QBiX-Lite-RPLA1360PH-A1
QBiX-Lite-RPLA1340PH-A1

QBiX-Lite Industrial Embedded System
Quick Start Guide

Copyright Notice

Acknowledgement

Packing List

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

Item	Quantity
Bracket for Wall Mount (25HB1-SD4000-R0R)	2
Screws for Wall Mount M3.0*L6.0 (25KS9-130600-S0R)	4
PSU ADP 19.5V 135W 100-240VAC (25EP4-201352-C1S)	1
Power Cord (Optional, by region)	1
Thermal Pad for Memory (25ST3-200086-T5R)	1
SATA Cable (25CRI-180002-S9R)	1
Screws for 2.5” HDD #2-M3x4L (25KS2-13004G-S0R)	8
Exsiccator (10g)	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.

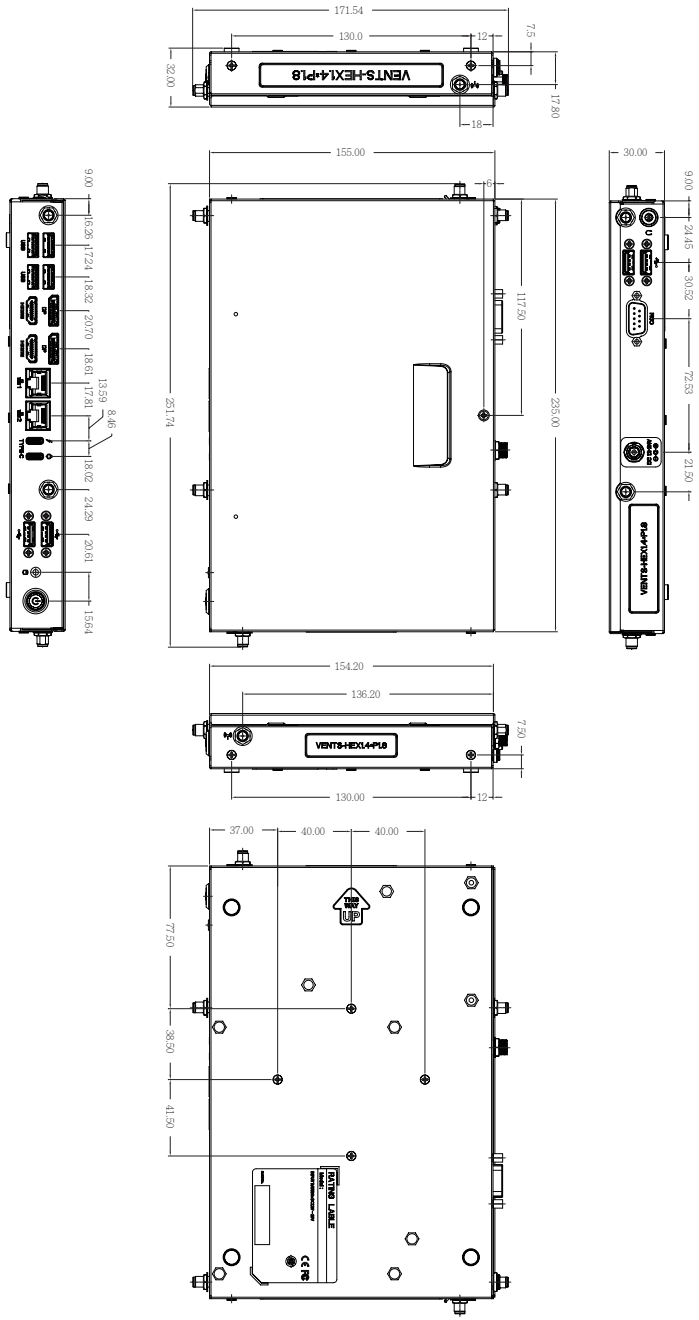
Attention:

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.

Table Contents

Chapter 1

Chapter 1 - Product Specifications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130.0
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7.5
32.00
17.80
18
VENTS-HEX14-PL8
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235.00
30.00
9.00
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30.52
72.53
21.50
9.00
16.26
17.24
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18.61
17.81
13.59
8.46
18.02
24.29
20.61
15.64
154.20
136.20
7.50
130.00
12
37.00
40.00
40.00
77.50
38.50
41.50
RATING LABLE

1.1 Specifications

System	QBiX-Lite-RPLA1360PH-A1 (QL-1360A-SI)	QBiX-Lite-RPLA1340PH-A1 (QL-1340A-SI)
Dimension	System Size : 234W x 155D x 30H (mm)	
CPU	Intel® Core™ i7-1360P Processor Intel® 7, 12 cores, 4P+8E, 16 threads, up to 5.0 GHz	Intel® Core™ i5-1340P Processor Intel® 7, 12 cores, 4P+8E, 16 threads, up to 4.6 GHz
Memory	2 x DDR5 SO-DIMM sockets, Max. Capacity 64 GB Support Dual channel DDR5 5200 MHz memory modules	
Ethernet	2 x 2.5GbE LAN Ports (Intel® I226V)	
Graphic support	Integrated Graphics Processor - Intel® Iris® Xe Graphics eligible: 2 x HDMI 2.1 ports, supporting a maximum resolution of 4096x2160 @60Hz 2 x DP 1.4 ports, supporting a maximum resolution of 7680x4320 @30Hz 1 x DP 1.4 through USB type C (8k), supporting a maximum resolution of 7680x4320 @30Hz (4 independent display outputs)	
Audio	Realtek® ALC269	
Storage	1 x 2.5” HDD/SSD (SATA 6Gb/s)	
Expansion Slots	1 x 2280 M.2 M-Key (PCIe x4, SATA 6Gb/s) 1 x 2230 M.2 E-Key 1 x 3052/3042 M.2 B-Key with SIM slot (Support 5G)	
Front I/O	1 x USB type C (USB 3.2 Gen 2x1, DP Alt Mode & PD Out-30W) (-100W requests to use 250W adapter) 1 x USB type C (USB 3.2 Gen 2x1, PD input-130W) 4 x USB 3.2 Gen 2x1 2 x HDMI 2 x DP 2 x RJ45 LAN Ports 2 x USB 2.0 1 x HDD LED 1 x Power button with LED 2 x External Antenna Holes (Optional)	
Rear I/O	1 x COM Port (RS-232 & RI/5V/12V) 2 x USB 2.0 1 x Headphone Jack 1 x Screw type DC Jack 2 x External Antenna Holes (Optional)	

System	QBiX-Lite-RPLA1360PH-A1 (QL-1360A-SI)	QBiX-Lite-RPLA1340PH-A1 (QL-1340A-SI)
Side I/O	1 x External Antenna Hole (on each side)	
TPM	Onboard TPM 2.0 security chip INFINEON SLB9670VQ2.0	
Power	+12V~24VDC (Adapter 19.5V/135W)	
Operation Temperature	Operating temperature: 0°C to 50°C Operating humidity: 0-90% (non-condensing) Non-operating temperature: -40°C to 85°C Non-operating humidity: 0%-95% (non-condensing) Use wide temperature range memory and storage	
Vibration During Operation	Operation: IEC 60068-2-64, 1 Grms, random, 5 ~ 500 Hz, 1 hr / Per Axis, with SSD/M.2 2280 Non-operation: IEC 60068-2-6, 2 G, Sine, 10 ~ 500 Hz, 1 Oct/min, 1 hr / Per Axis	
Shock During Operation	Operation: IEC 60068-2-27, 50 G, half sine, 11 ms duration, With SSD	
Packaging Content	Carton size: 481 x 300 x 375 (mm) Packing Capacity: 5pcs Single Box size: 336 x 279 x 90 (mm) Including: Bracket for Wall Mount x 2 : 25HB1-SD4000-R0R Screws for Wall Mount x 4 : 25KS9-130600-S0R PSU ADP 19.5V 135W 100-240VAC x 1 : 25EP4-201352-C1S Power Cord : Optional (by region) Thermal Pad for Memory x 1 : 25ST3-200086-T5R SATA Cable x 1 : 25CRI-180002-S9R Screws for 2.5” HDD x 8 : 25KS2-13004G-S0R	
Order Information	System : 6BQL1360AMR-SI (Box packing)	System : 6BQL1340AMR-SI (Box packing)

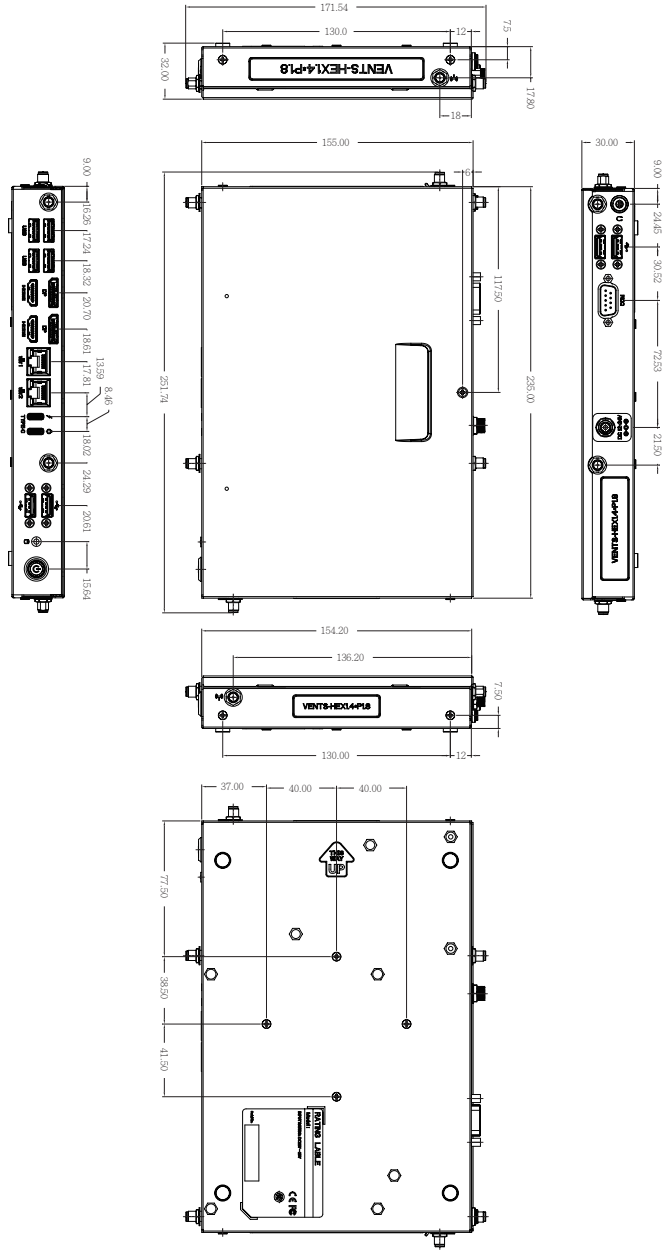
※ Note 1 : Either using DC IN or USB Type C (USB3CP) power in for your design or application. It does not support hot swap.

※ Note 2 : When plug-in 130W adapter into USB Type C (USB3CP) port, power max of USB Type C (USB3CM) would restrict to 36W (12V/3A) only, to maintain stable of the system.

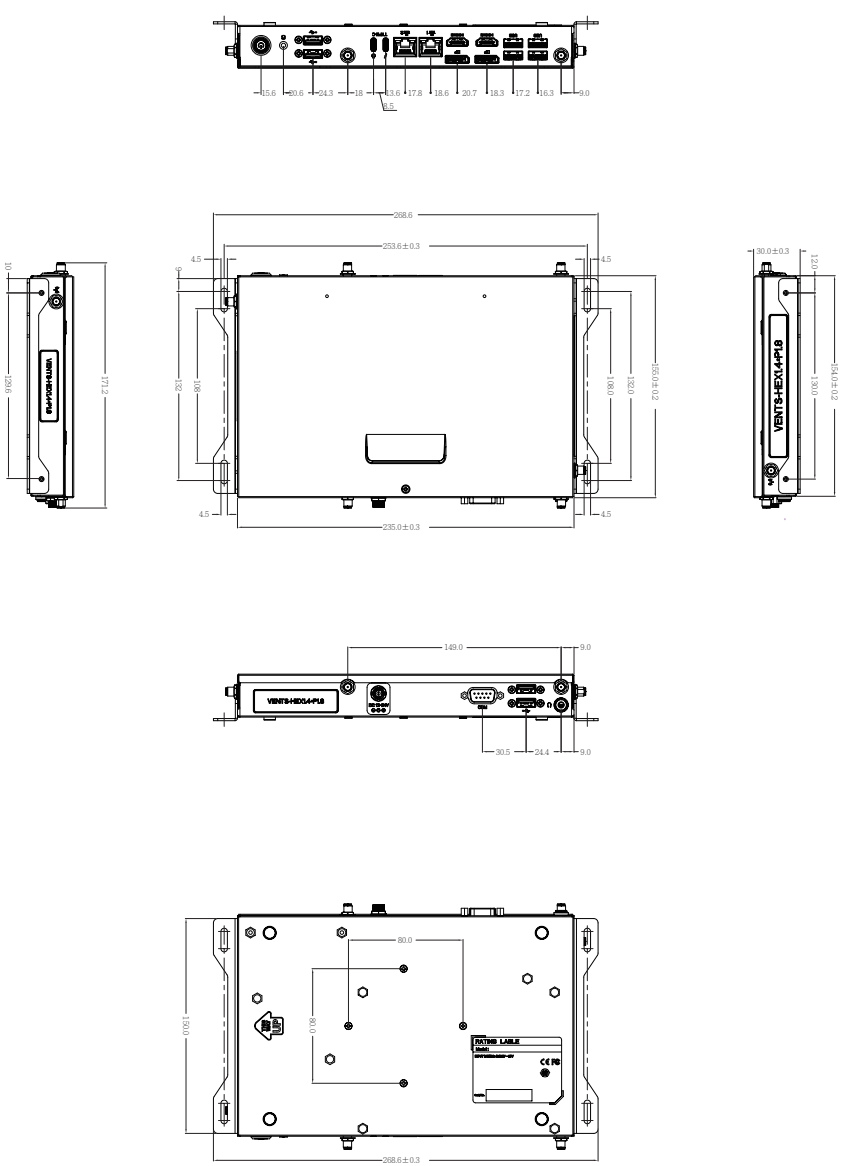
Chapter 2

Chapter 2 – Industrial Embedded System Kit

2.1 Dimension



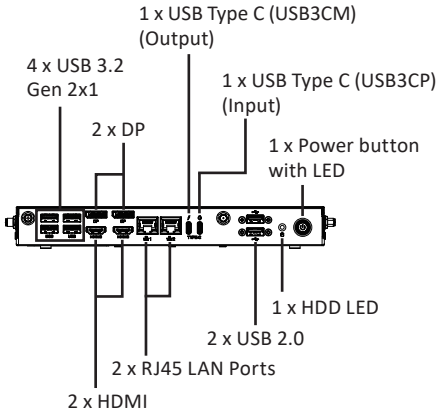
2.1 Dimension - including wall mount brackets



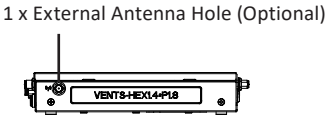
NOTE : The wall mount bracket will be shipped as an accessory instead of assembled on the system. Above dimension drawing including wall mount backets is for reference only.

2.2 Getting Familiar with Your Unit

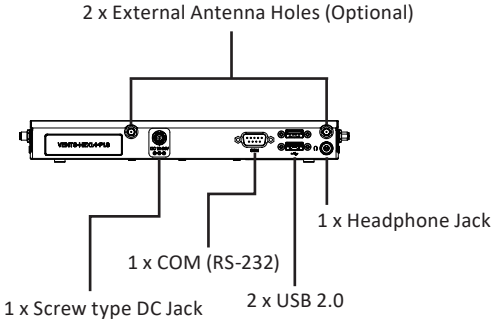
[Front I/O Side]



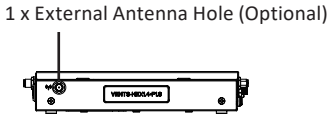
[Left Side]



[Rear I/O Side]



[Right Side]

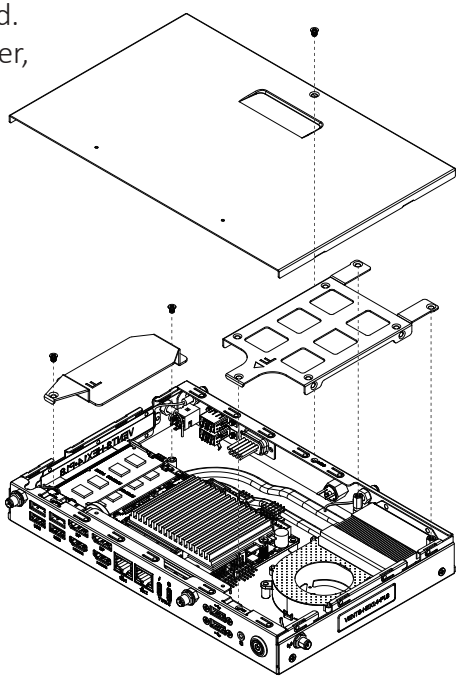


※ Note 1 : Either using DC IN or USB Type C (USB3CP) power in for your design or application.
It does not support hot swap.

※ Note 2 : When plug-in 130W adapter into USB Type C (USB3CP) port, power max of
USB Type C (USB3CM) would restrict to 36W (12V/3A) only, to maintain stable of the system.

[Install]

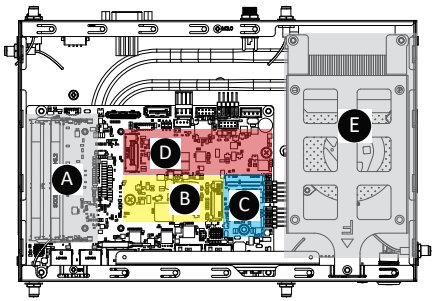
* Before opening the case, make sure to unplug the power cord.
* Before Connecting the power, make sure to fasten the case securely.



[Bottom PCB Side]

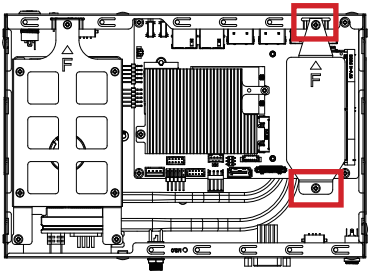
	Information
A	2 x DDR5 SO-DIMM sockets
B	1 x 3052/3042 M.2 B-Key with SIM Slot (Support 5G)

	Information
C	1 x 2230 M.2 E-Key
D	1 x 2280 M.2 M-Key
E	Support 2.5'' Hard drive/ SSD

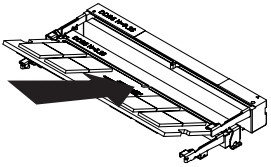


2.3 A) Memory Installation: DDR5 SO-DIMM

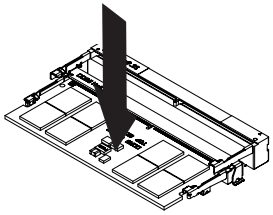
1. Remove 2 screws and the memory heatplate.



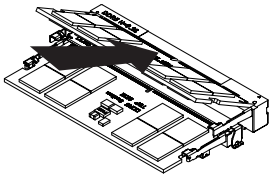
2. Carefully insert SO-DIMM memory modules.



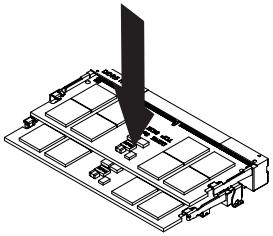
3. Push down until the modules click into place.



4. Carefully insert SO-DIMM memory modules.



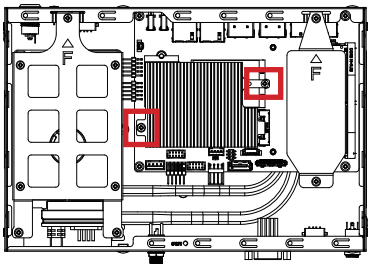
5. Push down until the modules click into place.



2.4 B) 5G module Installation: How to safely install the module (5G Module inclusion may vary based on local distribution)

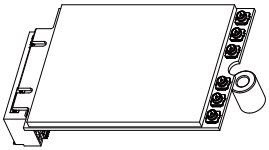
1

Remove 2 screws and the heatsink.



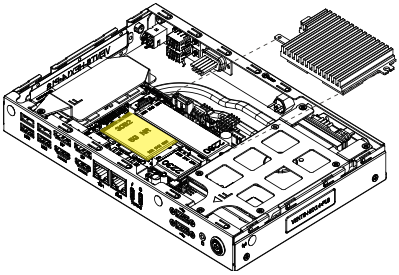
2

Carefully insert the 5G module into the slot.



3

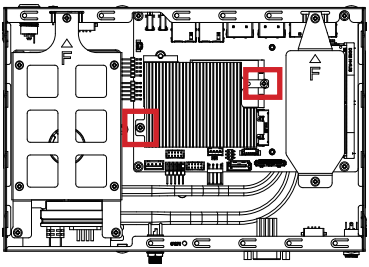
Remove the release paper and secure the heatsink.
Make sure the thermal pad is fully compacted with the module.



2.5 C) Wireless Module: How to safely install the Module (Wireless Module inclusion may vary based on local distribution) - 1

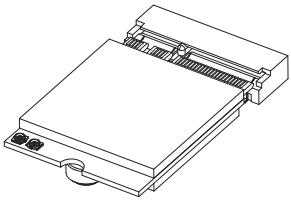
❶

Remove 2 screws and the heatsink.



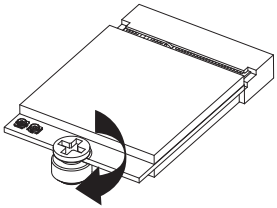
❷

Remove the srcew which is in the standoff.
Carefully insert the wireless module into the slot.



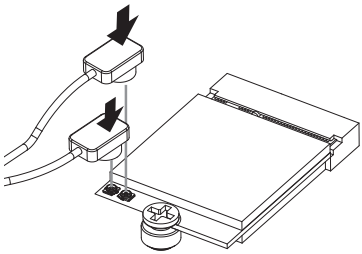
❸

Lock the srcew in the middle.



❹

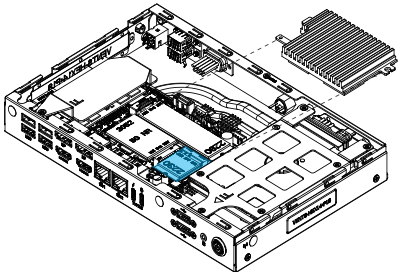
Install the antenna on the left side of the connection wireless module down.



2.5 C) Wireless Module: How to safely install the Module (Wireless Module inclusion may vary based on local distribution) - 2

❺

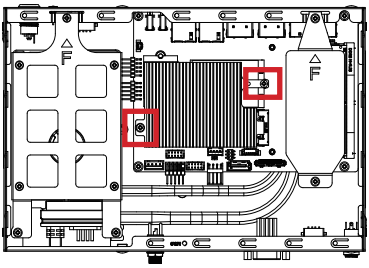
Remove the release paper and secure the heatsink.
Make sure the thermal pad is fully compacted with the module.



2.6 D) M.2 SSD Installation: How to safely install the M.2 2280 SSD

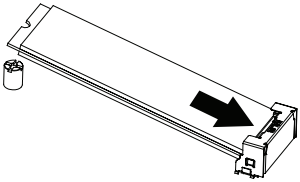
❶

Remove 2 screws and the heatsink.



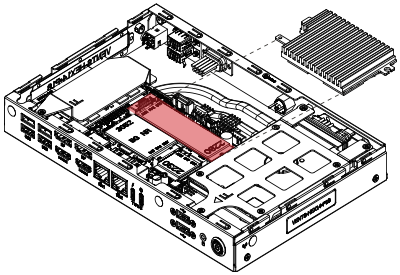
❷

Carefully insert the M.2 SSD into the slot.



❸

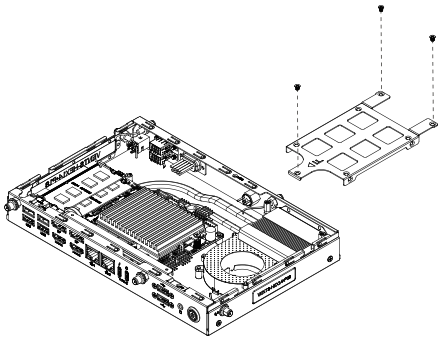
Remove the release paper and secure the heatsink.
Make sure the thermal pad is fully compacted
with the module.



2.7 E) 2.5” HDD/SSD installation: How to install 2.5” HDD/SSD

1

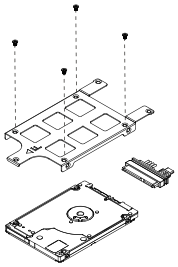
Remove 3 screws to remove the HDD bracket.



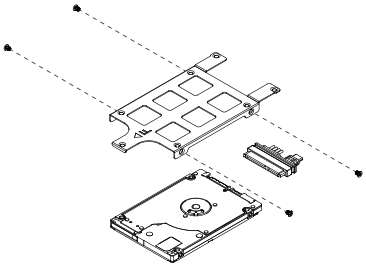
2

Two Ways to secure 2.5" HDD/SSD as below. (The gold finger must face up)
Then assemble the SATA cable with 2.5" HDD/SDD, and lock the bottom cover.

Option 1



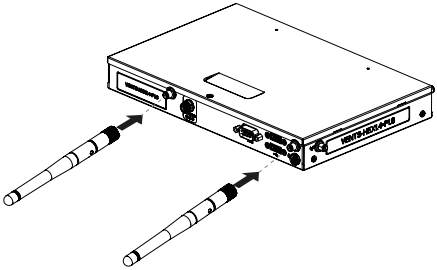
Option 2



2.8 Antenna Installation (Antenna inclusion may vary based on local distribution)

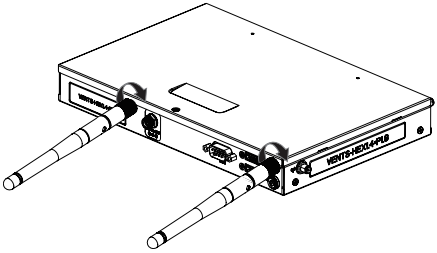
1

Carefully insert the antennas into the connectors.



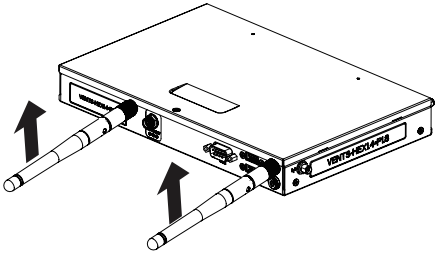
2

Turn the antennas clockwise until they are completely secure on the connectors.



3

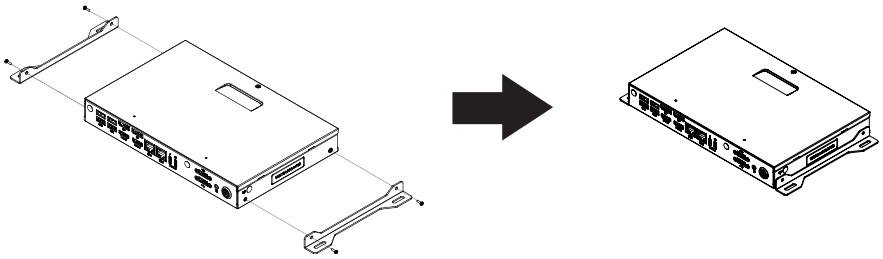
Flip up the antenna heads so that they are perpendicular to the machine.



2.9 Wall mount Bracket Installation

1

First : remove 4 screws that are already on the system.
Second : Use 4 screws in the accessory kit to lock wall mount bracket on the system.

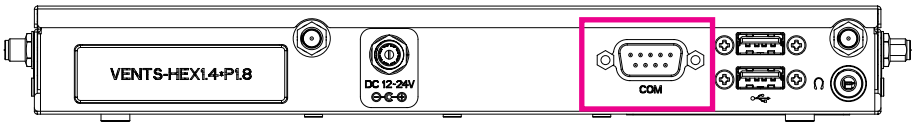


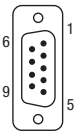
2

Suggest screws as below for different type of surface.

Concrete wall	Wooden wall	Machine
 Electric drill	 Self-tapping screw ST3.2 x 25mm	 Machine screw M3 x 10mm pan head, with Spring washer + flat washer
 Wall anchors ST3.2 x 30mm		
 Self-tapping screw ST3.2 x 25mm		

2.10 DB9 COM Pin Define



DB9 COM	
	
25CF8-120600-S9R	
Pin No.	Pin Define
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

2.11 Support

- For AVL list, go to: http://www.gigaipc.com
- To download the latest drivers, go to: http://www.gigaipc.com
- For product support, go to: http://www.gigaipc.com

2.12 Safety and Regulatory Information

Risk of explosion if the battery is replaced with an incorrect type. Batteries should be recycled where possible.
Disposal of used Batteries must be in accordance with local environmental regulations.
Failure to use the included Power Adapter may violate regulatory compliance and may expose the user to safety
hazards.

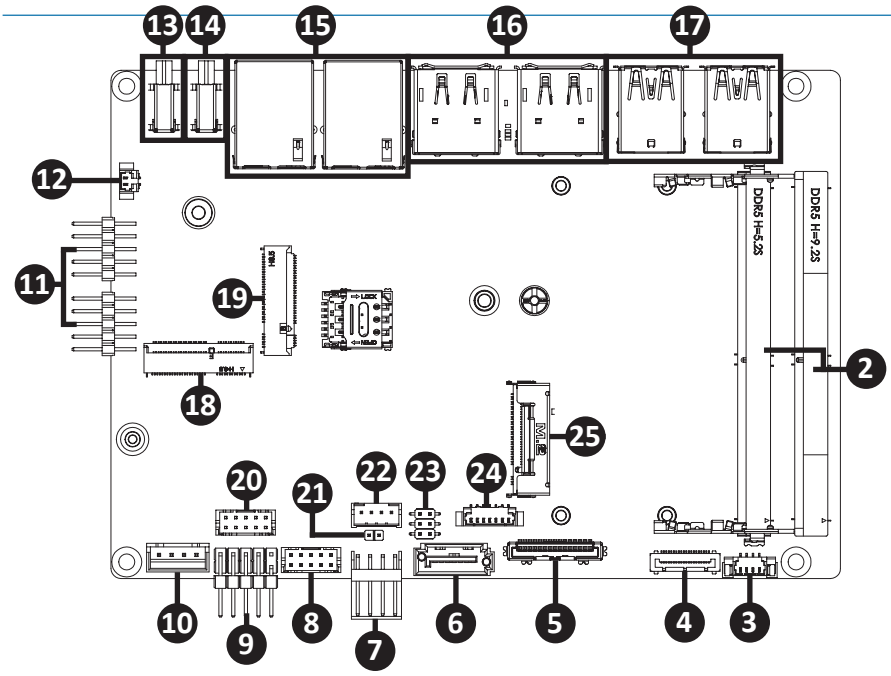
HIGH DEFINITION MULTIMEDIA INTERFACE

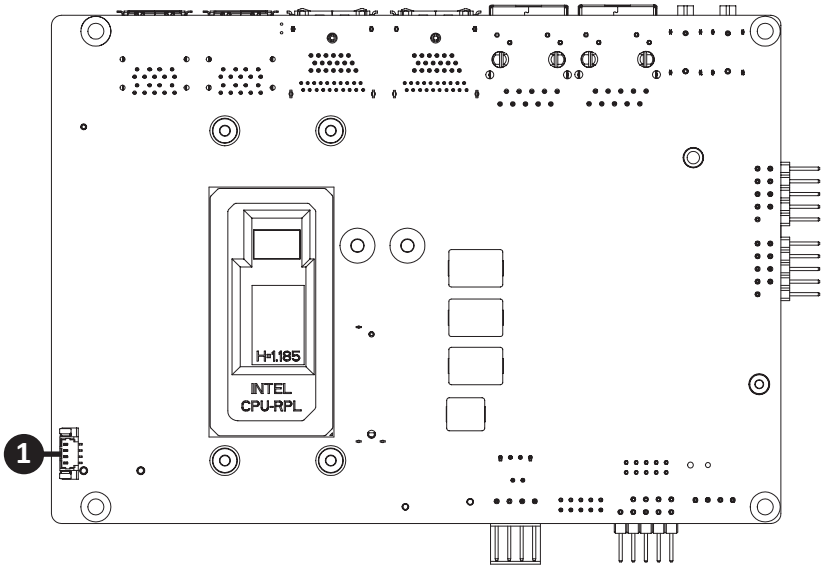
At the end of its serviceable life, this product should not be treated as household or general waste. It should be handed over to the applicable collection point for the recycling of electrical and electronic equipment, or returned to the supplier for disposal.

Chapter 3

Chapter 3 – Hardware Information

3.1 Jumpers and Connectors



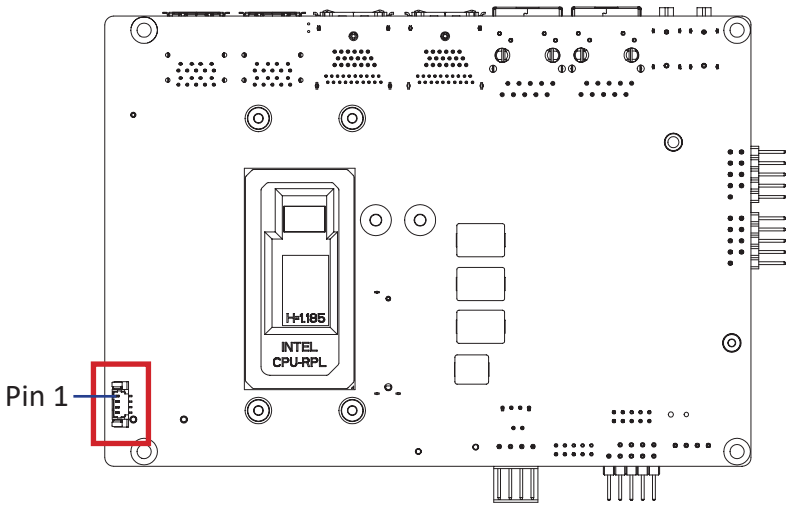


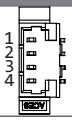
No	Code	Description
1	CPU_FAN2	CPU fan connector
2	SODIMM1 SODIMM2	DDR5 SO-DIMM Slot
3	CPU_FAN1	CPU fan connector
4	EDP	Embedded Display Port Connector
5	PCIE_X4	PCIe Gen4 x4 connector
6	SATA0	SATA 6Gb/s connector
7	SATAPWR	SATA power connector
8	FP_AUDIO	Front Audio connector
9	SYS_PANEL	Front panel header
10	DC_IN	DC IN 1x4 pin power connector
11	FUSB1, FUSB2	USB 2.0 headers
12	BATTERY	Battery cable connector
13	USB3CP	USB 3.2 Gen 2x1 Type C connector (Input)
14	USB3CM	USB 3.2 Gen 2x1 Type C connector (Output)
15	LAN1, LAN2	LAN connector
16	HDMI_DP_1 HDMI_DP_2	DP connector (Top) HDMI connector (Bottom)
17	USB31_1 USB31_2	USB 3.2 Gen 2x1 connector
18	M2E	M.2 Slot, 2230 E-key
19	M2B	M.2 Slot, 3052/3042 B-key
20	COM1	Serial port header (RS-232 & RI/5V/12V)
21	ME_DIS	ME Disable jumper

No	Code	Description
22	SPK_OUT	Speaker out connector
23	JCOM1	COM 1 (COM RI# pin RI#/5V/12V Select)
24	EDP_PWR	Embedded Display Port power connector
25	M2M_CPU	M.2 Slot, 2280 M-key

3.2.1 CPU_FAN2 (CPU fan connector)

1



CPU fan Connector


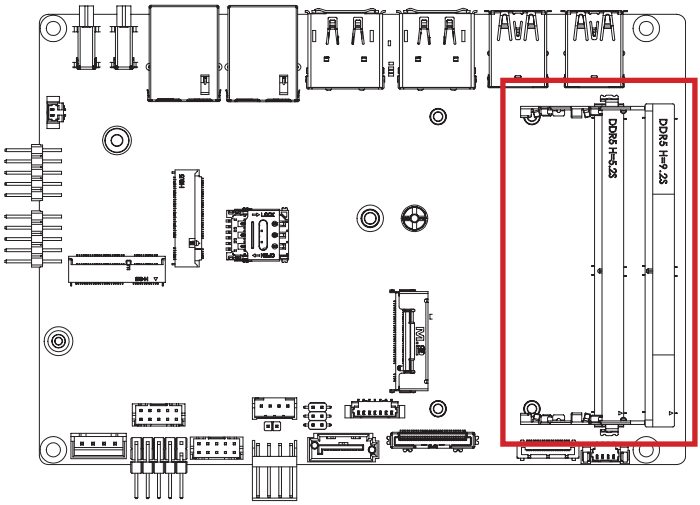
Pin No.	Definition
1	GND
2	12V
3	Detect
4	Speed control

Connector PN	Vendor
85205-0470N	ACES
A1250WV-S-04PC	JOINT-TECH

Connector type
1x4pin header, pitch 1.25mm

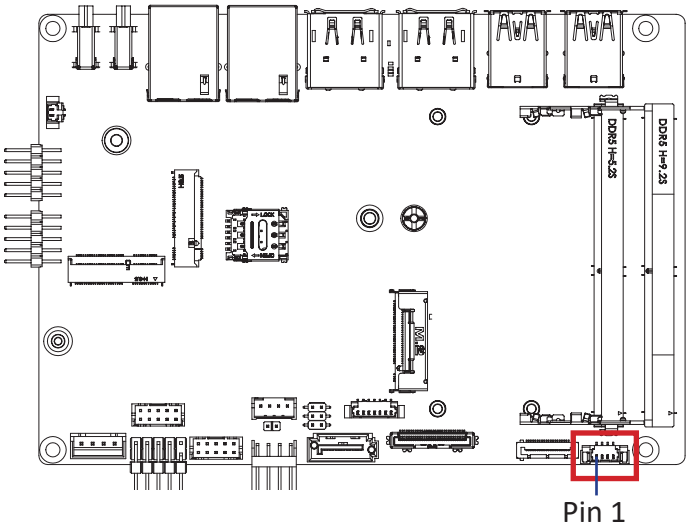
3.2.2 SODIMM1, SODIMM2 (DDR5 SO-DIMM Slot)

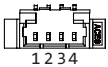
❷



3.2.3 CPU_FAN1 (CPU fan connector)

3



CPU fan Connector

1 2 3 4

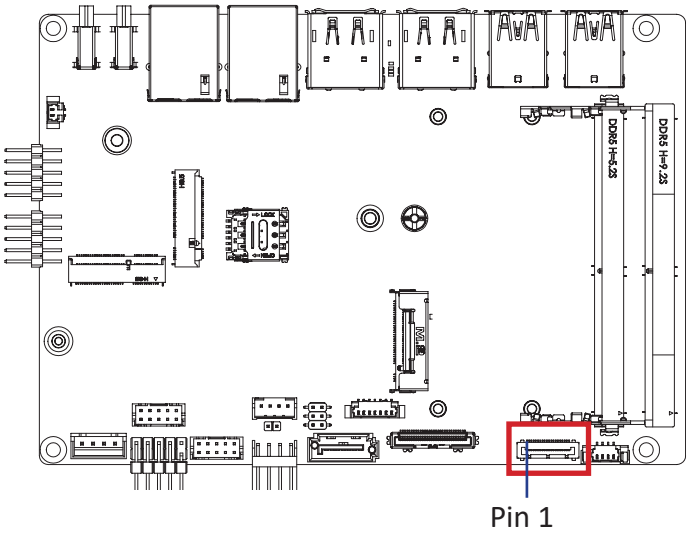
Pin No.	Definition
1	GND
2	12V
3	Detect
4	Speed control

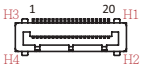
Connector PN	Vendor
85205-0470N	ACES
A1250WV-S-04PC	JOINT-TECH

Connector type
1x4pin header, pitch 1.25mm

3.2.4 EDP (Embedded Display Port Connector)

4



Embedded Display Port Connector


Pin No.	Definition	Pin No.	Definition
1	GND	13	GND
2	EDP_TX0-	14	EDP_AUX-
3	EDP_TX0+	15	EDP_AUX+
4	GND	16	NC
5	EDP_TX1-	17	Hotplug Detect
6	EDP_TX1+	18	Backlight Enable
7	GND	19	GND
8	EDP_TX2-	20	Backlight cotrol

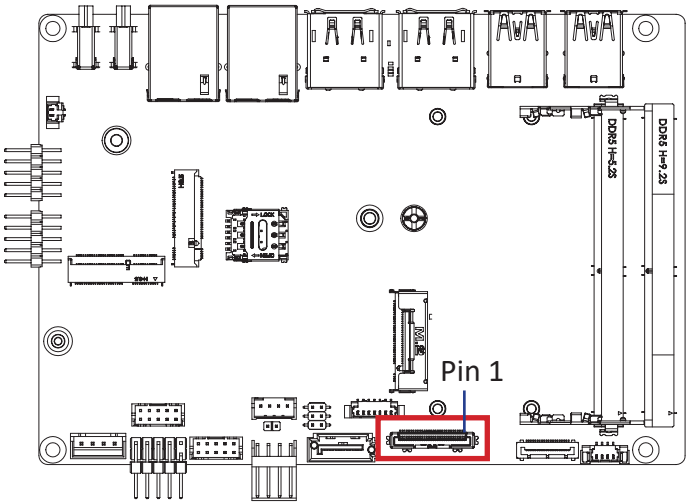
Pin No.	Definition	Pin No.	Definition
9	EDP_TX2+	21	H1
10	GND	22	H2
11	EDP_TX3-	23	H3
12	EDP_TX3+	24	H4

Connector PN	Vendor
115B20-100020-G4-R	STARCONN

Connector type
1x20pin header, pitch 0.5mm

3.2.5 PCIE_X4 (PCIe Gen4 x4 connector)

5



PCIe Gen4 x4 Connector			
30 1			
Pin No.	Definition	Pin No.	Definition
1	TX3_DP	2	TX3_DN
3	GND	4	TX2_DP
5	TX2_DN	6	GND
7	TX1_DP	8	TX1_DN
9	GND	10	TX0_DP
11	TX0_DN	12	GND
13	RX3_DP	14	RX3_DN
15	GND	16	RX2_DP
17	RX2_DN	18	GND
19	RX1_DP	20	RX1_DN

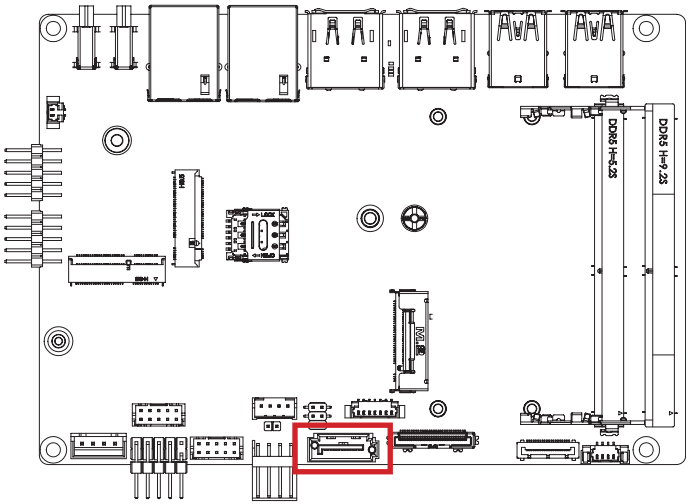
Pin No.	Definition	Pin No.	Definition
21	GND	22	RX0_DP
23	RX0_DN	24	CK_REQ
25	CLK_DP	26	CLK_DN
27	SMB_CLK	28	SMB_DATA
29	PLT_RST#	30	PCIE_WAKE#

Connector PN	Vendor
115B30-000040-G4-R	STARCONN

Connector type
1x30pin header, pitch 0.5mm

3.2.6 SATA0 (SATA 6Gb/s connector)

6



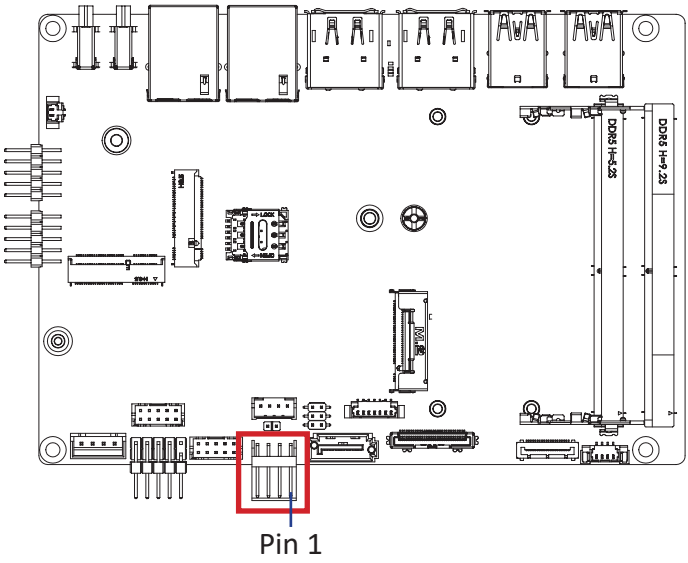
SATA Connector


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

Connector PN	Vendor
WATF-07DBLBA1UW	WINWIN

3.2.7 SATAPWR (SATA power connector)

7



Hard Disk Power Connector

4 1

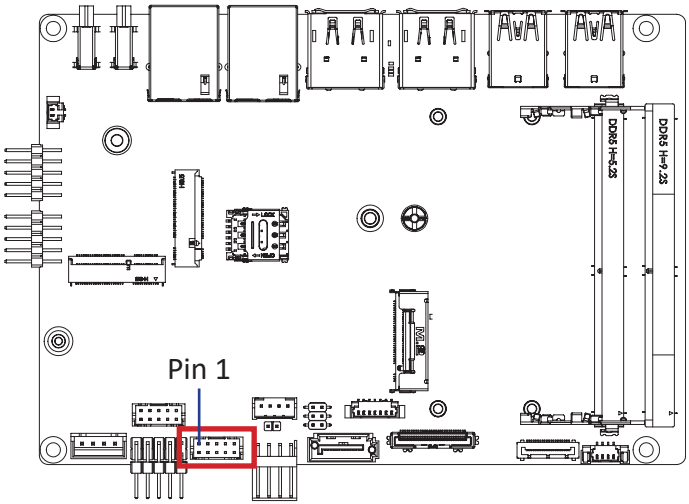
Pin No.	Definition
1	12V
2	GND
3	GND
4	5V

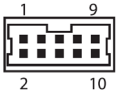
Connector PN	Vendor
743-72-04TW12	PINREX
A2540WR-04PR6NG1N10G	JOINT-TECH

Connector type
1x4pin header, pitch 2.54mm

3.2.8 FP_AUDIO (Front Audio connector)

8



Front Audio Connector


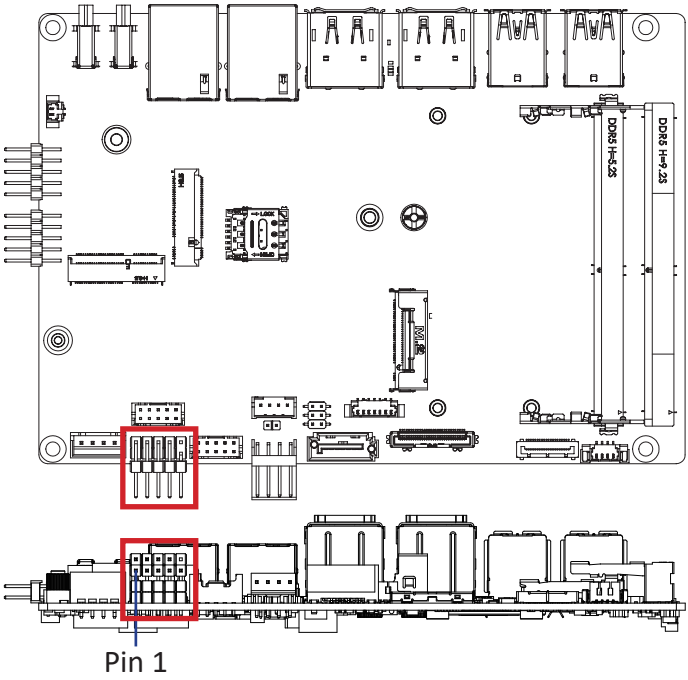
Pin No.	Definition	Pin No.	Definition
1	MIC_L	6	MIC_JD
2	GND	7	FAUDIO_JD
3	MIC_R	8	No Connect
4	NC	9	HPOUT_L
5	HPOUT_R	10	HPOUT_JD

Connector PN	Vendor
725-81-10TW00	PINREX
A2004WV-2X05P46	JOINT-TECH

Connector type
2x5pin header, pitch 2.0mm

3.2.9 SYS_PANEL (Front panel header)

9



System Panel Header
2 10 1 9

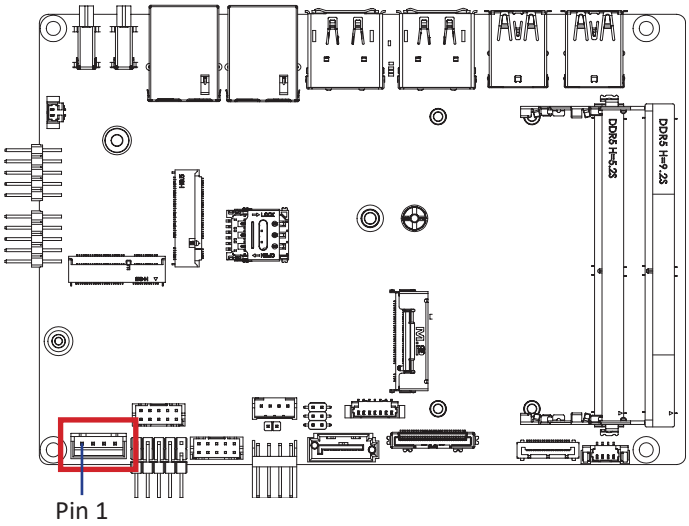
Pin No.	Definition
1	HDD LED+
2	Power LED+
3	HDD LED-
4	Power LED-
5	GND
6	Power Button+
7	Reset
8	Power Button-
9	No Connect
10	No Pin

Connector PN	Vendor
21P-92-05GB06	PINREX

Connector type
2x5pin header, pitch 2.54mm

3.2.10 DC_IN (DC IN 1x4 pin power connector)

10



DC IN 1x4 pin power connector
1 2 3 4

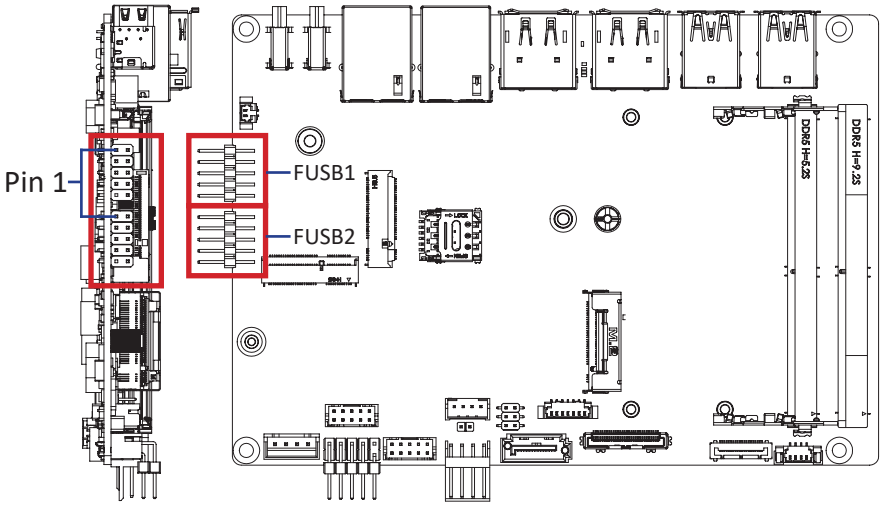
Connector PN	Vendor
753-81-04TW00	PINREX

Connector type
1x4pin header, pitch 2.5mm

Pin No.	Definition
1	GND
2	POWER IN
3	POWER IN
4	GND

3.2.11 FUSB1, FUSB2 (USB2.0 headers)

11



USB 2.0 Header
1 2 9 10

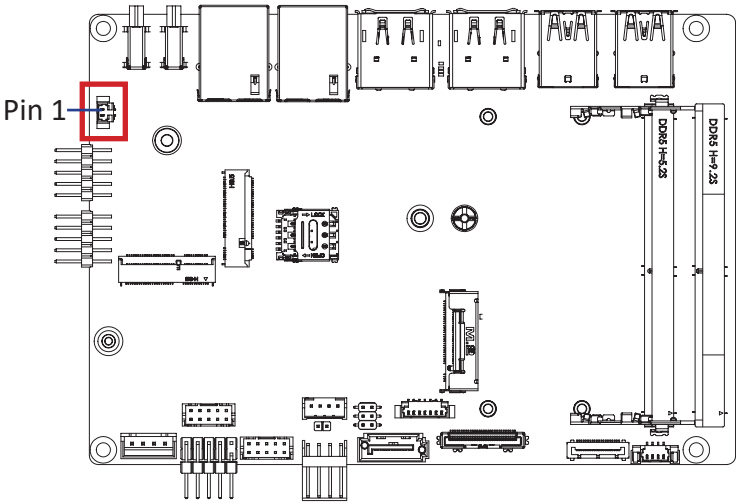
Pin No.	Definition
1	5V
2	5V
3	DL-
4	DR-
5	DL+
6	DR+
7	GND
8	GND
9	No Pin
10	No Connect

Connector PN	Vendor
210-92-05GB04	PINREX
PH10R53BAZ009	HORNGTONG

Connector type
2x5pin header, pitch 2.54mm

3.2.12 BATTERY (Battery cable Connector)

12



Battery cable Connector

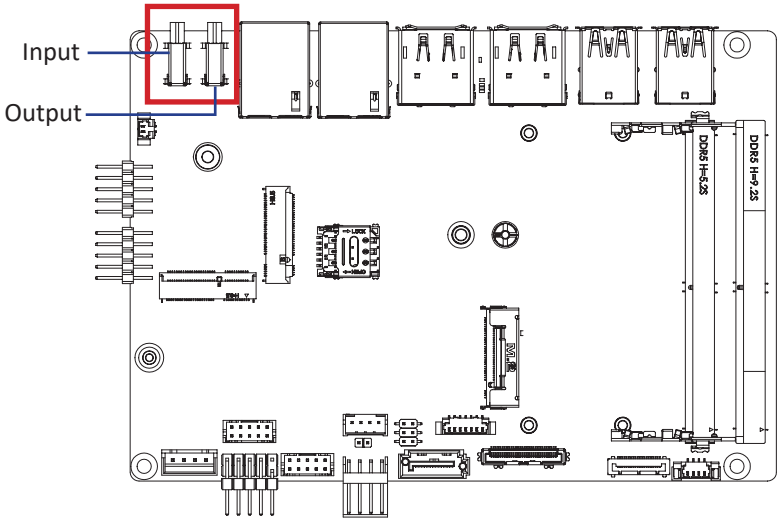

Pin No.	Definition
1	3.3V
2	GND

Connector PN	Vendor
85205-0270L	ACES
A1250WV-S-02PC	JOINT-TECH

Connector type
1x2pin header, pitch 1.25mm

3.2.13 USB3CP (USB 3.2 Gen 2x1 Type C connector)
3.2.14 USB3CM (USB 3.2 Gen 2x1 Type C connector)

13 14



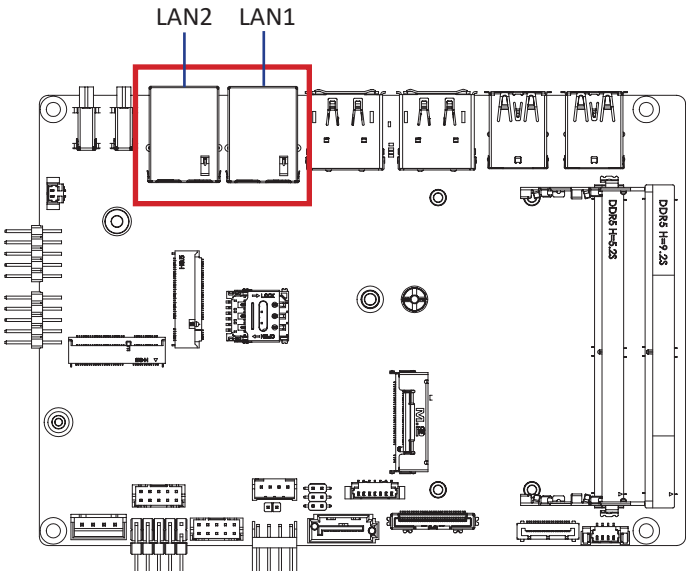
USB Type C Connector

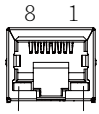

Pin No.	Definition	Pin No.	Definition
A1	GND	B1	GND
A2	TX1+	B2	TX2+
A3	TX1-	B3	TX2-
A4	VBUS	B4	VBUS
A5	CC1	B5	CC2
A6	D+	B6	D+
A7	D-	B7	D-
A8	NC	B8	NC
A9	VBUS	B9	VBUS
A10	RX2-	B10	RX1-
A11	RX2+	B11	RX1+
A12	GND	B12	GND

Connector PN	Vendor
WU3CR-24A5L1CU5T41	WINWIN

3.2.15 LAN1, LAN2 (LAN Connector)

15



LAN Connector

8 1
Link / Activity LED　Connection/ Speed LED

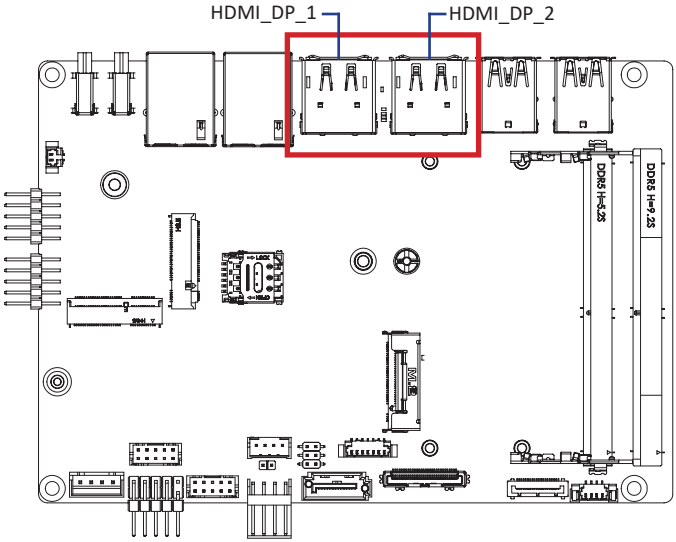
Pin No.	Definition
1	TX+_D1
2	TX-_D1
3	RX+_D2
4	BI+_D3
5	BI-_D3
6	RX-_D2
7	BI+_D4
8	BI-_D4

State	Description
Orange On	2.5Gbps data rate
Green On	1Gbps data rate
Off	100M & 10Mbps data rate

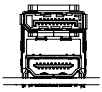
Connector PN	Vendor
RB1-GB-0009	UDE

3.2.16 HDMI_DP_1, HDMI_DP_2 (HDMI (Bottom) & DP (Top) connector)

16



HDMI & DP Connector



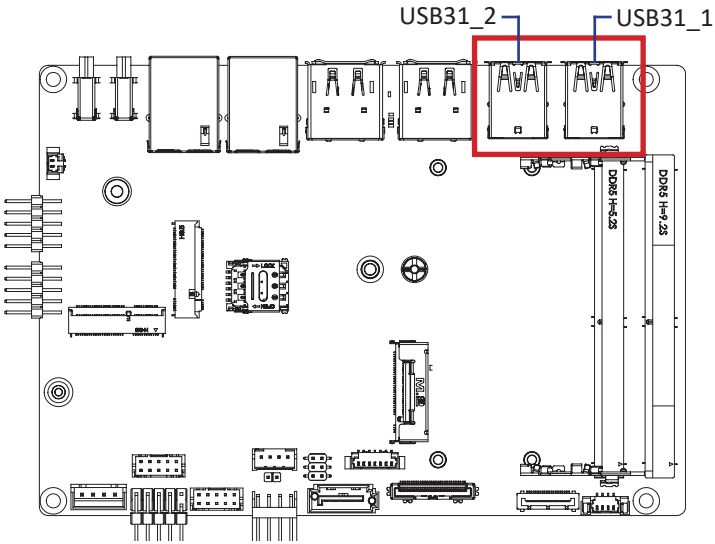
HDMI Connector			
Pin No.	Definition	Pin No.	Definition
1	HDMI_D2+	13	NC
2	GND	14	NC
3	HDMI_D2-	15	HDMI_SCL
4	HDMI_D1+	16	HDMI_SDA
5	GND	17	GND
6	HDMI_D1-	18	5V
7	HDMI_D0+	19	HDMI_HPD
8	GND		
9	HDMI_D0-		
10	HDMI_CLK+		
11	GND		
12	HDMI_CLK-		

DP Connector			
Pin No.	Definition	Pin No.	Definition
1	DATA_0P	11	GND
2	GND	12	DATA_3N
3	DATA_0N	13	CONFIG1
4	DATA_1P	14	GND
5	GND	15	AUX_P
6	DATA_1N	16	GND
7	DATA_2P	17	AUX_N
8	GND	18	DP HPD
9	DATA_2N	19	NC
10	DATA_3P	20	DP PWR

Connector PN	Vendor
DPHDDPHD0172201AN0	FENYING

3.2.17 USB31_1, USB31_2 (USB 3.2 Gen 2x1 Connector)

17



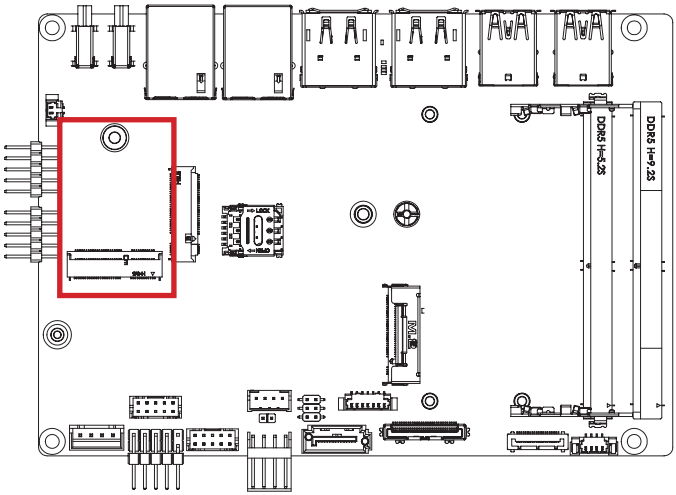
USB Connector


Pin No.	Definition	Pin No.	Definition
1	5V	10	5V
2	USB_D-	11	USB_D-
3	USB_D+	12	USB_D+
4	GND	13	GND
5	USB3_RX-	14	USB3_RX-
6	USB3_RX+	15	USB3_RX+
7	GND	16	GND
8	USB3_TX-	17	USB3_TX-
9	USB3_TX+	18	USB3_TX+

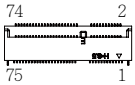
Connector PN	Vendor
18-A5950-6A33-A	TCONN

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

18



M.2 E Key Connector



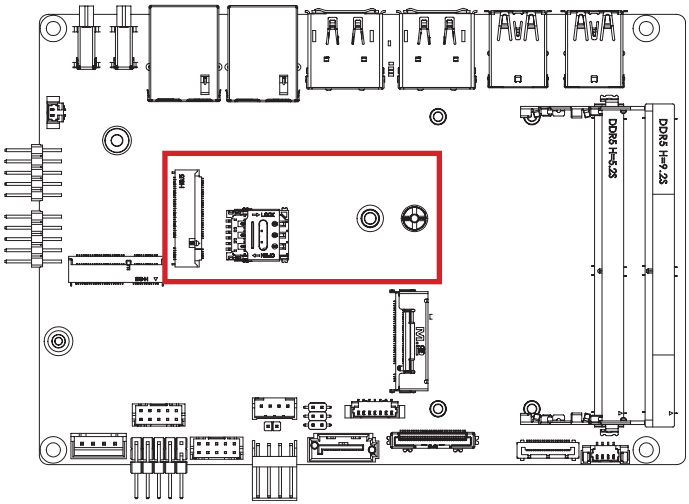
Pin No.	Definition	Pin No.	Definition
1	GND	2	3V
3	USB_D+	4	3V
5	USB_D-	6	NC
7	GND	8	NC
9	NC	10	NC
11	NC	12	NC
13	NC	14	NC
15	NC	16	NC
17	NC	18	GND
19	NC	20	NC
21	NC	22	NC
23	NC		

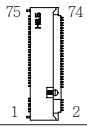
Pin No.	Definition	Pin No.	Definition
33	GND	32	NC
35	WLAN_TXP	34	NC
37	WLAN_TXN	36	NC
39	GND	38	CL_RST#
41	WLAN_RXP	40	CL_DATA
43	WLAN_RXN	42	CL_CLK
45	GND	44	NC
47	CLK_DP	46	NC
49	CLK_DN	48	NC
51	GND	50	SUSCLK
53	CLK_REQ	52	PLT_RST#
55	PCIE_WAKE	54	BT_Disable#
57	GND	56	WIFI_Disable#
59	NC	58	NC
61	NC	60	NC
63	GND	62	NC
65	NC	64	NC
67	NC	66	NC
69	GND	68	NC
71	NC	70	NC
73	NC	72	3V
75	GND	74	3V

Connector PN	Vendor
APCI0095-P002A	LOTES
80152-8521	BELLWETHER

3.2.19 M2B (M.2 Slot, 3052/3042 B-key)

19



M.2 B Key Connector


Pin No.	Definition	Pin No.	Definition
1	3.3V	2	3.3V
3	GND	4	3.3V
5	GND	6	WWAN_PWR_OFF
7	USB D+	8	WWAN_Disable
9	USB D-	10	LED
11	GND		

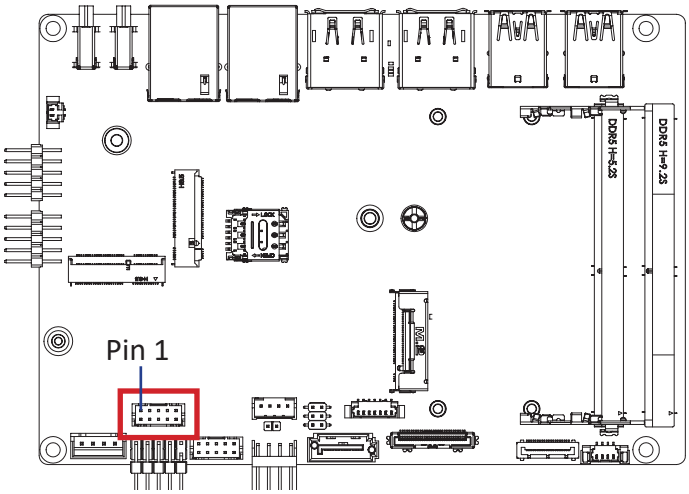
Pin No.	Definition	Pin No.	Definition
21	NC	20	NC
23	M2B_WAKE	22	NC
25	M2B_DRP	24	NC
27	GND	26	WWAN_Disable2
29	USB3 RXN	28	NC
31	USB3_RXP	30	SIM_RST#
33	GND	32	SIM_CLK
35	USB3_TXN	34	SIM_DATA

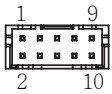
Pin No.	Definition	Pin No.	Definition
37	USB3_TXP	36	SIM_PWR
39	GND	38	BootSelect
41	PCIE_RXN	40	NC
43	PCIE_RXP	42	NC
45	GND	44	NC
47	PCIE_TXN	46	GNSS_CLK
49	PCIE_TXP	48	GNSS_TX_BLANK
51	GND	50	PLT_RST
53	CLK_N	52	CK_REQ
55	CLK_P	54	PCIE_WAKE
57	GND	56	NC
59	NC	58	NC
61	NC	60	COEX3
63	NC	62	COEX2
65	NC	64	COEX1
67	1.8V	66	UMI_DET
69	M2B_DET	68	NC
71	GND	70	3.3V
73	GND	72	3.3V
75	NC	74	3.3V

Connector PN	Vendor
80149-8521	BELLWETHER
2E0BC21-S85BB-7H	FOXCONN

3.2.20 COM1 (Serial port header, RS-232 & RI/5V/12V)

20



Serial Port Cable Connector


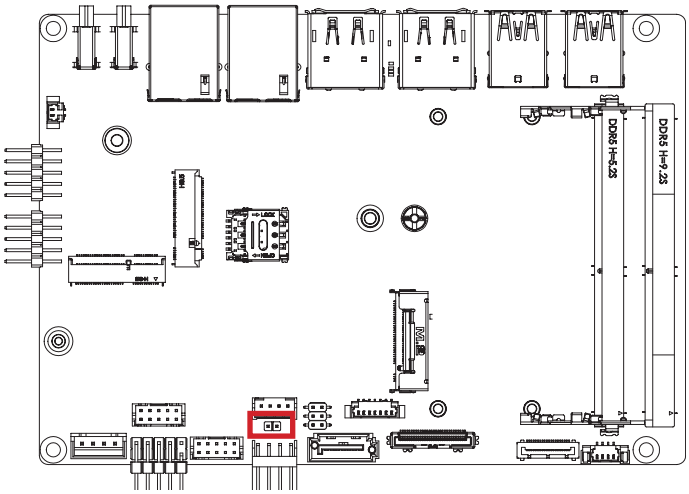
Connector PN	Vendor
725-81-10TW00	PINREX
A2004WV-2X05P46	JOINT-TECH

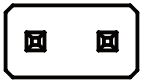
Connector type
2x5pin header, pitch 2.0mm

Pin No.	Definition	Pin No.	Definition
1	RXD	6	GND
2	DCD	7	CTS
3	DTR	8	RTS
4	TXD	9	No Connect
5	DSR	10	RI/ 5V/ 12V

3.2.21 ME_DIS (ME Disable jumper)

21



ME Disable Connector


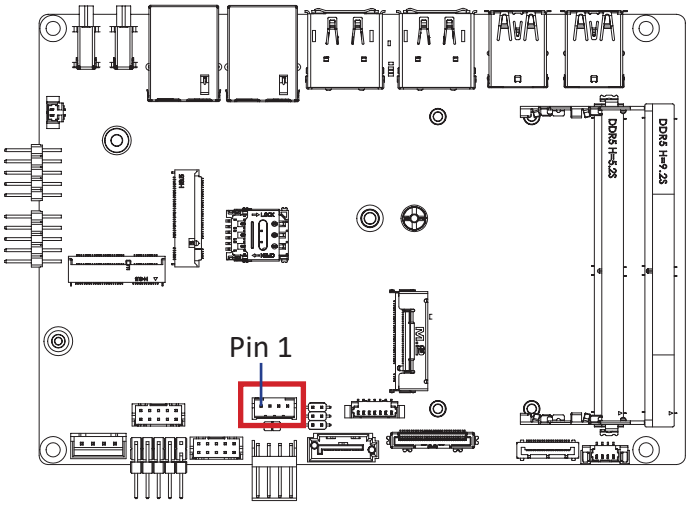
ME Disable jumper	
	Enable (Default)
	Disable (Close)

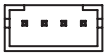
Connector PN	Vendor
220-96-02GBK1	PINREX

Connector type
1x2pin header, pitch 2.0mm

3.2.22 SPK_OUT (Speaker out connector)

22



Speaker out Connector

1234

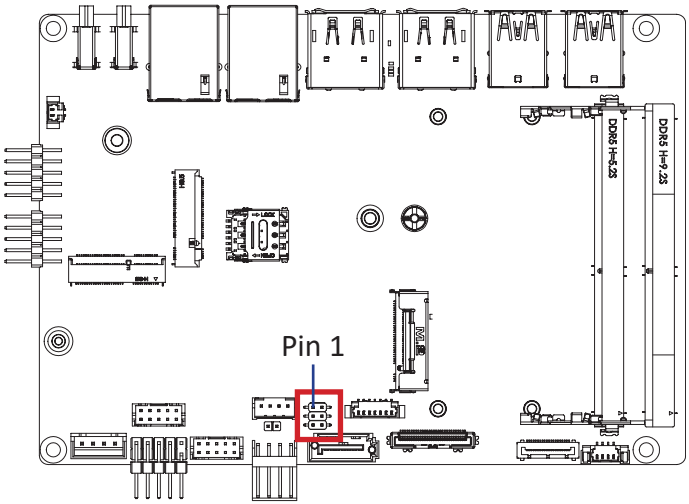
Pin No.	Definition
1	Speaker Out L+
2	Speaker Out L-
3	Speaker Out R-
4	Speaker Out R+

Connector PN	Vendor
A2001WV-04P146	JOINT-TECH

Connector type
1x4pin header, pitch 2.0mm

3.2.23 JCOM1 (COM1 RI# pin RI#/5V/12V Select)

23



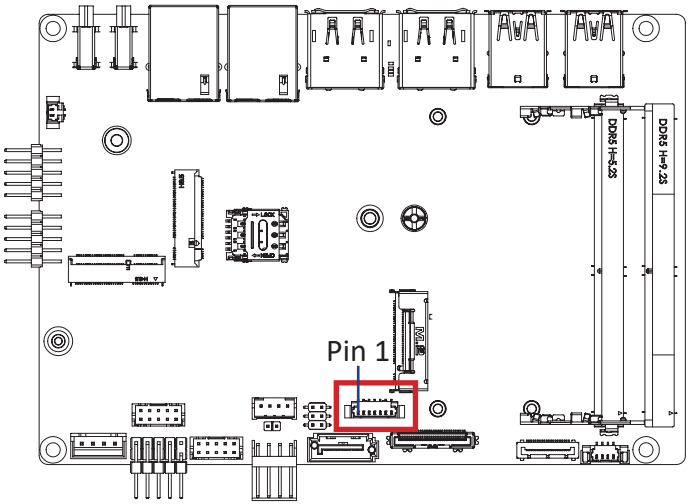
JCOM1 Jumper Select	
1 2 5 6	1-2 Close: 5V (Power COM)
1 2 5 6	3-4 Close: RI (Stand COM) (Default-Setting)
1 2 5 6	5-6 Close: 12V (Power COM)

Connector PN	Vendor
222-97-03GBE1	PINREX

Connector type
2x3pin header, pitch 2.0mm

3.2.24 EDP_PWR (Embedded Display Port power connector)

24



Embedded Display Port power connector

1 7

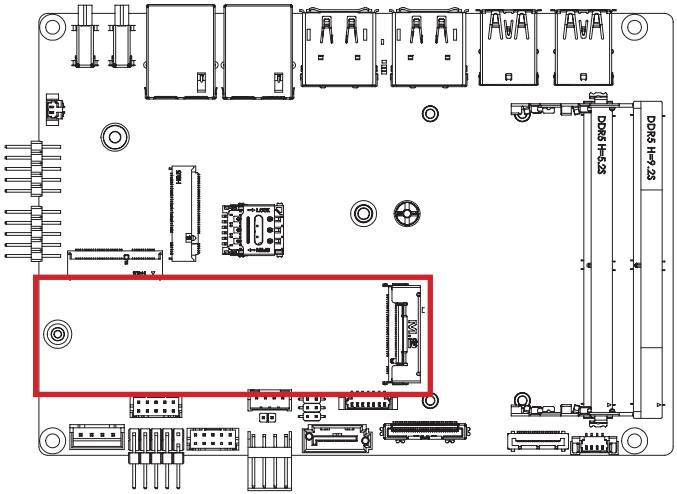
Pin No.	Definition
1	NC
2	NC
3	3V
4	GND
5	GND
6	12V
7	12V

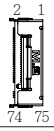
Connector PN	Vendor
85205-0770N	ACES
A1250WV-S-07PC	JOINT-TECH

Connector type
1x7pin header, pitch 1.25mm

3.2.25 M2M (M.2 Slot, 2280 M-key)

25



M.2 M Key Connector


Pin No.	Definition	Pin No.	Definition
1	GND	2	3.3V
3	GND	4	3.3V
5	PCIE_RX3-	6	NC
7	PCIE_RX3+	8	NC
9	GND	10	M2_LED
11	PCIE_TX3-	12	3.3V
13	PCIE_TX3+	14	3.3V
15	GND	16	3.3V
17	PCIE_RX2-	18	3.3V
19	PCIE_RX2+	20	NC
21	GND	22	NC
23	PCIE_TX2-	24	NC
25	PCIE_TX2+	26	NC
27	GND	28	NC
29	PCIE_RX1-	30	NC
31	PCIE_RX1+	32	NC
33	GND	34	NC

Pin No.	Definition	Pin No.	Definition
35	PCIE_TX1-	36	NC
37	PCIE_TX1+	38	DEVSLP
39	GND	40	SMB Clock
41	SATA_RXP	42	SMB DATA
43	SATA_RXN	44	SMB ALERT
45	GND	46	NC
47	SATA_TXN	48	NC
49	SATA_TXP	50	PLT_RST
51	GND	52	CK_REQ
53	CLK_N	54	PCIE_WAKE#
55	CLK_P	56	NC
57	GND	58	NC

Pin No.	Definition	Pin No.	Definition
67	NC	68	SUSCLK
69	M2_SSD_ Detect	70	3.3V
71	GND	72	3.3V
73	GND	74	3.3V
75	GND		

Connector PN	Vendor
2E0BC41-C85CM-LH	FOXCONN

Chapter 4

Chapter 4 – BIOS

4.1 Introduction

BIOS (Basic input/output system) provides hardware detailed information and boot-up options, which include firmware to control, set-up and test all hardware settings. Therefore, BIOS is the communication bridge between OS/application software and hardware.

4.1.1 How to Entering into BIOS menu

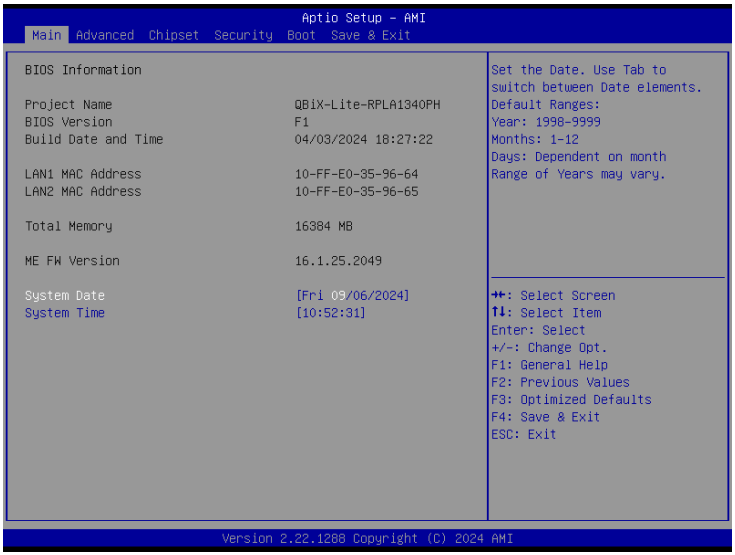
Once the system is power on, press the <DEL> key as soon as possible to access into BIOS Setup program.

4.1.2 Function Keys to setup in BIOS Setup program

Function keys	Description
→←	Select Screen
↑↓	Select Item
Enter	Execute command or enter the submenu
+	Increase the numeric value or make changes
—	Decrease the numeric value or make changes
F1	General Help
F2	Previous Values
F3	Load Optimized Defaults Settings
F4	Save changes & Exit the BIOS Setup program
ESC	Exit the BIOS Setup program

4.2 The Main Menu

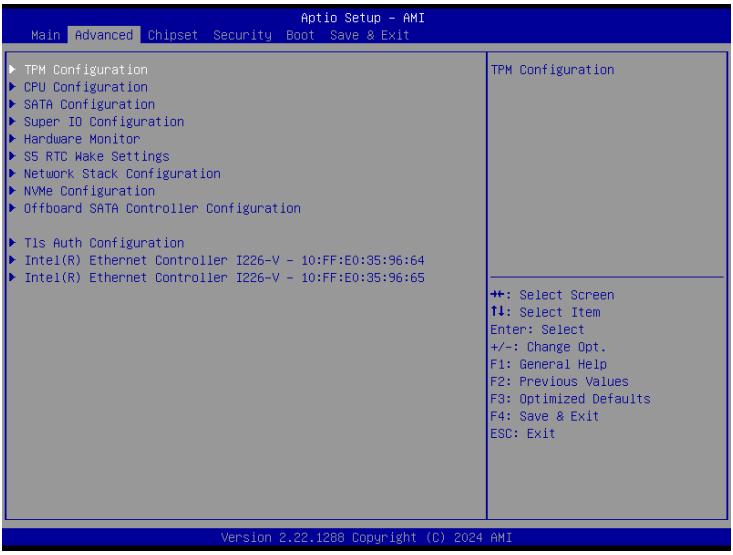
The main menu shows the basic system information.
Use arrow keys to move among the items.



Items	Description
Project Name	Shows Project name information
BIOS Version	Shows the BIOS version of the system
Build Date and Time	Shows the Build Date and Time when the BIOS was created.
LAN1 MAC Address	Shows LAN MAC Address information
LAN2 MAC Address	Shows LAN MAC Address information
Total Memory	Shows the total memory size of the installed memory
ME FW version	Shows ME firmware version
System Date	Set the Date for the system (Format : Weekday - Month - Day - Year)
System Time	Set the time for the system (Format : Hour - Minute - Second)

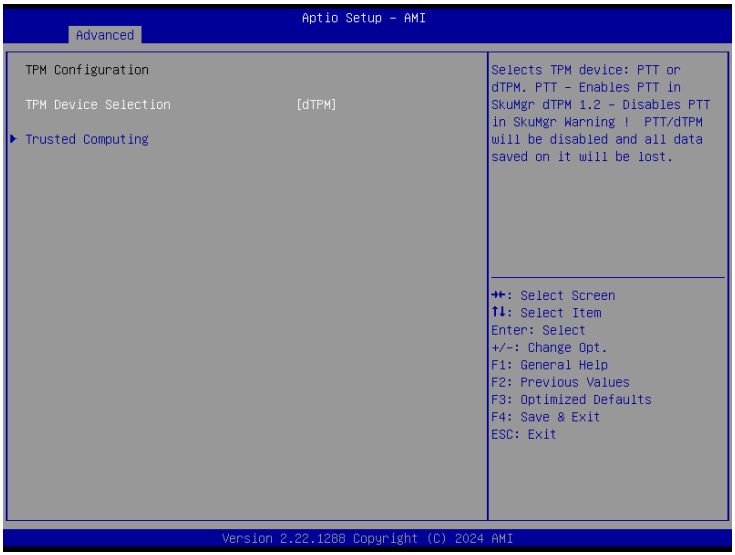
4.3 Advanced

The Advanced menu is to configure the functions of hardware settings through submenu. Use arrow keys to move among the items, and press <Enter> to access into the related submenu.



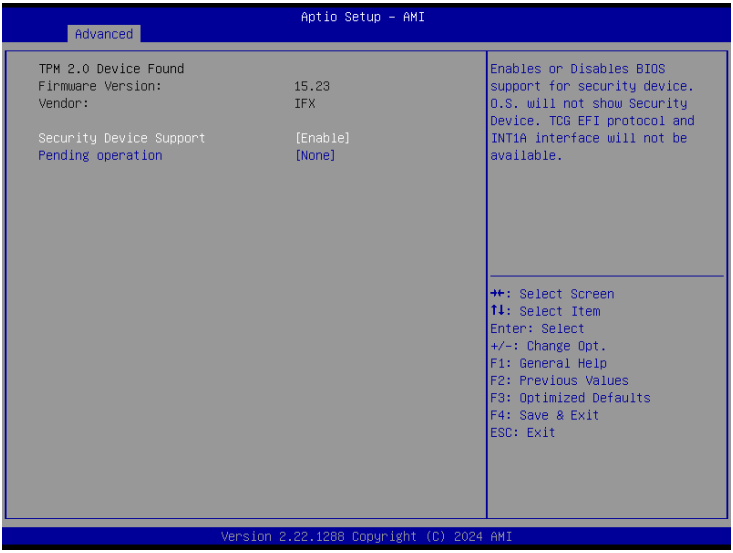
4.3.1 TPM Configuration

Use TPM Configuration submenu to choose TPM interface.



Item	Description
TPM Device Selection	PTT : Internal TPM dTPM : External TPM (When using External TPM module or having TPM chip on MB)(Default setting)

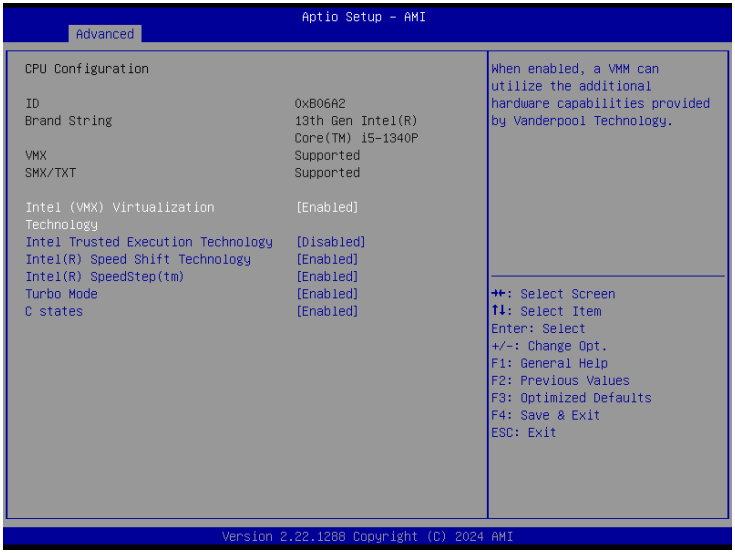
Trusted Computing : Shows TPM information, and TPM module configuration setting.



Item	Description
Security Device support	**Enabled : Enables TPM feature (Default setting)** **Disabled : Disables TPM feature**
Pending operation	**None : No execution will be conducted (Default setting)** **TPM clear : Set to clear data on TPM**

4.3.2 CPU Configuration

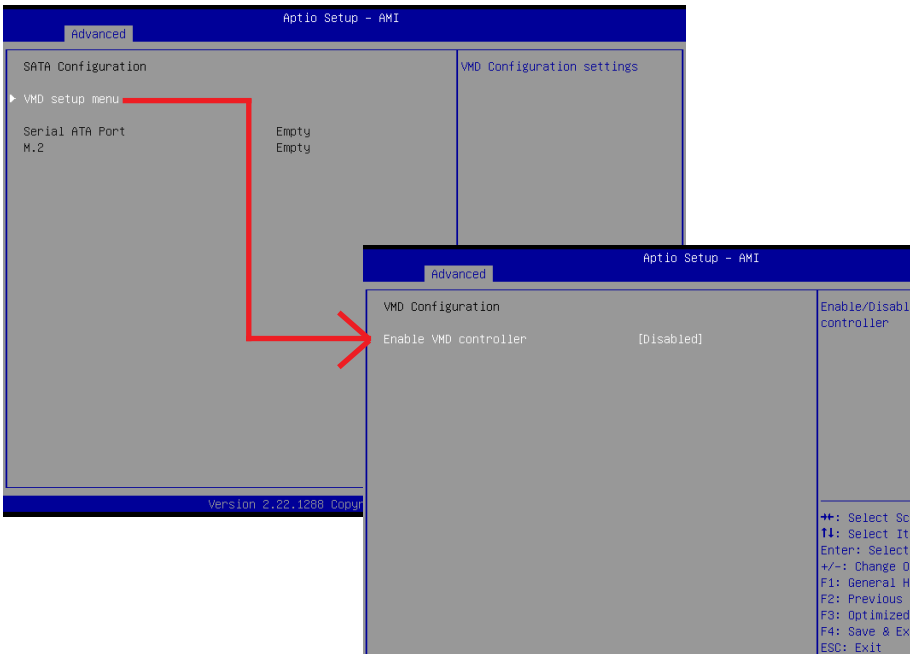
This submenu shows detailed CPU informations.



Item	Description
Intel (VMX) Virtualization Technology	Virtualization enhanced by Intel® Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems. **Enabled : Enables Intel Virtualization Technology (Default setting)** **Disabled : Disables Intel Virtualization Technology**
Intel Trusted Execution Technology	**Disabled : Disables Intel Trusted Execution Technology (Intel® TXT) (Default setting)** **Enabled : Enables Intel Trusted Execution Technology (Intel® TXT)**
Intel(R) Speed Shift Technology	To speed up CPU frequency transition time from basic frequency to maximum frequency. **Enabled : Enables Intel(R) Speed Shift Technology (Default setting)** **Disabled : Disables Intel(R) Speed Shift Technology**

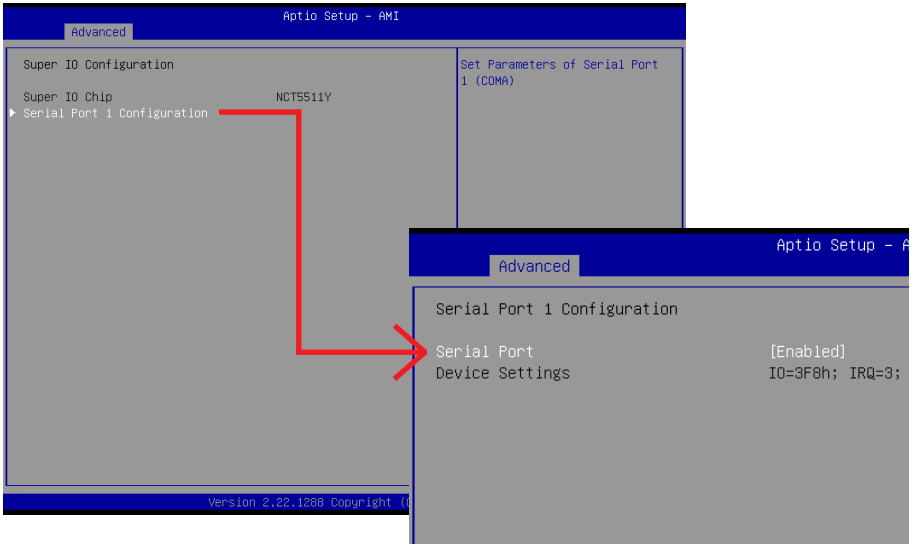
Intel(R) SpeedStep(tm)	According to Intel CPU loading, Intel SpeedStep Technology will automatically adjust the CPU voltage and core frequency to decrease heat and power consumption for power saving. **Enabled : Enables Intel SpeedStep Technology (Default setting)** **Disabled : Disables Intel SpeedStep Technology**
Turbo Mode	**Enabled : Enables Turbo Mode (Default setting)** **Disabled : Disables Turbo Mode**
C states	Command CPU to enter into low power consumption mode when CPU is under idle mode. **Enabled : Enables C states (Default setting)** **Disabled : Disables C states**

4.3.3 SATA Configuration



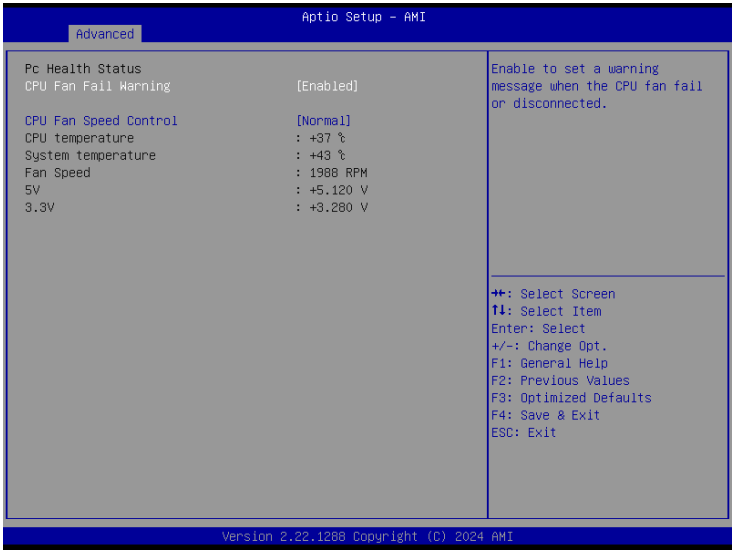
Item	Description
VMD setup menu / Enable VMD controller	Intel VMD feature helps you to control and manage NVMe PCIe SSD. **Enabled : Enables Intel VMD feature** **Disabled : Disables Intel VMD feature (Default setting)**
Serial ATA Port	shows 2.5" SATA HDD/SSD information
M.2	shows M.2 SATA interface SSD information

4.3.4 Super I/O Configuration



Item	Description
Super IO Chip	Shows Super I/O chip model
Serial Port 1 Configuration	Press [Enter] to configure advanced items : Serial Port : **Enabled : Enables allows you to configure the serial port settings** **Disabled : if Disabled, displays no configuration for the serial port** Device settings : Display the specified Serial Port base I/O address and IRQ

4.3.5 Hardware Monitor

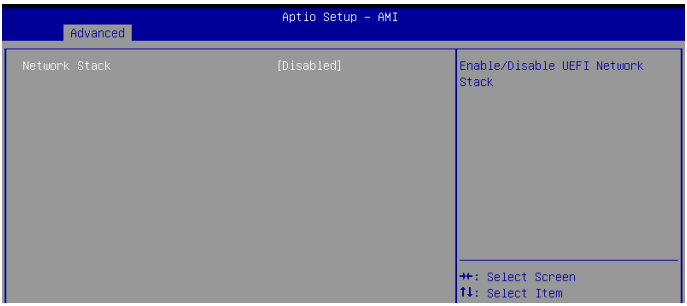


Item	Description
CPU Fan Fail Warning	**Enabled : Enables CPU FAN Fail warning alert function (Default setting)** **Disabled : Disables CPU FAN Fail warning alert function**
CPU Fan Speed Control	**Normal : Fan speed set by BIOS default(Default setting)** **Full Speed : Set Fan operates at full speed**
CPU temperature	Shows current CPU temperature
System temperature	Shows current system temperature
Fan Speed	Shows current CPU fan Speed

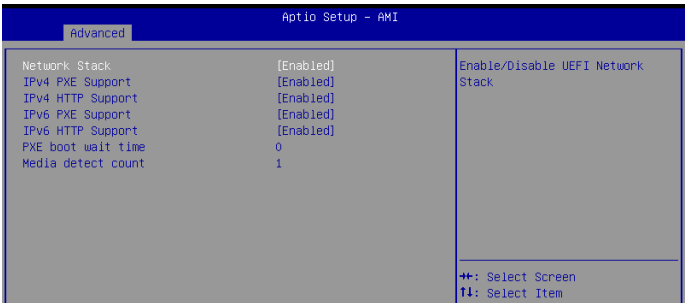
4.3.6 S5 RTC Wake Settings

Item	Description
Wake system from S5	Enable or Disable System to wake on a specific time. **Disabled : Disables system to wake on a specific time (Default setting)** **Fixed Time : Enables system to wake on a specific time (Format : hr : min : sec)**

4.3.7 Network Stack Configuration



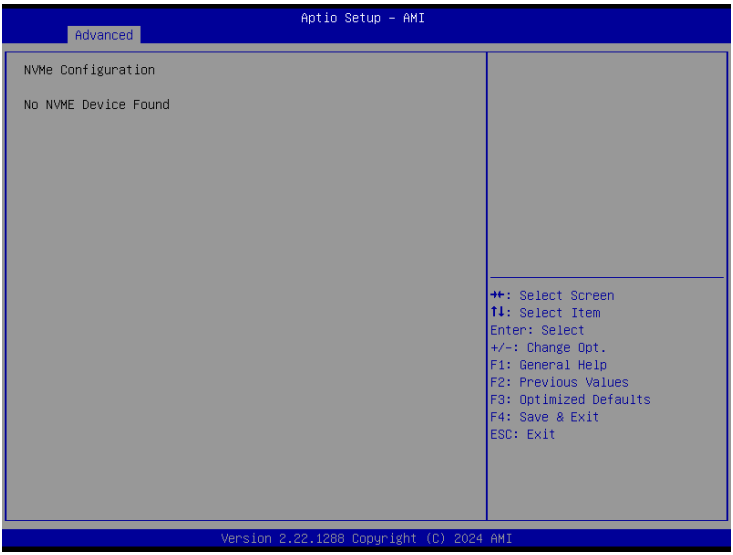
When Network stack is enabled :



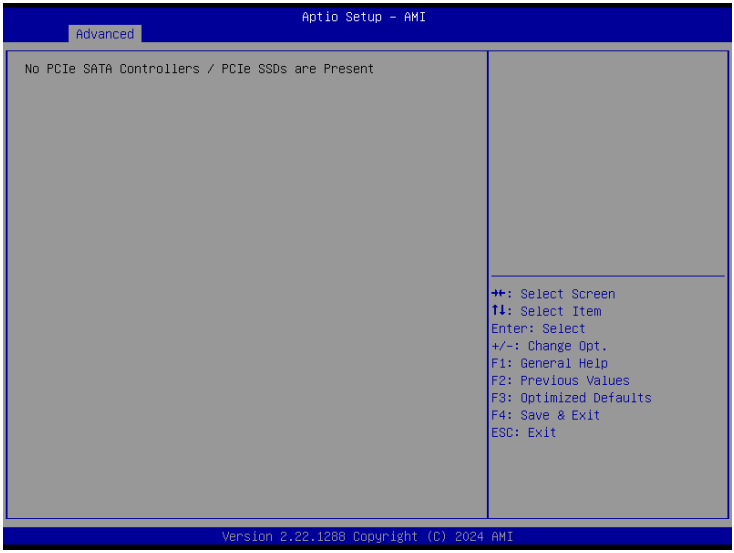
Item	Description
Network Stack	When system is power on, install LAN driver under UEFI mode **Disabled : Disables UEFI Network Stack (Default setting)** **Enabled : Enables UEFI Network Stack**
IPv4 PXE Support	When Network stack is enabled : **Disabled : Disables Ipv4 PXE Support** **Enabled : Enables Ipv4 PXE Support**
IPv4 HTTP Support	When Network stack is enabled : **Disabled : Disables Ipv6 PXE Support** **Enabled : Enables Ipv6 PXE Support**
IPv6 PXE Support	When Network stack is enabled : **Disabled : Disables Ipv4 PXE Support** **Enabled : Enables Ipv4 PXE Support**
IPv6 HTTP Support	When Network stack is enabled : **Disabled : Disables Ipv6 PXE Support** **Enabled : Enables Ipv6 PXE Support**
PXE boot wait time	Wait time in seconds, or use ESC key to abort the PXE boot.
Media detect count	Number of times the presence of media will be checked.

4.3.8 NVMe Configuration

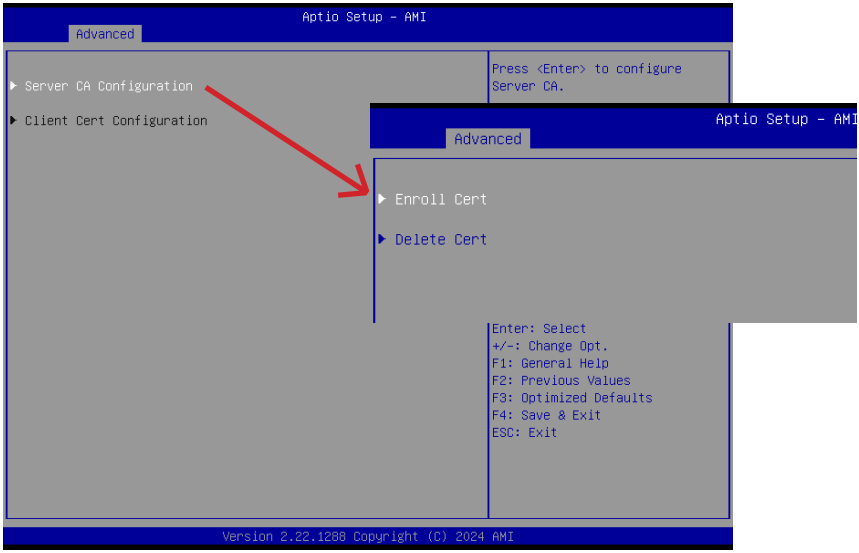
NVMe Configuration shows information when your M.2 NVMe PCIe SSD is installed.



4.3.9 Offboard SATA Controller Configuration



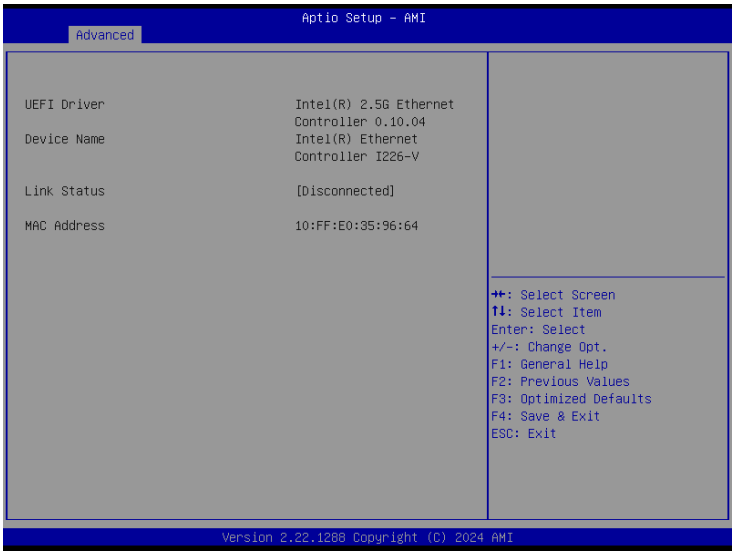
4.3.10 Tls Auth Configuration



Item	Description
Enroll Cert	Press [Enter] to configure advanced items : **Server CA Configuration :** Enroll Cert : 1. Enroll Cert Using File 2. Cert GUID : Input digit character in 11111111-2222-3333-4444-1234567 890ab format. 3. Commit Changes and Exit 4. Discard Changes and Exit

4.3.11 Intel(R) Ethernet Controller I226-V - 10:FF:E0:35:96:64 (MAC address may varied based on different motherboard)

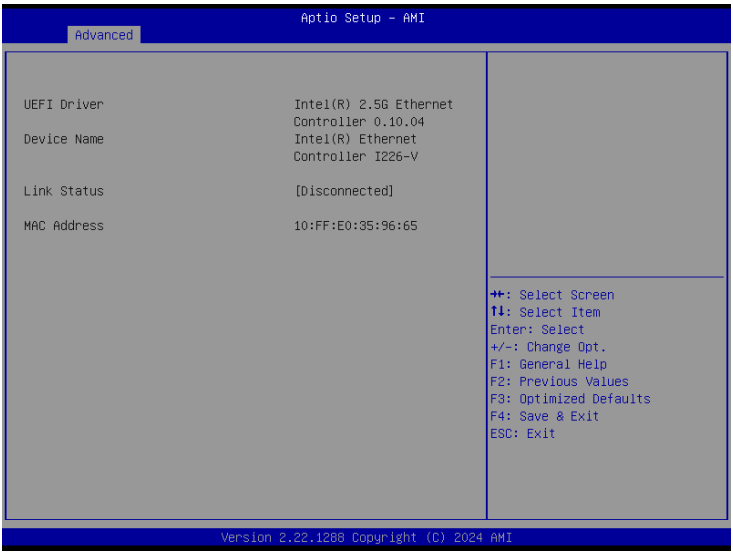
Shows Intel Ethernet controller information



NOTE：MAC address may varied based on different motherboard

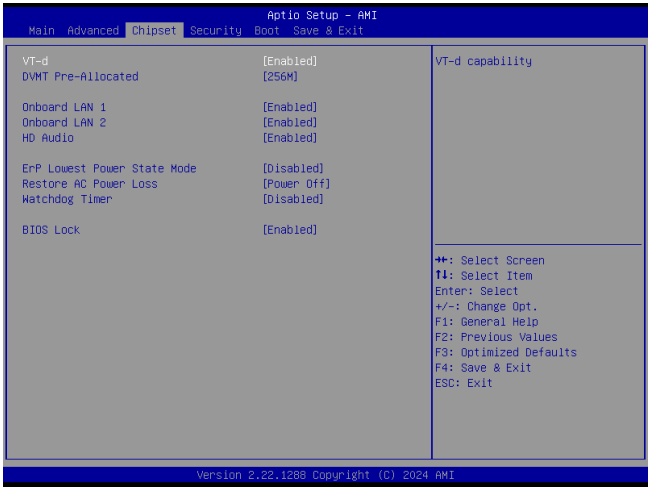
4.3.12 Intel(R) Ethernet Controller I226-V - 10:FF:E0:35:96:65 (MAC address may varied based on different motherboard)

Shows Intel Ethernet controller information



NOTE：MAC address may varied based on different motherboard

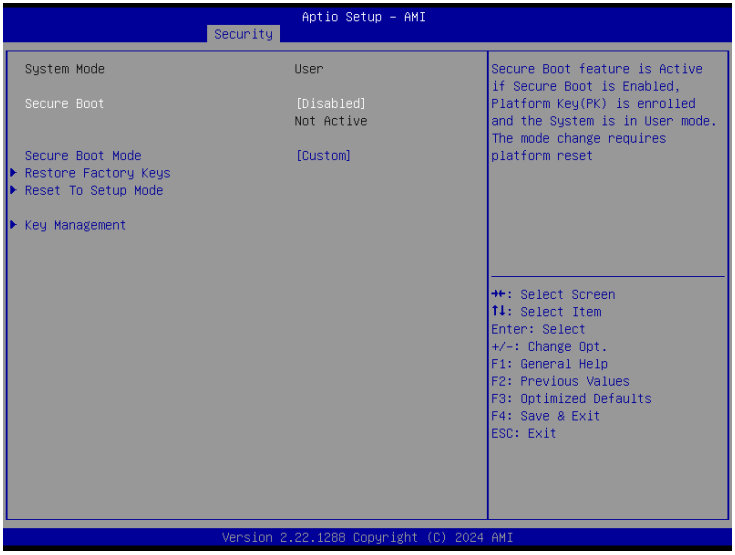
4.4 Chipset



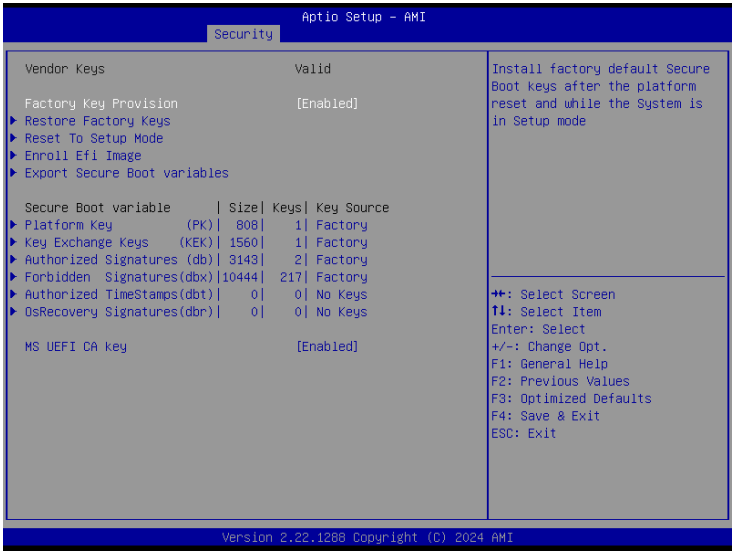
Item	Description
VT-d	**Enabled : Enables VT-d function (Default setting)** **Disabled : Disables VT-d function**
DVMT Pre-Allocated	Use DVMT Pre-Allocated to set the amount of system memory which is installed to the integrated graphics processor **Option items : 32M , 64M, 128M, 256M (Default setting)**
Onboard LAN1 **Onboard LAN2**	Enable/Disable onboard LAN controller **Enabled : Enables onboard LAN controller (Default setting)** **Disabled : Disables onboard LAN controller**
HD Audio	Enable/Disable onboard audio controller **Enabled : Enables onboard audio controller (Default setting)** **Disabled : Disables onboard audio controller**
ErP Lowest Power State Mode	Enable/Disable power saving funtion **Enabled : Enables ERP Lowest Power State Mode** **Disabled : Disabled ERP Lowest Power State Mode (Default setting)**
Restore AC Power Loss	To set which option the system should returns if a sudden power loss occured **Power on : System power on when the power is back** **Power off : Do not power on when the power is back (Default setting)** **Last state : Restore the system to the state before power loss occures**
Watchdog Timer	Enable/Disable Watchdog Timer function **Enabled : Enables Watchdog Timer function** **Disabled : Disabled Watchdog Timer function (Default setting)**
BIOS Lock	Enable/Disable BIOS Lock function **Enabled : Enables BIOS Lock function (Default setting)** **Disabled : Disabled BIOS Lock funtion**

4.5 Security

Item	Description
Administrator Password	To set up Administrator's password **Minimum length : 3** **Maximum length : 20**
User Password	To set up User's password **Minimum length : 3** **Maximum length : 20**
Secure Boot	Press <Enter> to configure the advanced items



Item	Description
Secure Boot	Secure Boot requires all the applications that are running during the booting process to be pre-signed with valid digital certificates **Enabled : Enables Secure Boot function** **Disabled : Disables Secure Boot function (Default setting)**
Secure Boot Mode	**Standard : Standard mode** **Custom : Custom mode (Default setting)**
Restore Factory Keys	To restore factory settings **Yes : Agree to restore factory settings** **No : Cancel to restore factory settings**
Reset To Setup Mode	**Yes : Agree to setup mode** **No : Cancel to setup mode**
Key Management	Enables expert users to modify Secure boot policy variables without full authentication Press <Enter> to configure the advanced items

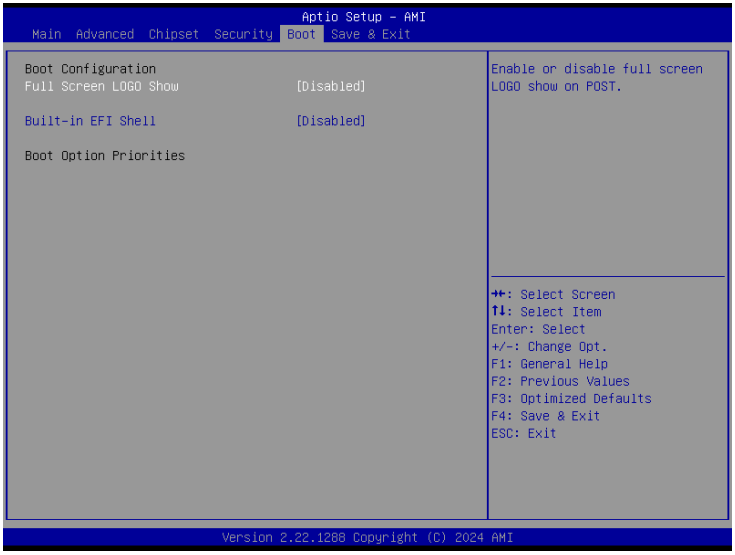


Item	Description
Factory Key Provision	Install factory default Secure Boot keys after the platform reset and while the system is in Setup mode **Enabled : Enables Factory Key Provision (Default setting)** **Disabled : Disables Factory Key Provision**
Restore Factory Keys	To restore factory settings **Yes : Agree to restore factory settings** **No : Cancel to restore factory settings**
Reset To Setup Mode	**Yes : Agree to setup mode** **No : Cancel to setup mode**
Enroll Efi Image	Allow the image to run in Secure Boot mode
Export Secure Boot variables	Copy NVRAM content of Secure Boot variables to files in a root folder on a file system device

Item	Description
Platform Key (PK)	These items allows you to enroll factory defaults or load Certificates from a file.
Key Exchange Keys (KEK)	
Authorized Signatures (db)	
Forbidden Signatures (dbx)	
Authorized TimeStamps (dbt)	
OsRecovery Signatures (dbr)	
MS UEFI CA key	**Enabled : Enables MS UEFI CA Key (Default setting)** **Disabled : Disables MS UEFI CA Key**

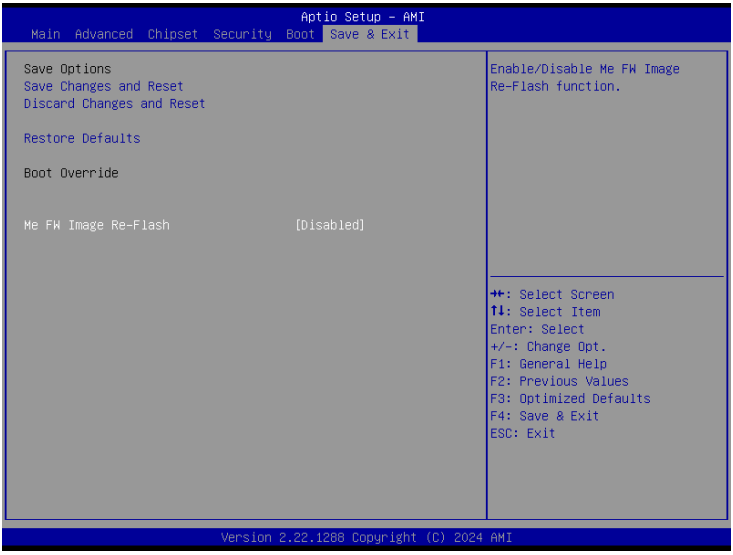
4.6 Boot

This Boot menu allows you to set/change system boot options



Item	Description
Full Screen LOGO Show	Enable/Disable full screen LOGO show on POST screen **Enabled : Enables Full screen LOGO Show on POST screen** **Disabled : Disables Full screen LOGO Show on POST screen (Default setting)**
Built-in EFI Shell	Enable/Disable Built-in EFI Shell **Enabled : Enables Built-in EFI Shell** **Disabled : Disables Built-in EFI Shell (Default setting)**
Boot Option Priorities	Shows the information of the storage that be installed in the system **Choose/set the boot priority**

4.7 Save & Exit



Item	Description
Save Changes and Reset	After configuring all the options that you wish to change, choose this option to save all the changes and reboot the system **Yes : Agree to save and reset** **No : Cancel to save and reset**
Discard Changes and Reset	Choose this option to reboot the system without saving any changes **Yes : Agree to discard changes and reset** **No : Cancel to discard changes and reset**
Restore Defaults	Restore/Load default values for all the setup options **Yes : Agree to load optimized defaults** **No : Cancel to load optimized defaults**
Me FW Image Re-Flash	Enable/Disable Me FW image re-flash function **Enabled : Enables Me FW image re-flash function** **Disabled : Disables Me FW image re-flash function (Default setting)**