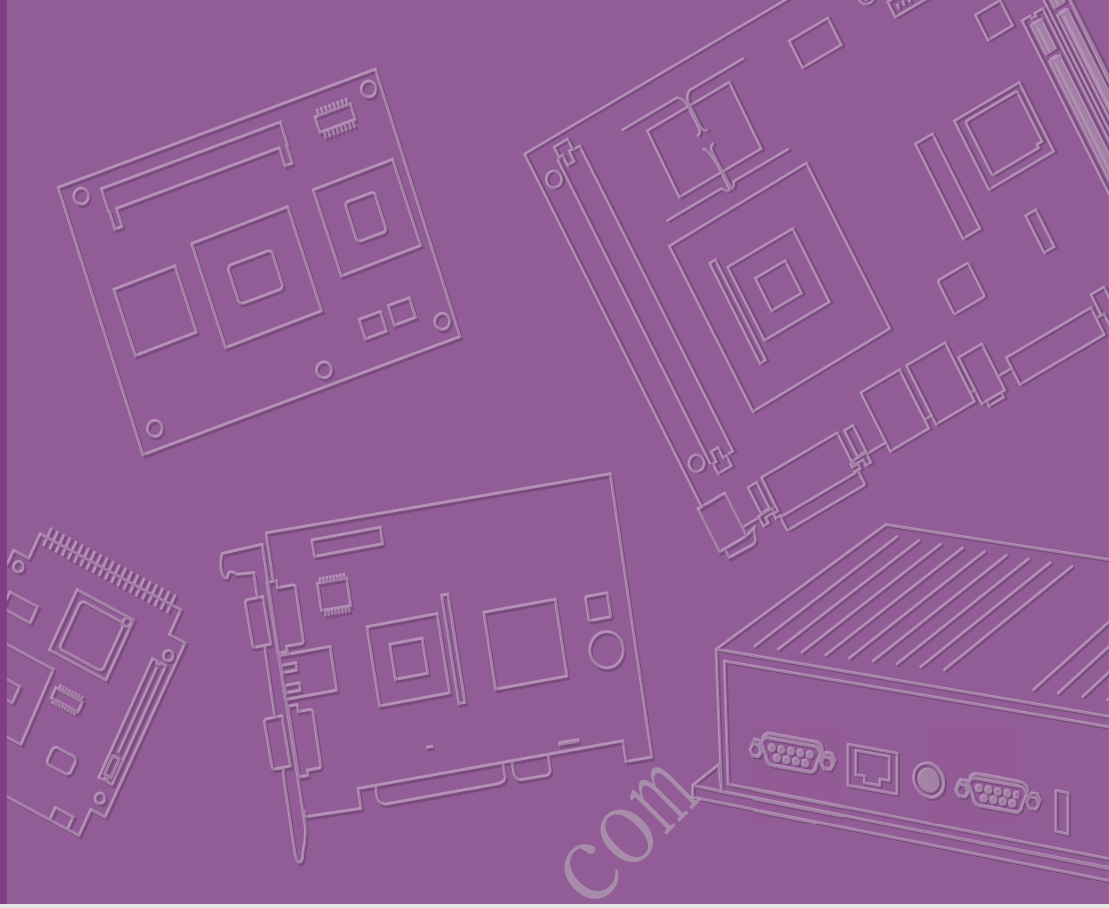


User Manual

MIO-5379

Intel® Core™ Ultra U/H-series 3.5" SBC

https://advavee.com

ADVANTECH

Enabling an Intelligent Planet

Copyright

The documentation and the software included with this product are copyrighted 2025 by Advantech Co., Ltd. All rights are reserved. Advantech Co., Ltd. reserves the right to make improvements in the products described in this manual at any time without notice. No part of this manual may be reproduced, copied, translated, or transmitted in any form or by any means without the prior written permission of Advantech Co., Ltd. The information provided in this manual is intended to be accurate and reliable. However, Advantech Co., Ltd. assumes no responsibility for its use, nor for any infringements of the rights of third parties that may result from its use.

Acknowledgments

Intel® is a trademark of Intel® Corporation.

AMI is a trademark of American Megatrends, Inc.

IBM, PC, PS/2, and VGA are trademarks of International Business Machines Corporation.

Microsoft Windows®, DirectX® is a registered trademark of Microsoft Corp.

All other product names or trademarks are properties of their respective owners.

For more information on this and other Advantech products, please visit our websites at:

http://www.advantech.com

http://www.advantech.com/eplatform

For technical support and service, please visit our support website at:

http://support.advantech.com/

This manual is for the MIO-5379.

https://advvee.com

Part No. 2006537900 Edition 1

Published in Taiwan October 2025

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.

https://advver.com

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

https://advantech.com

Packing List

Before you begin installing your card, please make sure that the following materials have been shipped:

- 1 x MIO-5379 SBC
- 1 x USB 2.0 Cable 20cm (p/n: 1700030406-01)
- 1 x COM RS-232/422/485 Cable 20cm (p/n: 1700030404-01)
- 3 x COM RS-232 Cable 20cm (p/n: 1700031582-01)
- 1 x Cooler/Heatsink (p/n: 1970005512T001/1970005973T001)
- 1 x Screw Kit (4sets screws for M.2 device & 4sets of screws and stand-off for Heatsink/Cooler)

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

Optional Accessories

- 1x Heat spreader of MIO-5379 (p/n: 1970005998T001)
- 1x MIOe-TCPD Module (p/n: MIOE-TCPD-P1A1)
- 1x 4 wires COM RS-422/485 cables (p/n: 1700035016-01)
- 1x M.2 3042/3052 Extension Bracket (p/n: 1960103315N020)

https://advavee.com

https://advavee.com

Contents

Chapter 1 General Information 1

1.1 Introduction 2
1.2 Specifications 2
Table 1.1: Specifications 2
1.3 Block Diagram 4

Chapter 2 Mechanical Specifications 5

2.1 Introduction 6
2.2 Board Layout: Dimensions 6
Figure 2.1 MIO-5379 Mechanical Diagram (Top Side) 6
Figure 2.2 MIO-5379 Mechanical Diagram (Bottom Side) 7
Figure 2.3 MIO-5379 Mechanical Diagram (Coastline) 7
Figure 2.4 MIO-5379 Mechanical Diagram (with Cooler) 7
Figure 2.5 MIO-5379 Mechanical Diagram (with Heatsink) 8
Figure 2.6 MIO-5379 Mechanical Diagram (with Heatspreader) .8
2.3 Quick Installation Guide 8
Figure 2.7 MIO-5379 Cooler Installation 8
Figure 2.8 MIO-5379 Heatsink Installation 9
Figure 2.9 MIO-5379 Heatspreader Installation 9

Chapter 3 Installation 11

3.1 Jumpers & Switches 12
3.1.1 Miscellaneous Selection Jumper: SW1 12
Table 3.1: Miscellaneous Selection Jumper: SW1 12
3.2 Connectors 13
Table 3.2: Connectors 13
3.3 Locating Connectors 14
Figure 3.1 Front view 14
Figure 3.2 Bottom view 14
3.4 Setting Jumpers 15
3.5 Connectors (for Internal) 15
Table 3.3: CANBus Internal Connector: CANBUS1 15
Table 3.4: CANBus Internal Connector: CANBUS2 16
Table 3.5: I2C Internal Connector: I2C_1 16
Table 3.6: Smart FAN Internal Connector: FAN1 16
Table 3.7: USB2.0 Dual-Ports Internal Connector: USB2 17
Table 3.8: Audio Internal Connector: AUDIO1 17
Table 3.9: COM-Port Internal Connector 1: COM1 18
Table 3.10: COM-Port Internal Connector 2: COM2 18
Table 3.11: COM-Port Internal Connector 3: COM3 19
Table 3.12: COM-Port Internal Connector 4: COM4 19
Table 3.13: Front Panel Internal Connector: CN1 20
Table 3.14: GPIO Internal Connector: GPIO1 21
Table 3.15: RTC Battery Connector: BAT1 21
Table 3.16: eDP VDD Jumper: J1_VCC1 22
Table 3.17: M.2 Key-E Connector: M2_1 22
Table 3.18: M.2 Key-M Connector: M2_2 24
Table 3.19: M.2 Key-M Connector: M2_3 26
Table 3.20: M.2 Key-B Connector: M2_B1 28
Table 3.21: I2C PD Connector: I2C_PD 31
Table 3.22: PD input power Connector: CN4 31

https://advaved.com

Chapter 4 AMI BIOS Setup 33

4.1 Entering Setup 35
4.1.1 Main Setup 35
4.1.2 Advanced BIOS Features Setup 36
4.1.3 Chipset Configuration 61
4.1.4 Security 70
4.1.5 Boot 71
4.1.6 Save & Exit 72

Appendix A System Assignments 73

A.1 System I/O Ports 74
Table A.1: System I/O Ports 74
A.2 DMA Channel Assignments 75
Table A.2: DMA Channel Assignments 75
A.3 1st MB Memory Map 75
Table A.3: 1st MB Memory Map 75
A.4 Interrupt Assignments 75
Table A.4: Interrupt Assignments 75

https://advavee.com

Chapter 1

General Information

https://advavee.com

1.1 Introduction

MIO-5379 is powered by the latest Intel Arrow Lake/Meteor Lake for AI. It offers rich I/O and USB4 for expansion. It supports out-of-band management and TCC/TSN. MIO-5379 design with external power board to support external display with only type-c cable.

1.2 Specifications

Table 1.1: Specifications

Platform	Processor	Core Ultra 7, 255H	Core Ultra 5, 225H	Core Ultra 7, 155U	Core Ultra 5, 125U
	Max. Frequency	5.1/4.4	4.9/4.3	4.8/3.8	4.3/3.6
	Base Frequency	2.0/1.5	1.7/1.3	1.7/1.2	1.3
	Core/Tread	16C/6P+8E	14C/4P+8E	12C/2P+8E	12C/2P+8E
	LLC	L3	L3	L3	L3
	CPU TDP	28W	28W	15W	15W
	Chipset	Intel® Chipset (SoC Integrated)			
	BIOS	AMI UEFI 256Mbit			
Memory	**Technology**	DDR5-6400 SDRAM			
	Max. Capacity	Up to 96GB			
	Channel/ Socket	Dual Channels/2 Sockets			
Graphics	**Controller**	Intel® Xe LPG+ graphics architecture		Intel® Xe LPG graphics architecture	
	Max. Frequency	2.25	2.2	1.95	1.85
	3D/HW Acceleration	Ray Tracing (Full-rate) / Execute Indirect			
	AI Features	Intel®XMX Matrix Engines (4-deep systolic)			
Display I/F	**eDP**	1 x eDP 1.4			
	HDMI	2 x HDMI 2.1			
	USB	1 x USB 4			
	Multiple Display	4 simultaneous displays: eDP/HDMI/USB			
Ethernet	**Controller**	LAN1: Intel i210; LAN2: Intel i226			
	Speed	LAN1: 1Gbps; LAN2: 2.5Gbps			
External I/O	**Ethernet**	2 x RJ-45			
	HDMI/USB-C	2/1			
	USB3.2/2.0	2/2			
	Power DC-Jack	4-pin 90D ATX connector			

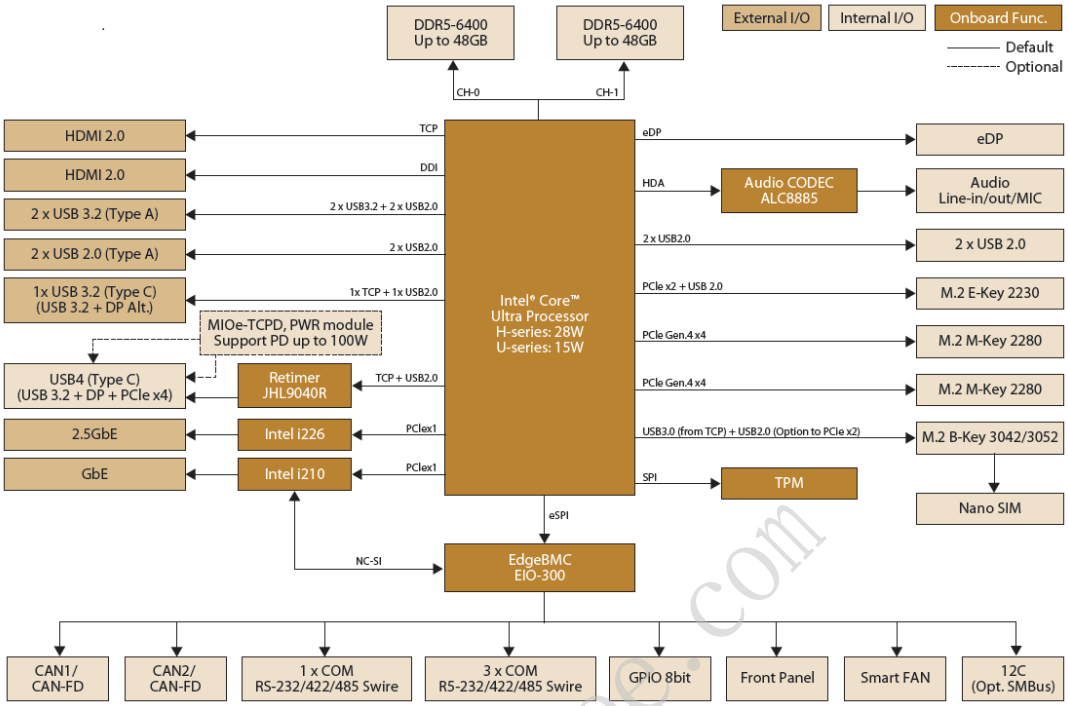
https://advantech.com

Table 1.1: Specifications

Internal I/O	**USB**	2 x USB-A 2.0, 1 x USB-C 4.0
	Serial Bus	1 x I2C/SMBus
	COM Port	1 x RS-232/422/485(8-wire) , 3 x RS-232/422/485 (4-wire)
	GPIO	8-bit general purpose input output I/O
	Audio	Realtek ALC888S, Line-in/Line-out/MIC
	Inverter	12V/5V
	CAN Bus	2 x CAN-FD
	Fan	4-wire smart fan
	Front Panel Control	Power-on, Reset, Buzzer, CaseOpen
Board Feature	**USB-C PD**	USB Type-C PD (Power Delivery) 100w*(optional MIOe-TCDP module)
	EdgeBMC OOB	LAN1: Supports EdgeBMC Out-of-Band(OOB) remote control
	Watchdog Timer	65536 level, 0~65535 sec
	TPM	TPM2.0
Expansion	**M.2 E-Key**	1 x E-Key 2230 (PCIe x2, USB2.0)
	M.2 B-Key	1 x B-Key 3042/ 3052 (PCIe x2, USB2.0) w/ Nano-SIM
	M.2 M-Key	2 x M-Key 2280 (PCIex4 Gen.4 NVMe)
Power	**Supply Voltage**	Vin: DC 12~24V +/- 10%; RTC Battery: Lithium 3V/210mAH
	Connector	ATX 2x2 pin 90D, optional DC-Jack or ATX 2x2 pin 180D*
	Power Management	AT, ATX
Environment	**Temperature**	0 ~ 60°C (32 ~ 140°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”)

https://advee.com

1.3 Block Diagram



https://advaved.com

https://advavee.com

Chapter 2

Mechanical Specifications

2.1 Introduction

The MI/O compact form factor SBC is a new-generation SBC designed with a variety of mechanical improvements. This chapter includes board and assembly instructions for the standard thermal solution.

2.2 Board Layout: Dimensions

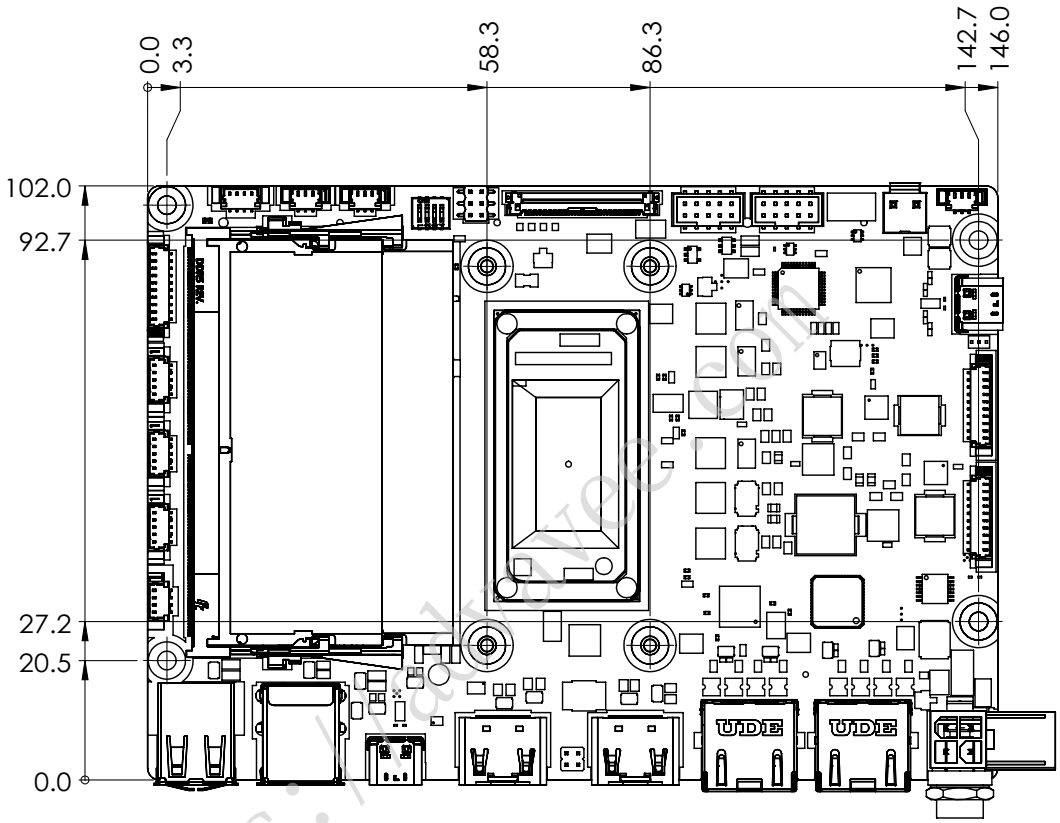


Figure 2.1 MIO-5379 Mechanical Diagram (Top Side)

https://advantech.com

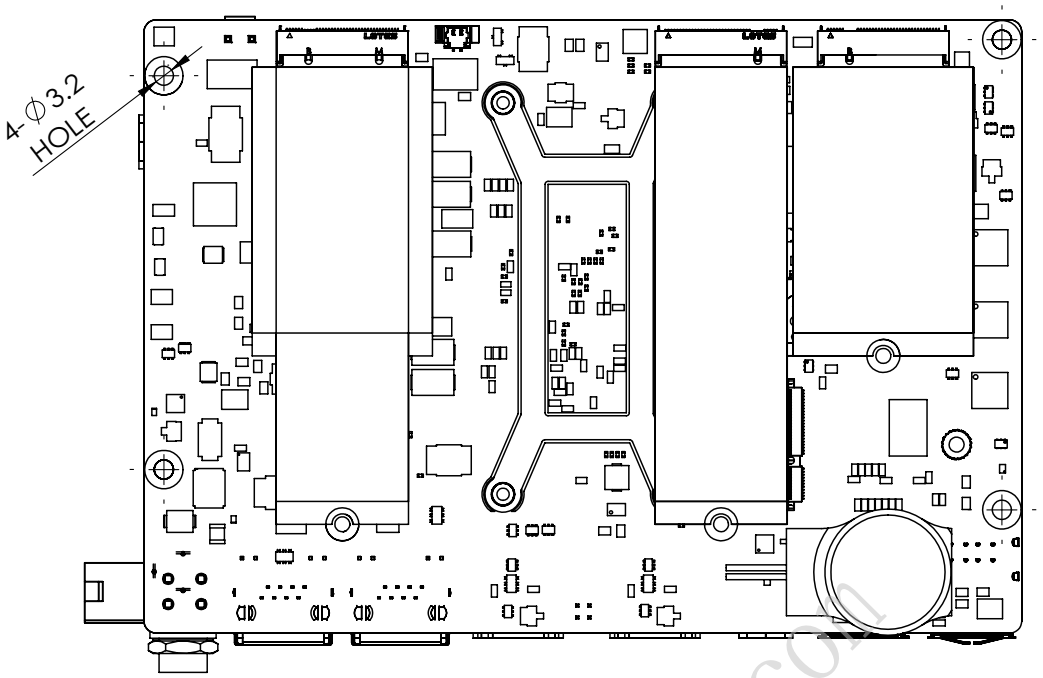


Figure 2.2 MIO-5379 Mechanical Diagram (Bottom Side)

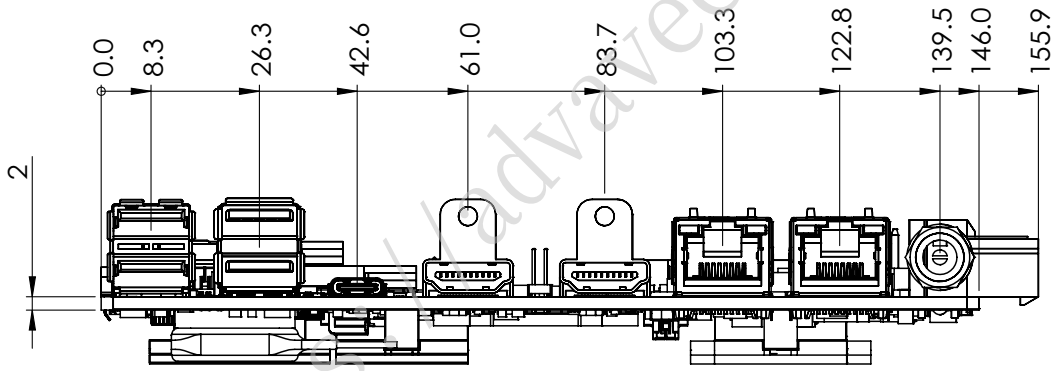


Figure 2.3 MIO-5379 Mechanical Diagram (Coastline)

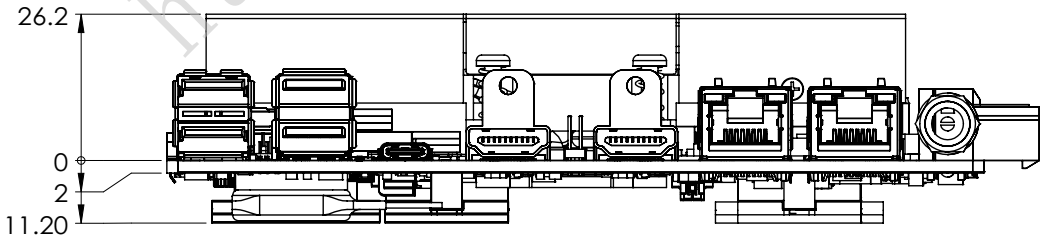


Figure 2.4 MIO-5379 Mechanical Diagram (with Cooler)

https://advavee.com

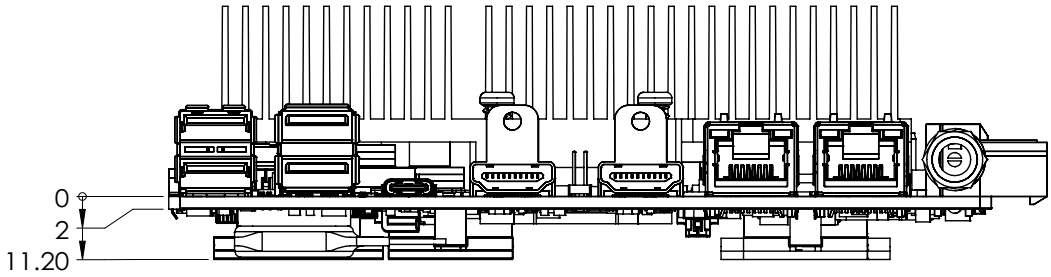


Figure 2.5 MIO-5379 Mechanical Diagram (with Heatsink)

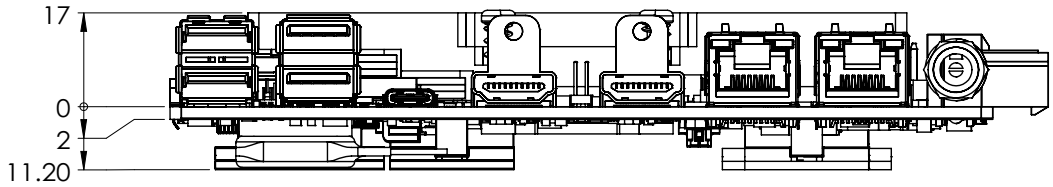


Figure 2.6 MIO-5379 Mechanical Diagram (with Heatspreader)

2.3 Quick Installation Guide

This section introduces installation of the heatsink, which contains in the white box inside the package. Please assemble it by following the diagrams below. Remember to remove the plastic piece from the thermal pad before starting.

https://advaveec.com

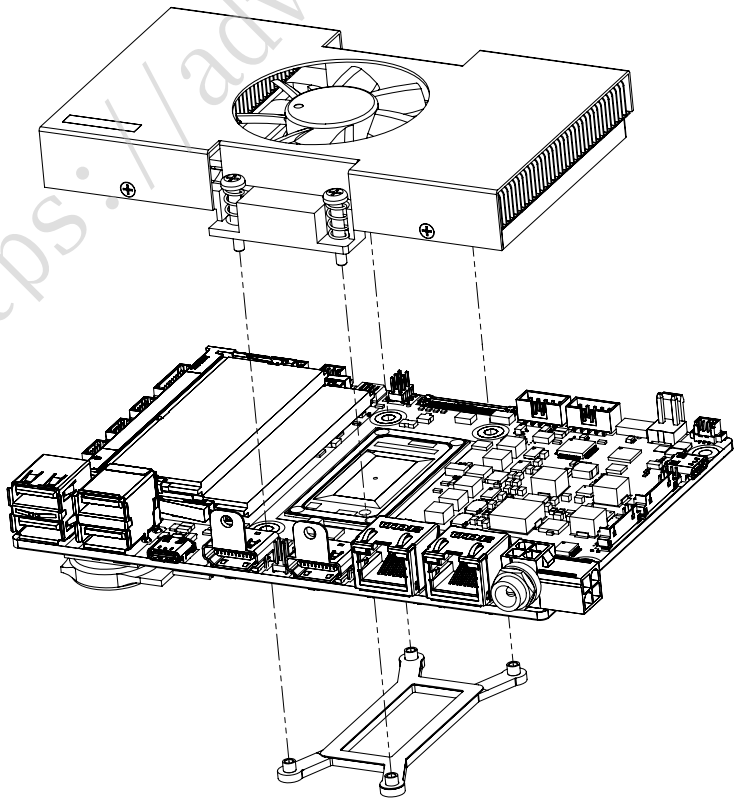


Figure 2.7 MIO-5379 Cooler Installation

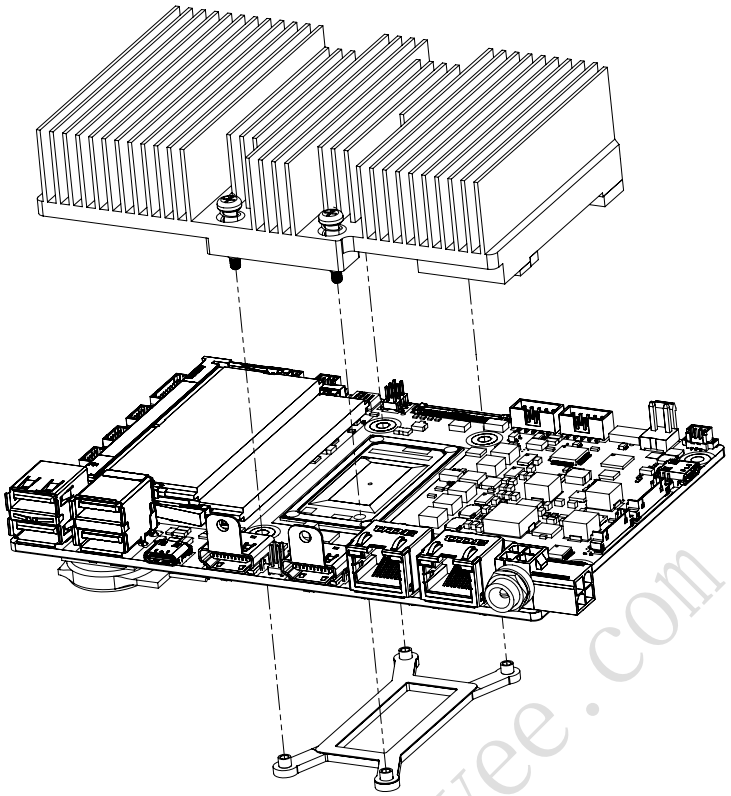


Figure 2.8 MIO-5379 Heatsink Installation

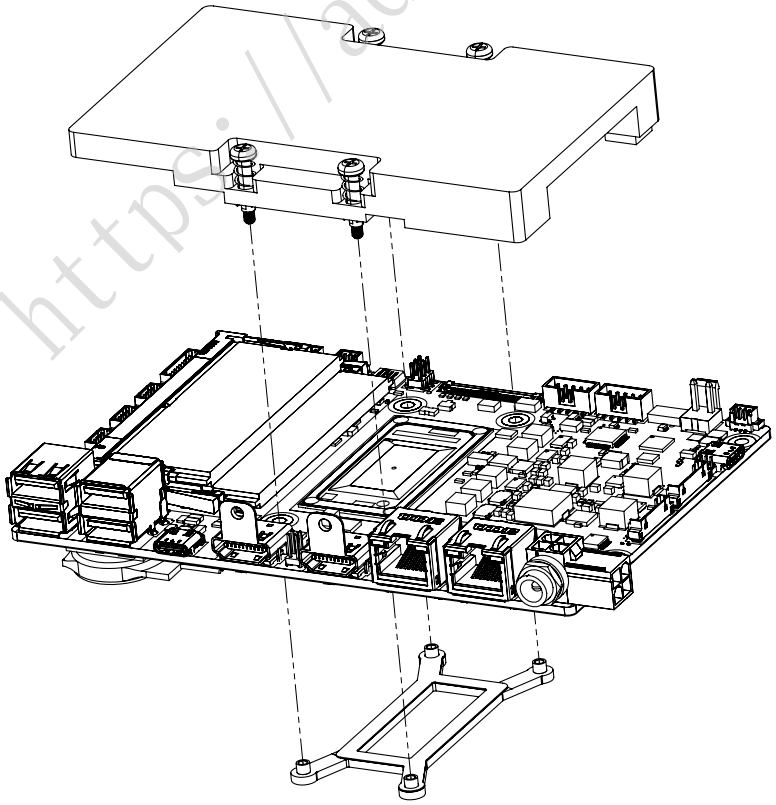


Figure 2.9 MIO-5379 Heatspreader Installation

https://advavee.com

https://advavee.com

Chapter 3

Installation

https://advavee.com

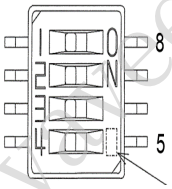
3.1 Jumpers & Switches

The MIO-5379 has a number of jumpers that allow you to configure your system to suit your application. The table below lists the functions of the various jumpers.

3.1.1 Miscellaneous Selection Jumper: SW1

Table 3.1: Miscellaneous Selection Jumper: SW1

Jumper Short	Panel Functional
1	ATX_DET (Default)
2	LOAD_BIOS_DEFAULT (Default_off)
3	GPI (no function)
4	Topswap (Default_off)
5	Topswap (On)
6	GPI (no function)
7	LOAD_BIOS_DEFAULT (On)
8	AT_DET#



https://advantech.com

3.2 Connectors

Table 3.2: Connectors		
1	DCIN1 DCIN2	DC Power Input Connector
2	LAN1	I210 RJ45 LAN Ports
3	LAN2	I226 RJ45 LAN Ports
4	HDMI1	HDMI Connector
5	HDMI2	HDMI Connector
6	TYPEC1	TypeC Port (USB3.2/DP)
7	USB3	USB2.0 Connector
8	USB1	USB3.2 Connector
9	CANBUS2	CAN Bus Port 1
10	CANBUS1	CAN Bus Port 0
11	COM4	COM Port Internal Connector 4
12	COM3	COM Port Internal Connector 3
13	COM2	COM Port Internal Connector 2
14	COM1	COM Port Internal Connector 1
15	FAN1	Smart FAN
16	I2C_1	I2C/ SMBus Internal Connector
17	SW1	Miscellaneous Selection Jumper
18	AUDIO1	Audio Internal Connector
19	USB2	USB2.0 Internal Connector
20	I2C_PD	I2C PD Connector
21	TYPEC3	TypeC Port (TBT4)
22	GPIO1	GPIO Internal Connector
23	CN1	Front Panel Internal Connector
24	J1_VCC1	eDP VDD Jumper
25	eDP1	eDP Connector
26	CN4	PD input power Connector
27	M2_1	M.2 Key-E Connector
28	SIM1	NANO SIM
29	M2_B1	M.2 Key-B Connector
30	M2_2	M.2 Key-M Connector
31	M2_3	M.2 Key-M Connector
32	BAT1	RTC battery Connector

https://advantech.com

3.3 Locating Connectors

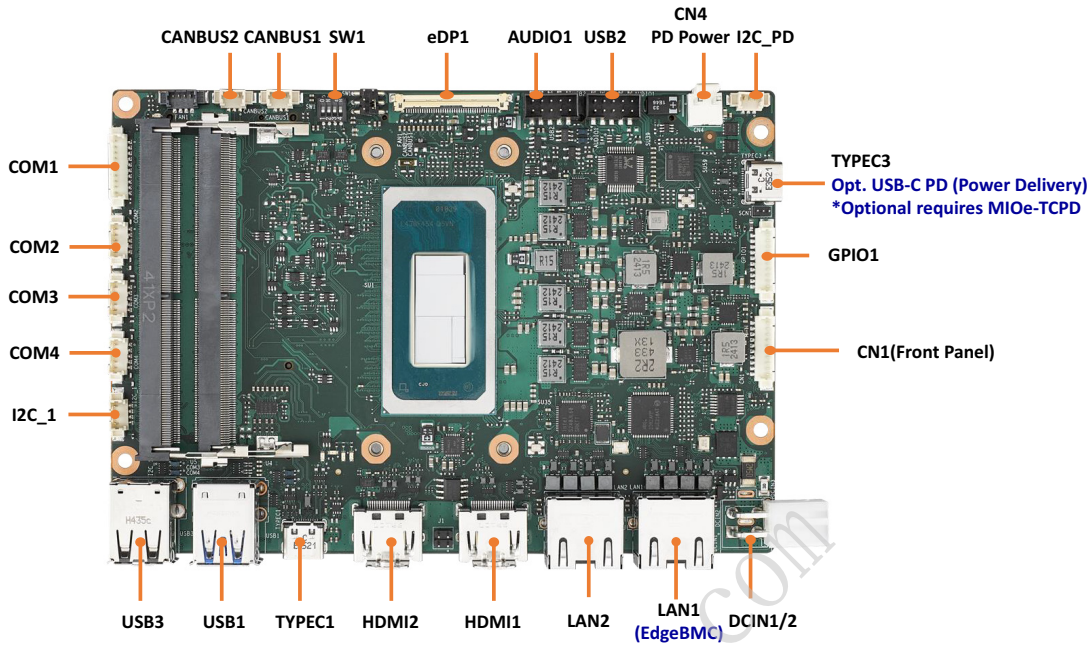


Figure 3.1 Front view

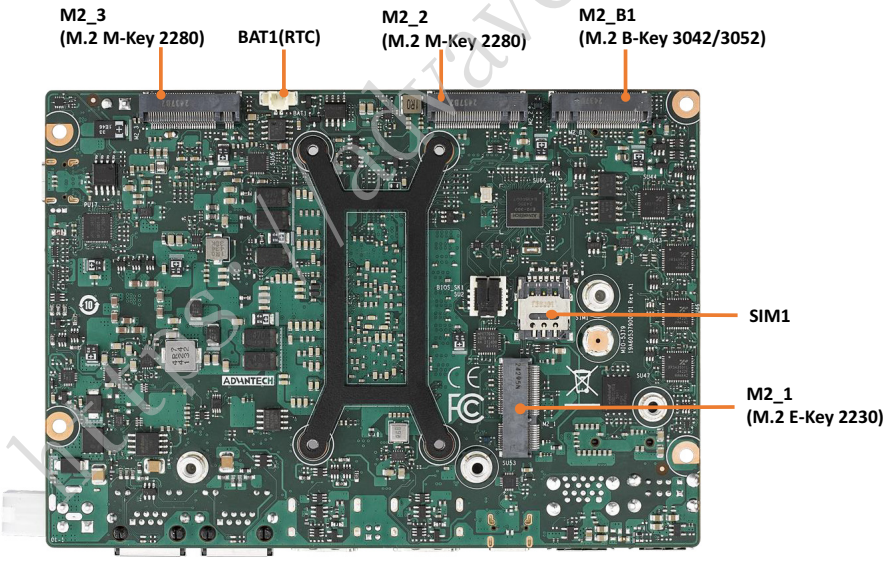
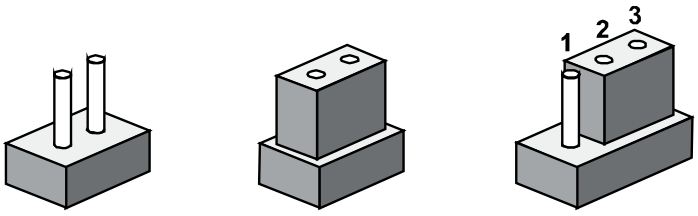


Figure 3.2 Bottom view

https://advantech.com

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:



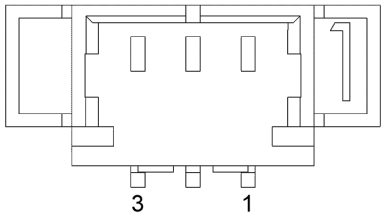
open **closed** **closed 2-3**

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.

3.5 Connectors (for Internal)

Table 3.3: CANBus Internal Connector: CANBUS1

Pin	Signal Pin Definition
1	CAN0_D+
2	CAN0_D-
3	GND



https://advaves.com

Table 3.4: CANBus Internal Connector: CANBUS2	
Pin	**Signal Pin Definition**
1	CAN2_D+
2	CAN2_D-
3	GND

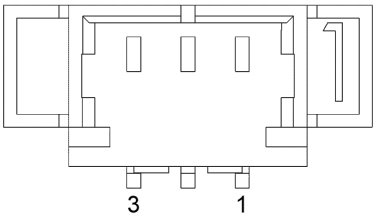


Table 3.5: I2C Internal Connector: I2C_1	
Pin	**Signal Pin Definition**
1	GND
2	EC_I2C0_z_DAT
3	EC_I2C0_z_CLK
4	+V3.3_I2CCONN

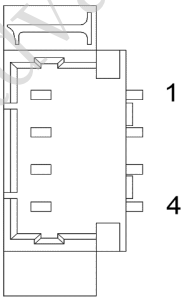
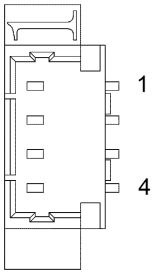


Table 3.6: Smart FAN Internal Connector: FAN1	
Pin	**Signal Pin Definition**
1	GND
2	+V12
3	FAN_SPEED
4	FAN_V5_PWM



https://advavee.com

Table 3.7: USB2.0 Dual-Ports Internal Connector: USB2	
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

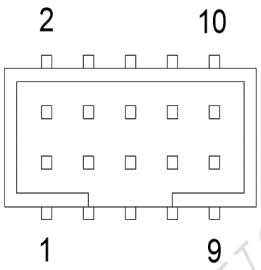
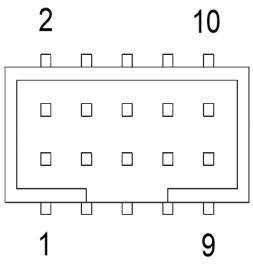
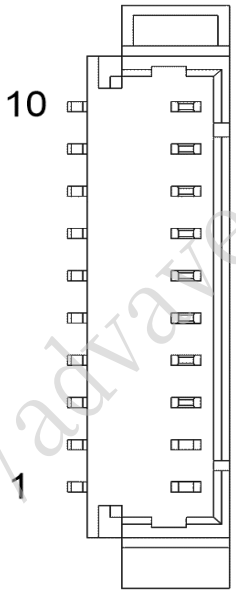


Table 3.8: Audio Internal Connector: AUDIO1	
Pin	**Signal Pin Definition**
1	LOUTR
2	LINR
3	GND_AUD
4	GND_AUD
5	LOUTL
6	LINL
7	GND_AUD
8	FRONT_JD
9	MIC1R
10	MIC1L



https://advavee.com

Table 3.9: COM-Port Internal Connector 1: COM1	
Pin	**Signal Pin Definition**
1	NA
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



https://advavee.com

Table 3.10: COM-Port Internal Connector 2: COM2	
Pin	**Signal Pin Definition**
1	COM2_TXD
2	COM2_RTS#
3	COM2_RXD
9	COM2_CTS#
10	GND

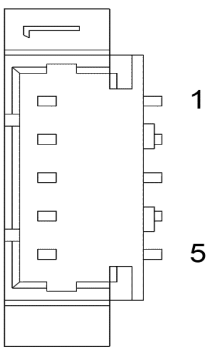


Table 3.11: COM-Port Internal Connector 3: COM3	
Pin	**Signal Pin Definition**
1	COM3_TXD
2	COM3_RTS#
3	COM3_RXD
4	COM3_CTS#
5	GND

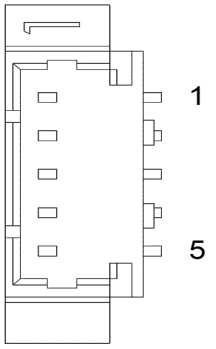
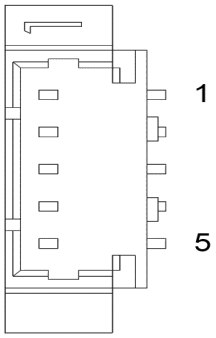
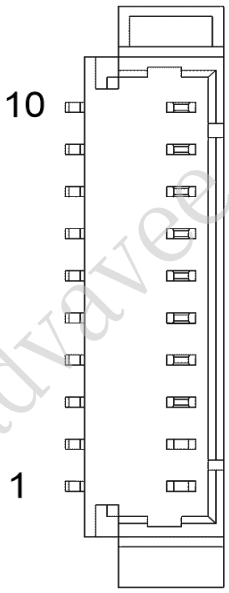


Table 3.12: COM-Port Internal Connector 4: COM4	
Pin	**Signal Pin Definition**
1	COM4_TXD
2	COM4_RTS#
3	COM4_RXD
4	COM4_CTS#
5	GND



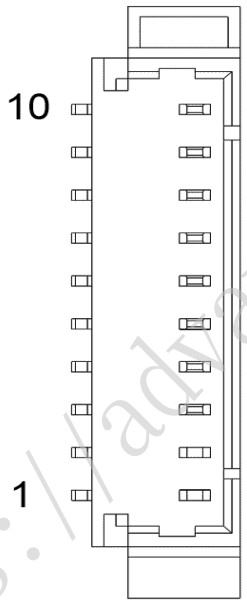
https://advavee.com

Table 3.13: Front Panel Internal Connector: CN1	
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



https://advavee.com

Table 3.14: GPIO Internal Connector: GPIO1	
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



https://advavee.com

Table 3.15: RTC Battery Connector: BAT1	
Pin	**Signal Pin Definition**
1	+VBAT
2	GND

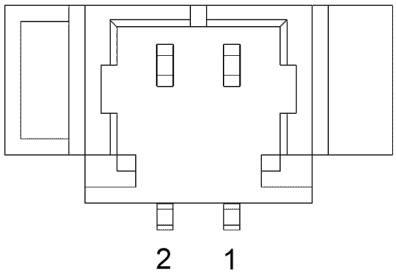


Table 3.16: eDP VDD Jumper: J1_VCC1	
Pin	**Signal Pin Definition**
1-3	3.3V (Default)
3-5	5V
3-4	12V

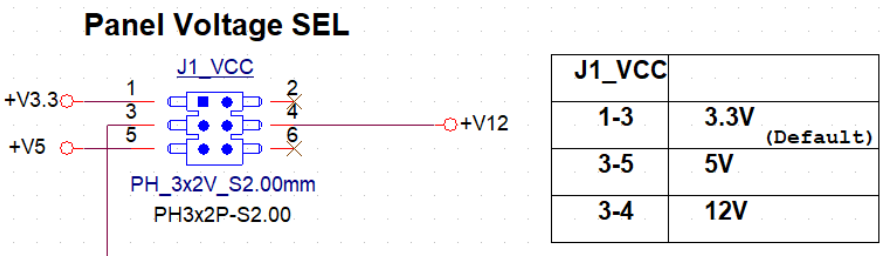
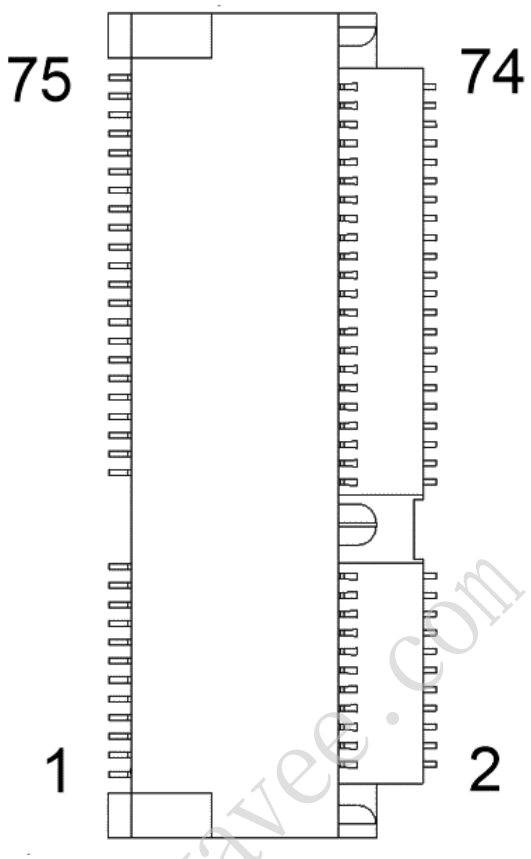


Table 3.17: M.2 Key-E Connector: M2_1	
Pin	**Signal Pin Definition**
1	GND
2	+V3.3SB_M.2_E
3	USB6_z_P+
4	+V3.3SB_M.2_E
5	USB6_z_P-
6	NC
7	GND
8	NC
9	NC
10	NC
11	NC
12	NC
13	NC
14	NC
15	NC
16	NC
17	NC
18	GND
19	NC
20	NC
21	NC
22	UART2_RXD
23	NC
32	UART2_TXD
33	GND
34	NC
35	PCIE_M2_z_TX3+
36	NC
37	PCIE_M2_z_TX3-
38	CLINK_RST#

https://advavee.com

Table 3.17: M.2 Key-E Connector: M2_1	
39	GND
40	CLINK_DATA
41	PCIE_M2_RX3+
42	CLINK_CLK
43	PCIE_M2_RX3-
44	CNV_PA_BLANKING
45	GND
46	NC
47	CLK0_M2E_z_PCIE+
48	NC
49	CLK0_M2E_z_PCIE-
50	SUSCLK_z_EKEY
51	GND
52	PLTRST_BUFFER#
53	PCIE_a_CLKREQ0#
54	BT_DISABLE#
55	PCIE_WAKE#_3.3
56	WIFI_DISABLE#
57	GND
58	NC
59	PCIE_M2_z_TX4+
60	NC
61	PCIE_M2_z_TX4-
62	NC
63	GND
64	NC
65	PCIE_M2_RX4+
66	NC
67	PCIE_M2_RX4-
68	PCIE_a_CLKREQ1#
69	GND
70	NC
71	CLK1_M2E_z_PCIE+
72	+V3.3SB_M.2_E
73	CLK1_M2E_z_PCIE-
74	+V3.3SB_M.2_E
75	GND
H1	NC
H2	NC
H3	GND
H4	GND

https://advavee.com



https://advvee.com

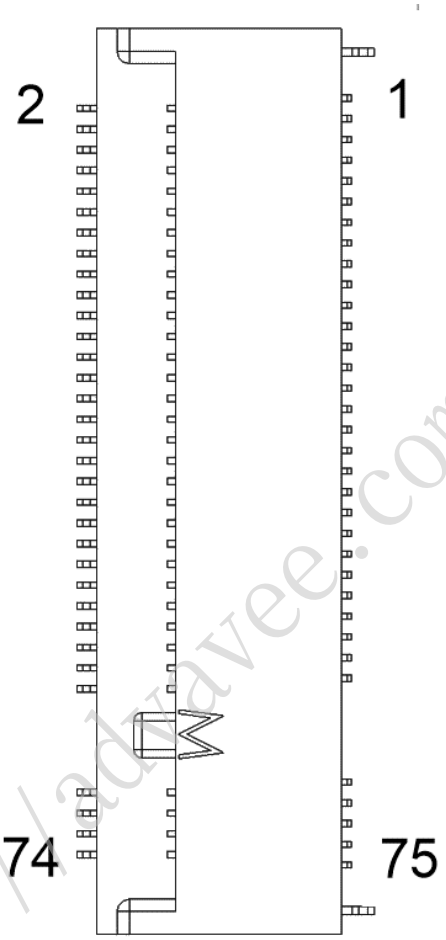
Table 3.18: M.2 Key-M Connector: M2_2

Pin	Signal Pin Definition
1	GND
2	+V3.3_M.2_1
3	GND
4	+V3.3_M.2_1
5	PCIE3_KEY-M_RX3-
6	NC
7	PCIE3_KEY-M_RX3+
8	M.2_PLN#
9	GND
10	NC
11	PCIE3_KEY-M_a_TX3-
12	+V3.3_M.2_1
13	PCIE3_KEY-M_a_TX3+
14	+V3.3_M.2_1
15	GND
16	+V3.3_M.2_1
17	PCIE3_KEY-M_RX2-
18	+V3.3_M.2_1
19	PCIE3_KEY-M_RX2+
20	NC
21	GND

Table 3.18: M.2 Key-M Connector: M2_2	
22	NC
23	PCIE3_KEY-M_a_TX2-
24	NC
25	PCIE3_KEY-M_a_TX2+
26	NC
27	GND
28	NC
29	PCIE3_KEY-M_RX1-
30	NC
31	PCIE3_KEY-M_RX1+
32	GND
33	GND
34	USB8_z_P+
35	PCIE3_KEY-M_a_TX1-
36	USB8_z_P-
37	PCIE3_KEY-M_a_TX1+
38	GND
39	GND
40	NC
41	PCIE3_KEY-M_RX0-
42	NC
43	PCIE3_KEY-M_RX0+
44	NC
45	GND
46	NC
47	PCIE3_KEY-M_a_TX0-
48	NC
49	PCIE3_KEY-M_a_TX0+
50	PLTRST_M2M1_BUFFER#
51	GND
52	CLK0_M2MB_a_PCIE_REQ#
53	CK0_100M_a_MKEY_N
54	M2M1_PCIE_WAKE#
55	CK0_100M_a_MKEY_P
56	NC
57	GND
58	NC
67	NC
68	PCH_SUSCLK_R_M2M1
69	NC
70	+V3.3_M.2_1
71	GND
72	+V3.3_M.2_1
73	GND
74	+V3.3_M.2_1
75	GND
H1	NC

http://advavee.com

Table 3.18: M.2 Key-M Connector: M2_2	
H2	NC
H3	NC
H4	NC



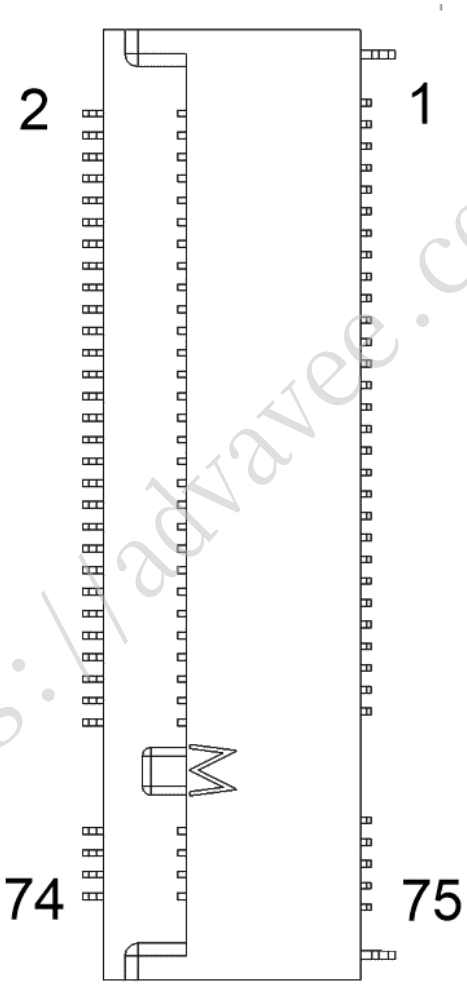
https://advavee.com

Table 3.19: M.2 Key-M Connector: M2_3	
Pin	**Signal Pin Definition**
1	GND
2	+V3.3_M.2_2
3	GND
4	+V3.3_M.2_2
5	PCIE4_KEY-M_RX3-
6	NC
7	PCIE4_KEY-M_RX3+
8	M2M1_PLN#
9	GND
10	NC
11	PCIE4_KEY-M_a_TX3-
12	+V3.3_M.2_2
13	PCIE4_KEY-M_a_TX3+
14	+V3.3_M.2_2
15	GND

Table 3.19: M.2 Key-M Connector: M2_3	
16	+V3.3_M.2_2
17	PCIE4_KEY-M_RX2-
18	+V3.3_M.2_2
19	PCIE4_KEY-M_RX2+
20	NC
21	GND
22	NC
23	PCIE4_KEY-M_a_TX2-
24	NC
25	PCIE4_KEY-M_a_TX2+
26	NC
27	GND
28	NC
29	PCIE4_KEY-M_RX1-
30	NC
31	PCIE4_KEY-M_RX1+
32	NC
33	GND
34	NC
35	PCIE4_KEY-M_a_TX1-
36	NC
37	PCIE4_KEY-M_a_TX1+
38	NC
39	GND
40	NC
41	PCIE4_KEY-M_RX0-
42	NC
43	PCIE4_KEY-M_RX0+
44	NC
45	GND
46	NC
47	PCIE4_KEY-M_a_TX0-
48	NC
49	PCIE4_KEY-M_a_TX0+
50	PLTRST_M2M2_BUFFER#
51	GND
52	CLK1_M2MB_a_PCIE_REQ#
53	CK1_100M_a_MKEY_N
54	M2M2_PCIE_WAKE#
55	CK1_100M_a_MKEY_P
56	NC
57	GND
58	NC
67	NC
68	PCH_SUSCLK_R_M2M2
69	NC
70	+V3.3_M.2_2

https://advavee.com

Table 3.19: M.2 Key-M Connector: M2_3	
71	GND
72	+V3.3_M.2_2
73	GND
74	+V3.3_M.2_2
75	GND
H1	NC
H2	NC
H3	NC
H4	NC



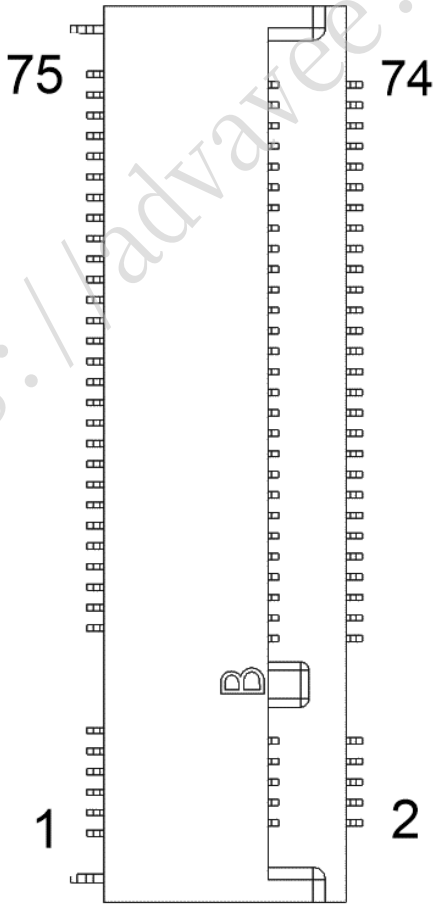
https://advavee.com

Table 3.20: M.2 Key-B Connector: M2_B1	
Pin	**Signal Pin Definition**
1	M2B1_CFG3
2	+V3.3A_M.2_B
3	GND
4	+V3.3A_M.2_B
5	GND
6	M2B1_FULL_CARD_OFF#
7	USB_M2B1_P
8	M2B1_W_DISABLE1#

Table 3.20: M.2 Key-B Connector: M2_B1	
9	USB_M2B1_N
10	CAM1_SYNCOUT
11	GND
20	M2B1_PCIE_DIS
21	M2B1_CFG0
22	M2B1_ANT_CFG
23	M2B1_WAKE_ON_WWAN#
24	M2B1_ANT_TUNER
25	M2B1_DPR
26	M2B1_W_DISABLE2#
27	GND
28	NC
29	M2B1_PCIE_RX1-
30	M2B1_UIM_RESET
31	M2B1_PCIE_RX1+
32	M2B1_UIM_CLK
33	GND
34	M2B1_UIM_DATA
35	M2B1_PCIE_TX1-
36	M2B1_UIM_PWR
37	M2B1_PCIE_TX1+
38	NC
39	GND
40	NC
41	M2B1_PCIE_RX-
42	NC
43	M2B1_PCIE_RX+
44	NC
45	GND
46	NC
47	M2B1_PCIE_TX-
48	NC
49	M2B1_PCIE_TX+
50	M2B1_a_PERST#
51	GND
52	M2B1_a_CLKREQ#
53	CLK100M_a_M2B1-
54	M2B1_PCIEWAKE#
55	CLK100M_a_M2B1+
56	NC
57	GND
58	NC
59	NC
60	NC
61	NC
62	NC
63	NC

https://advavee.com

Table 3.20: M.2 Key-B Connector: M2_B1	
64	NC
65	NC
66	NC
67	M2B1_a_RESET#
68	M2B1_SUSCLK
69	M2_DET
70	+V3.3A_M.2_B
71	GND
72	+V3.3A_M.2_B
73	GND
74	+V3.3A_M.2_B
75	M2B1_CFG2
H1	NC
H2	NC
H3	GND
H4	GND



https://advavee.com

Table 3.21: I2C PD Connector: I2C_PD	
Pin	**Signal Pin Definition**
1	EE_+VDCIN_SCLK
2	EE_+VDCIN_SDATA
3	EC_GPIOE5

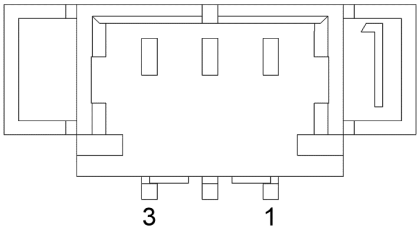
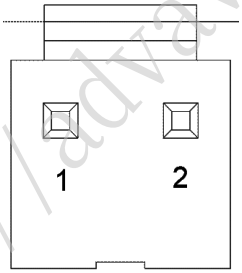


Table 3.22: PD input power Connector: CN4	
Pin	**Signal Pin Definition**
1	+V_CHGR_VIN
2	GND



https://advavee.com

https://advavee.com

https://advavee.com

Chapter 4

AMI BIOS Setup

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-5379 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.

https://advavee.com

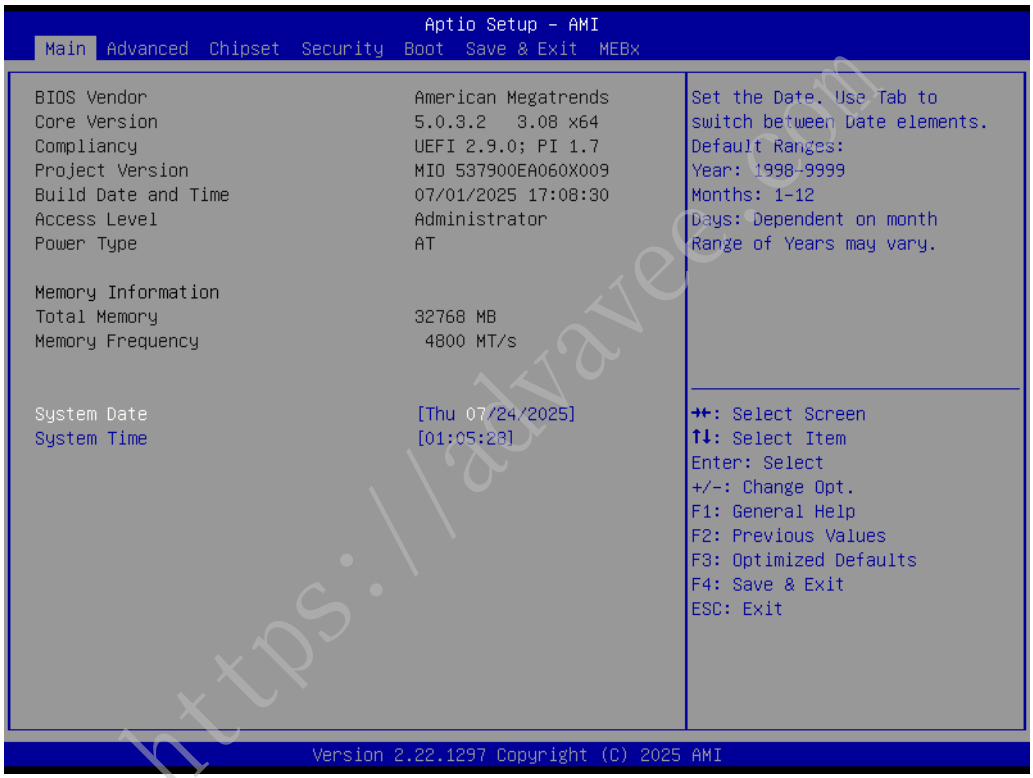
4.1 Entering Setup

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.



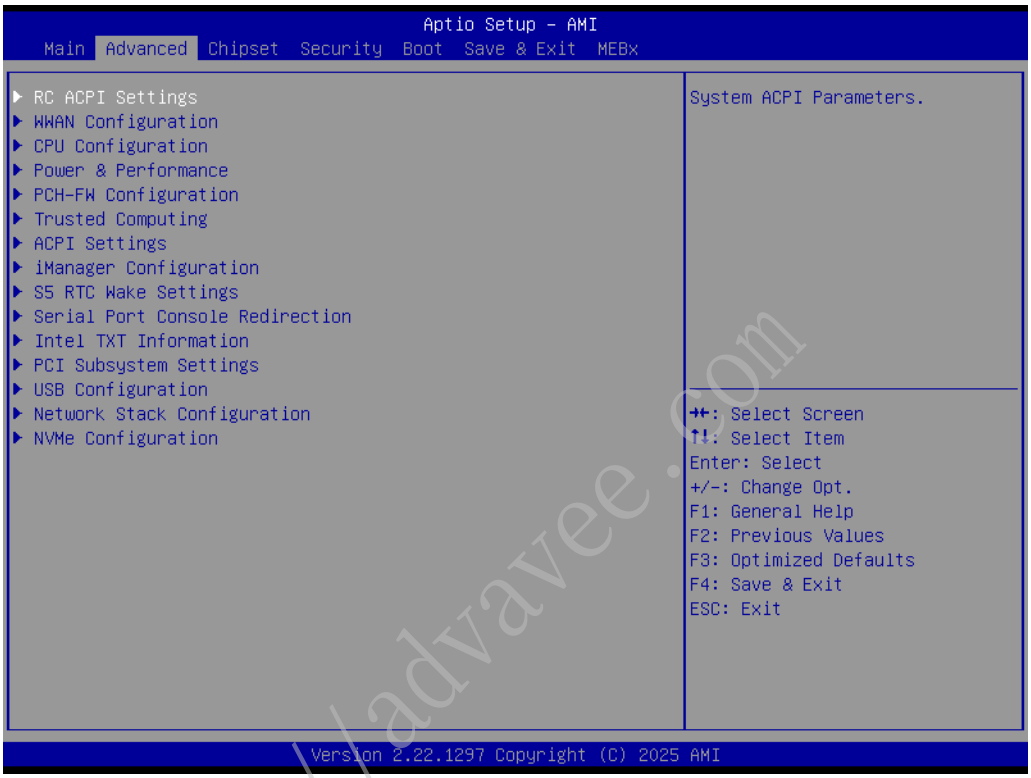
The Main BIOS setup screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured; options in blue can. The right frame displays the key legend.

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.

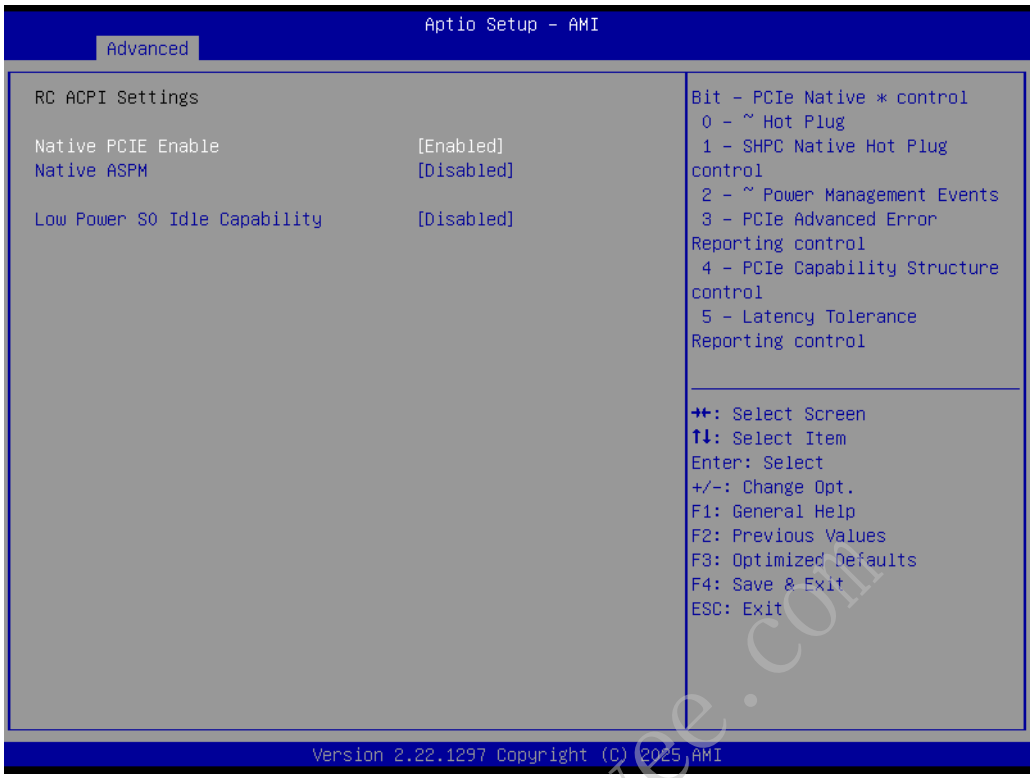
4.1.2 Advanced BIOS Features Setup

Select the Advanced tab from the MIO-5379 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.



https://advavee.com

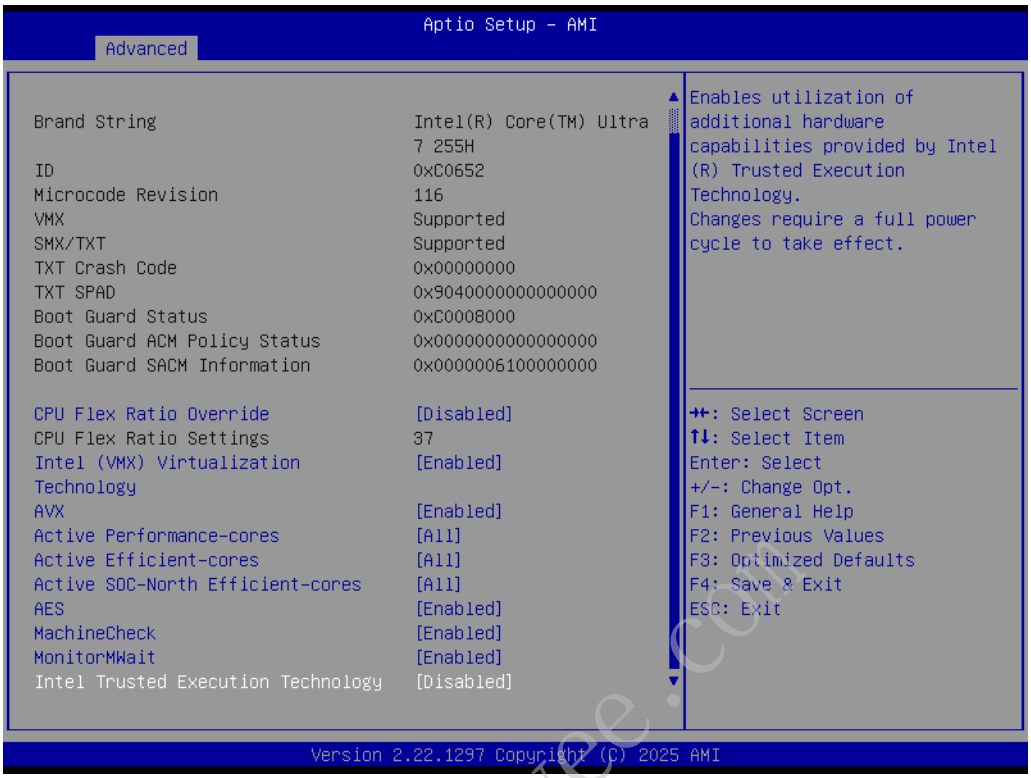
4.1.2.1 RC ACPI Settings



- **PTID Support**
  If Enabled loads the PTID Table.
- **Native PCIE Enable**
  Enable/Disable PCIE Native Control reported in the ACPI table.
- **Native ASPM**
  Choose if ASPM feature is controlled by OS or BIOS.
- **BDAT ACPI Table Support**
  If Enabled supports BDAT ACPI Table.
- **Low Power S0 Idle Capability**
  Enable/Disable ACPI Low Power S0 Idle Capability under OS.

https://advavee.com

4.1.2.2 CPU Configuration

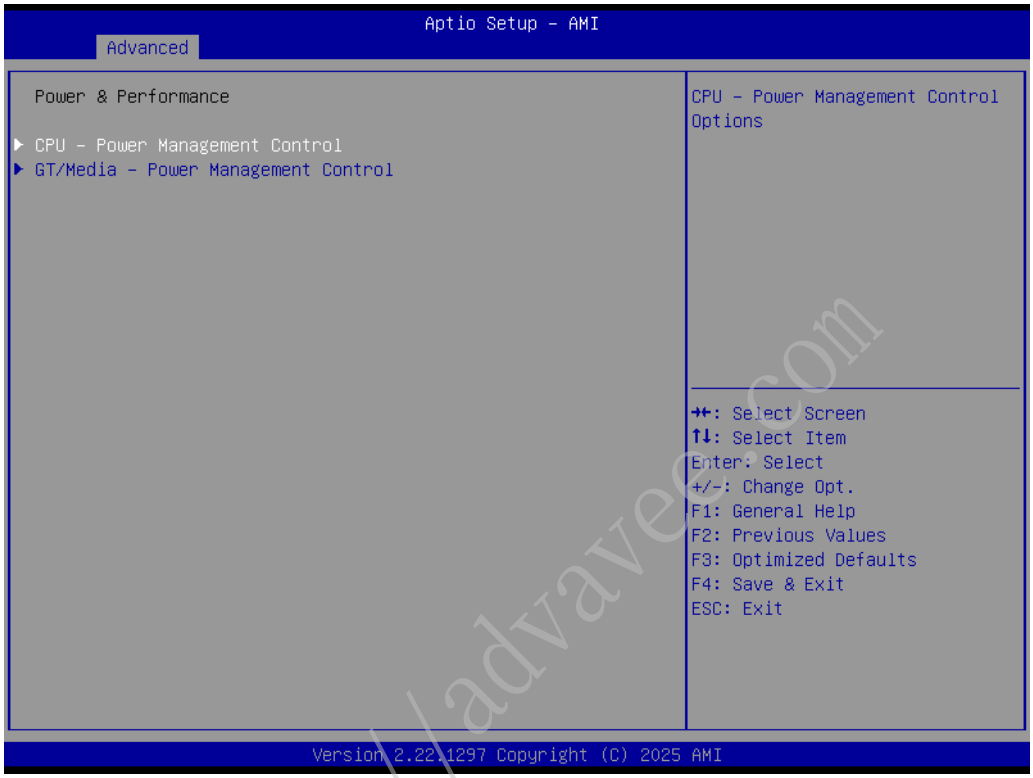


- **C6DRAM**
  Enable/Disable moving of dram contents to PRM memory when CPU is in C6 state.
- **CPU Flex Ratio Override**
  Enable/Disable CPU Flex Ratio Programming.
- **Hardware Prefetcher**
  Enable/Disable the hardware prefetcher feature.
- **Adjacent Cache Line Prefetch**
  Enable or Disable the adjacent cache line prefetch feature.
- **Intel (VMX) Virtualization Technology**
  When Enabled, a VMM can utilize the additional hardware capability provided by Vanderpool Technology.
- **AVX**
  Enable/Disable the AVX 2/3 Instructions.
- **Active Performance-cores**
  Number of P-cores to enable in each processor package.
- **Active Efficient-cores**
  Number of E-cores to enable in each processor package.
- **Hyper-Threading**
  Enable/Disable Hyper-Threading Technology.
- **AES**
  Enable/Disable AES (Advanced Encryption Standard).
- **MachineCheck**
  Enable/Disable Machine Check.
- **MonitorMWait**
  Enable/Disable MonitorMWait.

https://advavee.com

- **Intel Trusted Execution Technology**
  Enables utilization of additional hardware capability provided by Intel® Trusted Execution Technology.
- **Total Memory Encryption**
  Configure Total Memory Encryption (TME) to protect DRAM data from physical attacks.

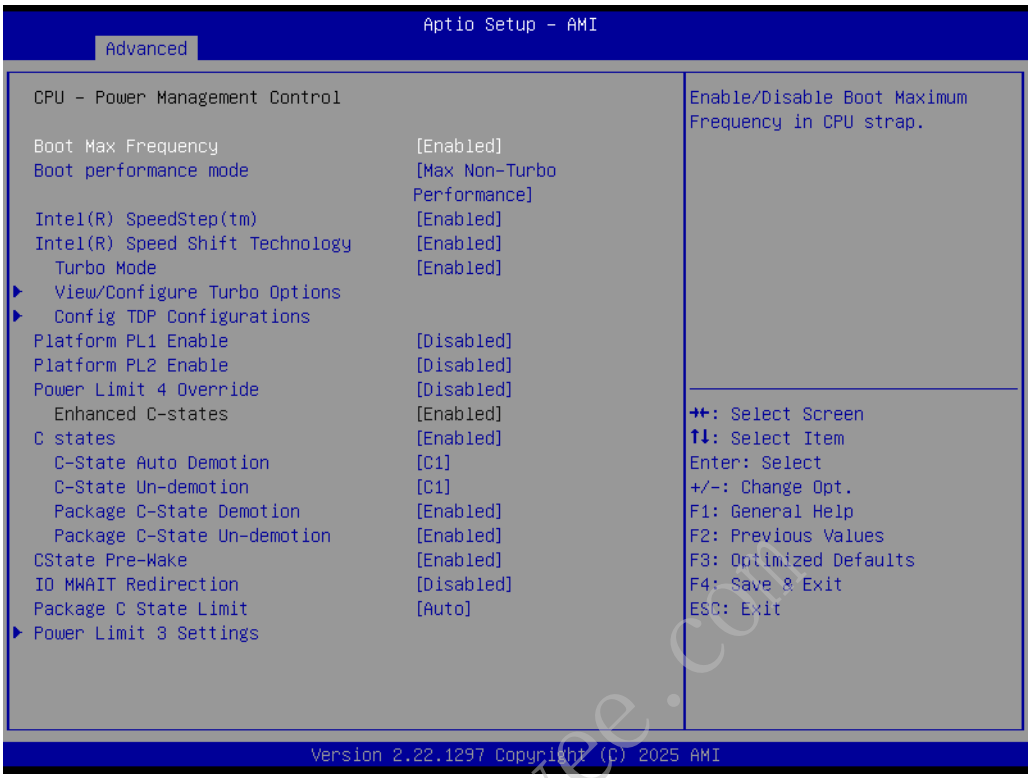
4.1.2.3 Power & Performance



- **CPU – Power Management Control**
  CPU – Power Management Control Options.
- **GT – Power Management Control**
  GT – Power Management Control Options.

https://advavee.com

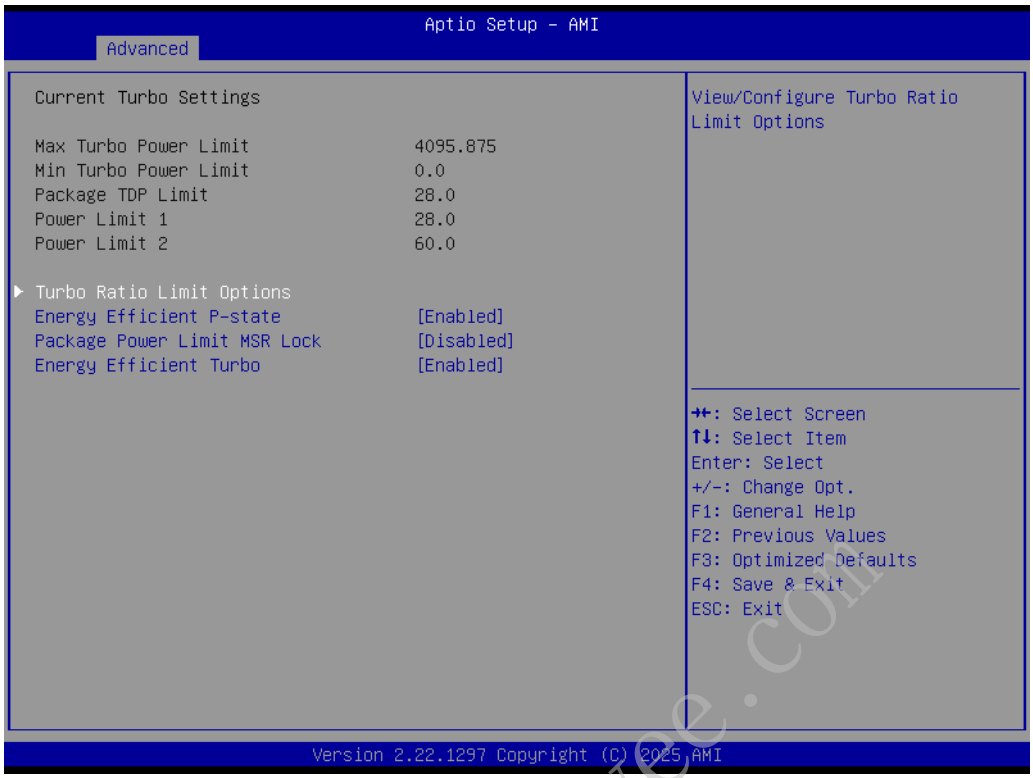
4.1.2.3.1 CPU - Power Management Control



- **Boot performance mode**
  Select the performance state that the BIOS will set before OS handoff.
- **Intel® SpeedStep™**
  Allows more than two frequency ranges to be supported.
- **Intel® Speed Shift Technology**
  Enable/Disable Intel® Speed Shift Technology support.
- **HDC Control**
  Enable/Disable Intel HDC.
- **Turbo Mode**
  Enable/Disable processor turbo mode.
- **View/Configure Turbo Options**
  View and Configure Turbo Options.
- **Config TDP Configuration**
  Config TDP Configurations.
- **Platform PL1 Enable**
  Enable/Disable Platform Power Limit 1 programming.
- **Platform PL2 Enable**
  Enable/Disable Platform Power Limit 1 programming.
- **Power Limit 4 Override**
  Enable/Disable Power Limit 4 override.
- **C states**
  Enable/Disable CPU Power Management.
- **PowerLimit 3 Settings**
  Power Limit 3 Settings.

https://advavee.com

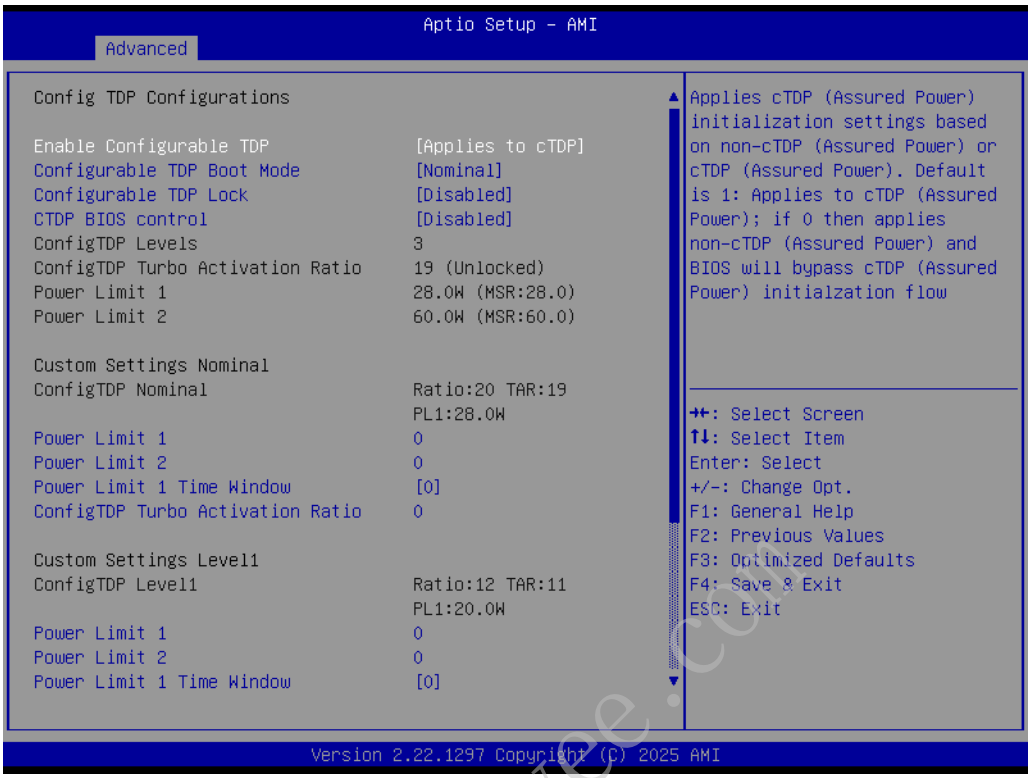
View/Configure Turbo Options



- **Turbo Ratio Limit Option**
  View/Configure Turbo Ratio Limit Options.
- **Energy Efficient P-state**
  Enable/Disable Energy Efficient P-state feature.
- **Package Power Limit MSR Lock**
  Enable/Disable locking of Package Power Limit settings.
- **Energy Efficient Turbo**
  Enable/Disable Energy Efficient Turbo feature.

https://advavee.com

Config TDP Configurations



- **Enable Configurable TDP**
  Applies TDP initialization settings based on non-cTDP or cTDP.
- **Configurable TDP Boot Mode**
  Configurable TDP Mode as Nominal/Up/Down/Deactivate TDP selection.
- **Configurable TDP Lock**
  Configurable TDP Mode Lock sets the Lock bit.
- **CTDP BIOS control**
  Enables CTDP control via runtime ACPI BIOS method.

https://advavee.com

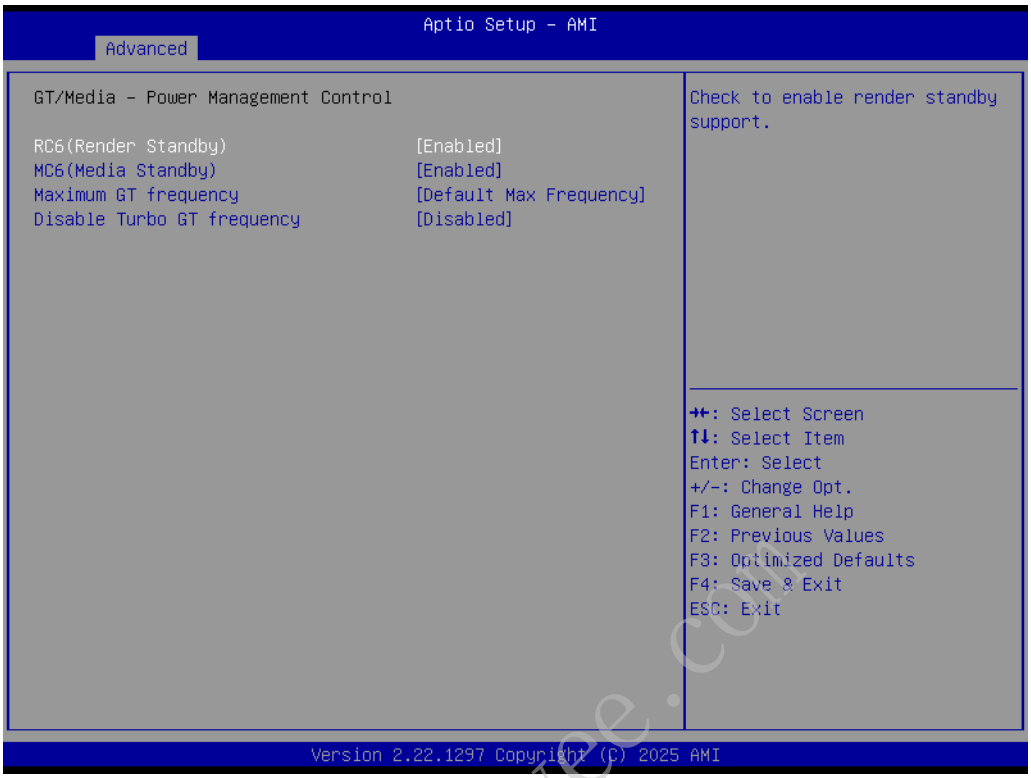
Power Limit 3 Settings



– **Power Limit 3 Override**
Enable/Disable Power Limit 3 override.

https://advavee.com

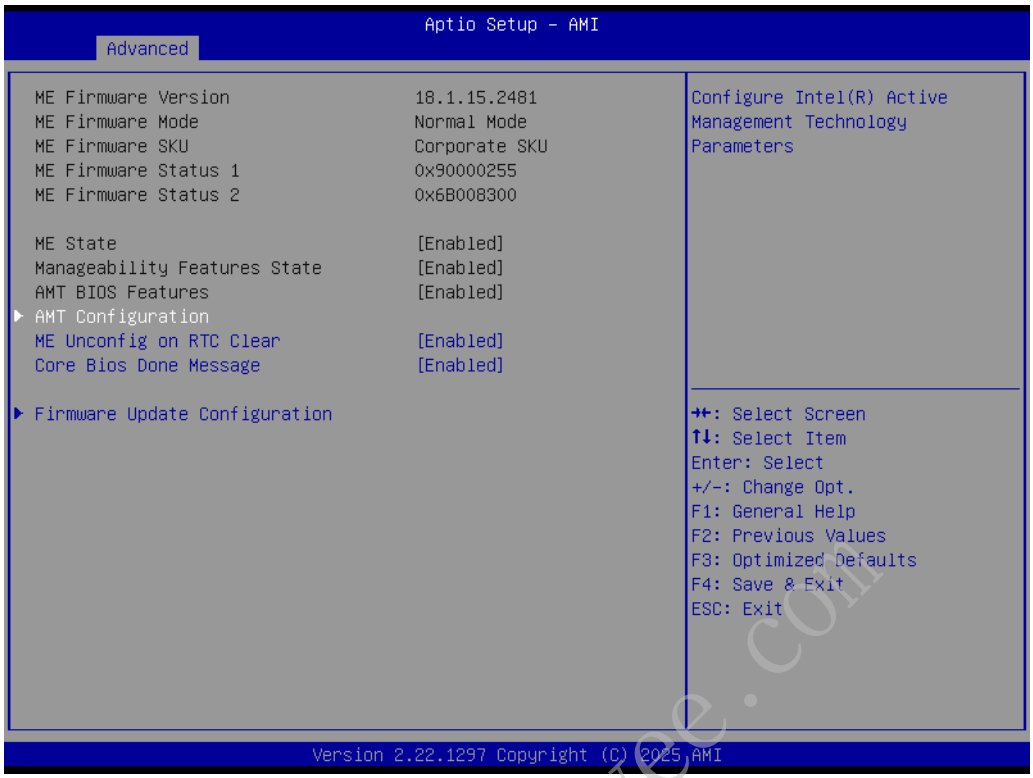
4.1.2.3.2 GT - Power Management Control



- **RC6(Render Standby)**
  Check to enable render standby support.
- **Maximum GT frequency**
  Maximum GT frequency limited by user.
- **Disable Turbo GT frequency**
  Enabled/Disabled Turbo GT frequency.

https://advavee.com

4.1.2.4 PCH-FW Configuration



- **ME State**
  When Disabled ME will be put ME into Temporarily Disabled Mode.
- **Manageability Feature State**
  When Disabled, ME will not be unconfigured on RTC Clear.
- **AMT BIOS Features**
  When Disabled, ME will not be unconfigured on RTC Clear.
- **AMT Configuration**
  Configure Intel® Active Management Technology Parameters.
- **ME Unconfig on RTC Clear**
  When Disabled, ME will not be unconfigured on RTC Clear.
- **Core BIOS Done Message**
  Enable/Disable Core BIOS Done message sent to ME.
- **Firmware Update Configuration**
  Configure Management Engine Technology Parameters.

https://advavee.com

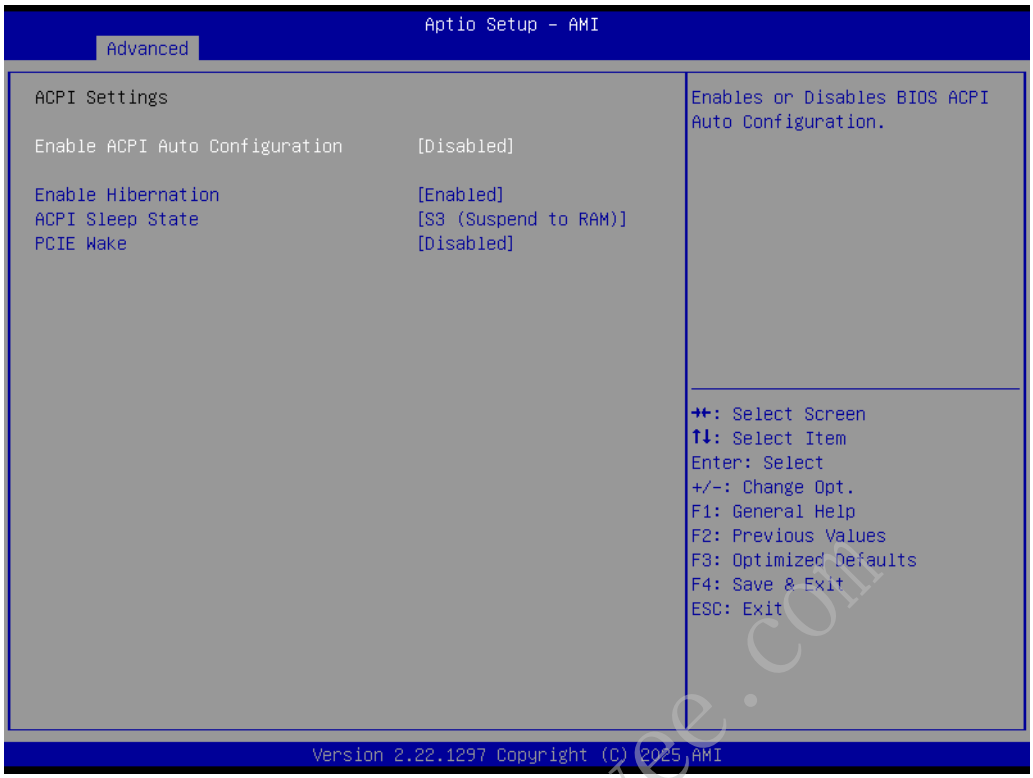
4.1.2.4.1 AMT Configuration



- **USB Provision of AMT**
  Enable/Disable of AMT BIOS Provisioning.
- **MAC Pass Through**
  Enable/Disable MAC Pass Through function.
- **Active Remote Assistance Process**
  Trigger CIRA boot.
- **Unconfigure ME**
  Unconfigure ME with resetting MEBx password to default on next boot.
- **ASF Configuration**
  Configure Alert Standard Format parameters.
- **Secure Erase Configuration**
  Secure Erase configuration menu.
- **One Click Recovery(OCR) Configuration**
  Configuration setting for One Click Recovery.
- **Remote Platform Erase Configuration**
  Remote Platform Erase configuration menu.

https://advavee.com

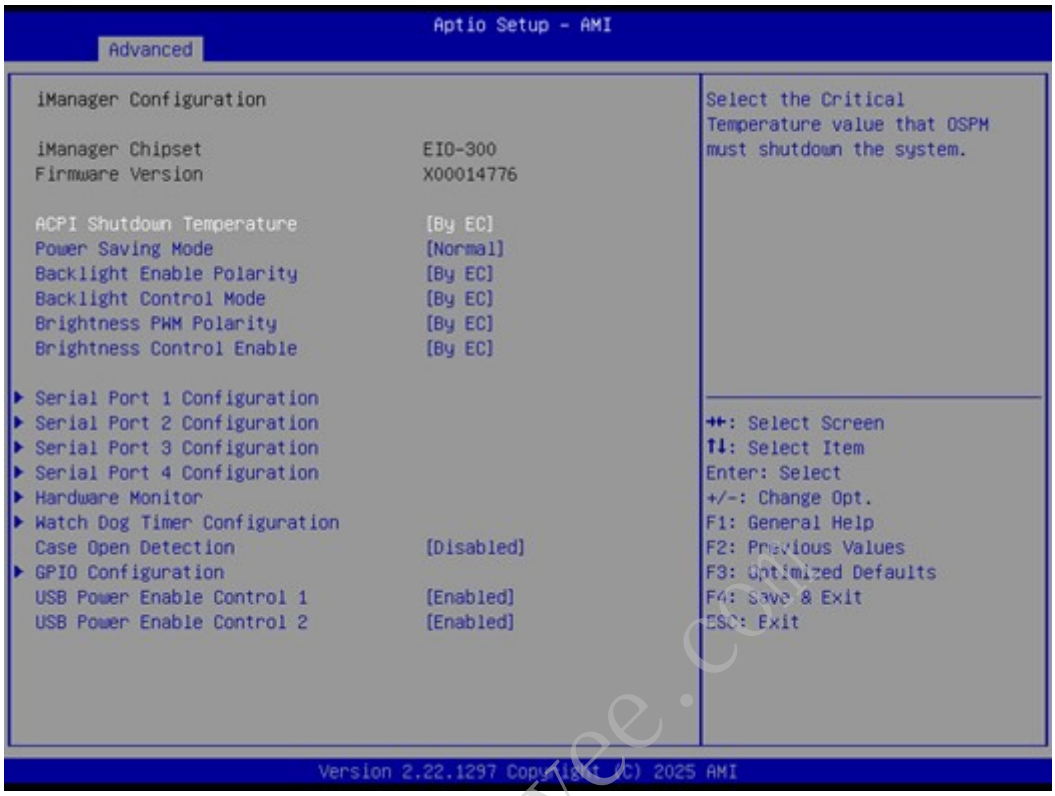
4.1.2.5 ACPI Settings



- **Enable ACPI Auto Configuration**
  Enable or disable BIOS ACPI auto configuration.
- **Enable Hibernation**
  Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.
- **ACPI Sleep State**
  Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
- **PCIE Wake**
  Enable or disable PCIE to wake the system from S5.

https://advavee.com

4.1.2.6 iManager Configuration

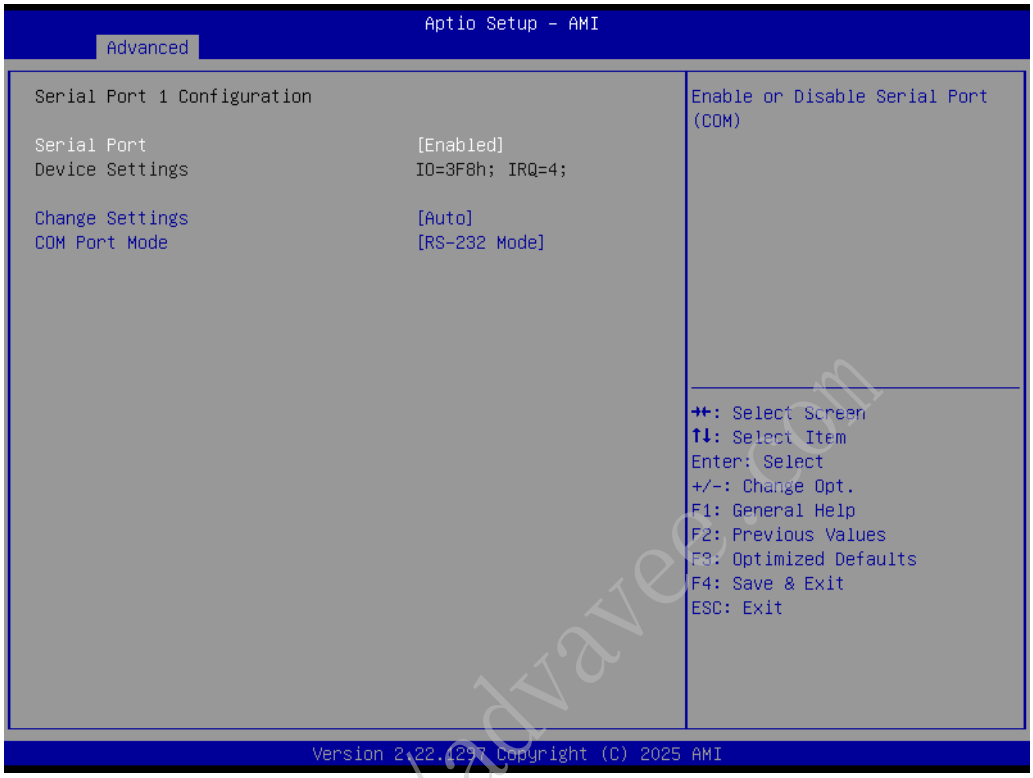


- **CPU Shutdown Temperature**
  Enable/Disable CPU Shutdown Temperature.
- **Power Saving Mode**
  Enable/Disable power saving mode.
- **Backlight Enable Polarity**
  Switch Backlight Enable Polarity for Native or Invert.
- **Backlight Control Mode**
  Switch Backlight Control to PWM or DC mode.
- **Brightness PWM Polarity**
  Backlight Control Brightness PWM Polarity for Native or Invert.
- **Brightness Control Enable**
  Choose to control LVDS brightness value by EC or User override during POST stage.
- **Serial Port 1 Configuration**
  Set Parameters of Serial Port 1.
- **Serial Port 2 Configuration**
  Set Parameters of Serial Port 2.
- **Serial Port 3 Configuration**
  Set Parameters of Serial Port 3.
- **Serial Port 4 Configuration**
  Set Parameters of Serial Port 4.
- **Hardware Monitor**
  Monitor hardware Status.
- **Watch Dog Timer Configuration**
  Watch Dog Timer Configuration Page.
- **Case Open Detection**
  Enable or Disable Case Open Detect Function.

Intron Advantech

- **GPIO Configuration**
  GPIO Configuration Settings.
- **ACPI Report Method Configuration**
  Select ACPI Reporting Method for EC Devices.

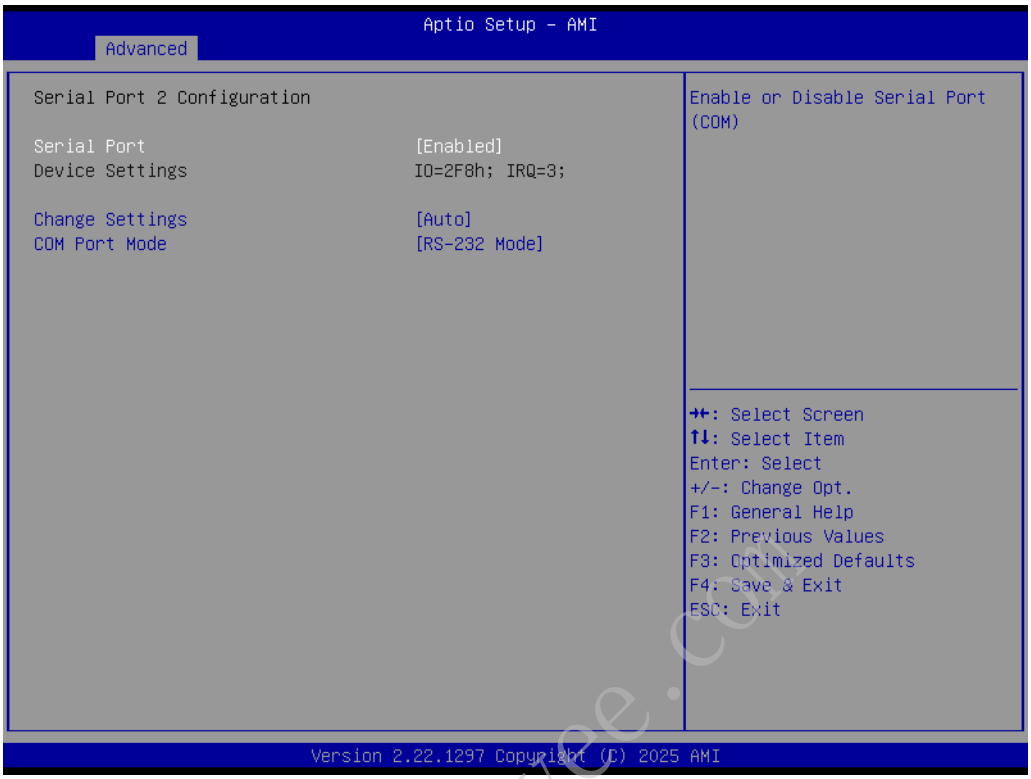
4.1.2.6.1 Serial Port 1 Configuration



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

https://advavee.com

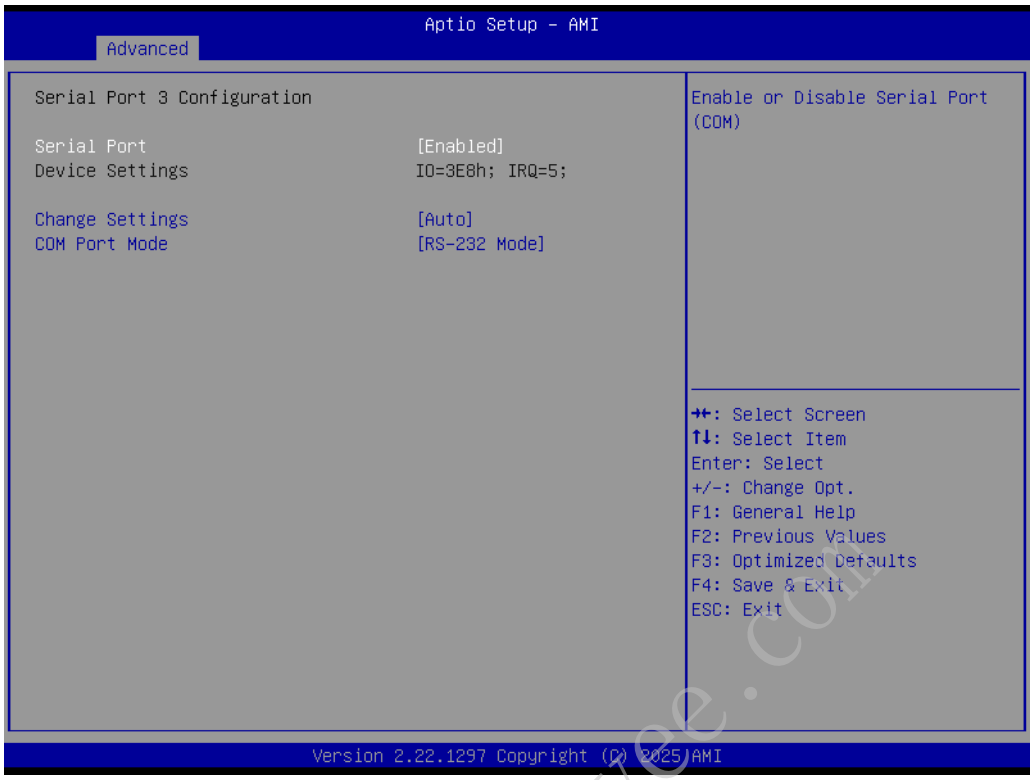
4.1.2.6.2 Serial Port 2 Configuration



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

https://advavee.com

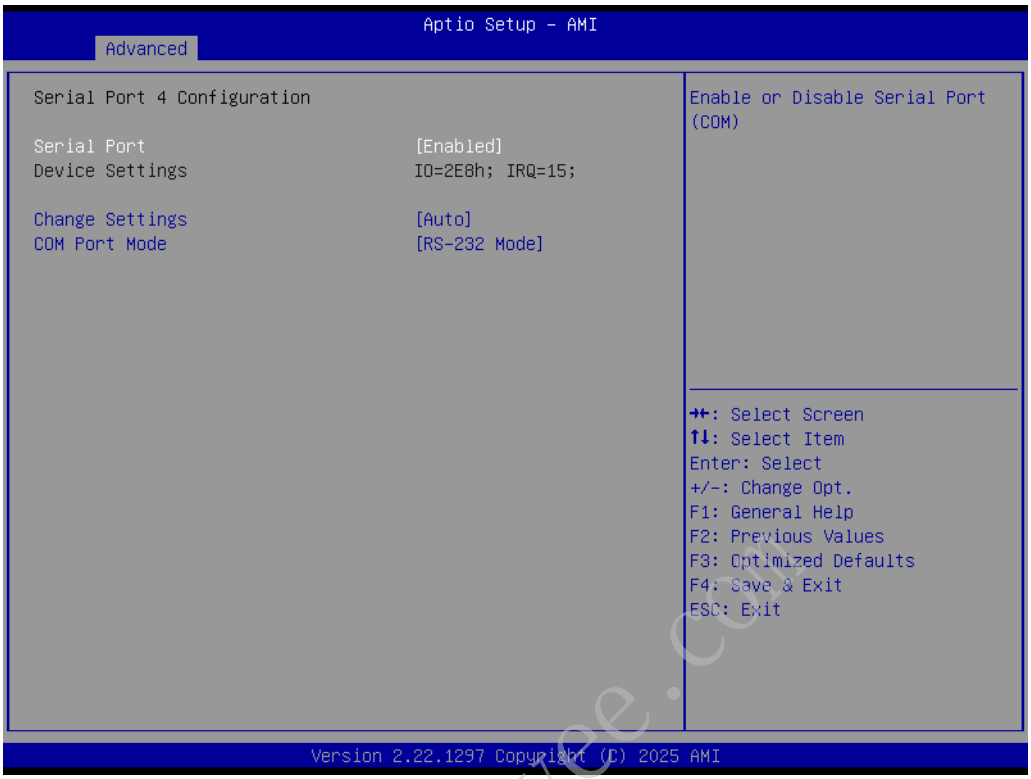
4.1.2.6.3 Serial Port 3 Configuration



- **Serial Port**
  Enable or Disable Serial Port (COM).
- **Change Settings**
  Select an optimal settings for Super IO device.

https://advavee.com

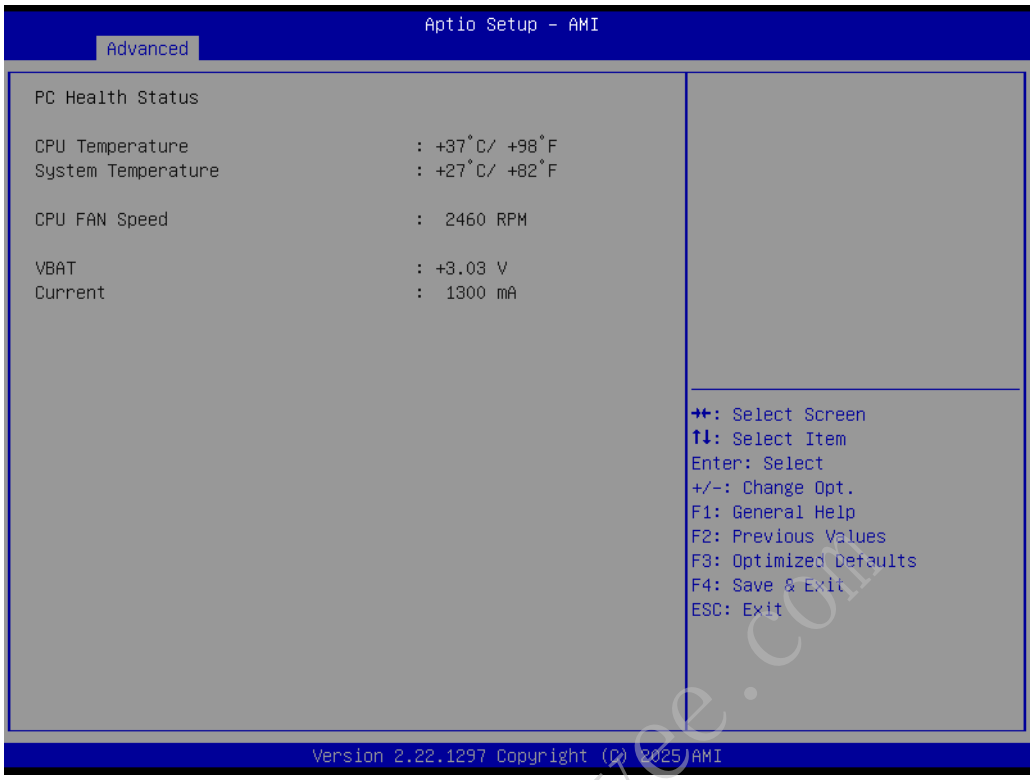
4.1.2.6.4 Serial Port 4 Configuration



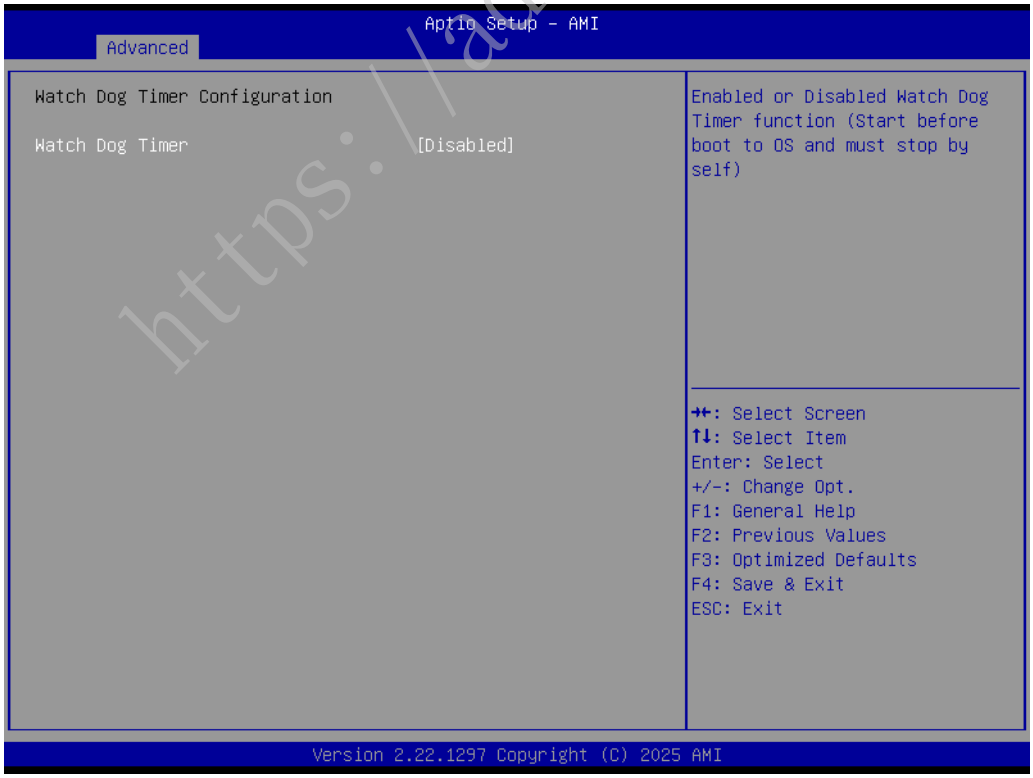
- **Serial Port**
  Enable or Disable Serial Port (COM).
- **Change Settings**
  Select an optimal settings for Super IO device.

https://advavee.com

4.1.2.6.5 Hardware Monitor



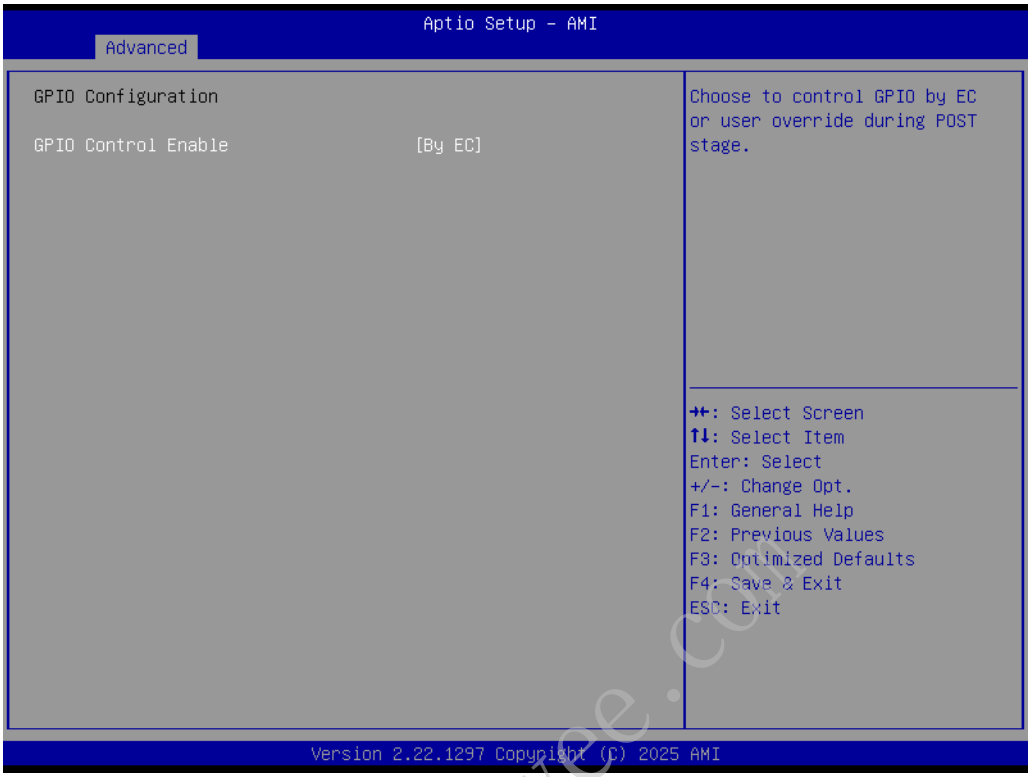
4.1.2.6.6 Watch Dog Timer Configuration



- **Watch Dog Timer**
  Enable or Disable Watch Dog Timer Function.

https://advavee.com

4.1.2.6.7 GPIO Configuration



- **GPIO Control Enable**
  Choose to control GPIO by EC or user override during POST stage.
- **GPIO0/1/2/3/4/5/6/7**
  Configure GPIO0/1/2/3/4/5/6/7.

https://advavee.com

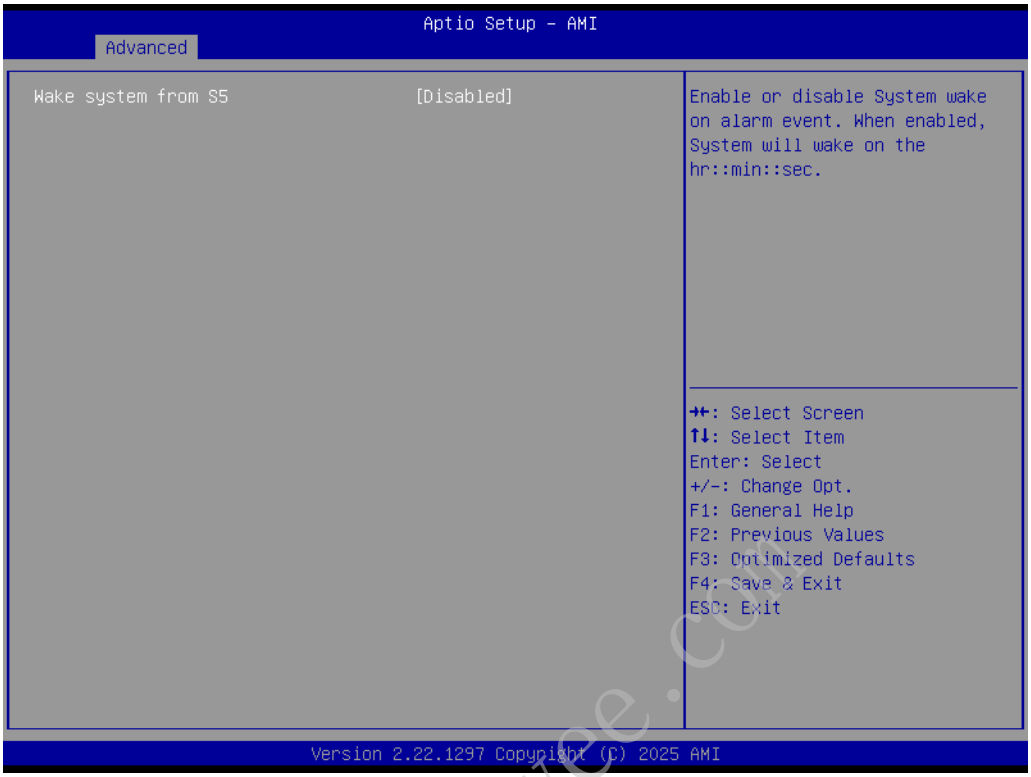
4.1.2.7 Trusted Computing



- **Security Device Support**
  Enable or disable BIOS support for security device.
- **SHA256 PCR Bank**
  Enable or Disable SHA256 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 PPI 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.

https://advavee.com

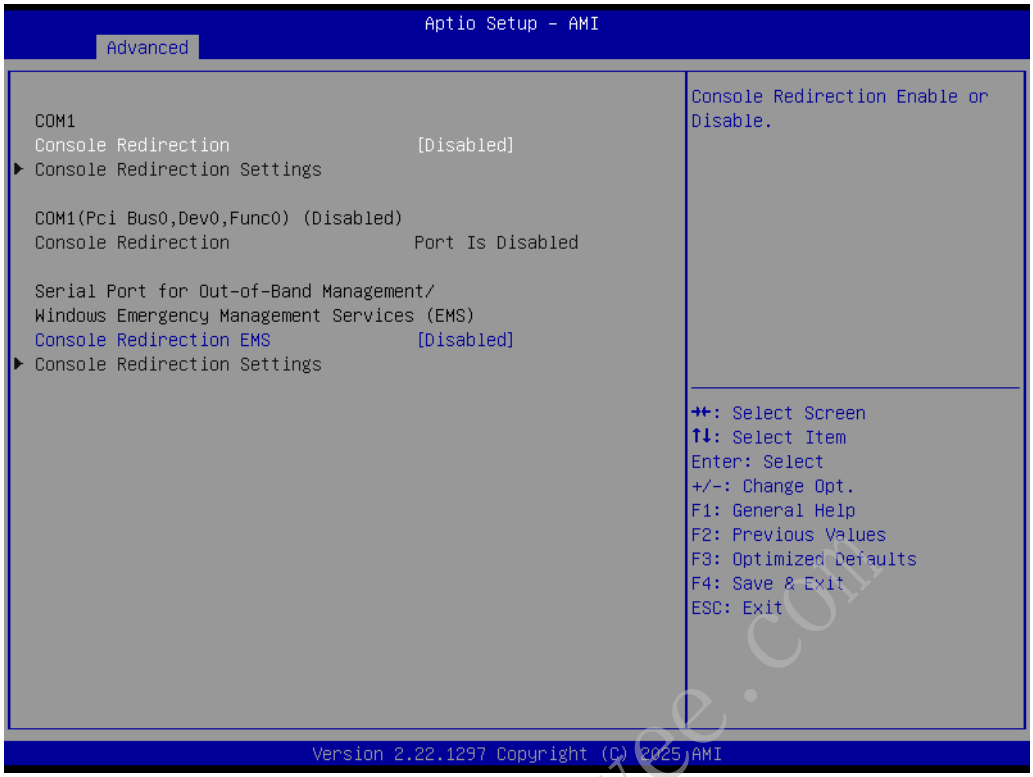
4.1.2.8 S5 RTC Wake Settings



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

https://advavee.com

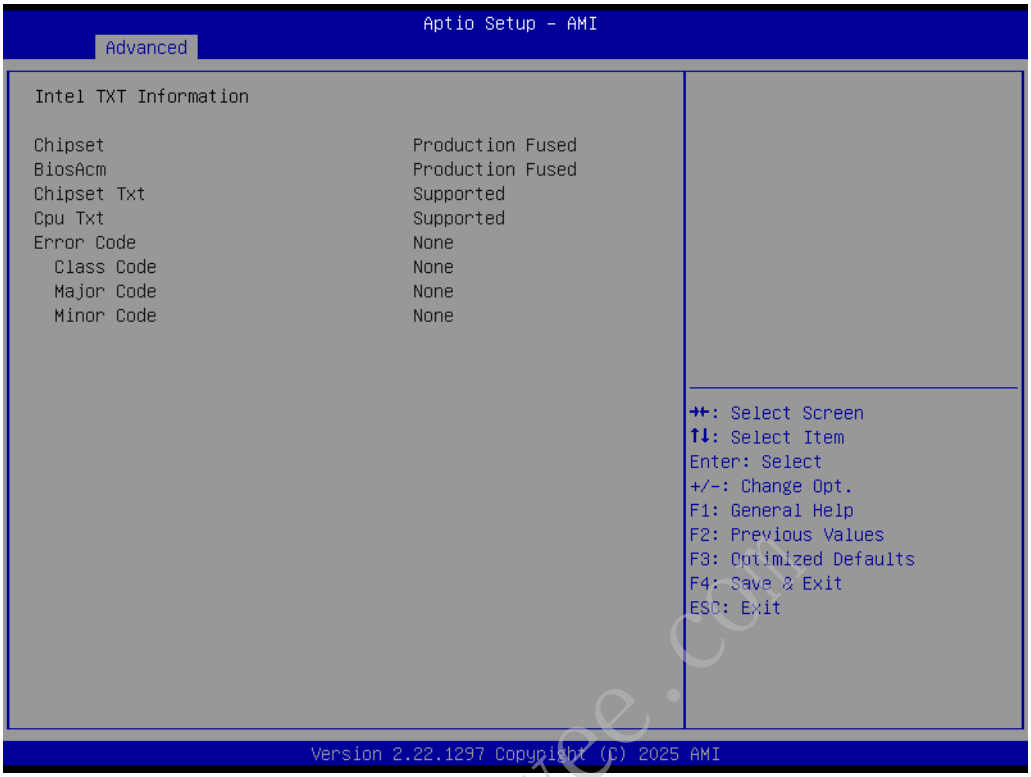
4.1.2.9 Serial Port Console Redirection



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

https://advavee.com

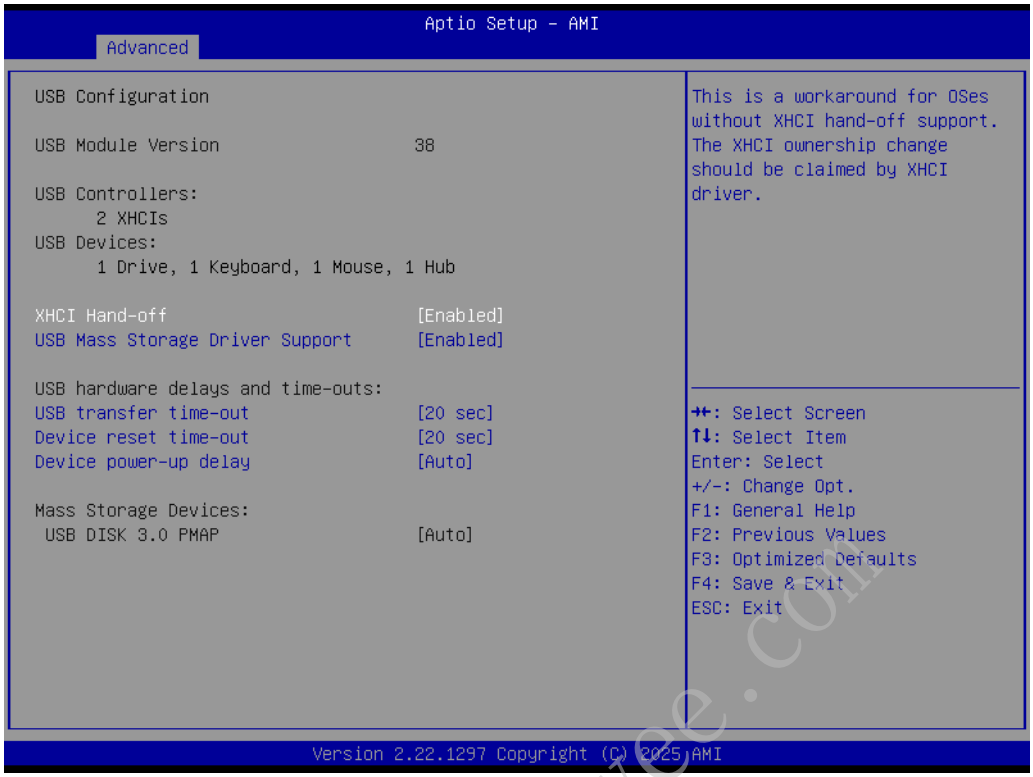
4.1.2.10 Intel TXT Information



- **Intel TXT Information**
  Display Intel TXT information.

https://advavee.com

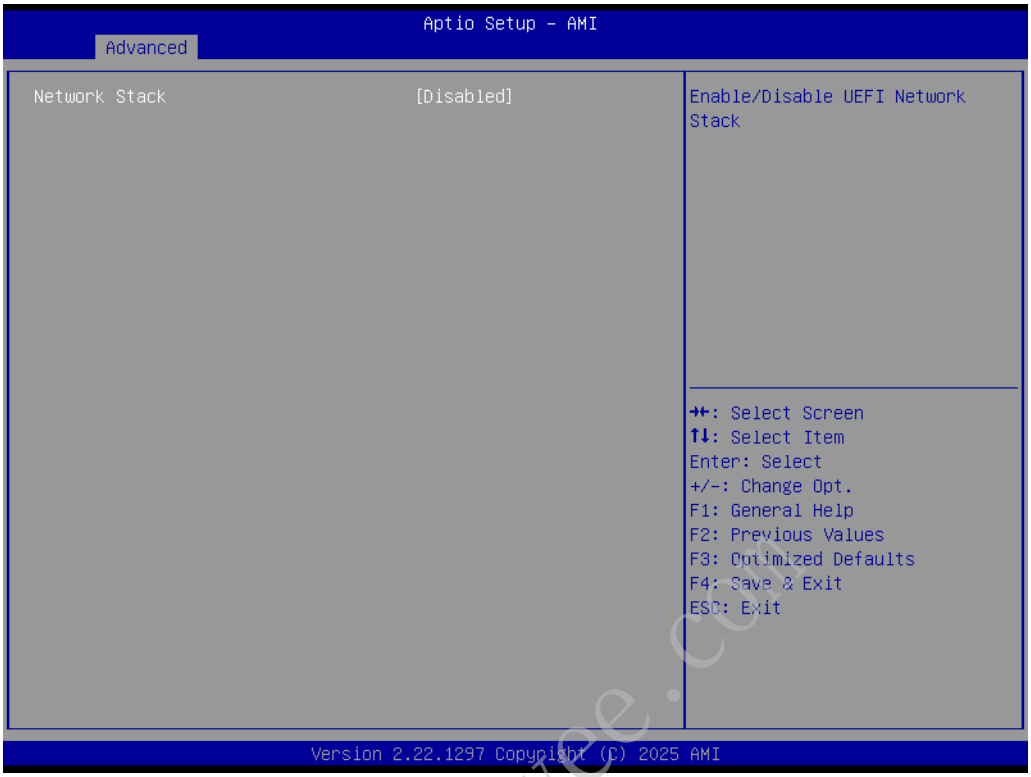
4.1.2.11 USB Configuration



- **XHCI Hand-off**
  This is a workaround for OSes without XHCI hand-off support. The 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 start 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 default value: for a Root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor.

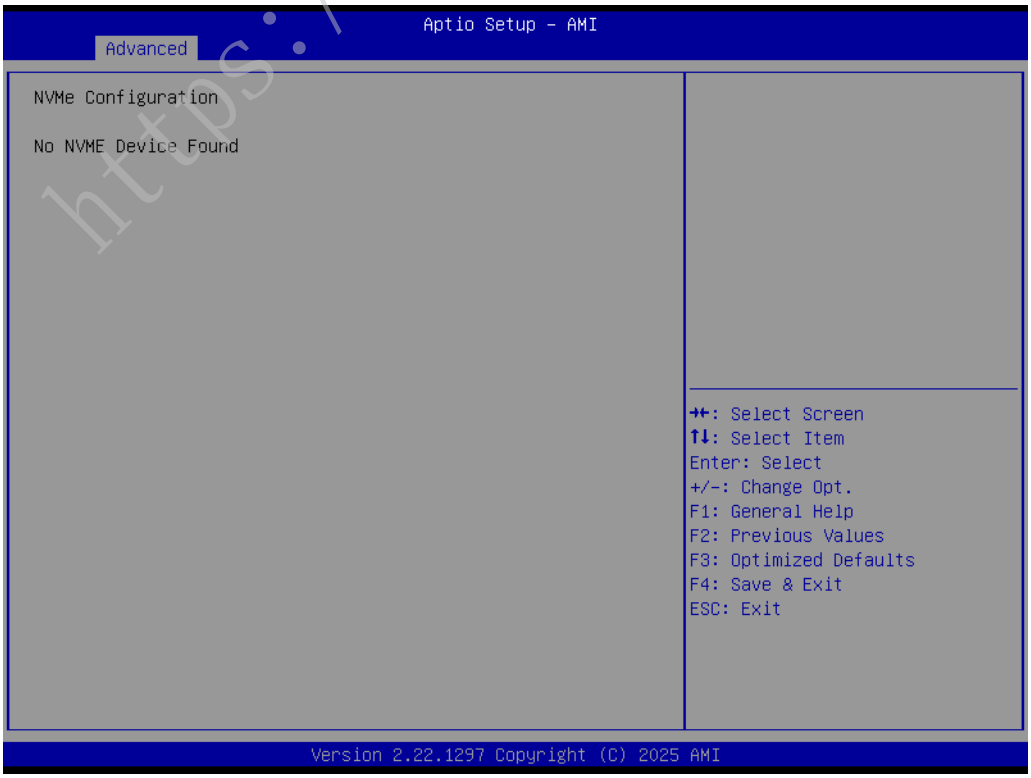
https://advavee.com

4.1.2.12 Network Stack Configuration



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

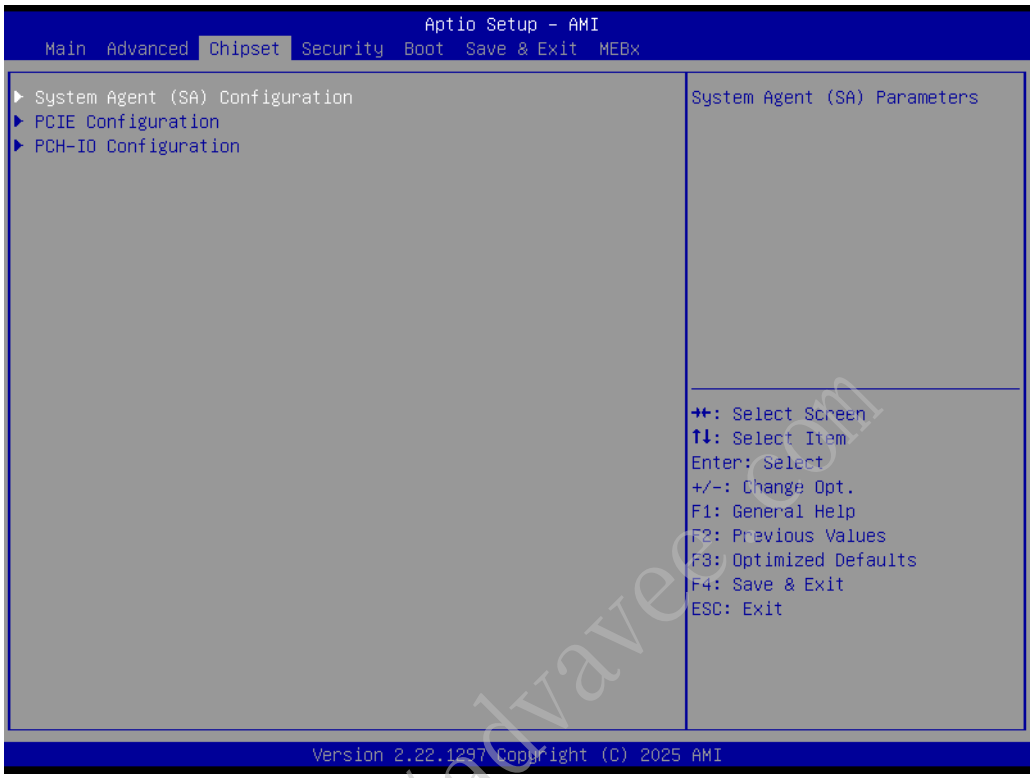
4.1.2.13 NVMe Configuration



https://advavee.com

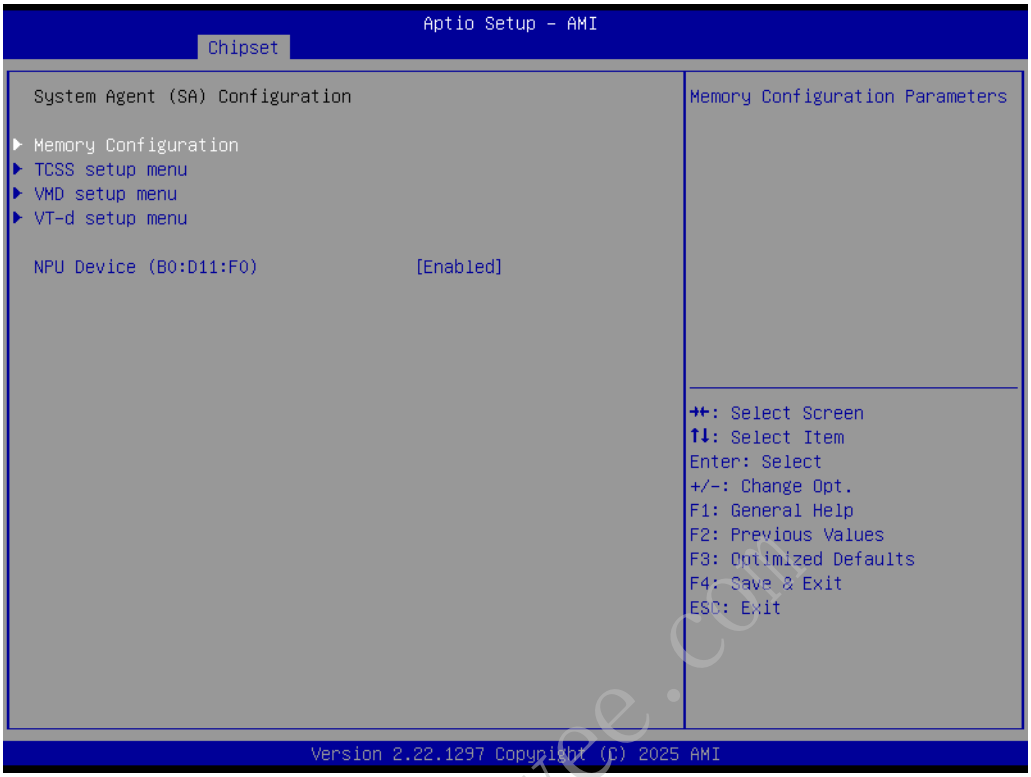
4.1.3 Chipset Configuration

Select the Chipset tab from the MIO-5379 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.



https://advaveo.com

4.1.3.1 System Agent (SA) Configuration



- **Memory Configuration**
  Memory Configuration Parameters.
- **Graphics Configuration**
  Graphics Configuration Parameters.
- **DMI/OPI Configuration**
  Control various DMI functions.
- **TCSS setup menu**
  TCSS Configuration settings.
- **Display setup menu**
  Display Configuration settings.
- **Stop Grant Configuration**
  Automatic/Manual stop grant configuration.
- **VT-d**
  VT-D capability.
- **Control Iommu Pre-boot Behavior**
  Enable IOMMU in Pre-boot environment.
- **X2APIC Opt Out**
  Enable/Disable X2APIC Opt Out Bit.
- **DMA Control Guarantee**
  Enable/Disable DMA_CONTROL_GUARANTEE bit.
- **Above 4GB MMIO BIOS assignment**
  Enable/Disable above 4GB Memory Mapped IO BIOS assignment.

http://advavee.com

4.1.3.1.1 Memory Configuration

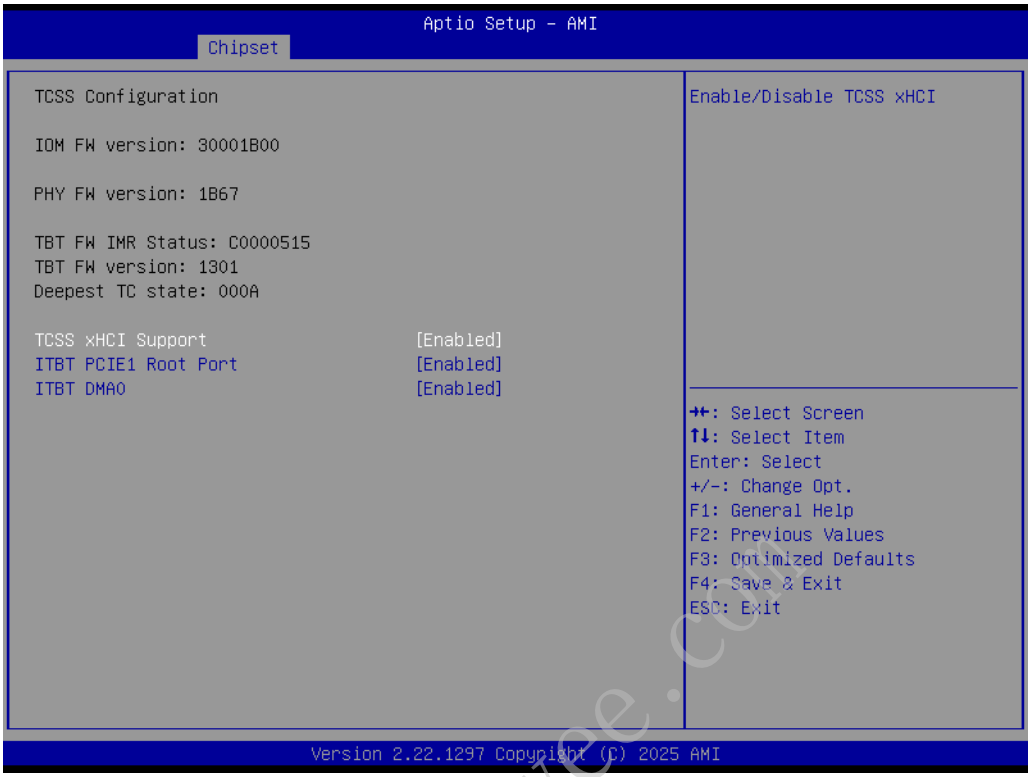


- **Memory Test on Warm Boot**
  Enable/Disable Base Memory Test Run on Warm Boot.
- **Max TOLUD**
  Maximum Value of TOLUD.
- **SA GV**
  System Agent Geysetville.
- **Gear Ratio**
  Gear ratio when SAGV is disabled.
- **Memory Scrambler**
  Enable/Disable Memory Scrambler support.
- **Force ColdReset**
  Force ColdReset OR Choose MrcColdBoot mode.

- **In-Band ECC Support**
  Enable/Disable In-Band ECC.
- **Memory Remap**
  Enable/Disable Memory Remap above 4GB.

https://advavee.com

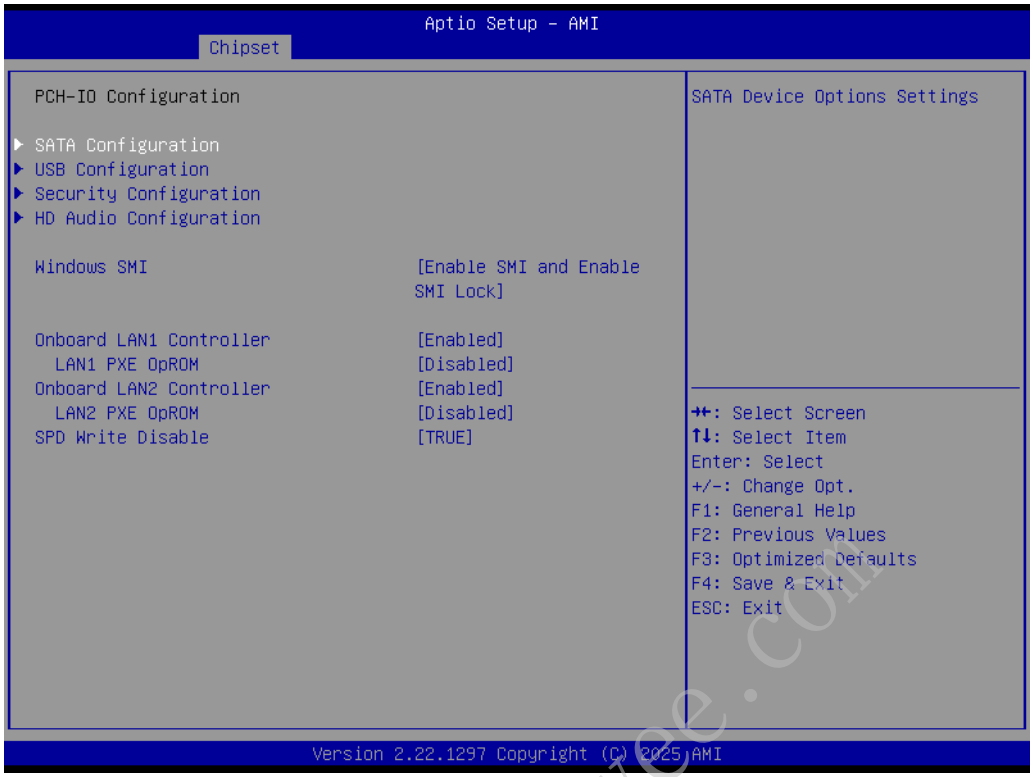
4.1.3.1.2 TCSS Setup Menu



- **TCSS xHCI Support**
  Enable/Disable TCSS xHCI.
- **ITBT PECI1 Root Port**
  Enable/Disable ITBT PCIE Root.
- **ITBT DMA0**
  Enable/Disable ITBT DMA0.

https://advavee.com

4.1.3.2 PCH-IO Configuration

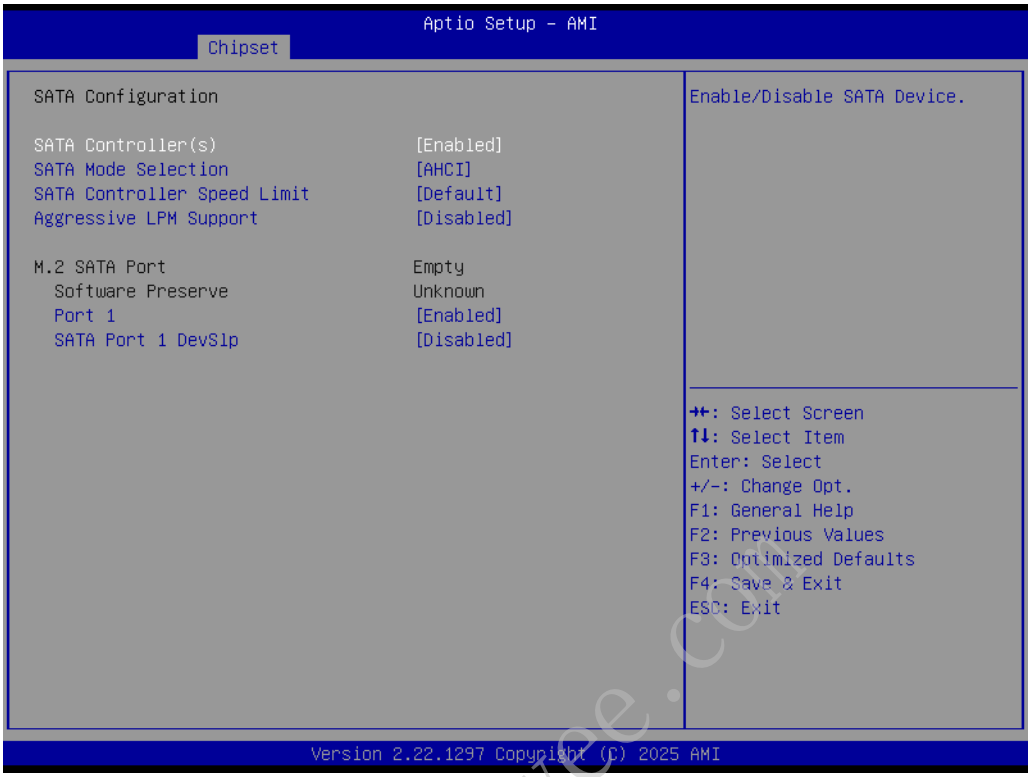


- **PCI Express Configuration**
  PCI Express Configuration Settings.
- **SATA Configuration**
  SATA Device Options Settings.
- **USB Configuration**
  USB Configuration Settings.
- **Security Configuration**
  Security Configuration Settings.
- **HD Audio Configuration**
  HD Audio Subsystem Configuration Settings.

- **PCH LAN Controller**
  Enable or Disable onboard NIC.
- **Wake on LAN Enable**
  Enable or Disable Integrated LAN to wake the system.
- **LAN1 PXE ROM**
  Enable or disable boot option for LAN1 Controller.
- **Onboard LAN2 Controller**
  Select to Enable or Disable onboard LAN2 Controller.
- **LAN2 PXE ROM**
  Enable or disable boot option for LAN2 Controller.
- **Restore AC Power Loss**
  Specify what state to go to when power is re-applied after a power failure (G3 state).
- **SPD Write Disable**
  Enable/Disable setting SPD Write Disable.

https://advavee.com

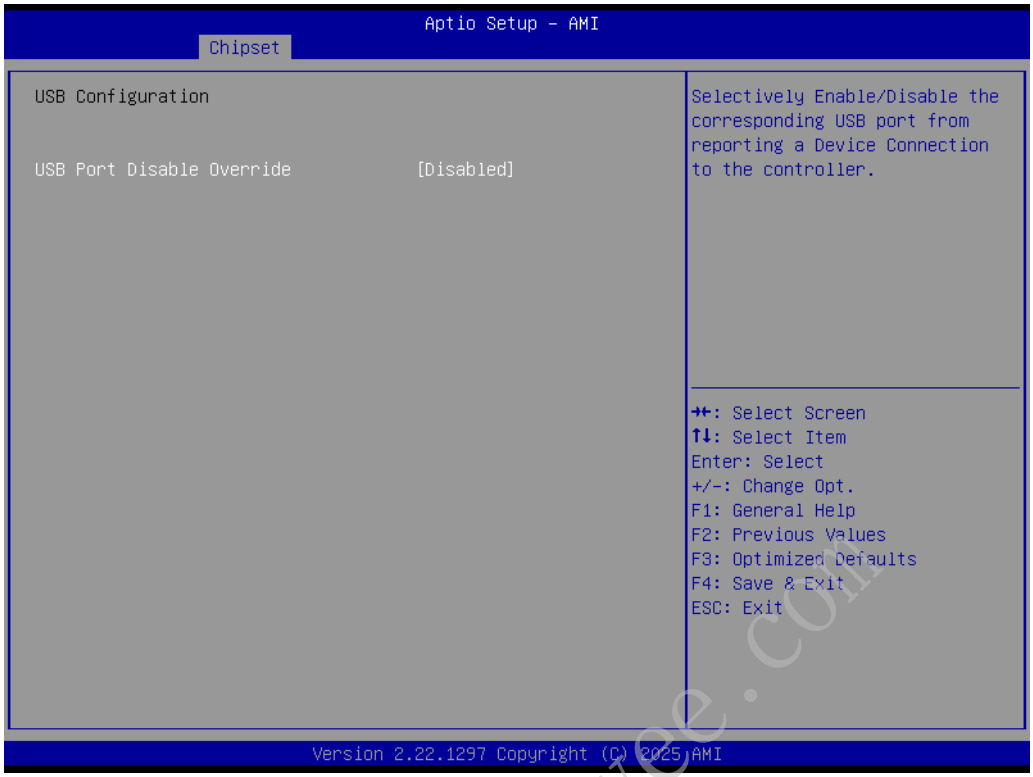
4.1.3.2.1 SATA Configuration



- **SATA Controller(s)**
  Enable/Disable SATA Device.
- **SATA Mode Selection**
  Determine how SATA controller operate.
- **SATA Controller Speed Limit**
  Indicates the maximum speed the SATA controller can support.
- **Aggressive LPM Support**
  Enabled PCH to aggressively enter link power state.

http://advavee.com

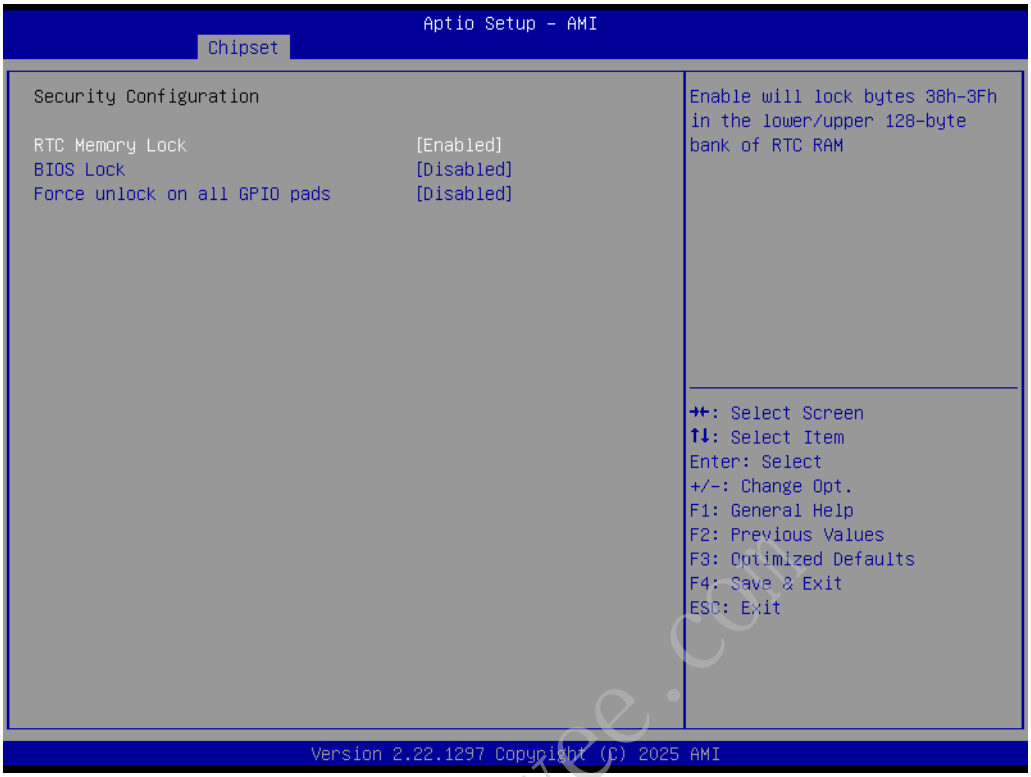
4.1.3.2.2 USB Configuration



- **USB Port Disable Override**
  Selectively Enable/Disable the corresponding USB Port from reporting a Device Connection to the Controller.

https://advavee.com

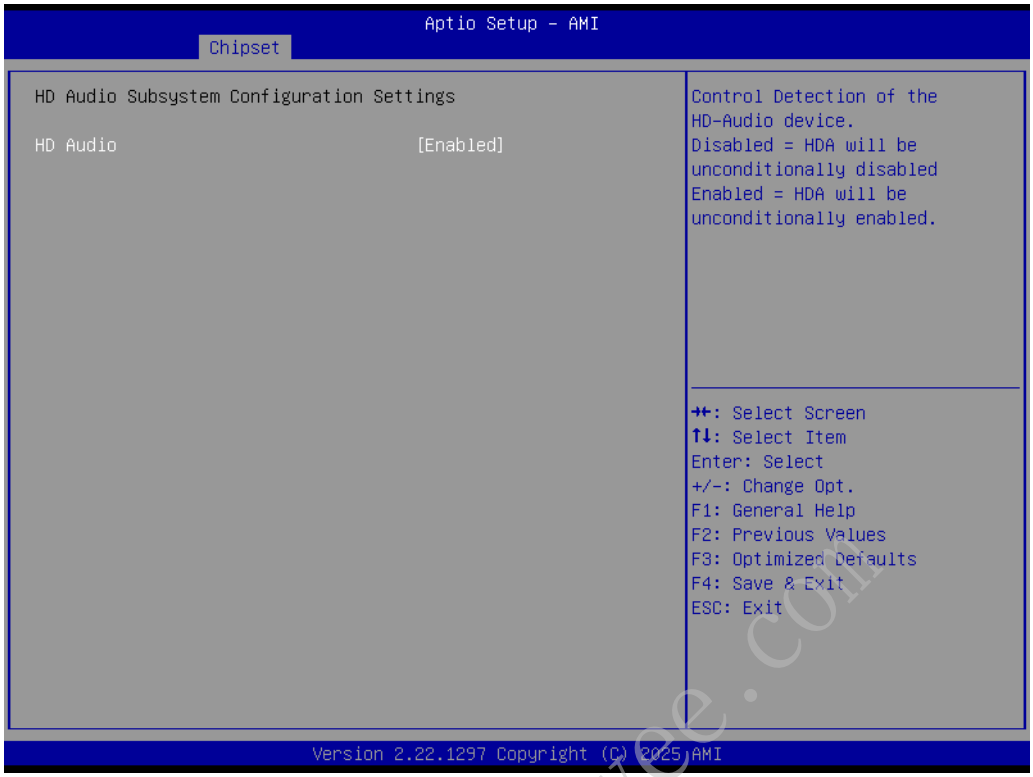
4.1.3.2.3 Security Configuration



- **RTC Memory Lock**
  Enable will lock bytes 38h-3Fh in the lower/upper 128-byte bank of RTC RAM.
- **BIOS Lock**
  Enable or Disable the PCH BIOS Lock Enable feature.
- **Force unlock on all GPIO pads**
  If Enabled BIOS will force all GPIO pads to be in unlock state.

https://advavee.com

4.1.3.2.4 HD Audio Configuration



- **HD Audio**
  Control Detection of the HD-Audio device. Disabled = HDA will be unconditionally disabled. Enabled = HDA will be unconditionally Enabled.

https://advavee.com

4.1.4 Security

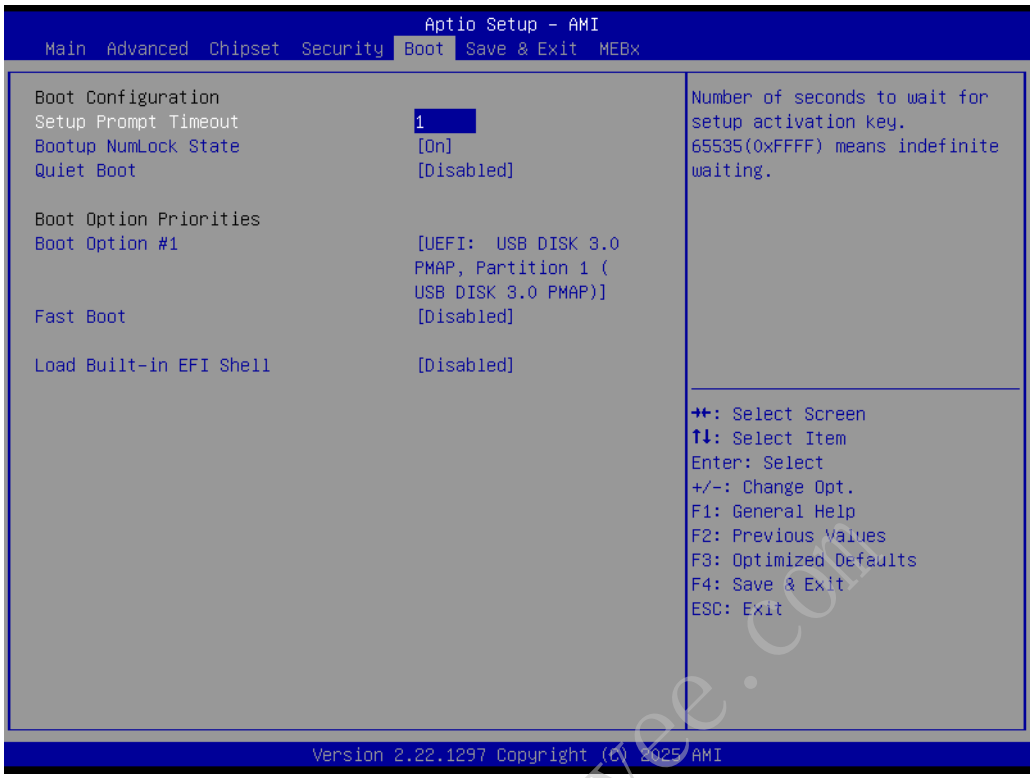


Select Security Setup from the MIO-5379 Setup main BIOS setup menu. All Security Setup options, such as password protection and virus protection are described in this section. To access the sub menu for the following items, select the item and press <Enter>:

- **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.

https://advavee.com

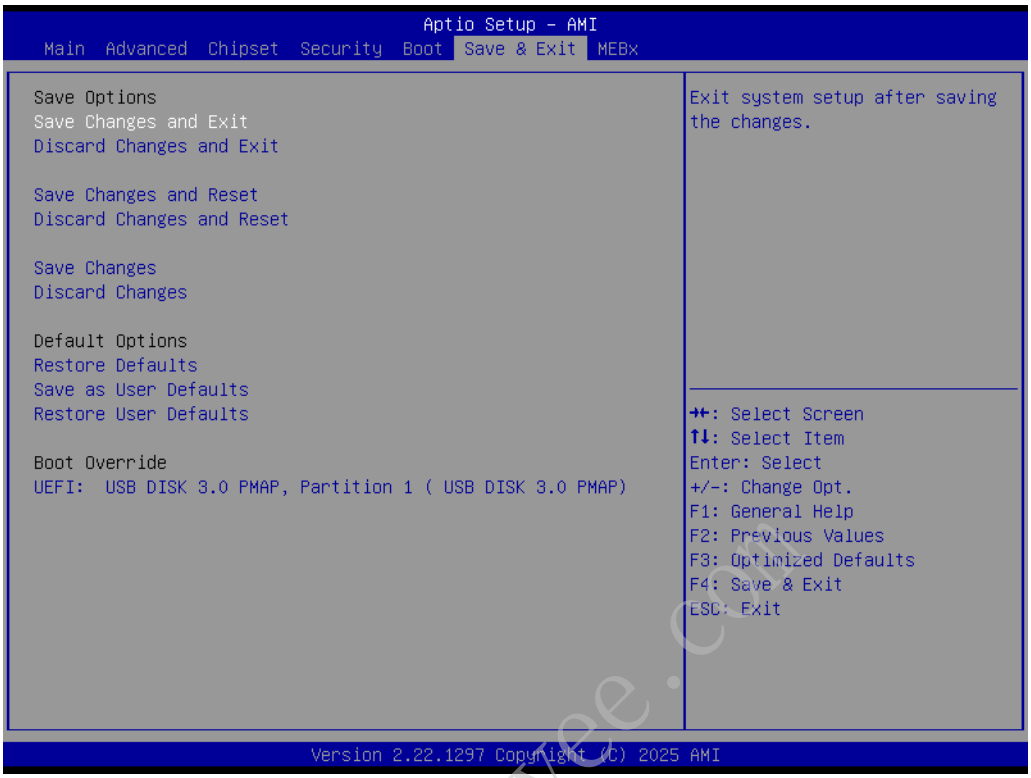
4.1.5 Boot



- **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.

http://.advantech.com

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.

https://advavee.com

Appendix A

System Assignments

https://advavee.com

A.1 System I/O Ports

Table A.1: System I/O Ports

Addr. Range (Hex)	Device
00h-1Fh	DMA Controller
20h-2Dh	Interrupt Controller
2Eh–2Fh	Motherboard resources
30h-3Dh	Interrupt Controller
40h-43h	Timer/Counter
4Eh–4Fh	Motherboard resources
50h-53h	Timer/Counter
60h-6Fh	8042 (keyboard controller)/NMI Controller/Microcontroller
70h-7Fh	Real-time Controller
80h-8Fh	Debug Port/Reserved
90h-9Fh	Debug Port/Reset Generator
A0h-ADh	Interrupt Controller
B0h-B1h	Interrupt Controller
B4h-BDh	Power Management
200h-27Fh	CANBus Controller
280h-28Fh	I2C Controller
290h-29Fh	EC Index port and Data port
2A0h-2BFh	GPIO Controller
2C0h-2DFh	SMBus Controller
2E8h-2EFh	Communications Port (COM4)
2F0h-2F7h	EC/PMC Controller
2F8h-2FFh	Communications Port (COM2)
300h-37Fh	CANBus Controller
3E8h-3EFh	Communications Port (COM3)
3F8h-3FFh	Communications Port (COM1)
480h-4CFh	Motherboard resources
4D0h-4D1h	Interrupt Controller
680h-69Fh	Motherboard resources
A00h-AFFh	Motherboard resources
164Eh-164Fh	Motherboard resources
1800h-18FFh	Motherboard resources
CF9h-CF9h	Reset Generator

https://vegavee.com

A.2 DMA Channel Assignments

Table A.2: DMA Channel Assignments	
Channel	**Function**
0	Available
1	Available
2	Available
3	Available
4	Direct memory access controller
5	Available
6	Available
7	Available

A.3 1st MB Memory Map

Table A.3: 1st MB Memory Map	
Addr. Range (Hex)	**Device**
E0000h - FFFFFh	System board
D0000h - DFFFFh	PCI Bus
C0000h - CFFFFh	System board
A0000h - BFFFFh	PCI Bus
A0000h - BFFFFh	Intel® HD Graphic
00000h - 9FFFFh	System board

https://advavee.com

A.4 Interrupt Assignments

Table A.4: Interrupt Assignments	
Interrupt#	**Interrupt source**
NMI	Parity error detected
IRQ0	System timer
IRQ1	Using SERIRQ, Keyboard Emulation
IRQ2	Interrupt from controller 2 (cascade)
IRQ3	Communications Port (COM2)
IRQ4	Communications Port (COM1)
IRQ5	EC Watch Dog
IRQ6	CANBus Controller
IRQ7	Communications Port (COM3)
IRQ8	System CMOS/real time clock
IRQ9	Microsoft ACPI-Compliant System
IRQ10	Communications Port (COM4)
IRQ11	Display Controller
IRQ12	Available
IRQ13	Numeric data processor
IRQ14	GPIO Controller
IRQ15	Reserved

https://advavee.com

https://advavee.com

ADVANTECH

Enabling an Intelligent Planet

www.advantech.com

Please verify specifications before quoting. This guide is intended for reference purposes only.

All product specifications are subject to change without notice.

No part of this publication may be reproduced in any form or by any means, such as electronically, by photocopying, recording, or otherwise, without prior written permission from the publisher.

All brand and product names are trademarks or registered trademarks of their respective companies.

© Advantech Co., Ltd. 2025

https://advavee.com