

ECM-QM77

Intel® Ivy Bridge Processors 3.5" Micro Module
with Intel® QM77 Chipset

Quick Installation Guide



2nd Ed – 12 November 2012

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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A Message to the customer

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Each and every Avalue's product is built to the most exacting specifications to ensure reliable performance in the harsh and demanding conditions typical of industrial environments. Whether your new Avalue device is destined for the laboratory or the factory floor, you can be assured that your product will provide the reliability and ease of operation for which the name Avalue has come to be known.

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Your satisfaction is our primary concern. Here is a guide to Avalue's customer services. To ensure you get the full benefit of our services, please follow the instructions below carefully.

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

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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.

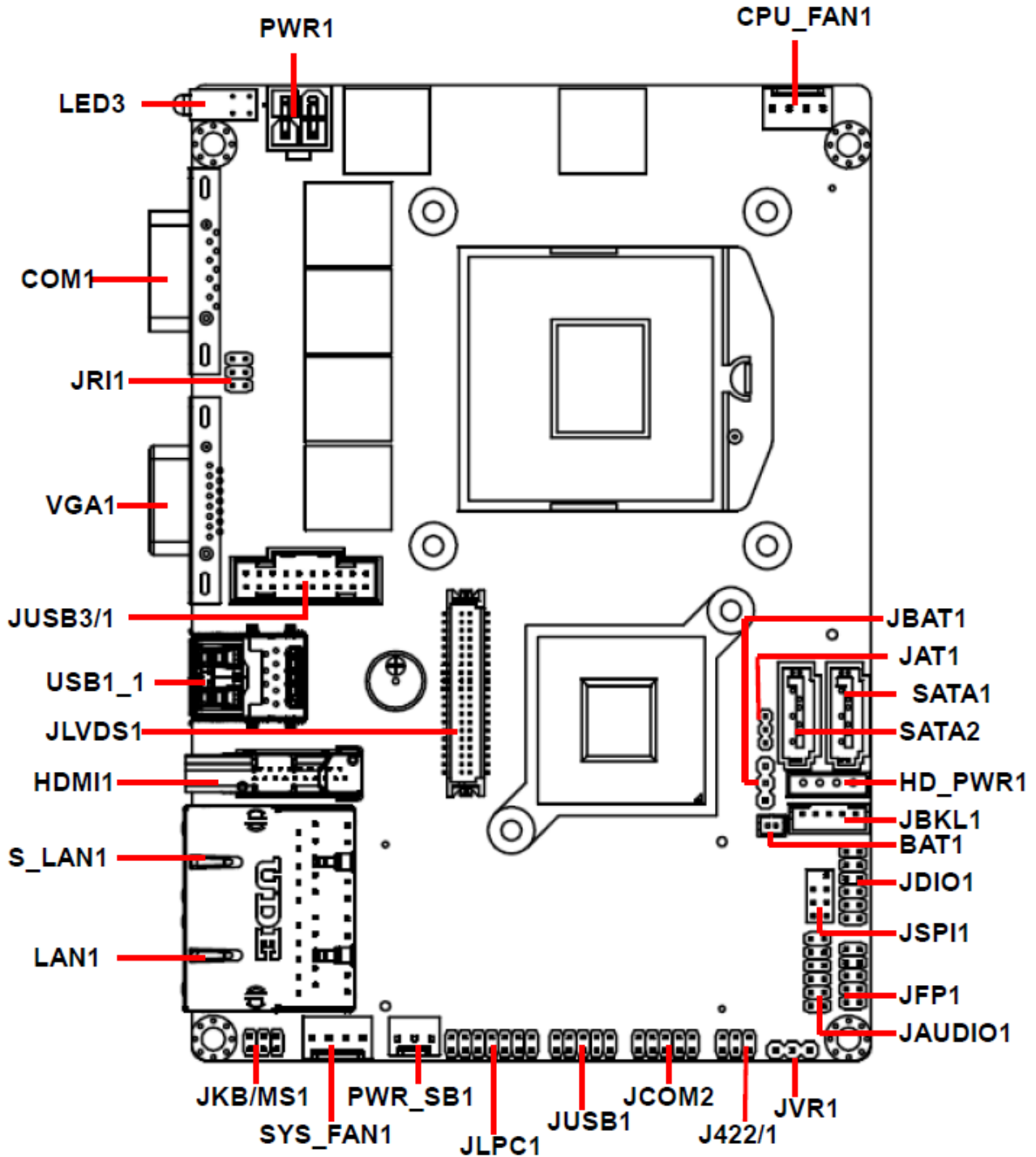
1.2 Packing List

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

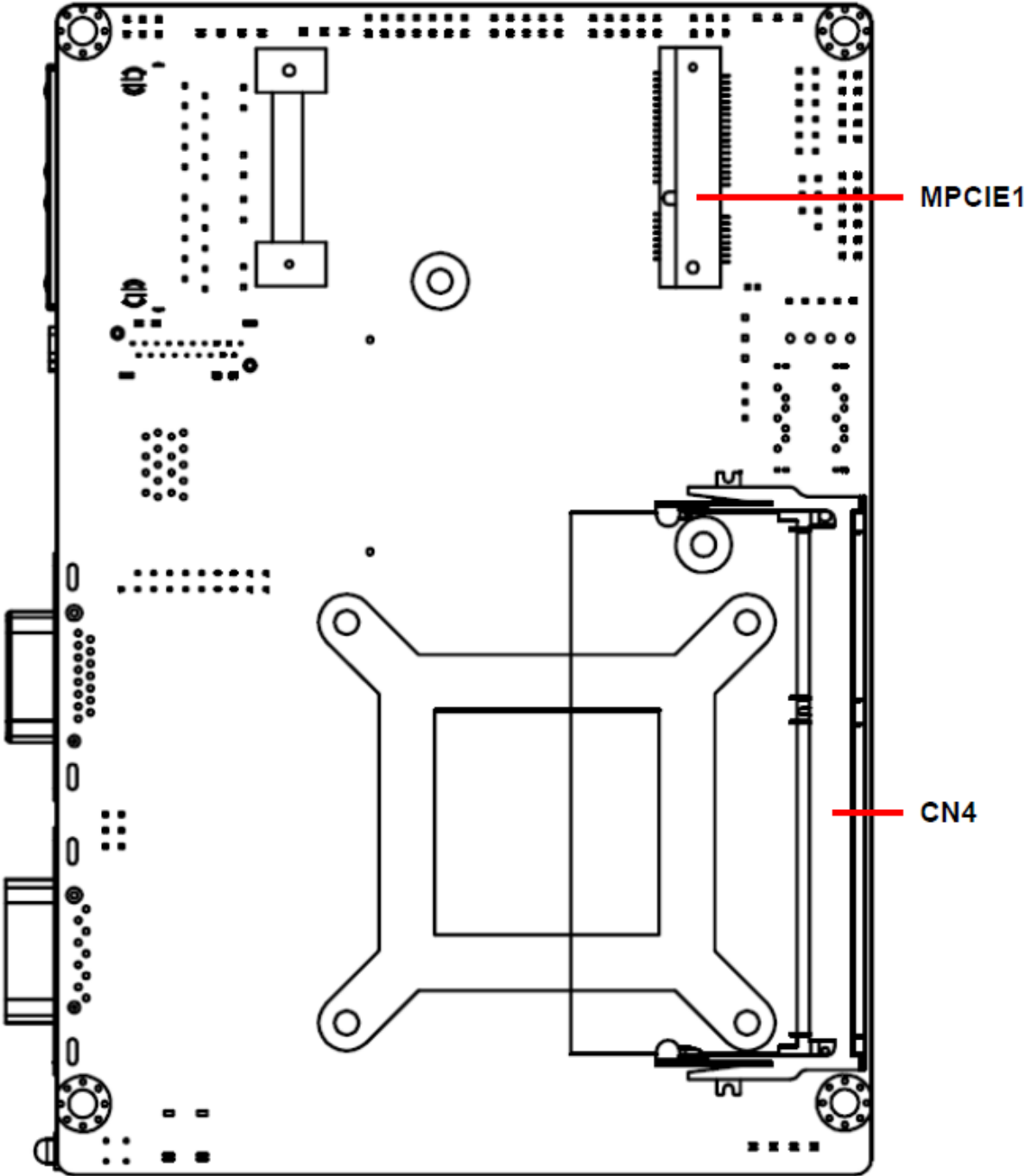
- 1 x 3.5" ECM-QM77 Micro Module
- 1 x Quick Installation Guide for ECM-QM77
- 1 x AUX-056 daughter board
- 1 x DVD-ROM contains the followings:
 - User's Manual (this manual in PDF file)
 - Ethernet driver and utilities
 - VGA drivers and utilities
 - Audio drivers and utilities
- 1 x Cable set contains the followings:
 - 1 x Audio cable (12pin,2.0 pitch)
 - 1 x USB 2.0 cable (10P/2.0mm-10P/2.0mm)
 - 1 x USB 3.0 cable ((20P/2.0mm-20P/2.0mm)
 - 1 x Serial ATA cable (7-pin, standard)
 - 1 x Wire SATA power cable (15-pin,4P/2.5mm)
 - 1 x Flat cable 9P(M)-PHD 10P/2.0mm)
- 3M foam (VHB-4622 10mm*20mm*1.1mm)

2. Hardware Configuration

2.1 Product Overview



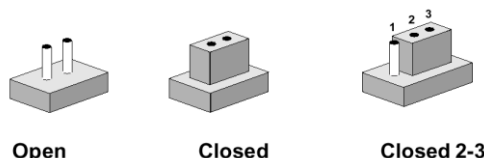
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2.2 Jumper and Connector List

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
JBAT1	Clear CMOS	3 x 1 header, pitch 2.54 mm
JRI1	COM 1 pin 9 signal select	3 x 2 header, pitch 2.00 mm
JAT1	AT/ ATX Input power select	3 x 1 header, pitch 2.00 mm

Connectors

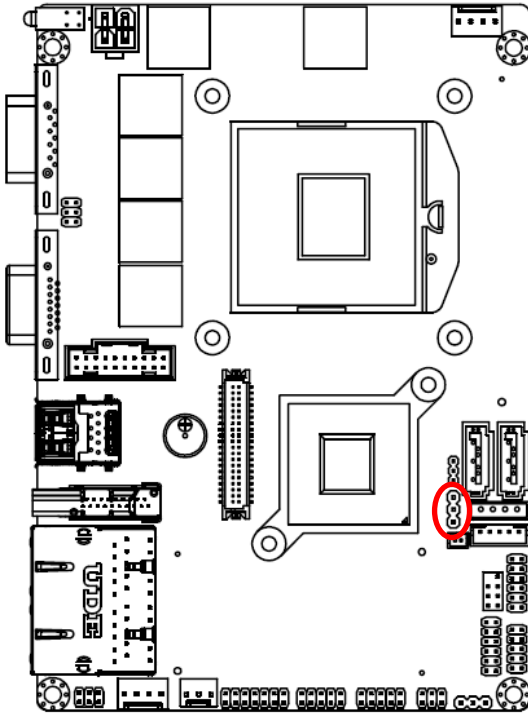
Label	Function	Note
BAT1	Battery connector	2 x 1 wafer, pitch 1.25 mm
COM1	Serial port 1 connector	D-sub 9-pin, male
CPU_FAN1	CPU fan connector	4 x 1 wafer, pitch 2.54 mm
HDMI1	HDMI connector	

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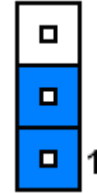
J422/1	COM 1 RS-422-485 mode	3 x 2 header, pitch 2.00 mm
JAUDIO1	Audio connector	6 x 2 header, pitch 2.00 mm
JBKL1	LCD inverter connector	5 x 1 wafer, pitch 2.00 mm
JCOM2	Serial port 2 connector	5 x 2 header, pitch 2.00 mm
JDIO1	General purpose I/O connector	6 x 2 header, pitch 2.00 mm
JFP1	Miscellaneous setting connector	5 x 2 header, pitch 2.00 mm
JLPC1	Low pin count interface	7 x 2 header, pitch 2.00 mm
JLVDS1	LVDS connector	20 x 2 header, pitch 1.25 mm
JSPI1	SPI connector	4 x 2 header, pitch 2.00 mm
JUSB1	On-board box header for USB2.0	5 x 2 header, pitch 2.00 mm
JUSB3/1	On-board box header for USB3.0	10 x 2 wafer, pitch 2.00 mm
JVR1	LCD backlight brightness adjustment	3 x 1 header, pitch 2.54 mm
LAN1/S_LAN1	RJ-45 Ethernet connector	
LED3	LED connector	
PWR_SB1	5VSB connector in ATX	3 x 1 wafer, pitch 2.54 mm
PWR1	Power connector	2 x 2 wafer, pitch 4.2 mm
JKB/MS1	PS/2 keyboard & mouse connector	2 x 3 wafer, pitch 2.00 mm
HD_PWR1	HD power connector	1 x 4 wafer, pitch 2.50 mm
SATA1	Serial ATA connector 1	
SATA2	Serial ATA connector 2	
SYS_FAN1	System fan connector	4 x 1 wafer, pitch 2.54 mm
USB1_1	On-board connector for USB2.0	
VGA1	VGA connector	D-sub 15-pin, female
MPCIE1	Mini-PCI connector	
CN4	DDR3 SODIMM connector	

2.3 Setting Jumpers & Connectors

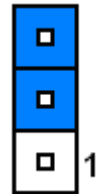
2.3.1 Clear CMOS (JBAT1)



Protect*

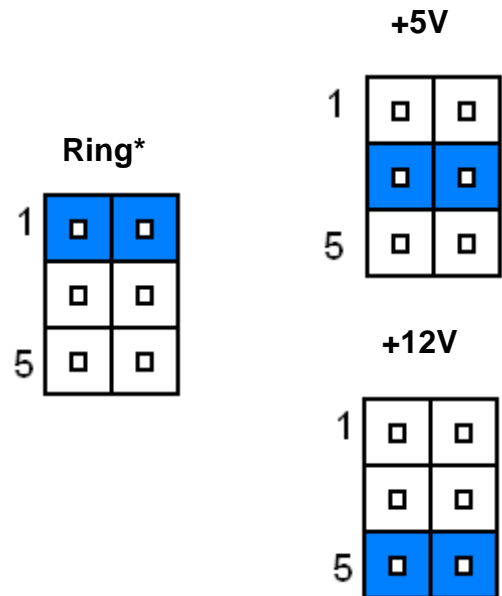
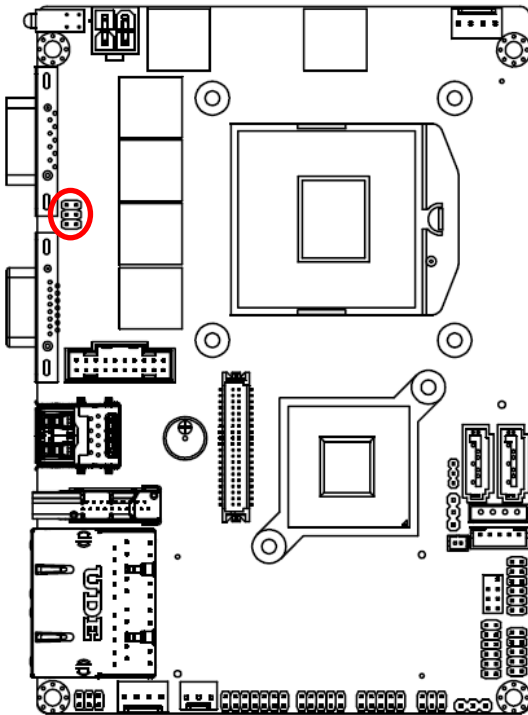


Clear CMOS



* Default

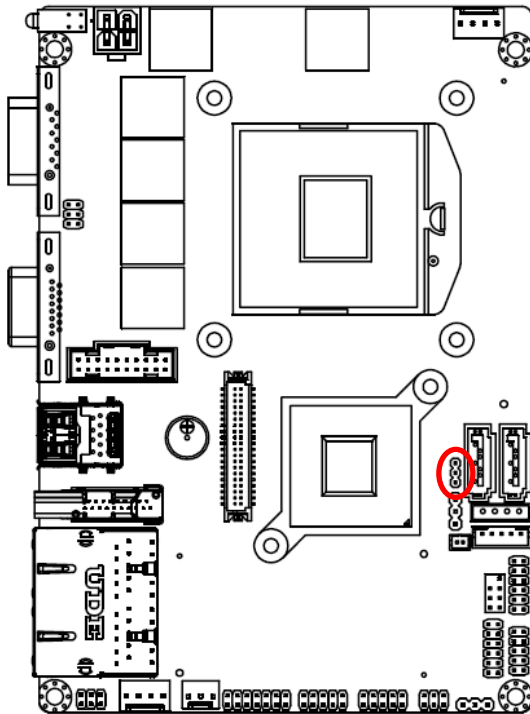
2.3.2 COM 1 pin 9 signal select (JRI1)



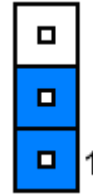
* Default

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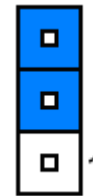
2.3.3 AT/ ATX Input power select (JAT1)



AT*

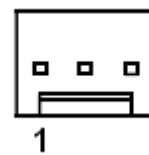
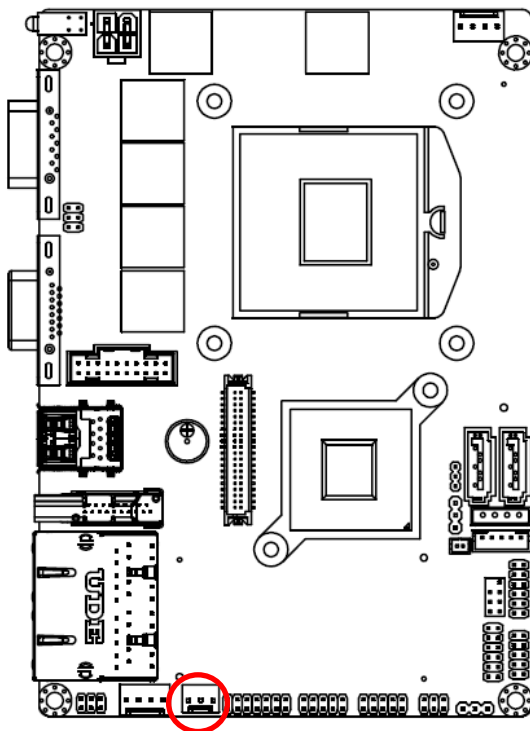


ATX



* Default

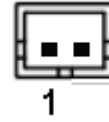
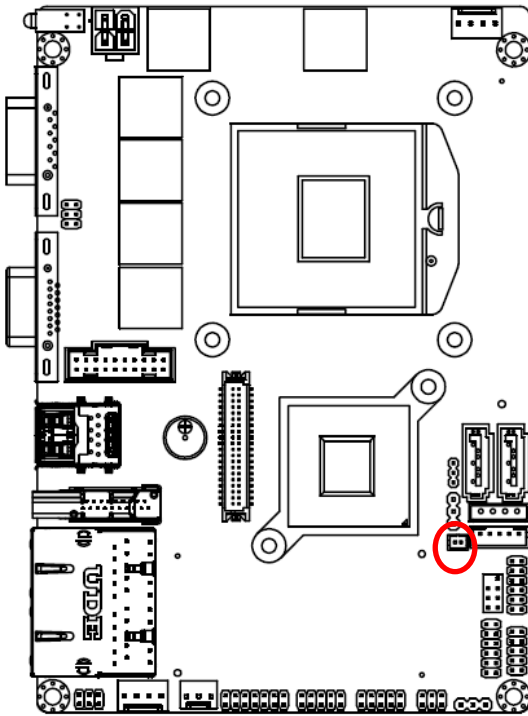
2.3.4 5VSB connector in ATX (PWR_SB1)



Signal	PIN
SIO_PSON#	1
GND	2
+ATX5VSB	3

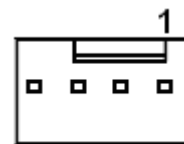
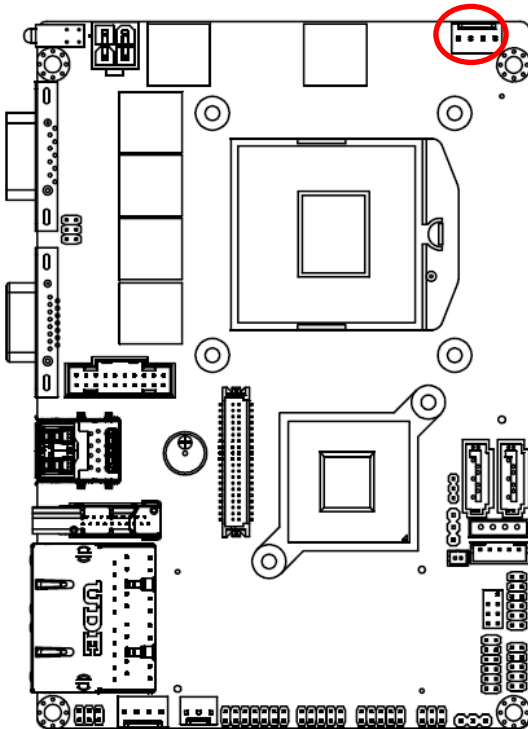
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2.3.5 Battery connector (BAT1)



Signal	PIN
+3.3V	1
GND	2

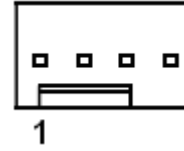
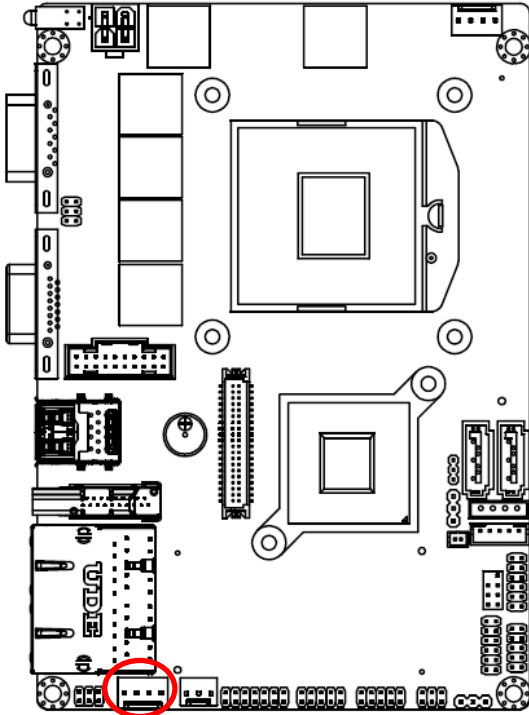
2.3.6 CPU fan connector (CPU_FAN1)



Signal	PIN
GND	1
+12V	2
CPUFANIN0	3
CPUFANOUT0	4

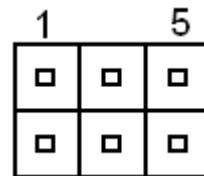
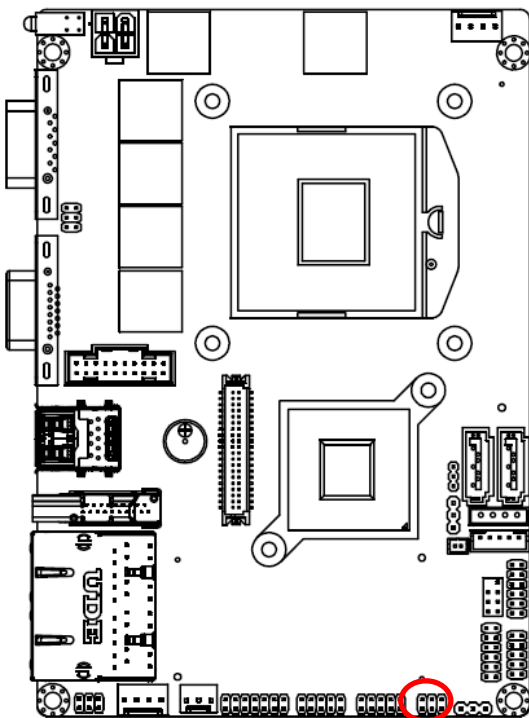
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2.3.7 System fan connector (SYS_FAN1)



Signal	PIN
GND	1
+12V	2
SYSFANIN	3
SYSFANOUT	4

2.3.8 COM 1 RS-422-485 mode (J422/1)



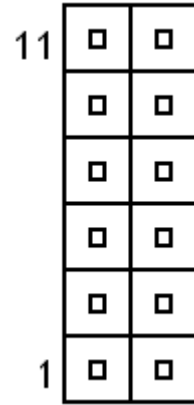
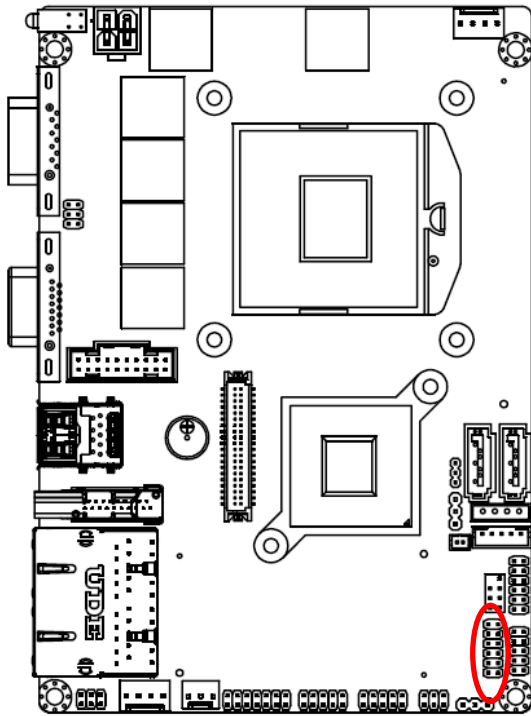
Signal	PIN	PIN	Signal
485_422TX-	2	1	422RX-
485_422TX+	4	3	422RX+
+5V	6	5	GND

Note:

J422/485 is available after modify the mode of COM1 in BIOS setting

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2.3.9 Audio connector (JAUDIO1)



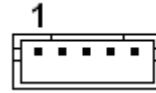
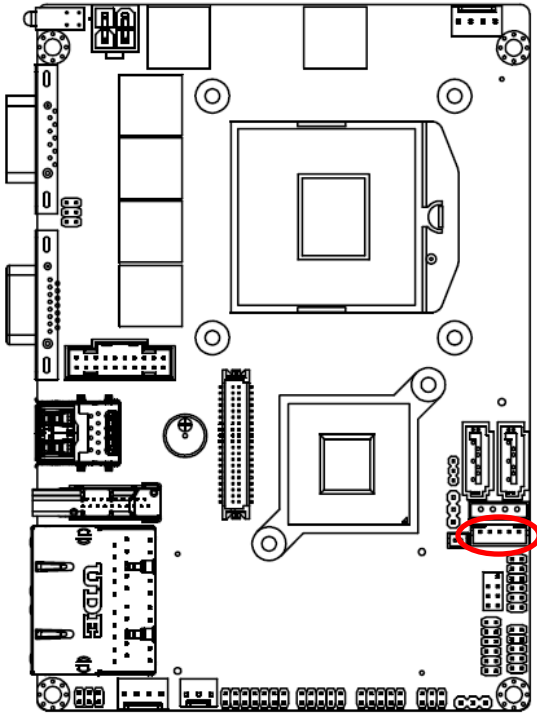
Signal	PIN	PIN	Signal
GND	11	12	MIC1-JD
LINE1-JD	9	10	FRONT-JD
MIC1-L-IN	7	8	MIC1-R-IN
LINE1-L-IN	5	6	LINE1-R-IN
GND	3	4	GND
FRONT-L-OUT	1	2	FRONT-R-OUT

2.3.9.1 Signal Description – Audio connector (JAUDIO1)

Signal	Signal Description
LINE1_JD	AUDIO IN (LINE_RIN/LIN)sense pin
FRONT_JD	AUDIO Out(ROUT/LOUT) sense pin
MIC1_JD	MIC IN (MIC_RIN/LIN) sense pin

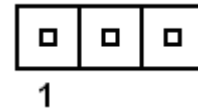
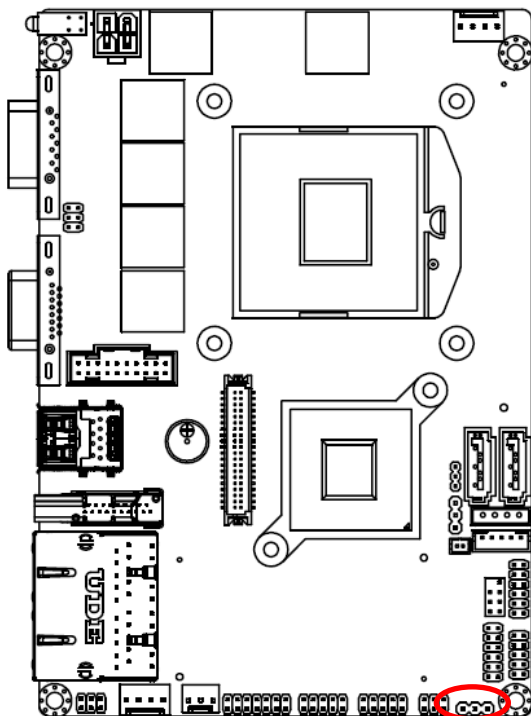
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2.3.10 LCD inverter connector (JBKL1)

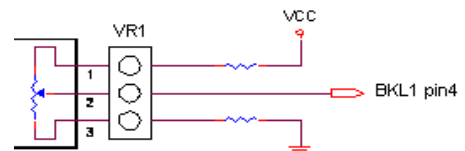


Signal	PIN
+12V	1
GND	2
BKLEN	3
BRIADJ	4
+5V	5

2.3.11 LCD backlight brightness adjustment (JVR1)



Signal	PIN
+5V	1
BRIGHT	2
GND	3

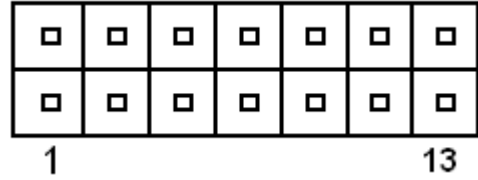
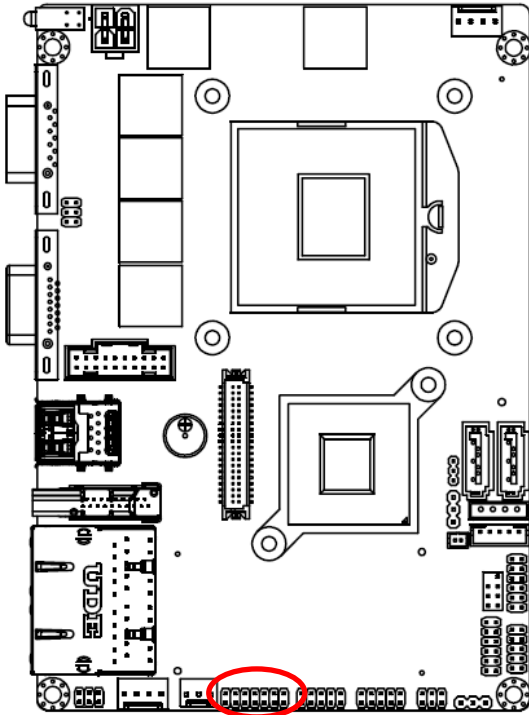


Variation Resistor

(Recommended: 4.7KΩ, >1/16W)

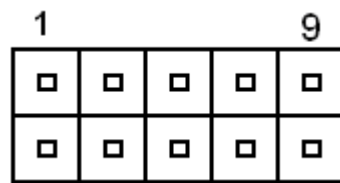
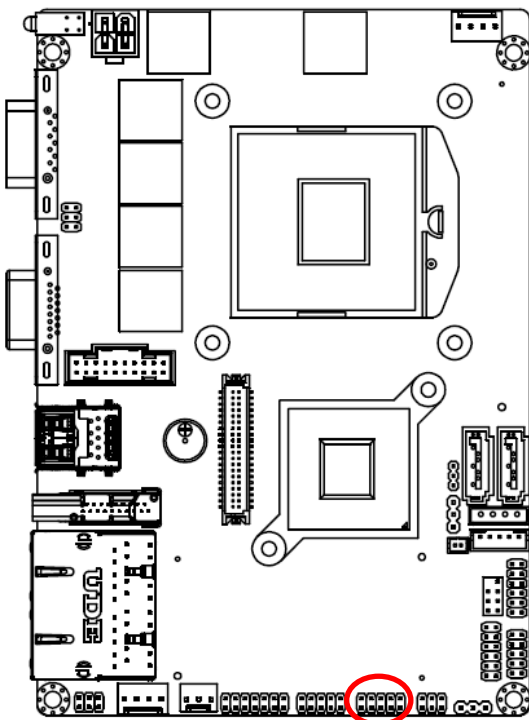
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2.3.12 Low pin count connector (JLPC1)



Signal	PIN	PIN	Signal
LPC_AD0	1	2	+3.3V
LPC_AD1	3	4	LPC_RST#
LPC_AD2	5	6	LPC_FRAME#
LPC_AD3	7	8	CLK_PCI_LPC
INT_SERIRQ	9	10	GND
+V5S	11	12	GND
+V5A	13	14	PCH_DRQ#1

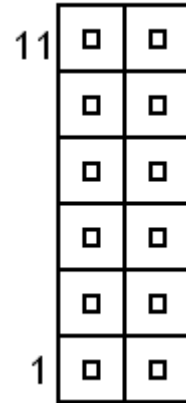
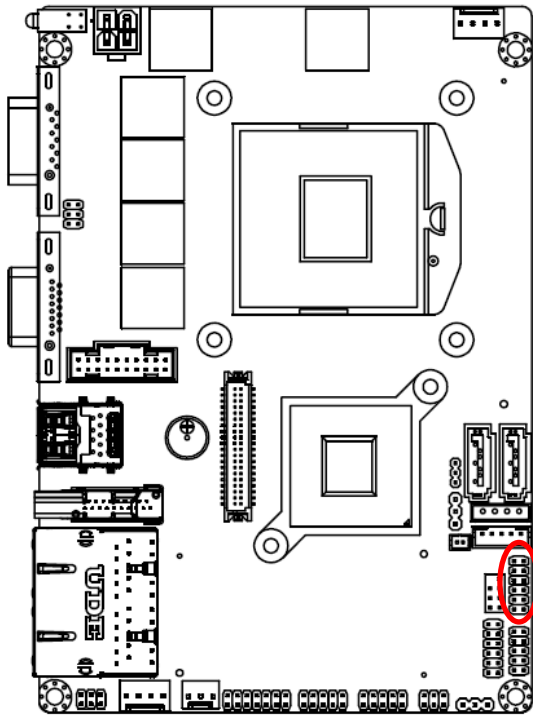
2.3.13 Serial port 2 connector (JCOM2)



Signal	PIN	PIN	Signal
DCD2	1	2	RxDD2
TxDD2	3	4	DTR2
GND	5	6	DSR2
RTS2	7	8	CTS2
RI2	9	10	NC

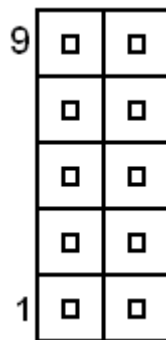
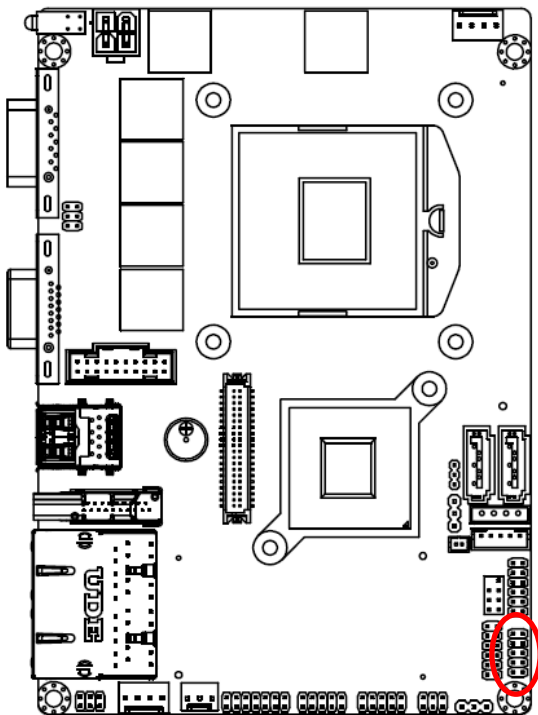
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2.3.14 General purpose I/O connector (JDIO1)



Signal	PIN	PIN	Signal
GND	11	12	GND
SMB_DATA_9555	9	10	SMB_CLK_9555
DIO_GP13	7	8	DIO_GP23
DIO_GP12	5	6	DIO_GP22
DIO_GP11	3	4	DIO_GP21
DIO_GP10	1	2	DIO_GP20

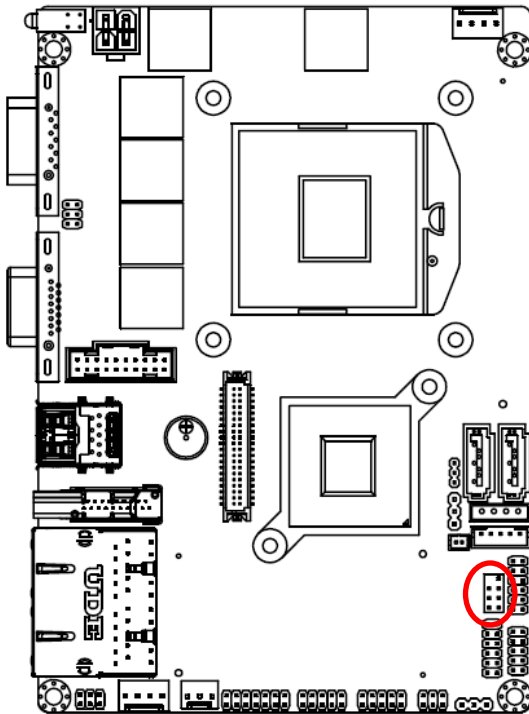
2.3.15 Miscellaneous setting connector (JFP1)



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

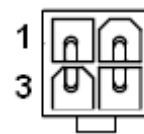
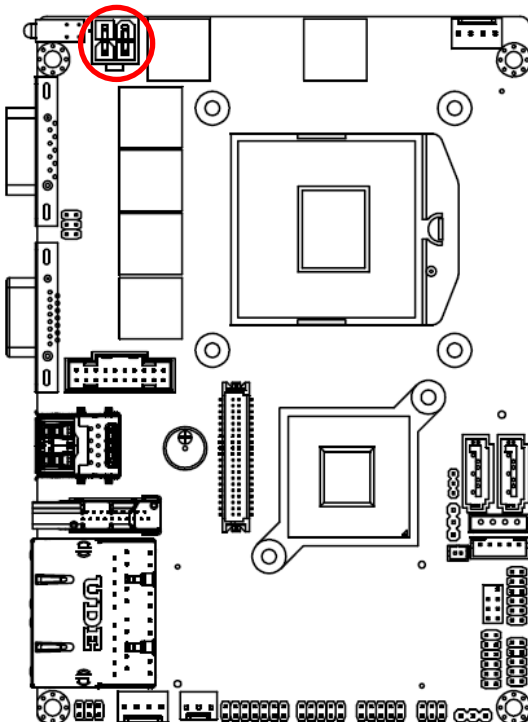
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2.3.16 SPI connector (JSPI1)



Signal	PIN	PIN	Signal
		7	HOLD#
SPI_SI	6	5	SPI_SO
SPI_CLK	4	3	SPI_CS0#
GND	2	1	+3.3V

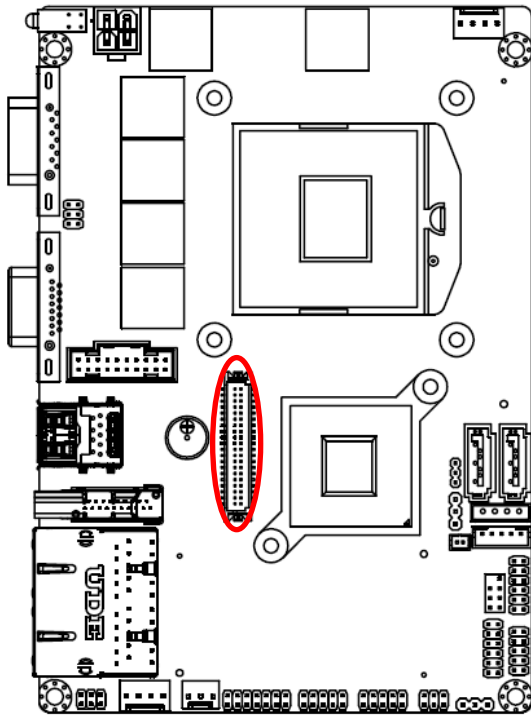
2.3.17 Power connector (PWR1)



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

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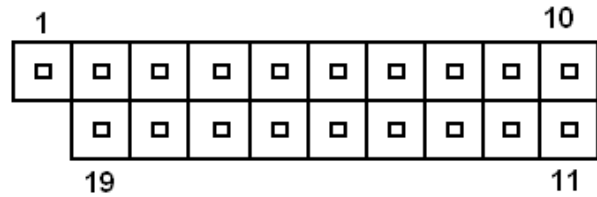
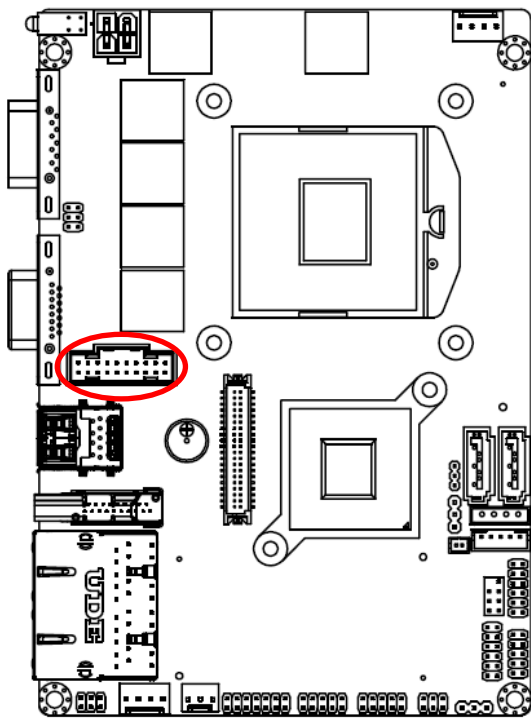
2.3.18 LVDS connector (JLVDS1)



Signal	PIN	PIN	Signal
+12V	39	40	+12V
GND	37	38	GND
LVDS_CLK2_N	35	36	LVDS_CLK1_N
LVDS_CLK2_P	33	34	LVDS_CLK1_P
GND	31	32	GND
LVDS_DATA7_N	29	30	LVDS_DATA6_N
LVDS_DATA7_P	27	28	LVDS_DATA6_P
GND	25	26	GND
LVDS_DATA5_N	23	24	LVDS_DATA4_N
LVDS_DATA5_P	21	22	LVDS_DATA4_P
GND	19	20	GND
LVDS_DATA3_N	17	18	LVDS_DATA2_N
LVDS_DATA3_P	15	16	LVDS_DATA2_P
GND	13	14	GND
LVDS_DATA1_N	11	12	LVDS_DATA0_N
LVDS_DATA1_P	9	10	LVDS_DATA0_P
GND	7	8	GND
NC	5	6	NC
+3.3V	3	4	+5V
+3.3V	1	2	+5V

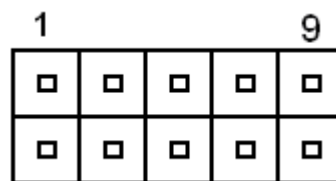
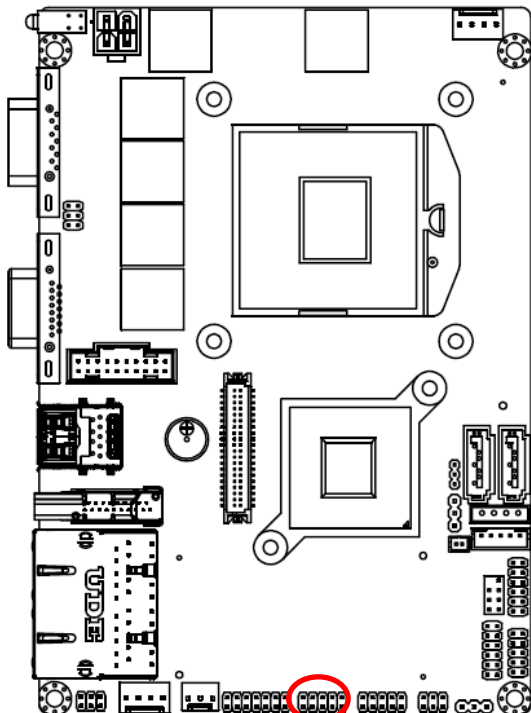
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2.3.19 On-board box header for USB3.0 (JUSB3/1)



Signal	PIN	PIN	Signal
+5V	1		
USB3_RXN3_L	2	19	+5V
USB3_RXP3_L	3	18	USB3_RXN4_L
GND	4	17	USB3_RXP4_L
USB3_TXN3_L	5	16	GND
USB3_TXP3_L	6	15	USB3_TXN4_L
GND	7	14	USB3_TXP4_L
USB_PN_Z_2	8	13	GND
USB_PP_Z_2	9	12	USB_PN_Z_3
NC	10	11	USB_PP_Z_3

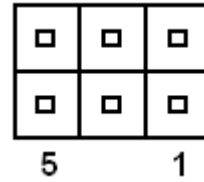
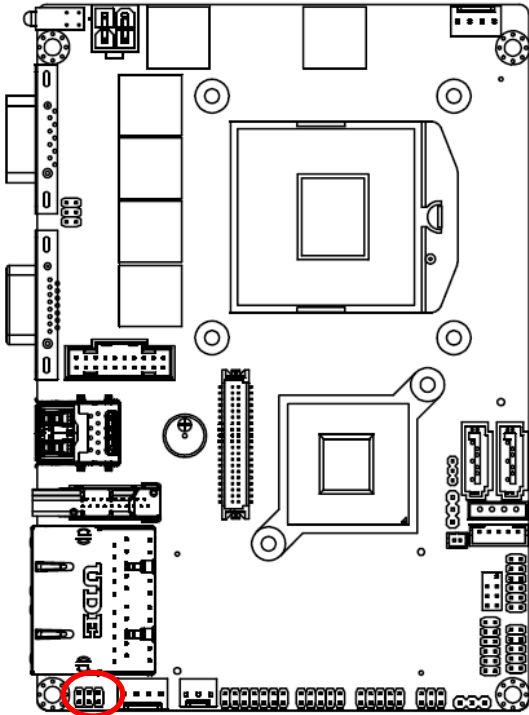
2.3.20 On-board box header for USB2.0 (JUSB1)



Signal	PIN	PIN	Signal
+5V	1	2	+5V
USB_PN_Z_5	3	4	USB_PN_Z_4
USB_PP_Z_5	5	6	USB_PP_Z_4
GND	7	8	GND
GND	9	10	GND

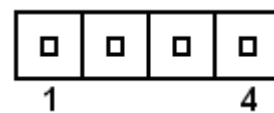
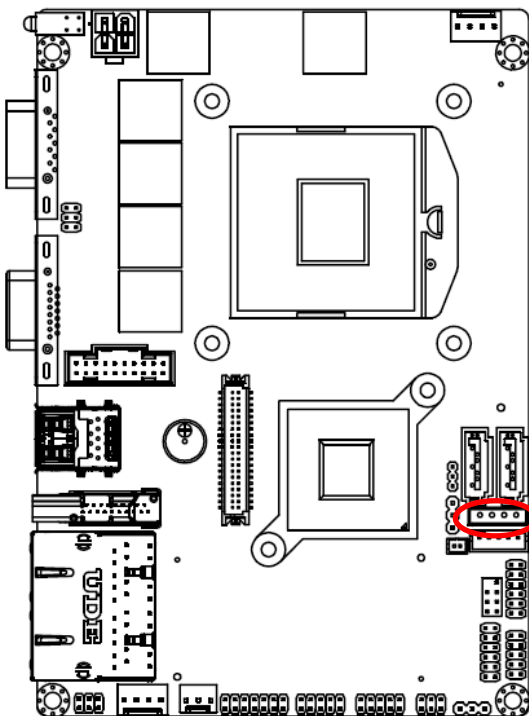
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2.3.21 PS/2 keyboard & mouse connector (JKB/ MS1)



Signal	PIN	PIN	Signal
KBCK	1	2	KBDT
KBVCC	3	4	GND
MSCK	5	6	MSDT

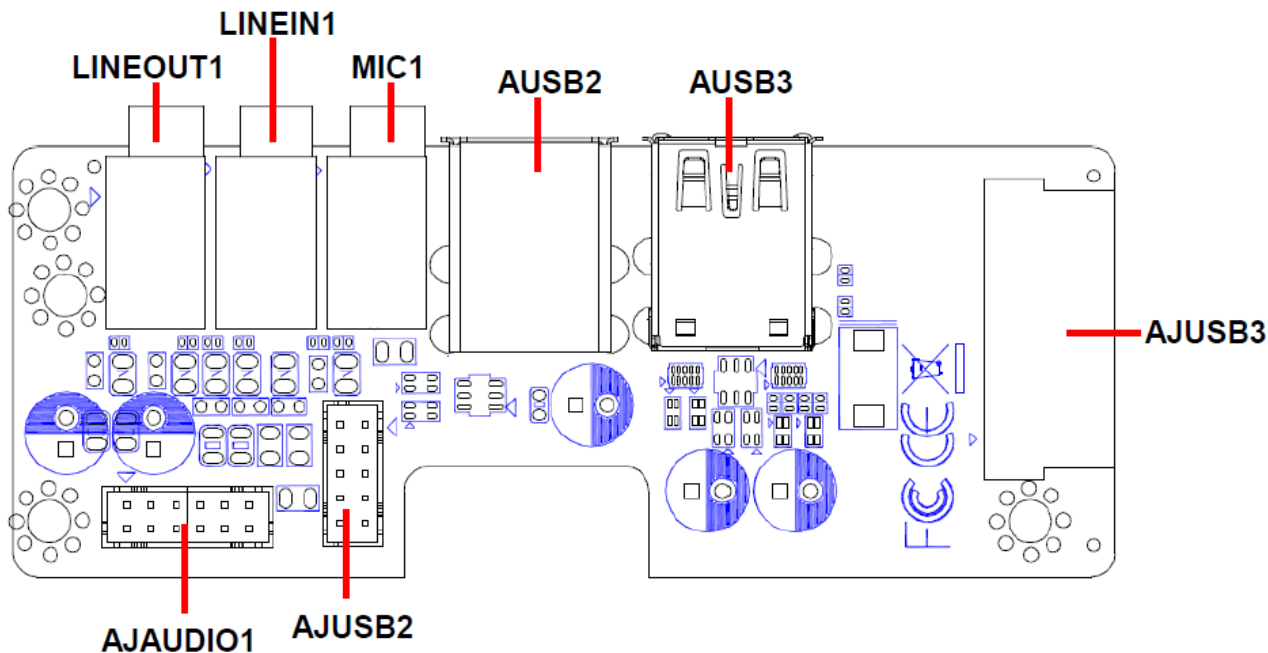
2.3.22 HD power connector (HD_PWR1)



Signal	PIN
GND	1
GND	2
+5V	3
+5V	4

2.4 Audio / USB Daughter Board User's Guide

2.4.1 Jumper and Connector Layout



2.4.2 Jumper and Connector List

Connectors

Label	Function	Note
AUSB2	USB connector 2.0	
AUSB3	USB connector 3.0	
MIC1	Mic in connector	Phone Jack
LINEOUT1	Line out connector	Phone Jack
LINEIN1	Line in connector	Phone Jack
AJAUDIO1	Audio connector	6 x 2 header, pitch 2.00mm
AJUSB2	2.00mm USB connector	5 x 2 header, pitch 2.00mm
AJUSB3	2.00mm USB connector	10 x 2 header, pitch 2.00mm

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2.4.3 Setting Jumper and Connector

Audio Connector (AJAUDIO1)

Signal	PIN	PIN	Signal
AFRONT1-L-OUT	1	2	AFRONT1-R-OUT
GND	3	4	GND
ALINE1-L-IN	5	6	ALINE1-R-IN
AMIC1-L-IN	7	8	AMIC1-R-IN
ALINE1-JD	9	10	AFRONT1-JD
GND	11	12	AMIC1-JD

2.00mm USB Connector (AJUSB2)

Signal	PIN	PIN	Signal
USB2VCC	1	2	USB2VCC
AUSB_PN2	3	4	AUSB_PN1
AUSB_PP2	5	6	AUSB_PP1
GND	7	8	GND
GND	9	10	GND

2.00mm USB Connector (AJUSB3)

Signal	PIN	PIN	Signal
AUSBVCC2	1		
AUSB3_RXN1_L	2	19	AUSBVCC3
AUSB3_RXP1_L	3	18	AUSB3_RXN2_L
GND	4	17	AUSB3_RXP2_L
AUSB3_TXN1_L	5	16	GND
AUSB3_TXP1_L	6	15	AUSB3_TXN2_L
GND	7	14	AUSB3_TXP2_L
AUSB_PN3	8	13	GND
AUSB_PP3	9	12	AUSB_PN4
NC	10	11	AUSB_PP4

