



PICO-ADN2

PICO-ITX Single Board Computer

User's Manual 2nd Ed

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Packing List

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

Item	Quantity
● PICO-ADN2	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 product page on AAEON.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 WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 60°C (140°F) TO PREVENT DAMAGE.**

FCC Statement

Warning!



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

Caution:

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

Attention:

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

产品中有毒有害物质或元素名称及含量

AAEON 主板/子板/背板

QO4-381 Rev.A2

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	×	○	○	○	○	○
本表格依据 SJ/T 11364 的规定编制。 ○：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GB/T 26572标准规定的限量要求以下。 ×：表示该有害物质的某一均质材料超出了GB/T 26572的限量要求, 然而该部件仍符合欧盟指令2011/65/EU 的规范。 环保使用期限(EFUP (Environmental Friendly Use Period)) : 10年 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)

Name and content of hazardous substances in product

AAEON Main Board/ Daughter Board/ Backplane

QO4-381 Rev.A2

Part Name	Hazardous Substances					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
PCB Assemblies	×	○	○	○	○	○
Connector and Cable	×	○	○	○	○	○
The table is prepared in accordance with the provisions of SJ/T 11364. ○： Indicates that said hazardous substance contained in all of the homogenous materials for this product is below the limit requirement of GB/T 26572. ×： Indicates that said hazardous substance contained in at least one of the homogenous materials used for this part is above the limit requirement of GB/T 26572. But this product still be compliance with 2011/65/EU Directive (allowed with 2011/65/EU Annex III of RoHS exemption with number 6(c),7(a),7(c)-1). EFUP (Environment Friendly Use Period) value: 10 years. Notes: This product defined period of use is under normal condition.						

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Chapter 1

Product Specifications

1.1 Specifications

System	
Form Factor	Pico-ITX
CPU	Intel Atom® x7000E Series, Intel® Processor N-series, and Intel® Core™ i3 Processor N-series: Intel® Processor N97 (4C, 2.00 GHz, 12W) Intel® Core™ i3-N305 Processor (8C, 1.80 GHz, 15W) Intel Atom® x7425E Processor (4C, 1.50 GHz, 12W)
Chipset	Integrated with Intel® SoC
Memory Type	Onboard Single-Channel LPDDR5, up to 16GB
BIOS	UEFI
Wake on LAN	Yes
Watchdog Timer	255 Levels
Security	TPM 2.0
RTC Battery	Lithium Battery 3V/240mAh 2-pin Header for external supercapacitor (Optional) Note: Capacitance of the capacitor must be large enough to achieve a running time of at least 48 hours.
Dimension	3.94" x 2.84" (100mm x 72mm)
Gross Weight	0.18 lb (0.08 kg)
OS Support	Windows 10/11 (64-bit) Ubuntu 24.04.2

Power

Power Requirement	+12V
Power Supply Type	AT/ATX
Connector	JST-VH 2-pin Connector (Default)
Power Consumption	Intel® Processor N97, LPDDR5 8GB, 2.43A @+12V (Typical) Intel® Processor N97, LPDDR5 8GB, 2.91A @+12V (Max)

Display

Controller	Intel® UHD Graphics
LVDS/eDP	LVDS x 1 (18/24-bit 2CH), 1920 x 1200 @60Hz eDP 1.4 x 1, 3840 x 2160 @60Hz (Optional) LVDS Signal Voltage: 3.3 V / 5 V, 1.5 A (selectable via jumper) LVDS Backlight Voltage: 5 V / 12 V, 2.5 A (selectable via jumper)
Display Interface	HDMI 1.4 x 1, 3840 x 2160 @30Hz DDI x 1 (via BIO, optional)
Multiple Display	Up to 3 Simultaneous Displays

Audio

Codec	—
Audio Interface	—
Speaker	—

External I/O

Ethernet	8-Pin Header for 1GbE x 1 (Intel® Ethernet Controller I226-IT x 1, Realtek RTL8111H-CG x 1)
USB	—
Serial Port	—
Video	HDMI 1.4 x 1

Internal I/O

USB	USB 3.2 Gen 1 Pin Header x 2 USB 2.0 Pin Header x 2
Serial Port	COM 1, COM 2 (RS-232/422/485, supports 5V/12V/RI, by BOM)
Video	LVDS / eDP x 1 (Default: LVDS) Backlight Voltage Control (5/12V @2.5A)
SATA	—
Audio	—
DIO/GPIO	GPIO 4-bit
SMBus/I2C	SMBus / I2C x 1 (Default: SMBus)
Fan	4-pin Smart Fan x 1
Front Panel	HDD LED, PWR LED, Power Button, Buzzer, Reset

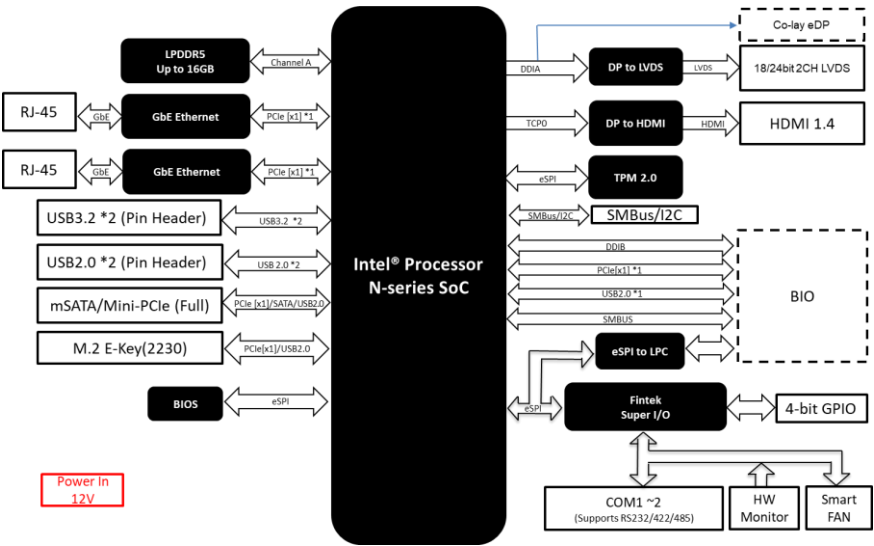
Expansion

Mini PCIe/mSATA	Full-size mSATA/mPCIe x 1 (default: mSATA, select with BIOS)
M.2	M.2 2230 E-Key x 1 (PCIe 3.0 [x1] + USB 2.0)
Others	BIO (Optional, PCIe [x1] x 1, USB 2.0, SMBus, DDI, LPC)

Environmental

Operating Temperature	-4°F – 158°F (-20°C – 70°C) WiTAS2: -40°F – 185°F (-40°C – 85°C)
Storage Temperature	-40°F – 185°F (-40°C – 85°C)
Operating Humidity	0% – 90% relative humidity, non-condensing
MTBF (Hours)	1,636,770
EMC	CE/FCC Class A

1.2 Function Block Diagram

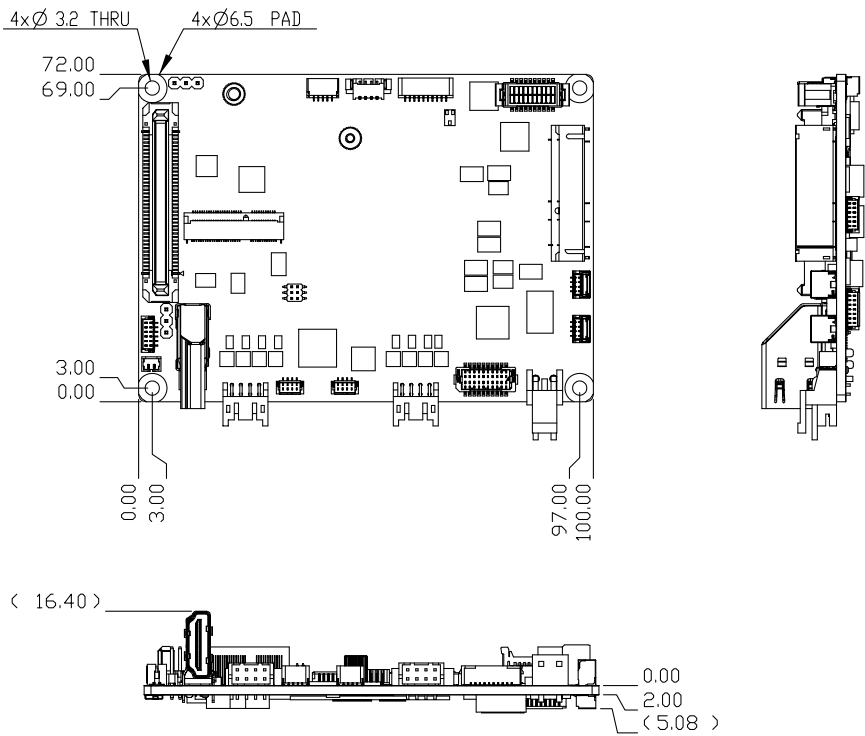


Chapter 2

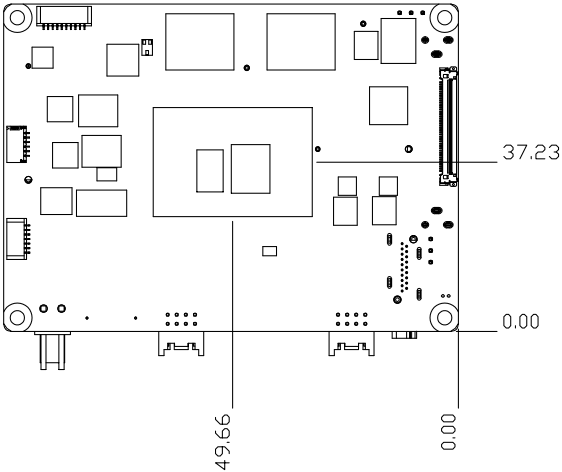
Hardware Information

2.1 Dimensions

Top View

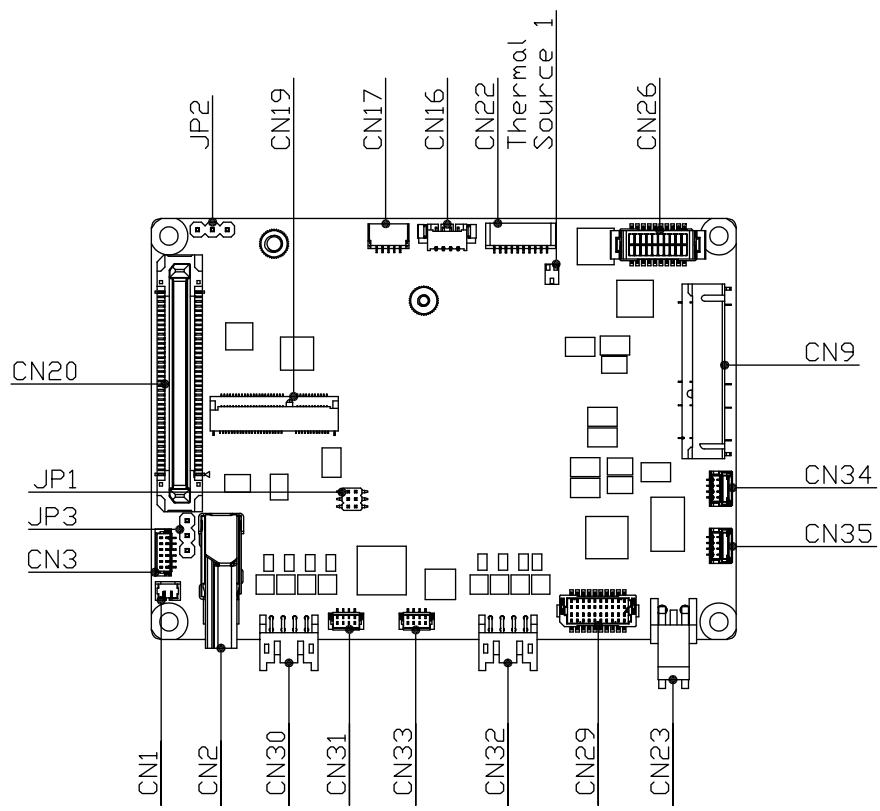


Bottom View

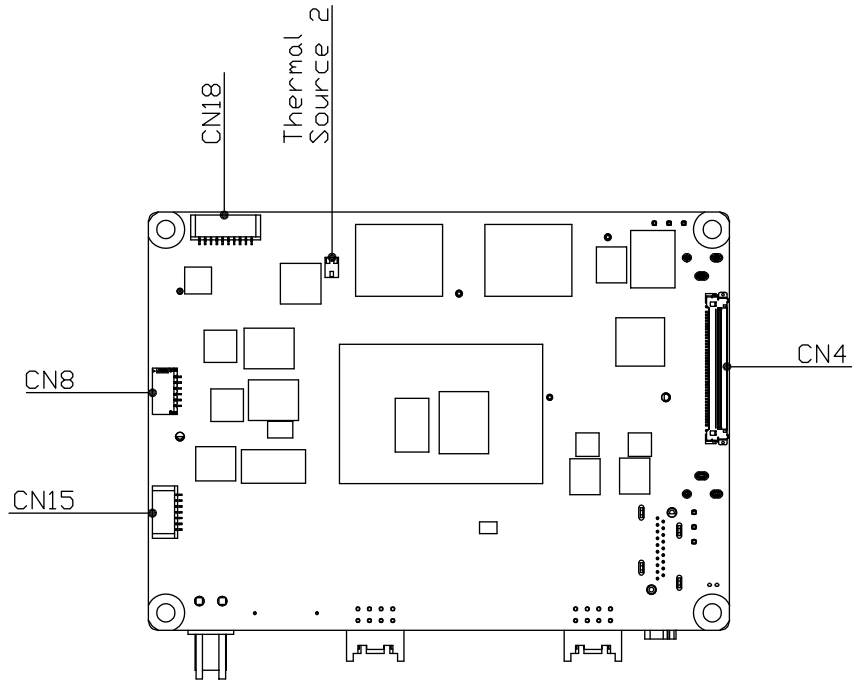


2.2 Jumpers and Connectors

Top View



Bottom View



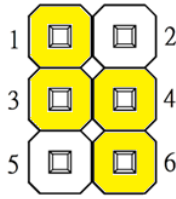
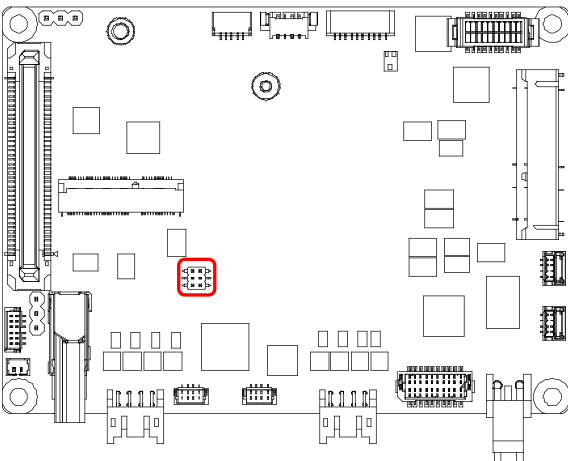
2.3 List of Jumpers

Jumpers allow users to manually customize system configurations to their suitable application needs.

Please refer to the table below for all of the board's jumpers that you can configure for your application.

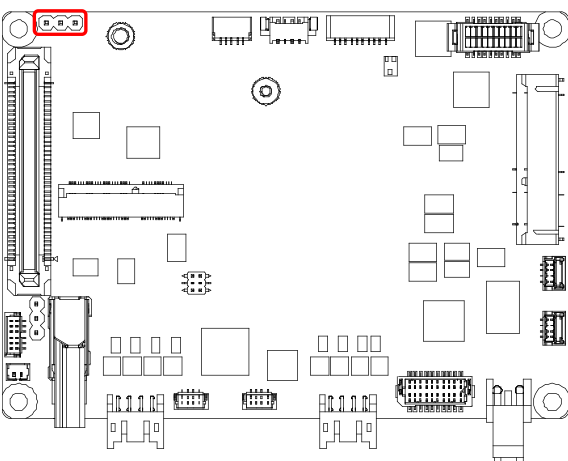
Label	Function
JP1	Clear CMOS Jumper & Auto Power Button Enable/Disable
JP2	LVDS/eDP Port Operating Voltage Selection (+5V/+3.3V, Maximum Current 1.5A)
JP3	LVDS Backlight Voltage Selection (+12V/+5V, Maximum Current 1A)

2.3.1 Clear CMOS Jumper & Auto Power Button Enable/Disable (JP1)



Clear CMOS Jumper		
1-3	Save CMOS	Default
3-5	Clear CMOS	
Auto Power Button Enable/Disable		
2-4	Disable	
4-6	Enable	Default

2.3.2 LVDS/eDP Port Operating Voltage Selection (JP2)

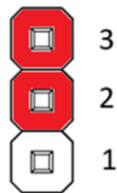
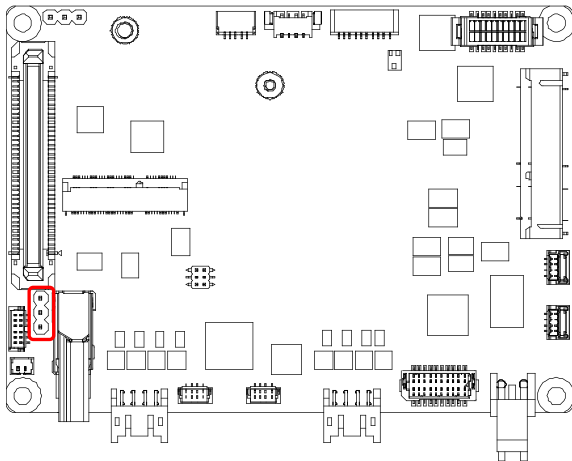


LVDS/eDP Port Operating Voltage Selection

1-2	+5V	
2-3	+3.3V	Default

Note: +5V/+3.3V, Maximum Current 1.5A.

2.3.3 LVDS Backlight Voltage Selection (JP3)



LVDS Backlight Voltage Selection

1-2	+12V	
2-3	+5V	Default

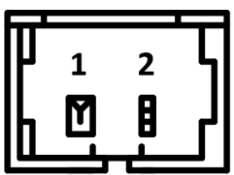
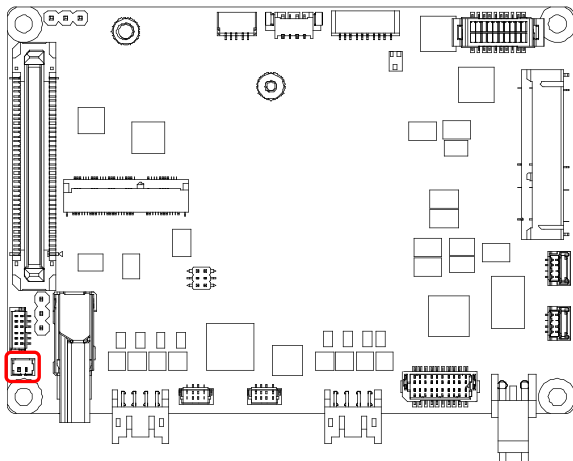
Note: +12V/+5V, Maximum Current 1A

2.4 List of Connectors

Please refer to the table below for all of the board's connectors that you can configure for your application

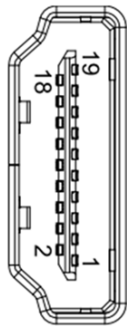
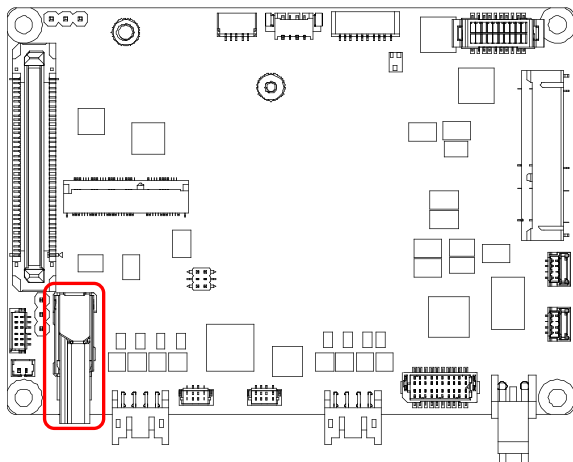
Label	Function
CN1	RTC Super Capacitor Header
CN2	HDMI Port
CN3	LVDS Backlight Header
CN4	LVDS/eDP Co-lay Connector (Default LVDS)
CN8	4-bit GPIO Header
CN9	mSATA/mini-Card Slot (Default mSATA)
CN15	SPI Flash Programming Header (For BIOS)
CN16	4-pin Smart Fan Header
CN17	I2C/SMBus Header
CN18	eSPI Debug Header
CN19	M.2 2230 E-Key Slot
CN20	BIO Connector (Reserved)
CN22	Front Panel Header
CN23	12V Power Input Header
CN26	COM Port 1/Port 2 Header
CN29	USB 3.2 Gen 1 Header (2-Port)
CN30	LAN Port 1 Header
CN31	LAN Port 1 LED Header
CN32	LAN Port 2 Header
CN33	LAN Port 2 LED Header
CN34	USB 2.0 Port 1 Header
CN35	USB 2.0 Port 2 Header

2.4.1 RTC Super Capacitor Header (CN1)



Pin	Pin Name	Signal Type	Signal Level
1	+3.3V	PWR	+3.3V
2	GND	GND	GND

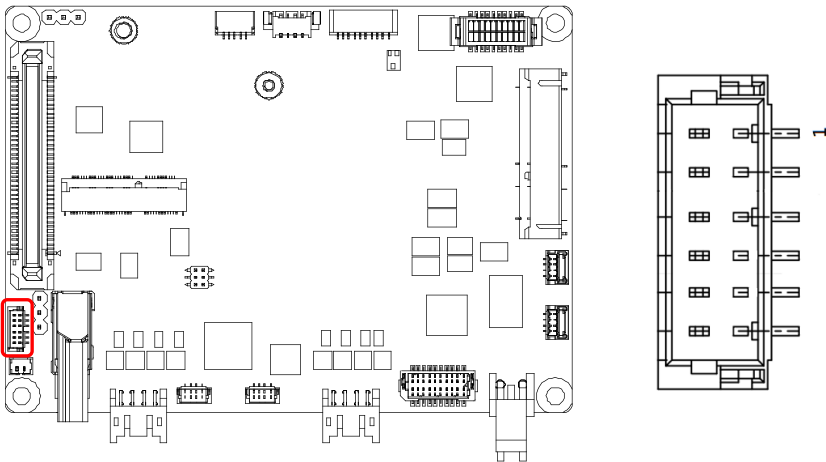
2.4.2 HDMI (CN2)



Pin	Pin Name	Signal Type	Signal Level
1	HDMI_TX2 +	DIFF	-
2	GND	GND	GND

Pin	Pin Name	Signal Type	Signal Level
3	HDMI_TX2-	DIFF	-
4	HDMI_TX1+	DIFF	-
5	GND	GND	GND
6	HDMI_TX1-	DIFF	-
7	HDMI_TX0+	DIFF	-
8	GND	GND	GND
9	HDMI_TX0-	DIFF	-
10	HDMI_CLK+	DIFF	-
11	GND	GND	GND
12	HDMI_CLK-	DIFF	-
13	N/A	N/A	N/A
14	N/A	N/A	N/A
15	DDC_CLK	IN/OUT	-
16	DDC_DATA	IN/OUT	-
17	GND	GND	GND
18	+VSS	PWR	+5V
19	HDMI_HPD	IN	-

2.4.3 LVDS Back Light Header (CN3)



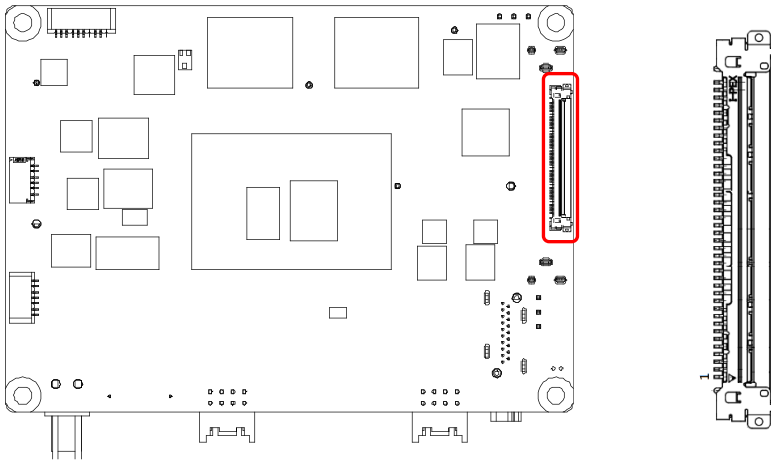
Pin	Pin Name	Signal Type	Signal Level
1	BKL_PWR	PWR	+5V(Default)/+12V
2	BKL_PWR	PWR	+5V(Default)/+12V
3	BKL_CONTROL	OUT	-

Pin	Pin Name	Signal Type	Signal Level
4	GND	GND	GND
5	GND	GND	GND
6	BKL_ENABLE	OUT	+3.3V

Note: BKL_PWR can be set to +5V or +12V by JP3.

Note: The driving current of BKL_PWR supports up to 1A.

2.4.4 LVDS/eDP Connector (CN4)

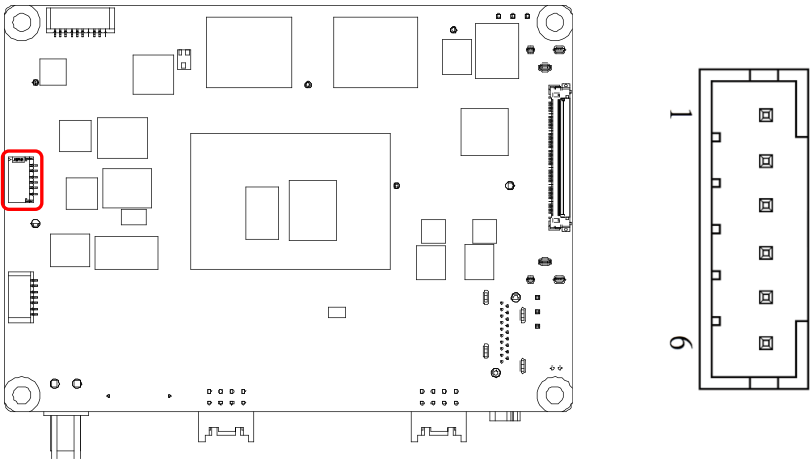


Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	LVD1_CB_3_DP	DIFF	-
3	LVD1_CB_3_DN	DIFF	-
4	GND	GND	GND
5	LVD1_CB_CLKP	DIFF	-
6	LVD1_CB_CLKN	DIFF	-
7	GND	GND	GND
8	LVD1_CB_2_DP	DIFF	-
9	LVD1_CB_2_DN	DIFF	-
10	GND	GND	GND
11	LVD1_CB_1_DP	DIFF	-
12	LVD1_CB_1_DN	DIFF	-
13	GND	GND	GND
14	LVD1_CB_0_DP	DIFF	-
15	LVD1_CB_0_DN	DIFF	-

Pin	Pin Name	Signal Type	Signal Level
16	GND	GND	GND
17	+V3P3S	PWR	+3.3V
18	LVD1_DDC_CLK/ DDIO_HPD	Signal	-
19	LVD1_BKLTEN/ DDIO_BKLTEN	Signal	-
20	LVD1_DDC_DATA	Signal	-
21	LVD1_BKLCTL/ DDIO_BKLCTL	Signal	-
22	GND	GND	GND
23	LVD1_CA_CLKP/ DDIO_AUX_DP	DIFF	-
24	LVD1_CA_CLKN/ DDIO_AUX_DN	DIFF	-
25	GND	GND	GND
26	LVD1_CA_3_DP/ DDIO_LANE3_DP	DIFF	-
27	LVD1_CA_3_DN/ DDIO_LANE3_DN	DIFF	-
28	GND	GND	GND
29	LVD1_CA_0_DP/ DDIO_LANE0_DP	DIFF	-
30	LVD1_CA_0_DN/ DDIO_LANE0_DN	DIFF	-
31	GND	GND	GND
32	LVD1_CA_1_DP/ DDIO_LANE1_DP	DIFF	-
33	LVD1_CA_1_DN/ DDIO_LANE1_DN	DIFF	-
34	GND	GND	GND
35	LVD1_CA_2_DP/ DDIO_LANE2_DP	DIFF	-
36	LVD1_CA_2_DN/ DDIO_LANE2_DN	DIFF	-
37	GND	GND	GND
38	+VDD	PWR	+3.3V(Default)/+5V
39	+VDD	PWR	+3.3V(Default)/+5V
40	+VDD	PWR	+3.3V(Default)/+5V

- Note:** +VDD can be set to +3.3V or +5V by JP2.
- Note:** The driving current of +VDD supports up to 1.5A.
- Note:** LVDS and eDP can be set by BOM. Default is LVDS.
- Note:** For Single Channel LVDS, connect the LVD1_CA signals.
- Note:** For Dual Channel LVDS, connect the LVD1_CA signals to the odd-numbered channels, and the LVD1_CB signals to the even-numbered channels.

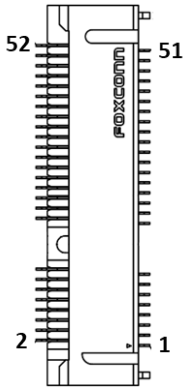
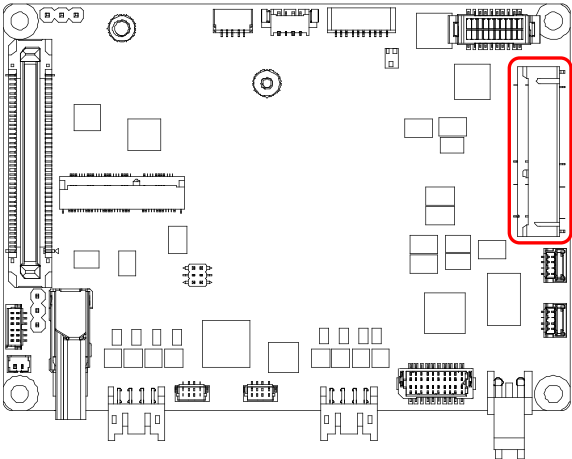
2.4.5 4-bit GPIO Header (CN8)



Pin	Pin Name	Signal Type	Signal Level
1	+V5S	VDD	5V
2	GPIO_0	Signal	-
3	GPIO_1	Signal	-
4	GPIO_2	Signal	-
5	GPIO_3	Signal	-
6	GND	GND	GND

Note: The driving current of +V5S supports up to 0.5A.

2.4.6 mSATA/mini-Card Slot (CN9)

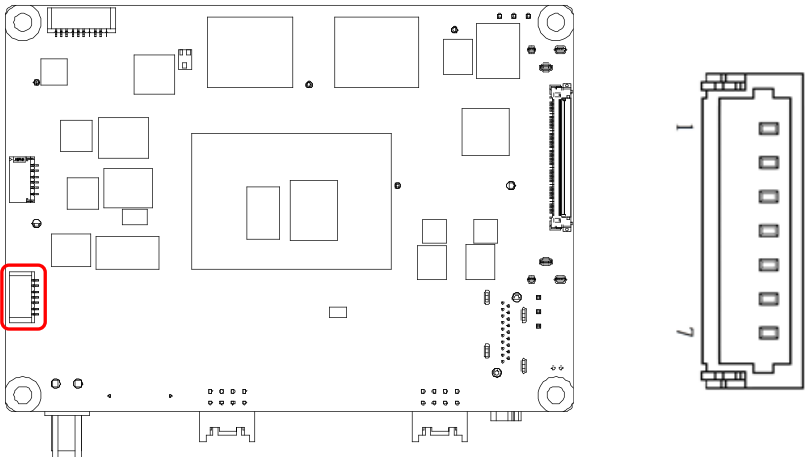


Pin	Pin Name	Signal Type	Signal Level
1	PCIE_WAKE#	IN	-
2	+3.3V	PWR	+3.3V
3	NC	-	-
4	GND	GND	GND
5	NC	-	-
6	+1.5V	PWR	+1.5V
7	PCIE_CLK_REQ#	IN	-
8	NC	-	-
9	GND	GND	GND
10	NC	-	-
11	PCIE_REF_CLK-	DIFF	-
12	NC	-	-
13	PCIE_REF_CLK+	DIFF	-
14	NC	-	-
15	GND	GND	GND
16	NC	-	-
17	NC	-	-
18	GND	GND	GND
19	NC	-	-
20	W_DISABLE#	OUT	+3.3V
21	GND	GND	GND
22	PCIE_RST3	OUT	+3.3V
23	PCIE_RX-/SATA_RX-	DIFF	GND

Pin	Pin Name	Signal Type	Signal Level
24	+3.3V	PWR	+3.3V
25	PCIE_RX+/SATA_RX+	DIFF	-
26	GND	GND	GND
27	GND	GND	GND
28	+1.5V	PWR	+1.5V
29	GND	GND	GND
30	SMB_CLK	IN/OUT	+3.3V
31	PCIE_TX-/SATA_TX-	DIFF	-
32	SMB_DATA	IN/OUT	+3.3V
33	PCIE_TX+/SATA_TX+	DIFF	-
34	GND	GND	GND
35	GND	GND	GND
36	USB_D-	DIFF	-
37	GND	GND	GND
38	USB_D+	DIFF	-
39	+3.3V	PWR	+3.3V
40	GND	GND	GND
41	+3.3V	PWR	+3.3V
42	NC	-	-
43	GND	GND	GND
44	NC	-	-
45	NC	-	-
46	NC	-	-
47	NC	-	-
48	+1.5V	PWR	+1.5V
49	NC	-	-
50	GND	GND	GND
51	NC	-	-
52	+3.3V	PWR	+3.3V

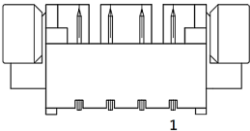
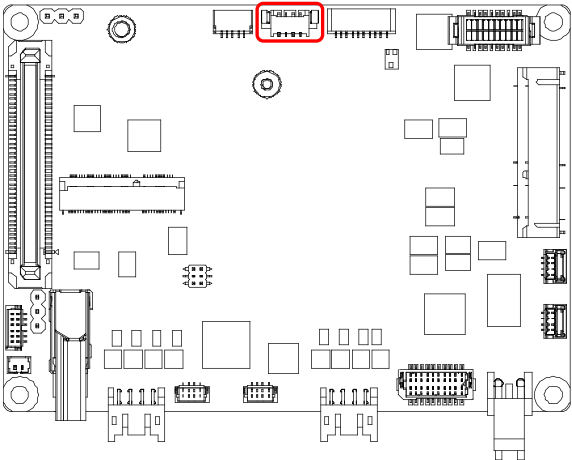
Note: mSATA/mini-Card function can be set by BOM and BIOS. Default is mSATA.

2.4.7 SPI Flash Programming Header (For BIOS) (CN15)



Pin	Pin Name	Signal Type	Signal Level
1	SPI_SO	OUT	-
2	GND	GND	GND
3	SPI_CLK	IN	-
4	+V3P3A_SPI	PWR	+3.3V
5	SPI_SI	IN	-
6	SPI_CS	IN	-
7	NC	-	-

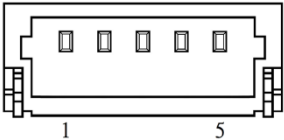
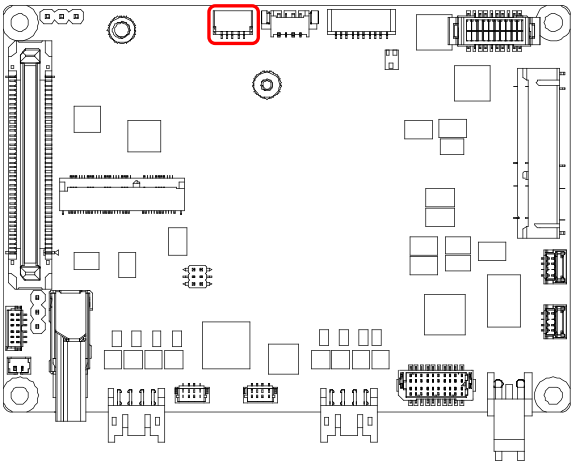
2.4.8 4-pin Smart Fan Header (CN16)



Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	FAN_POWER	PWR	+12V
3	FAN_TAC	IN	-
4	FAN_CTL	OUT	-

Note: The driving current of FAN_POWER supports up to 1A.

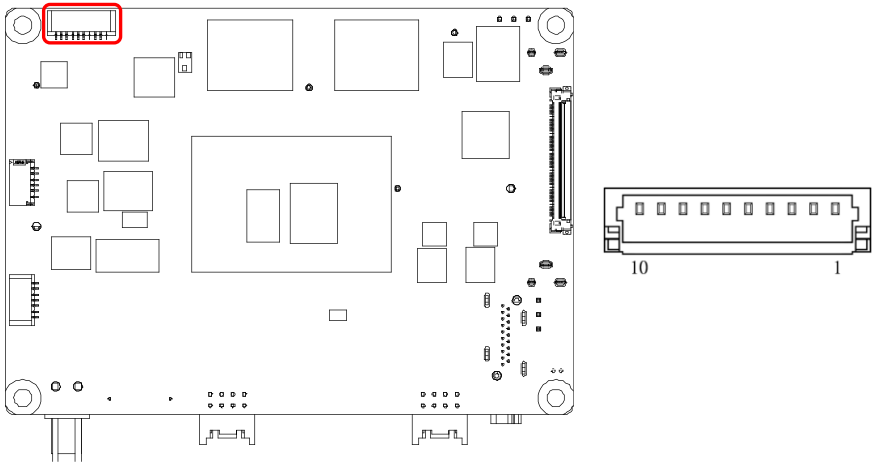
2.4.9 I2C/SMBus Header (CN17)



Pin	Pin Name	Signal Type	Signal Level
1	+V3P3A	PWR	+3.3V
2	SMB_CLK/ I2C_CLK/TIME_SYNC0	OUT	+3.3V
3	SMB_DAT/ I2C_DAT/TIME_SYNC1	IN/OUT	+3.3V
4	SMB_ALERT/ INT_SERIRQ/LAN_SDP	IN	+3.3V
5	GND	GND	GND

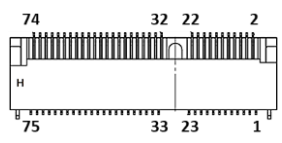
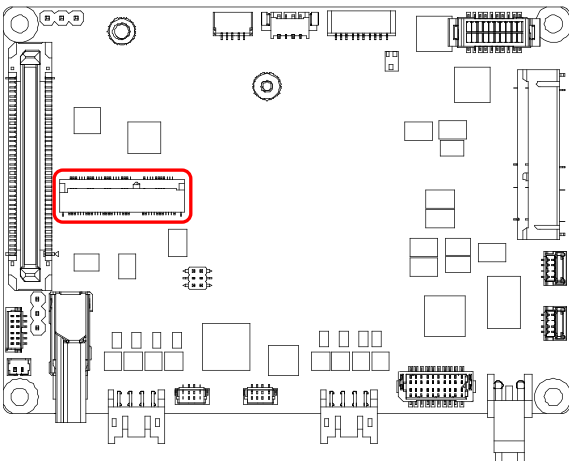
Note: Default function is SMBus.

2.4.10 eSPI Debug Header (CN18)



Pin	Pin Name	Signal Type	Signal Level
1	ESPI_IO0	Signal	+1.8V
2	ESPI_IO1	Signal	+1.8V
3	ESPI_IO2	Signal	+1.8V
4	ESPI_IO3	Signal	+1.8V
5	+V3.3S	PWR	+3.3V
6	ESPI_CS	Signal	-
7	ESPI_RESET#	Signal	+1.8V
8	GND	GND	GND
9	ESPI_CLK	Signal	1.8V
10	+V3P3A	Signal	+3.3V

2.4.11 M.2 2230 E-Key Slot (CN19)

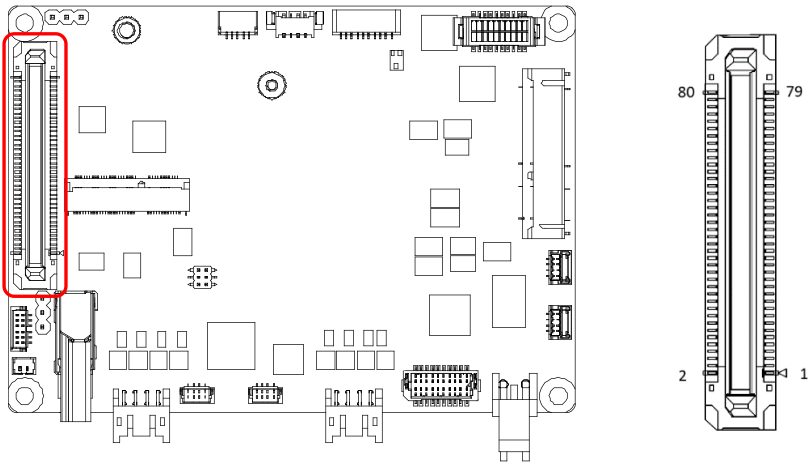


Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	+V3P3A	PWR	+3.3V
3	USB2_DP	DIFF	-
4	+V3P3A	PWR	+3.3V
5	USB2_DN	DIFF	-
6	NC	-	-
7	GND	GND	GND
8	I2SCLK	OUT	-
9	NC	-	-
10	I2S_SYNC	OUT	-
11	NC	-	-
12	I2S_IN	IN	-
13	NC	-	-
14	I2S_OUT	OUT	-
15	NC	-	-
16	NC	-	-
17	NC	-	-
18	GND	GND	GND
19	NC	-	-
20	NC	-	-
21	NC	-	-
22	NC	-	-
23	NC	-	-

Pin	Pin Name	Signal Type	Signal Level
32	NC	-	-
33	GND	GND	GND
34	NC	-	-
35	PCIE1_TXP	DIFF	-
36	NC	-	-
37	PCIE1_TXN	DIFF	-
38	NC	-	-
39	GND	GND	GND
40	NC	-	-
41	PCIE1_RXP	DIFF	-
42	NC	-	-
43	PCIE1_RXN	DIFF	-
44	NC	-	-
45	GND	GND	GND
46	NC	-	-
47	PCIE_CLK_DP	DIFF	-
48	NC	-	-
49	PCIE_CLK_DN	DIFF	-
50	SUS_CLK	OUT	-
51	GND	GND	GND
52	BUF_PLT_RST#	OUT	-
53	PCIE_CLKREQ	IN	-
54	NC	-	-
55	PCIE_WAKE#	IN/OUT	-
56	NC	-	-
57	GND	GND	GND
58	NC	-	-
59	NC	-	-
60	NC	-	-
61	NC	-	-
62	NC	-	-
63	GND	GND	GND
64	NC	-	-
65	NC	-	-
66	NC	-	-
67	NC	-	-
68	NC	-	-
69	GND	GND	GND
70	NC	-	-

Pin	Pin Name	Signal Type	Signal Level
71	NC	-	-
72	+V3P3A	PWR	+3.3V
73	NC	-	-
74	+V3P3A	PWR	+3.3V
75	GND	GND	GND

2.4.12 BIO Connector (Reserved) (CN20)

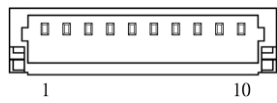
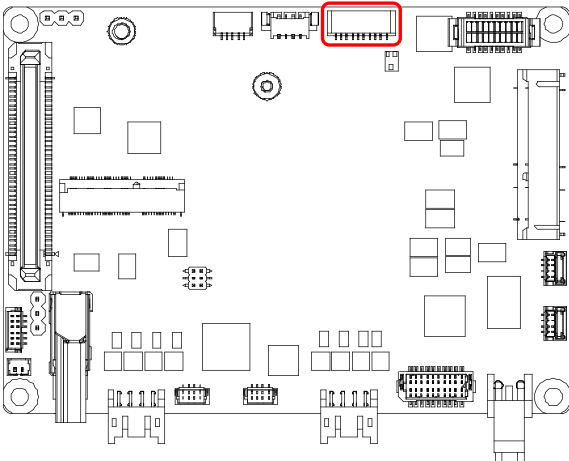


Pin	Pin Name	Signal Type	Signal Level
1	+V12A	PWR	+12V
2	GND	GND	GND
3	GND	GND	GND
4	PCIE_3_TXN	DIFF	-
5	PCIE_3_RXN	DIFF	-
6	PCIE_3_TXP	DIFF	-
7	PCIE_3_RXP	DIFF	-
8	GND	GND	GND
9	GND	GND	GND
10	PCIE_4_TXN	DIFF	-
11	PCIE_4_RXN	DIFF	-
12	PCIE_4_TXP	DIFF	-
13	PCIE_4_RXP	DIFF	-
14	GND	GND	GND
15	GND	GND	GND

Pin	Pin Name	Signal Type	Signal Level
16	PS_ON#	Signal	-
17	DDIB_CTRL_CLK	-	-
18	DDIB_CTRL_DATA	-	-
19	+V5A	PWR	+5V
20	+V5A	PWR	+5V
21	+V5A	PWR	+5V
22	+V5A	PWR	+5V
23	PCIE_3_CLK_DP	DIFF	-
24	BUF_PLT_RST#	Signal	-
25	PCIE_3_CLK_DN	DIFF	-
26	GND	GND	GND
27	GND	GND	GND
28	DDIB_LANE1_DN	DIFF	-
29	DDIB_LANE0_DN	DIFF	-
30	DDIB_LANE1_DP	DIFF	-
31	DDIB_LANE0_DP	DIFF	-
32	GND	GND	GND
33	GND	GND	GND
34	DDIB_LANE3_DN	DIFF	-
35	DDIB_LANE2_DN	DIFF	-
36	DDIB_LANE3_DP	DIFF	-
37	DDIB_LANE2_DP	DIFF	-
38	GND	GND	GND
39	GND	GND	GND
40	DDIB_HPD_BIO	Signal	-
41	DDIB_AUXN	DIFF	-
42	GND	GND	GND
43	DDIB_AUXP	DIFF	-
44	NC	-	-
45	GND	GND	GND
46	NC	-	-
47	USB2_6_DN	DIFF	-
48	GND	GND	GND
49	USB2_6_DP	DIFF	-
50	NC	-	-
51	GND	GND	GND
52	NC	-	-
53	SMB_CLK	Signal	+3.3V
54	GND	GND	GND

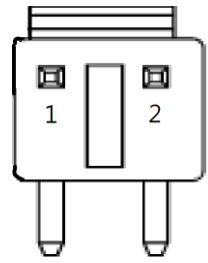
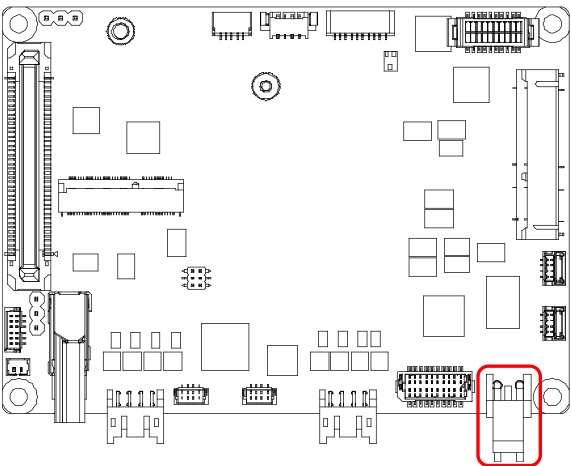
Pin	Pin Name	Signal Type	Signal Level
55	SMB_DATA	Signal	+3.3V
56	PCIE_WAKE#	Signal	-
57	GND	GND	GND
58	USB2_OC3#	Signal	-
59	+5VS	PWR	+5V
60	USB2_OC3#	Signal	-
61	+5VS	PWR	+5V
62	+5VS	PWR	+5V
63	+5VS	PWR	+5V
64	+5VS	PWR	+5V
65	LPC_AD0	Signal	-
66	LPC_FRAME#	Signal	-
67	LPC_AD1	Signal	-
68	SERIRQ#	Signal	-
69	LPC_AD2	Signal	-
70	NC	-	-
71	LPC_AD3	Signal	-
72	GPIO	Signal	-
73	GND	GND	GND
74	NC	-	-
75	LPC_CLK_BIO	Signal	-
76	NC	-	-
77	PME#	Signal	-
78	NC	-	-
79	GND	GND	GND
80	GND	GND	GND

2.4.13 Front Panel (CN22)



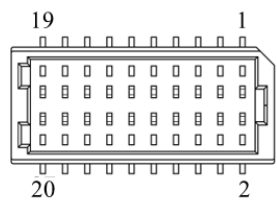
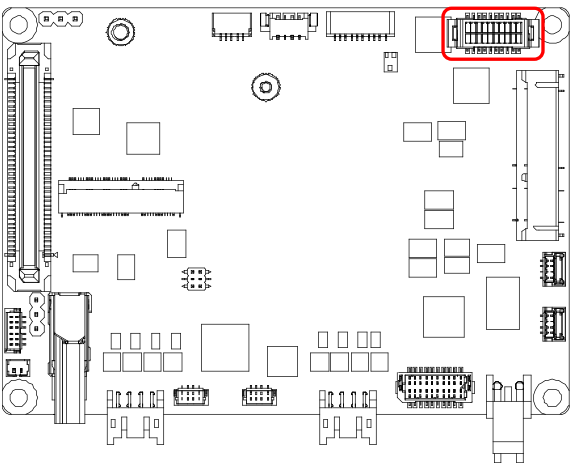
Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	EXT_PWRBTN#	Signal	-
3	FP_IDELED#	Signal	-
4	+V3P3S	PWR	+3.3V
5	FP_BUZZER	Signal	-
6	+V5S	PWR	+5V
7	GND	GND	GND
8	+V3P3S	PWR	+3.3V
9	GND	GND	GND
10	HWRST#	Signal	-

2.4.14 12V Power Input Header (CN23)



Pin	Pin Name	Signal Type	Signal Level
1	+V12A	PWR	+12V
2	GND	GND	GND

2.4.15 COM Port 1/Port 2 Header (CN26)



COM Port 1/Port 2 RS-232 (Default)			
Pin	Pin Name	Signal Type	Signal Level
1	DCD1	IN	-

COM Port 1/Port 2 RS-232 (Default)

Pin	Pin Name	Signal Type	Signal Level
2	DCD2	IN	-
3	RX1	IN	-
4	RX2	IN	-
5	TX1	OUT	±9V
6	TX2	OUT	±9V
7	DTR1	OUT	±9V
8	DTR2	OUT	±9V
9	GND	GND	GND
10	GND	GND	GND
11	DSR1	IN	-
12	DSR2	IN	-
13	RTS1	OUT	±9V
14	RTS2	OUT	±9V
15	CTS1	IN	-
16	CTS2	IN	-
17	RI1/ +5V/ +12V	IN/ PWR	+5V/+12V
18	RI2/ +5V/ +12V	IN/ PWR	+5V/+12V
19	NC	-	-
20	NC	-	-

COM Port 1 RS-422

Pin	Pin Name	Signal Type	Signal Level
9	GND	GND	GND
1	RS422_TX-	OUT	±9V
3	RS422_TX+	OUT	±9V
5	RS422_RX+	IN	-
7	RS422_RX-	IN	-

COM Port 1 RS-485

Pin	Pin Name	Signal Type	Signal Level
9	GND	GND	GND
1	RS485_D-	IN/OUT	±9V
3	RS485_D+	IN/OUT	±9V

COM Port 2 RS-422

Pin	Pin Name	Signal Type	Signal Level
10	GND	GND	GND
2	RS422_TX-	OUT	±9V
4	RS422_TX+	OUT	±9V
6	RS422_RX+	IN	-
8	RS422_RX-	IN	-

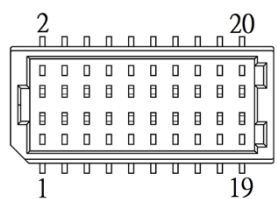
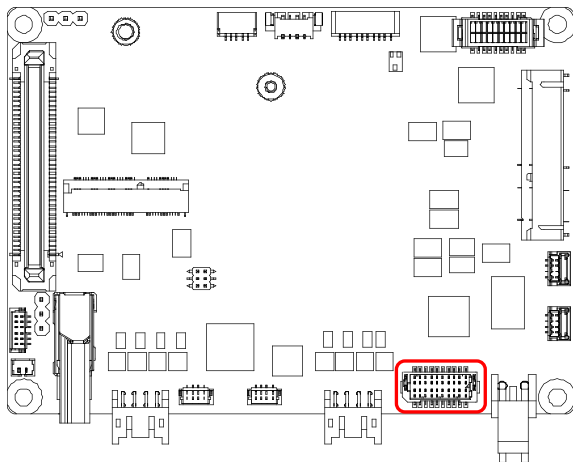
COM Port 2 RS-485

Pin	Pin Name	Signal Type	Signal Level
10	GND	GND	GND
2	RS485_D-	IN/OUT	±9V
4	RS485_D+	IN/OUT	±9V

Note: COM Port RS-232/422/485 can be set by BIOS setting. Default is RS-232.

Note: Pin 17/18 function can be set by BOM. Default is RING.

2.4.16 USB 3.2 Gen 1 Header (2-Port) (CN29)

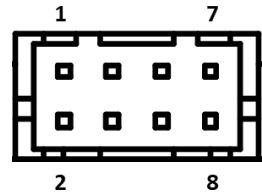
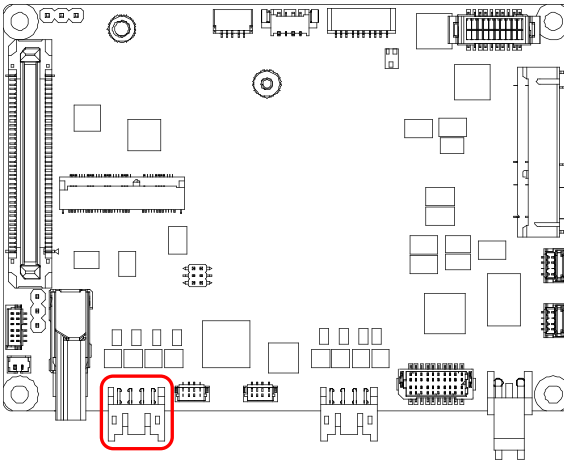


Pin	Pin Name	Signal Type	Signal Level
1	+V5A_USB	PWR	+5V
2	+V5A_USB	PWR	+5V
3	USB2_1_DN	DIFF	-
4	USB2_2_DN	DIFF	-
5	USB2_1_DP	DIFF	-
6	USB2_2_DP	DIFF	-
7	GND	GND	GND
8	GND	GND	GND
9	USB3_1_RXN	DIFF	-
10	USB3_2_RXN	DIFF	-
11	USB3_1_RXP	DIFF	-
12	USB3_2_RXP	DIFF	-
13	GND	GND	GND
14	GND	GND	GND

Pin	Pin Name	Signal Type	Signal Level
15	USB3_1_TXN	DIFF	-
16	USB3_2_TXN	DIFF	-
17	USB3_1_TXP	DIFF	-
18	USB3_2_TXP	DIFF	-
19	GND	GND	GND
20	GND	GND	GND

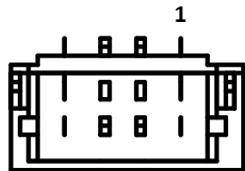
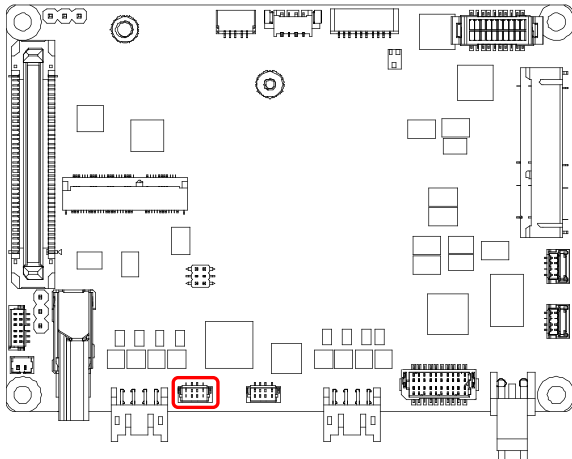
Note: The driving current of +V5A_USB supports up to 0.9A/Port.

2.4.17 LAN Port 1 Header (CN30)



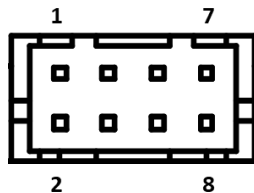
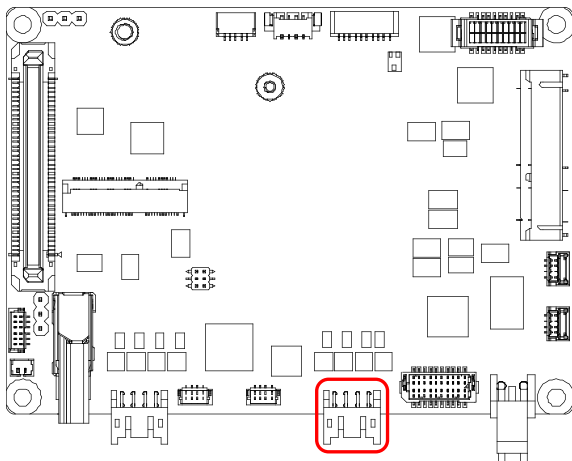
Pin	Pin Name	Signal Type	Signal Level
1	MDI3+	DIFF	-
2	MDI3-	DIFF	-
3	MDI2+	DIFF	-
4	MDI2-	DIFF	-
5	MDI1+	DIFF	-
6	MDI1-	DIFF	-
7	MDI0+	DIFF	-
8	MDI0-	DIFF	-

2.4.18 LAN Port 1 LED Header (CN31)



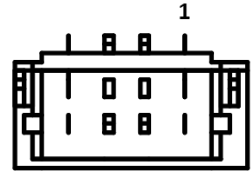
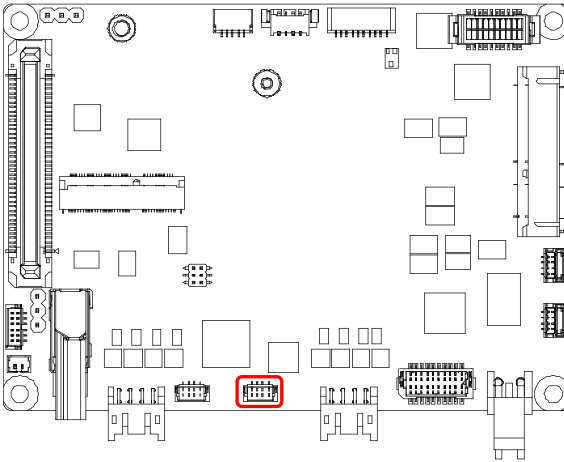
Pin	Pin Name	Signal Type	Signal Level
1	+V3P3A_LAN1	PWR	+3.3V
2	LAN1_1000#	Signal	-
3	LAN1_ACT	Signal	-
4	LAN1_2500#	Signal	-

2.4.19 LAN Port 2 Header (CN32)



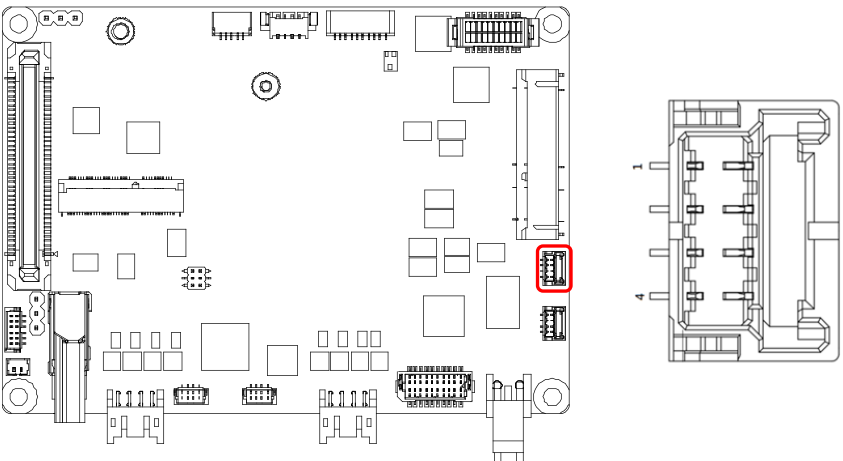
Pin	Pin Name	Signal Type	Signal Level
1	MDI3+	DIFF	-
2	MDI3-	DIFF	-
3	MDI2+	DIFF	-
4	MDI2-	DIFF	-
5	MDI1+	DIFF	-
6	MDI1-	DIFF	-
7	MDI0+	DIFF	-
8	MDI0-	DIFF	-

2.4.20 LAN Port 2 LED Header (CN33)



Pin	Pin Name	Signal Type	Signal Level
1	+V3P3A_LAN2	PWR	+3.3V
2	LAN2_1000#	Signal	-
3	LAN2_ACT	Signal	-
4	LAN2_100#	Signal	-

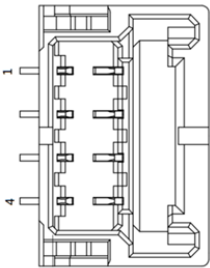
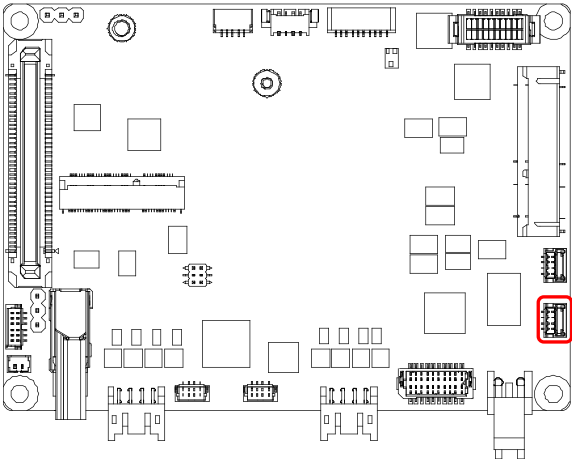
2.4.21 USB 2.0 Port 1 Header (CN34)



Pin	Pin Name	Signal Type	Signal Level
1	+V5A_USB	PWR	+5V
2	USB2_3_DN	DIFF	-
3	USB2_3_DP	DIFF	-
4	GND	GND	GND

Note: The driving current of +V5A_USB supports up to 0.5A/Port.

2.4.22 USB 2.0 Port 2 Header (CN35)



Pin	Pin Name	Signal Type	Signal Level
1	+V5A_USB	PWR	+5V
2	USB2_4_DN	DIFF	-
3	USB2_4_DP	DIFF	-
4	GND	GND	GND

Note: The driving current of +V5A_USB supports up to 0.5A/Port.

Chapter 3

AMI BIOS Setup

3.1 System Test and Initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors.

System configuration verification

These routines check the current system configuration stored in the CMOS memory and BIOS NVRAM. If system configuration is not found or a system configuration data error is detected, the system will load optimized default and re-boot with this default system configuration automatically.

There are four situations in which you will need to setup system configuration:

1. You are starting your system for the first time
2. You have changed the hardware attached to your system
3. The system configuration is reset by Clear-CMOS jumper
4. The CMOS memory has lost power and the configuration information has been erased.

The PICO-ADN2 CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

3.2 AMI BIOS Setup

AMI BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM and BIOS NVRAM so that it retains the Setup information when the power is turned off.

Entering Setup

Power on the computer and press or <ESC> immediately. This will allow you to enter Setup.

Main

Set the date, use tab to switch between date elements.

Advanced

Enable/disable boot option for legacy network devices.

Chipset

Host bridge parameters.

Boot

Enables/disables quiet boot option.

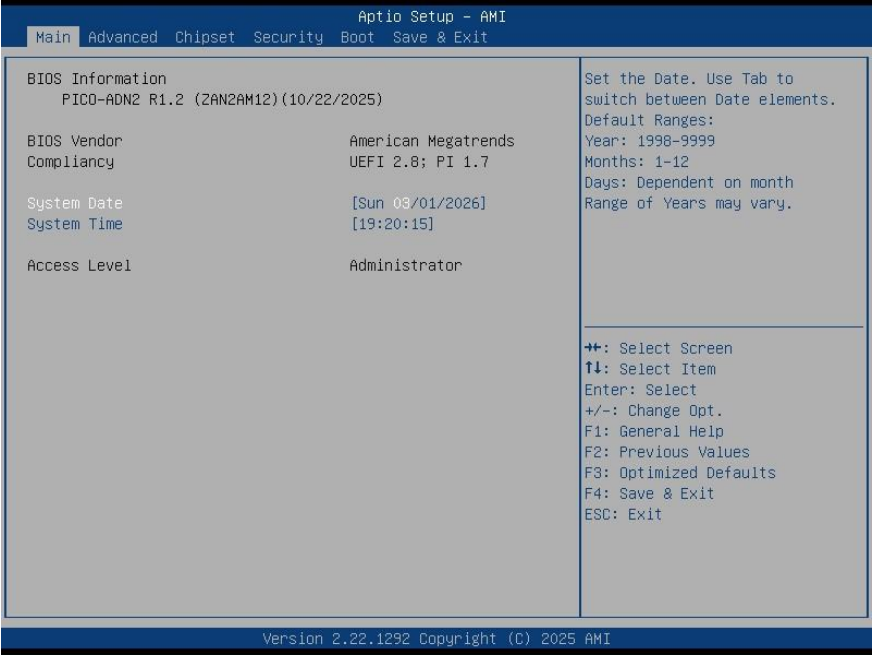
Security

Set setup administrator password.

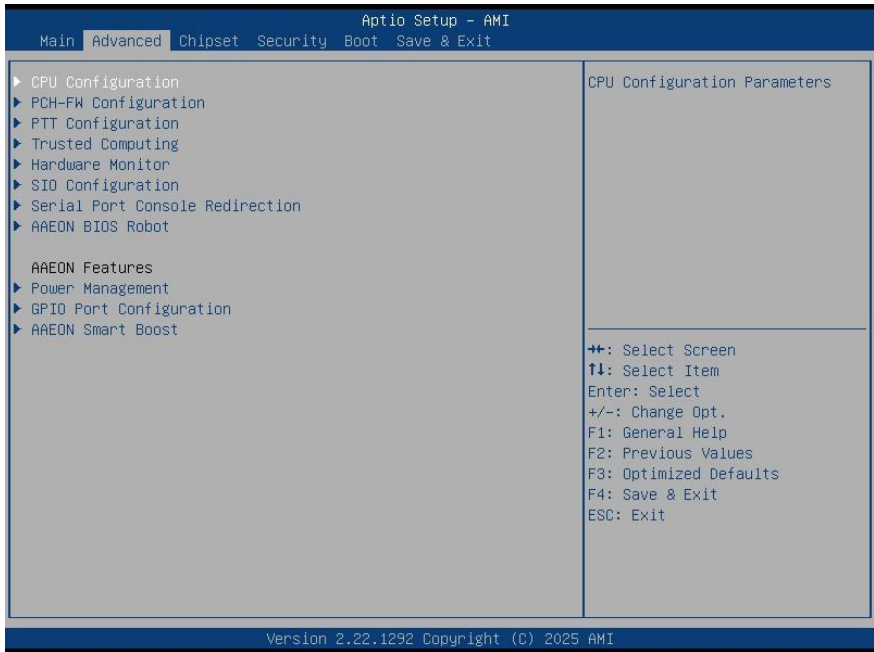
Save & Exit

Exit system setup after saving the changes.

3.3 Setup Submenu: Main



3.4 Setup Submenu: Advanced

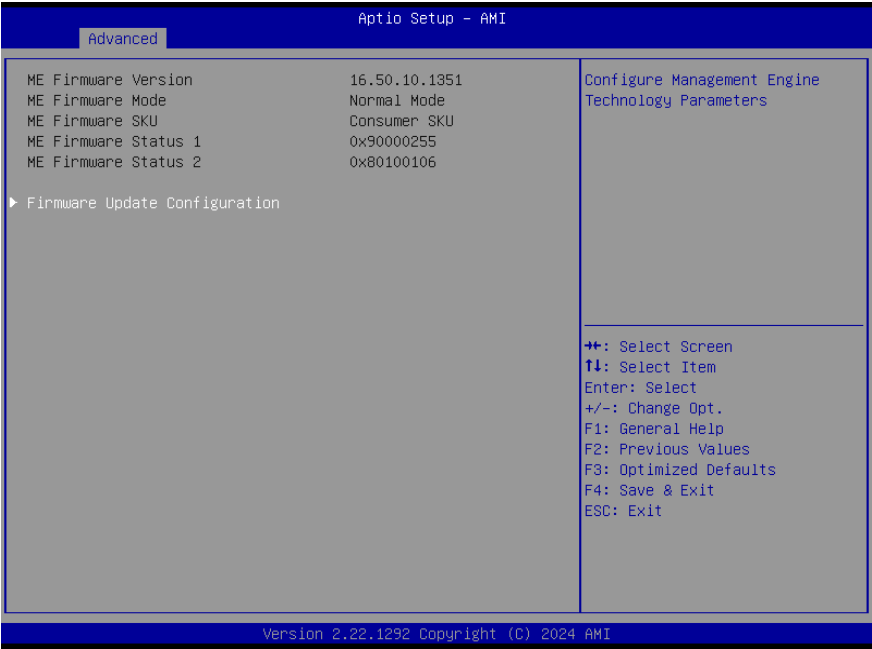


3.4.1 CPU Configuration



Options Summary		
Intel (VMX) Virtualization Technology	Disabled	
	Enabled	Optimal Default, Failsafe Default
When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.		
Intel® SpeedStep™	Disabled	
	Enabled	Optimal Default, Failsafe Default
Allows more than two frequency ranges to be supported.		
Turbo Mode	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable processor Turbo Mode (requires EMTTM enable too). AUTO means enabled.		
C states	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable/Disable CPU Power Management. Allows CPU to go to C states when it's not 100 utilized.		

3.4.2 PCH-FW Configuration



3.4.2.1 Firmware Update Configuration



Options Summary		
Me FW Image Re-Flash	Enabled	
	Disabled	Optimal Default, Failsafe Default
Enable/Disable Me FW Image Re-Flash function.		
FW Update	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable/Disable ME FW Update function.		

3.4.3 PTT Configuration



Options Summary		
TPM Device Selection	dTPM	Optimal Default, Failsafe Default
	PTT	
Select the TPM device: PTT or discrete TPM (dTPM). PTT – Enables Intel® Platform Trust Technology (PTT) in SkuMgr. dTPM – Disables PTT in SkuMgr and uses a discrete TPM device. Warning: Switching between PTT and dTPM disables the current TPM device, and all data stored in it will be lost.		

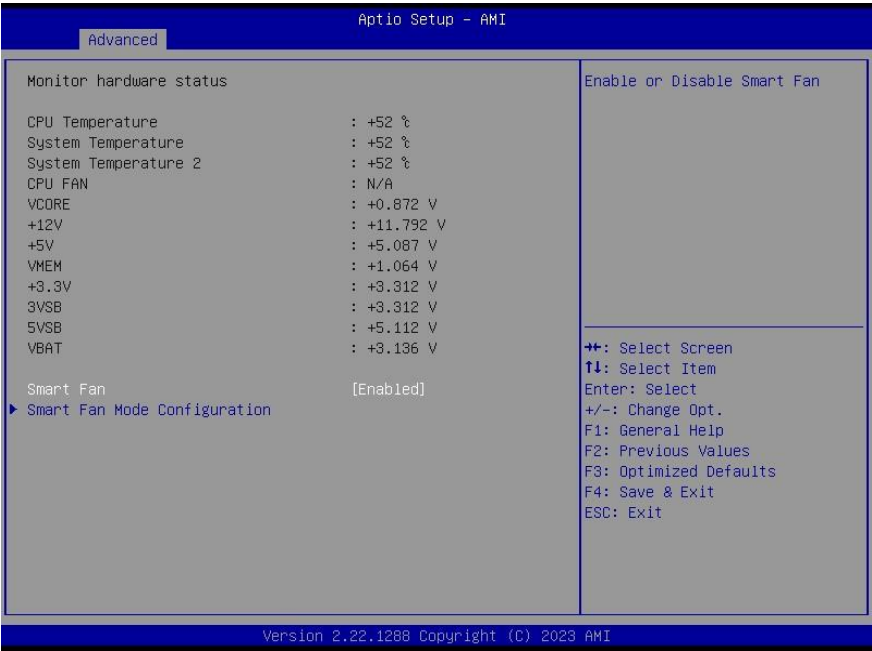
3.4.4 Trusted Computing



Options Summary		
Security Device Support	Enable	Optimal Default, Failsafe Default
	Disable	
Enable or Disable BIOS support for the security device. When Disabled, the operating system will not detect the security device, and the TCG EFI protocol and INT1A interface will not be available.		
SHA256 PCR Bank	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable SHA256 PCR Bank.		
SHA384 PCR Bank	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable SHA384 PCR Bank.		
Pending operation	None	Optimal Default, Failsafe Default
	TPM Clear	
Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.		

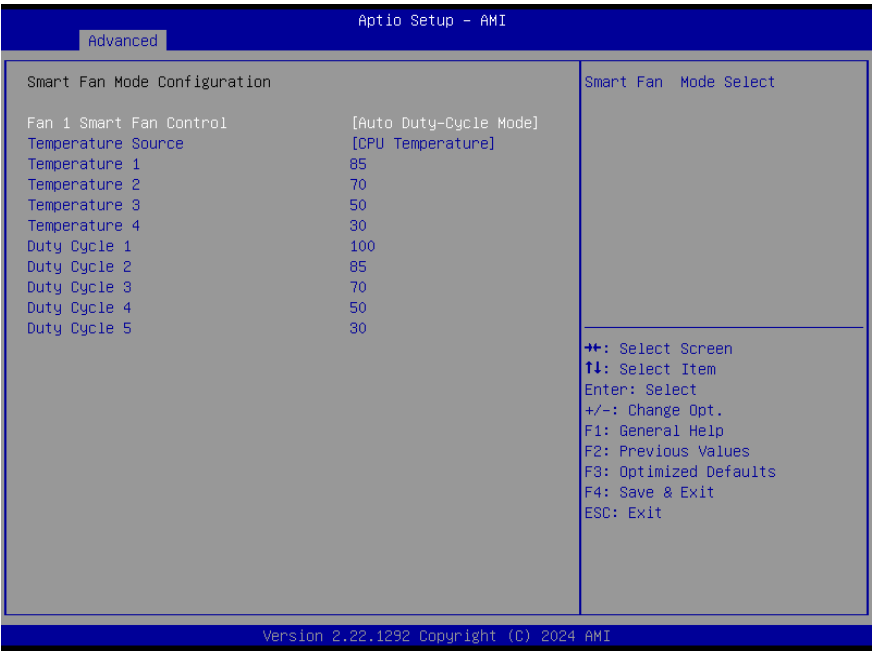
Options Summary		
Platform Hierarchy	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable Platform Hierarchy.		
Storage Hierarchy	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable Storage Hierarchy.		
Endorsement Hierarchy	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable Endorsement Hierarchy		
Physical Presence Spec Version	1.3	Optimal Default, Failsafe Default
	1.2	
Select to Tell O.S. to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3		
Device Select	Auto	
	TPM 1.2	
	TPM 2.0	Optimal Default, Failsafe Default
TPM 1.2 will restrict support to TPM 1.2 devices. TPM 2.0 will restrict support to TPM 2.0 devices. Auto will support both with the default set to TPM 2.0 devices if not found. TPM 1.2 devices will be enumerated.		

3.4.5 Hardware Monitor



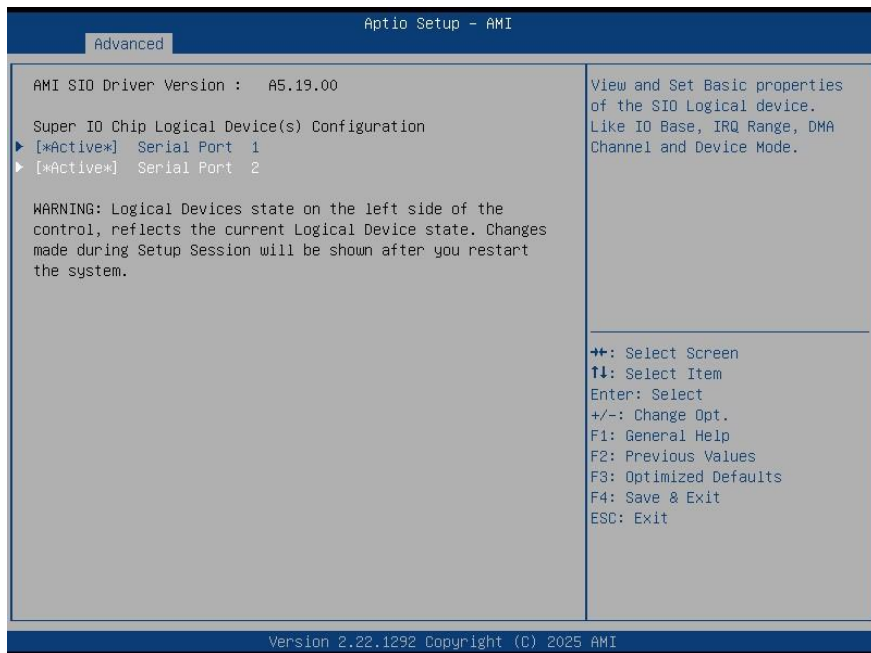
Options Summary		
Smart Fan	Disable	
	Enable	Optimal Default, Failsafe Default
Enables or Disables Smart Fan.		

3.4.5.1 Smart Fan Mode Configuration

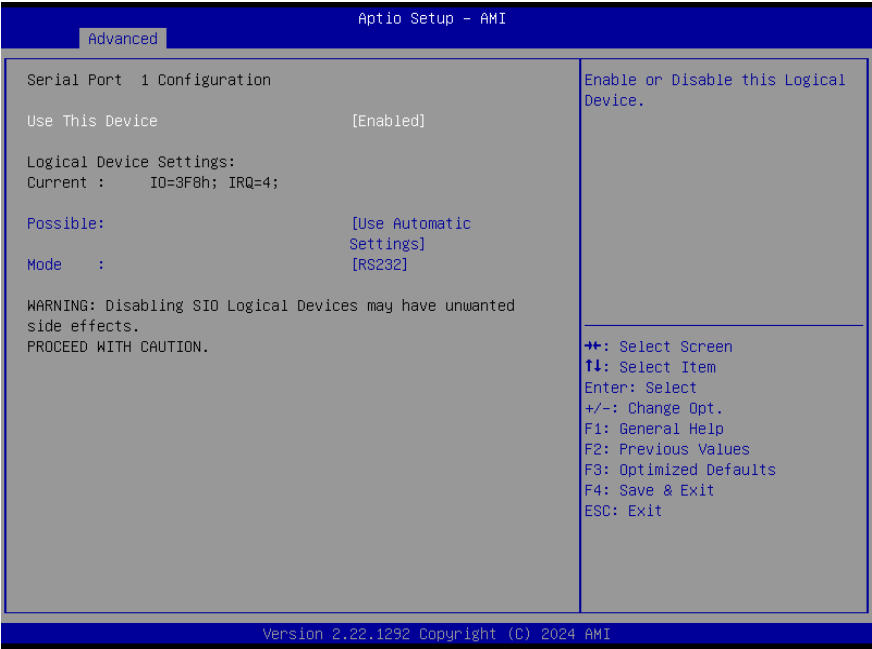


Options Summary		
Fan 1 Smart Fan Control	Manual Duty Mode	
	Auto Duty-Cycle Mode	Optimal Default, Failsafe Default
Smart Fan Mode Select		
Temperature Source	CPU Temperature	Optimal Default, Failsafe Default
	System Temperature	
	System Temperature 2	
Select the monitored temperature source for this fan.		
Temperature 1	86	
Duty Cycle 1	100	
Enable automatic fan speed control based on system temperature. Fan speed is automatically adjusted according to temperature using a configurable duty cycle range of 1–100%.		

3.4.7 SIO Configuration



3.4.7.1 Serial Port 1 Configuration



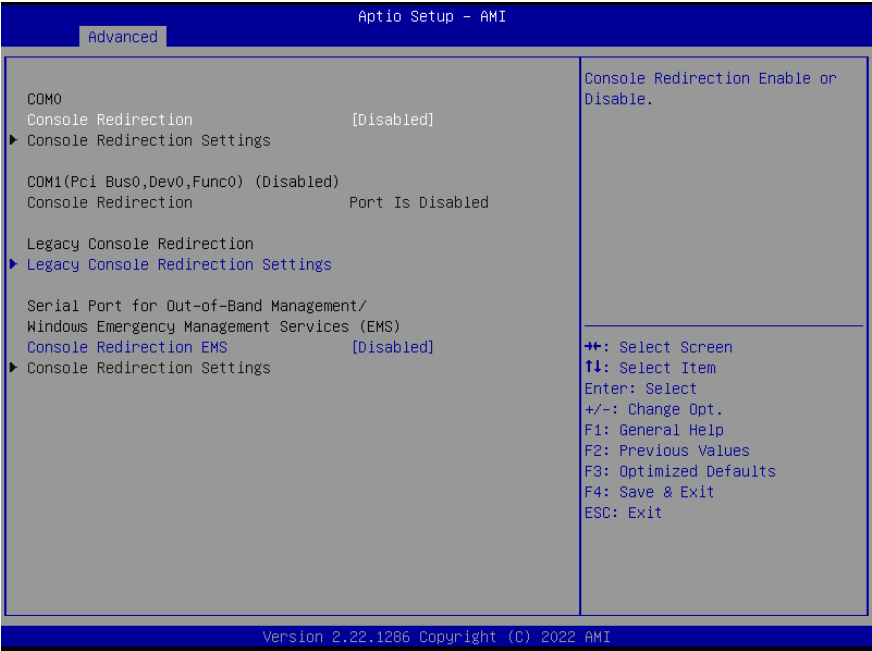
Options Summary		
Use This Device	Disable	
	Enable	Optimal Default, Failsafe Default
Enable or Disable this Logical Device.		
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=3F8h; IRQ=4	
	IO=2F8h; IRQ=3	
Allows user to change Device's Resource settings. New settings will be reflected on This Setup Page after System restarts.		
Mode:	RS232	Optimal Default, Failsafe Default
	RS422	
	RS485	
UART RS232, 422, 485 selection.		

3.4.7.2 Serial Port 2 Configuration



Options Summary		
Use This Device	Disable	
	Enable	Optimal Default, Failsafe Default
Enable or Disable this Logical Device.		
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=2F8h; IRQ=3	
	IO=3F8h; IRQ=4	
Allows user to change Device's Resource settings. New settings will be reflected on This Setup Page after System restarts.		
Mode:	RS232	Optimal Default, Failsafe Default
	RS422	
	RS485	
UART RS232, 422, 485 selection.		

3.4.8 Serial Port Console Redirection



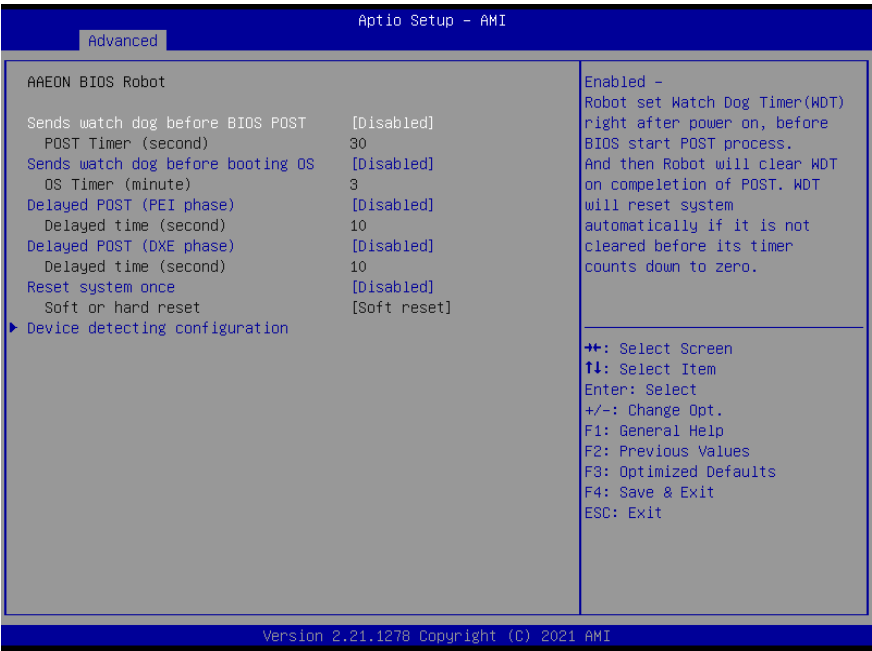
Options Summary		
Console Redirection	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable or Disable Console Redirection.		
Console Redirection EMS	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable or Disable Console Redirection.		

3.4.8.1 Legacy Console Redirection Settings



Options Summary		
Redirection COM port	COM0	Optimal Default, Failsafe Default
	COM1(Pci Bus0, Dev0, Func0) (Disabled)	
Select the COM port used for displaying Legacy OS and Legacy Option ROM (OPROM) messages through console redirection.		
Resolution	80x24	Optimal Default, Failsafe Default
	80x25	
Defines the number of rows and columns supported for console redirection in a legacy operating system environment.		
Redirect After POST	Always Enable	Optimal Default, Failsafe Default
	BootLoader	
Control Legacy Console Redirection behavior when booting to a legacy operating system. BootLoader – Disables Legacy Console Redirection before booting into a legacy OS. Always Enable – Keeps Legacy Console Redirection enabled for legacy OS operation. Default: Always Enable		

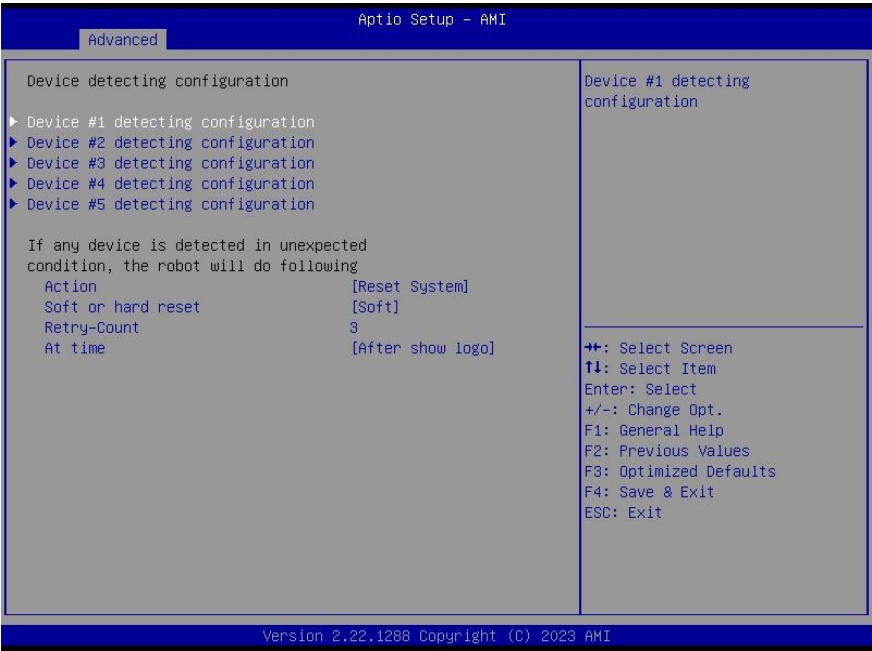
3.4.9 AAEON BIOS Robot



Options Summary		
Sends watch dog before BIOS POST	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable or disable setting the Watchdog Timer (WDT) before BIOS POST. Enabled – The robot sets the WDT immediately after power-on, before BIOS starts the POST process, and clears it upon POST completion. If the WDT is not cleared before the timer expires, the system will automatically reset.		
POST Timer (second)	30	Optimal Default, Failsafe Default
Set the Watchdog Timer (WDT) duration for the POST process in seconds. Warning: Do not set this value equal to or shorter than the normal POST time, as the system may fail to complete POST unless BIOS settings are cleared. It is recommended to set the timer to more than 2× the normal POST duration.		
Sends watch dog before booting OS	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable or disable setting the Watchdog Timer (WDT) after POST completion and before control is transferred to the operating system. Enabled – The robot sets the WDT after POST completes. The operating system must include a program responsible for periodically clearing the WDT.		

Options Summary		
Warning: Disable this function during OS updates, as the system may reset if the WDT is not cleared in time.		
OS Timer (minute)	3	Optimal Default, Failsafe Default
Set the Watchdog Timer (WDT) count value for the OS loading phase.		
Delayed POST (PEI phase)	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable or disable delaying POST during the PEI phase. Enabled – The robot holds BIOS from starting POST immediately after power-on, allowing the system to stabilize or warm up before POST begins. Note: This action occurs before “Sends Watch Dog.”		
Delayed time (second)	10	Optimal Default, Failsafe Default
Period of time for Robot to hold BIOS from POST.		
Delayed POST (DXE phase)	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable or disable delaying POST during the DXE phase. Enabled – The robot holds BIOS before POST completion, allowing the system to stabilize or warm up during the POST process. Note: This action occurs after “Sends Watch Dog Before BIOS POST.”		
Delayed time (second)	10	Optimal Default, Failsafe Default
Period of time for Robot to hold BIOS from POST.		
Reset system once	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable or disable performing a one-time system reset on each boot. Enabled – The robot performs a single reset during each boot cycle, issuing a soft or hard reset to onboard devices to place them into a more stable state.		
Soft or hard reset	Soft reset	Optimal Default, Failsafe Default
	Hard reset	
Select reset type robot should send on each boot.		

3.4.9.1 Device Detecting Configuration



Options Summary		
Action	Reset System	Optimal Default, Failsafe Default
	Hold System	
Select action that robot should perform.		
Soft or hard reset	Soft	Optimal Default, Failsafe Default
	Hard	
Select reset type robot should send on each boot.		
Retry-Count	30	Optimal Default, Failsafe Default
Set the maximum number of reset retries. The robot will reset the system up to the configured counter value, and then allow the system to continue POST normally.		
At time	After show logo	Optimal Default, Failsafe Default
	Before show logo	
Select when the robot performs its action during system boot. After Show Logo – The robot performs the action after the boot logo is displayed, when most system devices are already initialized and ready. Before Show Logo – The robot performs the action earlier in the boot process, before		

Options Summary		
Action	Reset System	Optimal Default, Failsafe Default
	Hold System	
Select action that robot should perform.		
Soft or hard reset	Soft	Optimal Default, Failsafe Default
	Hard	
Select reset type robot should send on each boot.		
Retry-Count	30	Optimal Default, Failsafe Default
Set the maximum number of reset retries. The robot will reset the system up to the configured counter value, and then allow the system to continue POST normally.		
At time	After show logo	Optimal Default, Failsafe Default
	Before show logo	
the logo is displayed; some devices may not yet be fully ready.		

3.4.9.1.1 Device #1 Detecting Configuration



Options Summary		
Interface	Disable	Optimal Default, Failsafe Default
	PCI	
	DIO	
	SMBUS	
	Legacy I/O	
	Super I/O	
	MMIO	
Select interface robot should use to communicate with device.		

3.4.9.1.2 Device #2 Detecting Configuration



Options Summary		
Interface	Disable	Optimal Default, Failsafe Default
	PCI	
	DIO	
	SMBUS	
	Legacy I/O	
	Super I/O	
	MMIO	
Select interface robot should use to communicate with device.		

3.4.9.1.3 Device #3 Detecting Configuration



Options Summary		
Interface	Disable	Optimal Default, Failsafe Default
	PCI	
	DIO	
	SMBUS	
	Legacy I/O	
	Super I/O	
	MMIO	
Select interface robot should use to communicate with device.		

3.4.9.1.4 Device #4 Detecting Configuration



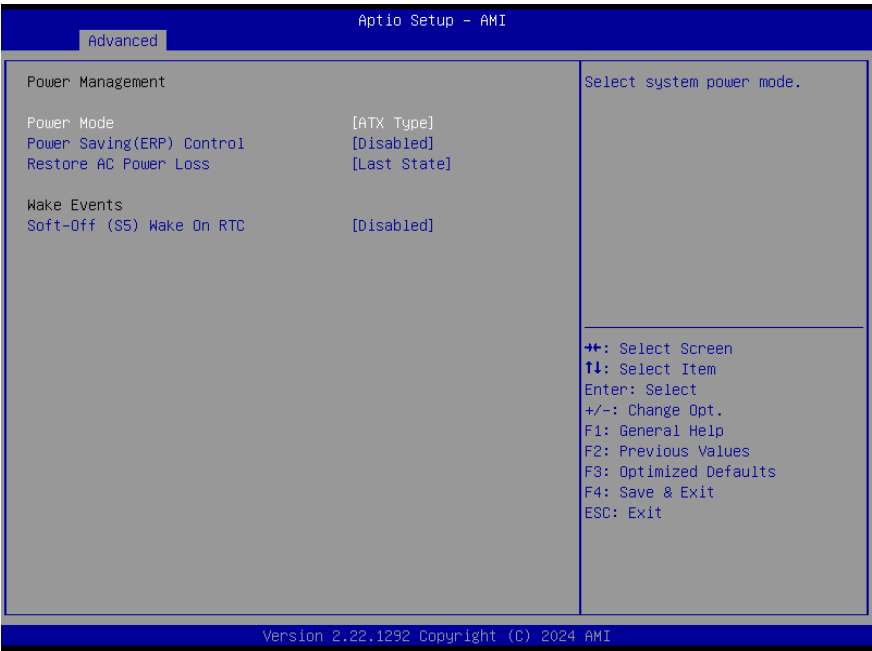
Options Summary		
Interface	Disable	Optimal Default, Failsafe Default
	PCI	
	DIO	
	SMBUS	
	Legacy I/O	
	Super I/O	
	MMIO	
Select interface robot should use to communicate with device.		

3.4.9.1.5 Device #5 Detecting Configuration



Options Summary		
Interface	Disable	Optimal Default, Failsafe Default
	PCI	
	DIO	
	SMBUS	
	Legacy I/O	
	Super I/O	
	MMIO	
Select interface robot should use to communicate with device.		

3.4.10 Power Management



Options Summary		
Power Mode	ATX Type	Optimal Default, Failsafe Default
	AT Type	
Select power supply mode.		
Power Saving(ERP) Control	Disabled	Optimal Default, Failsafe Default
	Enabled	
Select Power saving control.		
Restore AC Power Loss	Last State	Optimal Default, Failsafe Default
	Always On	
	Always Off	
Select power state when power is re-applied after a power failure.		
Soft-Off (S5) Wake On RTC	Disable	Optimal Default, Failsafe Default
	By Date	
	By Weekday	
	Bypass	

Options Summary		
By Date: System will wake on the with hr::min::sec specified.		
By Weekday: System will wake on the enabled weekday with hr::min::sec specified.		
Bypass: BIOS will not control RTC wake function.		

3.4.11 GPIO Port Configuration



Options Summary		
GPIO Port*	Output	
	Input	
Set GPIO as Input or Output.		
Output Level	High	
	Low	
Set output level when GPIO pin is output.		

3.5 Setup Submenu: Chipset

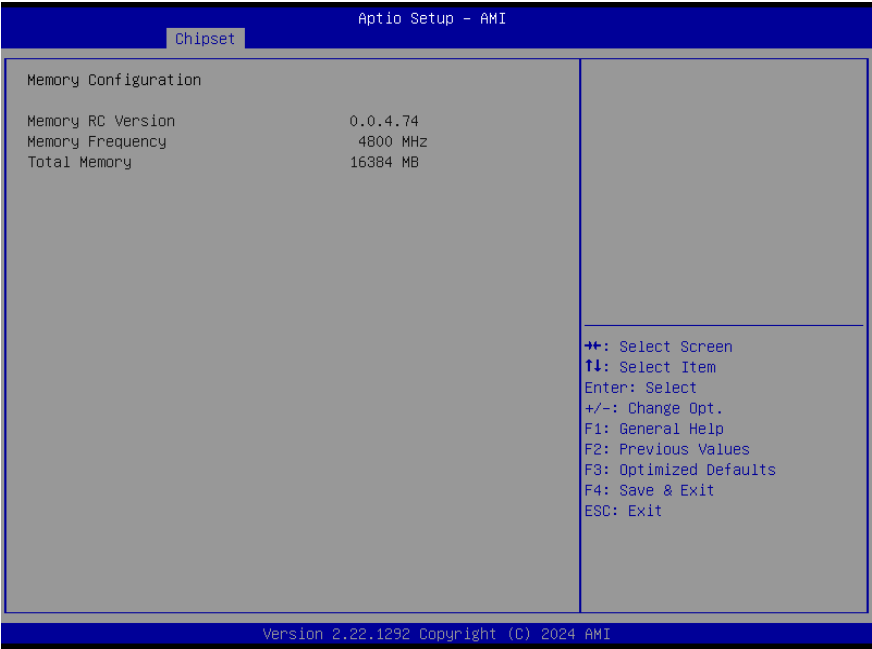


3.5.1 System Agent (SA) Configuration

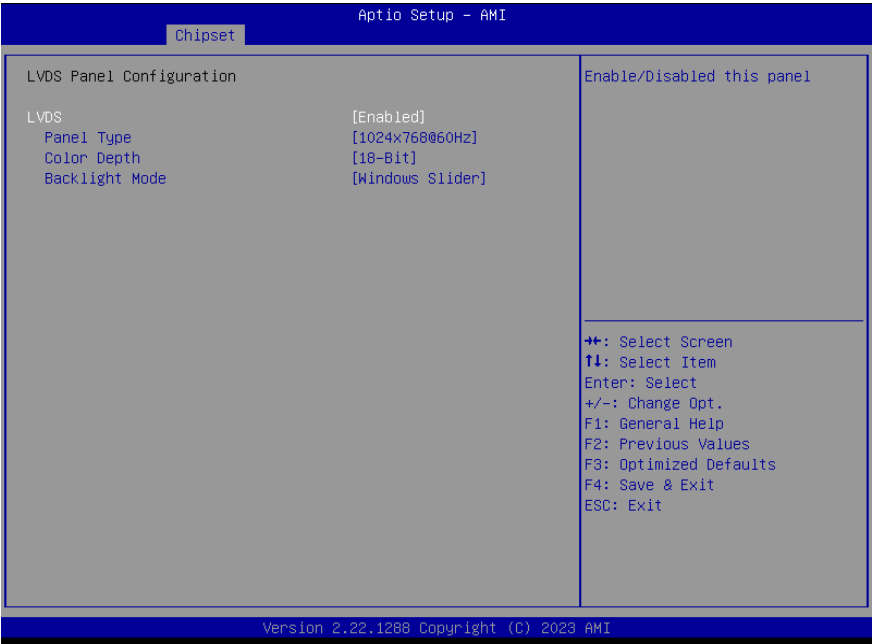


Options Summary		
VT-d	Disabled	Optimal Default, Failsafe Default
	Enabled	
VT-d capability.		

3.5.1.1 Memory Configuration



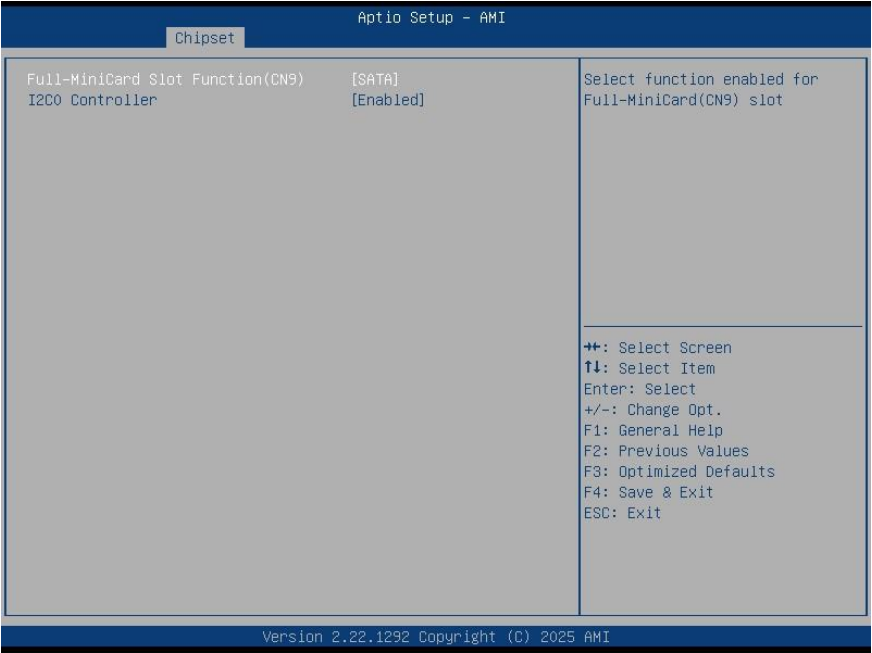
3.5.1.2 LVDS Panel Configuration



Options Summary		
LVDS	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable/Disable this panel.		
LVDS Panel Type	640x480,18bit,60Hz	
	800x480,18bit,60Hz	
	800x600,18bit,60Hz	
	1024x600,18bit,60Hz	
	1024x768,18bit,60Hz	
	1024x768,24bit,60Hz	Optimal Default, Failsafe Default
	1280x768,24bit,60Hz	
	1280x1024,48bit,60Hz	
	1366x768,24bit,60Hz	
	1440x900,48bit,60Hz	
	1600x1200,48bit,60Hz	
	1920x1080,48bit,60Hz	
	1920x1200,48bit,60Hz	

Options Summary		
Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item.		
Color Depth	18-bit	Optimal Default, Failsafe Default
	24-bit	
	36-bit	
	48-bit	
Select panel type.		
Backlight Mode	BIOS & Application	
	Windows Slider	Optimal Default, Failsafe Default
Select backlight control signal type.		

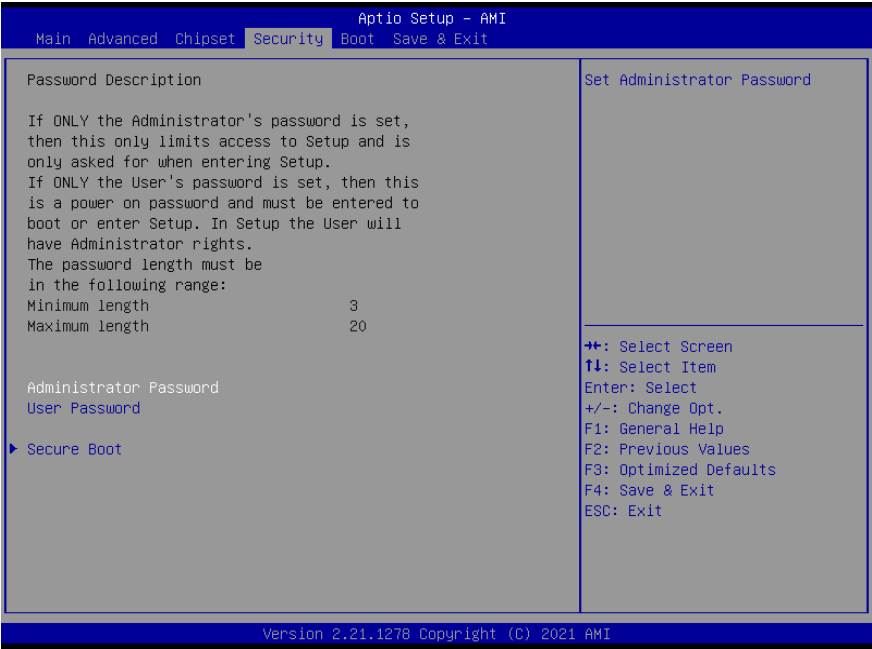
3.5.2 PCH-IO Configuration



Options Summary		
Full-MiniCard Slot Function (CN9)	SATA	Optimal Default, Failsafe Default
	PCIe	
Select function enabled for Full-MiniCard (CN9) slot.		

Options Summary		
I2C0 Controller	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enables or Disables the Seriallo Controller. - If the device is Function 0, PSF disabling is skipped. The PSF default remains, and the device PCI configuration space stays visible. This ensures that PCI enumerators can access functions above 0 in multifunction devices. Device Dependencies: - I2C0 depends on I2C1, I2C2, I2C3 - UART0 depends on UART1, SPI0, SPI1 - UART2 depends on I2C4, I2C5 Special Conditions for UART0 (00:30:00): - Cannot be disabled if a child device is enabled, e.g., CNVi Bluetooth (_SB.PC00.UA00.BTH0) - Cannot be enabled if the I2S audio codec is enabled (_SB.PC00.I2C0.HDAC)		

3.6 Setup Submenu: Security



Change User/Supervisor Password

You can install a Supervisor password, and if you install a supervisor password, you can then install a user password. A user password does not provide access to many of the features in the Setup utility.

If you highlight these items and press Enter, a dialog box appears which lets you enter a password. You can enter no more than six letters or numbers. Press Enter after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press Enter after you have retyped it correctly. The password is required at boot time, or when the user enters the Setup utility.

Removing the Password

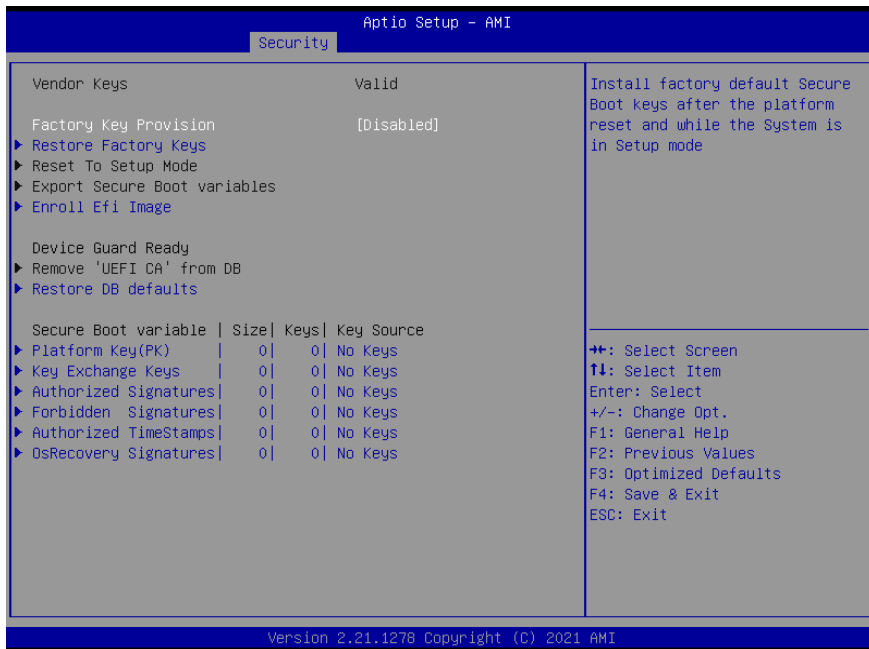
Highlight this item and type in the current password. At the next dialog box press Enter to disable password protection.

3.6.1 Secure Boot



Options Summary		
Secure Boot	Disabled	Optimal Default, Failsafe Default
	Enabled	
Secure Boot feature is Active if Secure Boot is Enabled, Platform Key (PK) is enrolled and the System is in User mode. The mode change requires platform reset.		
Secure Boot Mode	Custom	Optimal Default, Failsafe Default
	Standard	
Secure Boot mode options: Standard or Custom.		
In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication.		
Restore Factory Keys		
Force System to User Mode. Install factory default Secure Boot key databases.		
Reset to Setup Mode		
Delete all Secure Boot key databases from NVRAM.		

3.6.1.1 Key Management



Options Summary

Factory Key Provision	Disabled	Optimal Default, Failsafe Default
	Enabled	

Secure Boot feature is Active if Secure Boot is Enabled, Platform Key (PK) is enrolled and the System is in User mode. The mode change requires platform reset.

Restore Factory Keys

Force System to User Mode. Install factory default Secure Boot key databases.

Reset to Setup Mode

Delete all Secure Boot key databases from NVRAM.

Export Secure Boot variables

Copy NVRAM content of Secure Boot variables to files in a root folder on a file system device.

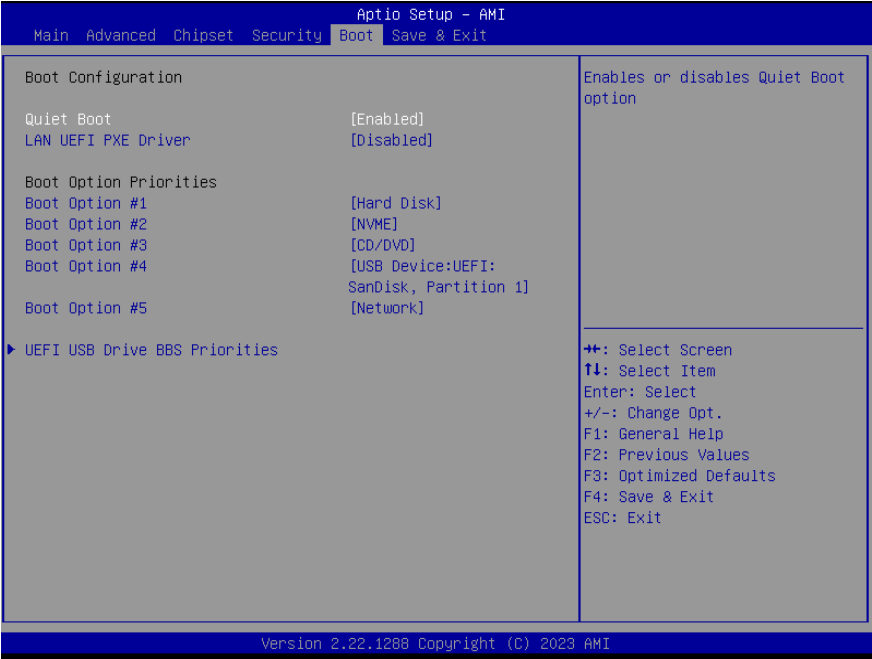
Enroll Efi Image

Allow the image to run in Secure Boot mode. Enroll SHA256 Hash certificate of a PE image into Authorized Signature Database (db).

Remove 'UEFI CA' from DB

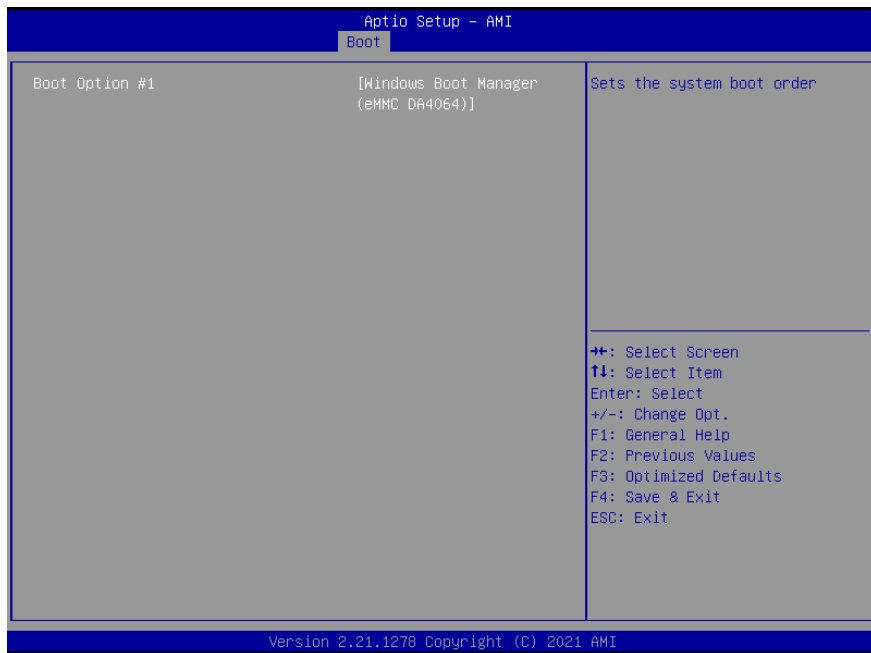
Options Summary	
Device Guard ready system must not list 'Microsoft UEFI CA' Certificate in Authorized Signature database (db).	
Restore DB defaults	
Restore DB variable to factory defaults.	
Platform Key (PK)	Update
Key Exchange Keys	Update
	Append
Authorized Signatures	Update
	Append
Forbidden Signatures	Update
	Append
Authorized TimeStamps	Update
	Append
OsRecovery Signatures	Update
	Append
Enroll Factory Defaults or load certificates from a file:	
1.Public Key Certificate:	
a) EFI_SIGNATURE_LIST	
b) EFI_CERT_X509 (DER)	
c) EFI_CERT_RSA2048 (bin)	
d) EFI_CERT_SHAXXX	
2. Authenticated UEFI Variable	
3. EFI PE/COFF Image (SHA256)	
Key Source: Factory, External, Mixed	

3.7 Setup Submenu: Boot

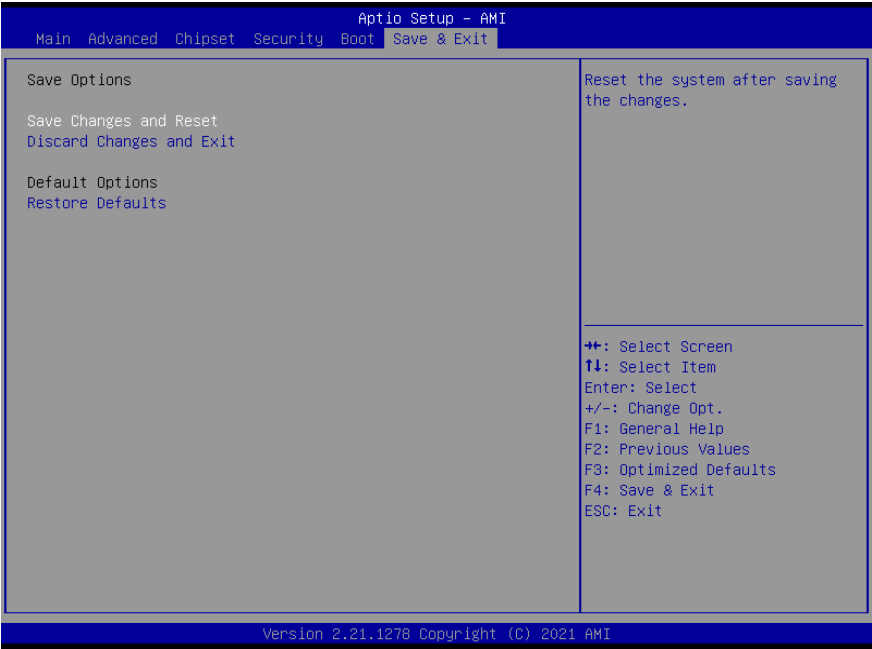


Options Summary		
Quiet Boot	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable Quiet Boot option.		
UEFI PXE Support	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable/Disable UEFI Network Stack.		
FIXED BOOT ORDER Priorities		
Sets the system boot order.		

3.7.1 BBS Priorities



3.8 Setup Submenu: Save & Exit



Options Summary	
Save Changes and Reset	Reset the system after saving the changes.
Discard Changes and Exit	Exit system setup without saving any changes.
Restore Defaults	Restore/Load Default values for all the setup options.

Chapter 4

Drivers Installation

4.1 Drivers Download and Installation

Drivers for the PICO-ADN2 can be downloaded from the product page on the AAEON website by following this link:

https://www.aaeon.com/en/product/detail/pico-itx_boards_pico-adn2/download

Download the driver(s) you need and follow the steps below to install them.

Install Chipset Driver

1. Open the **Intel Chipset** folder.
2. Run the **SetupChipset.exe** file.
3. Follow the instructions
4. Drivers will be installed automatically

Install Graphics Driver

1. Open the **Intel Graphics** folder.
2. Run the **Installer.exe** file.
3. Follow the instructions
4. Driver will be installed automatically

Install LAN Drivers

A. Realtek RTL8111H-CG LAN Driver

1. Open the **LAN** folder.
2. Run the **Install_Win11_Win10_10072_05222024_07232024.exe** file
3. Follow the instructions
4. Driver will be installed automatically

B. Intel® LAN Driver

1. Open the **LAN** folder.
2. Identify the LAN driver files:
 - o e2f – Intel® Ethernet driver
 - o e2f.sys – Ethernet system driver
 - o e2fmsg.dll – Supporting Ethernet messaging library
3. Open the **e2f** driver folder.
4. Right-click the corresponding Setup Information (**.inf**) file and select **Install**, or run **setup.exe** if one is provided. Follow the instructions

5. Driver will be installed automatically

Install Serial IO Driver

1. Open the **Serial IO** folder.
2. Run the **SetupSerialIO.exe** file
3. Follow the instructions
4. Driver will be installed automatically

Install ME Driver

1. Open the **ME** folder.
2. Run the **SetupME.exe** file
3. Follow the instructions
4. Driver will be installed automatically

Install Realtek Audio Drivers

1. Open the **Audio Drivers** folder
2. Run the **Setup.exe** file
3. Follow the instructions
4. Drivers will be installed automatically

Install Intel® SST Drivers (Optional)

1. Open the **Audio Drivers** folder
2. Identify the audio drivers you need based on your system hardware:
 - o **IntcAudioBus** – Intel® Audio Bus driver
 - o **IntcAudioBus** – Intel® Audio Bus driver
 - o **IntcDMic** – Digital Microphone driver
 - o **IntcOED** – Audio Offload Engine driver
 - o **IntcStreaming** – Intel® Audio Streaming driver
 - o **IntcSDW** – SoundWire audio driver
 - o **IntcSdwBus** – SoundWire bus driver
2. Open the folder for the audio driver you want to install.
3. Right-click the corresponding **Setup Information (.inf)** file (for example, IntcAudioBus.inf) and select **Install**, or run the **setup.exe** file if one is provided.
4. The required **.sys**, **.dll**, and **.cat** files will be installed automatically.
5. Repeat steps 3–4 for each additional audio driver required by your system.

Appendix A

Mating Connectors

A.1 List of Mating Connectors and Cables

The following table lists mating connectors and available cables.

Label	Function	Mating Connector		Available Cable	AAEON Cable P/N
		Vendor	Model no		
CN1	RTC Super Capacitor Header	Molex	51021-0200	Super Capacitor Cable	11FX000010
CN3	LVDS Backlight Header	JST	SHR-06V-S-B	LVDS Inverter Cable	170X000152
CN4	LVDS Connector (Default)	I-PEX	20453-040T-11	Single Channel LVDS Cable	170X000532
	eDP Connector			Dual Channel LVDS Cable	170X000764
				EDP Cable	170X000531
CN8	4-bit DIO Header	JST	SHR-06V-S-B	N/A	N/A
CN16	4-pin Smart FAN Header	Molex	51021-0400	N/A	N/A
CN17	I2C/SMBUS Header	JST	SHR-05V-S-B	I2C/SMBUS Cable	170X000743
CN18	eSPI debug Header	JST	SHR-10V-S-B	eSPI debug Cable	1703100133
CN22	Front Panel Header	JST	SHR-10V-S-B	Front Panel Cable	170X000287
CN23	12V Power Input Header	JST	VHR-2N	2P 3.96mm to dual 4P 12V Peripheral Female Connector	170X000609
CN26	COM Port 1/Port 2 Header	ACES	50247-020H (w/o lock)	COM Port Cable (2-Port)	170X000231
			52254-020H (w/ lock)	N/A	N/A
CN29	USB 3.2 Gen 1 Header (2-Port)	ACES	50247-020H (w/o lock)	USB 3.0 Cable (2-Port)	170X000285
			52254-020H (w/ lock)	N/A	N/A
CN30	LAN Port 1 Header	JST	PHDR-08VS	LAN Cable 8P wafer to RJ45	170X000767
CN31	LAN Port 1 LED Header	JST	SHR-04V-S-B	4P to 3 Channel LED G/O/Y	170X000634
CN32	LAN Port 2 Header	JST	PHDR-08VS	LAN Cable 8P wafer to RJ45	170X000767
CN33	LAN Port 2 LED Header	JST	SHR-04V-S-B	4P to 3 Channel LED G/O/Y	170X000634
CN34	USB 2.0 Port 1 Header	Hirose	KW30-4P-1C(800)	USB2.0 Cable	170X000880
CN35	USB 2.0 Port 2 Header	Hirose	KW30-4P-1C(800)	USB2.0 Cable	170X000880

Note 1: Single Channel LVDS Test Panel is AUO G121XN01V0 with Cable P/N: 170X000532.

Note 2: Dual Channel LVDS Test Panel is INNOLUX G156HCE-L01 with Cable P/N: 170X000764.

Note 3: eDP Test Panel is AUO B173ZAN01.0 with Cable P/N: 170X000531.

Appendix B

I/O Information

B.1 I/O Address Map

Input/output (IO)	
	[0000000000000000 - 000000000000CF7] PCI Express Root Complex
	[0000000000000020 - 0000000000000021] Programmable interrupt controller
	[0000000000000020 - 0000000000000021] Programmable interrupt controller
	[0000000000000020 - 0000000000000021] Programmable interrupt controller
	[0000000000000020 - 0000000000000021] Programmable interrupt controller
	[0000000000000020 - 0000000000000021] Programmable interrupt controller
	[0000000000000020 - 0000000000000021] Programmable interrupt controller
	[0000000000000020 - 0000000000000021] Programmable interrupt controller
	[0000000000000024 - 0000000000000025] Programmable interrupt controller
	[0000000000000024 - 0000000000000025] Programmable interrupt controller
	[0000000000000024 - 0000000000000025] Programmable interrupt controller
	[0000000000000024 - 0000000000000025] Programmable interrupt controller
	[0000000000000024 - 0000000000000025] Programmable interrupt controller
	[0000000000000024 - 0000000000000025] Programmable interrupt controller
	[0000000000000024 - 0000000000000025] Programmable interrupt controller
	[0000000000000028 - 0000000000000029] Programmable interrupt controller
	[0000000000000028 - 0000000000000029] Programmable interrupt controller
	[0000000000000028 - 0000000000000029] Programmable interrupt controller
	[0000000000000028 - 0000000000000029] Programmable interrupt controller
	[0000000000000028 - 0000000000000029] Programmable interrupt controller
	[0000000000000028 - 0000000000000029] Programmable interrupt controller
	[0000000000000028 - 0000000000000029] Programmable interrupt controller
	[000000000000002C - 000000000000002D] Programmable interrupt controller
	[000000000000002C - 000000000000002D] Programmable interrupt controller
	[000000000000002C - 000000000000002D] Programmable interrupt controller
	[000000000000002C - 000000000000002D] Programmable interrupt controller
	[000000000000002C - 000000000000002D] Programmable interrupt controller
	[000000000000002C - 000000000000002D] Programmable interrupt controller
	[000000000000002C - 000000000000002D] Programmable interrupt controller
	[000000000000002E - 000000000000002F] Motherboard resources
	[0000000000000030 - 0000000000000031] Programmable interrupt controller
	[0000000000000030 - 0000000000000031] Programmable interrupt controller

	[0000000000000040 - 0000000000000043]	System timer
	[0000000000000040 - 0000000000000043]	System timer
	[0000000000000040 - 0000000000000043]	System timer
	[0000000000000040 - 0000000000000043]	System timer
	[0000000000000040 - 0000000000000043]	System timer
	[0000000000000040 - 0000000000000043]	System timer
	[0000000000000040 - 0000000000000043]	System timer
	[000000000000004E - 000000000000004F]	Motherboard resources
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000061 - 0000000000000061]	Motherboard resources
	[0000000000000063 - 0000000000000063]	Motherboard resources
	[0000000000000065 - 0000000000000065]	Motherboard resources
	[0000000000000067 - 0000000000000067]	Motherboard resources
	[0000000000000070 - 0000000000000070]	Motherboard resources
	[0000000000000080 - 0000000000000080]	Motherboard resources
	[0000000000000092 - 0000000000000092]	Motherboard resources
	[00000000000000A0 - 00000000000000A1]	Programmable interrupt controller
	[00000000000000A0 - 00000000000000A1]	Programmable interrupt controller
	[00000000000000A0 - 00000000000000A1]	Programmable interrupt controller
	[00000000000000A0 - 00000000000000A1]	Programmable interrupt controller
	[00000000000000A0 - 00000000000000A1]	Programmable interrupt controller
	[00000000000000A0 - 00000000000000A1]	Programmable interrupt controller
	[00000000000000A4 - 00000000000000A5]	Programmable interrupt controller
	[00000000000000A4 - 00000000000000A5]	Programmable interrupt controller
	[00000000000000A4 - 00000000000000A5]	Programmable interrupt controller
	[00000000000000A4 - 00000000000000A5]	Programmable interrupt controller
	[00000000000000A4 - 00000000000000A5]	Programmable interrupt controller

	[00000000000000AC - 00000000000000AD]	Programmable interrupt controller
	[00000000000000B0 - 00000000000000B1]	Programmable interrupt controller
	[00000000000000B0 - 00000000000000B1]	Programmable interrupt controller
	[00000000000000B0 - 00000000000000B1]	Programmable interrupt controller
	[00000000000000B0 - 00000000000000B1]	Programmable interrupt controller
	[00000000000000B0 - 00000000000000B1]	Programmable interrupt controller
	[00000000000000B0 - 00000000000000B1]	Programmable interrupt controller
	[00000000000000B0 - 00000000000000B1]	Programmable interrupt controller
	[00000000000000B2 - 00000000000000B3]	Motherboard resources
	[00000000000000B4 - 00000000000000B5]	Programmable interrupt controller
	[00000000000000B4 - 00000000000000B5]	Programmable interrupt controller
	[00000000000000B4 - 00000000000000B5]	Programmable interrupt controller
	[00000000000000B4 - 00000000000000B5]	Programmable interrupt controller
	[00000000000000B4 - 00000000000000B5]	Programmable interrupt controller
	[00000000000000B4 - 00000000000000B5]	Programmable interrupt controller
	[00000000000000B4 - 00000000000000B5]	Programmable interrupt controller
	[00000000000000B4 - 00000000000000B5]	Programmable interrupt controller
	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000B0 - 00000000000000B7]	Fintek Communications Port (COM4)
	[00000000000000B8 - 00000000000000BF]	Fintek Communications Port (COM3)
	[00000000000000C0 - 00000000000000C7]	Fintek Communications Port (COM6)

	[00000000000002D0 - 00000000000002D7]	Fintek Communications Port (COM5)
	[00000000000002F8 - 00000000000002FF]	Fintek Communications Port (COM2)
	[00000000000003F8 - 00000000000003FF]	Fintek Communications Port (COM1)
	[00000000000004D0 - 00000000000004D1]	Programmable interrupt controller
	[00000000000004D0 - 00000000000004D1]	Programmable interrupt controller
	[00000000000004D0 - 00000000000004D1]	Programmable interrupt controller
	[00000000000004D0 - 00000000000004D1]	Programmable interrupt controller
	[00000000000004D0 - 00000000000004D1]	Programmable interrupt controller
	[00000000000004D0 - 00000000000004D1]	Programmable interrupt controller
	[0000000000000680 - 000000000000069F]	Motherboard resources
	[0000000000000A00 - 0000000000000A0F]	Motherboard resources
	[0000000000000A10 - 0000000000000A1F]	Motherboard resources
	[0000000000000A20 - 0000000000000A2F]	Motherboard resources
	[0000000000000D00 - 0000000000000FFF]	PCI Express Root Complex
	[000000000000164E - 000000000000164F]	Motherboard resources
	[0000000000001800 - 00000000000018FE]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000002000 - 00000000000020FE]	Motherboard resources
	[0000000000003000 - 000000000000303F]	Intel(R) UHD Graphics
	[0000000000003000 - 00000000000030FF]	Realtek PCIe GbE Family Controller
	[0000000000003000 - 0000000000003FFF]	PCI Express Root Port #9 - 54B0
	[0000000000003000 - 0000000000003FFF]	Intel(R) PCI Express Root Port #1 - 7AB8
	[0000000000003000 - 0000000000003FFF]	Intel(R) PCI Express Root Port #3 - 4B3B
	[0000000000003020 - 000000000000303F]	Standard SATA AHCI Controller
	[0000000000003040 - 0000000000003043]	Standard SATA AHCI Controller
	[0000000000003050 - 0000000000003057]	Standard SATA AHCI Controller

	[0000000000003000 - 0000000000003FFF]	Intel(R) PCI Express Root Port #1 - 7AB8
	[0000000000003000 - 0000000000003FFF]	Intel(R) PCI Express Root Port #3 - 4B3B
	[0000000000003020 - 000000000000303F]	Standard SATA AHCI Controller
	[0000000000003040 - 0000000000003043]	Standard SATA AHCI Controller
	[0000000000003050 - 0000000000003057]	Standard SATA AHCI Controller
	[0000000000004000 - 000000000000403F]	Intel(R) UHD Graphics
	[0000000000004000 - 000000000000403F]	Intel(R) UHD Graphics 730
	[0000000000004000 - 000000000000403F]	Microsoft Basic Display Adapter
	[0000000000004000 - 00000000000040FF]	Realtek PCIe GbE Family Controller #2
	[0000000000004000 - 0000000000004FFF]	Intel(R) PCI Express Root Port #2 - 4B3A
	[0000000000004060 - 000000000000407F]	Standard SATA AHCI Controller
	[0000000000004060 - 000000000000407F]	Standard SATA AHCI Controller
	[0000000000004080 - 0000000000004083]	Standard SATA AHCI Controller
	[0000000000004080 - 0000000000004083]	Standard SATA AHCI Controller
	[0000000000004090 - 0000000000004097]	Standard SATA AHCI Controller
	[0000000000004090 - 0000000000004097]	Standard SATA AHCI Controller
	[0000000000005000 - 000000000000503F]	Intel(R) UHD Graphics
	[0000000000005000 - 000000000000503F]	Intel(R) UHD Graphics
	[0000000000005060 - 000000000000507F]	Standard SATA AHCI Controller
	[0000000000005080 - 0000000000005083]	Standard SATA AHCI Controller
	[0000000000005090 - 0000000000005097]	Standard SATA AHCI Controller
	[000000000000EFA0 - 000000000000EFBF]	SMBus - 54A3
	[000000000000EFA0 - 000000000000EFBF]	Intel(R) SMBus - 7AA3
	[000000000000EFA0 - 000000000000EFBF]	Intel(R) SMBus Controller - 4B23
	[000000000000EFA0 - 000000000000EFBF]	SM Bus Controller

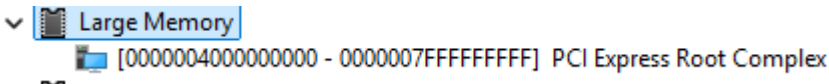
B.2 IRQ Mapping Chart

Interrupt request (IRQ)	
 (ISA) 0x00000000 (00)	System timer
 (ISA) 0x00000000 (00)	System timer
 (ISA) 0x00000000 (00)	System timer
 (ISA) 0x00000000 (00)	System timer
 (ISA) 0x00000000 (00)	System timer
 (ISA) 0x00000000 (00)	System timer
 (ISA) 0x00000000 (00)	System timer
 (ISA) 0x00000003 (03)	Fintek Communications Port (COM2)
 (ISA) 0x00000004 (04)	Fintek Communications Port (COM1)
 (ISA) 0x0000000B (11)	Fintek Communications Port (COM3)
 (ISA) 0x0000000B (11)	Fintek Communications Port (COM4)
 (ISA) 0x0000000B (11)	Fintek Communications Port (COM5)
 (ISA) 0x0000000B (11)	Fintek Communications Port (COM6)
 (ISA) 0x0000000E (14)	Intel(R) Serial IO GPIO Host Controller - INTC1057
 (ISA) 0x0000000E (14)	Intel(R) Serial IO GPIO Host Controller - INTC1020
 (ISA) 0x0000000E (14)	Intel(R) Serial IO GPIO Host Controller - INTC1056
 (ISA) 0x0000000E (14)	Unknown device
 (ISA) 0x00000023 (35)	Intel(R) Platform Services Engine DMA Controller
 (ISA) 0x00000024 (36)	Intel(R) Platform Services Engine DMA Controller
 (ISA) 0x00000037 (55)	Microsoft ACPI-Compliant System
 (ISA) 0x00000038 (56)	Microsoft ACPI-Compliant System
 (ISA) 0x00000039 (57)	Microsoft ACPI-Compliant System
 (ISA) 0x0000003A (58)	Microsoft ACPI-Compliant System
 (ISA) 0x0000003B (59)	Microsoft ACPI-Compliant System
 (ISA) 0x0000003C (60)	Microsoft ACPI-Compliant System
 (ISA) 0x0000003D (61)	Microsoft ACPI-Compliant System
 (ISA) 0x0000003E (62)	Microsoft ACPI-Compliant System
 (ISA) 0x0000003F (63)	Microsoft ACPI-Compliant System
 (ISA) 0x00000040 (64)	Microsoft ACPI-Compliant System
 (ISA) 0x00000041 (65)	Microsoft ACPI-Compliant System
 (ISA) 0x00000042 (66)	Microsoft ACPI-Compliant System
 (ISA) 0x00000043 (67)	Microsoft ACPI-Compliant System
 (ISA) 0x00000044 (68)	Microsoft ACPI-Compliant System

	(ISA) 0x000001BD (445)	Microsoft ACPI-Compliant System
	(ISA) 0x000001BE (446)	Microsoft ACPI-Compliant System
	(ISA) 0x000001BF (447)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C0 (448)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C1 (449)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C2 (450)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C3 (451)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C4 (452)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C5 (453)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C6 (454)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C7 (455)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C8 (456)	Microsoft ACPI-Compliant System
	(ISA) 0x000001C9 (457)	Microsoft ACPI-Compliant System
	(ISA) 0x000001CA (458)	Microsoft ACPI-Compliant System
	(ISA) 0x000001CB (459)	Microsoft ACPI-Compliant System
	(ISA) 0x000001CC (460)	Microsoft ACPI-Compliant System
	(ISA) 0x000001CD (461)	Microsoft ACPI-Compliant System
	(ISA) 0x000001CE (462)	Microsoft ACPI-Compliant System
	(ISA) 0x000001CF (463)	Microsoft ACPI-Compliant System
	(ISA) 0x000001D0 (464)	Microsoft ACPI-Compliant System
	(ISA) 0x000001D1 (465)	Microsoft ACPI-Compliant System
	(ISA) 0x000001D2 (466)	Microsoft ACPI-Compliant System
	(ISA) 0x000001D3 (467)	Microsoft ACPI-Compliant System
	(ISA) 0x000001D4 (468)	Microsoft ACPI-Compliant System
	(ISA) 0x000001D5 (469)	Microsoft ACPI-Compliant System
	(ISA) 0x000001D6 (470)	Microsoft ACPI-Compliant System
	(ISA) 0x000001D7 (471)	Microsoft ACPI-Compliant System
	(ISA) 0x000001D8 (472)	Microsoft ACPI-Compliant System
	(ISA) 0x000001D9 (473)	Microsoft ACPI-Compliant System
	(ISA) 0x000001DA (474)	Microsoft ACPI-Compliant System
	(ISA) 0x000001DB (475)	Microsoft ACPI-Compliant System
	(ISA) 0x000001DC (476)	Microsoft ACPI-Compliant System
	(ISA) 0x000001DD (477)	Microsoft ACPI-Compliant System
	(ISA) 0x000001DE (478)	Microsoft ACPI-Compliant System

	(ISA) 0x000001EA (490)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EB (491)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EC (492)	Microsoft ACPI-Compliant System
	(ISA) 0x000001ED (493)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EE (494)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EF (495)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F0 (496)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F1 (497)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F2 (498)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F3 (499)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F4 (500)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F5 (501)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F6 (502)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F7 (503)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F8 (504)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F9 (505)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FA (506)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FB (507)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FC (508)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FD (509)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FE (510)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FF (511)	Microsoft ACPI-Compliant System
	(PCI) 0x00000013 (19)	High Definition Audio Controller
	(PCI) 0x0000001B (27)	Intel(R) Serial IO I2C Host Controller - 54E8
	(PCI) 0xFFFFFFF7 (-9)	Intel(R) Management Engine Interface #1
	(PCI) 0xFFFFFFF8 (-8)	Intel(R) Ethernet Controller I226-V #5
	(PCI) 0xFFFFFFF9 (-7)	Intel(R) Ethernet Controller I226-V #5
	(PCI) 0xFFFFF0FA (-6)	Intel(R) Ethernet Controller I226-V #5
	(PCI) 0xFFFFF0FB (-5)	Intel(R) UHD Graphics
	(PCI) 0xFFFFF0FC (-4)	Intel(R) USB 3.10 eXtensible Host Controller - 1.20 (Microsoft)
	(PCI) 0xFFFFF0FD (-3)	Realtek PCIe GbE Family Controller #4
	(PCI) 0xFFFFF0FE (-2)	Standard SATA AHCI Controller

B.3 Large Memory Map



B.4 Memory Address Map

Memory	
[0000000000A0000 - 0000000000BFFFFF]	PCI Express Root Complex
[000000007FC00000 - 000000007FC03FFF]	Realtek PCIe GbE Family Controller
[000000007FC00000 - 000000007FC0FFFF]	Intel(R) PCI Express Root Port #3 - 4B3B
[000000007FC04000 - 000000007FC04FFF]	Realtek PCIe GbE Family Controller
[000000007FD00000 - 000000007FD03FFF]	Realtek PCIe GbE Family Controller #2
[000000007FD00000 - 000000007FD0FFFF]	Intel(R) PCI Express Root Port #2 - 4B3A
[000000007FD04000 - 000000007FD04FFF]	Realtek PCIe GbE Family Controller #2
[000000007FE00000 - 000000007FE01FFF]	Standard SATA AHCI Controller
[000000007FE02000 - 000000007FE027FF]	Standard SATA AHCI Controller
[000000007FE03000 - 000000007FE030FF]	Standard SATA AHCI Controller
[0000000080000000 - 00000000801FFFFF]	PCI Express Root Port
[0000000080200000 - 00000000803FFFFF]	PCI Express Root Port
[0000000080400000 - 00000000804FFFFF]	Intel(R) Ethernet Controller I226-V #5
[0000000080400000 - 00000000804FFFFF]	Intel(R) Ethernet Controller I226-IT
[0000000080400000 - 00000000804FFFFF]	Intel(R) Ethernet Controller I226-V #4
[0000000080400000 - 00000000805FFFFF]	PCI Express Root Port #7 - 54BE
[0000000080400000 - 00000000805FFFFF]	PCI Express Root Port #10 - 54B1
[0000000080400000 - 00000000805FFFFF]	PCI Express Root Port #10 - 54B1
[0000000080400000 - 0000000080DFFFFF]	Intel(R) PCI Express Root Port #1 - 7AB8
[0000000080400000 - 00000000BFFFFFFF]	PCI Express Root Complex
[0000000080420000 - 0000000080421FFF]	Standard SATA AHCI Controller
[0000000080422000 - 00000000804227FF]	Standard SATA AHCI Controller
[0000000080423000 - 00000000804230FF]	Standard SATA AHCI Controller
[0000000080500000 - 0000000080503FFF]	Intel(R) Ethernet Controller I226-V #5
[0000000080500000 - 0000000080503FFF]	Intel(R) Ethernet Controller I226-IT
[0000000080500000 - 0000000080503FFF]	Intel(R) Ethernet Controller I226-V #4
[0000000080600000 - 0000000080603FFF]	Realtek PCIe GbE Family Controller #4
[0000000080600000 - 00000000806FFFFF]	PCI Express Root Port #9 - 54B0
[0000000080604000 - 0000000080604FFF]	Realtek PCIe GbE Family Controller #4
[0000000080700000 - 0000000080701FFF]	Standard SATA AHCI Controller
[0000000080702000 - 00000000807027FF]	Standard SATA AHCI Controller
[0000000080703000 - 00000000807030FF]	Standard SATA AHCI Controller
[0000000080800000 - 00000000809FFFFF]	PCI Express Root Port #4 - 54BB

	[0000000080A00000 - 0000000080AFFFFF] Intel(R) Ethernet Controller I226-IT #4
	[0000000080A00000 - 0000000080AFFFFF] Intel(R) Ethernet Controller I226-V #3
	[0000000080A00000 - 0000000080BFFFFF] PCI Express Root Port #3 - 54BA
	[0000000080B00000 - 0000000080B03FFF] Intel(R) Ethernet Controller I226-IT #4
	[0000000080B00000 - 0000000080B03FFF] Intel(R) Ethernet Controller I226-V #3
	[0000000080E00000 - 0000000080EFFFFF] Intel(R) Ethernet Controller I226-V
	[0000000080E00000 - 0000000080EFFFFF] Intel(R) Ethernet Controller I226-LM #2
	[0000000080E00000 - 0000000080FFFFF] Intel(R) PCI Express Root Port #3 - 7ABA
	[0000000080E00000 - 0000000080FFFFF] PCI-to-PCI Bridge
	[0000000080F00000 - 0000000080F03FFF] Intel(R) Ethernet Controller I226-V
	[0000000080F00000 - 0000000080F03FFF] Intel(R) Ethernet Controller I226-LM #2
	[0000000081000000 - 000000008101FFFF] Intel(R) Ethernet Connection (17) I219-LM
	[0000000081000000 - 00000000811FFFFF] PCI-to-PCI Bridge
	[0000000081020000 - 0000000081021FFF] Standard SATA AHCI Controller
	[0000000081022000 - 0000000081022FFF] Standard SATA AHCI Controller
	[0000000081023000 - 0000000081023FFF] Standard SATA AHCI Controller
	[0000000081200000 - 00000000813FFFFF] PCI-to-PCI Bridge
	[00000000C0000000 - 00000000CFFFFF] Motherboard resources
	[00000000E0690000 - 00000000E069FFFF] Intel(R) Serial IO GPIO Host Controller - INTC1056
	[00000000E06A0000 - 00000000E06AFFFF] Intel(R) Serial IO GPIO Host Controller - INTC1056
	[00000000E06B0000 - 00000000E06BFFFF] Intel(R) Serial IO GPIO Host Controller - INTC1056
	[00000000E06D0000 - 00000000E06DFFFF] Intel(R) Serial IO GPIO Host Controller - INTC1056
	[00000000E06E0000 - 00000000E06EFFFF] Intel(R) Serial IO GPIO Host Controller - INTC1056
	[00000000E0D10000 - 00000000E0D1FFFF] Unknown device
	[00000000E0D20000 - 00000000E0D2FFFF] Unknown device
	[00000000E0D30000 - 00000000E0D3FFFF] Unknown device
	[00000000E0D40000 - 00000000E0D4FFFF] Unknown device
	[00000000E0D50000 - 00000000E0D5FFFF] Unknown device
	[00000000FD000000 - 00000000FD68FFFF] Motherboard resources
	[00000000FD690000 - 00000000FD69FFFF] Intel(R) Serial IO GPIO Host Controller - INTC1057
	[00000000FD690000 - 00000000FD69FFFF] Intel(R) Serial IO GPIO Host Controller - INTC1020
	[00000000FD6A0000 - 00000000FD6AFFFF] Intel(R) Serial IO GPIO Host Controller - INTC1057
	[00000000FD6A0000 - 00000000FD6AFFFF] Intel(R) Serial IO GPIO Host Controller - INTC1020

	[00000000FD6B0000 - 00000000FD6BFFFF]	Intel(R) Serial IO GPIO Host Controller - INTC1020
	[00000000FD6B0000 - 00000000FD6CFFFF]	Motherboard resources
	[00000000FD6C0000 - 00000000FD6CFFFF]	Intel(R) Serial IO GPIO Host Controller - INTC1020
	[00000000FD6D0000 - 00000000FD6DFFFF]	Intel(R) Serial IO GPIO Host Controller - INTC1057
	[00000000FD6D0000 - 00000000FD6DFFFF]	Intel(R) Serial IO GPIO Host Controller - INTC1020
	[00000000FD6E0000 - 00000000FD6EFFFF]	Intel(R) Serial IO GPIO Host Controller - INTC1057
	[00000000FD6E0000 - 00000000FD6EFFFF]	Intel(R) Serial IO GPIO Host Controller - INTC1020
	[00000000FD6F0000 - 00000000FD6FFFFF]	Motherboard resources
	[00000000FE000000 - 00000000FE01FFFF]	Motherboard resources
	[00000000FE010000 - 00000000FE010FFF]	SPI (flash) Controller - 54A4
	[00000000FE010000 - 00000000FE010FFF]	Intel(R) SPI (flash) Controller - 4B24
	[00000000FE010000 - 00000000FE010FFF]	Intel(R) SPI (flash) Controller - 7AA4
	[00000000FE010000 - 00000000FE010FFF]	PCI Device
	[00000000FE050000 - 00000000FE053FFF]	Intel(R) Platform Services Engine DMA Controller
	[00000000FE060000 - 00000000FE063FFF]	Intel(R) Platform Services Engine DMA Controller
	[00000000FE200000 - 00000000FE7FFFFF]	Motherboard resources
	[00000000FED00000 - 00000000FED003FF]	High precision event timer
	[00000000FED20000 - 00000000FED7FFFF]	Motherboard resources
	[00000000FED40000 - 00000000FED44FFF]	Trusted Platform Module 2.0
	[00000000FED45000 - 00000000FED8FFFF]	Motherboard resources
	[00000000FED90000 - 00000000FED93FFF]	Motherboard resources
	[00000000FEDA0000 - 00000000FEDA0FFF]	Motherboard resources
	[00000000FEDA1000 - 00000000FEDA1FFF]	Motherboard resources
	[00000000FEDC0000 - 00000000FEDC7FFF]	Motherboard resources
	[00000000FEE00000 - 00000000FEEFFFFF]	Motherboard resources
	[00000000FF000000 - 00000000FFFFFFFF]	Motherboard resources
	[0000004000000000 - 000000400FFFFFFF]	Intel(R) Graphics
	[0000004000000000 - 000000400FFFFFFF]	Intel(R) Graphics
	[0000004000000000 - 000000400FFFFFFF]	Intel(R) UHD Graphics
	[0000004000000000 - 000000400FFFFFFF]	Intel(R) UHD Graphics
	[0000004000000000 - 000000400FFFFFFF]	Intel(R) UHD Graphics
	[0000004000000000 - 000000400FFFFFFF]	Intel(R) UHD Graphics
	[0000004000000000 - 000000400FFFFFFF]	Intel(R) UHD Graphics

	[0000004000000000 - 000000400FFFFFFF]	Intel(R) UHD Graphics 730
	[0000004000000000 - 000000400FFFFFFF]	Microsoft Basic Display Adapter
	[0000004017000000 - 0000004017FFFFFFF]	Intel(R) Graphics
	[0000004020240000 - 000000402024FFFFF]	Intel(R) USB 3.20 eXtensible Host Controller - 1.20 (Microsoft)
	[0000004020250000 - 000000402025FFFFF]	Intel(R) USB 3.20 eXtensible Host Controller - 1.20 (Microsoft)
	[0000004020268000 - 00000040202680FFF]	SM Bus Controller
	[000000402026A000 - 000000402026AFFFF]	PCI Simple Communications Controller
	[000000402026B000 - 000000402026BFFFF]	PCI Device
	[000000402026C000 - 000000402026CFFFF]	PCI Device
	[0000006000000000 - 00000060009FFFFFFF]	Intel(R) PCI Express Root Port #1 - 7AB8
	[0000006000000000 - 0000006000FFFFFFF]	Intel(R) Graphics
	[0000006000000000 - 0000006000FFFFFFF]	Intel(R) UHD Graphics
	[0000006000000000 - 0000006000FFFFFFF]	Intel(R) UHD Graphics
	[0000006000000000 - 0000006000FFFFFFF]	Intel(R) UHD Graphics
	[0000006000000000 - 0000006000FFFFFFF]	Intel(R) UHD Graphics
	[0000006000000000 - 0000006000FFFFFFF]	Intel(R) UHD Graphics
	[0000006001000000 - 0000006001FFFFFFF]	Intel(R) UHD Graphics 730
	[0000006001000000 - 0000006001FFFFFFF]	Microsoft Basic Display Adapter
	[0000006001100000 - 000000600110FFFFF]	Intel(R) USB 3.10 eXtensible Host Controller - 1.20 (Microsoft)
	[0000006001100000 - 000000600110FFFFF]	Intel(R) USB 3.10 eXtensible Host Controller - 1.20 (Microsoft)
	[0000006001110000 - 0000006001117FFFF]	Intel(R) Platform Monitoring Technology Driver
	[0000006001118000 - 00000060011180FFF]	Intel(R) SMBus Controller - 4B23
	[000000600111A000 - 000000600111AFFFF]	Intel(R) Serial IO I2C Host Controller - 4B7A
	[000000600111B000 - 000000600111BFFFF]	Intel(R) Serial IO I2C Host Controller - 4B78
	[0000006001128000 - 00000060011280FFF]	SMBus - 54A3
	[000000600133F000 - 000000600133FFFFF]	Intel SD Host Controller
	[0000006002100000 - 000000600210FFFFF]	Intel(R) USB 3.20 eXtensible Host Controller - 1.20 (Microsoft)
	[0000006002118000 - 00000060021180FFF]	Intel(R) SMBus - 7AA3
	[0000007FFFEFA000 - 0000007FFFEFAFFFF]	Intel(R) Management Engine Interface #1
	[0000007FFFEFB000 - 0000007FFFEFBFFFF]	Intel(R) Serial IO I2C Host Controller - 54E8
	[0000007FFFEFC000 - 0000007FFFEFCFFFF]	High Definition Audio Controller
	[0000007FFFFF0000 - 0000007FFFFF7FFFF]	High Definition Audio Controller