

QBi-4125A (MGMLKAH)

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-4125A	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	0	0	0	0	0	□
Wires & Connectors for External Connections	0	0	0	0	0	0

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

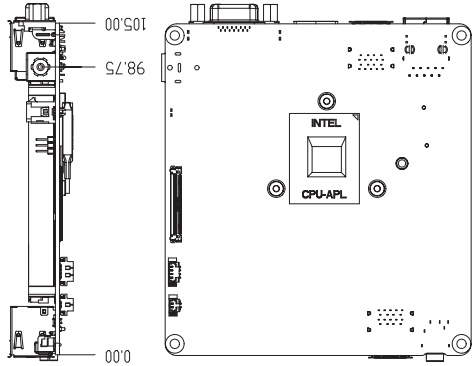
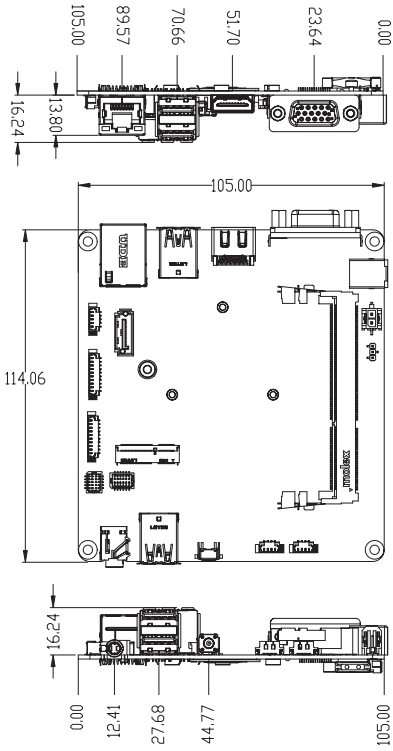
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Chapter 1

Chapter1 - Product Specifications
QBi-4125A (MGMLKAH)



1.2 Specifications- QBi-4125A

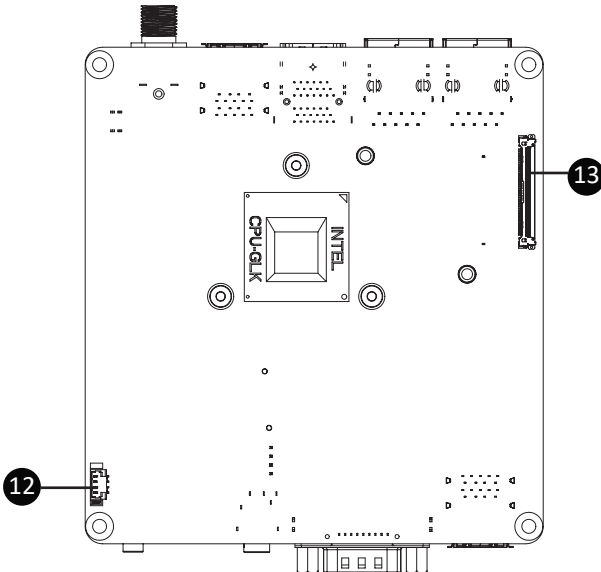
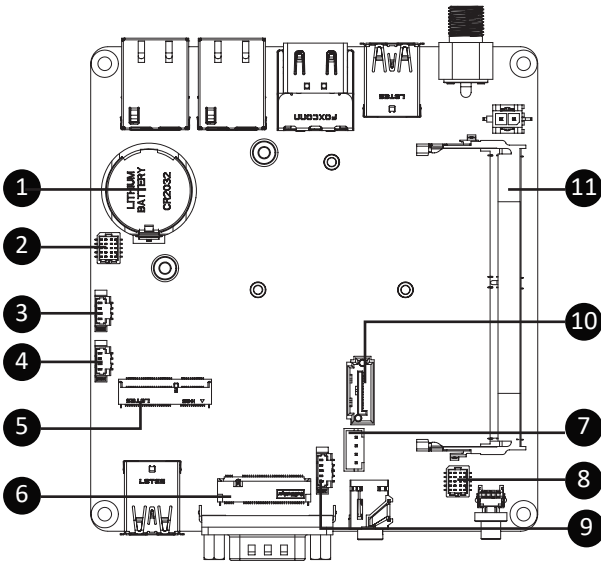
Motherboard	QBi-4125A (MGMLKAH)
Form Factor	Embedded Compact Board 105W x 110D mm
CPU	Intel® Celeron® J4125 Processor 14nm, 4 cores, 4 threads, up to 2.7 GHz TDP 10W
Socket	1 x FCBGA1090
Chipset	—
Memory	1 x DDR4 SO-DIMM sockets, Max. Capacity 8 GB Support Single Channel DDR4 2400 MHz memory module
Ethernet	1 x GbE LAN Port (Intel® I211AT) 1 x GbE LAN Port (Realtek® RTL8111HS)
Video	Integrated Graphics Processor - Intel® UHD Graphics 600" 2 x HDMI 1.4 port, supporting a maximum resolution of 4096x2160 @30Hz 1 x eDP port, supporting a maximum resolution of 3840x2160 @60Hz
Audio	Realtek® Audio Codec
Storage	1 x SATA 6Gb/s Port
Raid	RAID 0/1
Expansion Slots	1 x 2280 M.2 M-Key (SATA 6Gb/s) 1 x 2230 M.2 E-Key
Internal I/O	1 x SATA Power header 1 x CPU fan header 1 x Power button header 2 x USB 2.0 headers 1 x Speaker out header
Front IO	2 x USB 3.2 Gen 1 1 x COM Port (RS-232) 1 x Headphone Jack 1 x Power button
Rear IO	2 x RJ45 LAN Ports 2 x USB 3.2 Gen 1 2 x HDMI 1 x Screw type DC Jack (+12V~19VDC)

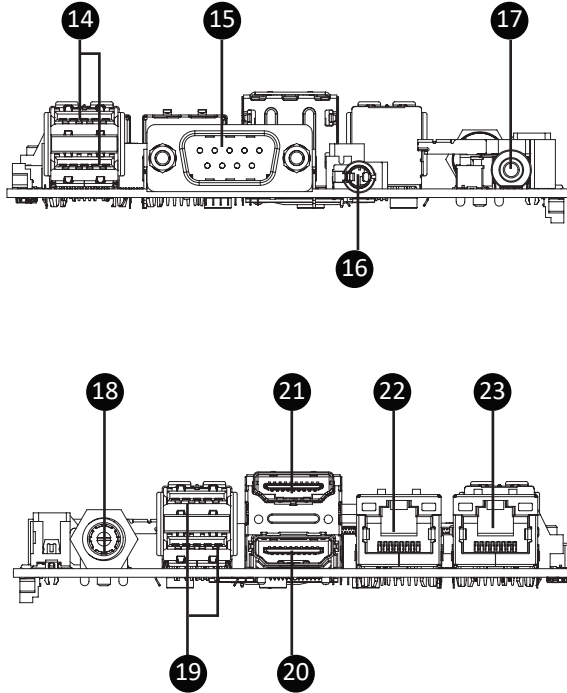
Motherboard	QBi-4125A (MGMLKAH)
Side IO	—
TPM	—
OS Compatibility	Windows 10 (x64)
PSU Connectors	DC Jack 12~19V Full Range 1 x 2-pin Box header power connector (Co-lay with DC Jack)-option
Operating Properties	Operating temperature: 0°C to 60°C Operating humidity: 0-90% (non-condensing) Non-operating temperature: -40°C to 85°C Non-operating humidity: 0%-95% (non-condensing)
Packaging Content	Carton size: 465 x 351 x 217 (mm) Packing Capacity: 10pcs Single Box size: 221 x 178 x 65 (mm) Including: SATA power Cable 150mm x 1 (P/N: 25CRI-150621-K1R)
Order Information	9MGMLKAHMR-SI (Box Packing)

Chapter 2

Chapter 2 – Hardware Information

2.1 Jumpers and Connectors

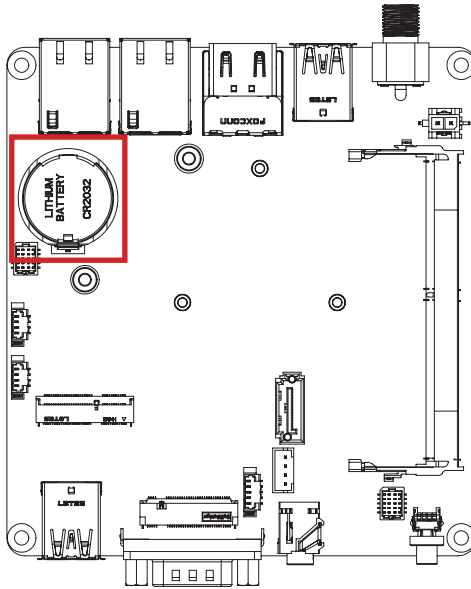




No	Code	Description
1	BATTERY	Battery Cable Connector
2	80H	80H Connector
3	F_USB2_1	USB 2.0 Header
4	F_USB2_2	USB 2.0 Header
5	M2E	M.2 slot, 2230 E-key
6	M2M	M.2 slot, 2280 M-key
7	SPK_OUT	Speaker out connector
8	PWR_BT	Power Button Connector

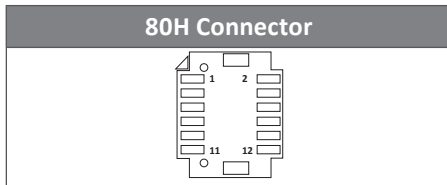
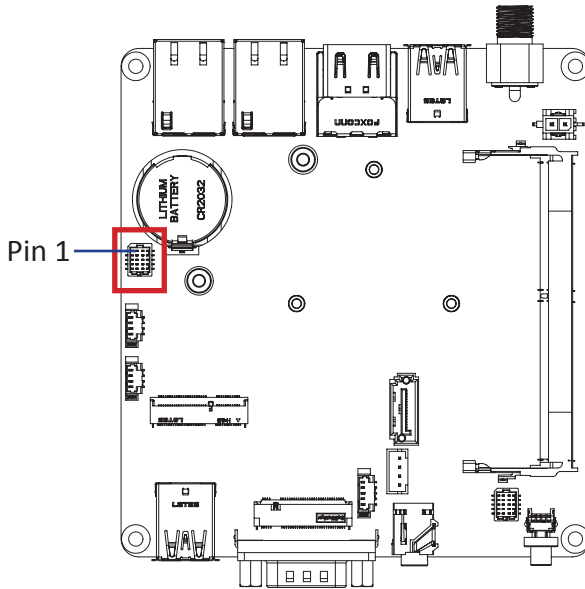
No	Code	Description
9	SATA_PWR	SATA power Connector
10	SATA	SATA 6Gb/s Connector
11	SODIMM1	DDR4 SO-DIMM Slot
12	CPU_FAN	CPU FAN Connector
13	EDP	Embedded Display Port Connector
14	USB3_2	Front USB 3.0 Port x 2
15	COM	Serial Port (RS-232)
16	HP-out	Header Phone-out
17	PWR_BUTTON	Power Button
18	DC_IN	DC In Jack
19	USB3_1	Rear USB 3.0 Port x 2
20	HDMI_1	HDMI Port
21	HDMI_2	HDMI Port
22	LAN1	GbE LAN Port
23	LAN2	GbE LAN Port

2.2.1 BATTERY (Battery connector)

1

2.2.2 80H (80H Connector)

2

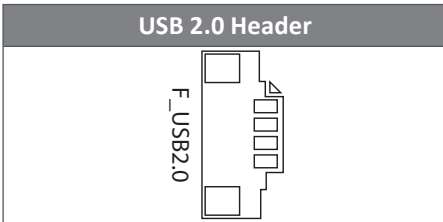
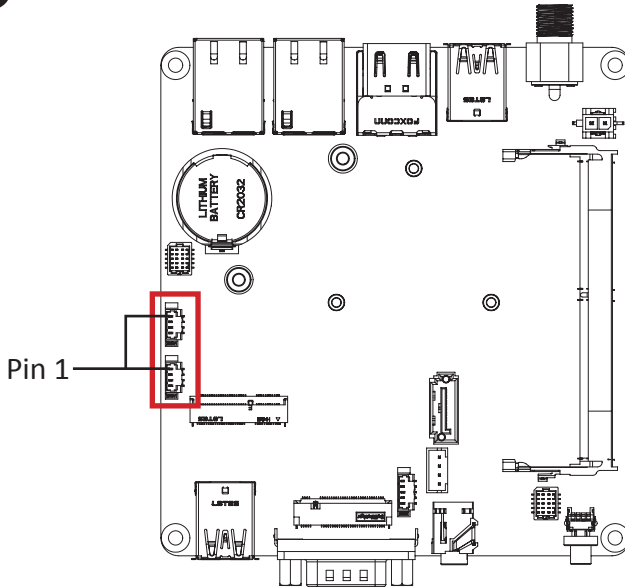


Pin No.	Definition
1	CK_LPC1_80H
2	GND
3	LFRAME#
4	LAD0
5	RTL_RST_80H#
6	LAD1
7	LAD3
8	LAD2
9	3.3V
10	SERIRQ
11	GND

Pin No.	Definition
12	GND
Connector PN	Vendor
87216-1206-06	ACES

2.2.3 F_USB2_1, F_USB2_2 (USB 2.0 Header)

3 4

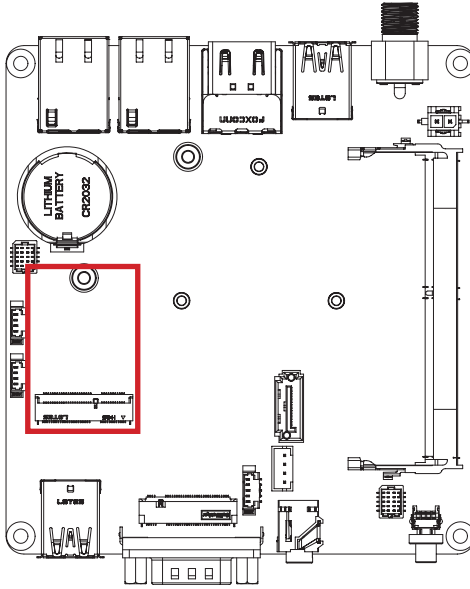


Connector PN	Vendor
A1250WV-S-04PNLBT1T00L	JOINT-TECH
50273-0047N-001	ACES

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

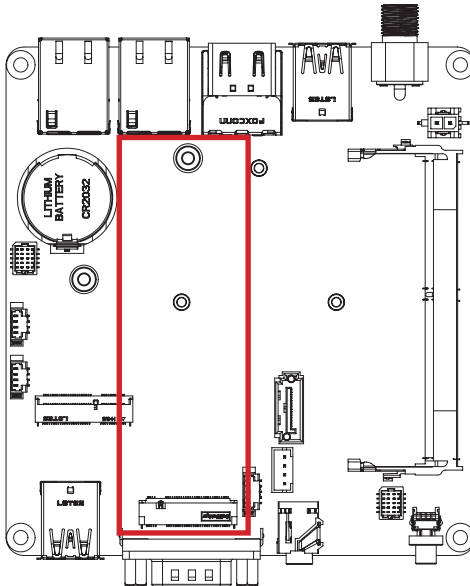
2.2.4 M2E (M.2 slot, 2230 E-key)

5



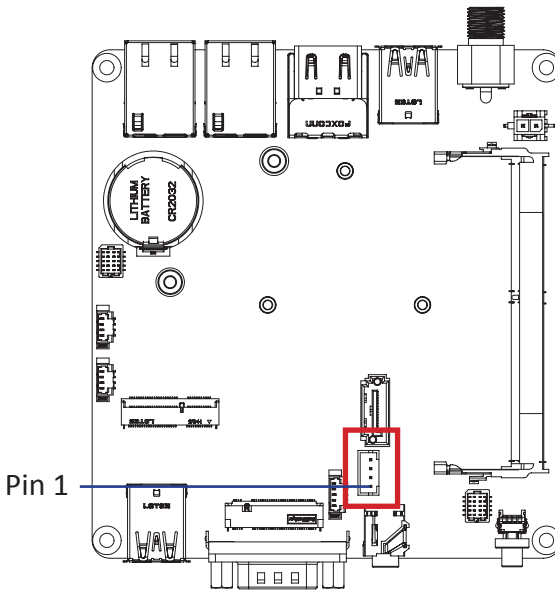
2.2.5 M2M (M.2 slot, 2280 M-key)

6



2.2.6 SPK_OUT (Speaker Out Connector)

7



Speaker Out connector

4

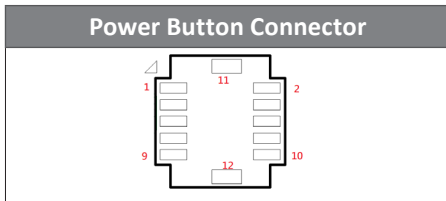
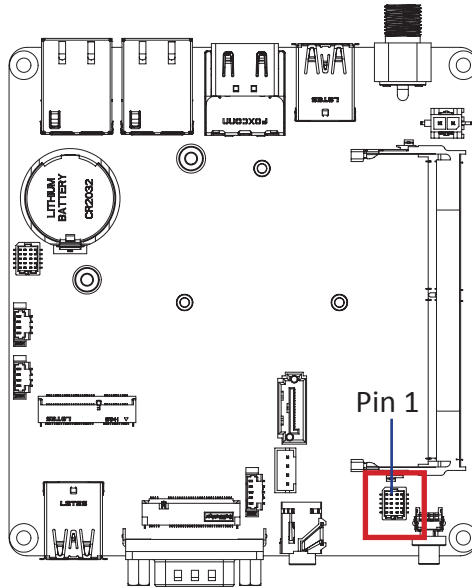


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Pin No.	Definition
1	Out_R+
2	Out_R-
3	Out_L+
4	Out_L-

2.2.7 PWR_BT (Power Button Connector)

8

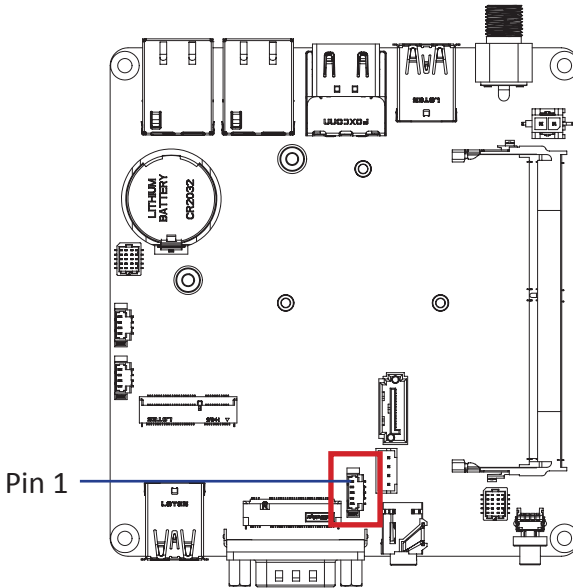


Pin No.	Definition
11	GND
12	GND

Pin No.	Definition
1	PANSHW
2	GND
3	MDP_+
4	MDP_-
5	NC
6	SATA_LED
7	NC
8	NC
9	+3.3V
10	NC

2.2.8 SATA_PWR (SATA power connector)

9



SATA power connector

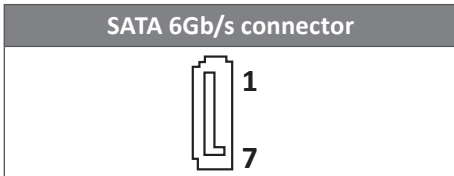
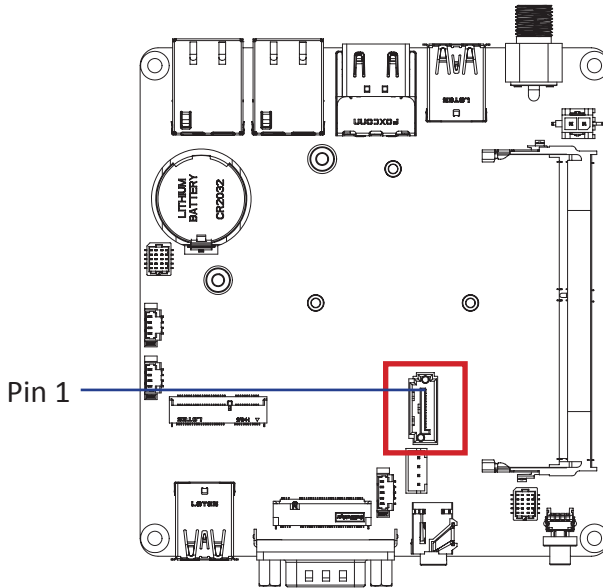


Connector PN	Vendor
85205-0570N	ACES
CI4405M1VRP-LF	CVILUX

Pin No.	Definition
1	+5V
2	+5V
3	+3.3V
4	GND
5	GND

2.2.9 SATA (SATA 6Gb/s connector)

10

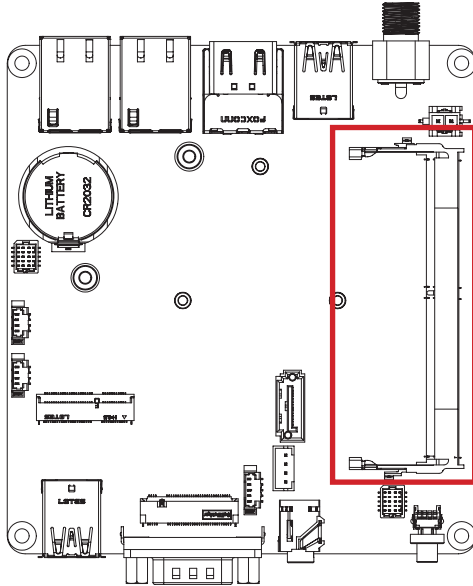


Connector PN	Vendor
WATF-07DBLBA1UW	WINWIN

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

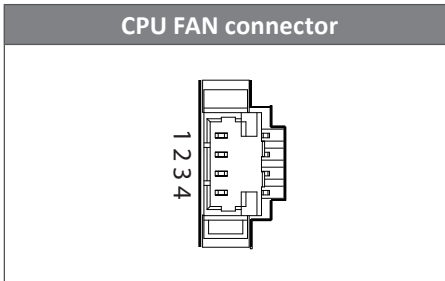
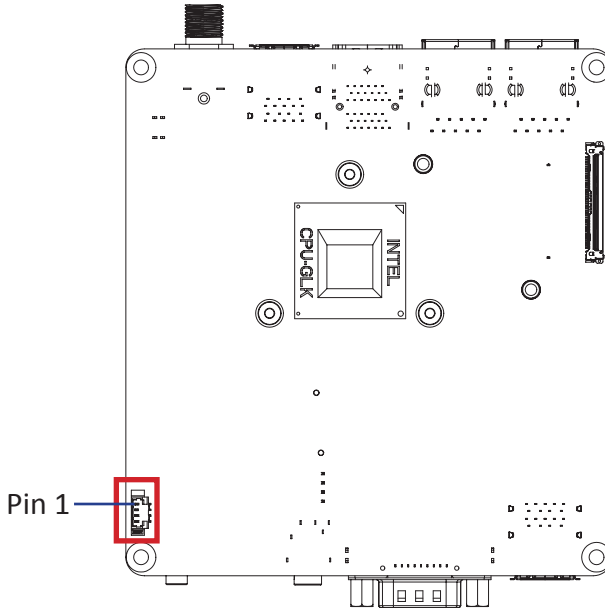
2.2.10 SODIMM1 (DDR4 SO-DIMM Slot)

11



2.2.11 CPU_FAN (CPU FAN connector)

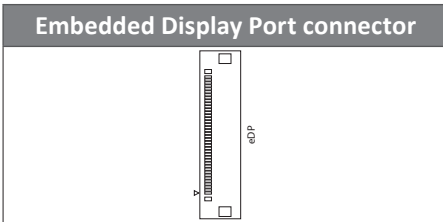
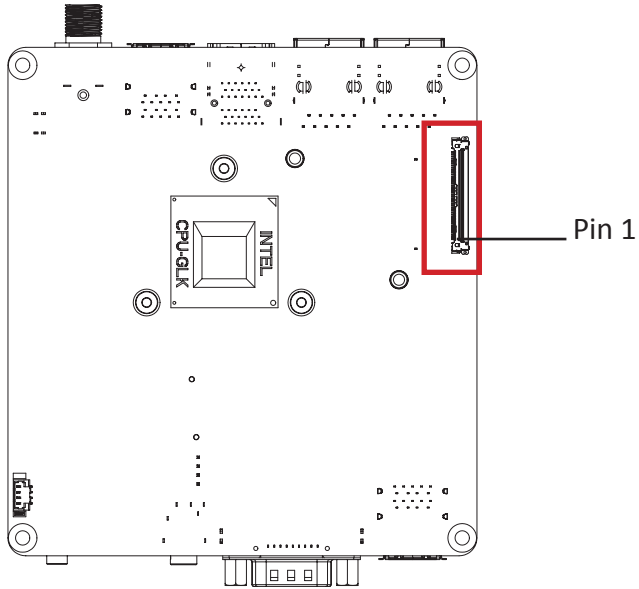
12



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

2.2.12 EDP (Embedded Display Port Connector)

13



Pin No.	Definition	Pin No.	Definition
13	EDP_LANP0	33	EDP_BKLCTL_3V3
14	GND	34	NC
15	EDP_AUX_C_DP	35	NC
16	EDP_AUX_C_DN	36	+BL_PWR (10V or DCIN)
17	GND	37	+BL_PWR (10V or DCIN)
18	+LCD_VCC (5V)	38	+BL_PWR (10V or DCIN)
19	+LCD_VCC (5V)	39	+BL_PWR (10V or DCIN)
20	+LCD_VCC (5V)	40	NC

Pin No.	Definition	Pin No.	Definition
1	NC	21	+LCD_VCC (5V)
2	GND	22	NC
3	EDP_LANN3	23	GND
4	EDP_LANP3	24	GND
5	GND	25	GND
6	EDP_LANN2	26	GND
7	EDP_LANP2	27	EDP_HPD_3V3
8	GND	28	GND
9	EDP_LANN1	29	GND
10	EDP_LANP1	30	GND
11	GND	31	GND
12	EDP_LANN0	32	EDP_BKLTEN_3V3

Note: Please ensure pin 8 is connected to Ground.

Connector PN	Vendor
20455-040E-12	I-PEX