QBiX-Pro-APLC4200H-B1 (QP-4200C-SI)

QBiX-Pro Industrial Embedded System
Quick Start Guide

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
System kit	1
Screw I Head for 2.5” HDD M3x8L (25KSG-130081-K1R)	4
SATA Cable (25CF4-170020-S9R)	1
Terminal Blocks Male Plug (25IO0-5ESDV0-D2R)	1
Exsiccator (25g)	1

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

About this Document

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

Users may refer to the GIGAIPC.com for the latest version of this document.

Safety Precautions

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

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

13. Watch out for high temperatures when the system is running.

14. Do not touch the heat sink or heat spreader when the system is running

15. Never pour any liquid into the openings. This could cause fire or electric shock.

16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.

17. If any of the following situations arises, please the contact our service personnel:
    i. Damaged power cord or plug
    ii. Liquid intrusion to the device
    iii. Exposure to moisture
    iv. Device is not working as expected or in a manner as described in this manual
    v. The device is dropped or damaged
    vi. Any obvious signs of damage displayed on the device

18. **DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.**

FCC Statement

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

Caution:

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

Attention:

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

Table Contents

QBiX-Pro Industrial Embedded System Quick Start Guide 1

Copyright Notice 2

Acknowledgement 3

Packing List 4

About this Document 5

Safety Precautions 6

FCC Statement 8

Chapter 1 - Product Specifications 12

1.1 Specifications 14

Chapter 2 – QBiX-Pro-APLC4200H-B1 Industrial Embedded System Kit 16

2.1 Dimension 17

2.2 Getting Familiar with Your Unit 18

2.3 A) Memory Installation: DDR3L SO-DIMM 20

2.4 B) Mini PCIe Card Installation: How to safely install the Mini PCIe Card 21

2.5 C) M.2 SSD Installation: How to safely install the M.2 2242 SSD 22

2.6 D) 2.5” HDD/SSD installation: How to install 2.5” HDD/SSD 23

2.7 Antenna Installation (Antenna inclusion may vary based on local distribution) 24

2.8 DIO (GPIO) Pin Define 25
2.9 DB9 COM Pin Define 26
2.10 Support 27
2.11 Safety and Regulatory Information..... 28

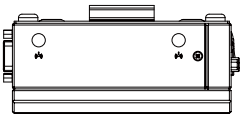
Chapter 3 – Hardware Information 29
3.1 Jumpers and Connectors 30
3.2.1 FAN (FAN connector) 33
3.2.2 DC IN (DC IN 1x4pin power connector) 34
3.2.3 COM1, COM2, COM3, COM4 (Serial port header) 35
3.2.4 SPK_OUT (Speaker out connector) 36
3.2.5 JCOM1 (RI# pin RI#/5V/12V Select jumper for COM1 port) 37
3.2.6 JRS11-JRS14 (RS11-14 select jumper for serial port)..... 38
3.2.7 AT_CN (AT/ATX mode select jumper)..... 39
3.2.8 LSW (LVDS resolution jumper)..... 40
3.2.9 LVDS (LVDS connector).....41
3.2.10 BKL_CN (Backlight control connector)..... 42
3.2.11 BUZZER (buzzer header) 43
3.2.12 BATTERY (Battery cable connector)..... 44
3.2.13 SATAPW (SATA power connector)..... 45
3.2.14 SATAIII (SATA 6Gb/s Connector) 46
3.2.15 FUSB2_1, FUSB2_2 (USB 2.0 header)..... 47
3.2.16 GPIO_CNT (General Purpose input/output header) 48
3.2.17 SYS_PANEL (Front panel header) 49
3.2.18 MPCIE (Mini PCIe slot)..... 50

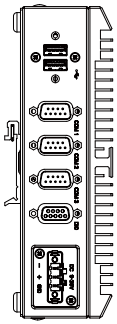
3.2.19 M2M (M.2 slot, 2242 M-key) 51
3.2.20 SIM_CARD (3G/4G SIM Slot) 52
3.2.21 SODIMMA, SODIMMB (2 x DDR3L SO-DIMM sockets) ..53
3.2.22 LAN1, LAN2 (GbE LAN Connectors)..... 54
3.2.23 FUSB30 (USB 3.2 Gen 1 connector) 55
3.2.24 HDMI (HDMI Connector)..... 56
3.2.25 VGA (VGA port) 57
3.2.26 CLR_CMOS (Clear CMOS jumper) 58

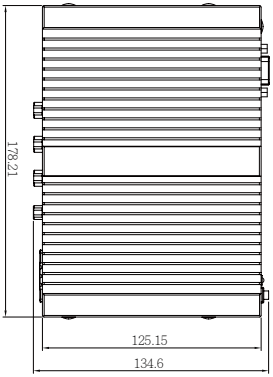
Chapter 4 – BIOS 59
4.1 Introduction 60
4.2 The Main Menu..... 61
4.3 Advanced 62
4.3.1 TPM Configuration..... 63
4.3.2 IT8786 Super IO Configuration 65
4.3.3 Hardware Monitor 66
4.3.4 S5 RTC Wake Settings 67
4.3.5 CPU Configuration 68
4.3.6 SATA Configuration 69
4.3.7 CSM Configuration..... 70
4.3.8 Digital IO Port Configuration 71
4.4 Chipset 72
4.5 Security 73
4.6 Boot..... 76
4.7 Save & Exit 77

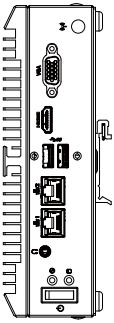
Chapter 1

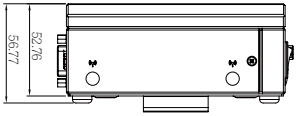
Chapter 1 - Product Specifications

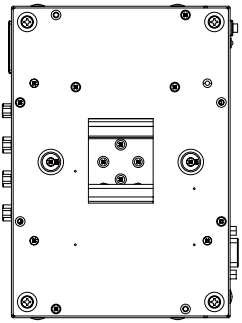


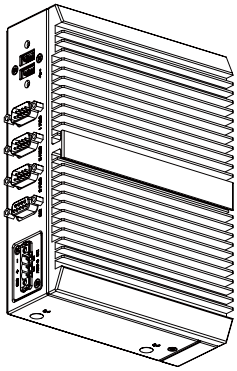



178.21
125.15
134.6




56.77
52.76





1.1 Specifications

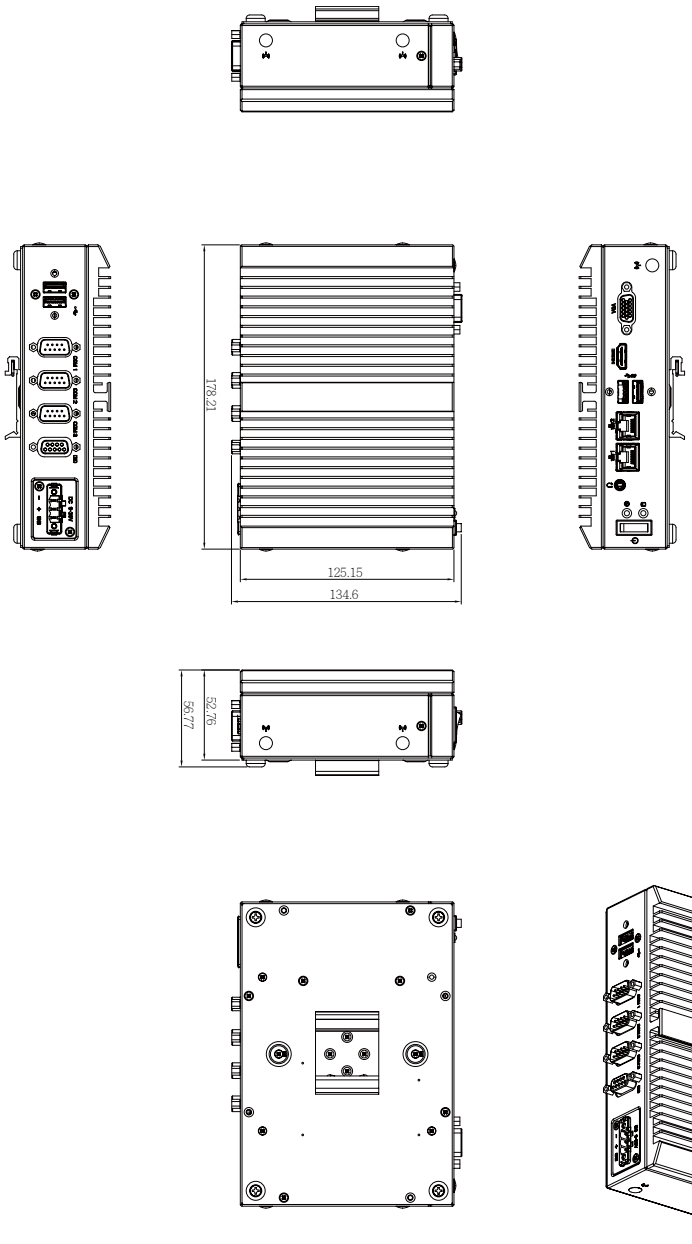
System	QBiX-Pro-APLC4200H-B1 (QP-4200C-SI)
Dimension	System Size : 178W x 125D x 52.7H (mm)
CPU	Intel® Pentium® N4200 Processor 14nm, 4 cores, 4 threads, up to 2.5 GHz TDP 6W 2MB L2 cache
Chipset	SoC
Memory	2 x DDR3L SO-DIMM sockets, Max. Capacity 8 GB Support Dual channel DDR3L 1866 MHz memory modules
Ethernet	2 x GbE LAN Ports (Realtek® RTL8111H)
Graphic support	Integrated Graphics Processor -Intel® HD Graphics 505: 1 x HDMI 1.4 port, supporting a maximum resolution of 3840x2160 @30Hz 1 x D-SUB port, supporting a maximum resolution of 1920x1080 @60Hz (with compatible displays) (2 independent display outputs)
Audio	Realtek® ALC897
Storage	1 x 2.5” HDD/SSD (SATA 6Gb/s)
Expansion Slots	1 x 2242 M.2 M-Key (SATA 6Gb/s) 1 x Full-size Mini PCIe with SIM slot (PCIe x1 + USB2.0) -- support 3G/4G module
Front I/O	2 x RJ45 LAN Ports 2 x USB 3.2 Gen 1 1 x HDMI 1 x VGA 1 x Power switch 1 x Power & HDD LED 1 x Headphone Jack
Rear I/O	2 x USB 2.0 1 x COM Port (RS-232/422/485 & RI/5V/12V) 2 x COM Ports (RS-232) 1 x GPIO (8 bits) 1 x 3-pin Terminal Block
Side I/O	2 x External Antenna Holes (Optional)
Power	DC 9V~36V (Full Range)

System	QBiX-Pro-APLC4200H-B1 (QP-4200C-SI)
Operation temperature	Operating temperature: 0°C to 50°C Operating humidity: 0-90% (non-condensing) Non-operating temperature: -20°C to 70°C Non-operating humidity: 0%-95% (non-condensing) Use wide temperature range memory and storage
Vibration During Operation	Operation: IEC 60068-2-64, 5 Grms, random, 5 ~ 500 Hz, 1 hr / Per Axis, With SSD/M.2 2242 Non-operation: IEC 60068-2-6, 2 G, Sine, 10 ~ 500 Hz, 1 Oct/ min, 1 hr / Per Axis
Shock During Operation	Operation: IEC 60068-2-27, 50 G, half sine, 11 ms duration, With SSD
Packaging Content	Carton size: 505 x 333 x 231 (mm) Packing Capacity: 5pcs Including: Screw I Head for 2.5” HDD M3x8L x 4 (25KSG-130081-K1R) SATA Cable x 1 (25CF4-170020-S9R) Terminal Blocks Male Plug x 1 (25IO0-5ESDV0-D2R)
Order Information	System: 6BQP4200CMR-SI (Box packing)

Chapter 2

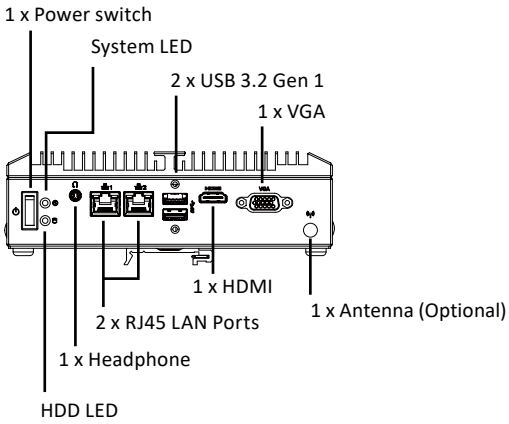
Chapter 2 – QBiX-Pro-APLC4200H-B1
Industrial Embedded System Kit

2.1 Dimension

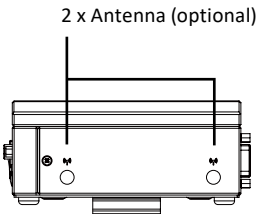


2.2 Getting Familiar with Your Unit

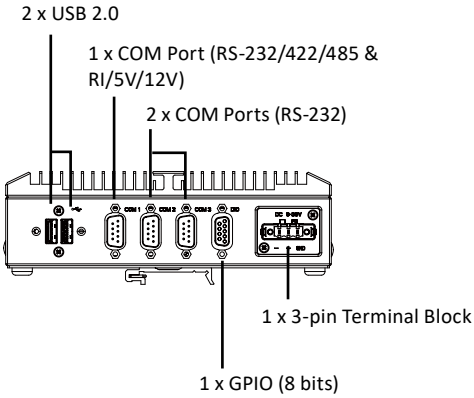
[Front Side]



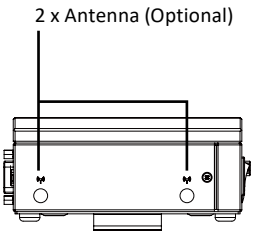
[Left Side]



[Rear Side]

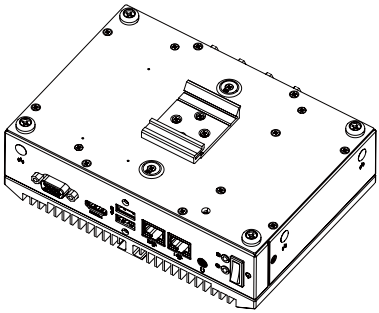


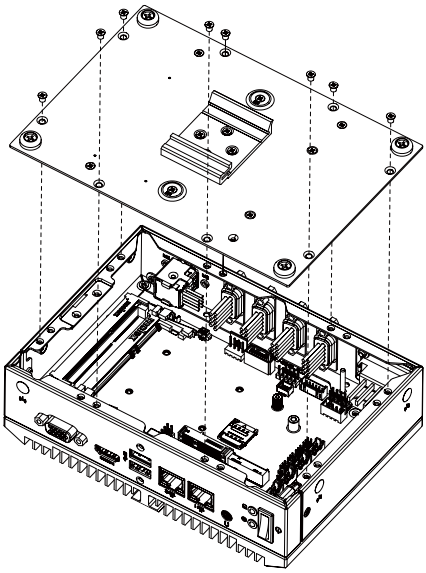
[Right Side]



[Install]

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

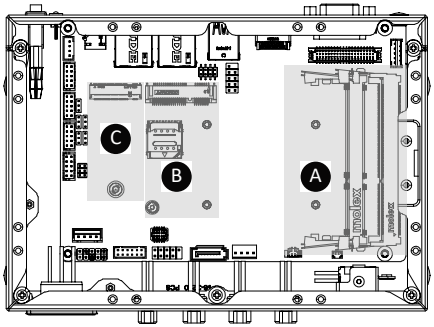


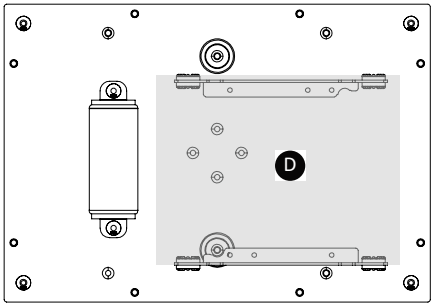


[Bottom PCB Side]

	Information
A	2 x DDR3L SO-DIMM sockets
B	1 x Mini PCIe slot with SIM Slot

	Information
C	1 x M.2 slot 2242 M-key
D	Support 2.5'' Hard drive/SSD

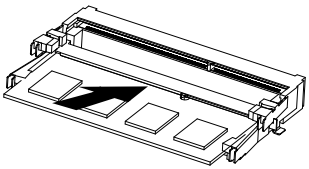




2.3 A) Memory Installation: DDR3L SO-DIMM

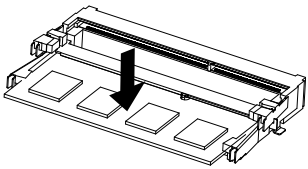
1

Carefully insert SO-DIMM memory modules.



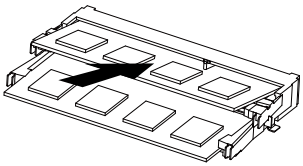
2

Push down until the modules click into place.



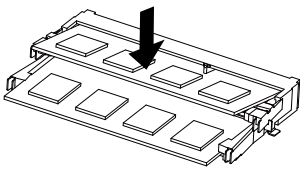
3

Carefully insert SO-DIMM memory modules.



4

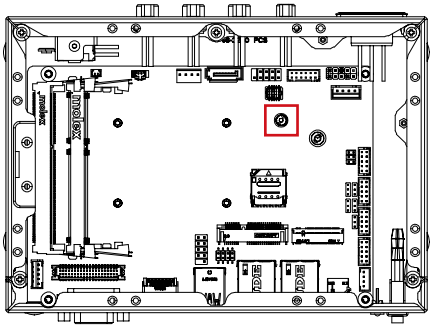
Push down until the modules click into place.



2.4 B) Mini PCIe Card Installation: How to safely install the Mini PCIe Card

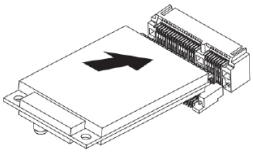
1

Remove the screw from the screw hole (Location : MSO1)



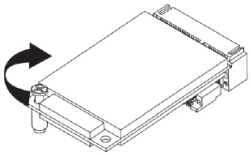
2

Carefully insert the Mini PCIe Card into the slot.



3

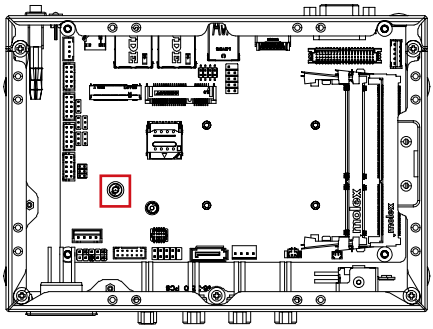
Secure the Mini PCIe Card with screw.



2.5 C) M.2 SSD Installation: How to safely install the M.2 2242 SSD

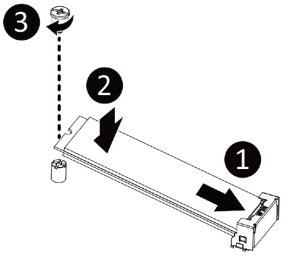
1

Remove the screw from the screw hole (Location : MSO2)



2

Carefully insert the M.2 SSD into the slot, and secure with the screw.

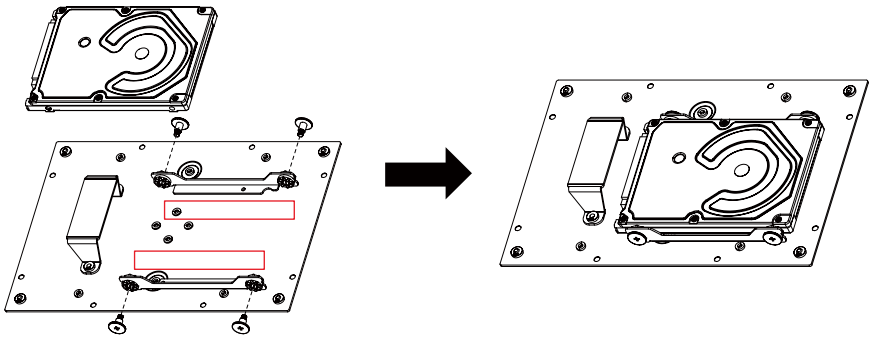


2.6 D) 2.5” HDD/SSD installation: How to install 2.5” HDD/SSD

1. Remove 2 release papers on the thermal pad. (Located as shown in below red)

2. First : assemble the SATA cable and 2.5" HDD/SSD.
   Second : install 2.5" HDD/SSD (Gold finger of 2.5" HDD/SSD must face down), and secure with 4 screws.

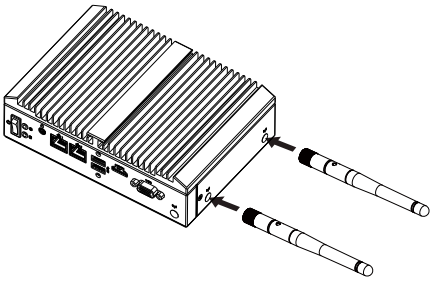
3. Assemble the SATA cable on the SATA connector, and lock the bottom cover.



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

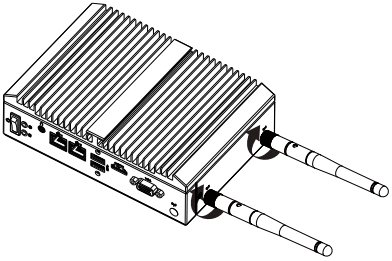
1

Carefully insert the antennas into the connectors.



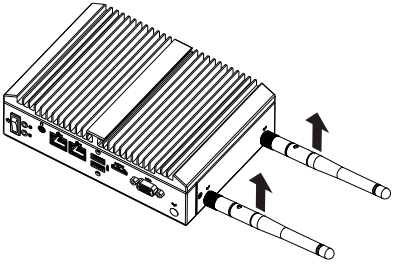
2

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

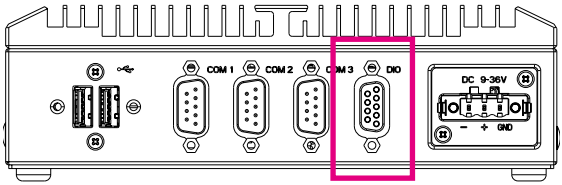


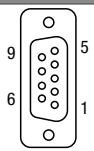
3

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



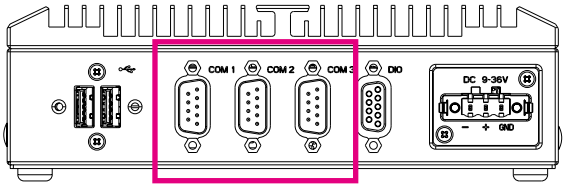
2.8 DIO (GPIO) Pin Define

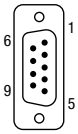


DIO (GPIO)	
	
DIO 25CR5-050600-S9R	
Pin No.	Pin Define
1	GPIO-output_1
2	GPIO-input_1
3	GPIO-output_2
4	GPIO-input_2
5	GPIO-output_3
6	GPIO-input_3
7	GPIO-output_4
8	GPIO-input_4
9	5V

Caution: The GPIO 8 bits, on the terminal does not meet limited power source (LPS) requirements. This port is limited to only 5V for the specific end products and are provided with a molded plastic Fire Enclosure. Rated minimum 94V-1 or Metal enclosure.

2.9 DB9 COM Pin Define



DB9 COM			
			
25CF8-180620-S9R			
Pin No.	RS-232	RS-422 Full Duplex	RS-485 Half Duplex
1	DCD	TXD-	D-
2	RXD	TXD+	D+
3	TXD	RXD+	—
4	DTR	RXD-	—
5	GND		
6	DSR	—	—
7	RTS	—	—
8	CTS	—	—
9	RI	—	—

2.10 Support

● For a list of tested memory, M.2, 2.5'' SSD, wireless adapters and OS supported, go to: http://www.gigaipc.com
● To download the latest drivers and BIOS updates, go to: http://www.gigaipc.com
● For product support, go to: http://www.gigaipc.com

2.11 Safety and Regulatory Information

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

HIGH DEFINITION MULTIMEDIA INTERFACE

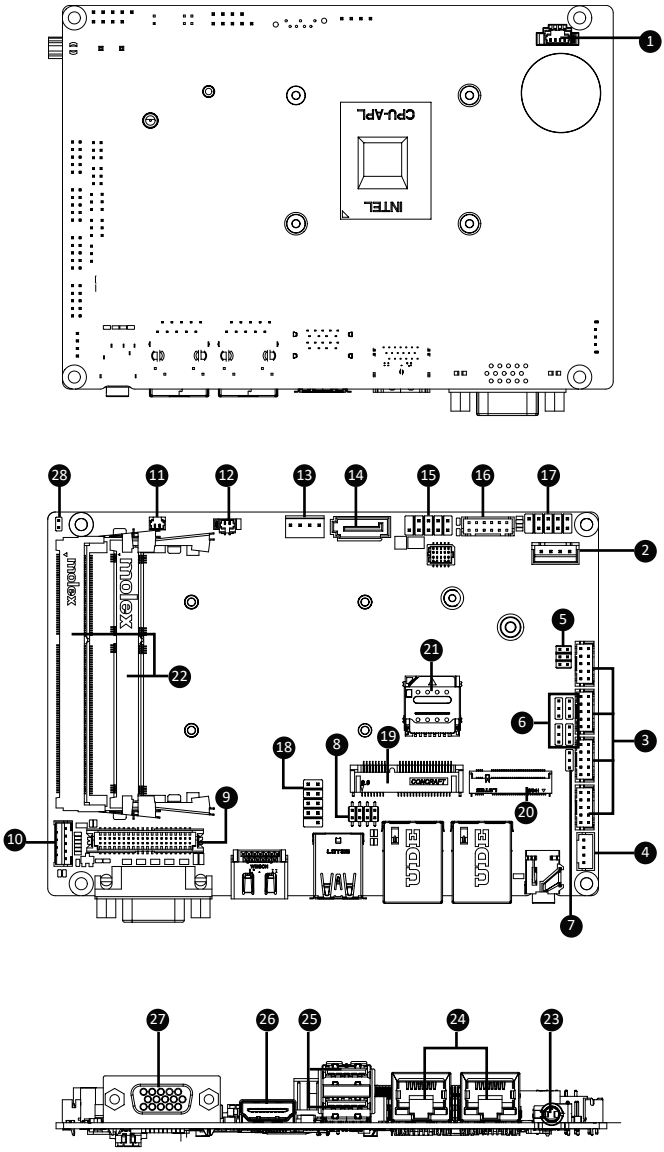
At the end of its serviceable life, this product should not be treated as household or general waste. It should be handed over to the applicable collection point for the recycling of electrical and electronic equipment, or returned to the supplier for disposal.

Chapter 3

Chapter 3 – Hardware Information

GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

3.1 Jumpers and Connectors



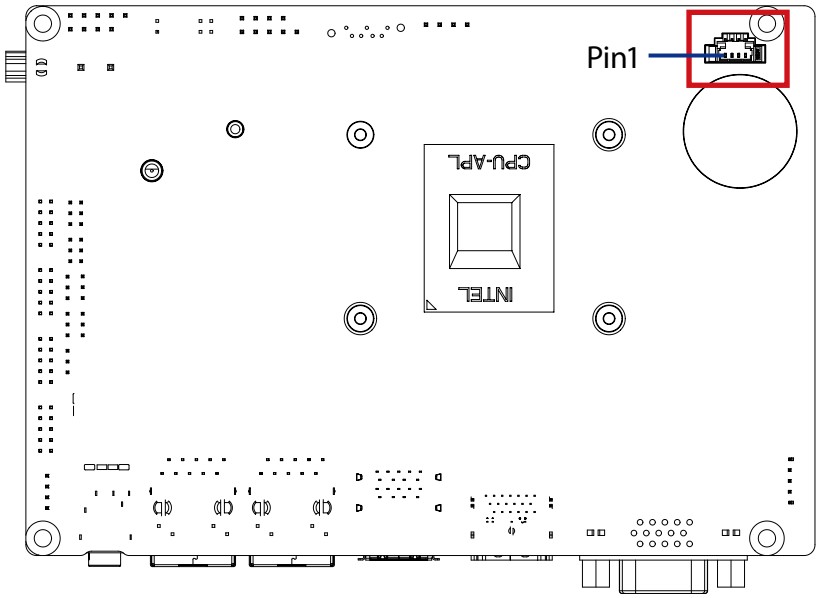
No	Code	Description
1	FAN	FAN connector
2	DC_IN	DC IN 1x4pin power connector
3	COM1 COM2 COM3 COM4	Serial port header COM1 : RS-232/422/485 & RI/5V/12V COM2, COM3, COM4 : RS-232
4	SPK_OUT	Speaker out connector
5	JCOM1	RI# pin RI#/5V/12V Select jumper for COM1 port
6	JRS11-JRS14	RS11-14 select jumper for serial port
7	AT_CN	AT/ATX mode select jumper
8	LSW	LVDS resolution jumper
9	LVDS	LVDS connector
10	BKL_CN	Backlight Control connector
11	BUZZER	buzzer header
12	BATTERY	Battery cable connector
13	SATAPW	SATA power connector
14	SATAIII	SATA 6Gb/s Connector
15	FUSB2_1	USB 2.0 header
16	GPIO_CNT	General Purpose input/output header
17	SYS_PANEL	Front panel header
18	FUSB2_2	USB 2.0 header
19	MPCIE	Mini-PCIe slot
20	M2M	M.2 slot, 2242 M-key
21	SIM_CARD	3G/4G SIM Slot

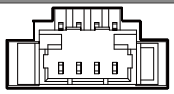
GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

No	Code	Description
22	SODIMMA, SODIMMB	2 x DDR3L SO-DIMM sockets
23	Audio jack	Line out
24	LAN1, LAN2	2 x RJ45 Ports
25	FUSB30	2 x USB 3.2 Gen 1
26	HDMI	HDMI connector
27	VGA	VGA Port
28	CLR_CMOS	Clear CMOS jumper

3.2.1 FAN (FAN connector)

1



CPU/System FAN

1 2 3 4

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

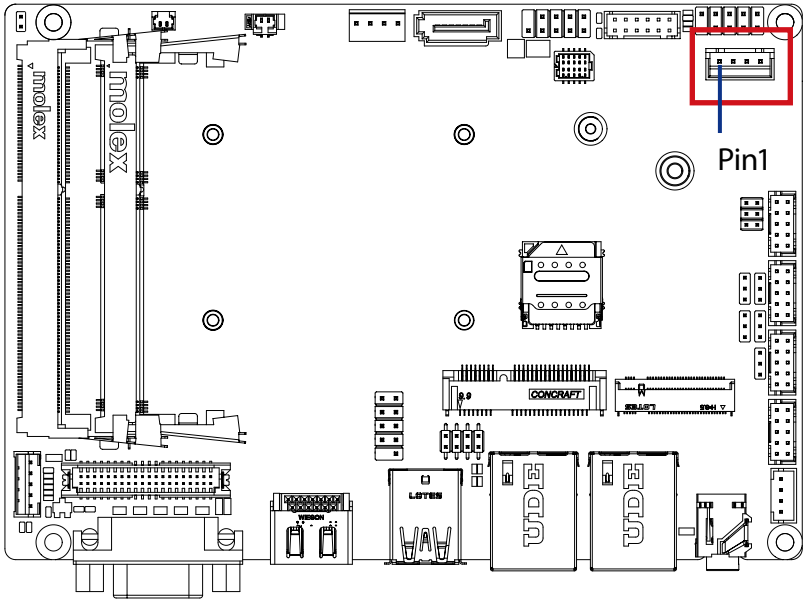
Connector type
1x4pin header, pitch 1.25mm

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

GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

3.2.2 DC IN (DC IN 1x4pin power connector)

❷



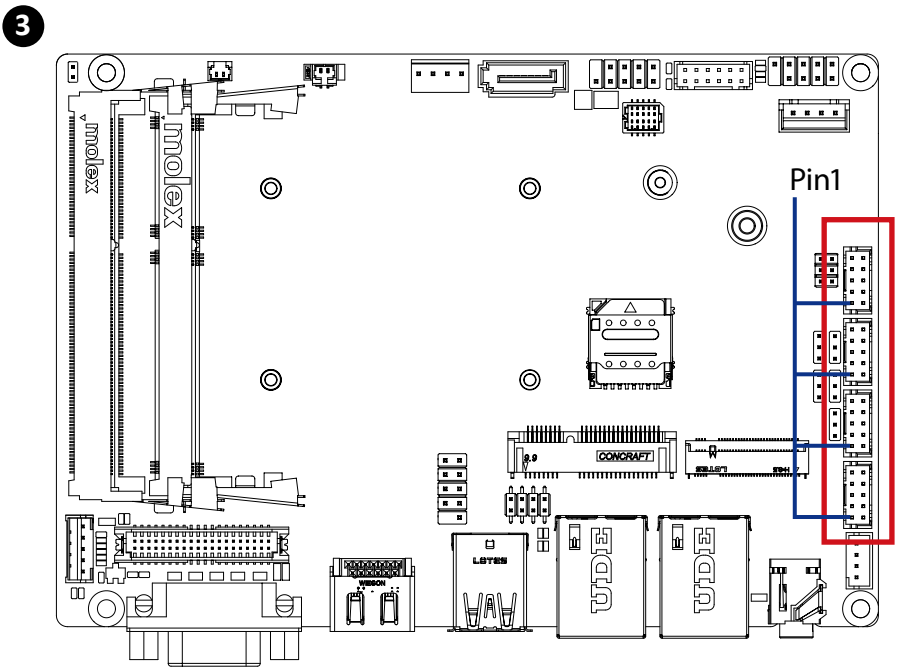
DC in Connector
DC_IN 1 4

Connector PN	Vendor
753-81-04TW00	PINREX

Connector type
1x4pin header, pitch 2.5mm

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

3.2.3 COM1, COM2, COM3, COM4 (Serial port header)



Serial Port Cable Connector
9 10 1 2

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	–	–

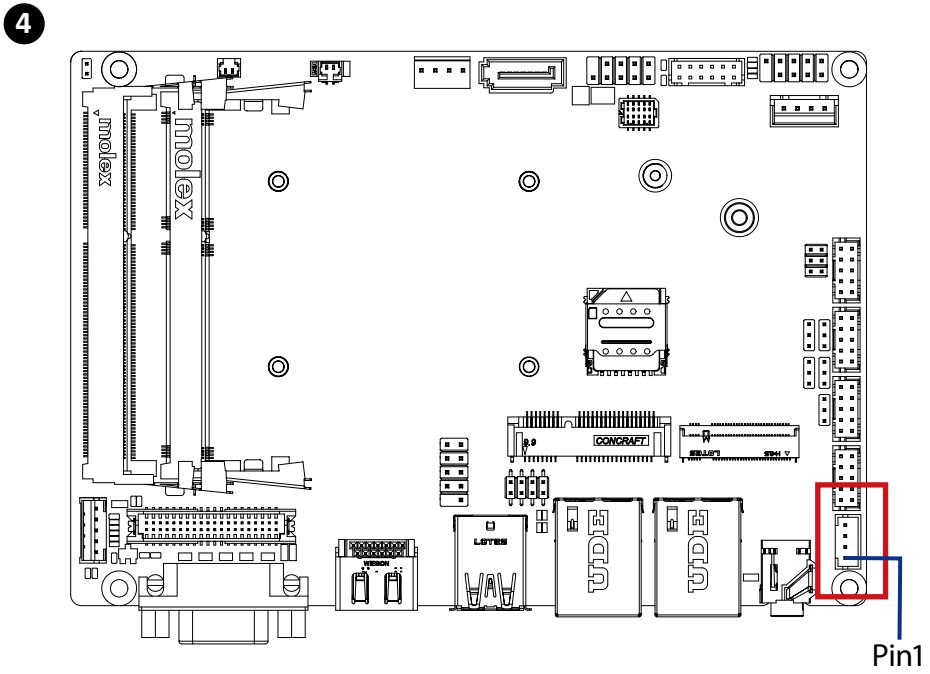
Connector PN	Vendor
725-81-10TW00	PINREX
A2004WV-2X05P46	JOINT-TECH

Connector type
2x5pin header, pitch 2.0mm

Note :
COM1 : Support RS-232/422/485 & RI/5V/12V
For RI/5V/12V jumper setting, please see P. 31
COM2, COM3, COM4 : Support RS-232 only

GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

3.2.4 SPK_OUT (Speaker out connector)



Speaker out connector
4 1

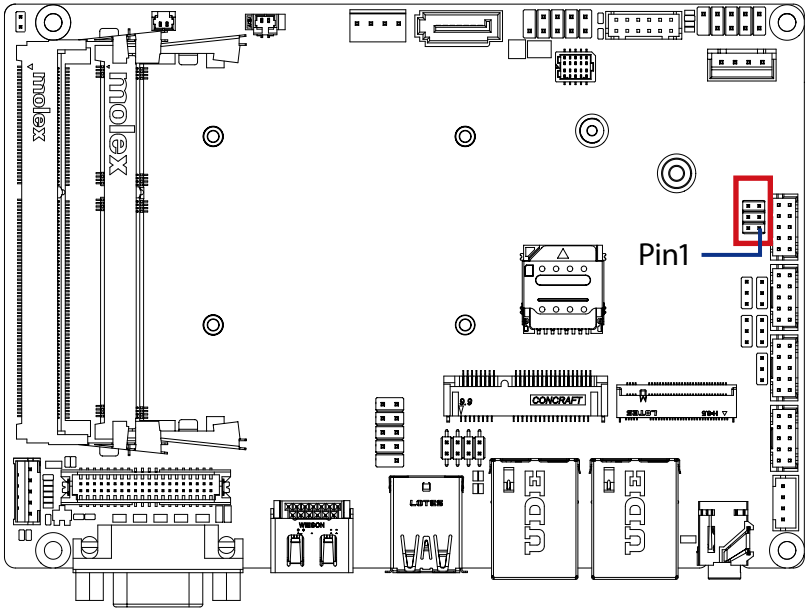
Pin No.	Definition
1	Speaker Out R+
2	Speaker Out R-
3	Speaker Out L-
4	Speaker Out L+

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

Connector type
1x4pin header, pitch 2.0mm

3.2.5 JCOM1 (RI# pin RI#/5V/12V Select jumper for COM1 port)

❺



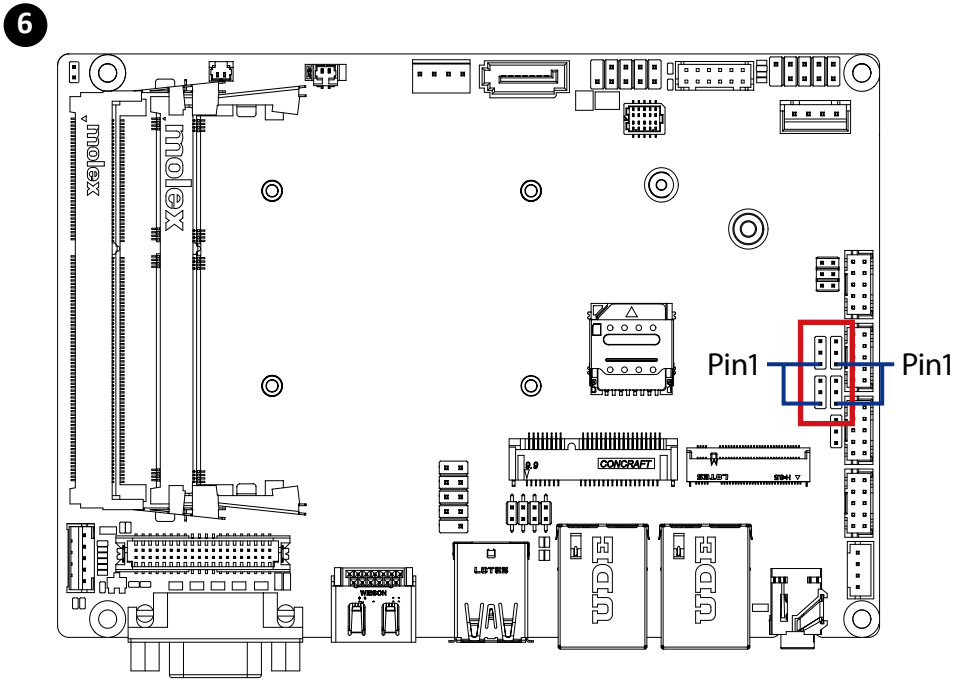
JCOM1 Jumper Select	
	1-2 Close: 5V (Power COM)
	3-4 Close: RI (Stand COM)
	5-6 Close: 12V (Power COM)

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

Connector type
2x3pin header, pitch 2.0mm

GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

3.2.6 JRS11-JRS14 (RS11-14 select jumper for serial port)



JRS 11-14 Jumper
JRS13 JRS14 JRS12 JRS11
RS-232 (Default)

Connector PN	Vendor
220-96-03GB01	PINREX

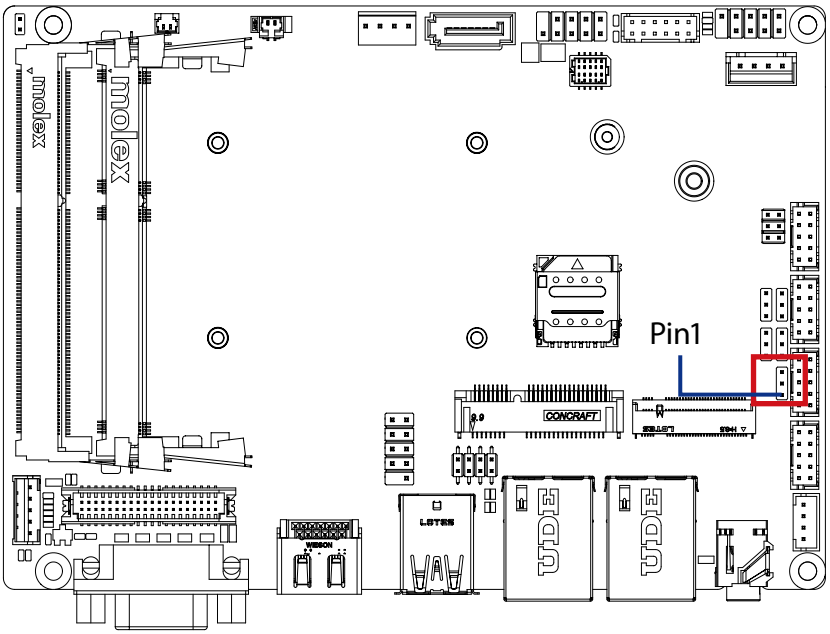
Connector type
1x3pin header, pitch 2.0mm

HW jump Configuration
Pin1, Pin2 Close is 1 Pin2, Pin3 Close is 0

JRS11	JRS12	JRS13	JRS14	Mode	Status
0	0	0	1	RS-422 Full Duplex	1T/1R RS-422
0	0	1	1	Pure RS-232	3T/5R RS-232 (Default)
0	1	0	1	RS-485 Half Duplex	1T/1R RS-485, TX ENABLE Low Active
0	1	1	1	RS-485 Half Duplex	1T/1R RS-485, TX ENABLE High Active

3.2.7 AT_CN (AT/ATX mode select jumper)

7



AT/ATX mode select jumper	
	1-2 Close : AT mode.
	2-3 Close : ATX mode. (Default setting)

Connector PN	Vendor
220-96-03GB01	PINREX

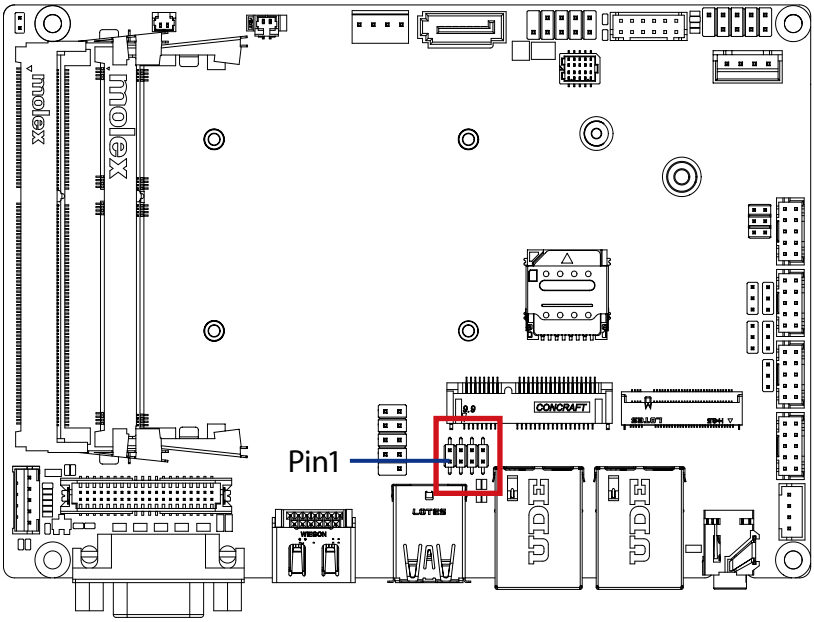
Connector type
1x3pin header, pitch 2.0mm

Pin No.	Definition
1	AT MODE
2	Detect
3	ATX MODE

GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

3.2.8 LSW (LVDS resolution jumper)

8



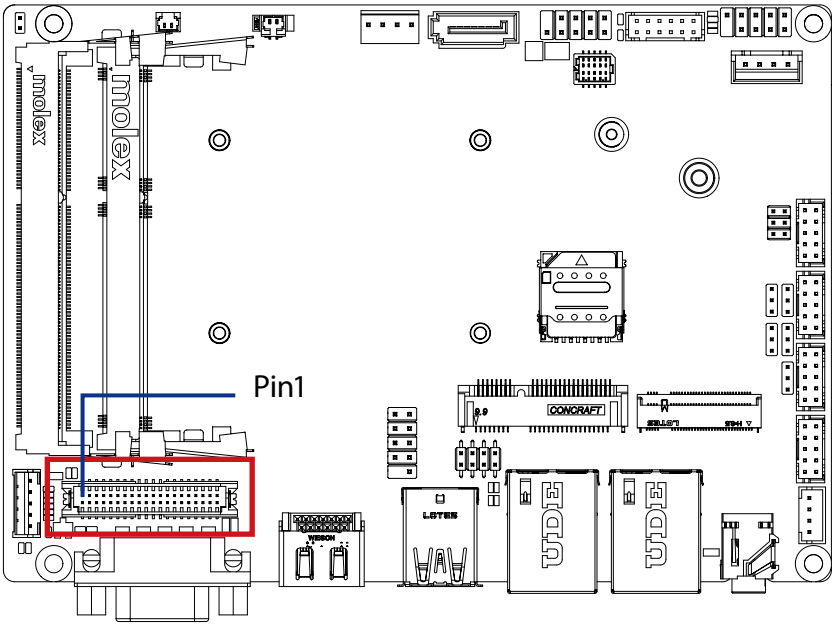
LVDS Resolution Jumper			
Jumper Setting	Resolution	Jumper Setting	Resolution
1 8	800 x 600 18bit (default)	1 8	1366 x 768 24bit
1 8	1024 x 768 18bit	1 8	1440 x 900 24bit
1 8	1024 x 768 24bit	1 8	1400 x 1050 24bit
1 8	1024 x 600 18bit	1 8	1600 x 900 24bit
1 8	1280 x 800 18bit	1 8	1680 x 1050 24bit
1 8	1280 x 960 18bit	1 8	1600 x 1200 24bit
1 8	1280 x 1024 24bit	1 8	1920 x 1080 24bit
1 8	1366 x 768 18bit	1 8	1920 x 1200 24bit

Connector PN	Vendor
222-97-04GBE1	PINREX

Connector type
2x4pin header, pitch 2.0mm

3.2.9 LVDS (LVDS connector)

9



LVDS Connector			
1			39
2			40

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

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.

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

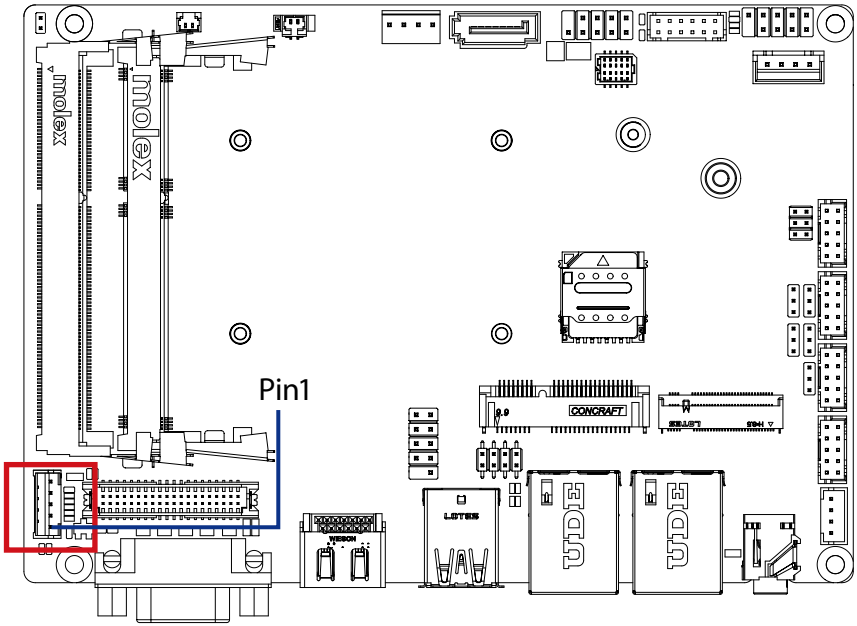
Connector type
2x20pin header, pitch 1.25mm

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

GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

3.2.10 BKL_CN (Backlight control connector)

10



Backlight control connector
5
1

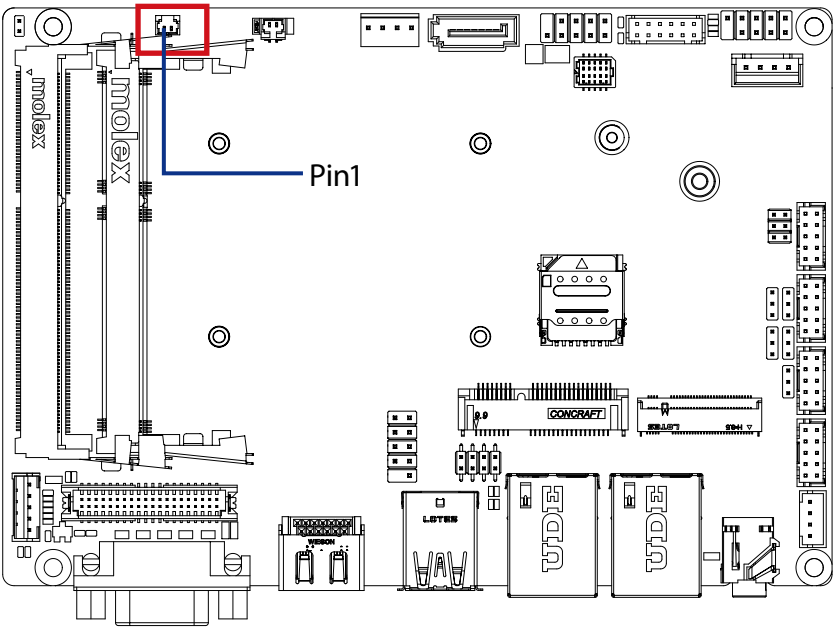
Connector PN	Vendor
721-81-05TW00	PINREX
A2001WV-05P146	JOINT-TECH

Connector type
1x5pin header, pitch 2.0mm

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

3.2.11 BUZZER (buzzer header)

11



Buzzer

Pin No.	Definition
1	SPKR
2	5V

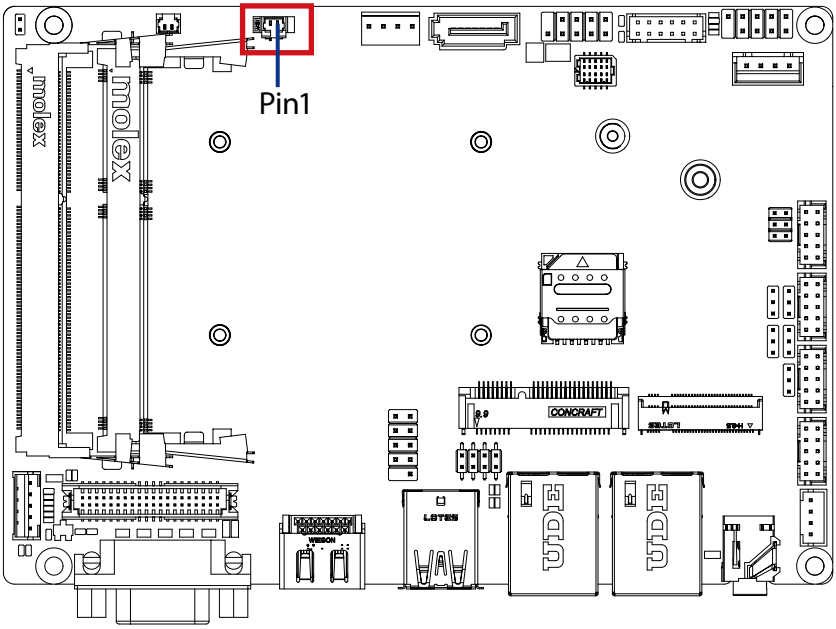
Connector PN	Vendor
712-71-02TW01	PINREX
A1250WV-02P	JOINT-TECH

Connector type
1x2pin header, pitch 1.25mm

GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

3.2.12 BATTERY (Battery cable connector)

12



Battery Cable Connector
2 1

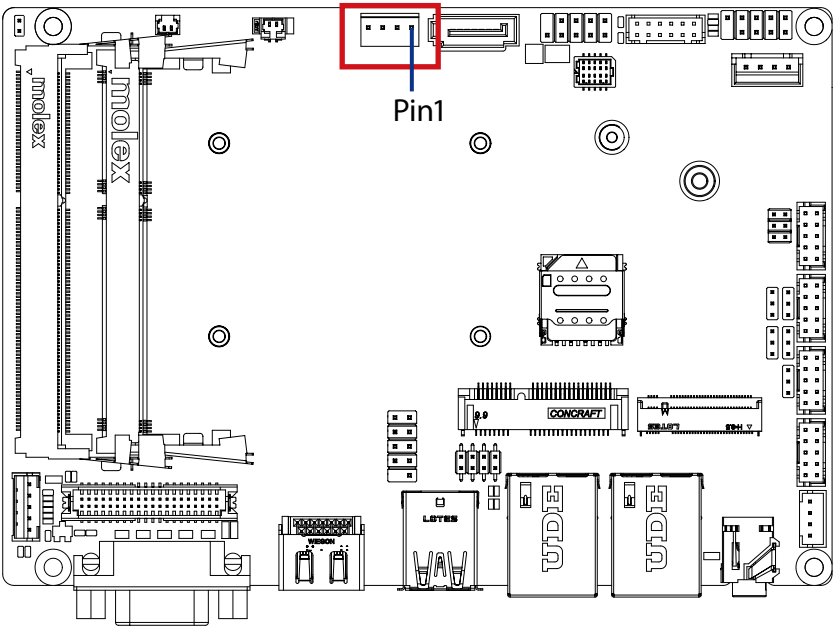
Pin No.	Definition
1	3.3V RTC
2	GND

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

Connector type
1x2pin header, pitch 1.25mm

3.2.13 SATAPW (SATA power connector)

13



Hard Disk Power Connector
4 ■■■■ 1

Connector PN	Vendor
743-81-04TW00	PINREX

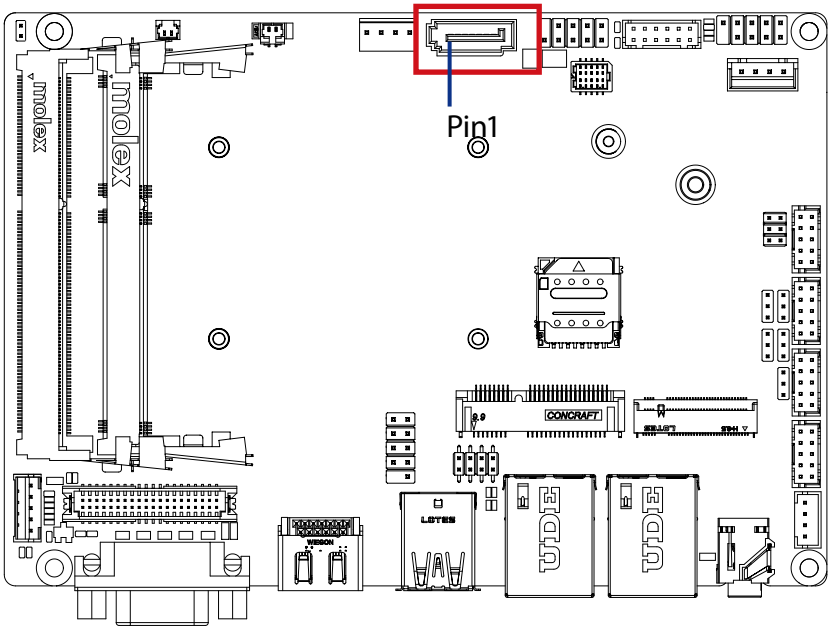
Connector type
1x4pin header, pitch 2.54mm

Pin No.	Definition
1	+12V
2	GND
3	GND
4	VCC

GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

3.2.14 SATAIII (SATA 6Gb/s Connector)

14



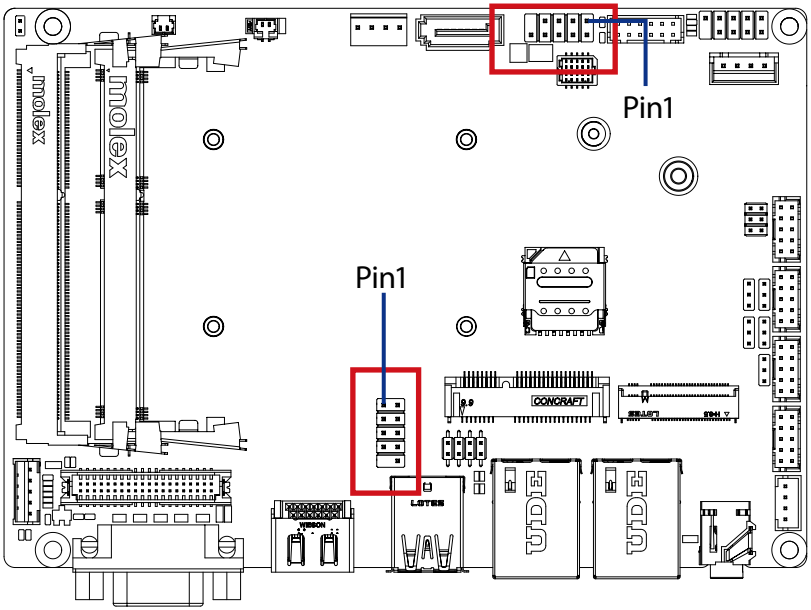
SATA 6Gb/S Connector

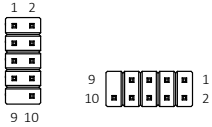
Connector PN	Vendor
WAT3M-07A1G3BU4W	WINWIN
ABA-SAT-054-S15	LOTES

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

3.2.15 FUSB2_1, FUSB2_2 (USB 2.0 header)

15 18



USB 2.0 Header


Pin No.	Definition
1	5V
2	5V
3	DXn
4	DYn
5	DXp
6	DYp
7	GND
8	GND
9	No Pin
10	No Connect

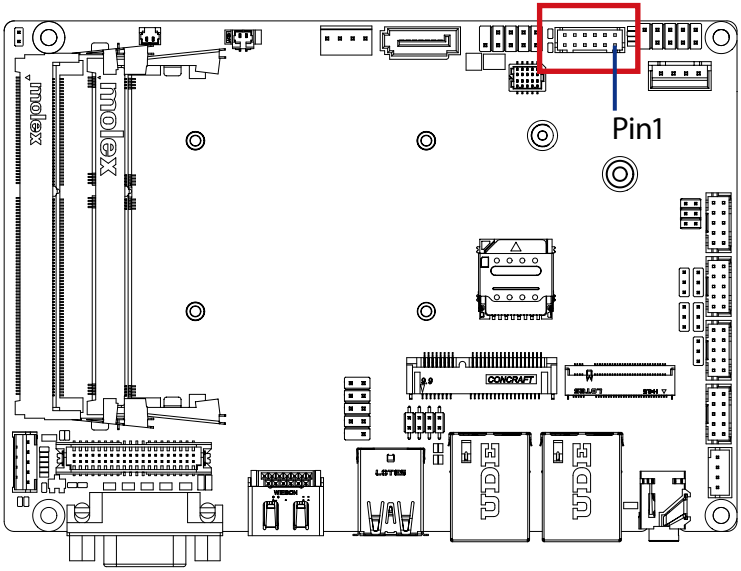
Connector PN	Vendor
210-92-05GB04	PINREX
PH10R53BAZ009	HORNGTONG

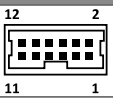
Connector type
2x5pin header, pitch 2.54mm

GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

3.2.16 GPIO_CNT (General Purpose input/output header)

16



GPIO Connector


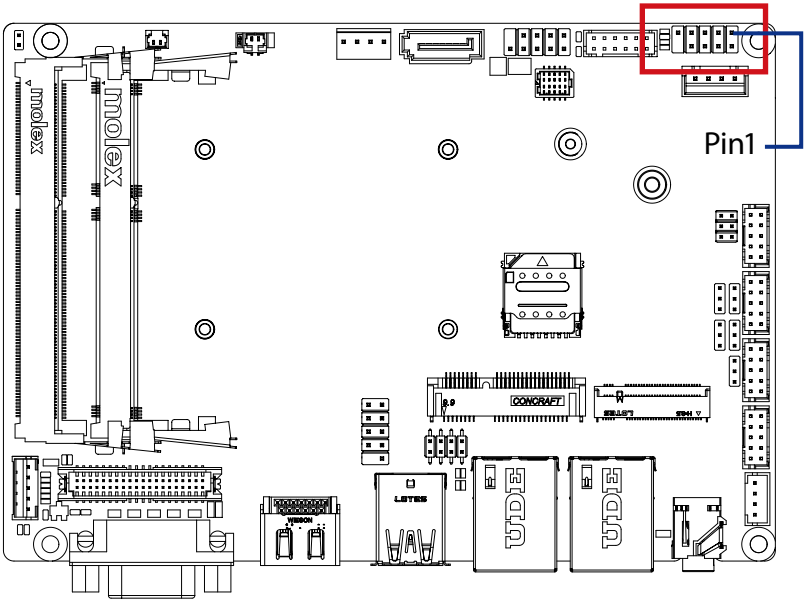
Pin No.	Definition
1	GPIO-output_1
2	GPIO-input_1
3	GPIO-output_2
4	GPIO-input_2
5	GPIO-output_3
6	GPIO-input_3
7	GPIO-output_4
8	GPIO-input_4
9	SMBus Clock
10	SMBus DATA
11	5V
12	GND

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

Connector type
2x6pin header, pitch 2.0mm

3.2.17 SYS_PANEL (Front panel header)

17



System Panel Header

Connector PN	Vendor
210-92-05GW5W	PINREX

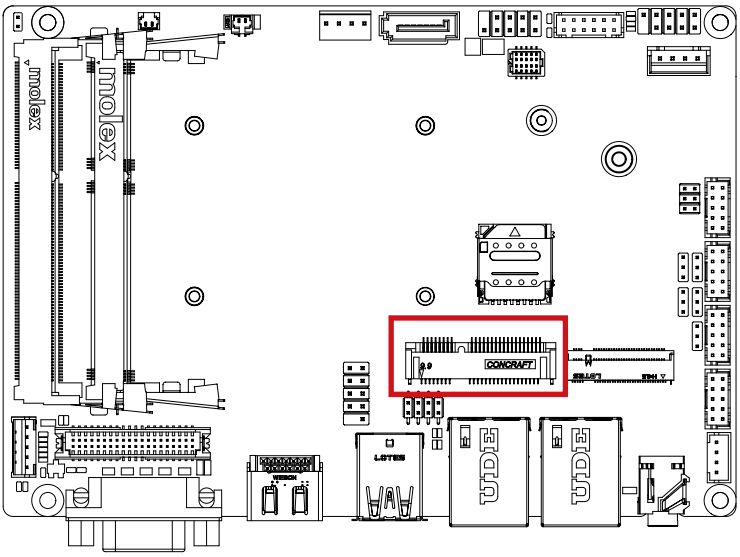
Connector type
2x5pin header, pitch 2.54mm

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

GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

3.2.18 MPCIE (Mini PCIe slot)

19



Mini PCIe Connector
2 52 1 51

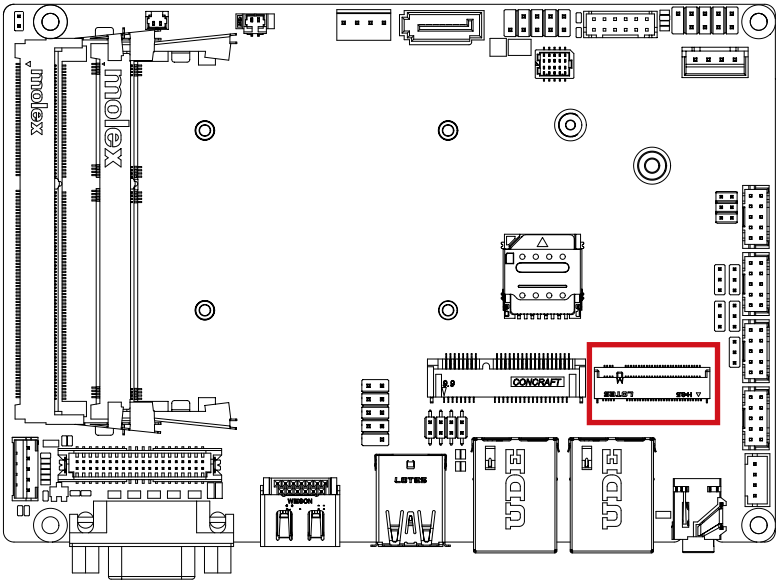
Pin No.	Definition	Pin No.	Definition
1	PCIE WAKE	2	3.3V
3	NC	4	GND
5	NC	6	NC
7	PCIE Clock Request	8	SIM PWR
9	GND	10	SIM DATA
11	PCIE Clock n	12	SIM Clock
13	PCIE Clock p	14	SIM Reset
15	GND	16	UIM VPP3
17	NC	18	GND
19	NC	20	WLAN_DISABLE
21	GND	22	Reset
23	PCIE RXn	24	3.3V
25	PCIE RXp	26	GND
27	GND	28	NC
29	GND	30	SMB Clock

Pin No.	Definition	Pin No.	Definition
31	PCIE TXn	32	SMB DATA
33	PCIE TXp	34	GND
35	GND	36	USB Dn
37	GND	38	USB Dp
39	3.3V	40	GND
41	3.3V	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	NC
49	NC	50	GND
51	NC	52	3.3V

Connector PN	Vendor
AS0B221-S99Q-7H	FOXCONN

3.2.19 M2M (M.2 slot, 2242 M-key)

20



M.2 M Key Connector			
74			2
75			1

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	NC
11	NC	12	3.3V
13	NC	14	3.3V
15	GND	16	3.3V
17	NC	18	3.3V
19	NC	20	NC
21	GND	22	NC
23	NC	24	NC
25	NC	26	NC
27	GND	28	NC
29	NC	30	NC
31	NC	32	NC
33	GND	34	NC
35	NC	36	NC

Pin No.	Definition	Pin No.	Definition
37	NC	38	sleep
39	GND	40	NC
41	SATA0 RXp	42	NC
43	SATA0 RXn	44	NC
45	GND	46	NC
47	SATA0 TXn	48	NC
49	SATA0 TXp	50	Reset
51	GND	52	NC
53	NC	54	NC
55	NC	56	NC
57	GND	58	NC

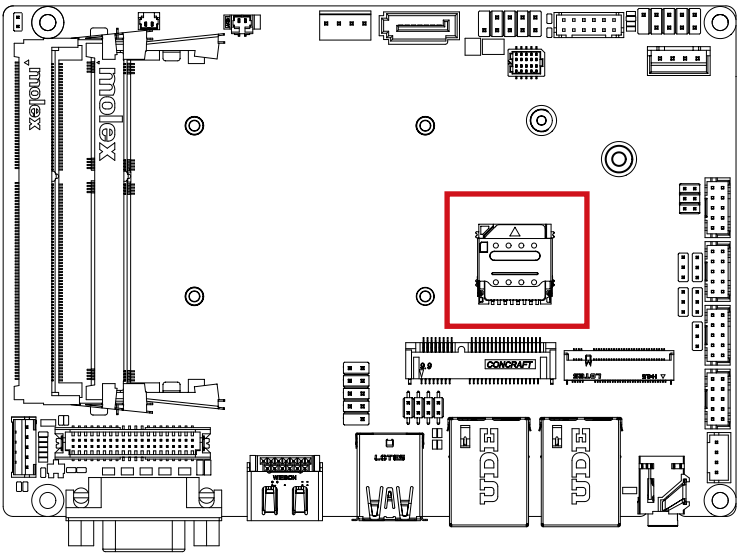
Pin No.	Definition	Pin No.	Definition
67	NC	68	NC
69	Detect	70	3.3V
71	GND	72	3.3V
73	GND	74	3.3V
75	GND		

Connector PN	Vendor
80159-8521	BELLWETHER

GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

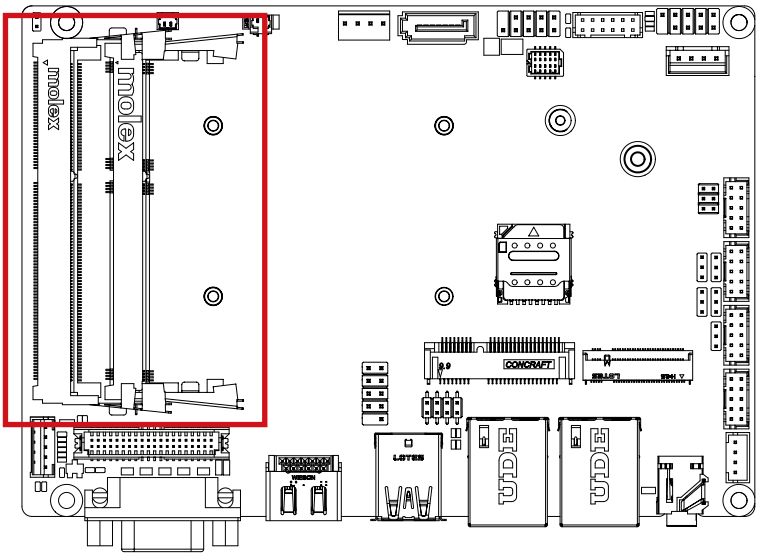
3.2.20 SIM_CARD (3G/4G SIM Slot)

21



3.2.21 SODIMMA, SODIMMB (2 x DDR3L SO-DIMM sockets)

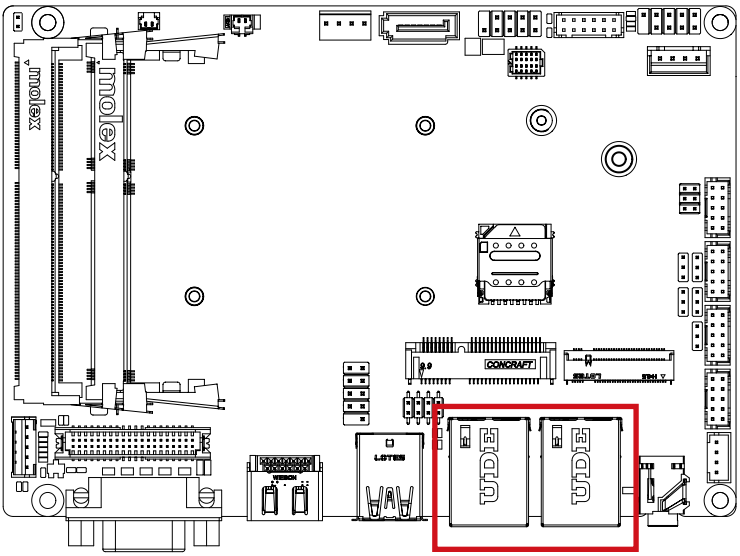
22



GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

3.2.22 LAN1, LAN2 (GbE LAN Connectors)

24



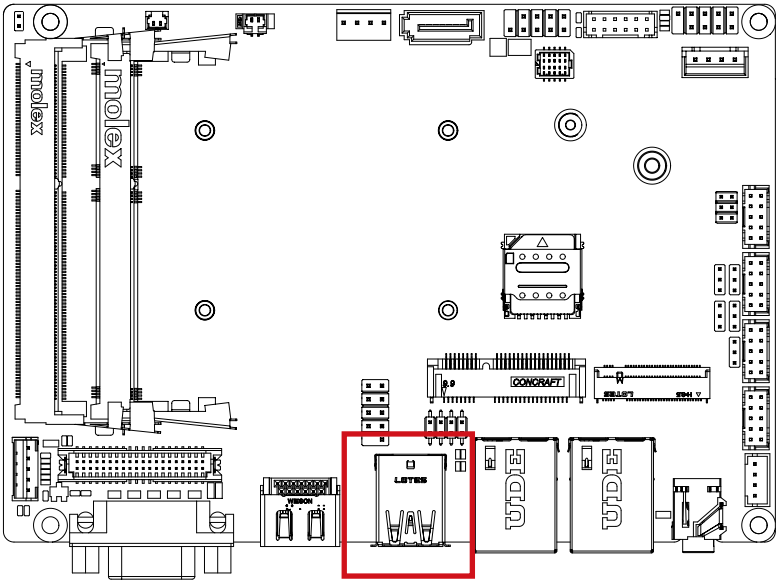
LAN Connector

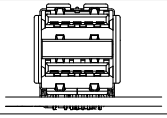
Status	Description
Orange On	1Gbps data rate
Green On	100Mbps data rate
Off	10Mbps data rate

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

3.2.23 FUSB30 (USB 3.2 Gen 1 connector)

25



USB Connector


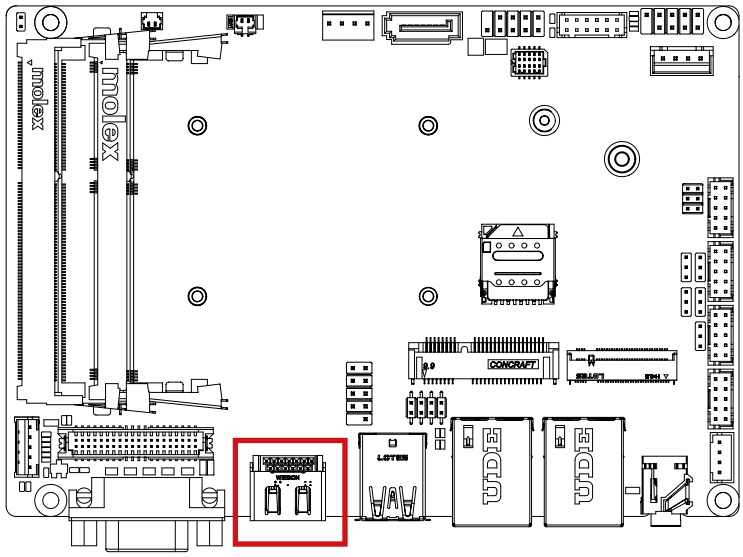
Pin No.	Definition
1	5V
2	D1n
3	D1p
4	GND
5	USB3_RX1n
6	USB3_RX1p
7	GND
8	USB3_TX1n
9	USB3_TX1p
10	5V
11	D0n
12	D0p

Pin No.	Definition
13	GND
14	USB3_RX2n
15	USB3_RX2p
16	GND
17	USB3_TX2n
18	USB3_TX2p

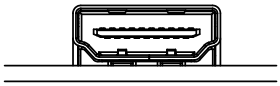
GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

3.2.24 HDMI (HDMI Connector)

26



HDMI Connector

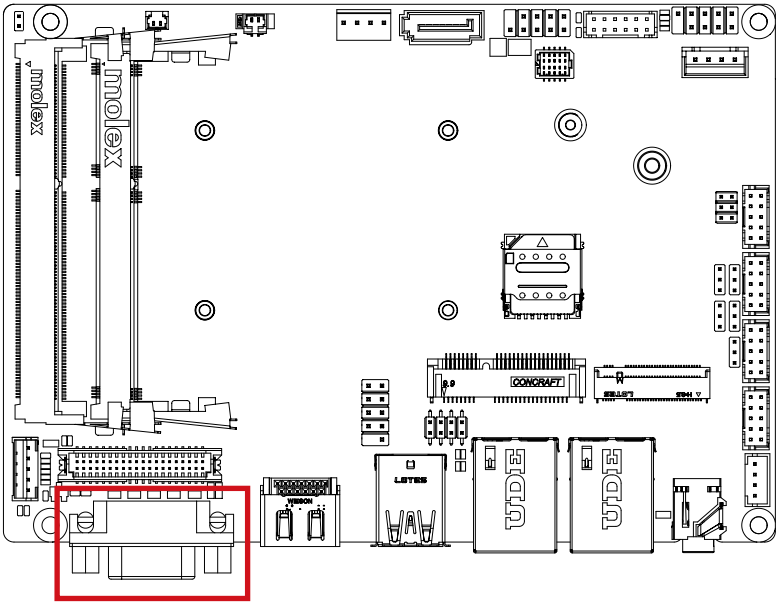


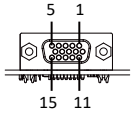
Pin No.	Definition	Pin No.	Definition
1	TX2p	20	TX2p
2	GND	21	GND
3	TX2n	22	TX2n
4	TX1p	23	TX1p
5	GND	24	GND
6	TX1n	25	TX1n
7	TX0p	26	TX0p
8	GND	27	GND
9	TX0n	28	TX0n
10	CLKp	29	CLKp
11	GND	30	GND
12	CLKn	31	CLKn
13	NC	32	NC

Pin No.	Definition	Pin No.	Definition
14	NA	33	NA
15	DDC Clock	34	DDC Clock
16	DDC Data	35	DDC Data
17	GND	36	GND
18	5V	37	5V
19	Hot Plug Detect	38	Hot Plug Detect

3.2.25 VGA (VGA port)

27

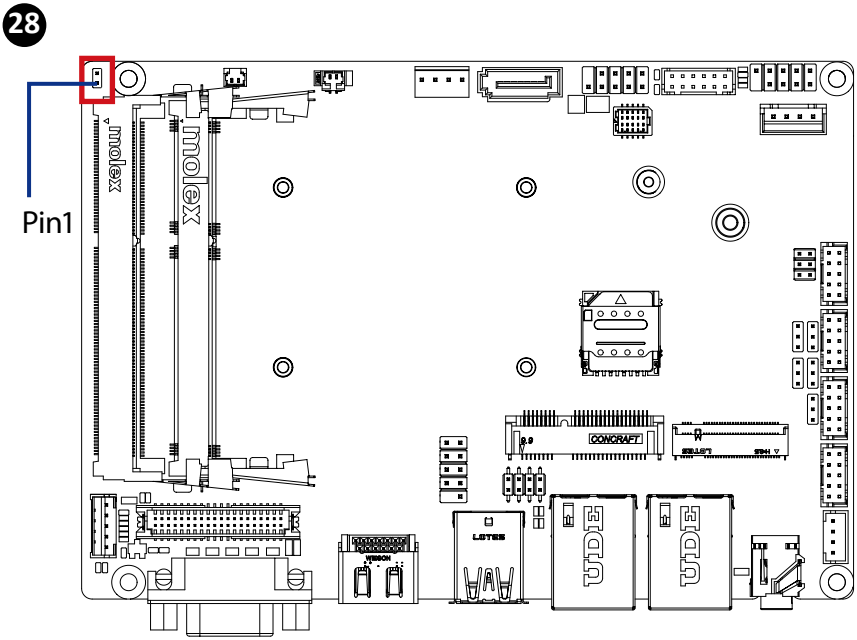


D-sub Connector


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

GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

3.2.26 CLR_CMOS (Clear CMOS jumper)



Clear CMOS Jumper
2 1

Pin No.	Definition
1	Clear CMOS
2	GND

Pin No.	Definition
Open: Normal Operation (Default setting) Close: Clear CMOS data.	

Connector PN	Vendor
210-91-02GBK2	PINREX

Connector type
1x2pin header, pitch 2.54mm

Chapter 4

Chapter 4 – BIOS

4.1 Introduction

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

4.1.1 How to Entering into BIOS menu

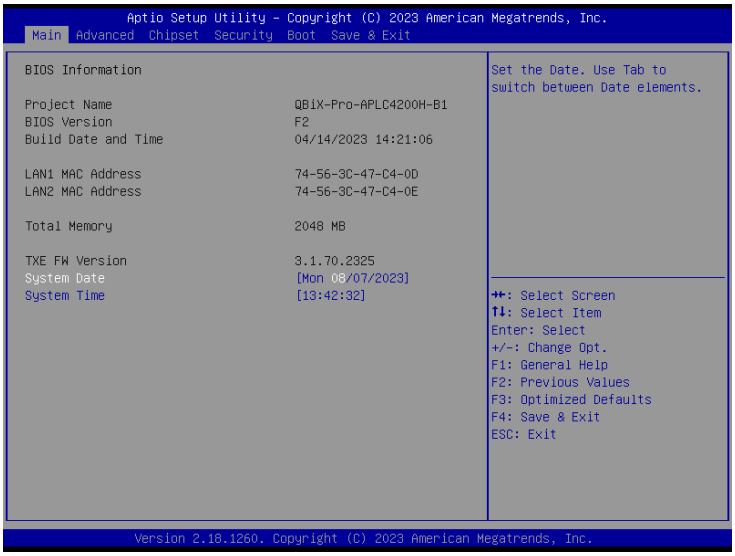
Once the system is power on, press the <DEL> key as soon as possible to access into BIOS Setup program.

4.1.2 Function Keys to setup in BIOS Setup program

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

4.2 The Main Menu

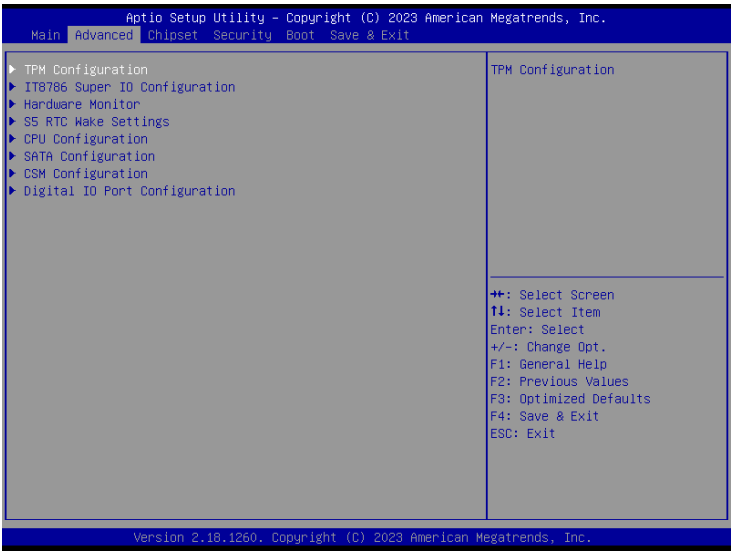
The main menu shows the basic system information.
Use arrow keys to move among the items.



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

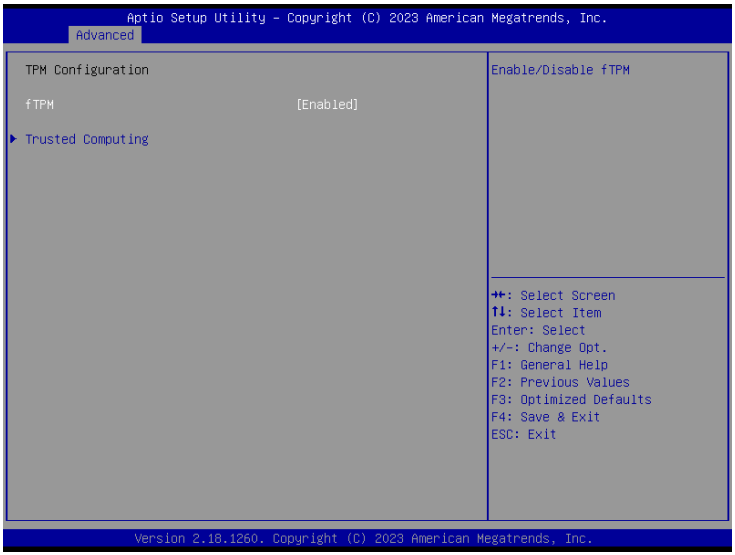
4.3 Advanced

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



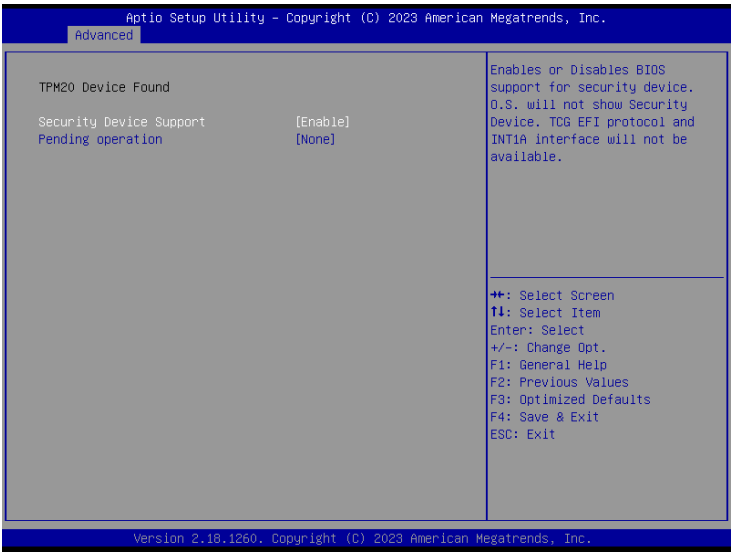
4.3.1 TPM Configuration

Use TPM Configuration submenu to choose TPM interface.



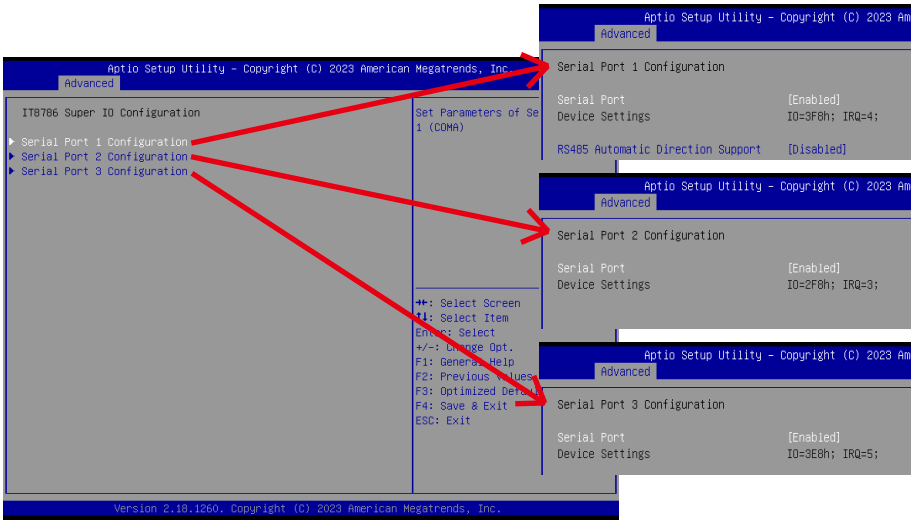
Item	Description
fTPM	**Enabled : Enables fTPM (Default setting)** **Disabled : Disables fTPM**

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



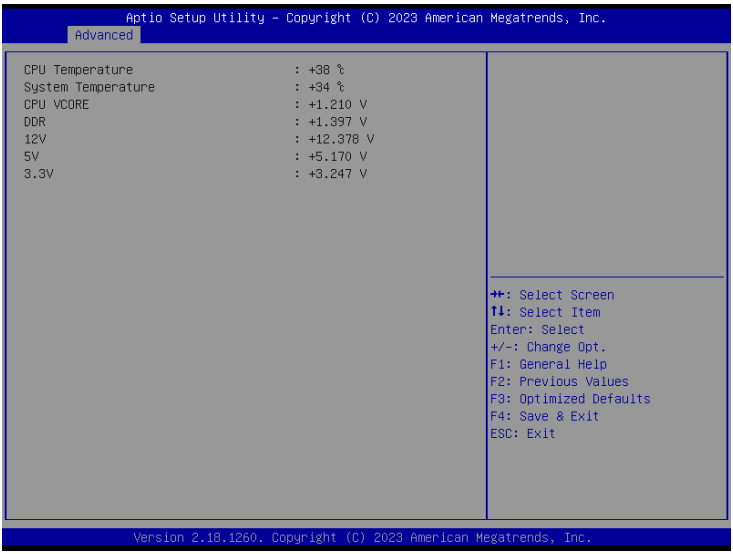
Item	Description
Security Device support	**Enabled : Enables TPM feature (Default setting)** **Disabled : Disables TPM feature**
Pending operation	**None : No execution will be conducted (Default setting)** **TPM clear : Set to clear data on TPM**

4.3.2 IT8786 Super IO Configuration



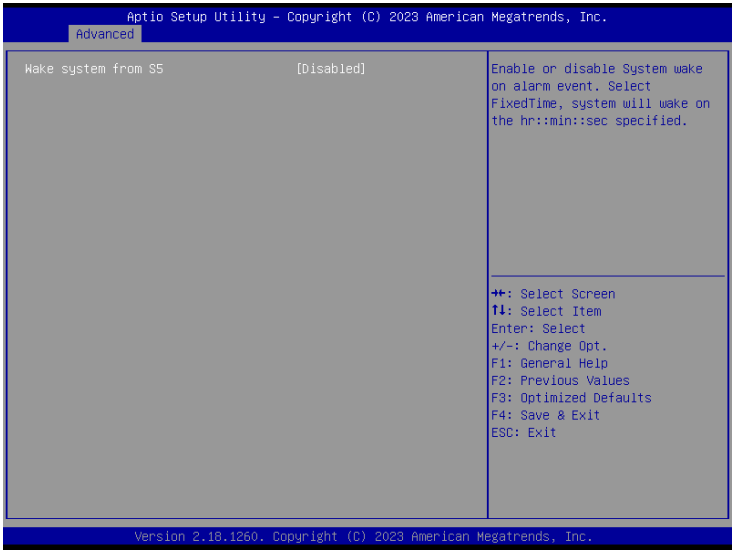
Item	Description
Serial Port 1 Configuration	Press [Enter] to configure advanced items : Serial Port : **Enabled : Enables allows you to configure the serial port settings** **Disabled : if Disabled, displays no configuration for the serial port** Device settings : Display the specified Serial Port base I/O address and IRQ RS485 Automatic Direction Support : **Enabled : Enables RS485 Automatic Direction Support function** **Disabled : Disables RS485 Automatic Direction Support function (Default setting)**
Serial Port 2 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
Serial Port 3 Configuration	

4.3.3 Hardware Monitor



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

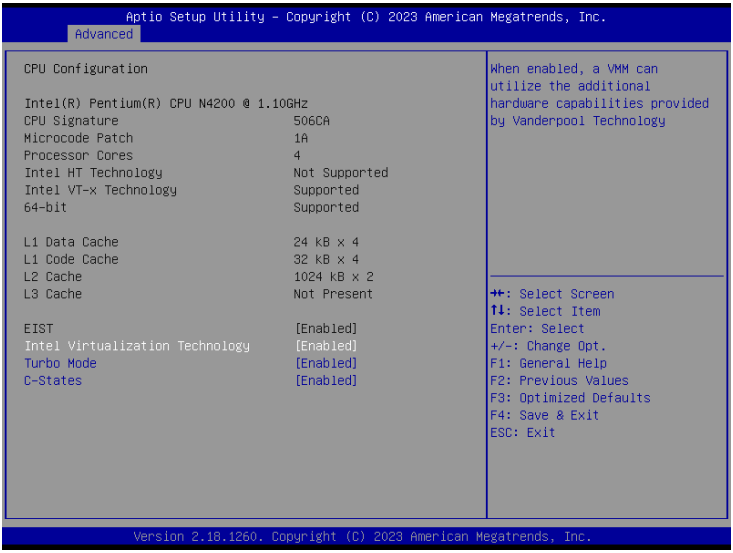
4.3.4 S5 RTC Wake Settings



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

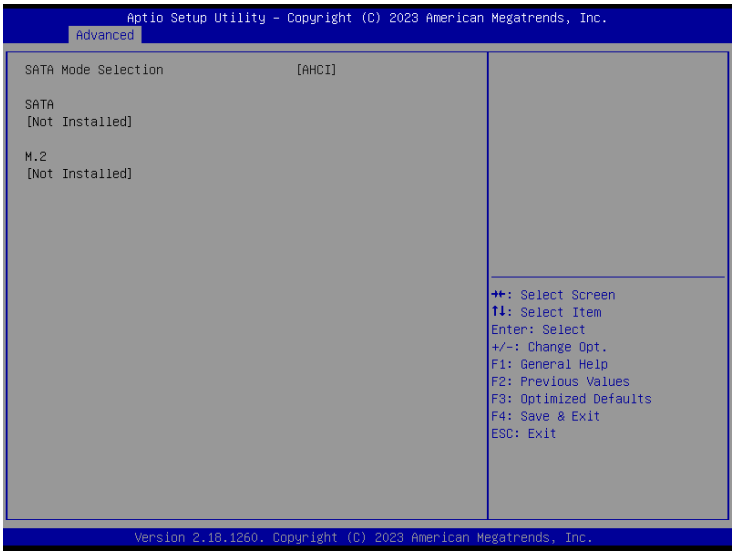
4.3.5 CPU Configuration

This submenu shows detailed CPU informations.



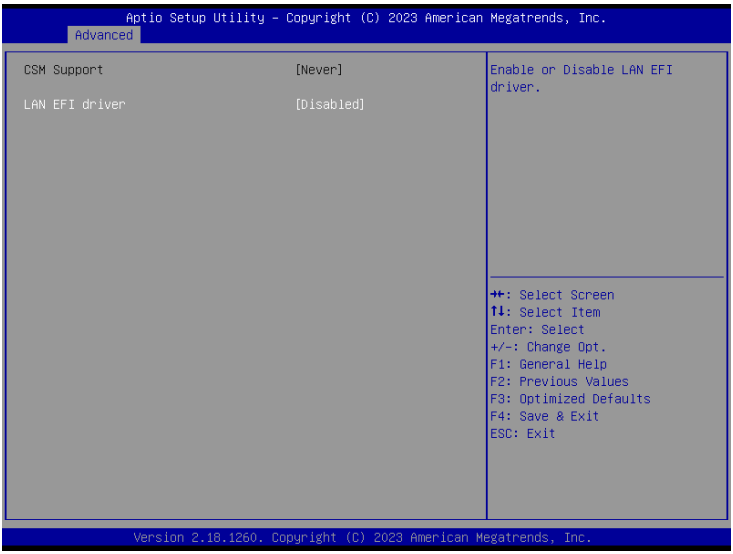
Item	Description
EIST	According to System loading, Enhanced Intel SpeedStep Technology (EIST)will automatically adjust the CPU voltage and core frequency to decrease heat and power consumption for power saving. **Enabled : Enables EIST Technology (Default setting)** **Disabled : Disables EIST Technology**
Intel Virtualization Technology	Virtualization enhanced by Intel® Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems. **Enabled : Enables Intel Virtualization Technology (Default setting)** **Disabled : Disables Intel Virtualization Technology**
Turbo Mode	**Enabled : Enables Turbo Mode (Default setting)** **Disabled : Disables Turbo Mode**
C-states	Command CPU to enter into low power consumption mode when CPU is under idle mode. **Enabled : Enables C states (Default setting)** **Disabled : Disables C states**

4.3.6 SATA Configuration



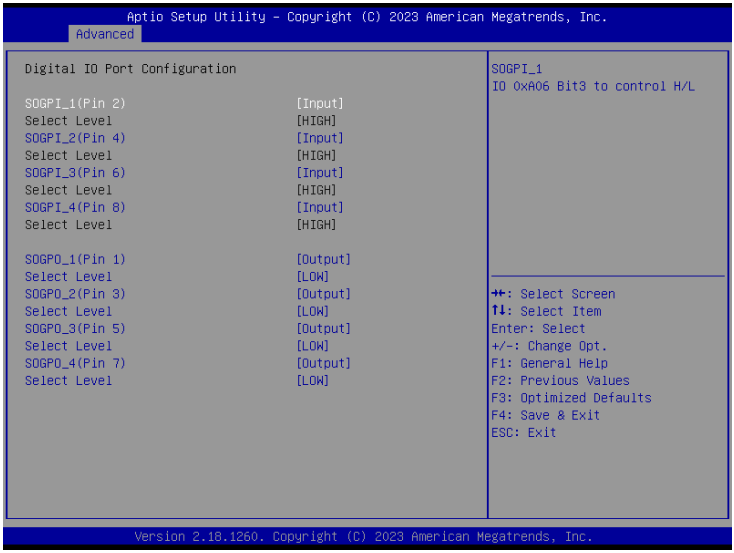
Item	Description
SATA Mode Selection	**AHCI : Configures the SATA controllers to AHCI mode. (Default setting)**
SATA	shows 2.5" SATA HDD/SSD information
M.2	shows M.2 SATA interface SSD information

4.3.7 CSM Configuration



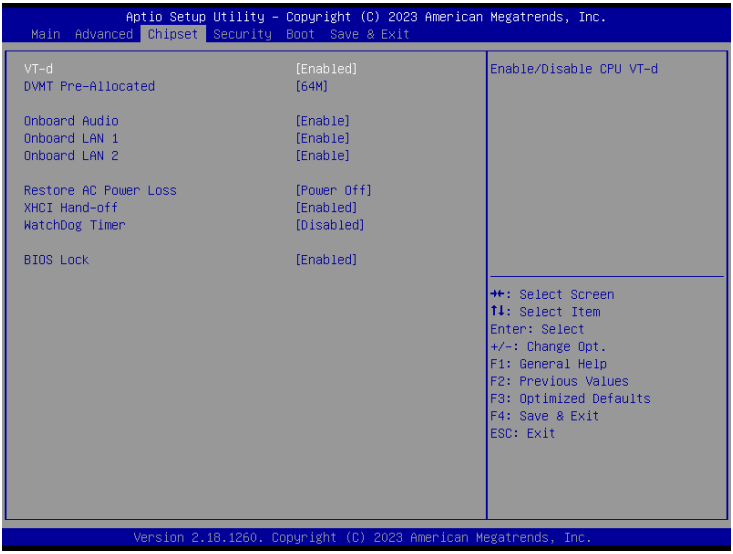
Item	Description
CSM Support	**Never : UEFI Mode only (Default setting)**
LAN EFI driver	When system is power on, install LAN driver under UEFI mode. **Disabled : Disables UEFI Network Stack (Default setting)** **Enabled : Enables UEFI Network Stack**

4.3.8 Digital IO Port Configuration



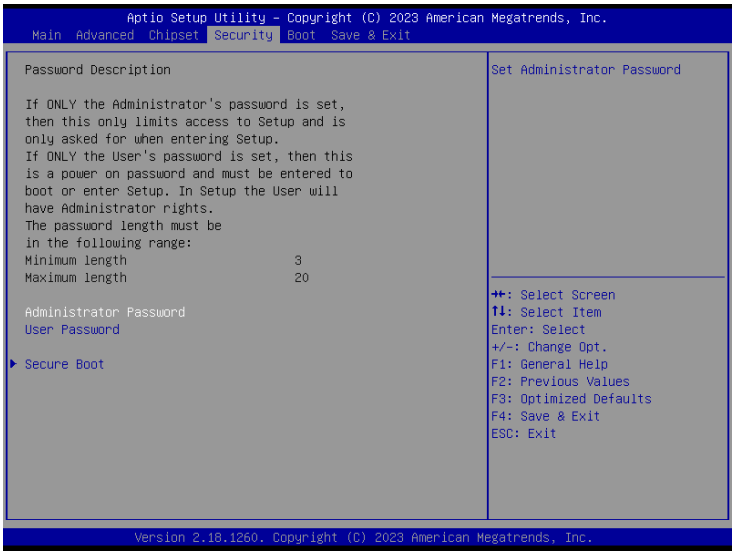
Item	Description
SOGPI_1 (Pin 2) **SOGPI_2 (Pin 4)** **SOGPI_3 (Pin 6)** **SOGPI_4 (Pin 8)**	Configure Digital IO Input values for each pin.
SOGPO_1 (Pin 1) **SOGPO_2 (Pin 3)** **SOGPO_3 (Pin 5)** **SOGPO_4 (Pin 7)**	Configure Digital IO Output values for each pin.

4.4 Chipset

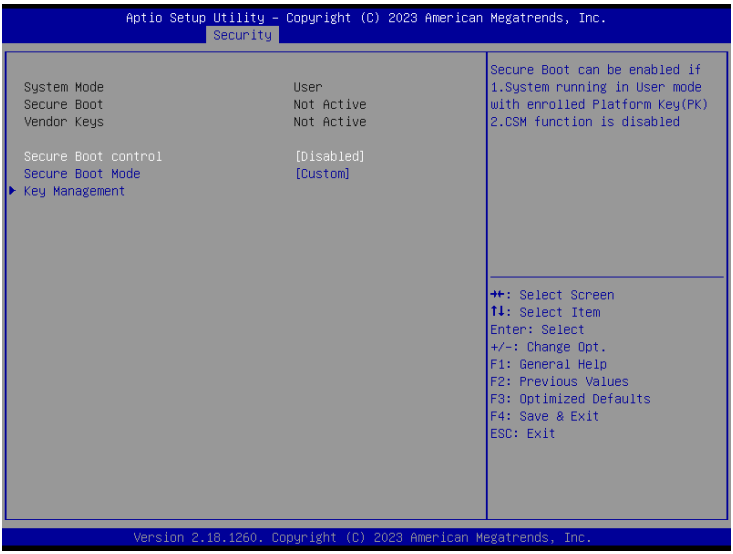


Item	Description
VT-d	**Enabled : Enables VT-d function (Default setting)** **Disabled : Disables VT-d function**
DVMT Pre-Allocated	Use DVMT Pre-Allocated to set the amount of system memory which is installed to the integrated graphics processor **Option items : 32M , 64M(Default setting) , 128M , 256M**
Onboard Audio	Enable/Disable onboard audio controller **Enabled : Enables onboard audio controller (Default setting)** **Disabled : Disables onboard audio controller**
Onboard LAN 1 **Onboard LAN 2**	Enable/Disable onboard LAN controller **Enabled : Enables onboard LAN controller (Default setting)** **Disabled : Disables onboard LAN controller**
Restore AC Power Loss	To set which option the system should returns if a sudden power loss occured **Power off : Do not power on when the power is back (Default setting)** **Power on : System power on when the power is back** **Last state : Restore the system to the state before power loss occures**
XHCI Hand-off	Enable/Disable XHCI Hand-off function **Enabled : Enables XHCI Hand-off function (Default setting)** **Disabled : Disables XHCI Hand-off function**
WatchDog Timer	Enable/Disable Watchdog Timer function **Enabled : Enables Watchdog Timer function** **Disabled : Disabled Watchdog Timer function (Default setting)**
BIOS Lock	Enable/Disable BIOS Lock function **Enabled : Enables BIOS Lock function (Default setting)** **Disabled : Disabled BIOS Lock funtion**

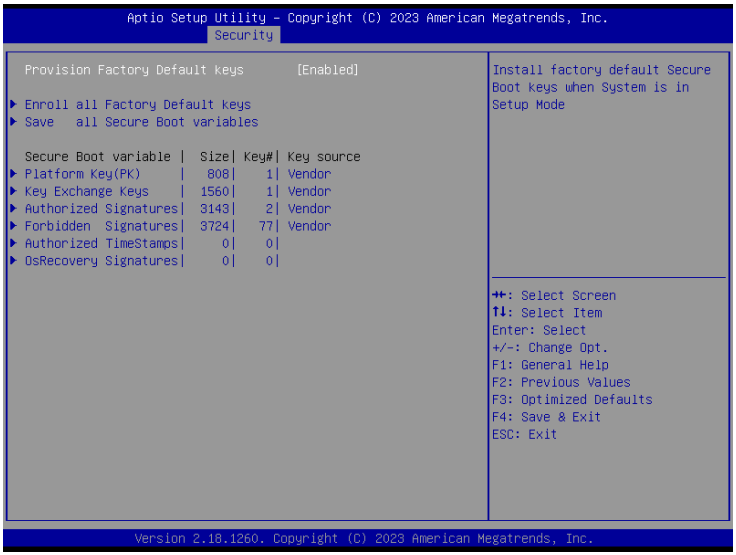
4.5 Security



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



Item	Description
Secure Boot control	Secure Boot requires all the applications that are running during the booting process to be pre-signed with valid digital certificates. Secure Boot can be enabled if : 1. system runningin User mode with enrolled Platform Key (PK) 2. CSM function is disabled **Disabled : Disables Secure Boot control function (Default setting)** **Enabled : Enables Secure Boot control function**
Secure Boot Mode	**Standard : Standard mode** **Custom : Custom mode (Default setting)**
Key Management	Enables expert users to modify Secure boot policy variables without full authentication Press <Enter> to configure the advanced items

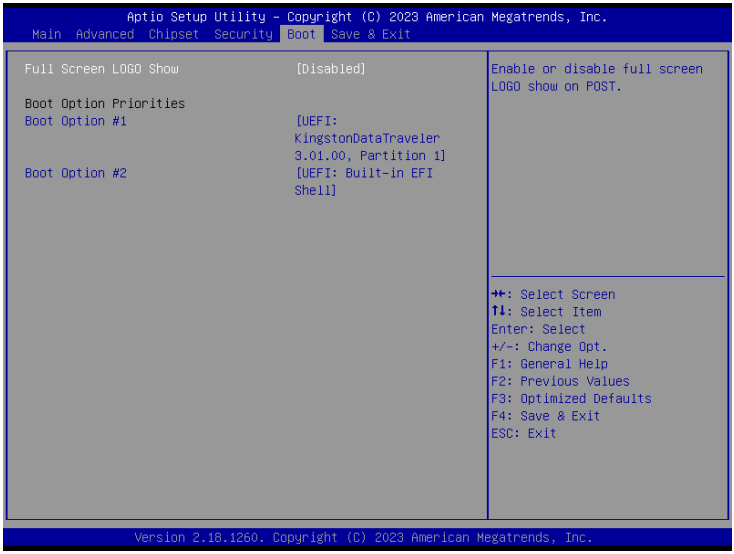


Item	Description
Provision Factory Default Keys	Install factory default Secure Boot keys when the system is in Setup mode **Enabled : Enables Factory Key Provision (Default setting)** **Disabled : Disables Factory Key Provision**
Enroll all Factory Default keys	Force system to User mode - install all Factory Default keys
Save all Secure Boot variables	Save NVRAM content of all Secure boot varaiables to the files in root folder on a target file system device

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

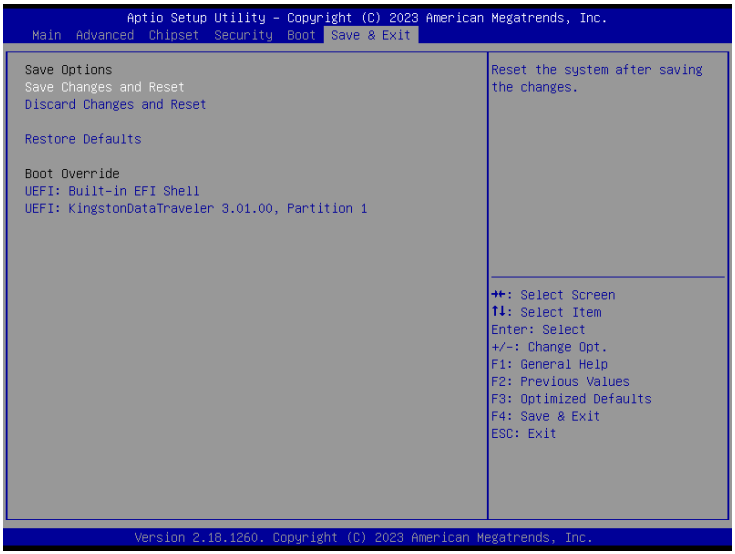
4.6 Boot

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



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

4.7 Save & Exit



Item	Description
Save Changes and Reset	After configuring all the options that you wish to change, choose this option to save all the changes and reboot the system **Yes : Agree to save and reset** **No : Cancel to save and reset**
Discard Changes and Reset	Choose this option to reboot the system without saving any changes **Yes : Agree to discard changes and reset** **No : Cancel to discard changes and reset**
Restore Defaults	Restore/Load default values for all the setup options **Yes : Agree to load optimized defaults** **No : Cancel to load optimized defaults**