

# **QBi-6412B (MEHLJBH)**

---

10" x 10" Embedded Compact Board

## Copyright Notice

---

This document is copyrighted, 2023. All rights are reserved. The original manufacturer reserves the right to make improvements to the products described in this manual at any time without notice.

No part of this manual may be reproduced, copied, translated, or transmitted in any form or by any means without the prior written permission of the original manufacturer. Information provided in this manual is intended to be accurate and reliable. However, the original manufacturer assumes no responsibility for its use, or for any infringements upon the rights of third parties that may result from its use.

The material in this document is for product information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, GIGAIPC assumes no liabilities resulting from errors or omissions in this document, or from the use of the information contained herein.

GIGAIPC reserves the right to make changes in the product design without notice to its users.

## Acknowledgement

---

All other products' name or trademarks are properties of their respective owners.

- Microsoft Windows is a registered trademark of Microsoft Corp.
- Intel, Pentium, Celeron, and Xeon are registered trademarks of Intel Corporation
- Core, Atom are trademarks of Intel Corporation
- ITE is a trademark of Integrated Technology Express, Inc.
- IBM, PC/AT, PS/2, and VGA are trademarks of International Business Machines Corporation.

All other product names or trademarks are properties of their respective owners.

# Packing List

---

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

Item	Quantity
QBi-6412B (MEHLJBH)	1
SATA power cable	1

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

## About this Document

---

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the [GIGAIPC.com](http://GIGAIPC.com) for the latest version of this document.

## Safety Precautions

---

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. Make sure the power source matches the power rating of the device.
3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
4. Always completely disconnect the power before working on the system's hardware.
5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
6. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
7. Always disconnect this device from any AC supply before cleaning.
8. While cleaning, use a damp cloth instead of liquid or spray detergents.
9. Make sure the device is installed near a power outlet and is easily accessible.
10. Keep this device away from humidity.
11. Place the device on a solid surface during installation to prevent falls
12. Do not cover the openings on the device to ensure optimal heat dissipation.
13. Watch out for high temperatures when the system is running.

14. Do not touch the heat sink or heat spreader when the system is running
15. Never pour any liquid into the openings. This could cause fire or electric shock.
16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.
17. If any of the following situations arises, please the contact our service personnel:
  - i. Damaged power cord or plug
  - ii. Liquid intrusion to the device
  - iii. Exposure to moisture
  - iv. Device is not working as expected or in a manner as described in this manual
  - v. The device is dropped or damaged
  - vi. Any obvious signs of damage displayed on the device
18. **DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.**

## FCC Statement

---

### **Warning!**



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

### **Caution:**

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

### **Attention:**

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



## China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

GIGAIPC Main Board/ Daughter Board/ Backplane

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

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。

备注: 此产品所标示之环保使用期限, 系指在一般正常使用状况下。

## China RoHS Requirement (EN)

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

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

<b>10" x 10" Embedded Compact Board</b>	<b>1</b>
Copyright Notice .....	2
Acknowledgement .....	3
Packing List .....	4
About this Document .....	5
Safety Precautions .....	6
FCC Statement.....	8
China RoHS Requirements (CN).....	9
China RoHS Requirement (EN) .....	10
<b>Chapter 1 - Product Specifications QBi-6412B (MEHLJBH)</b>	<b>13</b>
1.1 Specifications- QBi-6412B (MEHLJBH).....	15
<b>Chapter 2 – Hardware Information</b>	<b>17</b>
2.1 Jumpers and Connectors .....	18
2.2.1 SYS_PANEL (Front panel header) .....	21
2.2.2 M2E (M.2 Slot, 2230 E-Key) .....	22
2.2.3 FUSB2_1, FUSB2_2 (USB 2.0 header).....	23
2.2.4 BATTERY (Battery connector) .....	24
2.2.5 ATX_IN (ATX IN Connector) .....	25
2.2.6 SODIMM (DDR4 SO-DIMM Slot) .....	26
2.2.7 SATAIII (SATA 6Gb/s connector) .....	27
2.2.8 SATA_PWR (SATA power connector) .....	28
2.2.9 M2M (M.2 Slot, 2280 M-Key) .....	29

2.2.10	CPU FAN (CPU Fan connector) .....	30
2.2.11	USB32_2 (USB 3.2 Gen 2x1 connector) .....	31
2.2.12	COM (Serial port connector, RS-232).....	32
2.2.13	DC_IN (Screw type DC Jack connector).....	33
2.2.14	USB32_1 (USB 3.2 Gen 2x1 connector) .....	34
2.2.15	HDMI_21 (HDMI connector).....	35
2.2.16	LAN1, LAN2 (LAN connector).....	36

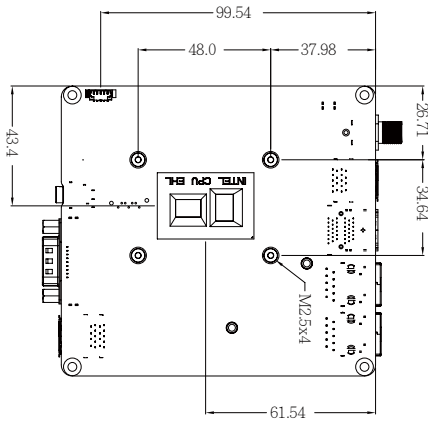
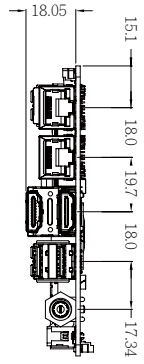
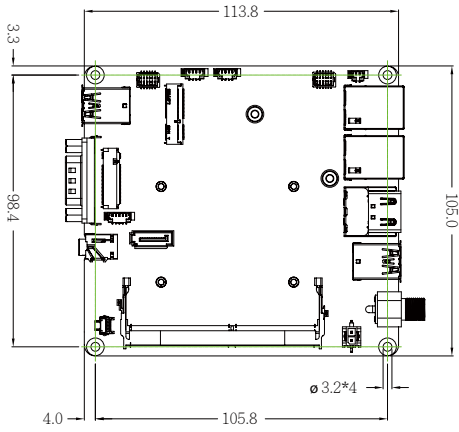
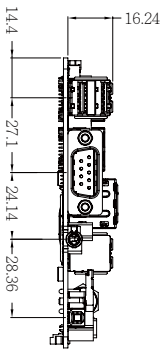
## **Chapter 3 – BIOS 37**

3.1	Introduction .....	38
3.2	The Main Menu.....	39
3.3	Advanced .....	40
3.3.1	TPM Configuration.....	41
3.3.2	S5 RTC Wake Settings .....	43
3.3.3	CPU Configuration .....	44
3.3.4	SATA Configuration .....	45
3.3.5	IT8613 Super IO Configuration .....	46
3.3.6	Hardware Monitor .....	47
3.3.7	Network Stack Configuration.....	48
3.3.8	NVMe Configuration.....	49
3.3.9	Offboard SATA Controller Configuration .....	50
3.4	Chipset .....	51
3.5	Security .....	52
3.6	Boot.....	55
3.7	Save & Exit .....	56

# Chapter 1

---

Chapter 1 - Product Specifications  
QBi-6412B (MEHLJBH)



## 1.1 Specifications- QBi-6412B (MEHLJBH)

Motherboard	QBi-6412B (MEHLJBH)
Form Factor	Embedded Compact Board 105W x 110D (mm)
CPU	Intel® Celeron® J6412 Processor 10nm, 4 cores, 4 threads, up to 2.60 GHz TDP 10W
Socket	1 x FCBGA1493
Chipset	—
Memory	1 x DDR4 SO-DIMM sockets, Max. Capacity 32 GB Support Single Channel DDR4 3200 MHz memory modules
Ethernet	2 x GbE LAN Ports (Realtek® RTL8111H)
Video	Integrated Graphics Processor - Intel® UHD Graphics for 10th Gen Intel® Processors : 2 x HDMI 2.0 port, supporting a maximum resolution of 4096x2160 @60Hz  (2 independent display outputs)
Audio	Realtek® ALC897
Storage	1 x SATA 6Gb/s Port
Raid	—
Expansion Slots	1 x 2280 M.2 M-Key (PCIe Gen3x2, SATA 6Gb/s) 1 x 2230 M.2 E-Key
Internal I/O	1 x 2-pin power connector 1 x SATA power header 1 x CPU fan header 1 x Front panel header 2 x USB 2.0 headers
Front IO	2 x USB 3.2 Gen 2x1 1 x COM Port (RS-232) 1 x Combo Audio Jack (Headphone & Headset) 1 x Power button

Motherboard	QBi-6412B (MEHLJBH)
Rear IO	2 x RJ45 LAN Ports 2 x HDMI 2 x USB 3.2 Gen 2x1 1 x Screw type DC Jack (+12V~19VDC)
Side IO	—
TPM	Onboard TPM 2.0 security chip Infineon SLB9670VQ2.0
OS Compatibility	Windows 10 (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)
Packaging Content	Carton size: 465 x 351 x 217 (mm) Packing Capacity: 10pcs  Single Box size: 221 x 178 x 65 (mm)  Including: SATA Power cable 150mm x 1 (25CRI-150621-K1R)
Order Information	Motherboard : 9MEHLJBHMR-SI (Box Packing)



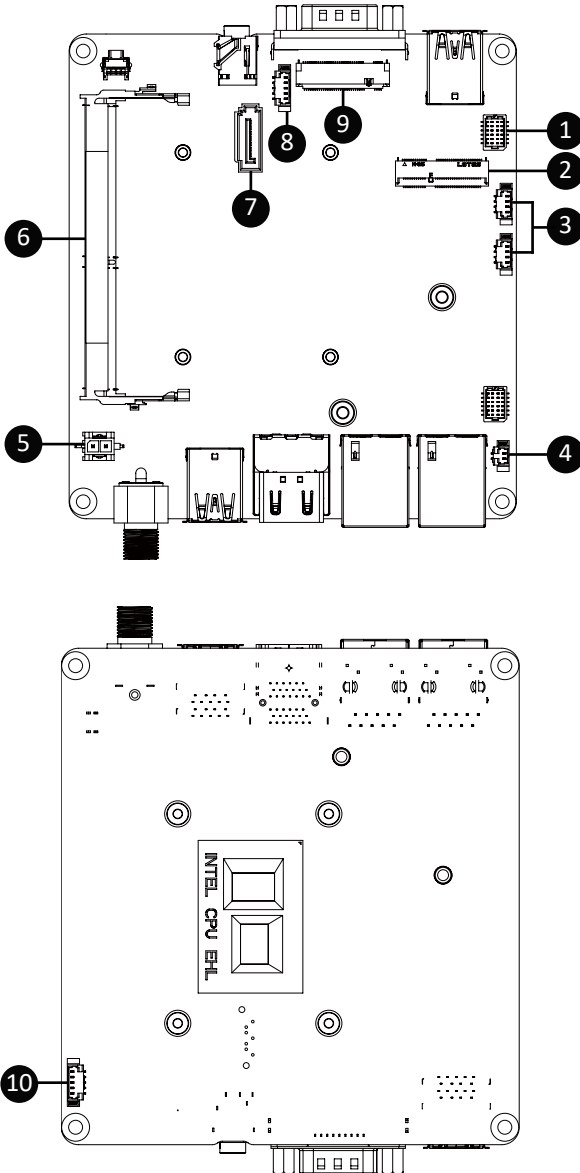
## Chapter 2

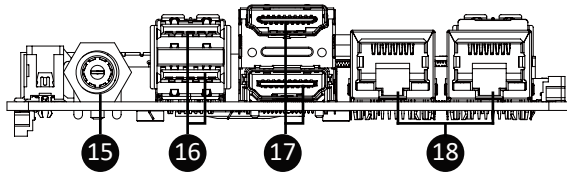
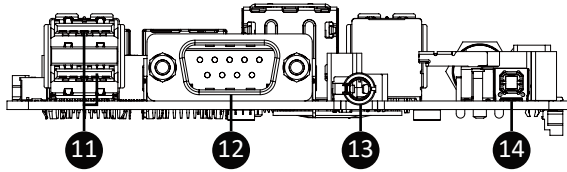
---

### Chapter 2 – Hardware Information

# 2.1 Jumpers and Connectors

---



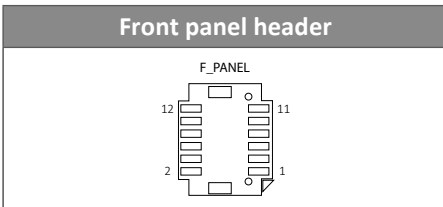
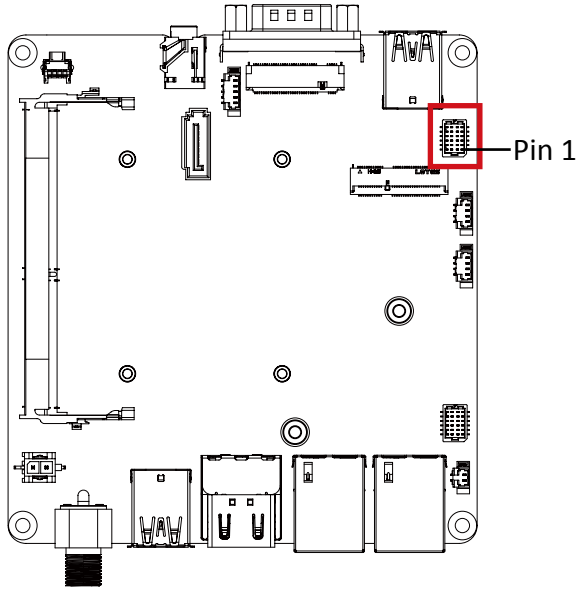


No	Code	Description
1	SYS_PANEL	Front panel header
2	M2E	M.2 Slot, 2230 E-key
3	FUSB2_1 FUSB2_2	USB 2.0 header
4	BATTERY	Battery connector
5	ATX_IN	ATX IN connector
6	SODIMM	DDR4 SO-DIMM Slot
7	SATAIII	SATA 6Gb/s connector

No	Code	Description
8	SATA_PWR	SATA power connector
9	M2M	M.2 Slot, 2280 M-Key
10	CPU_FAN	CPU Fan connector
11	USB32_2	USB 3.2 Gen 2x1 port x 2
12	COM	Serial port connector (RS-232)
13	HP	Combo Audio Jack (Headphone & Headset)
14	PWR_BUTTON	Power button
15	DC_IN	Screw type DC Jack
16	USB32_1	USB 3.2 Gen 2x1 port x 2
17	HDMI_21	HDMI connector
18	LAN1 LAN2	LAN Connector x 2

## 2.2.1 SYS\_PANEL (Front panel header)

1



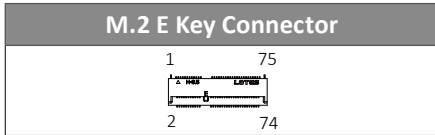
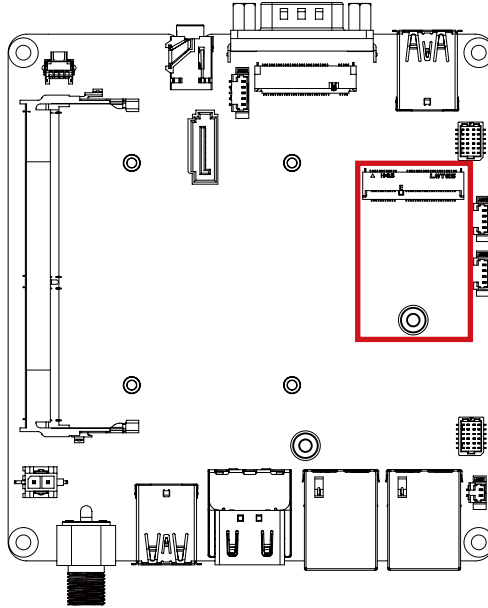
Connector PN	Vendor
87216-1206-06	ACES

Connector type
2x6pin header, pitch 1.0mm

Pin No.	Definition
1	HD-p
2	MPD-p
3	HD-n
4	MPD-n
5	GND
6	POWER-ON
7	Reset
8	GND
9	NC
10	NC
11	NC
12	NC

## 2.2.2 M2E (M.2 Slot, 2230 E-Key)

2



Pin No.	Definition	Pin No.	Definition
1	GND	2	3.3V
3	D1p	4	3.3V
5	D1n	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		

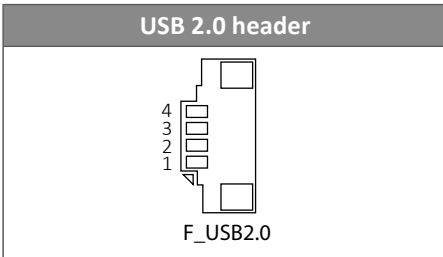
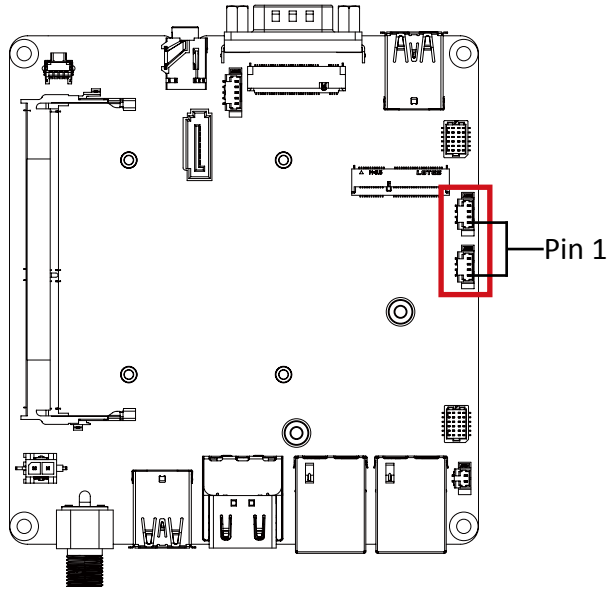
Pin No.	Definition	Pin No.	Definition
33	GND	32	NC
35	PCIE TXp	34	NC
37	PCIE TXn	36	NC

39	GND	38	NC
41	PCIE RXp	40	NC
43	PCIE RXn	42	NC
45	GND	44	NC
47	PCIE Clock p	46	NC
49	PCIE Clock n	48	NC
51	GND	50	SUSCLK
53	PCIE Clock Request	52	Reset
55	PCIE Wakeup	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	3.3V
75	GND	74	3.3V

Connector PN	Vendor
80152-8521	BELLWETHER

## 2.2.3 FUSB2\_1, FUSB2\_2 (USB 2.0 header)

3



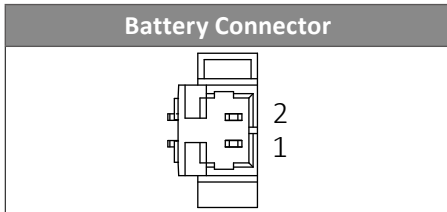
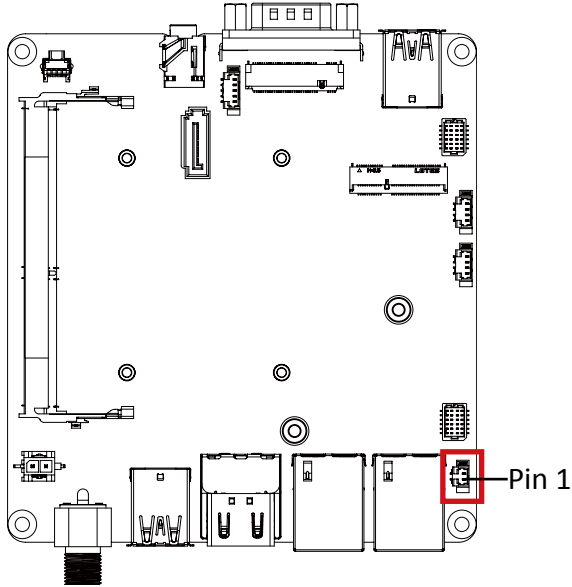
Pin No.	Definition
1	5V
2	D1n
3	D1p
4	GND

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

Connector type
1x4pin header, pitch 1.25mm

## 2.2.4 BATTERY (Battery connector)

4



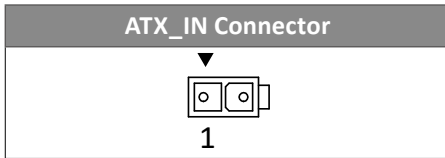
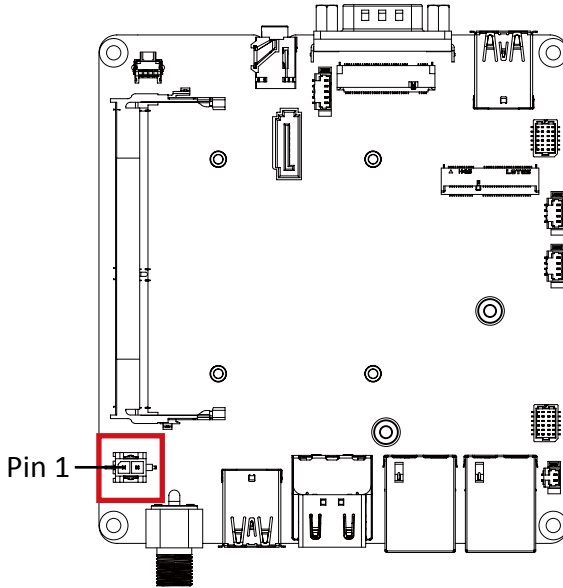
Pin No.	Definition
1	3V
2	GND

Connector type
1x2pin header, pitch 1.25mm



## 2.2.5 ATX\_IN (ATX IN Connector)

**5**

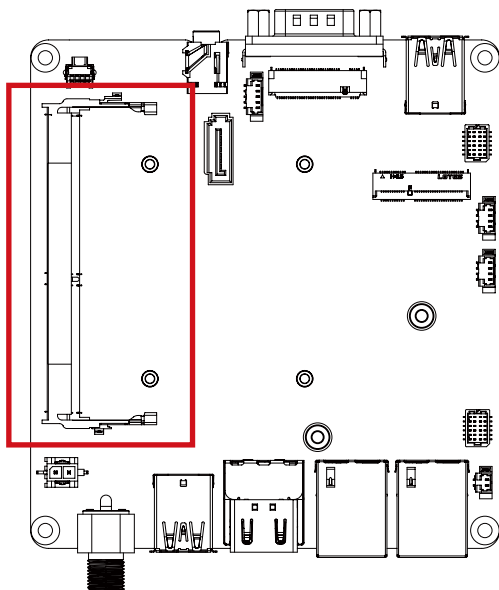


Connector PN	Vendor
99-01740-B004-A	TCONN
Connector type	
1x2pin header, pitch 3.0mm	

Pin No.	Definition
1	GND
2	DC IN

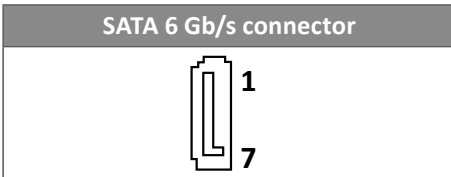
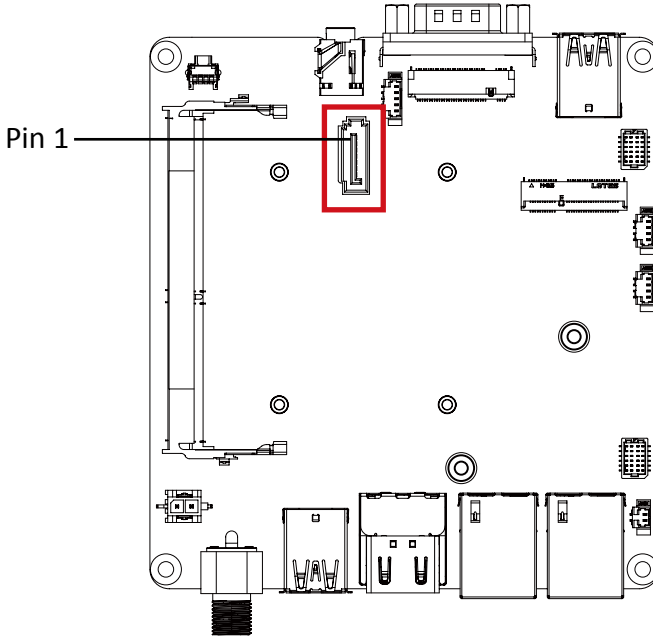
## 2.2.6 SODIMM (DDR4 SO-DIMM Slot)

6



## 2.2.7 SATAIII (SATA 6Gb/s connector)

**7**

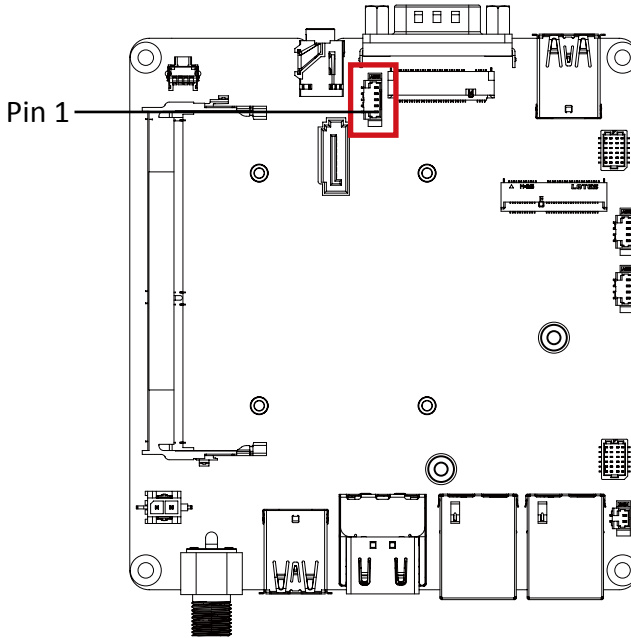


Connector PN	Vendor
WATM-07ABNB2BAUW3	WINWIN
770-83-07SW19	PINREX

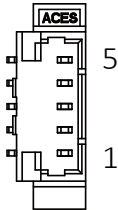
Pin No.	Definition
1	GND
2	TXp
3	TXn
4	GND
5	RXn
6	RXp
7	GND

## 2.2.8 SATA\_PWR (SATA power connector)

8



SATA power connector



Connector PN

85205-0570N

Vendor

ACES

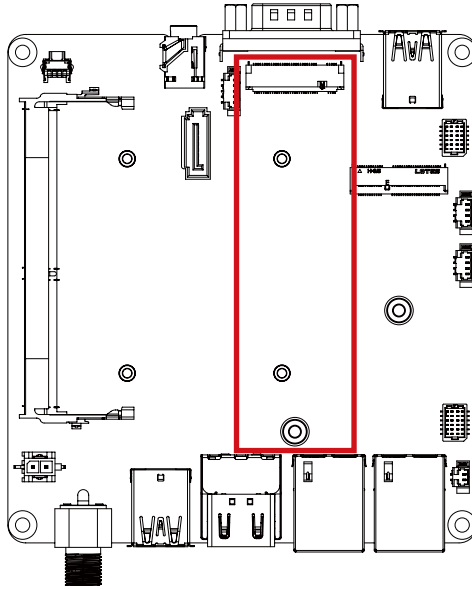
Connector type

1x5pin header, pitch 1.25mm

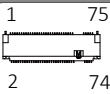
Pin No.	Definition
1	5V
2	5V
3	3.3V
4	GND
5	GND

## 2.2.9 M2M (M.2 Slot, 2280 M-Key)

9



**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	SSD 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	PCIE1 RXn	30	NC
31	PCIE1 RXp	32	NC
33	GND	34	NC
35	PCIE1 TXn	36	NC
37	PCIE1 TXp	38	NC

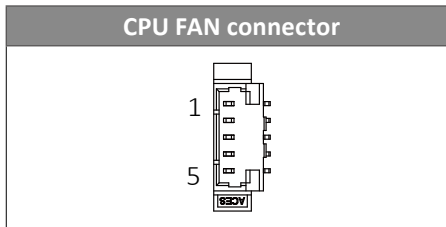
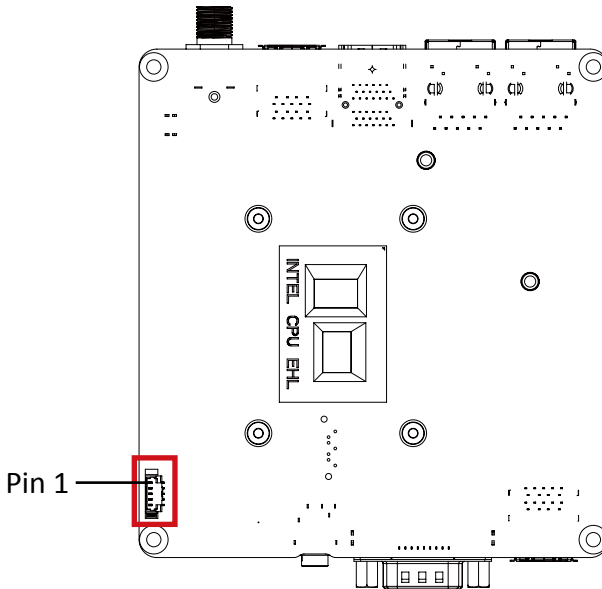
Pin No.	Definition	Pin No.	Definition
39	GND	40	NC
41	PCIE0 RXn/ SATA RXp	42	NC
43	PCIE0 RXp/ SATA RXn	44	NC
45	GND	46	NC
47	PCIE0 TXn/ SATA TXn	48	NC
49	PCIE0 TXp/ SATA TXp	50	PCI Reset
51	GND	52	PCIE Clock Request
53	PCIE Clock n	54	NC
55	PCIE Clock p	56	NC
57	GND	58	NC

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

Connector PN	Vendor
80159-8521	BELLWETHER

## 2.2.10 CPU FAN (CPU Fan connector)

10

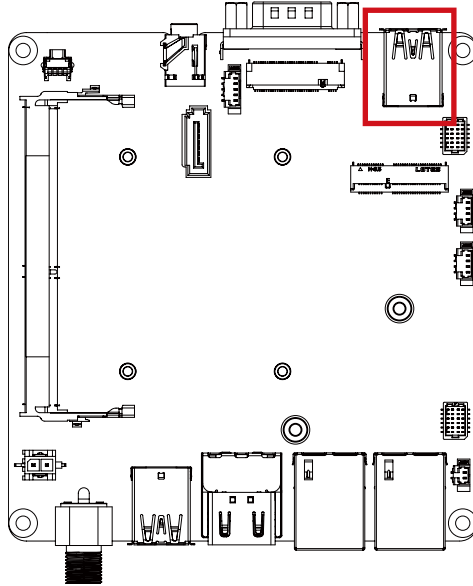


Connector PN	Vendor
85205-0570N	ACES
Connector type	
1x5pin header, pitch 1.25mm	

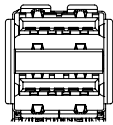
Pin No.	Definition
1	GND
2	5V
3	Detect
4	PWM
5	NC

## 2.2.11 USB32\_2 (USB 3.2 Gen 2x1 connector)

11



USB 3.2 Gen 2x1 connector



Connector PN

18-A5950-6A33-A

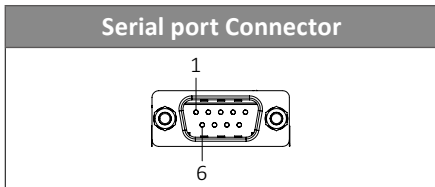
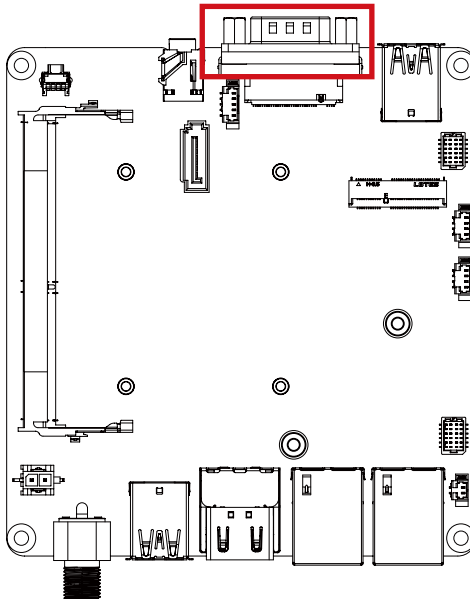
Vendor

TCONN

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

## 2.2.12 COM (Serial port connector, RS-232)

12



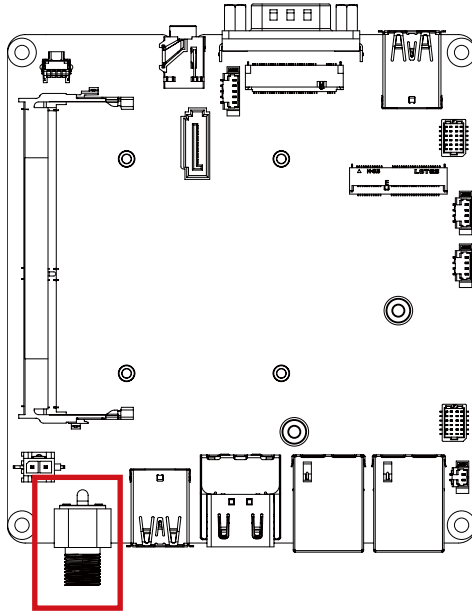
Pin No.	Definition
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

Connector PN	Vendor
SM41D1P1122N33N1	FENYING

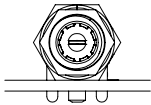


## 2.2.13 DC\_IN (Screw type DC Jack connector)

15



Screw Type DC Jack Connector



Connector PN

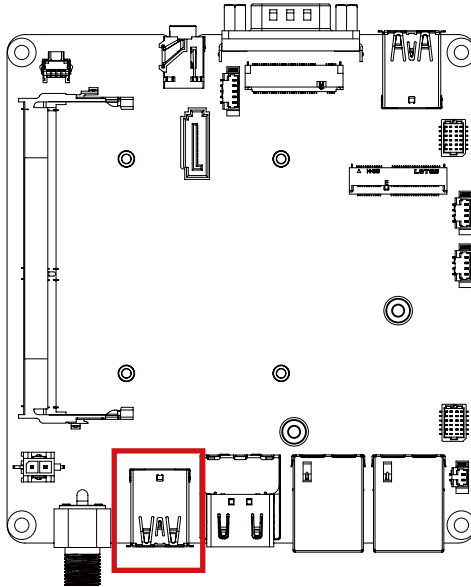
655-360-000

Vendor

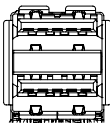
SHEN-MING

## 2.2.14 USB32\_1 (USB 3.2 Gen 2x1 connector)

16



USB 3.2 Gen 2x1 connector

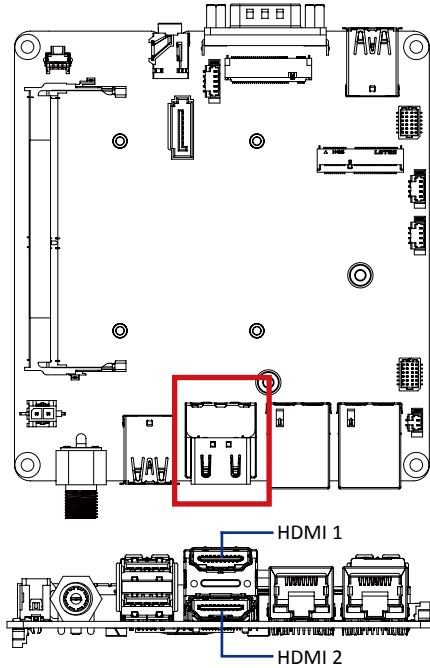


Connector PN	Vendor
18-A5950-6A33-A	TCONN

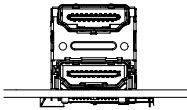
Pin No.	Definition	Pin No.	Definition
1	5V	10	5V
2	D1n	11	D0n
3	D1p	12	D0p
4	GND	13	GND
5	USB3_RX1n	14	USB3_RX2n
6	USB3_RX1p	15	USB3_RX2p
7	GND	16	GND
8	USB3_TX1n	17	USB3_TX2n
9	USB3_TX1p	18	USB3_TX2p

## 2.2.15 HDMI\_21 (HDMI connector)

17



HDMI Connector

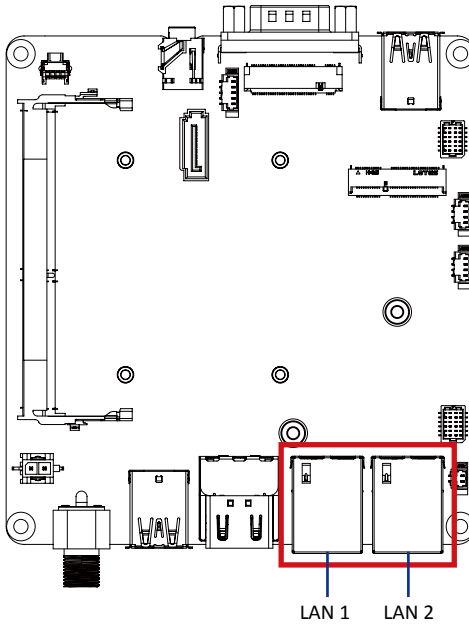


Connector PN	Vendor
QJ11191-DFB1-4F	FOXCONN

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

## 2.2.16 LAN1, LAN2 (LAN connector)

18



**LAN Connector**

8 1

Link /  
Activity LED

Connection/  
Speed LED

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

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

Connector PN	Vendor
RB1-13NB5N5A	UDE

# 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

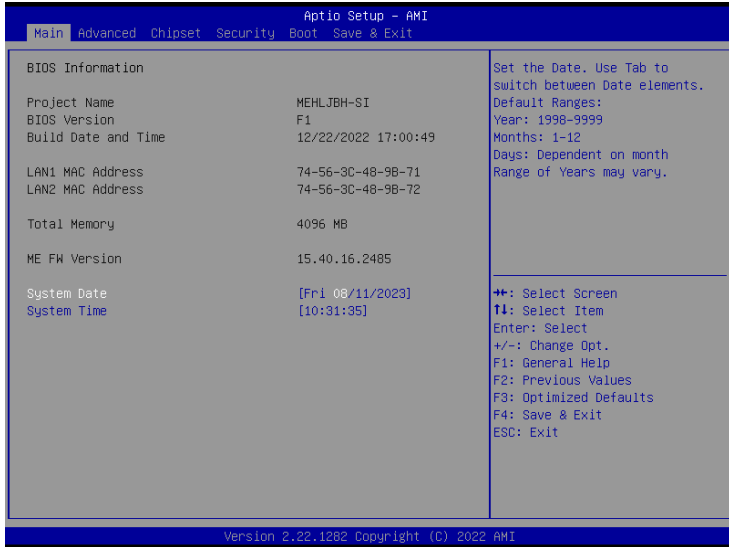
Once the system is power on, press the <DEL> key as soon as possible to access into BIOS Setup program.

### 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

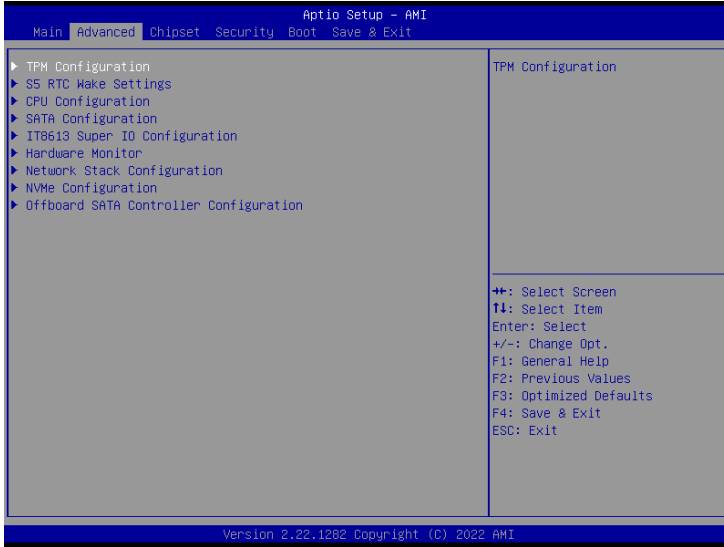
The main menu shows the basic system information. Use arrow keys to move among the items.



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

### 3.3 Advanced

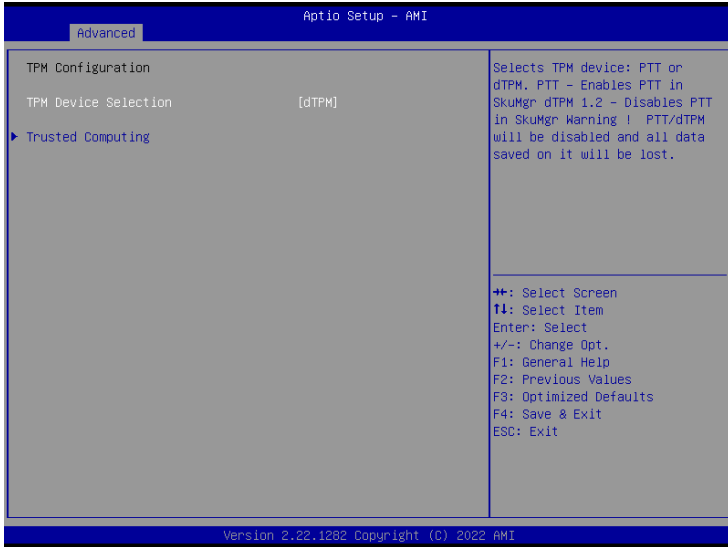
The Advanced menu is to configure the functions of hardware settings through submenu. Use arrow keys to move among the items, and press <Enter> to access into the related submenu.





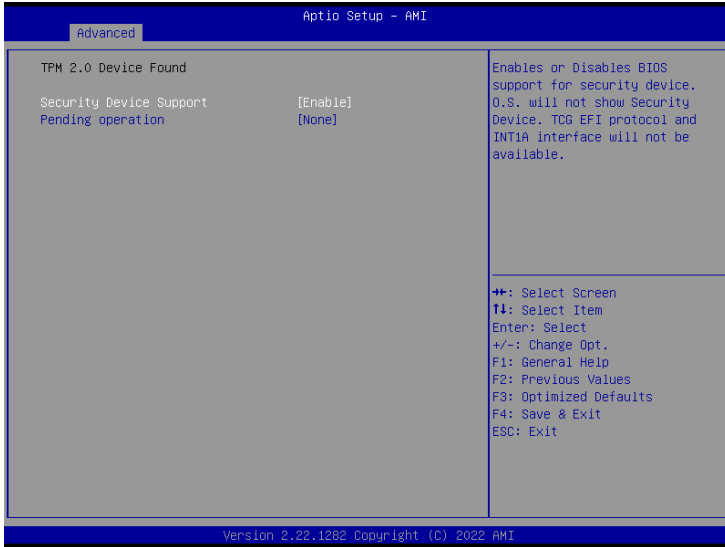
### 3.3.1 TPM Configuration

Use TPM Configuration submenu to choose TPM interface.



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

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



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

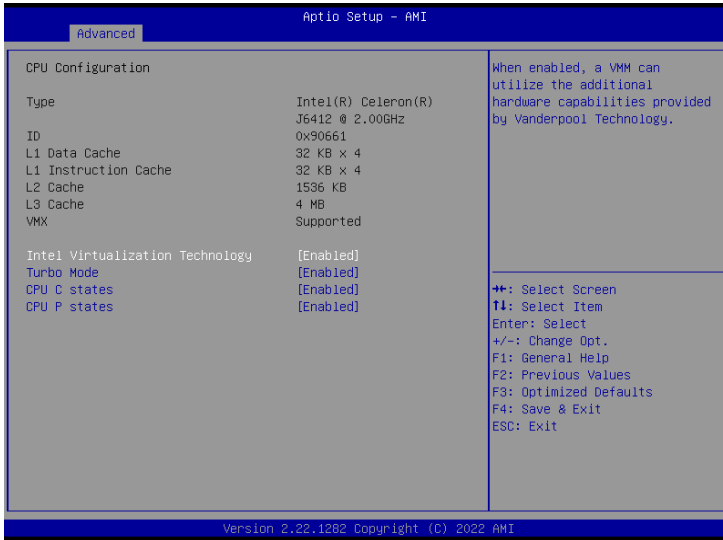
### 3.3.2 S5 RTC Wake Settings



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

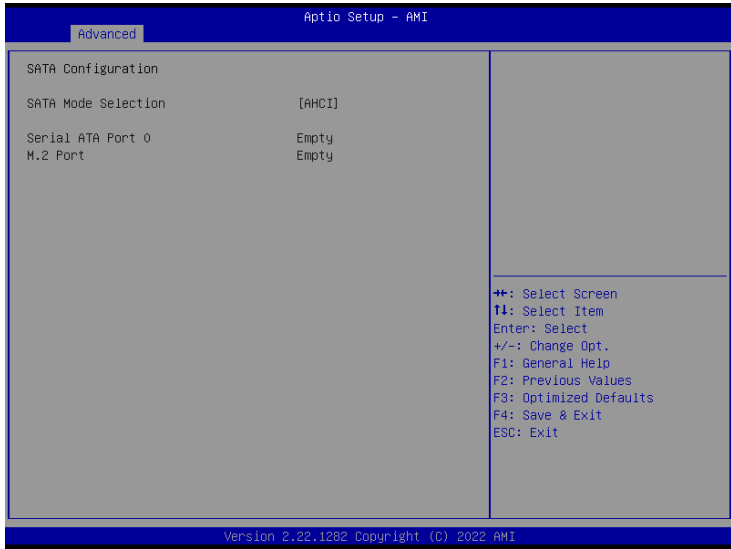
### 3.3.3 CPU Configuration

This submenu shows detailed CPU informations.



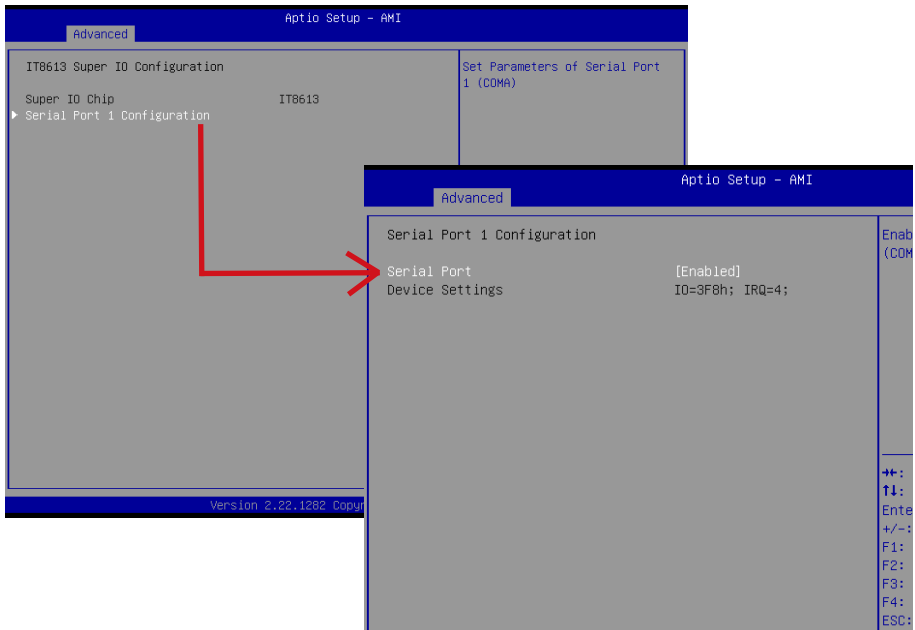
Item	Description
<b>Intel Virtualization Technology</b>	Virtualization enhanced by Intel® Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems. <b>Enabled : Enables Intel Virtualization Technology (Default setting)</b> <b>Disabled : Disables Intel Virtualization Technology</b>
<b>Turbo Mode</b>	<b>Enabled : Enables Turbo Mode (Default setting)</b> <b>Disabled : Disables Turbo Mode</b>
<b>CPU C states</b>	Command CPU to enter into low power consumption mode when CPU is under idle mode. <b>Enabled : Enables CPU C states function (Default setting)</b> <b>Disabled : Disables CPU C states function</b>
<b>CPU P states</b>	CPU will adjust frequency depends on it's loading. <b>Enabled : Enables CPU P states function (Default setting)</b> <b>Disabled : Disables CPU P states function</b>

### 3.3.4 SATA Configuration



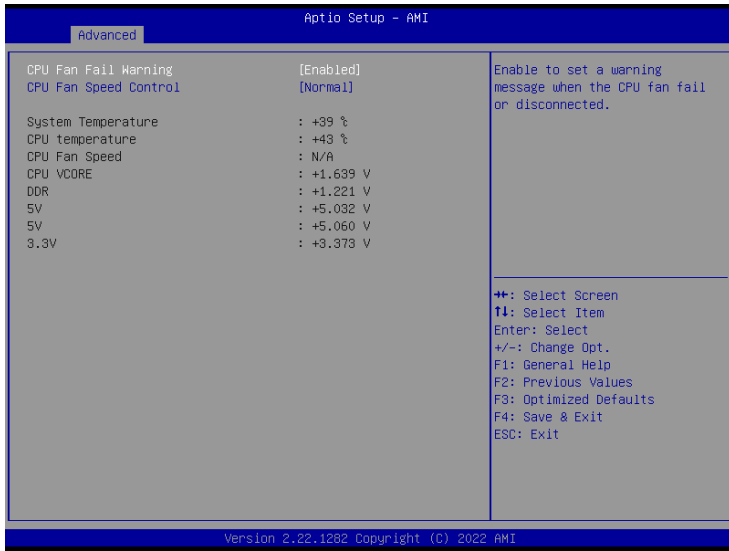
Item	Description
<b>SATA Mode Selection</b>	<b>AHCI : Configures the SATA controllers to AHCI mode. (Default setting)</b>
<b>Serial ATA Port 0</b>	shows 2.5" SATA HDD/SSD information
<b>M.2 Port</b>	shows M.2 SATA interface SSD information

### 3.3.5 IT8613 Super IO Configuration



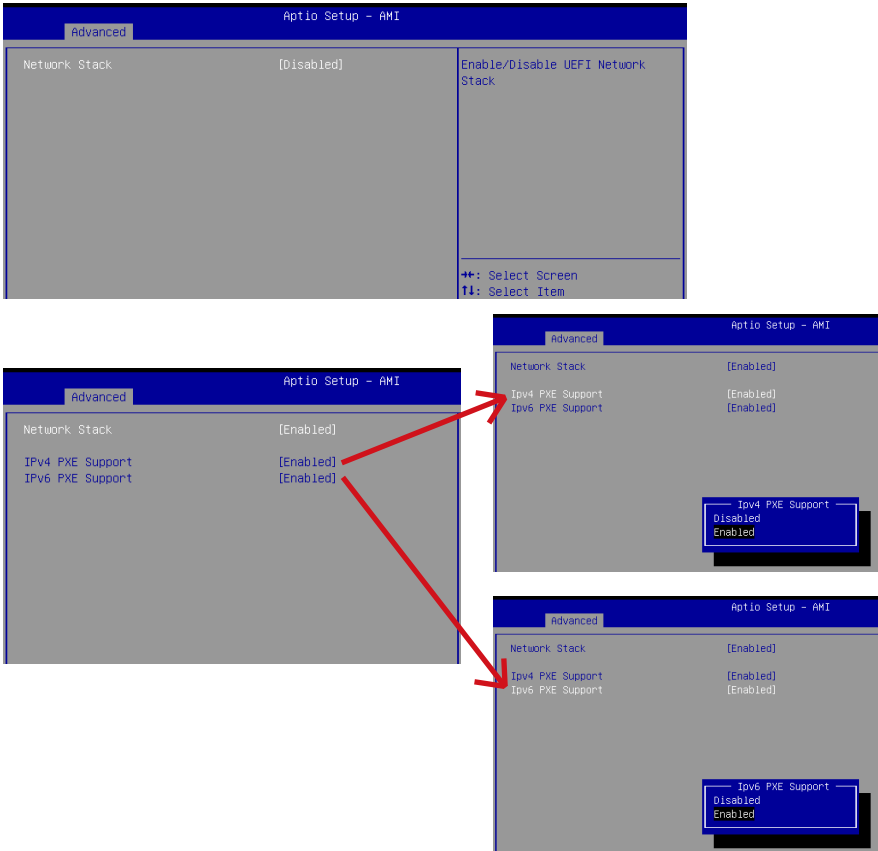
Item	Description
<b>Super IO Chip</b>	Shows Super I/O chip model
<b>Serial Port 1 Configuration</b>	<p>Press [Enter] to configure advanced items :</p> <p>Enable or Disable Serial Port  <b>Enabled : Enables Serial Port function (Default setting)</b>  <b>Disabled : Disables Serial Port function</b></p> <p>Device settings :            Display the specified Serial Port base I/O address and IRQ</p>

## 3.3.6 Hardware Monitor



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

### 3.3.7 Network Stack Configuration



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



### 3.3.8 NVMe Configuration

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

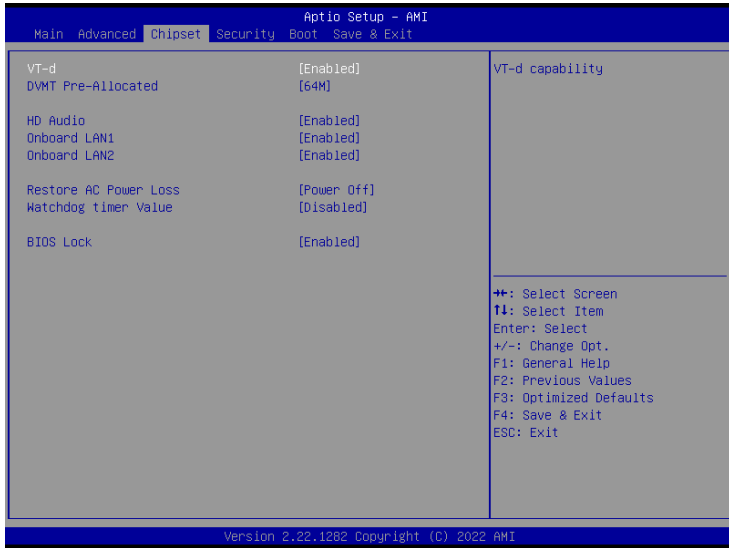


### 3.3.9 Offboard SATA Controller Configuration

---



## 3.4 Chipset



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

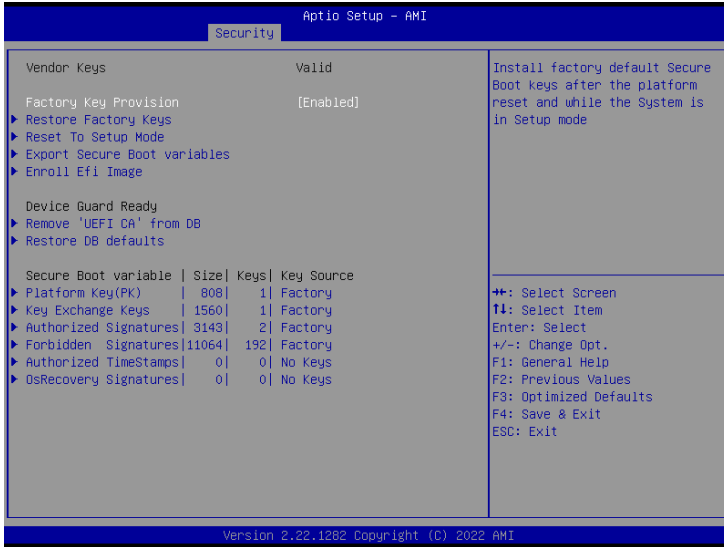
## 3.5 Security



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



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



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

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

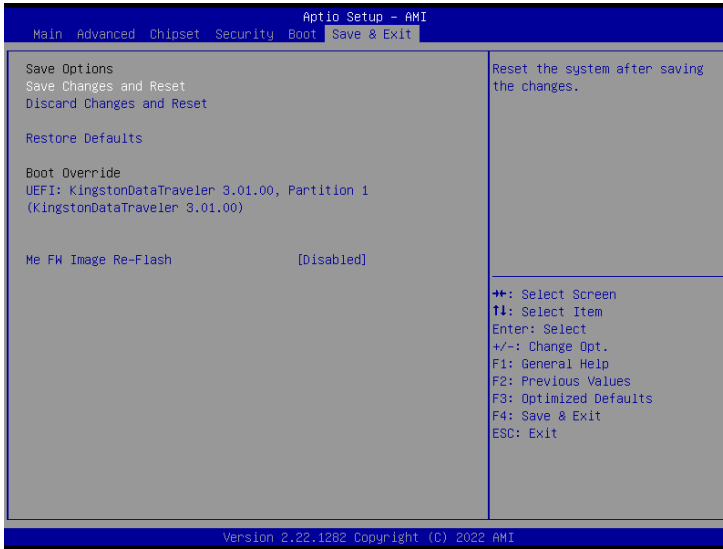
## 3.6 Boot

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



Item	Description
<b>Full Screen LOGO Show</b>	Enable/Disable full screen LOGO show on POST screen <b>Enabled : Enables Full screen LOGO Show on POST screen</b> <b>Disabled : Disables Full screen LOGO Show on POST screen (Default setting)</b>
<b>Boot Option #1</b> <b>Boot Option #2</b>	Shows the information of the storage that be installed in the system <b>Choose/set the boot priority</b>

## 3.7 Save & Exit



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