
ASLAN-W10XXC Series

Fanless Industrial Panel PC with Intel® Core
i5-1145G7E 1.5GHz Processor

User's Manual

Version 1.0

Revision History

Version	Date	Description
1.0	2023.6	Initial release

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Copyright Notice

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Under no circumstances will the manufacturer be liable for any direct, indirect, special, incidental, or consequential damages arising from the use or inability to use the product or documentation, even if advised of the possibility of such damages.

This document contains proprietary information protected by copyright. All rights are reserved. No part of this document may be reproduced by any mechanical, electronic, or other means in any form without prior written permission of the manufacturer.

Declaration of Conformity

CE

The CE symbol on your product indicates that it is in compliance with the directives of the Union European (EU). A Certificate of Compliance is available by contacting Technical Support.

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 kind of cable is available from ARBOR. Please contact your local supplier for ordering information.

Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC Class A

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. 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. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

RoHS

ARBOR Technology Corp. certifies that all components in its products are in compliance and conform to the European Union's Restriction of Use of Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive 2002/95/EC.

The above mentioned directive was published on 2/13/2003. The main purpose of the directive is to prohibit the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE) in electrical and electronic products. Member states of the EU are to enforce by 7/1/2006.

ARBOR Technology Corp. hereby states that the listed products do not contain unintentional additions of lead, mercury, hex chrome, PBB or PBDB that exceed a maximum concentration value of 0.1% by weight or for cadmium exceed 0.01% by weight, per homogenous material. Homogenous material is defined as a substance or mixture of substances with uniform composition (such as solders, resins, plating, etc.). Lead-free solder is used for all terminations (Sn(96-96.5%), Ag(3.0-3.5%) and Cu(0.5%)).

SVHC / REACH

To minimize the environmental impact and take more responsibility to the earth we live, Arbor hereby confirms all products comply with the restriction of SVHC (Substances of Very High Concern) in (EC) 1907/2006 (REACH --Registration, Evaluation, Authorization, and Restriction of Chemicals) regulated by the European Union.

All substances listed in SVHC < 0.1 % by weight (1000 ppm)

Important Safety Instructions

Read these safety instructions carefully

1. Read all cautions and warnings on the equipment.
2. Place this equipment on a reliable surface when installing. Dropping it or letting it fall may cause damage
3. Make sure the correct voltage is connected to the equipment.
4. For pluggable equipment, the socket outlet should be near the equipment and should be easily accessible.
5. Keep this equipment away from humidity.
6. The openings on the enclosure are for air convection and protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
7. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
8. Never pour any liquid into opening. This may cause fire or electrical shock.
9. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
10. If one of the following situations arises, get the equipment checked by service personnel:
 - a. The power cord or plug is damaged.
 - b. Liquid has penetrated into the equipment.
 - c. The equipment has been exposed to moisture.
 - d. The equipment does not work well, or you cannot get it to work according to the user's manual.
 - e. The equipment has been dropped or damaged.
 - f. The equipment has obvious signs of breakage.
11. Keep this User's Manual for later reference.

Warning

The Box PC and its components contain very delicately Integrated Circuits (IC). To protect the Box PC and its components against damage caused by static electricity, you should always follow the precautions below when handling it:

1. Disconnect your Box PC from the power source when you want to work on the inside.
2. Use a grounded wrist strap when handling computer components.
3. Place components on a grounded antistatic pad or on the bag that came with the Box PC, whenever components are separated from the system.

Lithium Battery Replacement

Incorrect replacement of the lithium battery may lead to a risk of explosion.

The lithium battery must be replaced with an identical battery or a battery type recommended by the manufacturer.

Do not throw lithium batteries into the trash can. It must be disposed of in accordance with local regulations concerning special waste.

Technical Support

If you have any technical difficulties, please consult the user's manual first at:
<http://www.arbor.com.tw>

Please do not hesitate to call or e-mail our customer service when you still cannot find out the answer.

<https://www.arbor-technology.com>

Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster.

Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party.

Vendors disclaim all other warranties, either expressed or implied, including but not limited to implied warranties of merchantability and fitness for a particular purpose, with respect to the hardware, the accompanying product's manual(s) and written materials, and any accompanying hardware. This limited warranty gives you specific legal rights.

Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.

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Chapter 1

Introduction

1.1. The Computer

Product Highlights

- 15.6~21.5" LCD Display w/ LED Backlight
- Flat panel with PCAP touch screen
- IP65 compliant front panel
- Anti-scratch surface: 7H hardness
- Serial Ports (RS-232/422/485), RS-485 w/ auto-flow control
- Mini PCIe expansion slot support
- 4 x SMA antenna holes for optional wireless function
- Wide power input range(9~36 VDC) & wide operating temperature(0°C ~ 50°C)
- Fanless cooling system



1.2. About this Manual

This manual is meant for the experienced users and integrators with hardware knowledge of personal computers. If you are not sure about the description in this manual, consult your vendor before further handling.

We recommend that you keep one copy of this manual for the quick reference for any necessary maintenance in the future. Thank you for choosing ARBOR products.

1.3. Specifications

System	
CPU	Soldered onboard Intel® 11th Gen Core™ i5-1145G7E Processor 1.50 GHz
Memory	2 x 260-pin DDR4 SO-DIMM sockets, supporting 3200MHz SDRAM up to 64GB (1 x 4GB DDR4 SO-DIMM pre-installed)
LAN Chipset	1 x Intel® i225/i226LM PCIe controller w/ iAMT 2 x Intel® i210/i211AT PCIe controller
Watchdog Timer	1~255 levels reset
TPM	Support TPM 2.0
Storage	
Device	1 x 2.5" drive bay (SATA III) 1 x M.2 M-Key 2242/2280 slot (PCIe Gen III x4 + SATA III)
Audio	
Device	1 x Mic-in / 1 x Line out 2 x 1.5W speakers (optional)
LCD Display	
Size/Type	ASLAN-W1015C 15.6" TFT LCD panel ASLAN-W1019C 18.5" TFT LCD Panel ASLAN-W1022C 21.5" TFT LCD panel
Max. Resolution	ASLAN-W1015C 1366 x 768, WXGA ASLAN-W1019C 1366 x 768, WXGA ASLAN-W1022C 1920 x 1080, Full HD
Max. Colors	W1015C/W1019C/W1022C: 16.7M
Luminance	ASLAN-W1015C 400 cd/m ² ASLAN-W1019C 450 cd/m ² ASLAN-W1022C 250 cd/m ²
Touch Screen	ASLAN-W1015C/W1019C/W1022C: Projected capacitive touch panel
View Angle (U/D/R/L)	ASLAN-W1015C/W1019C 80°/80°/85°/85° ASLAN-W1022C 89°/89°/89°/89°
Power System	
Power Input	ASLAN-W1015C/W1019C/W1022C: 9~36 VDC (3-pin terminal block: V+, V-, GND)
Power Consumption	ASLAN-W1019C/W1022C Max. 120W (w/o I/O cards) ASLAN-W1015C Max. 120W (w/o I/O cards)
Qualification	
Certification	CE, FCC Class A

Introduction

Expansion		
Expansion Bus	1 x mPCIe (PCIe x1 + USB2.0, Full Size) w/ 1 x nano SIM card slot	
	1 x M.2 B-Key 2242/3042/3052 (PCIe x2 + USB3.0) w/ 2 x nano SIM card slots for 5G module	
	1 x M.2 E-Key 2230 (CNVi + USB 2.0) slot for WiFi /BT **Support CNVi modules only**	
External I/O		
Serial Ports	2 x DB-9 connectors for RS-232	
	1 x DB-9 connectors for RS-232/422/485	
USB Ports	4 x USB-A 3.2 Gen2 ports	
LAN	1 x RJ-45 2.5 GbE LAN ports	
	2 x RJ-45 GbE ports	
Video	1 x HDMI 2.0b, up to 3840x2160@60Hz	
	1 x DisplayPort 1.4, up to 3840x2160@60Hz	
DIO	8 x DI & 8 x DO w/ 1.5KV isolation	
Others	4 x Antenna holes	
Mechanical		
Mounting Type	Panel mount & VESA-100 mounting	
Material	Aluminum front bezel and SGCC chassis	
Dimension (W x H x D)	ASLAN-W1015C	404 x 255 x 65.8 mm
	ASLAN-W1019C	470 x 295 x 65.8 mm
	ASLAN-W1022C	536 x 332 x 65 mm
Weight (Net)	ASLAN-W1015C	5.5 kg
	ASLAN-W1019C	6.7 kg
	ASLAN-W1022C	8 kg
Environmental		
Operating Temp.	ASLAN-W1015C/W1019C	-20°C ~ 55°C
	ASLAN-W1022C	0°C ~ 55°C
Storage Temp.	ASLAN-W1015C/W1019C	-30°C ~ 70°C
	ASLAN-W1022C	-10°C ~ 70°C
Operating Humidity	ASLAN-W1015C/W1019C/W1022C 10 ~ 95% RH @ 55°C (non-condensing)	
Vibration	5 ~ 500Hz, 1Grms random (w/ SSD)	
Shock	Operating 10G, 11ms non-operating 30G, 11ms (w/ SSD)	
OS Support		
Windows 10 / Windows 11 / Linux: Ubuntu 20.04		

1.4. Inside the Package

Upon opening the package, carefully inspect the contents. If any of the items is missing or appears damaged, contact your local dealer or distributor. The package should contain the following items:



1 x ASLAN-W10XXC

*Product appearance varies by model.

1 x **Accessory Box** that contains the following items:



- 4 x M3*4L screws (for 2.5" SSD/ HDD tray)
- Panel-mount Clamps w/ screws (clamps and M4*18L screws)
- 2 x 10-pin plug (for D I/O)
- 1 x Rubber O-ring
- 3-pin plug x 2 (one for DC input block; one for Remote Control block)

1.5. Ordering Information

ASLAN -W1015C	15.6" Soldered onboard Intel® 11th Gen Core™ i5-1145G7E Processor 1.50 GHz processor,wide-screen industrial panel PC w/ 4GB Memory
ASLAN -W1019C	18.5" Soldered onboard Intel® 11th Gen Core™ i5-1145G7E Processor 1.50 GHz processor,wide-screen industrial panel PC w/ 4GB Memory
ASLAN -W1022C	21.5" Soldered onboard Intel® 11th Gen Core™ i5-1145G7E Processor 1.50 GHz processor,wide-screen industrial panel PC w/ 4GB Memory

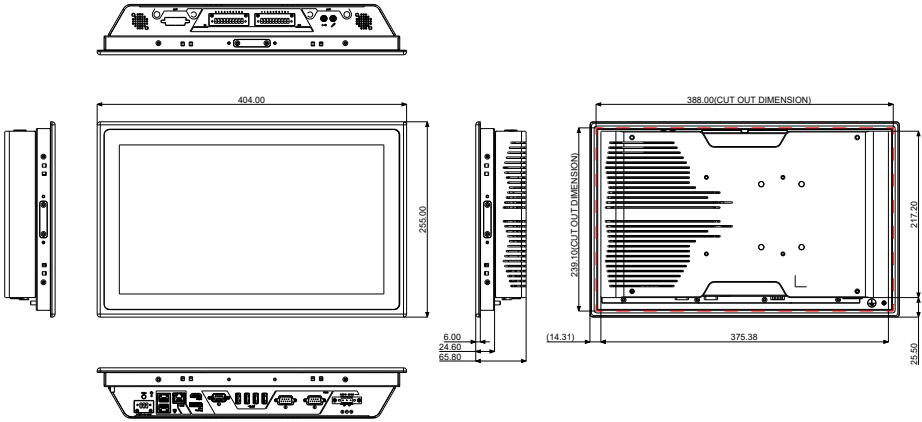
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Chapter 2

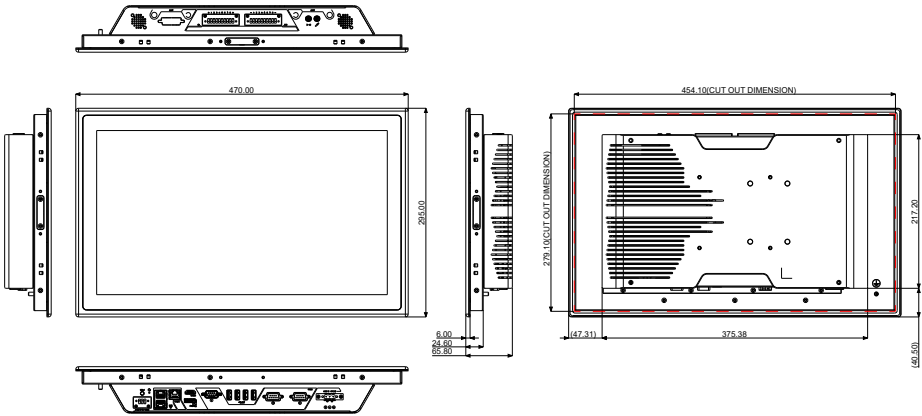
Getting Started

2.1. Dimensions

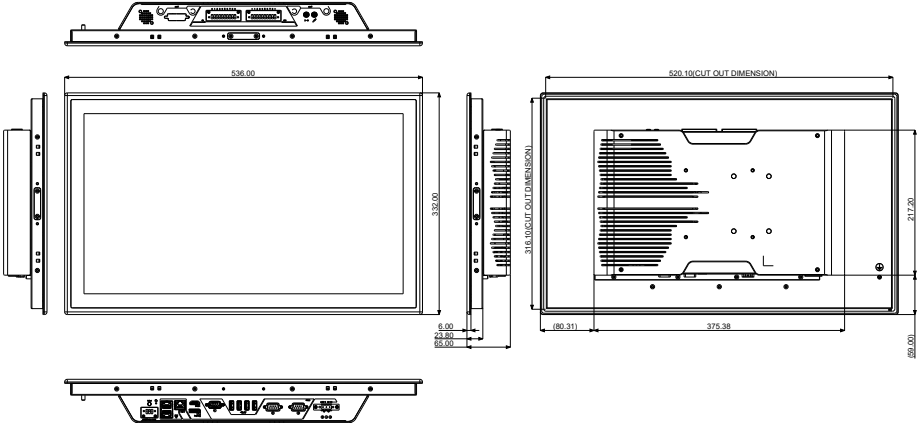
ASLAN-W1015C



ASLAN-W1019C



ASLAN-W1022C



2.2. Tour the Computer

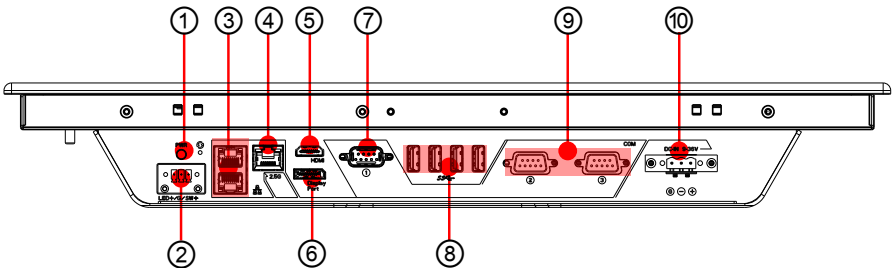
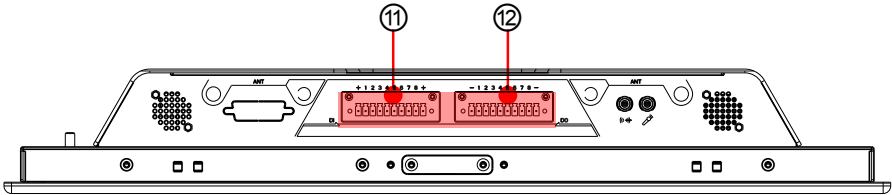
Take a look around the computer and find the external controls and connectors.

2.2.1. Front View



*Product appearance varies by model.

2.2.2. Top/Bottom View



ASLAN-W10XXC

No.	Description
①	Power Button
②	Remote On/Off Control
③	2 x RJ-45 GbE ports
④	1 x RJ-45 2.5 GbE port
⑤	HDMI 2.0b port
⑥	Displayport 1.4
⑦	COM Port, RS-232/422/485 selectable
⑧	4 x Type-A USB 3.2 Gen2 ports
⑨	COM Ports, RS-232
⑩	3-pin DC-in Power Connector
⑪	8 bit Digital Input Connector
⑫	8 bit Digital Output Connector

2.2.3. I/O Definition

② Remote On/Off Control

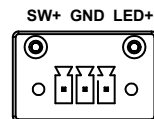
3-pin terminal block

Function: 3-pin terminal block for remote control and PWR LED

Connector Type: 1x3-pin Terminal block

Pin Assignment:

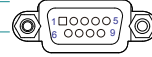
Pin	Desc.
1	Power button+
2	GND
3	LED+



⑦ COM1

Function: RS-232/422/485 Selectable Serial Port
Connector Type: External double-stacked 9-pin D-sub male connector
Pin Assignment:

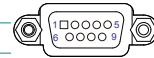
Pin	Desc.	Pin	Desc.
1	DCD / (RS422 TX-) / (RS485-)	6	DSR
2	RXD / (RS422 TX+) / (RS485+)	7	RTS
3	TXD / (RS422 RX+)	8	CTS
4	DTR / (RS422 RX-)	9	RI
5	GND		



⑨ COM2, COM3

Function: RS-232 Serial Port
Connector Type: External double-stacked 9-pin D-sub male connector
Pin Assignment:

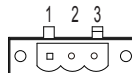
Pin	Description	Pin	Description
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	N.C



⑩ PWRIN1

Function: Power input terminal block
Connector Type: 1x3-pin Terminal block
Pin Assignment:

Pin	Desc.
1	Power Input +
2	Power Input -
3	Earth Ground



⑪ 8 bit Digital Input Connector

Function: Digital Input Connector
Connector Type:
Pin Assignment:

Pin	Desc.	Pin	Desc.
+	DIO_POWER	5	DI_5
1	DI_1	6	DI_6
2	DI_2	7	DI_7
3	DI_3	8	DI_8
4	DI_4	+	DIO_POWER

⑫ 8 bit Digital Output Connector

Function: Digital Output Connector

Connector Type:

Pin Assignment:

Pin	Desc.	Pin	Desc.
-	GND	5	DO_5
1	DO_1	6	DO_6
2	DO_2	7	DO_7
3	DO_3	8	DO_8
4	DO_4	-	GND

2.3. Driver Installation Note

Windows 10 64-Bit

To install the drivers, please visit our website at www.arbor-technology.com and download the driver pack from the product page. If you need login access, please contact your local ARBOR sales representative.

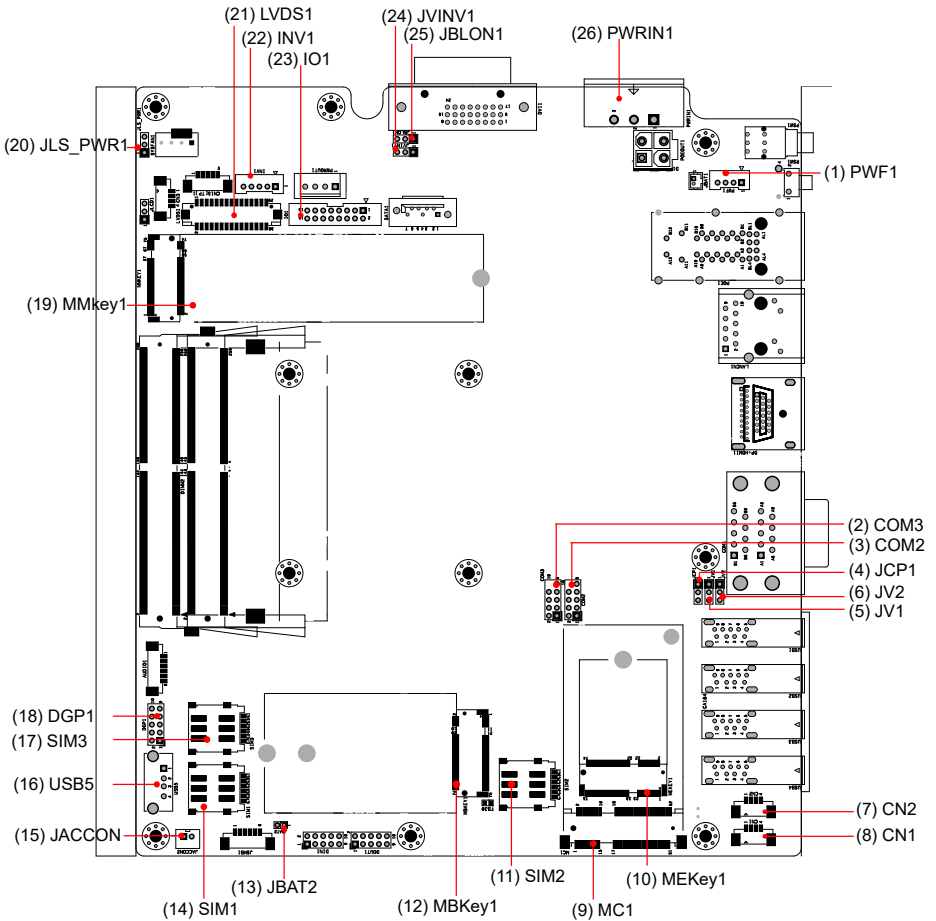
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Chapter 3

Engine of the Computer

3.1. Board Layout

Main Board (ASLAN-1015C/1019C/1022C)




Label	Description
(1) PWF1	Power button and Power LED Connector
(2) COM3	COM port for 9pin D-SUB
(3) COM2	COM port for 9pin D-SUB
(4) JCP1	Power selection for COM port
(5) JV1	COM1 function
(6) JV2	COM2 function
(7) CN2	USB2.0 wafer connector
(8) CN1	USB2.0 wafer connector
(9) MC1	PCI Express Mini-card socket
(10) MEKEY1	M.2 E-Key socket
(11) SIM2	Nano SIM card socket
(12) MBKEY1	M.2 B-Key socket
(13) JBAT2	Reset CMOS settings
(14) SIM1	Nano SIM card socket
(15) JACCON2	Acc mode selection for vehicles
(16) USB5	USB connector
(17) SIM3	Nano SIM card socket
(18) DGP1	External debug port
(19) MMKEY	M.2 M-Key socket
(20) JLS_PWR1	Multi Serial Bus power connector
(21) LVDS1	LVDS Connector
(22) INV1	LVDS Back light Connector
(23) IO1	Onboard Type 16pin header
(24) JVINV1	LCD backlight
(25) JBLON1	Backlight PWM
(26) PWRIN1	Power Input Terminal Block

3.2. Connectors & Jumpers

(1) PWF1

Function: Power button and Power LED Connector
Connector Type: 2.00 mm pitch 1x4-pin one-wall connector
Pin Assignment:

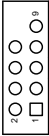
Pin	Desc.
1	PWR_IN_SW#
2	GND
3	LED+
4	NC



(2)(3) COM2/3



Function: RS232 DB9 connector
Connector Type: 2.00 mm pitch 2x5 pin box header
Pin Assignment:

	Pin	Desc.	Pin	Desc.
	1	DCD	2	RXD
	3	TXD	4	DTR
RS232	5	GND	6	DSR
	7	RTS	8	CTS
	9	RI	10	NC





(4)JCP1

Function: Power selection for COM port
Jumper Type: Onboard 2.00mm-pitch 1x3-pin header
Setting:

Pin	Description	
Short 1-2	COM_5V	
Short 2-3	COM_12V	

(5)(6)JV1/JV2

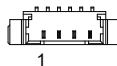
Function: RI/5V/12V (Pin 9) Selection for COM Port
Jumper Type: Onboard 2.00mm-pitch 1x3-pin header
Setting:

Pin	Description	
Short 1-2	RI (default)	
Short 2-3	5V or 12V (depends on JCP1)	

(7)(8) CN1/CN2

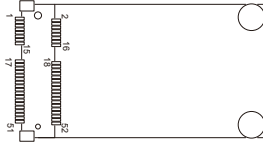
Function: USB2.0 Wafer
Connector Type: onboard Type 4pin wafer
Pin Assignment:

Pin	Desc.
1	VCC5
2	DATA-
3	DATA+
4	GND



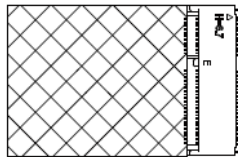
(9) MC2

Function: PCI Express Mini-card Full socketed
Connector Type: Onboard 0.8mm pitch 52-pin edge card connector.
Pin Assignment:



(10) MEKEY1

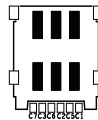
Function: M.2 E-Key socket (w/ CNVi+USB2.0) for optional Wi-Fi/BT
Connector Type: M.2 E-Key 2230 Socket
Pin Assignment: The pin assignments conform to the industry standard.



(11) SIM2

Function: SIM Card Socket
Connector Type: 6-pin SIM card socket
Pin Assignment:

Pin	Desc.	Pin	Desc.
C1	VCC	C2	RST
C3	CLK	C5	GND
C6	VPP	C7	I/O





(12) MBKEY1

Function: M.2 B-Key socket (w/ PCIe + USB 3.0 or PCIe x2)(either one)
Connector Type: M.2 B-Key
Pin Assignment: The pin assignments conform to the industry standard.

(13) JBAT2

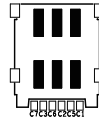
Function: Clears/keeps CMOS
Jumper Type: 2.00 mm pitch 1x2-pin header
Setting:

Pin	Description
Short	Clears CMOS
	
Open	Keeps CMOS (default)
	

(14) SIM1

Function: SIM Card Socket
Connector Type: 6-pin SIM card socket
Pin Assignment:

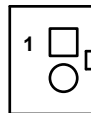
Pin	Desc.	Pin	Desc.
C1	VCC	C2	RST
C3	CLK	C5	GND
C6	VPP	C7	I/O



(15) JACCON2

Function: Ignition Power Connector
Connector Type: Onboard 2x1-pin box connector
Pin Assignment:

Pin	Description
1	Acc_ON
2	GND



(16) USB5

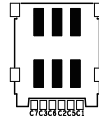
Function: Internal USB 2.0 connector
Connector Type: USB2.0 Type-A connector
Pin Assignment: The Pin assignment conform to the industry standard.



(17) SIM3

Function: SIM Card Socket
Connector Type: 6-pin SIM card socket
Pin Assignment:

Pin	Desc.	Pin	Desc.
C1	VCC	C2	RST
C3	CLK	C5	GND
C6	VPP	C7	I/O



(18) DGP1

Function: Debug port
Connector Type: 2.00mm-pitch 2x5-pin header
Pin Assignment:

Pin	Description	Pin	Description
1	24MHz Clock	2	GND
3	LPC_FRAME#	4	LPC_LAD0
5	PLTRST#	6	N.C
7	LPC_LAD3	8	LPC_LAD2
9	VCC3	10	LPC_LAD1



(19) MMKEY1



Function: M.2 M-Key Connector
Connector Type: M.2 75-pin M-Key connector for PCIe x4/SATA-III SSD storage, supporting 22x42 / 22x80 modules
Pin Assignment: The pin assignments conform to the industry standard.



(20) JLS_PWR1

Function: Multi Serial Bus power connector
Jumper Type: Onboard 2.00mm-pitch 1x3-pin header
Setting:

Pin	Description
Short 1-2	5V(default)
Short 2-3	3.3V

(21) LVDS1

Function: Debug port
Connector Type: 2.00mm-pitch 2x5-pin header
Pin Assignment:

Pin	Description	Pin	Description
1	24MHz Clock	2	GND
3	LPC_FRAME#	4	LPC_LAD0
5	PLTRST#	6	N.C
7	LPC_LAD3	8	LPC_LAD2
9	VCC3	10	LPC_LAD1



(22) INV1

Function: Debug port
Connector Type: 2.00mm-pitch 2x5-pin header
Pin Assignment:

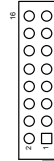
Pin	Description	Pin	Description
1	24MHz Clock	2	GND
3	LPC_FRAME#	4	LPC_LAD0
5	PLTRST#	6	N.C
7	LPC_LAD3	8	LPC_LAD2
9	VCC3	10	LPC_LAD1



(23) IO1

Function: Multi Serial Bus connector
Connector Type: 2.00mm-pitch 2x8-pin header
Pin Assignment:

Pin	Description	Pin	Description
1	I2C0_SCL	2	I2C0_SDA
3	SPI_MISO	4	SPI_MOSI
5	SPI_CLK	6	SPI_CS#
7	LS_PWR 5V(default)/3.3V	8	GND
9	I2C1_SCL	10	I2C1_SDA
11	UART_TXD	12	UART_RXD
13	UART_RTS#	14	UART_CTS#
15	NC	16	GND



(24) JVINV1

Function: LCD backlight
Jumper Type: Onboard 2.00mm-pitch 1x3-pin header
Setting:

Pin	Description
Short 1-2	5.0V: 1-2
Short 2-3	12V: 2-3 (default)



(25) JBLON1

Function: Backlight PWM
Jumper Type: Onboard 2.00mm-pitch 1x3-pin header
Setting:

Pin	Description
Short 1-2	Inverted: 1-2
Short 2-3	Normal: 2-3 (default)



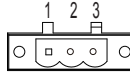
(26) PWRIN1

Function: Power input terminal block

Connector Type: 1x3-pin Terminal block

Pin Assignment:

Pin	Desc.
1	VCC
2	GND
3	D_GND



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Chapter 4

Installation & Maintenance

4.1. Disassembling and Assembling the Computer

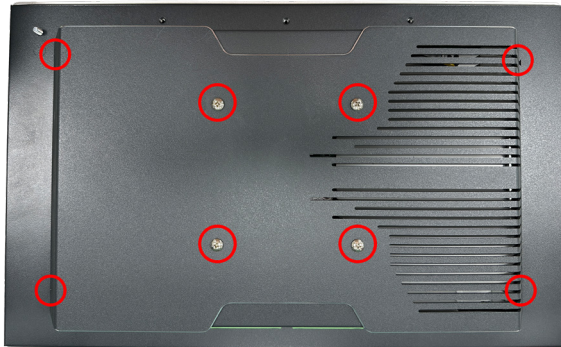
This section will guide you to install the Wi-Fi module and SSD. If you don't need to install the Wi-Fi module, skip the Wi-Fi related sections.

The installation procedures for ASLAN-W1015C, ASLAN-W1019C and ASLAN-W1022C are similar. This section will use the ASLAN-W1019C to illustrate the procedures.

4.1.1. Disassembling the Computer

To use onboard jumpers/connectors or to install/remove internal components, you will need to open the computer to access the inside of the computer. Follow through the guide below to disassembly the computer.

1. Position the computer with the rear side facing up and remove 8 screws securing the chassis as shown below .



2. Then lift the chassis away from the assembly.
3. You are ready to access the components on the main board and make required configurations and connections.

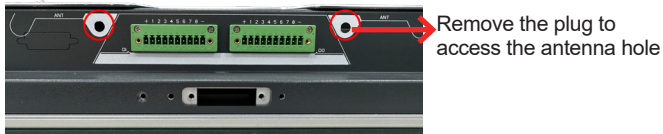
4.1.2. Assembling the Computer

After completing the required hardware installation and jumpers settings, assemble the computer by performing the proceeding steps in reverse order.

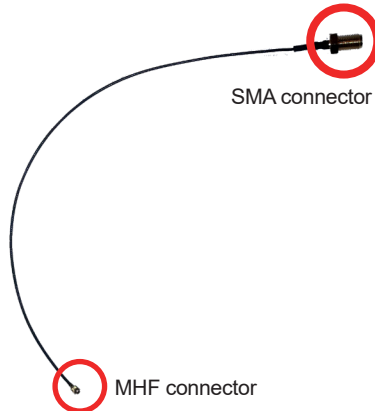
4.2 Install Wi-Fi Antenna

To install the antenna, you have to remove the rear cover to access the antenna holes first. Please refer to [4.1.1. Disassembling the Computer on page 28](#). After installing the antenna, restore the rear cover and proceed to next section to install the Wi-Fi module.

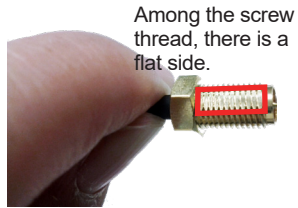
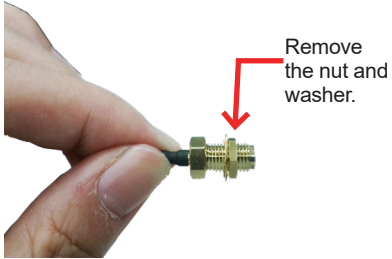
1. Remove the plastic plug from the antenna hole. Keep the plastic plug for any possible restoration in the future.



2. Prepare the RF antenna. The antenna has an SMA connector on one end and an MHF connector on the other.



From the SMA end of the RF antenna, remove the washer and the nut. Save the washer and nut for later use. Note that the SMA connector is in the form of a threaded bolt, with one flat side.

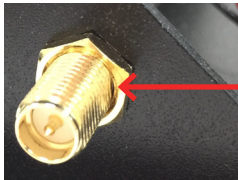


3. Pass the SMA connector through the above mentioned antenna hole. Make sure that you align the connector's flat side with the antenna hole's flat side.

Arrange the flat side of the SMA connector to meet the flat side of the antenna hole.



4. Mount the washer first and then the nut to the SMA connector. Make sure the nut is tightened.



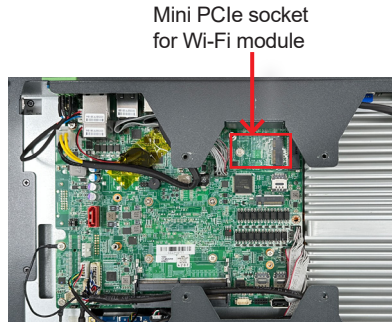
Mount the washer and the nut to the SMA connector. Tighten the nut.

5. If you are using two antennas, repeat steps 2~5 for another antenna.
6. Restore the computer's rear cover and fasten the 8 screws.

4.3 Install the Wi-Fi Module

To install the Wi-Fi Module, you have to remove the rear cover to access the Mini PCIe socket first. Please refer to to [4.1.1. Disassembling the Computer on page 28.](#)

1. Locate the **Mini PCIe** socket for wireless module. Note that the socket has a notch among the connector.



2. Connect the antenna to your wireless module. The wireless module comes with two U.FL connectors - one is "1" and the other is "0". Always follow the connections below for best signal reception.

If you are using only one antenna, connect the antenna's MHF end to the connector labeled "1".



U.FL connector labeled
"1" for main W-Fi antenna

U.FL connector labeled "0 "
for auxiliary Wi-Fi antenna

3. Then plug the Wi-Fi module to the socket's connector by a slanted angle. Fully insert the module, and note that the notch on the wireless module should meet the break of the connector.



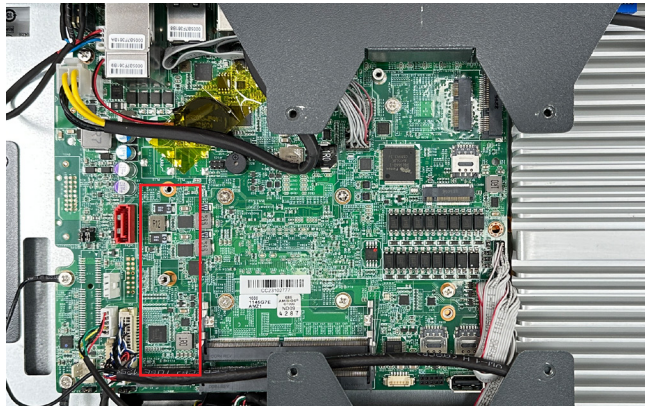
4. Press the module down and fix the module in place using the screw.



4.4 Install the M.2 SSD Module

The computer has a M.2 M-Key socket for NVMe SSD storage. This section will use a 22 x 80 form factor as the installation example.

1. Remove the rear cover to access the M.2 on-board socket first. Please refer to [4.1.1. Disassembling the Computer on page 28.](#)



2. Insert the M.2 module into the socket by aligning the notch on the module with the small slot on the M.2 socket.

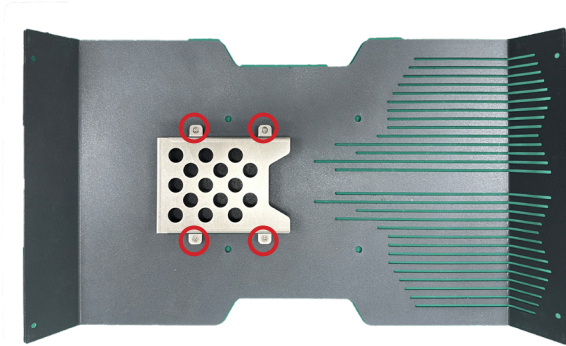


3. Press the module down and fix the module in place using a screw.

4.5 Install 2.5" SSD or HDD

To install 2.5" HDD or SSD to the computer,

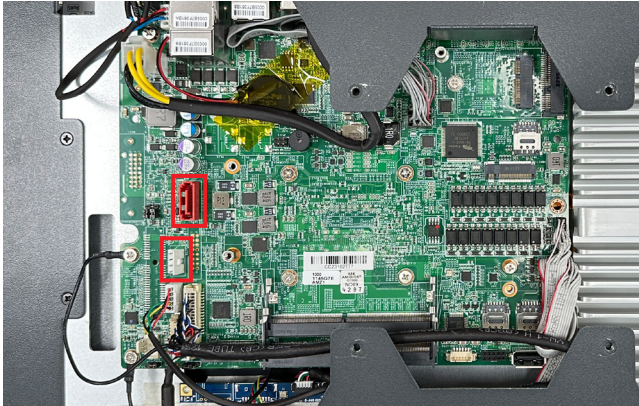
1. Remove the hard drive bay from the rear cover chassis by loosening the 4 screws.



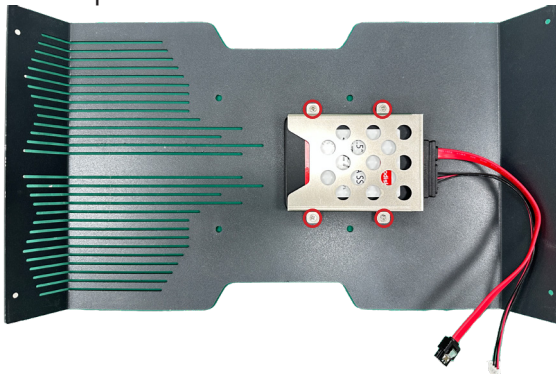
2. Slide the 2.5" HDD or SSD storage device into the drive bracket and use 4 screws coming with the storage device kit, fix the storage device in place.



3. Connect the SATA interface and power cables to the SATA & power connectors on the main board.



4. Secure the drive bay back to the rear side cover by fastening the 4 screws you removed in Step 1.



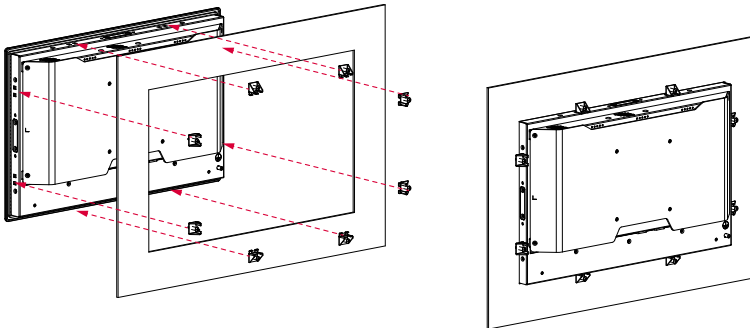
4.6. Mount the Computer

Integrate the computer to where it works by mounting it to a wall in the surroundings or to the rear of a display panel.

4.6.1. Panel Mounting

For ASLAN-W1015C/W1019C/W1022C

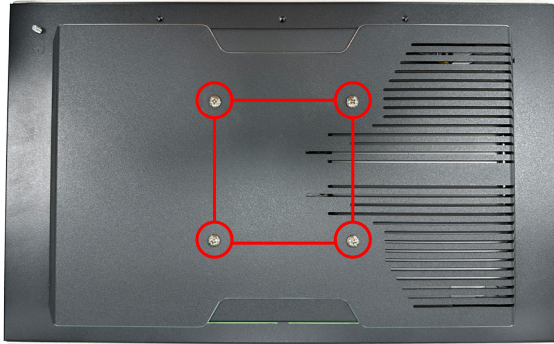
1. Put the panel PC into correct-sized opening on a panel or other fixture.
2. Put the provided panel-mounting clamps into holes around edges of the panel PC.
3. Tightly fasten the panel-mounting clamps around edges.



4.6.2. VESA Mounting

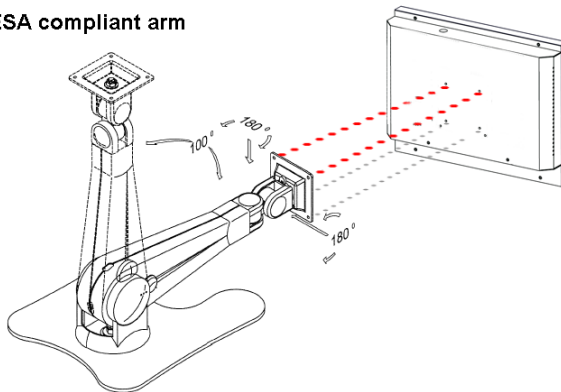
To integrate the computer to a VESA arm:

1. Find the VESA mounting holes on the Panel PC. The VESA specifications varies according to your model.



2. Attach the VESA arm to the rear of the computer by meeting the mounting holes on the VESA arm and VESA bracket.
3. Fix the assemblage with four screws.

VESA compliant arm



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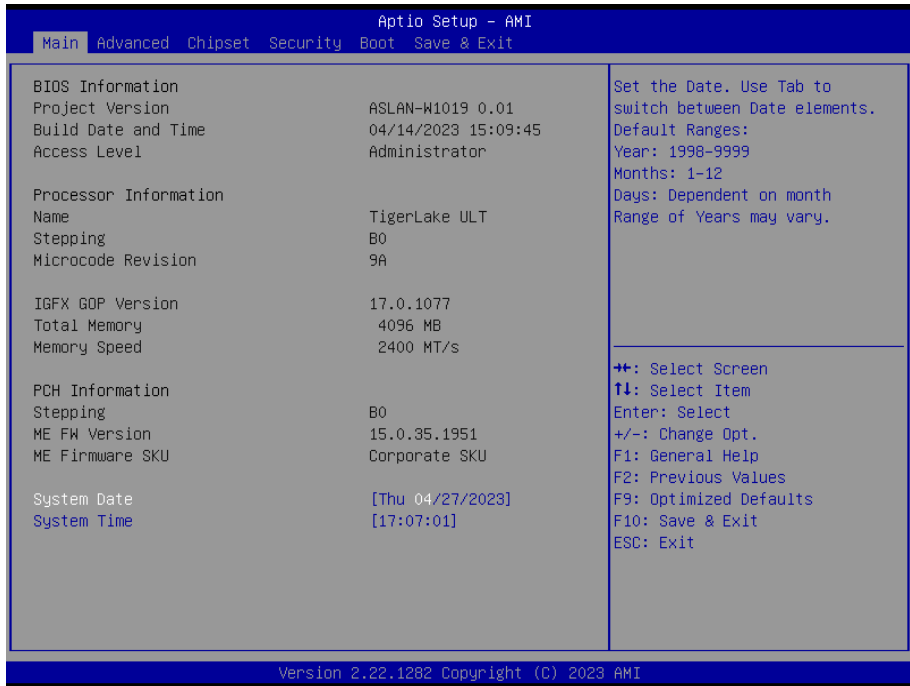
Chapter 5

BIOS

BIOS

The BIOS Setup utility for the ASLAN-W10XXC is featured by American Megatrends Inc to configure the system settings stored in the system's BIOS ROM. The BIOS is activated once the computer powers on. When the computer is off, the battery on the main board supplies power to BIOS RAM.

To enter the BIOS Setup utility, keep hitting the “Delete” key upon powering on the computer.



Menu	Description
Main	See 5.1. Main on page 42
Advanced	See 5.2. Advanced on page 43
Chipset	See 5.3. Chipset on page 59
Boot	See 5.4 Security on page 68
Security	See 5.5. Boot on page 70
Save & Exit	See 5.6. Save & Exit on page 71

Key Commands

The BIOS Setup utility relies on a keyboard to receive user's instructions. Hit the following keys to navigate within the utility and use the utility.

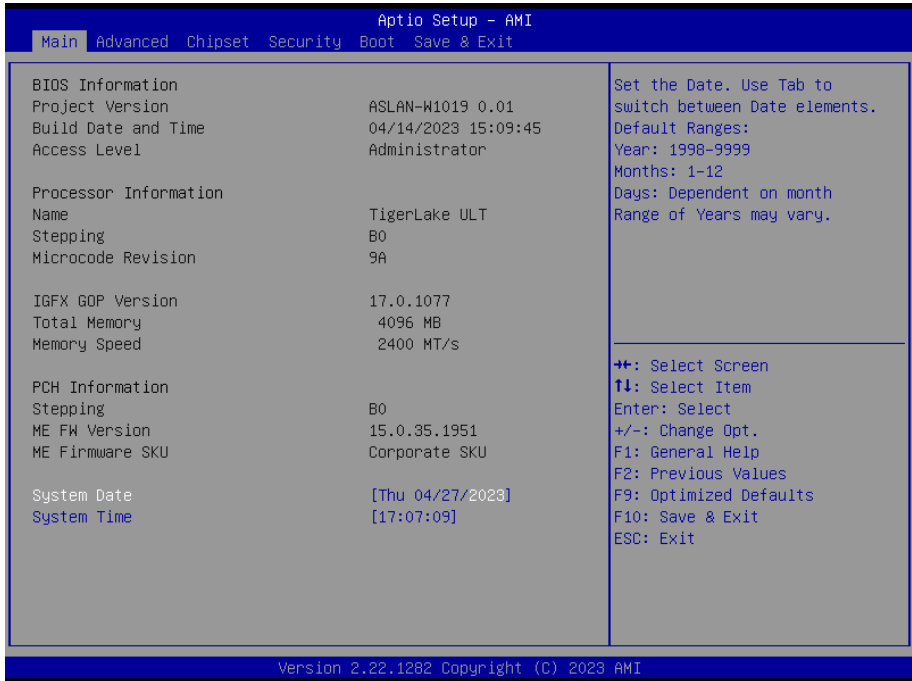
Keystroke	Function
← →	Moves left/right between the top menus.
↓ ↑	Moves up/down between highlight items.
Enter	Selects an highlighted item/field.
Esc	<ul style="list-style-type: none"> ▶ On the top menus: Use Esc to quit the utility without saving changes to CMOS. (The screen will prompt a message asking you to select OK or Cancel to exit discarding changes. ▶ On the submenus: Use Esc to quit current screen and return to the top menu.
Page Up / +	Increases current value to the next higher value or switches between available options.
Page Down / -	Decreases current value to the next lower value or switches between available options.
F1	Opens the Help of the BIOS Setup utility.
F10	Exits the utility saving the changes that have been made. (The screen then prompts a message asking you to select OK or Cancel to exit saving changes.)

Note: Pay attention to the "WARNING" that shows at the left pane onscreen when making any change to the BIOS settings.

This BIOS Setup utility is updated from time to time to improve system performance and hence the screenshots hereinafter may not fully comply with what you actually have onscreen.

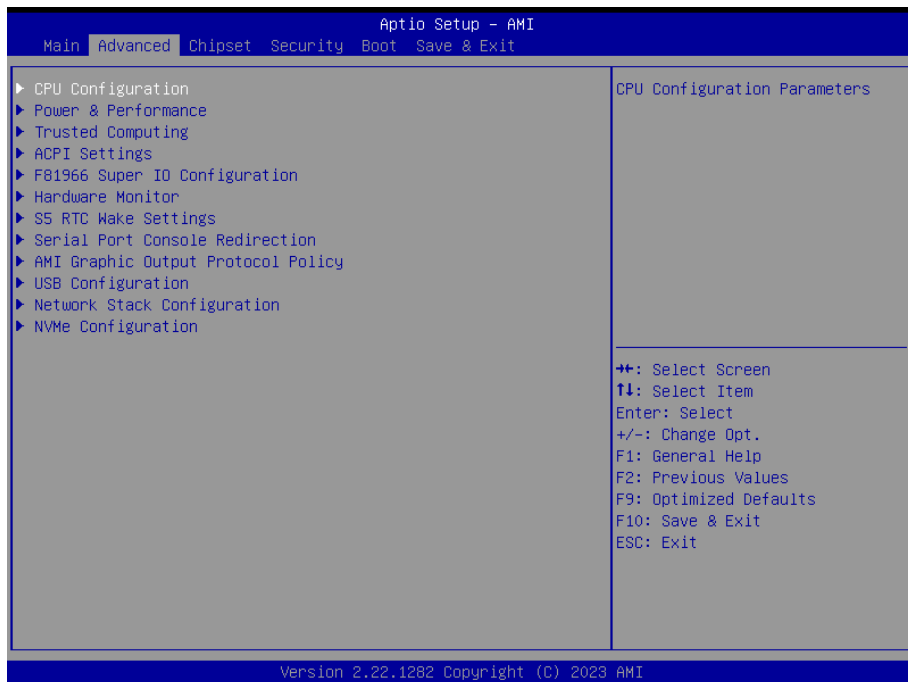
5.1. Main

The **Main** menu features the settings of **System Date** and **System Time** and displays some BIOS info.



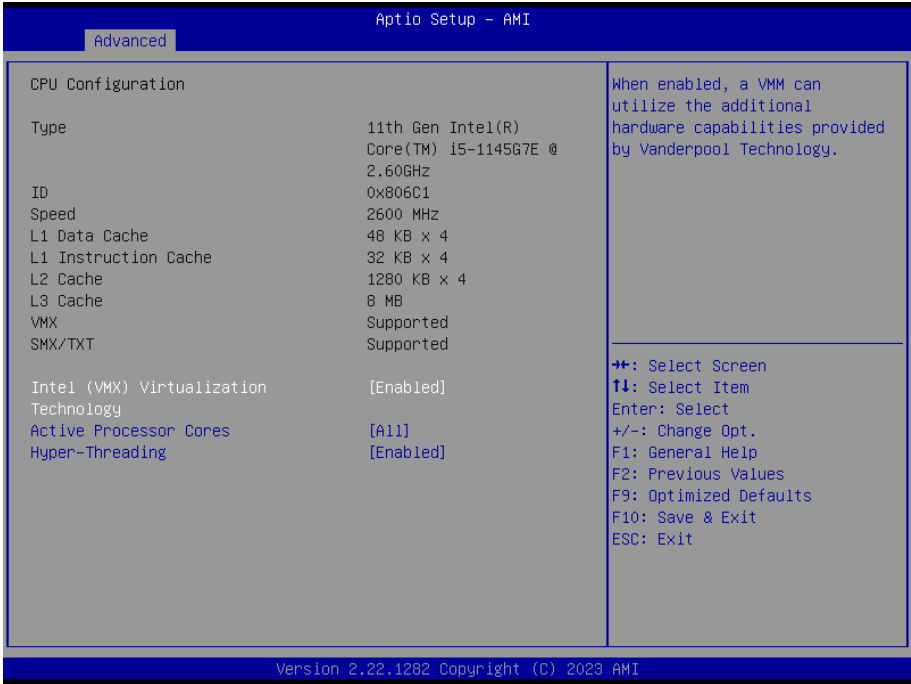
Setting	Description
Project Name	Delivers the model name of the computer.
BIOS Version	Delivers the computer's BIOS version.
Build Date and Time	Delivers the date and time when the BIOS Setup utility was made/ updated.
Access Level	Delivers the level that the BIOS is being accessed at the moment.
System Date	Sets system date.
System Time	Sets system time.

5.2. Advanced



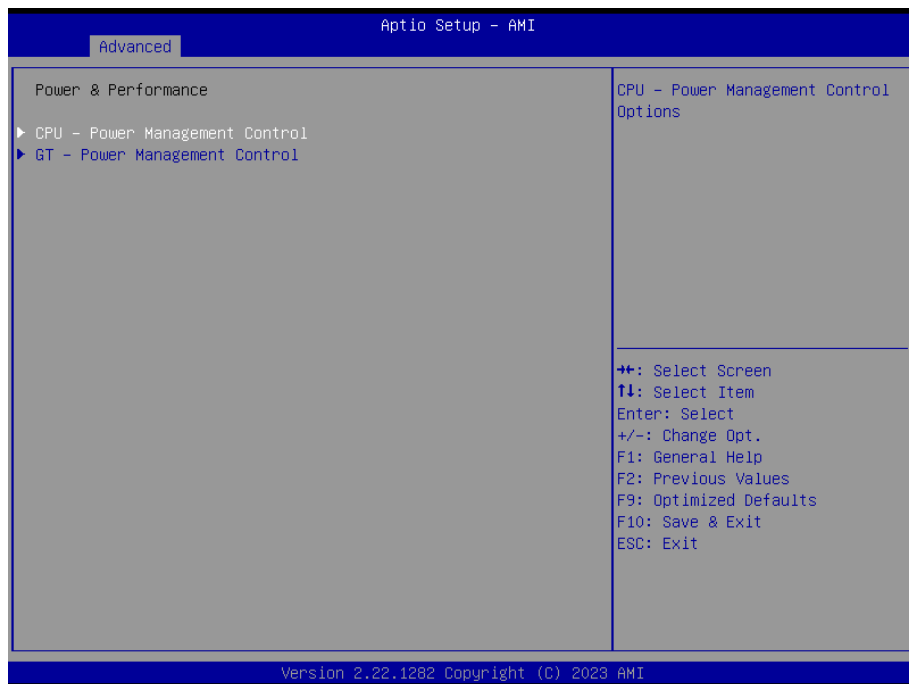
Setting	Description
CPU Configuration	See 5.2.1. CPU Configuration on page 44
Power & Performance	See 5.2.2. Power & Performance on page 45
Trusted Computing	See 5.2.3. Trusted Computing on page 48
ACPI Settings	See 5.2.4. ACPI Settings on page 50
F81966A Super IO Configuration	See 5.2.5. F81966 Super IO Configuration on page 51
Hardware Monitor	See 5.2.6. Hardware Monitor on page 50
S5 RTC Wake Settings	See 5.2.7 S5 RTC Wake Settings on page 53
Serial Port Console Redirection	See 5.2.8. Serial Port Console Redirection on page 54
USB Configuration	See 5.2.9. USB Configuration on page 55
Network Stack Configuration	See 5.2.10. Network Stack Configuration on page 57
NVME Configuration	See 5.2.11. NVME Configuration on page 58

5.2.1. CPU Configuration



Setting	Description
Intel (VMX) Virtualization Technology	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology ► Options: Enabled (default) or Disabled
Active Processor Cores	Number of cores to enable in each processor package. ► Options: All (default) and 1
Hyper-threading	Enabled (default) for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized or Hyper-Threading Technology). When disabled only one thread per enabled core is enabled.

5.2.2. Power & Performance



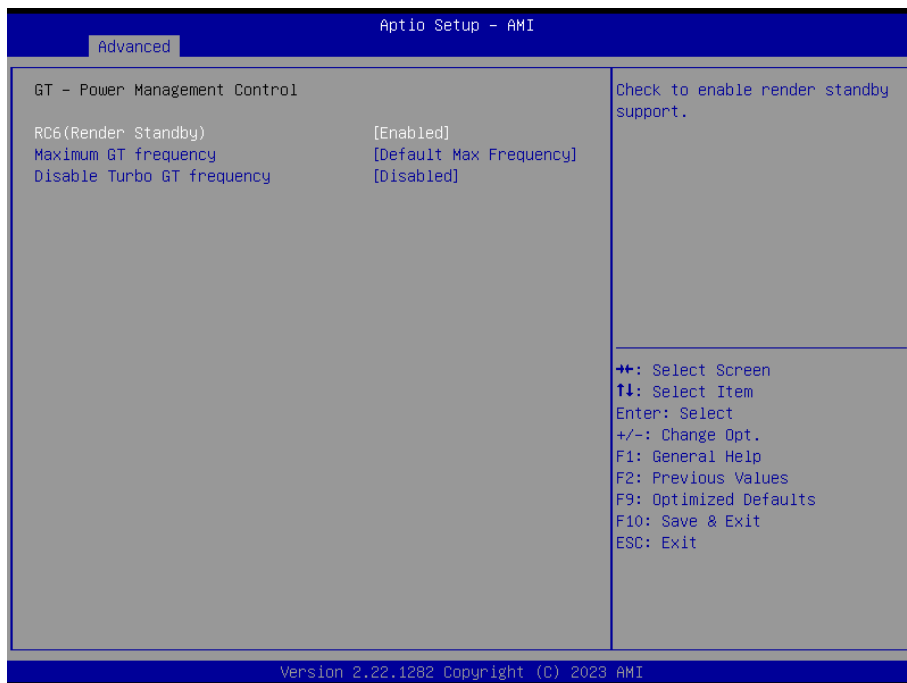
Setting	Description
CPU - Power Management Control	Configure CPU Power Management See 5.2.2.1 CPU Power & Performance on page 46
GT - Power Management Control	Configure graphics processors Power Management See 5.2.2.2 GT - Power Management Control on page 47

5.2.2.1 CPU Power & Performance



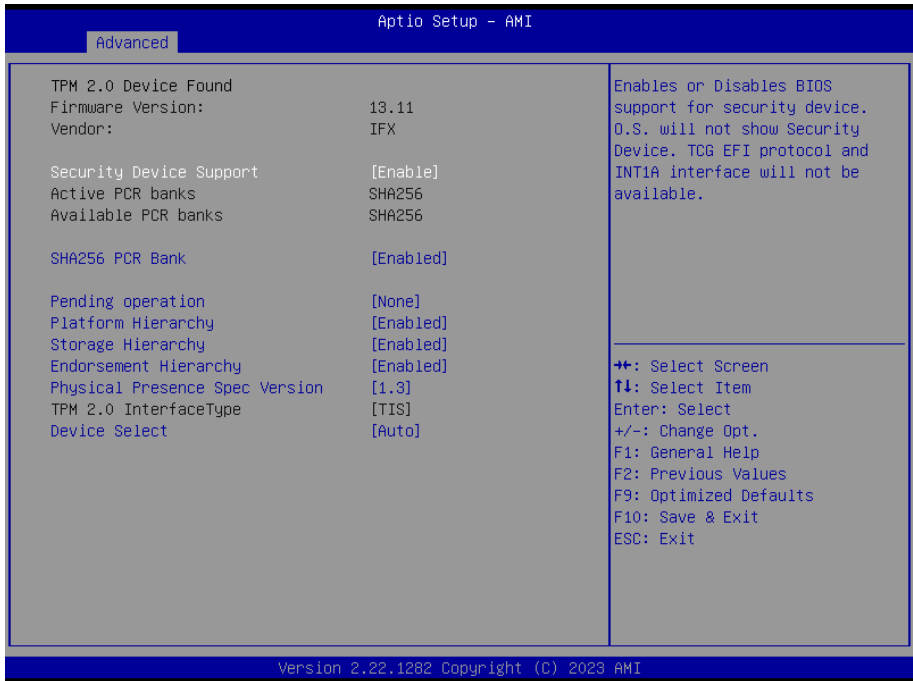
Setting	Description
Enable ACPI Auto Configuration	Enables or Disables (default) BIOS ACPI Auto Configuration
Enable Hibernation	Enables (default) or Disables System ability to Hibernate (OS/ S4 Sleep State). This option may be not effective with some OS.
ACPI Sleep State	Select ACPI sleep state the system will enter when the SUSPEND button is pressed. ► Options: Suspend Disabled and S3 (Suspend to RAM) (default)

5.2.2.2 GT - Power Management Control



Setting	Description
RC6 (Render Standby)	Function of activation and deactivation the energy-saving mechanism integrated into the Intel graphics core processors when the computer enters sleep mode. Enable (default) / Disable
Maximum GT frequency	This item maximum GT frequency limited by te user. Value beyond the range will be clipped to min/max supported by SKU. Default Max Frequency (default)
Disable Turbo GT frequency	This item Disable Turbo GT frequency. Enabled : Disables Turbo GT frequency. Disabled : GT frequency is no limited. Disabled (Default) / Enabled

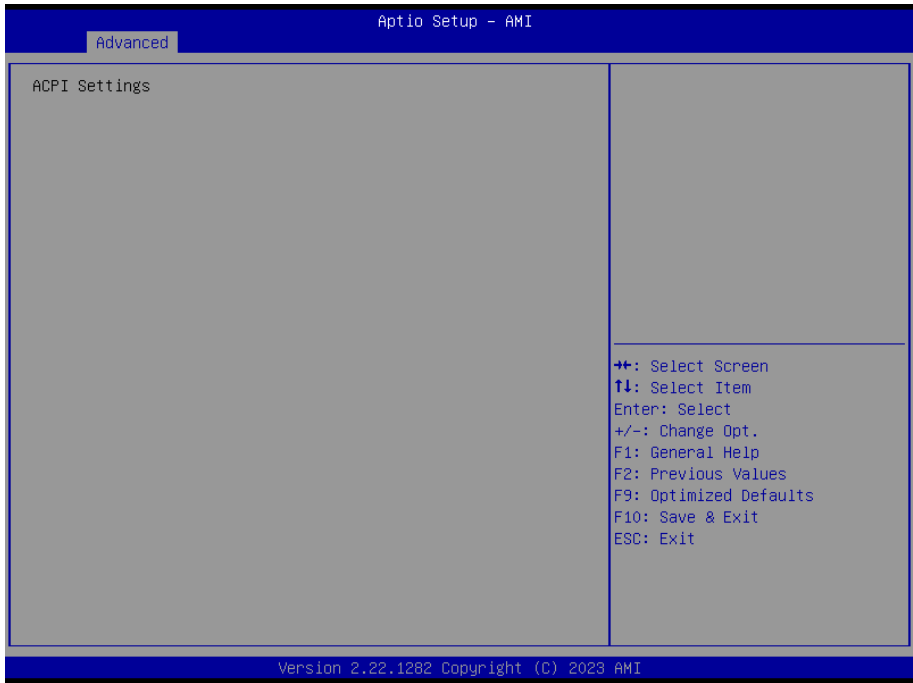
5.2.3. Trusted Computing



Setting	Description
Security Device Support	This item enables or disables BIOS support for security device. O.S will not show Security Device. Enabled (Default) / Disabled
SHA-1 PCR Bank	This item enables or disables SHA-1 PCR Bank. Enabled/Disabled(Default)
SHA256 PCR Bank	Enables or disables SHA-1 PCR Bank. Enabled (Default) / Disabled
Pending operation	This item schedule an operation for the security device. None (Default) / TPM Clear
Platform Hierarchy	Enables or disables Platform Hierarchy Enabled (Default) / Disabled
Storage Hierarchy	Enables or disables Storage Hierarchy Enabled (Default) / Disabled

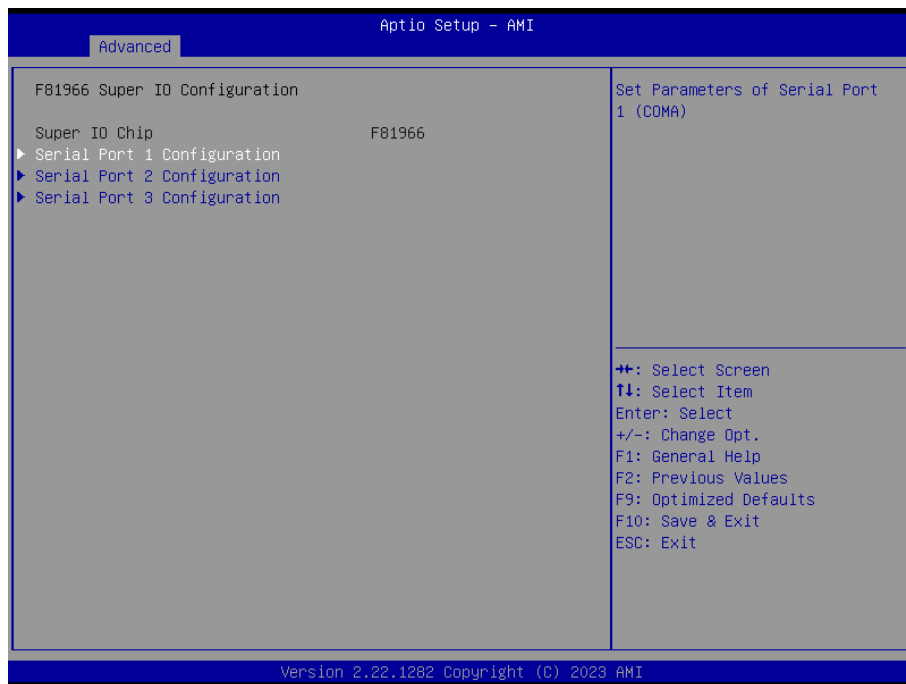
Endorsement Hierarchy	Enables or disables Endorsement Hierarchy. Enabled (Default) / Disabled
TPM2.0 UEFI Spec Version	Allows user to select the TCG2 Spec Version Support. TCG_1_2: Compatible mode for Win8/ Win10 TCG_2: Support new TCG2 protocol and event for Win10 or later. TCG_1_2/TCG_2 (Default)
Physical Presence Spec Version	This item select to tell O.S. to support PPI Spec Version 1.2 or 1.3. 1.3 (Default) / 1.2
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 TPM 2.0 devices and TPM 1.2 devices. Auto(Default)/TPM 1.2/TPM 2.0

5.2.4. ACPI Settings



Setting	Description
Enable ACPI Auto Configuration	Enable (default) or Disable BIOS ACPI Auto Configuration
ACPI Sleep State	Only available when BIOS ACPI Auto Configuration is enabled. Select ACPI sleep state the system will enter when the SUSPEND button is pressed. ► Options: Suspend Disabled and S3 (Suspend to RAM) (default)

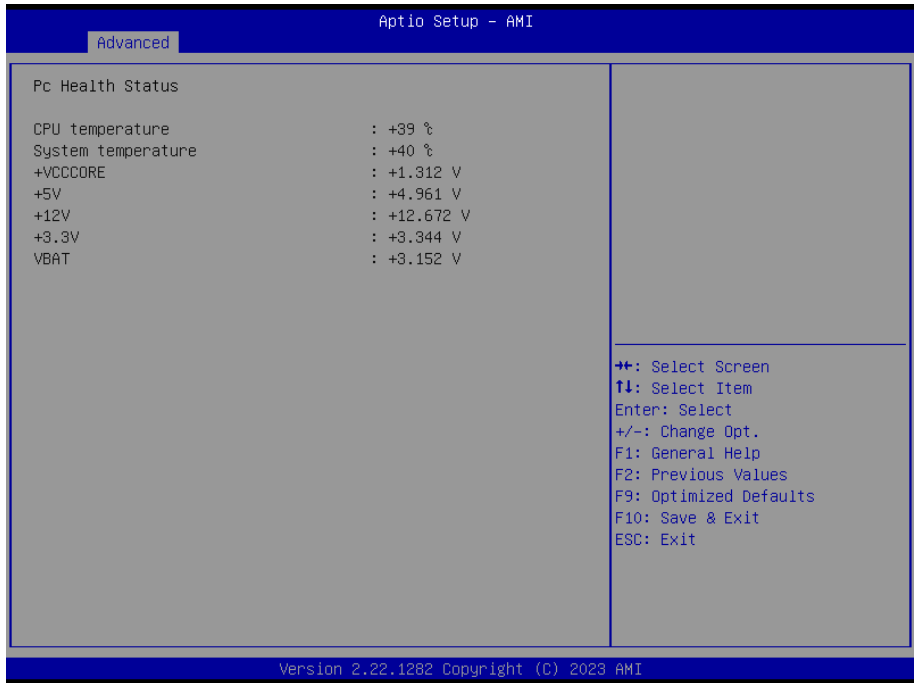
5.2.5. F81966 Super IO Configuration



Note: The quantity of serial ports varies according to your model.

Setting	Description
Serial Port 1/2/3 Configuration	To configure each COM port settings. Note: The quantity of serial ports varies according to your model.
Serial Port	Enable (default) or Disable the Serial Port (COM).
COM1 Mode Select	For Serial Port 1: Select RS-232 (default), RS-422 , RS-485 or RS-485 with termination resistor .

5.2.6. Hardware Monitor



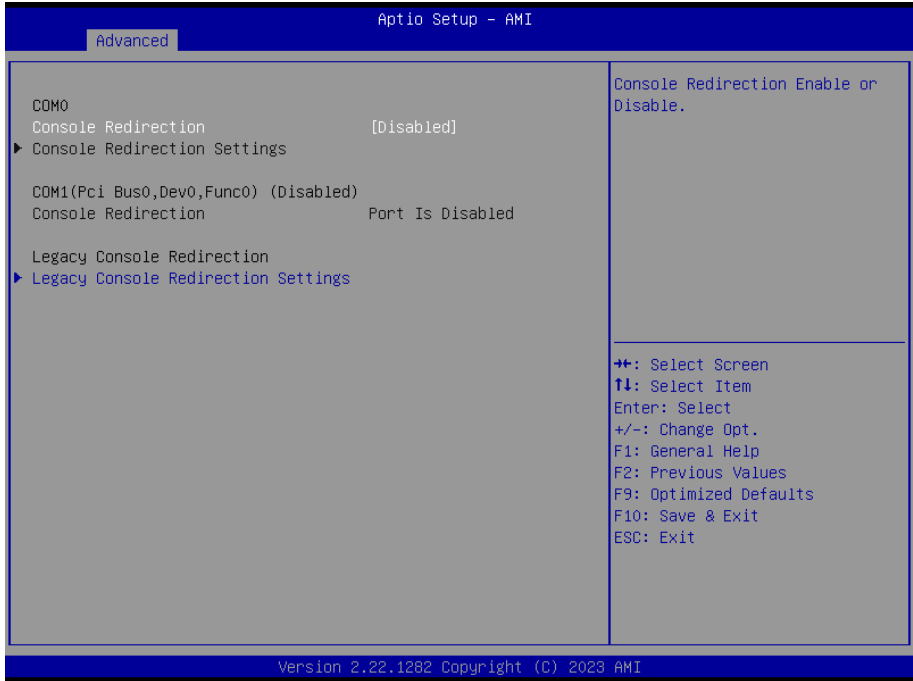
Access this submenu to monitor the hardware status.

5.2.7 S5 RTC Wake Settings



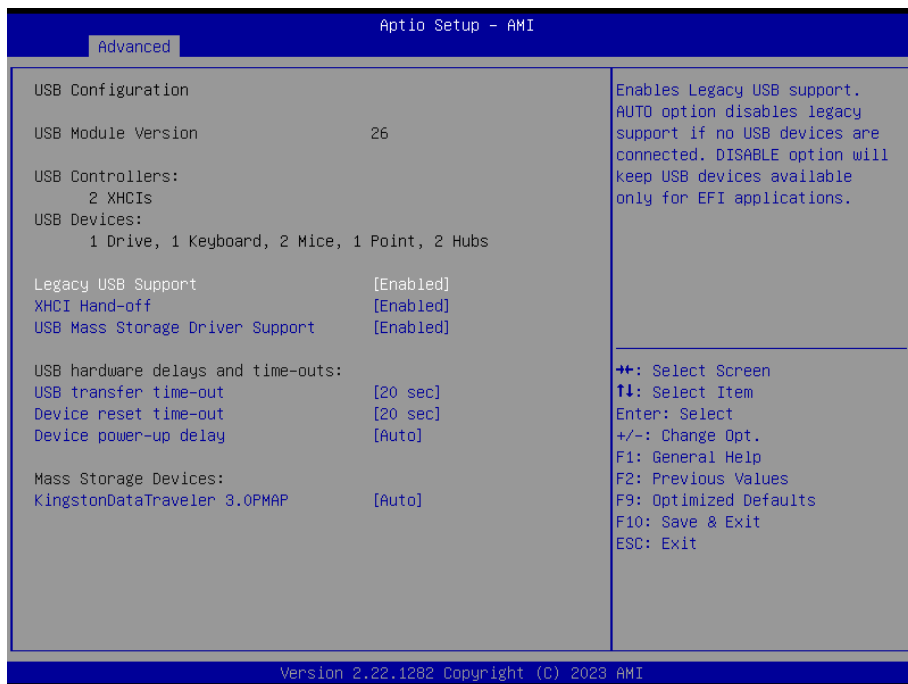
Setting	Description
Wake System from S5	<p>Enable or Disable (default) system wake on alarm event.</p> <p>► Options available are:</p> <p>Disabled (default):</p> <p>Fixed Time: System will wake on the hr::min::sec specified.</p> <p>DynamicTime: If selected, you need to set Wake up minute increase from 1 - 5. System will wake on the current time + increase minute(s).</p>

5.2.8. Serial Port Console Redirection



Setting	Description
Serial Port Console Redirection	Allow you to enable or disable the console redirection feature. Enabled / Disabled (Default)
Legacy Console Redirection Settings	Allow you to select a COM part to display redirection of Legacy OS and Legacy OPRom Messages.

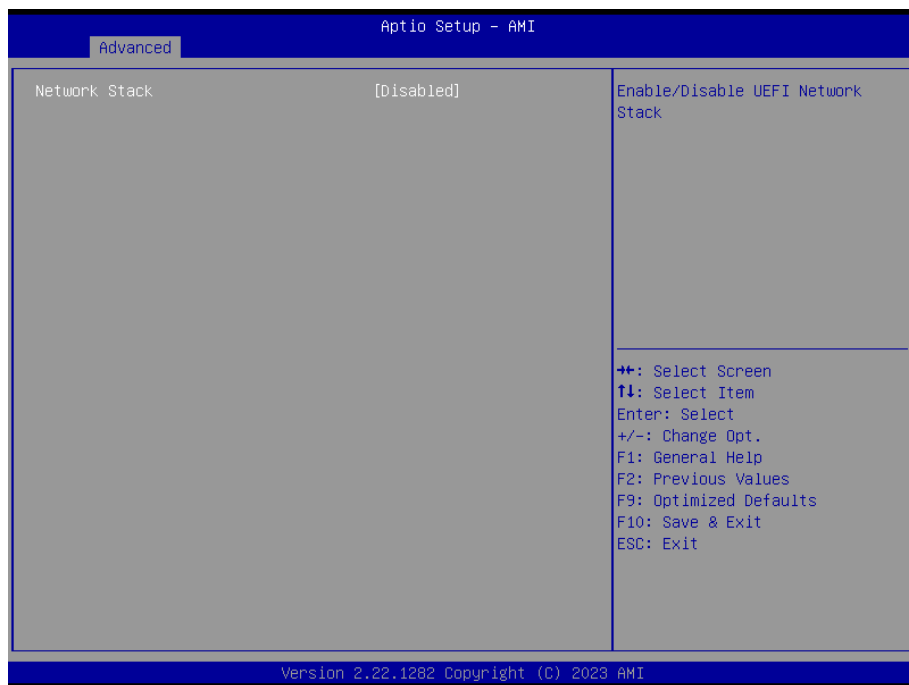
5.2.9. USB Configuration



Setting	Description
Legacy USB Support	<p>Enables/disables legacy USB support.</p> <ul style="list-style-type: none"> ▶ Options available are Enabled (default), Disabled and Auto. ▶ Select Auto to disable legacy support if no USB device are connected. ▶ Select Disabled to keep USB devices available only for EFI applications.
XHCI Hand-off	<p>This is a workaround for Oses without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.</p> <ul style="list-style-type: none"> ▶ The optional settings are: Enabled (default) / Disabled.
USB Mass Storage Driver Support	<p>Enables/disables USB Mass Storage Driver Support.</p> <ul style="list-style-type: none"> ▶ The optional settings are: Enabled (default) / Disabled.

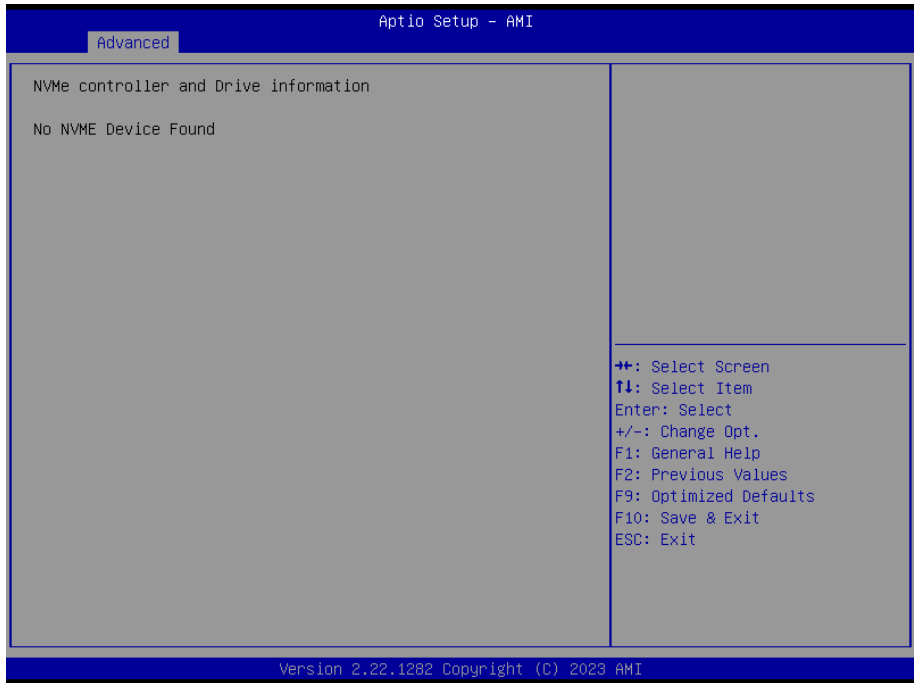
USB hardware delay and time-out	
USB transfer time-out	<p>Use this item to set the time-out value for control, bulk, and interrupt transfers.</p> <p>▶ Options: 1 sec, 5 sec, 10 sec, 20 sec (default)</p>
Device reset time-out	<p>Use this item to set USB mass storage device start unit command time-out.</p> <p>▶ Options available are: 10 sec, 20 sec (default), 30 sec, 40 sec</p>
Device power-up delay	<p>Use this item to set 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.</p> <p>▶ Options available are:</p> <p>Auto: Default</p> <p>Manual: Select Manual you can set value for the following sub-item: 'Device Power-up delay in seconds', the delay range in from 1 to 40 seconds, in one second increments.</p>

5.2.10. Network Stack Configuration



Setting	Description
Network Stack	Enable or Disable (default) UEFI network stack.

5.2.11. NVME Configuration



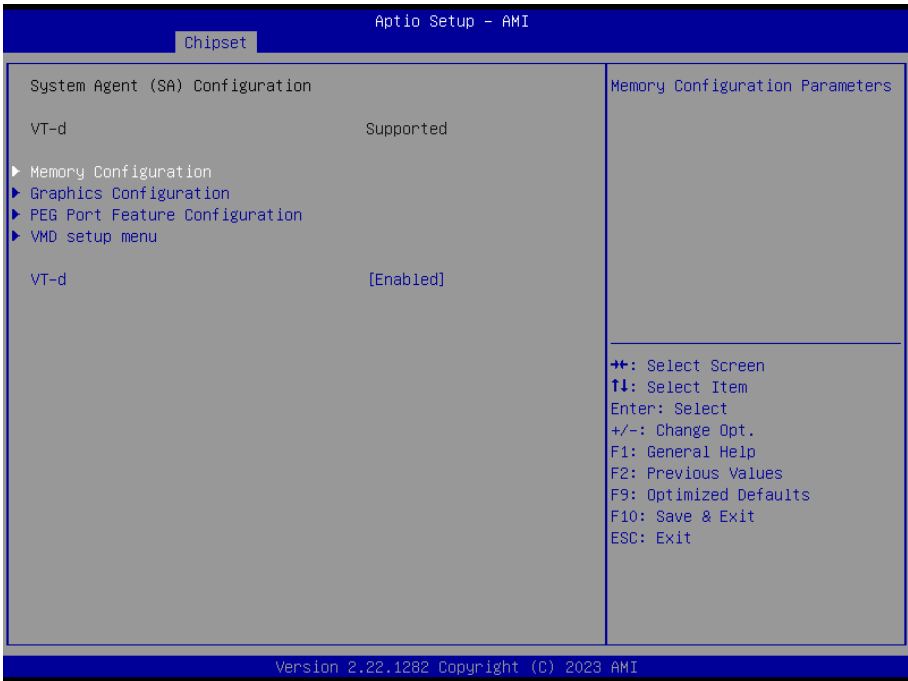
Access this submenu to view the NVMe controller and driver information.

5.3. Chipset



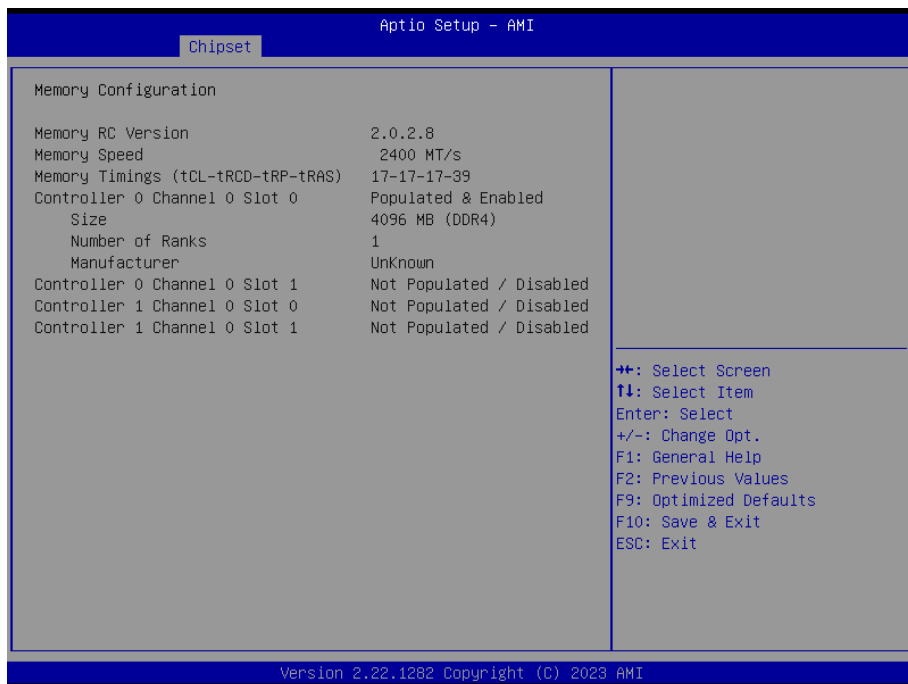
Submenu	Description
System Agent (SA) Configuration	See 5.3.1. System Agent (SA) Configuration on page 60
PCH-IO Configuration	See 5.3.2. PCH-IO Configuration on page 65

5.3.1. System Agent (SA) Configuration



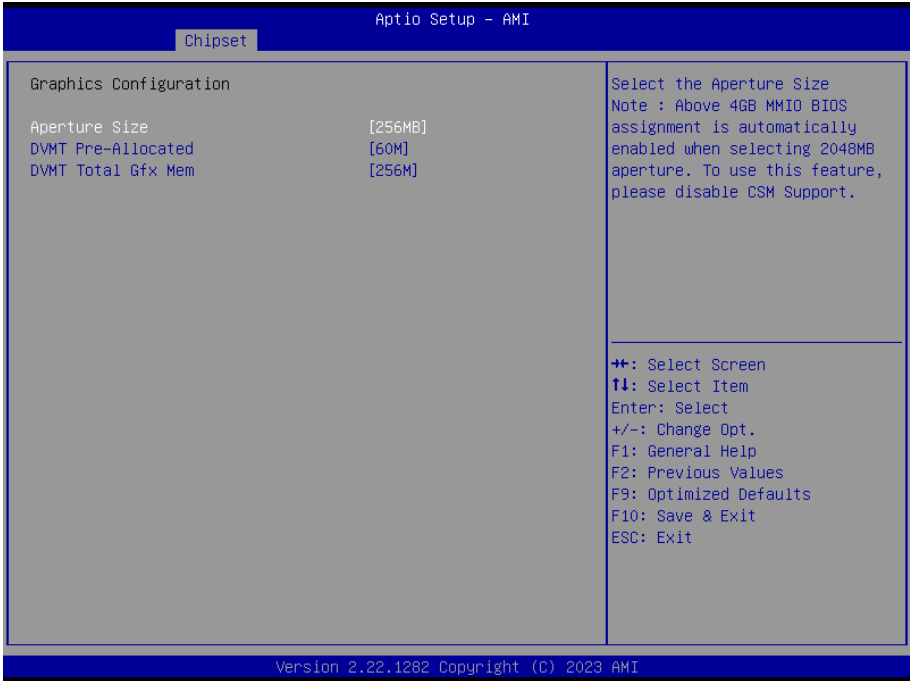
Submenu	Description
System Agent (SA) Configuration	
Memory Configuration	See 5.3.1.1 Memory Configuration on page 61
Graphics Configuration	See 5.3.1.2. Graphics Configuration on page 62
PEG Port Feature Configuration	See 5.3.1.3. PEG Port Feature Configuration on page 63
VMD Setup Menu	See 5.3.1.4. VMD Configuration on page 64
VT-d	Enable (default) or Disable VT-d function

5.3.1.1 Memory Configuration



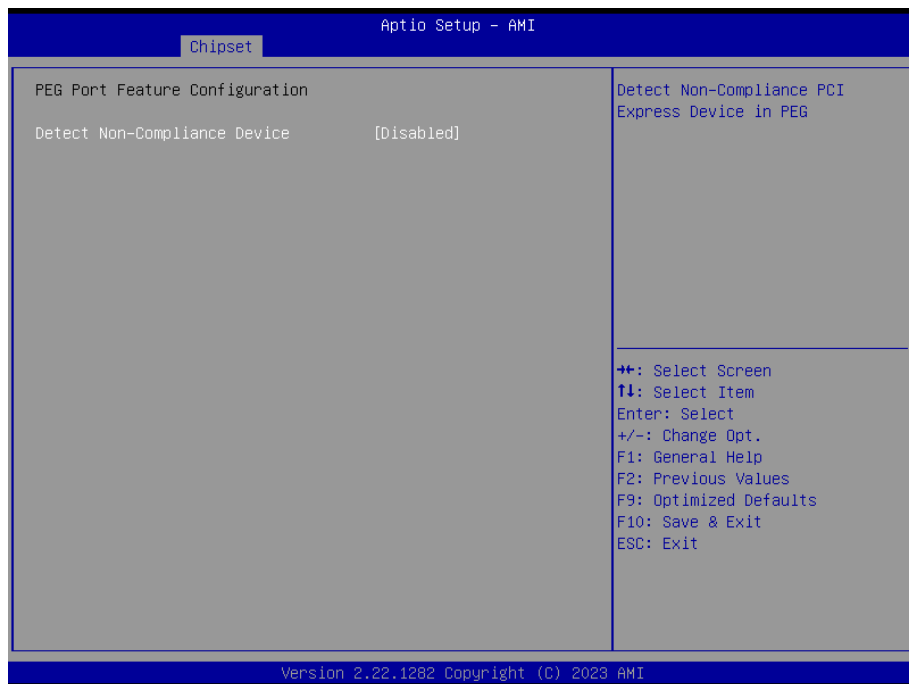
Access this submenu to view the memory configuration.

5.3.1.2. Graphics Configuration



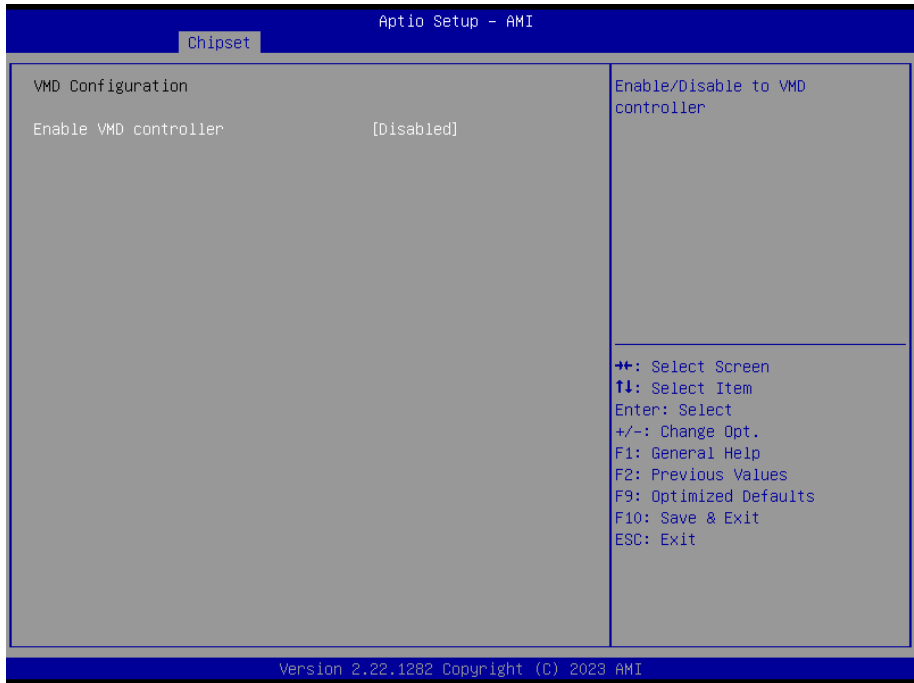
Setting	Description
Aperture Size	Select the Aperture Size ▶ Options: 128MB, 256MB (default), 512MB and 1024MB .
DVMT Pre-Allocated	Select the DVMT 5.0 Pre-allocated (Fixed) Graphic Memory size used by the Internal Graphic Device. ▶ 60M is the default.
DVMT Total Gfx Mem	Select the DVMT 5.0 Total Graphic Memory size used by the Internal Graphic Device. ▶ Options: 128MB, 256MB (default) and Max .

5.3.1.3. PEG Port Feature Configuration



Submenu	Description
Detect Non-Compliance Device	Detect Non-Compliance PCI Express Device in PEG. Enabled / Disabled (Default)

5.3.1.4. VMD Configuration



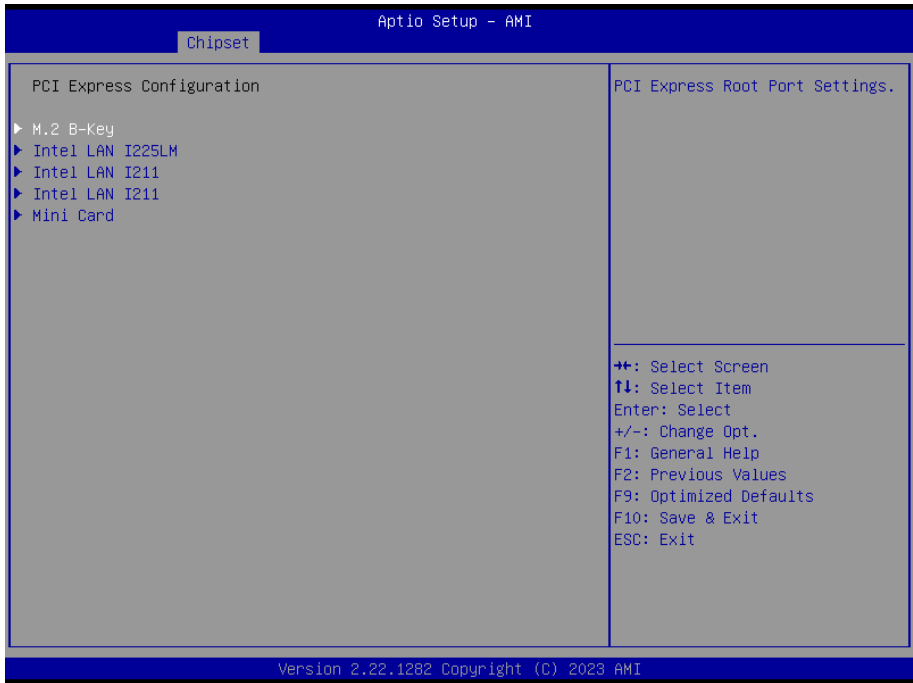
Submenu	Description
Enable VMD controller	Enabled / Disabled (Default) VMD controller

5.3.2. PCH-IO Configuration



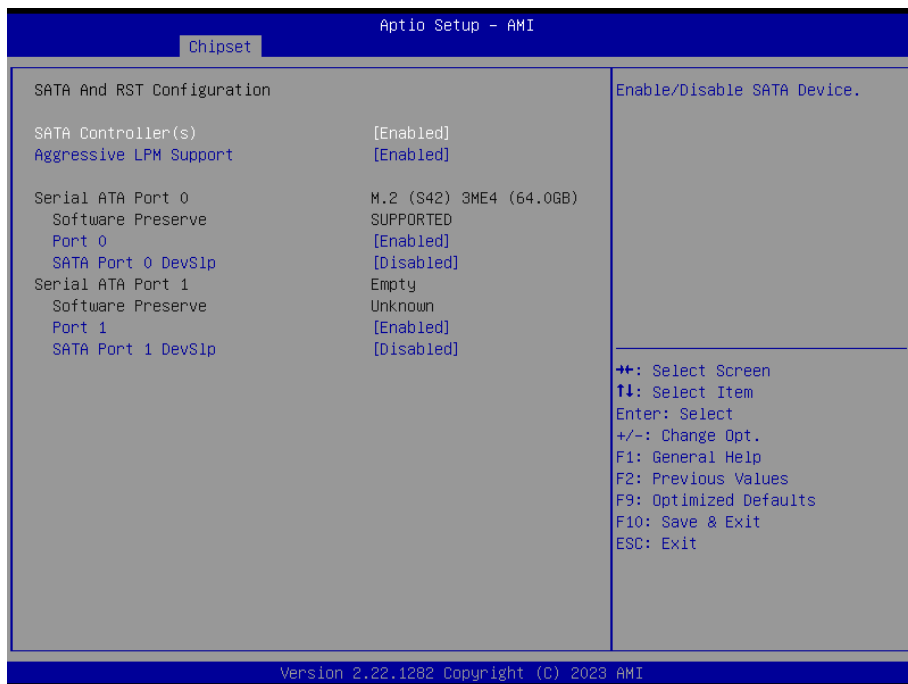
Setting	Description
PCI Express Configuration	See 5.3.2.1 PCI Express Configuration on page 66
SATA And RST Configuration	See 5.3.2.2. SATA And RST Configuration on page 67
Power on after power fail	Specify what state to go to when power is re-applied after a power failure (G3 state). <ul style="list-style-type: none"> Options available are Enable (default), Disable.

5.3.2.1 PCI Express Configuration



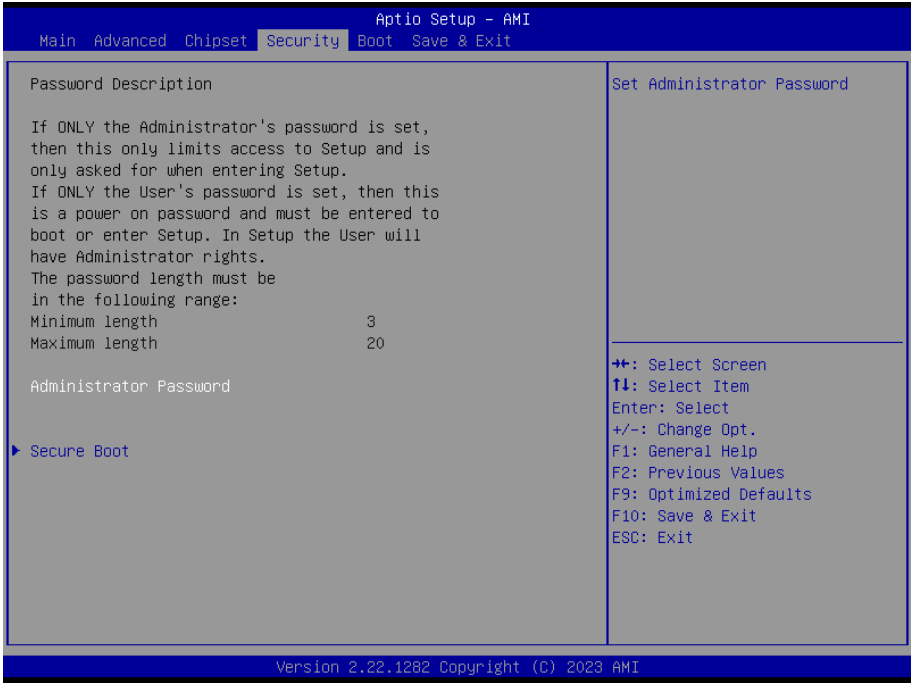
Setting	Description
M.2 B-key	PCI Express root port settings. Control the M.2 B-key root port.
Intel LAN I225LM	PCI Express root port settings. Control the LAN I225LM root port.
Intel LAN I211	PCI Express root port settings. Control the LAN I211 root port.
Mini Card	PCI Express root port settings. Control the Mini Card root port.

5.3.2.2. SATA And RST Configuration



Setting	Description
SATA Controller(s)	Enables (default) / disables SATA device(s).
Aggressive LPM Support	Enables (default) / disables PCH to aggressively enter link power state.
SATA Mode Selection	Configures how SATA controller(s) operate. ► Options: AHCI (default) and Intel RST premium With Intel Optane System Acceleration .
Serial ATA Port 0/1	SATA device information. *Available SATA ports depend on your model.
Port 0/1	Enables (default) / disables the SATA port.
SATA Port 0/1 DevSlp	Enables / disables (default) the SATA port DevSlp. Board rework for LP needed before enable.

5.4 Security



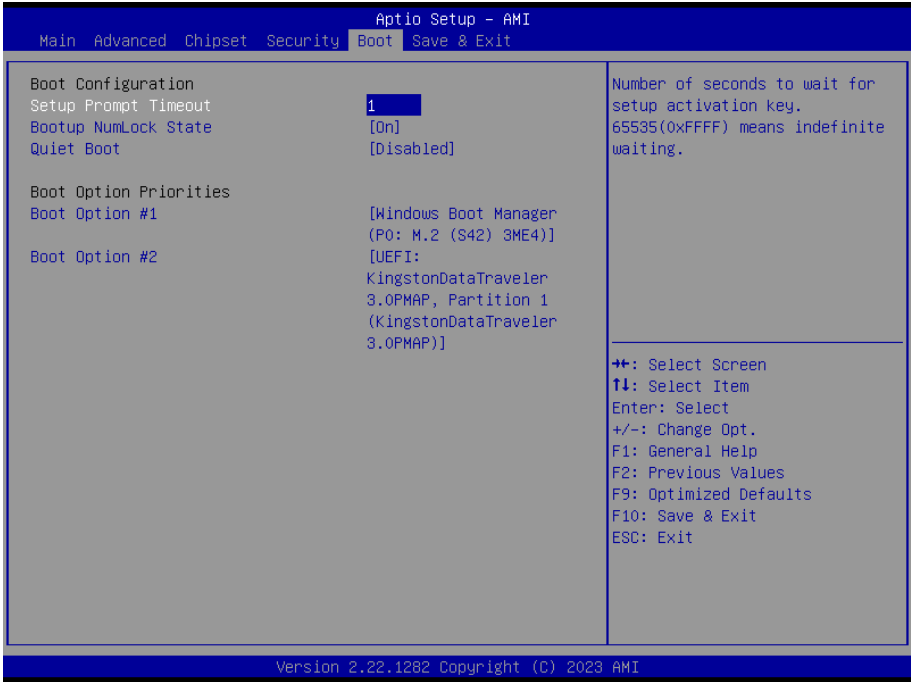
Setting	Description
Administrator Password	To set up an administrator password: <ol style="list-style-type: none"> 1. Select Administrator Password. 2. An Create New Password dialog then pops up onscreen. 3. Enter your desired password that is no less than 3 characters and no more than 20 characters. 4. Hit [Enter] key to submit.

5.4.1 Security Boot



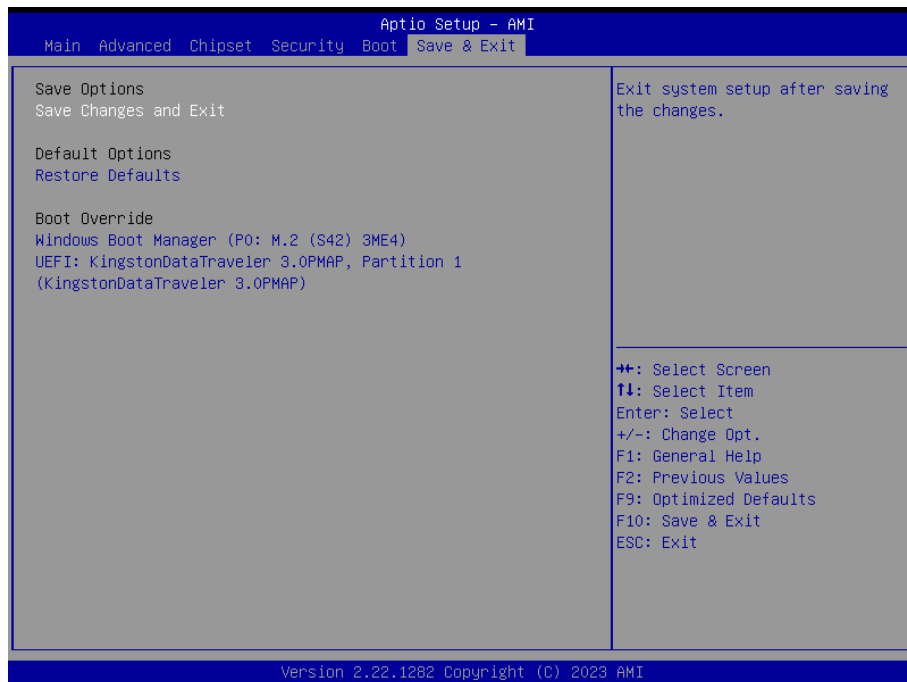
Setting	Description
Secure Boot	Enable/Disable (default) secure boot.
Secure Boot Mode	Allow users to set the secure boot selector. Standard/Custom (default) mode.
Restore Factory Keys	Force system to restore default secure boot key database.
Reset to Setup Mode	Delete all secure boot key databases.
Key Management	Allow users to modify secure variables and set key management page.

5.5. Boot



Setting	Description
Setup Prompt Timeout	Set how long to wait for the prompt to show for entering BIOS Setup. <ul style="list-style-type: none"> ▶ The default setting is 2 (sec). ▶ Set it to 65535 to wait indefinitely.
Bootup NumLock State	Sets whether to enable or disable the keyboard's NumLock state when the system starts up. <ul style="list-style-type: none"> ▶ Options available are On (default) and Off.
Quiet Boot	Sets whether to display the POST (Power-on Self Tests) messages or the system manufacturer's full screen logo during booting. <ul style="list-style-type: none"> ▶ Select Disabled to display the normal POST message, which is the default.
Boot Option Priority	Set the system boot priorities.

5.6. Save & Exit



Setting	Description
Save Changes and Exit	Saves the changes and quits the BIOS Setup utility.
Restore Defaults	Restores all settings to defaults. ▶ This is a command to launch an action from the BIOS Setup utility.
Boot Override	Boot Override presents a list in context with the boot devices in the system. ▶ P0 : Select the device to boot up the system regardless of the currently configured boot priority. ▶ Launch EFI Shell from filesystem device : Attempts to launch EFI Shell Application (Shell.efi) from one of the available filesystem devices.

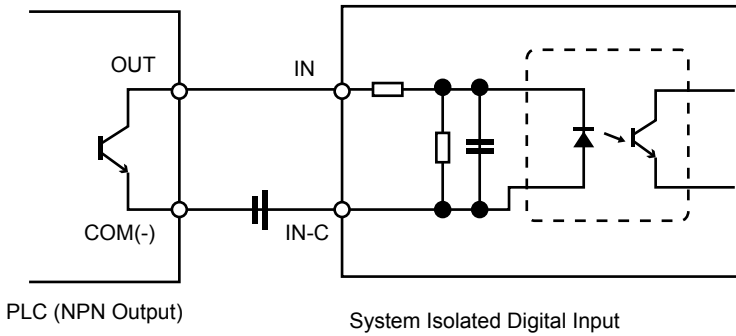
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Appendix

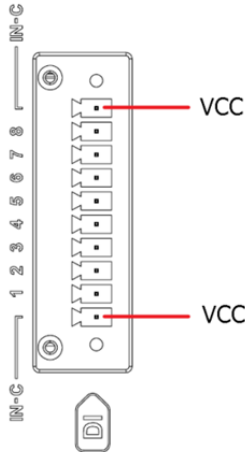
Appendix A. 16-bit DIO Signal Connections

A.1. Isolated Digital Input Connections

The input (IN-C) will accept supply voltages. Make sure the V_{on} (IN-C to IN) is more than 12V and V_{off} (IN-C to IN) is less than 5V. The following diagram shows the connection between outside signal and the system.

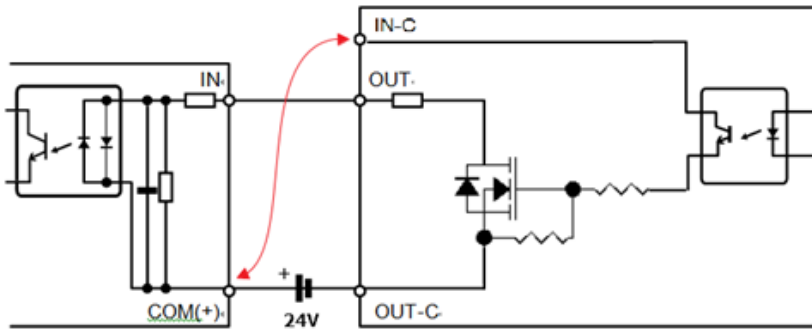


Note that the input's (IN-C) first and last pins are for VCC.



A.2. Isolated Digital Output Connections

When an isolated output channel is being used as an output channel, if an external voltage is applied, the current will flow from the external voltage source to the system. Make sure that the current through each out pin does not exceed 100 mA.



Note that the output's (OUT-C) first and last pins are for GND.

