

# QBiP-1360A/ QBiP-1340A

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3.5" SBC Boards

## Copyright Notice

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# Packing List

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

Item	Quantity
QBiP-1360A or QBiP-1340A	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

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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](http://GIGAIPC.com) for the latest version of this document.

## Safety Precautions

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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

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### **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	○	○	○	○	○	○

○ : 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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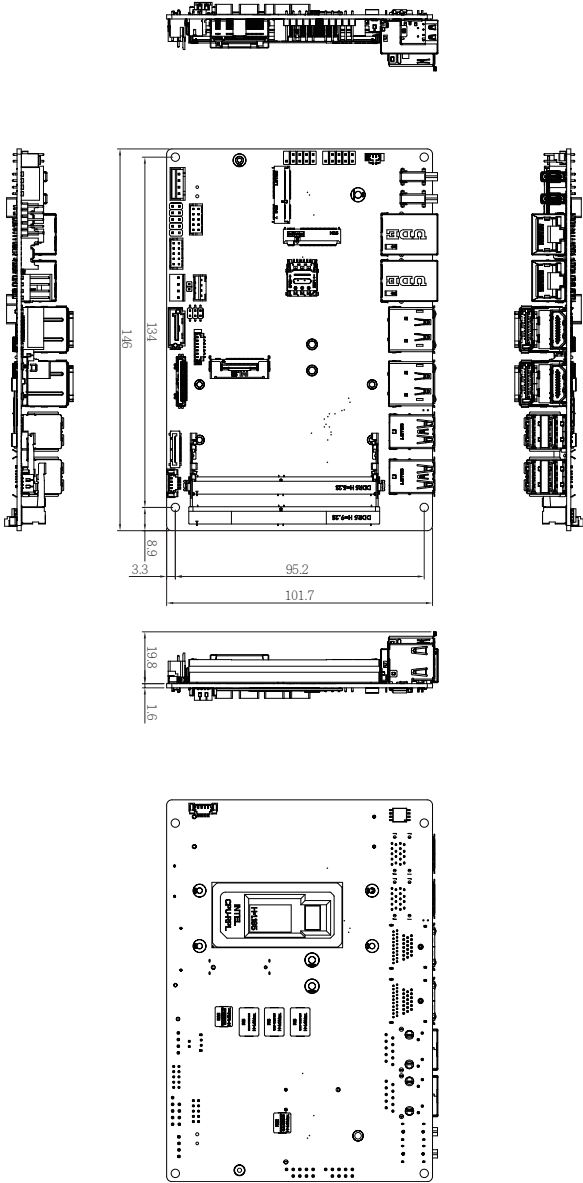
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# Chapter 1

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## Chapter 1 - Product Specifications



## 1.1 Specifications

Motherboard	QBiP-1360A	QBiP-1340A
Form Factor	3.5" SBC 146W x 101.7Dmm	
CPU	Intel® Core™ i7-1360P Processor Intel 7, 12 cores, 16 threads, up to 5.0 GHz TDP 28W 18 MB Smart Cache	Intel® Core™ i5-1340P Processor Intel 7, 12 cores, 16 threads, up to 4.60 GHz TDP 28W 12 MB Smart Cache
Socket	1 x FCBGA1744	
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)	
Video	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 1 x eDP port, supporting a maximum resolution of 4096x2160 @60Hz  (4 independent display outputs)	
Audio	Realtek® ALC269	
Storage	1 x SATA 6Gb/s Port	
Raid	Intel® SATA RAID 0/1	
Expansion Slots	1 x 2280 M.2 M-Key (PCIe Gen 4x4, SATA 6Gb/s) 1 x 2230 M.2 E-Key 1 x 3052/3042 M.2 B-Key with SIM Slot (Support 5G only USB interface) 1 x PCIe Gen 4x4 (Board to Wire connector)	



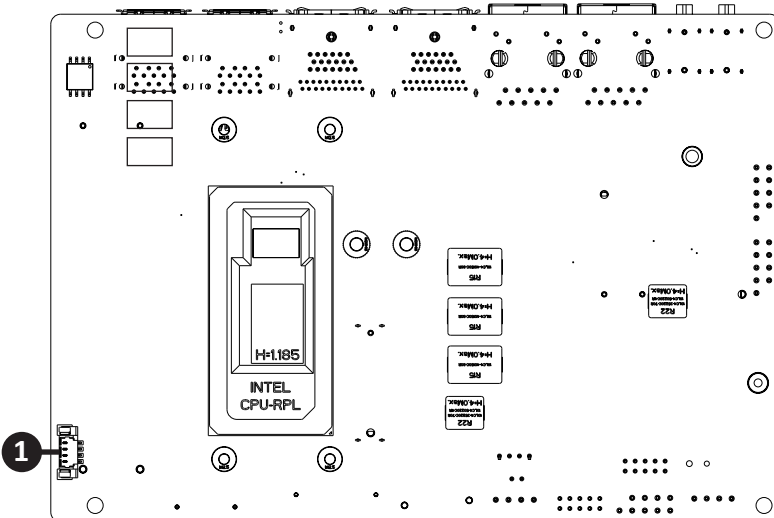
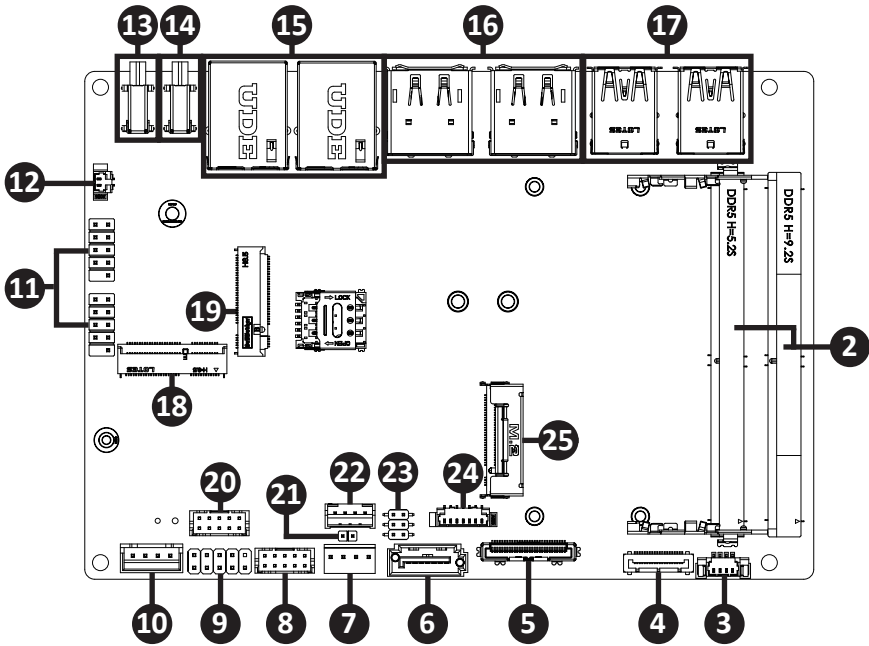
Motherboard	QBiP-1360A	QBiP-1340A
Internal I/O	1 x 4-pin box power connector (DC in +12V~24VDC) 1 x SATA Power header 2 x CPU fan headers 1 x Front panel header 1 x Front panel audio header 1 x 2W Speaker out header 4 x USB 2.0 headers 1 x COM header (RS-232 & RI/5V/12V) 1 x eDP power header	
Rear I/O	1 x USB type C (USB 3.2 Gen 2x1 + DP output-share with DP) & PD v3.0 Out -100W (Adapt 24V only), PD v3.0 Out 60W (Adapt 12V ~ 19V) 1 x USB type C (USB 3.2 Gen 2x1, PD 3.0 input-100W) 4 x USB 3.2 Gen 2x1 2 x HDMI 2 x DP 2 x RJ45 LAN Ports	
TPM	Onboard TPM 2.0 security chip INFINEON SLB9672VU2.0	
OS Compatibility	Windows® 10/11 (x64)	
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

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## Chapter 2 – Hardware Information

# 2.1 Jumpers and Connectors

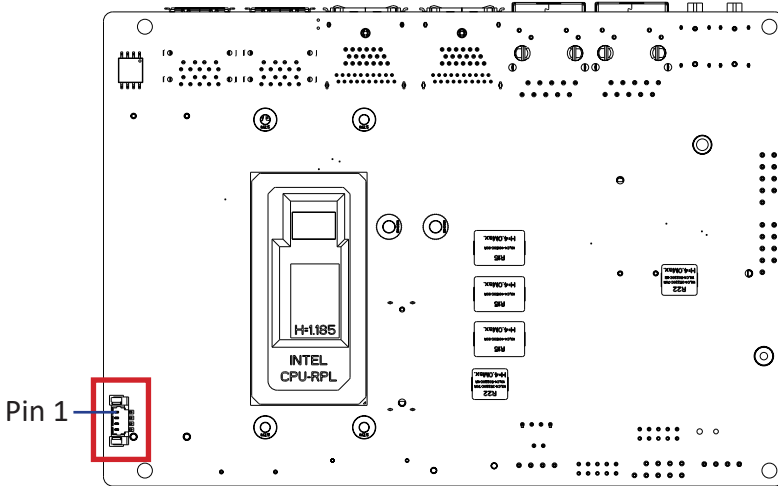


No	Code	Description
1	CPU_FAN2	CPU fan connector
2	SODIMM1 SODIMM2	DDR5 SO-DIMM Slot
3	CPU_FAN1	CPU fan connector
4	EDP	Embedded Display Port Connector
5	PCIE_X4	PCIe Gen4 x4 connector
6	SATA0	SATA 6Gb/s connector
7	SATAPWR	SATA power connector
8	FP_AUDIO	Front Audio connector
9	SYS_PANEL	Front panel 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 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

## 2.2.1 CPU\_FAN2 (CPU fan connector)

1

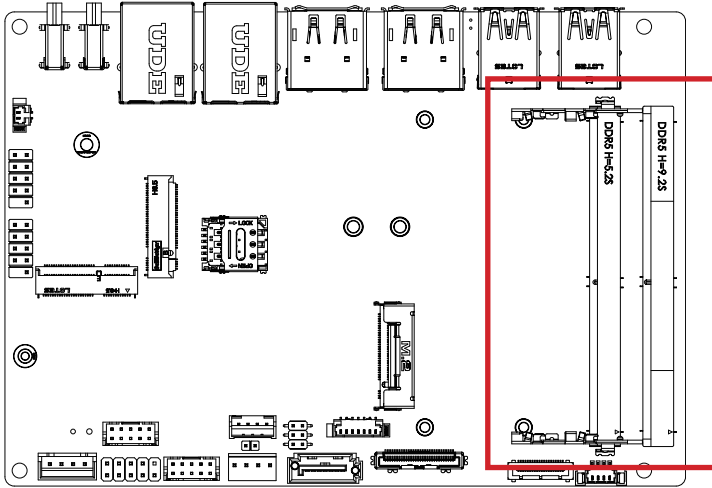


CPU fan Connector	
Pin No.	Definition
1	GND
2	12V
3	Detect
4	Speed control

Connector PN	Vendor
85205-0470N	ACES
A1250WV-S-04PC	JOINT-TECH
Connector type	
1x4pin header, pitch 1.25mm	

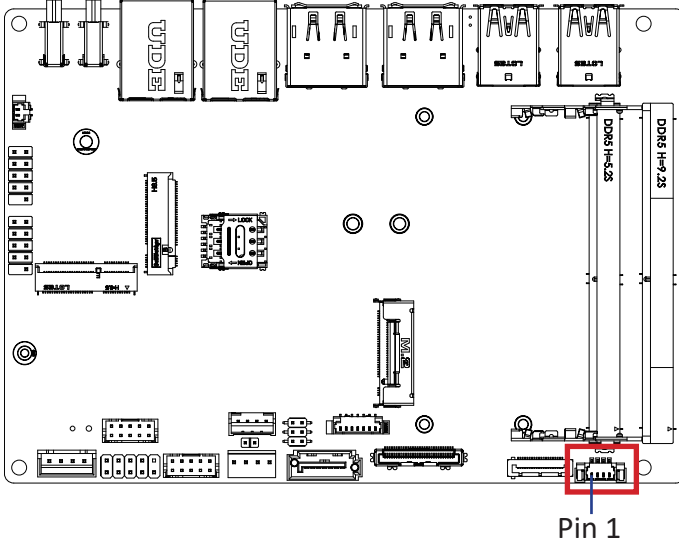
## 2.2.2 SODIMM1, SODIMM2 (DDR5 SO-DIMM Slot)

2

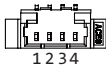


## 2.2.3 CPU\_FAN1 (CPU fan connector)

3



CPU fan Connector



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

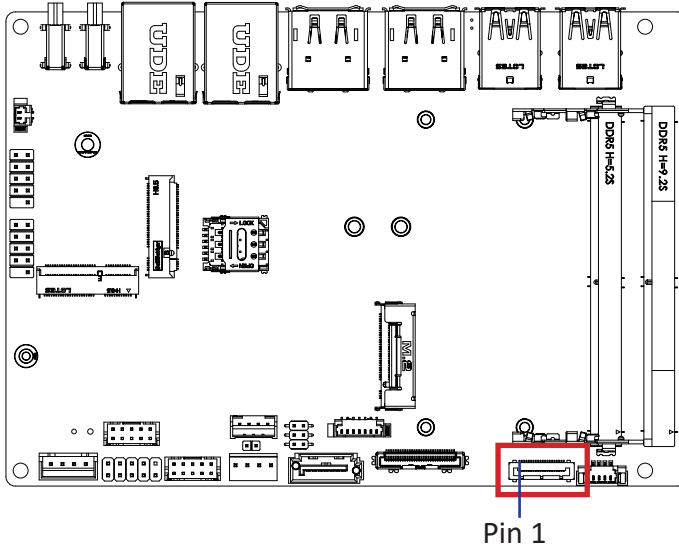
Connector PN	Vendor
85205-0470N	ACES
A1250WV-S-04PC	JOINT-TECH

Connector type
1x4pin header, pitch 1.25mm



## 2.2.4 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 control

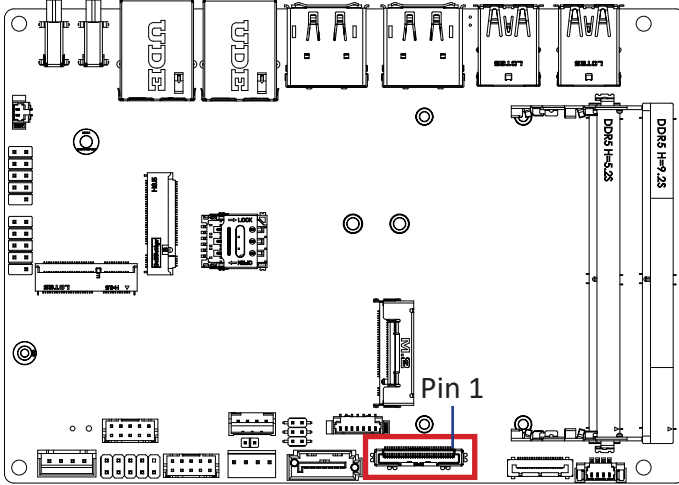
Pin No.	Definition	Pin No.	Definition
9	EDP_TX2+	21	H1
10	GND	22	H2
11	EDP_TX3-	23	H3
12	EDP_TX3+	24	H4

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

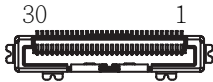
Connector type
1x20pin header, pitch 0.5mm

## 2.2.5 PCIE\_X4 (PCIe Gen4 x4 connector)

5



PCIe Gen3 x4 Connector



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

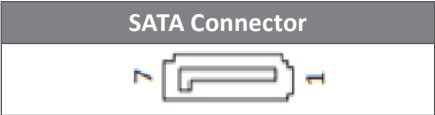
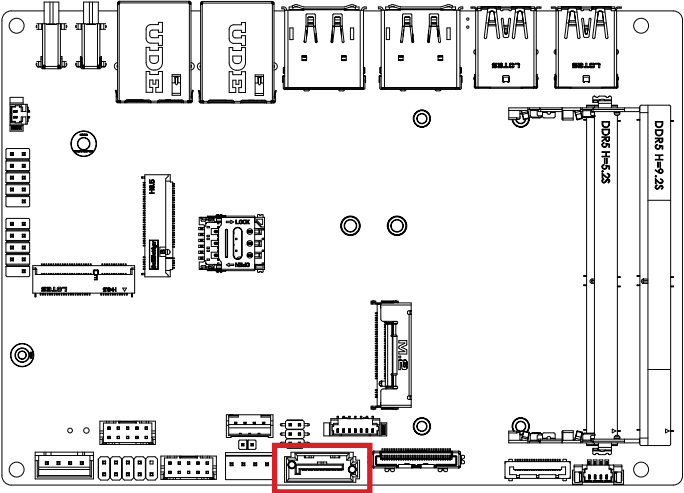
Pin No.	Definition	Pin No.	Definition
21	GND	22	RX0_DP
23	RX0_DN	24	CK_REQ
25	CLK_DP	26	CLK_DN
27	SMB_CLK	28	SMB_DATA
29	PLT_RST#	30	PCIE_WAKE#

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

Connector type
1x30pin header, pitch 0.5mm

## 2.2.6 SATA0 (SATA 6Gb/s connector)

6

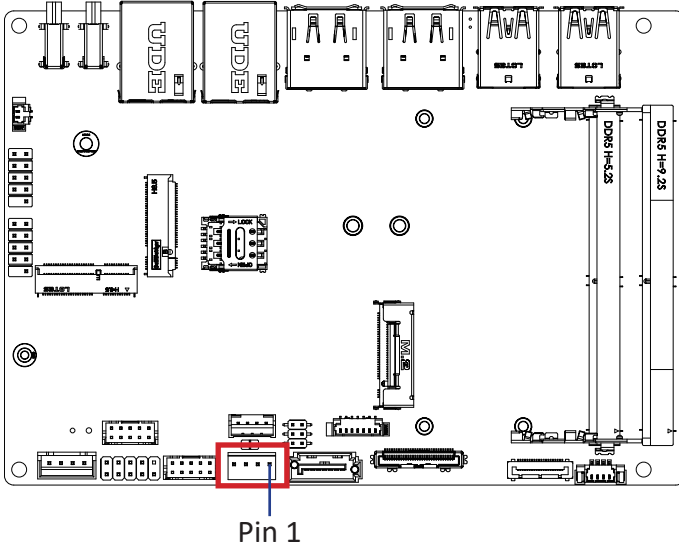


Connector PN	Vendor
WATF-07DBLBA1UW	WINWIN

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

## 2.2.7 SATAPWR (SATA power connector)

7



### Hard Disk Power Connector

4 3 2 1



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

### Connector PN

743-91-045W00

A2540WR-

04PR6NG1N10G

### Vendor

PINREX

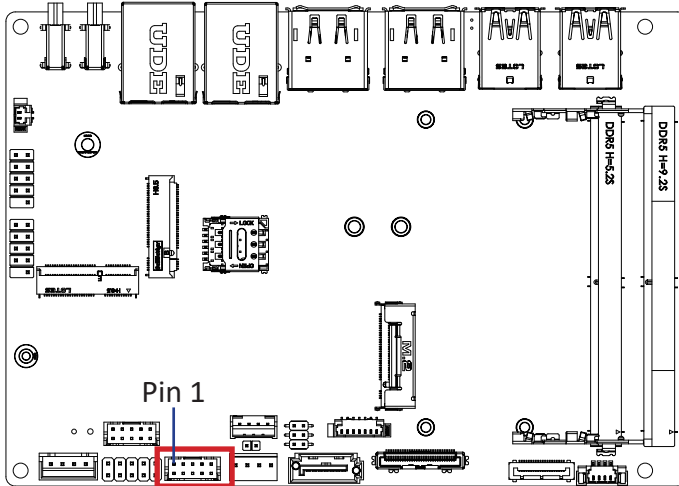
JOINT-TECH

### Connector type

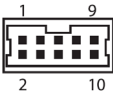
1x4pin header, pitch 2.54mm

## 2.2.8 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

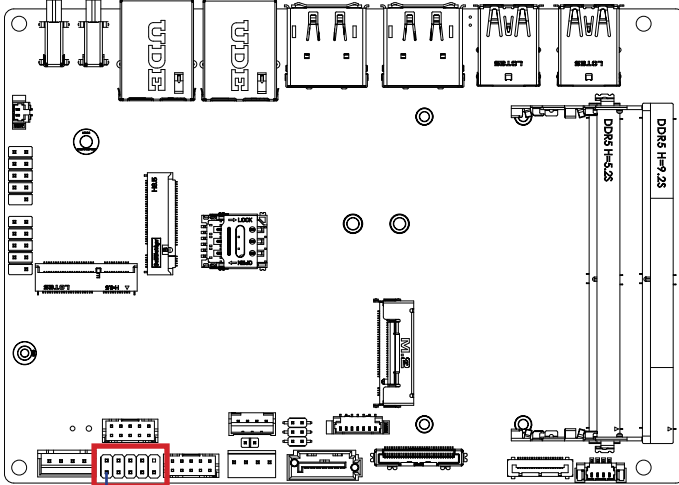
JOINT-TECH

Connector type

2x5pin header, pitch 2.0mm

## 2.2.9 SYS\_PANEL (Front panel header)

9



Pin 1

### System Panel Header



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

21P-92-05GB06  
210-92-05GW5W

### Vendor

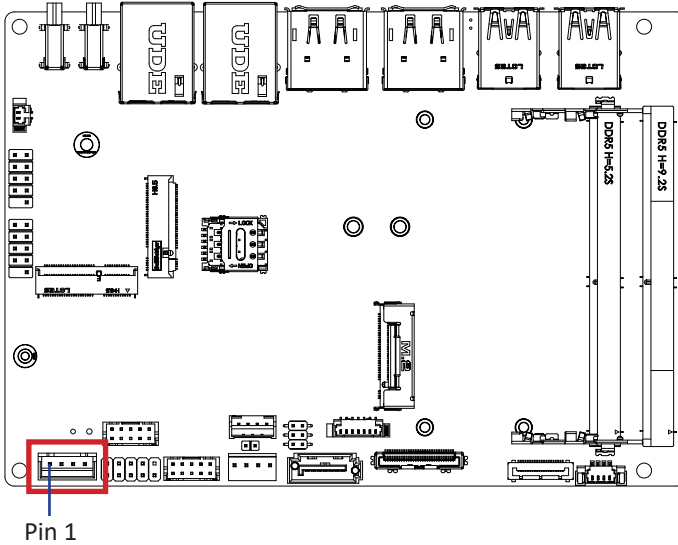
PINREX  
PINREX

### Connector type

2x5pin header, pitch 2.54mm

## 2.2.10 DC\_IN (DC IN 1x4 pin power connector)

10



Pin 1

DC IN 1x4 pin power connector



1 2 3 4

Connector PN

753-81-04TW00

Vendor

PINREX

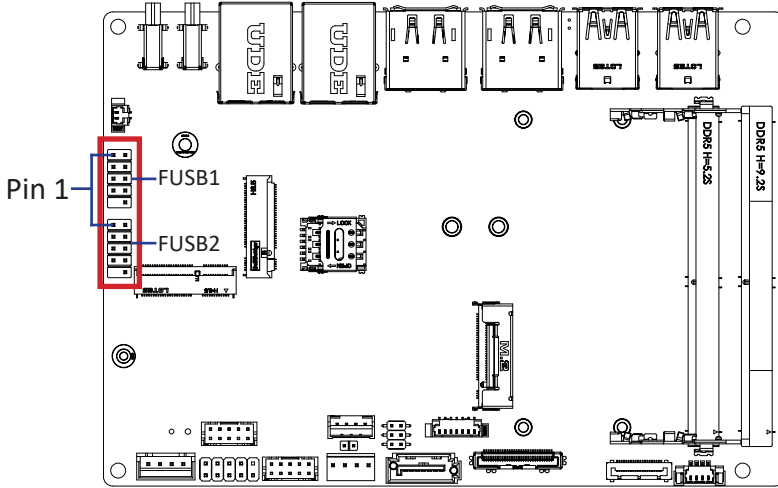
Connector type

1x4pin header, pitch 2.5mm

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

## 2.2.11 FUSB1, FUSB2 (USB2.0 headers)

11



### USB 2.0 Header



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

210-92-05GB04

PH10R53BAZ009

### Vendor

PINREX

HORNGTONG

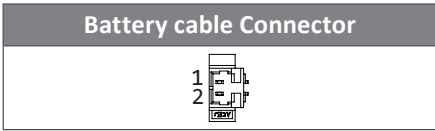
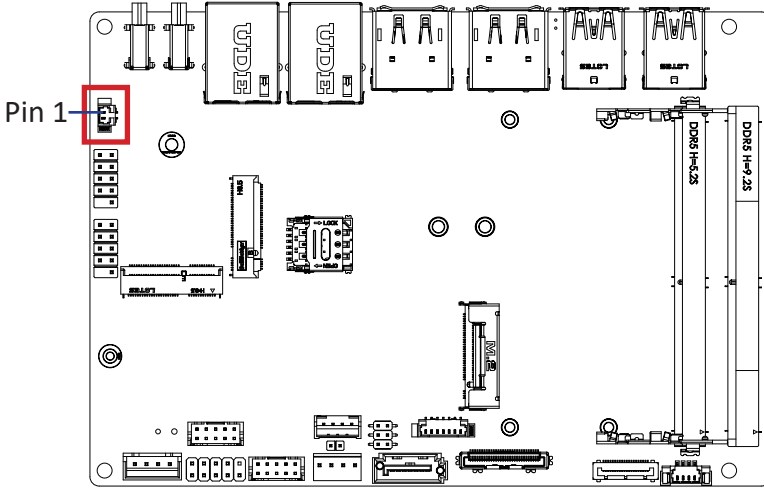
### Connector type

2x5pin header, pitch 2.54mm



## 2.2.12 BATTERY (Battery cable Connector)

12



Pin No.	Definition
1	3.3V
2	GND

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

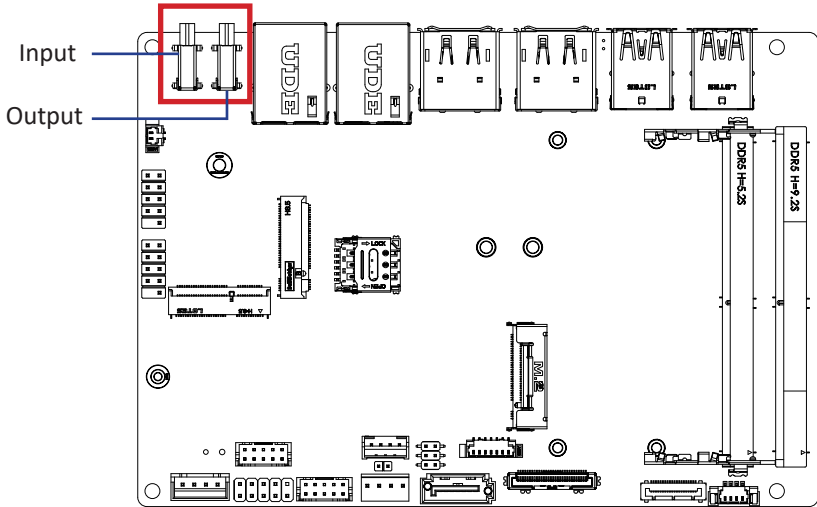
**Connector type**

1x2pin header, pitch 1.25mm

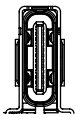
## 2.2.13 USB3CP (USB 3.2 Gen 2x1 Type C connector)

## 2.2.14 USB3CM (USB 3.2 Gen 2x1 Type C connector)

13 14



USB Type C Connector

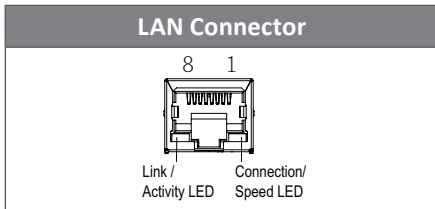
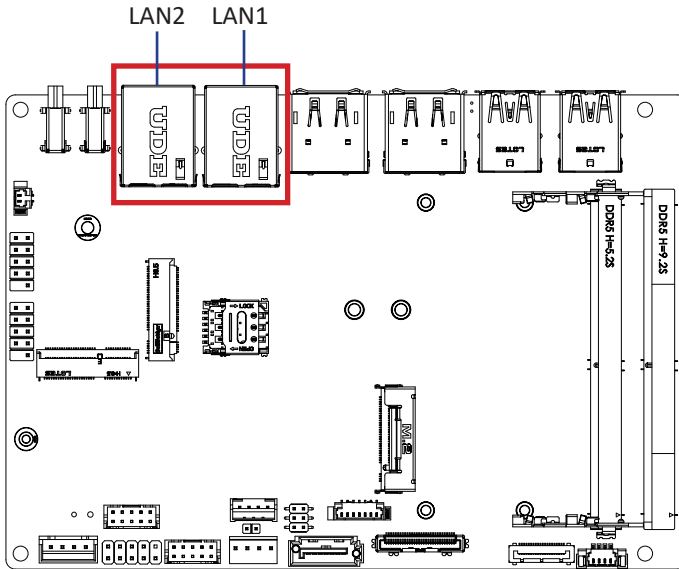


Connector PN	Vendor
WU3CR-24A5L1CU5T41	WINWIN

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

## 2.2.15 LAN1, LAN2 (LAN Connector)

15



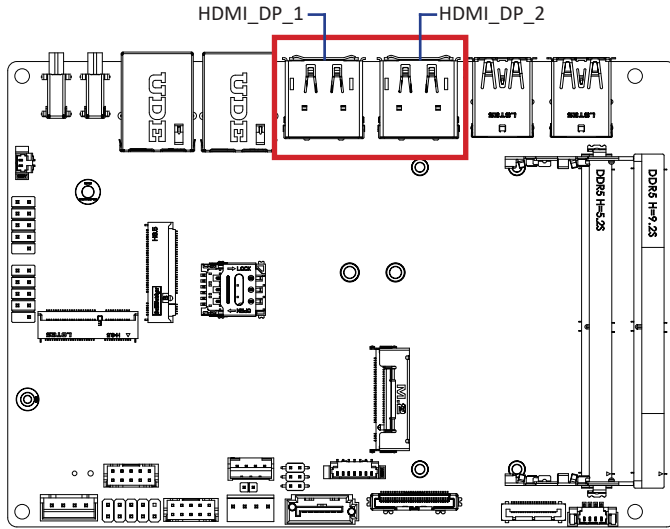
Pin No.	Definition
1	TX+_D1
2	TX-_D1
3	RX+_D2
4	BI+_D3
5	BI-_D3
6	RX-_D2
7	BI+_D4
8	BI-_D4

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

## 2.2.16 HDMI\_DP\_1, HDMI\_DP\_2 (HDMI (Bottom) & DP (Top) connector)

16



### HDMI & DP Connector

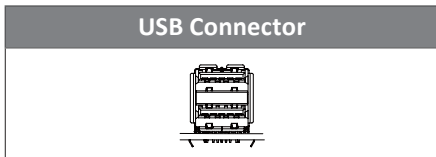
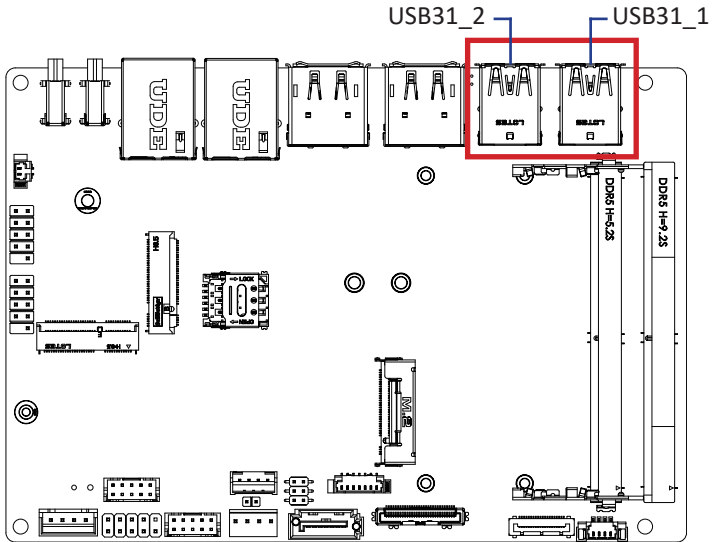


HDMI Connector			
Pin No.	Definition	Pin No.	Definition
1	HDMI_D2+	13	NC
2	GND	14	NC
3	HDMI_D2-	15	HDMI_SCL
4	HDMI_D1+	16	HDMI_SDA
5	GND	17	GND
6	HDMI_D1-	18	5V
7	HDMI_D0+	19	HDMI_HPD
8	GND		
9	HDMI_D0-		
10	HDMI_CLK+		
11	GND		
12	HDMI_CLK-		

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	

## 2.2.17 USB31\_1, USB31\_2 (USB 3.2 Gen 2x1 Connector)

17

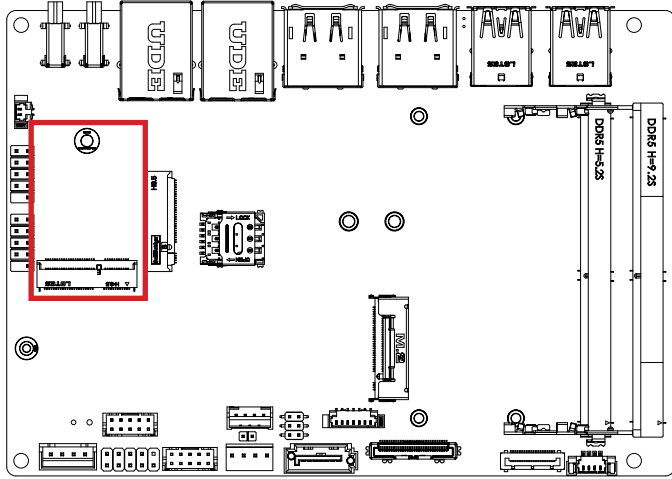


Connector PN	Vendor
18-A5950-6A33-A	TCONN

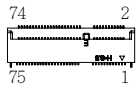
Pin No.	Definition	Pin No.	Definition
1	5V	10	5V
2	USB_D-	11	USB_D-
3	USB_D+	12	USB_D+
4	GND	13	GND
5	USB3_RX-	14	USB3_RX-
6	USB3_RX+	15	USB3_RX+
7	GND	16	GND
8	USB3_TX-	17	USB3_TX-
9	USB3_TX+	18	USB3_TX+

## 2.2.18 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		

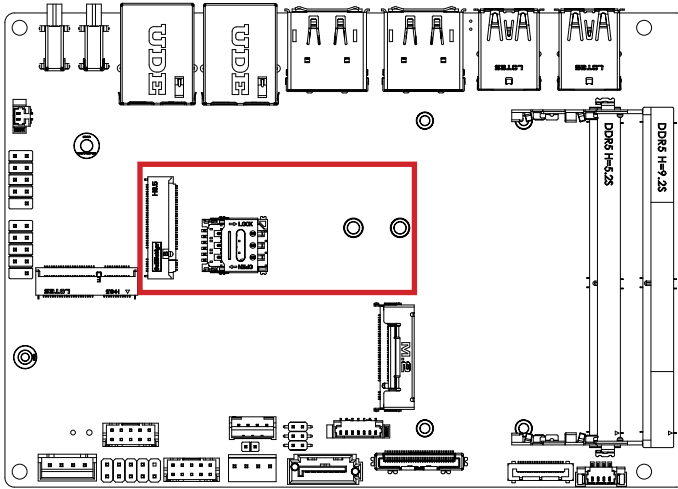
Pin No.	Definition	Pin No.	Definition
33	GND	32	NC
35	WLAN_TXP	34	NC
37	WLAN_TXN	36	NC

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	PCI_E_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

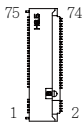
Connector PN	Vendor
APCI0095-P002A	LOTES
80152-8521	BELLWETHER

## 2.2.19 M2B (M.2 Slot, 3052 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		

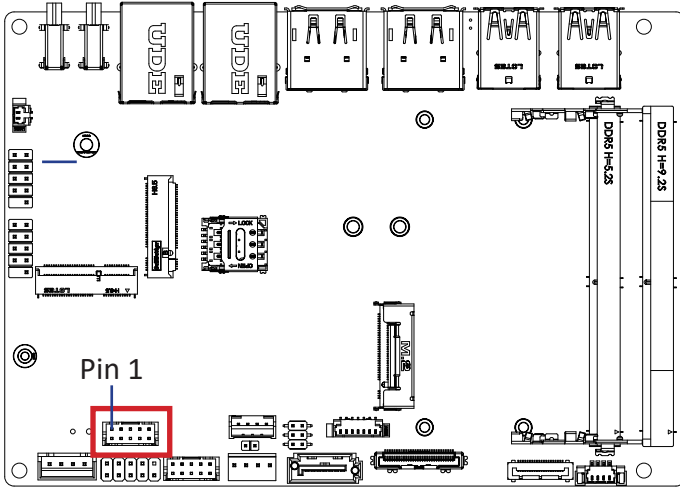
Pin No.	Definition	Pin No.	Definition
21	NC	20	NC
23	M2B_WAKE	22	NC
25	M2B_DRP	24	NC
27	GND	26	WWAN_Disable2
29	USB3_RXN	28	NC
31	USB3_RXP	30	SIM_RST#
33	GND	32	SIM_CLK
35	USB3_TXN	34	SIM_DATA

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

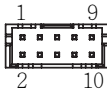
Connector PN	Vendor
80149-8521	BELLWETHER
2E0BC21-S85BB-7H	FOXCONN

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

20



Serial Port Cable Connector



Connector PN

725-81-10TW00

A2004WV-2X05P46

Vendor

PINREX

JOINT-TECH

Connector type

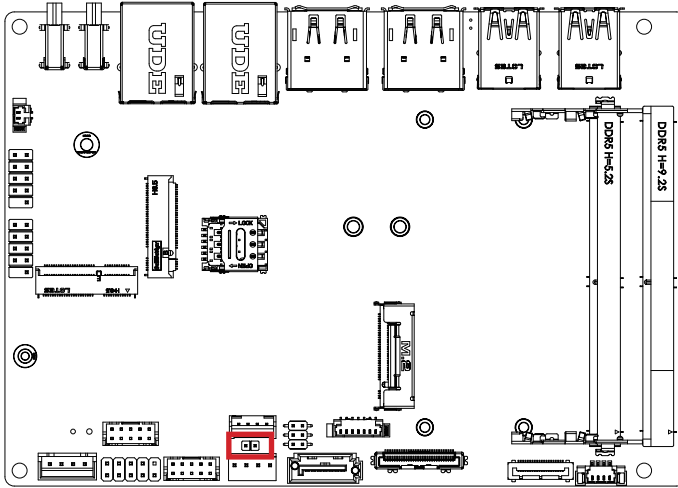
2x5pin header, pitch 2.0mm




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



## 2.2.21 ME\_DIS (ME Disable jumper)

21

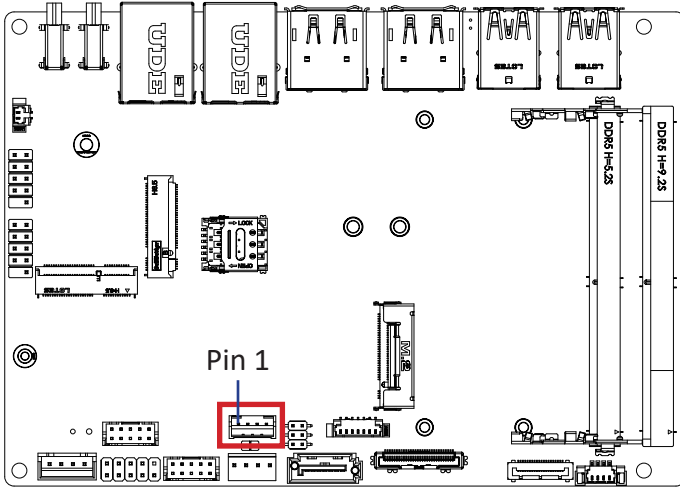


ME Disable Connector	
	
ME Disable jumper	
	Enable (Default)
	Disable (Close)

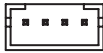
Connector PN	Vendor
220-96-02GBK1	PINREX
Connector type	
1x2pin header, pitch 2.0mm	

## 2.2.22 SPK\_OUT (Speaker out connector)

22



Speaker out Connector



1 2 3 4

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

Connector PN

A2001WV-04P146

Vendor

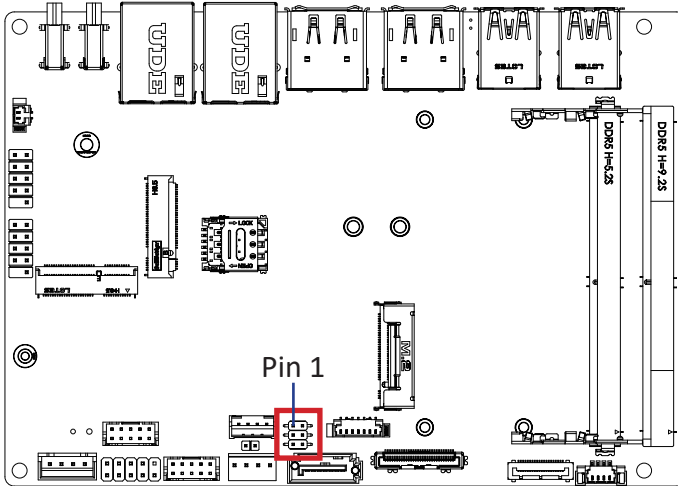
JOINT-TECH

Connector type

1x4pin header, pitch 2.0mm

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

23

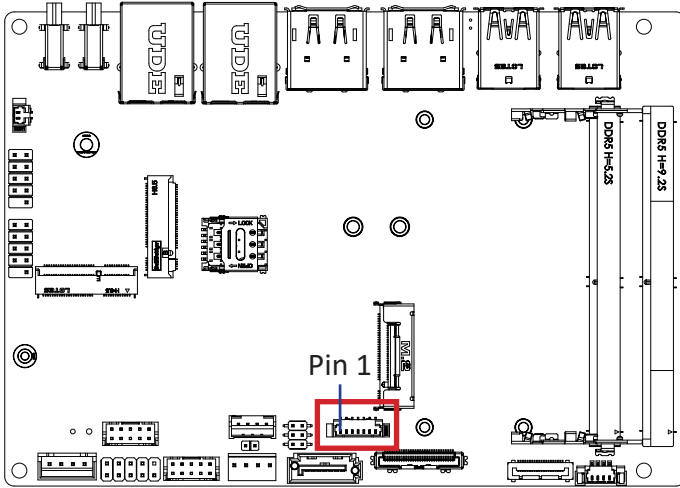


JCOM1 Jumper Select	
<p>1 2 □ □ □ □ 5 6</p>	1-2 Close: 5V (Power COM)
<p>1 2 □ □ □ □ 5 6</p>	3-4 Close: RI (Stand COM) (Default-Setting)
<p>1 2 □ □ □ □ 5 6</p>	5-6 Close: 12V (Power COM)

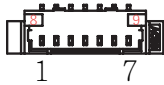
Connector PN	Vendor
222-97-03GBE1	PINREX
Connector type	
2x3pin header, pitch 2.0mm	

## 2.2.24 EDP\_PWR (Embedded Display Port power connector)

24



Embedded Display Port power connector



Connector PN

Vendor

85205-0770N

ACES

A1250WV-S-07PC

JOINT-TECH

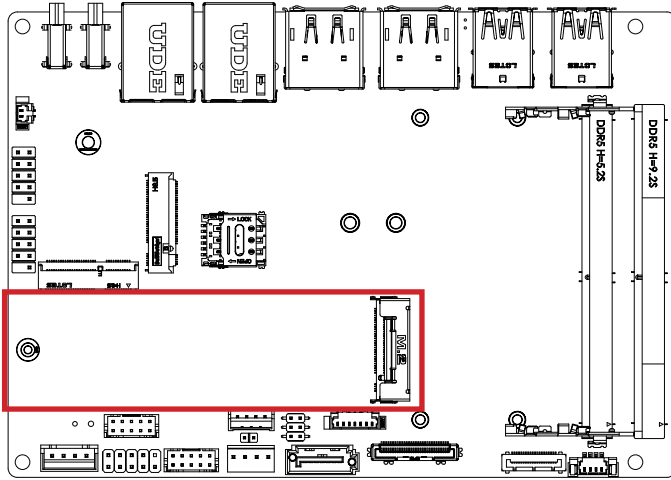
Connector type

1x7pin header, pitch 1.25mm

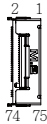
Pin No.	Definition
1	NC
2	NC
3	3V
4	GND
5	GND
6	12V
7	12V
8	GND
9	GND

## 2.2.25 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 3

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## Chapter 3 – BIOS

## 3.1 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.

### 3.1.1 How to Entering into BIOS menu

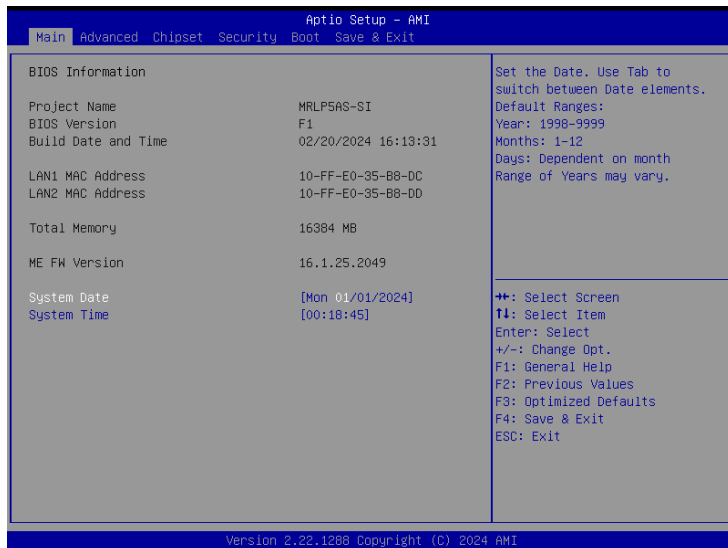
Once the system is power on, press the <DEL> key as soon as possible to access into BIOS Setup program.

### 3.1.2 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

## 3.2 The Main Menu

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

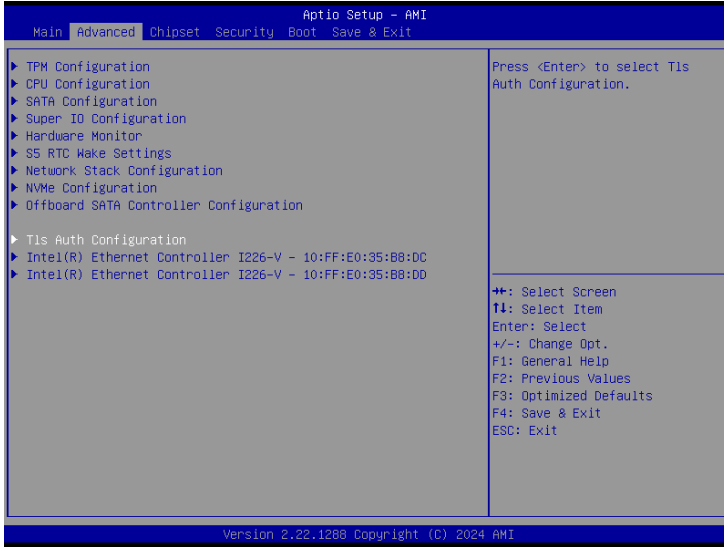


Items	Description
<b>Project Name</b>	<b>Shows Project name information</b>
<b>BIOS Version</b>	<b>Shows the BIOS version of the system</b>
<b>Build Date and Time</b>	<b>Shows the Build Date and Time when the BIOS was created.</b>
<b>LAN1 MAC Address</b>	<b>Shows LAN MAC Address information</b>
<b>LAN2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



### 3.3 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.



## 3.3.1 TPM Configuration

Use TPM Configuration submenu to choose TPM interface.



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

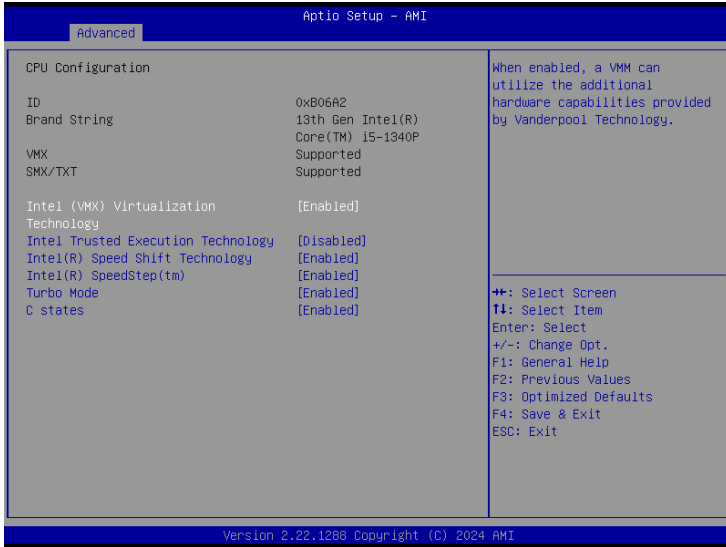
Trusted Computing : Shows TPM information, and TPM module configuration setting.



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

### 3.3.2 CPU Configuration

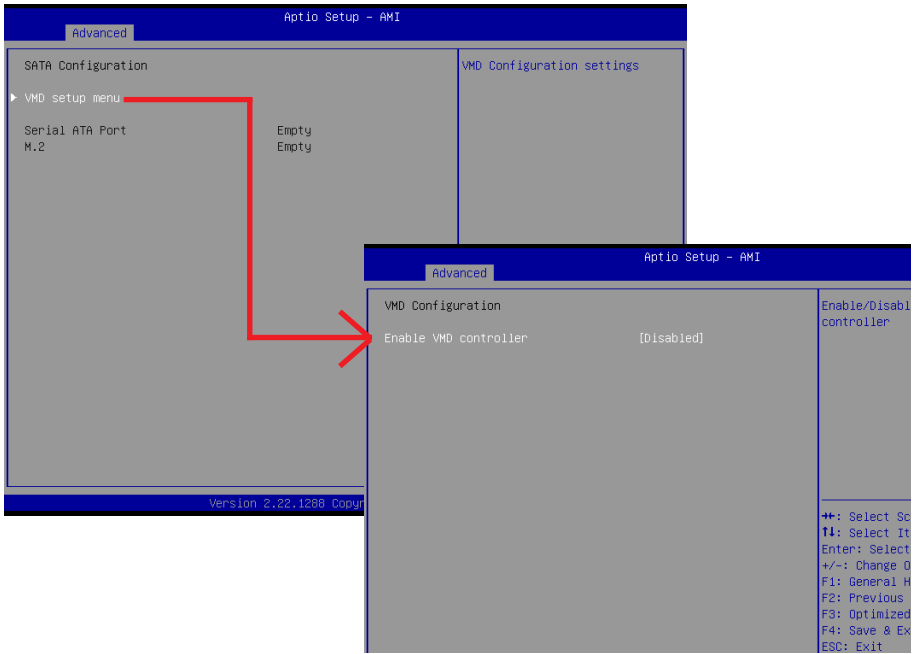
This submenu shows detailed CPU informations.



Item	Description
<b>Intel (VMX) Virtualization Technology</b>	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. <b>Enabled : Enables Intel Virtualization Technology (Default setting)</b> <b>Disabled : Disables Intel Virtualization Technology</b>
<b>Intel Trusted Execution Technology</b>	<b>Disabled : Disables Intel Trusted Execution Technology (Intel® TXT) (Default setting)</b> <b>Enabled : Enables Intel Trusted Execution Technology (Intel® TXT)</b>
<b>Intel(R) Speed Shift Technology</b>	To speed up CPU frequency transition time from basic frequency to maximum frequency. <b>Enabled : Enables Intel(R) Speed Shift Technology (Default setting)</b> <b>Disabled : Disables Intel(R) Speed Shift Technology</b>

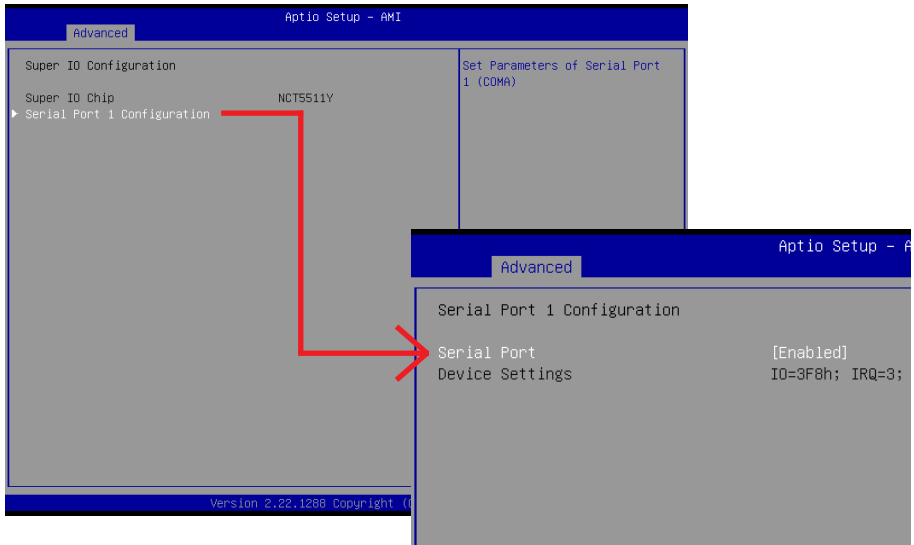
<p><b>Intel(R) SpeedStep(tm)</b></p>	<p>According to Intel CPU loading, Intel SpeedStep Technology will automatically adjust the CPU voltage and core frequency to decrease heat and power consumption for power saving.  <b>Enabled : Enables Intel SpeedStep Technology (Default setting)</b>  <b>Disabled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

### 3.3.3 SATA Configuration



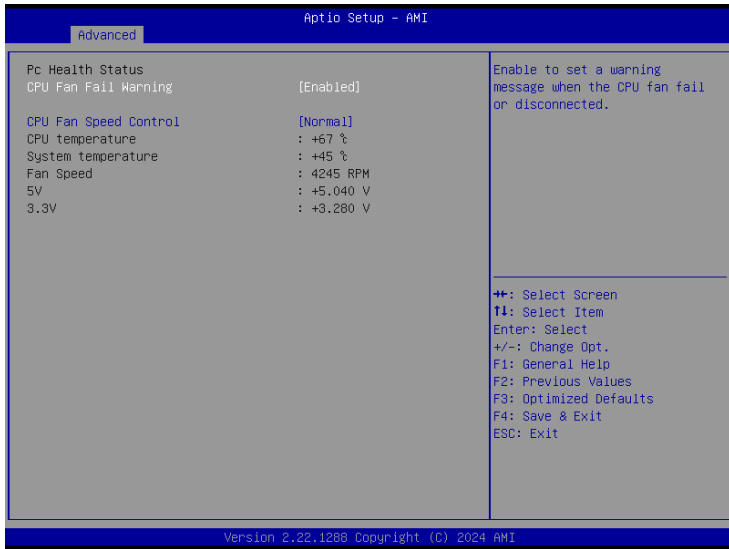
Item	Description
<b>VMD setup menu / Enable VMD controller</b>	Intel VMD feature helps you to control and manage NVMe PCIe SSD. <b>Enabled : Enables Intel VMD feature</b> <b>Disabled : Disables Intel VMD feature (Default setting)</b>
<b>Serial ATA Port</b>	shows 2.5" SATA HDD/SSD information
<b>M.2</b>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

### 3.3.4 Super I/O Configuration



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

## 3.3.5 Hardware Monitor



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

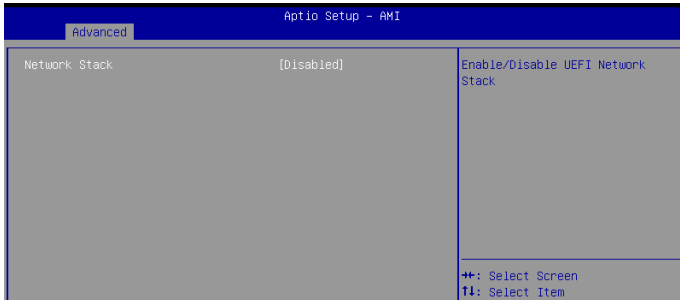


### 3.3.6 S5 RTC Wake Settings

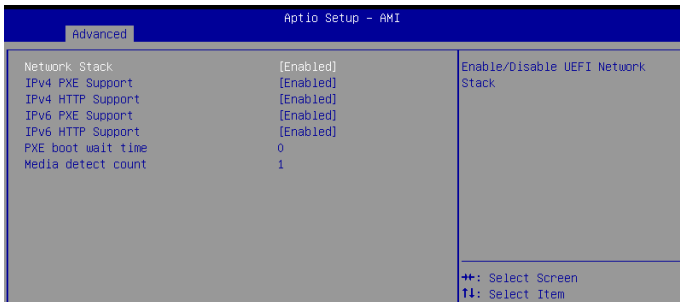


Item	Description
<p><b>Wake system from S5</b></p>	<p>Enable or Disable System to wake on a specific time.  <b>Disabled : Disables system to wake on a specific time (Default setting)</b>  <b>Fixed Time : Enables system to wake on a specific time (Format : hr : min : sec)</b></p>

## 3.3.7 Network Stack Configuration



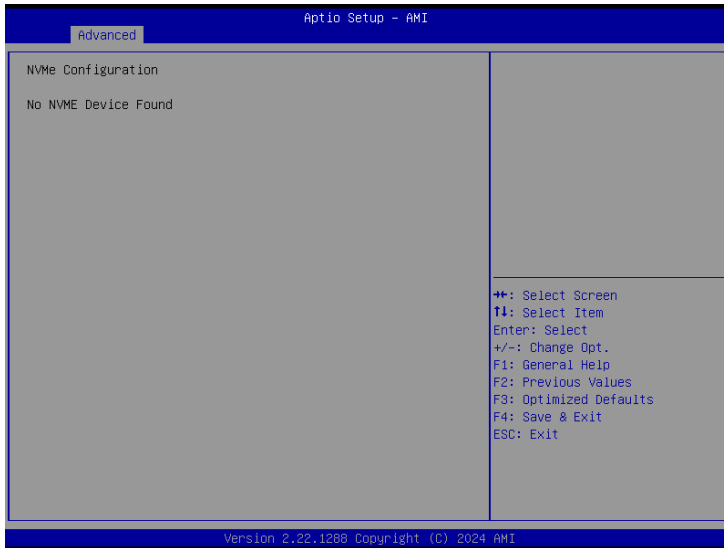
When Network stack is enabled :



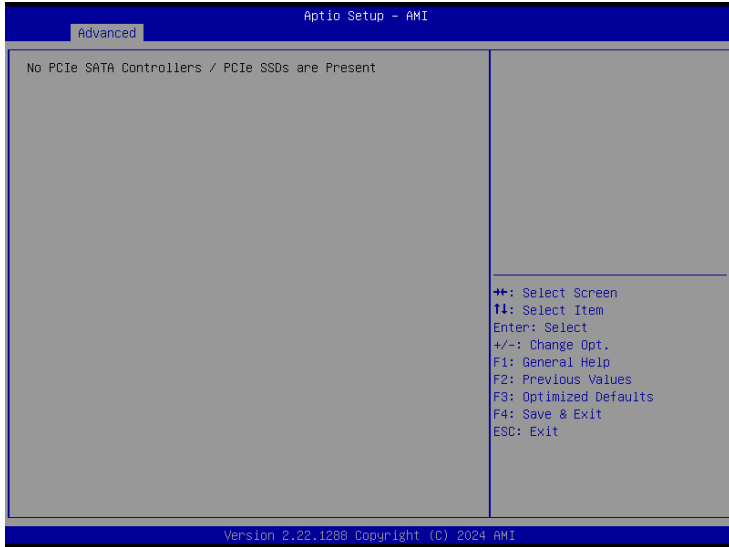
Item	Description
<b>Network Stack</b>	When system is power on, install LAN driver under UEFI mode <b>Disabled : Disables UEFI Network Stack (Default setting)</b> <b>Enabled : Enables UEFI Network Stack</b>
<b>IPv4 PXE Support</b>	When Network stack is enabled : <b>Disabled : Disables Ipv4 PXE Support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

### 3.3.8 NVMe Configuration

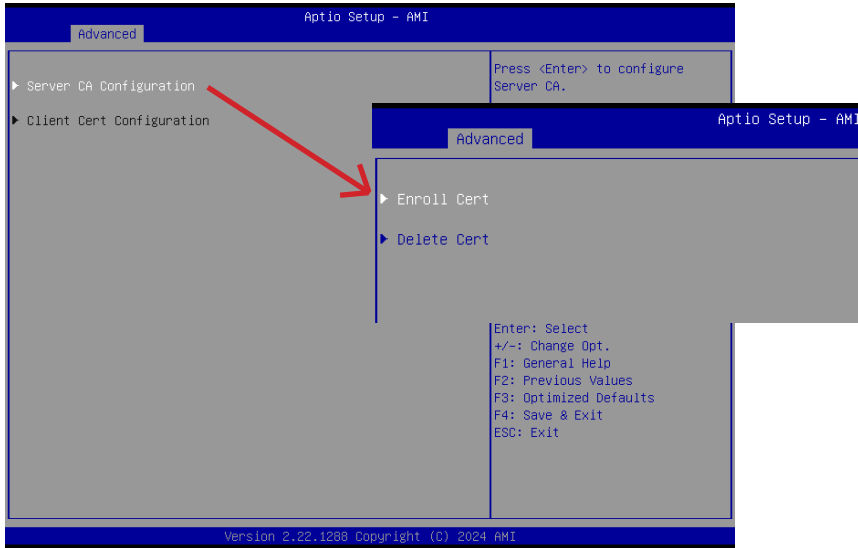
NVMe Configuration shows information when your M.2 NVMe PCIe SSD is installed.



## 3.3.9 Offboard SATA Controller Configuration



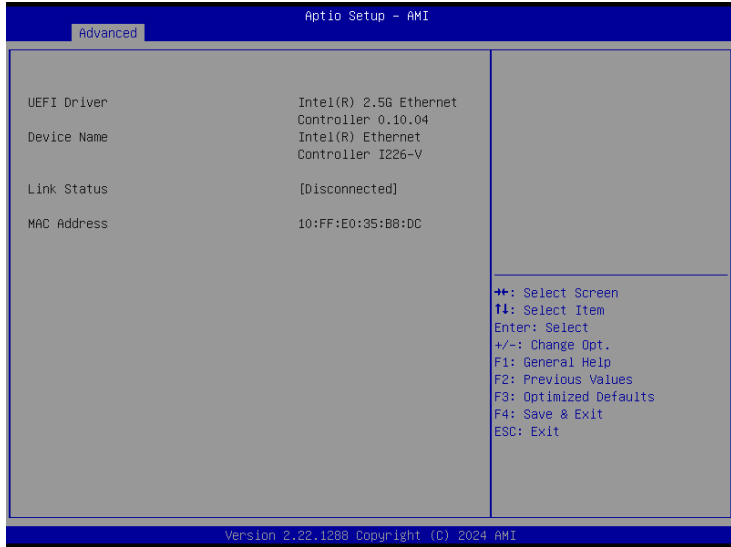
### 3.3.10 Tls Auth Configuration



Item	Description
<b>Enroll Cert</b>	<p>Press [Enter] to configure advanced items :</p> <p><b>Server CA Configuration :</b></p> <p>Enroll Cert :</p> <ol style="list-style-type: none"> <li>1. Enroll Cert Using File</li> <li>2. Cert GUID : Input digit character in 11111111-2222-3333-4444-1234567 890ab format.</li> <li>3. Commit Changes and Exit</li> <li>4. Discard Changes and Exit</li> </ol>

### 3.3.11 Intel(R) Ethernet Controller I226-V - 10:FF:E0:35:B8:DC (MAC address may varied based on different motherboard)

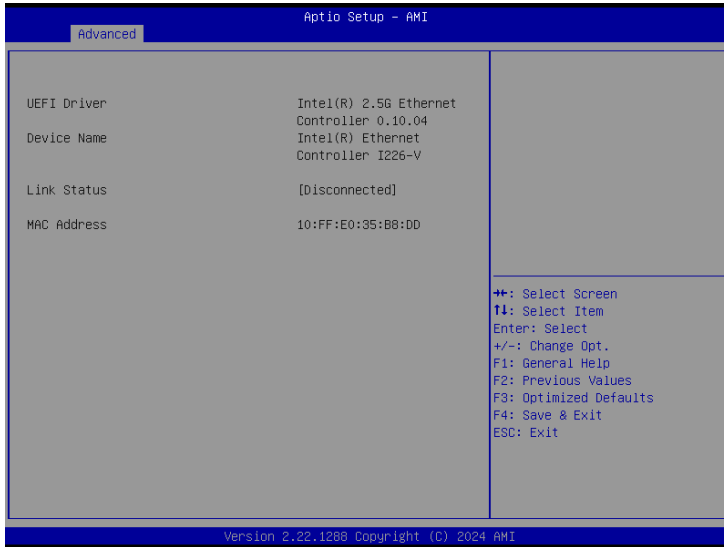
Shows Intel Ethernet controller information



NOTE : MAC address may varied based on different motherboard

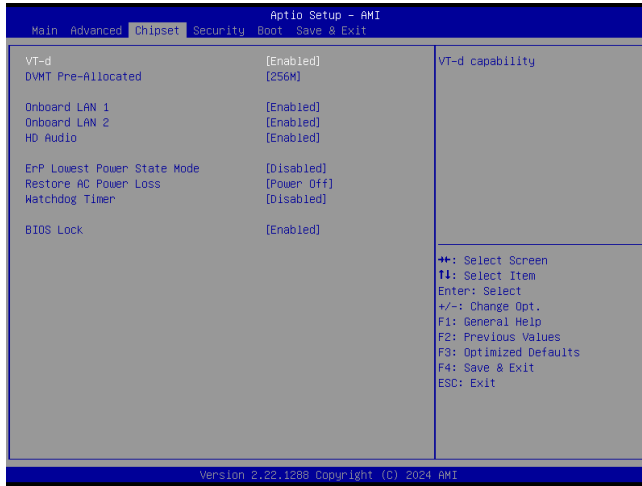
### 3.3.12 Intel(R) Ethernet Controller I226-V - 10:FF:E0:35:B8:DD (MAC address may varied based on different motherboard)

Shows Intel Ethernet controller information



NOTE : MAC address may varied based on different motherboard

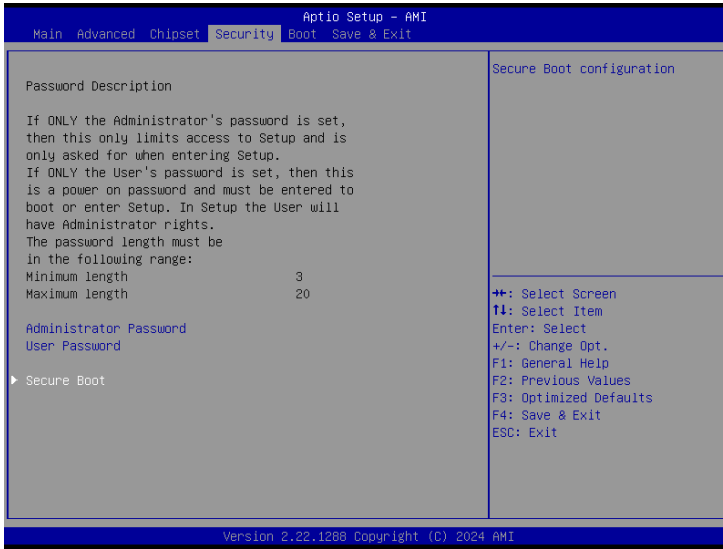
## 3.4 Chipset



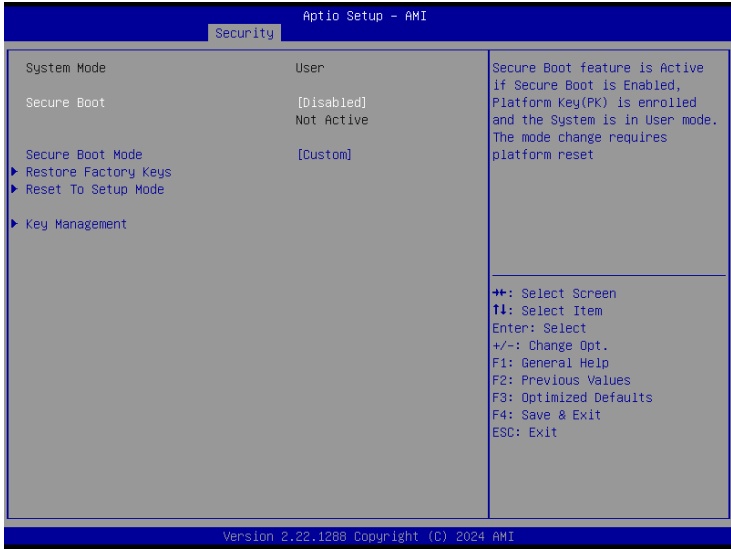
Item	Description
VT-d	<b>Enabled : Enables VT-d function (Default setting)</b> <b>Disabled : Disables VT-d function</b>
DVMT Pre-Allocated	Use DVMT Pre-Allocated to set the amount of system memory which is installed to the integrated graphics processor <b>Option items : 32M , 64M, 128M, 256M (Default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



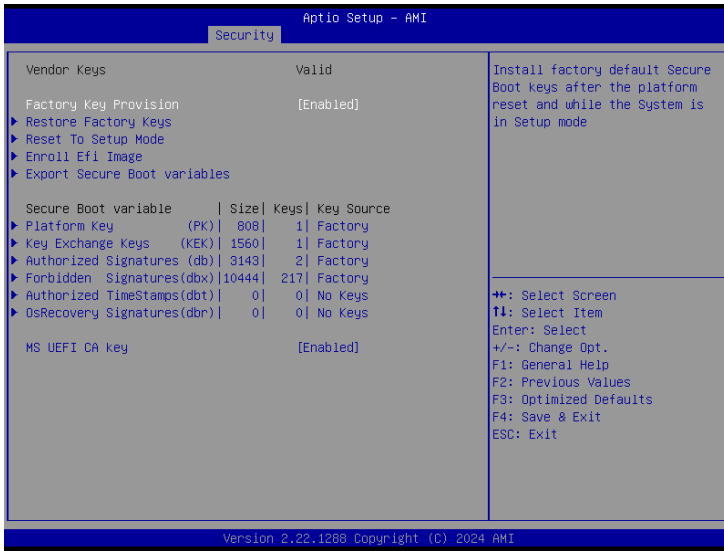
## 3.5 Security



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



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

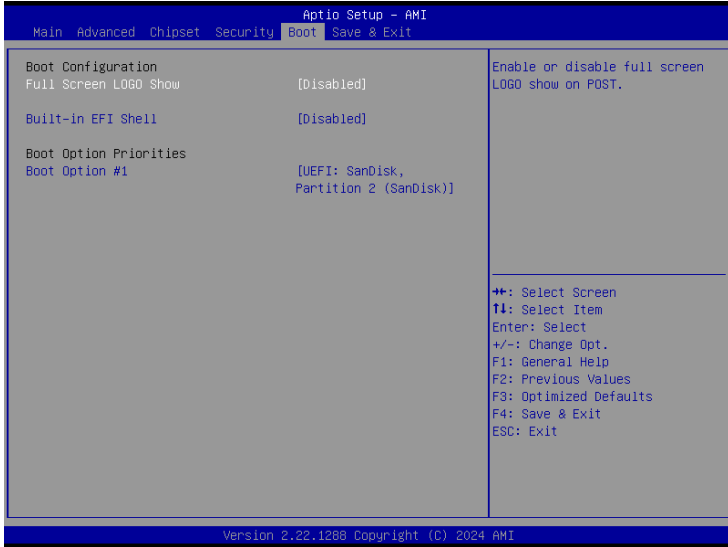


Item	Description
<b>Factory Key Provision</b>	Install factory default Secure Boot keys after the platform reset and while the system is in Setup mode <b>Enabled : Enables Factory Key Provision (Default setting)</b> <b>Disabled : Disables Factory Key Provision</b>
<b>Restore Factory Keys</b>	To restore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

Item	Description
<b>Platform Key (PK)</b>	These items allows you to enroll factory defaults or load Certificates from a file.
<b>Key Exchange Keys (KEK)</b>	
<b>Authorized Signatures (db)</b>	
<b>Forbidden Signatures (dbx)</b>	
<b>Authorized TimeStamps (dbt)</b>	
<b>OsRecovery Signatures (dbr)</b>	

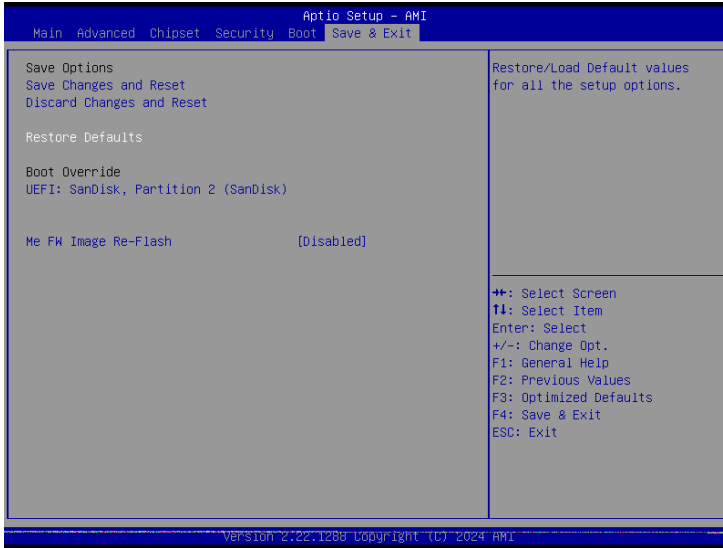
## 3.6 Boot

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



Item	Description
<b>Full Screen LOGO Show</b>	Enable/Disable full screen LOGO show on POST screen <b>Enabled : Enables Full screen LOGO Show on POST screen</b> <b>Disabled : Disables Full screen LOGO Show on POST screen (Default setting)</b>
<b>Built-in EFI Shell</b>	Enable/Disable Built-in EFI Shell <b>Enabled : Enables Built-in EFI Shell</b> <b>Disabled : Disables Built-in EFI Shell (Default setting)</b>
<b>Boot Option #1</b>	Shows the information of the storage that be installed in the system <b>Choose/set the boot priority</b>

## 3.7 Save & Exit



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