QBiX-JWB-SKYA110H-A1 (QJ-H110A-SI)

QBiX-JWB Industrial Embedded System
Quick Start Guide

Copyright Notice

Acknowledgement

Packing List

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

Item	Quantity
System kit	1 pcs
HDD screw, M3 x 8L	8 Pcs
Exsiccator (10g)	1 pcs

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. Connect only to a properly wired and ground outlet.

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

20. **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.

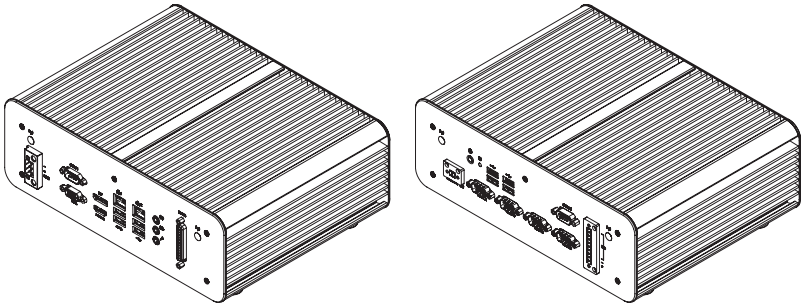
Attention:

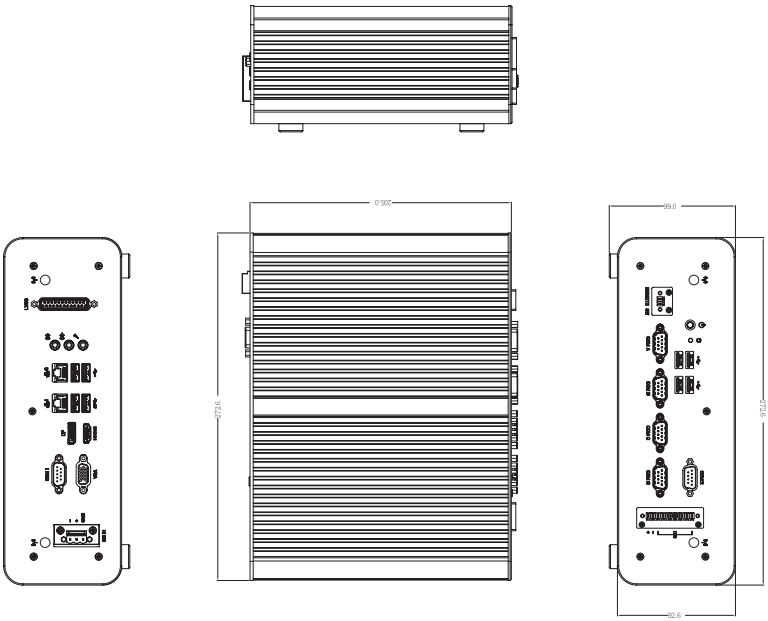
Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte.
Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

Table Contents

Chapter 1

Chapter 1 - Product Specifications





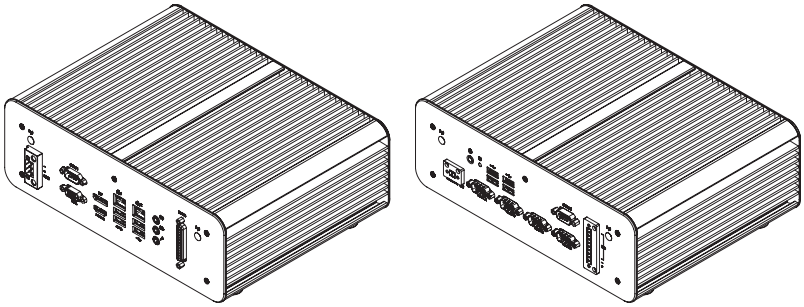
1.1 Specifications

System	QBiX-JWB-SKYA110H-A1 (QJ-H110A-SI)
Dimension	273W x 203D x 91H(mm)
CPU	Supports for 6/7th Generation Intel® Core™ i7/i5/i3, Pentium® & Celeron® processors, TDP under 35W
Chipset	Intel® H110 Chipset
Memory	2 x DDR4 SO-DIMM sockets, Max. Capacity 32 GB, Support Dual Channel DDR4 2400/2133 MHz
Ethernet	2 x GbE LAN ports (Intel® I219V and Intel® I211AT)
Graphic support	Integrated Graphics Processor - Intel® HD Graphics support: 1 x HDMI port, supporting a maximum resolution of 4096x2160@30 Hz 1 x DP port, supporting a maximum resolution of 4096x2160@60 Hz 1 x D-Sub port, supporting a maximum resolution of 1920x1200@60 Hz 1 x LVDS port, supporting a maximum resolution of 1920 x 1080@60Hz 2 independent display outputs
Audio	Realtek ALC269 High Definition Audio
Storage	2 x SATA 6 Gb/s port (Support 2.5'' Hard drive/SSD)
Expansion Slots	1 x 2280 M.2 M-Key (SATA 6Gb/s) 1 x Full/Half-size Mini PCIe with SIM slot
Front I/O	1 x Power Switch 1 x Power & HDD LED 2 x Remote control header 4 x USB 2.0 4 x COM ports (RS-232/422/485) 1 x COM port (RS-232) 1 x GPIO (8 bit) 4 4r 2 x External Antenna Hole (Optional)

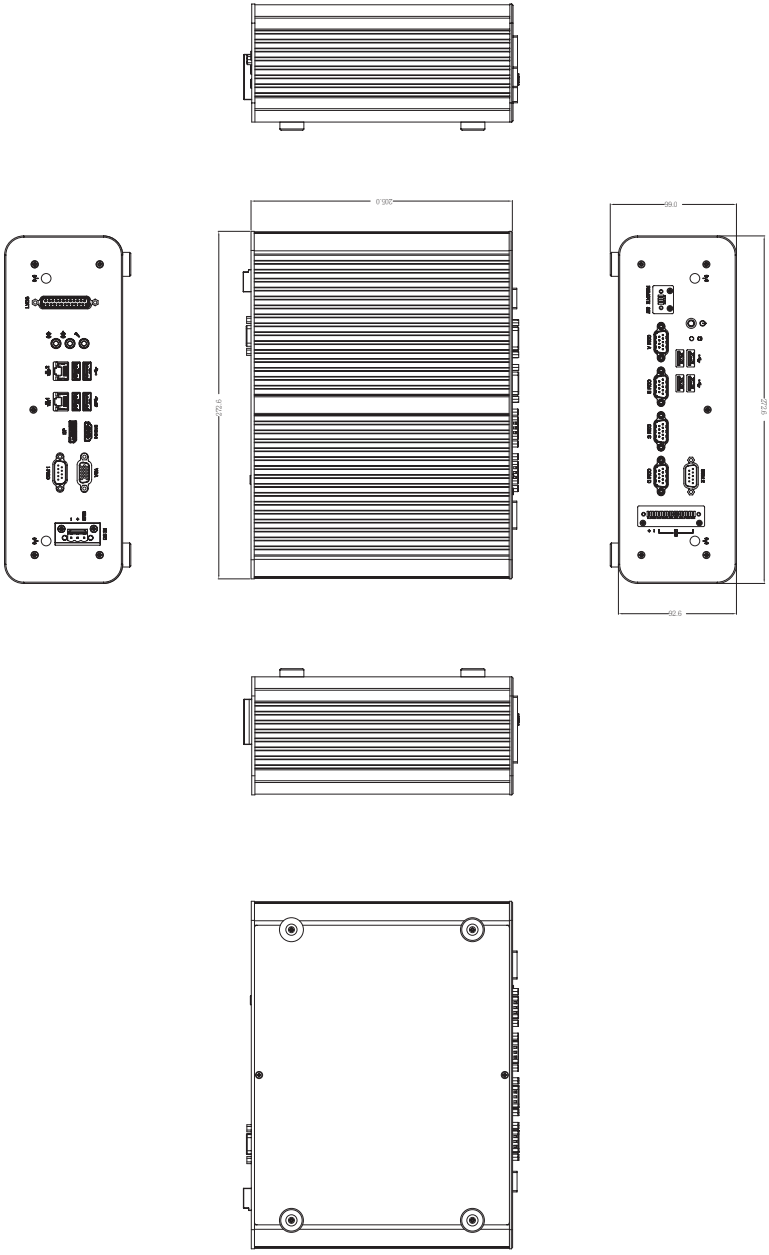
System	QBiX-JWB-SKYA110H-A1 (QJ-H110A-SI)
Rear I/O	3 x Audio Jacks (Line in, Line out, Mic in) 1 x VGA 1 x HDMI 1 x Display Port 1 x LVDS 1 x COM port (RS-232/422/485 & RI/5V/12V) 2 x RJ45 LAN ports 2 x USB 3.0 2 x USB 2.0 1 x 3-pin Terminal Block 2 x External Antenna Hole (Optional)
Power	+12V/+19V/+24VDC
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	TBD
Shock During Operation	TBD
Order Information	9BQJH110AMR-SI (Box packing)
Build in Components	CPU: Intel® Core™ i3-7100T Processor, 3M Cache, 3.40 GHz Memory: 4GB DDR4 SO-DIMM Storage: 128GB, 2280 M.2, SSD

Chapter 2

Chapter 2 – QBiX-JWB-SKYA110H-A1 (QJ-H110A-SI)
Industrial Embedded System Kit

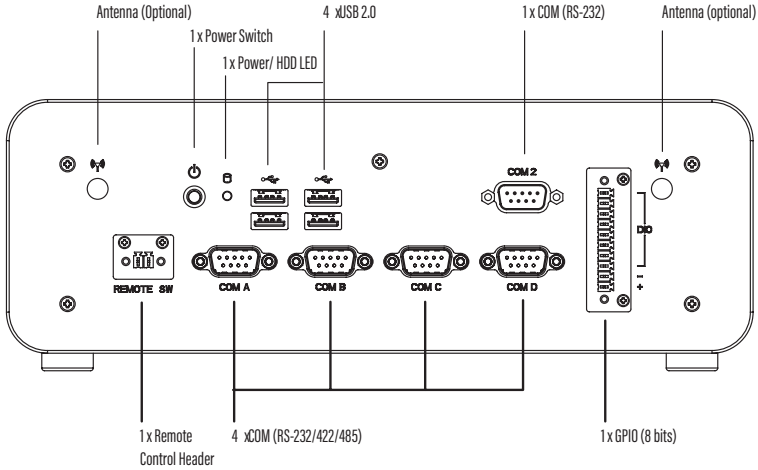


2.1 Dimension

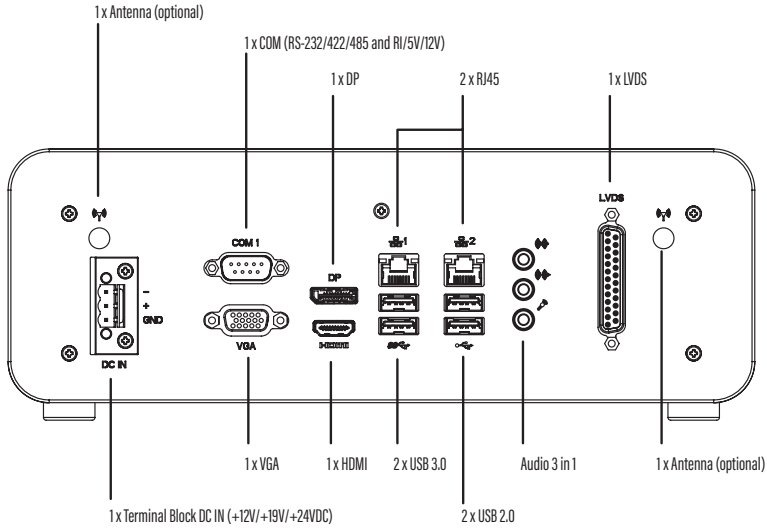


2.2 Getting Familiar with Your Unit

[Front Side]



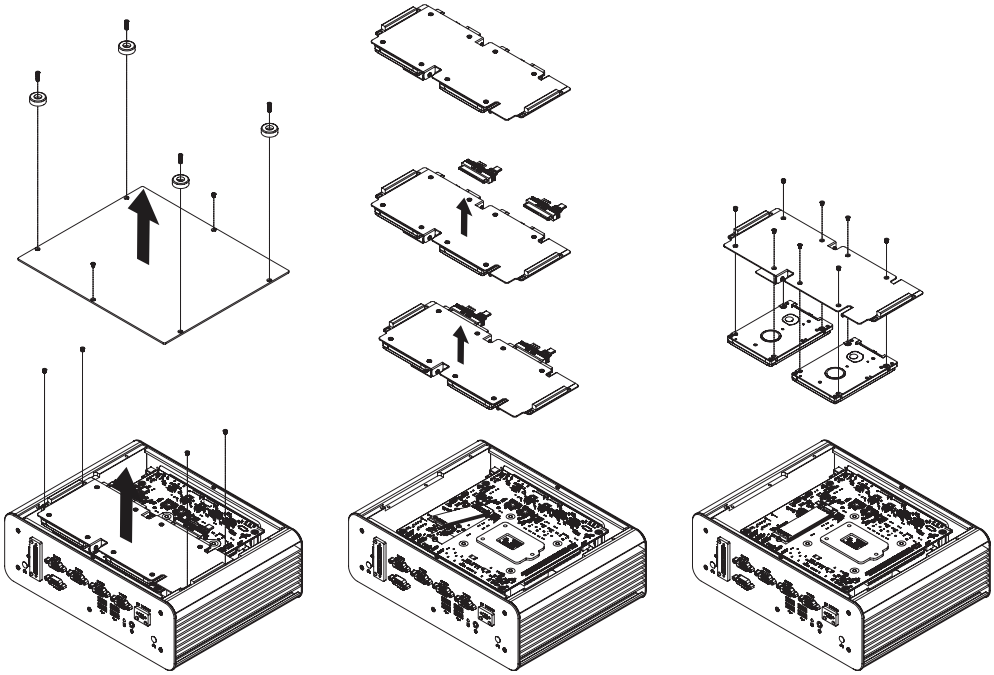
[Rear Side]



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

[Install]

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



2.3 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

2.4 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.

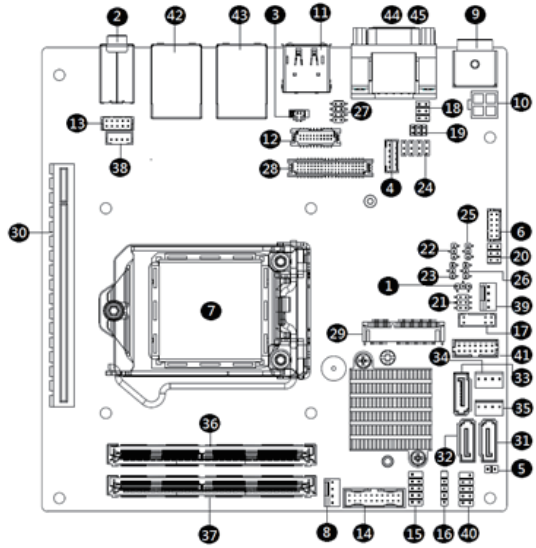
HIGH DEFINITION MULTIMEDIA INTERFACE

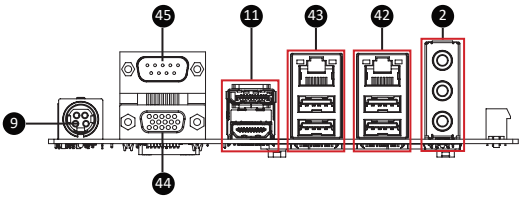
At the end of its serviceable life, this product should not be treated as household or general waste. It should be handed over to the applicable collection point for the recycling of electrical and electronic equipment, or returned to the supplier for disposal.

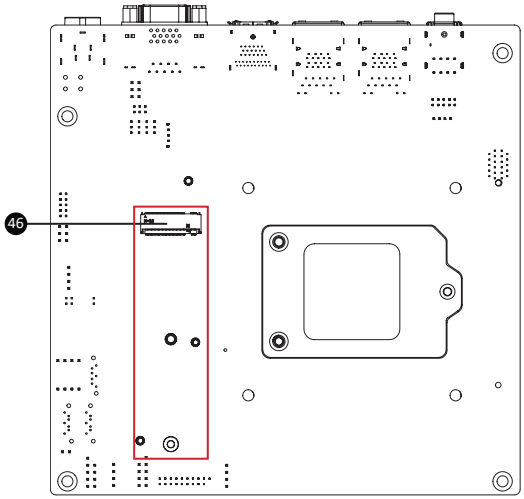
Chapter 3

Chapter 3 – Hardware Information

3.1 Jumpers and Connectors





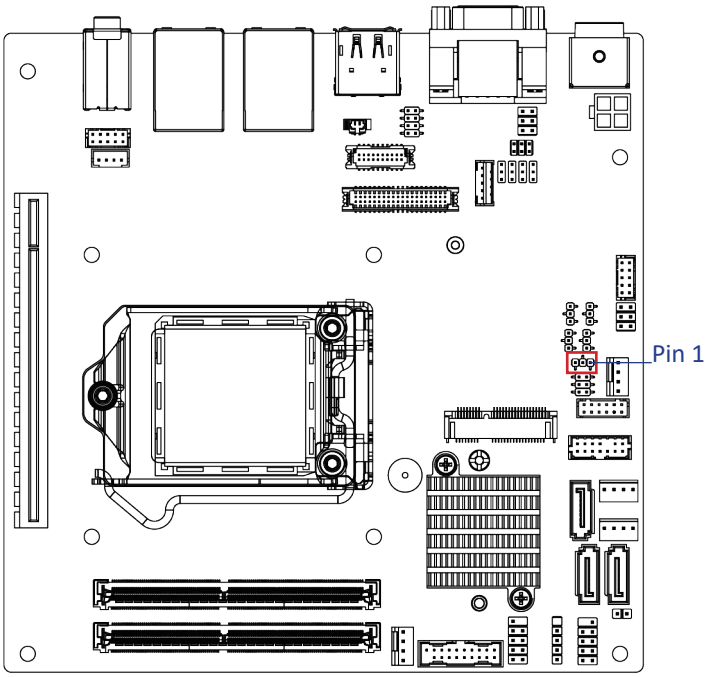


No	Code	Description
1	AT_CN	AT/ATX power mode select jumper
2	AUDIO	Audio Line Out port
3	BATTERY	Battery cable connector
4	BKL_CN	Back light brightness control connector
5	CLR_CMOS	Clear CMOS jumper
6	COM2	Serial port header
7	U1	Intel® LGA1151 socket
8	CPU_FAN	CPU fan connector
9	DC_IN	DC In Jack
10	DC_IN2	ATX 2x2 pin power connector
11	HDMI_DP	Display port & HDMI port
12	EDP	Embedded Display Port connector
13	F_AUDIO	Front audio header
14	FUSB30	USB 3.0 header
15	FUSB20_1	USB 2.0 header
16	FUSB20_2	USB 2.0 header
17	GPIO_CNT	General Purpose input/output header
18	JCOM11	Default COM1 is RI pin, can select RI/5V/12V
19	JCOM12	COM1 RS-232/RS-422/RS-485 Select
20	JCOM21	Default COM2 is RI pin, can select RI/5V/12V
21	JCOM22	COM2 RS-232/RS-422/RS-485 Select
22	JRS21	RS21 select jumper for serial port for COM2
23	JRS24	RS24 select jumper for serial port for COM2

No	Code	Description
24	JRS11-14	RS11-14 select jumper for serial port for COM1
25	JRS22	RS22 select jumper for serial port for COM2
26	JRS23	RS23 select jumper for serial port for COM2
27	LSW	LVDS resolution jumper
28	LVDS	LVDS connector
29	MINI_PCIE	MINI PCIE connector
30	PCIE16X	PCIE x16 slot
31	SATAIII_0	SATA 6Gb/s connector
32	SATAIII_1	SATA 6Gb/s connector
33	SATAIII_2	SATA 6Gb/s connector
34	SATAPW_1	SATA 6Gb/s power connector
35	SATAPW_2	SATA 6Gb/s power connector
36	SODIMM1	DDR4 SO-DIMM slot #1
37	SODIMM2	DDR4 SO-DIMM slot #2
38	SPK_OUT	Speaker out connector
39	SYS_FAN	System fan connector
40	SYS_PANEL	Front panel header
41	TPM_LPC	TPM connector
42	USB20_LAN2	USB 2.0 ports + GbE LAN port
43	USB30_LAN1	USB 3.0 ports + GbE LAN port
44	VGA (Bottom)	VGA port
45	COM1 (TOP)	Serial port
46	M2_M	M.2 Slot, M-Key, SATA 6Gb/s & PCIe, Supports NGFF-2280 Card

3.2.1 AT_CN (AT/ATX power mode select jumper)

1



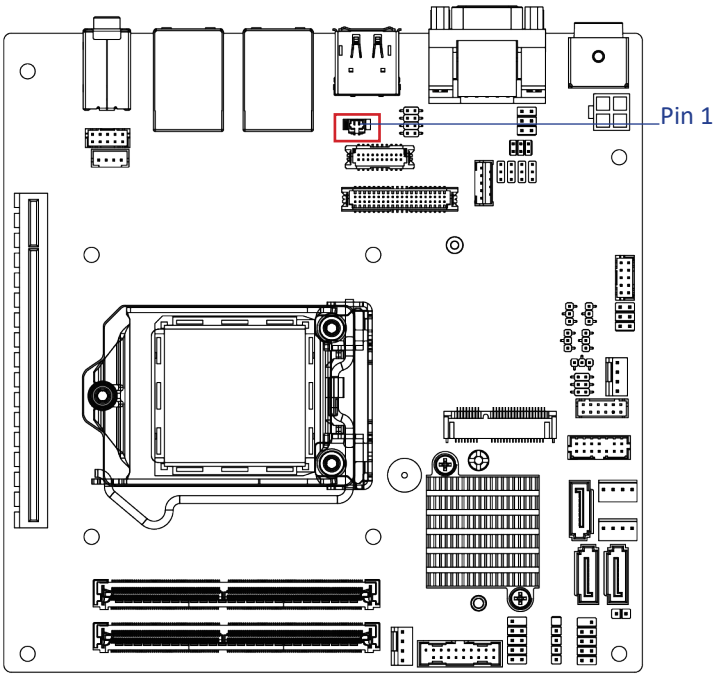
AT/ATX power mode select jumper
 1

Connector PN	Vendor
PH03N33BAAA00	HORNGTONG

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

3.2.2 Battery

❸



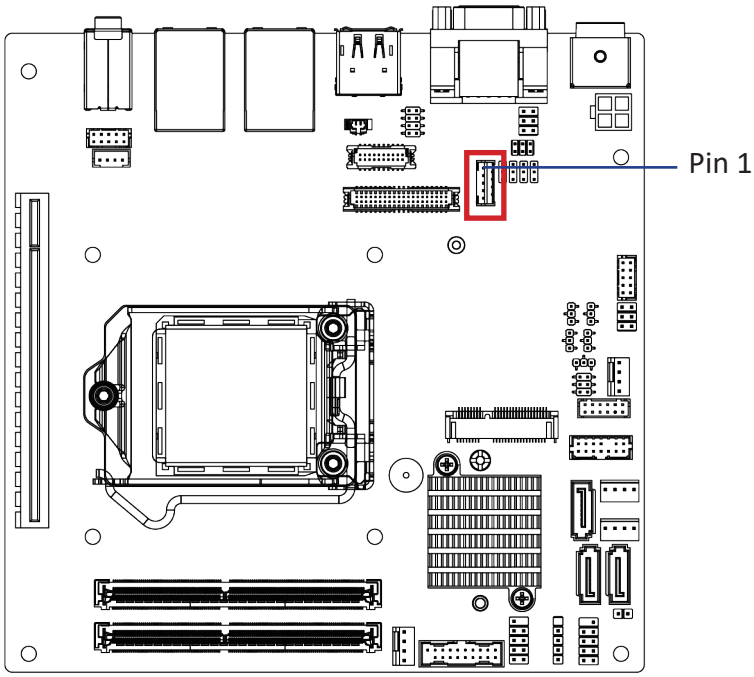
Battery Cable Connector
2 1

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

Pin No.	Definition
1	3.3V
2	GND

3.2.3 BKL_CN (Back light brightness control connector)

4



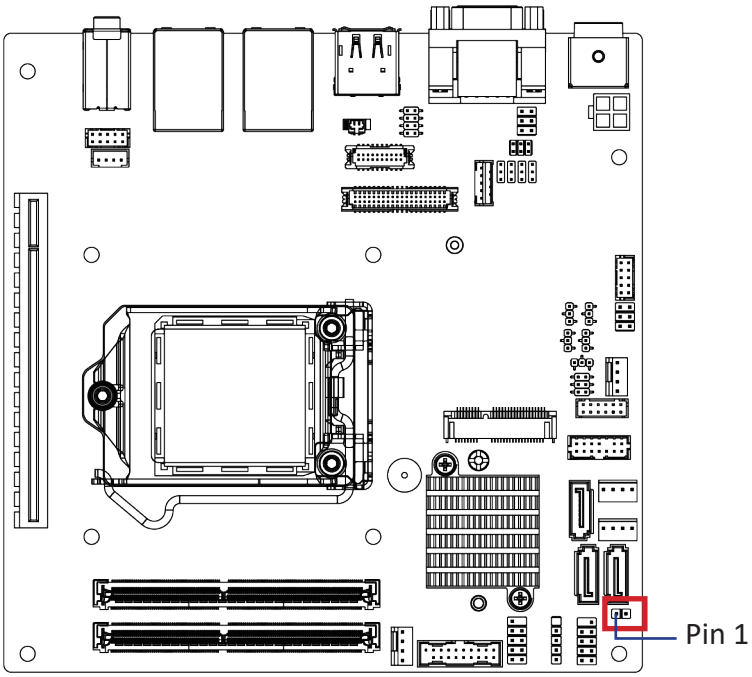
Back light brightness control connector


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

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

3.2.4 CLR_CMOS

5



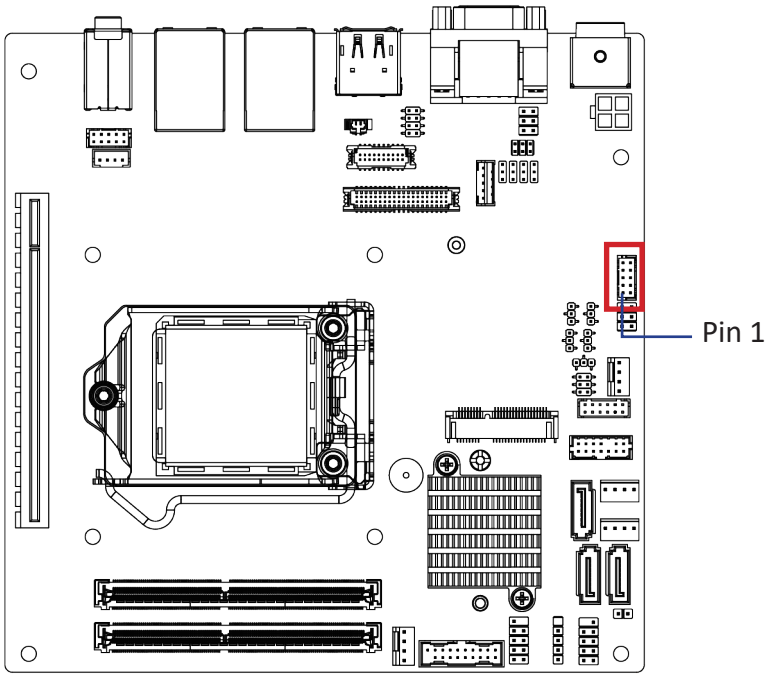
Clear COMS Jumper
1 2

Connector PN	Vendor
210-91-02GB01	PINREX
PH02R23BAZ000	HORNGTONG

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

3.2.5 COM2 (Serial Port header)

6



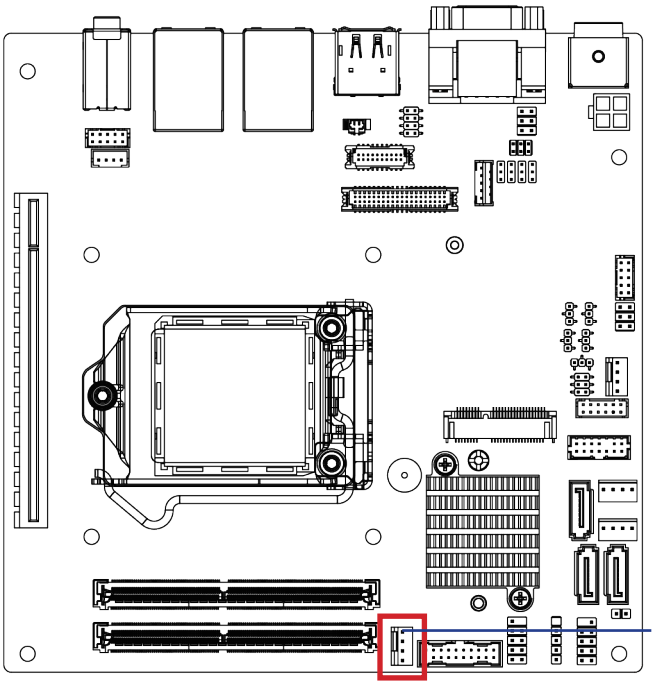
Serial Port Cable Connector
9 10 1 2

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

Pin No.	Definition	Pin No.	Definition
1	RX	6	GND
2	DCD	7	CTS
3	DTR	8	RTS
4	TX	9	No Connect
5	DSR	10	RI/ 5V/ 12V

3.2.6 CPU_FAN (CPU fan connector)

8



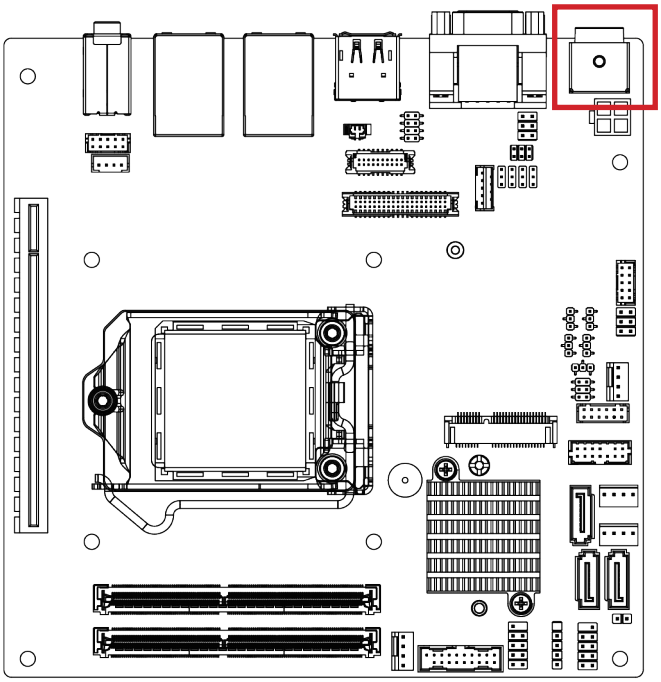
CPU FAN


Connector PN	Vendor
744-81-045W11	PINREX
WF04R22WJQ195	HORNGTONG

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

3.2.7 DC_IN (DC In JACK Connector)

9



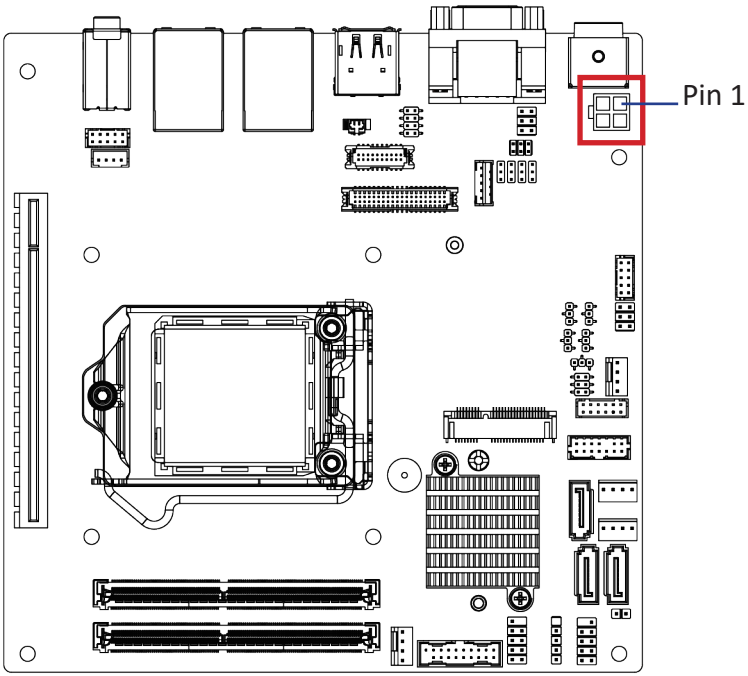
DC JACK Connector

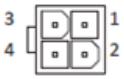

Connector PN	Vendor
2MJ-3422A1I0	SINGATRON

Note: *Connect only to a properly wired and ground outlet.

3.2.8 DC_IN2 (ATX 2x2 pin power connector)

10



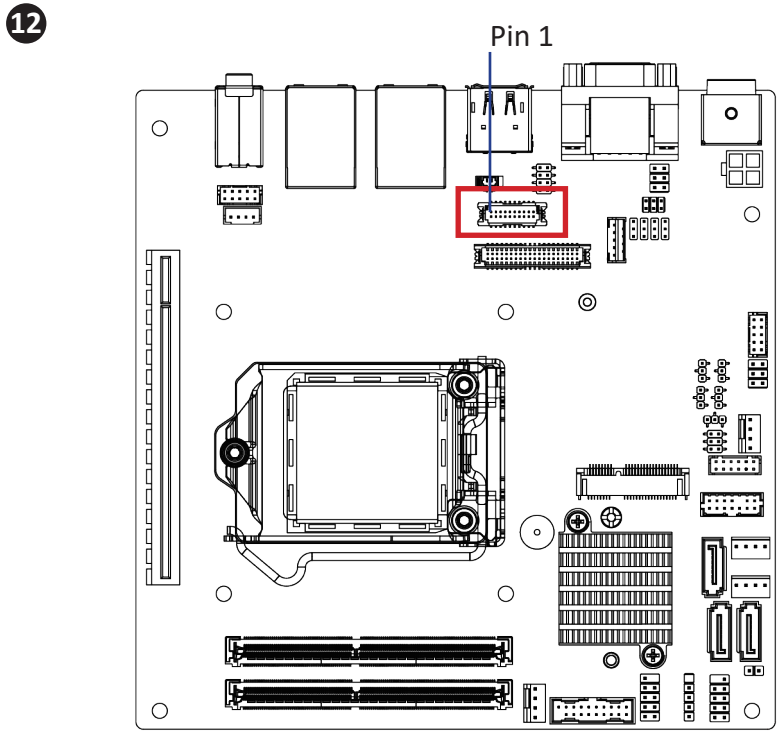
Power Connector


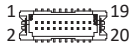
Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

Connector PN	Vendor
740-81-04TW56	PINREX
25104A0400B3-93LF	ATRC

Note: *Connect only to a properly wired and ground outlet.

3.2.9 EDP (Embedded Display Port Connector)



Embedded Display Port connector


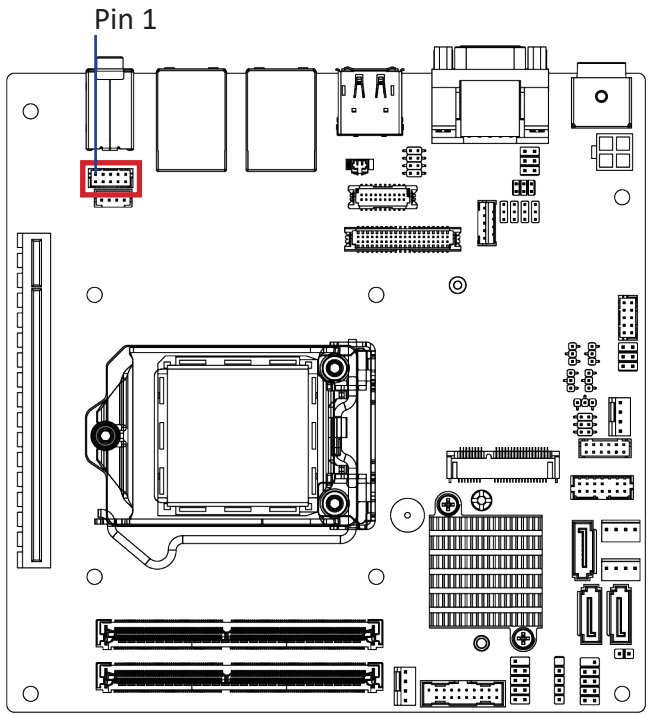
Pin No.	Definition	Pin No.	Definition
1	GND	11	A1+
2	GND	12	AUX-
3	A0-	13	GND
4	A3-	14	AUX+
5	A0+	15	A2-
6	A3+	16	GND
7	GND	17	A2+
8	SW *	18	HDP
9	A1-	19	5V
10	GND	20	3.3V

Note: * Please ensure pin 8 is connected to Ground.

Connector PN	Vendor
A1252WV-SF-2X10PN6BG1G00L	JOINT-TECH
50286-02071-001	ACES

3.2.6 F_Audio (Front audio header)

13



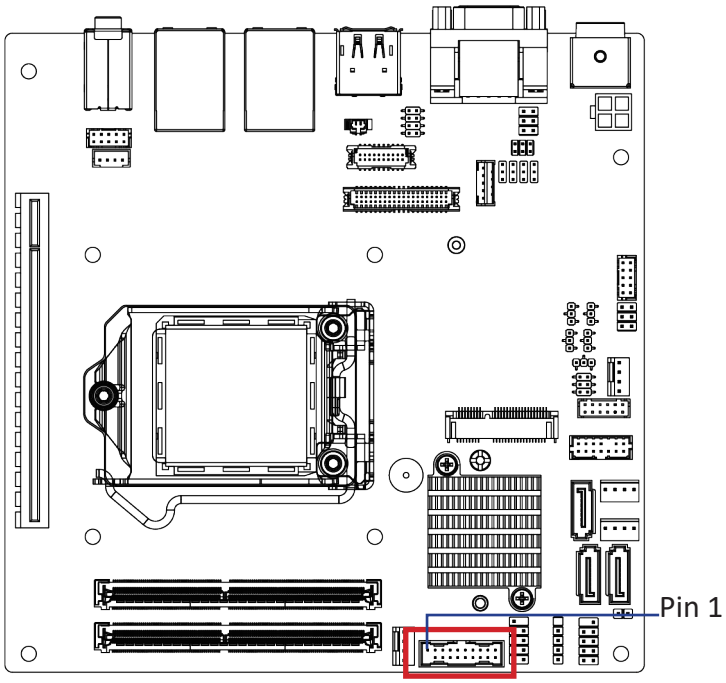
Front Audio Connector


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

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

3.2.11 F_USB 30 (USB 3.0 header)

14



USB 3.0 Header
1 10 20 11

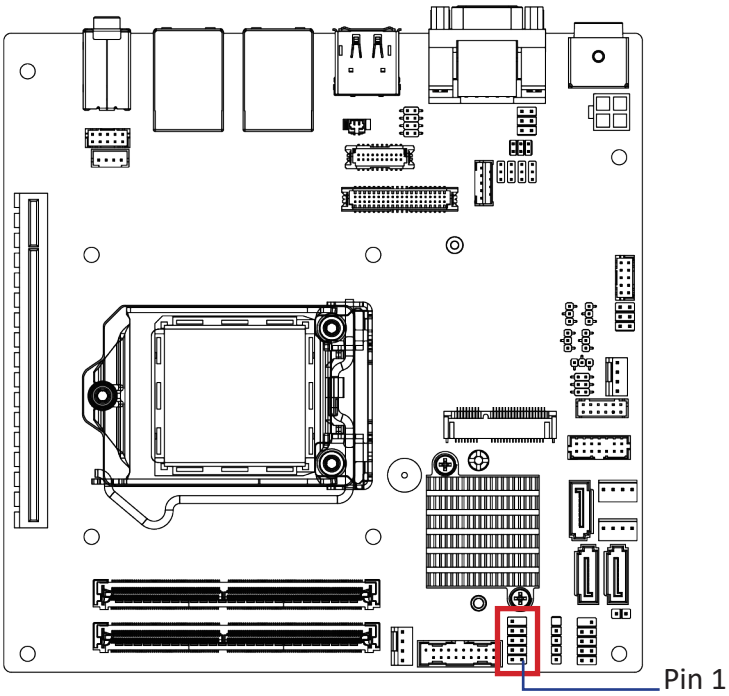
Pin No.	Definition
1	Power
2	P1_RX-
3	P1_RX+
4	GND
5	P1_TX-
6	P1_TX+
7	GND
8	P1_D-
9	P1_D+
10	OC
11	P2_D+
12	P2_D-

Pin No.	Definition
13	GND
14	P2_TX+
15	P2_TX-
16	GND
17	P2_RX+
18	P2_RX-
19	Power
20	No Pin

Connector PN	Vendor
52X-80-20GU65	PINREX
WUIR-19A9N4BU3W	WINWIN

3.2.12 F_USB 20_1 (USB 2.0 header)

15



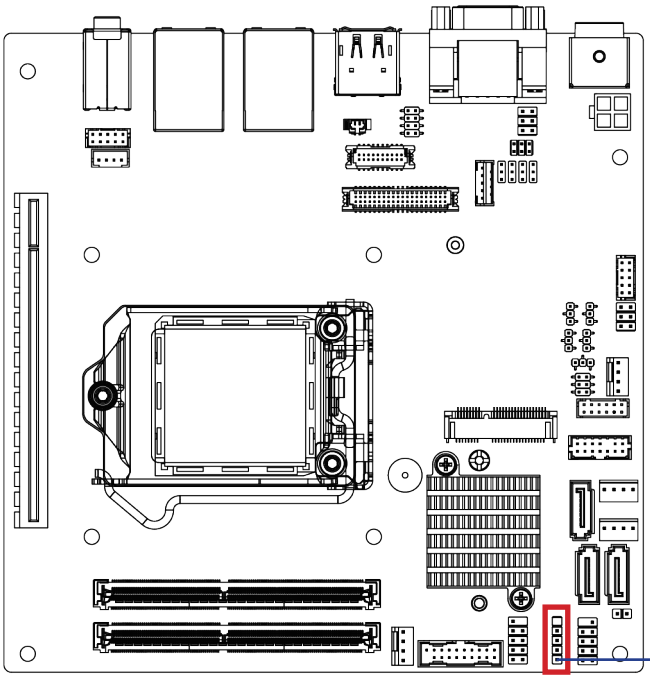
USB 2.0 Header


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

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

3.2.13 F_USB 20_2 (USB 2.0 header)

16



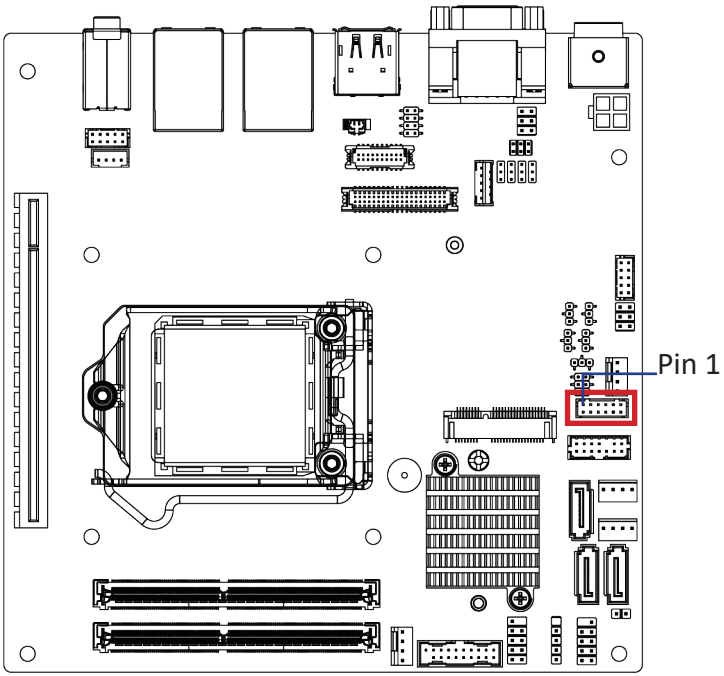
USB 2.0 Header
5 1

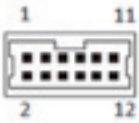
Pin No.	Definition
1	VCC
2	D-
3	D+
4	GND
5	NC

Connector PN	Vendor
210-91-05GB02	PINREX
PH05R23BAZ005	HORNGTONG

3.2.14 GPIO_CNT

17



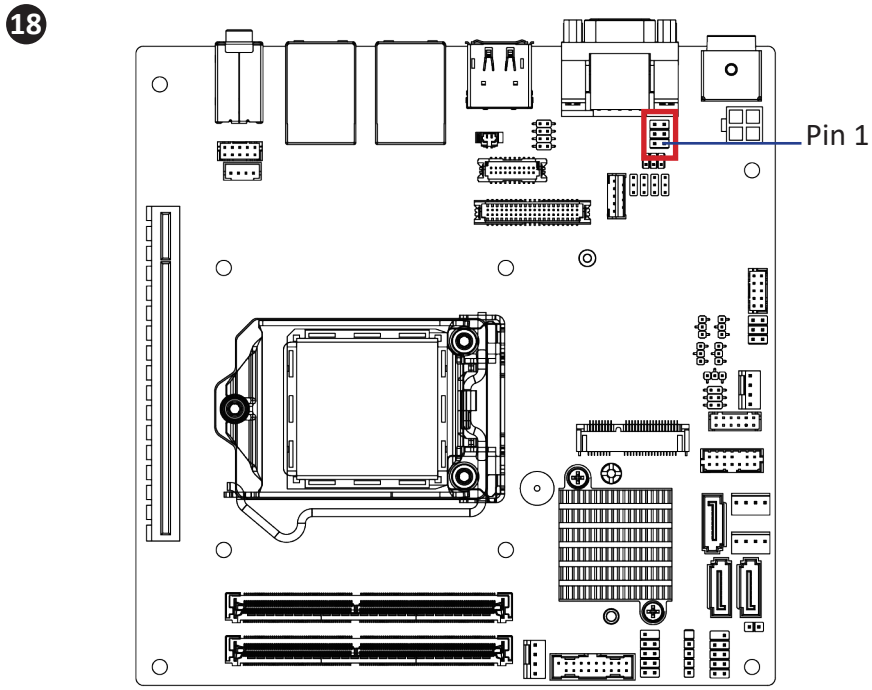
GPIO Connector


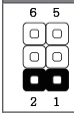
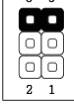
Pin No.	Definition
1	GPO1
2	GPI1
3	GPO2
4	GPI2
5	GPO3
6	GPI3
7	GPO4
8	GPI4

Pin No.	Definition
9	SMB_CLK
10	SMB_DATA
11	5V
12	GND

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

3.2.15 JCOM11 (Default COM1 is RI pin, can select RI/5V/12V)

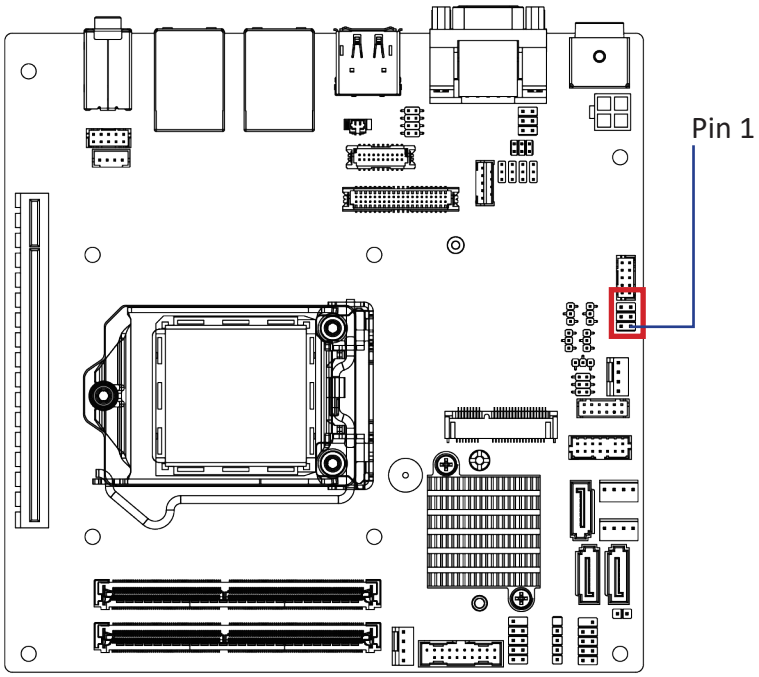


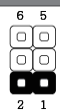
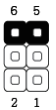
JCOM11 Jumper	
	1-2 Close: 5V (Power COM)
	3-4 Close: RI (Stand COM)(Default)
	5-6 Close: 12V (Power COM)

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

3.2.16 JCOM21 (Default COM2 is RI pin, can select RI/5V/12V)

20

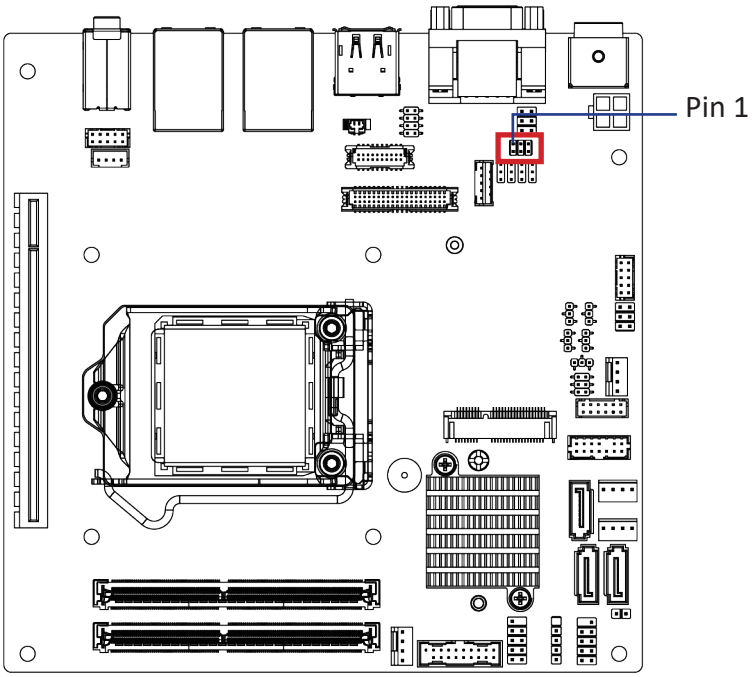


JCOM11, JCOM21 Jumper	
	1-2 Close: 5V (Power COM)
	3-4 Close: RI (Stand COM)(Default)
	5-6 Close: 12V (Power COM)

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

3.2.17 JCOM12 (COM1 RS-232/RS-422/RS-485 Select)

19



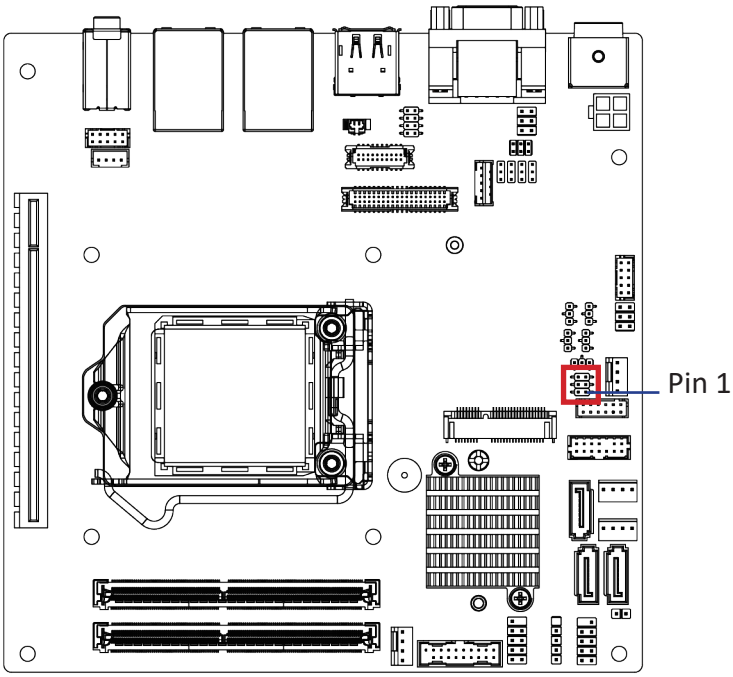
JCOM12 Jumper	
	1-2 Close: RS-232 (Default)
	3-4 Close: RS-422
	5-6 Close: RS-485

Pin No.	Definition
1	RX232
2	RX
3	RX422
4	RX
5	RX485
6	RX

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

3.2.18 JCOM22 (COM2 RS-232/RS-422/RS-485 Select)

21

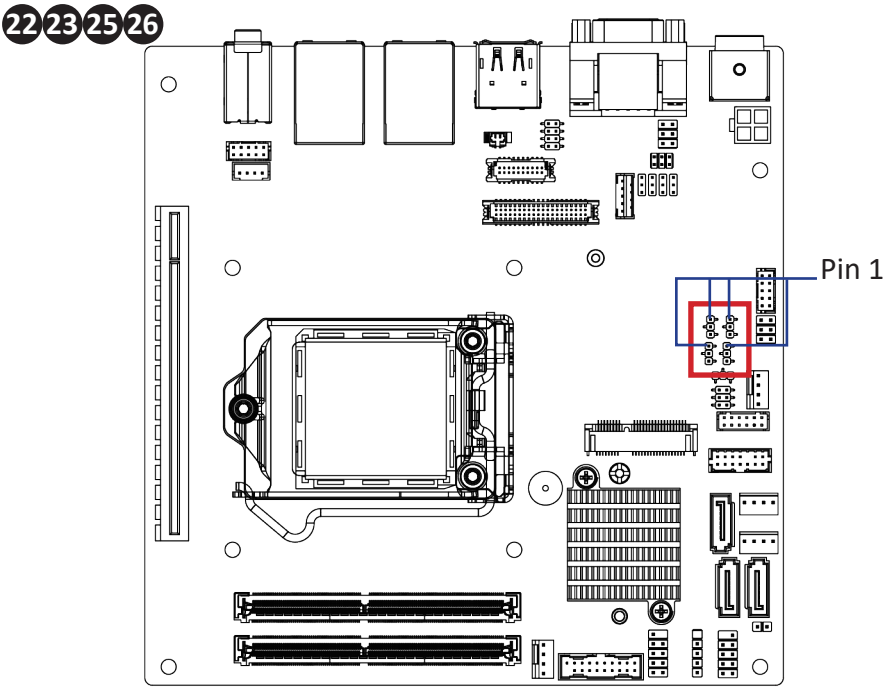


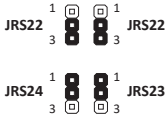
JCOM22 Jumper	
6 5 2 1	1-2 Close: RS-232 (Default)
6 5 2 1	3-4 Close: RS-422
6 5 2 1	5-6 Close: RS-485

Pin No.	Definition
1	RX232
2	RX
3	RX422
4	RX
5	RX485
6	RX

Connector PN	Vendor
222-97-03GBE1	PINREX

3.2.19 JRS21-24 (COM2 JRS21-24 select jumper for serial port)



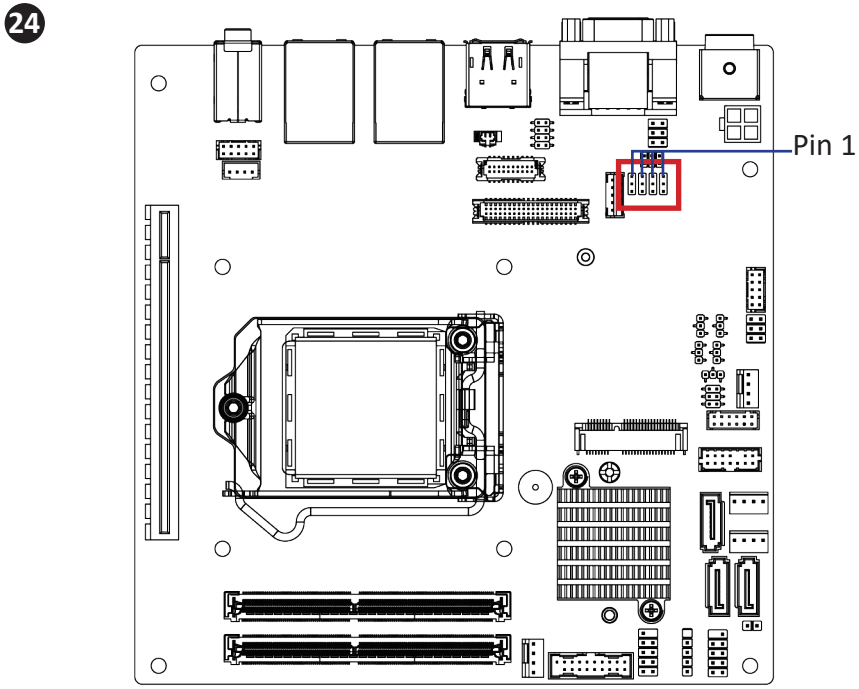
JRS 21-24 Jumper

RS-232 (Dafult-setting)

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

HW jump Configuration
Pin1, Pin2 Close is 1, Pin2, Pin3 Close is 0. JRS21=M0, JRS22=M1, JRS23=M2, JRS24=SLEW (Default 1)

M0 (JRS21)	M0 (JRS21)	M0 (JRS21)	SLEW (JRS24)	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
1	0	0	1	RS-422 Full Duplex	1T/1R RS-422 with termination resistor and bias resistor.
1	1	0	1	RS-485 Half Duplex	1T/1R RS-485 with termination resistor and bias resistor. TX ENABLE Low Active

3.2.20 JRS 11-14 (COM1 JRS11-14 select jumper for serial port)



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

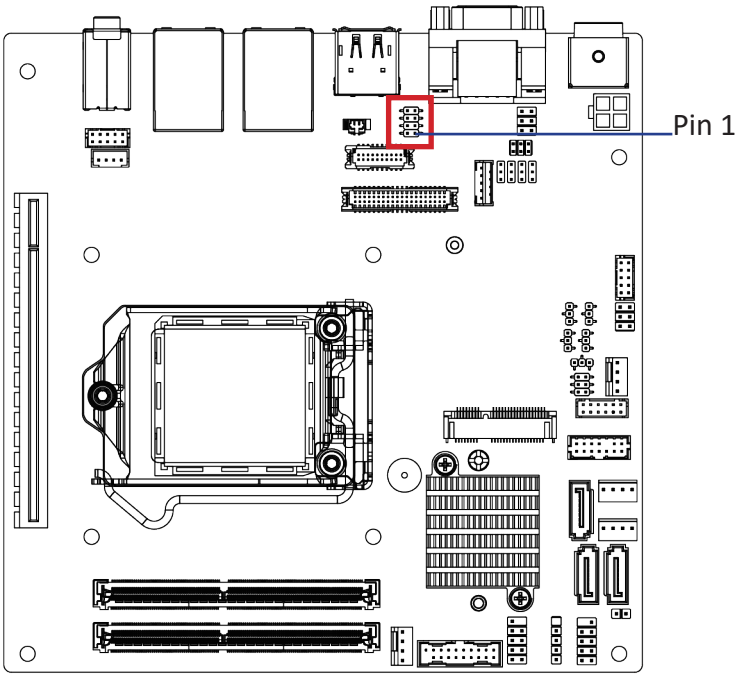
Connector PN	Vendor
220-96-03GB01	PINREX
PH03N2-7BAN000	HORNGTONG

HW jump Configuration
Pin1, Pin2 Close is 1, Pin2, Pin3 Close is 0. JRS11=M0, JRS12=M1, JRS13=M2, JRS14=SLEW (Default 1)

M0 (JRS11)	M0 (JRS11)	M0 (JRS11)	SLEW (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
1	0	0	1	RS-422 Full Duplex	1T/1R RS-422 with termination resistor and bias resistor.
1	1	0	1	RS-485 Half Duplex	1T/1R RS-485 with termination resistor and bias resistor. TX ENABLE Low Active

3.2.21 LSW (LVDS resolution jumper)

27



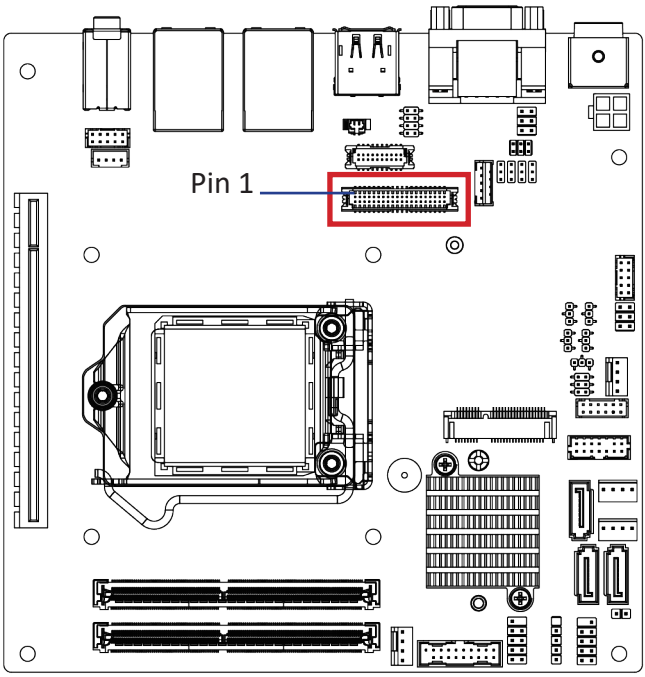
LVDS Resolution Jumper			
Jumper Setting	Resolution	Jumper Setting	Resolution
8 1	800 x 600 18bit	8 1	1366 x 768 24bit
8 1	1024 x 768 18bit	8 1	1440 x 900 24bit
8 1	1024 x 768 24bit	8 1	1400 x 1050 24bit
8 1	1024 x 600 18bit	8 1	1600 x 900 24bit
8 1	1280 x 800 18bit	8 1	1680 x 1050 24bit
8 1	1280 x 960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

Connector PN	Vendor
222-97-04GBE1	PINREX

W

3.2.22 LVDS (LVDS connector)

28



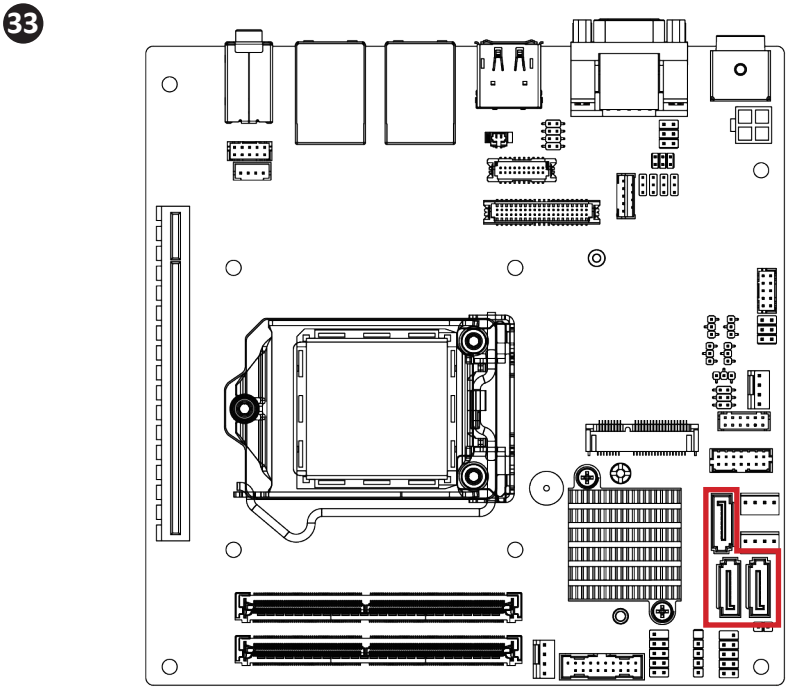
LVDS Connector			
1			39
2			40

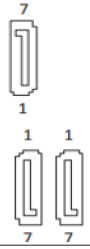
Pin No.	Definition	Pin No.	Definition
1	3.3V	21	A5+
2	5V	22	A4+
3	3.3V	23	A5-
4	5V	24	A4-
5	SPEC0	25	GND
6	SPED0	26	GND
7	GND	27	A7+
8	GND	28	A6+
9	A1+	29	A7-
10	A0+	30	A6-
11	A1-	31	GND
12	A0-	32	GND
13	GND	33	CLK2+
14	GND	34	CLK1+
15	A3+	35	CLK2-
16	A2+	36	CLK1-
17	A3-	37	GND
18	A2-	38	GND
19	GND	39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

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.

3.2.23 SATAIII_0, SATAIII_1, SATAIII_2 (SATA 6GB/s Connector)



SATA Connector


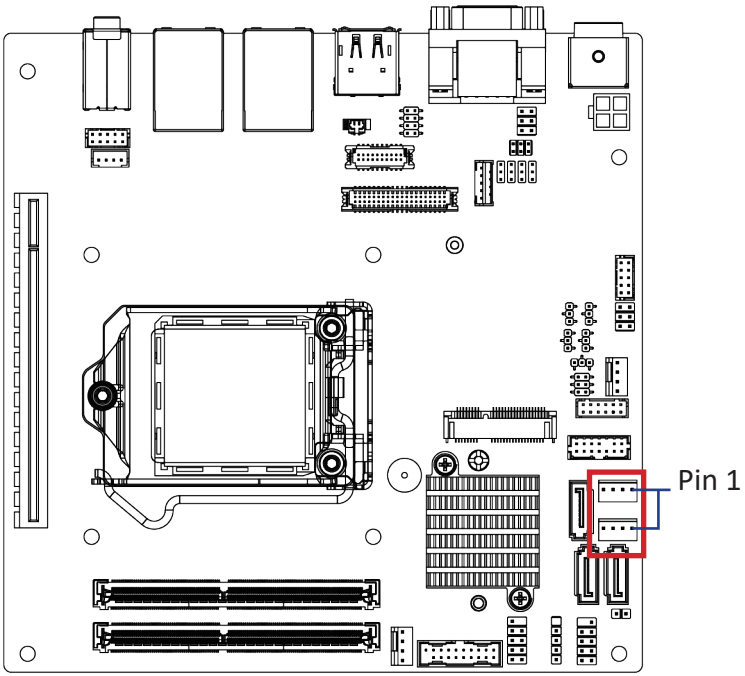
Pin No.	Definition	Pin No.	Definition
1	GND	2	A+
3	A-	4	GND
5	B-	6	B+
7	GND		

SATAIII_1,SATAIII_0	
Connector PN	Vendor
WATM-07ABNB2BAUW3	WINWIN
770-83-07SW19	PINREX

SATAIII_2	
Connector PN	Vendor
ASAT0014-P008C	LOTES

3.2.24 SATAPW_1, SATAPW_2 (SATA 6GB/s Power Connector)

34 35



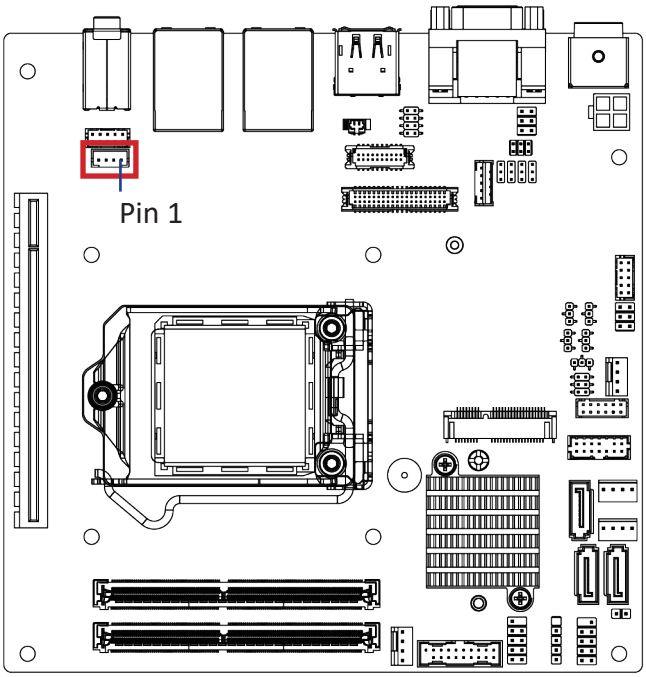
Hard Disk Power Connector
4 ▪▪▪▪ 1

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

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

3.2.25 SPK_OUT (Speaker out Connector)

38



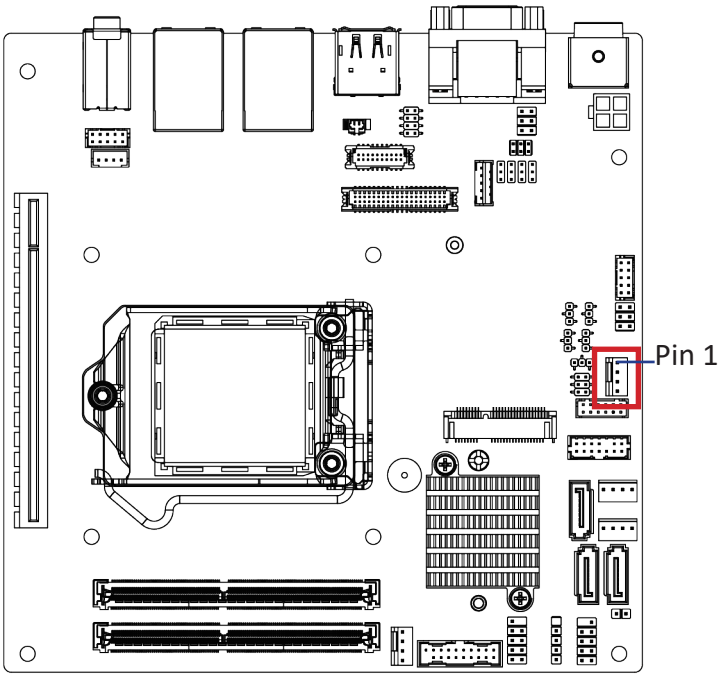
Audio Amplifie Connector
1 ▪▪▪▪ 4

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

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

3.2.26 SYS_FAN (System Fan Connector)

39



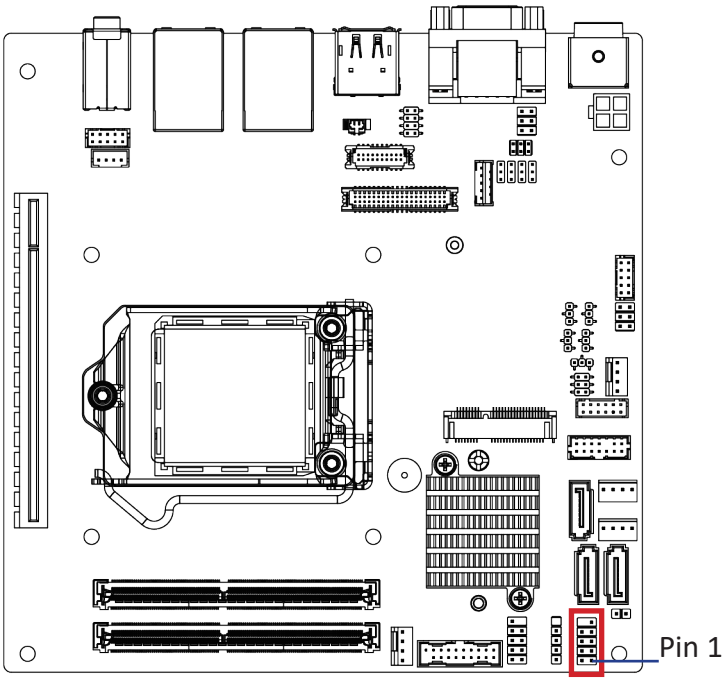
System FAN
1  4

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

Connector PN	Vendor
744-81-045R11	PINREX
WF04R22RJQ105	HORNGTONG

3.2.27 SYS_PANEL (Front Panel Header)

40



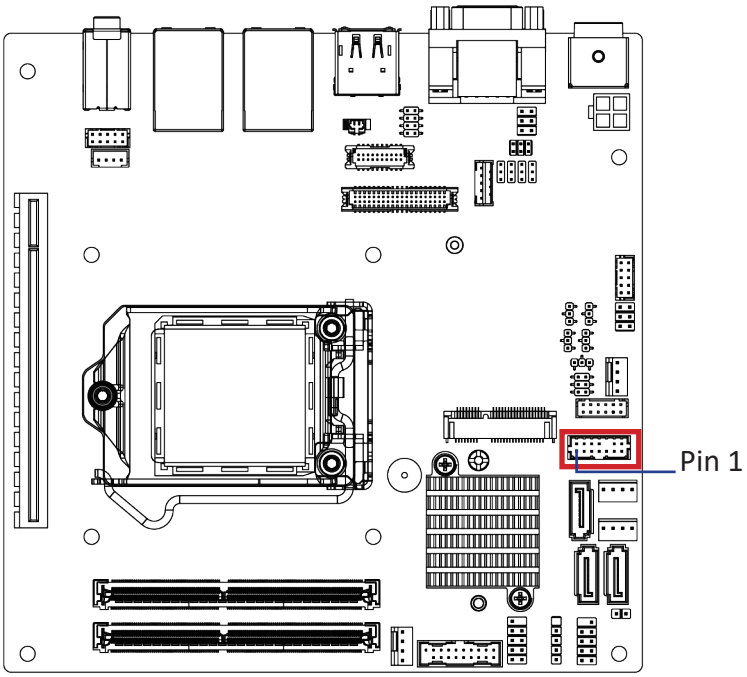
System Panel Header
10 9 2 1

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

Connector PN	Vendor
210-92-05G111	PINREX

3.2.28 TPM_LPC (Trusted Platform Module Connector)

41



TPM Module Connector
2 14 1 13

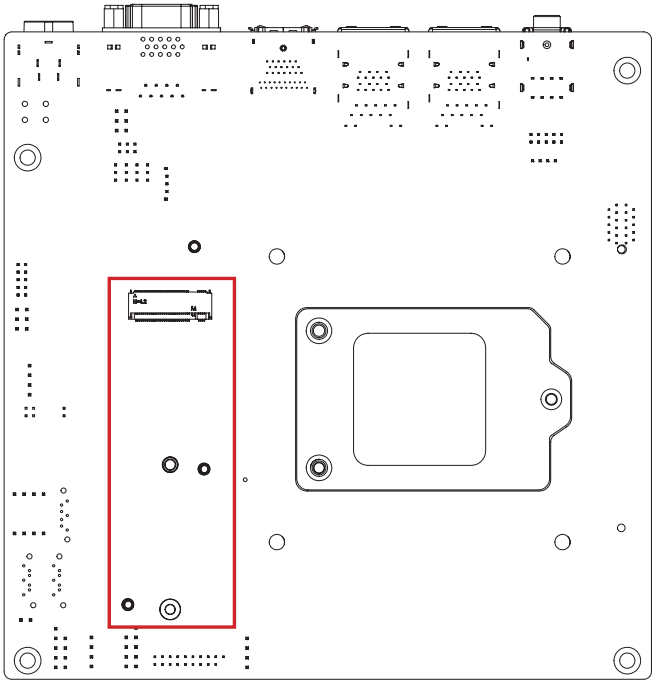
Pin No.	Definition
1	LPCCLK
2	3VDUAL
3	PFM RST
4	VCC3
5	LAD0
6	IRQ_SERIAL
7	LAD1

Pin No.	Definition
8	TPM_DET
9	LAD2
10	NC
11	LAD3
12	GND
13	LFRAME
14	GND

Connector PN	Vendor
52M-90-14GBE7	PINREX

3.2.29 M2_M (M.2 Slot, M-Key, SATA 6Gb/s & PCIe, Supports NGFF-2280/2242 Card)

46



Chapter 4

Chapter 4 – BIOS

4.1 The Main Menu

Once you enter the BIOS Setup program, the Main Menu (as shown below) appears on the screen. Use arrow keys to move among the items and press to accept or enter other sub-menu.

Main Menu Help

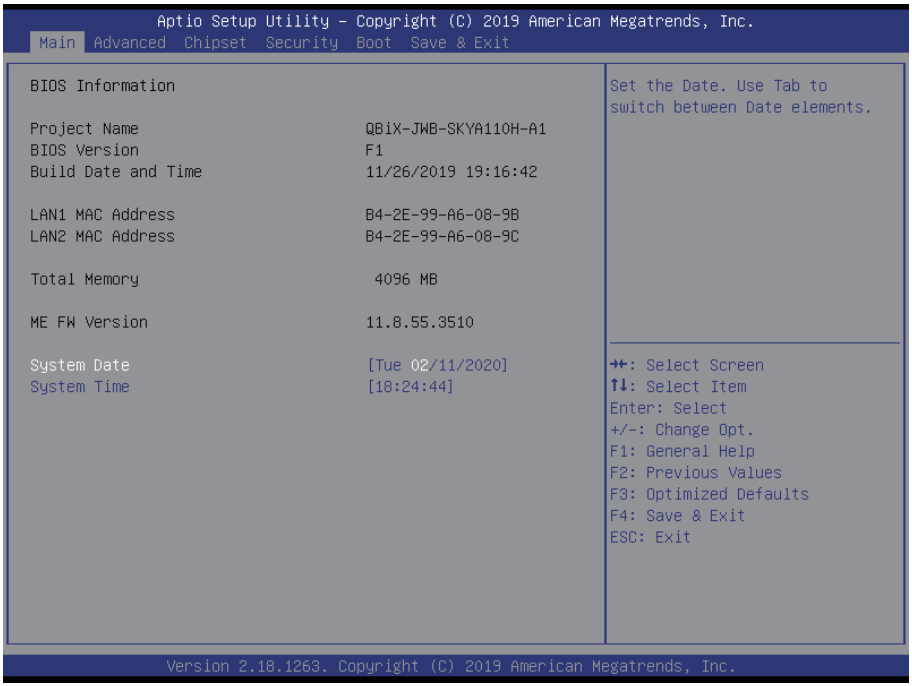
The on-screen description of a highlighted setup option is displayed on the bottom line of the Main Menu.

Submenu Help

While in a submenu, press to display a help screen (General Help) of function keys available for the menu. Press to exit the help screen. Help for each item is in the Item Help block on the right side of the submenu.

• When the system is not stable as usual, select the Restore User Defaults item to set your system to its defaults.

• The BIOS Setup menus described in this chapter are for reference only and may differ by BIOS version.



BIOS Information

» **Project Name**
Display version number of the project.

» **BIOS Version**
Display version number of the BIOS setup utility.

» **Build Date and Time**
Displays the date and time when the BIOS setup utility was created.

» **LAN1/2 MAC Address**

» **Total Memory**
Displays the technical specifications for the installed memory.

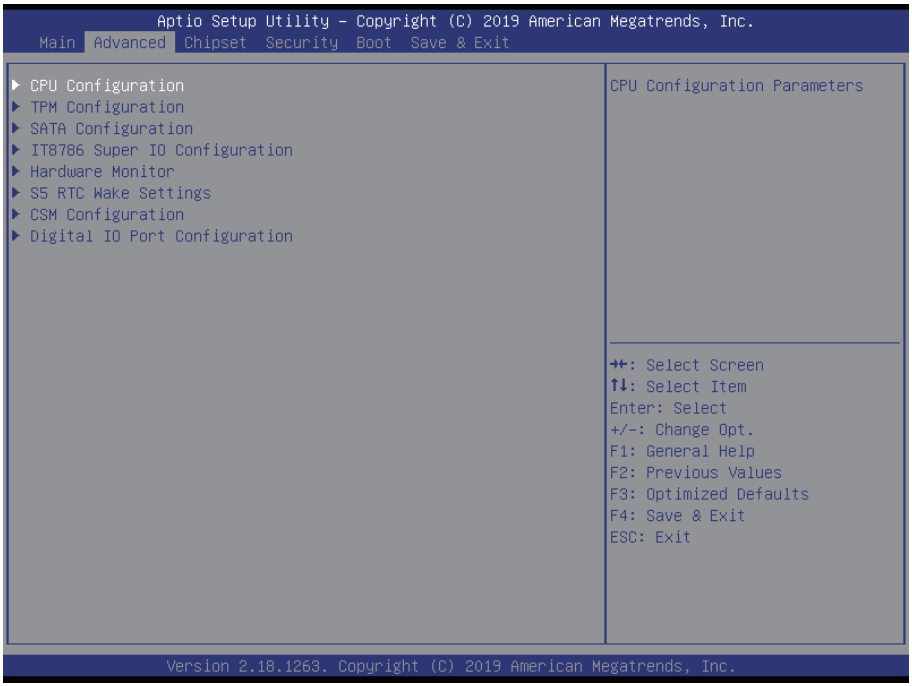
» **ME FW Version**

» **System Date**
Set the date following the weekday-month-day- year format.

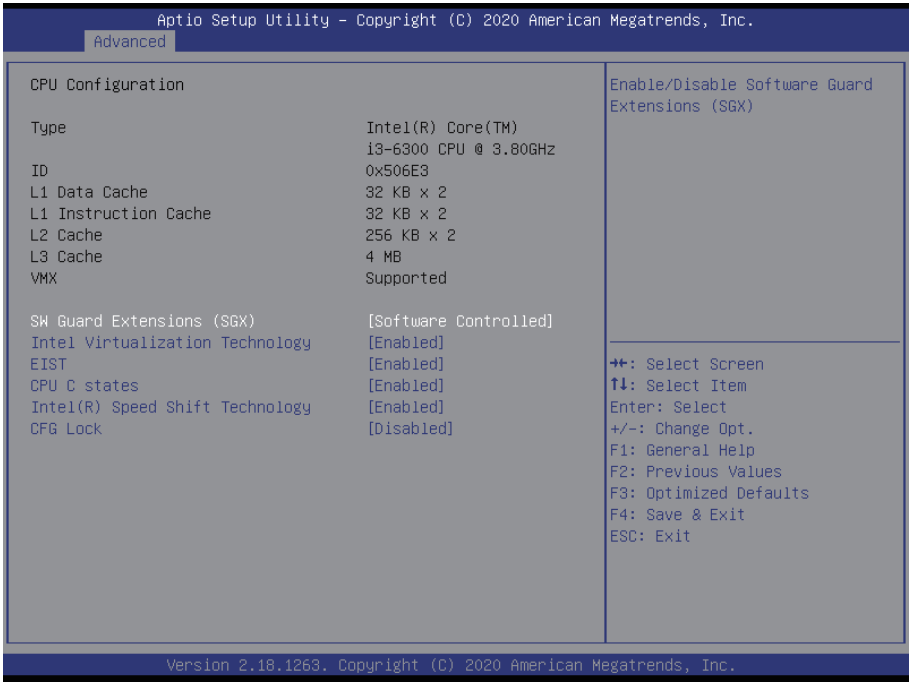
» **System Time**
Set the system time following the hour-minute- second format.

4.2 Advanced Menu

The Advanced menu display submenu options for configuring the function of various hardware components. Select a submenu item, and then press Enter to access the related submenu screen.



4.2.1 CPU Configuration Menu



» **SW Guard Extension**

Enable/Disable SGX, SGX is a set of instructions that increase the security of application code and data.

» **Intel Virtualization Technology**

Enables or disables 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.

Options available: Enabled/Disabled.

Default setting is Enabled

» **EIST**

Enables or disables Enhanced Intel® Speed Step Technology (EIST). Depending on CPU loading, Intel® EIST technology can dynamically and effectively lower the CPU voltage and core frequency to decrease average power consumption and heat production. Auto lets the BIOS automatically configure this setting.
Options available: Enabled/Disabled.
Default setting is Enabled

» **CPU C-States**

Enables or disables support for C-States.
Options available: Enabled/Disabled.
Default setting is Enabled

» **Intel® Speed Shift Technology**

Enables or disables support for Intel® Speed Shift Technology
Options available: Enabled/Disabled.
Default setting is Enabled

» **CFG lock**

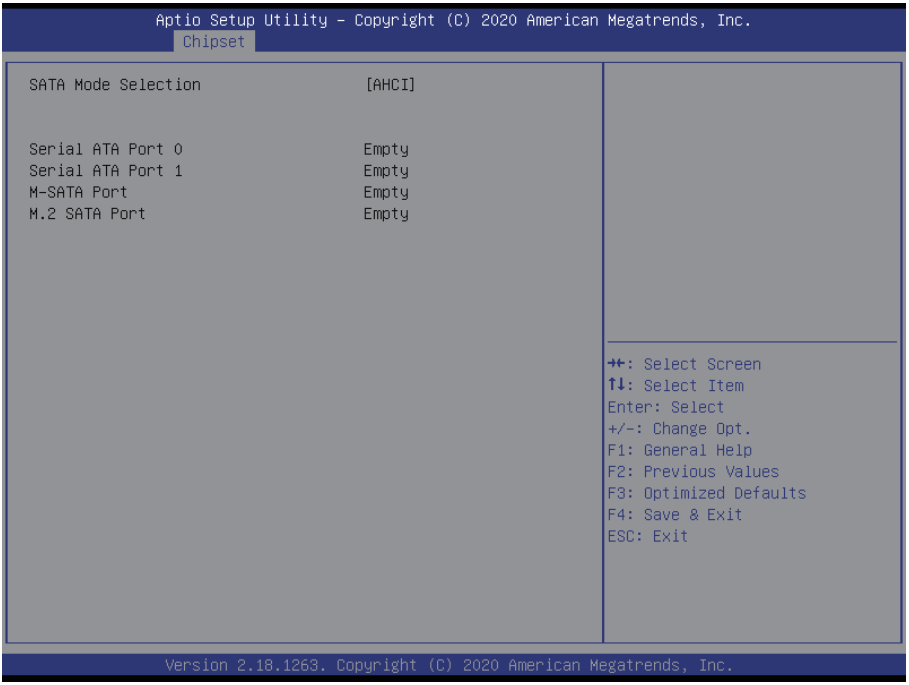
Enable/Disable CFG lock.
Options available: Enabled/Disabled.
Default setting is Disabled

4.2.2 A Trusted Computing Menu

» **Security Device Support**

Select Enabled to activate TPM support feature.
Options available: Enabled/Disabled.
Default setting is Disabled.

4.2.3 SATA and RST Configuration Menu



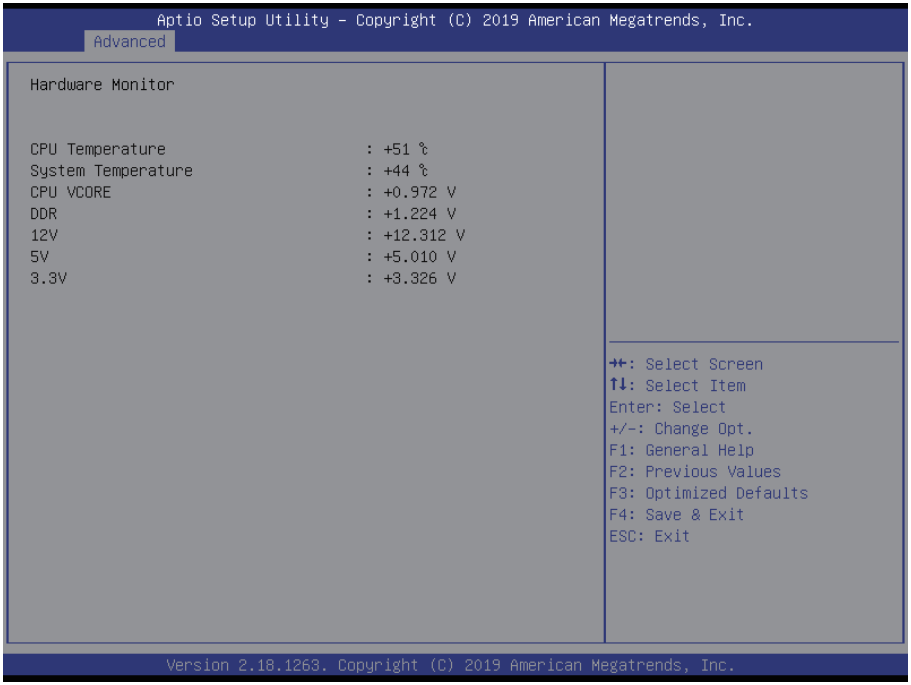
» **SATA Mode Selection**

Enables or disables RAID for the SATA controllers integrated in the Intel Chipset or configures the SATA controllers to AHCI mode. AHCI Configures the SATA controllers to AHCI mode. Advanced Host Controller Interface (AHCI) is an interface specification that allows the storage driver to enable advanced Serial ATA features such as Native Command Queuing and hot plug. (Default)
RAID Enables RAID for the SATA controller.

» **M.2 Port**

The category identifies M.2 types of hard disk that are installed in the computer. System will automatically detect HDD type. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. Hard drive information should be labeled on the outside device casing. Enter the appropriate option based on this information.

4.2.4 Hardware Monitor Menu



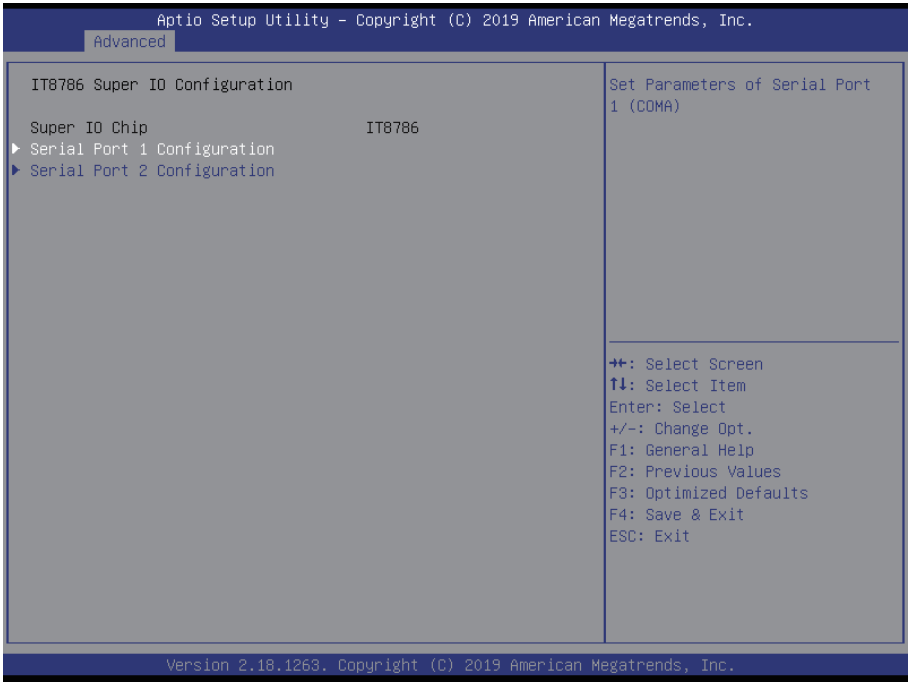
» **CPU / System Temperature**

Displays current system/ CPU temperature.

» **VCORE/ DDR1.2V/ +12V/ VCC/ VCC3**

Displays a real-time record of the related system voltage.

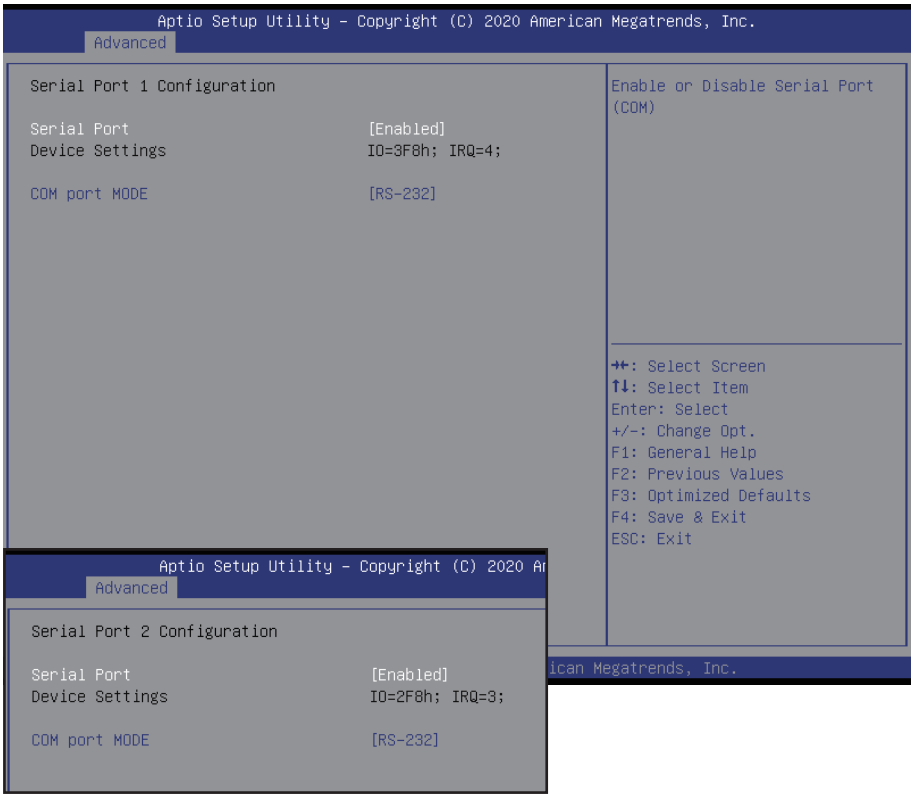
4.2.5.1 Super IO Configuration Menu



» **Serial Port 1 Configuration**

Press [Enter] for configuration of advanced items.

4.2.5.2 Serial Port 1/2 Configuration Menu



» **Serial Port**

When enabled allows you to configure the serial port settings. When set to Disabled, displays no configuration for the serial port.
Options available: Enabled/Disabled.
Default setting is **Enabled.**

» **Device Settings**

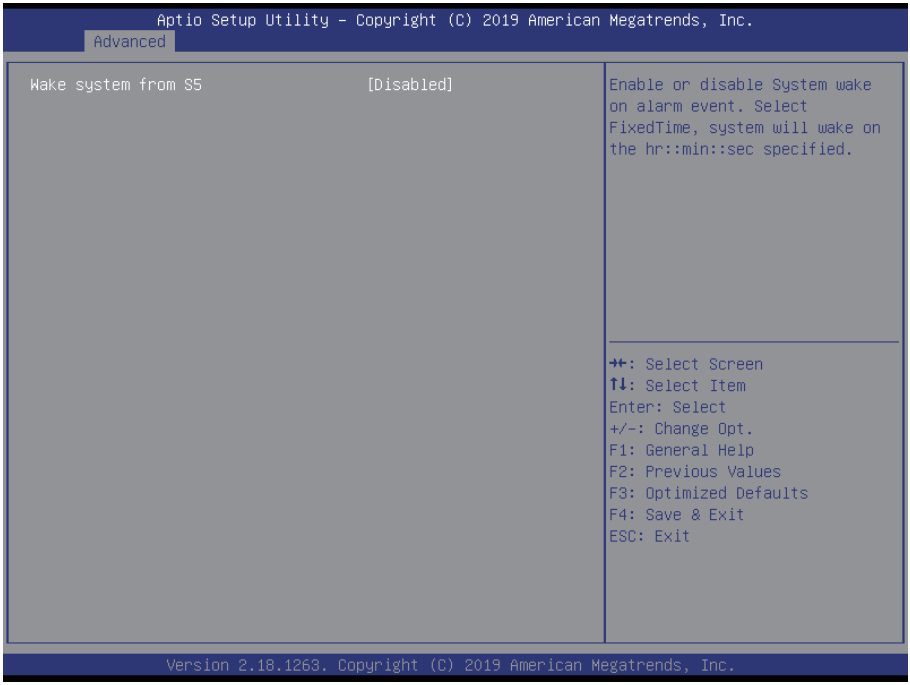
Display the specified Serial Port base I/O address and IRQ.

» **Mode**

Select Mode of serial port.

Options available: RS232 / RS485 / RS485&RS422
Default setting is **RS232**.

4.2.6 S5 RTC Wake Settings Menu



» **Wake system from S5**
Enable or disable System wake on alarm event. When enabled, System will wake on the hr:min:sec specified.
Options available: Enabled/Disabled.
Default setting is Disabled.

» **Wake up hour (Note)**
Press <+> and <-> to define the wake up hour.

» **Wake up minute (Note)**
Press <+> and <-> to define the wake up minute.

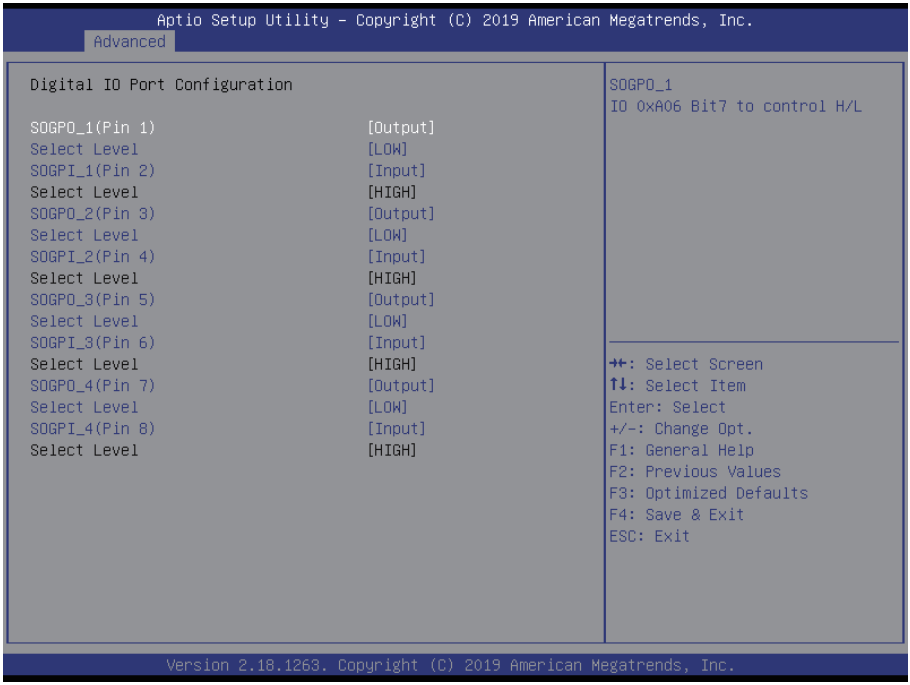
» **Wake up second (Note)**
Press <+> and <-> to define the wake up second.

4.2.7 OS Selection Menu

» **CSM (Compatibility Support Module)**
Enable/Disable Compatibility Support Module (CSM) launch. Options available: Enabled/Disabled. Default setting is Disabled. If the CSM is set to Disabled, the following five items will not be able to support Legacy mode.

» **LAN EFI driver**
Enable/Disable LAN EFI driver.
Options available: Enabled/Disabled.
Default setting is **Disabled**

4.2.8 Digital IO Port Configuration Menu



» **SOGPI_1 / 2 / 3 / 4**

Set the GPIO port as Input or output.

Options available: Input / Output

Default setting is **Input**.

» **SOGPO_1 / 2 / 3 / 4**

Set the GPIO port as Input or output.

Options available: Input / Output

Default setting is **Output**.

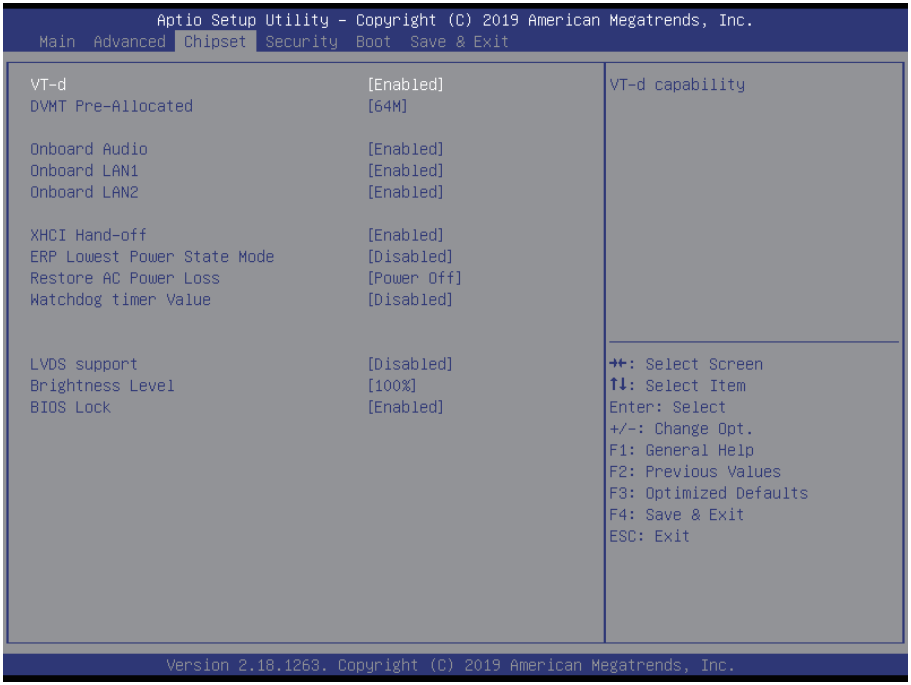
» **Select Level**

Select Output Level High or Low.

Options available: High / Low

Default setting is **High**.

4.3 Chipset Menu



» **VT-d**

Enable/Disable VT-d function.
Options available: Enabled/Disabled.
Default setting is Enabled.

» **DVMT Pre-Allocated**

Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.
Options available: 32M/64M/128M/256M.
Default setting is 64M.

» **Onboard Audio**

Enable/Disable onboard audio controller.
Options available: Enabled/Disabled.
Default setting is Enabled.

» **Onboard LAN1/2**
Enable/Disable onboard LAN controller.
Options available: Enabled/Disabled.
Default setting is Enabled.

» **XHCI Hand-off**
Determines whether to enable XHCI Hand-off feature for an operating system without XHCI Hand-off support.
Options available: Enabled/Disabled.
Default setting is Enabled.

» **ERP Lowest Power State Mode**
Enable/Disable ERP Lowest Power State Mode.
Options available: Enabled/Disabled.
Default setting is Disabled.

» **Restore AC Power Loss**
This option provides user to set the mode of operation if an AC / power loss occurs.
Power On: System power state when AC cord is re-plugged.
Power Off: Do not power on system when AC power is back.
Last State: Set system to the last sate when AC power is removed.
Options available: Power On/Power Off/Last State.
Default setting is Power Off.

» **WatchDog Timer**
Force system reboot if system gang up by memory detection fail. This option provides user to set watchdog timer as default.
Options available: Disabled / 15s / 30s / 60s
Default setting is Disabled.

4.4 Security Menu

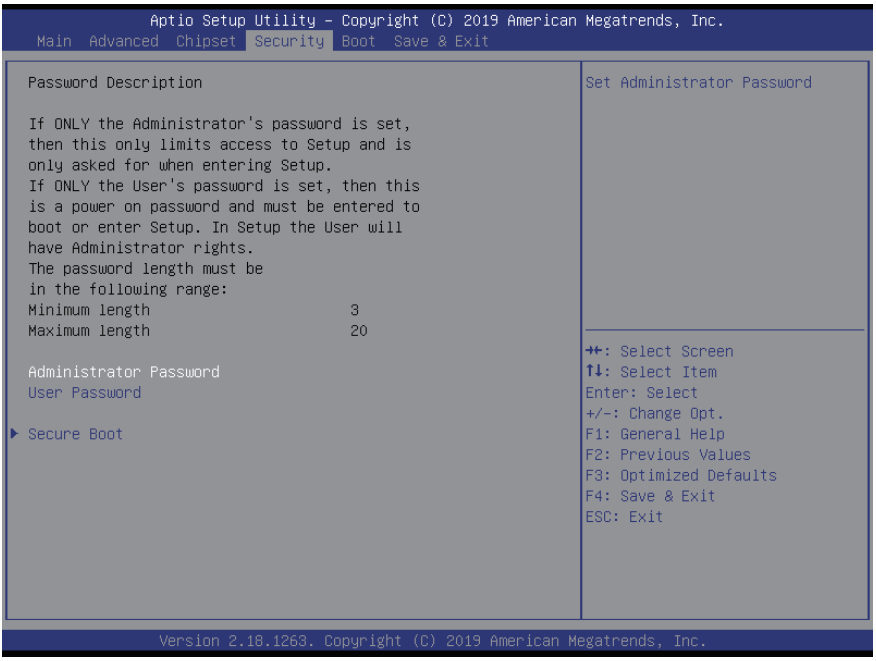
Here are two types of passwords that you can set:

Administrator Password

Entering this password will allow the user to access and change all settings in the Setup Utility.

User Password

Entering this password will restrict a user's access to the Setup menus. To enable or disable this field, a Administrator Password must first be set. A user can only access and modify the System Time, System Date, and Set User Password fields.



» **Administrator Password**

Press Enter to configure the Administrator password.

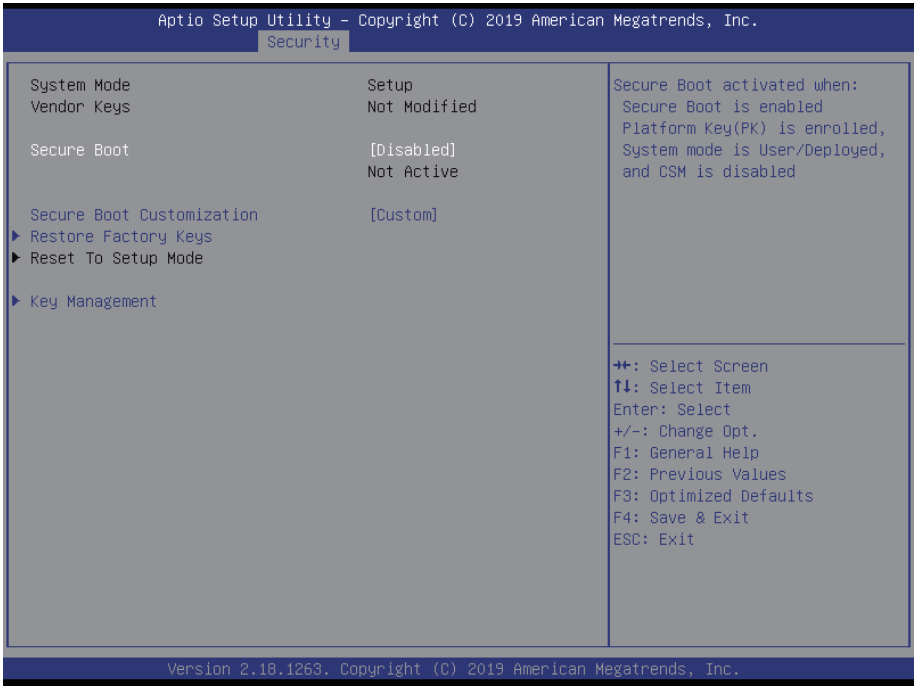
» **User Password**

Press Enter to configure the user password.

» **Secure Boot menu**

Press [Enter] for configuration of advanced items.

4.4.1 Secure Boot Menu



» **System Mode**
Display the System Mode state.

» **Vendor Keys**
Display the Vendor Keys information.

» **Secure Boot**
Display the System Mode State.

» **Secure Boot**
Secure Boot requires all the applications that are running during the booting process to be pre-signed with valid digital certificates. This way, the system knows all the files being loaded before Windows 8 loads and gets to the login screen have not been tampered with.
Options available: Enabled/Disabled.
Default setting is Disabled.

» **Secure Boot Mode (Note)**

Define the Secure Boot Mode. Set this item to Custom to advanced items configuration.

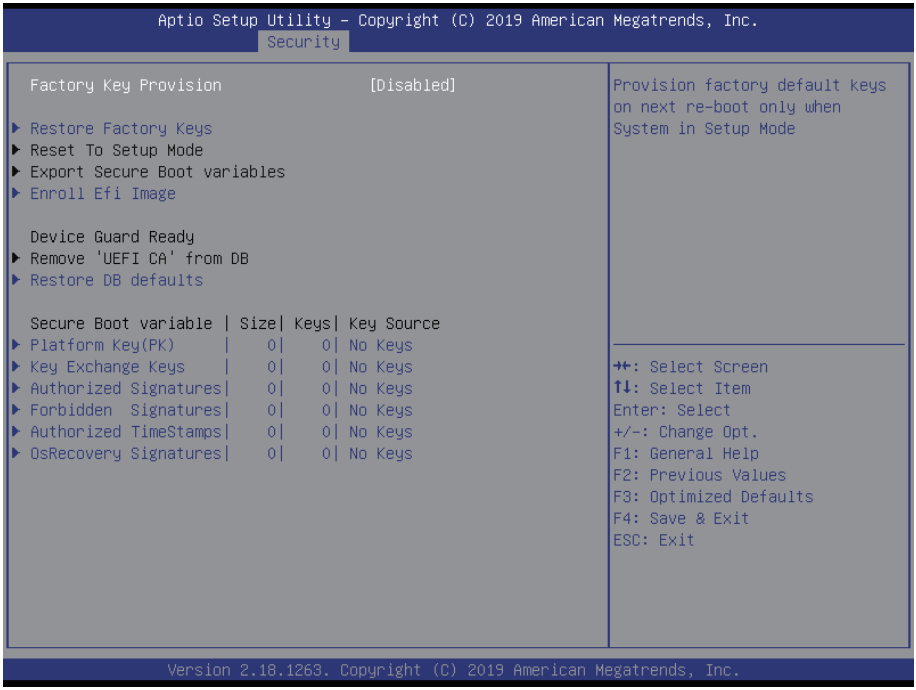
Option available: Standard/Custom.

Default setting is Custom.

» **Key Management**

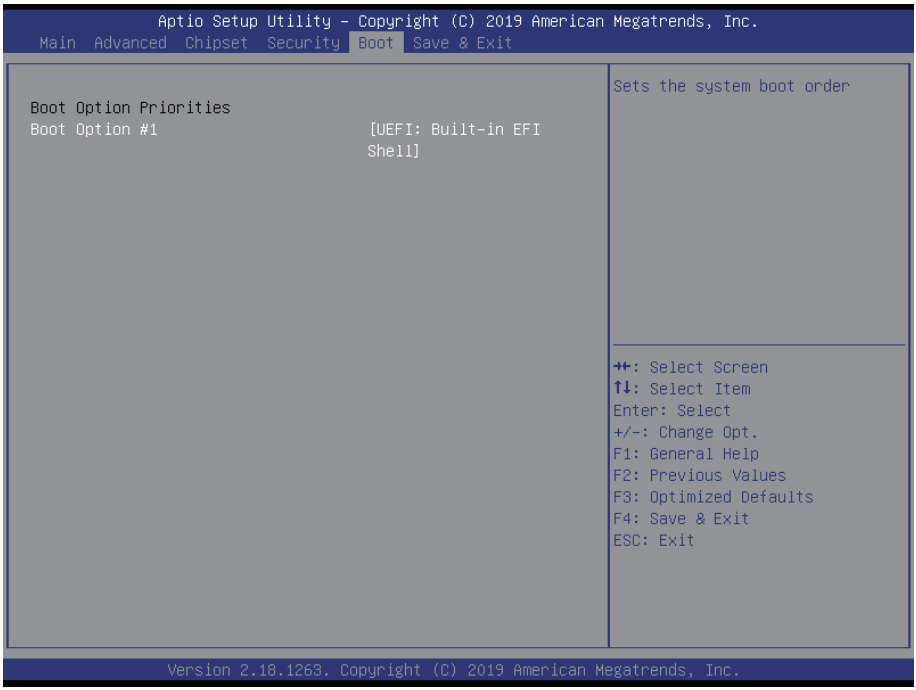
Press Enter to configure the advanced items.

4.4.2 Key Management Menu



4.5 Boot Menu

The Boot menu allows you to set the drive priority during system boot-up. BIOS setup will display an error message if the drive(s) specified is not bootable.



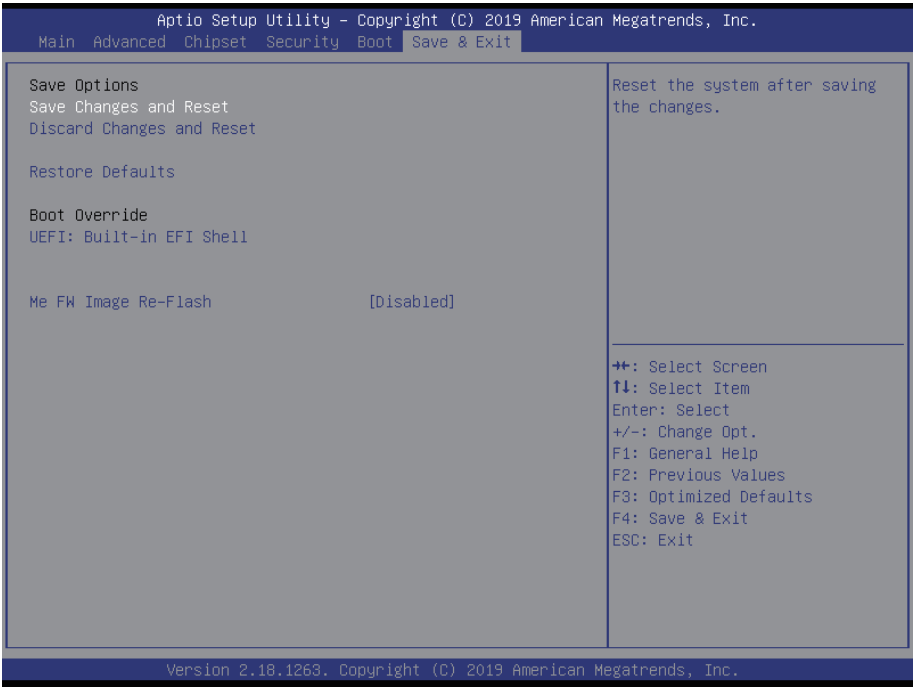
» **Boot Option Priorities**

» **Boot Option #1 / #2 / #3**

Press Enter to configure the boot priority.

4.6 Save & Exit Menu

The Exit menu displays the various options to quit from the BIOS setup. Highlight any of the exit options then press Enter.



» **Save Changes and Reset**

Saves changes made and reset the system.
Options available: Yes/No.

» **Discard Changes and Reset**

Discards changes made and reset the system.
Options available: Yes/No.

» **Restore Defaults**

Loads the default settings for all BIOS setup parameters.
Setup Defaults are quite demanding in terms of resources consumption. If you are using low-speed memory chips or other kinds of low-performance components and you choose to load these settings, the system might not function properly.
Options available: Yes/No.

» **Me FW Image Re-Flash**

Enable/Disable Me FW Image Re-Flash function.
Options available: Enabled/Disabled.
Default setting is Disabled.