

EEV-EX13

MicroATX COM Express Carrier Board

Quick Installation Guide



1st Ed – 16 July 2009

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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:

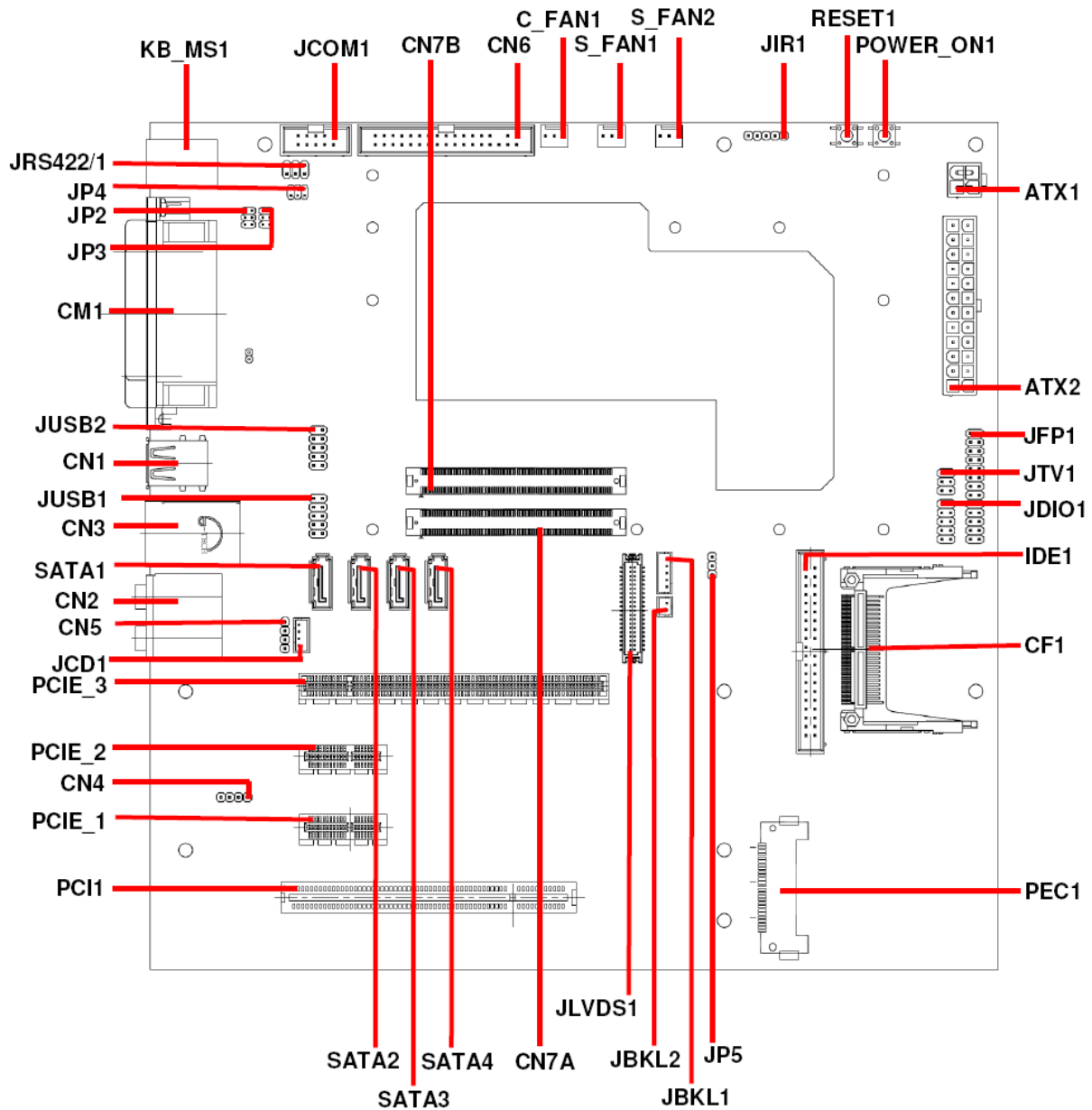
- 1 x EEV-EX13 COM Express Evaluation Carrier Board
- 1 x Quick Installation Guide
- 1 x CD-ROM or DVD-ROM contains the followings:
 - User's Manual (this manual in PDF file)
 - Audio drivers and utilities



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

2. Hardware Configuration

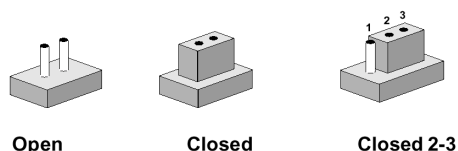
2.1 Product Overview



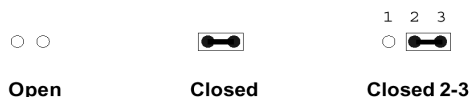
2.2 Jumper and Connector List

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.



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
JP2	COM1 pin 9 signal select	3 x 2 header, pitch 2.0mm
JP3	COM2 pin 9 signal select	3 x 2 header, pitch 2.0mm
JP4	COM2 RS-232/422/485 select	3 x 2 header, pitch 2.0mm
JP5	Clear CMOS	3 x 1 header, pitch 2.54mm

Connectors

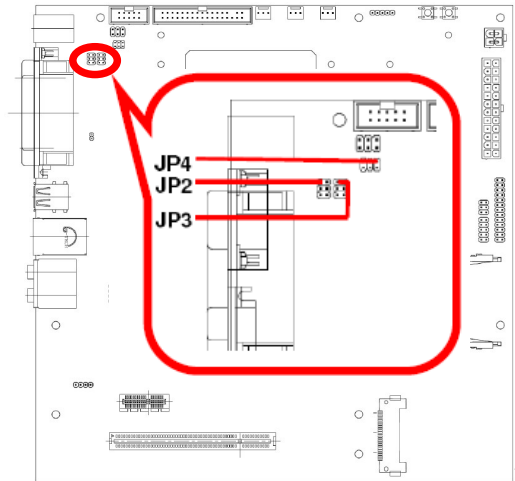
Label	Function	Note
ATX1	ATX Power connector	2 x 2 header
ATX2	ATX Power connector	12 x 2 header
C_FAN1	CPU fan connector	3 x 1 wafer, pitch 2.54mm
CF1	Compact Flash card connector	
CM1-1	Print port connector	D-sub 25-pin, female
CM1-2	Serial Port 1 connector	D-sub 9-pin, female
CM1-3	VGA connector	D-sub 15-pin, male
CN1	USB connector 2&3	Double deck
CN2	Audio input connector	Phone Jack x 6
CN3	USB connector 0&1	Double deck
CN4	SPDIF connector	4x 1 header, pitch 2.54mm
CN5	CD-ROM audio input connector	4x 1 header, pitch 2.54mm
CN6	Floppy connector	17 x 2 header, pitch 2.54mm
CN7A	ETX Express connector 1	
CN7B	ETX Express connector 2	
IDE1	Primary IDE connector	20 x 2 header, pitch 2.54mm
JBKL1	LCD inverter connector	5 x 1 wafer, pitch 2.0mm
JBKL2		2 x 1 wafer, pitch 2.0mm
JCD1	CD-ROM audio input connector	4 x 1 wafer, pitch 2.0mm
JCOM1	Serial Port 2 in RS-232 mode	5 x 2 header, pitch 2.54mm
JDIO1	General purpose I/O connector	5 x 2 header, pitch 2.54mm
JFP1	Miscellaneous setting connector	13 x 2 header, pitch 2.54mm
JIR1	IrDA connector	5 x 1 header, pitch 2.54mm
JLVDS1	LVDS connector	DIN-40 PIN, pitch 1.25mm
JTV1	TV out connector	3 x 2 header, pitch 2.54mm
JRS422/1	Serial Port 2 in RS422/485 mode	3 x 2 header, pitch 2.54mm
JUSB1	USB connector 7	5 x 2 header, pitch 2.54mm
JUSB2	USB connector 4&5	5 x 2 header, pitch 2.54mm
KB_MS1	PS/2 keyboard & PS/2 mouse connector	6-pin Mini-DIN x 2
PCI1	PCI slot 1	
PCIE_1	PCI Express x1 connector	
PCIE_2	PCI Express x1 connector	
PCIE_3	PCI Express x16 connector	

Connectors

Label	Function	Note
PEC1	PCI Express card	
POWER_ON1	Power on button	
RESET1	Reset button	
S_FAN1	System fan connector 1	3 x 1 wafer, pitch 2.54mm
S_FAN2	System fan connector 2	3 x 1 wafer, pitch 2.54mm
SATA1	Serial ATA connector 1	
SATA2	Serial ATA connector 2	
SATA3	Serial ATA connector 3	
SATA4	Serial ATA connector 4	

2.3 Setting Jumpers & Connectors

2.3.1 COM1/COM2 pin 9 signal select (JP2, JP3)

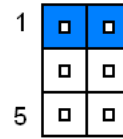


*Default

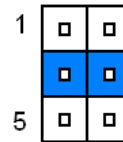
JP2 (COM1)

JP3 (COM2)

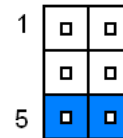
Ring*



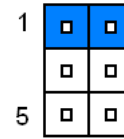
+5V



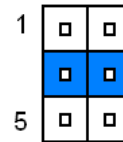
+12V



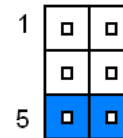
Ring*



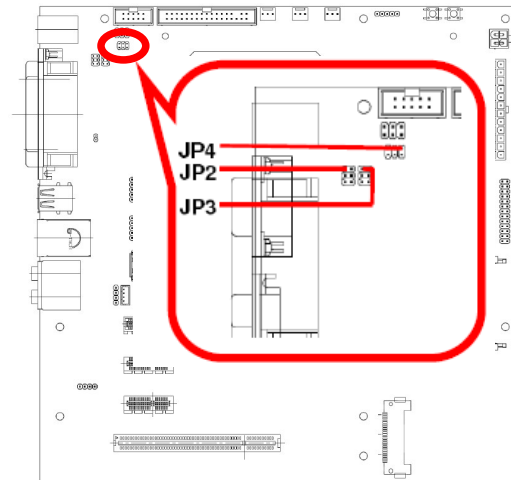
+5V



+12V



2.3.2 COM2 RS-232/422/485 Select (JP4)



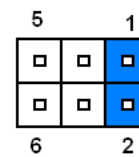
* Default



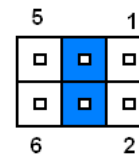
Note:

Replace JCOM1 by JRS422/1 when the using RS-422/485 mode.

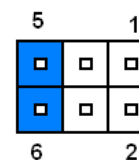
RS-232



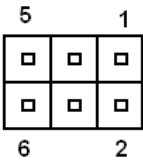
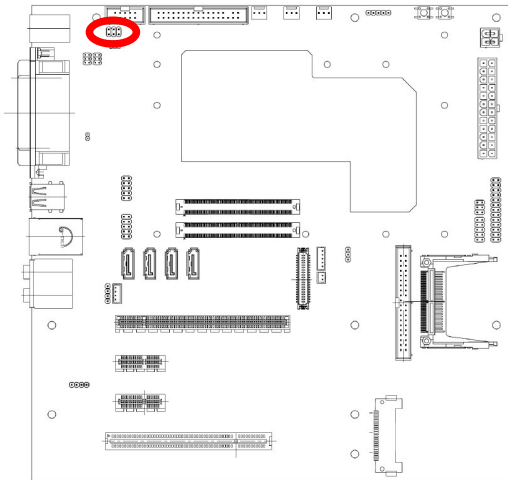
RS-422



RS-485



2.3.3 COM2 in RS422/485 Mode (JRS422/1)



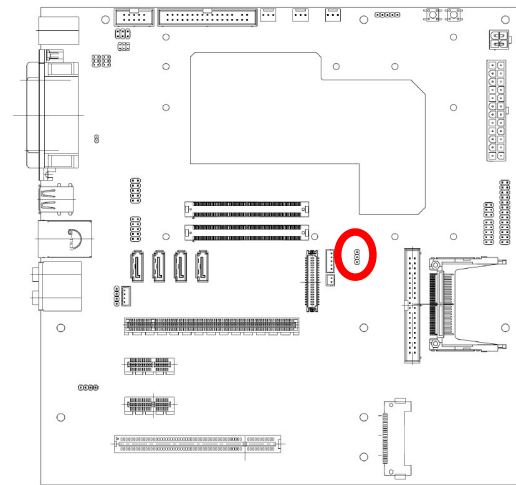
In 422 Mode

Signal	PIN	PIN	Signal
TX-	1	2	RX-
TX+	3	4	RX+
+5V	5	6	GND

In 485 Mode

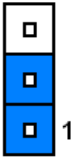
Signal	PIN	PIN	Signal
DATA-	1	2	RX-
DATA+	3	4	RX+
+5V	5	6	GND

2.3.4 Clear CMOS (JP5)

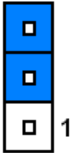


* Default

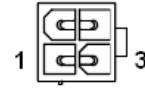
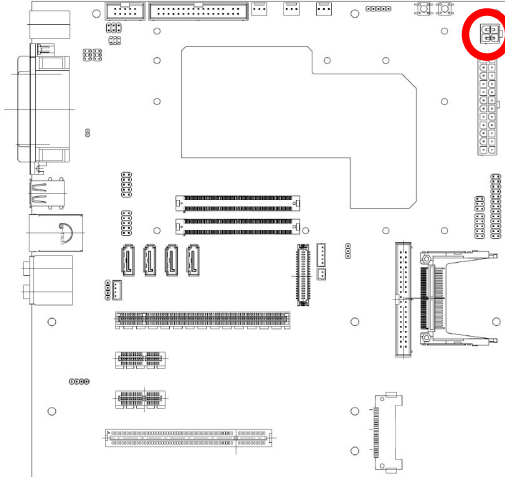
Protect*



Clear CMOS

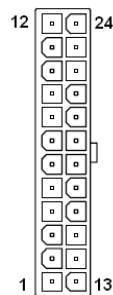
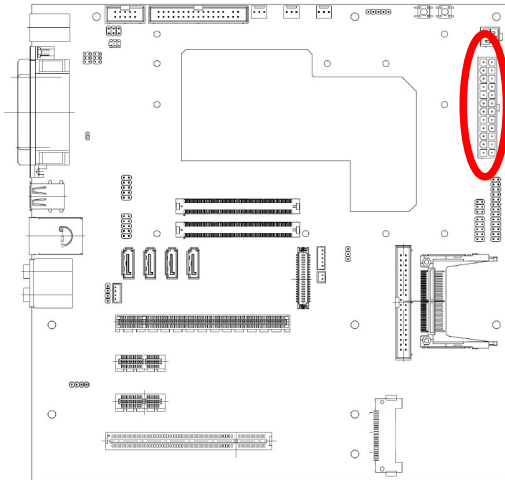


2.3.5 ATX Power Connector (ATX1)



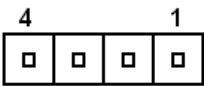
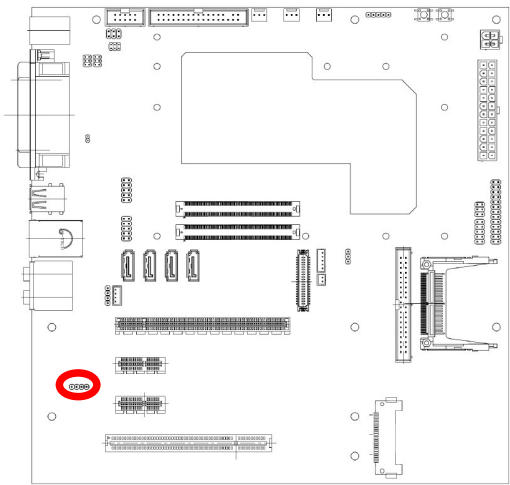
Signal	PIN	PIN	Signal
GND	2	4	+12V
GND	1	3	+12V

2.3.6 ATX Power Connector (ATX2)



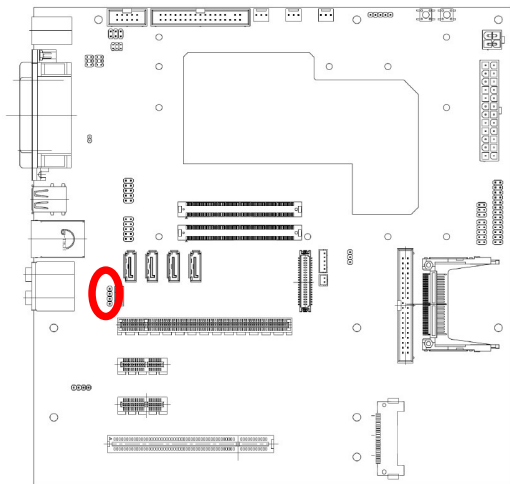
Signal	PIN	PIN	Signal
3.3V	12	24	GND
+12V	11	23	+5V
+12V	10	22	+5V
AUX5V	9	21	+5V
PWROK	8	20	-5V
GND	7	19	GND
+5V	6	18	GND
GND	5	17	GND
+5V	4	16	PS_ON
GND	3	15	GND
3.3V	2	14	-12V
3.3V	1	13	3.3V

2.3.7 SPDIF connector (CN4)



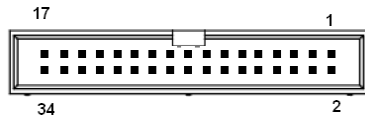
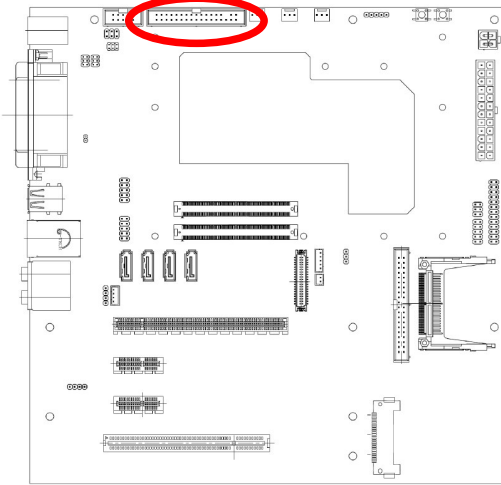
Signal	PIN
SPDIFIN	1
GND	2
GND	3
SPDIFOUT	4

2.3.8 CD-ROM Audio Input Connector (CN5)



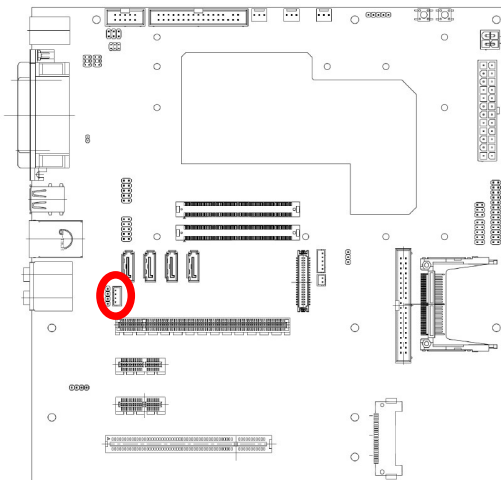
Signal	PIN
CD_R	1
GND	2
GND	3
CD_L	4

2.3.9 Floppy connector (CN6)



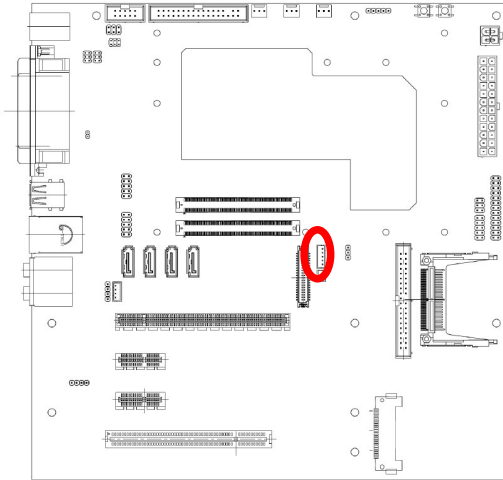
Signal	PIN	PIN	Signal
GND	1	2	RWC#
GND	3	4	NC
GND	5	6	DRVEN1
GND	7	8	INDEX#
GND	9	10	MOA#
GND	11	12	DSB#
GND	13	14	DSA#
GND	15	16	MOB#
GND	17	18	DIR#
GND	19	20	STEP#
GND	21	22	WD#
GND	23	24	WE#
GND	25	26	TRAK0#
GND	27	28	WP#
NC	29	30	RDATA#
GND	31	32	HEAD#
NC	33	34	DSKCHG#

2.3.10 CD-ROM Audio Input Connector (JCD1)



Signal	PIN
CD_R	4
GND	3
CD_L	2
NC	1

2.3.11 LCD Inverter Connector (JBKL1)



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



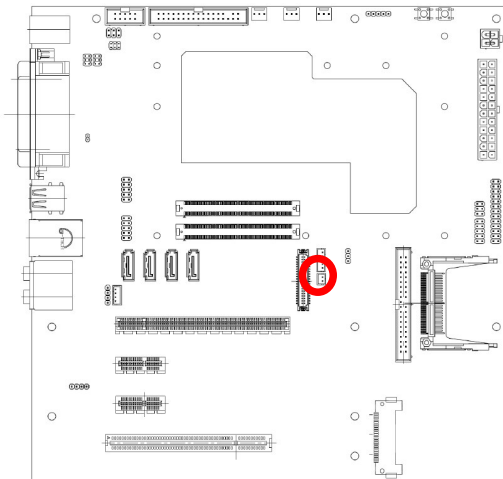
Note:

For inverters with adjustable Backlight function, it is possible to control the LCD brightness through the VR signal controlled by **JFP1**. Please see the **JFP1** section for detailed circuitry information.

2.3.11.1 Signal Description – LCD Inverter Connector (JBKL1)

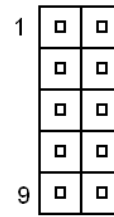
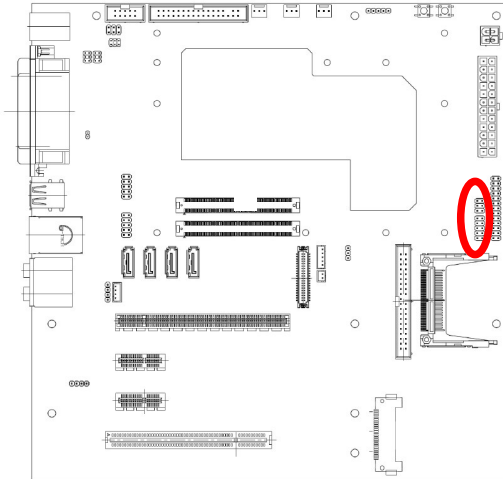
Signal	Signal Description
BRIGHT	$V_{adj} = 0.75V \sim 4.25V$ (Recommended: $4.7K\Omega$, $>1/16W$)
ENBKL	LCD backlight ON/OFF control signal

2.3.12 LCD Inverter Connector (JBKL2)



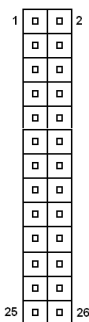
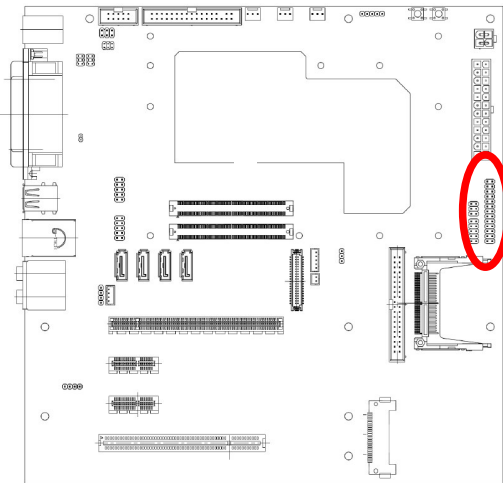
Signal	PIN
+12V	1
GND	2

2.3.13 General Purpose I/O Connector (JDIO1)



Signal	PIN	PIN	Signal
+5v	1	2	GND
GPO0	3	4	GPI0
GPO1	5	6	GPI1
GPO2	7	8	GPI2
GPO3	9	10	GPI3

2.3.14 Miscellaneous Setting Connector (JFP1)



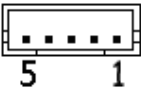
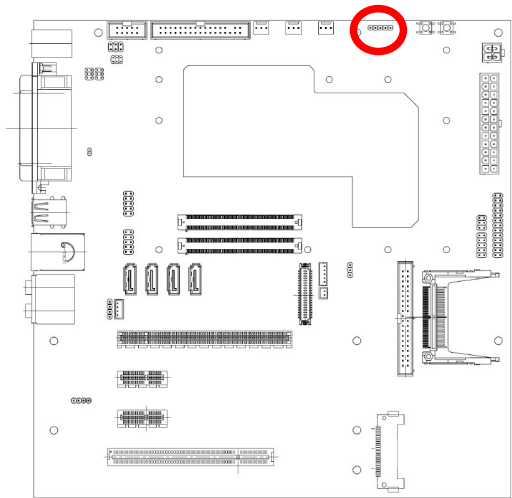
Signal	PIN	PIN	Signal
RESET+	1	2	VCCSB
GND	3	4	GND
+5V	5	6	+5V
HDLED-	7	8	GND
VCCSB	9	10	VCCSB
PANSWIN	11	12	SUS_LED-
KB_LOCK-	13	14	+5V
GND	15	16	SPKIN
CASEOPEN-	17	18	VTIN3
GND	19	20	THRMDN-
+5V	21	22	+5V
BRIGHT	23	24	MASTER-
GND	25	26	GND



Note: To set the CF Card as Master , please short JFP1 pin 24 & 26

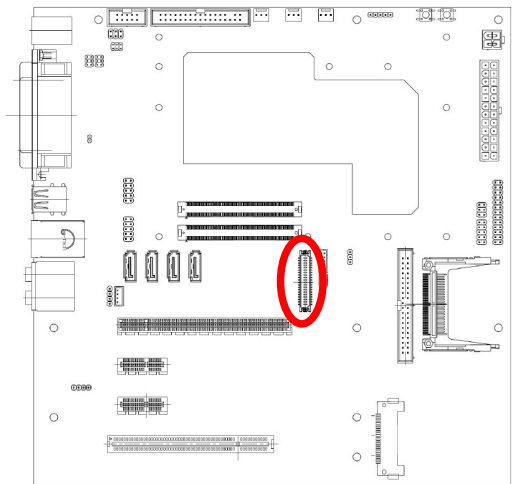
EEV-EX13

2.3.15 IrDA Connector (JIR1)



Signal	PIN
+5V	1
NC	2
IRRX	3
GND	4
IRTX	5

2.3.16 LVDS Connector (JLVDS1)



Signal	PIN	PIN	Signal
+12V_LVDS	39	40	+12V_LVDS
GND	37	38	GND
LCDDO16	35	36	LCDDO6
LCDDO17	33	34	LCDDO7
GND	31	32	GND
LCDDO18	29	30	LCDDO14
LCDDO19	27	28	LCDDO15
GND	25	26	GND
LCDDO12	23	24	LCDDO10
LCDDO13	21	22	LCDDO11
GND	19	20	GND
LCDDO8	17	18	LCDDO4
LCDDO9	15	16	LCDDO5
GND	13	14	GND
LCDDO2	11	12	LCDDO0
LCDDO3	9	10	LCDDO1
GND	7	8	GND
I ² C_CLK	5	6	I ² C_DAT
LVDS_+3.3V	3	4	LVDS_+5V
LVDS_+3.3V	1	2	LVDS_+5V

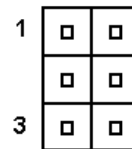
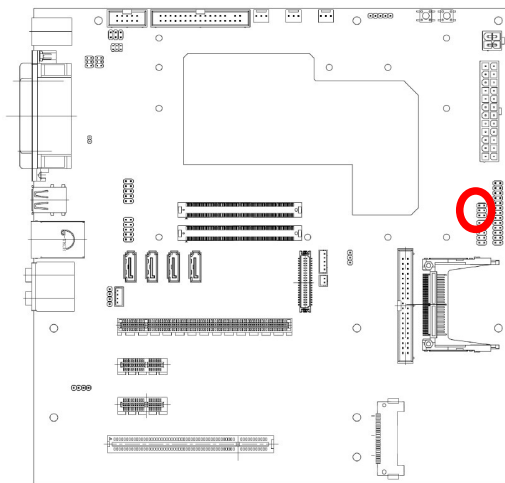
**Note:**

JLVDS1 supports up to dual channel 24-bit LVDS, but the real function depends on the limitation of the used COM Express module.

2.3.16.1 Signal Description – LVDS Connector (JLVDS1)

Signal	1 Pixel / Clock LVDS Mode	2 Pixel / Clock LVDS Mode
LCDDO0	Txout0#	Odd Txout0#
LCDDO1	Txout0	Odd Txout0
LCDDO2	Txout1#	Odd Txout1#
LCDDO3	Txout1	Odd Txout1
LCDDO4	Txout2#	Odd Txout2#
LCDDO5	Txout2	Odd Txout2
LCDDO6	Txclk#	Odd Txclk#
LCDDO7	Txclk	Odd Txclk
LCDDO8	Txout3#	Odd Txout3#
LCDDO9	Txout3	Odd Txout3
LCDDO10	-	Even Txout0#
LCDDO11	-	Even Txout0
LCDDO12	-	Even Txout1#
LCDDO13	-	Even Txout1
LCDDO14	-	Even Txout2#
LCDDO15	-	Even Txout2
LCDDO16	-	Even Txclk#
LCDDO17	-	Even Txclk
LCDDO18	-	Even Txout3#
LCDDO19	-	Even Txout3
I ² C_DAT, I ² C_CLK	I ² C interface for panel parameter EEPROM. This EEPROM is mounted on the LVDS receiver. The data in the EEPROM allows the COM Express module to automatically set the proper timing parameters for a specific LCD panel.	

2.3.17 TV Out Connector (JTV1)



Signal	PIN	PIN	Signal
Pb	1	2	GND
Y	3	4	C
GND	5	6	GND



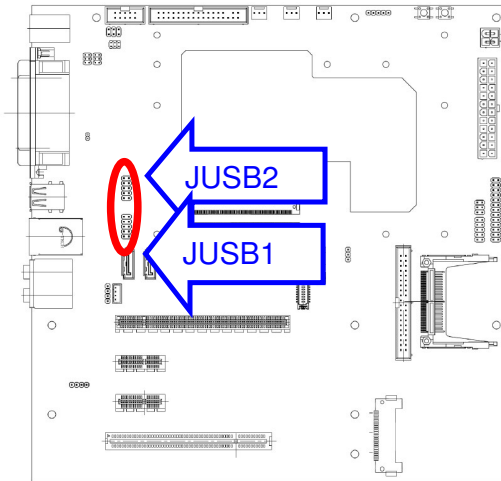
Note:

JTV1 is available when the used COM Express module supports TV out function.

2.3.17.1 Signal Description – TV Out Connector (JTV1)

Signal	Description
Pb	TVDAC Channel A Output: supports CVBS signal of Composite; Chrominance (Pb) analog signal of Component.
Pr	TVDAC Channel B Output: supports Chrominance analog signal of S-Video; Chrominance (Pr) analog signal of Component.
Y	TVDAC Channel C Output: supports Luminance signal of S-Video; Luminance (Y) analog signal of Component.

2.3.18 USB Connector 7, 4 & 5 (JUSB1, JUSB2)



JUSB1

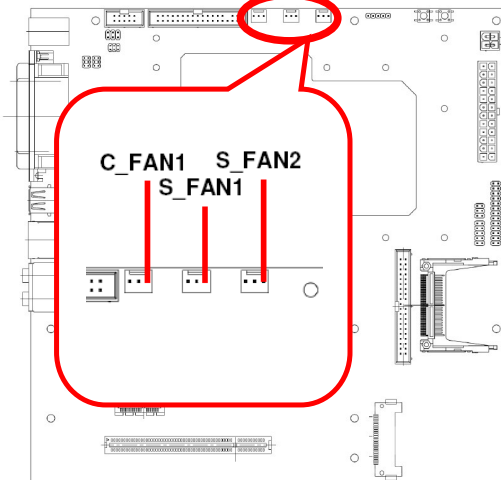
1	□	□
	□	□
	□	□
	□	□
9	□	□

JUSB2

1	□	□
	□	□
	□	□
	□	□
9	□	□

Signal	PIN	PIN	Signal
+5V	1	2	GND
D6-/D4-	3	4	GND
D6+/D4+	5	6	D7+/D5+
GND	7	8	D7-/D5-
GND	9	10	+5V

2.3.19 CPU Fan connector/ System Fan connector 1/ System Fan connector 2 (C_FAN1/ S_FAN1/ S_FAN2)



Signal	PIN
GND	1
+12V	2
FANIO2/ FANIO3/ FANIO1	3

