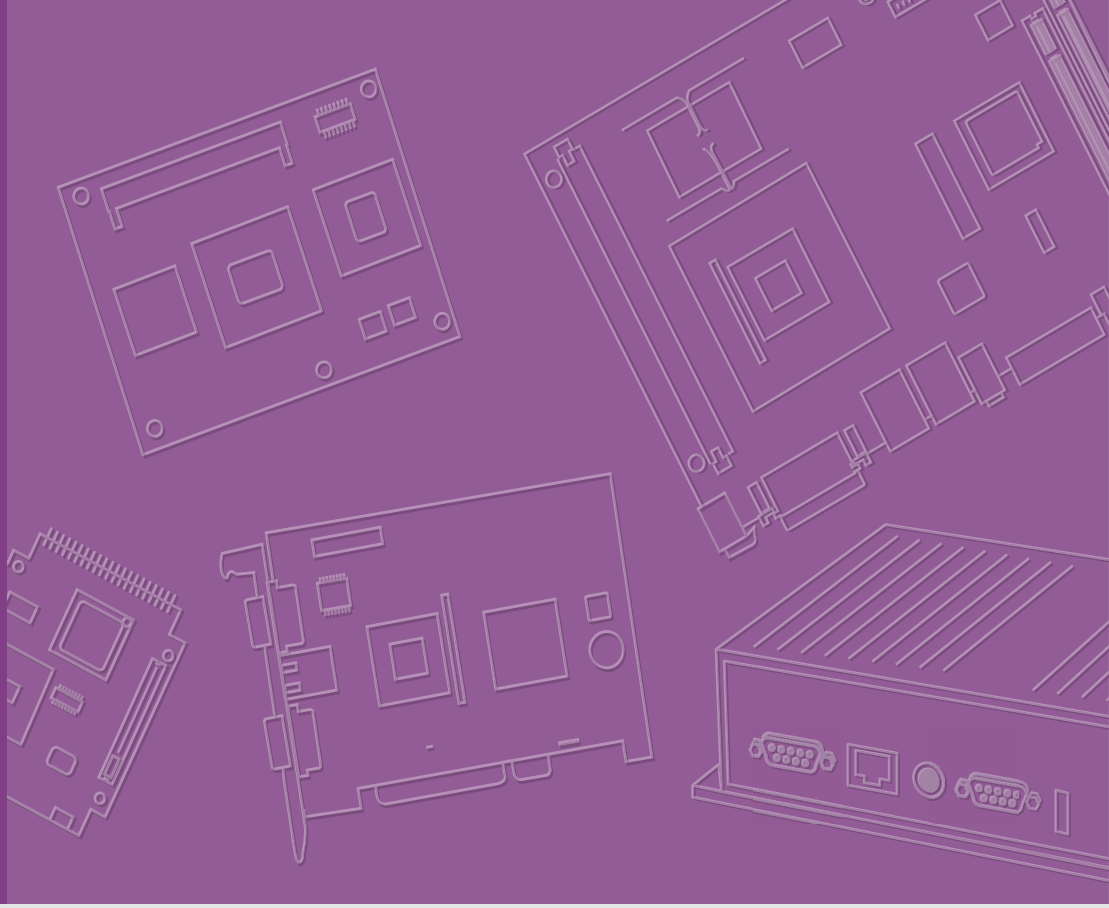


User Manual

MIO-5380

AMD Ryzen™ AI Embedded P100 Series on 3.5" SBC

ADVANTECH

Enabling an Intelligent Planet

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This manual is for the MIO-5380.

Part No. 2006538000 Edition 1

October 2026

Product Warranty (2 Years)

Advantech warrants the original purchaser that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products that have been repaired or altered by persons other than repair personnel authorized by Advantech, or products that have been subject to misuse, abuse, accident, or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced free of charge during the warranty period. For out-of-warranty repairs, customers will be billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details.

If you believe your product to be defective, follow the steps outlined below.

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages displayed when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain a return merchandise authorization (RMA) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a completed Repair and Replacement Order Card, and a proof of purchase date (such as a photocopy of your sales receipt) into a shippable container. Products returned without a proof of purchase date are not eligible for warranty service.
5. Write the RMA number clearly on the outside of the package and ship the package prepaid to your dealer.

Declaration of Conformity

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This type of cable is available from Advantech. Please contact your local supplier for ordering information.

Test conditions for passing also include the equipment being operated within an industrial enclosure. In order to protect the product from damage caused by electrostatic discharge (ESD) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for assistance.

Technical Support and Assistance

1. Visit the Advantech website at www.advantech.com/support to obtain the latest product information.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before calling:
   - Product name and serial number
   - Description of your peripheral attachments
   - Description of your software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wording of any error messages

Packing List

Before system installation, check that the items listed below are included and in good condition. If any item does not accord with the list, contact your dealer immediately.

- 1 x MIO-5380 SBC
- 1 x USB 2.0 Cable 20 cm (P/N: 1700030406-01)
- 1 x COM RS-232/422/485 Cable 20 cm (P/N: 1700030404-01)
- 3 x COM RS-232 Cable 20 cm (P/N: 1700031582-01)
- 1 x Cooler (P/N: 1970005512T001) for TDP 28W SKU or 1 x Heatsink (P/N: 1970005973T011) for cTDP 15W SKU
- 1 x Screw Kit (4 x screws for M.2 device & 4 x screws and stand-off for SBC)
- 1 x Jumper Kit (10 x Jumpers)

Optional Accessories

- Audio Cable 20cm (P/N: 1700019584-01)
- 4 wires COM RS-422/485 cables (P/N: 1700035016-01)
- USB Power Delivery 100W power module (P/N: MIOE-TCPD-P1A1)
- Dual Port 15.4W PoE PSE power module (P/N: MIOe-PSE-DPA1)
- M.2 3052 to Dual 2.5GbE LAN port I/O expansion module (P/N: MIOe-M2LAN-DPA1)
- M.2 2280 slot to M.2 2242/3052 extension bracket (P/N: 1960103315N020)
- M.2 3052 slot to M.2 2242/3042 extension bracket (P/N: 1960110006N000)

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Chapter 1

General Information

This chapter gives background information on the MIO-5380. Sections include:

- Introduction
- Specifications
- Block Diagram

1.1 Introduction

The MIO-5380 is a 3.5-inch (146 x 102 mm) single-board computer and powered by AMD Ryzen™ AI Embedded P100 Series Processors. It supports Dual Channel DDR5-5600 up to 128GB, with Sideband ECC, and provides 4 simultaneous displays via eDP + 2 x HDMI + 2 x USB Type-C with DP Alt. Mode. This SBC offers sufficient I/O with 2 x LAN, 6 x USB (incl. 1 x USB4), 4 x COM, 2 x CAN-FD, DC-in 12~24V, and also 4 x standalone M.2 slots: E-Key 2230, B-Key 3052 & 2 x M-Key 2280, and 1 x MCIO (for high speed PCIe extension and support by selected CPU SKU).

The MIO-5380 includes the embedded SUSI API and EdgeBMC for out-of-band remote management with DeviceOn created by Advantech to monitor and control system operation effectively and remotely. Advantech has also validated the MIO-5380 for use with embedded operation systems, including Windows 11 LTSC and Ubuntu Pro LTS, making it ready for bundled shipment.

1.2 Specifications

Table 1.1: Specifications

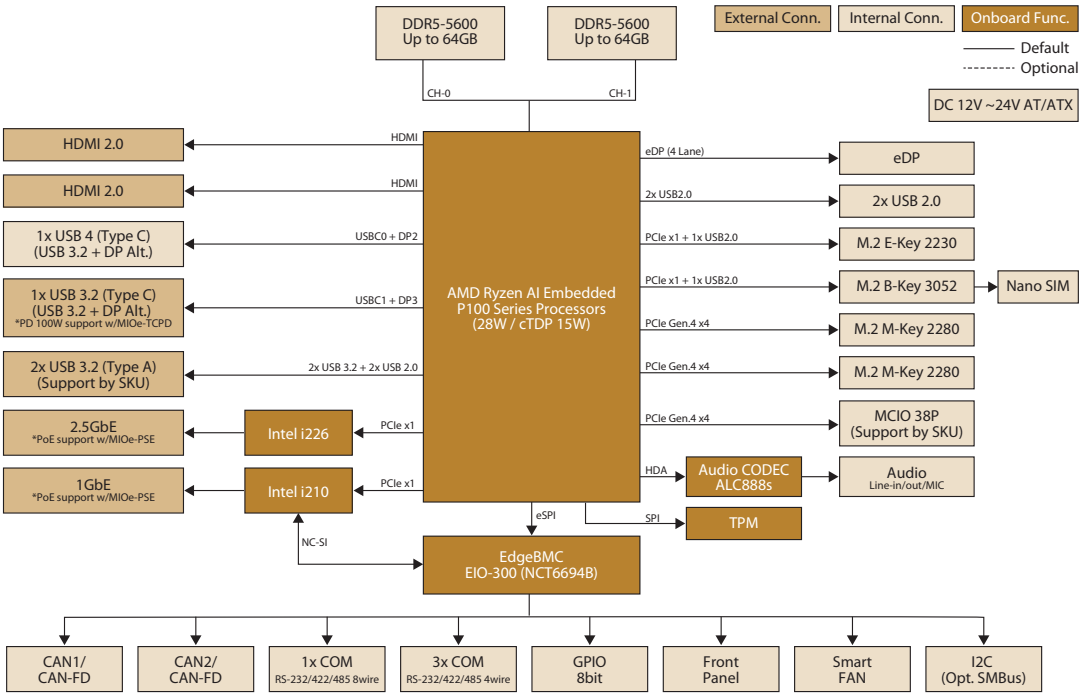
	Processor	**P185**	**P185i**	**P174**	**P164**	**P132**	**P121**
Platform	Max. Frequency	5.1GHz	5.1 GHz	5 GHz	5 GHz	4.5 GHz	4.4 GHz
	Core/Thread	12/24	12/24	10/20	8/16	6/12	4/8
	Cache	24MB	24MB	24MB	16MB	8MB	8MB
	CPU TDP	28W	28W	28W	28W	28W	28W
	BIOS	AMI UEFI 256Mbit					
Memory	Technology	DDR5-5600					
	Max. Capacity	Up to 128GB					
	Sideband ECC	Yes					
	Channel/ Socket	Dual Channels/2 sockets					
Graphics	Controller	AMD Radeon™ Graphics					
	Max. Frequency	2.9 GHz	2.9 GHz	2.8 GHz	2.8 GHz	2.8 GHz	2.7 GHz
	Work Group Processors	8	8	6	6	2	1
	3D/HW Acceleration	HW Decode: Up to 8K30, HEVC (H.265), VP9, AV1; HW Encode: Up to 8K30, HEVC (H.265), AV1					
AI Engine	NPU	50 TOPs	50 TOPs	50 TOPs	50 TOPs	50 TOPs	30 TOPs
Display I/F	LCD	1 x eDP 1.4					
	HDMI/DP	2 x HDMI 2.0b, up to 4096 x 2160 x 24bpp@60Hz					
	Multiple Display	4 simultaneous displays via eDP + 2x HDMI + 2x USB Type-C with DP Alt. Mode					
Ethernet	Controller	LAN1: Intel i210; LAN2: Intel i226					
	Speed	LAN1: 1GbE; LAN2: 2.5GbE					
	PoE support	*Optional support with MIOe-PSE					
External I/O	Ethernet	2 x RJ-45 (*Optional support Power Over Ethernet with MIOe-PSE)					
	HDMI/DP	2 x HDMI					
	USB Type-C	1 x USB 3.2 Gen2 x1 (10Gbps), support DisplayPort 1.4 Alt. Mode (*Optional support Power Delivery up to 100W with MIOe-TCPD)					
	USB Type-A	2 x USB 3.2 Gen2 x1 (10Gbps) (CPU SKU: P185 / P174 / P164)); 1 x USB 3.2 Gen2 x1 (10Gbps) + 1 x USB 2.0 (CPU SKU: P132 / P121)					

Table 1.1: Specifications

Internal I/O	MCIO	1 x 38p MCIO (PCIe Gen4 x4) *Support by Selected CPU SKU: P185 / P174 / P164
	USB4	1 x USB4 Type-C (up to 40Gbps, backward compatible USB 3.2 Gen2 x1 (10Gbps), DisplayPort 1.4 Alt. Mode, PCIe Tunneling)
	USB2.0	2
	COM Port	1 x RS-232/422/485 (8-wire), 3 x RS-232 (4-wire), max. 1Mbps
	CAN Bus	2 x CAN-FD, 2M/4M/8M bit/s or CAN 2.0, 1M bit/s
	Serial Bus	1 x I2C (*BOM option to SMBus by request)
	Audio	Realtek ALC888s, Line-in/Line-out/MIC
	GPIO	8-bit general purpose input output I/O
	Fan	12V, 1A
	Front Panel Control	Power-on, Reset, Buzzer, CaseOpen
Board Feature	Watchdog Timer	65536 level, 0~65535 sec
	TPM	Discrete TPM 2.0 IC
	iManager3.0	SW API for Hardware Monitor, Smart Fan Control, Brightness Control, I2C, GPIO, WDT
Expansion	M.2 E-Key	1 x E-Key 2230 (PCIe x1, USB 2.0) for WiFi/BT module
	M.2 B-Key	1 x B-Key 3052 (PCIe x1, USB 2.0) for 4G/LTE module w/ Nano SIM (*Support 2242/3042 module with optional bracket)
	M.2 M-Key	2 x M-Key 2280 (PCIe Gen.4 x4) for NVMe SSD (Support RAID 0/1 with custom BIOS & dedicated Driver)
Power	Supply Voltage	Vin: DC 12V~24V ± 10%; RTC Battery: Lithium 3V/220mAH
	Connector	ATX 2x2 pin 90D (*BOM option to DC-Jack or ATX 2x2 pin 180D by request)
	Power Management	AT (Default), ATX
Environment	Temperature	Operating: Standard: 0 ~ 60°C (32 ~ 140°F) with 0.7m/s airflow; Extend: -40 ~ 85°C (-40 ~ 185°F) with 0.7m/s airflow (*Support with Industrial SKU) Storage: -40 ~ 85°C (-40 ~ 185°F)
	Humidity	Operating: 40°C @95% relative humidity, non-condensing; Storage: 60°C @95%relative humidity, non-condensing
	Vibration Resistance	3.5 Grms
Certification	EMC	CE, FCC Class B
Mechanical	Dimensions	146 x 102 mm (5.7 x 4 in)

Note! *Product specifications are subject to change without notice. Please refer to the latest MIO-5380 datasheet available on the Advantech website for the most up-to-date information.*

1.3 Block Diagram



Chapter 2

Mechanical Specifications

This chapter gives mechanical information for the MIO-5380. Sections include:

- Mechanical Drawings

This chapter gives mechanical information for the MIO-5380.

The diagrams include board dimensions and assembly instructions for standard thermal solutions.

2.1 Board Layout: Dimensions

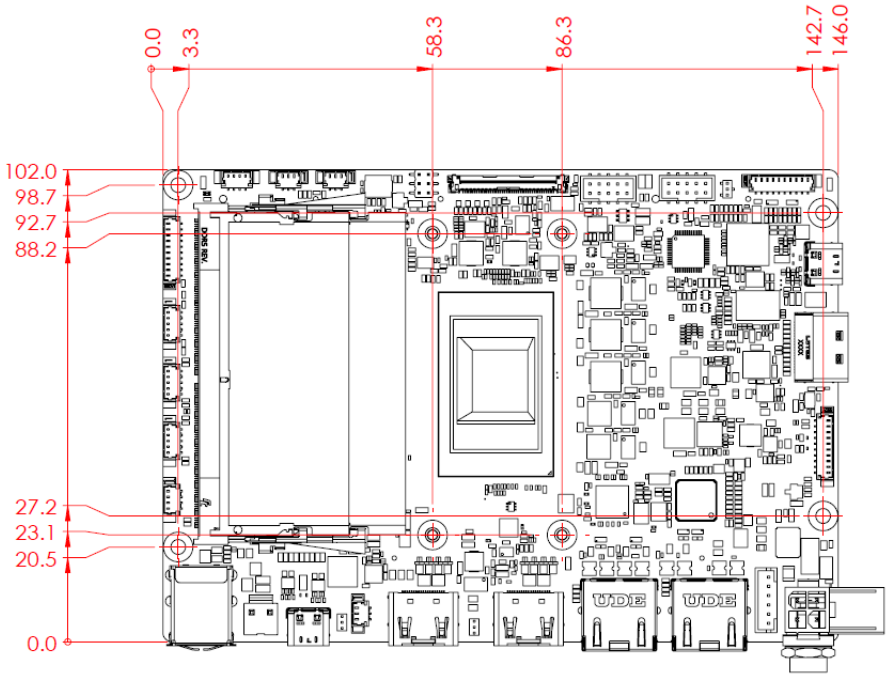


Figure 2.1 MIO-5380 Mechanical Diagram (Top Side)

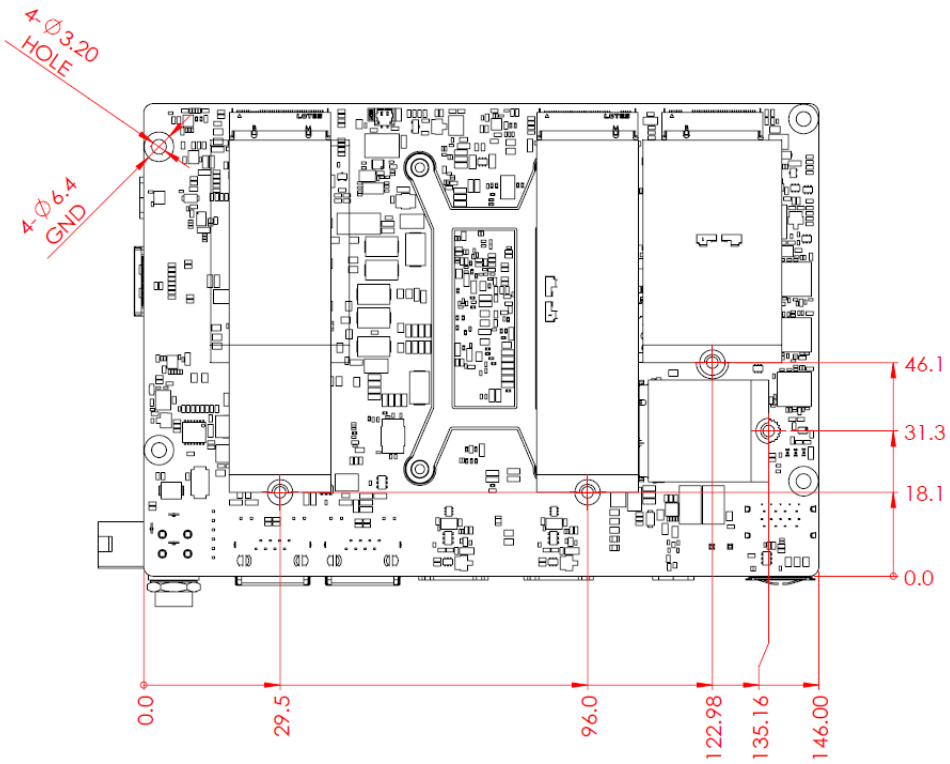


Figure 2.2 MIO-5380 Mechanical Diagram (Bottom Side)

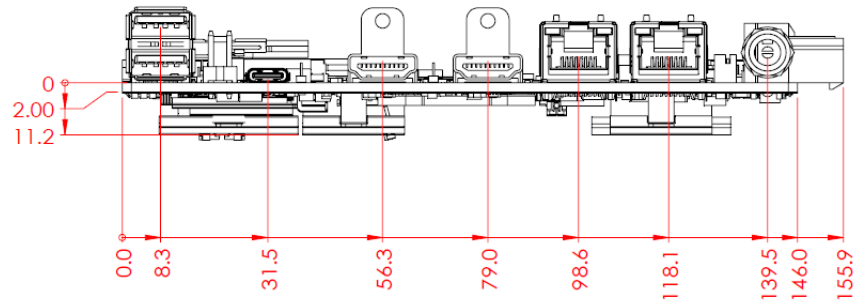


Figure 2.3 Figure 2.3 MIO-5380 Mechanical Diagram (Coastline)

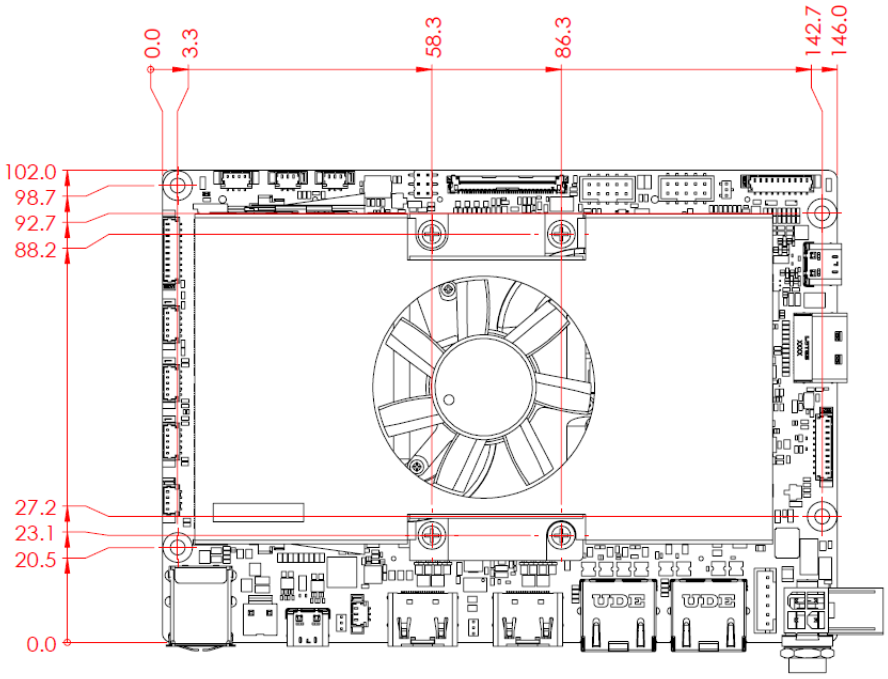


Figure 2.4 MIO-5380 Mechanical Diagram (Top Side, with Cooler)

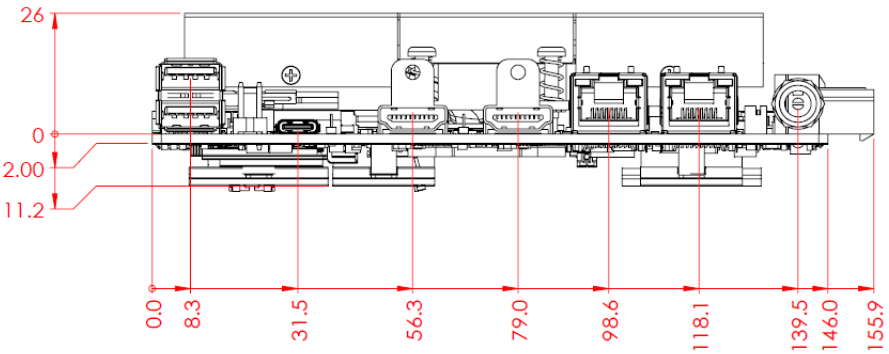


Figure 2.5 MIO-5380 Mechanical Diagram (Coastline, with Cooler)

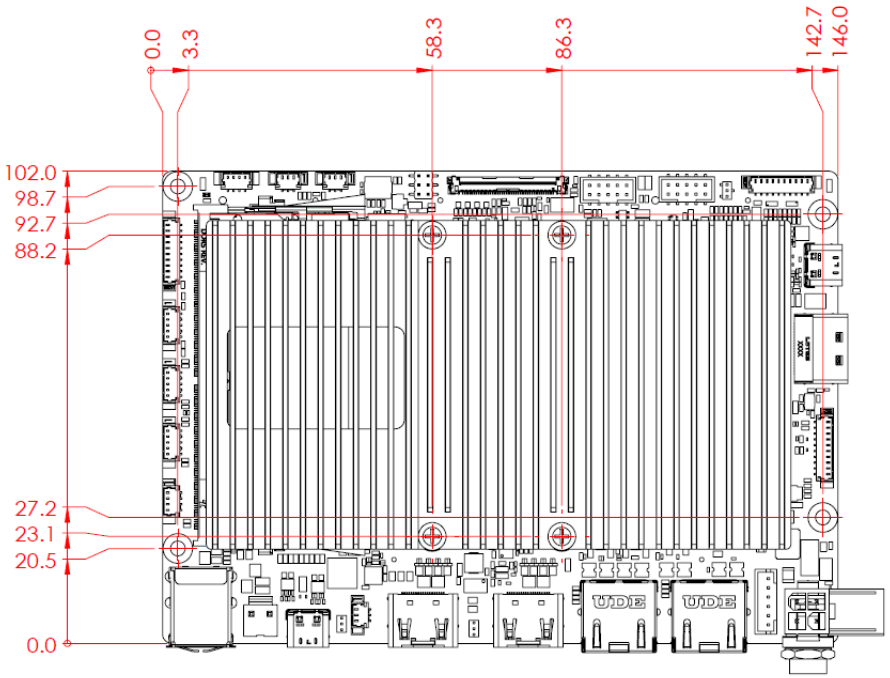


Figure 2.6 MIO-5380 Mechanical Diagram (Top Side, with Heatsink)

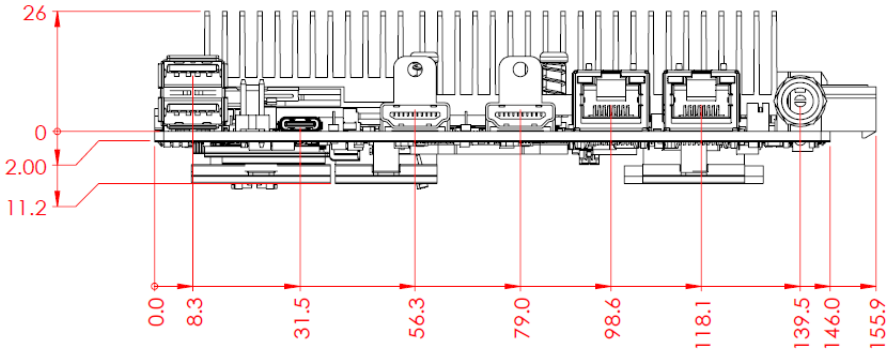


Figure 2.7 MIO-5380 Mechanical Diagram (Coastline, with Heatsink)

2.2 Quick Installation Guide

This section introduces the installation of the heatsink which can be found inside a white box inside the package. Please assemble it by following the diagram below.

Remember to remove the plastic from the thermal pad before assembly.

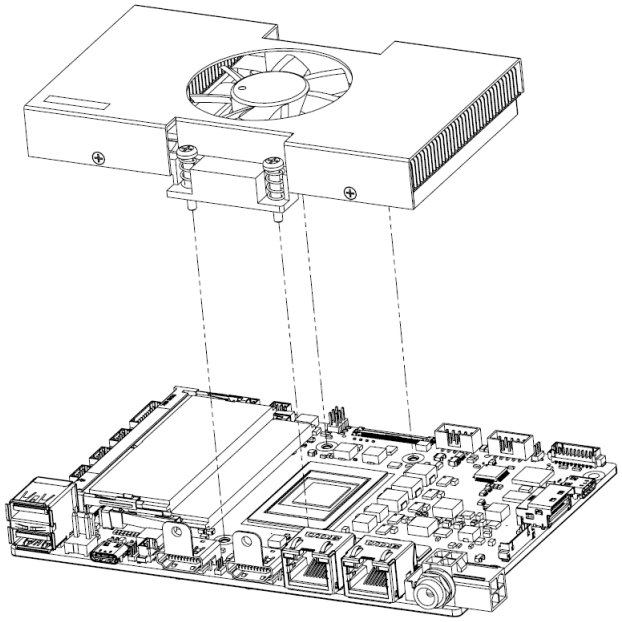


Figure 2.8 MIO-5380 Cooler Installation

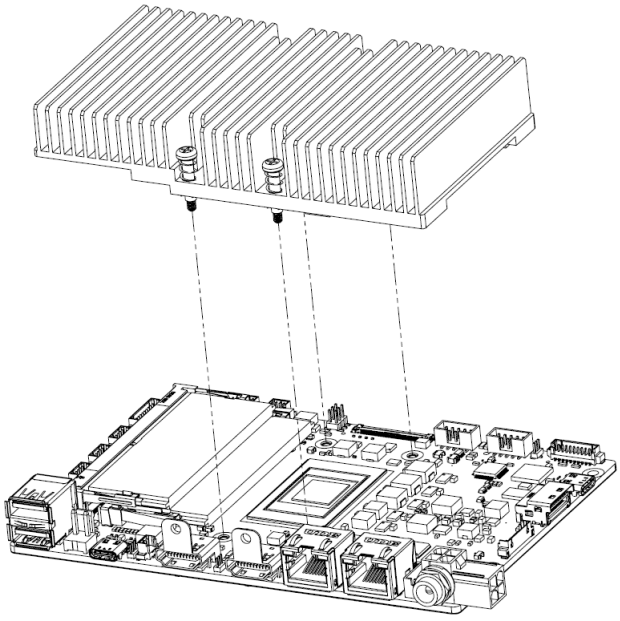


Figure 2.9 MIO-5380 Heatsink Installation

Chapter 3

Installation

This chapter explains the setup procedures of the MIO-5380 hardware, including instructions on setting jumpers and connecting peripherals, switches, and indicators. Be sure to read all safety precautions before you begin the installation procedure.

3.1 Connector and Header List

Table 3.1: Connector and Header List

No.	Description	Location Name
1	DC input Connector (90D, Default)	DCIN1
2	DC input Connector (180D, Option)	DCIN2
3	DC input Connector (Adapter, Option)	DCIN3
4	Power over Ethernet Connector	POE_PWR1
5	Intel I210 LAN Connector	LAN1
6	Intel I226 LAN Connector	LAN2
7	HDMI Connector	HDMI2
8	HDMI Connector	HDMI1
9	MIOe-TCPD I2C CLK/DATA	I2C_TCPD1
10	TYPE-C (USB3.2+DP)	TYPEC1
11	MIOe-TCPD Power	CN_TCPD1
12	USB3.2 Connector	USB1
13	I2C Connector	I2C_1
14	COM port Connector (RS232+RS422+RS485)	COM4
15	COM port Connector (RS232+RS422+RS485)	COM3
16	COM port Connector (RS232+RS422+RS485)	COM2
17	COM port Connector (RS232+RS422+RS485)	COM1
18	FAN Connector	FAN1
19	CANBUS Connector	CANBUS2
20	CANBUS Connector	CANBUS1
21	EDP Connector	EDP1
22	Internal USB2.0 Connector	USB2
23	Audio Connector	AUDIO1
25	GPIO Connector	GPIO1
26	TYPE-C (USB4.0)	TYPEC2
27	MCIO Connector (PCIe x4)	CN5
28	Front Panel	CN1
29	M.2 Key M (PCIe x4)	M2_3
30	RTC Battery Connector	BAT1
31	M.2 M-Key (PCIe x4)	M2_2
32	M.2 B-Key (PCIe x1/USB2.0)	M2_B1
33	Nano-SIM Holder	SIM1
34	M.2 E-Key (PCIe x1/USB2.0)	M2_1

3.2 Switch and Jumper

Table 3.2: Switch and Jumper		
No.	**Description**	**Location Name**
1	Multifunction Switch	SW1
2	Panel Voltage Selection	VDD1

3.3 Locating Connectors

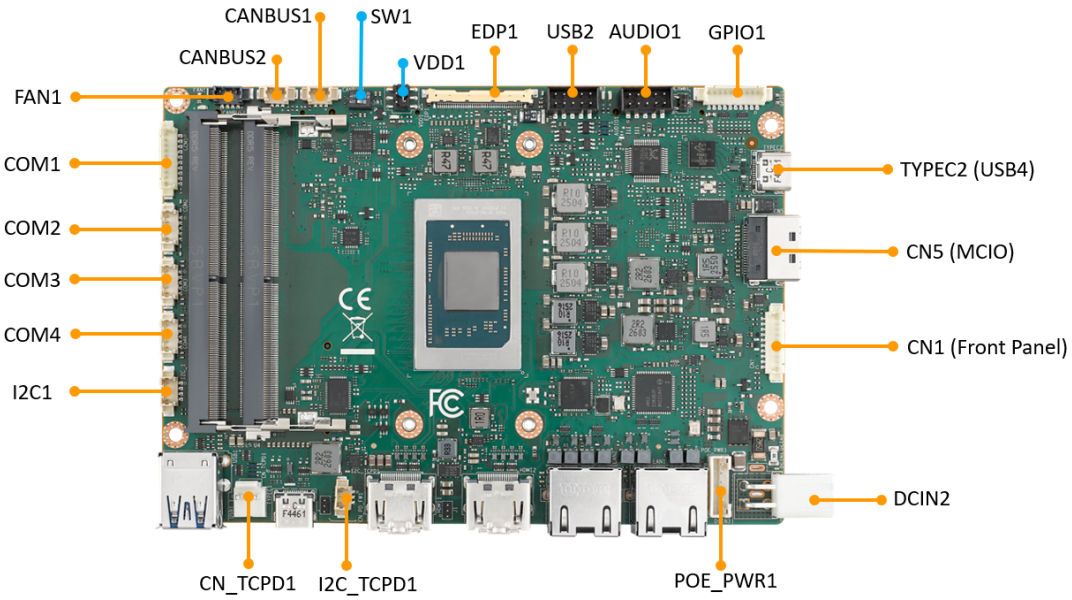


Figure 3.1 MIO-5380 Connector Locations (Top Side)

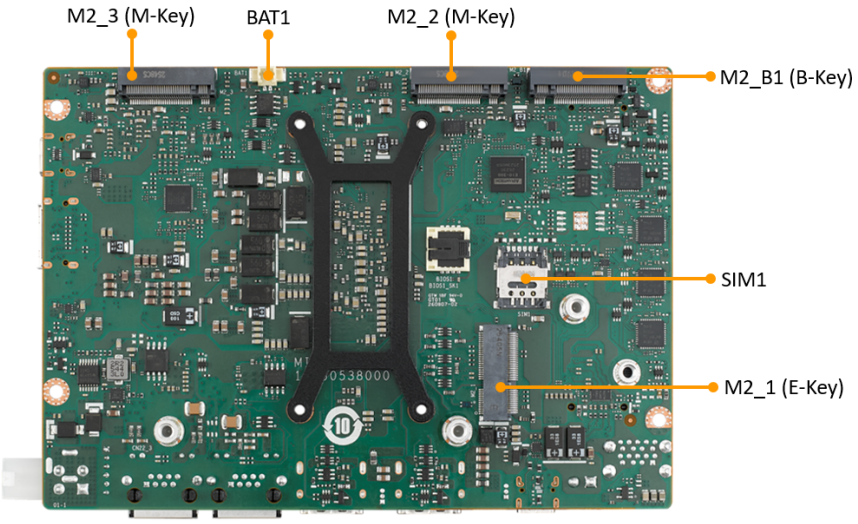
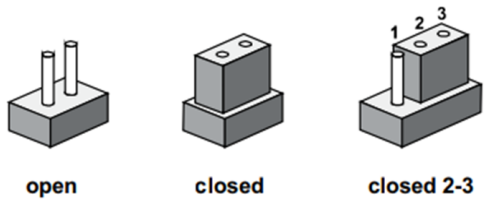


Figure 3.2 MIO-5380 Connector Locations (Bottom Side)

3.4 Setting Jumpers

You may configure your card to match the needs of your application by setting jumpers. A jumper is a metal bridge used to close an electric circuit. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper, you connect the pins with the clip. To “open” a jumper, you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case you would connect either pins 1 and 2, or 2 and 3. The jumper settings are schematically depicted in this manual as follows:



A pair of needle-nose pliers may be helpful when working with jumpers. If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes. Generally, you simply need a standard cable to make most connections.

3.4.1 DC Input Connector: DCIN1

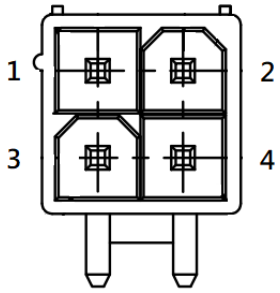


Table 3.3: DC input Connector: DCIN1	
ADV P/N	1655003865
Manufacturer	Pinrex Technology
MPN	740-77-04TS50
Pin	**Signal Pin Definition**
1	GND
2	GND
3	+V12_DC_IN
4	+V12_DC_IN

3.4.2 Power over Ethernet Connector: POE_PWR1

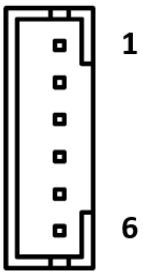


Table 3.4: Power over Ethernet Connector: POE_PWR1	
ADV P/N	1653009013-11
Manufacturer	Dongtai ZYCON Precision Technology
MPN	WAF5-06MT-N0D1-24
Pin	**Signal Pin Definition**
1	+V48_LAN1+
2	+V48_LAN1-
3	+V48_LAN2+
4	+V48_LAN2-
5	GND
6	+V12

3.4.3 MIOe-TCPD I2C CLK/DATA: I2C_TCPD1

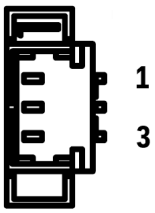


Table 3.5: MIOe-TCPD I2C CLK/DATA: I2C_TCPD1	
ADV P/N	1654903500
Manufacturer	Aces Electronic
MPN	85205-03001
Pin	**Signal Pin Definition**
1	MIO-TCPD_EN#
2	EE_VDCIN_SDATA
3	EE_VDCIN_SCLK

3.4.4 MIOe-TCPD Power: CN_TCPD1

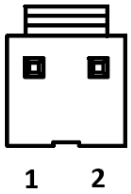


Table 3.6: MIOe-TCPD Power: CN_TCPD1	
ADV P/N	1653008011-01
Manufacturer	Pinrex Technology
MPN	732-91-02TW10
Pin	**Signal Pin Definition**
1	+V_CHGR_VIN
2	GND

3.4.5 I2C Connector: I2C_1

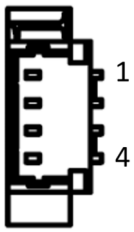


Table 3.7: I2C Connector: I2C_1	
ADV P/N	1655904020
Manufacturer	Aces Electronic
MPN	85205-04001
Pin	**Signal Pin Definition**
1	GND
2	EC_I2C0_z_DAT
3	EC_I2C0_z_CLK
4	+V3.3_I2CCONN

3.4.6 COM Port Connector (RS232+RS422+RS485): COM4

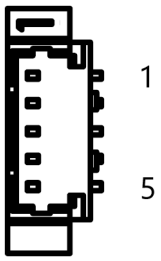


Table 3.8: COM Port Connector (RS232+RS422+RS485): COM4	
ADV P/N	1655004032
Manufacturer	Aces Electronic
MPN	85205-05701
Pin	**Signal Pin Definition**
1	COM4_RS232-TXD_RS422-RX+
2	COM4_RS232-RTS#_RS422-RX-
3	COM4_RS232-RXD_RS422-TX+_RS485-DAT+
4	COM4_RS232-CTS#_RS422-TX-_RS485-DAT-
5	GND

3.4.7 COM Port Connector (RS232+RS422+RS485): COM3

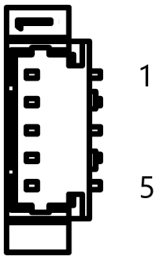


Table 3.9: COM Port Connector (RS232+RS422+RS485): COM3	
ADV P/N	1655004032
Manufacturer	Aces Electronic
MPN	85205-05701
Pin	**Signal Pin Definition**
1	COM3_RS232-TXD_RS422-RX+
2	COM3_RS232-RTS#_RS422-RX-
3	COM3_RS232-RXD_RS422-TX+_RS485-DAT+
4	COM3_RS232-CTS#_RS422-TX-_RS485-DAT-
5	GND

3.4.8 COM Port Connector (RS232+RS422+RS485): COM2

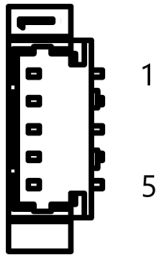


Table 3.10: COM Port Connector (RS232+RS422+RS485): COM2	
ADV P/N	1655004032
Manufacturer	Aces Electronic
MPN	85205-05701
Pin	**Signal Pin Definition**
1	COM2_RS232-TXD_RS422-RX+
2	COM2_RS232-RTS#_RS422-RX-
3	COM2_RS232-RXD_RS422-TX+_RS485-DAT+
4	COM2_RS232-CTS#_RS422-TX-_RS485-DAT-
5	GND

3.4.9 COM Port Connector (RS232+RS422+RS485): COM1



Table 3.11: COM Port Connector (RS232+RS422+RS485): COM1	
ADV P/N	1653007728-02
Manufacturer	Aces Electronic
MPN	50273-0107N-002
Pin	**Signal Pin Definition**
1	NC
2	COM1_RI#
3	COM1_DTR#
4	COM1_CTS#
5	COM1_TXD
6	COM1_RTS#
7	COM1_RXD
8	COM1_DSR#
9	COM1_DCD#
10	GND

3.4.10 FAN Connector: FAN1

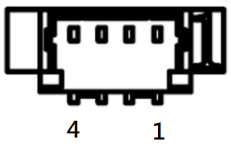


Table 3.12: FAN Connector: FAN1	
ADV P/N	1653008788-01
Manufacturer	Aces Electronic
MPN	50273-00401-001
Pin	**Signal Pin Definition**
1	GND
2	+V12
3	FAN_SPEED
4	FAN_V5_PWM

3.4.11 CANBUS Connector: CANBUS2

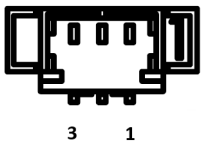


Table 3.13: CANBUS Connector: CANBUS2	
ADV P/N	1654903500
Manufacturer	Aces Electronic
MPN	85205-03001
Pin	**Signal Pin Definition**
1	CAN2_D+
2	CAN2_D-
3	GND

3.4.12 CANBUS Connector: CANBUS1

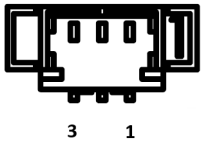


Table 3.14: CANBUS Connector: CANBUS1	
ADV P/N	1654903500
Manufacturer	Aces Electronic
MPN	85205-03001
Pin	**Signal Pin Definition**
1	CAN1_D+
2	CAN1_D-
3	GND

3.4.13 eDP Connector: EDP1



Table 3.15: eDP Connector: EDP1	
ADV P/N	1654011539-01
Manufacturer	Aces Electronic
MPN	50473-0400M-001
Pin	**Signal Pin Definition**
1	NC
2	+V12_+V5_eDP_INVERTER_0
3	+V12_+V5_eDP_INVERTER_0
4	+V12_+V5_eDP_INVERTER_0
5	+V12_+V5_eDP_INVERTER_0
6	NC
7	NC
8	EC_LVDS0_z_PWM
9	LVDS0_z_ENABKL
10	GND
11	GND
12	GND
13	GND
14	eDP_HPD
15	GND
16	GND
17	GND
18	GND
19	NC
20	+V_LCD
21	+V_LCD
22	+V_LCD
23	+V_LCD
24	GND
25	eDP_z_AUX-
26	eDP_z_AUX+
27	GND
28	eDP_z_TX0+
29	eDP_z_TX0-
30	GND
31	eDP_z_TX1+
32	eDP_z_TX1-
33	GND
34	eDP_z_TX2+
35	eDP_z_TX2-
36	GND
37	eDP_z_TX3+
38	eDP_z_TX3-
39	GND
40	NC

3.4.14 Internal USB2.0 Connector: USB2

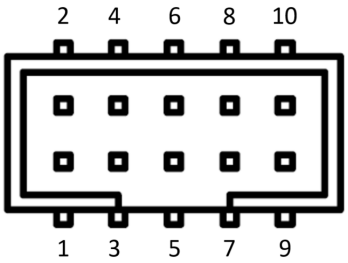


Table 3.16: Internal USB2.0 Connector: USB2	
ADV P/N	1653008214-01
Manufacturer	Pinrex Technology
MPN	52C-90-10GBE0
Pin	**Signal Pin Definition**
1	+V5SB_USB2
2	+V5SB_USB2
3	USB9_ z_P-
4	USB10_z_P-
5	USB9_z_P+
6	USB10_z_P+
7	GND
8	GND
9	GND
10	NC

3.4.15 Audio Connector: AUDIO1

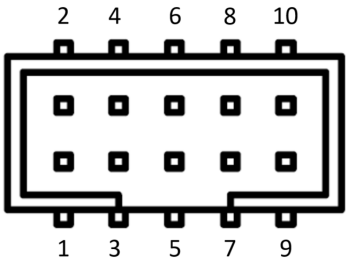


Table 3.17: Audio Connector: AUDIO1	
ADV P/N	1653008214-01
Manufacturer	Pinrex Technology
MPN	52C-90-10GBE0
Pin	**Signal Pin Definition**
1	LOUTR
2	LINR
3	GND
4	GND
5	LOUTL
6	LINL
7	FRONT-JD
8	GND
9	MIC1R
10	MIC1L

3.4.16 GPIO Connector: GPIO1

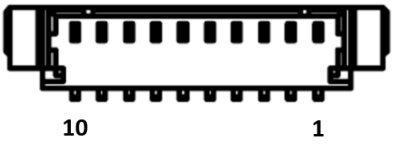


Table 3.18: GPIO Connector: GPIO1	
ADV P/N	1653007728-02
Manufacturer	Aces Electronic
MPN	50273-0107N-002
Pin	**Signal Pin Definition**
1	GND
2	EC_P1_GPIO7
3	EC_P1_GPIO2
4	EC_P1_GPIO6
5	EC_P1_GPIO1
6	EC_P1_GPIO5
7	EC_P1_GPIO0
8	EC_P1_GPIO4
9	+V5_P1_GPIO
10	EC_P1_GPIO3

3.4.17 MCIO Connector (PCIe x4): CN5

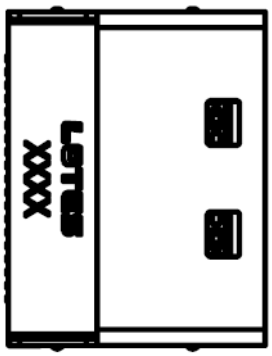


Table 3.19: MCIO Connector (PCIe x4): CN5			
ADV P/N		1654016399-01	
Manufacturer		LOTES	
MPN		AMCIA029-P004AC	
Pin	**Signal Pin Definition**	**Pin**	**Signal Pin Definition**
A1	GND	B1	GND
A2	PCIE_MCIO_RXP4	B2	PCIE_MCIO_TXP4
A3	PCIE_MCIO_RXN4	B3	PCIE_MCIO_TXN4
A4	GND	B4	GND
A5	PCIE_MCIO_RXP5	B5	PCIE_MCIO_TXP5
A6	PCIE_MCIO_RXN5	B6	PCIE_MCIO_TXN5
A7	GND	B7	GND
A8	MCIO1_PRSNT#	B8	MCIO_SMB_CLK
A9	MCIO1_WAKE#	B9	MCIO_SMB_DAT
A10	GND	B10	GND
A11	CLK_MCIO_P	B11	MCIO_RESET#
A12	CLK_MCIO_N	B12	MCIO_CLK_REQ#_3.3
A13	GND	B13	GND
A14	PCIE_MCIO_RXP6	B14	PCIE_MCIO_TXP6
A15	PCIE_MCIO_RXN6	B15	PCIE_MCIO_TXN6
A16	GND	B16	GND
A17	PCIE_MCIO_RXP7	B17	PCIE_MCIO_TXP7
A18	PCIE_MCIO_RXN7	B18	PCIE_MCIO_TXN7
A19	GND	B19	GND

3.4.18 Front Panel: CN1

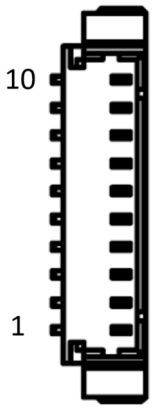


Table 3.20: Front Panel: CN1	
ADV P/N	1653007728-02
Manufacturer	Aces Electronic
MPN	50273-0107N-002
Pin	**Signal Pin Definition**
1	GND
2	BUZZER-
3	BUZZER+
4	CASEOPEN#
5	NC
6	FP_a_PSIN#
7	FP_a_RST#
8	+V3.3
9	NC
10	+V5

3.4.19 M.2 M-Key (PCIe x4): M2_3



Table 3.21: M.2 M-Key (PCIe x4): M2_3			
ADV P/N		1654014529-01	
Manufacturer		LOTES	
MPN		APCI0556-P001A	
Pin	**Signal Pin Definition**	**Pin**	**Signal Pin Definition**
2	+V3.3_M.2_1	1	GND
4	+V3.3_M.2_1	3	GND
6	NC	5	PCIE3_KEY-M_RX3-
8	M2M1_PLN#	7	PCIE3_KEY-M_RX3+
10	NC	9	GND
12	+V3.3_M.2_1	11	PCIE3_KEY-M_a_TX3-
14	+V3.3_M.2_1	13	PCIE3_KEY-M_a_TX3+
16	+V3.3_M.2_1	15	GND
18	+V3.3_M.2_1	17	PCIE3_KEY-M_RX2-
20	NC	19	PCIE3_KEY-M_RX2+
22	NC	21	GND
24	NC	23	PCIE3_KEY-M_TX2-
26	NC	25	PCIE3_KEY-M_TX2+
28	NC	27	GND
30	NC	29	PCIE3_KEY-M_RX1-
32	GND	31	PCIE3_KEY-M_RX1+
34	NC	33	GND
36	NC	35	PCIE3_KEY-M_TX1-
38	GND	37	PCIE3_KEY-M_TX1+
40	NC	39	GND
42	NC	41	PCIE3_KEY-M_RX0-
44	NC	43	PCIE3_KEY-M_RX0+
46	NC	45	GND
48	NC	47	PCIE3_KEY-M_TX0-
50	PLTRST_M2M1_BUFFER#	49	PCIE3_KEY-M_TX0+
52	CLK0_M2MB_a_PCIE_REQ#	51	GND
54	M2M1_PCIE_WAKE#	53	CK0_100M_a_MKEY_N
56	NC	55	CK0_100M_a_MKEY_P
58	NC	57	GND
60	?	59	?
62	?	61	?
64	?	63	?
66	?	65	?
68	NC	67	NC
70	+V3.3_M.2_1	69	NC
72	+V3.3_M.2_1	71	GND
74	+V3.3_M.2_1	73	GND
		75	GND

3.4.20 RTC Battery Connector: BAT1

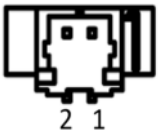


Table 3.22: RTC Battery Connector: BAT1	
ADV P/N	1653009030-01
Manufacturer	Aces Electronic
MPN	50273-0027N-002
Pin	**Signal Pin Definition**
1	+VBAT_B1
2	GND

3.4.21 M.2 M-Key (PCIe x4): M2_2

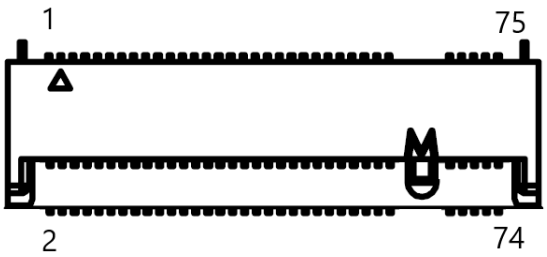


Table 3.23: M.2 M-Key (PCIe x4): M2_2			
ADV P/N		1654014529-01	
Manufacturer		LOTES	
MPN		APCI0556-P001A	
Pin	**Signal Pin Definition**	**Pin**	**Signal Pin Definition**
2	+V3.3_M.2_2	1	GND
4	+V3.3_M.2_2	3	GND
6	NC	5	PCIE4_KEY-M_RX3-
8	M2M1_PLN#	7	PCIE4_KEY-M_RX3+
10	NC	9	GND
12	+V3.3_M.2_2	11	PCIE4_KEY-M_a_TX3-
14	+V3.3_M.2_2	13	PCIE4_KEY-M_a_TX3+
16	+V3.3_M.2_2	15	GND
18	+V3.3_M.2_2	17	PCIE4_KEY-M_RX2-
20	NC	19	PCIE4_KEY-M_RX2+
22	NC	21	GND
24	NC	23	PCIE4_KEY-M_TX2-
26	NC	25	PCIE4_KEY-M_TX2+
28	NC	27	GND
30	NC	29	PCIE4_KEY-M_RX1-

Table 3.23: M.2 M-Key (PCIe x4): M2_2			
32	GND	31	PCIE4_KEY-M_RX1+
34	NC	33	GND
36	NC	35	PCIE4_KEY-M_TX1-
38	GND	37	PCIE4_KEY-M_TX1+
40	NC	39	GND
42	NC	41	PCIE4_KEY-M_RX0-
44	NC	43	PCIE4_KEY-M_RX0+
46	SYS_M_KEY_GPIO30#	45	GND
48	SYS_M_KEY_GPIO31#	47	PCIE4_KEY-M_TX0-
50	PLTRST_M2M2_BUFFER#	49	PCIE4_KEY-M_TX0+
52	CLK1_M2MB_a_PCIE_REQ#	51	GND
54	M2M2_PCIE_WAKE#	53	CK1_100M_a_MKEY_N
56	NC	55	CK1_100M_a_MKEY_P
58	NC	57	GND
60		59	
62		61	
64		63	
66		65	
68	NC	67	NC
70	+V3.3_M.2_2	69	NC
72	+V3.3_M.2_2	71	GND
74	+V3.3_M.2_2	73	GND
?	?	75	GND

3.4.22 M.2 B-Key (PCIe x1/USB2.0): M2_B1

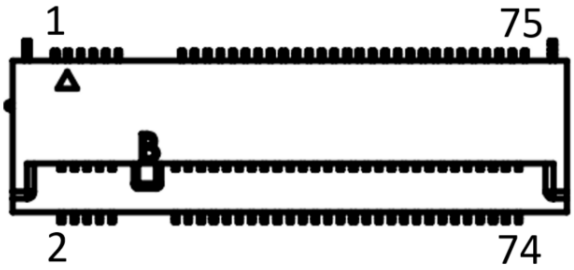


Table 3.24: M.2 B-Key (PCIe x1/USB2.0): M2_B1			
ADV P/N		1654012087-02	
Manufacturer		LOTES	
MPN		APCI0161-P001A	
Pin	**Signal Pin Definition**	**Pin**	**Signal Pin Definition**
74	+V3.3A_M.2_B	75	M2B1_CFG2
72	+V3.3A_M.2_B	73	GND
70	+V3.3A_M.2_B	71	GND
68	NC	69	M2_DET
66	NC	67	M2B1_a_RESET#
64	NC	65	NC
62	NC	63	NC
60	NC	61	NC
58	NC	59	NC
56	NC	57	GND
54	M2B1_WAKE#_3.3	55	CLK100M_M2B1+
52	M2B1_CLKREQ#_3.3	53	CLK100M_M2B1-
50	M2B1_a_PERST#	51	GND
48	NC	49	PCIE_M2B_TX+
46	NC	47	PCIE_M2B_TX-
44	NC	45	GND
42	NC	43	PCIE_M2B_RX+
40	NC	41	PCIE_M2B_RX-
38	NC	39	GND
36	M2B1_UIM_PWR	37	NC
34	M2B1_UIM_DATA	35	NC
32	M2B1_UIM_CLK	33	GND
30	M2B1_UIM_RESET	31	NC
28	NC	29	NC
26	NC	27	GND
24	M2B1_ANT_TUNER	25	M2B1_DPR
22	M2B1_ANT_CFG	23	NC
20	NC	21	M2B1_CFG0
29	NC	29	NC
30	M2B1_SATA_DEVSLP_R	30	M2B1_SATA_DEVSLP_R
31	GND	31	GND

Table 3.24: M.2 B-Key (PCIe x1/USB2.0): M2_B1			
32	NC	32	NC
10	M2B1_LED1#	11	GND
8	M2B1_W_DISABLE1#	9	USB2_DN
6	M2B1_FULL_CARD_OFF#	7	USB2_DP
4	+V3.3A_M.2_B	5	GND
2	+V3.3A_M.2_B	3	GND
		1	M2B1_CFG3

3.4.23 Nano-SIM Holder: SIM1

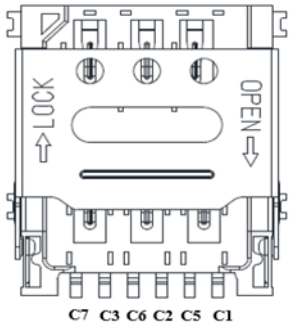


Table 3.25: Nano-SIM Holder: SIM1	
ADV P/N	1654013260-01
Manufacturer	Hamburg Industries
MPN	N010615-SINR00
Pin	**Signal Pin Definition**
C1	UIM_PWR
C2	UIM_RESET
C3	UIM_CLK
C5	GND
C6	UIM_VPP
C7	UIM_DATA

3.4.24 M.2 E-Key (PCIe x1 + USB2.0): M2_1

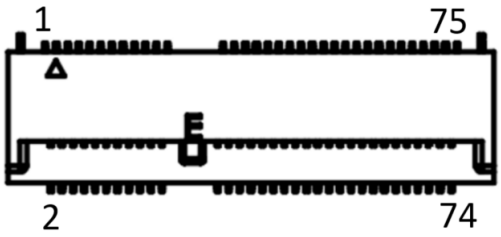
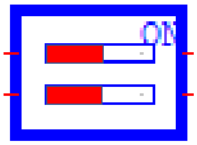
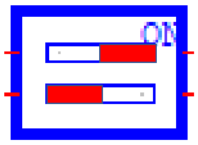
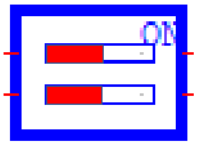
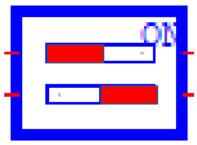


Table 3.26: M.2 E-Key (PCIe x1 + USB2.0): M2_1			
ADV P/N		1654011871-01	
Manufacturer		TE CONNECTIVITY	
MPN		2199230-2	
Pin	**Signal Pin Definition**	**Pin**	**Signal Pin Definition**
2	+V3.3SB_M.2_E	1	GND
4	+V3.3SB_M.2_E	3	USB6_DP
6	NC	5	USB6_DN
8	BT_I2S_SCK	7	GND
10	BT_I2S_WS	9	NC
12	BT_I2S_SDIN	11	NC
14	BT_I2S_SDOUT	13	NC
16	NC	15	NC
18	GND	17	NC
20	BT_UART0_WAKE#	19	?
22	APU_UART0_RX	21	NC
24	NC	23	NC
26	NC	25	NC
28	NC	27	NC
30	NC	29	NC
32	APU_UART0_TX	31	NC
34	APU_UART0_CTS#	33	NC
36	APU_UART0_RTS#	35	PCIE_M2E_TX+
38	NC	37	PCIE_M2E_TX-
40	NC	39	GND
42	NC	41	PCIE_M2E_RX+
44	NC	43	PCIE_M2E_RX-
46	NC	45	GND
48	NC	47	CLK0_M2E_PCIE+
50	SUSCLK	49	CLK0_M2E_PCIE-
52	PLTRST_BUFFER#	51	GND
54	BT_DISABLE#	53	CLK0_M2E_PCIE_REQ#_3.3
56	WIFI_DISABLE#	55	PCIE_WAKE#_3.3
58	NC	57	NC
60	NC	59	NC
62	NC	61	NC
64	NC	63	GND

Table 3.26: M.2 E-Key (PCIe x1 + USB2.0): M2_1			
66	NC	65	NC
68	NC	67	NC
70	NC	69	GND
72	+V3.3SB_M.2_E	71	NC
74	+V3.3SB_M.2_E	73	NC
		75	GND

3.4.25 Multifunction Switch (SW1)

Table 3.27: Multifunction Switch (SW1)		
Function	**Switch Setting**	
AT/ATX selection		
	ATX mode	*AT mode
Boot device		
	*Normal	Load BIOS Default

*Default Setting.

3.4.26 Panel Voltage Selection (VDD1)

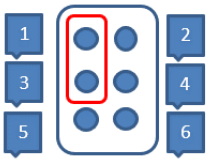
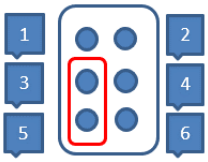
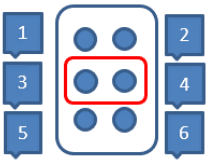
Table 3.28: Panel Voltage Selection (VDD1)	
Function	**Jumper Setting**
Panel Voltage Setting: +V3.3 (Default)	
Panel Voltage Setting: +V5	
Panel Voltage Setting: +V12	

Table 3.29:	
Pin	**Signal Pin Definition**
1	+V3.3
2	NC
3	+V_LVDS_LCD
4	+V12
5	+V5
6	NC

Chapter 4

AMI BIOS Setup

The AMIBIOS has been integrated into a plethora of motherboards for decades. With the AMIBIOS Setup program, you can modify BIOS settings and control the various system features. This chapter describes the basic navigation of the MIO-5380 BIOS setup screens.



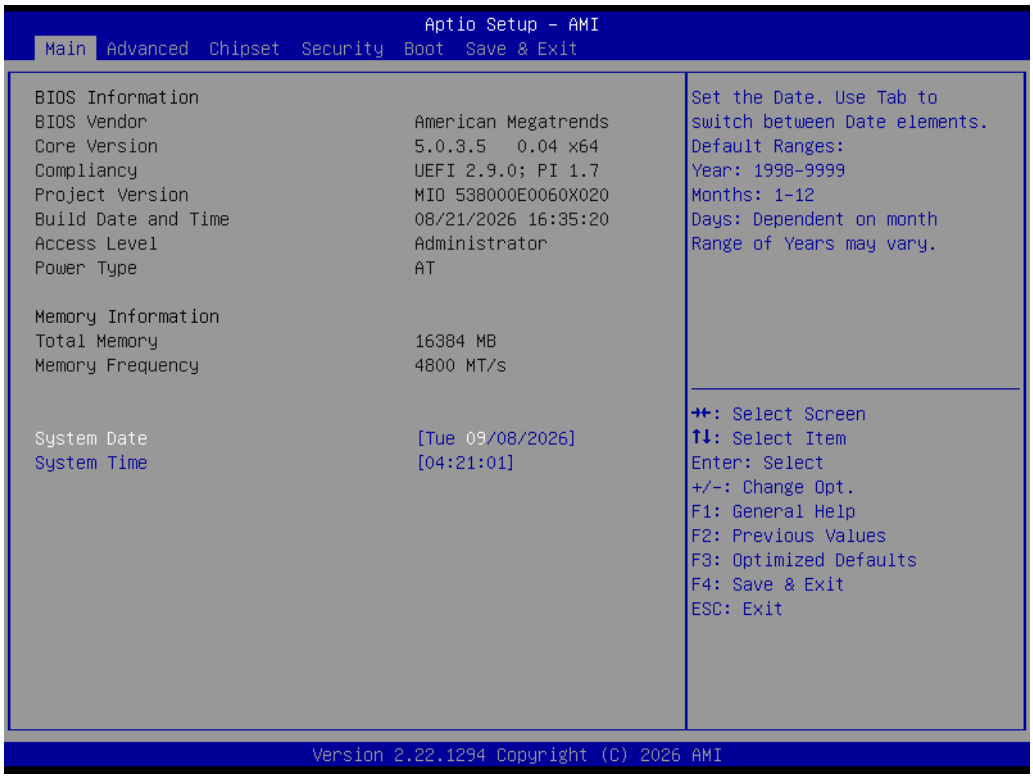
AMI BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This information is stored in battery-backed CMOS so it retains the Setup information when the power is turned off.

4.1 Entering Setup

Turn on the computer and check for the patch code. If there is a number assigned to the patch code, it means that the BIOS supports your CPU. If there is no number assigned to the patch code, please contact an Advantech application engineer to obtain an up-to-date patch code file. This will ensure that your CPU's system status is valid. After ensuring that you have a number assigned to the patch code, press <DEL> and you will immediately be allowed to enter Setup.

4.1.1 Main Setup

When you first enter the BIOS Setup Utility, you will encounter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup screen is shown below.



The Main BIOS setup screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured; options in blue can. The right frame displays the key legend.

Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it.

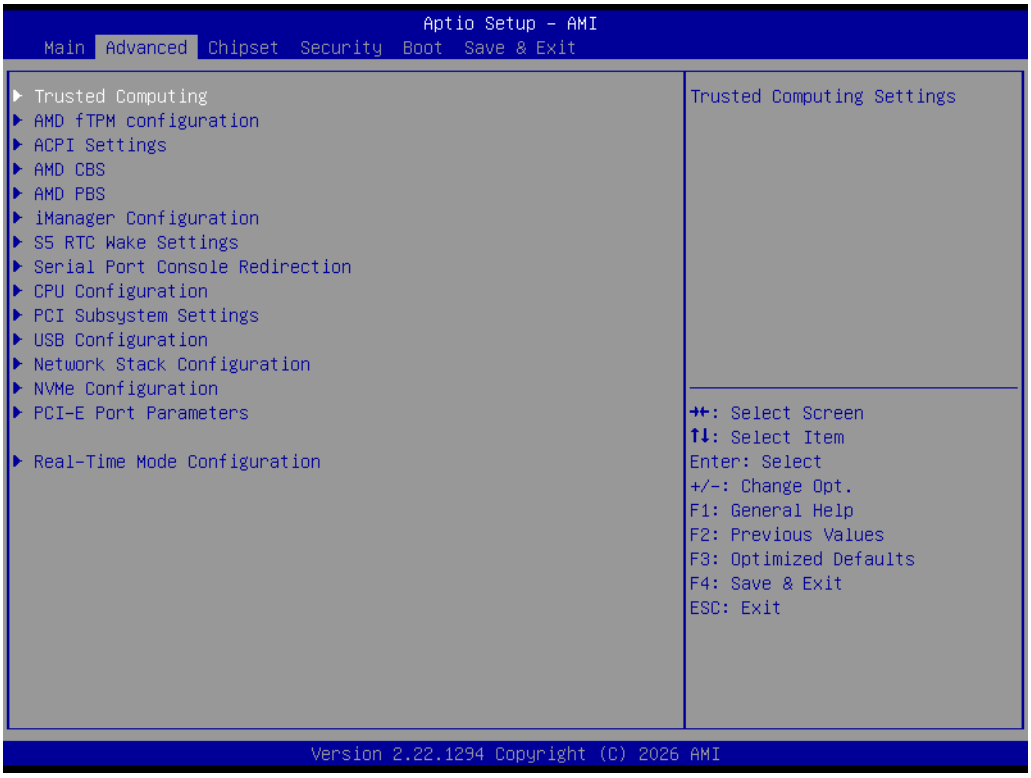
- **System time/System date**

Use this option to change the system time and date. Highlight System Time or System Date using the <Arrow> keys. Enter new values through the keyboard.

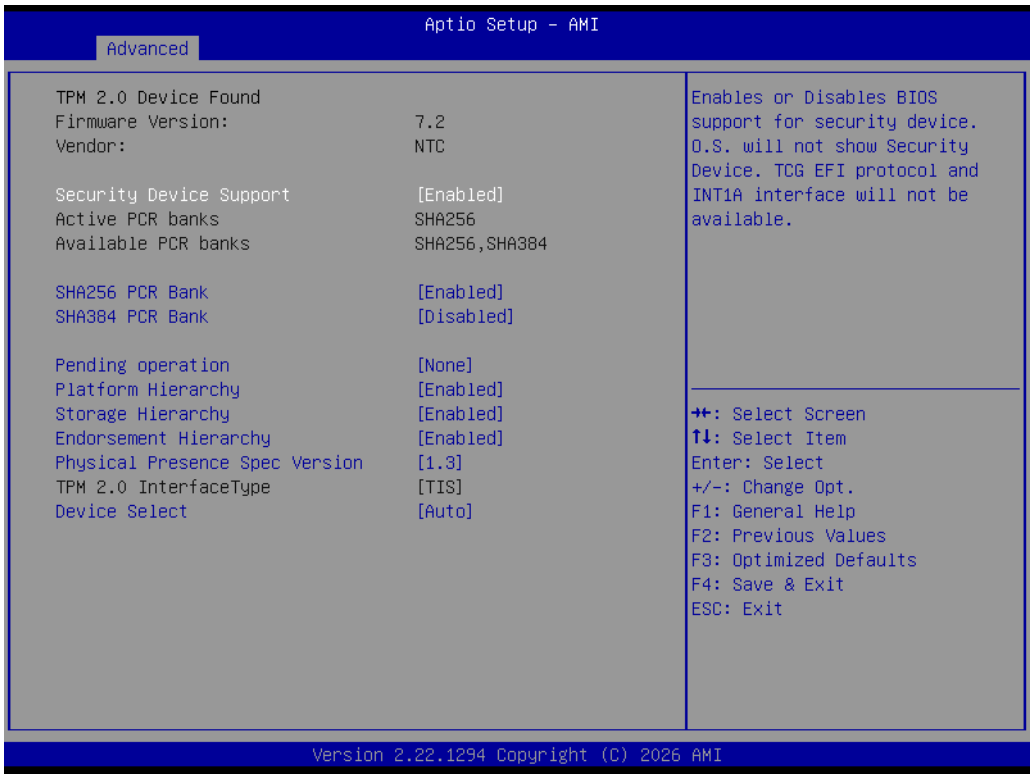
Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time must be entered in HH:MM:SS format.

4.1.2 Advanced BIOS Features Setup

Select the Advanced tab from the MIO-5380 setup screen to enter the Advanced BIOS Setup screen. You can select any of the items in the left frame of the screen, such as CPU Configuration, to go to the sub menu for that item. You can display an Advanced BIOS Setup option by highlighting it using the <Arrow> keys. All Advanced BIOS Setup options are described in this section. The Advanced BIOS Setup screens is shown below. The sub menus are described on the following pages.



4.1.2.1 Trusted Computing



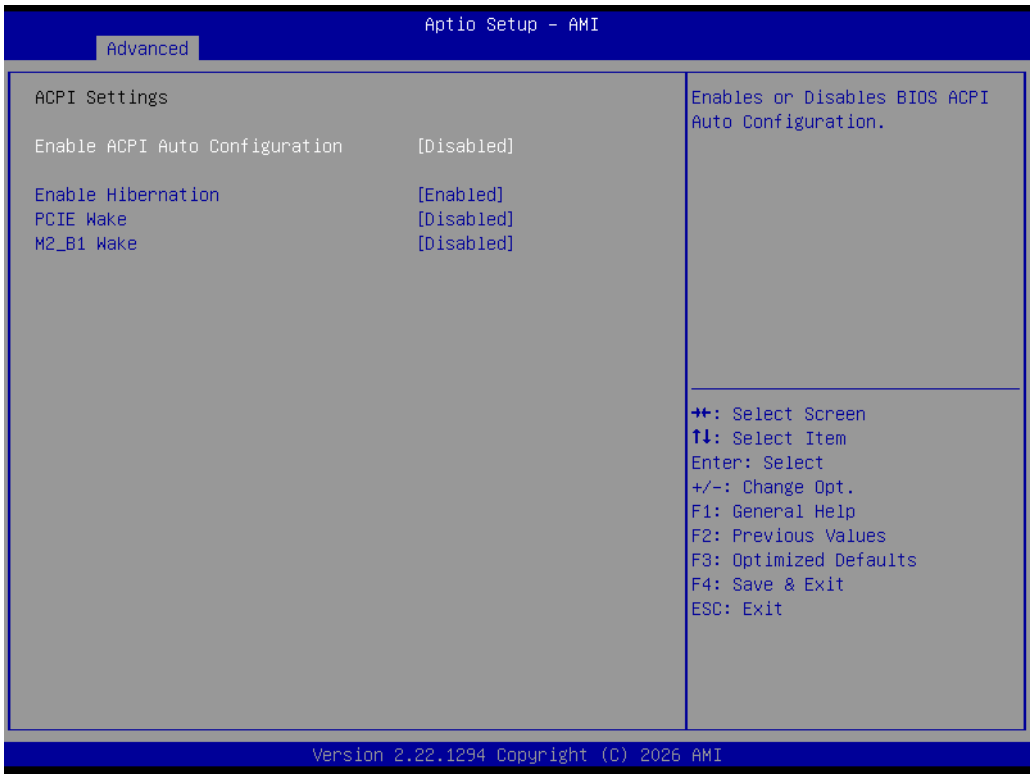
- **Security Device Support**
  Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
- **SHA256 PCR Bank**
  Enable or Disable SHA256 PCR Bank.
- **SHA384 PCR Bank**
  Enable or Disable SHA384 PCR Bank.
- **Pending operation**
  Schedule an Operation for the Security Device.
- **Platform Hierarchy**
  Enable or Disable Platform Hierarchy.
- **Storage Hierarchy**
  Enable or Disable Storage Hierarchy.
- **Endorsement Hierarchy**
  Enable or Disable Endorsement Hierarchy.
- **Physical Presence Spec Version**
  Select to Tell O.S. to support PPC Spec Version 1.2 or 1.3.
- **Device Select**
  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 default set to TPM 2.0 devices if not found, TPM 1.2 devices will be enumerated.

4.1.2.2 AMD fTPM Configuration



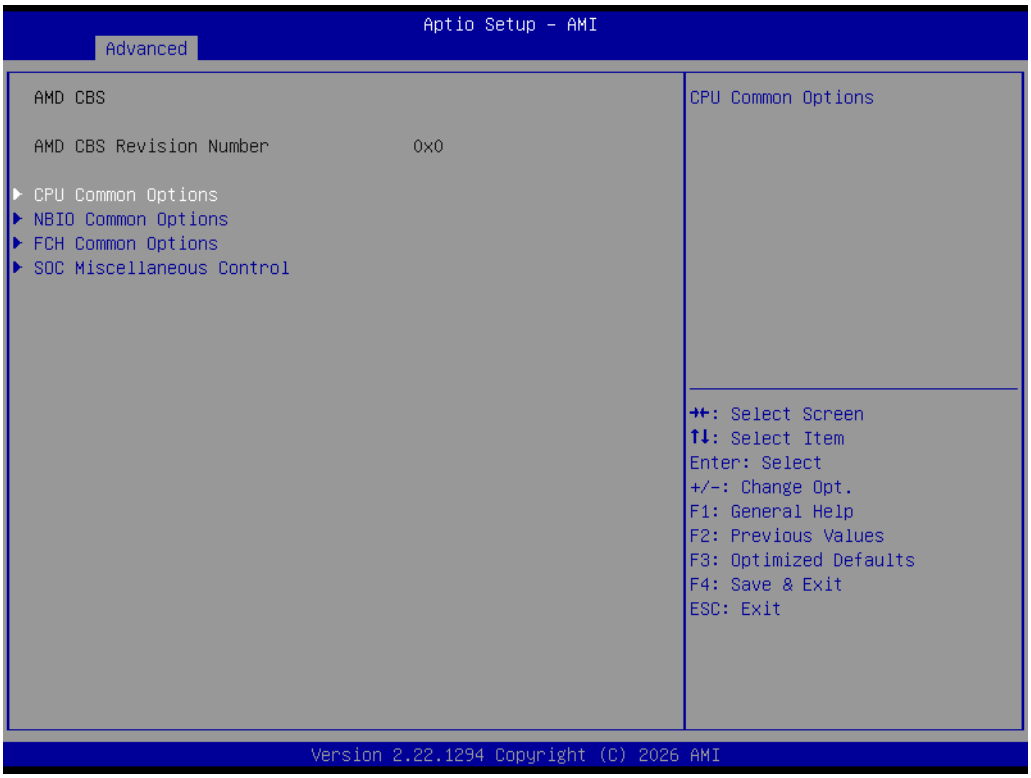
- **Erase fTPM NV for factory reset**
  When a new CPU is installed, Select “Enabled” to reset fTPM. Select “Disabled” to keep the previous fTPM record and continue the system boot.

4.1.2.3 ACPI Settings



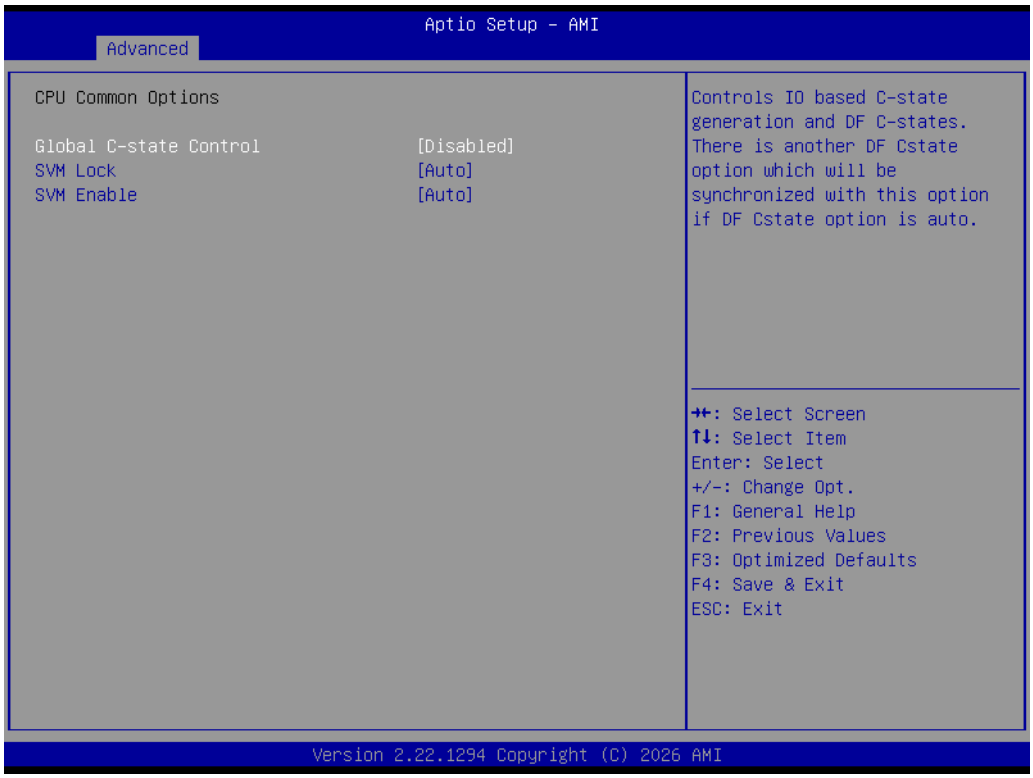
- **Enable ACPI Auto Configuration**
  Enable or Disable BIOS ACPI auto configuration.
- **Enable Hibernation**
  Enables or Disables the system's ability to Hibernate (OS/S4 Sleep State). This option may not be effective with some OS.
- **PCIE Wake**
  Enables or Disables PCIE to wake the system from S5.
- **M2_B1 Wake**
  Enables or Disables M2_B1 to wake the system from S5.

4.1.2.4 AMD CBS



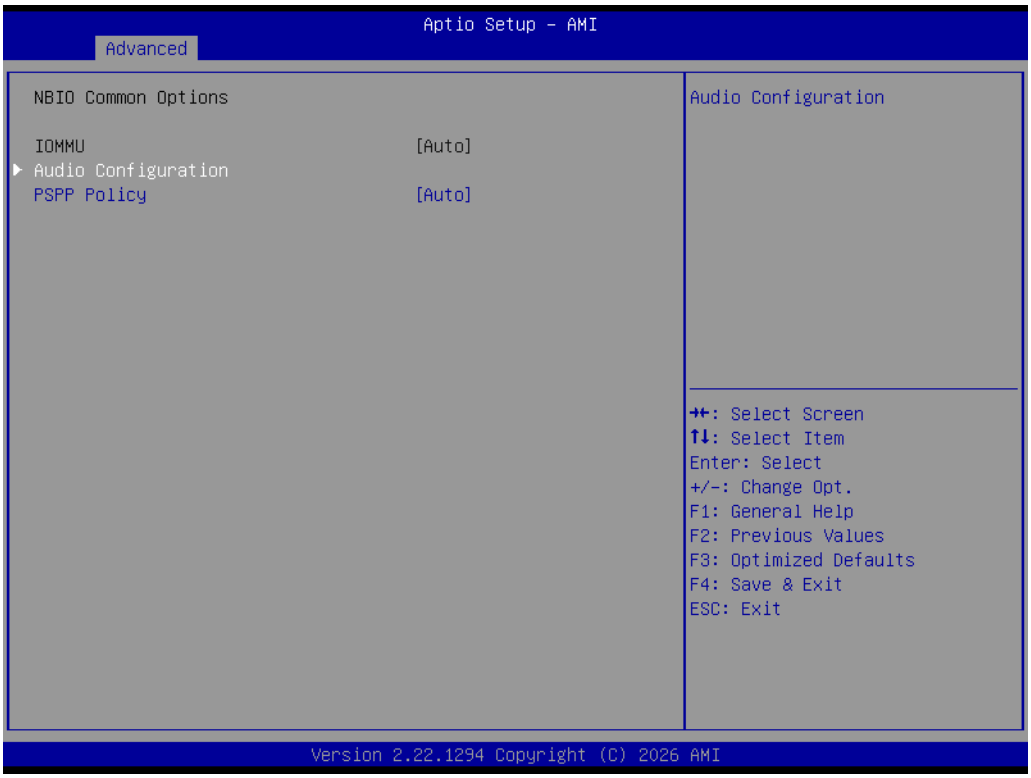
- **CPU Common Options**
  CPU Common Options.
- **NBIO Common Options**
  NBIO Common Options.
- **FCH Common Options**
  FCH Common Options.
- **SOC Miscellaneous Control**
  SOC Miscellaneous Control.

4.1.2.4.1 CPU Common Options



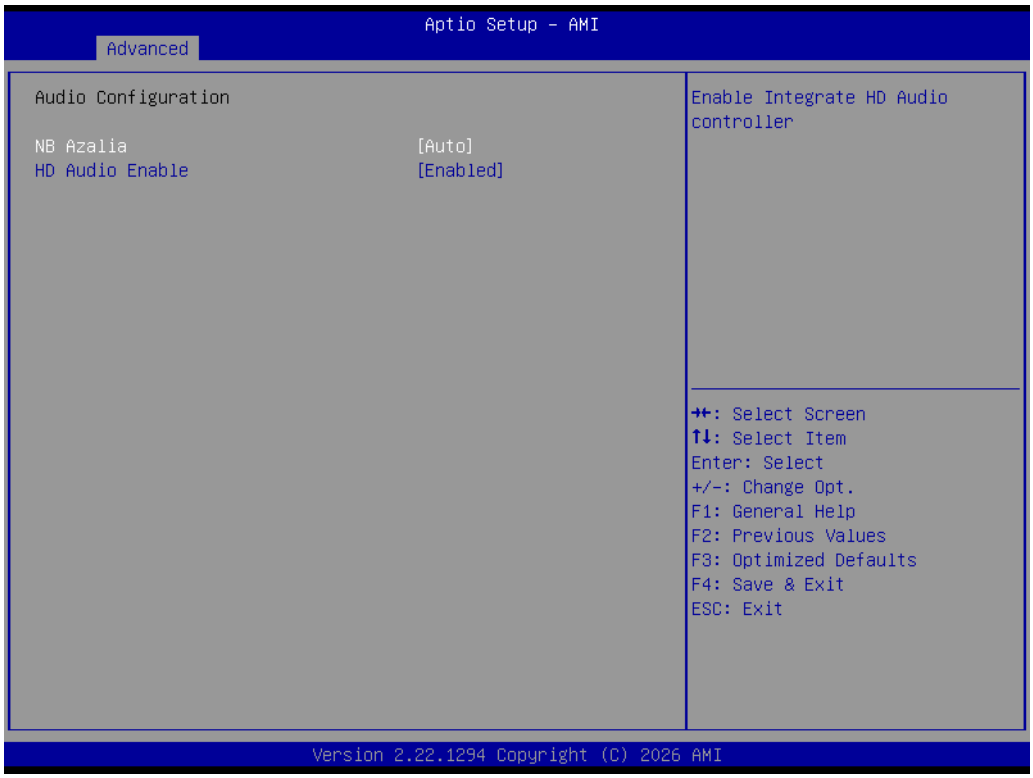
- **Global C-state Control**
  Controls IO based C-state generation and DF C-states.
  There is another DF C-state option which will synchronized with this option if DF C-state option is Auto.

4.1.2.4.2 NBIO Common Options



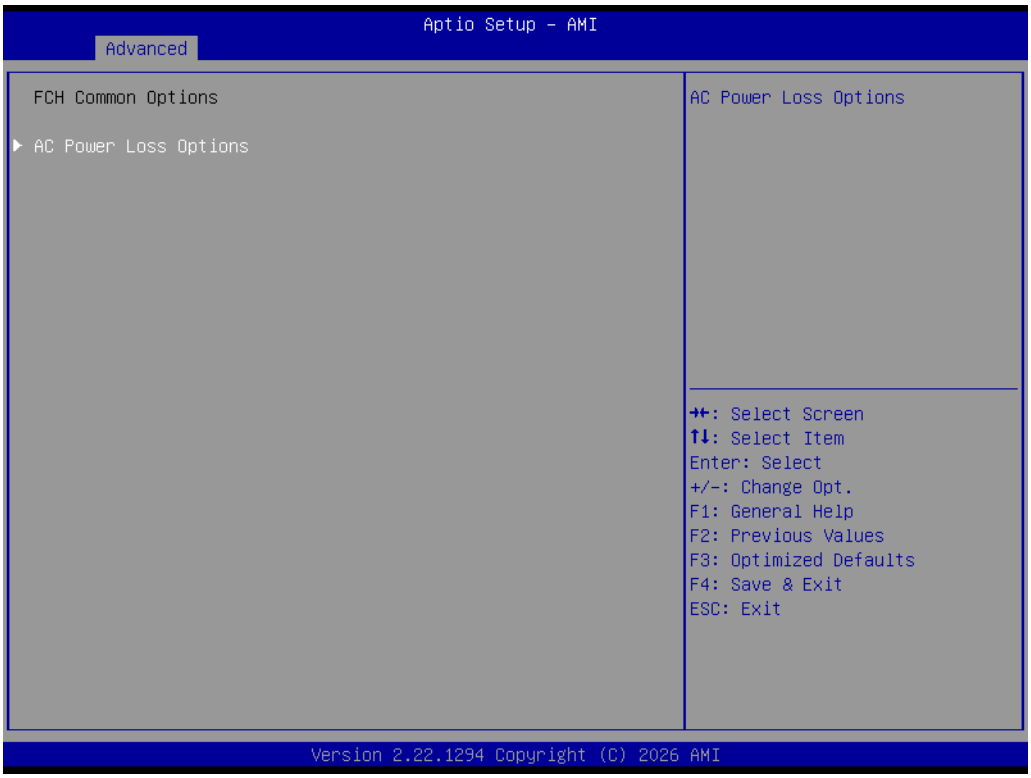
- **Audio Configuration**
  Audio Configuration.
- **PSPP Policy**
  PSPP Policy: Auto/Disabled/Balanced.

Audio Configuration



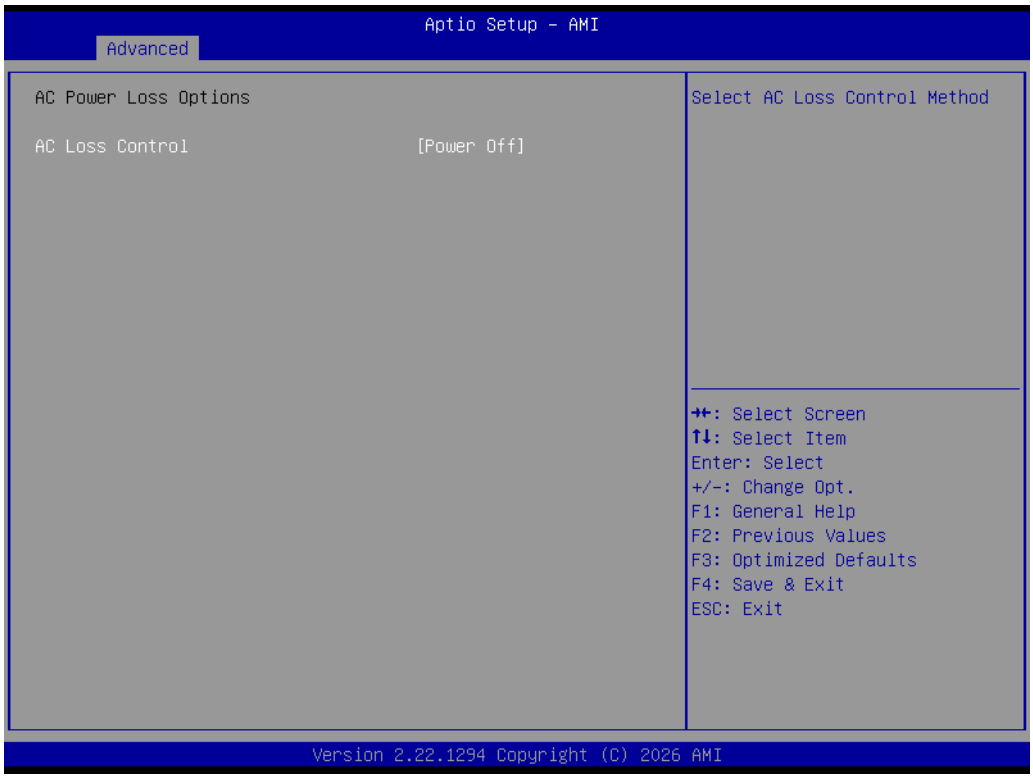
- NB Azalia
  Enable Integrate HD Audio controller.
- HD Audio Enable
  HD Audio Control.

4.1.2.4.3 FCH Common Options



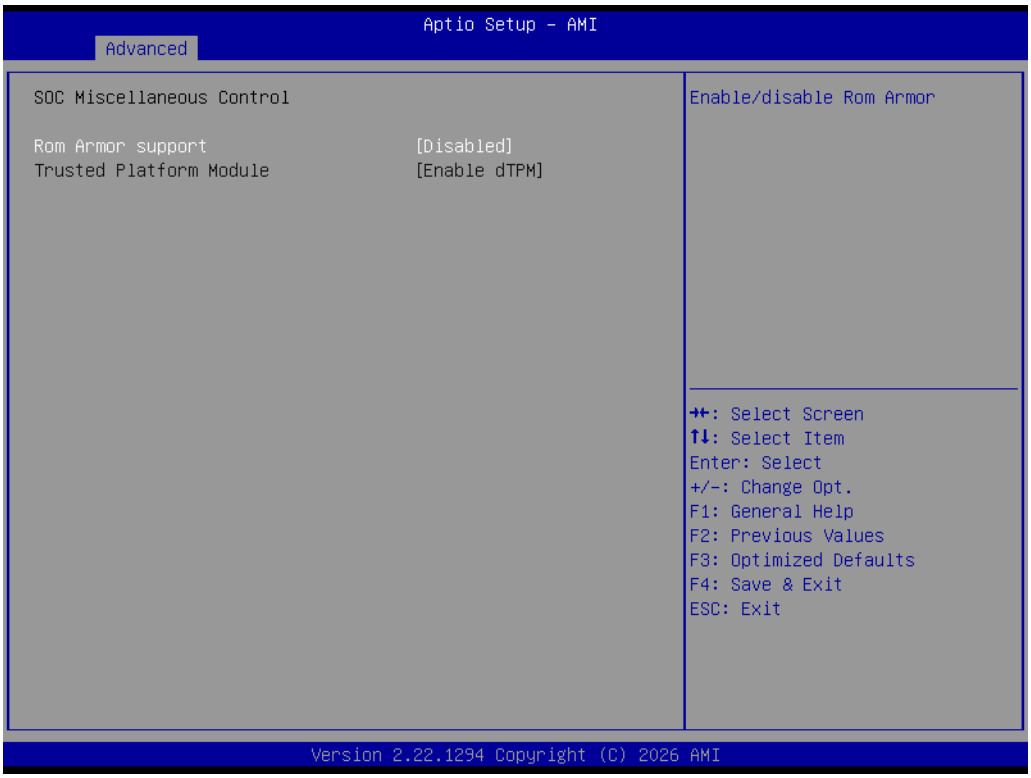
- **AC Power Loss Options**
  AC Power Loss Options.

AC Power Loss Options



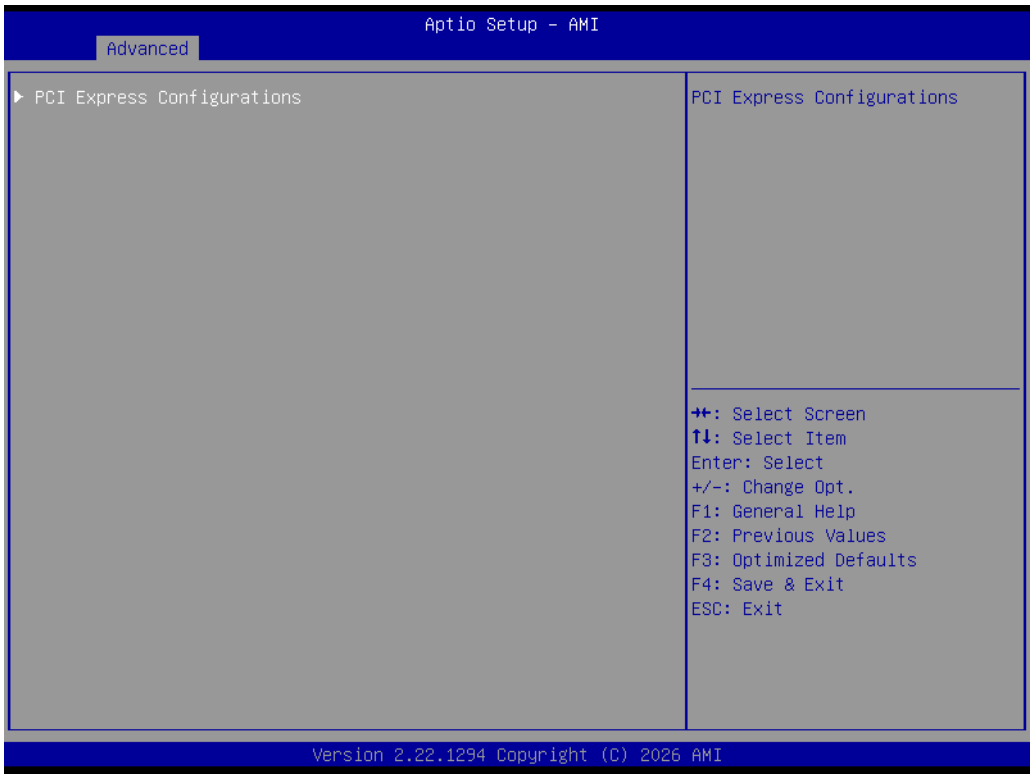
– AC Loss Control
Select AC Loss Control Method.

4.1.2.4.4 SOC Miscellaneous Control



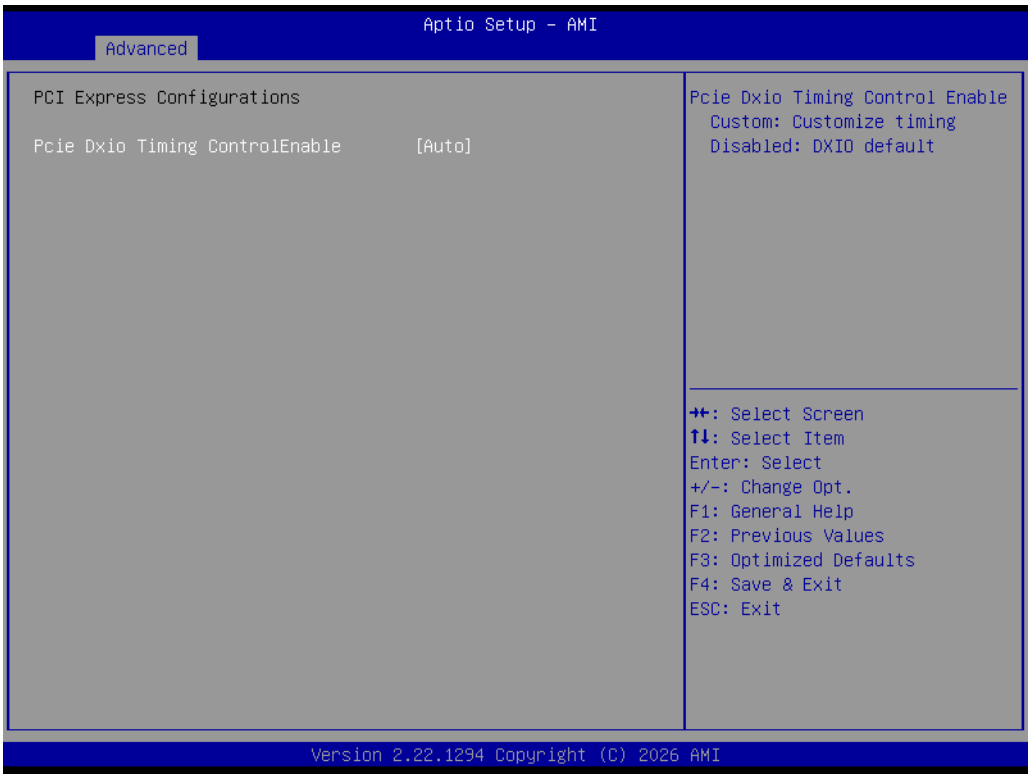
- **Rom Armor support**
  Enable/Disable Rom Armor.

4.1.2.5 AMD PBS



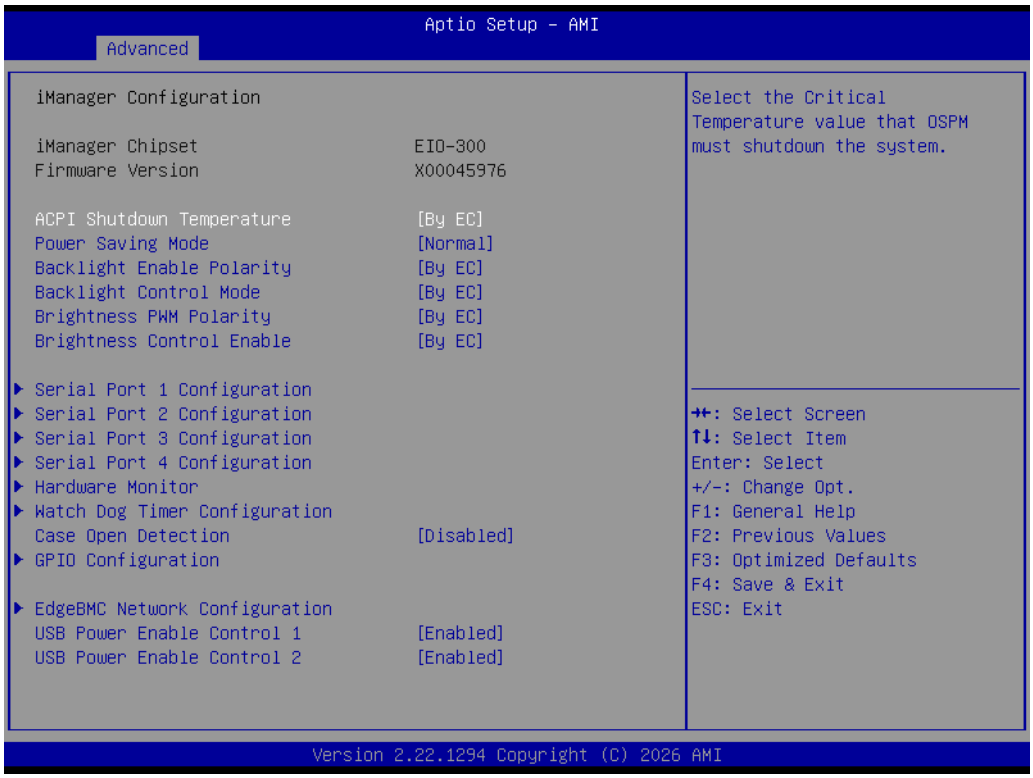
- **PCI Express Configurations**
  PCI Express Configurations.

4.1.2.5.1 PCI Express Configurations



- **PCIe DXIO Timing Control Enable**
  PCIe DXIO Timing Control Enable.
- **Custom: Customized timing**
  Disabled: DXIO default.

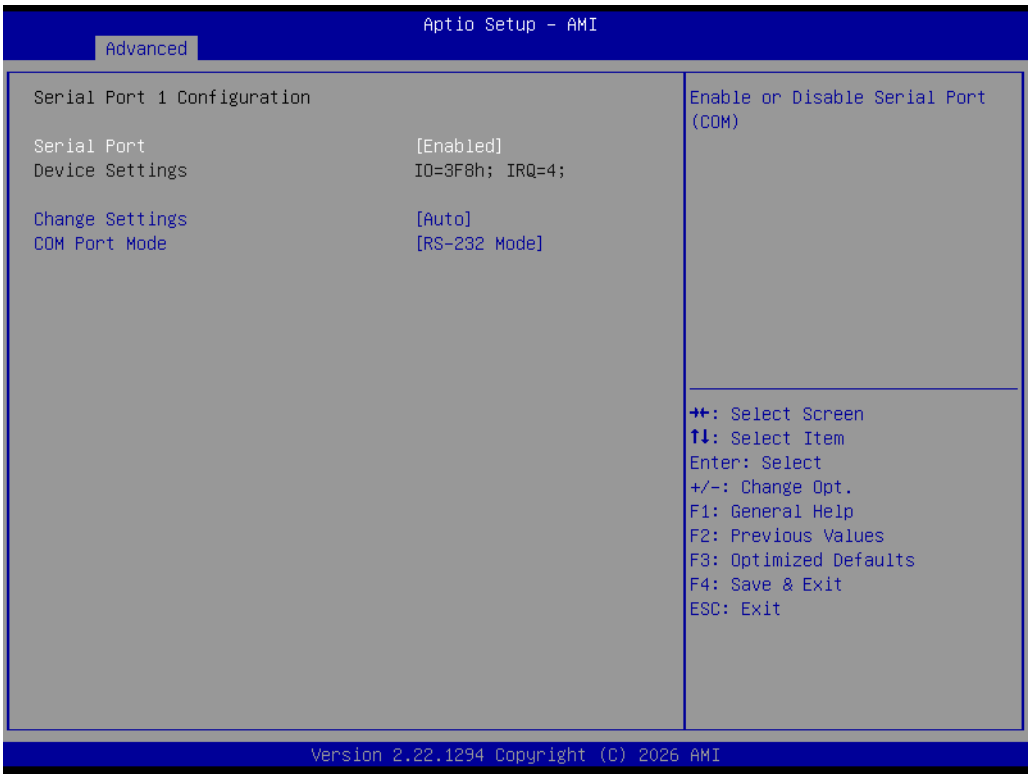
4.1.2.6 iManager Configuration



- **ACPI Shutdown Temperature**
  Select the Critical Temperature value that OSPM must shut down the system.
- **Power Saving Mode**
  Select Power Saving Mode.
- **Backlight Enable Polarity**
  Switch Backlight Enable Polarity for Native or Invert.
- **Backlight Control Mode**
  Switch Backlight Control to PWM or DC mode.
- **Brightness PWM Polarity**
  Backlight Control Brightness PWM Polarity for Native or Invert.
- **Brightness Control Enable**
  Choose to control the LVDS brightness value by EC or User override during the POST stage.
- **Serial Port 1 Configuration**
  Set Parameters of Serial Port 1 (COMA).
- **Serial Port 2 Configuration**
  Set Parameters of Serial Port 2 (COMB).
- **Serial Port 3 Configuration**
  Set Parameters of Serial Port 3 (COMC).
- **Serial Port 4 Configuration**
  Set Parameters of Serial Port 4 (COMD).
- **Hardware Monitor**
  Monitor hardware Status.
- **Watch Dog Timer Configuration**
  Watch Dog Timer Configuration Page.
- **Case Open Detection**
  Enable or Disable Case Open Detect Function.

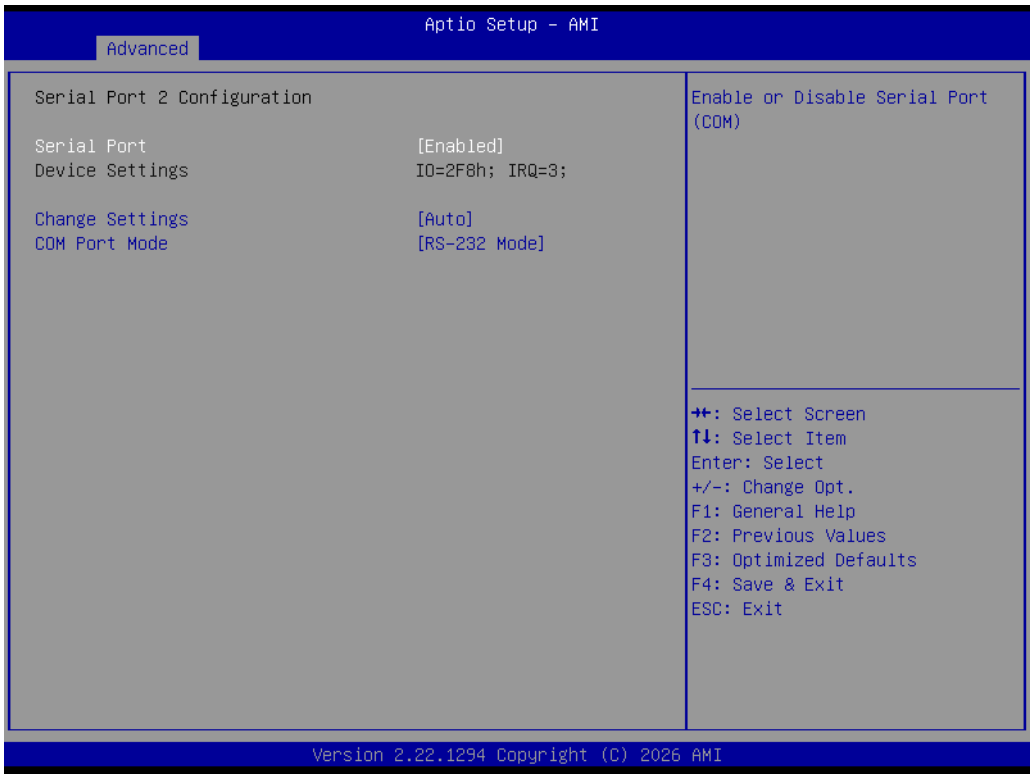
- **GPIO Configuration**
  GPIO Configuration Settings.
- **EdgeBMC Network Configuration**
  Configure EdgeBMC Network Parameters.
- **USB Power Enable Control 1**
  Enable or Disable USB1 Power in S4/S5.
- **USB1 Power Enable Control 2**
  Enable or Disable USB2 Power in S4/S5.

4.1.2.6.1 Serial Port 1 Configuration



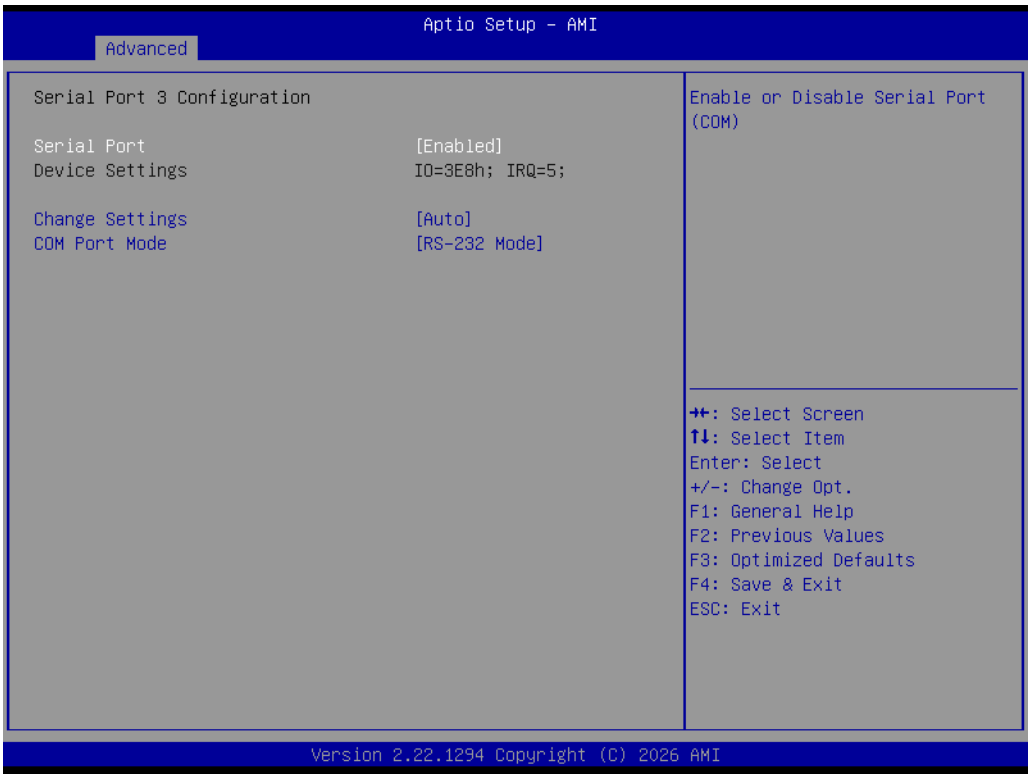
- **Serial Port**
  Enable or Disable Serial Port (COM).
- **Change Settings**
  Select an optimal setting for Super IO Device.
- **COM Port Mode**
  COM Port Mode Select.

4.1.2.6.2 Serial Port 2 Configuration



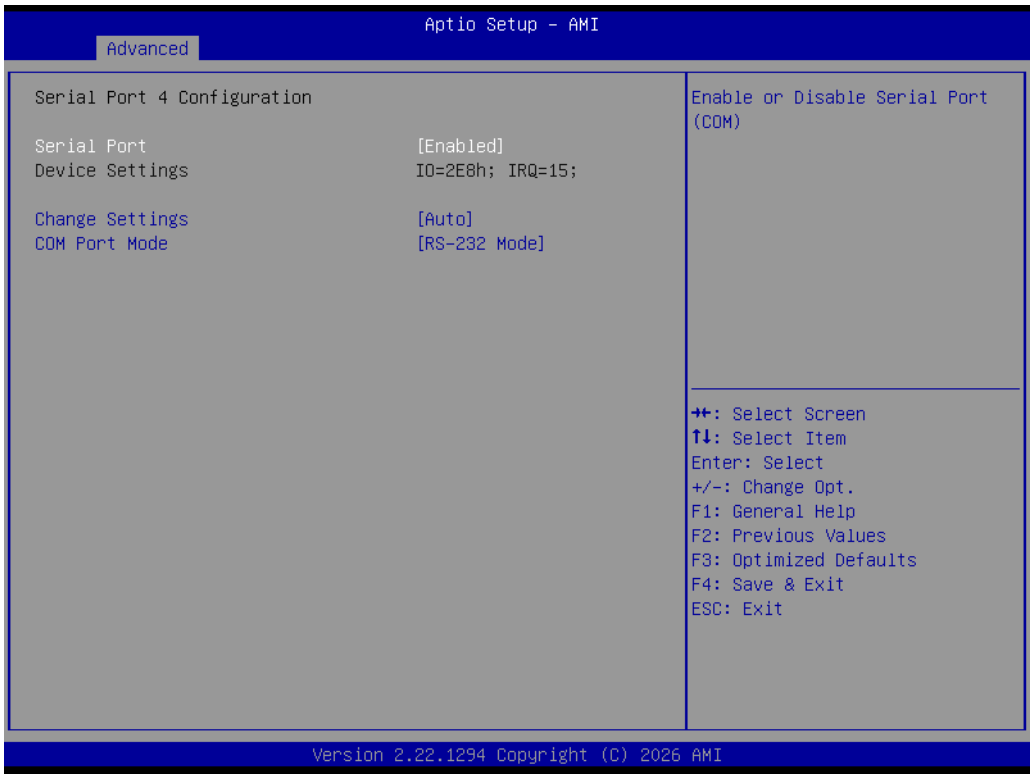
- **Serial Port**
  Enable or Disable Serial Port (COM).
- **Change Settings**
  Select an optimal setting for Super IO Device.
- **COM Port Mode**
  COM Port Mode Select.

4.1.2.6.3 Serial Port 3 Configuration



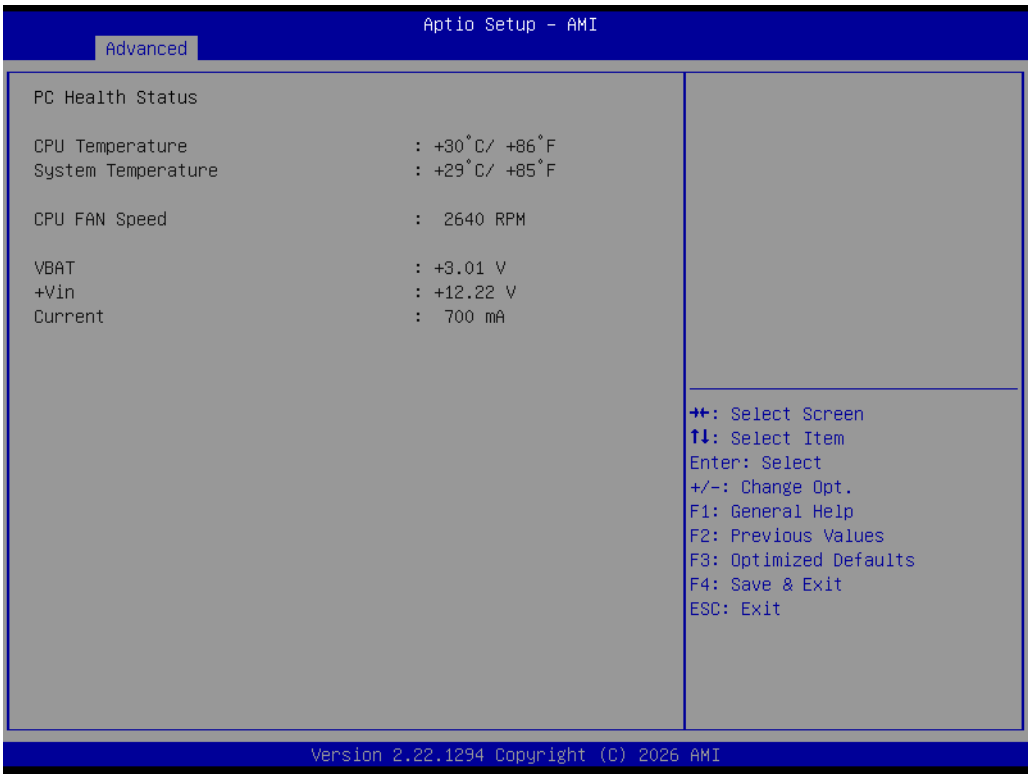
- **Serial Port**
  Enable or Disable Serial Port (COM).
- **Change Settings**
  Select an optimal setting for Super IO Device.
- **COM Port Mode**
  COM Port Mode Select.

4.1.2.6.4 Serial Port 4 Configuration



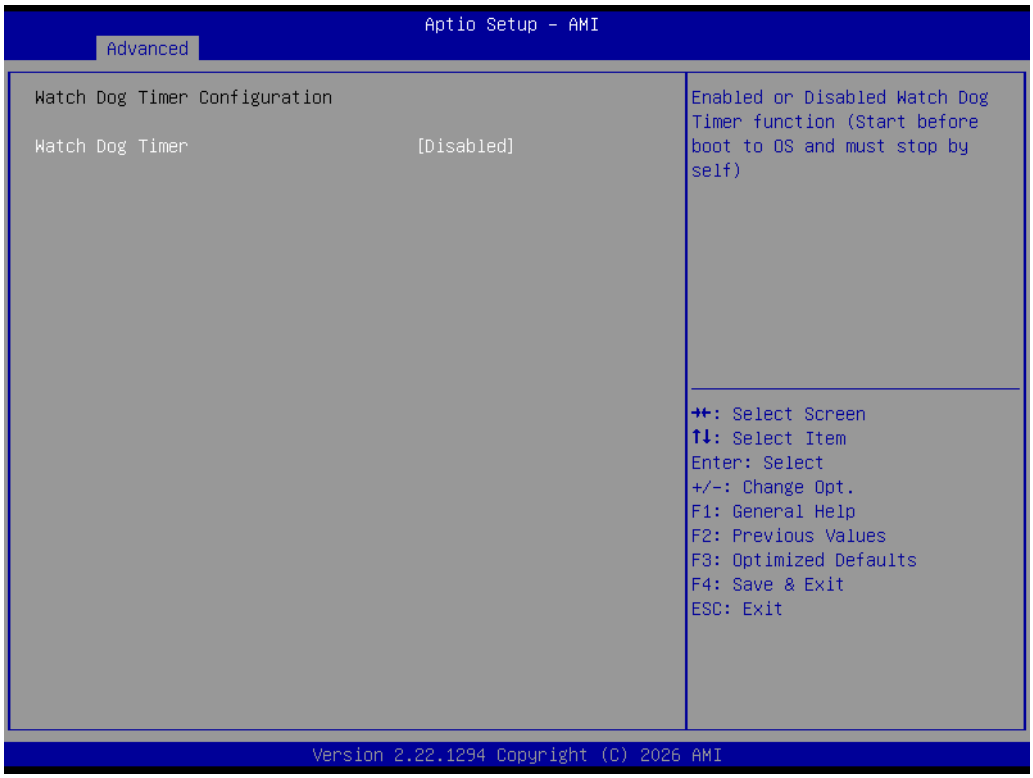
- **Serial Port**
  Enable or Disable Serial Port (COM).
- **Change Settings**
  Select an optimal setting for Super IO Device.
- **COM Port Mode**
  COM Port Mode Select.

4.1.2.6.5 Hardware Monitor



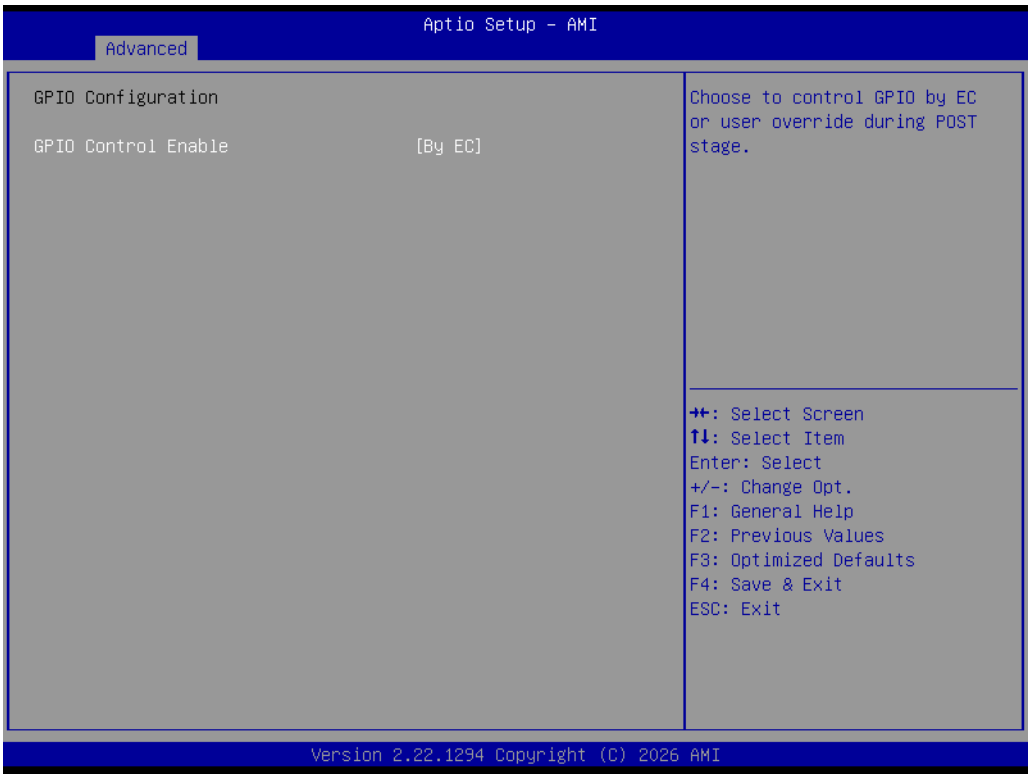
- **PC Health Status**
- **CPU Temperature**
- **System Temperature**
- **CPU FAN Speed**
- **VBAT**
  The Voltage of RTC Battery.
- **+Vin**
  The Voltage of System DC-IN.
- **Current**

4.1.2.6.6 Watch Dog Timer Configuration



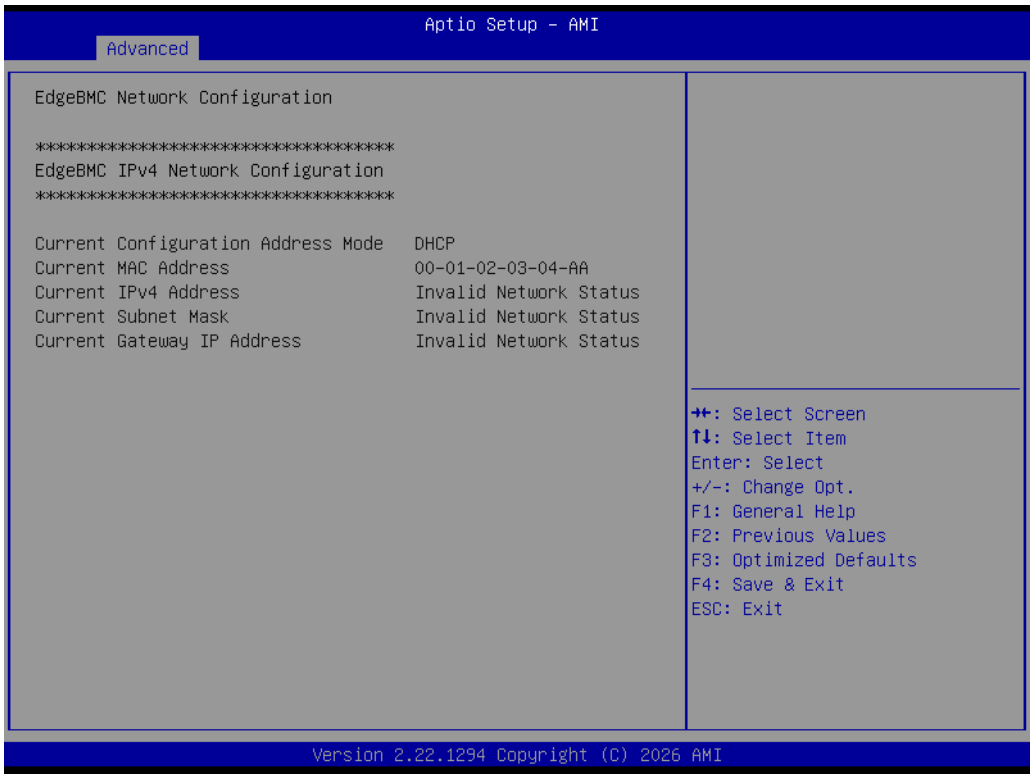
- **Watch Dog Timer**
  Enabled or Disabled Watch Dog Timer Function (Start before boot to OS and must stop by self).

4.1.2.6.7 GPIO Configuration



- **GPIO Control Enable**
  Choose to control GPIO by EC or user override during POST stage.

4.1.2.6.8 EdgeBMC Network Configuration



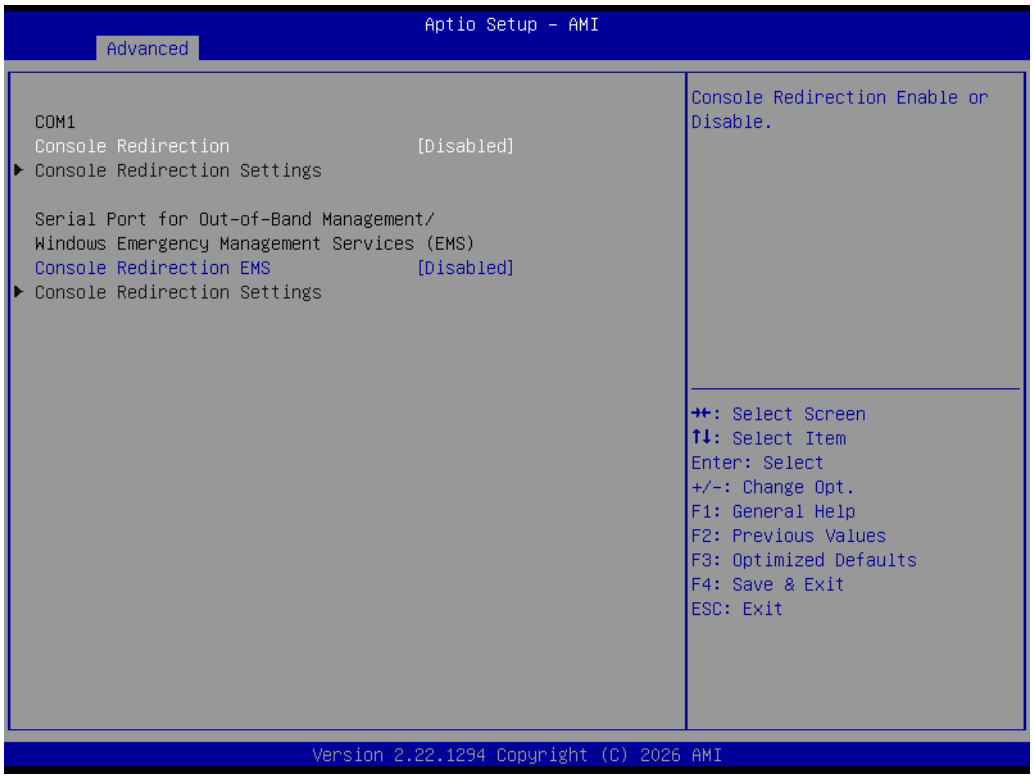
- **EdgeBMC IPv4 Network Configuration**

4.1.2.7 S5 RTC Wake Settings



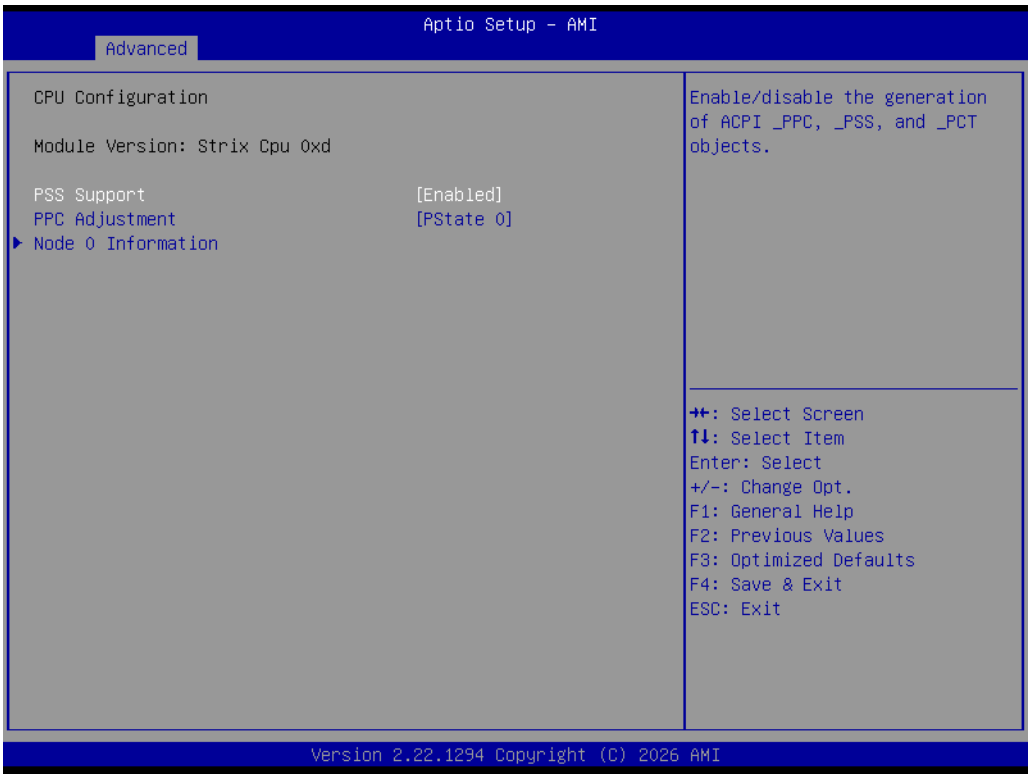
- **Wake system from S5**
  Enable or disable System wake on alarm event.
  When enabled, System will wake on the hr::min::sec.

4.1.2.8 Serial Port Console Redirection



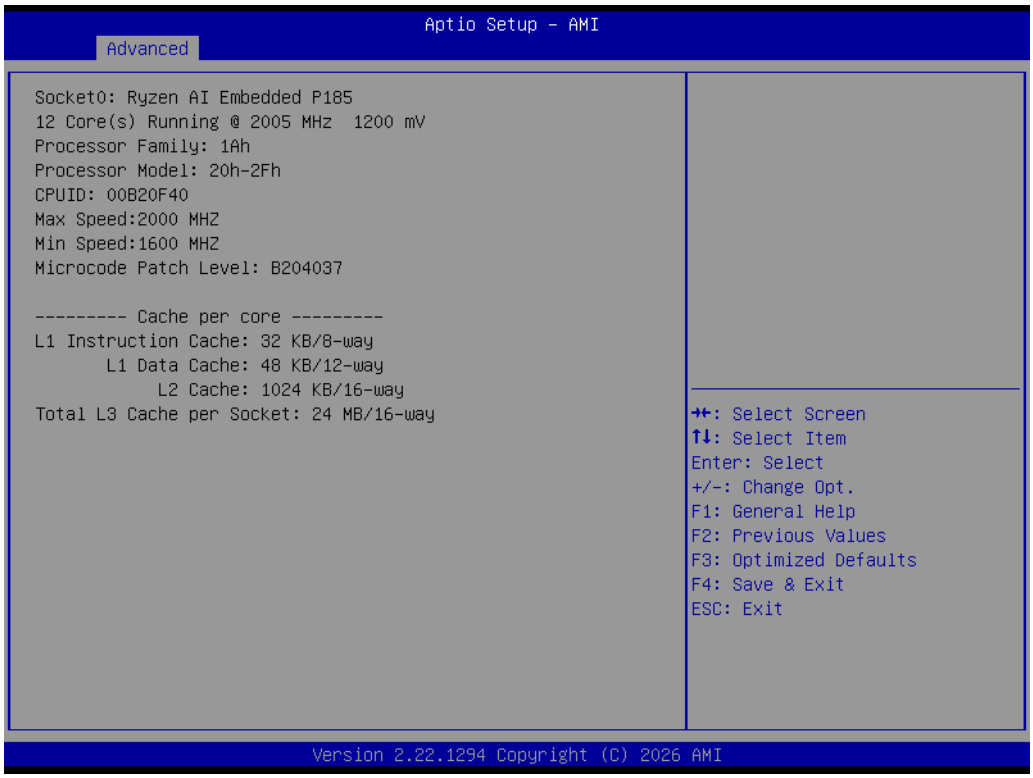
- **Console Redirection**
  This item allows users to configure console redirection detail settings.
- **Console Redirection EMS**
  This item allows users to enable or disable console redirection for Microsoft Windows Emergency Management Services (EMS).

4.1.2.9 CPU Configuration

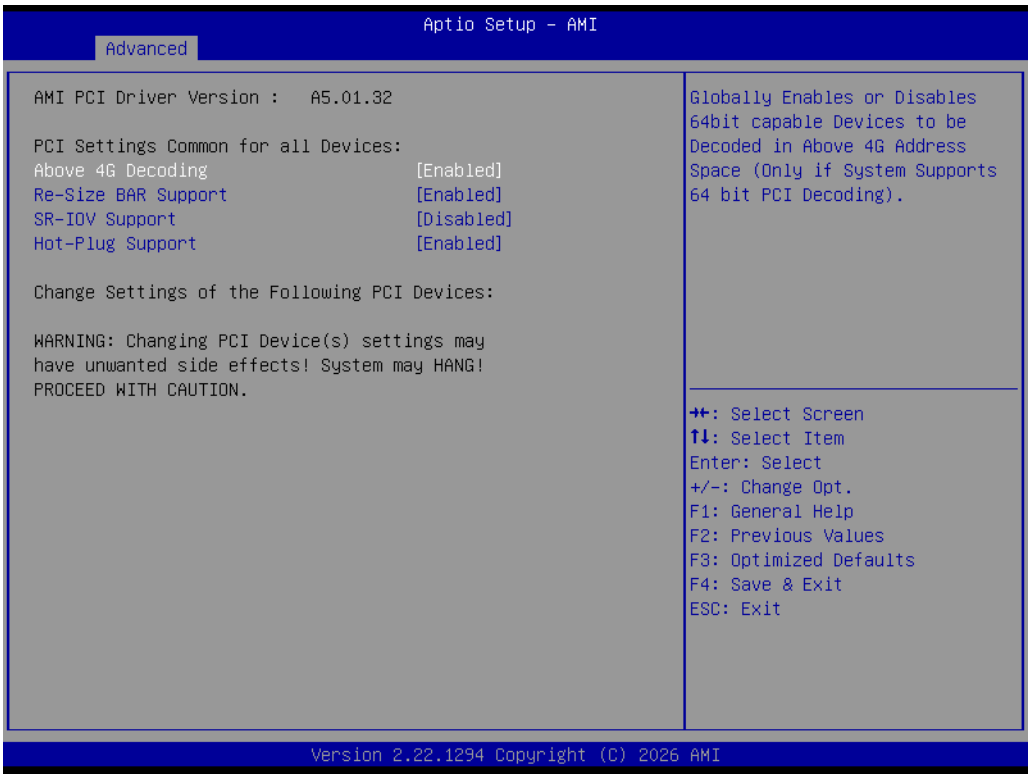


- **PSS Support**
  Enable/disable the generation of ACPI _PPC, _PPC, and _PCT objects.
- **PPC Adjustment**
  Provide to adjust _PPC object.
- **Node 0 Information**
  View Memory Information related to Node 0.

4.1.2.9.1 Node 0 Information

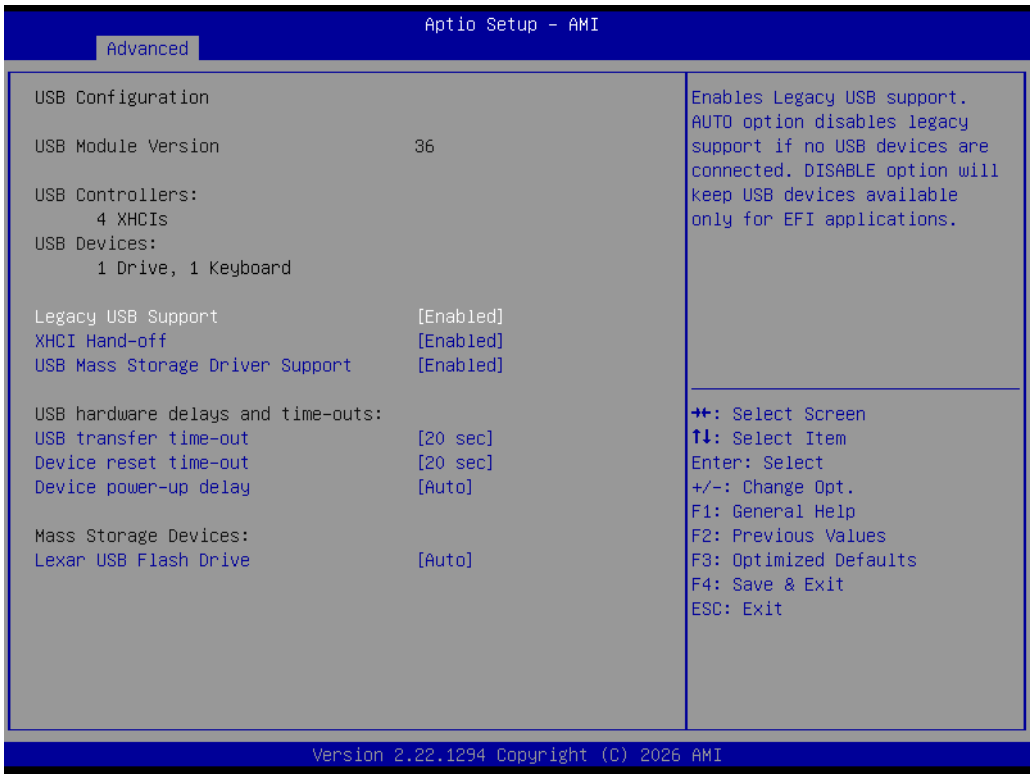


4.1.2.10 PCI Subsystem Settings



- **PCI Settings Common for all Devices**
- **Above 4G Decoding**
  Globally Enables or Disables 64bit capable Devices to be Decode in Above 4G Address Space (Only if System Supports 64 Bit PCI Decoding.)
- **Re-Size BAR Support**
  If system has Resizable BAR capable PCIe Devices, this option Enables or Disables Resizable BAR Support.
- **SR-IOV Support**
  If system has SR-IOV capable PCIe Devices, this option Enables or Disables Sigle Root IO Virtualization Support.
- **Hot-Plug Support**
  Globally Enables or Disables Hot-Plug support for the entire system. If System has Hot-Plug capable Slots and this option set to Enabled, it provides a Setup screen for selecting PCI resource padding for Hot-Plug.

4.1.2.11 USB Configuration



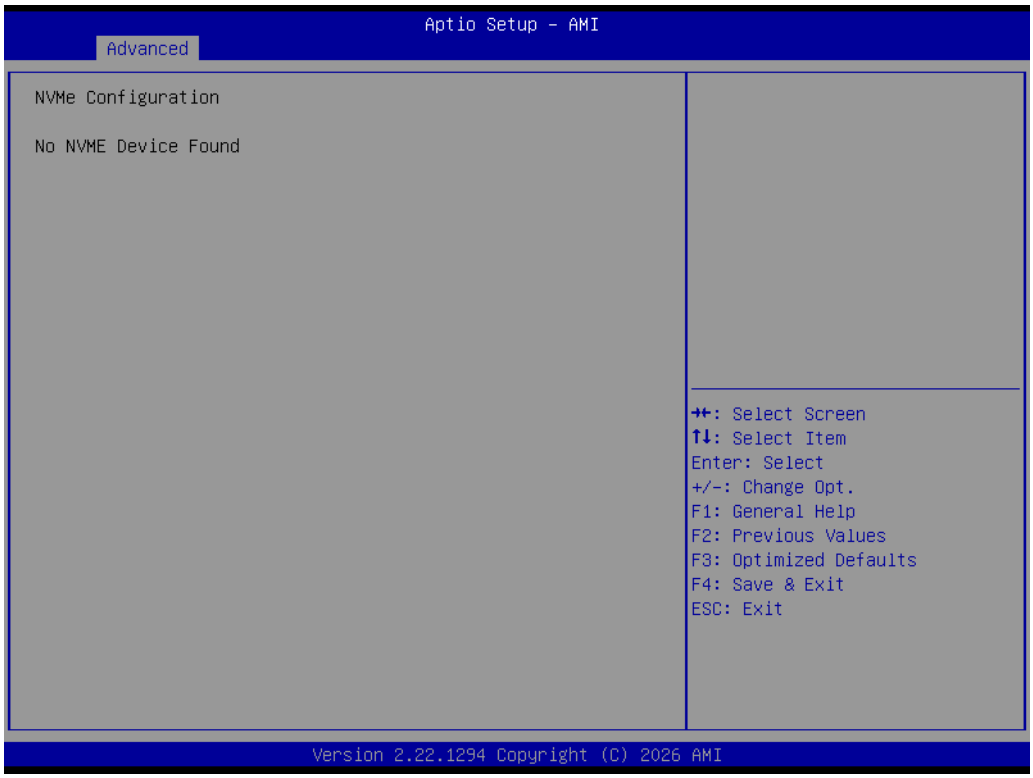
- **Legacy USB Support**
  Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
- **XHCI Hand-off**
  This is a workaround for OSes without XHCI ownership change should be claimed by XHCI driver.
- **USB Mass Storage Driver Support**
  Enable/Disable USB Mass Storage Driver Support.
- **USB transfer time-out**
  Time-out value for control, bulk, and interrupt transfers.
- **Device reset time-out**
  USB mass storage device starts unit command time-out.
- **Device power-up delay**
  Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses the default value: for a Root port it is 100 ms, for a Hub port the delay is taken from the Hub descriptor.

4.1.2.12 Network Stack Configuration

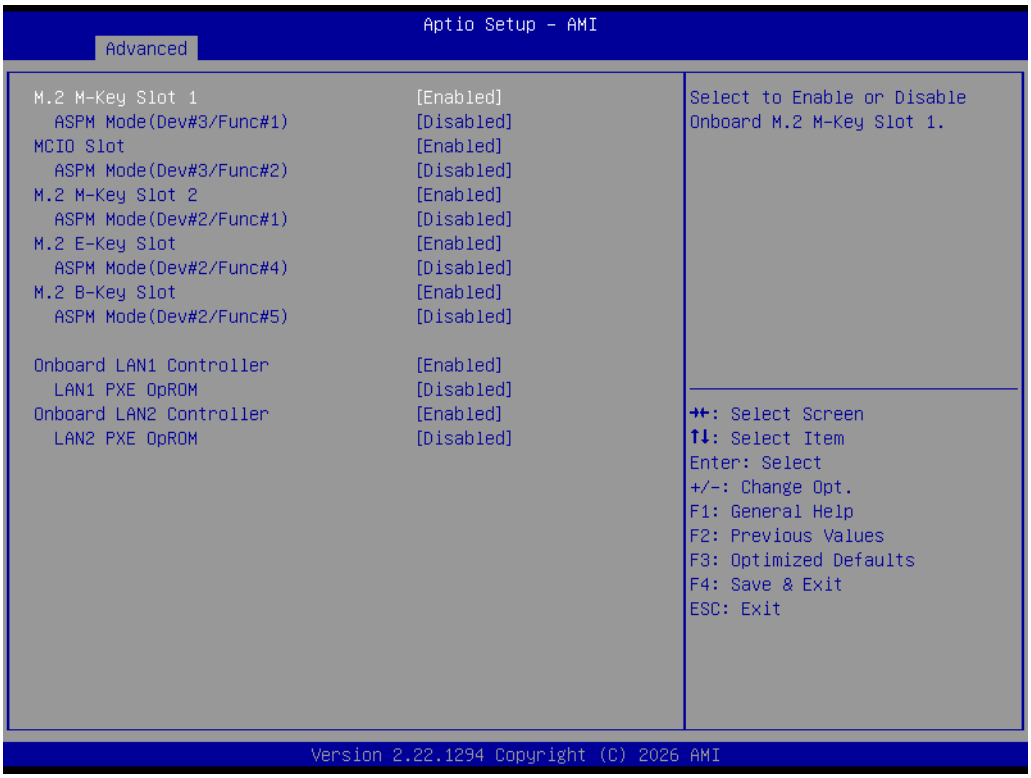


- **Network Stack**
  Enable/Disable UEFI Network Stack.

4.1.2.13 NVMe Configuration



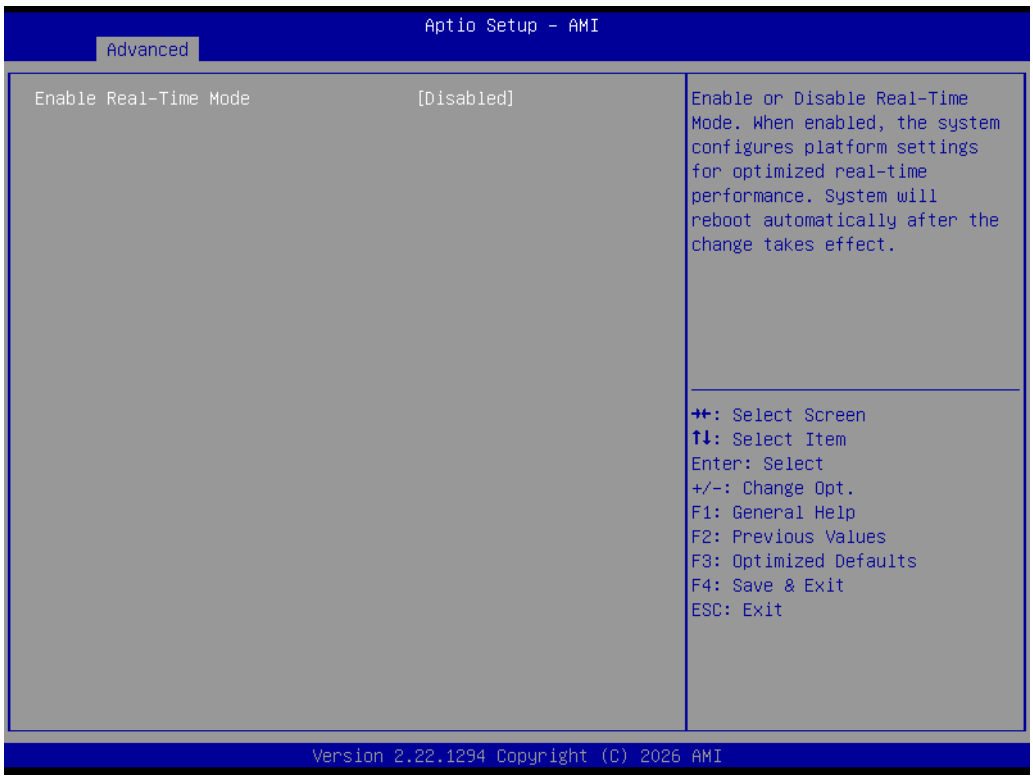
4.1.2.14 PCI-E Port Parameters



- **M.2 M-Key Slot 1**
  Select to Enable or Disable Onboard M.2 M-Key Slot 1.
- **ASPM Mode (Dev#3/Func#1)**
  NB Root Port ASPM Mode Control.
- **MCIO Slot**
  Select to Enable or Disable MCIO Slot.
- **ASPM Mode (Dev#3/Func#2)**
  NB Root Port ASPM Mode Control.
- **M.2 M-Key Slot 2**
  Select to Enable or Disable Onboard M.2 M-Key Slot 2.
- **ASPM Mode (Dev#2/Func#1)**
  NB Root Port ASPM Mode Control.
- **M.2 E-Key Slot**
  Select to Enable or Disable Onboard M.2 E-Key Slot.
- **ASPM Mode (Dev#2/Func#4)**
  NB Root Port ASPM Mode Control.
- **M.2 B-Key Slot**
  Select to Enable or Disable Onboard M.2 B-Key Slot.
- **ASPM Mode (Dev#2/Func#5)**
  NB Root Port ASPM Mode Control.
- **Onboard LAN1 Controller**
  Select to Enable to Disable Onboard LAN1 Controller.
- **LAN1 PXE OpROM**
  Enable to Disable boot option rom for LAN1 Controller.
- **Onboard LAN2 Controller**
  Select to Enable to Disable Onboard LAN2 Controller.

- **LAN2 PXE OpROM**
  Enable to Disable boot option rom for LAN2 Controller.

4.1.2.15 Real-Time Mode Configuration



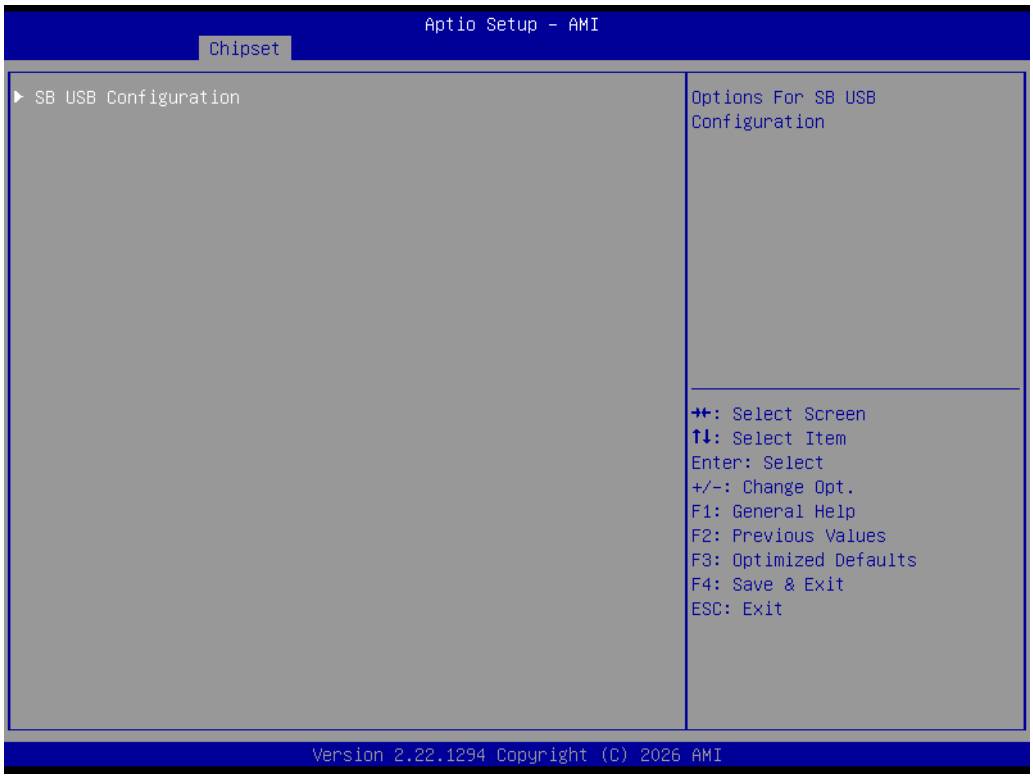
- **Enable Real-Time Mode**
  Enable or Disable Real-Time Mode. When enabled, the system configures platform settings for optimized real-time performance. System will reboot automatically after the change takes effect.

4.1.3 Chipset Configuration

Select the Chipset tab from the MIO-5380 setup screen to enter the Chipset BIOS Setup screen. You can display a Chipset BIOS Setup option by highlighting it using the <Arrow> keys. All Plug and Play BIOS Setup options are described in this section. The Plug and Play BIOS Setup screen is shown below.



4.1.3.1 South Bridge



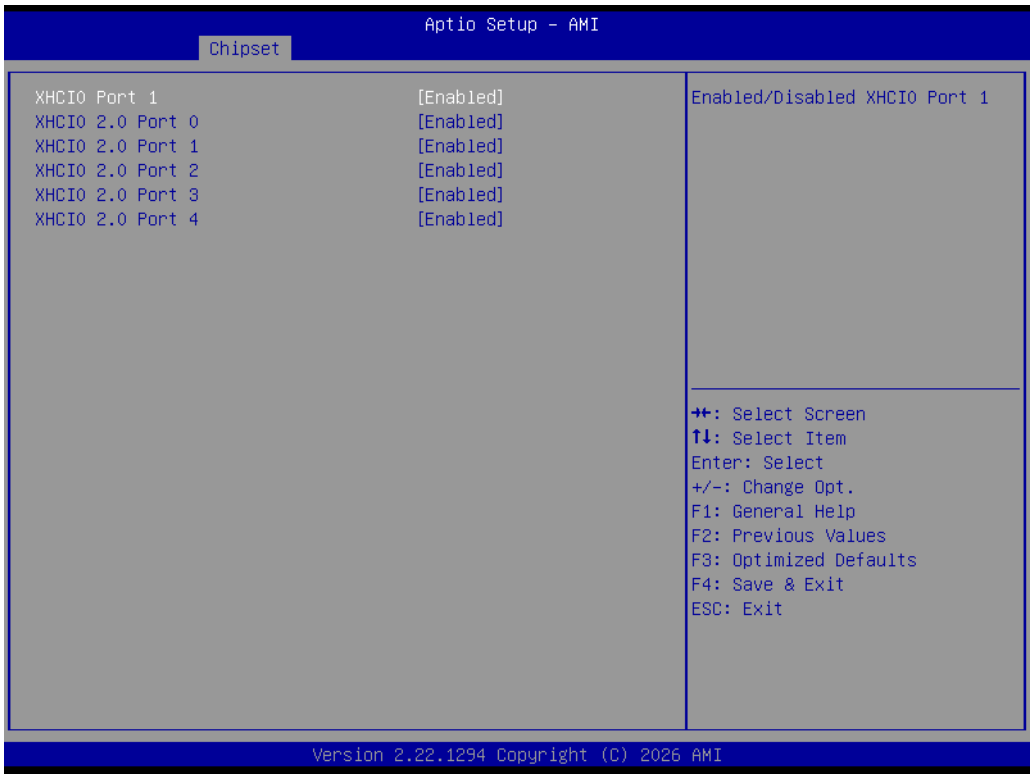
- **SB USB Configuration**
  Options for SB USB Configuration.

4.1.3.1.1 SB USB Configuration



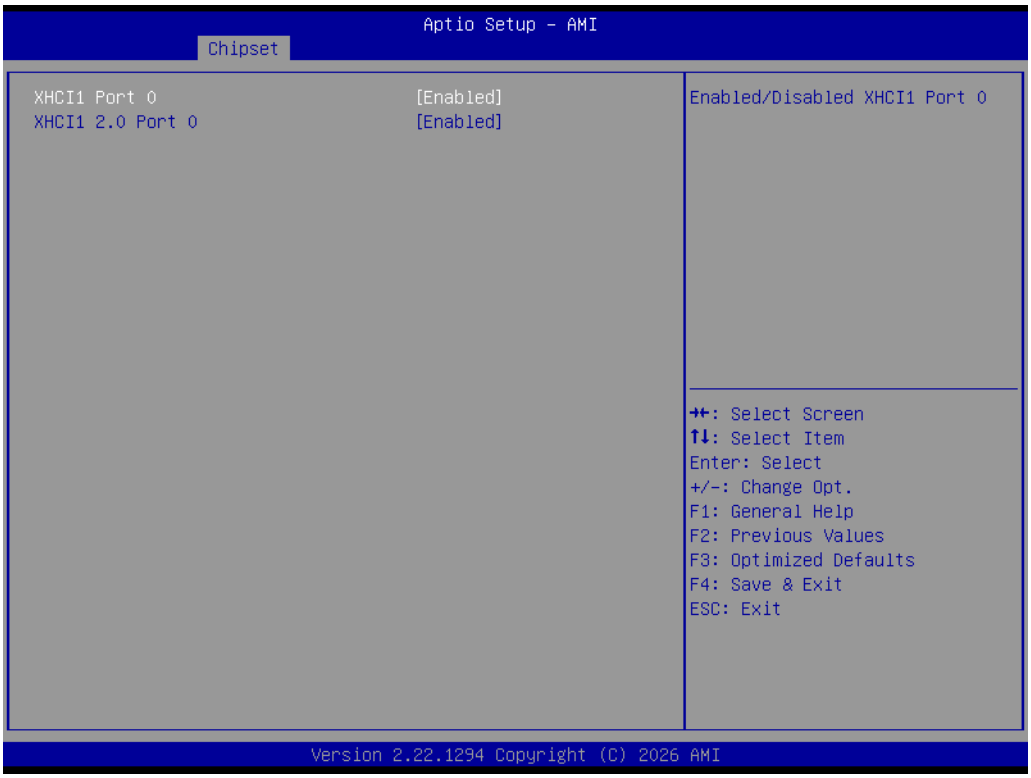
- **USB0 Ports**
  Options for SB USB Configuration.
- **USB1 Ports**
  Options for SB USB Configuration.
- **USB3 Ports**
  Options for SB USB Configuration.
- **USB4 Ports**
  Options for SB USB Configuration.

USB0 Ports



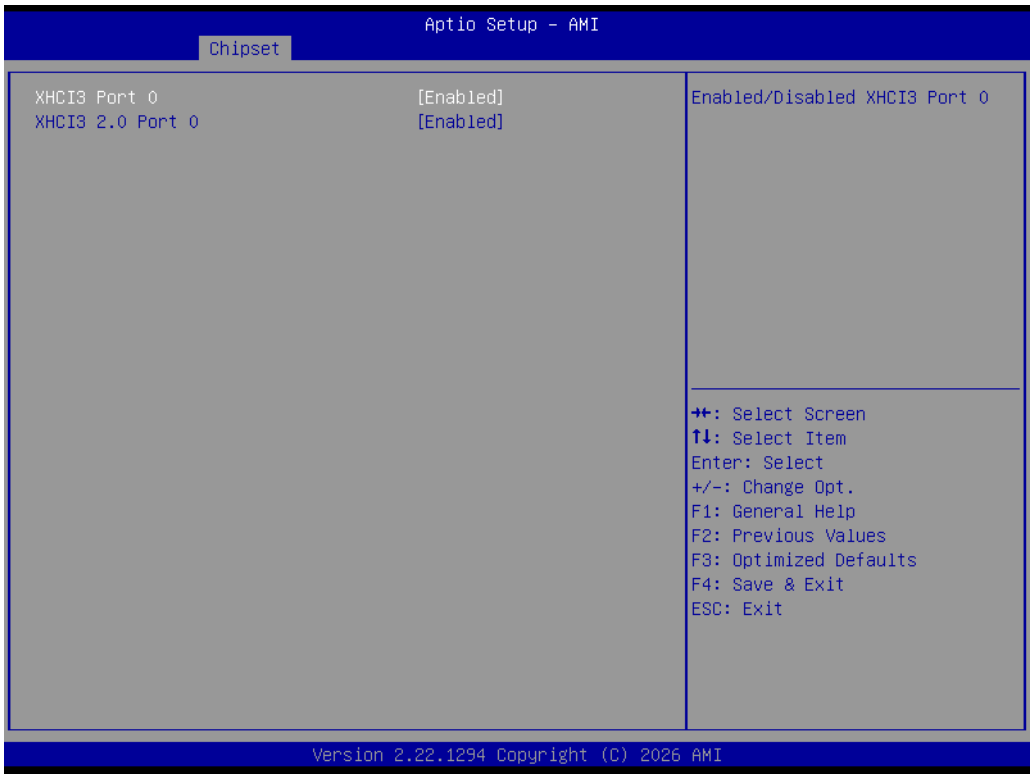
- XHCI0 Port 1
  Enabled/Disabled XHCI0 Port 1.
- XHCI0 2.0 Port 0
  Enabled/Disabled XHCI0 2.0 Port 0.
- XHCI0 2.0 Port 1
  Enabled/Disabled XHCI0 2.0 Port 1.
- XHCI0 2.0 Port 2
  Enabled/Disabled XHCI0 2.0 Port 2.
- XHCI0 2.0 Port 3
  Enabled/Disabled XHCI0 2.0 Port 3.
- XHCI0 2.0 Port 4
  Enabled/Disabled XHCI0 2.0 Port 4.

USB1 Ports



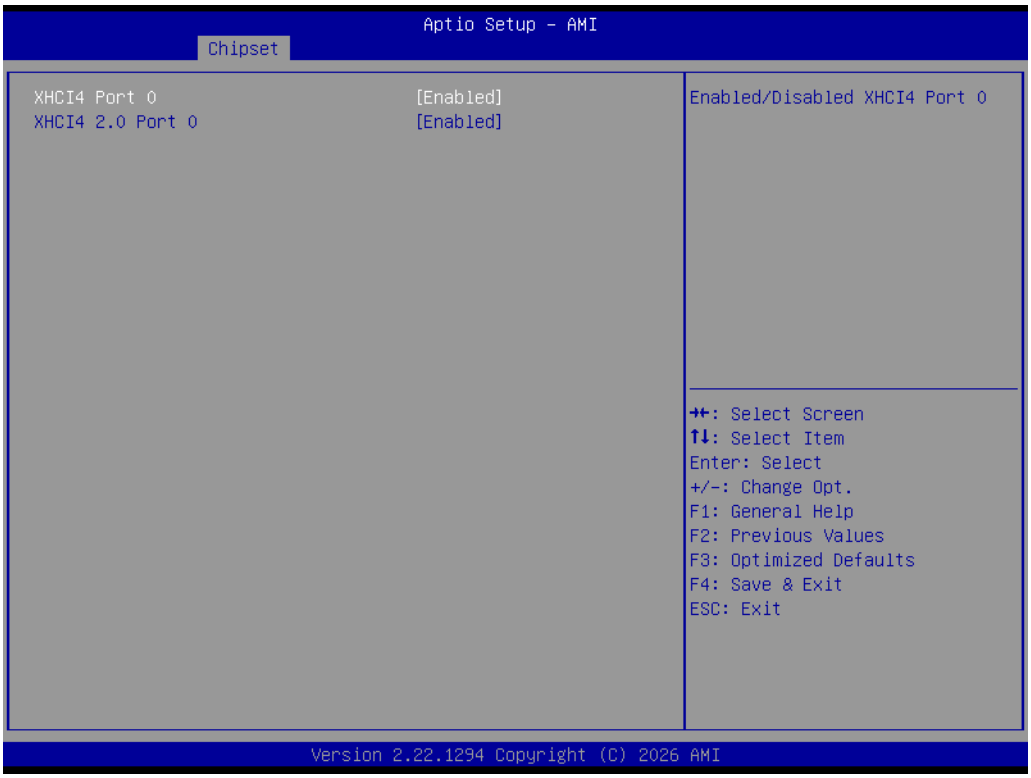
– XHCI1 Port 0
  Enabled/Disabled XHCI1 Port 0.
– XHCI1 2.0 Port 0
  Enabled/Disabled XHCI1 2.0 Port 0.

USB3 Ports



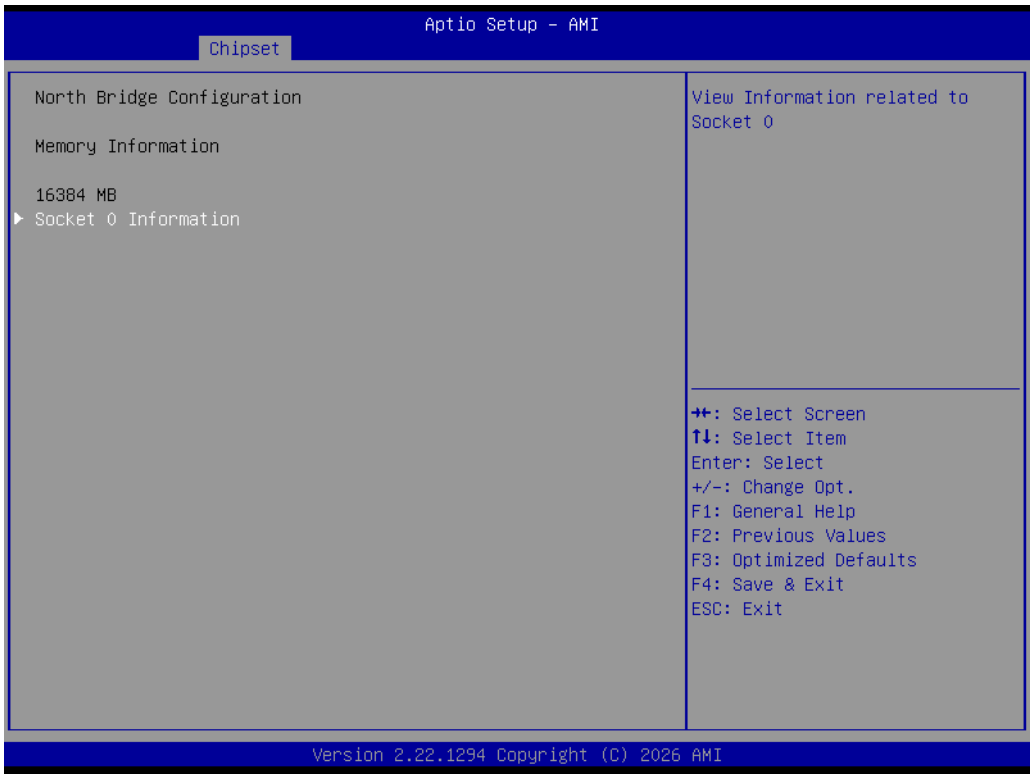
– XHCI3 Port 0
  Enabled/Disabled XHCI3 Port 0.
– XHCI3 2.0 Port 0
  Enabled/Disabled XHCI3 2.0 Port 0.

USB4 Ports



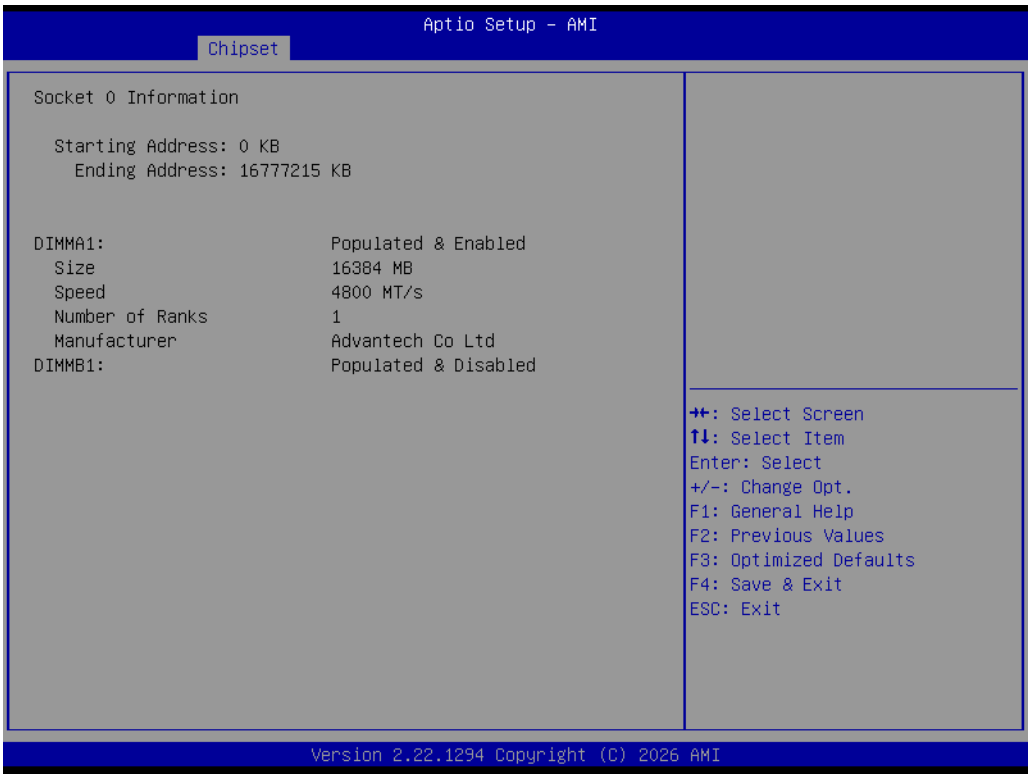
- XHCI4 Port 0
  Enabled/Disabled XHCI3 Port 0.
- XHCI4 2.0 Port 0
  Enabled/Disabled XHCI3 2.0 Port 0.

4.1.3.2 North Bridge



- **North Bridge Configuration**
- **Memory Information**
- **Socket 0 Information**
  View Information related to Socket 0.

4.1.3.2.1 Socket 0 Information



4.1.4 Security

Select Security Setup from the MIO-5380 Setup main BIOS setup menu. All Security Setup options, such as password protection and virus protection are described in this section.



To access the sub menu for the following items, select the item and press <Enter>:

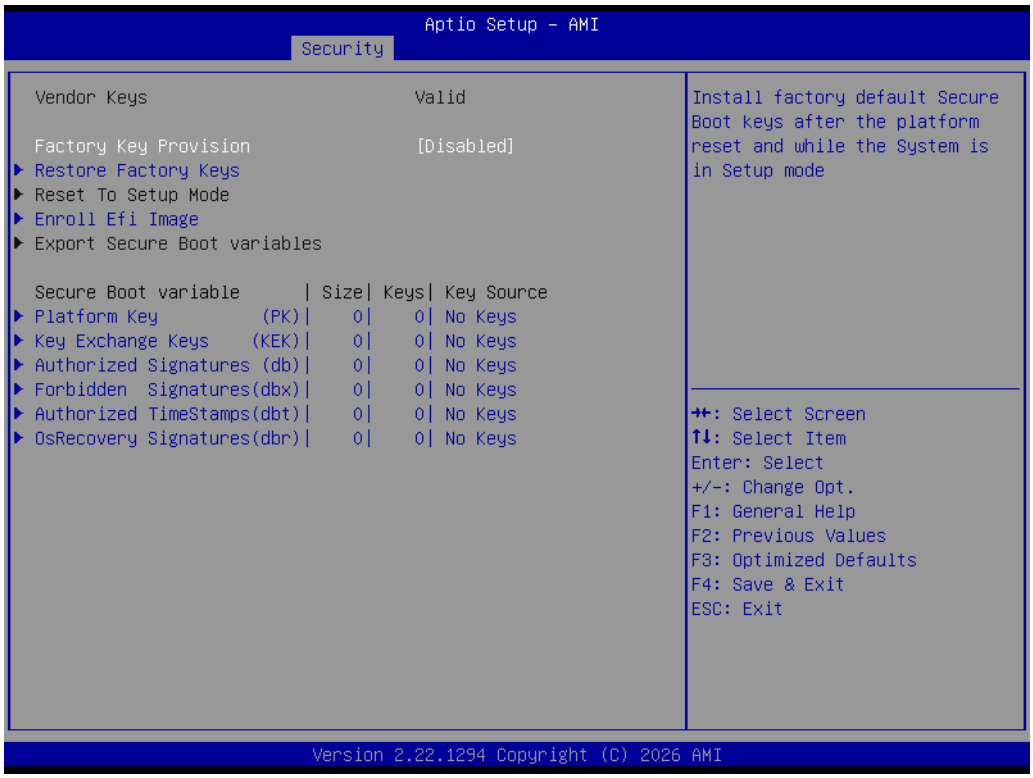
- **Change Administrator/User Password**
  Select this option and press <ENTER> to access the sub menu, and then type in the password.
- **Secure Boot**
  Secure Boot Configurations.

4.1.4.1 Secure Boot



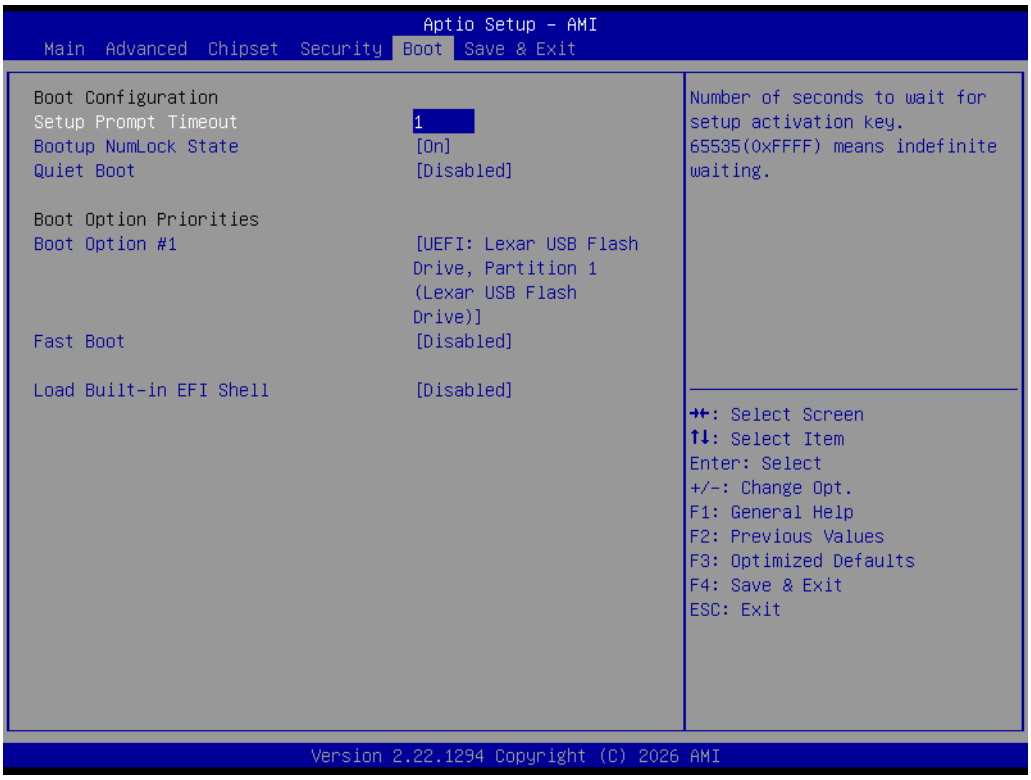
- **Secure Boot**
  Secure Boot feature is Active if Secure Boot is Enabled, Platform Key (PK) is enrolled and the System is in User mode. The mode change requires platform reset.
- **Secure Boot Mode**
  Secure Boot mode options: Standard or Custom. In Custom mode, Secure Boot Policy variables can be 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**
- **Expert Key Management**
  Enables expert users to modify Secure Boot Policy variables without variable authentication.

4.1.4.1.1 Expert Key Management



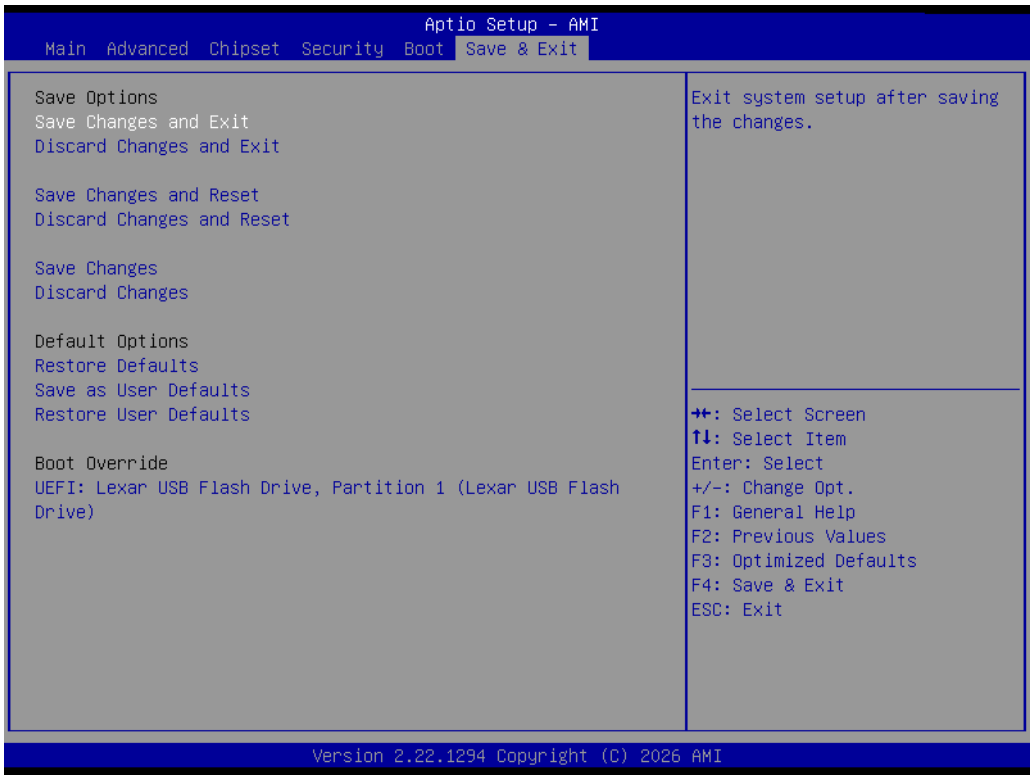
- **Factory Key Provision**
  Install factory default Secure Boot Keys after the platform reset and while the system is in setup mode.
- **Reset To Setup Mode**
- **Reroll Efi Image**
  Allow Efi image to run in Secure Boot mode. Enroll SHA256 Hash certificate of a PE image into Authorized Signature Database (db)
- **Export Secure Boot variables**
- **Platform Key (PK)**
- **Key Exchange Keys (KEK)**
- **Authorized Signatures (db)**
- **Forbidden Signatures (dbx)**
- **Authorized Time Stamps (dbt)**
- **OS Recovery Signatures (dbr)**

4.1.5 Boot



- **Setup Prompt Timeout**
  Number of seconds that the firmware will wait before initiating the original default boot selection. A value of 0 indicates that the default boot selection is to be initiated immediately on boot. A value of 65535(0xFFFF) indicates that firmware will wait for user input before booting. This means the default boot selection is not automatically started by the firmware.
- **Bootup NumLock State**
  Select the keyboard NumLock state.
- **Quiet Boot**
  Enables or disables Quiet Boot option.
- **Boot Option #1**
  Sets the system boot order.
- **Fast Boot**
  Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.
- **Load Built-in EFI Shell**
  Load/Unload Internal Built-in EFI Shell image inside BIOS. (Built-in EFI Shell will still be loaded in no any bootable device is found).

4.1.6 Save & Exit



- **Save Changes and Exit**
  This item allows you to exit system setup after saving the changes.
- **Discard Changes and Exit**
  This item allows you to exit system setup without saving any changes.
- **Save Changes and Reset**
  This item allows you to reset the system after saving the changes.
- **Discard Changes and Reset**
  This item allows you to rest system setup without saving any changes.
- **Save Changes**
  This item allows you to save changes done so far to any of the options.
- **Discard Changes**
  This item allows you to discard changes done so far to any of the options.
- **Restore Defaults**
  This item allows you to restore/load default values for all the options.
- **Save as User Defaults**
  This item allows you to save the changes done so far as user defaults.
- **Restore User Defaults**
  This item allows you to restore the user defaults to all the options.
- **Boot Override**
  Boot device select can override your boot priority.

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