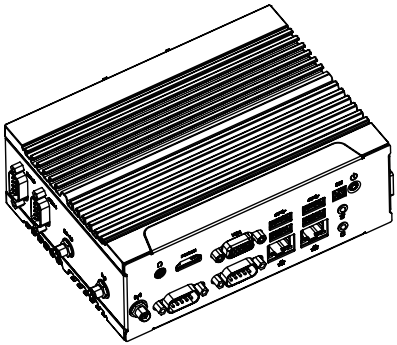
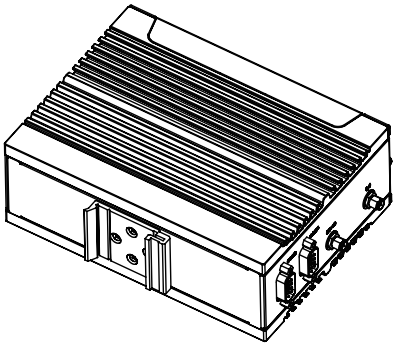
QBiX-Pro-GLKB5040HD-A1 (QP-5040B-SI)

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
System	1
Screw HDD M3x4L (P/N: 25984G-1C014-S00)	4
Terminal Blocks 1 x 3P (P/N: 25IO0-5ESDV0-D2R)	1
Terminal Blocks 1 x 2P (P/N: 25IO0-EC3500-D2R)	1
Terminal Blocks 1 x 10P (P/N: 25IO0-EC3810-D2R)	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.

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.

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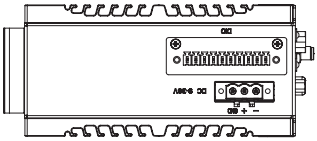
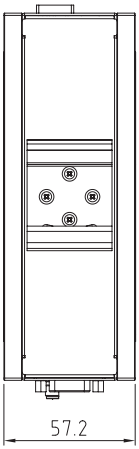
Chapter 1

Chapter 1 - Product Specifications

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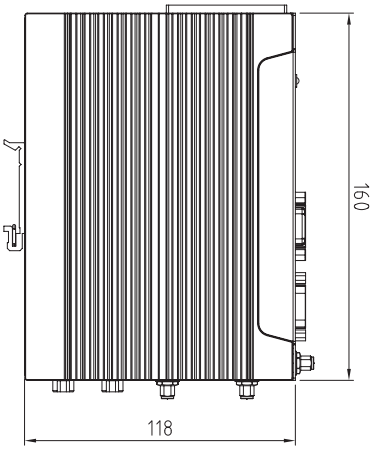
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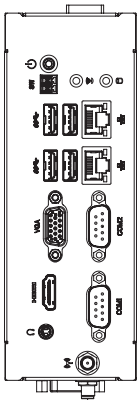
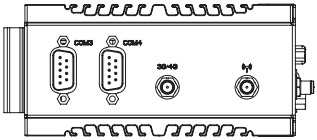
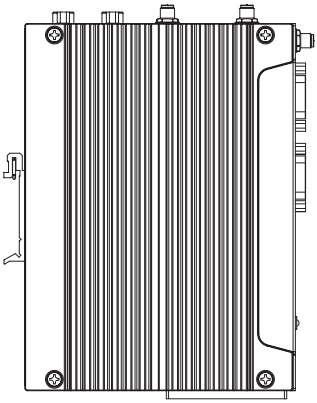






1.1 Specifications

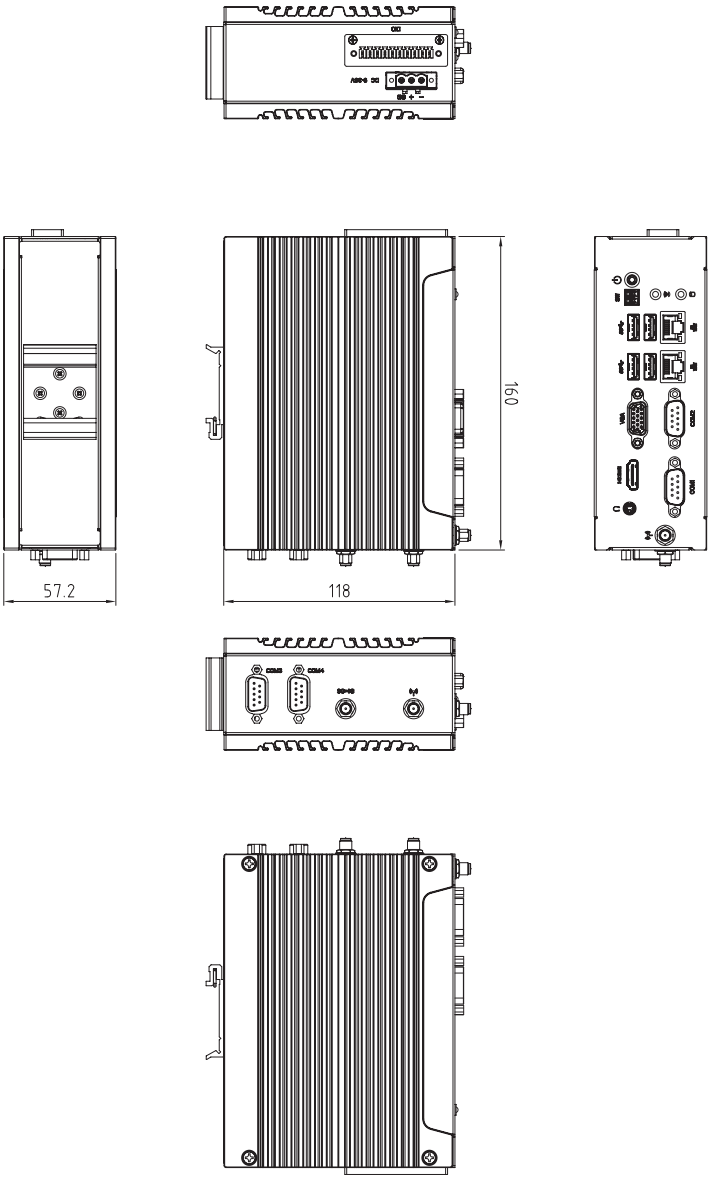
System	QBiX-Pro-GLKB5040HD-A1 (QP-5040B-SI)
Dimension	System Size : 160W x 118D x 62.6H(mm)
CPU	Intel® Pentium® Silver J5040 Processor 14nm, 4 cores, 4 threads, up to 3.2 GHz TDP 10W
Chipset	SoC
Memory	1 x DDR4 SO-DIMM sockets, Max. Capacity 8 GB Support Single Channel DDR4 2400 MHz memory modules
Ethernet	2 x GbE LAN Ports (Intel® I211AT)
Graphic support	Integrated Graphics Processor - Intel® UHD Graphics 605: 1 x HDMI port, supporting a maximum resolution of 4096x2160 @60Hz 1 x VGA port, supporting a maximum resolution of 2048×1536 @60Hz (2 independent display outputs)
Audio	Realtek® Audio Codec
Storage	1 x 2.5” HDD/SSD (SATA 6Gb/s)
Expansion Slots	1 x 2280 M.2 M-Key (SATA 6Gb/s) 1 x 2230 M.2 E-Key (WiFi/BT) 1 x Full-size Mini PCIe with SIM slot (PCIe x1 + USB2.0) -- support 3G/4G module 1 x Vertical USB 2.0
Front I/O	2 x RJ45 LAN Ports 4 x USB 3.2 Gen 1 1 x HDMI 1 x VGA 2 x COM Ports (RS-232/422/485 & RI/5V/12V) 1 x Power button with LED 1 x WiFi/HDD LED 1 x Remote control connector 1 x Headphone Jack 1 x External Antenna Hole (Optional)
Rear I/O	1 x Din Rail Mounting Support

System	QBiX-Pro-GLKB5040HD-A1 (QP-5040B-SI)
Side I/O	1 x GPIO (8 bit) 1 x 3-pin Terminal Block 2 x COM Ports (RS-232/422/485) 2 x External Antenna Holes (Optional)
Power	+9V~36VDC (Full Range)
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, 3 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: 416 x 409 x 347 (mm) Packing Capacity: 6pcs Including: Screw HDD M3x4L x 4 (P/N: 25984G-1C014-S00) Terminal Blocks 1*3P x 1 (P/N: 25IO0-5ESDV0-D2R) Terminal Blocks 1*2P x 1 (P/N: 25IO0-EC3500-D2R) Terminal Blocks 1*10P x 1 (P/N: 25IO0-EC3810-D2R)
Order Information	System: 6BQP5040BMR-SI (Box packing)

Chapter 2

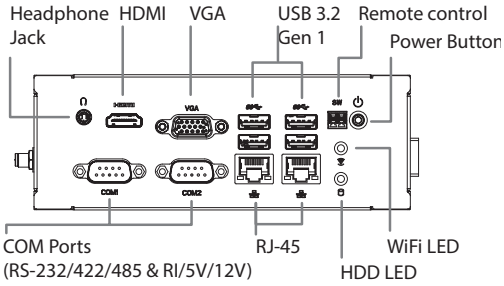
Chapter 2 – QBiX-Pro-GLKB5040HD-A1 (QP-5040B-SI)

2.1 Dimension

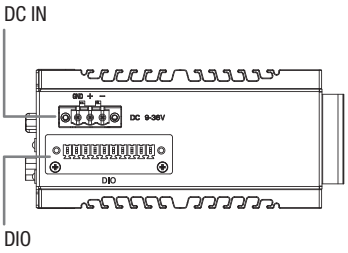


2.2 Getting Familiar with Your Unit

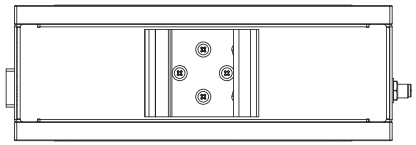
[Rear I/O Port on Board]



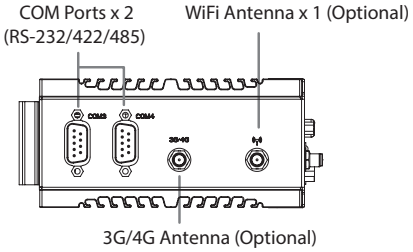
[Side IO Down side]



[Front Side]

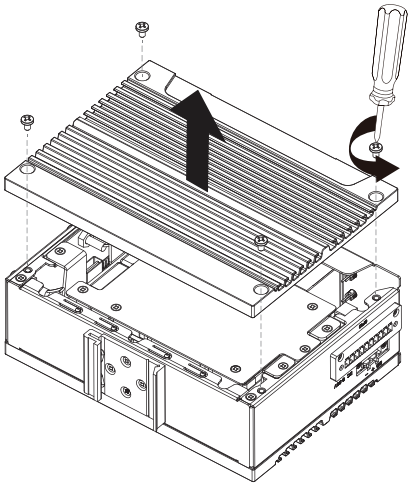


[Side IO Top Side]



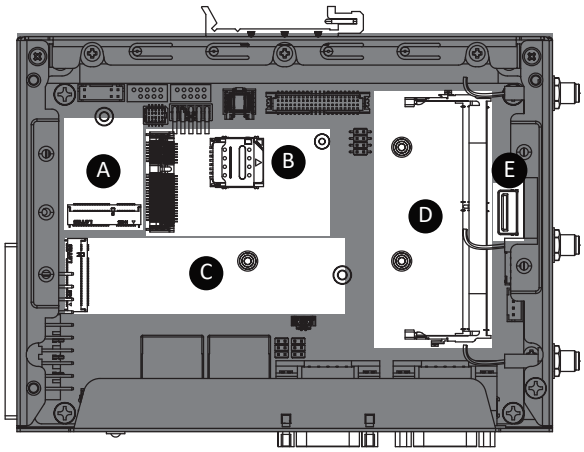
[Installation]

* Before opening the case, make sure to unplug the power cord.
* 打開機殼前，請確實移除電源。
* Before Connecting the power, make sure to fasten the case securely.
* 接上電源前，請確實將機殼完整鎖附。



[Bottom PCB Side]

	Information
A	M.2 2230 WiFi module connector
B	Mini PCIe (PCIe + USB2.0) connector
C	M.2 2280 SSD connector
D	DDR4 SO-DIMM Slot
E	USB 2.0 Vertical connector

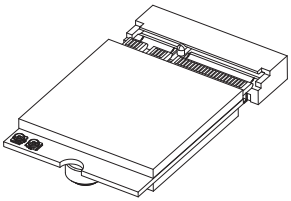


2.3 A) Wireless Module : How to safely install the Module (Wireless Module inclusion may vary based on local distribution)

1

Carefully insert the wireless module into the M.2 slot

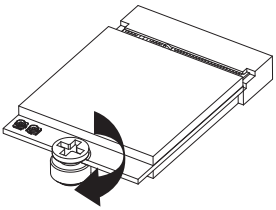
小心地將無線模組安裝於M.2插槽中。



2

Lock the screw in the middle.

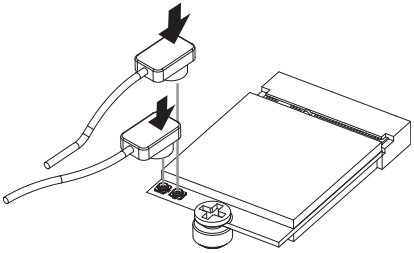
鎖入固定於無線模組中央頂端的螺絲。



3

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

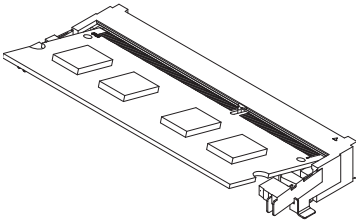
向下安裝連結於無線模組左側頂端天線。



2.4 B) Memory Installation: DDR4 SO-DIMM

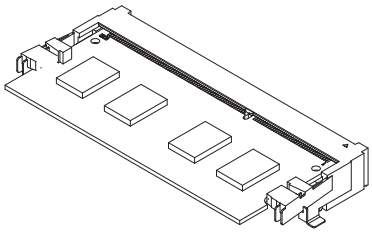
❶

Carefully insert SO-DIMM memory modules.
小心地由下至上將 SO-DIMM 記憶體安裝於記憶體插槽。



❷

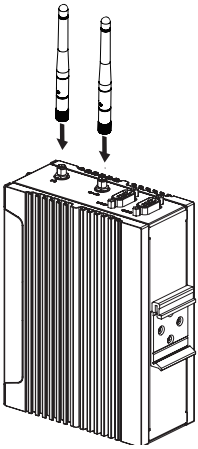
Push down until the modules click into place.
當記憶體固定於插槽後，再輕輕下壓至定點。



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

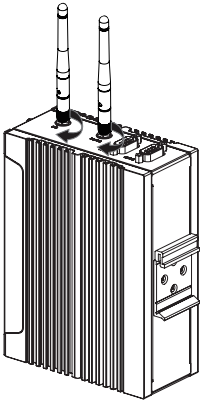
1

Carefully insert the antennas into the connectors.
小心地將天線插入天線插孔中。



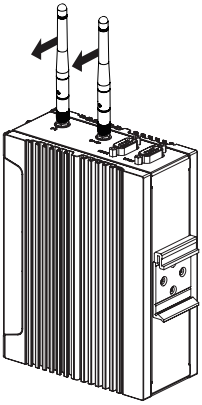
2

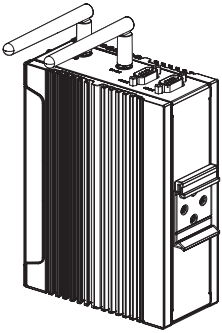
Turn the antennas clockwise until they are completely secure on the connectors.
握住天線接頭底端，按順時針方向將天線旋入插孔中牢牢固定。



3

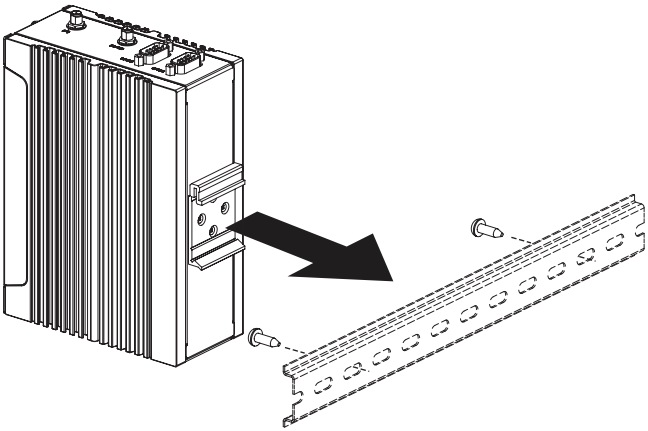
Flip up the antenna heads so that they are perpendicular to the machine.
栓緊後請將天線拉起朝上呈垂直狀。





2.6 Din Rail Bracket Installation

❶



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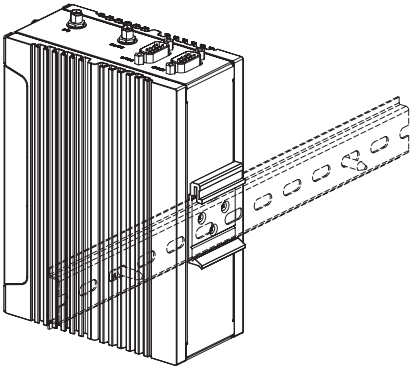
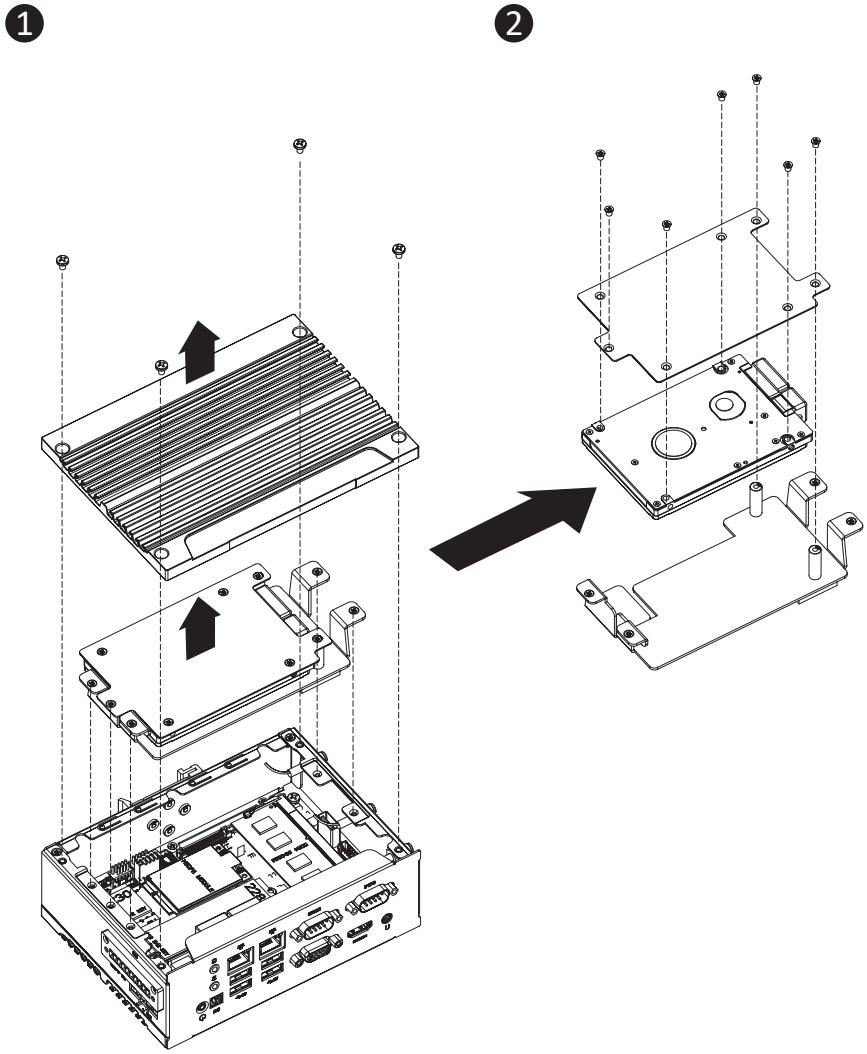
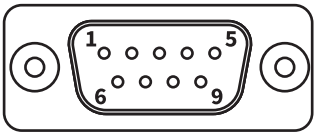


2.7 HDD Installation



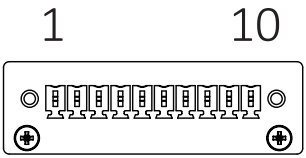
2.8 Cable Pin-define

1. DB9 COM (25CF8-180620-S9R)



DB9 Pin	RS-232	RS-422 Full Duplex	RS-485 Half Duplex
1	DCD	TXD-	D-
2	RXD	TXD+	D+
3	TXD	RXD+	-
4	DTR	RXD-	-
5	GND		
6	DSR	-	-
7	RTS	-	-
8	CTS	-	-
9	RI	-	-

2. DBP DIO (25CR5-100701-S9R)



DBP DIO Pin	Pin Name
1	GPIO-output_1
2	GPIO-input_1
3	GPIO-output_2
4	GPIO-input_2
5	GPIO-output_3
6	GPIO-input_3
7	GPIO-output_4
8	GPIO-input_4
9	GND
10	5V

2.9 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.

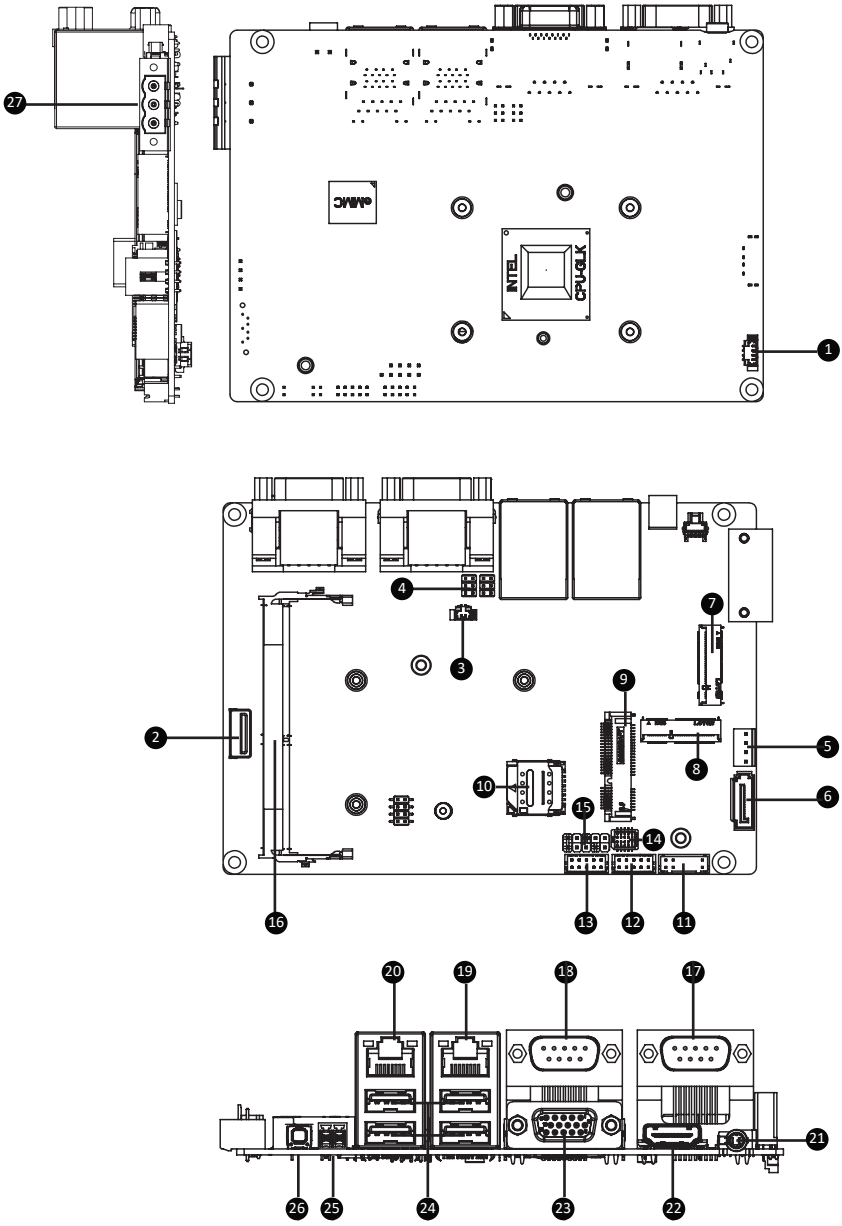
HIGH DEFINITION MULTIMEDIA INTERFACE

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

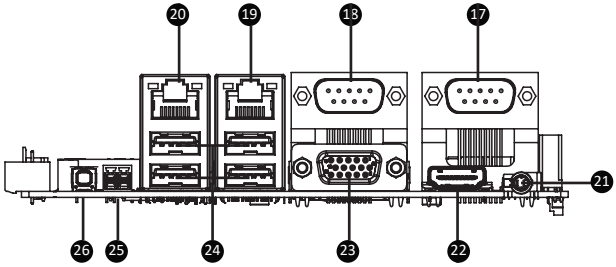
Chapter 3 – 3.5” SBC Board/ QBiP-5040B Define

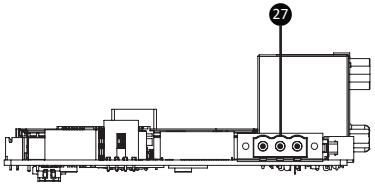
3.1 Jumpers and Connectors



	Code	Description
1	CPU FAN	CPU FAN connector
2	USB2	Vertical USB2.0 connector
3	BATTERY	Battery cable connector
4	JCOM1, JCOM2	COM RI# pin RI#/5V/12V Select jumper for COM1 & COM2 Port
5	SATAPW	SATA power connector
6	SATA	SATA 6Gb/s Connector
7	M2M	M.2 Slot, M-Key, NGFF2280
8	M2E	M.2 Slot, E-key, NGFF2230
9	MPCIE	Mini PCIe full size, support 3G/4G module
10	SIM-CARD	SIM Card slot
11	GPIO_CNT	General purpose input/output header
12	COM4	Serial port header (RS-232/422/485)
13	COM3	Serial port header (RS-232/422/485)
14	LPC_CN	1 x TPM Header
15	SYS_PANEL	Front panel header
16	SODIMM1	DDR4 SO-DIMM Slot
17	COM1	Serial Port connector, COM Port (RS-232/422/485 & RI/5V/12V)
18	COM2	Serial Port connector, COM Port (RS-232/422/485 & RI/5V/12V)
19	LAN1	LAN connector
20	LAN2	LAN connector
21	Headphone Jack	Headphone Jack

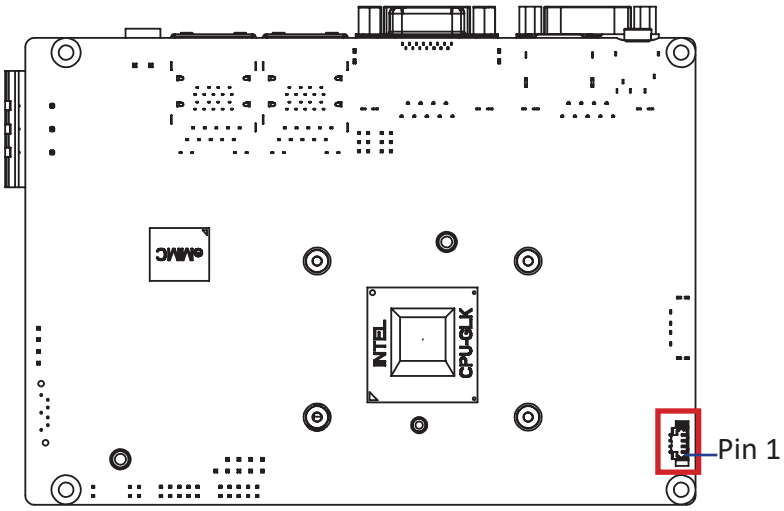
	Code	Description
22	HDMI	HDMI connector
23	D-SUB	D-Sub VGA Connector
24	RUSB3_1 RUSB3_2	USB 3.2 Gen 1 Connector x 4
25	PWR_SW	Remote Control connector
26	PWR_BUTTON	Power button
27	DC_IN2	DC IN 1 x 3-pin Terminal block (Side)

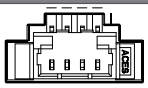




3.2.1 CPU FAN (CPU FAN connector)

1



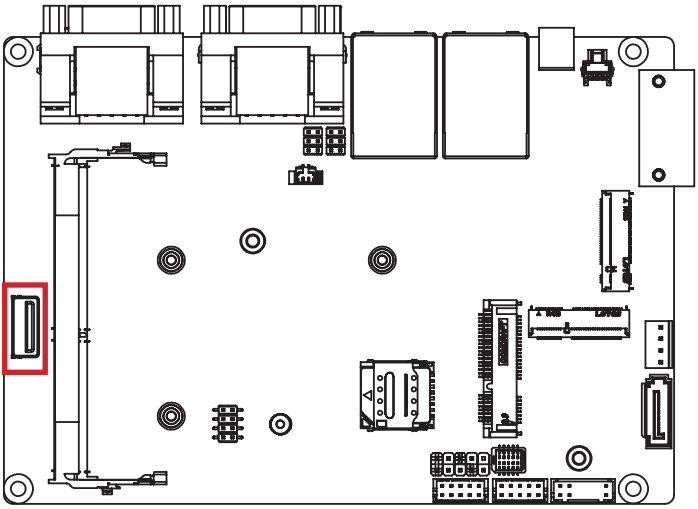
CPU FAN connector

1 2 3 4

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

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

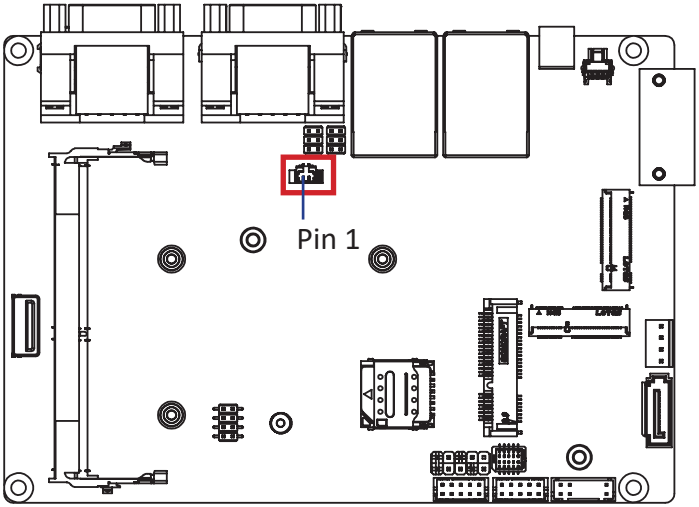
3.2.2 USB2 (Vertical USB2.0 connector)

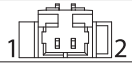
❷



3.2.3 BATTERY (Battery cable connector)

❸



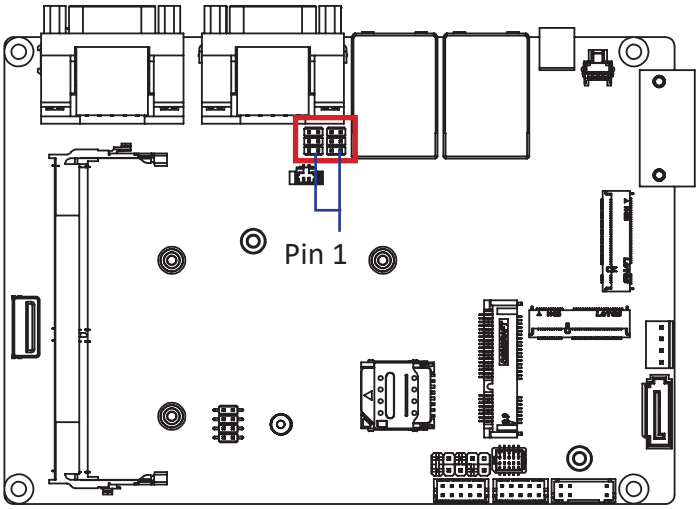
Battery Cable Connector


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

Pin No.	Definition
1	3.3V
2	GND

3.2.4 JCOM1, JCOM2 (RI# pin RI#/5V/12V Select jumper for COM1 & COM2 Port)

4

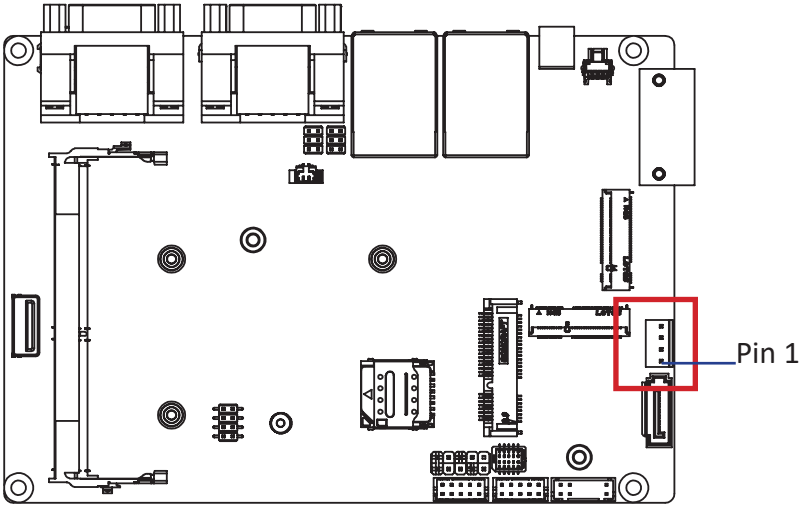


JCOM1/ JCOM2 Jumper Select	
	1-2 Close: 5V (Power COM)
	3-4 Close: RI (Stand COM)
	5-6 Close: 12V (Power COM)

Connector PN	Vendor
220-97-03GB01	PINREX
PH06N53BAZ000	HORNGTONG

3.2.5 SATAPW (SATA power connector)

5



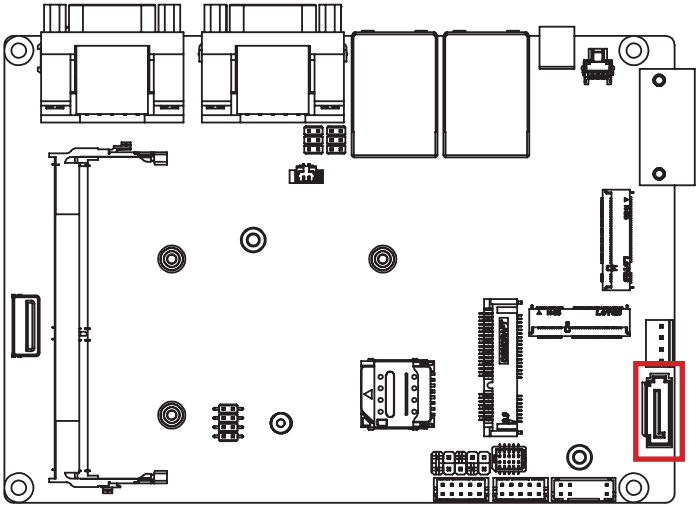
Hard Disk Power Connector
4 1

Connector PN	Vendor
743-81-04TW00	PINREX
WF04Q2-3BJQ000	HORNGTONG

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

3.2.6 SATA (SATA 6Gb/s Connector)

6



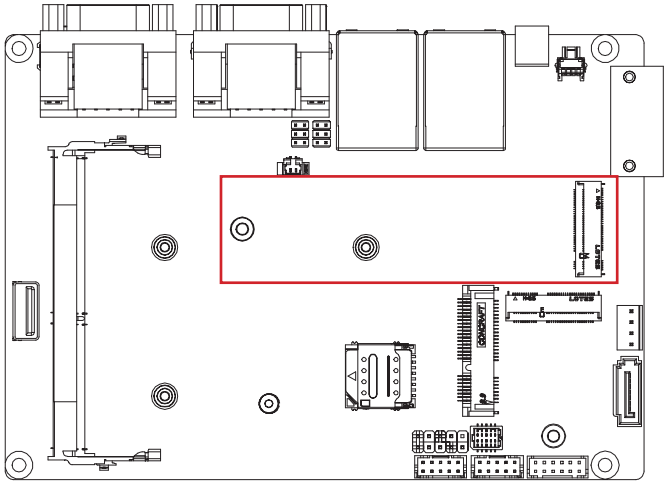
SATA Connector
1  7

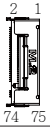
Connector PN	Vendor
WATF-07DBLBA1UW	WINWIN

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

3.2.7 M2M (M.2 Slot, M-Key, NGFF2280)

7



M.2 M Key Connector


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

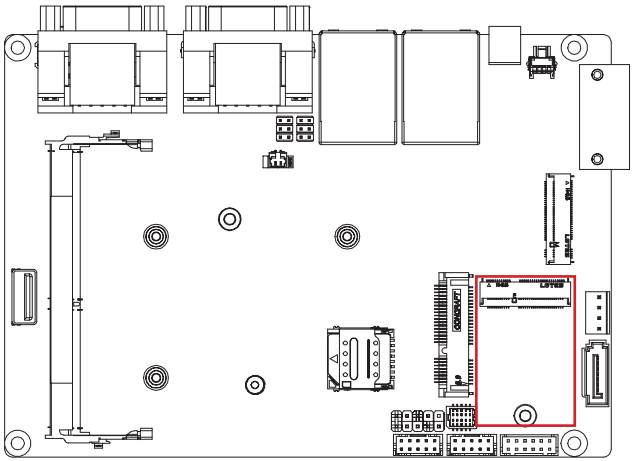
Pin No.	Definition	Pin No.	Definition
35	NC	36	NC
37	NC	38	NC
39	GND	40	SMB Clock
41	SATA_RXp	42	SMB DATA
43	SATA_RXn	44	SMB ALERT
45	GND	46	NC
47	SATA_TXn	48	NC
49	SATA_TXp	50	NC
51	GND	52	NC
53	NC	54	NC
55	NC	56	NC
57	GND	58	NC

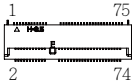
Pin No.	Definition	Pin No.	Definition
67	NC	68	SUSCLK
69	NC	70	3.3V
71	GND	72	3.3V
73	GND	74	3.3V
75	GND		

Connector PN	Vendor
80159-8521	BELLWETHER

3.2.8 M2E (M.2 Slot, E-key, NGFF2230)

8

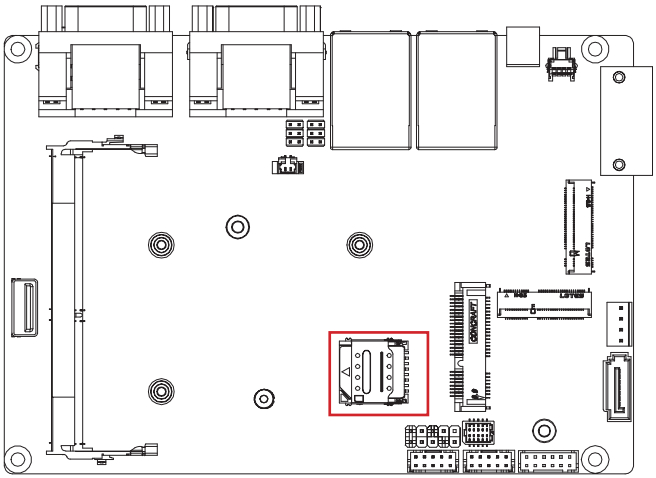


M.2 E Key Connector			
			
Pin No.	Definition	Pin No.	Definition
1	GND	2	3.3V
3	USBp	4	3.3V
5	USBn	6	WiFi_LED
7	NC	8	NC
9	NC	10	NC
11	NC	12	NC
13	NC	14	NC
15	NC	16	BT_LED
17	NC	18	GND
19	NC	20	NC
21	NC	22	NC
23	NC		
Pin No.	Definition	Pin No.	Definition
33	GND	32	NC
35	PCIE_TXp	34	NC
37	PCIE_TXn	36	NC
39	GND	38	NC
41	PCIE_RXp	40	NC
43	PCIE_RXn	42	NC
45	GND	44	NC
47	PCIE_CLKp	46	NC
49	PCIE_CLKn	48	NC
51	GND	50	SUSCLK
53	PCIE_CLKREQ	52	Reset
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	3.3V
75	GND	74	3.3V

Connector PN	Vendor
APCI0095-P002A	LOTES
80152-8521	BELLWETHER
213EAAA85FD	CONCRAFT

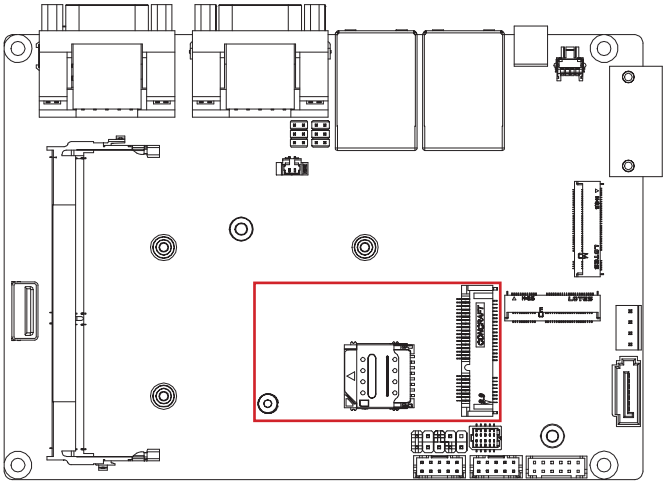
3.2.9 SIM-CARD (SIM Card slot)

9

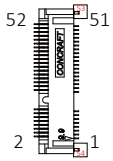


3.2.10 MPCIE (Mini PCIe full size, support 3G/4G module)

10



Mini PCIe Connector



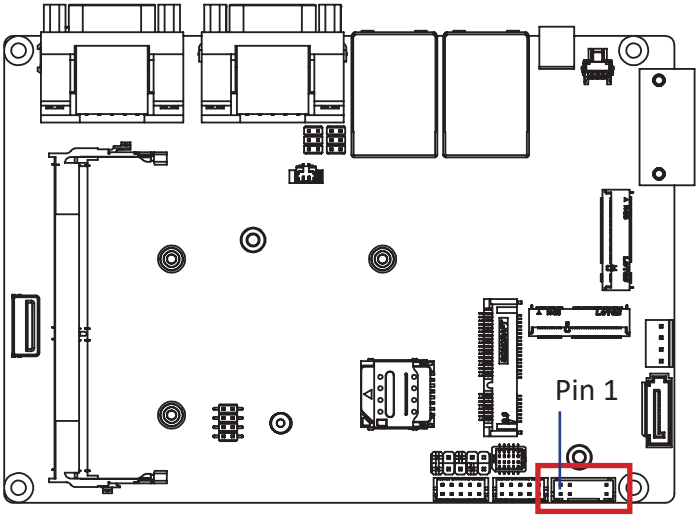
Pin No.	Definition	Pin No.	Definition
1	PCIE WAKE	2	3.3V
3	NC	4	GND
5	NC	6	NC
7	PCIE Clock Request	8	SIM PWR
9	GND	10	SIM DATA
11	PCIE Clock n	12	SIM Clock
13	PCIE Clock p	14	SIM Reset
15	GND	16	UIM VPP3
17	NC	18	GND
19	NC	20	WLAN_DISABLE
21	GND	22	Reset

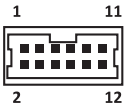
Pin No.	Definition	Pin No.	Definition
23	PCIE RXn	24	3.3V
25	PCIE RXp	26	GND
27	GND	28	NC
29	GND	30	SMB Clock
31	PCIE TXn	32	SMB DATA
33	PCIE TXp	34	GND
35	GND	36	USB Dn
37	GND	38	USB Dp
39	3.3V	40	GND
41	3.3V	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	NC
49	NC	50	GND
51	NC	52	3.3V

Connector PN	Vendor
AS0B221-S99Q-7H	FOXCONN

3.2.11 GPIO_CNT (General Purpose input/output header)

11



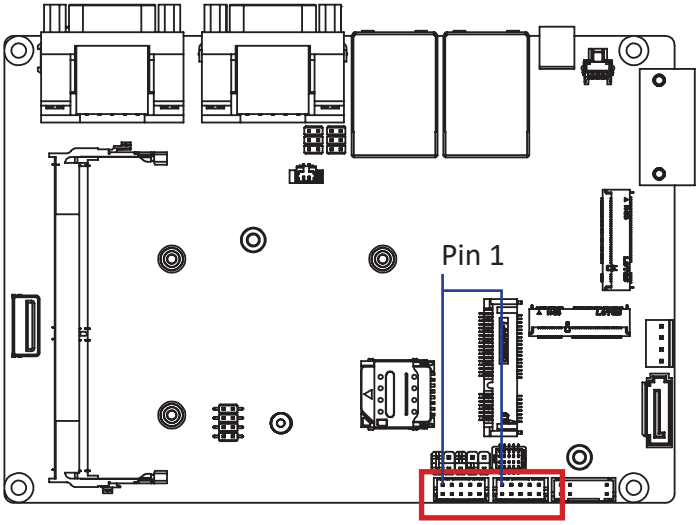
GPIO Connector


Pin No.	Definition
1	GPIO-output_1
2	GPIO-input_1
3	GPIO-output_2
4	GPIO-input_2
5	GPIO-output_3
6	GPIO-input_3
7	GPIO-output_4
8	GPIO-input_4
9	SMBus Clock
10	SMBus DATA
11	5V
12	GND

Connector PN	Vendor
725-81-12TW00	PINREX
A2004WV-2X06P46	JOINT-TECH

3.2.12 COM3, COM4 (Serial port header, RS-232/422/485)

12 13



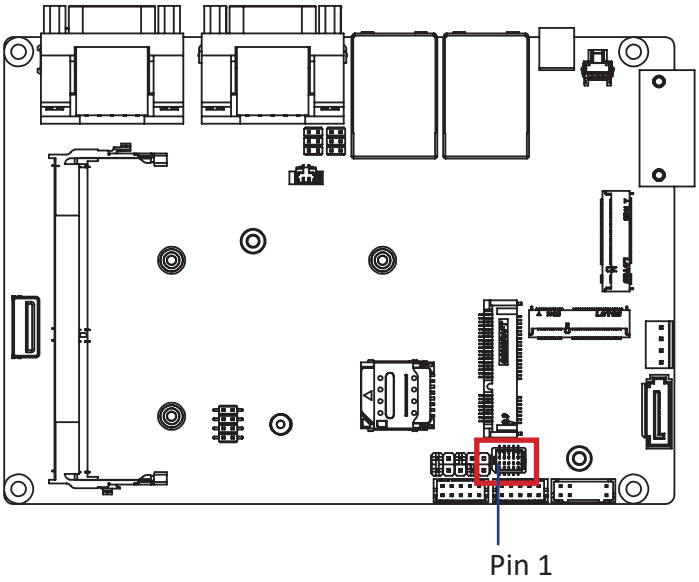
Serial Port Cable Connector

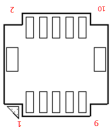

Connector PN	Vendor
725-81-10TW00	PINREX
A2004WV-2X05P46	JOINT-TECH

Pin No.	RS-232	RS-422 Full Duplex	RS-485 Half Duplex
1	RXD	TXD+	D+
2	DCD	TXD-	D-
3	DTR	RXD-	—
4	TXD	RXD+	—
5	DSR	—	—
6	GND	—	—
7	CTS	—	—
8	RTS	—	—
9	No Connect	—	—
10	RI/5V/12V	—	—

3.2.13 LPC_CN (LPC Connector)

14



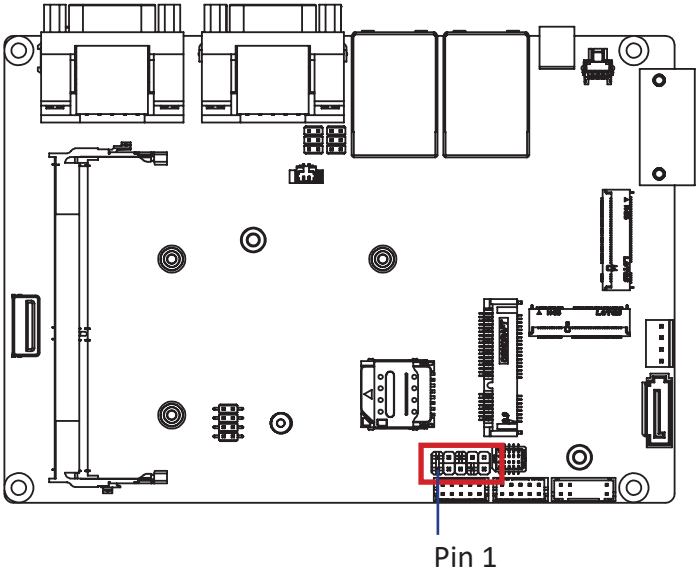
LPC Connector


Connector PN	Vendor
87216-1004-06	ACES

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

3.2.14 SYS_PANEL (Front panel header)

15



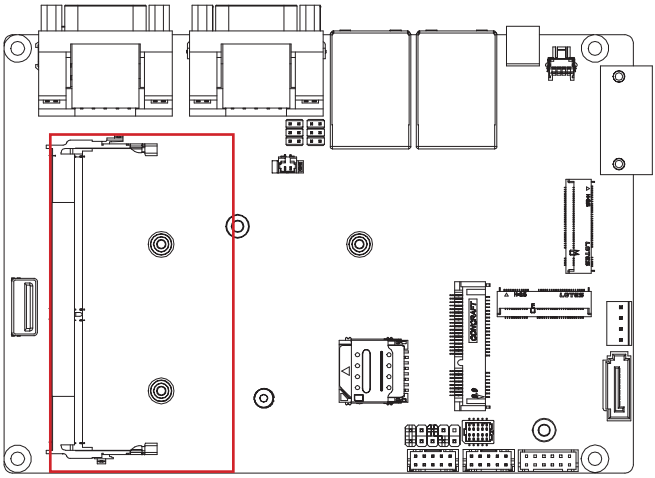
System Panel Header


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

Connector PN	Vendor
210-92-05G111	PINREX
210-92-05GW5W	PINREX

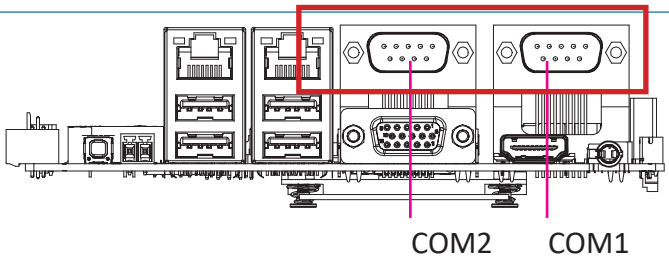
3.2.15 SODIMM1 (DDR4 SO-DIMM Slot)

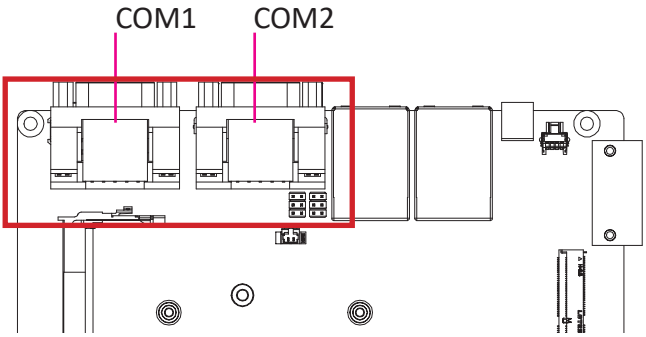
16



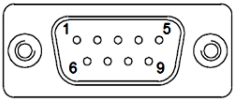
3.2.16 COM1, COM2 (Serial Port connector (RS-232/422/485 & RI/5V/12V))

17 18





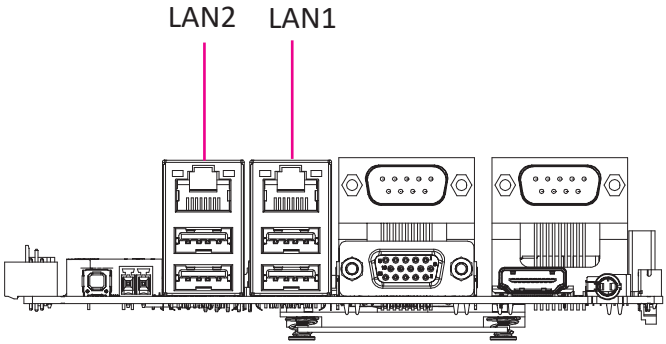
Serial port Connector



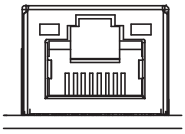
Pin No.	RS-232	RS-422 Full Duplex	RS-485 Half Duplex
1	DCD	TXD-	D-
2	RXD	TXD+	D+
3	TXD	RXD+	—
4	DTR	RXD-	—
5	GND	—	—
6	DSR	—	—
7	RTS	—	—
8	CTS	—	—
9	RI	—	—

3.2.17 LAN1, LAN2 (LAN Connector)

19 20



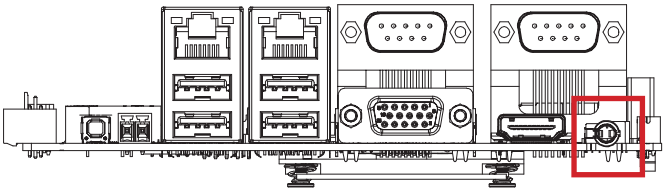
LAN Connector



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

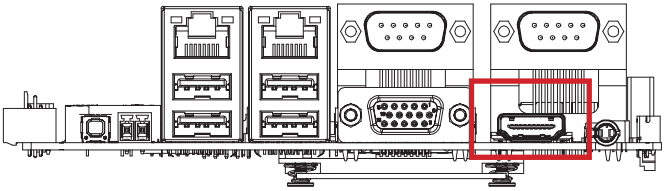
3.2.18 Headphone Jack(Headphone Jack)

21

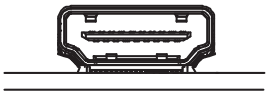


3.2.19 HDMI (HDMI Connector)

22



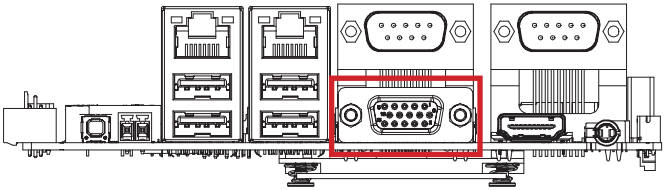
HDMI Connector

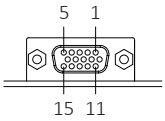


Pin No.	Definition	Pin No.	Definition
1	TX2p	11	GND
2	GND	12	CLKn
3	TX2n	13	NC
4	TX1p	14	NC
5	GND	15	SCL
6	TX1n	16	SDA
7	TX0p	17	GND
8	GND	18	5V
9	TX0n	19	Hot Plug Detect
10	CLKp		

3.2.20 VGA (DB-15 VGA Connector)

23

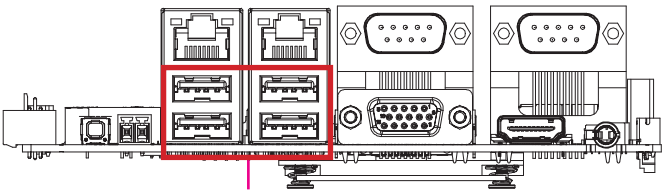


D-sub Connector


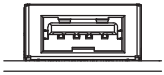
Pin No.	Definition	Pin No.	Definition
1	Red	9	5V
2	Green	10	GND
3	Blue	11	NC
4	NC	12	DDCSDA
5	GND	13	HSYNC
6	GND	14	VSYNC
7	GND	15	DDCSCL
8	GND		

3.2.21 USB3 (USB 3.2 Gen 1 Connector)

24



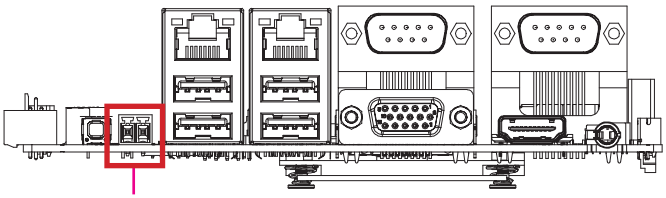
4 x USB 3.2 Gen 1

USB 3.2 Gen 1 Connector


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

3.2.22 Power Switch (Remote Control connector)

25

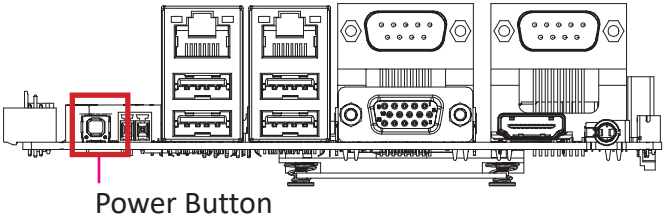


Remote Control connector
1

Pin No.	Definition
1	PWRBTSW
2	GND

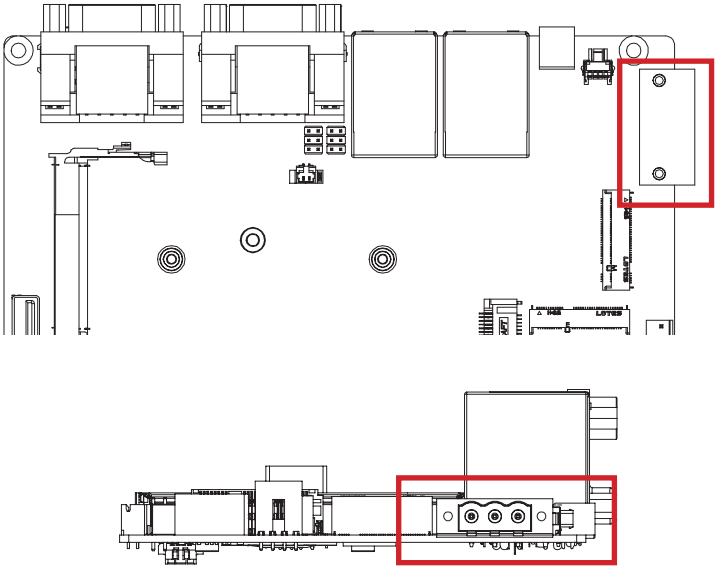
3.2.23 Power Button

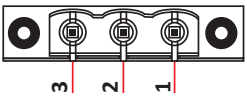
26



3.2.24 DC_IN (DC IN 1x3pin power connector)

27



DC_IN Connector	Pin No.	Definition
	1	CH_GND
	2	DCVIN
	3	GND

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

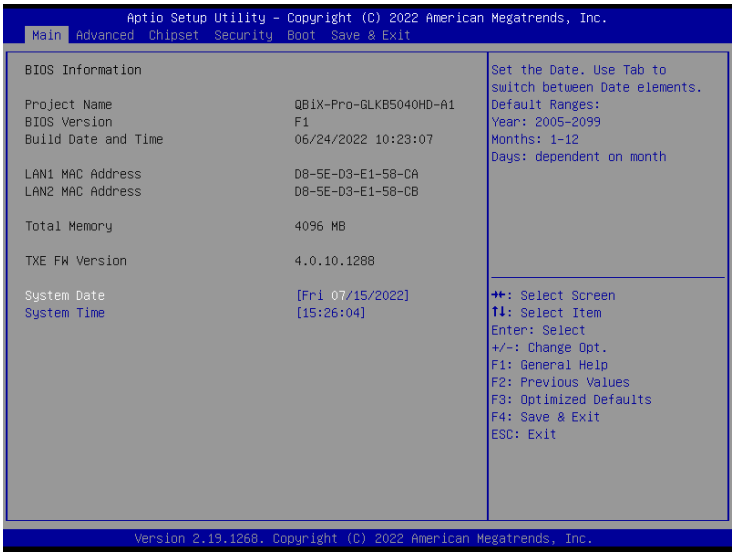
Once the system is power on, press the <DEL> key as soon as possible to access into BIOS Setup program.

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

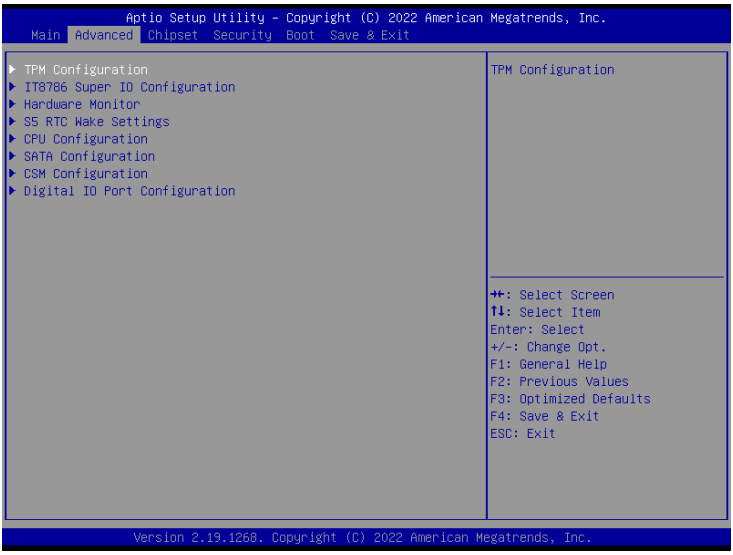
The main menu shows the basic system information.
Use arrow keys to move among the items.



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 LAN1 MAC Address information
LAN2 MAC Address	Shows LAN2 MAC Address information
Total Memory	Shows the total memory size of the installed memory
TXE FW version	Shows TXE firmware version
System Date	Set the Date for the system (Format : Week - Month - Day - Year)
System Time	Set the time for the system (Format : Hour - Minute - Second)

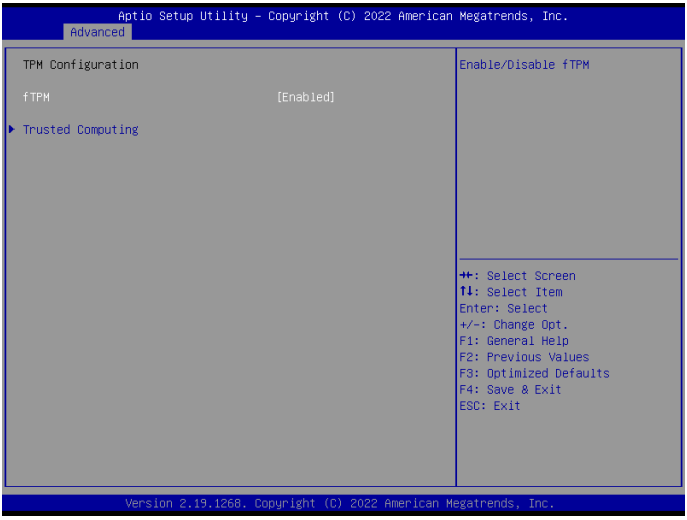
4.3 Advanced

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.



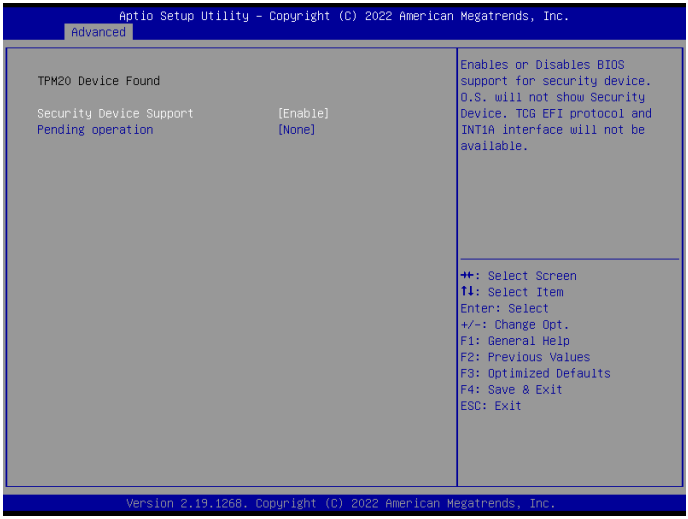
4.3.1 TPM Configuration

Use TPM Configuration submenu to choose TPM interface.



Item	Description
fTPM	**Enabled : Enables firmware TPM (Default setting)** **Disabled : Disables firmware TPM**

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



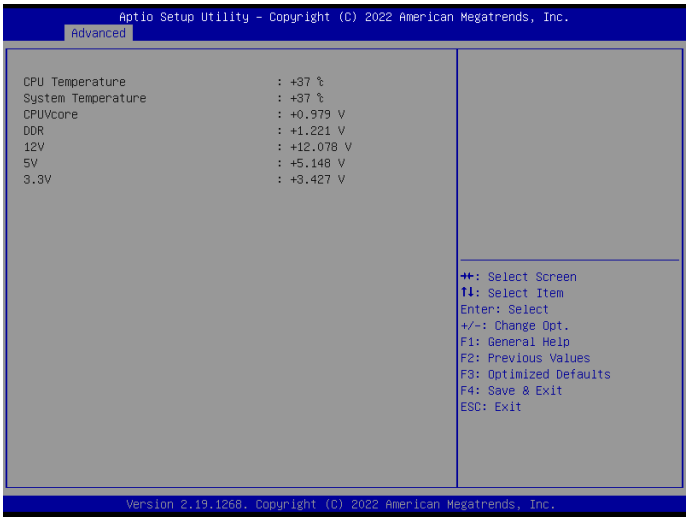
Item	Description
Security Device support	**Enabled : Enables TPM feature (Default setting)** **Disabled : Disables TPM feature**

Item	Description
Pending operation	**None : No execution will be conducted (Default setting)** **TPM clear : Set to clear data on TPM**

4.3.2 IT8786 Super IO Configuration

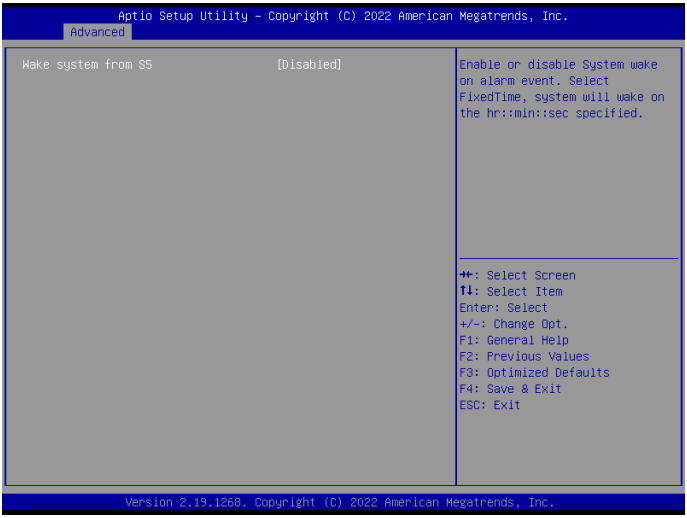
Item	Description
Serial Port 1 Configuration	Press [Enter] to configure advanced items : Serial Port : **Enabled : Enables allows you to configure the serial port settings** **Disabled : if Disabled, displays no configuration for the serial port** Device settings : Display the specified Serial Port base I/O address and IRQ COM Port Mode : Choose RS-232, RS-422, or RS-485 feature
Serial Port 2 Configuration	
Serial Port 3 Configuration	
Serial Port 4 Configuration	

4.3.3 Hardware Monitor



Item	Description
CPU temperature	Shows current CPU temperature
System temperature	Shows current system temperature

4.3.4 S5 RTC Wake Settings



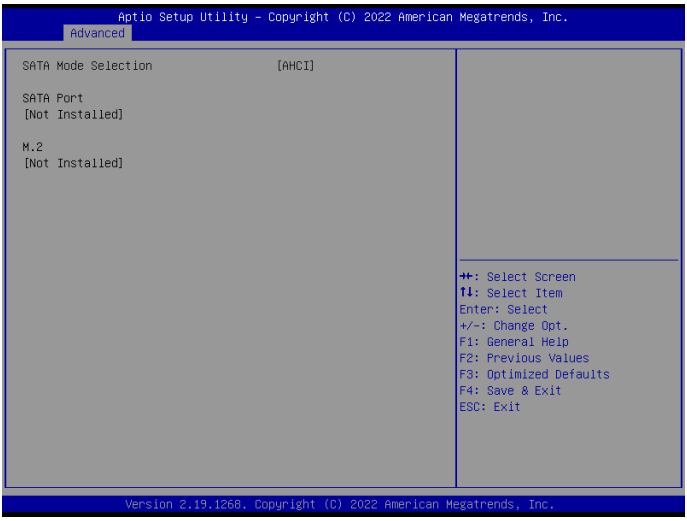
Item	Description
Wake system from S5	Enable or Disable System to wake on a specific time. **Disabled : Disables system to wake on a specific time (Default setting)** **Fixed Time : Enables system to wake on a specific time** **(Format : hr : min : sec)**

4.3.5 CPU Configuration

This submenu shows detailed CPU informations.

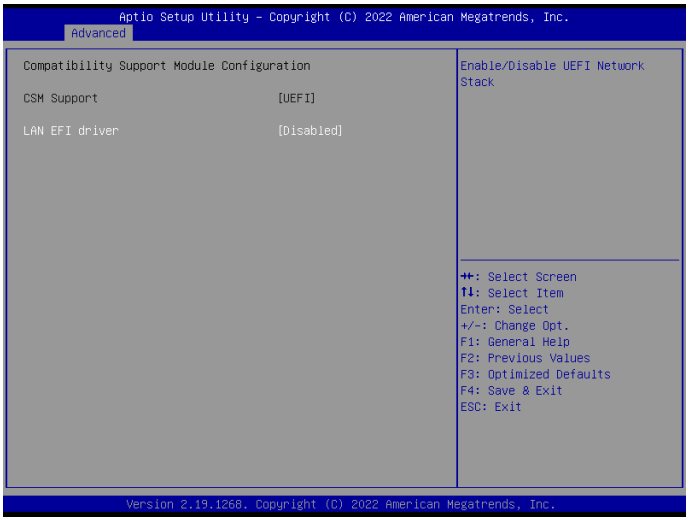
Item	Description
EIST	According to System loading, Enhanced Intel SpeedStep Technology (EIST)will automatically adjust the CPU voltage and core frequency to decrease heat and power consumption for power saving. **Enabled : Enables EIST Technology (Default setting)**
Intel Virtualization Technology	Virtualization 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**
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**

4.3.6 SATA Configuration



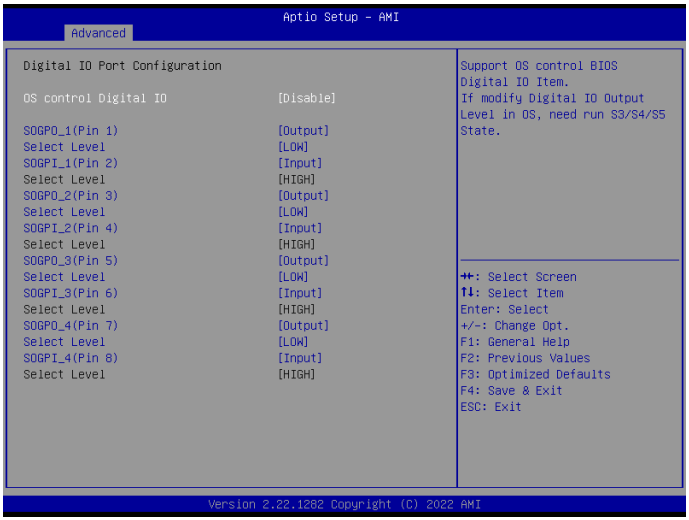
Item	Description
SATA Mode Selection	**AHCI : Configures the SATA controllers to AHCI mode. (Default setting)**
SATA Port	shows 2.5" SATA HDD/SSD information
M.2	shows M.2 SATA interface SSD information

4.3.7 CSM Configuration



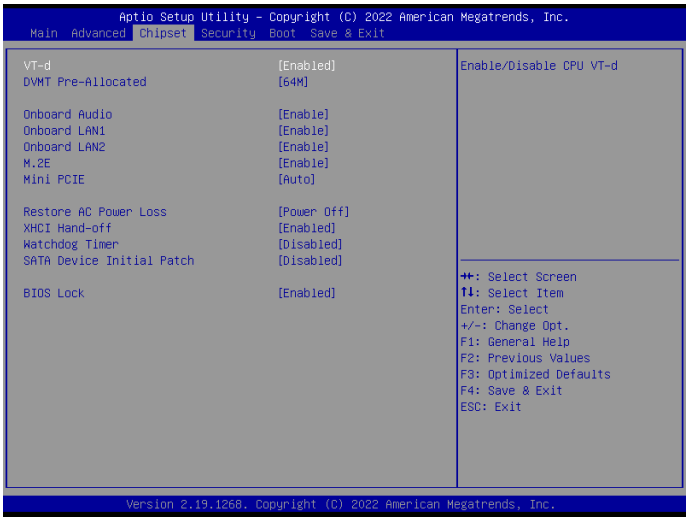
Item	Description
CSM Support	**UEFI : support UEFI mode only. (Default setting)**
LAN EFI driver	When system is power on, install LAN driver under UEFI mode. **Disabled : Disables LAN driver installed under UEFI mode. (Default setting)** **Enabled : Enables LAN driver installed under UEFI mode.**

4.3.8 Digital IO Port Configuration



Item	Description
OS control Digital IO	**Disabled : If Digital IO Output value/level is modified in OS, they will not be memorized and kept. (Default setting)** **Enabled : If Digital IO Output value/level is modified in OS, they will be memorized and kept.**
SOGPO_1 (Pin 1) **SOGPI_1 (Pin 2)** **SOGPO_2 (Pin 3)** **SOGPI_2 (Pin 4)** **SOGPO_3 (Pin 5)** **SOGPI_3 (Pin 6)** **SOGPO_4 (Pin 7)** **SOGPI_4 (Pin 8)**	Configure Digital IO Input or Output values for each pin.

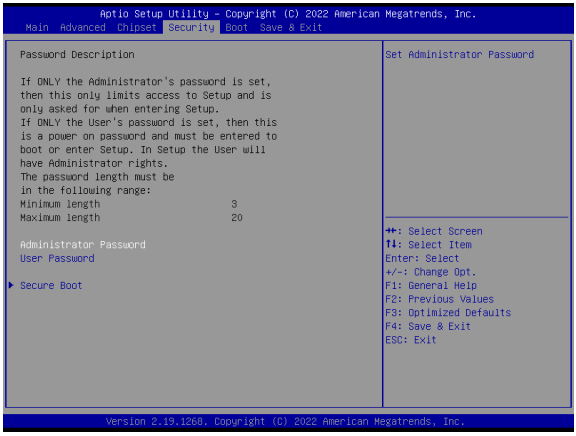
4.4 Chipset



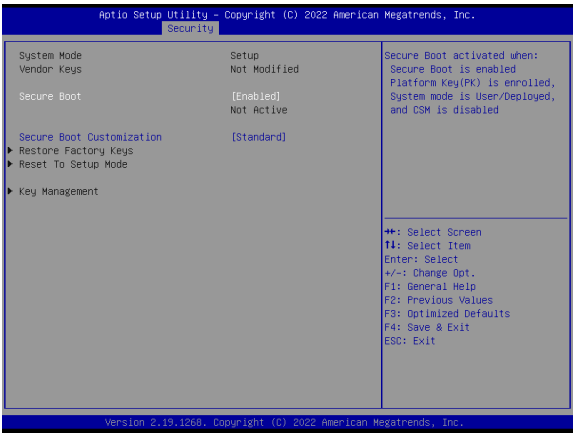
Item	Description
VT-d	**Enabled : Enables VT-d function (Default setting)** **Disabled : Disables VT-d function**
DVMT Pre-Allocated	Use DVMT Pre-Allocated to set the amount of system memory which is installed to the integrated graphics processor **Option items : 32M , 64M(Default setting) , 128M , 256M**
Onboard Audio	Enable/Disable onboard audio controller **Enable : Enables onboard audio controller (Default setting)** **Disable : Disables onboard audio controller**
Onboard LAN1 **Onboard LAN2**	Enable/Disable onboard LAN controller **Enable : Enables onboard LAN controller (Default setting)** **Disable : Disables onboard LAN controller**
M.2E	**Disable : Disables to detect M.2E device** **Enable : Enables to detect M.2E device (Default setting)** **Auto : To automatically detect M.2E device**
Mini PCIE	**Disable : Disables to detect Mini PCIe device** **Enable : Enables to detect Mini PCIe device** **Auto : To automatically detect Mini PCIe device (Default setting)**

Restore AC Power Loss	To set which option the system should returns if a sudden power loss occured **Power off : Do not power on when the power is back (Default setting)** **Power on : System power on when the power is back** **Last state : Restore the system to the state before power loss occures**
XHCI Hand-off	Enable/Disable XHCI Hand-off function **Enabled : Enables XHCI Hand-off function (Default setting)** **Disabled : Disables XHCI Hand-off function**
Watchdog Timer	Enable/Disable Watchdog Timer function Enabled : **Enables Watchdog Timer function** **Disabled : Disabled Watchdog Timer function (Default setting)**
SATA Device Initial Patch	To support over 6TB HDD **Disabled : Disables SATA Device initial patch (Default setting)** **Enabled : Enables SATA Device initial patch**
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



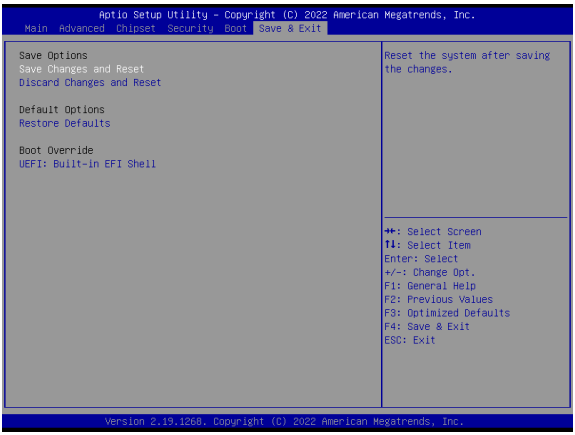
Item	Description
Secure Boot	Secure Boot requires all the applications that are running during the booting process to be pre-signed with valid digital certificates **Enabled : Enables Secure Boot function (Default setting)** **Disabled : Disables Secure Boot function**
Secure Boot Customization	**Standard : Standard mode (Default setting)** **Custom : Custom mode**

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)**
Boot Option #1	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**
UEFI : Built-in EFI Shell	Enter into EFI Shell **Yes : Save and reset to ento into EFI shell** **No : Cancal to enter into EFI shell**