

QBi-8565A (MWHLUAH)/ QBi-8265A(MWHLUBH)/ QBi-8145A (MWHLUCH)

10" x 10" Embedded Compact Board
User's Manual 1st Ed

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Packing List

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

Item	Quantity
QBi-8565A (MWHLUAH)/ QBi-8265A(MWHLUBH)/ QBi-8145A (MWHLUCH)	1
SATA power cable	1

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	○	○	○	○	○	○

O: 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	O	O	O	O	O	□
Wires & Connectors for External Connections	O	O	O	O	O	O

O : 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.
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.
Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only

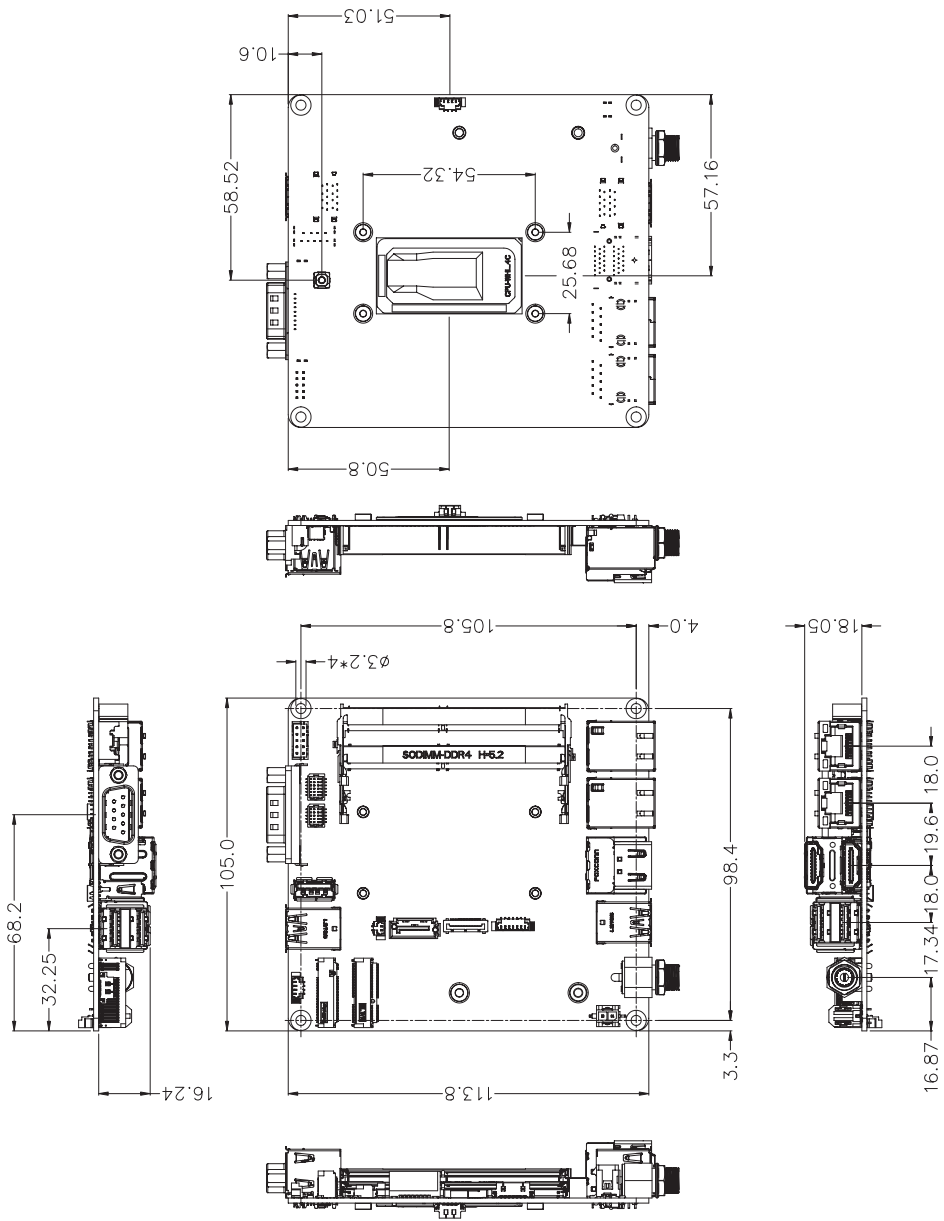
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Chapter 1

Chapter1 - Product Specifications
QBi-8565A (MWHLUAH)/ QBi-8265A(MWHLUBH)/
QBi-8145A (MWHLUCH)



1.2 Specifications- QBi-8565A, QBi-8265A, QBi-8145A

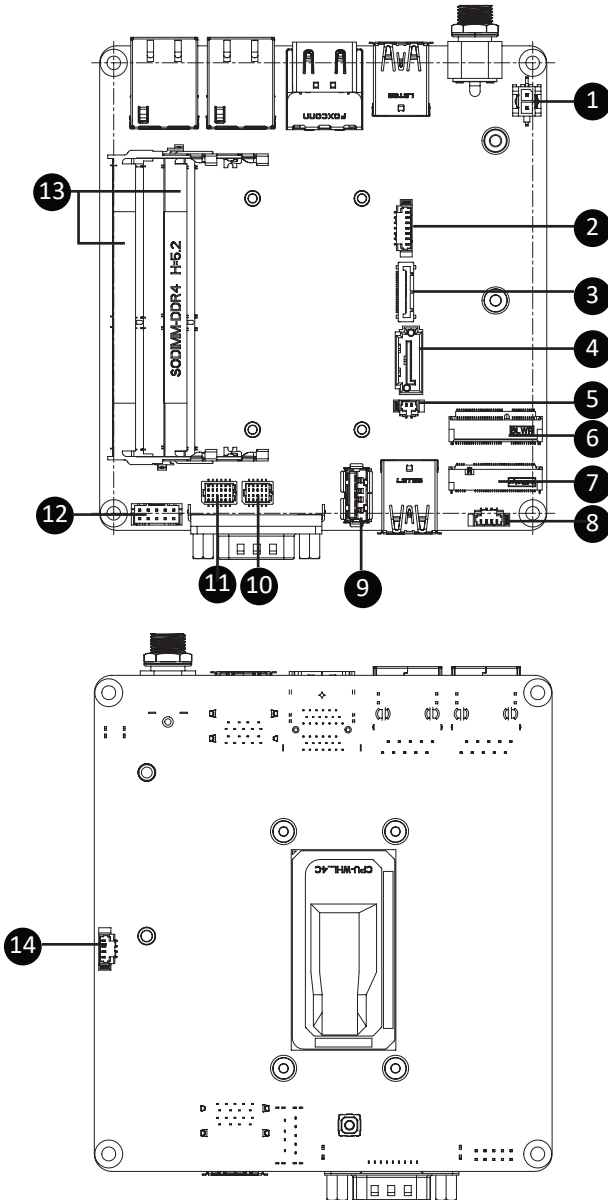
Motherboard	QBi-8565A	QBi-8265A	QBi-8145A
Form Factor	Embedded Compact Board 105W x 110D mm		
CPU	Intel® Core™ i7-8565U Processor 14nm, 4 cores, 8 threads 1.8GHz, up to 4.6 GHz TDP 15W 8 MB Intel® Smart Cache	Intel® Core™ i5-8265U Processor 14nm, 4 cores, 8 threads 1.6GHz, up to 3.9 GHz TDP 15W 6 MB Intel® Smart Cache	Intel® Core™ i3-8145UE Processor 14nm, 2 cores 2.2GHz up to 3.90 GHz TDP 15W 4 MB Intel® Smart Cache
Socket	1 x FCBGA1528		
Chipset	—		
Memory	2 x DDR4 SO-DIMM sockets, Max. Capacity 32 GB Dual channel memory architecture Support for DDR4 2400 MHz memory modules		
Ethernet	2 x GbE LAN port (Intel® i219V & Realtek RTL8111HS)		
Video	Integrated Graphics Processor - Intel® UHD Graphics 620 2 x HDMI1.4 port, supporting a maximum resolution of 3840 x 2160@24 Hz 1 x eDP port, supporting a maximum resolution of 3840x2160 @ 60Hz		
Audio	Realtek ALC269 High Definition Audio		
Storage	1 x SATA 6Gb/s port RAID (0/1)		
Raid	—		
Expansion Slots	1 x M.2 slot: - M-key - SATA 6Gb/s / PCIe X4 - Supports NGFF-2280 cards 1 x M.2 slot: - E-key - Supports NGFF-2230 (WiFi/BT)		

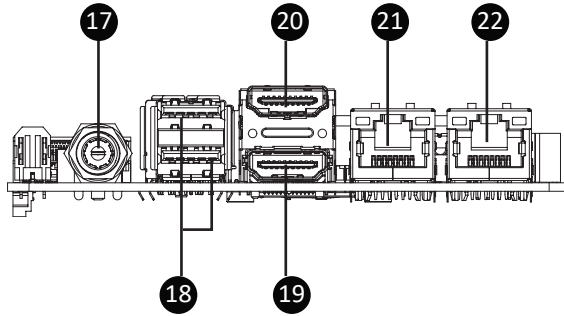
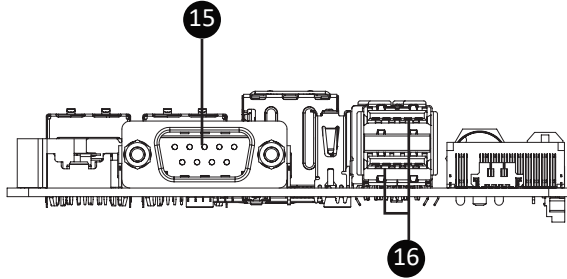
Motherboard	QBi-8565A	QBi-8265A	QBi-8145A
Internal I/O	1 x 2 pin power connector 1 x SATA 6Gb/s connector 1 x CPU fan header 1 x USB 2.0/1.1 headers 1 x Vertical USB3.0 connector (flex to PCIe X1) 1 x LPC header 1 x Front panel header 1 x SATA Power header (option for eDP Power) 1 x Front Audio header (option for GPIO)		
Front IO	2 x USB3.1 Gen2 1 x Power button 1 x COM Port (RS232/422/485)		
Rear IO	2 x HDMI 2 x RJ45 2 x USB3.1 Gen2 1 x Screw type DC Jack		
Side IO	—		
TPM	—		
OS Compatibility	Windows 10 (x64)		
PSU Connectors	1 x 9V~36V DC-in Full Range 1 x 2-pin Box header power connector (9~36V Full Range)		
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)		
Packaging Content	Box Packing Capacity: 10pcs Carton size: 460x345x203 (mm) Content: CABLE SATA POWER 150mm x 1 (25CRI-150621-K1R)		
Order Information	Motherboard : 9MWHLUAHMR-SI	Motherboard : 9MWHLUBHMR-SI	Motherboard : 9MWHLUCHMR-SI

Chapter 2

Chapter 2 – Hardware Information

2.1 Jumpers and Connectors



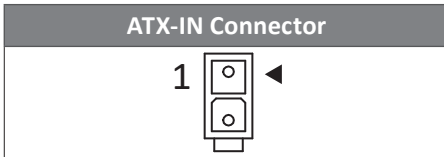
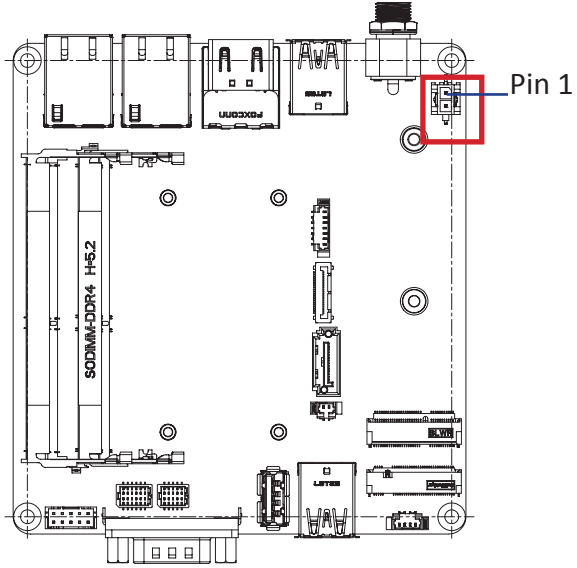


No	Code	Description
1	ATX-IN	ATX-IN
2	SATA_PWR_0	1 x SATA Power header (option for eDP Power)
3	EDP	Embedded Display Port Connector
4	SATA0	SATA 6.0 Gb/s Connector
5	BATTERY	Battery Cable Connector
6	M2E	E-key, Supports NGFF-2230 (WiFi/BT)
7	M2M	M-key, SATA 6.0 Gb/s, PCIe X4, Supports NGFF-2280 card

No	Code	Description
8	F_USB2_1	USB 2.0 Header
9	F_USB3_1	Vertical USB3.0 connector (flex to PCIe X1)
10	LPC_CN	LPC header
11	F_Panel	Front panel header
12	F_AUD_GPIO	Front Audio header (optional for GPIO)
13	SODIMM	DDR4 SO-DIMM Slot
14	CPU_FAN	CPU FAN Connector
15	COM	COM Port (RS-232/422/485)
16	USB31_2	Front USB 3.1 Gen2 Port x 2
17	DC_IN	Screw type DC Jack
18	USB31_1	Front USB 3.1 Gen2 Port x 2
19	HDMI_1	HDMI Port
20	HDMI_2	HDMI Port
21	LAN1	GbE LAN Port
22	LAN2	GbE LAN Port

2.2.1 ATX_IN (ATX-IN Connector)

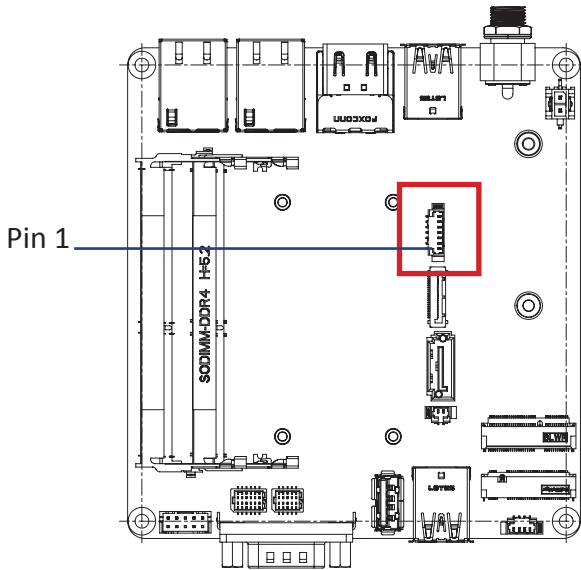
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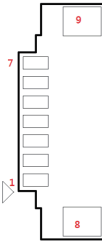
Pin No.	Definition
1	GND
2	DC_IN
G1	GND
G2	GND

2.2.2 SATA_PWR_0 (SATA Power header (option for eDP Power))

2



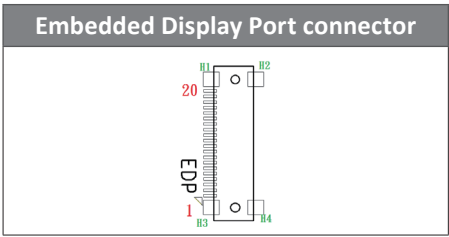
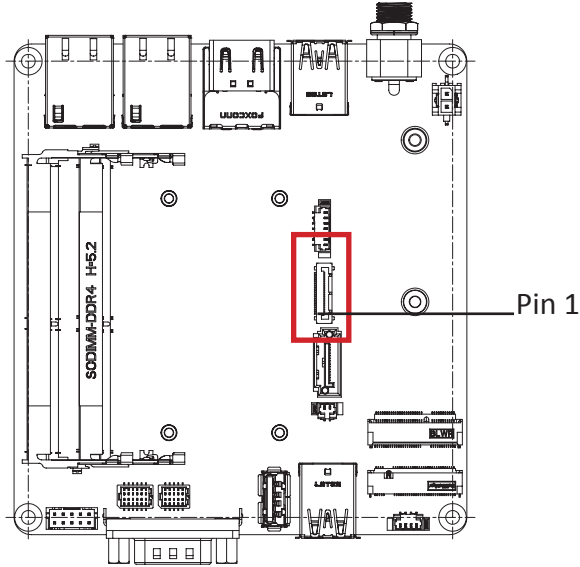
**SATA Power header
(option for eDP Power)**



Pin No.	Definition
1	5V
2	5V
3	3V
4	GND
5	GND
6	12V
7	12V
8	GND
9	GND

2.2.3 EDP (Embedded Display Port Connector)

3

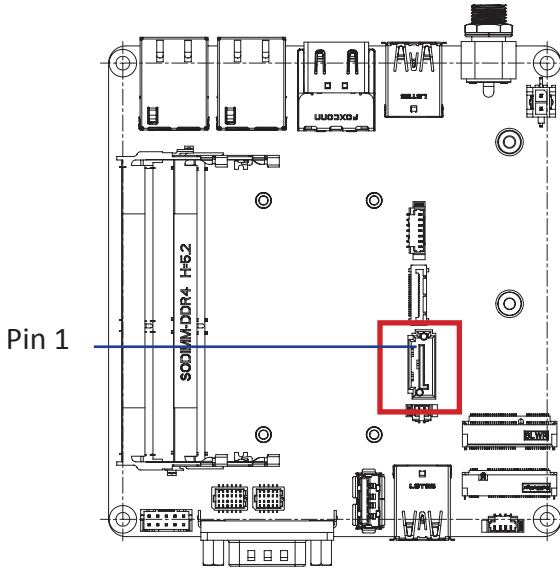


Pin No.	Definition
14	EDP_AUX-
15	EDP_AUX+
16	GND
17	EDP_HPD
18	EDP_BKLTEN
19	EDP_VDDEN
20	EDP_BKLTCTL
21	H1
22	H2
23	H3
24	H4

Pin No.	Definition
1	GND
2	EDP_TX0-
3	EDP_TX0+
4	GND
5	EDP_TX1-
6	EDP_TX1+
7	GND
8	EDP_TX2-
9	EDP_TX2+
10	GND
11	EDP_TX3-
12	EDP_TX3+
13	GND

2.2.4 SATA0 (SATA 6.0 Gb/s connector)

4



SATA 6.0 Gb/s connector



Connector PN

WATF-07DBLBA1UW

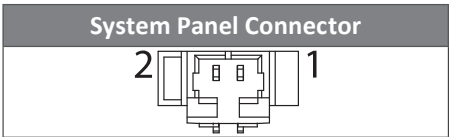
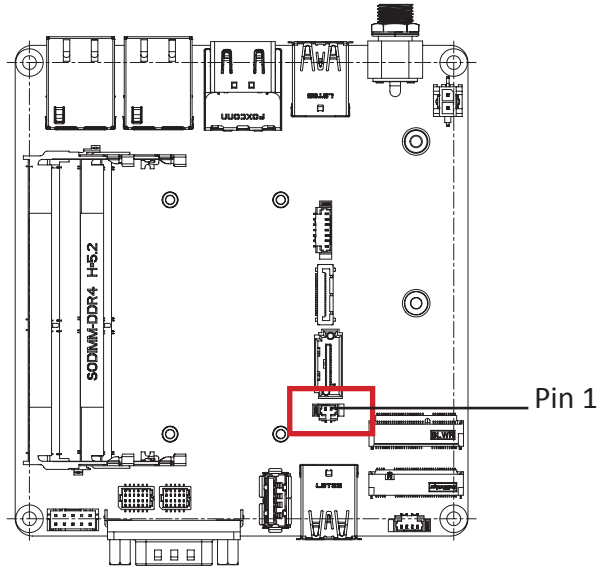
Vendor

WINWIN

Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

2.2.5 BATTERY (Battery connector)

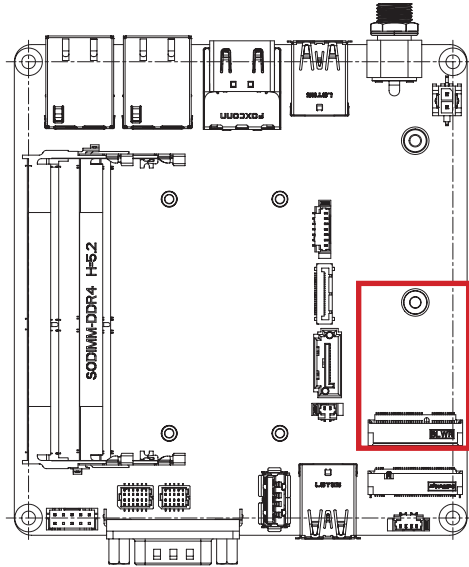
5



Pin No.	Definition
1	3.3V RTC
2	GND

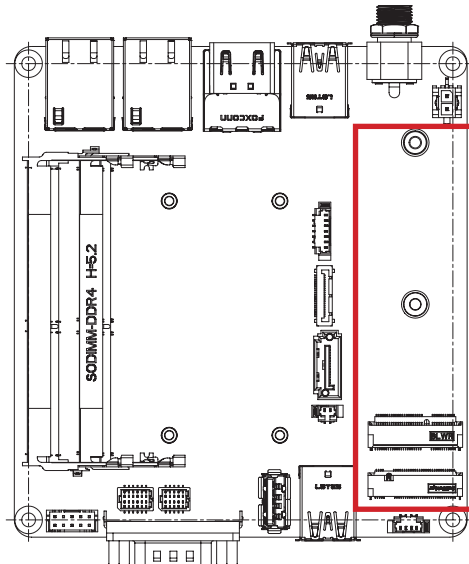
2.2.6 M.2E (E-key, Supports NGFF-2230 (WiFi/BT) Slot)

6



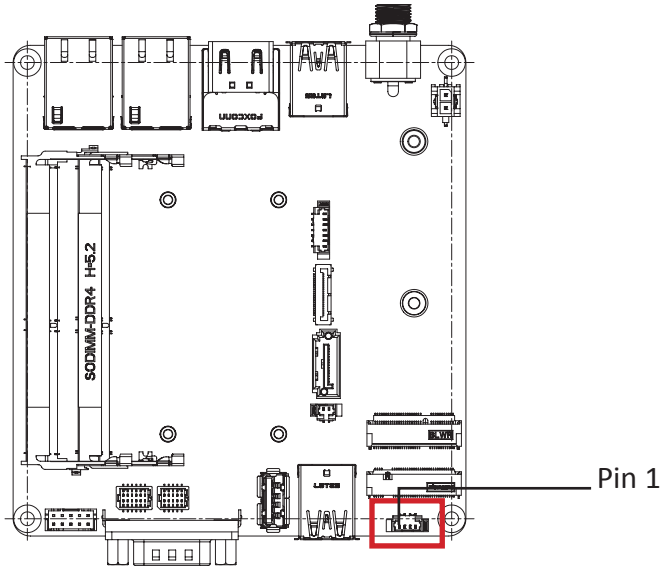
2.2.7 M.2M (M-key, SATA 6.0 Gb/s Slot)

7

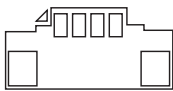


2.2.8 F_USB2_1 (USB 2.0 Header)

8



USB 2.0 Header



F_USB2.0

Connector PN

A1250WV-S-
04PNLBT1T00L
50273-0047N-001

Vendor

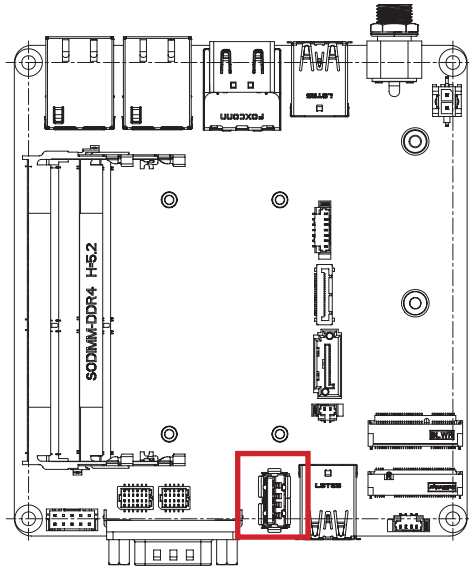
JOINT-TECH
ACES

Pin No. Definition

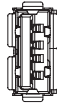
Pin No.	Definition
1	VCC
2	D- (USBN)
3	D+ (USBP)
4	GND

2.2.9 USB3_1 (Vertical USB3.0 connector (Flex to PCIe X1))

9

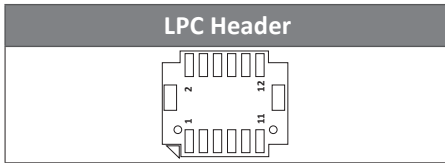
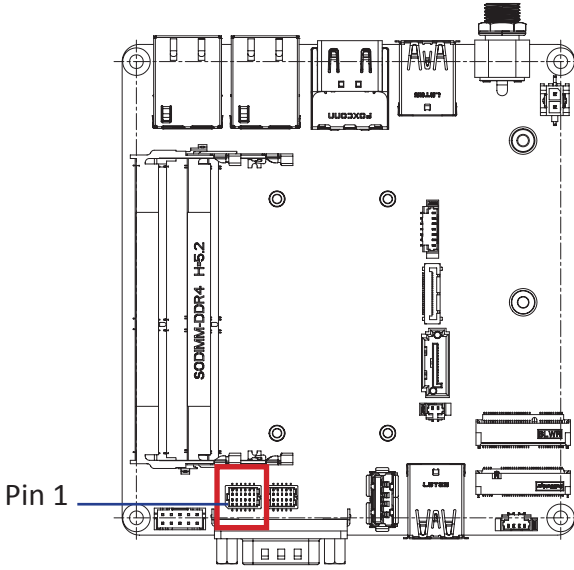


Vertical USB3.0 connector (Flex to PCIe X1)



2.2.10 LPC_CN (LPC Header)

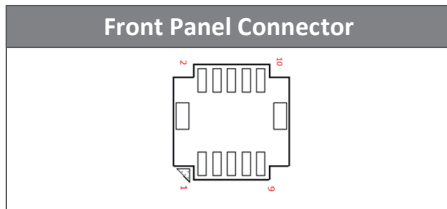
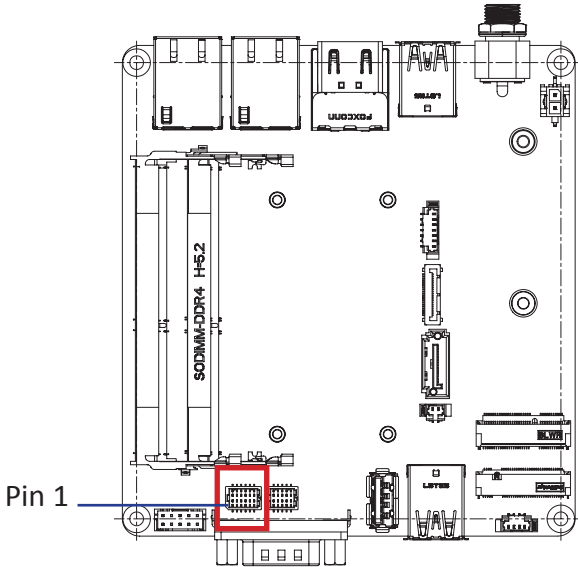
10



Pin No.	Definition
1	CK_LPC1_80H
2	GND
3	LFRAME#
4	LAD0
5	RLT_RST_80H#
6	LAD1
7	LAD3
8	LAD2
9	3.3V
10	SERIRQ

2.2.11 Front_PANEL (Front Panel Connector)

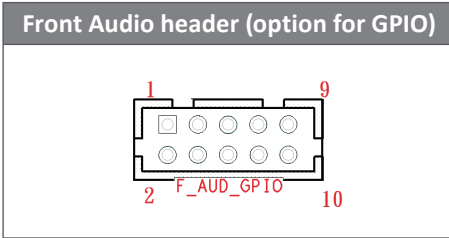
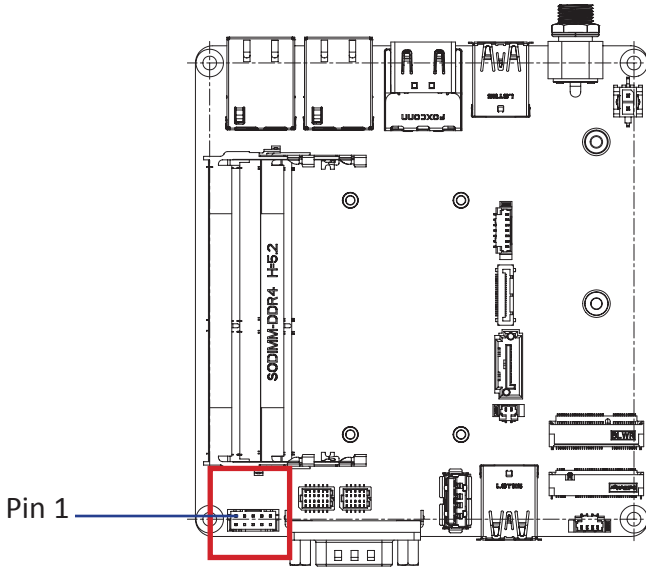
11



Pin No.	Definition
1	SATA_LED_P (3.3V)
2	MPD+
3	GND
4	MPD-
5	GND
6	Panshw_D
7	PMU_RSTBTN_N_D
8	GND
9	5V
10	3.3V
11	5V
12	NC

2.2.12 F_AUD_GPIO (Front Audio header (option for GPIO))

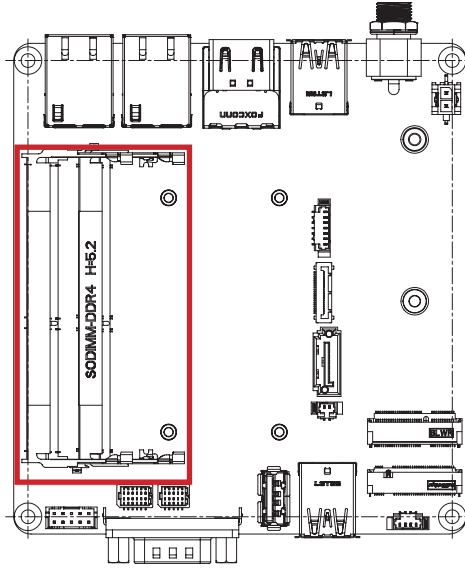
12



Pin No.	Definition	Pin No.	Definition
1	F_MIC1_L	2	AUD_AGND
3	F_MIC1_R	4	F_AUDIO_DET_C
5	F_HP_R	6	F_MIC_JD
7	FAUDIO_JD_C	8	NC
9	F_HP_L	10	FAUDIO_10

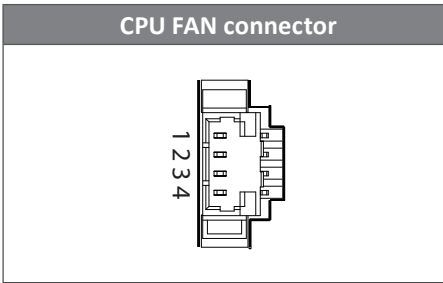
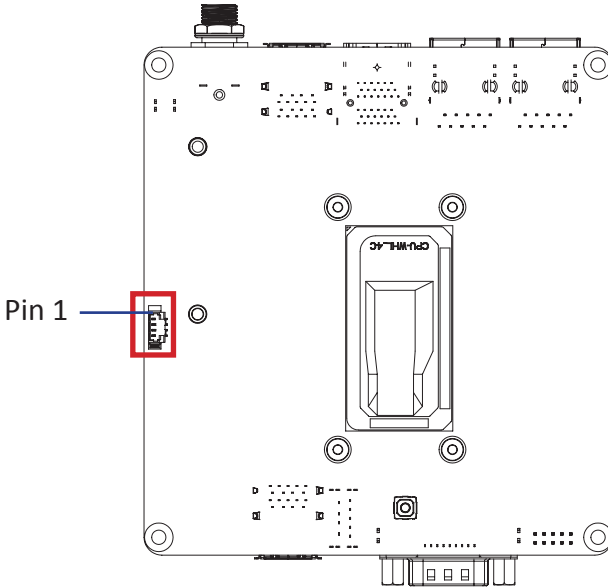
2.2.13 SODIMM (DDR4 SO-DIMM Slot x 2)

13



2.2.14 CPU FAN (CPU FAN connector)

14



Pin No.	Definition
1	GND
2	+5V
3	TACH_PWRFAN1
4	+5V