

IPM-1501B

15" HDBaseT™ 5-wires Resistive Touch Monitor

Quick Reference Guide

2nd Ed – 24 October, 2018

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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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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

- 1 x IPM-1501B 15" HDBaseT™ 5-wires Resistive Touch Monitor
- Other major components include the followings:
 - 1 x Power Cord
 - 1 x Adapter
 - 1 x Screws pack



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

1.3 System Specifications

Component	
Mother Board	5.25" Single Board
Processor	Valens VS2310RX & VS2310TX
Audio	Yes, (source from Box PC)
Power Supply	DC-in or Powered LAN PD
Adapter	60W Adapter (DC in 12V@5A)
System Fan	Fan-less
Speaker	2 x 2W Speaker
Panel	
LCD Panel	15" 1024 * 768
Touch Screen	Higgstec 5-wire Resistive Touch
Touch Controller	Built-in touch controller on board (by USB)
Others	Membrane button for ● Panel backlight power on/off ● Volume up/down ● Panel Brightness increase/decrease
I/O	
External I/O Connector	2 x RJ45 for HDBaseT 2 x USB 2.0 Ports for external peripherals in lower speed access 1 x 3.5mm stereo jack 1 x reset button
Internal I/O Connector	1 x 40pin 1.25mm 180D(M) connector for LVDS 1 x 1 x 5 pin, pitch 2.00mm Wafer connector for LCD inverter backlight connector (5V/12V) 2 x 1 x 3 pin, pitch 2.54mm connector for debug (support TX & RX only) 1 x 1 x 5 pin, pitch 2.54mm connector for USB 2.0 2 x 1 x 2 pin, pitch wafer 2.00mm connector for 6W x 2 Speaker 1 x 2 x 6 pin, pitch 2.00mm connector for Membrane
Other	Panel power on/off indicator light on membrane
Mechanical & Environmental	
Power Requirement	+12 ~ 26V DC-in Or Powered LAN 60W
Power Connector Type	Lockable DC-in jack
Mounting	VESA mount (75mm x 75mm & 100mm x 100mm) Wall Mount

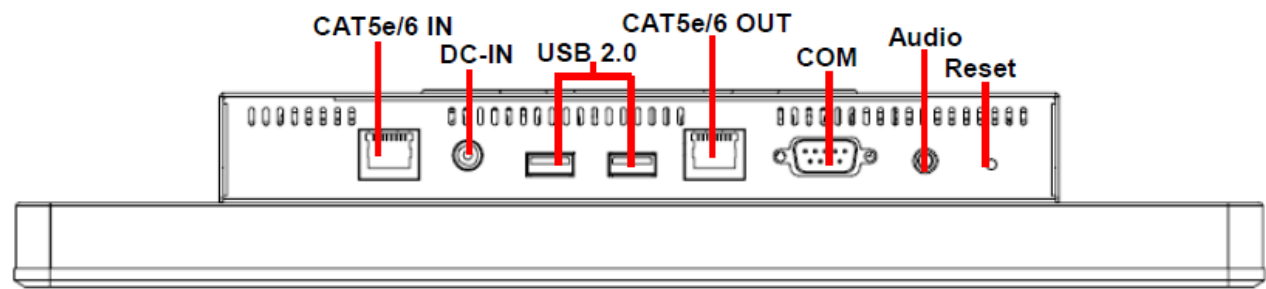
	DIN Rail
Dimension	350 x 274 x 54mm
Weight	3.6 kg



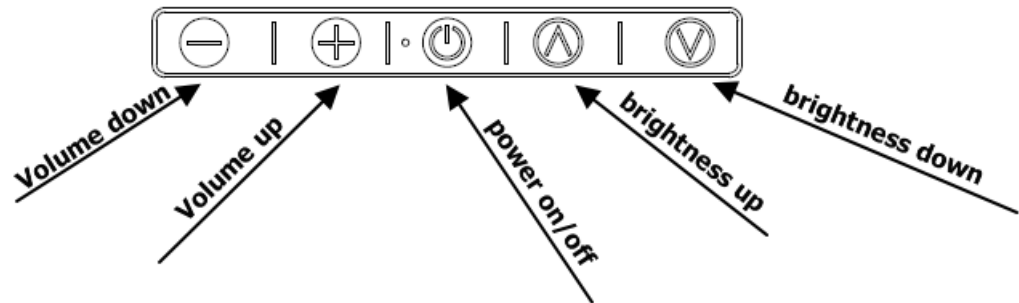
Note: Specifications are subject to change without notice.

1.4 System Overview

1.4.1 Rear View

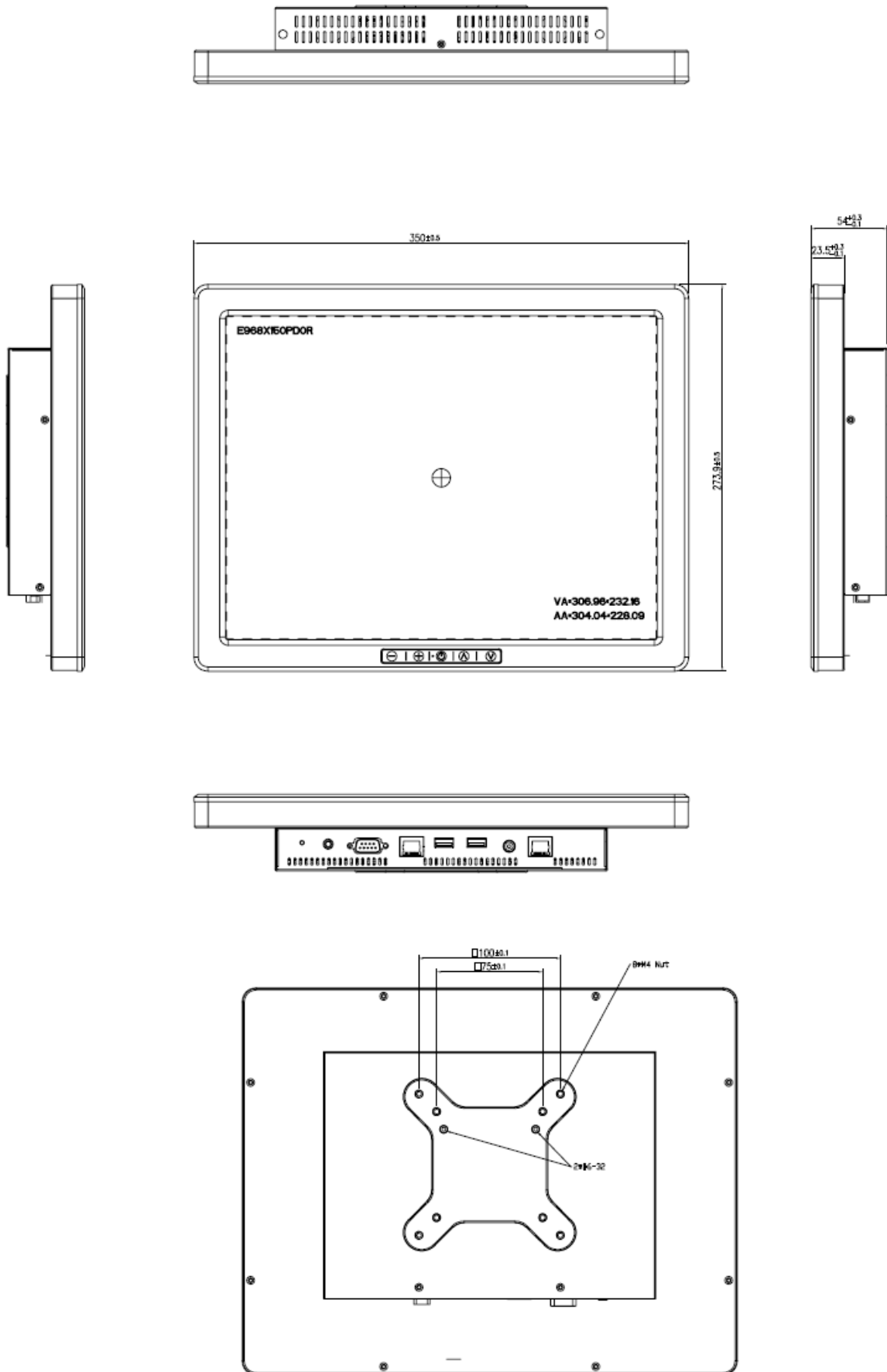


1.4.2 Membrane



Connectors		
Label	Function	Note
Reset	Reset button	
Audio	Audio connector	
COM	Serial port connector	support TX & RX only
CAT5e/6 OUT	CAT5e/6 OUT	
USB 2.0	2 x USB 2.0 connector	
DC-IN	DC Power-in connector	
CAT5e/6 IN	CAT5e/6 IN	

1.5 System Dimensions



(Unit: mm)

2. Hardware Configuration

For advanced information, please refer to:

- 1- IPM-1501B Main/Power board included in this manual.

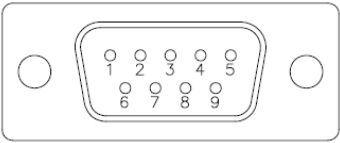
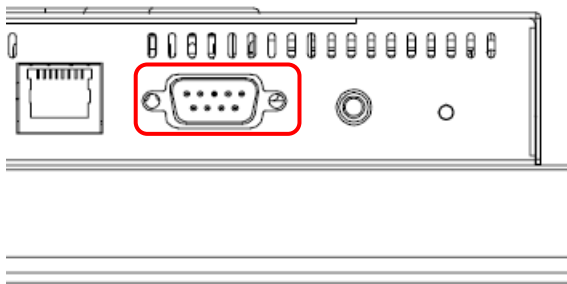


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2.1 IPM-1501B connector mapping

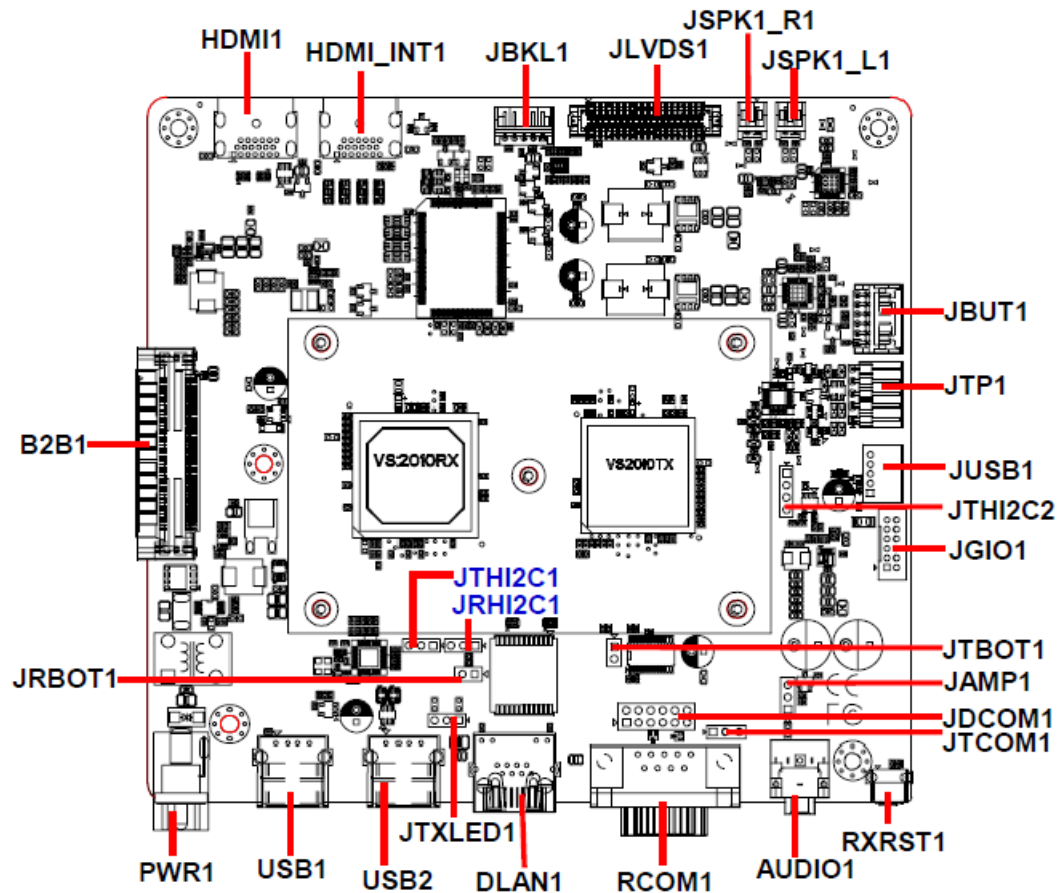
2.1.1 Serial port connector (COM)



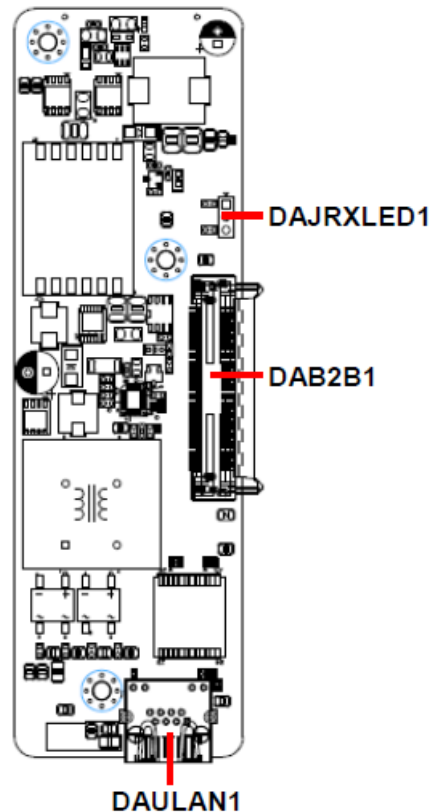
Signal	PIN	PIN	Signal
NC	1	6	NC
RCOM1_RX	2	7	NC
RCOM1_TX	3	8	NC
NC	4	9	NC
GND	5		

2.2 IPM-1501B Overviews

2.2.1 IPM-1501B Main board



2.2.2 IPM-1501B Power board



2.3 IPM-1501B Main/Power board Jumper and Connector list

Jumper

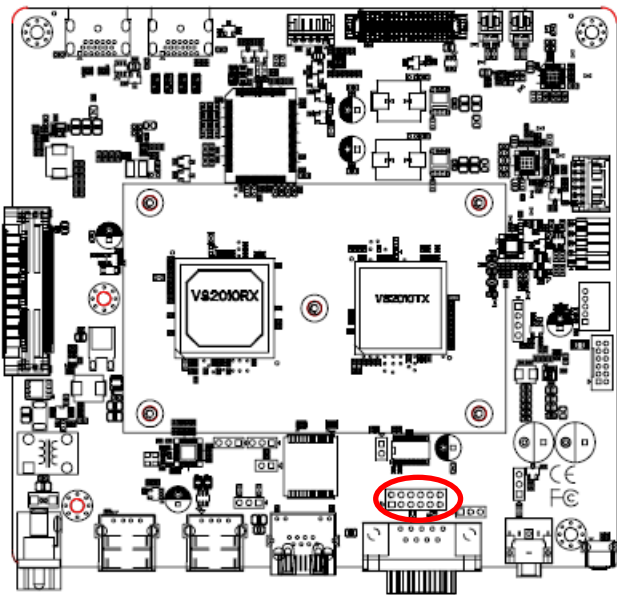
Label	Function	Note
JDCOM1	Setting for RCOM1 & JTCOM1	6 x 2 header, pitch 2.54mm
JRBOT1	Select boot source for VS2310RX	2 x 1 header, pitch 2.54mm
JTBOT1	Select boot source for VS2310TX	2 x 1 header, pitch 2.54mm
JAMP1	Amplifier connector	3 x 1 header, pitch 2.54mm

Connectors

Label	Function	Note
HDMI	HDMI connector	
HDMI_IN1	HDMI Input for Scaler connector	
JBKL1	LCD Inverter connector	5 x 1 wafer, pitch 2.00mm
RCOM1	Serial Port 1 connector	D-sub 9 pin, male
JTCOM1	Serial Port 1 from VS2310TX	3 x 1 header, pitch 2.54mm
JTP1	Touch Panel connector	5 x 1 header, pitch 2.54mm
JSPK1_R1	AMPLIFIER_R	2 x 1 wafer, pitch 2.00mm
JSPK1_L1	AMPLIFIER_L	2 x 1 wafer, pitch 2.00mm
B2B1	B2B connector	40 x 2 wafer, pitch 0.80mm
JBUT1	Touch button connector	6 x 2 wafer, pitch 2.00mm
JTXLED1	Data Link LED indicator	3 x 1 header, pitch 2.54mm
JLVDS1	LVDS connector	DIN 40-pin wafer, pitch 1.25mm
USB1/2	USB connector 1/2	
JUSB1	On-board header for USB2.0	5 x 1 wafer, pitch 2.00mm
DLAN1	CAT5e/6 OUT	
PWR1	Power connector	
RXRST1	Reset button	
JGIO1	General purpose I/O connector	6 x 2 wafer, pitch 2.00mm
JTHI2C1	Debug connector	3 x 1 header, pitch 2.54mm
JTHI2C2	I2C connector	4 x 1 header, pitch 2.54mm
JRHI2C1	Debug connector	3 x 1 header, pitch 2.54mm
AUDIO1	Audio connector	
DAB2B1	B2B connector	40 x 2 wafer, pitch 0.80mm
DAJRXLED1	Data Link LED indicator	3 x 1 header, pitch 2.54mm
DAULAN1	CAT5e/6 IN	

2.4 IPM-1501B Main/Power board Jumpers & Connectors settings

2.4.1 Setting for RCOM1 & JTCOM1 (JDCOM1)



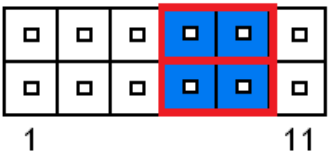
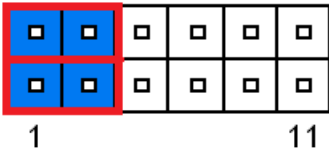
*Default

For RCOM1 setting

For JTCOM1 setting

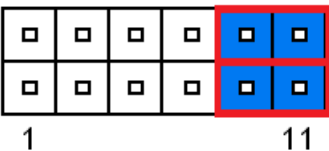
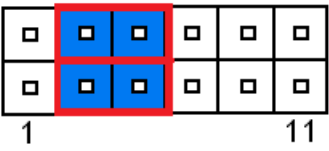
For Debug*

Serial port 1*

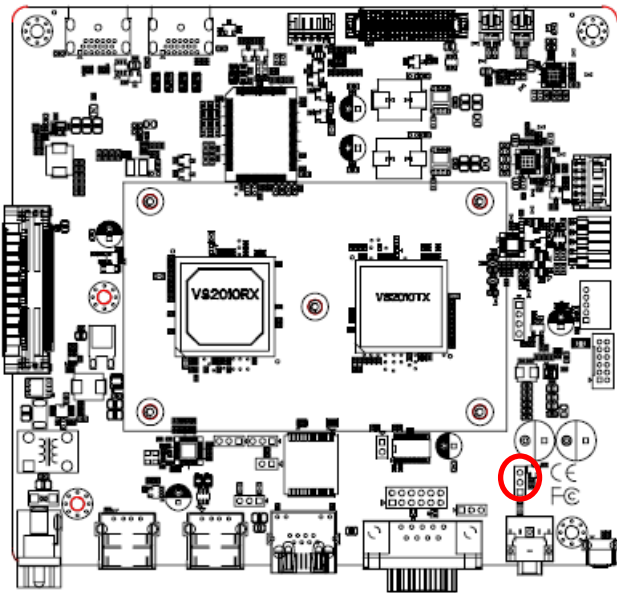


Serial port 1

For Debug

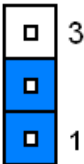


2.4.2 Amplifier connector (JAMP1)

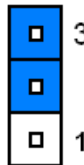


*Default

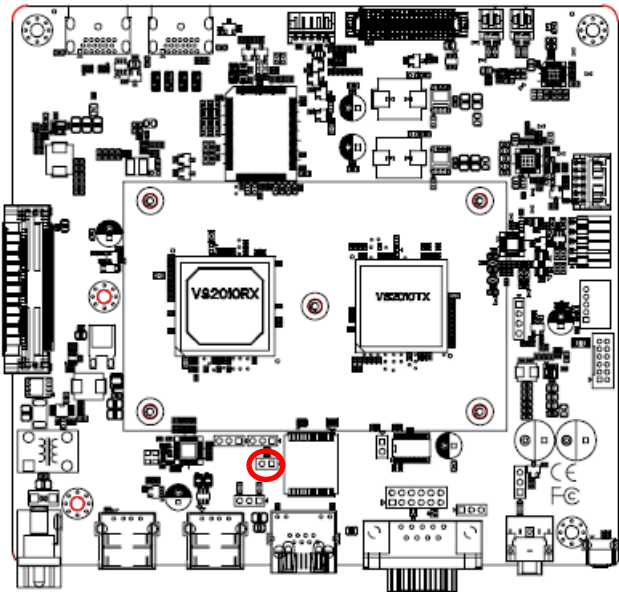
EAR_SENSE Detect*



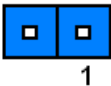
Speaker Out(only)



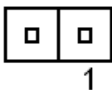
2.4.3 Select boot source for VS2310RX (JRBOT1)



External Boot*

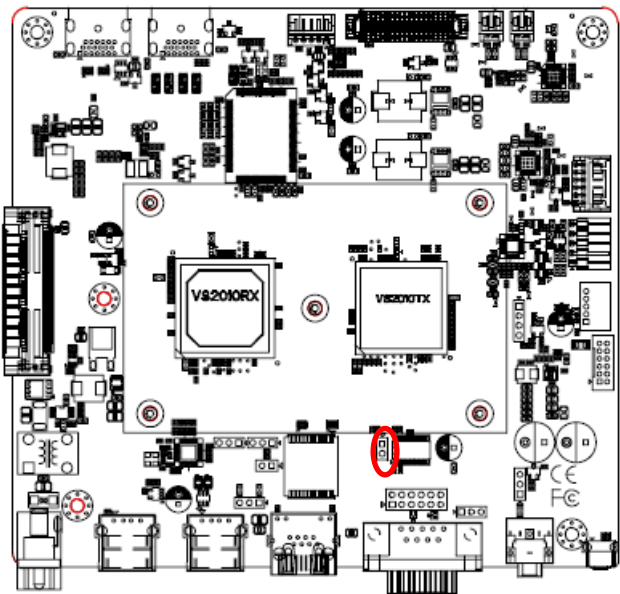


Internal Boot

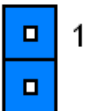


* Default

2.4.4 Select boot source for VS2310TX (JTBOT1)



External Boot*

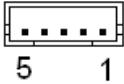
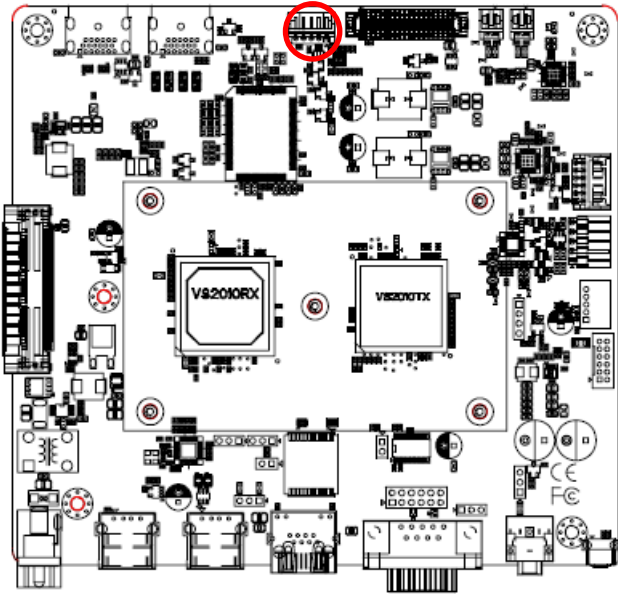


Internal Boot



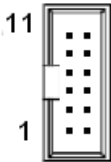
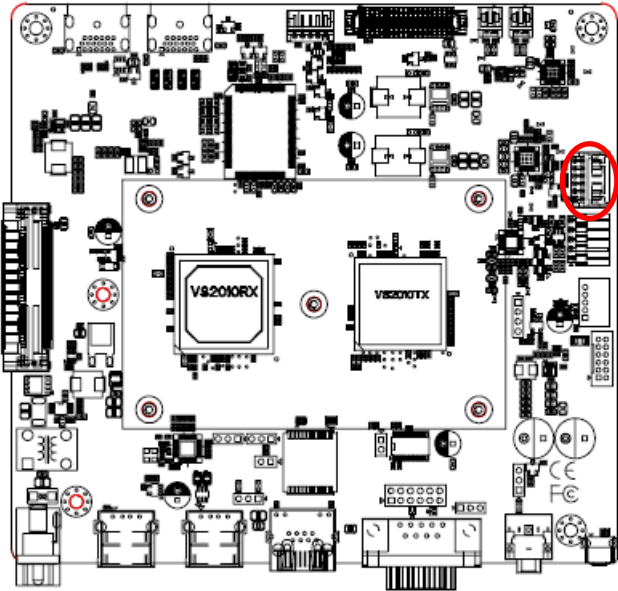
* Default

2.4.5 LCD Inverter connector (JBKL1)



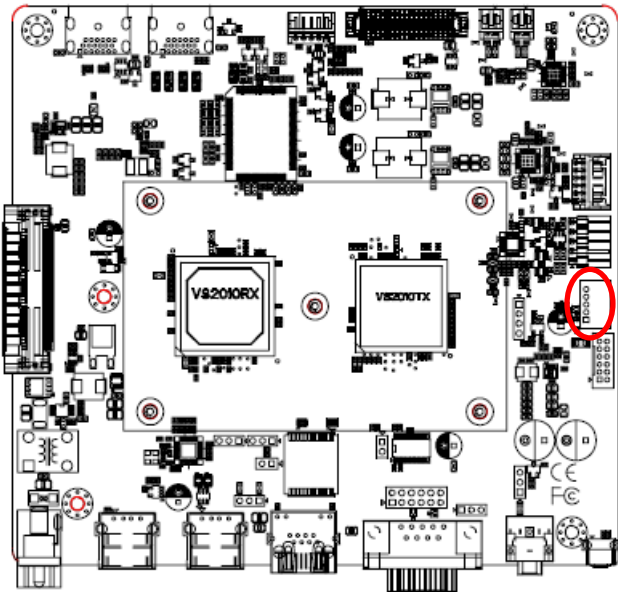
Signal	PIN
+12VSB	1
GND	2
BACKLIGHT	3
BRIGHT	4
+5VSB	5

2.4.6 Touch button connector (JBUT1)



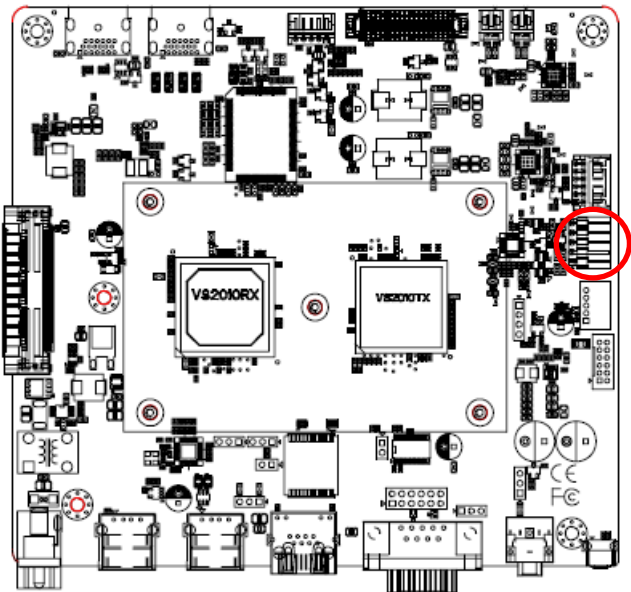
Signal	PIN	PIN	Signal
LED_GREEN	11	12	LED_ORANGE
BU6_BR-	9	10	BU7_PC
PWRBTN	7	8	BU5_BR+
BU2_VL+	5	6	BU3_VL-
IR	3	4	BU1_TV
+5VSB	1	2	GND

2.4.7 On-board header for USB2.0 (JUSB1)



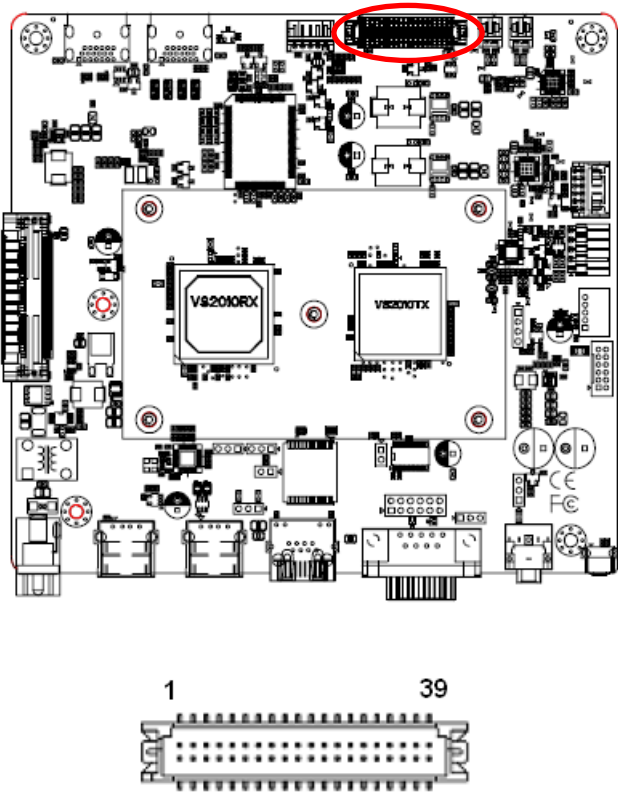
Signal	PIN
USBVCC2	5
USB_INTM	4
USB_INTP	3
GND	2
GND	1

2.4.8 Touch Panel connector (JTP1)



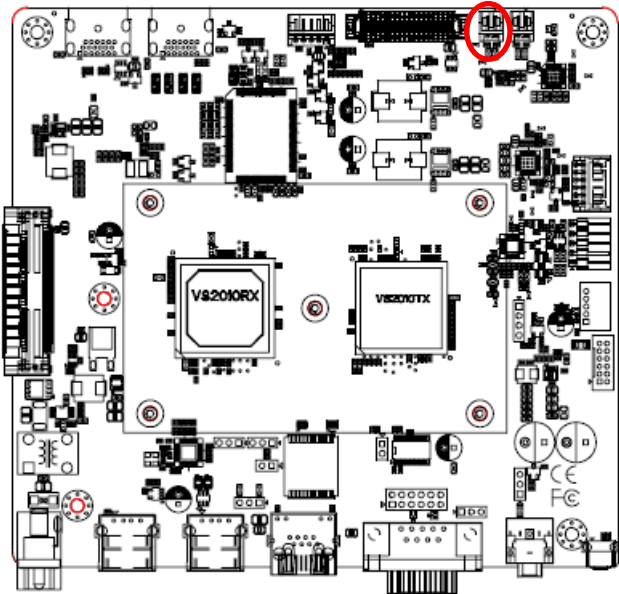
Signal	PIN
Y-	5
Y+	4
SENSE	3
X-	2
X+	1

2.4.9 LVDS connector (JLVDS1)



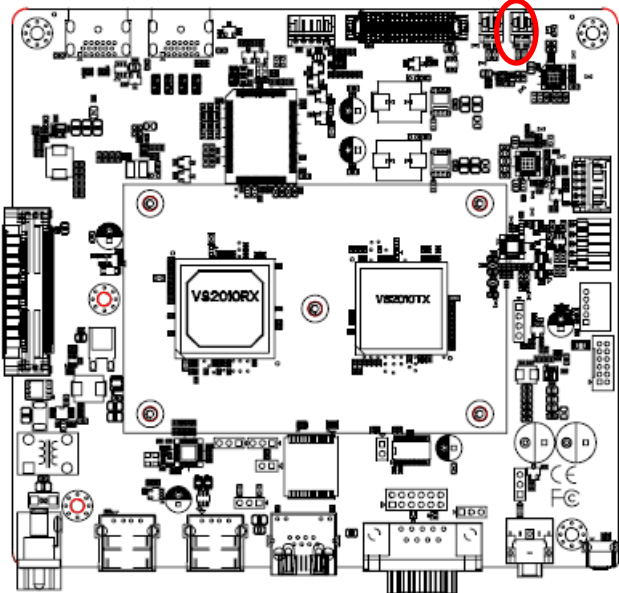
Signal	PIN	PIN	Signal
+3.3VSB	1	2	+5VSB
+3.3VSB	3	4	+5VSB
NC	5	6	NC
GND	7	8	GND
LVDSA_DATA1	9	10	LVDSA_DATA0
LVDSA_DATA1#	11	12	LVDSA_DATA0#
GND	13	14	GND
LVDSA_DATA3	15	16	LVDSA_DATA2
LVDSA_DATA3#	17	18	LVDSA_DATA2#
GND	19	20	GND
LVDSB_DATA1	21	22	LVDSB_DATA0
LVDSB_DATA1#	23	24	LVDSB_DATA0#
GND	25	26	GND
LVDSB_DATA3	27	28	LVDSB_DATA2
LVDSB_DATA3#	29	30	LVDSB_DATA2#
GND	31	32	GND
LVDSB_CLK	33	34	LVDSB_CLK
LVDSB_CLK#	35	36	LVDSB_CLK#
GND	37	38	GND
+12VSB	39	40	+12VSB

2.4.10 AMPLIFIER_R (JSPK1_R1)



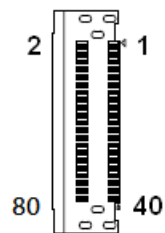
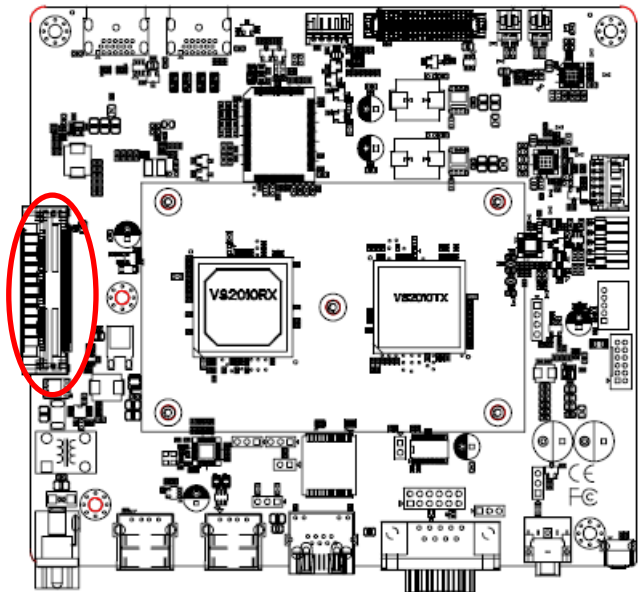
Signal	PIN
SPK-R-	1
SPK-R+	2

2.4.11 AMPLIFIER_L (JSPK1_L1)



Signal	PIN
SPK-L-	1
SPK-L+	2

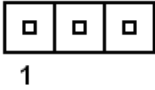
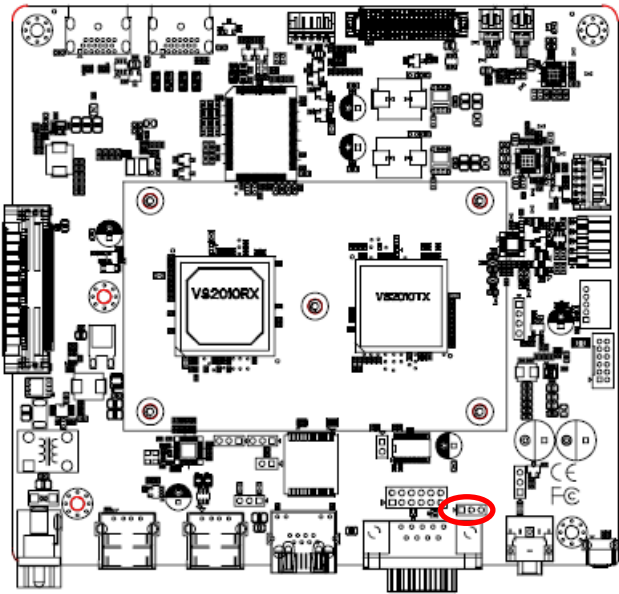
2.4.12 B2B connector (B2B1)



Signal	PIN	PIN	Signal
+12V	41	1	+12V
+12V	42	2	+12V
GND	43	3	GND
+3.3VSB	44	4	+1.8VSB
+3.3VSB	45	5	+1.8VSB
GND	46	6	GND
NC	47	7	NC
NC	48	8	NC
NC	49	9	NC
NC	50	10	NC

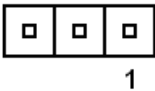
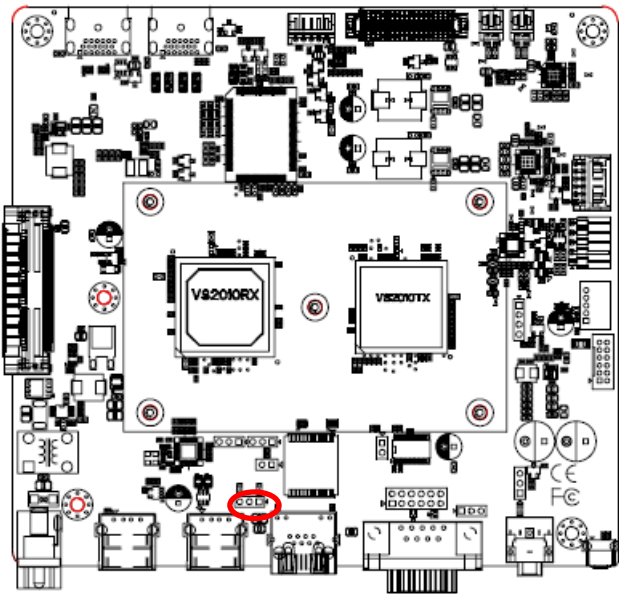
Signal	PIN	PIN	Signal
NC	51	11	NC
NC	52	12	NC
NC	53	13	NC
NC	54	14	NC
NC	55	15	NC
NC	56	16	NC
NC	57	17	NC
NC	58	18	NC
NC	59	19	NC
NC	60	20	NC
NC	61	21	NC
NC	62	22	NC
NC	63	23	NC
NC	64	24	NC
NC	65	25	NC
NC	66	26	NC
NC	67	27	NC
NC	68	28	GND
NC	69	29	SNK_XFRMR_3N
NC	70	30	SNK_XFRMR_3P
NC	71	31	GND
NC	72	32	SNK_XFRMR_2N
NC	73	33	SNK_XFRMR_2P
NC	74	34	GND
NC	75	35	SNK_XFRMR_1N
NC	76	36	SNK_XFRMR_1P
GND	77	37	GND
RX_LINK_LED	78	38	SNK_XFRMR_0N
RX_HDCP_LED	79	39	SNK_XFRMR_0P
GND	80	40	GND

2.4.13 Serial Port 1 from VS2310TX (JTCOM1)



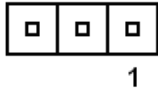
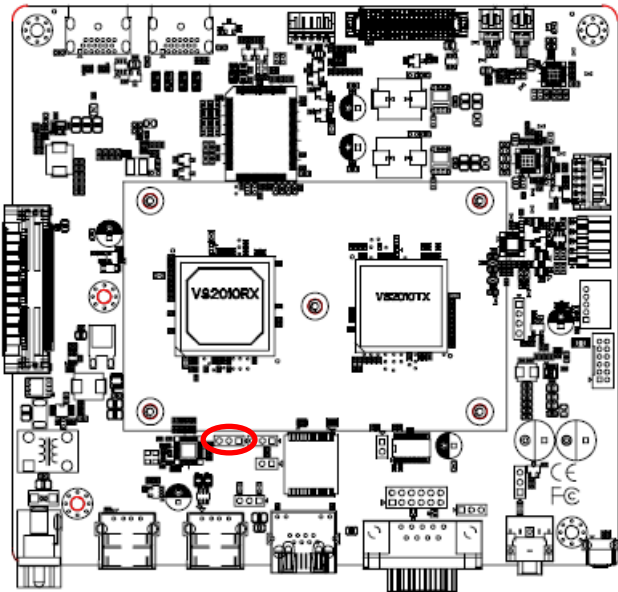
Signal	PIN
T232_TXD1	1
GND	2
T232_RXD1	3

2.4.14 Data Link LED indicator (JTXLED1)



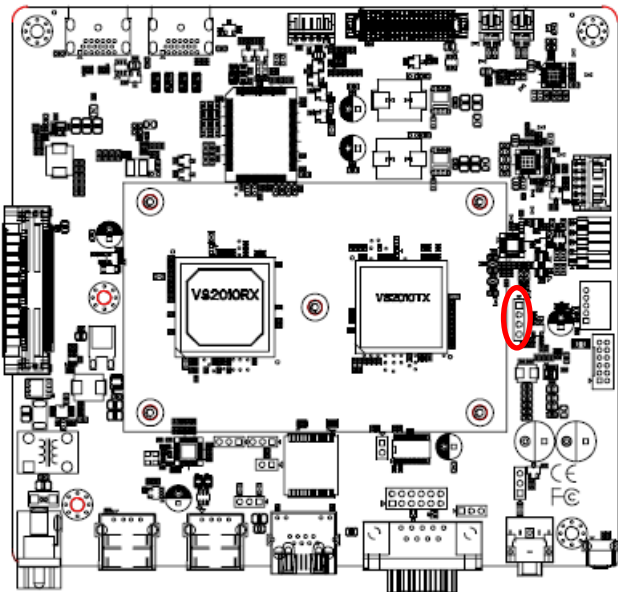
Signal	PIN
TX_LINK_LED	1
+3.3VSB	2
TX_HDCP_LED	3

2.4.15 Debug connector (JTHI2C1)



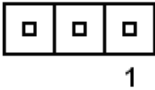
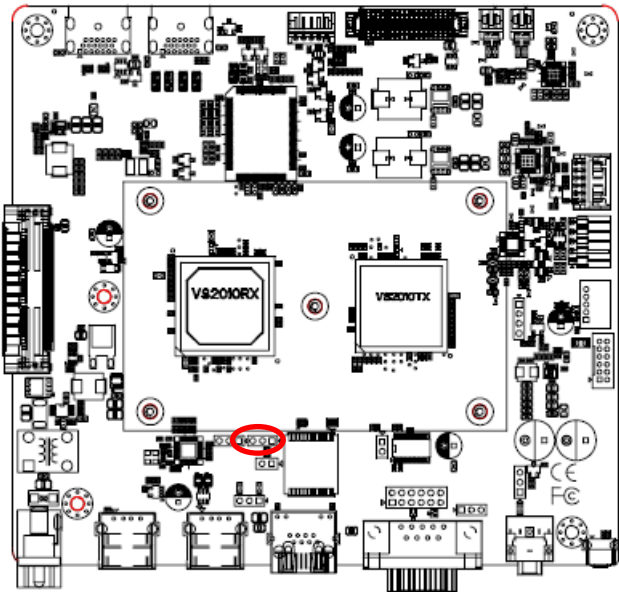
Signal	PIN
TDBG_RX	1
GND	2
TDBG_TX	3

2.4.16 I2C connector (JTHI2C2)



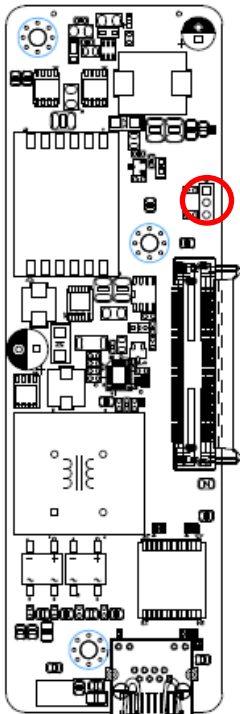
Signal	PIN
GND	1
HOST_SDA	2
+3.3VSB	3
HOST_SCL	4

2.4.17 Debug connector (JRHI2C1)



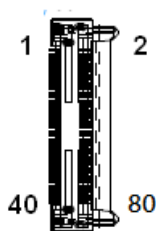
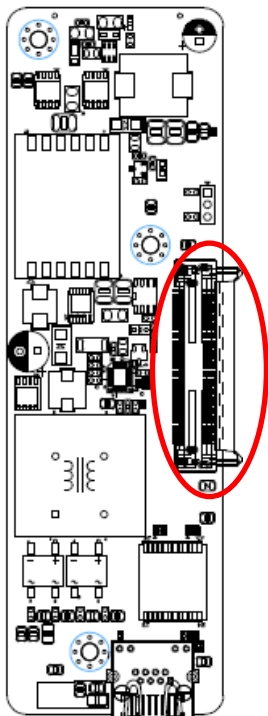
Signal	PIN
RDBG_RX	1
GND	2
RDBG_TX	3

2.4.18 Data Link LED indicator (DAJRXLED1)



Signal	PIN
RXLAN_LINK_R	1
+3.3VSB	2
RXLAN_HDCP_R	3

2.4.19 B2B connector (DAB2B1)



Signal	PIN	PIN	Signal
+12V	1	41	+12V
+12V	2	42	+12V
GND	3	43	GND
+1.8VSB	4	44	+3.3VSB
+1.8VSB	5	45	+3.3VSB
GND	6	46	GND
NC	7	47	NC
NC	8	48	NC
NC	9	49	NC
NC	10	50	NC

Signal	PIN	PIN	Signal
NC	11	51	NC
NC	12	52	NC
NC	13	53	NC
NC	14	54	NC
NC	15	55	NC
NC	16	56	NC
NC	17	57	NC
NC	18	58	NC
NC	19	59	NC
NC	20	60	NC
NC	21	61	NC
NC	22	62	NC
NC	23	63	NC
NC	24	64	NC
NC	25	65	NC
NC	26	66	NC
NC	27	67	NC
DASNK_XFRMR_3N	28	68	NC
DASNK_XFRMR_3P	29	69	NC
GND	30	70	NC
DASNK_XFRMR_2N	31	71	NC
DASNK_XFRMR_2P	32	72	NC
GND	33	73	NC
DASNK_XFRMR_1N	34	74	NC
DASNK_XFRMR_1P	35	75	NC
GND	36	76	NC
DASNK_XFRMR_0N	37	77	GND
DASNK_XFRMR_0P	38	78	DARX_LINK_LED
GND	39	79	DARX_HDCP_LED
GND	40	80	GND

