ECM-CDV

3.5" Intel Cedarview Module

Quick Installation Guide

3rd Ed – 7 November 2012

Part No. E2017CDV002R

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 UNDESIRED 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.

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Content

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.

Always note that improper disassembling action could cause damage to the motherboard. We suggest not removing the heatsink without correct instructions in any circumstance. If you really have to do this, please contact us for further support.

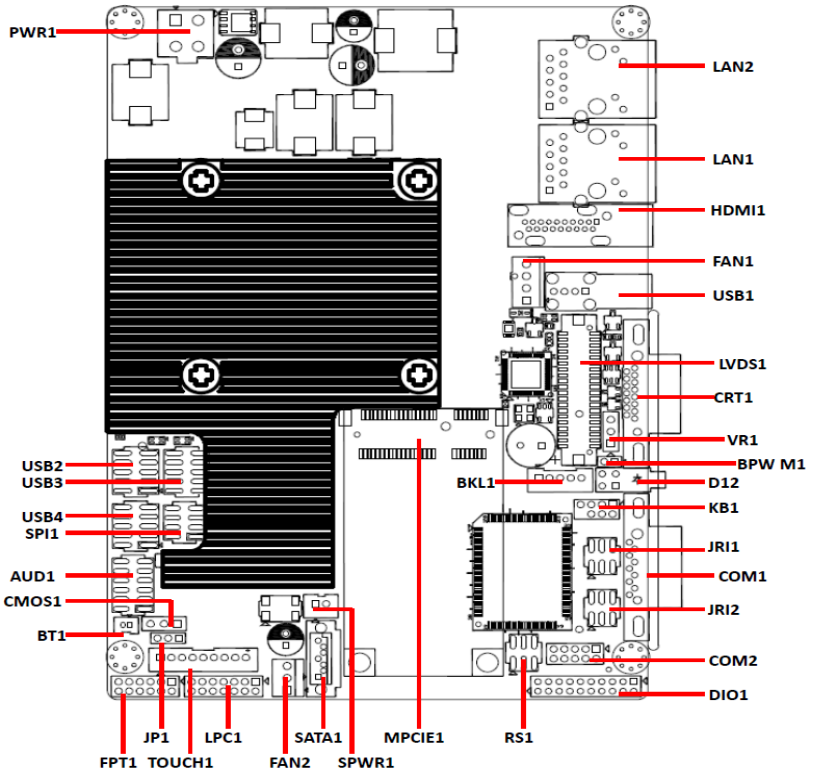
1.2 Packing List

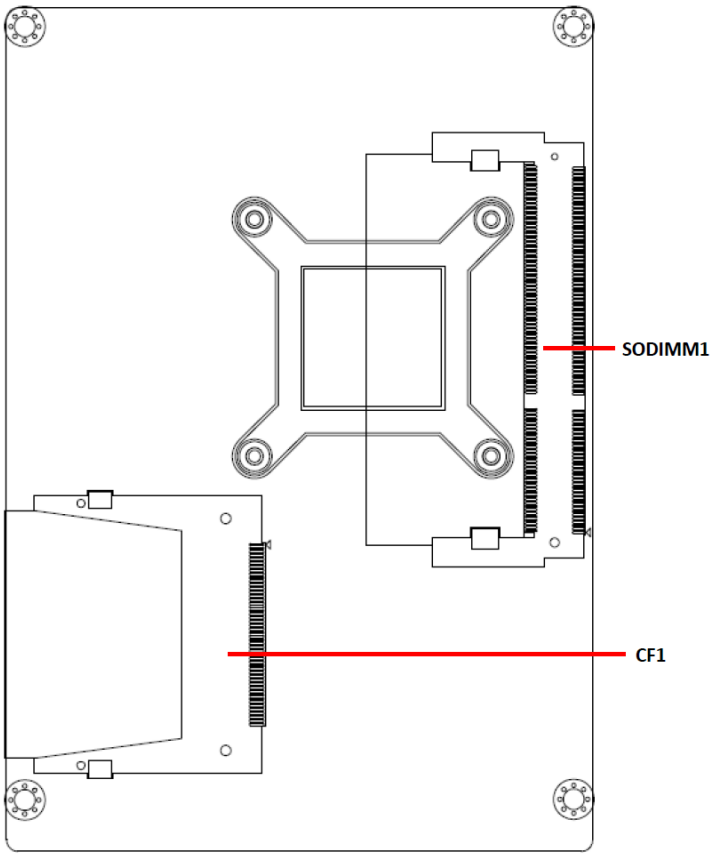
Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 x 3.5” ECM-CDV Micro Module
- 1 x Quick Installation Guide for ECM-CDV
- 1 x AUX-032 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, 2.0mm pitch)
  - 1 x USB cable
  - 1 x Serial ATA cable (7-pin, standard).
  - 1 x Wire SATA power (15-pin, 2P/2.0mm)
  - 1 x Flat Cable 9P(M)-Dupont 10P/2.0mm)
- 3M Foam (VHB-4622 10mm*20mm*1.1mm)

2. Hardware Configuration

2.1 Product Overview

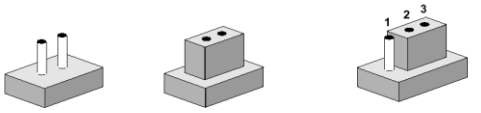




2.2 Jumper and Connector List

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.



Open Closed Closed 2-3

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

Open Closed Closed 2-3

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

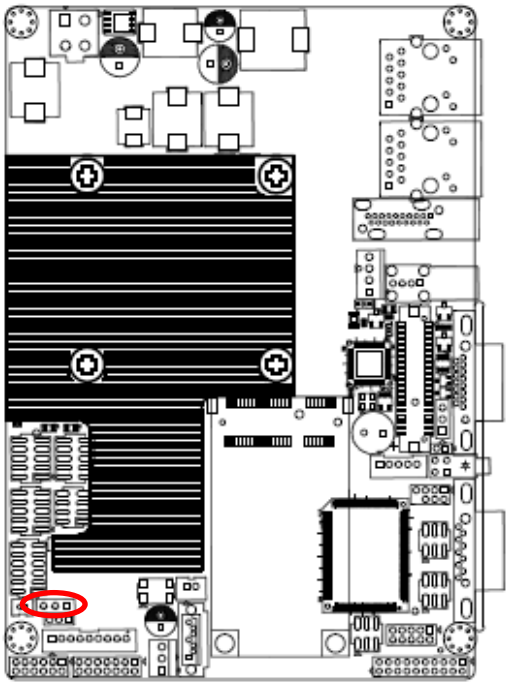
Label	Function	Note
CMOS1	Clear CMOS	3 x 1 header, pitch 2.54 mm
FPT1	Miscellaneous settings connector	6 x 2 header, pitch 2.0 mm
JP1	Touch Mode selector	3 x 1 header, pitch 2.0 mm
JRI1/ JRI2	Serial port 1/2 signal selector	3 x 2 header, pitch 2.0 mm
BPW M1	LCD PWM Mode Selector	2 x 1 header, pitch 2.0 mm

Connectors

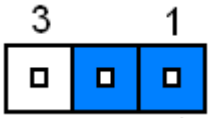
Label	Function	Note
AUD1	Audio connector	6 x 2 header, pitch 2.0 mm
BKL1	LCD inverter connector	5 x 1 wafer, pitch 2.0mm
BT1	Battery connector	2 x 1 wafer, pitch 1.25 mm
CF1	CF card slot	CF type II
COM1	Serial port 1 connector	D-sub 9-pin, male
COM2	Serial port 2 connector	5 x 2 header, pitch 2.0 mm
CRT1	CRT connector	D-sub 15-pin, female
DIO1	General purpose I/O connector	10 x 2 header, pitch 2.0 mm
D12	Power & HDD LED indicator	
FAN1	CPU fan connector	4 x 1 wafer, pitch 2.54 mm
FAN2	System fan connector	3 x 1 wafer, pitch 2.54 mm
LVDS1	LVDS connector	2 x 20 header, pitch 1.25mm
HDMI1	HDMI connector	
KB1	Keyboard & Mouse Connector	4 x 2 header, pitch 2.0 mm
LAN1/2	RJ-45 Ethernet connector 1/2	
LPC1	LPC connector	7 x 2 header, pitch 2.0 mm
MPCIE1	Mini PCI Express Connector	
PWR1	Power connector	2 x 2 wafer, pitch 4.2 mm
RS1	Serial port 2 in RS-422-485 mode	3 x 2 header, pitch 2.0 mm
SODIMM1	DDR3 SODIMM connector	204-pin
SPI1	SPI connector	4 x 2 header, pitch 2.0 mm
SPWR1	SATA power connector 1	2 x 1 wafer, pitch 2.0 mm
SATA1	Serial ATA connector 1	
TOUCH1	Touch connector	9 x 1 wafer, pitch 2.0 mm
USB1	USB connector 1	USB connector
USB2/ 3/ 4	USB connector 0&1 / 2&3 / 4&5	5 x 2 header, pitch 2.0 mm
VR1	LCD backlight brightness adjustment	3 x 1 header, pitch 2.54mm

2.3 Setting Jumpers & Connectors

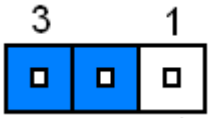
2.3.1 Clear CMOS (CMOS1)



Protect*

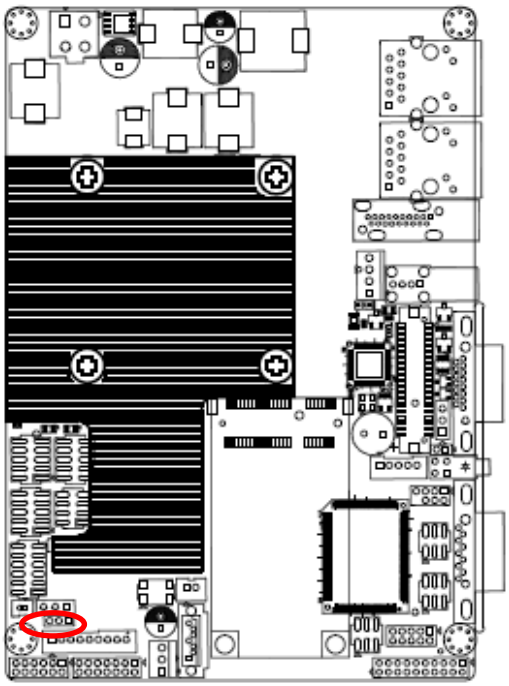


Clear CMOS

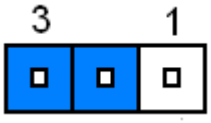


*** Default**

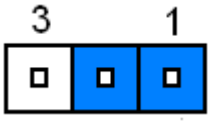
2.3.2 Touch Mode select (JP1)



5-Wire*

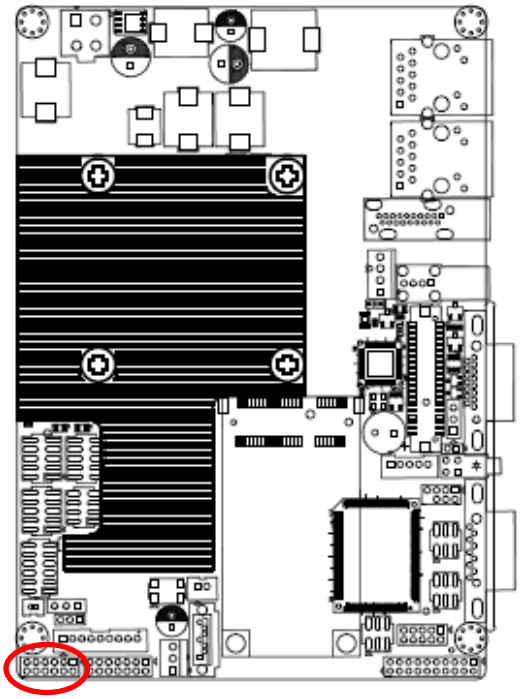


4/8-Wire



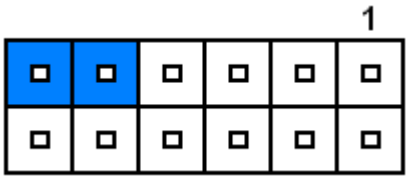
*** Default**

2.3.3 Miscellaneous settings connector (FPT1)

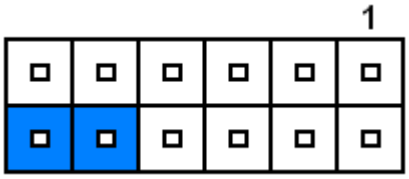


*** Default**

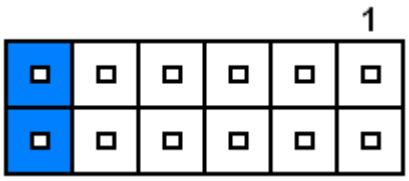
Power Button



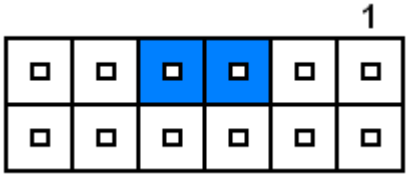
ATX Mode*



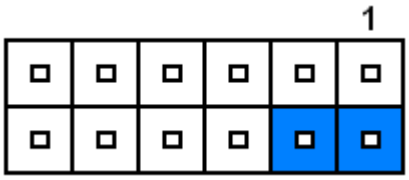
AT Mode



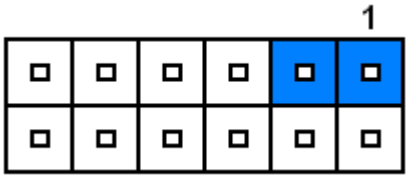
System Reset



Power LED Mode

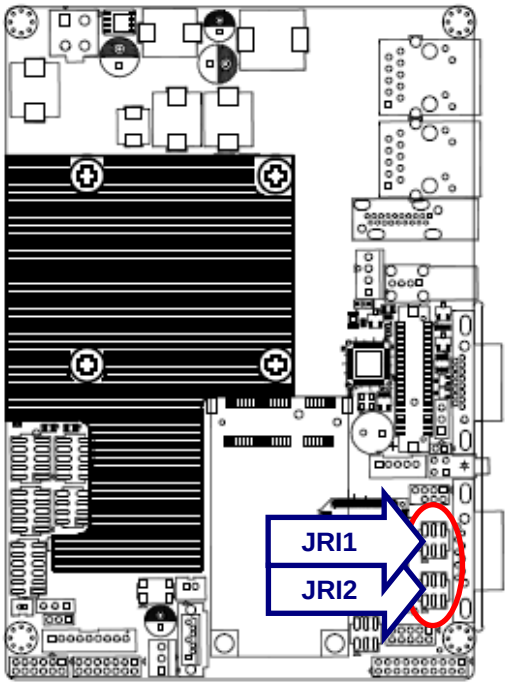


HDD LED Mode

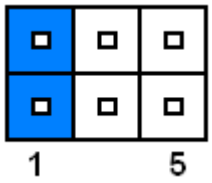


Signal	PIN	PIN	Signal
HDD_LED-	1	2	PWR_LED+
HDD_LED+	3	4	GND
GND	5	6	PWRSB_LED+
SYSRST	7	8	PWRSB_LED-
DS5_PANSW IN#	9	10	GND
ATX_EN#	11	12	ATX_EN#

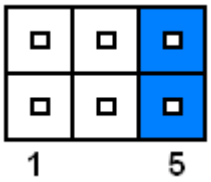
2.3.4 Serial port 1/ 2 signal select (JRI1/ JRI2)



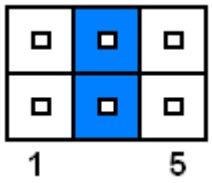
Ring*



+12V



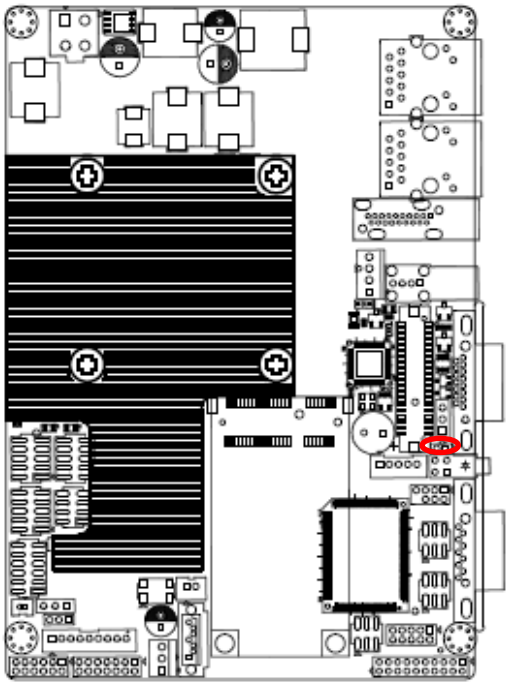
+5V



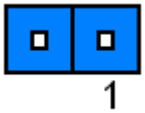
Signal	PIN	PIN	Signal
JNRIA/B#	1	2	NRIA/B#
+5V	3	4	NRIA/B#
+12V	5	6	NRIA/B#

*** Default**

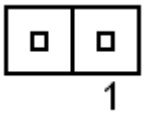
2.3.5 LCD PWM Mode Selector (BPW M1)



ON



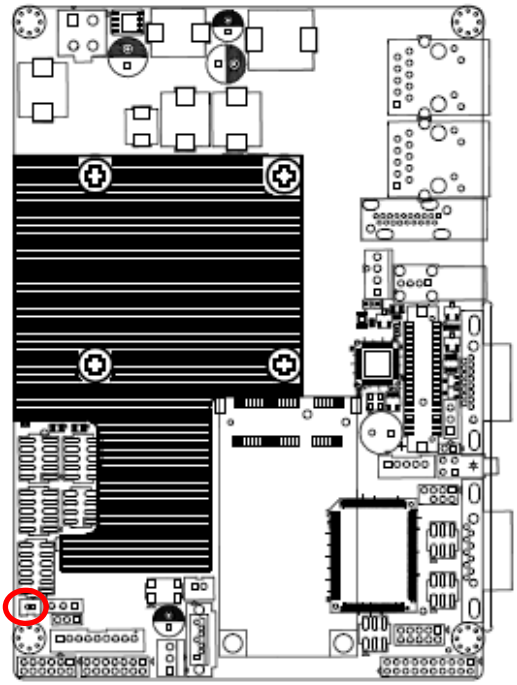
OFF*

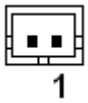


Signal	PIN
BRIGHT	1
LVDS_BKLTCTL	2

*** Default**

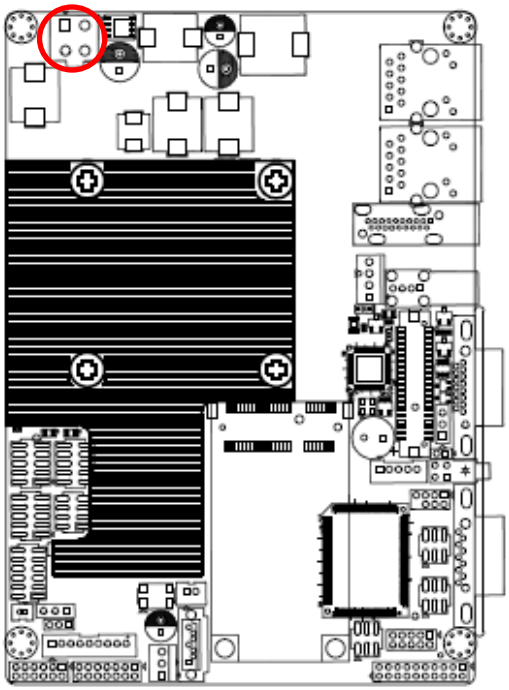
2.3.6 Battery connector (BT1)

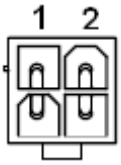




Signal	PIN
BAT	1
GND	2

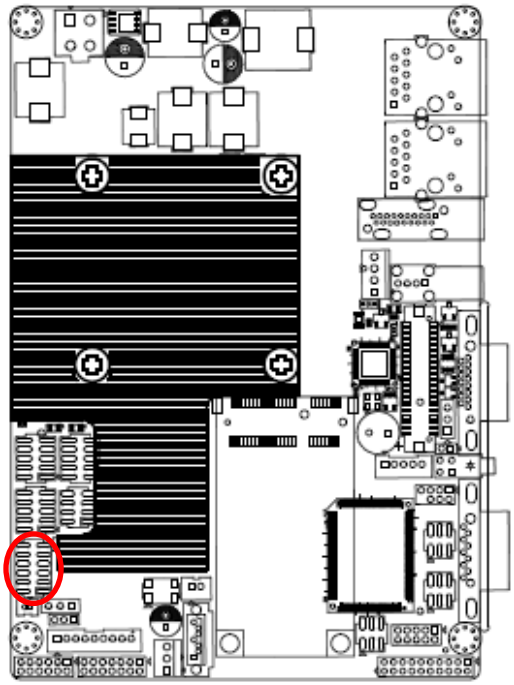
2.3.7 Power connector (PWR1)

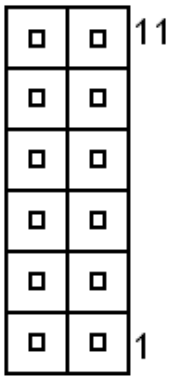




Signal	PIN	PIN	Signal
GND	1	2	GND
+12~26V	3	4	+12~26V

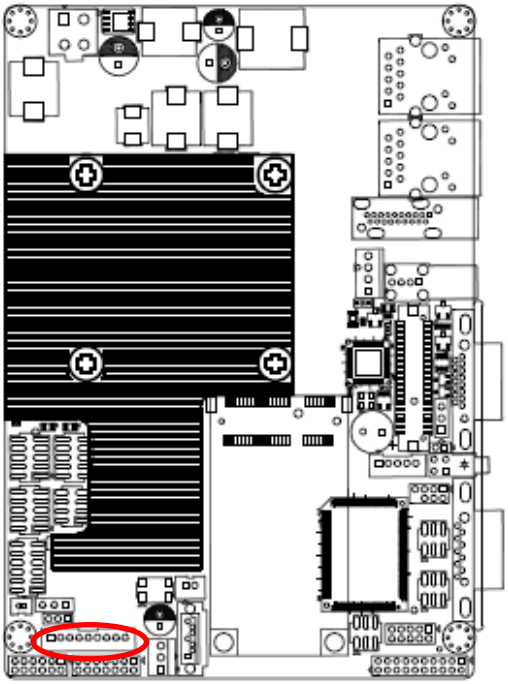
2.3.8 Audio connector (AUD1)

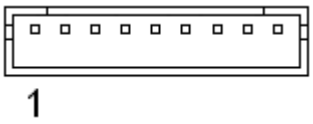




Signal	PIN	PIN	Signal
GND	12	11	MIC1-JD
LINE1-JD	10	9	FRONT-JD
MIC-LIN	8	7	MIC-RIN
LINE1_LIN	6	5	LINE1_RIN
GND	4	3	GND
LINEOUT_L	2	1	LINEOUT_R

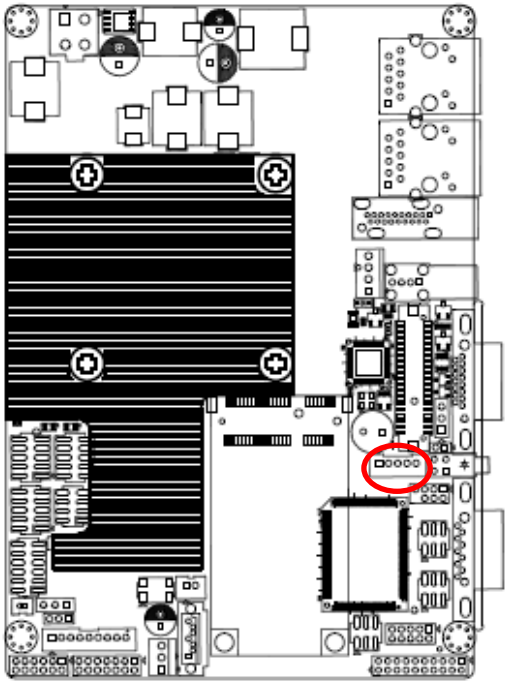
2.3.9 Touch connector (TOUCH1)

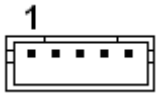




Signal	PIN	4-Wire	5-Wire	8-Wire
X+	1	NA	NA	Right Sense
X-	2	NA	NA	Left Sense
Y+	3	NA	NA	Bottom Sense
SENSE	4	NA	Sense	Top Sense
X+	5	Right	LR	Right Excite
X-	6	Left	LL	Left Excite
Y+	7	Bottom	UR	Bottom Excite
Y-	8	Top	UL	Top Excite
TOUCH_GND	9	GND	GND	GND

2.3.10 LCD inverter connector (BKL1)





Signal	PIN
+12V	1
GND	2
LVDS_BLKTEN	3
BRIGHT	4
+5V	5

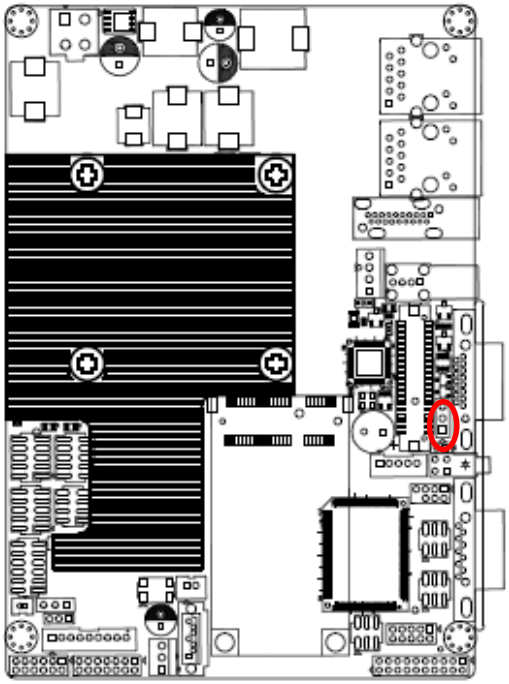
Note:

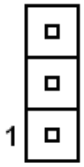
For inverters with adjustable Backlight function, it is possible to control the LCD brightness through the VR signal controlled by **VR1**.

2.3.10.1 Signal Description – LCD Inverter Connector (BKL1)

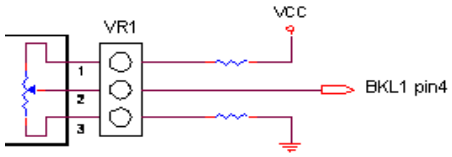
Signal	Signal Description
BRIGHT	Vadj = 0.75V ~ 4.25V (Recommended: 4.7KΩ, >1/16W)
LVDS_BLKTEN	LCD backlight ON/OFF control signal

2.3.11 LCD backlight brightness adjustment (VR1)





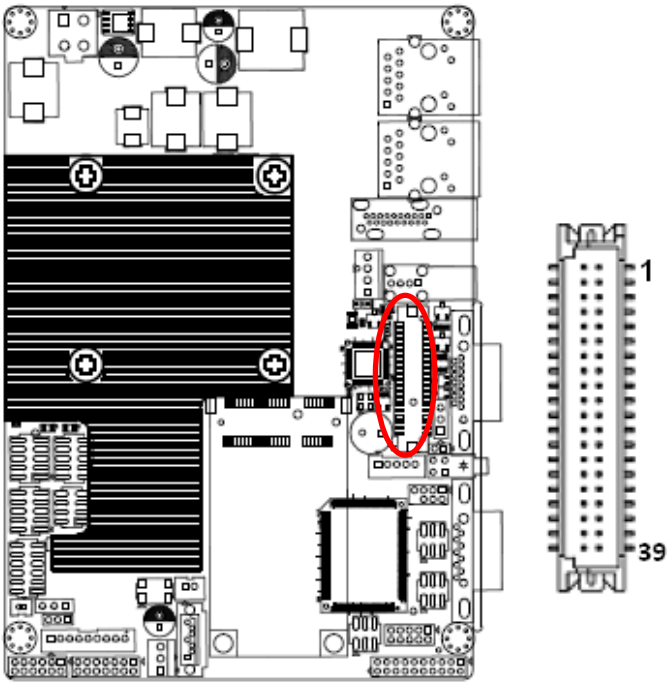
Signal	PIN
GND	3
BRIGHT	2
+5V	1



Variation Resistor

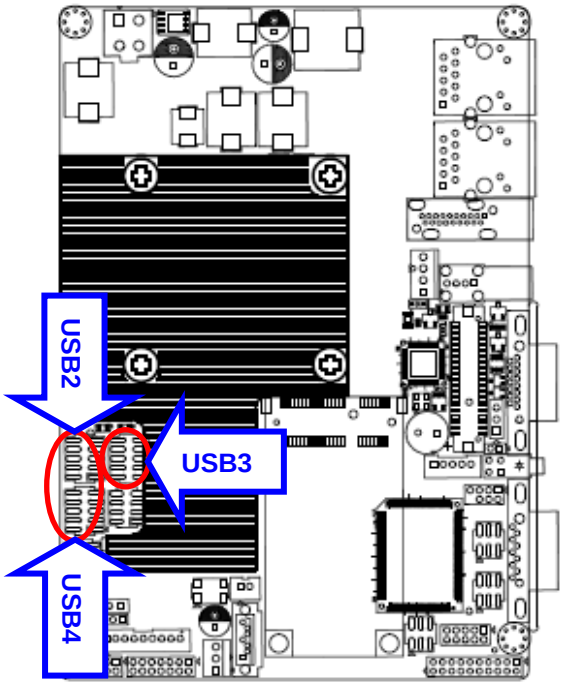
(Recommended: 4.7KΩ, >1/16W)

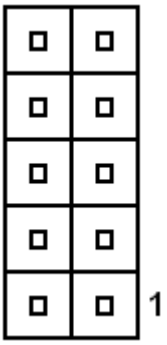
2.3.12 LVDS connector (LVDS1)



Signal	PIN	PIN	Signal
VDD5_LVDS	2	1	VDD3_LVDS
VDD5_LVDS	4	3	VDD3_LVDS
EDP_DDC_SDA	6	5	EDP_DDC_SCL
GND	8	7	GND
DATA0_P	10	9	DATA1_P
DATA0_N	12	11	DATA1_N
GND	14	13	GND
DATA2_P	16	15	DATA3_P
DATA2_N	18	17	DATA3_N
GND	20	19	GND
DATA4_P	22	21	DATA5_P
DATA4_N	24	23	DATA5_N
GND	26	25	GND
DATA6_P	28	27	DATA7_P
DATA6_N	30	29	DATA7_N
GND	32	31	GND
LVDS_CLK1_P	34	33	LVDS_CLK2_P
LVDS_CLK1_N	36	35	LVDS_CLK2_N
GND	38	37	GND
VDD12_LVDS	40	39	VDD12_LVDS

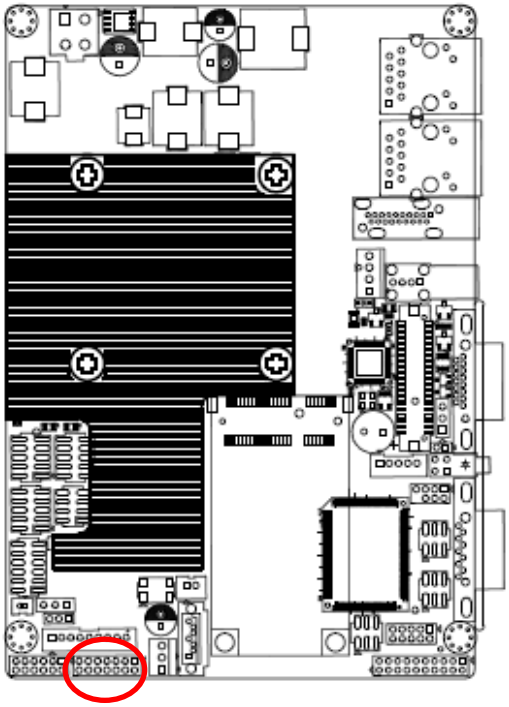
2.3.13 USB connector 0&1 / 2&3 / 4&5 (USB2/ 3/ 4)

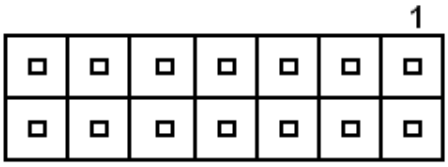




Signal	PIN	PIN	Signa
+5V	10	9	GND
USB_NP1/3/5	8	7	GND
USB_PP1/3/5	6	5	USB_PP0/2/4
GND	4	3	USB_NP0/2/4
GND	2	1	+5V

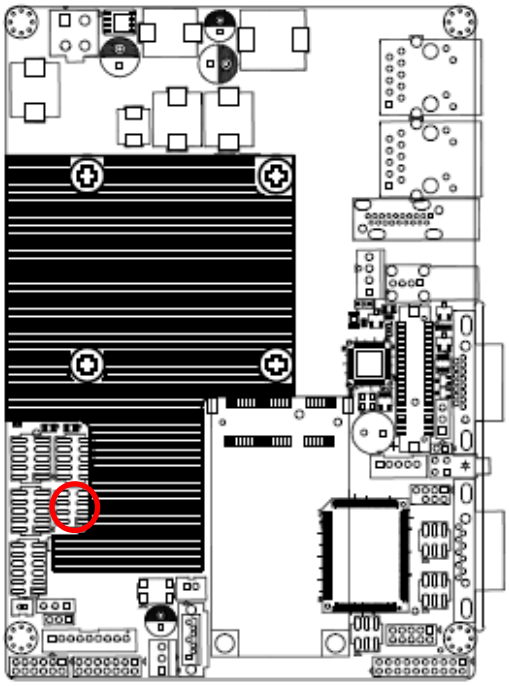
2.3.14 LPC connector (LPC1)

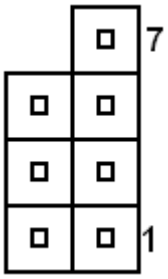




Signal	PIN	PIN	Signal
AD0	1	2	+V3P3_S
AD1	3	4	PLTRST#
AD2	5	6	LPC_FRAME#
AD3	7	8	LPC1_PCI_CLK
SERIRQ	9	10	GND
+V5S	11	12	GND
+V5A	13	14	LPC_LDRQ0#

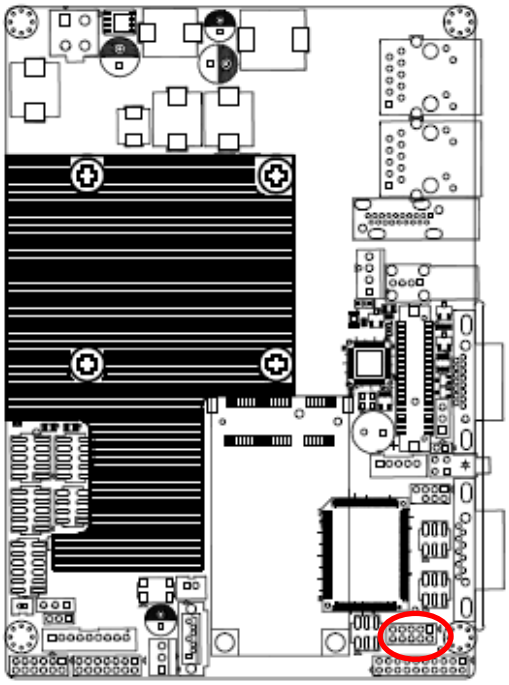
2.3.15 SPI connector (SPI1)

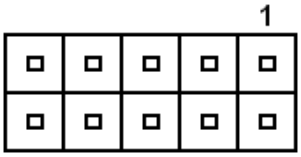




Signal	PIN	PIN	Signal
		7	SPI_HOLD#
SPI_SI	6	5	SPI_SO
SPI_CLK	4	3	SPI_CS#
GND	2	1	+V3P3A_SPI

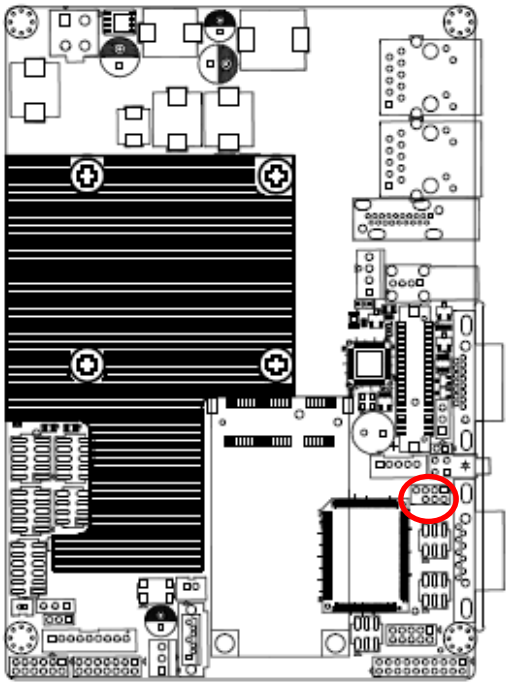
2.3.16 Serial port 2 connector (COM2)

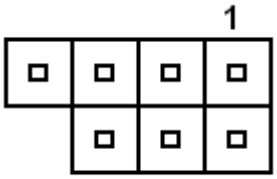




Signal	PIN	PIN	Signal
DCDB#	1	2	RxDB
TxDB	3	4	DTRB#
GND	5	6	DSRB#
RTSB#	7	8	CTSB#
RIB#	9	10	NC

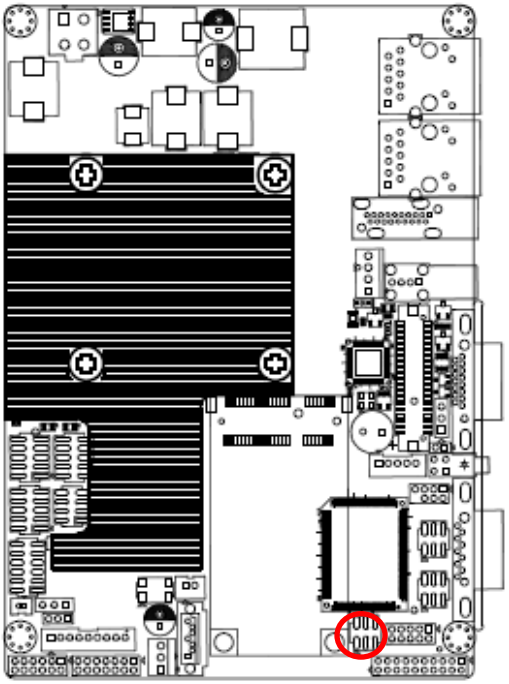
2.3.17 Keyboard & Mouse Connector (KB1)

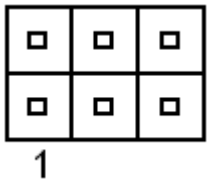




Signal	PIN	PIN	Signal
KBDA	1	2	KBCK
GND_PS2	3	4	VCC_PS2
MSDA	5	6	MSCK
NC	7		

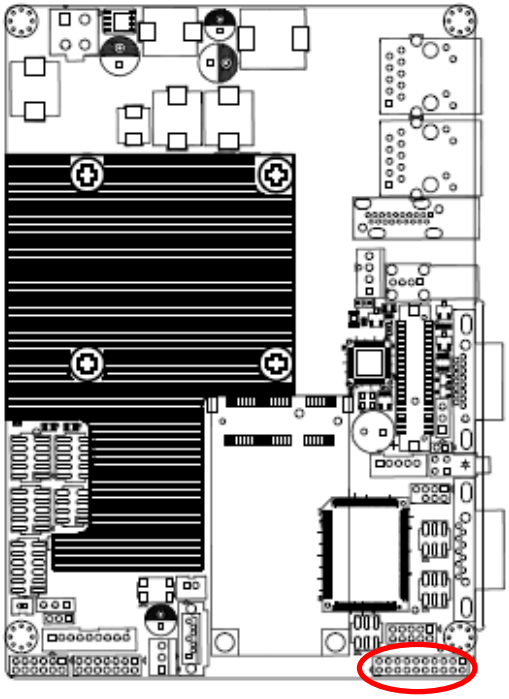
2.3.18 Serial port 2 in RS-422-485 mode (RS1)

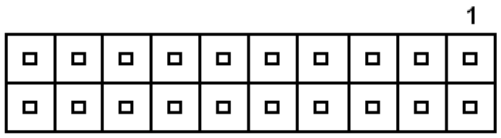




Signal	PIN	PIN	Signal
485_422TX-	1	2	422RX-
485_422TX+	3	4	422RX+
+5V	5	6	GND

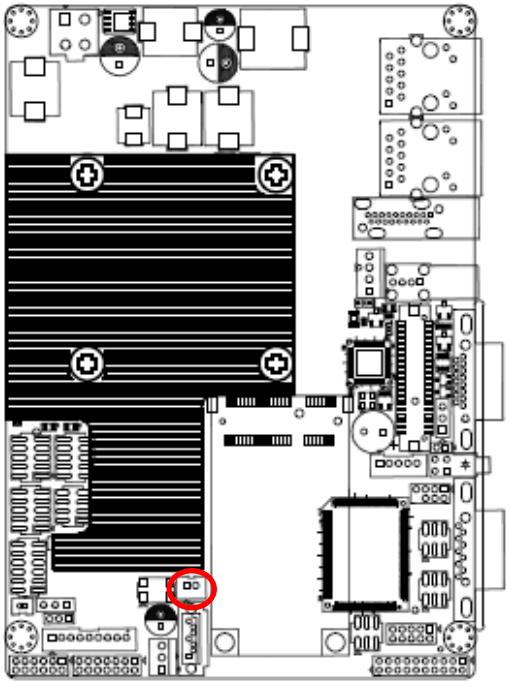
2.3.19 General purpose I/O connector (DIO1)

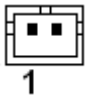




Signal	PIN	PIN	Signal
DI0	1	2	DO0
DI1	3	4	DO1
DI2	5	6	DO2
DI3	7	8	DO3
DI4	9	10	DO4
DI5	11	12	DO5
DI6	13	14	DO6
DI7	15	16	DO7
SMB_CLK	17	18	SMB_DATA
GND	19	20	+5V

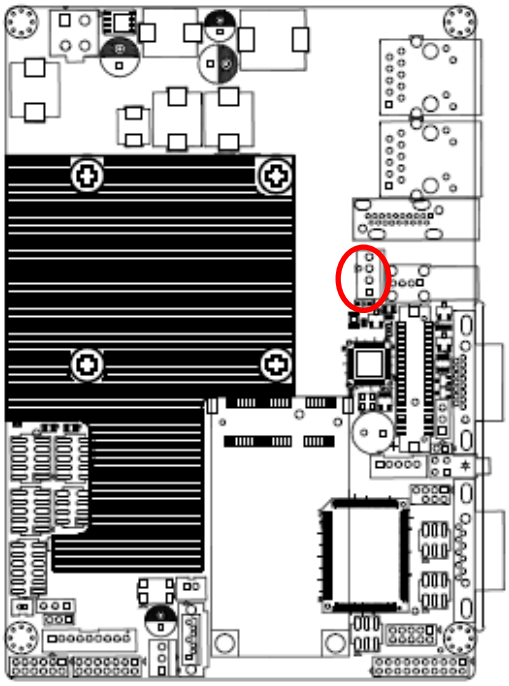
2.3.20 SATA power connector (SPWR1)





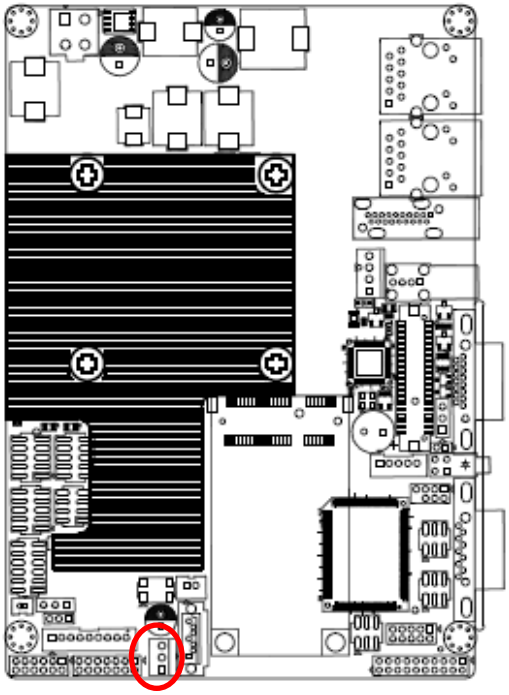
Signal	PIN
GND	1
+5V	2

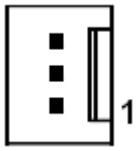
2.3.21 CPU fan connector (FAN1)



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

2.3.22 System fan connector (FAN2)





Signal	PIN
SYS_FANIN	3
+12V	2
GND	1