

E6-EVBB

COM Express Evaluation board

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Packing List

Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
E6-EVBB	1
I/O Shield	1
SATA cable	1
Standoff Screw	4

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

About this Document

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the GIGAIPC.com for the latest version of this document.

Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. Make sure the power source matches the power rating of the device.
3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
4. Always completely disconnect the power before working on the system's hardware.
5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
6. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
7. Always disconnect this device from any AC supply before cleaning.
8. While cleaning, use a damp cloth instead of liquid or spray detergents.
9. Make sure the device is installed near a power outlet and is easily accessible.
10. Keep this device away from humidity.
11. Place the device on a solid surface during installation to prevent falls
12. Do not cover the openings on the device to ensure optimal heat dissipation.

13. Watch out for high temperatures when the system is running.
14. Do not touch the heat sink or heat spreader when the system is running
15. Never pour any liquid into the openings. This could cause fire or electric shock.
16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.
17. If any of the following situations arises, please the contact our service personnel:
 - i. Damaged power cord or plug
 - ii. Liquid intrusion to the device
 - iii. Exposure to moisture
 - iv. Device is not working as expected or in a manner as described in this manual
 - v. The device is dropped or damaged
 - vi. Any obvious signs of damage displayed on the device
18. **DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.**

FCC Statement

Warning!



This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

GIGAIPC Main Board/ Daughter Board/ Backplane

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板 及其电 子组件	○	○	○	○	○	○
外部信号 连接器 及线材	○	○	○	○	○	○

○: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。
 X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。
 备注: 此产品所标示之环保使用期限, 系指在一般正常使用状况下。

China RoHS Requirement (EN)

Poisonous or Hazardous Substances or Elements in Products GIGAIPC Main Board/ Daughter Board/ Backplane

Component	Poisonous or Hazardous Substances or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
PCB & Other Components	○	○	○	○	○	○
Wires & Connectors for External Connections	○	○	○	○	○	○
<p>○ : The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement.</p> <p>X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement.</p> <p>Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only</p>						

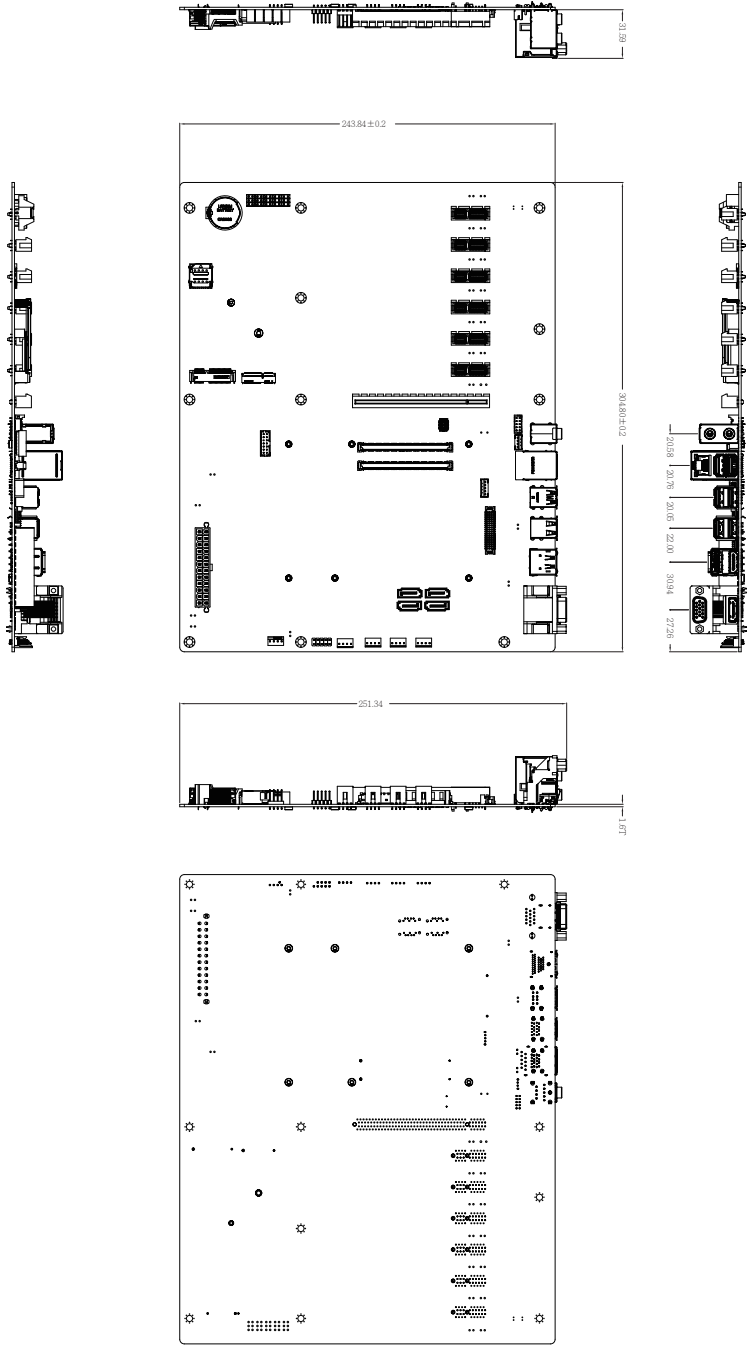
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Chapter 1

Chapter 1 - Product Specifications



1.1 Specifications

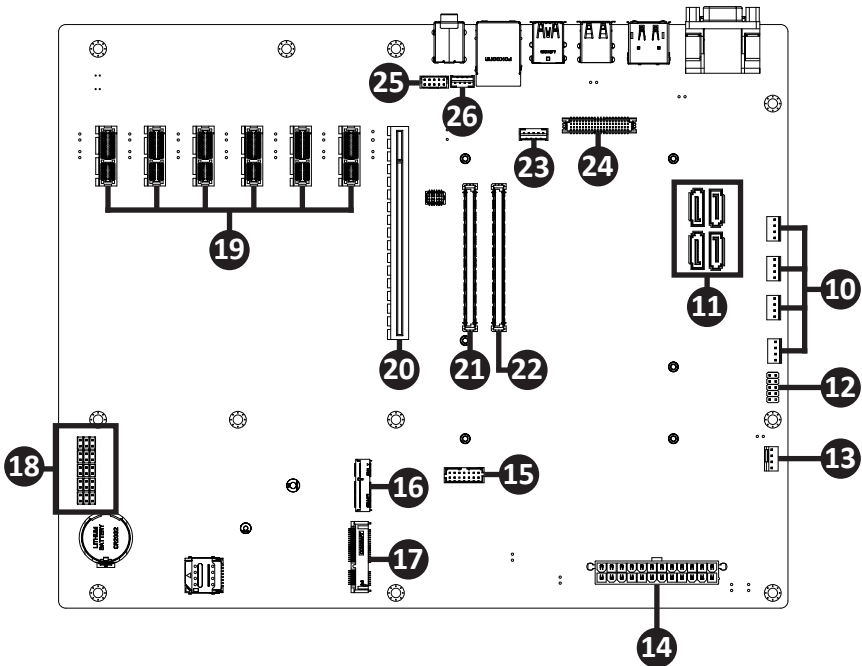
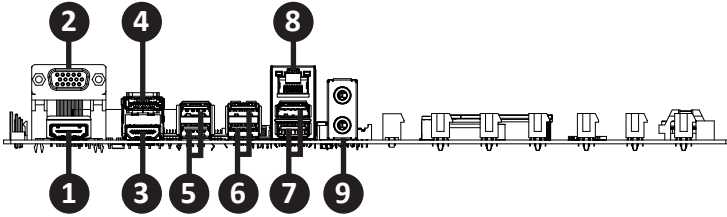
Evaluation Board	E6-EVBB (CICC2)
Form Factor	ATX form factor 305W x 244D (mm)
Compatible models	PICMG COM Express® R3.0 Type 6 pinout compatible
Ethernet	1 x GbE LAN Port
Graphics	Integrated Graphics Processor: 2 x HDMI 2.0 port 1 x DP port 1 x LVDS port 1 x VGA port (3 independent display outputs)
Audio	Realtek® ALC897
Storage	4 x SATA 6Gb/s Ports
Expansion Slots	1 x PCIe x16 6 x PCIe x1 1 x 2230 M.2 E-Key 1 x Full-size Mini PCIe with SIM slot
Internal I/O	1 x 24 pin ATX main power connector 4 x SATA Power connectors 1 x System fan header 1 x Front panel header 1 x Front panel audio header 1 x Backlight Control header 1 x Speaker out header 1 x TPM header 1 x Buzzer
Rear I/O	2 x Audio Jacks (Line out, Mic in) 2 x HDMI 1 x VGA 1 x DP 1 x RJ45 LAN Port 4 x USB 3.2 Gen 1 2 x USB 2.0

Evaluation Board	E6-EVBB (CICC2)
Packing Content	Carton size: 679 x 430 x 399 (mm) Packing Capacity: 10pcs Single Box size: 360 x 330 x 80 (mm) Including: IO Shield x 1 (P/N: 12AIO-CICC20-00R) SATA Cable x 1 (P/N: 12CF1-2SAT1B-01R) Standoff Screw x 4 (P/N: 25KSC-720020-G0R)
Operating Properties	Operating temperature: 0°C to 60°C Operating humidity: 0-90% (non-condensing) Non-operating temperature: -40°C to 85°C Non-operating humidity: 0%-95% (non-condensing)

Chapter 2

Chapter 2 – Hardware Information

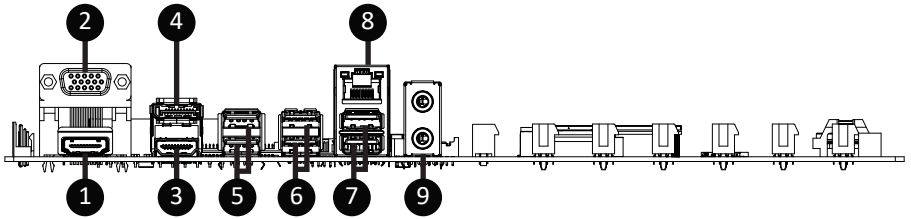
2.1 Jumpers and Connectors



No	Code	Description
1	HDMI_1	HDMI connector
2	VGA	D-SUB connector
3	HDMI2_DP	HDMI connector
4		Display port
5	USB20	USB 2.0 connector
6	USB32	USB 3.2 Gen 1 connector
7	USB32_LAN	USB 3.2 Gen 1 connector
8		RJ45 LAN Port
9	AUDIO	Line out Port (Green) Mic in Port (Pink)
10	SATAPWR, SATAPWR1, SATAPWR2, SATAPWR3,	SATA power connector
11	SATA0, SATA1, SATA2, SATA3	SATA 6Gb/s connector
12	SYS_PANEL	Front panel header
13	SYS_FAN	System fan connector
14	ATX	24-pin ATX main power connector
15	TPM	Trusted platform module connector
16	M2E	M.2 Slot, 2230 E-Key
17	MPCIE	Mini PCIE connector
18	FUNC_PIN, FUNC_PIN1, FUNC_PIN2, FUNC_PIN3, FUNC_PIN4,	Reserved pins

No	Code	Description
19	PCIEX1_1, PCIEX1_2, PCIEX1_3, PCIEX1_4, PCIEX1_5, PCIEX1_6,	PCIe x1 (Gen3 x1 bus) slot
20	PCIEX16	PCIe x16 (Gen3 x16 bus) slot
21	CEP_M	COM Express connector ROW A/B
22		COM Express connector ROW C/D
23	BKL_CN	Backlight Control header
24	LVDS	LVDS connector
25	FP_AUDIO	Front panel audio header
26	SPKR	Speaker out connector

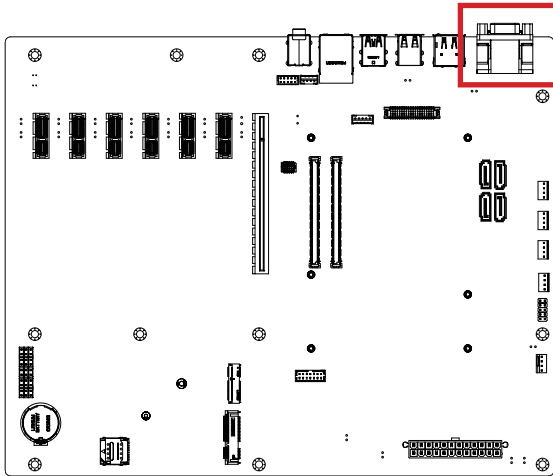
2.1.1 Rear I/O Connector



No	Code	Description
1	HDMI_1	HDMI connector
2	VGA	D-SUB connector
3	HDMI2_DP	HDMI connector
4		Display port
5	USB20	USB 2.0 connector
6	USB32	USB 3.2 Gen 1 connector
7	USB32_LAN	USB 3.2 Gen 1 connector
8		RJ45 LAN Port
9	AUDIO	Line out Port (Green) Mic in Port (Pink)

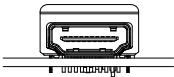
2.2.1 HDMI_1 (HDMI connector)

1



HDMI 1

HDMI Connector



Connector PN

1165-2CG04-24P

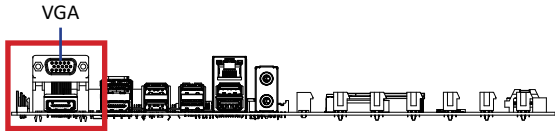
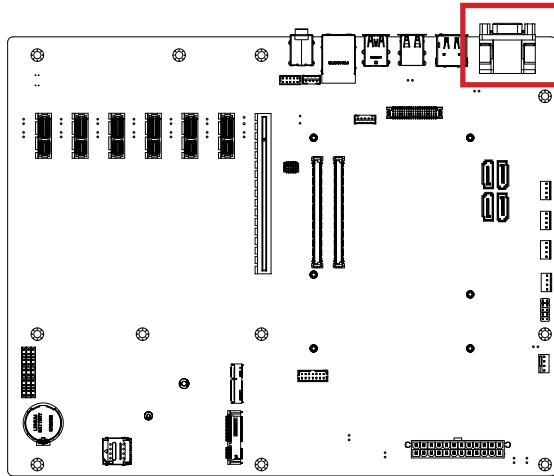
Vendor

TCONN

Pin No.	Definition	Pin No.	Definition
1	TX2p	11	GND
2	GND	12	CLKn
3	TX2n	13	NC
4	TX1p	14	NC
5	GND	15	SCL
6	TX1n	16	SDA
7	TX0p	17	GND
8	GND	18	5V
9	TX0n	19	Hot Plug Detect
10	CLKp		

2.2.2 VGA (D-sub connector)

2



D-sub Connector



Connector PN

DV11261-25W9-4F

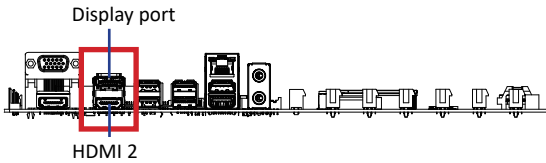
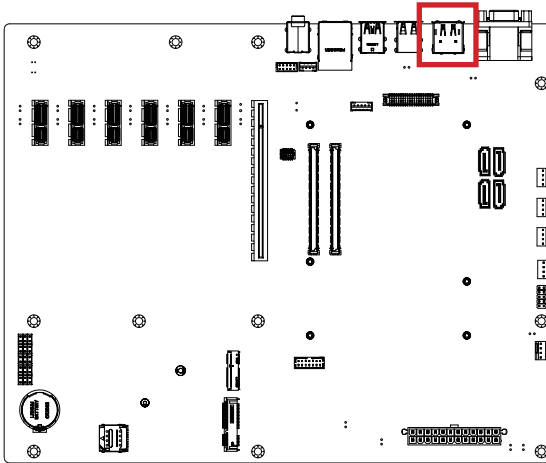
Vendor

FOXCONN

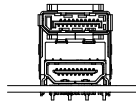
Pin No.	Definition	Pin No.	Definition
1	Red	9	5V
2	Green	10	GND
3	Blue	11	NC
4	NC	12	DDCSDA
5	GND	13	HSYNC
6	GND	14	VSYNC
7	GND	15	DDCSCL
8	GND		

2.2.3 HDMI2_DP (HDMI + Display port connector)

3 4



HDMI + DP Connector

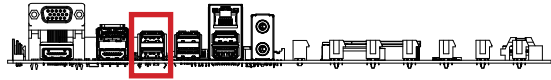
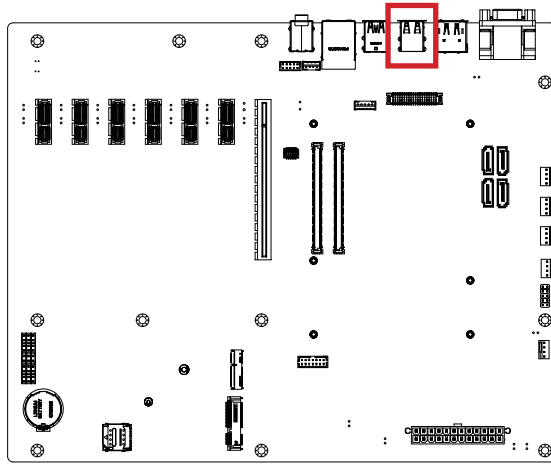


HDMI Connector			
Pin No.	Definition	Pin No.	Definition
1	TX2p	11	GND
2	GND	12	CLKn
3	TX2n	13	NC
4	TX1p	14	NC
5	GND	15	SCL
6	TX1n	16	SDA
7	TX0p	17	GND
8	GND	18	5V
9	TX0n	19	Hot Plug Detect
10	CLKp		

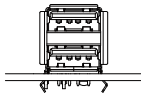
Display port Connector			
Pin No.	Definition	Pin No.	Definition
1	TX0p	11	GND
2	GND	12	TX3n
3	TX0n	13	GND
4	TX1p	14	GND
5	GND	15	AUXp
6	TX1n	16	GND
7	TX2p	17	AUXn
8	GND	18	Hot Plug Detect
9	TX2n	19	3.3V
10	TX3p	20	3.3V

2.2.4 USB20 (USB 2.0 connector)

5



USB 2.0 Connector



Connector PN

UB1112C-8FDE-4F

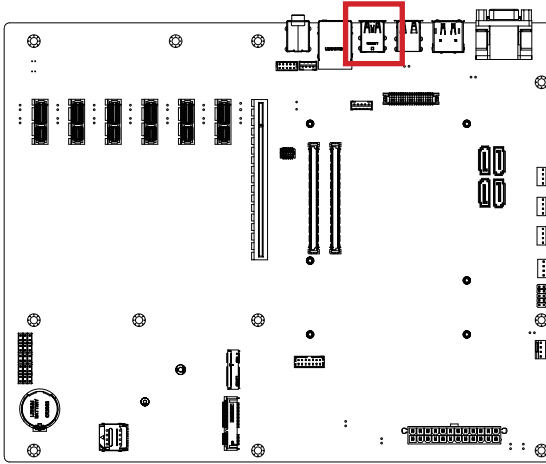
Vendor

FOXCONN

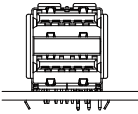
Pin No.	Definition
1	5V
2	5V
3	P5n
4	P4n
5	P5p
6	P4p
7	GND
8	GND

2.2.5 USB32 (USB 3.2 Gen 1 connector)

6



USB 3.2 Gen 1 connector



Connector PN

Vendor

UEA11121-8FS6-4F

FOXCONN

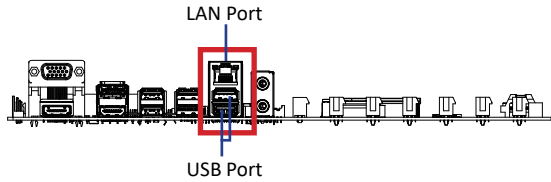
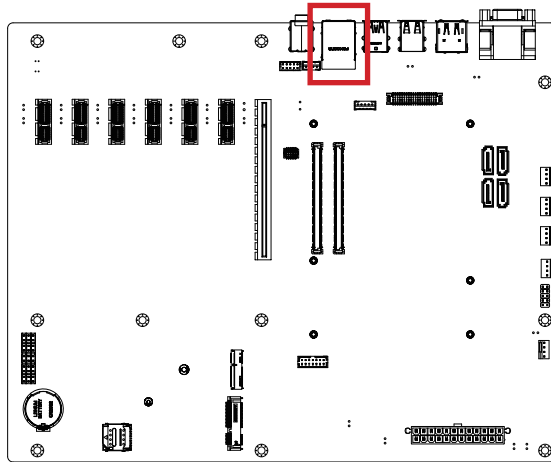
ABA-USB-079-K01

LOTES

Pin No.	Definition	Pin No.	Definition
1	5V	10	5V
2	D1n	11	D0n
3	D1p	12	D0p
4	GND	13	GND
5	USB3_RX1n	14	USB3_RX2n
6	USB3_RX1p	15	USB3_RX2p
7	GND	16	GND
8	USB3_TX1n	17	USB3_TX2n
9	USB3_TX1p	18	USB3_TX2p

2.2.6 USB2_LAN (RJ45 LAN + USB 3.2 Gen 1 connector)

7 8



USB & LAN Connector



USB Connector

Pin No.	Definition	Pin No.	Definition
1	5V	10	5V
2	D1n	11	D0n
3	D1p	12	D0p
4	GND	13	GND
5	USB3_RX1n	14	USB3_RX2n
6	USB3_RX1p	15	USB3_RX2p
7	GND	16	GND
8	USB3_TX1n	17	USB3_TX2n
9	USB3_TX1p	18	USB3_TX2p

LAN Connector

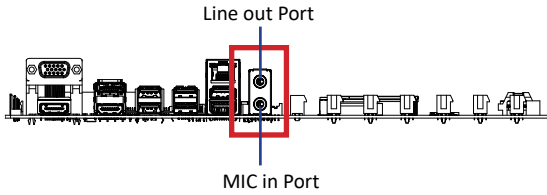
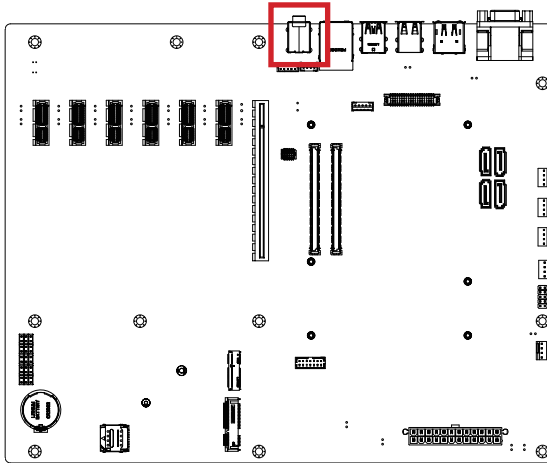
Pin No.	Definition	Pin No.	Definition
1	TX1+	4	TX3+
2	TX1-	5	TX3-
3	TX2+	7	TX4+
6	TX2-	8	TX4-

State	Description
Orange On	1Gbps data rate
Green On	100Mbps data rate
Off	10Mbps data rate

Connector PN	Vendor
JFM38U1B-B31G-4F	FOXCONN

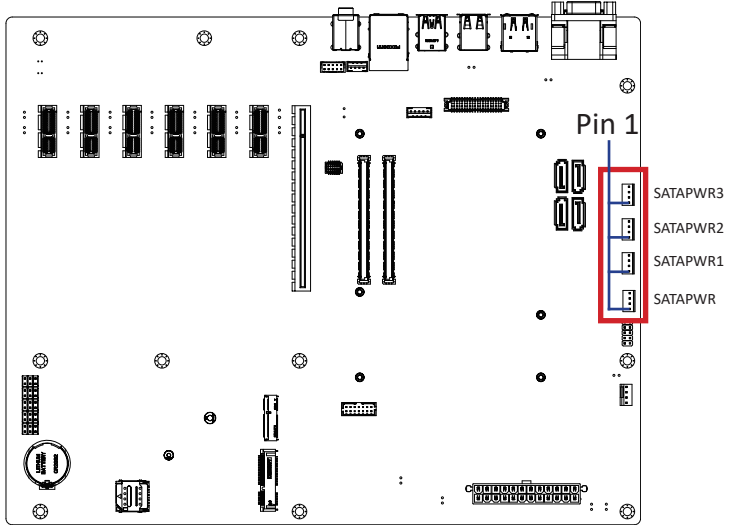
2.2.7 AUDIO (Line out + MIC in connector)

9



2.2.8 SATAPWR, SATAPWR1, SATAPWR2, SATAPWR3 (SATA power connector)

10



Hard Disk Power Connector



Pin No.	Definition
1	12V
2	GND
3	GND
4	5V

Connector PN

743-91-045W00

Vendor

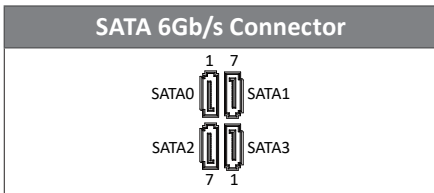
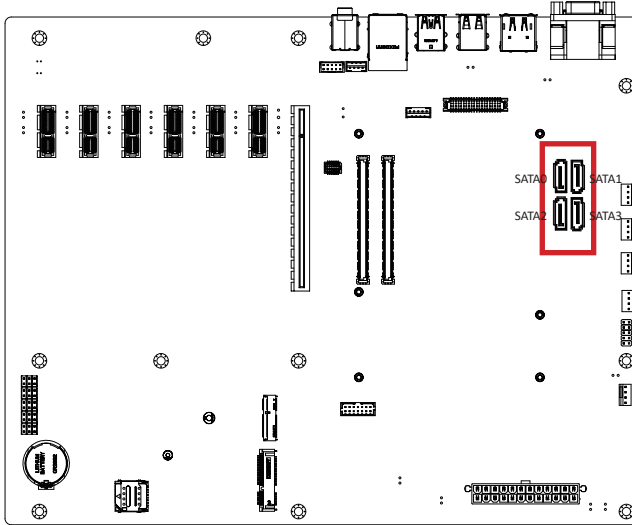
PINREX

Connector type

1x4pin header, pitch 2.54mm

2.2.9 SATA0, SATA1, SATA2, SATA3 (SATA 6Gb/s connector)

11

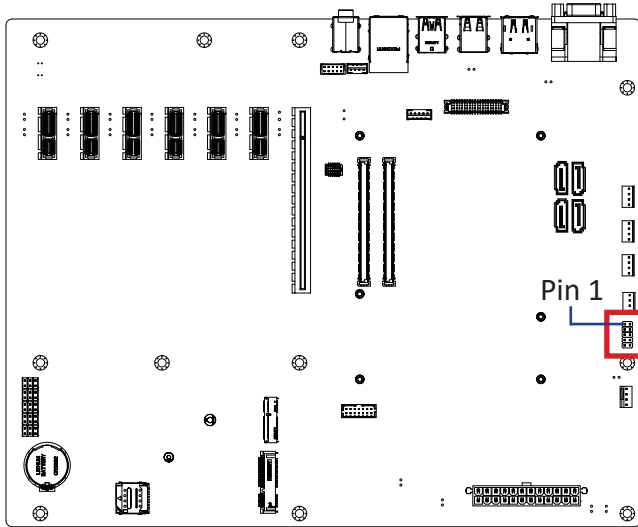


Connector PN	Vendor
WAT3M-07A1G3BU4W	WINWIN
ABA-SAT-054-S15	LOTES

Pin No.	Definition
1	GND
2	TXp
3	TXn
4	GND
5	RXn
6	RXp
7	GND

2.2.10 SYS_PANEL (Front panel header)

12



System Panel Header



Pin No.	Definition
1	HD-P
2	MPD-P
3	HD-N
4	MPD-N
5	GND
6	POWER-ON
7	Reset
8	GND
9	Reserved
10	NC

Connector PN

210-92-05GW5W

Vendor

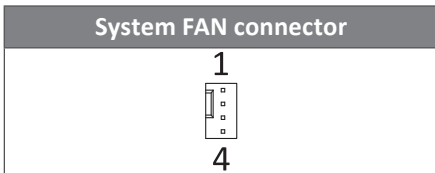
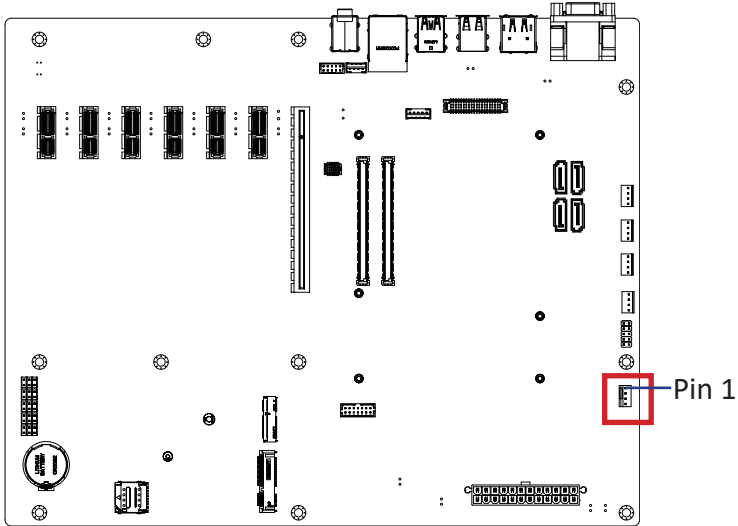
PINREX

Connector type

2x5pin header, pitch 2.54mm

2.2.11 SYS_FAN (System fan connector)

13



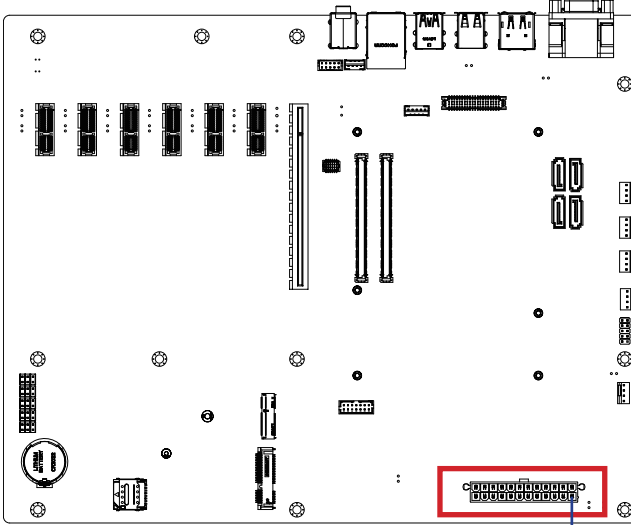
Pin No.	Definition
1	GND
2	12V
3	Detect
4	Speed Control

Connector PN	Vendor
744-81-045W11	PINREX
WF04R22WJQ195	HORNGTONG

Connector type
1x4pin header, pitch 2.54mm

2.2.12 ATX (24-pin ATX main power connector)

14



Pin 1

ATX power Connector



Pin No.	Definition	Pin No.	Definition
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	5V	16	PS_ON
5	GND	17	GND
6	5V	18	GND
7	GND	19	GND
8	Power Good	20	NC
9	5VSB	21	5V
10	12V	22	5V
11	12V	23	5V
12	3.3V	24	GND

Connector PN

740-96-245B70

Vendor

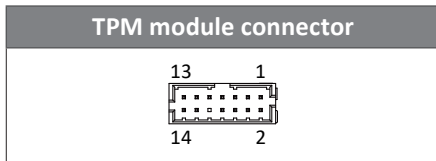
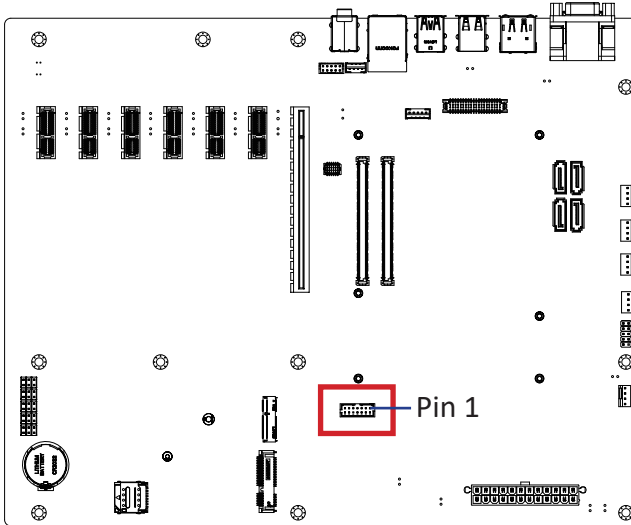
PINREX

Connector type

2x12pin connector, pitch 4.2mm

2.2.13 TPM (Trusted platform module connector)

15



Pin No.	Definition
1	Clock
2	3.3V
3	Reset
4	3.3V
5	SDO
6	IRQ_SERIAL
7	SDIN
8	NC
9	NC
10	NC

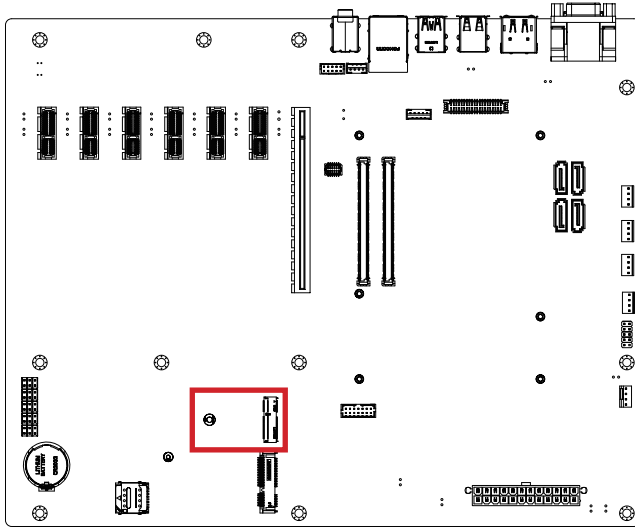
Pin No.	Definition
11	NC
12	GND
13	CS
14	GND

Connector PN	Vendor
52M-90-14GBE7	PINREX
LCB25-11424S01C-12	LIONCONN

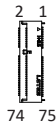
Connector type
2x7pin header, pitch 2.0mm

2.2.14 M2E (M.2 Slot, 2230 E-key)

16



M.2 E Key Connector



Pin No.	Definition	Pin No.	Definition
1	GND	2	3.3V
3	D1p	4	3.3V
5	D1n	6	NC
7	GND	8	NC
9	NC	10	NC
11	NC	12	NC
13	GND	14	NC
15	NC	16	NC
17	NC	18	GND
19	GND	20	NC
21	NC	22	NC
23	NC		

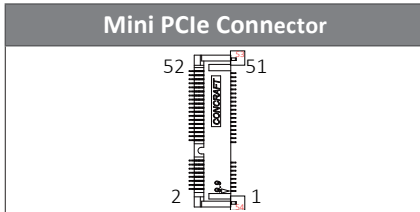
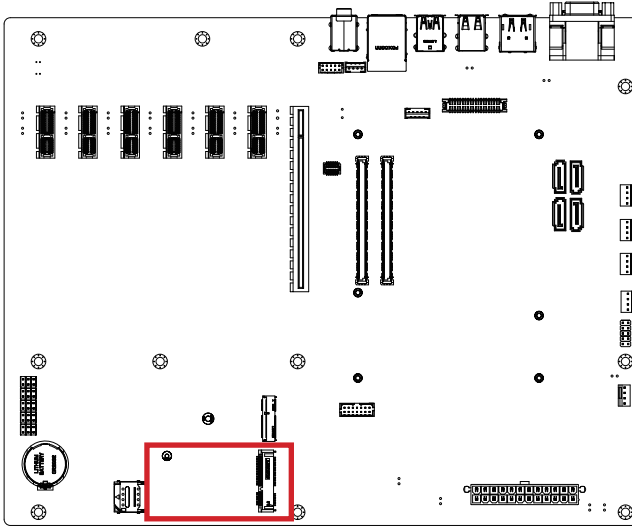
Pin No.	Definition	Pin No.	Definition
33	GND	32	NC
35	PCIE_TXp	34	NC
37	PCIE_TXn	36	NC

39	GND	38	NC
41	PCIE_RXp	40	NC
43	PCIE_RXn	42	NC
45	GND	44	NC
47	PCIE CLOCKp	46	NC
49	PCIE CLOCKn	48	NC
51	GND	50	SUSCLK
53	PCIE Clock Request	52	PCIRST
55	PCIE wake up	54	BT_Disable
57	GND	56	WLAN_DISABLE
59	NC	58	NC
61	NC	60	NC
63	GND	62	NC
65	NC	64	NC
67	NC	66	PERST
69	GND	68	NC
71	NC	70	NC
73	NC	72	3.3V
75	GND	74	3.3V

Connector PN	Vendor
80152-8521	BELLWETHER
2E0BC21-S85BE-LH	FOXCONN
APCI0095-P002A	LOTES

2.2.15 MPCIE (Mini PCIE connector)

17



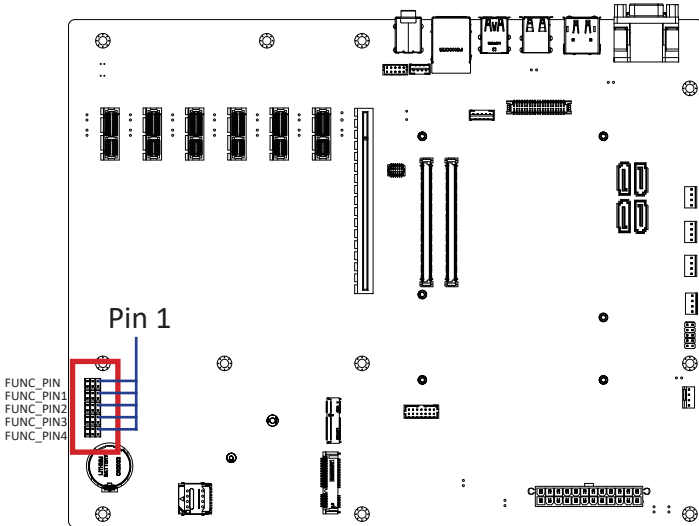
Pin No.	Definition	Pin No.	Definition
1	PCIE WAKE	2	3.3V
3	NC	4	GND
5	NC	6	NC
7	PCIE Clock Request	8	SIM VCC
9	GND	10	SIM DATA
11	PCIE Clock n	12	SIM Clock
13	PCIE Clock p	14	SIM Reset
15	GND	16	UIM VPP3
17	NC	18	GND
19	NC	20	WLAN_DISABLE
21	GND	22	Reset

Pin No.	Definition	Pin No.	Definition
23	PCIE RXn	24	3.3V
25	PCIE RXp	26	GND
27	GND	28	NC
29	GND	30	SMB Clock
31	PCIE TXn	32	SMB DATA
33	PCIE TXp	34	GND
35	GND	36	USB Dn
37	GND	38	USB Dp
39	3.3V	40	GND
41	3.3V	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	NC
49	NC	50	GND
51	NC	52	3.3V
53	GND	54	GND

Connector PN	Vendor
AS0B221-S99Q-7H	FOXCONN

2.2.16 FUNC_PIN, FUNC_PIN1, FUNC_PIN2, FUNC_PIN3, FUNC_PIN4 (Reserved pins)

18



Function pin Header



Connector PN

210-92-03GB01

Vendor

PINREX

PH06R53BAZ000

HORNGTONG

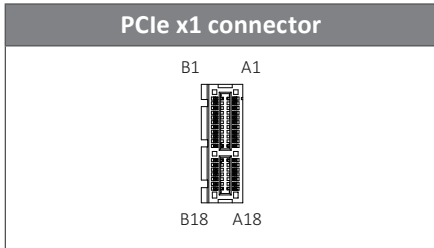
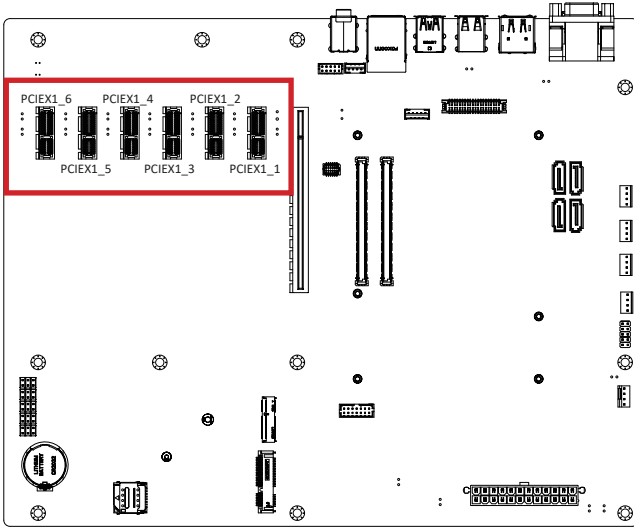
Connector type

2x3pin header, pitch 2.54mm

Pin No.	Function pin	Function pin1	Function pin2	Function pin3	Function pin4
1	TPM_PP	I2C_CK	HDA_SDIN1	THRMTrip#	ESPI_ALERT0
2	BIOS_DIS0	SER0_TX	SLEEP#	-USB_OC4	ESPI_EX#
3	SPI_PWR	I2C_DAT	HDA_SDIN2	THRM#	ESPI_ALERT1
4	BIOS_DIS1	SER0_RX	LED#	GBE_SDP	SER1_TX
5	PCH_SLP_S5#	WAKE1#	PEG_LANE_RV#	eDP_HPD	ESPI_CS1
6	WDT	BATLOW#	GBE_CTREF	USB0_HOST_PRSENT	SER1_RX

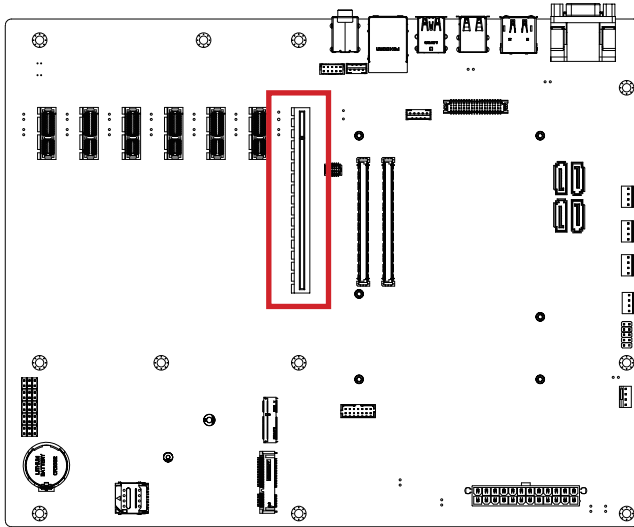
2.2.17 PCIEX1_1, PCIEX1_2, PCIEX1_3, PCIEX1_4, PCIEX1_5, PCIEX1_6 (PCIe x1 (Gen 3x1 bus) slot)

19

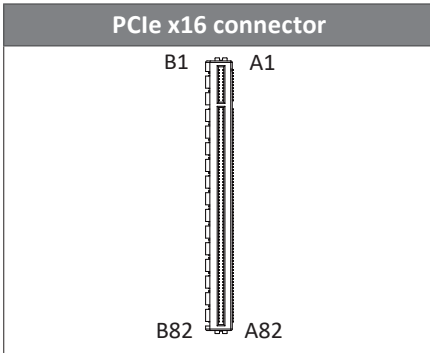


2.2.18 PCIEX16 (PCIe x16 (Gen 3x16 bus) slot)

20

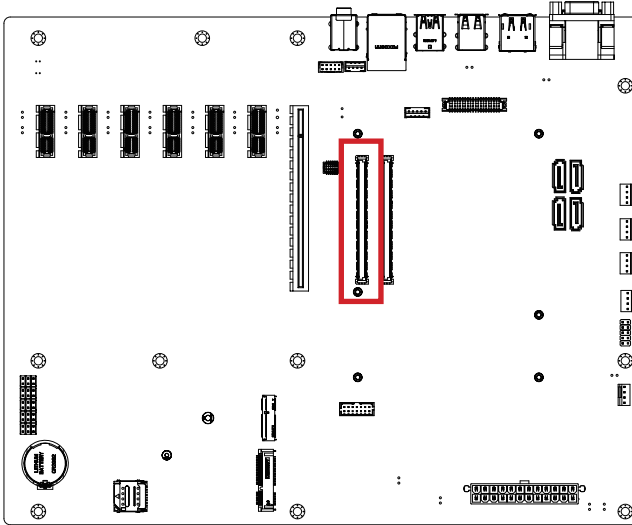


PCIe x16 connector



2.2.19 COM Express connector ROW A/B

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Pin No.	Definition	Pin No.	Definition
A1	GND (FIXED)	B1	GND (FIXED)
A2	GBE0_MDI3-	B2	GBE0_ACT#
A3	GBE0_MDI3+	B3	LPC_FRAME#/ESPI_CS0#
A4	GBE0_LNIK100#	B4	LPC_ADO/ESPI_IO_0
A5	GBE0_LNIK1000#	B5	LPC_AD1/ESPI_IO_1
A6	GBE0_MDI2-	B6	LPC_AD2/ESPI_IO_2
A7	GBE0_MDI2+	B7	LPC_AD3/ESPI_IO_3
A8	GBE0_LINK#	B8	LPC_DRQ0#/ESPI_ALERT0#
A9	GBE0_MDI1-	B9	LPC_DRQ1#/ESPI_ALERT1#
A10	GBE0_MDI1+	B10	LPC_CLK/ESPI_CK
A11	GND (FIXED)	B11	GND (FIXED)
A12	GBE0_MDI0-	B12	PWRBTN#
A13	GBE0_MDI0+	B13	SMB_CK
A14	GBE0_CTREF	B14	SMB_DATA
A15	SUS_S3#	B15	SMB_ALERT#

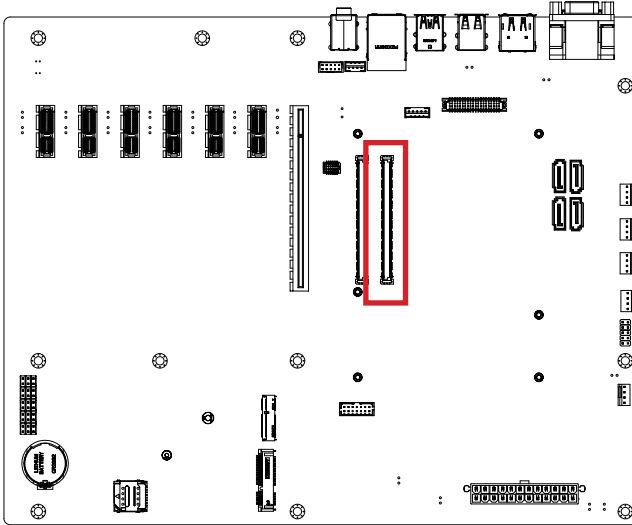
Pin No.	Definition	Pin No.	Definition
A16	SATA0_TX+	B16	SATA1_TX+
A17	SATA0_TX-	B17	SATA1_TX-
A18	SUS_S4#	B18	SUS_STAT#/ESPI_RESET#
A19	SATA0_RX+	B19	SATA1_RX+
A20	SATA0_RX-	B20	SATA1_RX-
A21	GND (FIXED)	B21	GND (FIXED)
A22	SATA2_TX+	B22	SATA3_TX+
A23	SATA2_TX-	B23	SATA3_TX-
A24	SUS_S5#	B24	PWR_OK
A25	SATA2_RX+	B25	SATA3_RX+
A26	SATA2_RX-	B26	SATA3_RX-
A27	BATLOW#	B27	WDT
A28	(S)ATA_ACT#	B28	HDA_SDIN2
A29	HDA_SYNC	B29	HDA_SDIN1
A30	HDA_RST#	B30	HDA_SDIN0
A31	GND (FIXED)	B31	GND (FIXED)
A32	HDA_BITCLK	B32	SPKR
A33	HDA_SDOUT	B33	I2C_CK
A34	BIOS_DIS0#/ESPI_SAFS	B34	I2C_DAT
A35	THRMTRIP#	B35	THRM#
A36	USB6-	B36	USB7-
A37	USB6+	B37	USB7+
A38	USB_6_7_OC#	B38	USB_4_5_OC#
A39	USB4-	B39	USB5-
A40	USB4+	B40	USB5+
A41	GND (FIXED)	B41	GND (FIXED)
A42	USB2-	B42	USB3-
A43	USB2+	B43	USB3+
A44	USB_2_3_OC#	B44	USB_0_1_OC#
A45	USB0-	B45	USB1-
A46	USB0+	B46	USB1+
A47	VCC_RTC	B47	ESPI_EN#
A48	RSVD	B48	USB0_HOST_PRSNNT
A49	GBE0_SDP	B49	SYS_RESET#
A50	LPC_SERIRQ/ESPI_CS1#	B50	CB_RESET#
A51	GND (FIXED)	B51	GND (FIXED)
A52	PCIE_TX5+	B52	PCIE_RX5+
A53	PCIE_TX5-	B53	PCIE_RX5-
A54	GPIO	B54	GPO1
A55	PCIE_TX4+	B55	PCIE_RX4+

Pin No.	Definition	Pin No.	Definition
A56	PCIE_TX4-	B56	PCIE_RX4-
A57	GND	B57	GPO2
A58	PCIE_TX3+	B58	PCIE_RX3+
A59	PCIE_TX3-	B59	PCIE_RX3-
A60	GND (FIXED)	B60	GND (FIXED)
A61	PCIE_TX2+	B61	PCIE_RX2+
A62	PCIE_TX2-	B62	PCIE_RX2-
A63	GPI1	B63	GPO3
A64	PCIE_TX1+	B64	PCIE_RX1+
A65	PCIE_TX1-	B65	PCIE_RX1-
A66	GND	B66	WAKE0#
A67	GPI2	B67	WAKE1#
A68	PCIE_TX0+	B68	PCIE_RX0+
A69	PCIE_TX0-	B69	PCIE_RX0-
A70	GND (FIXED)	B70	GND (FIXED)
A71	LVDS_A0+	B71	LVDS_B0+
A72	LVDS_A0-	B72	LVDS_B0-
A73	LVDS_A1+	B73	LVDS_B1+
A74	LVDS_A1-	B74	LVDS_B1-
A75	LVDS_A2+	B75	LVDS_B2+
A76	LVDS_A2-	B76	LVDS_B2-
A77	LVDS_VDD_EN	B77	LVDS_B3+
A78	LVDS_A3+	B78	LVDS_B3-
A79	LVDS_A3-	B79	LVDS_BKLT_EN
A80	GND (FIXED)	B80	GND (FIXED)
A81	LVDS_A_CK+	B81	LVDS_B_CK+
A82	LVDS_A_CK-	B82	LVDS_B_CK-
A83	LVDS_I2C_CK	B83	LVDS_BKLT_CTRL
A84	LVDS_I2C_DAT	B84	VCC_5V_SBY
A85	GPI3	B85	VCC_5V_SBY
A86	RSVD	B86	VCC_5V_SBY
A87	eDP_HPD	B87	VCC_5V_SBY
A88	PCIE_CLK_REF+	B88	BIOS_DIS1#
A89	PCIE_CLK_REF-	B89	VGA_RED
A90	GND (FIXED)	B90	GND (FIXED)
A91	SPI_POWER	B91	VGA_GRN
A92	SPI_MISO	B92	VGA_BLU
A93	GPO0	B93	VGA_HSYNC
A94	SPI_CLK	B94	VGA_VSYNC
A95	SPI_MOSI	B95	VGA_I2C_CK

Pin No.	Definition	Pin No.	Definition
A96	TPM_PP	B96	VGA_I2C_DAT
A97	TYPE10#	B97	SPI_CS#
A98	SERO_TX	B98	RSVD
A99	SERO_RX	B99	RSVD
A100	GND (FIXED)	B100	GND (FIXED)
A101	SER1_TX	B101	FAN_PWMOUT
A102	SER1_RX	B102	FAN_TACHIN
A103	LID#	B103	SLEEP#
A104	VCC_12V	B104	VCC_12V
A105	VCC_12V	B105	VCC_12V
A106	VCC_12V	B106	VCC_12V
A107	VCC_12V	B107	VCC_12V
A108	VCC_12V	B108	VCC_12V
A109	VCC_12V	B109	VCC_12V
A110	GND (FIXED)	B110	GND (FIXED)

2.2.20 COM Express connector ROW C/D

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Pin No.	Definition	Pin No.	Definition
C1	GND (FIXED)	D1	GND (FIXED)
C2	GND	D2	GND
C3	USB_SSRX0-	D3	USB_SSTX0-
C4	USB_SSRX0+	D4	USB_SSTX0+
C5	GND	D5	GND
C6	USB_SSRX1-	D6	USB_SSTX1-
C7	USB_SSRX1+	D7	USB_SSTX1+
C8	GND	D8	GND
C9	USB_SSRX2-	D9	USB_SSTX2-
C10	USB_SSRX2+	D10	USB_SSTX2+
C11	GND (FIXED)	D11	GND (FIXED)
C12	USB_SSRX3-	D12	USB_SSTX3-
C13	USB_SSRX3+	D13	USB_SSTX3+
C14	GND	D14	GND
C15	DDI1_PAIR6+	D15	DDI1_CTRLDATA_AUX-

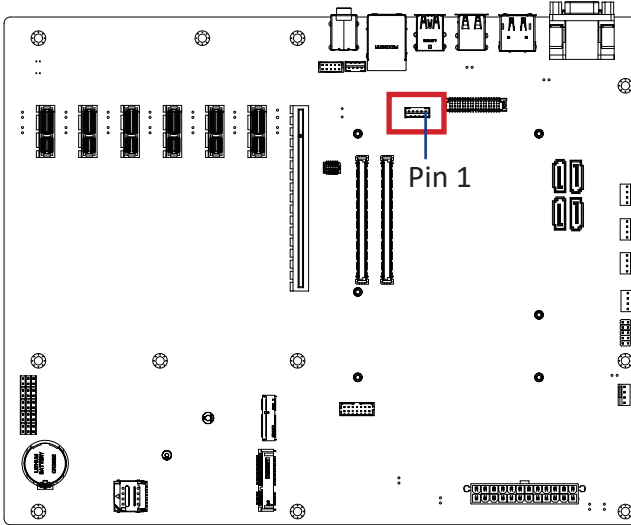
Pin No.	Definition	Pin No.	Definition
C16	DDI1_PAIR6-	D16	DDI1_CTRLCLK_AUX+
C17	RSVD	D17	RSVD
C18	RSVD	D18	RSVD
C19	PCIE_RX6+	D19	PCIE_TX6+
C20	PCIE_RX6-	D20	PCIE_TX6-
C21	GND (FIXED)	D21	GND (FIXED)
C22	PCIE_RX7+	D22	PCIE_TX7+
C23	PCIE_RX7-	D23	PCIE_TX7-
C24	DDI1_HPD	D24	RSVD
C25	DDI1_PAIR4+	D25	RSVD
C26	DDI1_PAIR4-	D26	DDI1_PAIR0+
C27	RSVD	D27	DDI1_PAIR0-
C28	RSVD	D28	RSVD
C29	DDI1_PAIR5+	D29	DDI1_PAIR1+
C30	DDI1_PAIR5-	D30	DDI1_PAIR1-
C31	GND (FIXED)	D31	GND (FIXED)
C32	DDI2_CTRLCLK_AUX+	D32	DDI1_PAIR2+
C33	DDI2_CTRLDATA_AUX-	D33	DDI1_PAIR2-
C34	DDI2_DDC_AUX_SEL	D34	DDI1_DDC_AUX_SEL
C35	RSVD	D35	RSVD
C36	DDI3_CTRLCLK_AUX+	D36	DDI1_PAIR3+
C37	DDI3_CTRLDATA_AUX-	D37	DDI1_PAIR3-
C38	DDI3_DDC_AUX_SEL	D38	RSVD
C39	DDI3_PAIR0+	D39	DDI2_PAIR0+
C40	DDI3_PAIR0-	D40	DDI2_PAIR0-
C41	GND (FIXED)	D41	GND (FIXED)
C42	DDI3_PAIR1+	D42	DDI2_PAIR1+
C43	DDI3_PAIR1-	D43	DDI2_PAIR1-
C44	DDI3_HPD	D44	DDI2_HPD
C45	RSVD	D45	RSVD
C46	DDI3_PAIR2+	D46	DDI2_PAIR2+
C47	DDI3_PAIR2-	D47	DDI2_PAIR2-
C48	RSVD	D48	RSVD
C49	DDI3_PAIR3+	D49	DDI2_PAIR3+
C50	DDI3_PAIR3-	D50	DDI2_PAIR3-
C51	GND (FIXED)	D51	GND (FIXED)
C52	PEG_RX0+	D52	PEG_TX0+
C53	PEG_RX0-	D53	PEG_TX0-
C54	TYPE0#	D54	PEG_LANE_RV#
C55	PEG_RX1+	D55	PEG_TX1+

Pin No.	Definition	Pin No.	Definition
C56	PEG_RX1-	D56	PEG_TX1-
C57	TYPE1#	D57	TYPE2#
C58	PEG_RX2+	D58	PEG_TX2+
C59	PEG_RX2-	D59	PEG_TX2-
C60	GND (FIXED)	D60	GND (FIXED)
C61	PEG_RX3+	D61	PEG_TX3+
C62	PEG_RX3-	D62	PEG_TX3-
C63	RSVD	D63	RSVD
C64	RSVD	D64	RSVD
C65	PEG_RX4+	D65	PEG_TX4+
C66	PEG_RX4-	D66	PEG_TX4-
C67	RAPID_SHUTDOWN	D67	GND
C68	PEG_RX5+	D68	PEG_TX5+
C69	PEG_RX5-	D69	PEG_TX5-
C70	GND (FIXED)	D70	GND (FIXED)
C71	PEG_RX6+	D71	PEG_TX6+
C72	PEG_RX6-	D72	PEG_TX6-
C73	GND	D73	GND
C74	PEG_RX7+	D74	PEG_TX7+
C75	PEG_RX7-	D75	PEG_TX7-
C76	GND	D76	GND
C77	RSVD	D77	RSVD
C78	PEG_RX8+	D78	PEG_TX8+
C79	PEG_RX8-	D79	PEG_TX8-
C80	GND (FIXED)	D80	GND (FIXED)
C81	PEG_RX9+	D81	PEG_TX9+
C82	PEG_RX9-	D82	PEG_TX9-
C83	RSVD	D83	RSVD
C84	GND	D84	GND
C85	PEG_RX10+	D85	PEG_TX10+
C86	PEG_RX10-	D86	PEG_TX10-
C87	GND	D87	GND
C88	PEG_RX11+	D88	PEG_TX11+
C89	PEG_RX11-	D89	PEG_TX11-
C90	GND (FIXED)	D90	GND (FIXED)
C91	PEG_RX12+	D91	PEG_TX12+
C92	PEG_RX12-	D92	PEG_TX12-
C93	GND	D93	GND
C94	PEG_RX13+	D94	PEG_TX13+
C95	PEG_RX13-	D95	PEG_TX13-

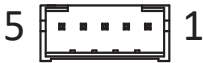
Pin No.	Definition	Pin No.	Definition
C96	GND	D96	GND
C97	RSVD	D97	RSVD
C98	PEG_RX14+	D98	PEG_TX14+
C99	PEG_RX14-	D99	PEG_TX14-
C100	GND (FIXED)	D100	GND (FIXED)
C101	PEG_RX15+	D101	PEG_TX15+
C102	PEG_RX15-	D102	PEG_TX15-
C103	GND	D103	GND
C104	VCC_12V	D104	VCC_12V
C105	VCC_12V	D105	VCC_12V
C106	VCC_12V	D106	VCC_12V
C107	VCC_12V	D107	VCC_12V
C108	VCC_12V	D108	VCC_12V
C109	VCC_12V	D109	VCC_12V
C110	GND (FIXED)	D110	GND (FIXED)

2.2.21 BKL_CN (Backlight Control header)

23



Backlight control connector



Connector PN	Vendor
721-81-05TW00	PINREX

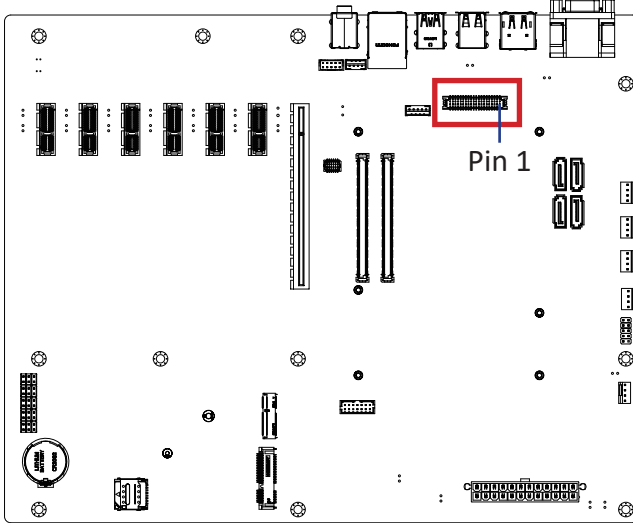
Connector type

1x5pin header, pitch 2.0mm

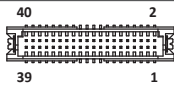
Pin No.	Definition
1	12V (5V optional)
2	PWM (3.3V)
3	Backlight Enable (3.3V)
4	GND
5	12V

2.2.22 LVDS (LVDS connector)

24



LVDS Connector



Pin No.	Definition	Pin No.	Definition
1	3.3V	21	A5p
2	5V	22	A4p
3	3.3V	23	A5n
4	5V	24	A4n
5	SPECO	25	GND
6	SPEDO	26	GND
7	GND	27	A7p
8	GND	28	A6p
9	A1p	29	A7n
10	A0p	30	A6n
11	A1n	31	GND
12	A0n	32	GND

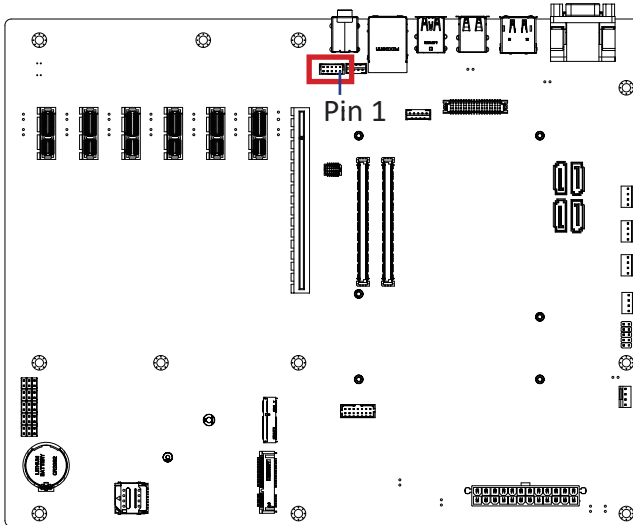
Pin No.	Definition	Pin No.	Definition
13	GND	33	CLK2p
14	GND	34	CLK1p
15	A3p	35	CLK2n
16	A2p	36	CLK1n
17	A3n	37	GND
18	A2n	38	GND
19	GND	39	12V
20	GND	40	12V

Connector PN	Vendor
712-76-40GWE0	PINREX
A1252WV-SF-2X20PD01	JOINT-TECH

Connector type
2x20pin header, pitch 1.25mm

2.2.23 FP_AUDIO (Front panel audio header)

25



Front Audio Connector	
10	2
9	1

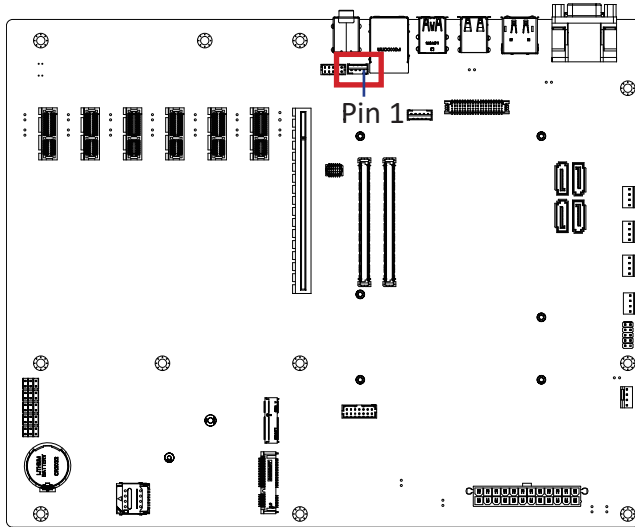
Connector PN	Vendor
725-81-10TW00	PINREX

Connector type
2x5pin header, pitch 2.0mm

Pin No.	Definition	Pin No.	Definition
1	MIC_Left	6	GND
2	GND	7	Jacksense Detect
3	MIC_Right	8	NC
4	NC	9	LINE_Left
5	LINE_Right	10	GND

2.2.24 SPKR (Speaker out connector)

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Speaker out Connector



Pin No.	Definition
1	Speaker Out L+
2	Speaker Out L-
3	Speaker Out R-
4	Speaker Out R+

Connector PN

A2001WV-04P146

Vendor

JOINT-TECH

Connector type

1x4pin header, pitch 2.0mm