GIGAIPC

QBiP-1185G7EB/ QBiP-1145G7EB/ QBiP-1185G7EBT/ QBiP-1145G7EBT

3.5” SBC Boards
User’s Manual 1st Ed

Copyright Notice

Acknowledgement

Packing List

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

For QBiP-1185G7EB/ QBiP-1145G7EB :

Item	Quantity
QBiP-1185G7EB/ QBiP-1145G7EB MB	1
SATA power cable	1

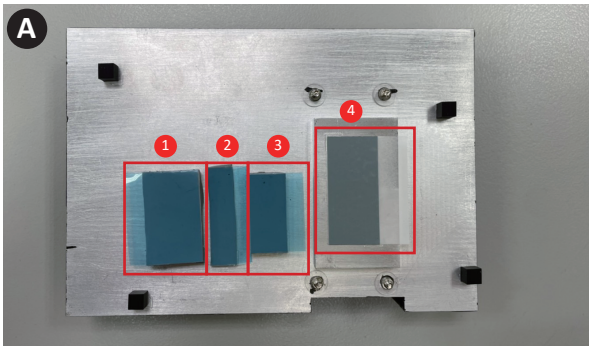
For QBiP-1185G7EBT/ QBiP-1145G7EBT :

Item	Quantity
QBiP-1185G7EBT/ QBiP-1145G7EBT MB	1
SATA power cable	1
Fanless Heatsink	1

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

Assembly Sequence

Fanless Heatsink assemble for QBiP-1185G7EBT/ QBiP-1145G7EBT :



Torque	2.2 ~ 2.5 kgf-cm
Assembly action	
1>.	Remove the release papers on the heatsink. (As shown in picture A with red columns)
2>.	Fix the heatsink with your hand to correct the corresponding hole position, and fix the heatsink as shown in picture B.
3>.	Follow the order as shown in picture B to assemble the heatsink with the suggest torsion.
4>.	When removing, please reverse (spinning from position 4) to disassemble the heatsink.

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

This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte.
Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量
GIGAIPC Main Board/ Daughter Board/ Backplane

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板及其电子组件	○	○	○	○	○	○
外部信号连接器及线材	○	○	○	○	○	○

O：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006 标准规定的限量要求以下。
X:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006 标准规定的限量要求。
备注：此产品所标示之环保使用期限，系指在一般正常使用状况下。

China RoHS Requirement (EN)

Poisonous or Hazardous Substances or Elements in Products
GIGAIPC Main Board/ Daughter Board/ Backplane

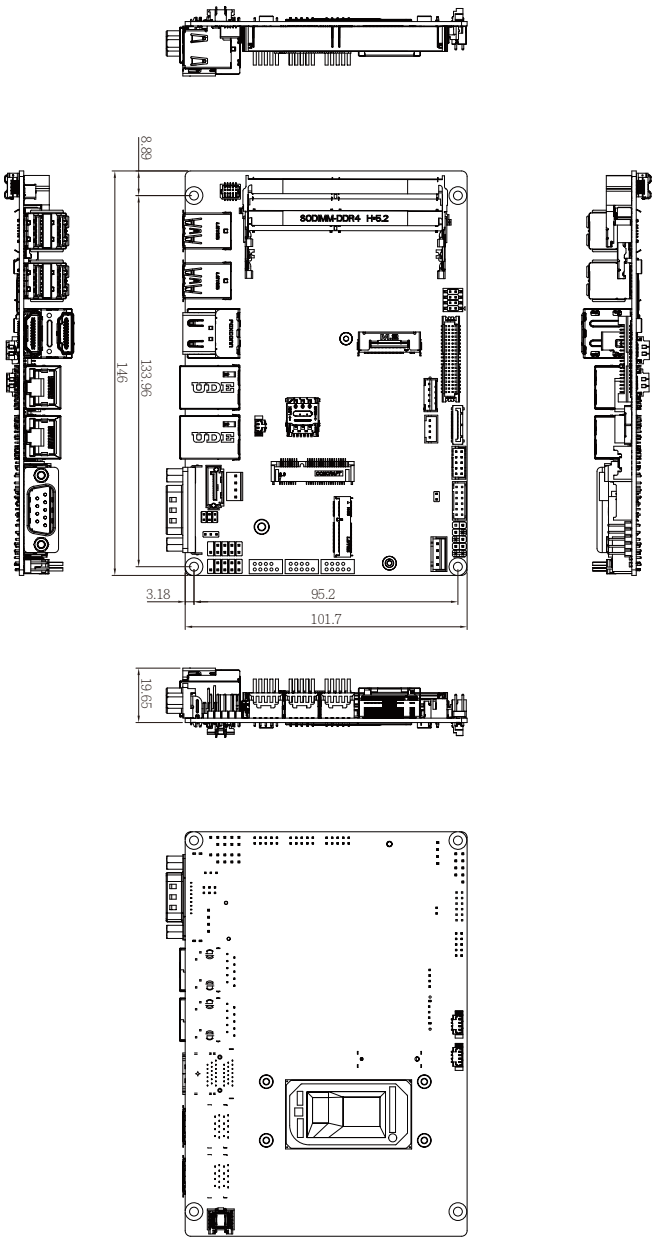
Component	Poisonous or Hazardous Substances or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
PCB & Other Components	O	O	O	O	O	O
Wires & Connectors for External Connections	O	O	O	O	O	O

O : The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement.
X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement.
Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only

Table Contents

Chapter 1

Chapter 1 - Product Specifications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146
133.96
SODIMM-DDR4 H=5.2
3.18
95.2
101.7
19.65

1.1 Specifications - QBiP-1185G7EB/ QBiP-1145G7EB

Motherboard	QBiP-1185G7EB	QBiP-1145G7EB
Form Factor	3.5'' SBC 146W x 101.7D (mm)	
CPU	Intel® Core™ i7-1185G7E Processor 10nm SuperFin, 4 cores, 8 threads, up to 4.4 GHz, vPro support, TDP 28W 12 MB Smart Cache	Intel® Core™ i5-1145G7E Processor 10nm SuperFin, 4 cores, 8 threads, up to 4.1 GHz, vPro support, TDP 28W 8 MB Smart Cache
Socket	1 x FCBGA1449	
Memory	2 x DDR4 SO-DIMM sockets, Max. Capacity 64 GB Support Dual channel DDR4 3200 MHz memory modules	
Ethernet	2 x GbE LAN Ports (Intel® I219LM and Intel® I211AT)	
Video	Integrated Graphics Processor - Intel® Iris® Xe Graphics: 2 x HDMI 2.0 port, supporting a maximum resolution of 4096x2160 @60Hz 1 x LVDS port, supporting a maximum resolution of 1920x1200 @60 Hz (3 independent display outputs)	
Audio	Realtek® Audio codec	
Storage	1 x SATA 6Gb/s port	
Raid	Intel® SATA RAID 0/1	
Expansion Slots	1 x 2280 M.2 M-Key (PCIe Gen3 x2, SATA 6Gb/s) 1 x 2230 M.2 E-Key 1 x Full-size Mini PCIe with SIM slot 1 x PCIe x1 (Board to Wire connector, PCIe Gen3 x1)	

Motherboard	QBiP-1185G7EB	QBiP-1145G7EB
Internal I/O	1 x 4-pin box power connector (DC in +9V~48VDC) 1 x SATA Power header 1 x CPU fan header 1 x System fan header 1 x Front panel header 1 x Front panel audio header 1 x 2W Speaker out header 4 x USB 2.0 headers 3 x COM headers (RS-232/422/485) 1 x Backlight control header 1 x AT/ATX mode select jumper 1 x GPIO (8-bits) & SMBus header 1 x SPI header	
Rear I/O	1 x COM Port (RS-232/422/485 & RI/5V/12V) 2 x HDMI 2 x RJ45 LAN Ports 4 x USB 3.2 Gen 2x1	
TPM	1 x TPM header	
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)	

1.1 Specifications - QBiP-1185G7EBT/ QBiP-1145G7EBT

Motherboard	QBiP-1185G7EBT	QBiP-1145G7EBT
Form Factor	3.5'' SBC 146W x 101.7D (mm)	
CPU	Intel® Core™ i7-1185G7E Processor 10nm SuperFin, 4 cores, 8 threads, up to 4.4 GHz, vPro support, TDP 28W 12 MB Smart Cache	Intel® Core™ i5-1145G7E Processor 10nm SuperFin, 4 cores, 8 threads, up to 4.1 GHz, vPro support, TDP 28W 8 MB Smart Cache
Socket	1 x FCBGA1449	
Memory	2 x DDR4 SO-DIMM sockets, Max. Capacity 64 GB Support Dual channel DDR4 3200 MHz memory modules	
Ethernet	2 x GbE LAN Ports (Intel® I219LM and Intel® I211AT)	
Video	Integrated Graphics Processor - Intel® Iris® Xe Graphics: 2 x HDMI 2.0 port, supporting a maximum resolution of 4096x2160 @60Hz 1 x LVDS port, supporting a maximum resolution of 1920x1200 @60 Hz (3 independent display outputs)	
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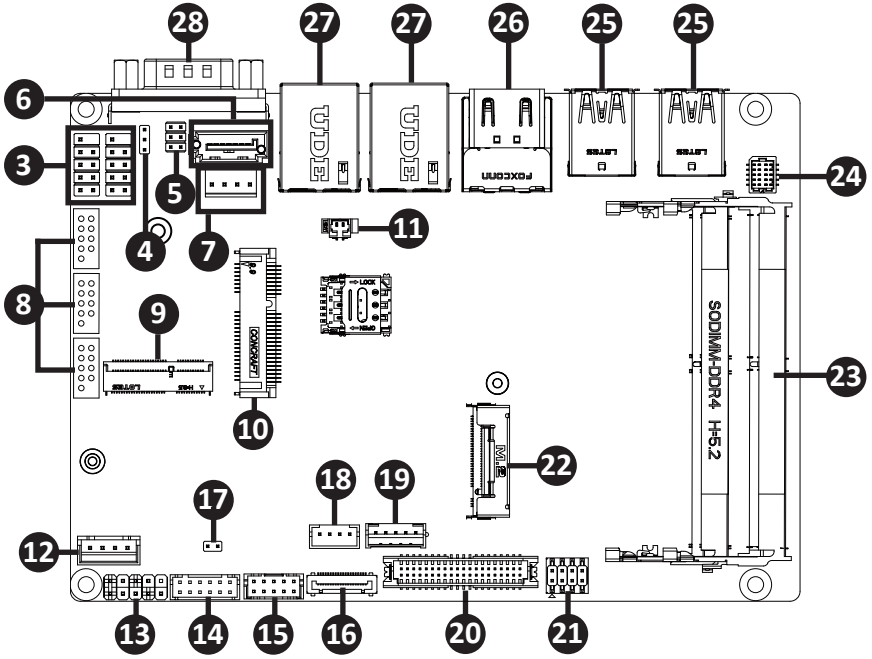
Raid	Intel® SATA RAID 0/1	
Expansion Slots	1 x 2280 M.2 M-Key (PCIe Gen3 x2, SATA 6Gb/s) 1 x 2230 M.2 E-Key 1 x Full-size Mini PCIe with SIM slot 1 x PCIe x1 (Board to Wire connector, PCIe Gen3 x1)	

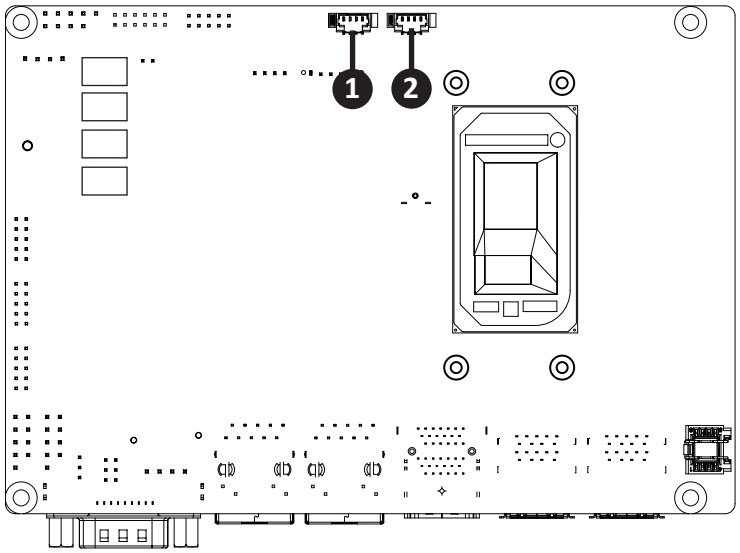
Motherboard	QBiP-1185G7EBT	QBiP-1145G7EBT
Internal I/O	1 x 4-pin box power connector (DC in +9V~48VDC) 1 x SATA Power header 1 x CPU fan header 1 x System fan header 1 x Front panel header 1 x Front panel audio header 1 x 2W Speaker out header 4 x USB 2.0 headers 3 x COM headers (RS-232/422/485) 1 x Backlight control header 1 x AT/ATX mode select jumper 1 x GPIO (8-bits) & SMBus header 1 x SPI header	
Rear I/O	1 x COM Port (RS-232/422/485 & RI/5V/12V) 2 x HDMI 2 x RJ45 LAN Ports 4 x USB 3.2 Gen 2x1	
TPM	1 x TPM header	
OS Compatibility	Windows® 10/11 (x64)	
Operating Properties	Operating temperature: -20°C to 70°C Operating humidity: 0-90% (non-condensing) Non-operating temperature: -40°C to 85°C Non-operating humidity: 0%-95% (non-condensing)	

Chapter 2

Chapter 2 – Hardware Information

2.1 Jumpers and Connectors



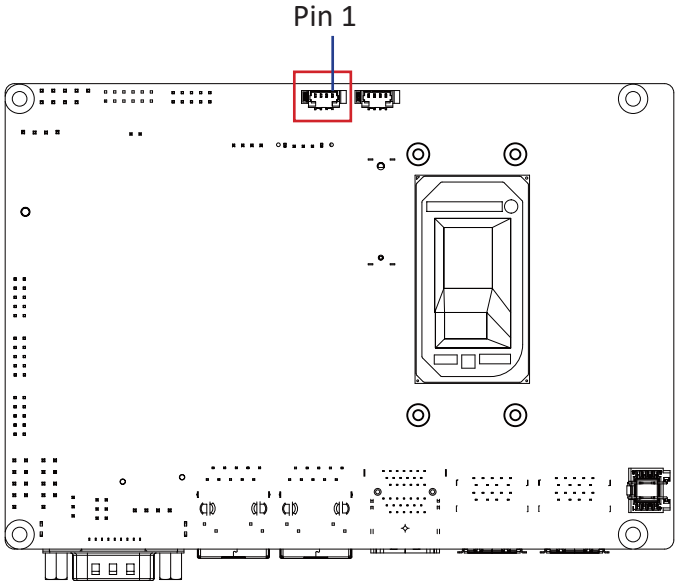


No	Code	Description
1	SYS_FAN	System fan connector
2	CPU_FAN	CPU fan connector
3	FUSB1, FUSB2	USB 2.0 headers
4	AT_CN	AT/ATX mode select jumper
5	JCOM1	RI# pin RI#/5V/12V Select jumper for COM1 port
6	SATA0	SATA 6Gb/s connector
7	SATAPW0	SATA power connector
8	COM2, COM3, COM4	Serial port header (RS-232/422/485)
9	M2E	M.2 Slot, 2230 E-key
10	MPCIE	Mini PCIe full size, support 3G/4G module
11	BATTERY	Battery cable connector
12	DC_IN	DC IN 1x4 pin power connector
13	SYS_PANEL	Front panel header
14	GPIO_CNT	General purpose input / ouput header
15	FP_AUDIO	Front Audio connector
16	PCIEX1	PCIe Gen3 x1 connector
17	ME	ME Enable jumper
18	SPK_OUT	Speaker out connector
19	BKL_CN	Backlight Control header
20	LVDS	LVDS connector
21	LSW	LVDS resolution jumper
22	M2M	M.2 Slot, 2280 M-key

No	Code	Description
23	SODIMM1 SODIMM2	DDR4 SO-DIMM Slot
24	TPM	Trusted Platform Module connector
25	USB31_1 USB31_2	USB 3.2 Gen 2x1 connector
26	HDMI_21	HDMI connector
27	LAN1, LAN2	LAN connector
28	COM1	Serial Port (RS-232/422/485 & RI/5V/12V)

2.2.1 SYS_FAN (System fan connector)

1



System fan Connector
4321

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

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

2.2.2 CPU_FAN (CPU fan connector)

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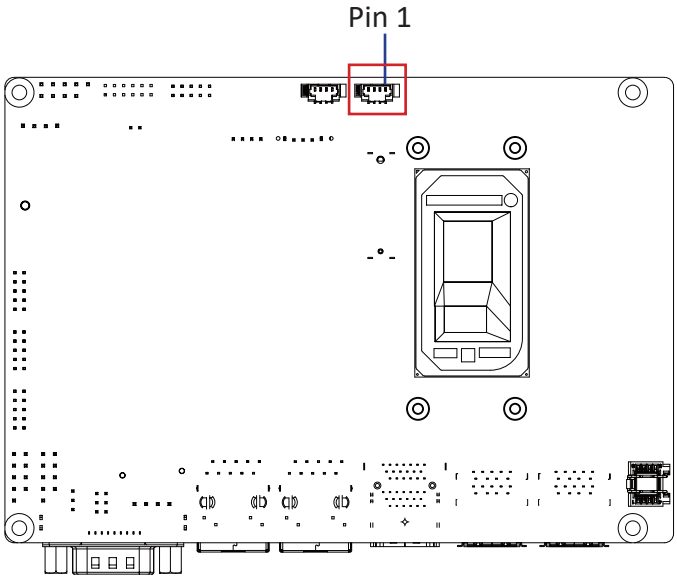
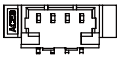


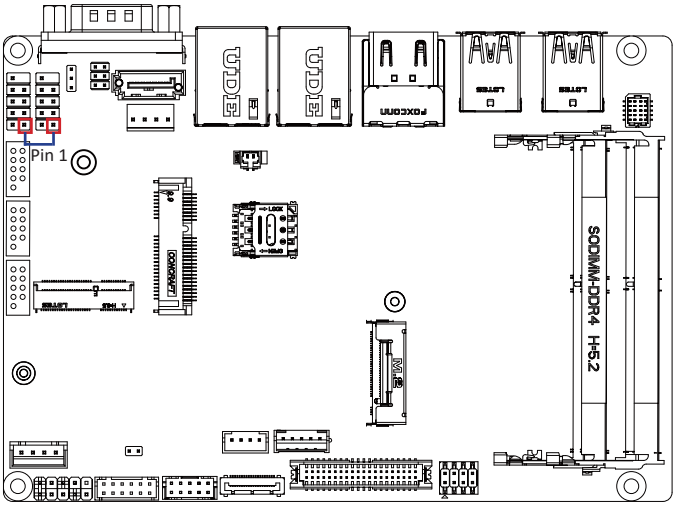
CPU fan Connector
4321 

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

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

2.2.3 FUSB1, FUSB2 (USB 2.0 headers)

❸



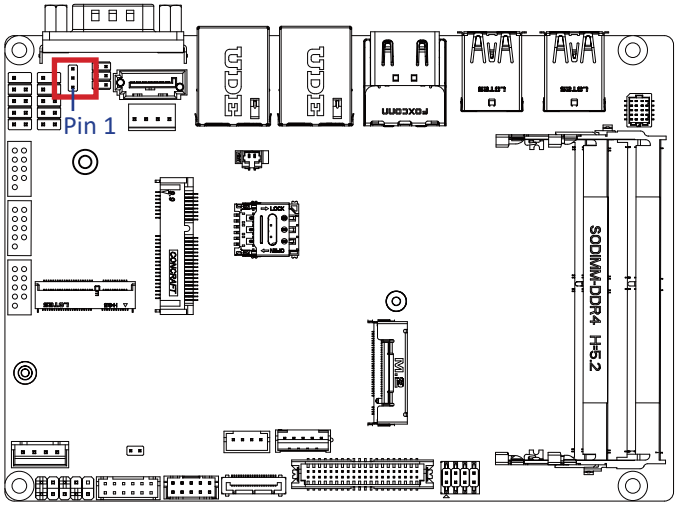
USB 2.0 Header


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

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

2.2.4 AT_CN (AT/ATX mode select jumper)

4



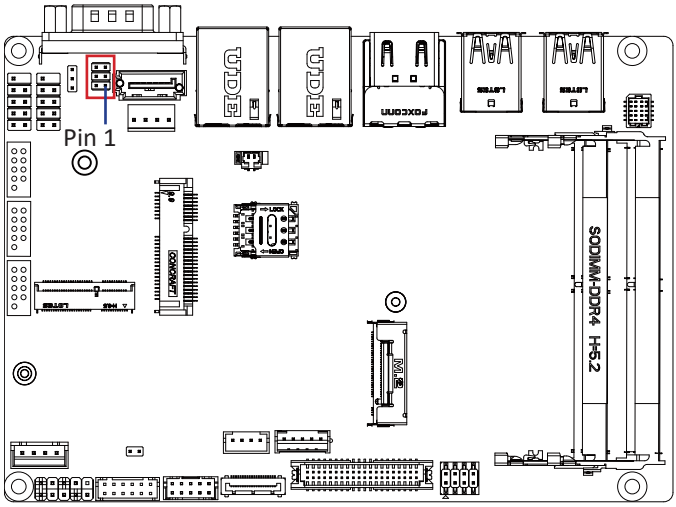
AT/ATX mode select jumper


Connector PN	Vendor
220-96-03GB01	PINREX
PH03N2-7BAN000	HORNGTONG

Pin No.	Definition
1	AT MODE
2	TXD5
3	ATX MODE
Jumper setting 1-2 Close : AT mode. 2-3 Close : ATX mode.(Default setting)	

2.2.5 JCOM1 (RI# pin RI#/5V/12V Select jumper for COM1 Port)

5

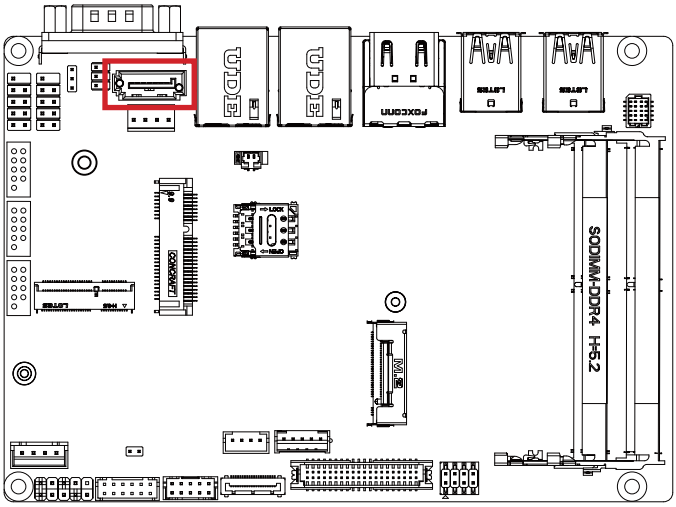


JCOM1 Jumper Select	
6 5 2 1	1-2 Close: 5V (Power COM)
6 5 2 1	3-4 Close: RI (Stand COM) (Default-Setting)
6 5 2 1	5-6 Close: 12V (Power COM)

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

2.2.6 SATA0 (SATA 6Gb/s connector)

6



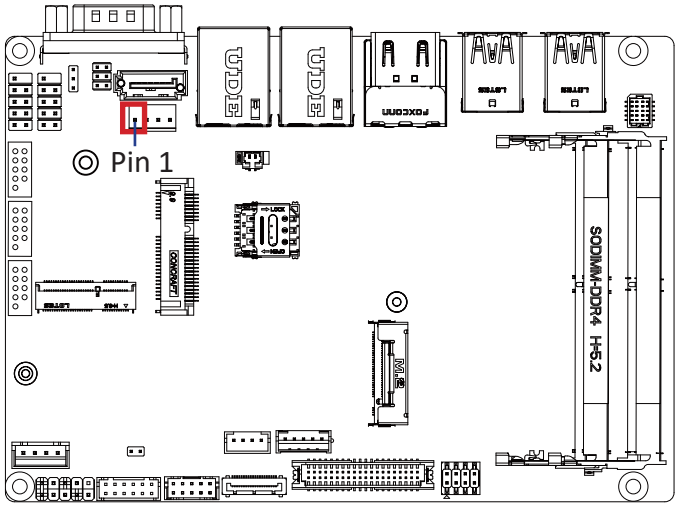
SATA Connector


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

Connector PN	Vendor
WATF-07DBLBA1UW	WINWIN

2.2.7 SATAPW0 (SATA power connector)

7



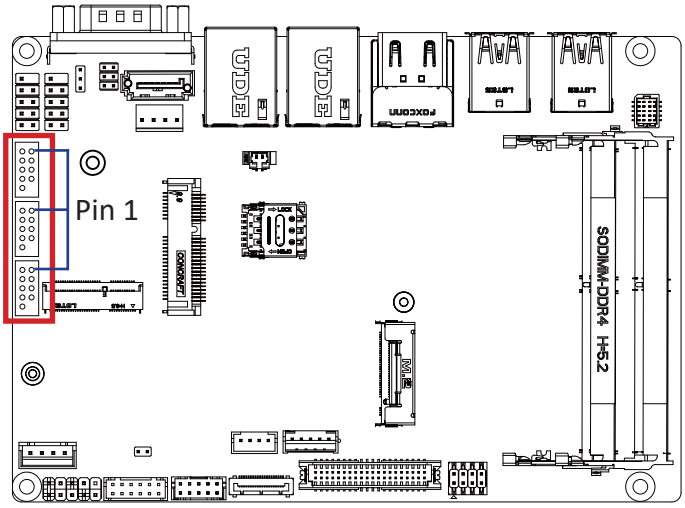
Hard Disk Power Connector

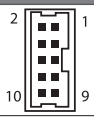

Pin No.	Definition
1	12V
2	GND
3	GND
4	5V

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

2.2.8 COM2, COM3, COM4 (Serial port header, RS-232/422/485)

8



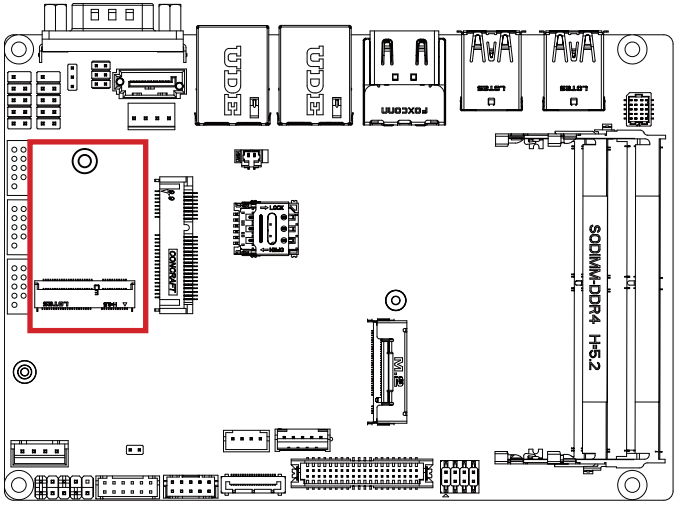
Serial Port Cable Connector


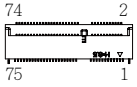
Connector PN	Vendor
725-81-10TW00	PINREX
A2004WV-2X05P46	JOINT-TECH

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	—	—

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

9



M.2 E Key Connector


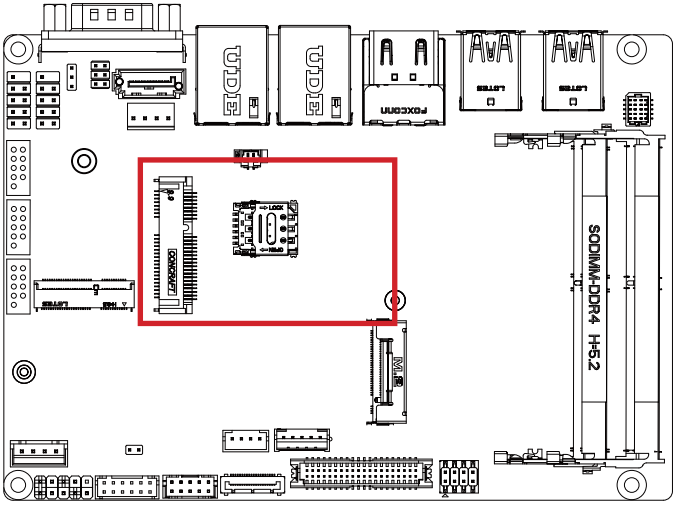
Pin No.	Definition	Pin No.	Definition
1	GND	2	3V
3	USB_D+	4	3V
5	USB_D-	6	NC
7	GND	8	NC
9	NC	10	NC
11	NC	12	NC
13	NC	14	NC
15	NC	16	NC
17	NC	18	GND
19	NC	20	NC
21	NC	22	NC
23	NC		

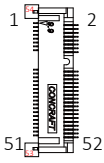
Pin No.	Definition	Pin No.	Definition
33	GND	32	NC
35	WLAN_TXp	34	NC
37	WLAN_TXn	36	NC
39	GND	38	CL_RST#
41	WLAN_RXp	40	CL_DATA
43	WLAN_RXn	42	CL_CLK
45	GND	44	NC
47	CLK_Dp	46	NC
49	CLK_Dn	48	NC
51	GND	50	SUSCLK
53	CLK_REQ	52	PCIE_RST
55	PCIE_WAKE	54	BT_Disable#
57	GND	56	WLAN_ DISABLE
59	NC	58	NC
61	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

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

10



Mini PCIe Connector


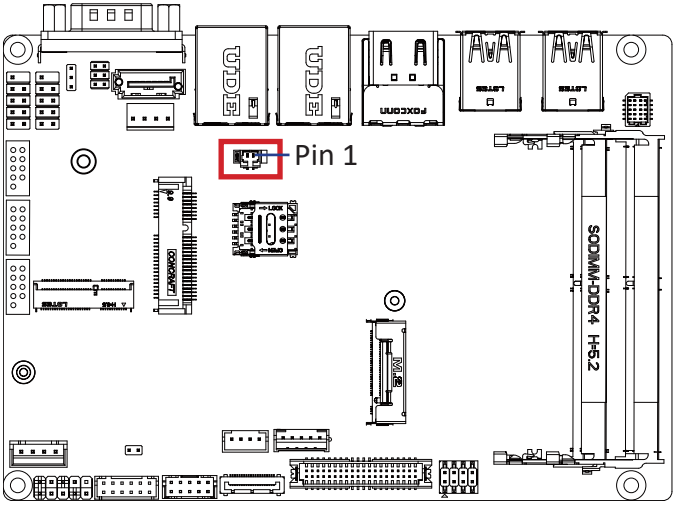
Pin No.	Definition	Pin No.	Definition
1	PCIE WAKE	2	3.3V
3	NC	4	GND
5	NC	6	NC
7	PCIE Clock Request	8	SIM PWR
9	GND	10	SIM DATA
11	PCIE Clock n	12	SIM Clock
13	PCIE Clock p	14	SIM Reset
15	GND	16	UIM VPP3
17	NC	18	GND
19	NC	20	WLAN_ DISABLE
21	GND	22	Reset

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

2.2.11 BATTERY (Battery cable Connector)

11



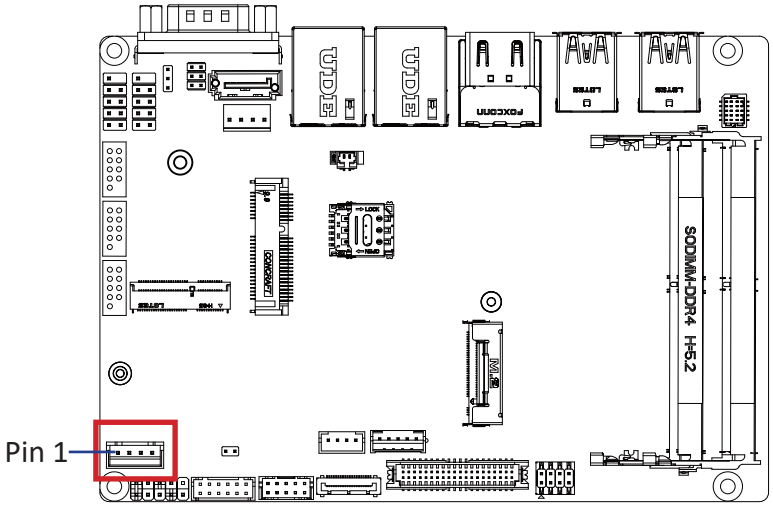
Battery cable Connector
2 1 

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

Pin No.	Definition
1	3.3V
2	GND

2.2.12 DC_IN (DC IN 1x4 pin power connector)

12



DC IN connector

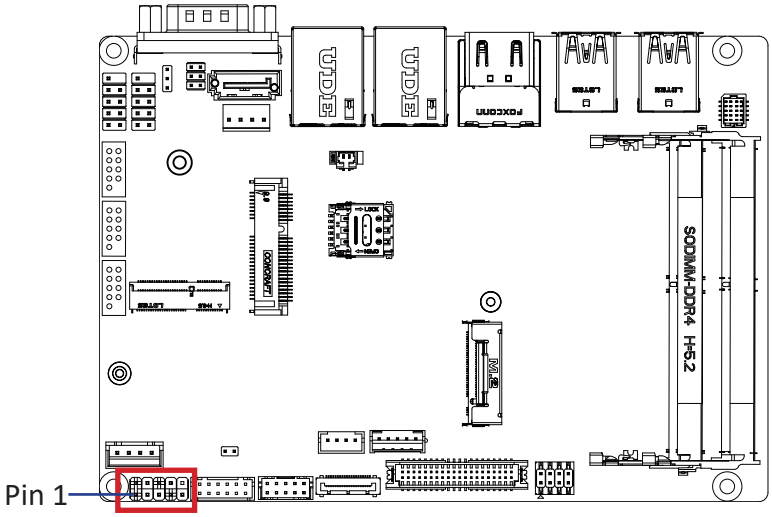
1 2 34

Pin No.	Definition
1	GND
2	Power
3	Power
4	GND

Connector PN	Vendor
753-81-04TW00	PINREX

2.2.13 SYS_PANEL (Front panel header)

13



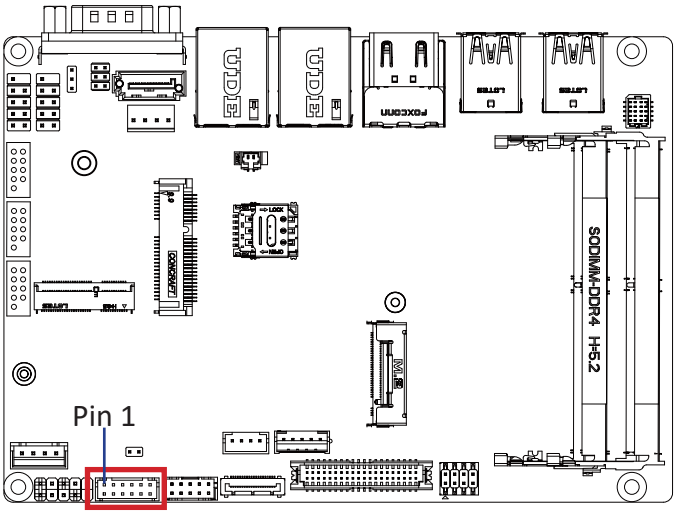
System Panel Header

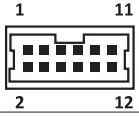

Pin No.	Definition
1	HDD LED+
2	Power LED+
3	HDD LED-
4	Power LED-
5	GND
6	Power Button+
7	Reset Button
8	Power Button-
9	No Connect
10	No Pin

Connector PN	Vendor
210-92-05G111	PINREX

2.2.14 GPIO_CNT (General Purpose input/output header)

14



GPIO Connector


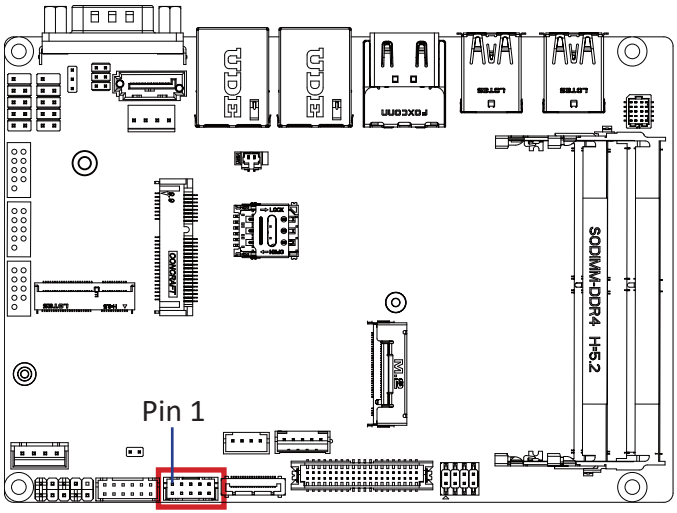
Pin No.	Definition
1	GPIO-output_1
2	GPIO-input_1
3	GPIO-output_2
4	GPIO-input_2
5	GPIO-output_3
6	GPIO-input_3
7	GPIO-output_4
8	GPIO-input_4
9	SMBus Clock

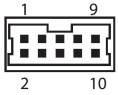
Pin No.	Definition
10	SMBus DATA
11	5V
12	GND

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

2.2.15 FP_AUDIO (Front Audio connector)

15



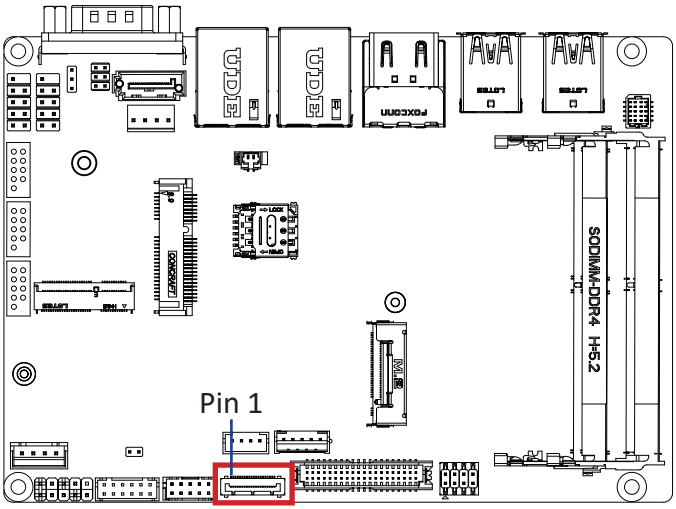
Front Audio Connector


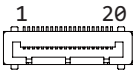
Pin No.	Definition	Pin No.	Definition
1	MIC_L	6	MIC_JD
2	GND	7	FAUDIO_JD
3	MIC_R	8	No Connect
4	Detect	9	HPOUT_L
5	HPOUT_R	10	GND

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

2.2.16 PCIEX1 (PCIe Gen3 x1 connector)

16



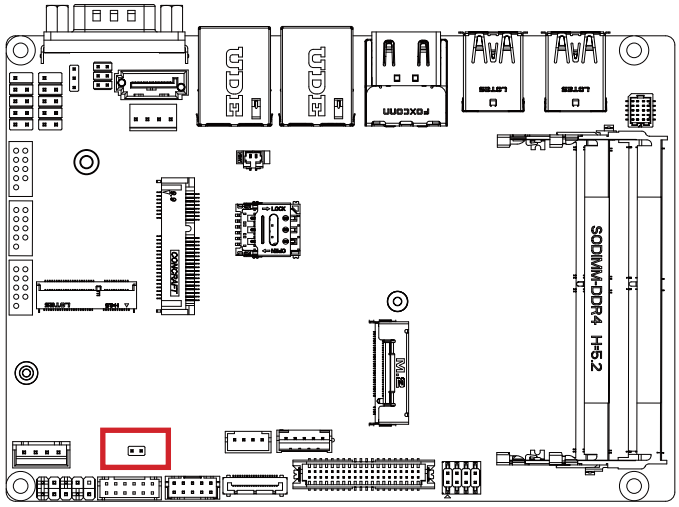
PCIe Gen3 x1 Connector


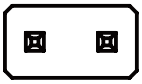
Pin No.	Definition	Pin No.	Definition
1	SRC_DP	11	SMDATA
2	SRC_DN	12	CLK_REQ#
3	GND	13	PLTRST#
4	TX+	14	PEWAKE#
5	TX-	15	SLP_S3#
6	GND	16	GND
7	RX+	17	GND
8	RX-	18	+V12A
9	GND	19	+V12A
10	SMCLK	20	+V12A

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

2.2.17 ME (ME Enable jumper)

17



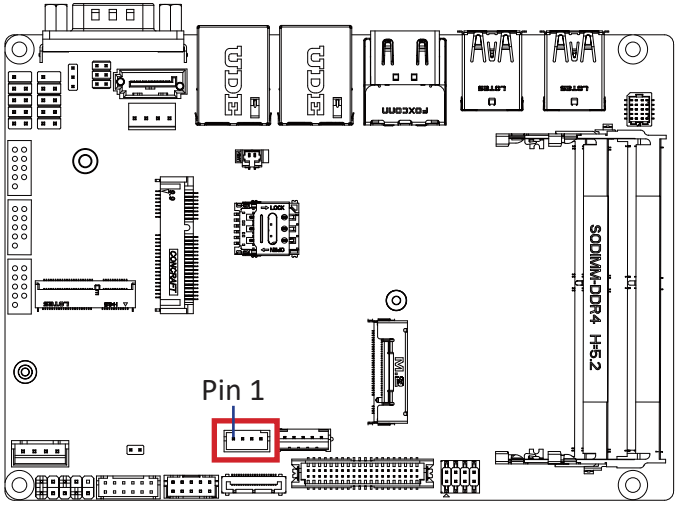
ME Enable Connector


ME Enable jumper	
	Enable (Default setting)
	Disable

Connector PN	Vendor
220-96-02GB01	PINREX

2.2.18 SPK_OUT (Speaker out connector)

18



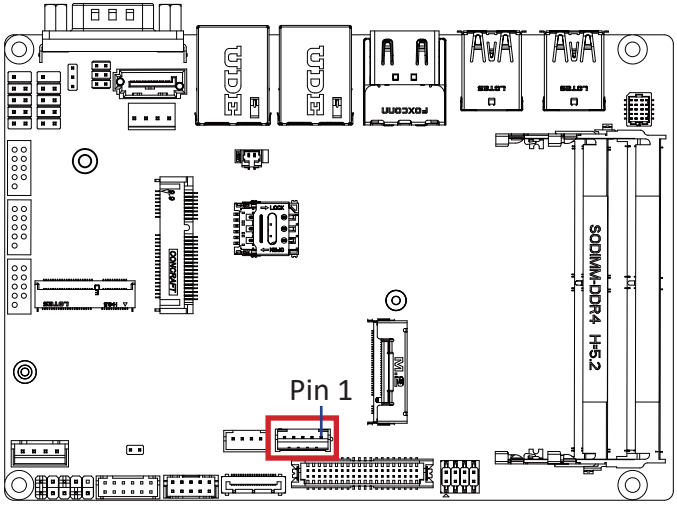
Audio Amplifie Connector
 1

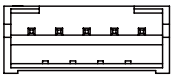
Pin No.	Definition
1	Speaker Out L+
2	Speaker Out L-
3	Speaker Out R-
4	Speaker Out R+

Connector PN	Vendor
721-81-045W00	PINREX
A2001WV-04P146	JOINT-TECH

2.2.19 BKL_CN (Backlight Control header)

19



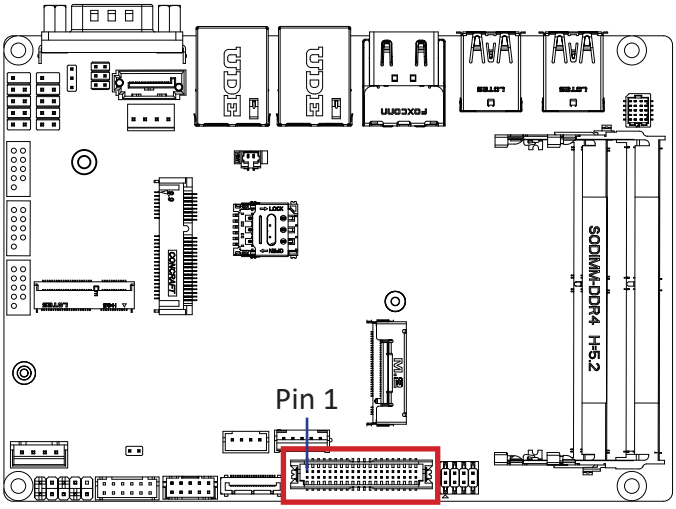
Backlight Control connector
5  1

Connector PN	Vendor
721-81-05TW00	PINREX
A2001WV-05P146	JOINT-TECH

Pin No.	Definition
1	5V
2	PWM
3	Back Light Enable
4	GND
5	12V

2.2.20 LVDS (LVDS connector)

20



LVDS Connector

Pin No.	Definition	Pin No.	Definition
1	3.3V	21	A5+
2	5V	22	A4+
3	3.3V	23	A5-
4	5V	24	A4-
5	SPEC0	25	GND
6	SPED0	26	GND
7	GND	27	A7+
8	GND	28	A6+
9	A1+	29	A7-
10	A0+	30	A6-
11	A1-	31	GND
12	A0-	32	GND
13	GND	33	CLK2+
14	GND	34	CLK1+
15	A3+	35	CLK2-
16	A2+	36	CLK1-
17	A3-	37	GND
18	A2-	38	GND
19	GND	39	12V
20	GND	40	12V

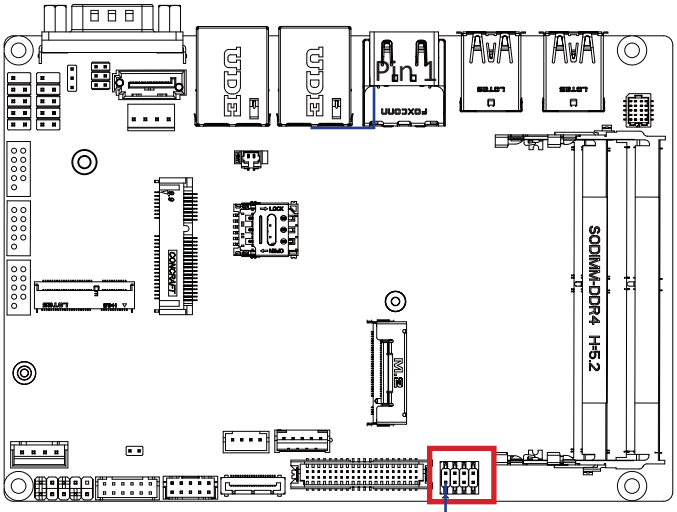
Connector PN	Vendor
712-76-40GWE0	PINREX
A1252WV-SF-2X20PD01	JOINT-TECH

For each model support LVDS function.
But below model no need to add.
A0~A3 is odd channel 0~3, A4~A7 is even channel.

Note: *The LVDS output connector of the unit is only intended to be connected to an UL/IEC/EN approval equipment with fire enclosure.

2.2.21 LSW (LVDS resolution jumper)

21



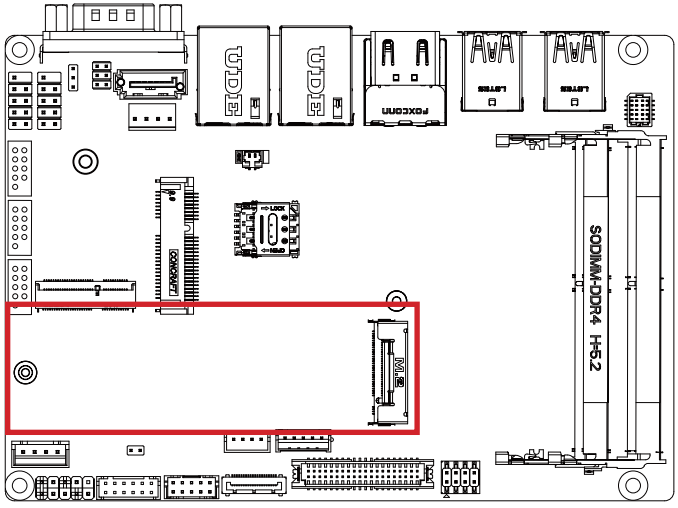
Pin 1

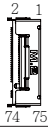
LVDS Resolution Jumper			
Jumper Setting	Resolution	Jumper Setting	Resolution
	800 x 600 18bit		1366 x 768 24bit
	1024 x 768 18bit		1440 x 900 24bit
	1024 x 768 24bit		1400 x 1050 24bit
	1024 x 600 18bit		1600 x 900 24bit
	1280 x 800 18bit		1680 x 1050 24bit
	1280 x 960 18bit		1600 x 1200 24bit
	1280 x 1024 24bit		1920 x 1080 24bit
	1366 x 768 18bit		1920 x 1200 24bit

Connector PN	Vendor
222-97-04GBE1	PINREX

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

22



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	PCIE_RXn	30	NC
31	PCIE_RXp	32	NC

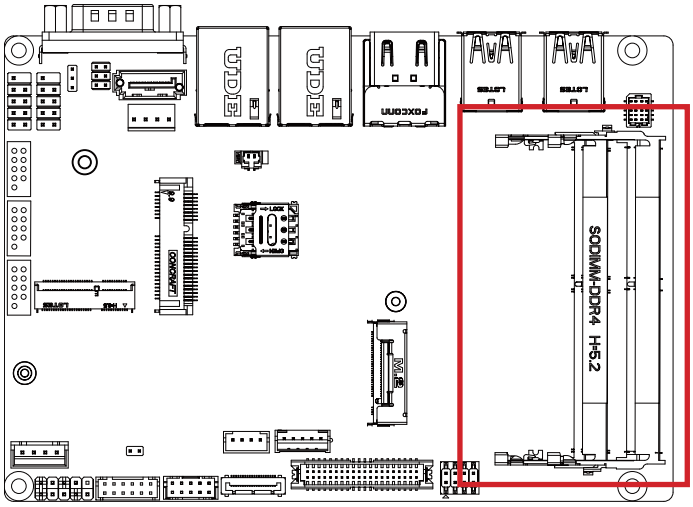
Pin No.	Definition	Pin No.	Definition
33	GND	34	NC
35	PCIE_TXn	36	NC
37	PCIE_ TXp	38	DEVSLP
39	GND	40	SMB Clock
41	SATA_RXp	42	SMB DATA
43	SATA_RXn	44	SMB ALERT
45	GND	46	NC
47	SATA_TXn	48	NC
49	SATA_TXp	50	PLT_RST
51	GND	52	CK_REQ
53	CLK_n	54	PCIE_WAKE#
55	CLK_p	56	NC
57	GND	58	NC

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

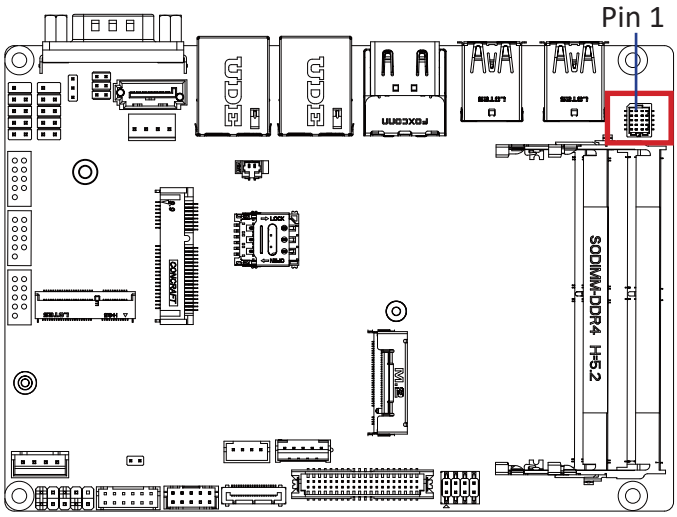
2.2.23 SODIMM1, SODIMM2 (DDR4 SO-DIMM Slot)

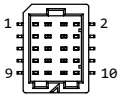
23



2.2.24 TPM (Trusted Platform Module Connector)

24



TPM Module Connector


Connector PN	Vendor
87216-1004-06	ACES

Pin No.	Definition
1	TPM_CLK
2	GND
3	SPI_CS#2
4	TPM_SO
5	TPM_RST#
6	TPM_SI
7	NC
8	NC
9	+V3.3A
10	NC

Chapter 3

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.

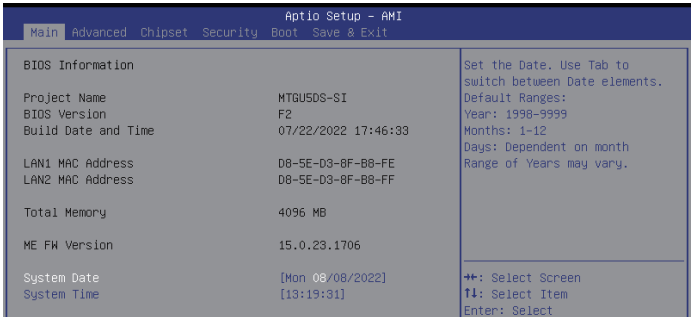
3.1.2 Function Keys to setup in BIOS Setup program

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

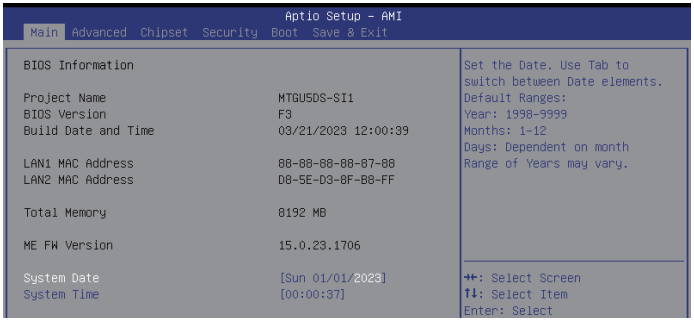
3.2 The Main Menu

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

3.2.1.1 Main page for QBiP-1185G7EB/QBiP-1145G7EB



3.2.1.2 Main page for QBiP-1185G7EBT/QBiP-1145G7EBT

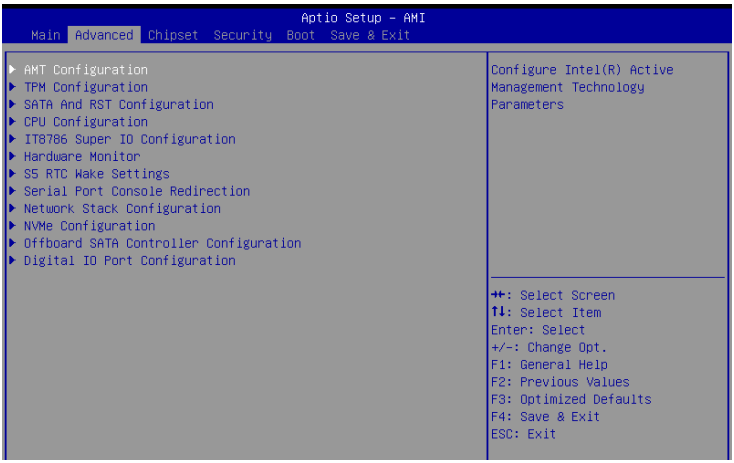


Items	Description
Project Name	Shows Project name information
BIOS Version	Shows the BIOS version of the system
Build Date and Time	Shows the Build Date and Time when the BIOS was created.
LAN1 MAC Address	Shows LAN1 MAC Address information
LAN2 MAC Address	Shows LAN2 MAC Address information
Total Memory	Shows the total memory size of the installed memory
ME FW version	Shows ME 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)

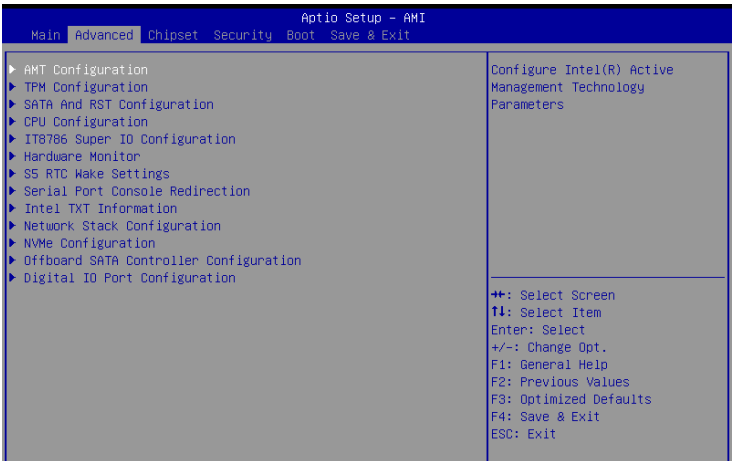
3.3 Advanced

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.

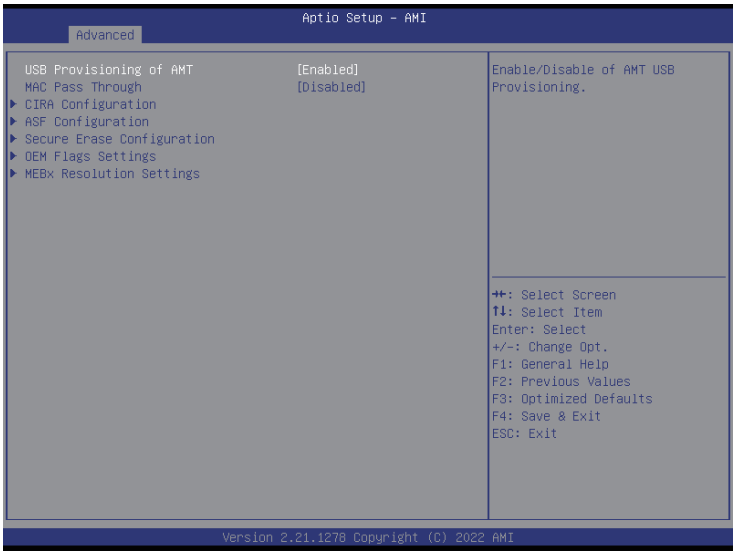
3.3.1.1 Advanced menu items for QBiP-1185G7EB/EBT



3.3.1.2 Advanced menu items for QBiP-1145G7EB/EBT

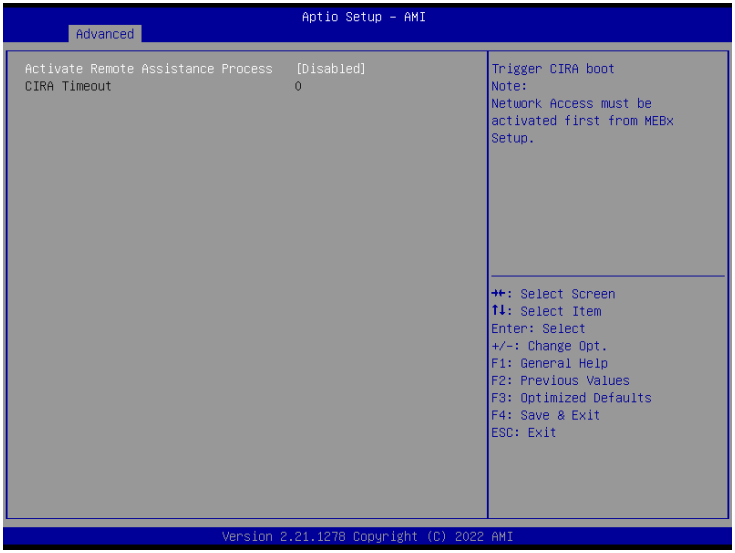


3.3.2 AMT Configuration



Item	Description
USB Provisioning of AMT	Inserting a specially formatted USB drive into a system, to let the other system remotely control. **Disabled : Disables USB Provisioning of AMT** **Enabled : Enables USB Provisioning of AMT (Default setting)**
MAC Pass Through	**Disabled : Disables MAC Pass Through function (Default setting)** **Enabled : Enables MAC Pass Through function**

CIRA Configuration

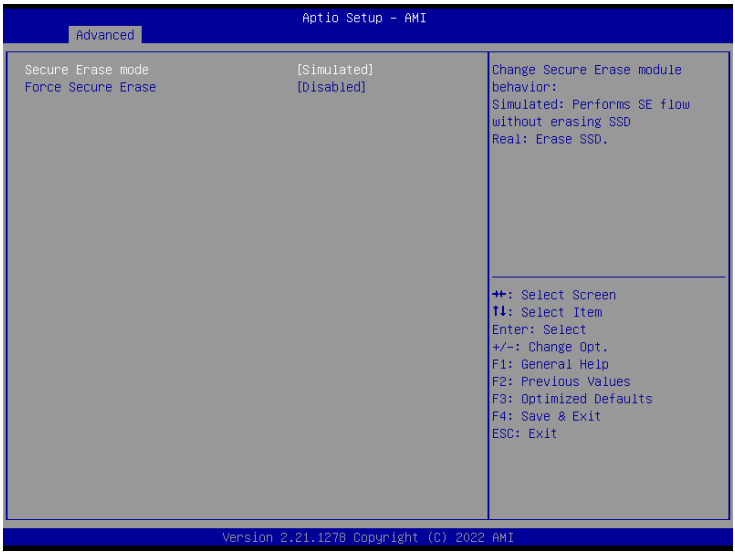


Item	Description
Activate Remote Assistance Process	Trigger CIRA boot **Disabled : Disables TPM feature (Default setting)** **Enabled : Enables TPM feature**

ASF Congifuration

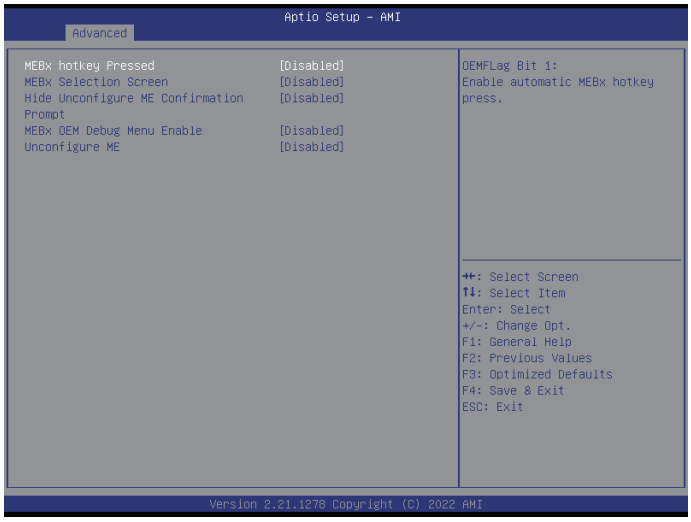
Item	Description
PET Progress	Choose to receive PET events or not **Disabled : Disables PET Progress** **Enabled : Enables PET Progress (Default setting)**
WatchDog	Choose to enables watchdog timer or not **Disabled : Disables watchdog Timer (Default setting)** **Enabled : Enables watchdog Timer**
OS Timer	Sets OS Watchdog Timer.
BIOS Timer	Sets BIOS Timer.
ASF Sensors Table	**Disabled : Disables ASF Sensors Table (Default setting)** **Enabled : Enables ASF Sensors Table**

Secure Erase Configuration



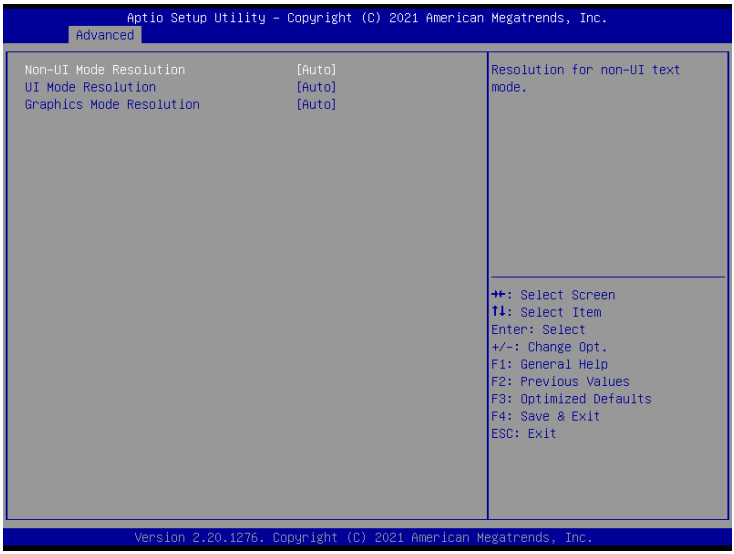
Item	Description
Secure Erase mode	Choose to enables secure erase mode or not. **Simulated : Performs SE flow without erasing SSD (Default setting)** **Real : Erase SSD**
Force Secure Erase	Force Secure Erase on next boot. **Disabled : Disables Force Secure Erase (Default setting)** **Enabled : Enables Force Secure Erase**

OEM Flags Settings



Item	Description
MEBx hotkey Pressed	Enables or Disables automatic MEBx hotkey press. **Disabled : Disables MEBx hotkey Pressed (Default setting)** **Enabled : Enables MEBx hotkey Pressed**
MEBx Selection Screen	Enables or Disables MEBx Selection Screen. **Disabled : Disables MEBx Selection Screen (Default setting)** **Enabled : Enables MEBx Selection Screen**
Hide Unconfigure ME Confirmation Prompt	To hide un-configured ME without password confirmation prompt. **Disabled : Disables Hide Unconfigure ME Confirmation Prompt (Default setting)** **Enabled : Enables Hide Unconfigure ME Confirmation Prompt**
MEBx OEM Debug Menu Enable	Enables or Disables MEBx debug message. **Disabled : Disables MEBx OEM Debug Menu Enable (Default setting)** **Enabled : Enables MEBx OEM Debug Menu Enable**
Unconfigure ME	To Un-configure ME without password. **Disabled : Disables Unconfigure ME (Default setting)** **Enabled : Enables Unconfigure ME**

MEBx Resolution Settings



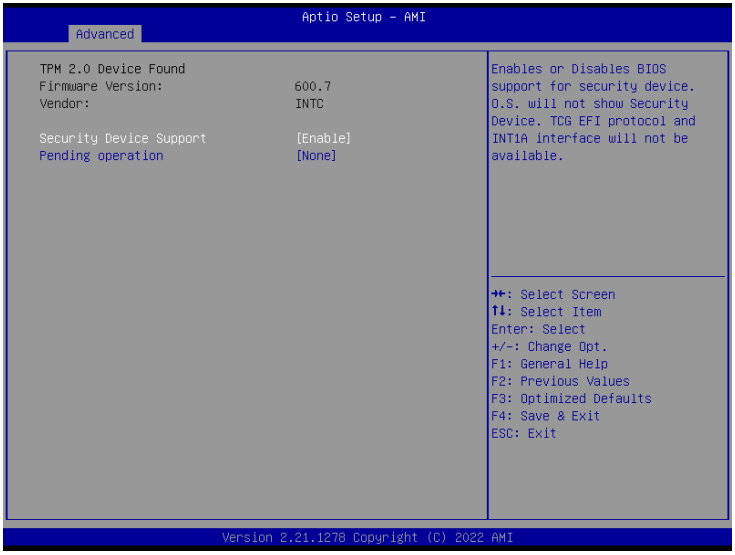
Item	Description
Non-UI Mode Resolution	Resolution for non-UI text mode. **Option items : Auto (Default setting), 80x25, 100x31**
UI Mode Resolution	Resolution for UI text mode. **Option items : Auto (Default setting), 80x25, 100x31**
Graphics Mode Resolution	Resolution for graphics mode. **Option items : Auto (Default setting), 640x480, 800x600, 1024x768**

3.3.3 TPM Configuration

Use TPM Configuration submenu to choose TPM interface.

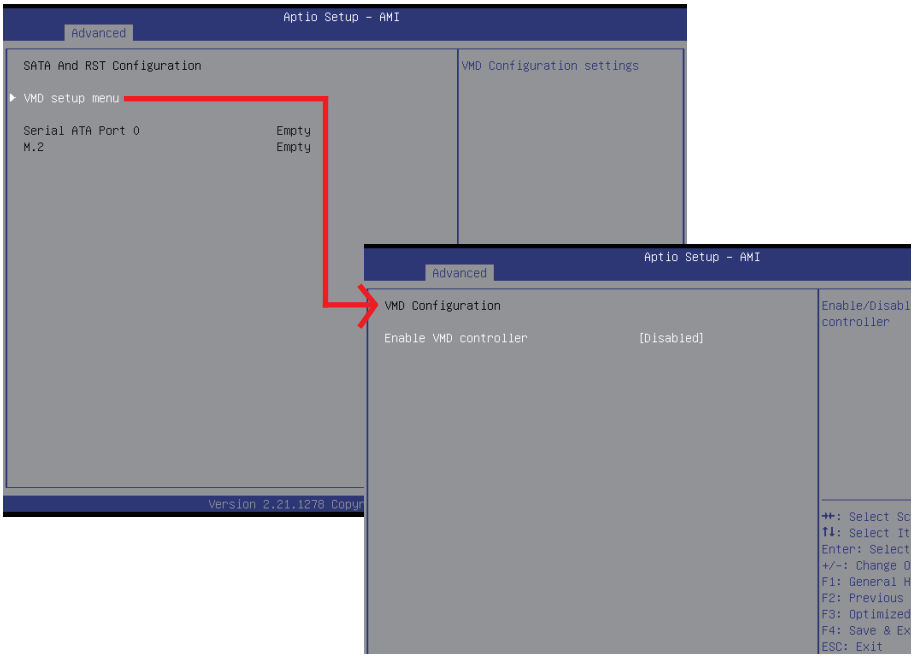
Item	Description
TPM Device Selection	**PTT : Internal TPM (Default setting)** **dTPM : External TPM (When using External TPM module or having TPM chip on MB)**

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**

3.3.4 SATA And RST Configuration

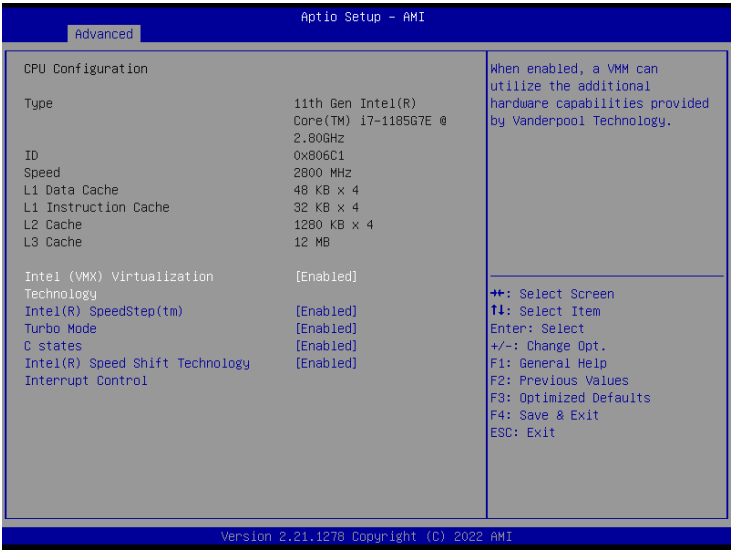


Item	Description
VMD setup menu / Enable VMD controller	Intel VMD feature helps you to control and manage NVMe PCIe SSD. **Enabled : Enables Intel VMD feature** **Disabled : Disables Intel VMD feature (Default setting)**
Serial ATA Port 0	shows 2.5" SATA HDD/SSD information
M.2	shows M.2 SATA interface SSD information

3.3.5 CPU Configuration

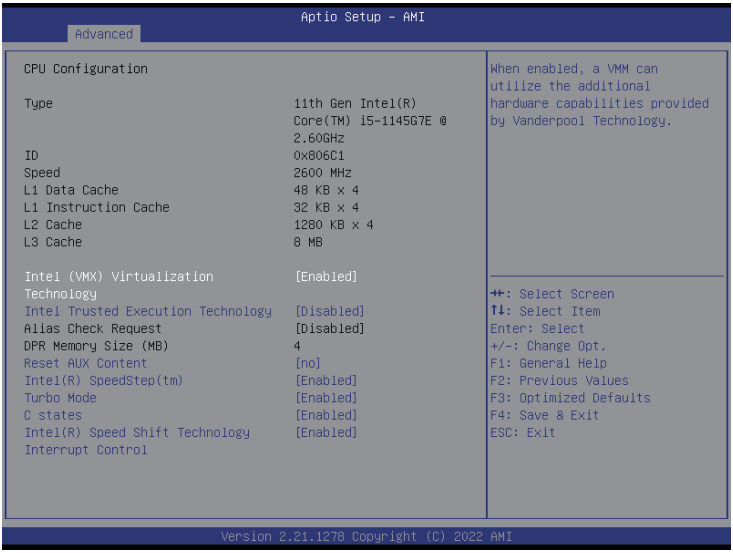
This submenu shows detailed CPU informations.

3.3.5.1 CPU Configuration items for QBiP-1185G7EB/EBT



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(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**
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 Interrupt control (Default setting)** **Disabled : Disables Intel(R) Speed Shift Technology Interrupt control**

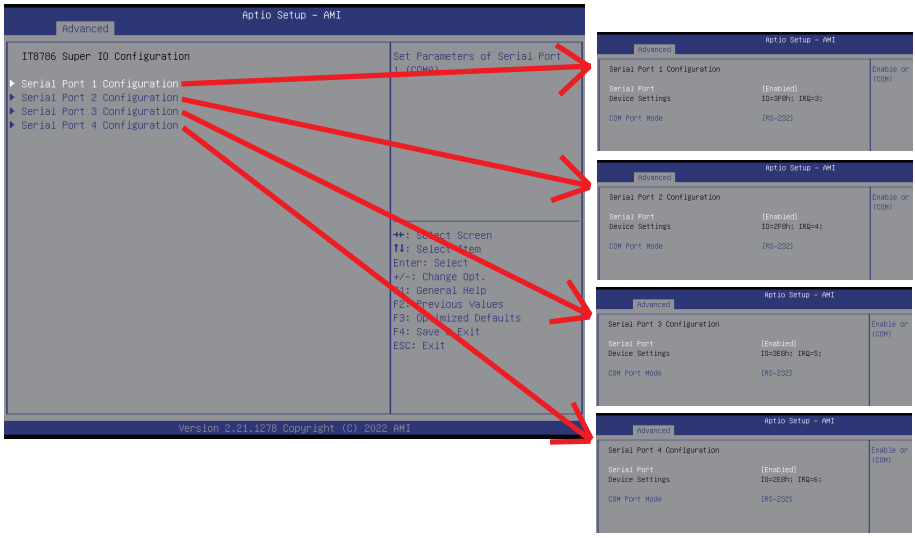
3.3.5.2 CPU Configuration items for QBiP-1145G7EB/EBT



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)**
Alias Check Request	Enables Txt Alias Checking capability. When Intel Trusted Execution Technology Enables : **Disabled : Disables Alias Check Request (Default setting)** **Enabled : Enables Alias Check Request**
DPR Memory Size (MB)	Reserve DPR memory size (0 – 255) MB **When Intel Trusted Execution Technology Disables, this item will be greyed.** **When Intel Trusted Execution Technology Enables, this item could be adjusted.**
Reset AUX Content	When Intel Trusted Execution Technology Disables : **yes : agree to reset TPM Aux content.** **no : disagree to reset TPM Aux content. (Default setting)**
Reset AUX Content	When Intel Trusted Execution Technology Disables : **yes : agree to reset TPM Aux content.** **no : disagree to reset TPM Aux content. (Default setting)**

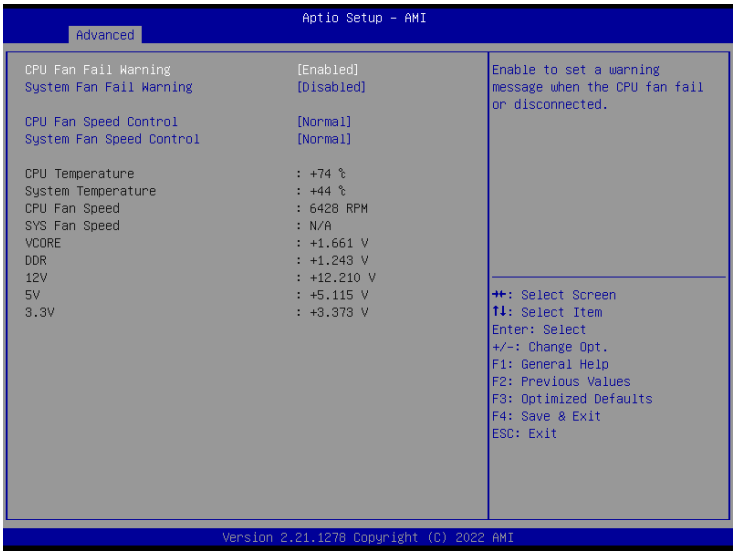
Intel(R) SpeedStep(tm)	According to Intel CPU loading, Intel SpeedStep Technology will automatically adjust the CPU voltage and core frequency to decrease heat and power consumption for power saving. **Enabled : Enables Intel SpeedStep Technology (Default setting)** **Disabled : Disables Intel SpeedStep 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**
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 Interrupt control (Default setting)** **Disabled : Disables Intel(R) Speed Shift Technology Interrupt control**

3.3.6 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	

3.3.7 Hardware Monitor

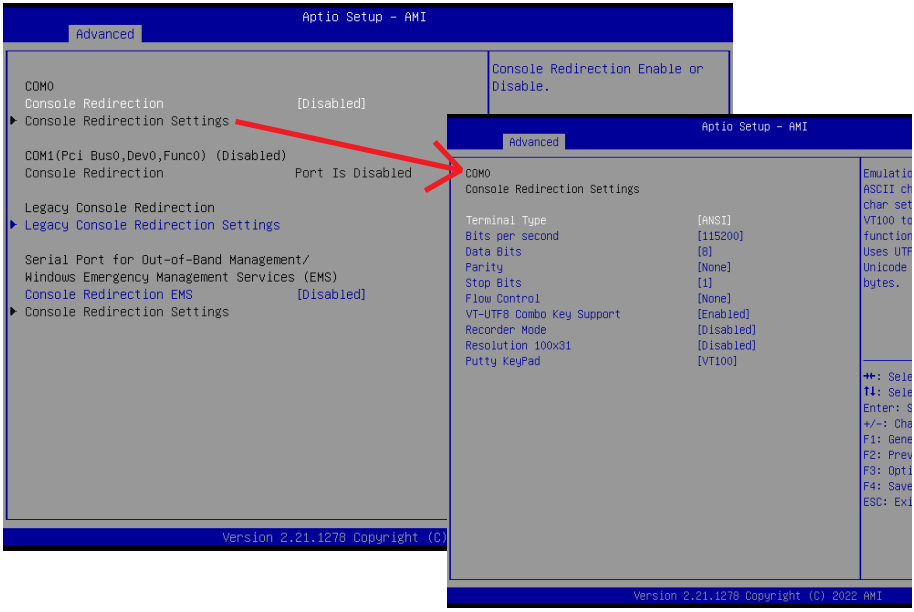


Item	Description
CPU Fan Fail Warning	**Enabled : Enables CPU FAN Fail warning alert function (Default setting)** **Disabled : Disables CPU FAN Fail warning alert function**
System Fan Fail Warning	**Enabled : Enables to set a warning message when the system fan fail or disconnected.** **Disabled : Disables to set a warning message when the system fan fail or disconnected. (Default setting)**
CPU Fan Speed Control	**Normal : Fan speed set by BIOS default (Default setting)** **Full Speed : Set Fan operates at full speed**
System 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
CPU Fan Speed	Shows current CPU fan Speed
SYS Fan Speed	Shows current System fan Speed

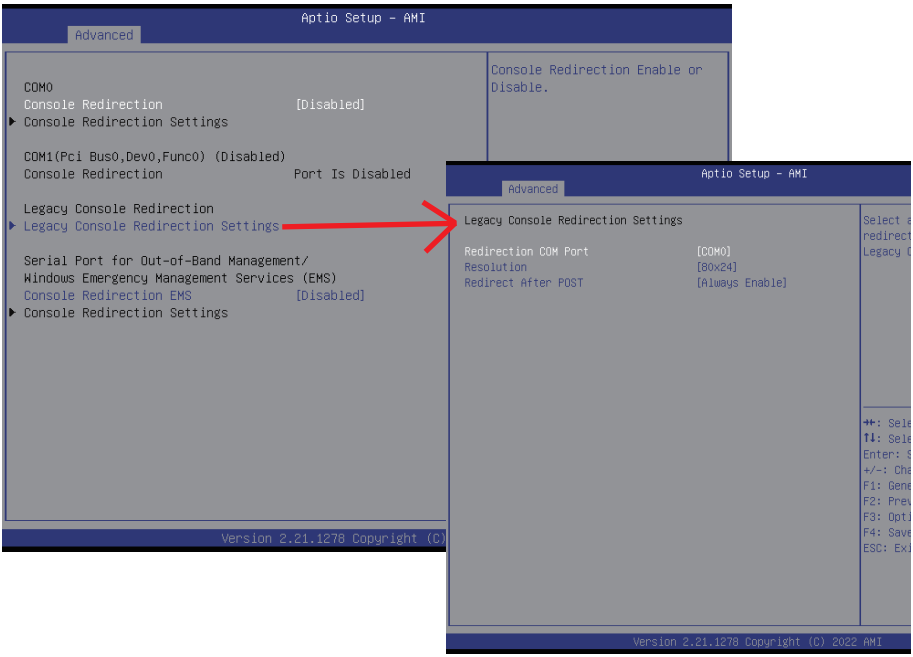
3.3.8 S5 RTC Wake Settings

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)**

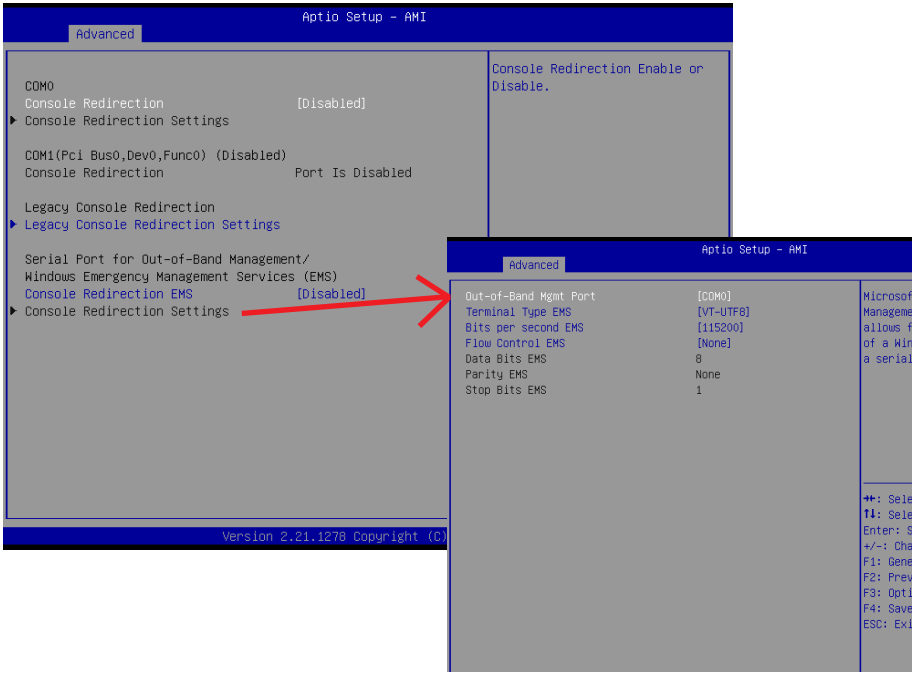
3.3.9 Serial Port Console Redirection



Item	Description
COM0	Console Redirection : To remotely control BIOS through COM **Disabled : Disables Console Redirection (Default setting)** **Enabled : Enables Console Redirection** When Console Redirection enables, you can enter into "Console Redirection Settings" menu to modify several settings : **Terminal Type : VT100, VT100+, VT-UTF8, ANSI (Default setting)** **Bites per second : 9600, 19200, 38400, 57600, 115200 (Default setting)** **Data Bits : 7, 8 (Default setting)** **Parity : None (Default setting), Even, Odd, Mark, Space** **Stop Bits : 1 (Default setting), 2** **Flow Control : None (Default setting), Hardware RTS/CTS** **VT-UTF8 Combo Key Support : Disableds, Enabled (Default setting)** **Recorder Mode : Disabled (Default setting), Enabled** **Resolution 100x31 : Disabled (Default setting), Enabled** **Putty KeyPad : VT100 (Default setting), LINUX, XTERMR6, SCO, ESCN, VT400**



Item	Description
Legacy Console Redirection	Legacy Console Redirection Settings : **Redirection COM Port : COM0 (Default setting), COM1 (Pci, Bus0, Dev0, Func0) (Disabled)** **Resolution : 80x24 (Default setting), 80x25** **Redirect After POST : Always Enable (Default setting), BootLoader**

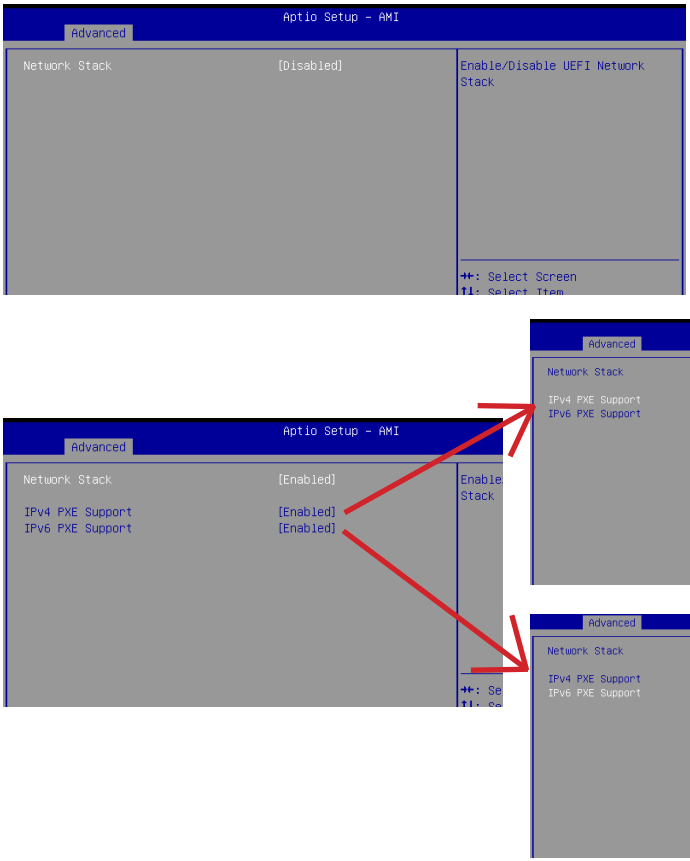


Item	Description
Serial Port for Out-of-Band Management / Windows Emergency Management Services (EMS)	Console Redirection EMS : **Disabled : Disables Console Redirection EMS (Default setting)** **Enabled : Enables Console Redirection EMS** When Console Redirection EMS enables, you can enter into "Console Redirection Settings" menu to modify several settings : **Out-of-Band Mgmt Port : COM0 (Default setting), COM1 (Pci, Bus0, Dev0, Func0) (Disabled)** **Terminal Type EMS : VT100, VT100+, VT-UTF8 (Default setting), ANSI** **Bits per second EMS : 9600, 19200, 57600, 115200 (Default setting)** **Flow Control EMS : None (Default setting), Hardware RTS/CTS, Software Xon/Xoff**

3.3.10 Intel TXT Information (For Model QBiP-1145G7EB/EBT only)

This submenu shows detailed Intel TXT informations.

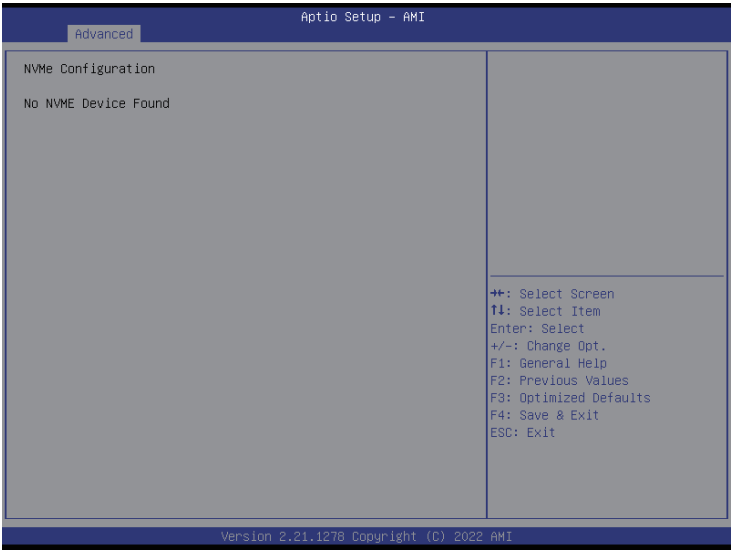
3.3.11 Network Stack Configuration



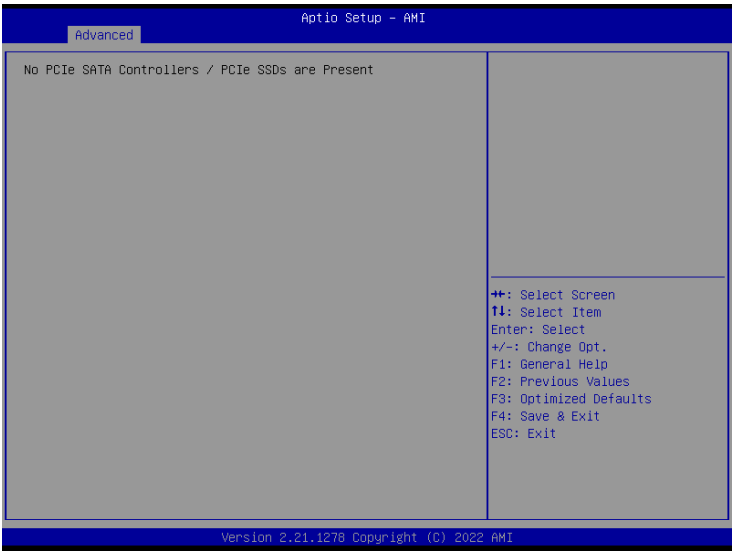
Item	Description
Network Stack	When system is power on, install LAN driver under UEFI mode **Disabled : Disables UEFI Network Stack (Default setting)** **Enabled : Enables UEFI Network Stack**
Ipv4 PXE Support	When Network stack is enabled : **Disabled : Disables Ipv4 PXE Support** **Enabled : Enables Ipv4 PXE Support**
Ipv6 PXE Support	When Network stack is enabled : **Disabled : Disables Ipv6 PXE Support** **Enabled : Enables Ipv6 PXE Support**

3.3.12 NVMe Configuration

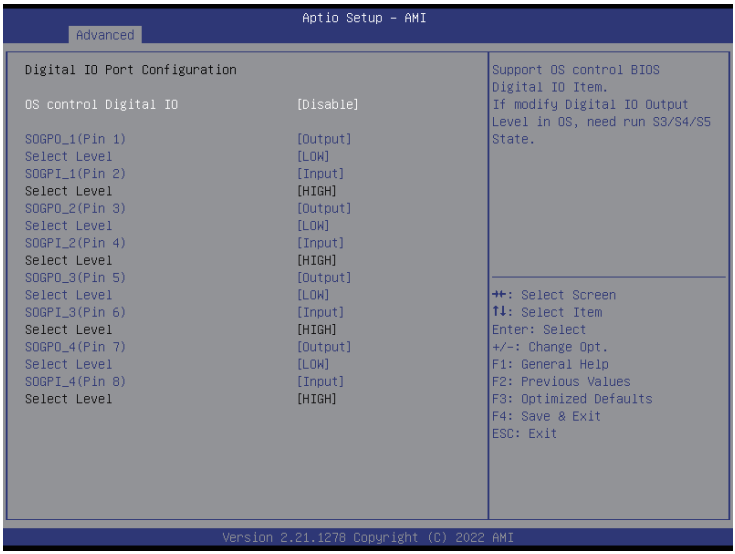
NVMe Configuration shows information when your M.2 NVMe PCIe SSD is installed.



3.3.13 Offboard SATA Controller Configuration

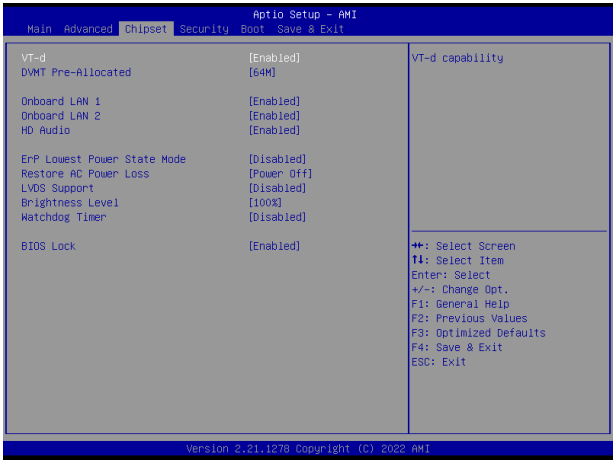


3.3.14 Digital IO Port Configuration



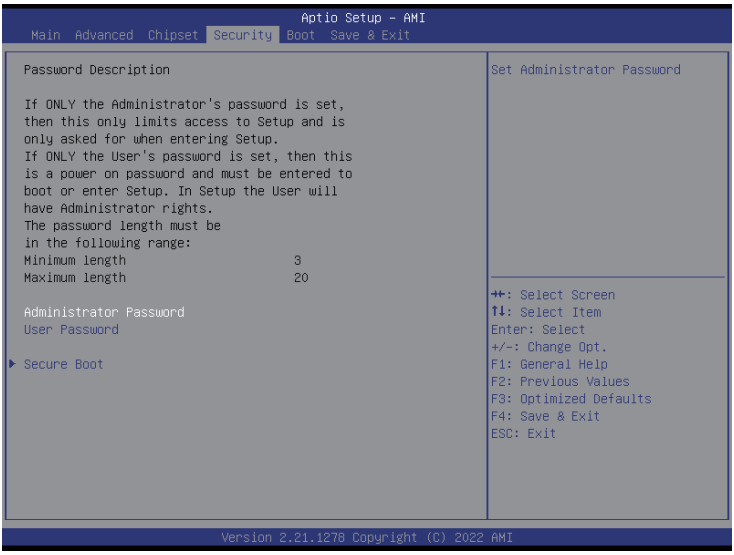
Item	Description
OS control Digital IO	**Disabled : If Digital IO Output value/level is modified in OS, they will not be memorized and kept. (Default setting)** **Enabled : If Digital IO Output value/level is modified in OS, they will be memorized and kept.**
SOGPO_1 (Pin 1) **SOGPI_1 (Pin 2)** **SOGPO_2 (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.

3.4 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 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 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**
LVDS Support	**Disabled : Disables LVDS Support (Default setting)** **Enabled : Enables LVDS Support**
Brightness Level	To modified the backlight brightness of the LVDS panel **Option items : 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100% (Default Setting)**
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**

3.5 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

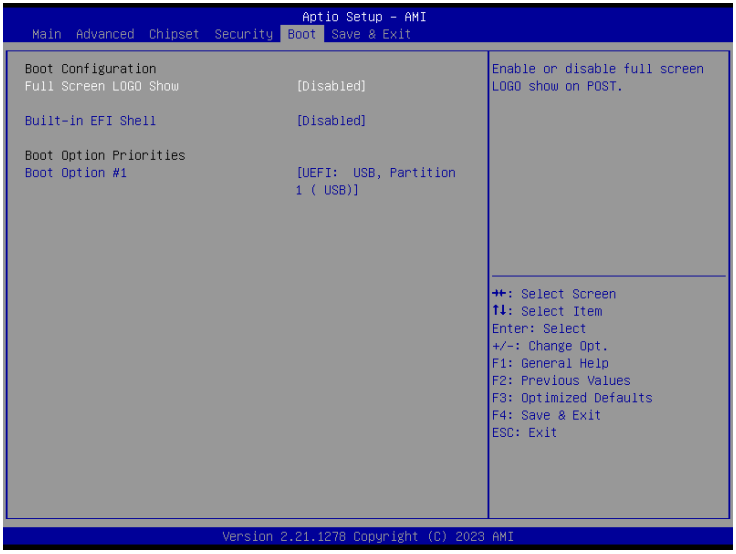
Item	Description
Secure Boot	Secure Boot requires all the applications that are running during the booting process to be pre-signed with valid digital certificates **Enabled : Enables Secure Boot function** **Disabled : Disables Secure Boot function (Default setting)**
Secure Boot Mode	**Standard : Standard 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** **Disabled : Disables Factory Key Provision (Default setting)**
Restore Factory Keys	To restore factory settings
Reset To Setup Mode	Delete all Secure boot key databases from NVRAM
Export Secure Boot variables	Copy NVRAM content of Secure Boot variables to files in a root folder on a file system device
Enroll Efi Image	Allow the image to run in Secure Boot mode
Remove 'UEFI CA' from DB	To remove 'UEFI CA' from database
Restore DB defaults	Restore DB variables to factory defaults **Yes : Agree to restore DB defaults** **No : Cancel to restore DB defaults**

Item	Description
Platform Key (PK)	These items allows you to enroll factory defaults or load Certificates from a file.
Key Exchange Keys	
Authorized Signatures	
Forbidden Signatures	
Authorized TimeStamps	
OsRecovery Signatures	

3.6 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 #1	Shows the information of the storage that be installed in the system **Choose/set the boot priority**

3.7 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)**