



***AXIOMTEK***

**Q7B301**

**Qseven Module Application Board**

**User's Manual**



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If you replace wrong batteries, it causes the danger of explosion. It is recommended by the manufacturer that you follow the manufacturer's instructions to only replace the same or equivalent type of battery, and dispose of used ones.

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## **ESD Precautions**

Computer boards have integrated circuits sensitive to static electricity. To prevent chipsets from electrostatic discharge damage, please take care of the following jobs with precautions:

- Do not remove boards or integrated circuits from their anti-static packaging until you are ready to install them.
- Before holding the board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. It discharges static electricity from your body.
- Wear a wrist-grounding strap, available from most electronic component stores, when handling boards and components.

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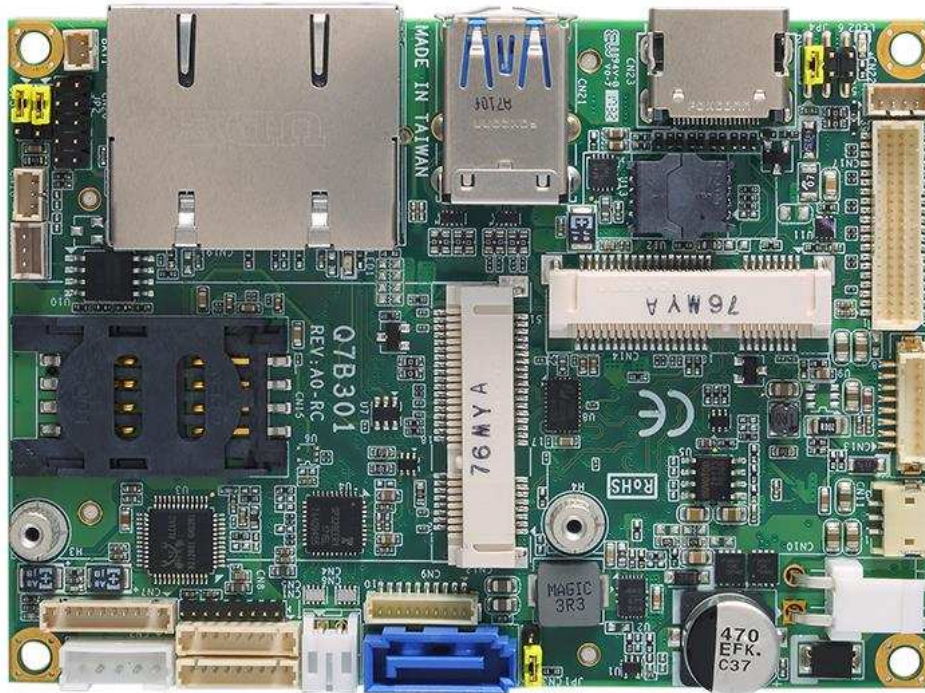
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# Chapter 1 Introduction



The Q7B301 is a new application baseboard for embedded Qseven Module and fully compliant with the Qseven Specification 2.1 standard. The Qseven is an open industry standard for Qseven modules, designed to be future proof and to provide a smooth transition path from legacy parallel interfaces to LVDS interfaces. In addition to the standard output signals for converting, Q7B301 provides one PCI-Express Mini Card socket and one SD card slot for expansion purposes.

This board supports various I/O features: display interfaces (LVDS and HDMI), two Gigabit/Fast Ethernet, HD audio codec, one SATA-600, two USB 3.0 and two RS-232/422/485 connectors.

With Q7B301, customers can implement this product for various applications and accelerate time-to-market.

## 1.1 Features

- 2 Gigabit Ethernet ports
- 1 SATA-600 connector
- 2 RS-232/422/485
- 2 USB 3.0 ports/1 USB 2.0 port
- 2 PCI-Express Mini Card socket (Full-size x1 / Half-size x1)
- 1 Micro SD card slot
- LVDS and HDMI connector

## 1.2 Specifications

- **CPU**
  - On the Qseven module.
- **System Chipset**
  - On the Qseven module.
- **BIOS**
  - On the Qseven module.
- **System Memory**
  - On the Qseven module.
- **Onboard Multi I/O**
  - Two RS-232/422/485
- **Serial ATA**
  - One SATA-600 connector.
- **Ethernet**
  - LAN chip on Qseven module.
  - Two 1000/100/10Mbps Gigabit/Fast Ethernet ports.
- **Audio**
  - HD audio with line-in/line-out/MIC-in.
- **USB Interface**
  - Two USB 3.0 ports on the rear I/O (USB 2.0 compliant).
  - One USB 2.0 in wafer connector.
- **SPI**
  - Not supported.
- **I2C**
  - Supported.
- **Digital I/O**
  - Four inputs and four outputs.
- **Fan**
  - Make sure you use the matching Q7B301 heatsink (P/N:7118Q311000E) or heatsreader (P/N : 7128Q311000E) for connecting to Axiomtek Qseven module.

- **Display**
  - One 40-pin connector for 18/24-bit single/dual channel LVDS and one 8-pin inverter connector.
  - One HDMI connector.
  
- **Expansion Interface**
  - Full-size PCI-Express Mini Card socket which comply with PCI-Express Mini Card Spec. V1.2.
  - Half-size PCI-Express Mini Card socket which comply with PCI-Express Mini Card Spec. V1.2.
  
- **Battery**
  - Lithium 3V/220mAH.
  
- **Size**
  - 100mm x 72mm.
  
- **Board Thickness**
  - 1.6mm.
  
- **Operation Temperature**
  - -20°C ~ +70°C.
  
- **Operation Humidity**
  - 10% ~ 95% relative humidity, non-condensing.



**Note**

*All specifications and images are subject to change without notice.*

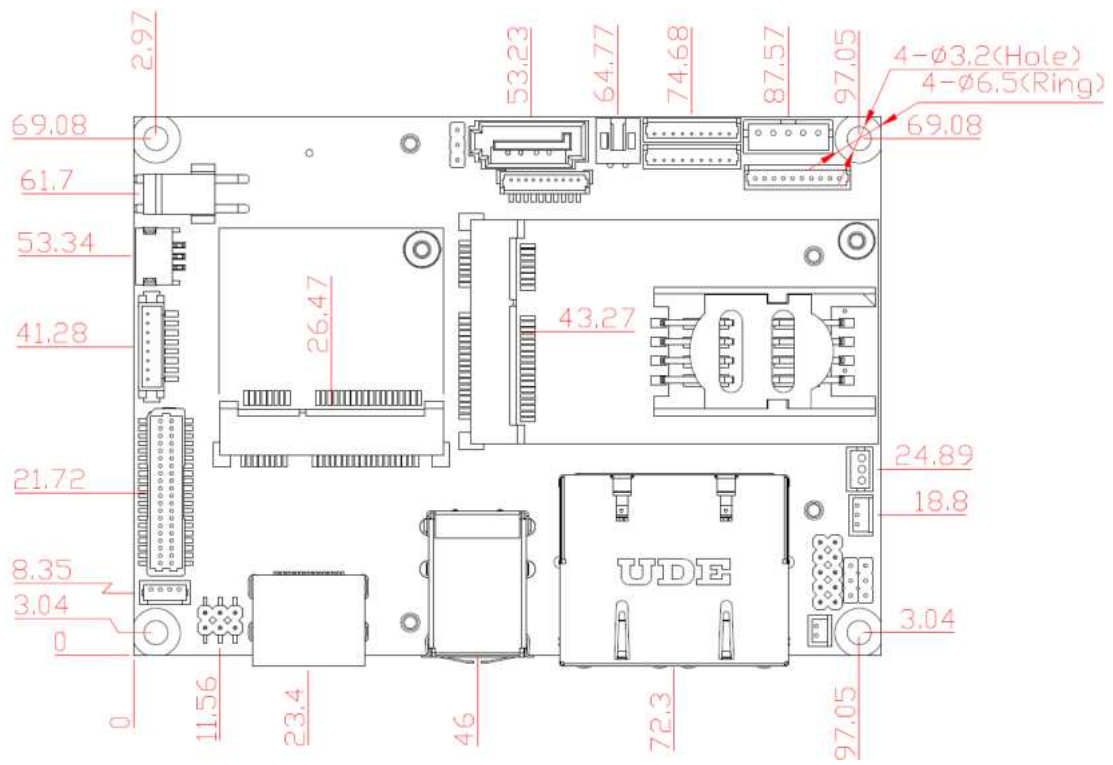
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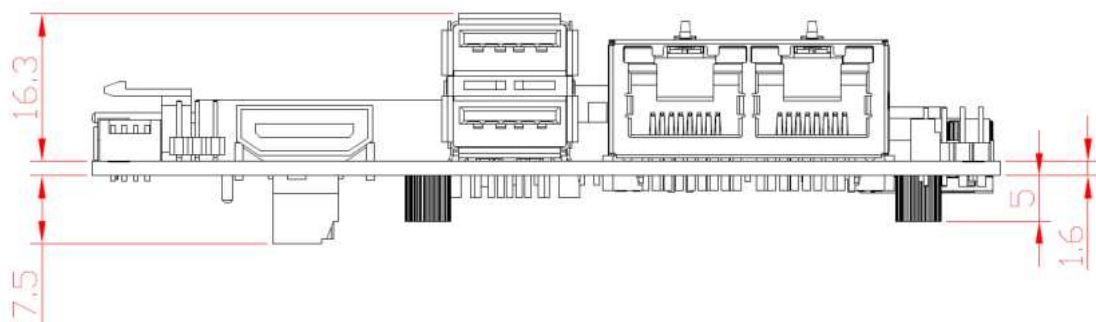
# Chapter 2

## Board and Pin Assignments

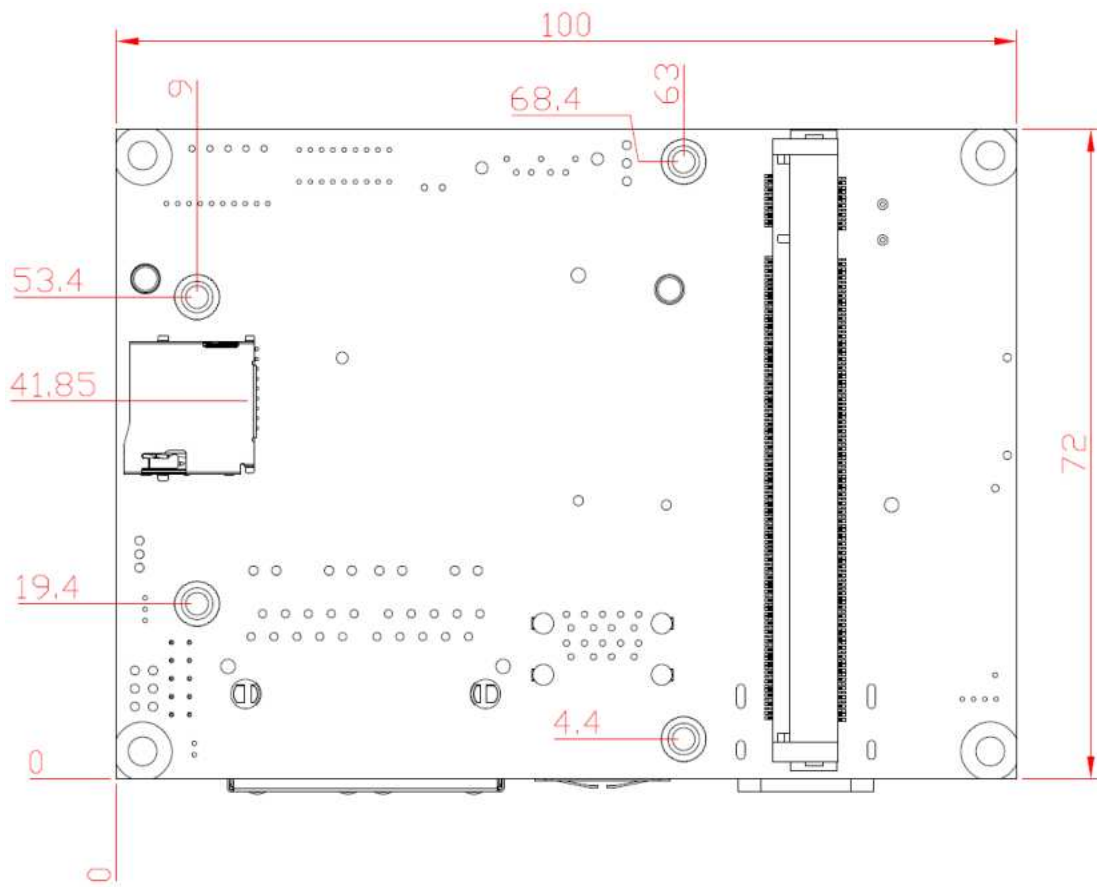
### 2.1 Board Dimensions and Fixing Holes



Top View

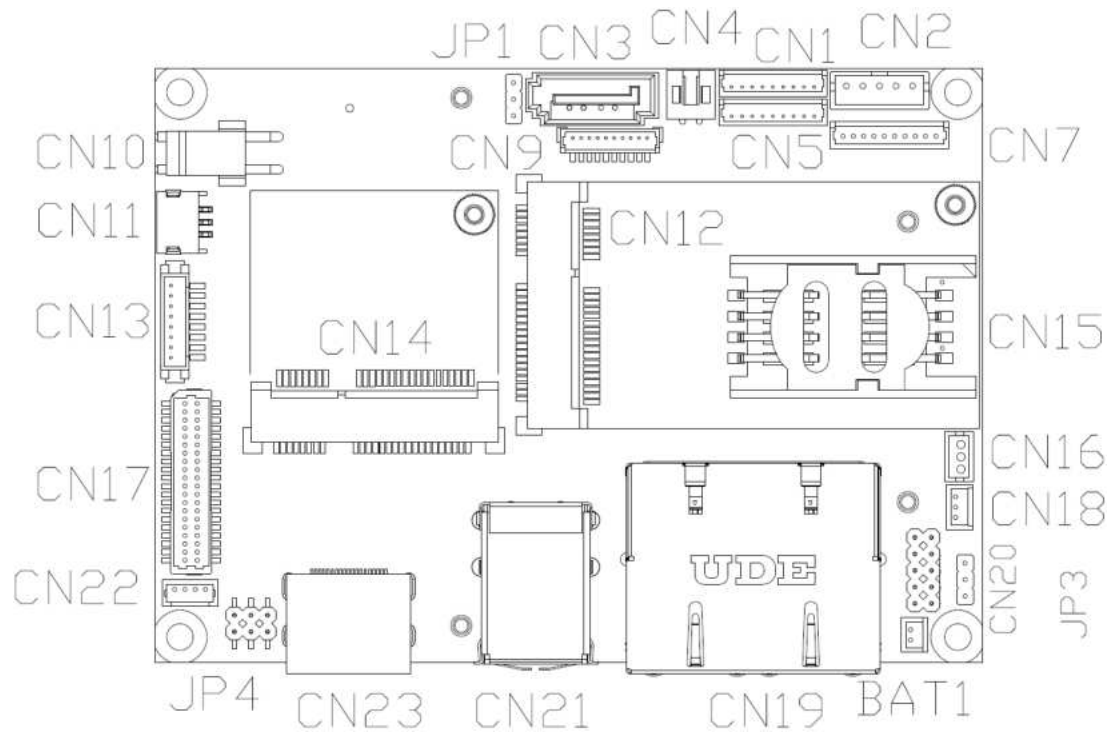


Front View

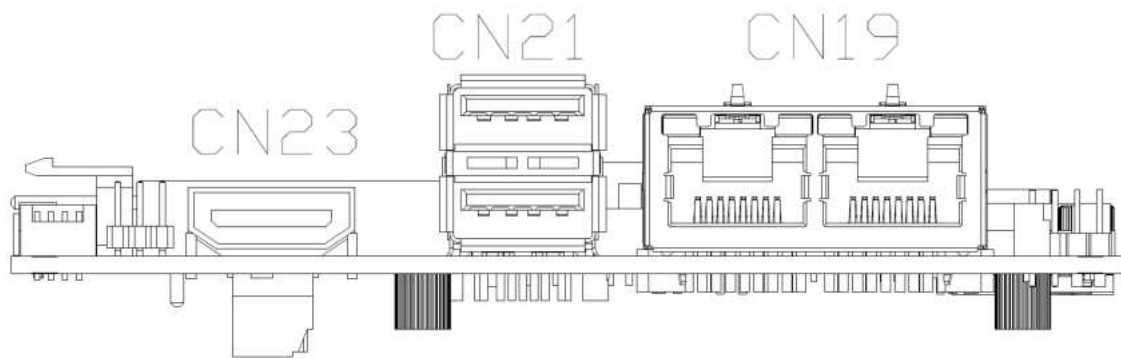


Bottom View

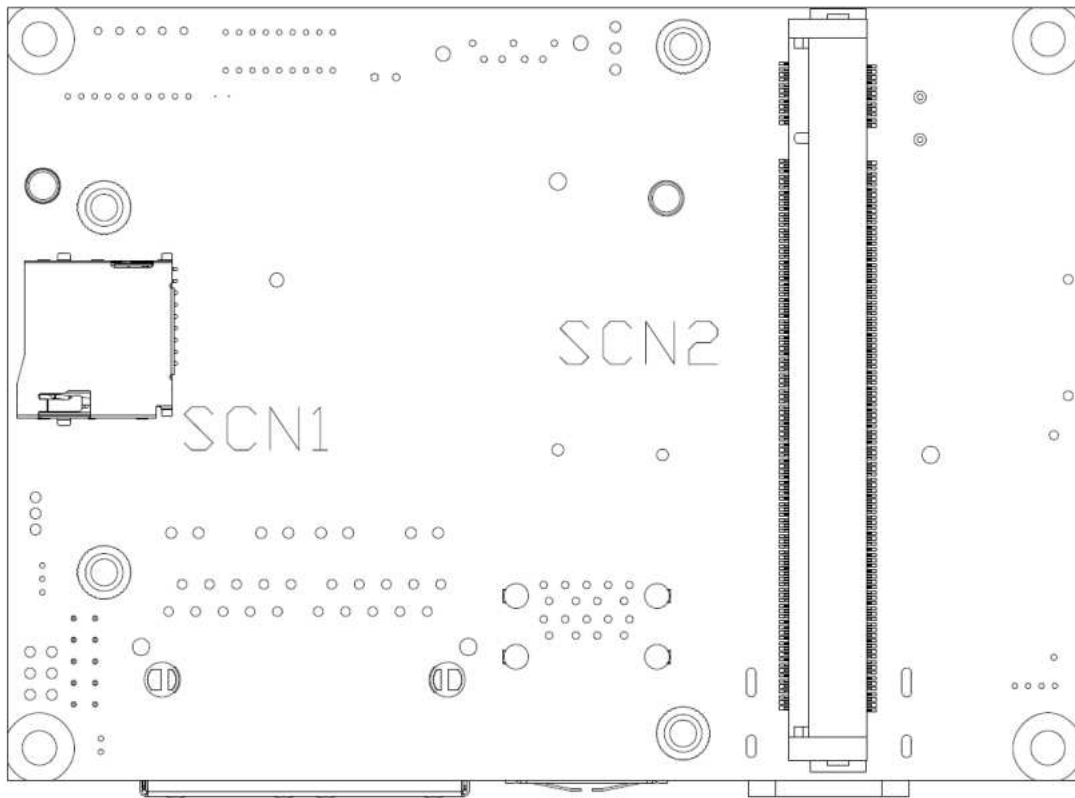
## 2.2 Board Layout



Top View



Front View

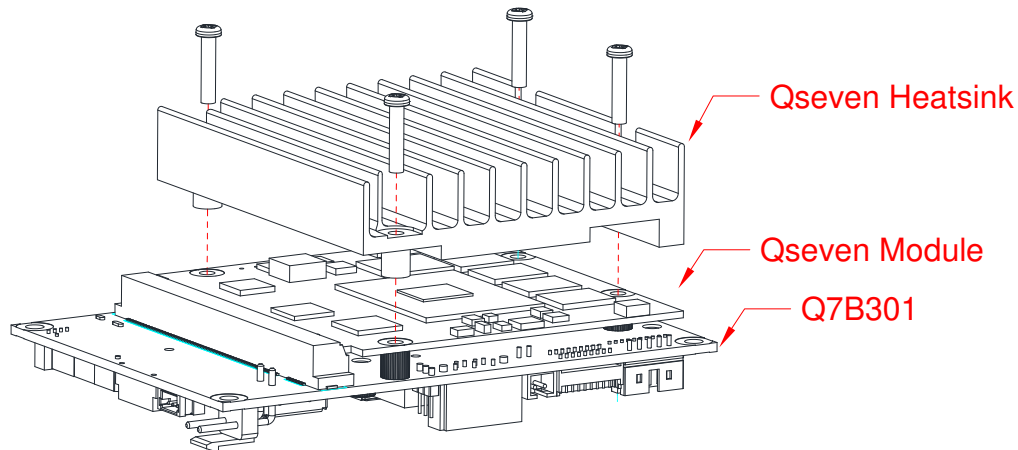


**Bottom View**

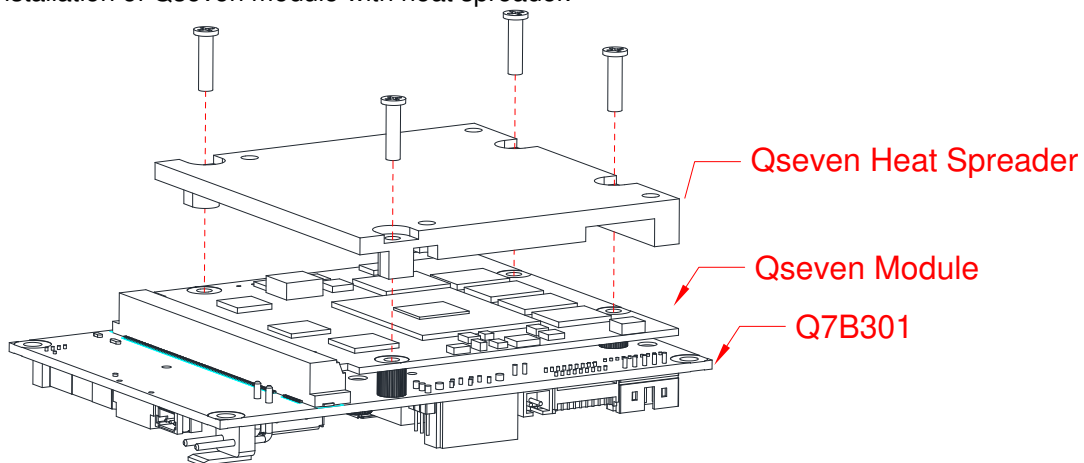
## 2.3 Installing Qseven Module and Thermal Solution

For thermal dissipation, a heatsink enables the components on the Qseven module to dissipate heat efficiently. All heat generating components are thermally conducted to the heatsink in order to avoid hot spots. Below images illustrate how to install the heatsink.

1. There is a protective plastic covering on the thermal pads. This must be removed before the heatsink can be mounted.
2. Each heatsink is designed for a specific Qseven module. The thermal pads on the heatsink are designed to make contact with the necessary components on the Qseven module. When mounting the heatsink you must make sure that the thermal pads on the heatsink make complete contact (no space between thermal pad and component) with the corresponding components on the Qseven module. This is especially critical for Qseven modules that have higher CPU speeds (for example 1.46GHz or more) to ensure that the heatsink acts as a proper thermal interface for cooling solutions.
3. This CPU module has four assembly holes for installing heatsink plate. Fix the heatsink plate to the Qseven module and install to carrier board. Be careful not to over-tighten the screws.

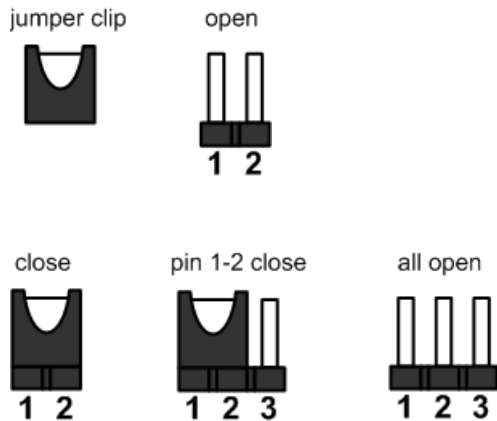


Due to high density of electric components on Q7B301, it is recommended to use heatspreader that attached directly to the system chassis as the system thermal solution for Qseven module with high CPU speed to avoid CPU from throttling. Below image shows installation of Qseven module with heat spreader.



## 2.4 Jumper Settings

Jumper is a small component consisting of jumper clip and jumper pins. Install jumper clip on 2 jumper pins to close. And remove jumper clip from 2 jumper pins to open. Below illustration shows how to set up jumper.



Properly configure jumper settings on the Q7B301 to meet your application purpose. Below you can find a summary table of all jumpers and onboard default settings.



Note

*Once the default jumper setting needs to be changed, please do it under power-off condition.*

Jumper	Description	Setting
JP1	PCIe/Mini Card Function Selection Default: PCIe	1-2 Close
JP3	Restore BIOS Optimal Defaults Default: Normal Operation	1-2 Close
JP4	LVDS Voltage Selection Default: +3.3V	1-2 Close

### 2.4.1 PCIE/Mini Card Function Selection (JP1)

Use JP1 to select PCIE or Mini Card.

Function	Setting
PCIE (Default)	1-2 close
Mini Card	2-3 close



### 2.4.2 Restore BIOS Optimal Defaults (JP3)

Put jumper clip to pin 2-3 for a few seconds then move it back to pin 1-2. Doing this procedure can restore BIOS optimal defaults.

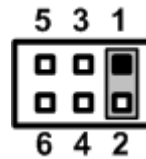
Function	Setting
Normal (Default)	1-2 close
Restore BIOS optimal defaults	2-3 close



### 2.4.3 LVDS Voltage Selection (JP4)

The board supports voltage selection for flat panel displays. Use this jumper to set LVDS connector (CN17) pin 1~6 VCCM to +3.3V, +5V or +12V. To prevent hardware damage, before connecting please make sure that the input voltage of flat panel is correct.

Function	Setting
+3.3V (Default)	1-2 close
+5V	2-4 close
+12V	5-6 close



## 2.5 Connectors

Signals go to other parts of the system through connectors. Loose or improper connection might cause problems, please make sure all connectors are properly and firmly connected. Here is a summary table which shows all connectors on the hardware.

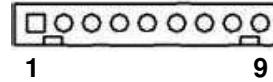
Connector	Description
CN1, CN5	COM1 and COM2 Wafer Connectors
CN2	CAN Connector
CN3	SATA Connector
CN4	SATA Power Connector
CN7	Audio Wafer Connector
CN9	Digital I/O Connector
CN10	DC Power Input Connector
CN11	Fan Connector
CN12	Full-size PCI-Express Mini Card Connector
CN13	Inverter Connector
CN14	Half-size PCI-Express Mini Card Connector
CN15	SIM Card Socket
CN16	SMBus Connector
CN17	LVDS Connector
CN18	I2C Connector
CN19	Ethernet Port 1 and 2
CN20	Front Panel Connector
CN21	USB 3.0 Port 0 and 1
CN22	USB 2.0 Wafer Connector
CN23	HDMI Connector
BAT1	CMOS Battery Connector
SCN1	Micro SD Card Slot
SCN2	Qseven Connector



### 2.5.1 COM Wafer Connectors (CN1 and CN5)

This board has two 9-pin (pitch=1.25mm) serial port connectors; CN1 for COM1 and CN5 for COM2.

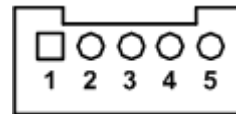
Pin	RS-232	RS-422	RS-485
1	DCD	TX-	Data-
2	DSR	No use	No use
3	RXD	TX+	Data+
4	RTS	No use	No use
5	TXD	RX+	No use
6	CTS	No use	No use
7	DTR	RX-	No use
8	RI	No use	No use
9	GND	No use	No use



### 2.5.2 CAN Connector (CN2)

The CN2 is a 5-pin (pitch=2.0mm) connector for CAN interface. Controller Area Network (CAN or CAN-bus) is a message based protocol designed specifically for automotive applications but now is also used in other areas such as industrial automation and medical equipment.

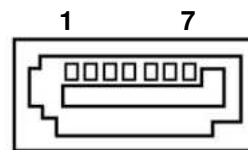
Pin	Signal
1	3.3V
2	TX
3	RX
4	NC
5	GND



### 2.5.3 SATA Connector (CN3)

The Serial Advanced Technology Attachment (Serial ATA or SATA) connector is computer bus interface for connecting to devices such as hard disk drive.

Pin	Signal
1	GND
2	SATA_TX+
3	SATA_TX-
4	GND
5	SATA_RX-
6	SATA_RX+
7	GND



### 2.5.4 SATA Power Connector (CN4)

This is a 2-pin (pitch=2.0mm) connector for interfacing to SATA 2.5" HDD power supply.

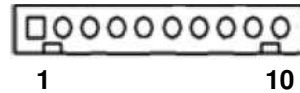
Pin	Signal
1	5V
2	GND



### 2.5.5 Audio Wafer Connector (CN7)

The CN7 is a 10-pin (pitch=1.25mm) connector for audio interface.

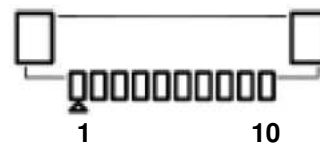
Pin	Signal
1	MIC_IN
2	GND
3	LINE_IN_L
4	GND
5	LINE_IN_R
6	GND
7	AUDIO_OUT_L
8	GND
9	AUDIO_OUT_R
10	GND



### 2.5.6 Digital I/O Connector (CN9)

This board is equipped with a 10-pin (pitch=1.0mm) digital I/O connector that meets requirements for a system customary automation control. The digital I/O can be configured to control cash drawers and sense warning signals from an Uninterrupted Power System (UPS), or perform store security control. The digital I/O is controlled via software programming.

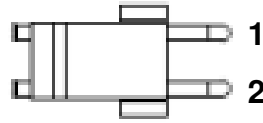
Pin	Signal
1	DIO0
2	DIO1
3	DIO2
4	DIO3
5	DIO4
6	DIO5
7	DIO6
8	DIO7
9	+5V
10	GND



### 2.5.7 DC Power Input Connector (CN10)

This is a 2-pin (pitch=3.96mm) connector for DC +12V input.

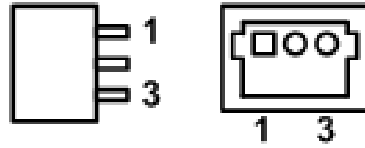
Pin	Signal
1	12V
2	GND



### 2.5.8 Fan Connector (CN11)

Fan is needed for cooling down system temperature. The system fan interface is available through a 3-pin (pitch=1.5mm) connector (CN11).

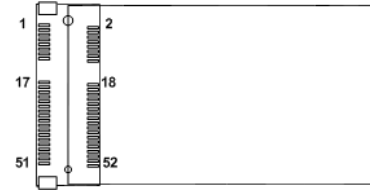
Pin	Signal
1	GND
2	Control pin
3	12V



### 2.5.9 Full-size PCI-Express Mini Card Connector (CN12)

This is a full-size PCI-Express Mini Card connector supporting PCI-Express x1 or USB 2.0. It also complies with PCI-Express Mini Card Spec. V1.2.

Pin	Signal	Pin	Signal
1	WAKE#	2	+3.3VSB
3	No use	4	GND
5	No use	6	+1.5V
7	CLKREQ#	8	SIM_PWR
9	GND	10	SIM_DATA
11	REFCLK-	12	SIM_CLK
13	REFCLK+	14	SIM_REST
15	GND	16	SIM_VPP
17	No use	18	GND
19	No use	20	W_DISABLE#
21	GND	22	PERST#
23	PE_RXN0/SATA_RXP1	24	+3.3VSB
25	PE_RXP0/SATA_RXN1	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PE_TXN0/SATA_TXN1	32	SMB_DATA
33	PE_TXP0/SATA_TXP1	34	GND
35	GND	36	USB_D-
37	GND	38	USB_D+
39	+3.3VSB	40	GND
41	+3.3VSB	42	No use
43	GND	44	No use
45	No use	46	No use
47	No use	48	+1.5V
49	No use	50	GND
51	No use	52	+3.3VSB



### 2.5.10 Inverter Connector (CN13)

The CN13 is an 8-pin connector for LVDS inverter interface. We strongly recommend you to use the matching DF13-8S-1.25C connector to avoid malfunction.

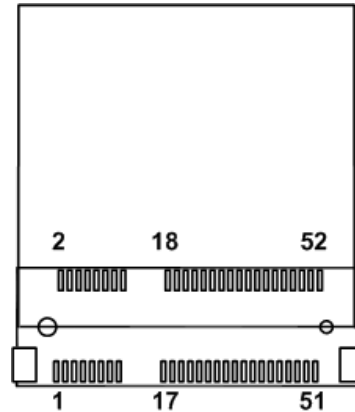
Pin	Signal
1	12V
2	12V
3	5V
4	Enable pin
5	GND
6	GND
7	GND
8	Ctrl pin



### 2.5.11 Half-size PCI-Express Mini Card Connector (CN14)

This is a half size PCI-Express Mini Card connector supporting either PCI-Express or USB 2.0. It also complies with PCI-Express Mini Card Spec. V1.2.

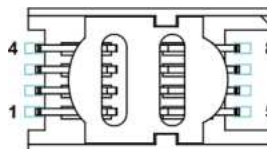
Pin	Signal	Pin	Signal
1	WAKE#	2	+3.3VSB
3	No use	4	GND
5	No use	6	+1.5V
7	CLKREQ#	8	SIM_PWR
9	GND	10	SIM_DATA
11	REFCLK-	12	SIM_CLK
13	REFCLK+	14	SIM_REST
15	GND	16	SIM_VPP
17	No use	18	GND
19	No use	20	W_DISABLE#
21	GND	22	PERST#
23	PE_RXN1	24	+3.3VSB
25	PE_RXP1	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PE_TXN1	32	SMB_DATA
33	PE_TXP1	34	GND
35	GND	36	No use
37	GND	38	No use
39	+3.3VSB	40	GND
41	+3.3VSB	42	No use
43	GND	44	No use
45	No use	46	No use
47	No use	48	+1.5V
49	No use	50	GND
51	No use	52	+3.3VSB



### 2.5.12 SIM Card Socket (CN15)

This board has CN15 socket for inserting SIM Card. In order to work properly, the SIM Card must be used together with 3G module which is inserted to CN12 or CN14. It is mainly used in 3G wireless network application.

Pin	Signal
1	PWR
2	RST
3	CLK
4	NC
5	GND
6	VPP
7	I/O
8	NC



### 2.5.13 SMBus Connector (CN16)

The CN16 is a 3-pin (pitch=1.5mm) connector for SMBus interface. The SMBus (System Management Bus) is a simple bus for the purpose of lightweight communication.

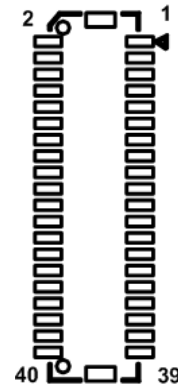
Pin	Signal
1	SMB_CLK
2	SMB_DAT
3	GND



### 2.5.14 LVDS Connector (CN17)

This is a 2x20-pin connector for LVDS LCD interface. It is strongly recommended to use the matching JST SHDR-40VS-B connector for LVDS interface. Pin 1~6 VCCM can be set to +3.3V, +5V or +12V with jumper JP4, see section 2.4.3.

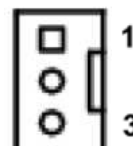
Pin	Signal	Pin	Signal
1	VCCM	2	VCCM
3	VCCM	4	VCCM
5	VCCM	6	VCCM
7	LVDS_DID_DAT	8	LVDS_DID_CLK
9	GND	10	GND
11	LVDS_B3-	12	LVDS_B0-
13	LVDS_B3+	14	LVDS_B0+
15	GND	16	GND
17	LVDS_B_CLK-	18	LVDS_B1-
19	LVDS_B_CLK+	20	LVDS_B1+
21	GND	22	GND
23	LVDS_A0-	24	LVDS_B2-
25	LVDS_A0+	26	LVDS_B2+
27	GND	28	GND
29	LVDS_A1-	30	LVDS_A3-
31	LVDS_A1+	32	LVDS_A3+
33	GND	34	GND
35	LVDS_A2-	36	LVDS_A_CLK-
37	LVDS_A2+	38	LVDS_A_CLK+
39	GND	40	GND



### 2.5.15 I2C Connector (CN18)

The CN18 is a 3-pin (pitch=1.25mm) connector for I2C interface.

Pin	Signal
1	I2C_CLK
2	I2C_DAT
3	GND



### 2.5.16 Ethernet Ports (CN19)

The board has two RJ-45 connectors for Ethernet port 1 and 2. Ethernet connection can be established by plugging one end of the Ethernet cable into this RJ-45 connector and the other end (phone jack) to a 1000/100/10-Base-T hub.

LAN1: Intel® i210/i211AT supports 1000/100/10Mbps Gigabit/Fast Ethernet (LAN chip on carrier board).

LAN2: Intel® i210/i211AT supports 1000/100/10Mbps Gigabit/Fast Ethernet (LAN chip on module).

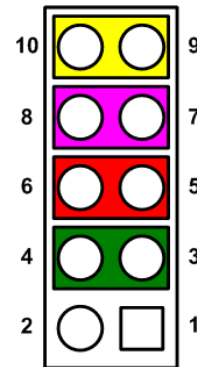
Pin	1000 Base-T	100/10 Base-T	Description
L1	BI_DA+	TX+	Bidirectional or Transmit Data+
L2	BI_DA-	TX-	Bidirectional or Transmit Data-
L3	BI_DB+	RX+	Bidirectional or Receive Data+
L4	BI_DC+	N.C.	Bidirectional or Not Connected
L5	BI_DC-	N.C.	Bidirectional or Not Connected
L6	BI_DB-	RX-	Bidirectional or Receive Data-
L7	BI_DD+	N.C.	Bidirectional or Not Connected
L8	BI_DD-	N.C.	Bidirectional or Not Connected
A	Speed LED 1000: Orange 100/10: Green/OFF		
B	Active Link LED (Yellow) Off: No link Blinking: Data activity detected		



### 2.5.17 Front Panel Connector (CN20)

The CN2 is a 2x5-pin (pitch=2.0mm) connector for front panel interface.

Pin	Signal	Pin	Signal
1	GND	2	PS_ON_N
3	GND	4	5V
5	GND	6	PWRBTN_N
7	GND	8	RSTBTN_N
9	SATA+ACT_N	10	3.3V



#### ATX Power Supply ON

Short pin 1 and pin 2, ATX power supply is forcing to turn on state. Otherwise, system will control ATX power supply state.

#### Power LED

Pin 4 connects anode(+) of LED and pin 3 connects cathode(-) of LED. The power LED lights up when the system is powered on.

#### Power On/Off Button

Pin 5 and 6 connect the power button on front panel to the CPU board, which allows users to turn on or off power supply.

#### System Reset Switch

Pin 7 and 8 connect the case-mounted reset switch that reboots your computer without turning off the power switch. It is a better way to reboot your system for a longer life of system power supply.

#### HDD Activity LED

This connection is linked to hard drive activity LED on the control panel. LED flashes when HDD is being accessed. Pin 9 and 10 connect the hard disk drive to the front panel HDD LED, pin 9 is assigned as cathode(-) and pin 10 is assigned as anode(+).

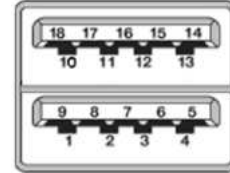


### 2.5.18 USB 3.0 Port (CN21)

The Universal Serial Bus (compliant with USB 3.0 (5Gb/s)) connector on the rear I/O is for installing USB peripherals such as keyboard, mouse, scanner, etc.

#### USB 3.0 port 0 and 1:

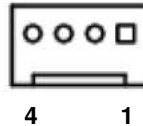
Pin	Signal	Pin	Signal
1	USB_VCC (+5V )	10	USB_VCC (+5V )
2	USB #0_D-	11	USB #1_D-
3	USB #0_D+	12	USB #1_D+
4	GND	13	GND
5	SSRX0-	14	SSRX1-
6	SSRX0+	15	SSRX1+
7	GND	16	GND
8	SSTX0-	17	SSTX1-
9	SSTX0+	18	SSTX1+



### 2.5.19 USB 2.0 Wafer Connector (CN22)

This is a 4-pin (pitch=1.25mm) connector for USB 2.0 interface.

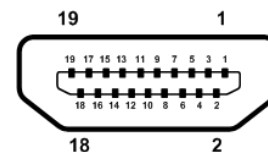
Pin	Signal
1	USB3_PWR23 (+5V_SBY )
2	D3+
3	D3-
4	GND



### 2.5.20 HDMI Connector (CN23)

The HDMI (High-Definition Multimedia Interface) is a compact digital interface which is capable of transmitting high-definition video and high-resolution audio over a single cable. Its interface is available through connector CN23.

Pin	Signal	Pin	Signal
1	HDMI DATA2+	2	GND
3	HDMI DATA2-	4	HDMI DATA1+
5	GND	6	HDMI DATA1-
7	HDMI DATA0+	8	GND
9	HDMI DATA0-	10	HDMI Clock+
11	GND	12	HDMI Clock-
13	N.C.	14	N.C.
15	HDMI SCL	16	HDMI SDA
17	GND	18	+5V
19	HDMI_HTPLG		



### 2.5.21 CMOS Battery Connector (BAT1)

This is a 2-pin (pitch=1.25mm) wafer connector for CMOS battery interface.

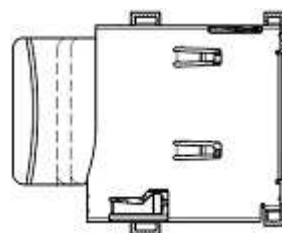
Pin	Signal
1	+3.3V
2	GND



### 2.5.22 Micro SD Card Slot (SCN1)

The Micro Secure Digital (Micro SD) is a flash memory card format used in portable device including notebook and digital camera.

Pin	Signal
1	SDIO_DAT2
2	SDIO_DAT3
3	SDIO_CMD
4	SDIO PWR (+3.3V level)
5	SDIO_CLK#
6	GND
7	SDIO_DAT0
8	SDIO_DAT1
9	SDIO_CD



### 2.5.23 Qseven Connector (SCN2)

The board comes with MXM 230-pin connector for Qseven interface. The MXM connector is a robust, low-cost edge connector that can handle high-speed signals.

Pin	Signal	Pin	Signal
1	GND	2	GND
3	GBE_MDI3-	4	GBE_MDI2-
5	GBE_MDI3+	6	GBE_MDI2+
7	GBE_LINK100#	8	GBE_LINK1000#
9	GBE_MDI1-	10	GBE_MDI0-
11	GBE_MDI1+	12	GBE_MDI0+
13	GBE_LINK#	14	GBE_ACT#
15	NC	16	NC
17	WAKE#	18	SUS_S3#
19	NC	20	PWRBTN#
21	NC	22	NC
23	GND	24	GND
	KEY		KEY
25	GND	26	PWGIN
27	NC	28	RSTBTN#
29	SATA0_TX+	30	SATA1_TX+
31	SATA0_TX-	32	SATA1_TX-
33	SATA_ACT#	34	GND
35	SATA0_RX+	36	SATA1_RX+
37	SATA0_RX-	38	SATA1_RX-
39	GND	40	GND
41	BIOS_DISABLE#	42	SDIO_CLK#
43	SDIO_CD#	44	RSVD
45	SDIO_CMD	46	SDIO_WP
47	SDIO_PWR#	48	SDIO_DAT1
49	SDIO_DAT0	50	SDIO_DAT3
51	SDIO_DAT2	52	RSVD
53	RSVD	54	RSVD
55	RSVD	56	NC
57	GND	58	GND
59	HDA_SYNC	60	SMB_CLK
61	HDA_RST#	62	SMB_DAT
63	HDA_BITCLK	64	NC
65	HDA_SDI	66	GP0_I2C_CLK
67	HDA_SDO	68	GP0_I2C_DAT
69	NC	70	NC
71	NC	72	WDOUT
73	GND	74	GND
75	USB_SSTX0-	76	USB_SSRX0-
77	USB_SSTX0+	78	USB_SSRX0+
79	USB_6_7_OC#	80	USB_4_5_OC#
81	NC	82	NC
83	NC	84	NC
85	USB_2_3_OC#	86	USB_0_1_OC#
87	USB_P3-	88	USB_P2-
89	USB_P3+	90	USB_P2+

Pin	Signal	Pin	Signal
91	NC	92	NC
93	USB_P1-	94	USB_P0-
95	USB_P1+	96	USB_P0+
97	GND	98	GND
99	LVDS_A0+	100	LVDS_B0+
101	LVDS_A0-	102	LVDS_B0-
103	LVDS_A1+	104	LVDS_B1+
105	LVDS_A1+	106	LVDS_B1-
107	LVDS_A2+	108	LVDS_B2+
109	LVDS_A2-	110	LVDS_B2-
111	LVDS_PPEN	112	LVDS_BLEN
113	LVDS_A3+	114	LVDS_B3+
115	LVDS_A3-	116	LVDS_B3-
117	GND	118	GND
119	LVDS_A_CLK+	120	LVDS_B_CLK+
121	LVDS_A_CLK-	122	LVDS_B_CLK-
123	LVDS_BLT_CTRL	124	NC
125	LVDS_DID_DAT	126	NC
127	LVDS_DID_CLK	128	NC
129	CAN0_TX	130	CAN0_RX
131	DP_LANE3+/TMDS_CLK+	132	USB_SSTX1-
133	DP_LANE3-/TMDS_CLK-	134	USB_SSTX1+
135	GND	136	GND
137	DP_LANE1+/TMDS_LANE1+	138	NC
139	DP_LANE1-/TMDS_LANE1-	140	NC
141	GND	142	GND
143	DP_LANE2+/TMDS_LANE0+	144	USB_SSRX1-
145	DP_LANE2-/TMDS_LANE0-	146	USB_SSRX1+
147	GND	148	GND
149	DP_LANE0+/TMDS_LANE2+	150	HDMI_CTRL_DAT
151	DP_LANE0-/TMDS_LANE2-	152	HDMI_CTRL_CLK
153	HDMI_HPD#	154	DP_HPD#
155	PCIE_CLK_REF+	156	PCIE_WAKE#
157	PCIE_CLK_REF-	158	PCIE_RST#
159	GND	160	GND
161	NC	162	NC
163	NC	164	NC
165	GND	166	GND
167	PCIE2_TX+	168	PCIE2_RX+
169	PCIE2_TX-	170	PCIE2_RX-
171	NC	172	NC
173	PCIE1_TX+	174	PCIE1_RX+
175	PCIE1_TX-	176	PCIE1_RX-
177	NC	178	NC
179	PCIE0_TX+	180	PCIE0_RX+

Pin	Signal	Pin	Signal
181	PCIE0_TX-	182	PCIE0_RX-
183	GND	184	GND
185	LPC_AD0	186	LPC_AD1
187	LPC_AD2	188	LPC_AD3
189	LPC_CLK	190	LPC_FRAME#
191	SERIRQ	192	NC
193	VCC_RTC	194	SPKR
195	FAN_TACHOIN	196	FAN_PWMOUT
197	GND	198	GND
199	SPI_MOSI	200	SPI_CS0#
201	SPI_MISO	202	SPI_CS1#
203	SPI_SCK	204	NC
205	VCC_5V_SB	206	VCC_5V_SB
207	NC	208	NC
209	NC	210	NC
211	NC	212	NC
213	NC	214	NC
215	NC	216	NC
217	NC	218	NC
219	VCC	220	VCC
221	VCC	222	VCC
223	VCC	224	VCC
225	VCC	226	VCC
227	VCC	228	VCC
229	VCC	230	VCC