

# **EEV-Q702**

**Qseven Carrier Board**

## **Quick Installation Guide**



**1<sup>st</sup> Ed – 26 March 2014**

## FCC Statement



THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.

(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" 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 COMMERCIAL ENVIRONMENT. 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.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

## Notice

This guide is designed for experienced users to setup the system within the shortest time. For detailed information, please always refer to the electronic user's manual.

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## Quick Installation Guide

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To receive the latest version of the user's manual; please visit our Web site at:

<http://www.avalue.com.tw/>

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# 1. Getting Started

## 1.1 Safety Precautions

### Warning!



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

### Caution!



Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

## 1.2 Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 x EEV-Q702 Qseven Carrier Board
- 1 x Quick Installation Guide
- 1 x DVD-ROM contains the followings:
  - User's Manual (this manual in PDF file)
  - Audio drivers and utilities
- 4 x Screws for fixing



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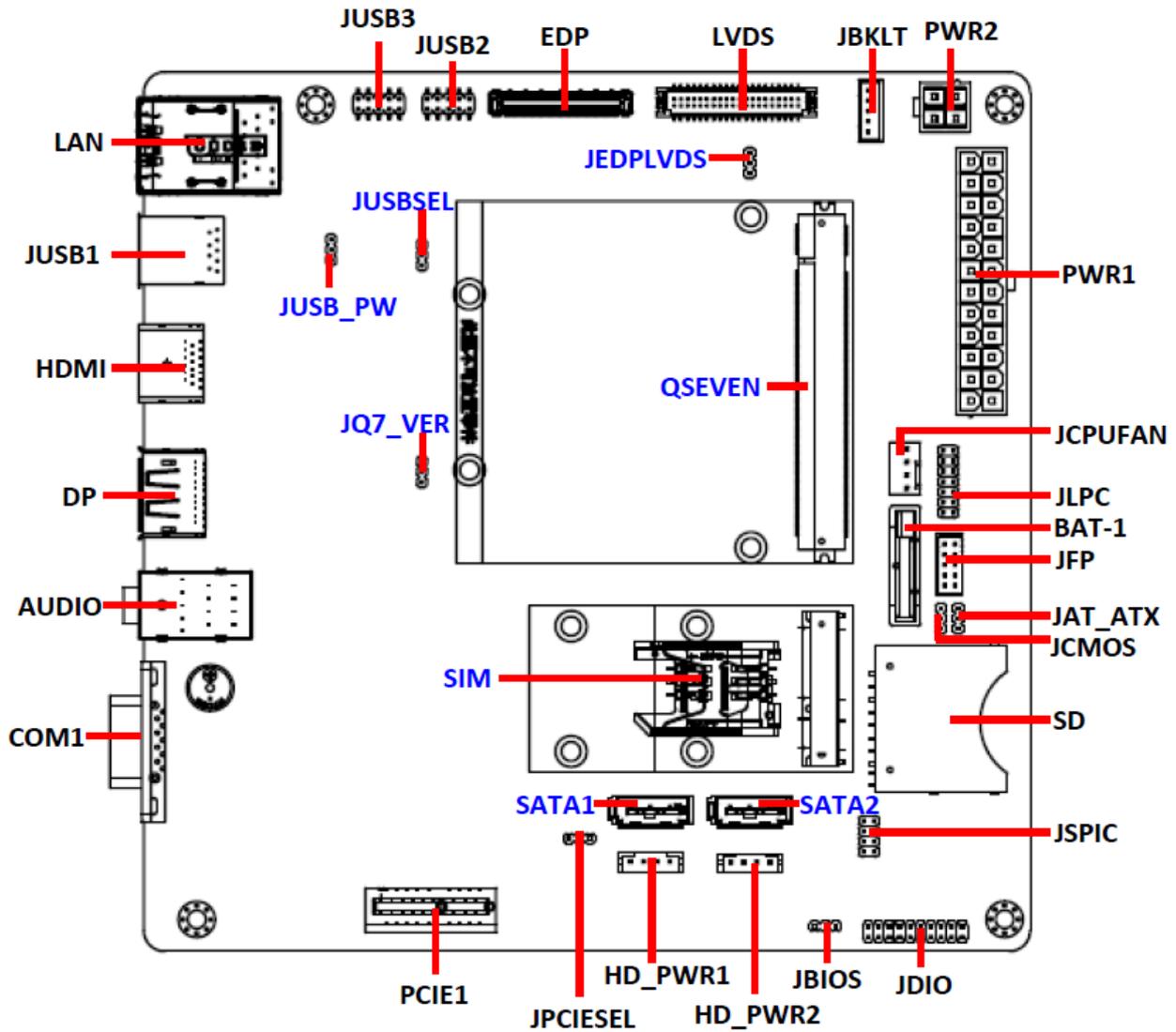
If any of the above items is damaged or missing, contact your retailer.

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## 2. Hardware Configuration

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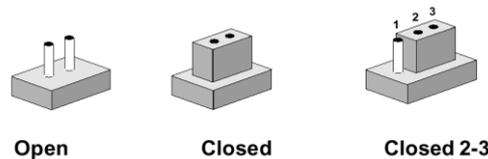
## 2.1 Product Overview



## 2.2 Jumper and Connector List

You can configure your board to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch.

It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper you connect the pins with the clip. To “open” a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either two pins.



The jumper settings are schematically depicted in this manual as follows:



A pair of needle-nose pliers may be helpful when working with jumpers.

Connectors on the board are linked to external devices such as hard disk drives, a keyboard, or floppy drives. In addition, the board has a number of jumpers that allow you to configure your system to suit your application.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

The following tables list the function of each of the board's jumpers and connectors.

### Jumpers

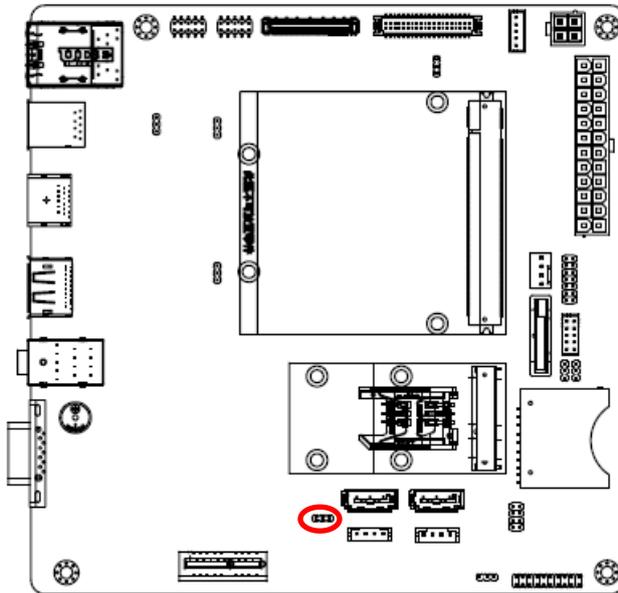
| Label           | Function                                 | Note                       |
|-----------------|--|----------------------------|
| <b>JPCIESEL</b> | PCIE signal selector                     | 3 x 1 header, pitch 2.00mm |
| <b>JUSB_PW</b>  | USB power selector                       | 3 x 1 header, pitch 2.00mm |
| <b>JAT_ATX</b>  | AT/ ATX Input power select               | 3 x 1 header, pitch 2.00mm |
| <b>JCMOS</b>    | Clear CMOS                               | 3 x 1 header, pitch 2.00mm |
| <b>JBIOS</b>    | Module/Carrier BIOS selector             | 3 x 1 header, pitch 2.00mm |
| <b>JUSBSEL</b>  | USB Port selector                        | 3 x 1 header, pitch 2.00mm |
| <b>JEDPLVDS</b> | eDP/ LVDS selector                       | 3 x 1 header, pitch 2.00mm |
| <b>JQ7_VER</b>  | JDPQVER selector<br>DP for Q7 1.2 VS 2.0 | 3 x 1 header, pitch 2.00mm |

## Connectors

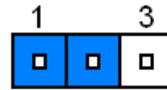
| Label            | Function  | Note                           |
|------------------|---|--------------------------------|
| <b>SD</b>        | SD card slot  |                                |
| <b>JCPUFAN</b>   | CPU fan connector                                       | 4 x 1 wafer, pitch 2.54mm      |
| <b>HD_PWR1/2</b> | HD Power connector 1/2                                  | 4 x 1 wafer, pitch 2.50mm      |
| <b>BAT-1</b>     | Battery connector                                       |                                |
| <b>JFP</b>       | Miscellaneous setting connector                         | 5 x 2 wafer, pitch 2.00mm      |
| <b>JBKLT</b>     | LCD inverter connector                                  | 5 x 1 wafer, pitch 2.00mm      |
| <b>EDP</b>       | eDP connector   | DIN 44-pin wafer, pitch 0.50mm |
| <b>COM1</b>      | Serial Port 1 connector                                 | D Sub 9 pin male               |
| <b>JDIO</b>      | General purpose I/O connector                           | 10 x 2 header, pitch 2.00mm    |
| <b>HDMI</b>      | HDMI connector  |                                |
| <b>LAN</b>       | LAN port connector<br>On-board connector for USB2.0 x 2 |                                |
| <b>LVDS</b>      | LVDS connector  | 20 x 2 wafer, pitch 1.25mm     |
| <b>JLPC</b>      | LPC port connector                                      | 7 x 2 header, pitch 2.00mm     |
| <b>PCIE1</b>     | PCIE connector  |                                |
| <b>PWR1</b>      | ATX1 Power connector                                    | 12 x 2 wafer, pitch 4.20mm     |
| <b>PWR2</b>      | ATX2 Power connector                                    | 2 x 2 wafer, pitch 4.20mm      |
| <b>JQSEVEN1</b>  | Qseven connector  |                                |
| <b>SIM</b>       | SIM card connector                                      |                                |
| <b>JSPIC</b>     | Carrier board SPI FLASH programming                     | 4 x 2 header, pitch 2.00mm     |
| <b>SATA1/2</b>   | SATA connector 1/2                                      |                                |
| <b>DP</b>        | DP connector  |                                |
| <b>Audio</b>     | Audio connector   |                                |
| <b>JUSB1</b>     | USB connector 1   |                                |
| <b>JUSB2</b>     | USB connector 2 & 3                                     | 5 x 2 header, pitch 2.00mm     |
| <b>JUSB3</b>     | USB connector 4 & 5                                     | 5 x 2 header, pitch 2.00mm     |

## 2.3 Setting Jumpers & Connectors

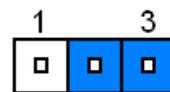
### 2.3.1 PCIE signal selector (JPCIESEL)



PCIE 1\*

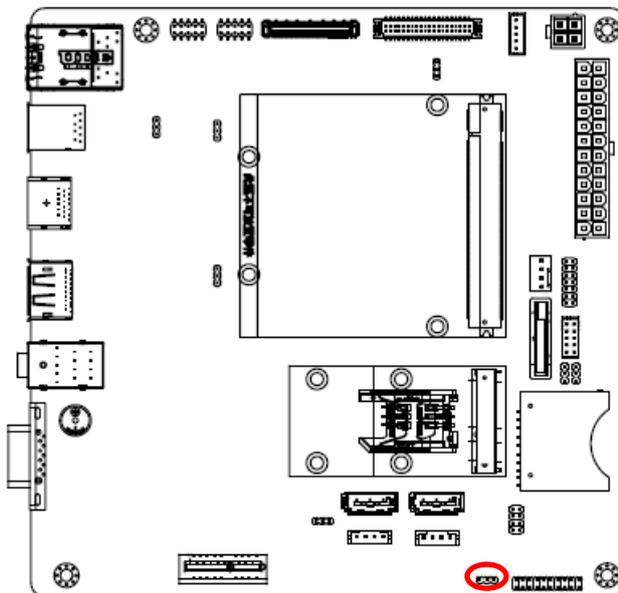


PCIE 2

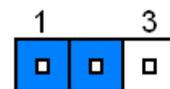


\*Default

### 2.3.2 Module/Carrier BIOS selector (JBIOS)



Q7 Module BIOS\*

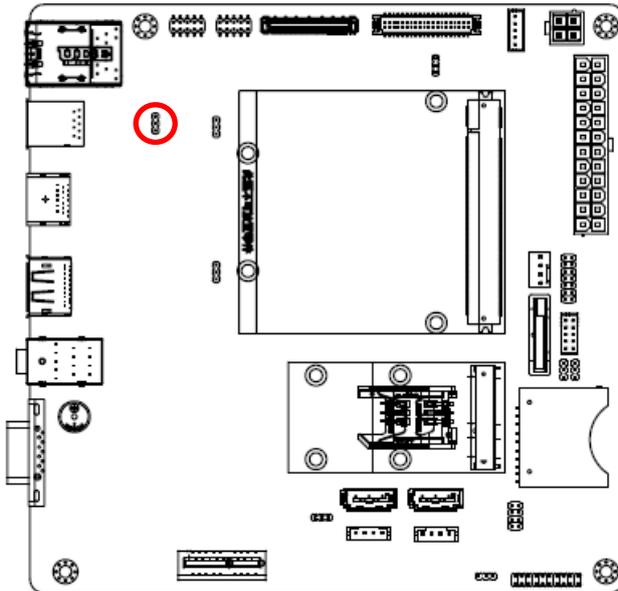


Carrier BIOS



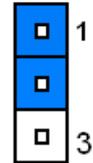
\*Default

### 2.3.3 USB power selector (JUSB\_PW)

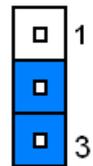


\*Default

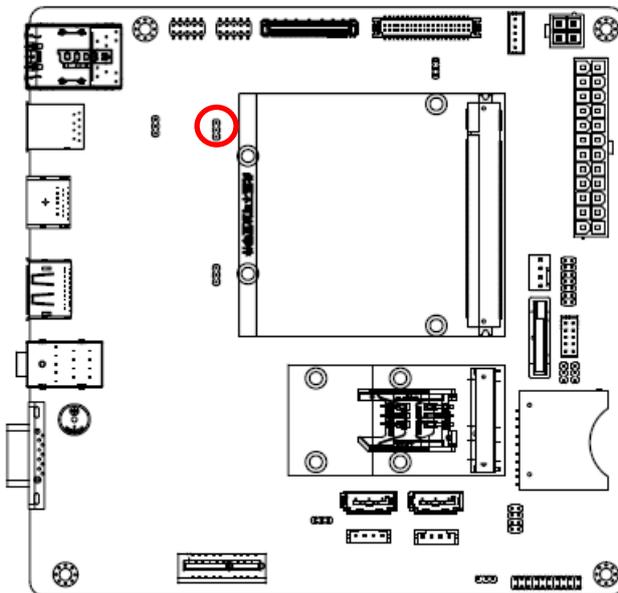
#### Standby power to USB\*



#### USB power when main power ok

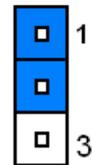


### 2.3.4 USB Port selector (JUSBSEL)

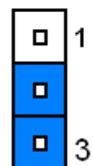


\*Default

#### Port 6, 7 to JUSB1 (USB3.0)\*

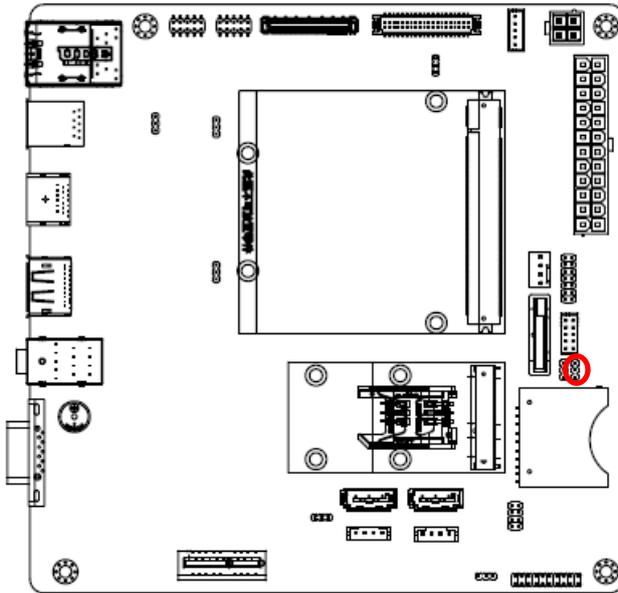


#### Port 6, 7 to JUSB3 (USB2.0)



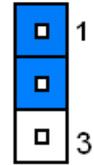
# EEV-Q702

## 2.3.5 AT/ ATX Input power select (JAT\_ATX)

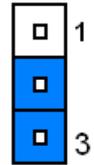


\*Default

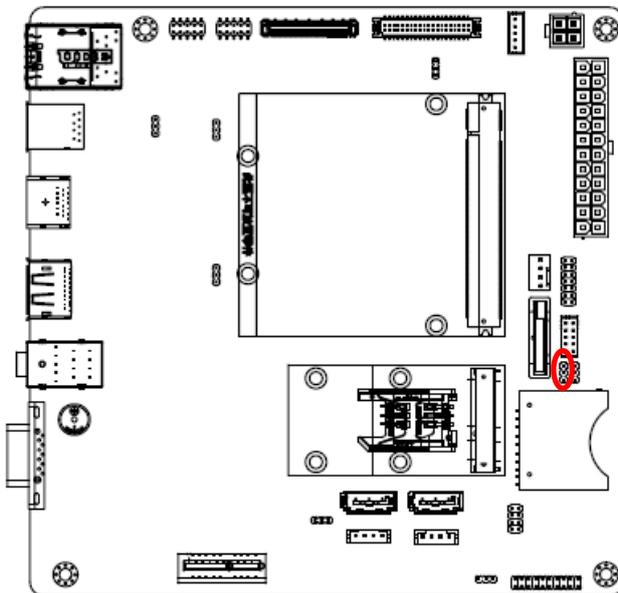
### AT MODE\*



### ATX MODE

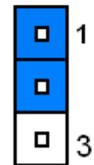


## 2.3.6 Clear CMOS (JCMOS)

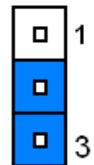


\*Default

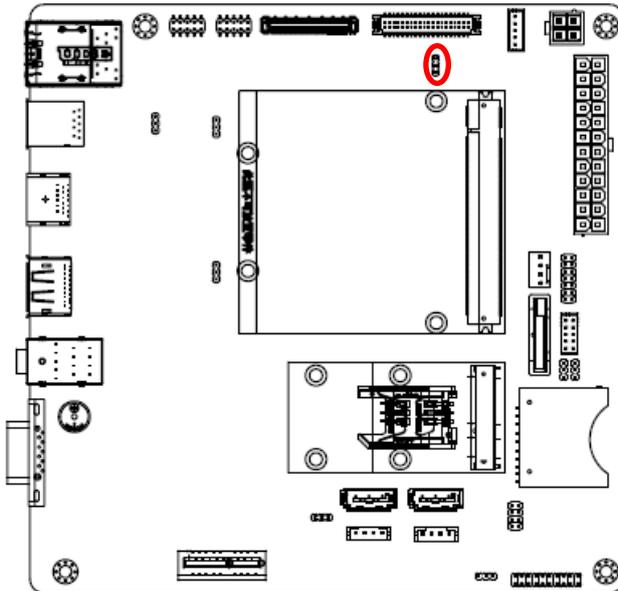
### Normal\*



### Clear CMOS

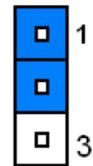


### 2.3.7 eDP/ LVDS selector (JEDPLVDS)

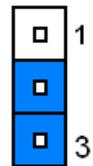


\*Default

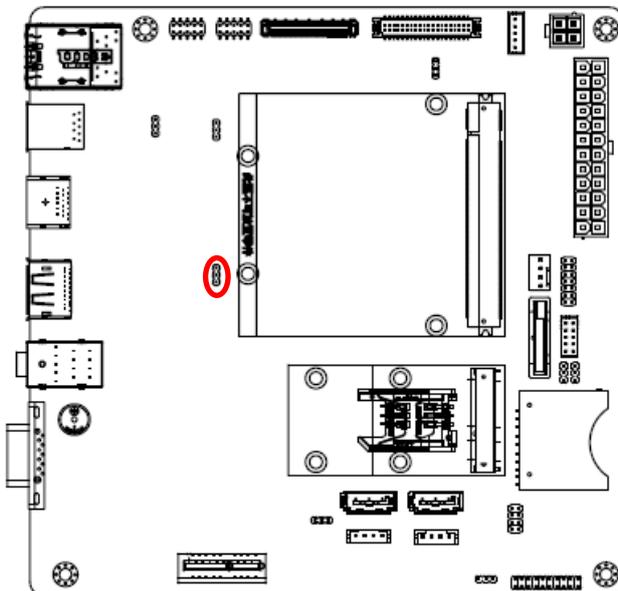
HI, LVDS port OUTPUT\*



LOW, eDP port OUTPUT

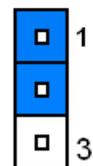


### 2.3.8 JDPQVER selector (JQ7\_VER)

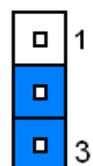


\*Default

Q7 2.0\*

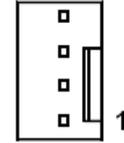
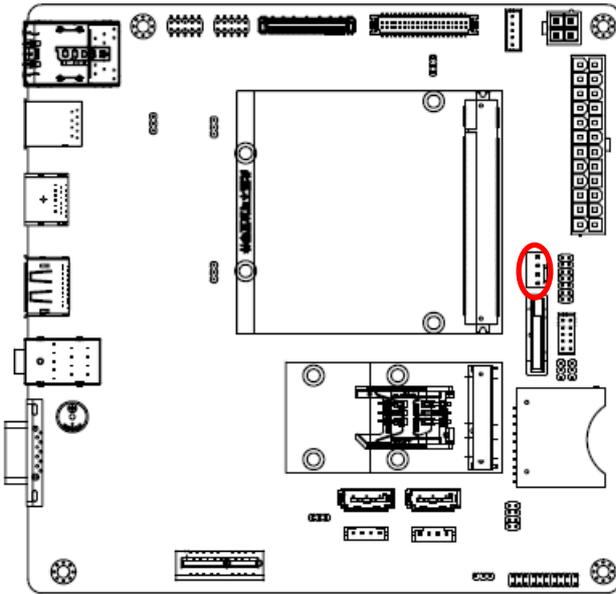


Q7 1.2



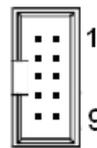
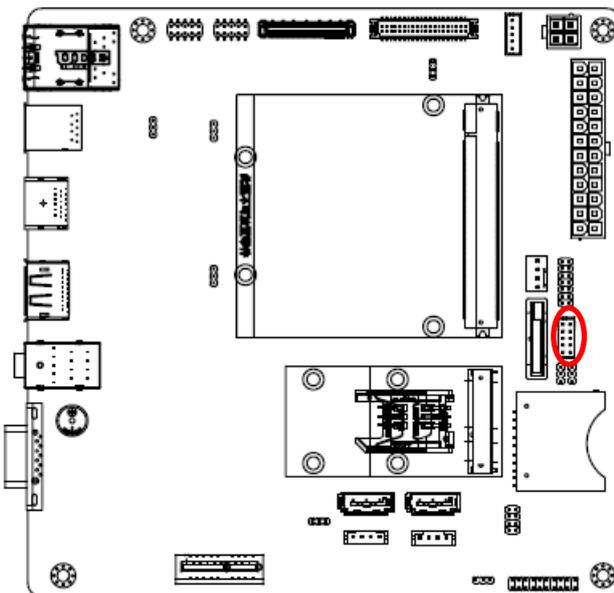
# EEV-Q702

## 2.3.9 CPU fan connector (JCPUFAN)



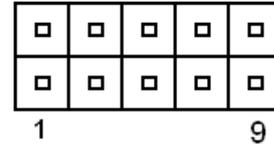
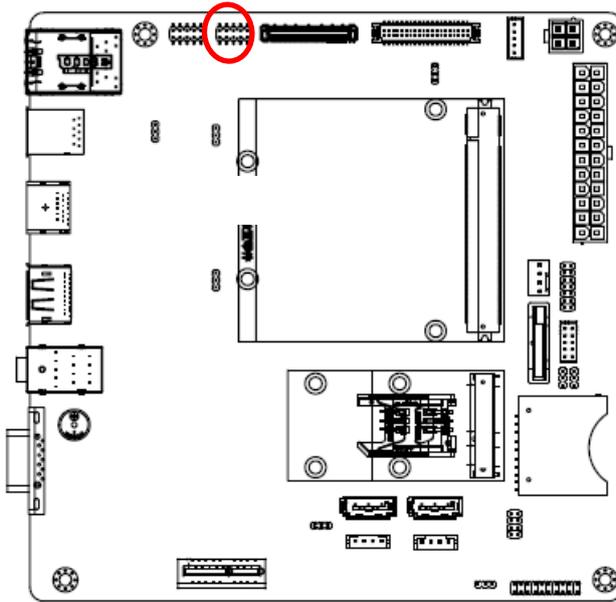
| Signal       | PIN |
|--------------|-----|
| CPU_FAN_CTRL | 4   |
| FAN_TACHOIN  | 3   |
| +12V         | 2   |
| GND          | 1   |

## 2.3.10 Miscellaneous setting connector (JFP)



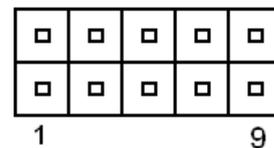
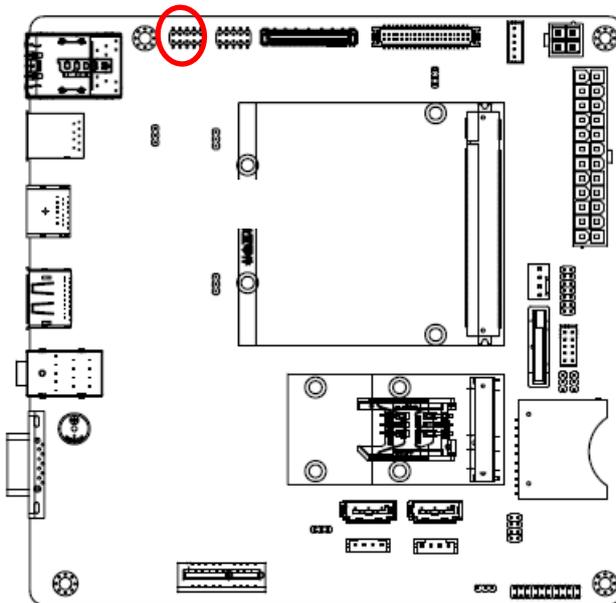
| Signal   | PIN |
|----------|-----|
| PWBT     | 1   |
|          | 2   |
| RST#     | 3   |
|          | 4   |
| PWR-LED- | 5   |
| PWR-LED+ | 6   |
| HDD-LED+ | 7   |
| HDD-LED- | 8   |
| NC       | 9   |
|          | 10  |

2.3.11 USB connector 2 & 3 (JUSB2)



| Signal  | PIN | PIN | Signal  |
|---------|-----|-----|---------|
| +5V     | 1   | 2   | GND     |
| USB_NP4 | 3   | 4   | GND     |
| USB_PP4 | 5   | 6   | USB_PP5 |
| GND     | 7   | 8   | USB_NP5 |
| GND     | 9   | 10  | +5V     |

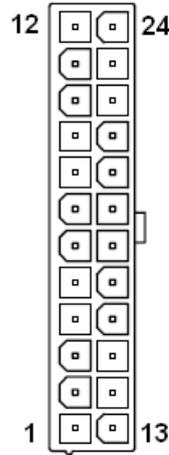
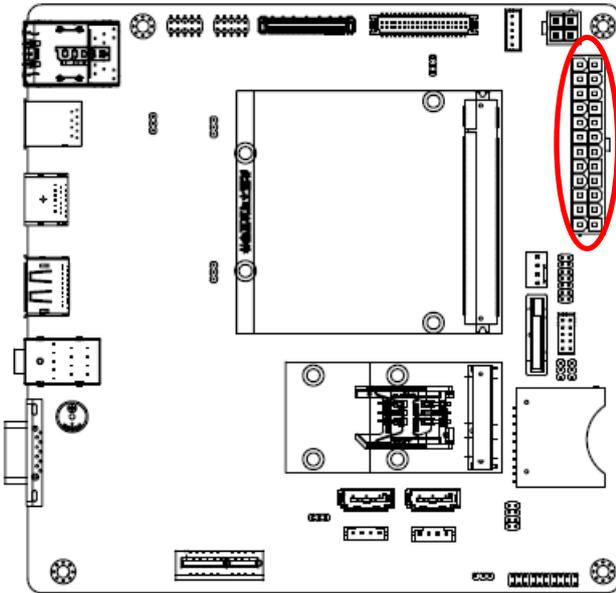
2.3.12 USB connector 4 & 5 (JUSB3)



| Signal  | PIN | PIN | Signal  |
|---------|-----|-----|---------|
| +5V     | 1   | 2   | GND     |
| USB_NP6 | 3   | 4   | GND     |
| USB_PP6 | 5   | 6   | USB_PP7 |
| GND     | 7   | 8   | USB_NP7 |
| GND     | 9   | 10  | +5V     |

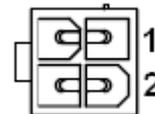
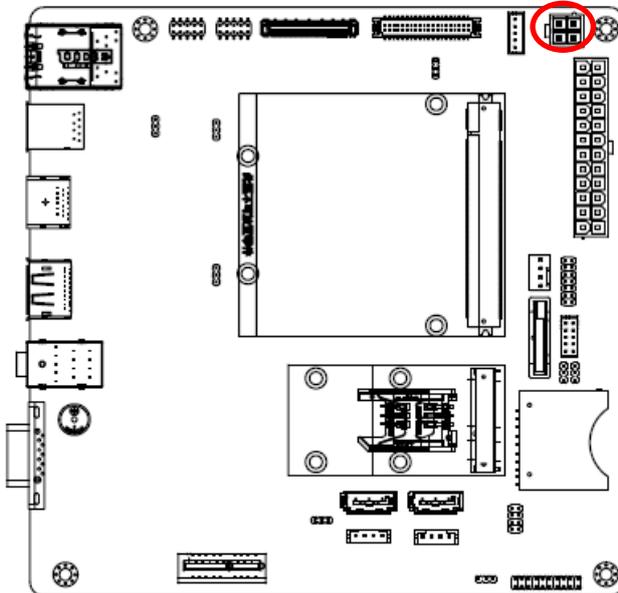
# EEV-Q702

## 2.3.13 ATX1 Power connector (PWR1)



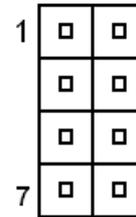
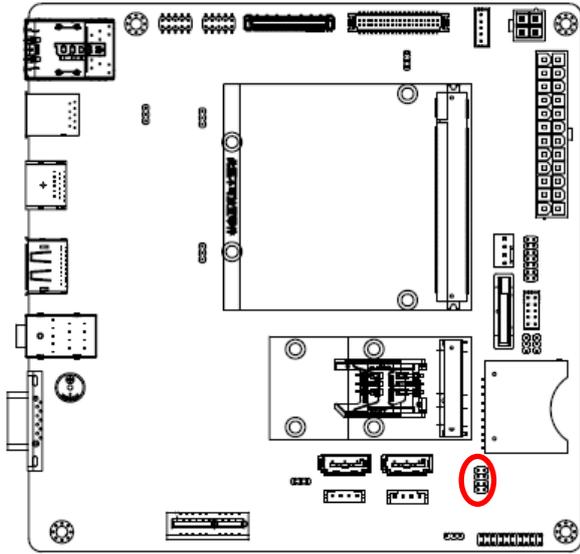
| Signal  | PIN | PIN | Signal |
|---------|-----|-----|--------|
| +3.3V   | 12  | 24  | GND    |
| +12V    | 11  | 23  | +5V    |
| +12V    | 10  | 22  | +5V    |
| +5V     | 9   | 21  | +5V    |
| ATX_POK | 8   | 20  | NC     |
| GND     | 7   | 19  | GND    |
| +5V     | 6   | 18  | GND    |
| GND     | 5   | 17  | GND    |
| +5V     | 4   | 16  | PS_ON# |
| GND     | 3   | 15  | GND    |
| +3.3V   | 2   | 14  | NC     |
| +3.3V   | 1   | 13  | +3.3V  |

## 2.3.14 ATX2 Power connector (PWR2)



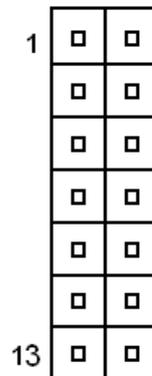
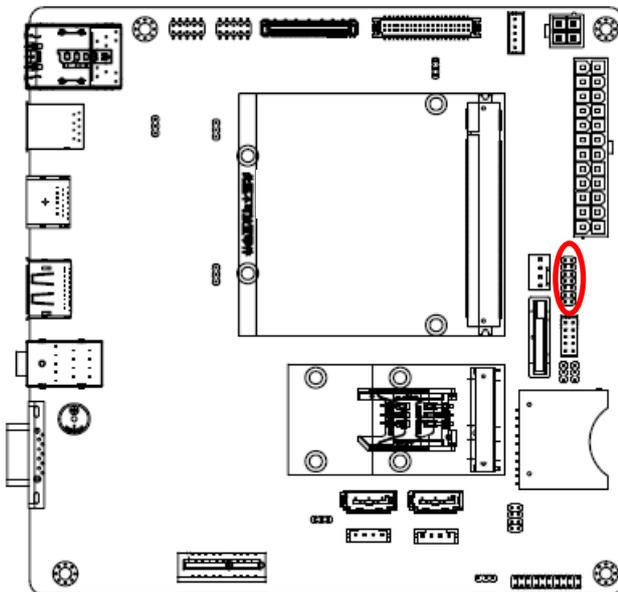
| Signal | PIN | PIN | Signal |
|--------|-----|-----|--------|
| +12V   | 3   | 1   | GND    |
| +12V   | 4   | 2   | GND    |

### 2.3.15 Carrier board SPI FLASH programming (JSPIC)



| Signal      | PIN | PIN | Signal  |
|-------------|-----|-----|---------|
| +3.3V       | 1   | 2   | GND     |
| SPI_CS#     | 3   | 4   | SPI_CLK |
| SPI_SO      | 5   | 6   | SPI_SI  |
| SPI_WP#_PRG | 7   | 8   | NC      |

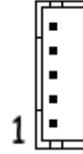
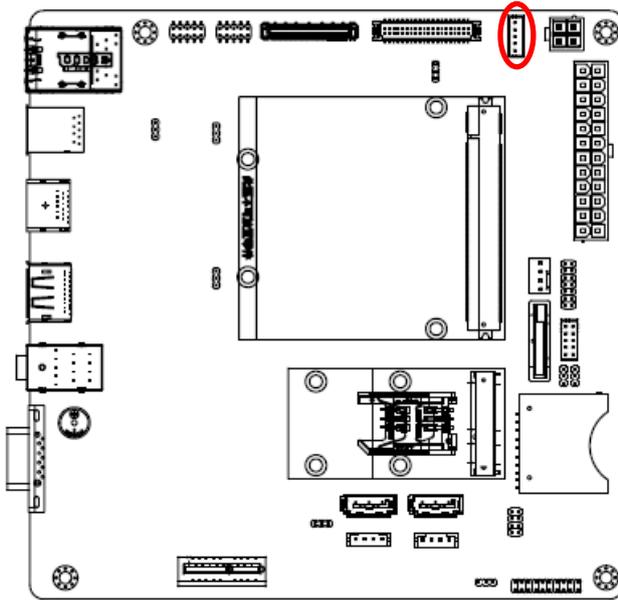
### 2.3.16 LPC port Connector (JLPC)



| Signal   | PIN | PIN | Signal      |
|----------|-----|-----|-------------|
| LPC_AD0  | 1   | 2   | +3.3V       |
| LPC_AD1  | 3   | 4   | PCIE_RST#   |
| LPC_AD2  | 5   | 6   | LPC_LFRAME# |
| LPC_AD3  | 7   | 8   | LPC_CLK     |
| SERIRQ   | 9   | 10  | GND         |
| +5V      | 11  | 12  | GND         |
| +V5_DUAL | 13  | 14  | GND         |

## EEV-Q702

### 2.3.17 LCD Inverter connector (JBKLT)

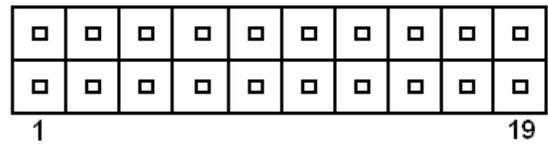
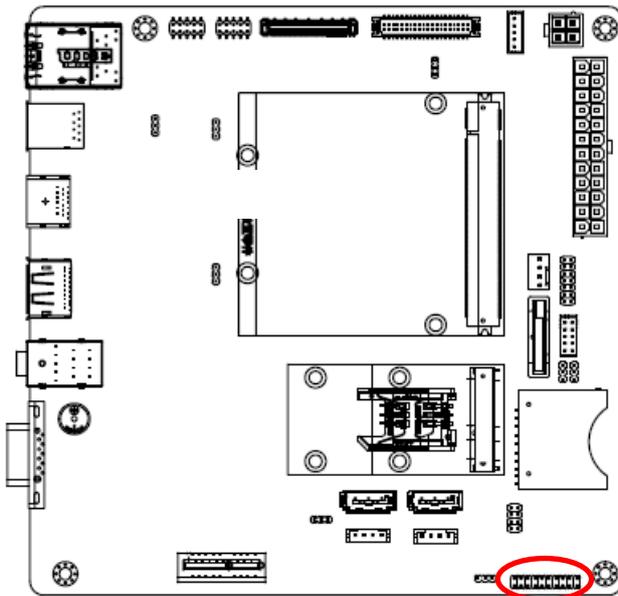


| Signal              | PIN |
|---------------------|-----|
| +5V<br>(max 400mA)  | 5   |
| +3.3V               | 4   |
| +5V                 | 3   |
| GND                 | 2   |
| +12V<br>(max 300mA) | 1   |

#### 2.3.17.1 Signal Description – LCD Inverter connector (JBKLT)

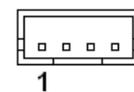
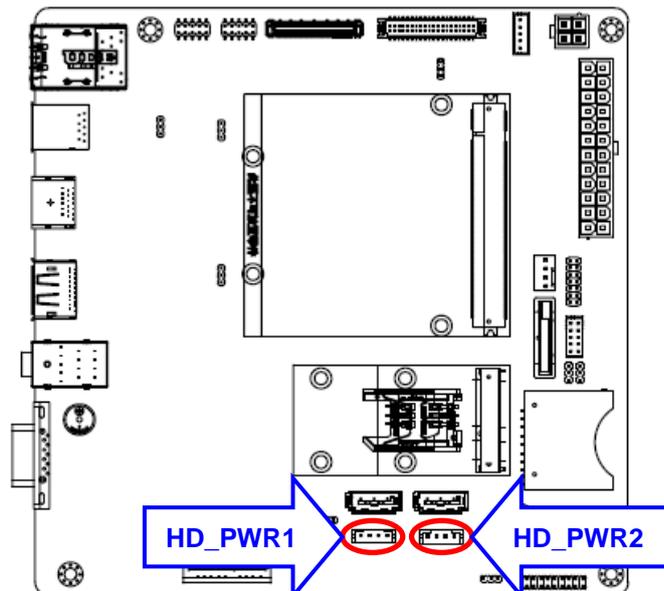
| Signal        | Signal Description                                     |
|---------------|--|
| LVDS_BKLTCTL  | LVDS backlight PWM control                             |
| LVDS_BPEN     | LCD backlight Enable/Disable control signal            |
| LVDS_EN level | selectable resistor - 5V or 3.3V<br>(Default 5V level) |

2.3.18 General Purpose I/O connector (JDIO)



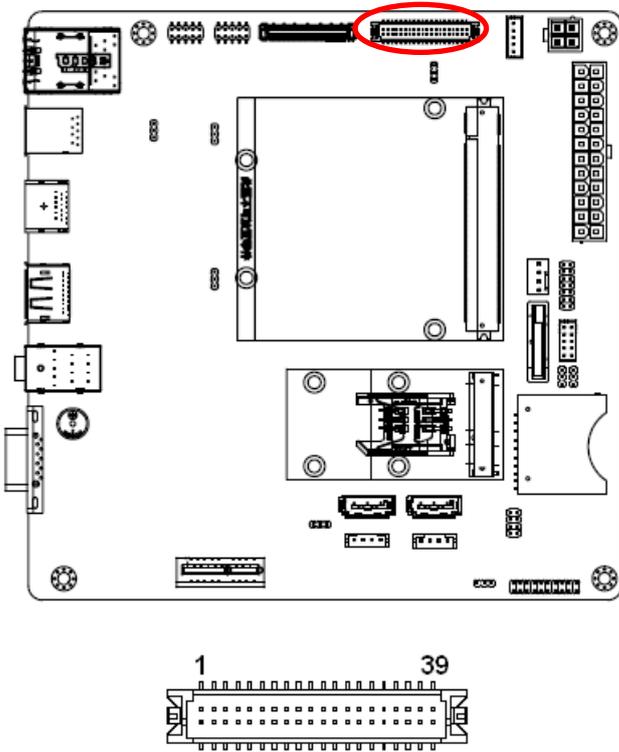
| Signal  | PIN | PIN | Signal                  |
|---------|-----|-----|-------------------------|
| DIO     | 1   | 2   | DO0                     |
| DIO     | 3   | 4   | DO1                     |
| DIO     | 5   | 6   | DO2                     |
| DIO     | 7   | 8   | DO3                     |
| DIO     | 9   | 10  | DO4                     |
| DIO     | 11  | 12  | DO5                     |
| DIO     | 13  | 14  | DO6                     |
| DIO     | 15  | 16  | DO7                     |
| SMB_CLK | 17  | 18  | SMB_DATA                |
| GND     | 19  | 20  | DIO_VDD5<br>(Max 500mA) |

2.3.19 HD Power connector 1/2 (HD\_PWR1/2)



| Signal       | PIN |
|--------------|-----|
| GND          | 1   |
| GND          | 2   |
| +5V          | 3   |
| (Max 1000Ma) | 4   |

2.3.20 LVDS connector (LVDS)



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

