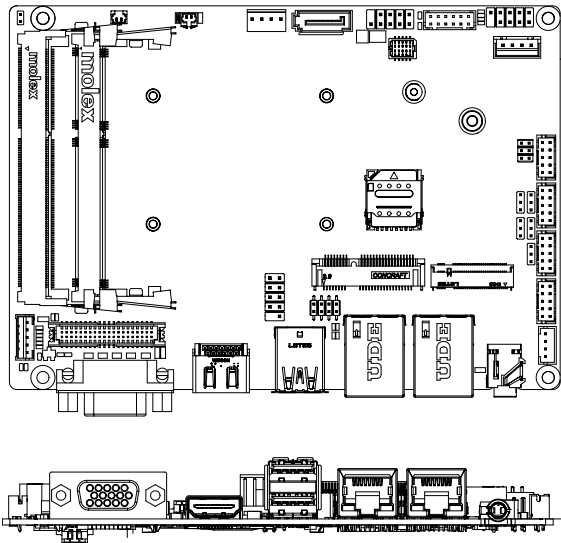


# QBiP-4200B/ QBiP-4200C/ QBiP-3350A/ QBiP-E3940A/ QBiP-E3940AT

3.5" SBC Boards  
User's Manual V3.0



## Copyright Notice

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# Packing List

---

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

For QBiP-4200B/ QBiP-4200C/ QBiP-3350A/ QBiP-E3940A :

Item	Quantity
QBiP-4200B/ QBiP-4200C/ QBiP-3350A/ QBiP-E3940A	1
SATA power cable	1

For QBiP-E3940AT :

Item	Quantity
QBiP-E3940AT	1
SATA power cable	1
Fanless Heatsink	1

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

## About this Document

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

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

# Safety Precautions

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

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

dissipation.

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

## FCC Statement

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### **Warning!**



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

### **Caution:**

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

### **Attention:**

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



## China RoHS Requirements (CN)

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

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

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

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

备注: 此产品所标示之环保使用期限, 系指在一般正常使用状况下。

# China RoHS Requirement (EN)

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

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

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

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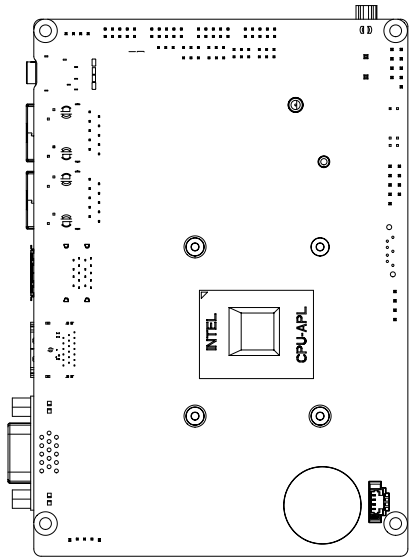
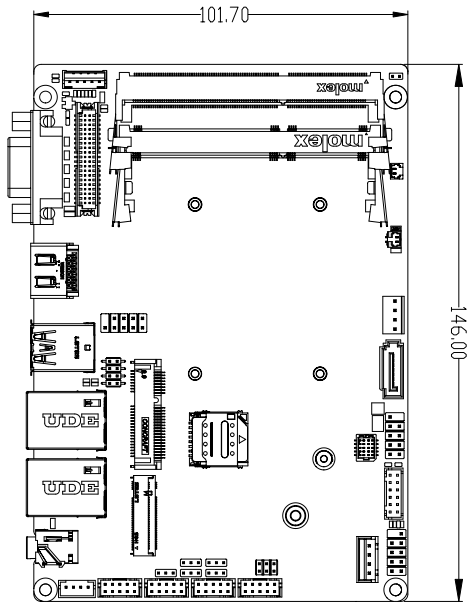
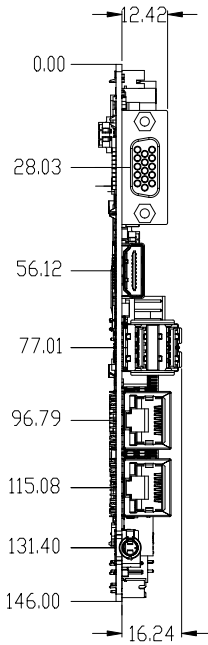
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# Chapter 1

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Chapter1 - Product Specifications  
QBiP-4200B/ QBiP-4200C/ QBiP-3350A/  
QBiP-E3940A/ QBiP-E390AT



## 1.1 Specifications- QBiP-4200B/ QBiP-4200C

Motherboard	QBiP-4200B	QBiP-4200C
Form Factor	3.5" SBC 146W x 101.7Dmm	
CPU	Intel® Pentium® N4200 Processor 14nm, 4 cores, 4 threads, up to 2.50 GHz TDP 6W	
Socket	1 x FCBGA1296	
Chipset	—	
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 (Intel® I211AT)	
Video	Integrated Graphics Processor -Intel® HD Graphics 505 1 x HDMI 1.4 port, supporting a maximum resolution of 3840x2160 @30Hz 1 x VGA port, supporting a maximum resolution of 1920x1080 @60Hz (with compatible displays) 1 x LVDS port, supporting a maximum resolution of 1920x1200 @60Hz  (3 independent display outputs)	
Audio	Realtek® ALC897	
Storage	1 x SATA 6Gb/s port 1 x eMMC 32GB	1 x SATA 6Gb/s port
Raid	—	
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	



Motherboard	QBiP-4200B	QBiP-4200C
Internal I/O	1 x 4-pin box power connector (+9V~36VDC) 1 x SATA Power header 1 x System fan header 1 x Front panel header 1 x 2W Speaker out header 4 x USB 2.0 headers 3 x COM headers (RS-232) 1 x COM header (RS-232/422/485 & RI/5V/12V) 1 x Backlight control header 1 x AT/ATX mode select jumper 1 x GPIO (8 bits) & SMBus header 1 x Buzzer header	
Rear I/O	1 x Headphone Jack 1 x HDMI 1 x VGA 2 x RJ45 LAN Ports 2 x USB 3.2 Gen 1	
TPM	1 x TPM header	
OS Compatibility	Windows 10 (x64)	
PSU Connectors	1 x 4-pin Box header power connector (+9~36V Full Range)	
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)	

\* Conditional DC-input 9V support with :

- (1) SATA\_PWR support 5V only
- (2) LVDS backlight cannot support
- (3) Total power consumption under 50W

## 1.2 Specifications- QBiP-3350A

Motherboard	QBiP-3350A
Form Factor	3.5" SBC 146W x 101.7Dmm
CPU	Intel® Celeron® N3350 Processor 14nm, 2 cores, 2 threads, up to 2.40 GHz TDP 6W
Socket	1 x FCBGA1296
Chipset	—
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 (Intel® I211AT)
Video	Integrated Graphics Processor -Intel® HD Graphics 500: 1 x HDMI port, supporting a maximum resolution of 3840x2160 @30Hz 1 x VGA port, supporting a maximum resolution of 1920x1080 @60Hz (with compatible displays) 1 x LVDS port, supporting a maximum resolution of 1920x1200 @60Hz (18/24bits)  (3 independent display outputs)
Audio	Realtek® ALC897
Storage	1 x SATA 6Gb/s port
Raid	—
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

Motherboard	QBiP-3350A
Internal I/O	1 x 4-pin box power connector (+9V~36VDC) 1 x SATA Power header 1 x System fan header 1 x Front panel header 1 x 2W Speaker out header 4 x USB 2.0 headers 3 x COM headers (RS-232) 1 x COM header (RS-232/422/485 & RI/5V/12V) 1 x Backlight Control header 1 x AT/ATX mode select jumper 1 x GPIO (8-bits) & SMBus header 1 x Buzzer header
Rear I/O	1 x Headphone Jack 1 x HDMI 1 x VGA 2 x RJ45 LAN Ports 2 x USB 3.2 Gen 1
TPM	1 x TPM header
OS Compatibility	Windows 10 (x64)
PSU Connectors	1 x 4-pin Box header power connector (+9~36V Full Range)
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)

\* Conditional DC-input 9V support with :

- (1) SATA\_PWR support 5V only
- (2) LVDS backlight cannot support
- (3) Total power consumption under 50W

### 1.3 Specifications- QBiP-E3940A/ QBiP-E3940AT

Motherboard	QBiP-E3940A	QBiP-E3940AT
Form Factor	3.5" SBC 146W x 101.7Dmm	
CPU	Intel® Atom® x5-E3940 Processor 14nm, 4 cores, 4 threads, up to 1.8 GHz TDP 9.5W 2M Cache	
Socket	1 x FCBGA1296	
Chipset	—	
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 (Intel® I211AT)	
Video	Integrated Graphics Processor - Intel® HD Graphics 500: 1 x HDMI 1.4 port, supporting a maximum resolution of 3840x2160 @30Hz 1 x VGA port, supporting a maximum resolution of 1920x1080 @60Hz (with compatible displays) 1 x LVDS port, supporting a maximum resolution of 1920x1200 @60Hz  (3 independent display outputs)	
Audio	Realtek® ALC897	
Storage	1 x SATA 6Gb/s port	
Raid	—	
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 module	

Motherboard	QBiP-E3940A	QBiP-E3940AT
Internal I/O	1 x 4-pin box power connector (+9V~36VDC) 1 x SATA Power header 1 x System fan header 1 x Front panel header 1 x 2W Speaker out header 4 x USB 2.0 headers 3 x COM headers (RS-232) 1 x COM header (RS-232/422/485 & RI/5V/12V) 1 x Backlight Control header 1 x AT/ATX mode select jumper 1 x GPIO (8-bits) & SMBus header 1 x Buzzer header	
Rear I/O	1 x Headphone Jack 1 x HDMI 1 x VGA 2 x RJ45 LAN Ports 2 x USB 3.2 Gen 1	
TPM	1 x TPM header	
OS Compatibility	Windows 10 (x64)	
PSU Connectors	1 x 4-pin Box header power connector (+9~36V Full Range)	
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)	Operating temperature: -40°C to 85°C Operating humidity: 0-90% (non-condensing) Non-operating temperature: -40°C to 85°C Non-operating humidity: 0%-95% (non-condensing)

\* Conditional DC-input 9V support with :

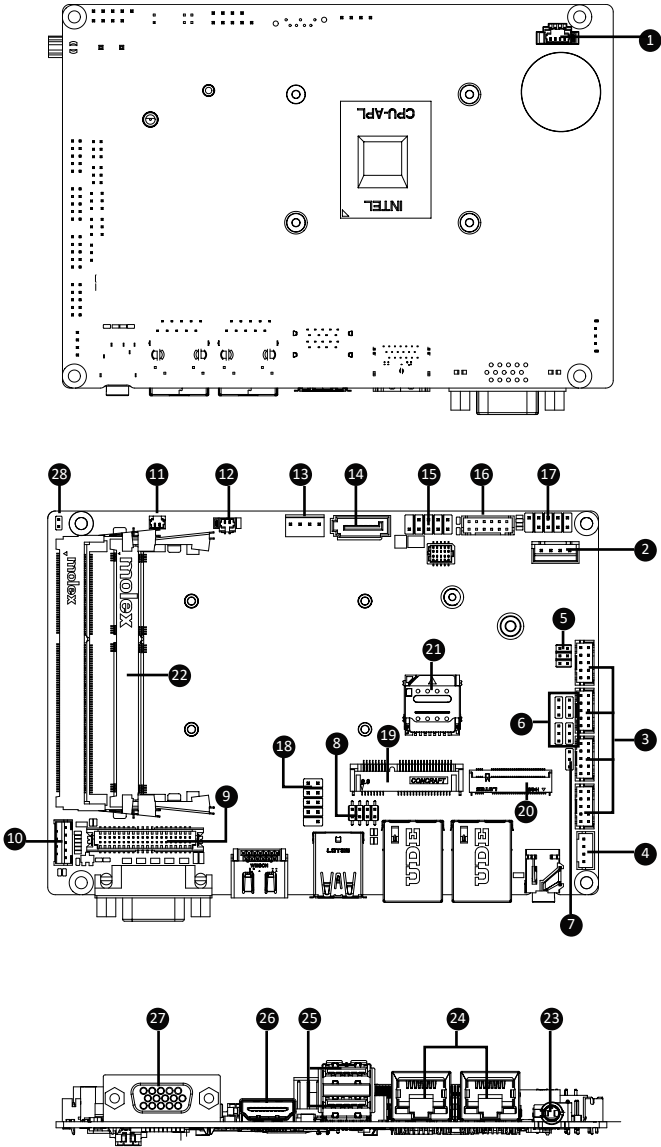
- (1) SATA\_PWR support 5V only
- (2) LVDS backlight cannot support
- (3) Total power consumption under 50W

# Chapter 2

---

## Chapter 2 – Hardware Information

# 2.1 Jumpers and Connectors



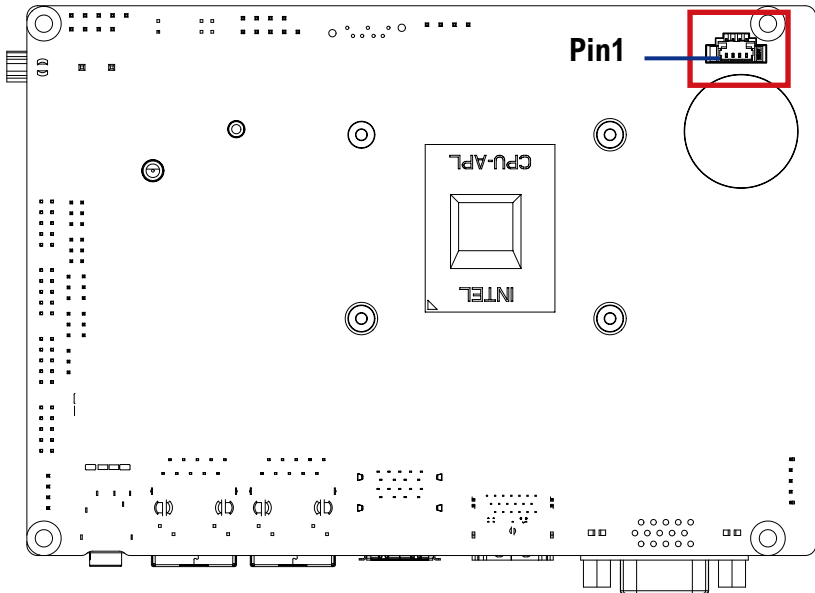
No	Code	Description
1	FAN	FAN connector
2	DC_IN	DC IN 1x4pin power connector
3	COM1 COM2 COM3 COM4	Serial port header COM1 : RS-232/422/485 & RI/5V/12V COM2, COM3, COM4 : RS-232
4	SPK_OUT	Speaker out connector
5	JCOM11	RI# pin RI#/5V/12V Select jumper for COM1 port
6	JRS11-JRS14	RS11-14 select jumper for serial port
7	AT_CN	AT/ATX power mode select jumper
8	LSW	LVDS resolution jumper
9	LVDS	LVDS connector
10	BKL_CN	Backlight brightness control connector
11	BUZZER	—
12	BATTERY	Battery cable connector
13	SATAPW	SATA power connector
14	SATAIII	SATA 6Gb/s Connector
15	FUSB20_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
21	SIM_CARD1	3G/4G Sim Slot



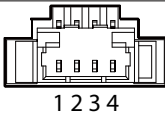
No	Code	Description
22	SODIMMA/B	<b>2 x DDR3L SO-DIMM sockets, Max. Capacity 8 GB Dual channel memory architecture Support DDR3L 1866MHz memory modules</b>
23	Audio jack	Line out
24	LAN1, LAN2	2 x RJ45 Ports
25	FUSB30	2 x USB3.0 Ports
26	HDMI	1 x HDMI Port
27	VGA	1 x VGA Port
28	CLS_CMOS	1 x Clear CMOS jumper

## 2.2.1 FAN (FAN connector)

1



CPU/System FAN

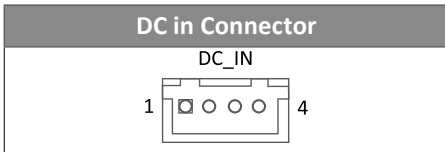
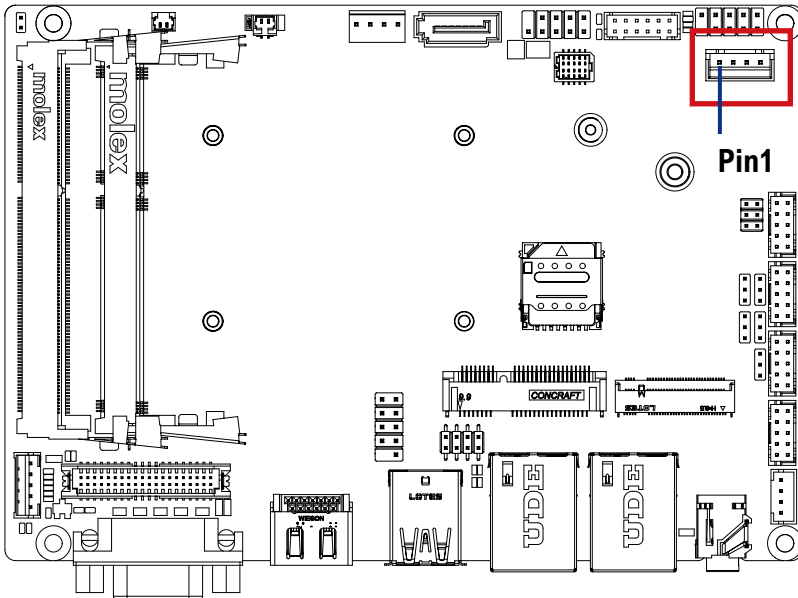


Connector PN	Vendor
85205-0470N	ACES
A1250WV-S-04PC	JOINT-TECH

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

## 2.2.2 DC IN (DC IN 1 x 4-pin power connector)

2

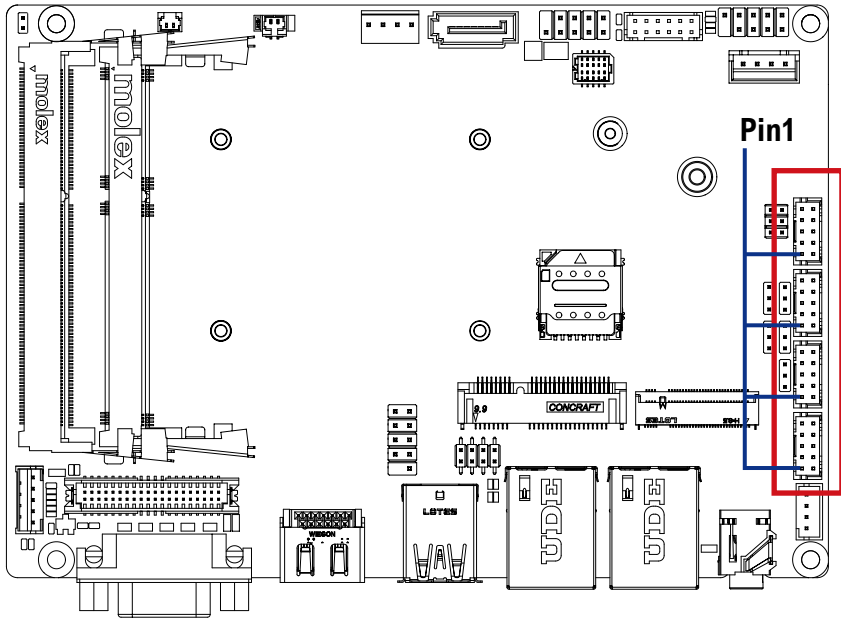


Connector PN	Vendor
753-81-04TW00	PINREX

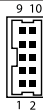
Pin No.	Definition
1	GND
2	DCIN
3	DCIN
4	GND

## 2.2.3 COM1, COM2, COM3, COM4 (Serial port header)

3



Serial Port Cable Connector



Connector PN

725-81-10TW00

A2004WV-2X05P46

Vendor

PINREX

JOINT-TECH

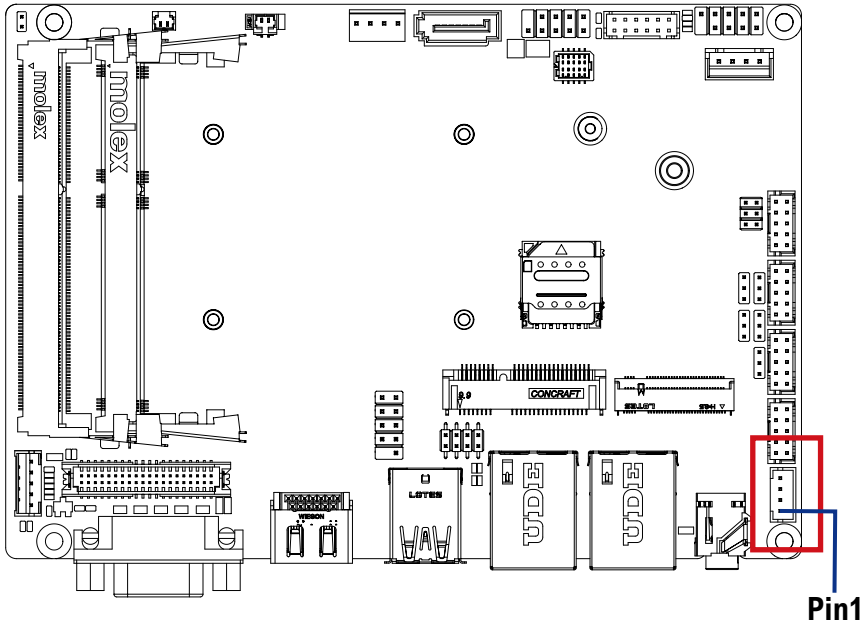
Pin No.	RS-232	RS-422 Full Duplex	RS-485 Half Duplex
1	RXD	TXD+	D+
2	DCD	TXD-	D-
3	DTR	RXD-	-
4	TXD	RXD+	-
5	DSR	-	-
6	GND	-	-
7	CTS	-	-
8	RTS	-	-
9	No Connect	-	-
10	RI/5V/12V	-	-

Note :

COM1 : Support RS-232/422/485 & RI/5V/12V  
 For RI/5V/12V jumper setting, please see P. 29  
 COM2, COM3, COM4 : Support RS-232 only

## 2.2.4 SPK\_OUT (Speaker out connector)

4



Pin1

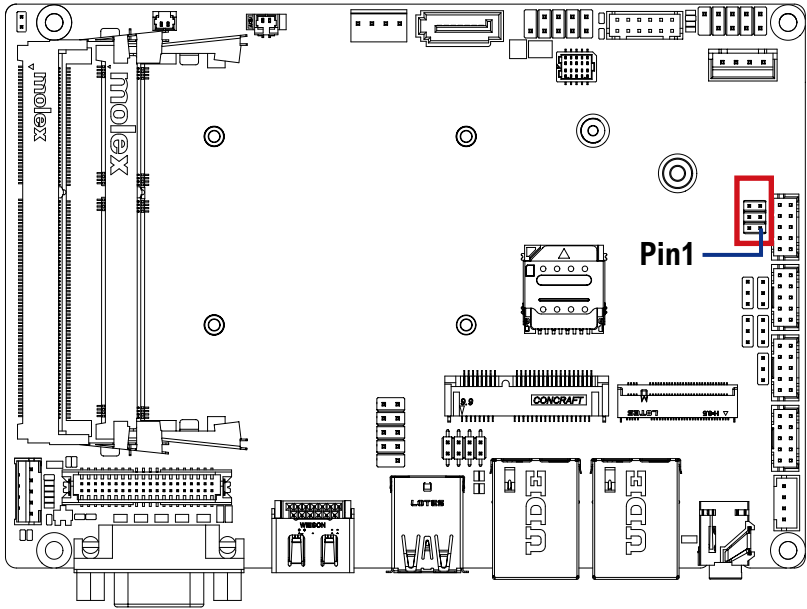
Speaker out connector	
4	
	1

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

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

## 2.2.5 JCOM11 (RI# pin RI#/5V/12V Select jumper for COM1 port)

5

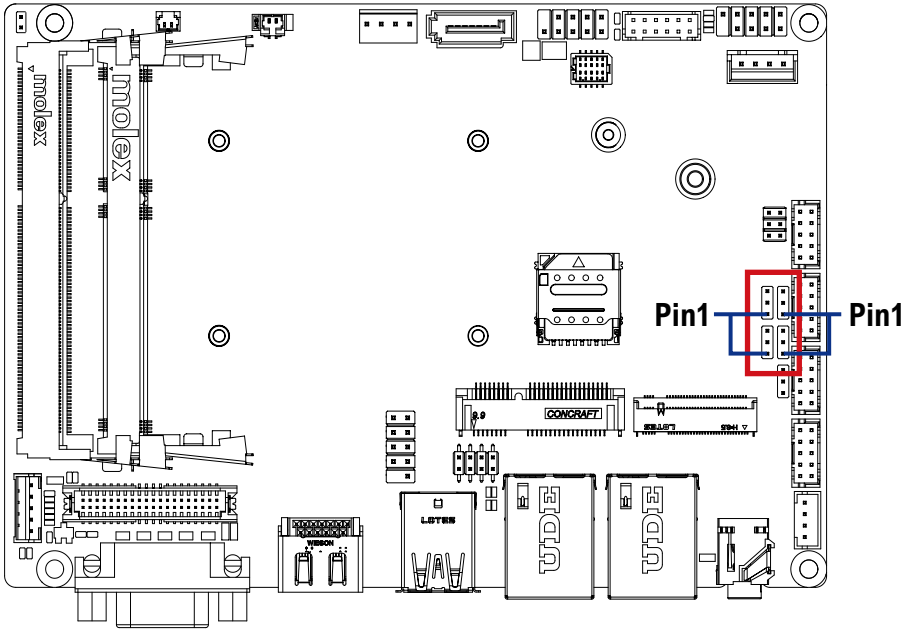


JCOM11 Jumper Select	
	1-2 Close: 5V (Power COM)
	3-4 Close: RI (Stand COM)
	5-6 Close: 12V (Power COM)

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

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

6



JRS 11-14 Jumper			
JRS13	JRS14		
		123	
		123	
JRS12	JRS11		
RS-232 (Default)			

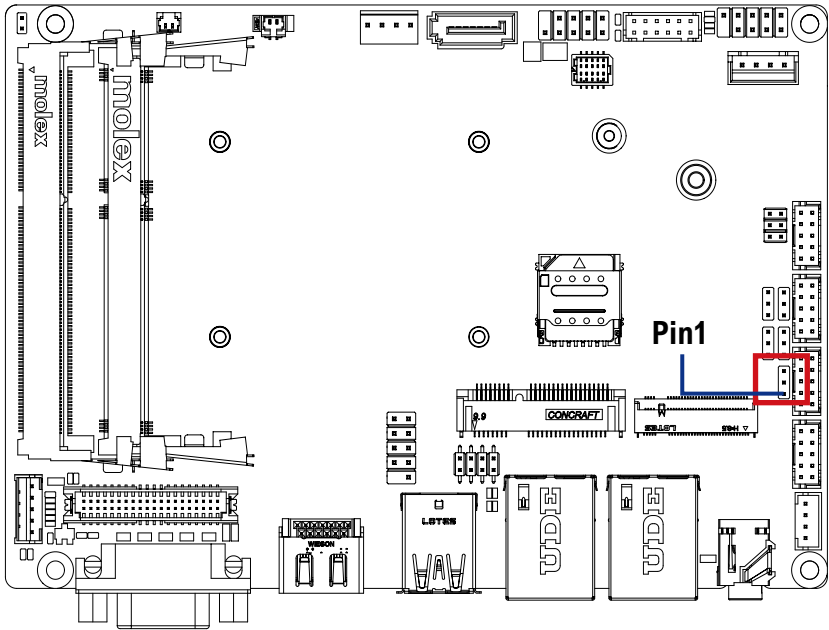
Connector PN	Vendor
220-96-03GB01	PINREX
PH03N2-7BAN000	HORNGTONG

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

## 2.2.7 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

220-96-03GB01

PH03N2-7BAN000

### Vendor

PINREX

HORNGTONG

### Pin No.

### Definition

1

AT MODE

2

Detect

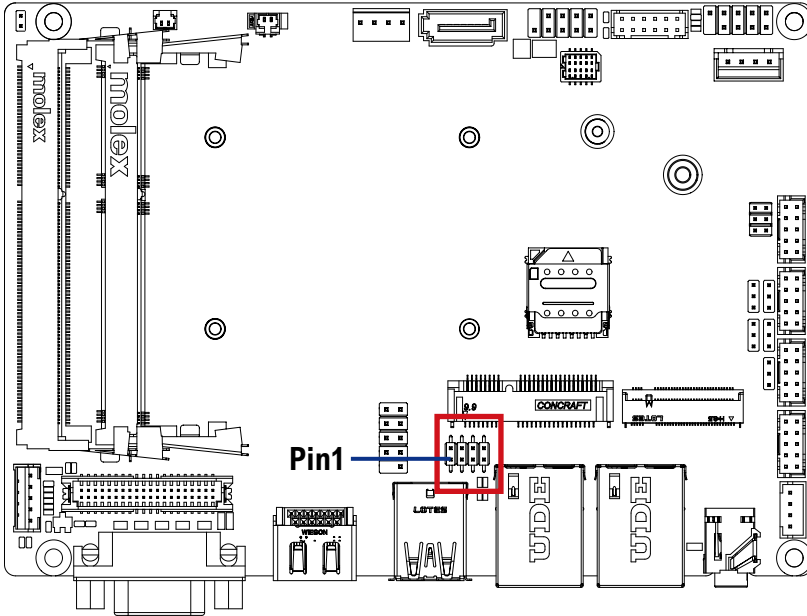
3

















ATX MODE



## 2.2.8 LSW (LVDS resolution jumper)

8

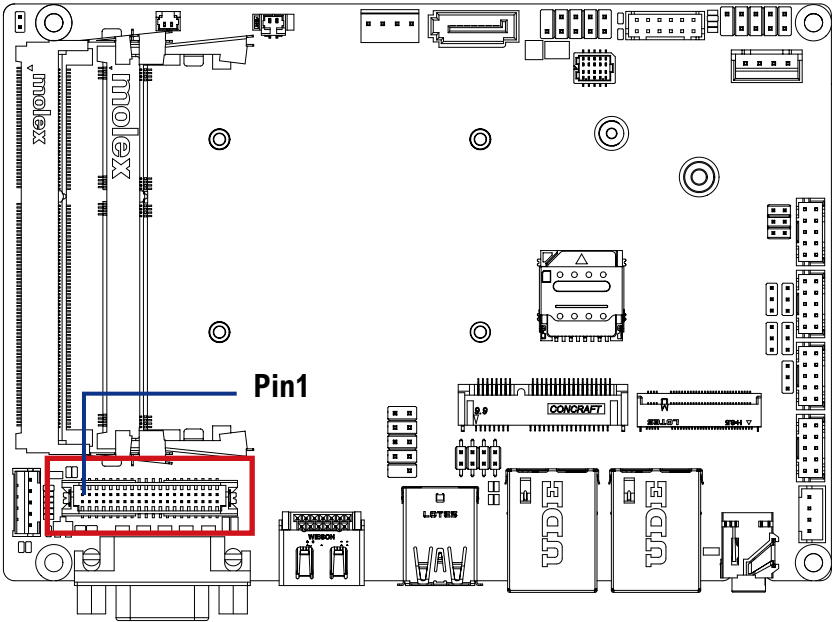


LVDS Resolution Jumper			
Jumper Setting	Resolution	Jumper Setting	Resolution
1 	800 x 600 18bit (default)	1 	1366 x 768 24bit
1 	1024 x 768 18bit	1 	1440 x 900 24bit
1 	1024 x 768 24bit	1 	1400 x 1050 24bit
1 	1024 x 600 18bit	1 	1600 x 900 24bit
1 	1280 x 800 18bit	1 	1680 x 1050 24bit
1 	1280 x 960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

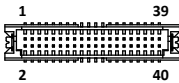
Connector PN	Vendor
222-97-04GBE1	PINREX

## 2.2.9 LVDS (LVDS connector)

9



LVDS Connector



Pin No.	Definition	Pin No.	Definition
17	A3-	37	GND
18	A2-	38	GND
19	GND	39	12V
20	GND	40	12V

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	SPE0	25	GND
6	SPE0	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-

For each model support LVDS function.

But below model no need to add.

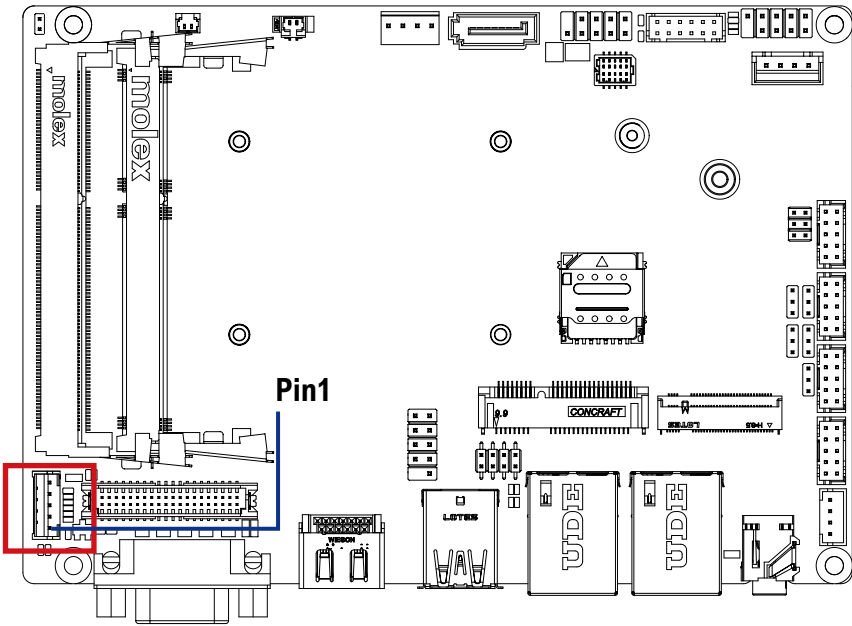
A0~A3 is odd channel 0~3, A4~A7 is even channel.

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

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

## 2.2.10 BKL\_CN (Backlight brightness control connector)

10



Backlight brightness control connector

5



1

Connector PN

721-81-05TW00

A2001WV-05P146

Vendor

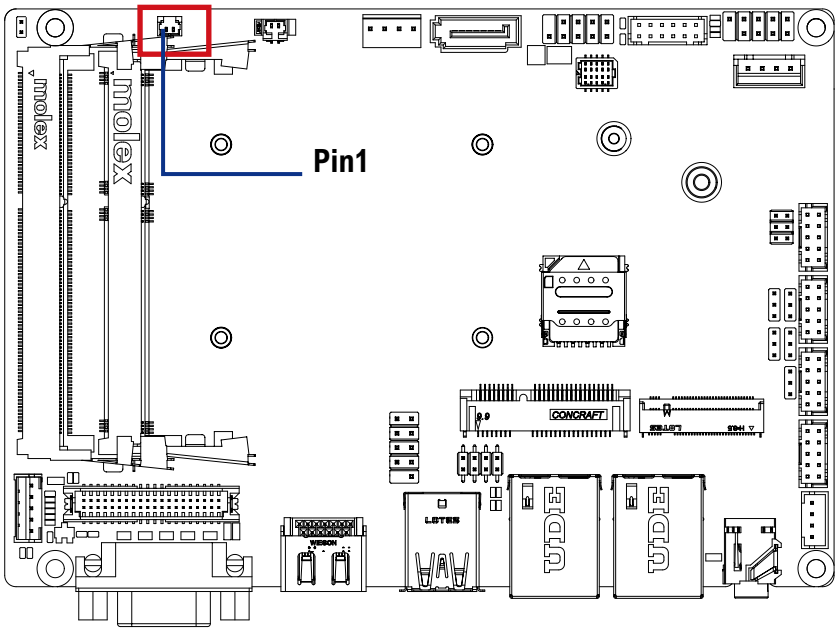
PINREX

JOINT-TECH

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

## 2.2.11 BUZZER

11



Buzzer



Connector PN

712-71-02TW01

A1250WV-02P

Vendor

PINREX

JOINT-TECH

Pin No.

Definition

1

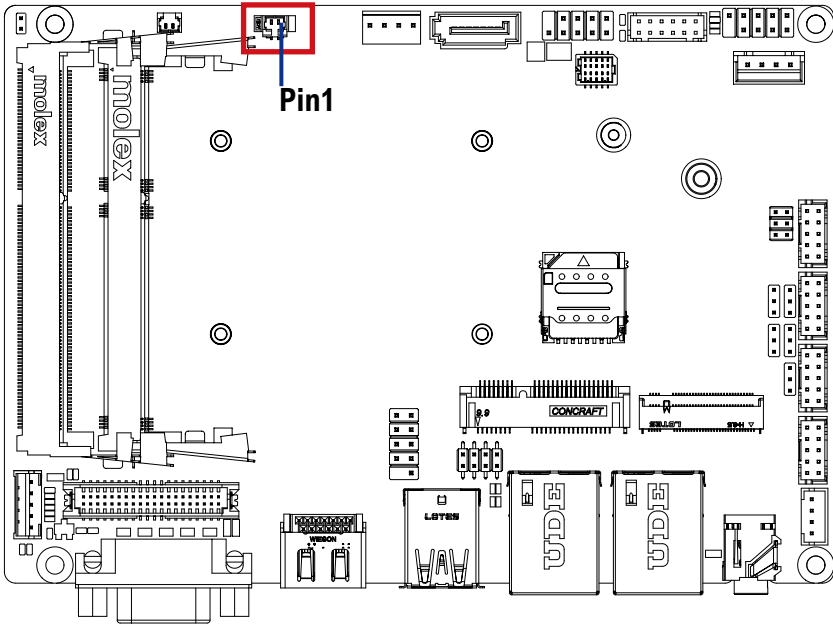
-SPKR

2

+VS5

## 2.2.12 BATTERY

12



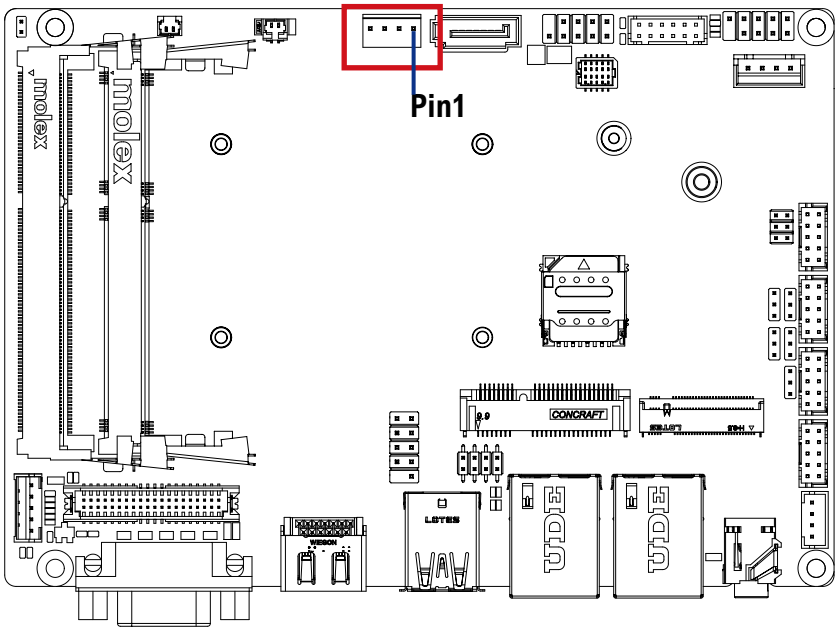
Battery Cable Connector	
2	1

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

Pin No.	Definition
1	3.3V RTC
2	GND

## 2.2.13 SATAPW (SATA power connector)

13



Hard Disk Power Connector



Connector PN

743-81-04TW00

WF04Q2-3BJQ000

Vendor

PINREX

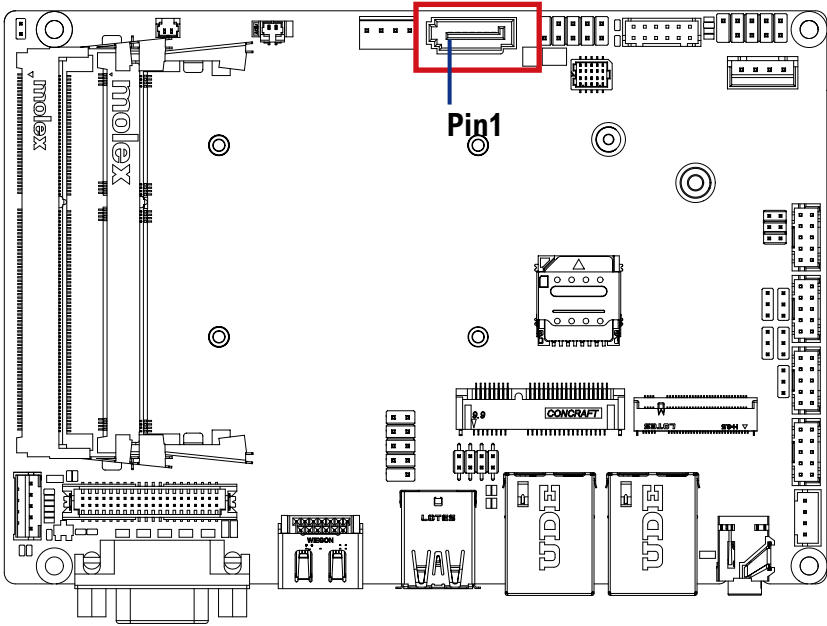
HORNGTONG


Pin No. Definition

1	+12V
2	GND
3	GND
4	VCC

## 2.2.14 SATAIII (SATA 6Gb/s Connector)

14



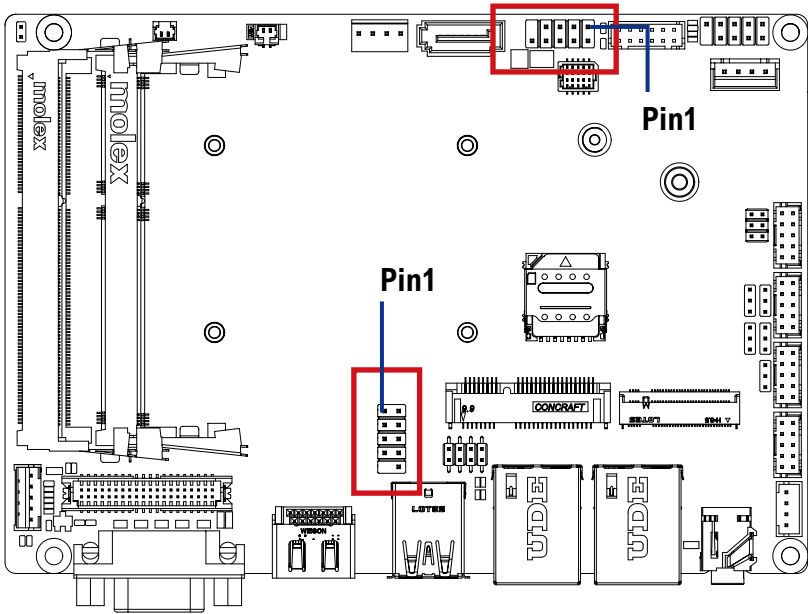
SATA 6Gb/S Connector


SATAIII	
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

## 2.2.15 FUSB20\_1, FUSB20\_2 (USB 2.0 header)

15 18



USB 2.0 Header



Connector PN

210-92-05GB04

PH10R53BAZ009

Vendor

PINREX

HORNGTONG

Pin No.

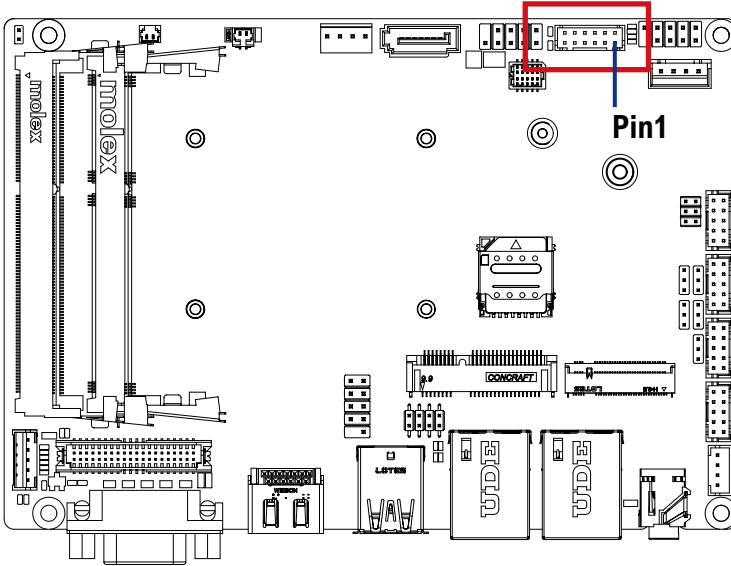
Definition

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



## 2.2.16 GPIO\_CNT (General Purpose input/output header)

16



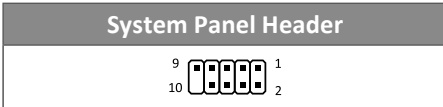
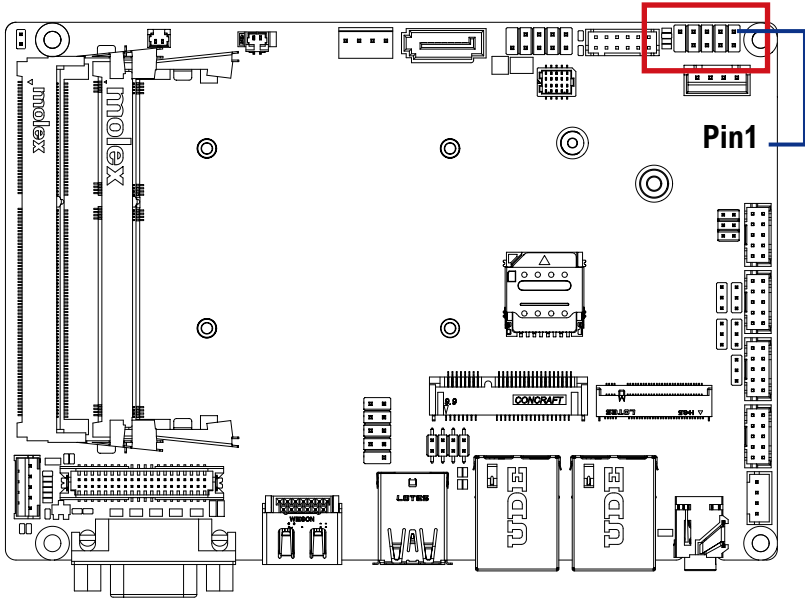
GPIO Connector	
12	2
11	1

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

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

## 2.2.17 SYS\_PANEL (Front panel header)

17

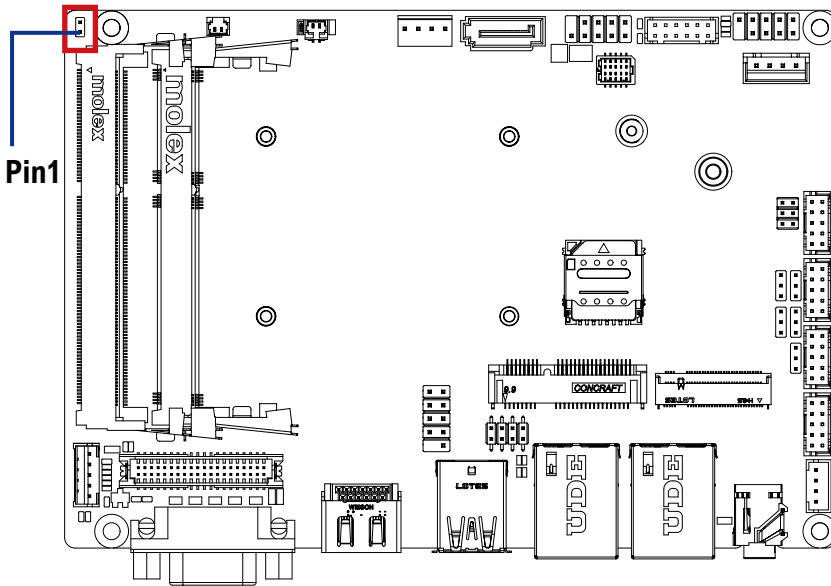


Connector PN	Vendor
210-92-05G111	PINREX

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

## 2.2.18 CLS\_CMOS (Clean CMOS jumper)

28



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
210-91-02GB01	PINREX
PH02R23BAZ000	HORNGTONG

# Chapter 3

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## Chapter 3 – BIOS

## 3.1 Introduction

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

### 3.1.1 How to Entering into BIOS menu

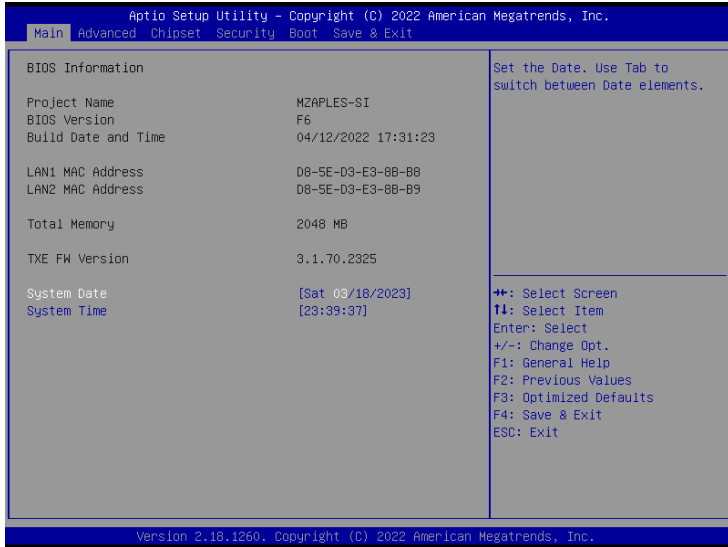
Once the system is power on, press the <DEL> key as soon as possible to access into BIOS Setup program.

### 3.1.2 Function Keys to setup in BIOS Setup program

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

## 3.2 The Main Menu

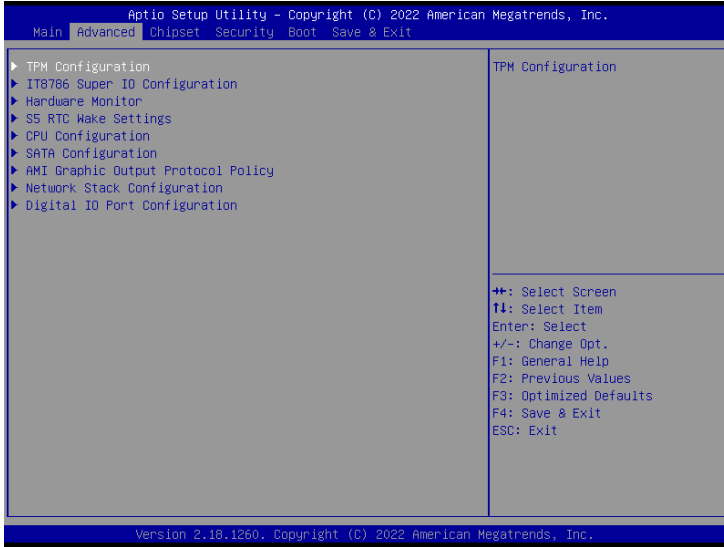
The main menu shows the basic system information. Use arrow keys to move among the items.



Items	Description
<b>Project Name</b>	<b>Shows Project name information</b>
<b>BIOS Version</b>	<b>Shows the BIOS version of the system</b>
<b>Build Date and Time</b>	<b>Shows the Build Date and Time when the BIOS was created.</b>
<b>LAN1 MAC Address</b>	<b>Shows 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>TXE 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
<p><b>TPM Device Selection</b></p>	<p><b>fTPM : Enabled (Default setting), Disabled</b></p>

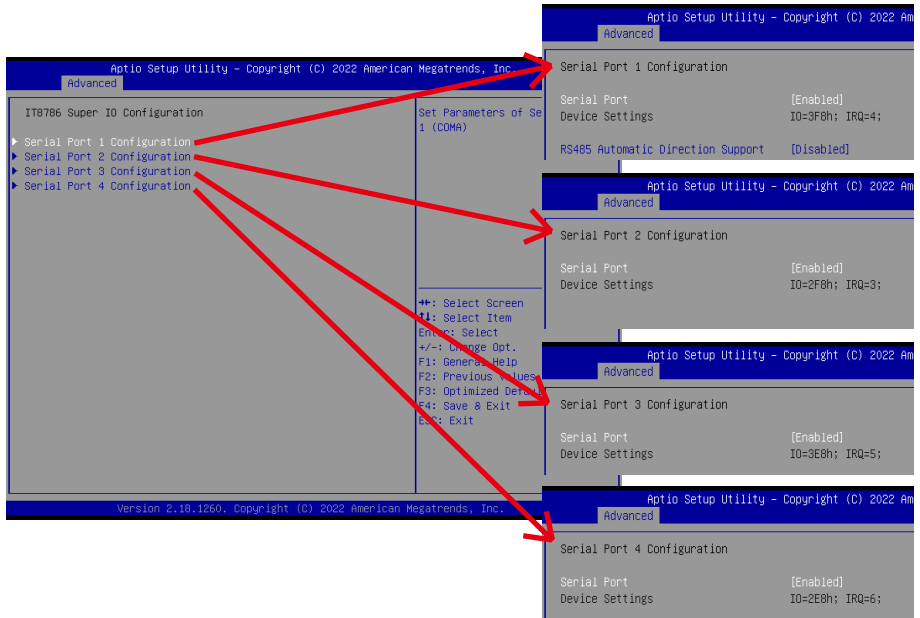


Trusted Computing : Shows TPM information, and TPM module configuration setting.



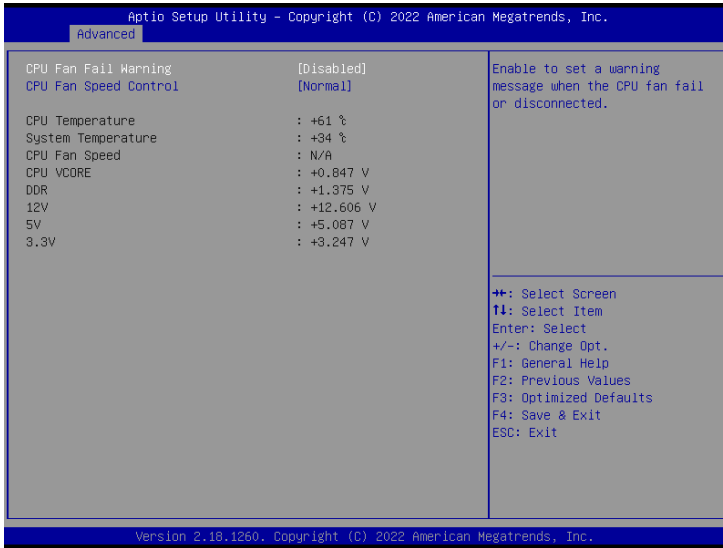
Item	Description
Security Device support	Enabled : Enables TPM feature (Default setting) Disabled : Disables TPM feature
Pending operation	None : No execution will be conducted (Default setting) TPM clear : Set to clear data on TPM

### 3.3.2 IT8786 Super IO Configuration



Item	Description
<b>Serial Port 1 Configuration</b>	<p>Press [Enter] to configure advanced items :</p> <p>Serial Port :  <b>Enabled : Enables allows you to configure the serial port settings</b>  <b>Disabled : if Disabled, displays no configuration for the serial port</b></p> <p>Device settings :                      Display the specified Serial Port base I/O address and IRQ</p> <p>RS485 Automatic Direction Support :  <b>Enabled : Enables RS485 Automatic Direction Support function</b>  <b>Disabled : Disables RS485 Automatic Direction Support function (Default setting)</b></p>
<b>Serial Port 2 Configuration</b>	<p>Press [Enter] to configure advanced items :</p> <p>Serial Port :</p>
<b>Serial Port 3 Configuration</b>	<p><b>Enabled : Enables allows you to configure the serial port settings</b>  <b>Disabled : if Disabled, displays no configuration for the serial port</b></p>
<b>Serial Port 4 Configuration</b>	<p>Device settings :                      Display the specified Serial Port base I/O address and IRQ</p>

### 3.3.3 Hardware Monitor



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

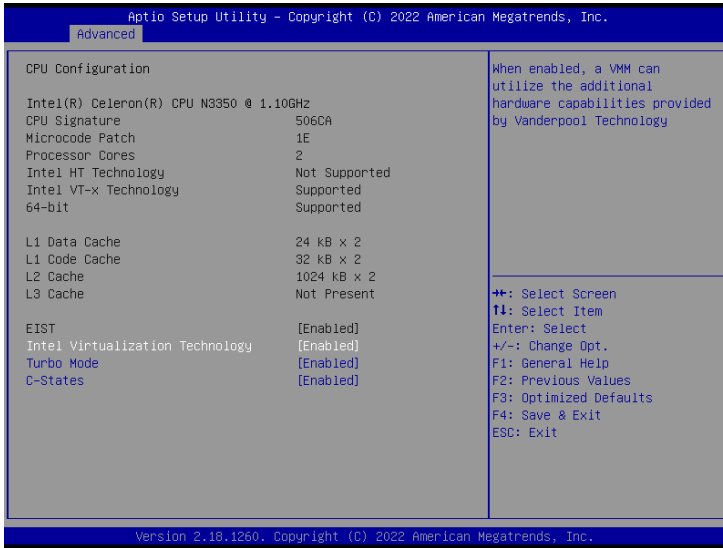
### 3.3.4 S5 RTC Wake Settings



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

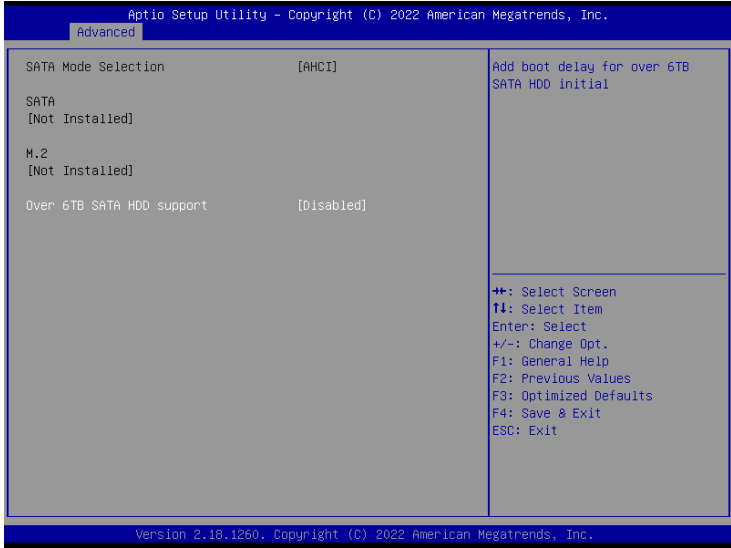
### 3.3.5 CPU Configuration

This submenu shows detailed CPU informations.



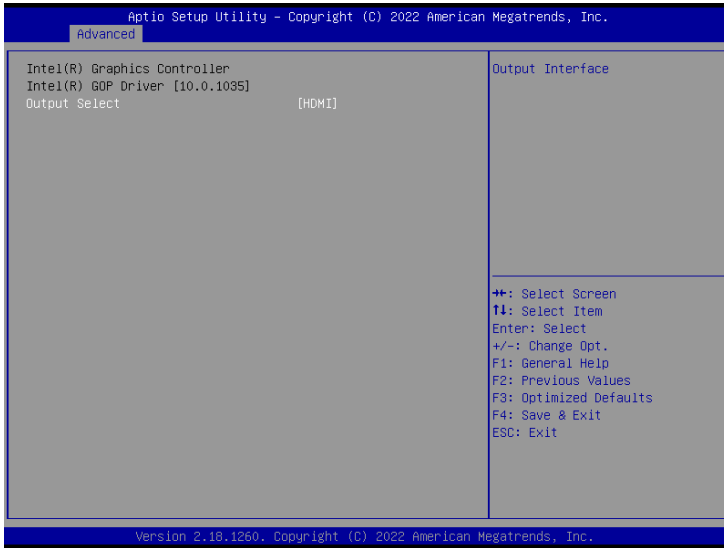
Item	Description
<b>EIST</b>	According to System loading, Enhanced Intel SpeedStep Technology (EIST) will automatically adjust the CPU voltage and core frequency to decrease heat and power consumption for power saving. <b>Enabled : Enables EIST Technology (Default setting)</b> <b>Disabled : Disables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

## 3.3.6 SATA Configuration



Item	Description
<b>SATA Mode Selection</b>	<b>AHCI : Configures the SATA controllers to AHCI mode. (Default setting)</b>
<b>SATA</b>	shows 2.5" SATA HDD/SSD information
<b>M.2</b>	shows M.2 SATA interface SSD information
<b>Over 6TB SATA HDD support</b>	<b>Enabled : When using over 6TB SATA HDD, suggest to enable this function to have delay time for HDD to initial.</b> <b>Disabled : Disables over 6TB SATA HDD support function (Default setting)</b>

### 3.3.7 AMI Graphic Output Protocol Policy

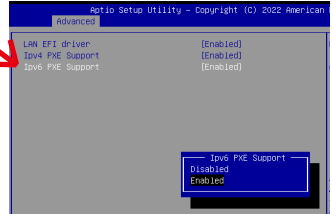
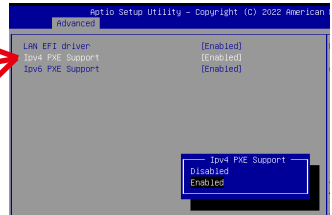
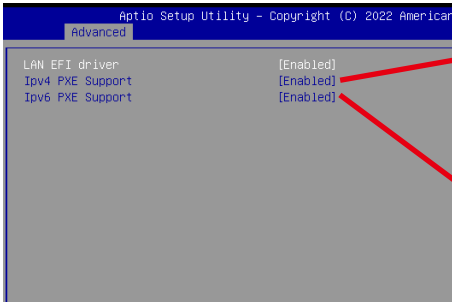
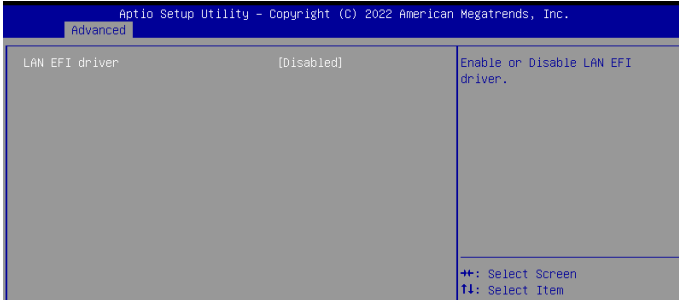


Item	Description
<b>Output Select</b>	Choose default monitor output when there are more than one monitor plugged on the motherboard.

## 3.3.8 Network Stack Configuration

3.5" SBC Boards

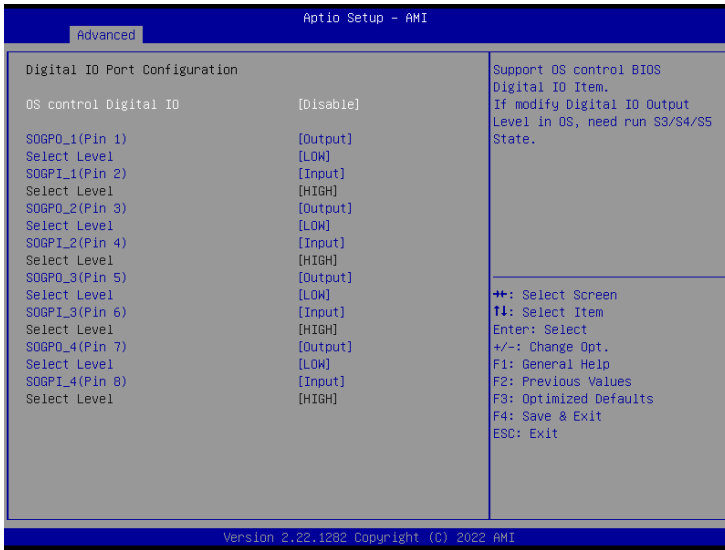
QBIP-4200B/4200C/3350A/E3940A/E3940AT



Item	Description
<b>LAN EFI driver</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 LAN EFI driver function is enabled : <b>Disabled : Disables Ipv4 PXE Support</b> <b>Enabled : Enables Ipv4 PXE Support</b>
<b>Ipv6 PXE Support</b>	When LAN EFI driver function is enabled : <b>Disabled : Disables Ipv6 PXE Support</b> <b>Enabled : Enables Ipv6 PXE Support</b>

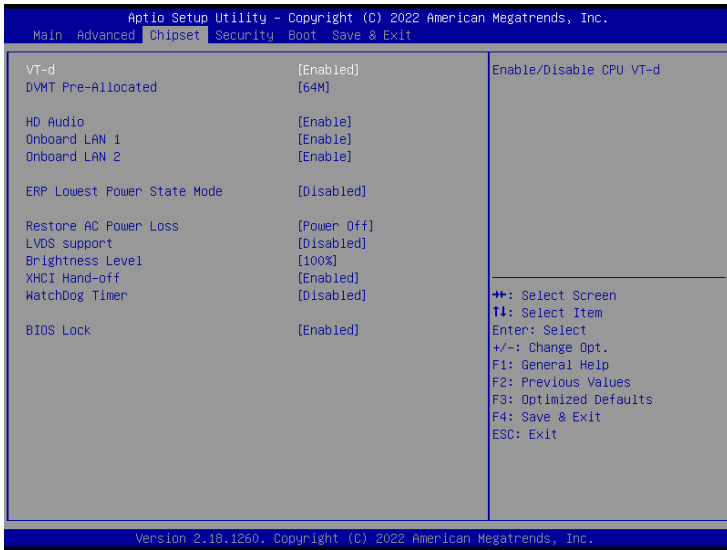


### 3.3.9 Digital IO Port Configuration



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

## 3.4 Chipset



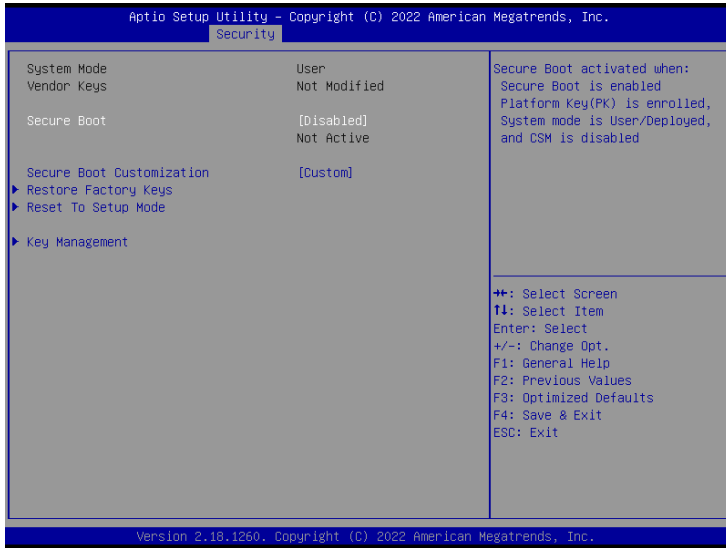
Item	Description
VT-d	<b>Enabled : Enables VT-d function (Default setting)</b> <b>Disabled : Disables VT-d function</b>
DVMT Pre-Allocated	Use DVMT Pre-Allocated to set the amount of system memory which is installed to the integrated graphics processor <b>Option items : 32M , 64M(Default setting) , 128M , 256M</b>
HD Audio	Enable/Disable onboard audio controller <b>Enabled : Enables onboard audio controller (Default setting)</b> <b>Disabled : Disables onboard audio controller</b>
Onboard LAN1 Onboard LAN2	Enable/Disable onboard LAN controller <b>Enabled : Enables onboard LAN controller (Default setting)</b> <b>Disabled : Disables onboard LAN controller</b>
ERP Lowest Power State Mode	Enable/Disable power saving function <b>Enabled : Enables ERP Lowest Power State Mode</b> <b>Disabled : Disabled ERP Lowest Power State Mode (Default setting)</b>
Restore AC Power Loss	To set which option the system should returns if a sudden power loss occurred <b>Power 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>
LVDS Support	<b>Disabled : Disables LVDS Support (Default setting)</b> <b>Enabled : Enables LVDS Support</b>

<b>Brightness Level</b>	To modified the backlight brightness of the LVDS panel <b>Option items : 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100% (Default Setting)</b>
<b>XHCI Hand-off</b>	Enable/Disable XHCI Hand-off function <b>Enabled : Enables XHCI Hand-off function (Default setting)</b> <b>Disabled : Disables XHCI Hand-off function</b>
<b>WatchDog Timer</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>

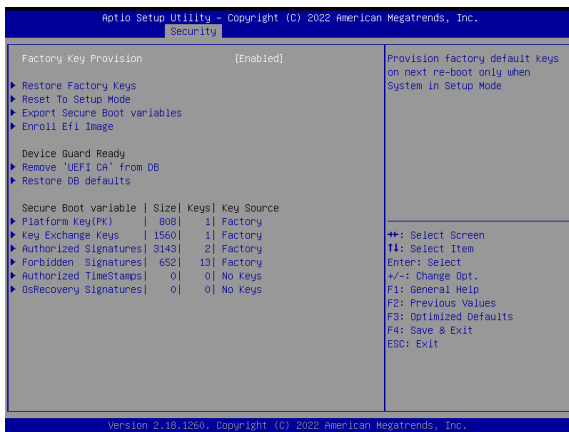
## 3.5 Security



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 Customization</b>	<b>Standard : Standard mode</b> <b>Custom : Custom mode (Default setting)</b>
<b>Restore Factory Keys</b>	To restore factory settings <b>Yes : Agree to restore factory settings</b> <b>No : Cancel to restore factory settings</b>
<b>Reset To Setup Mode</b>	<b>Yes : Agree to setup mode</b> <b>No : Cancel to setup mode</b>
<b>Key Management</b>	Enables expert users to modify Secure boot policy variables without full authentication Press <Enter> to configure the advanced items

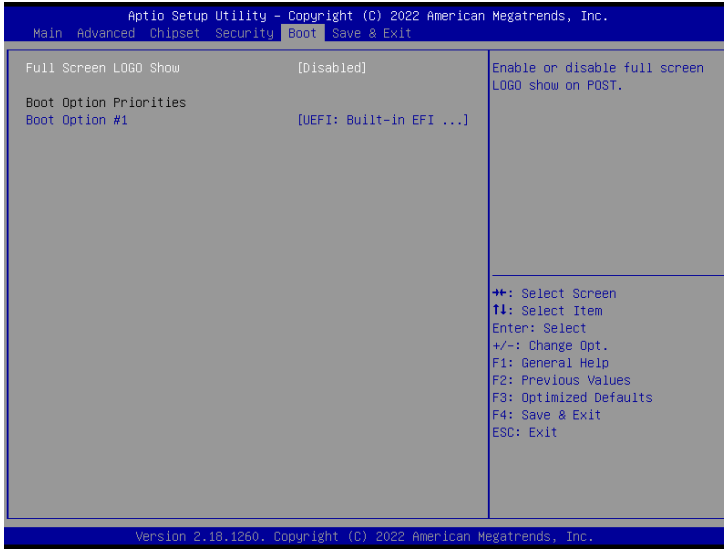


Item	Description
<b>Factory Key Provision</b>	Install factory default Secure Boot keys after the platform reset and while the system is in Setup mode <b>Enabled : Enables Factory Key Provision (Default setting)</b> <b>Disabled : Disables Factory Key Provision</b>
<b>Restore Factory Keys</b>	To restore factory settings <b>Yes : Agree to restore factory settings</b> <b>No : Cancel to restore factory settings</b>
<b>Reset To Setup Mode</b>	<b>Yes : Agree to setup mode</b> <b>No : Cancel to setup mode</b>
<b>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>Yes : Agree to remove 'UEFI CA' from database</b> <b>No : Cancel to remove 'UEFI CA' from database</b>
<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>	

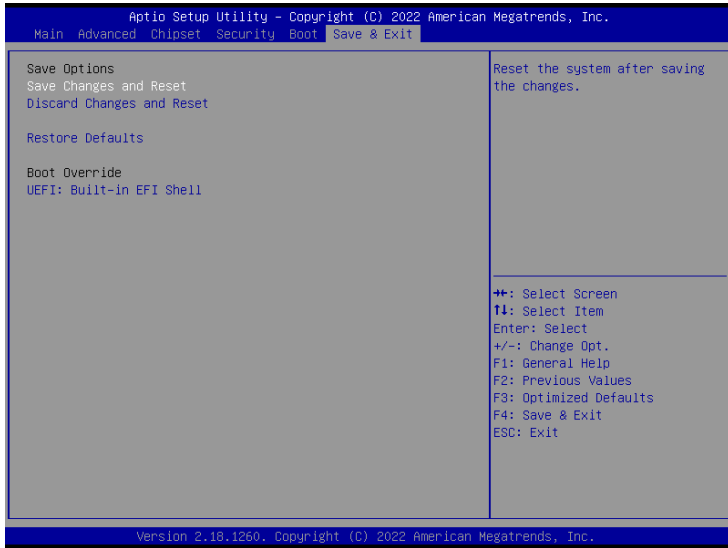
### 3.6 Boot

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>	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>