USER'S MANUAL

GOT110A-TWL-WCD

All-in-One
10.1" WXGA TFT Fanless
PCT Multi-Touch Panel PC with
Intel® Processor N150

User's Manual

AXIOMTEK

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WARNING

- ***Replacing the battery with an incorrect model may cause an explosion. Only use the same or equivalent type of battery as recommended by the manufacturer.***
- ***Properly dispose of used batteries according to the instructions.***

SEP. 2025, Version A1

Printed in Taiwan

Safety Precautions

Before getting started, please read the following important safety precautions.

1. Be sure to ground yourself to prevent static charge when installing any internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.

2. Disconnect the power cord from the GOT110A-TWL-WCD prior to any installation. Be sure both the system and all external devices are turned off. Sudden surge of power could ruin sensitive components. Make sure the GOT110A-TWL-WCD series is properly grounded.

3. Make sure the voltage of the power source is correct before connecting the GOT110A-TWL-WCD to any power outlet.

4. Turn off system power before cleaning. Clean the system using a cloth only. Do not spray any liquid cleaner directly onto the screen.

5. Do not leave the GOT110A-TWL-WCD in an uncontrolled environment where the storage temperature is below -10°C or above 50°C as it may damage the equipment.

6. Do not open the system's back cover. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

    - Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on human body.

    - When handling boards and components, wear a grounding wrist strap available from most electronic component stores.

Trademark Acknowledgments

Table of Contents

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SECTION 1
INTRODUCTION

This section contains general information and detailed specifications of the GOT110A-TWL-WCD, including the following subsections:

Figure 1-1 Front panel of the GOT110A-TWL-WCD

- General Descriptions
- Specifications
- Dimensions and Outlines
- I/O Outlets
- Packing List

1.1 General Descriptions

The GOT110A-TWL-WCD multi-touch panel PC adopts a 10.1-inch WXGA TFT LCD with 350-nits brightness and supports Intel® processor N-series N150 (Twin Lake) up to 6W, providing excellent computing performance and thermal resistance. The panel computer is able to install a mSATA and an optional half-slim SSD, provides two Mini card slots for wireless module. Its excellent ID and friendly user interface make it a professional yet easy-to-use panel computer. The GOT110A-TWL-WCD is an ideal for space-limited applications in factory automation, machine maker operating systems, building automation, and more.

Designed for extended operating temperature range and ingress protection

The GOT110A-TWL-WCD is an ultra-slim and lightweight industrial panel PC designed with a fanless architecture to deliver reliable performance in demanding environments. Supporting an extended operating temperature range from -10°C to +50°C, it offers a low-power, green design that ensures energy efficiency and sustainability with up to 95% recyclable materials. The system features a durable construction with Front Bezel IP65 and Rear Cover IP30 protection, safeguarding against dust and water ingress. The GOT110A-TWL-WCD is an ideal solution for industrial applications requiring reliability, efficiency, and eco-friendly design.

Reliable and stable design

The GOT110A-TWL-WCD meets MIL-STD-810H standards for both vibration and shock, ensuring stable operation in transportation and industrial applications. With its robust structure and rich connectivity options—USB 2.0, USB 3.2, Type-C, Ethernet, and RS-232/422/485—the system delivers reliable performance and easy integration with diverse devices.

【Note】 ***Heavy-vibration may sometimes cause the LCD screen to flash in white color; however, it won't affect the function of the product.***

Features

- 10.1" WXGA TFT LCD 350 nits with LED backlight, PCAP
- Fanless design with Intel® N-series N150 (Twin Lake)
- Front Bezel IP65 & Rear cover IP30
- AT/ATX mode selectable via hardware switch
- Supports AXEAPI
- Supports 2242/2280 M-key (PCIe Gen3 x2 NVMe), mSATA, Wi-Fi (6E/7) **or** 4G LTE
- Operating temperature: -10˚C to +50˚C
- Supports panel mount, wall mount, VESA, and desktop stand

1.2 Specifications

CPU

- **CPU**
  Intel®Processor N150, 4C, 6W, 3.6/2.9GHz,
  Intel®Processor N250, 4C, 6W, 3.8/3.2GHz (By option)

- **Chipset**
  - SoC integrated

- **System (Onboard) Memory**
  - 8GB LPDDR5-4800, dual-channel, onboard (default)
  - 16GB LPDDR5-4800, dual-channel, onboard (optional)

- **BIOS**
  - American Megatrends Inc. UEFI (Unified Extensible Firmware Interface) BIOS.

I/O System

- **Standard I/O**
  1 x RS-232/422/485
  1 x RS-232
  2 x USB 3.2 Gen 2
  2 x USB 2.0
  1 x USB Type-C (USB 3.2 Gen2, DP 1.4, 5V/3A, with lock hole)
  1 x Lock hole for Type-C port (use M2 screw or retention clip to prevent cable loosening under vibration)
  1 x power button
  1 x AT/ATX DIP switch
- **Ethernet**
  2 x 2.5GbE Ethernet (I226-V, supports UEFI PXE boot and LAN wake-up)
- **Expansion**
  1 x M.2 Key E slot 2230 for wireless (PCIe & USB 2.0)
  1 x full-size mini PCIe slot (PCIe +SATA +USB)
  1 x NANO SIM card slot
- **Storage**

  1 x M.2 Key M slot 2242/2280 (PCIe Gen3 x2 NVMe)

- **Power connector**
  1 x power input 9 to 36VDC via 3-pin terminal block connector

- **Wireless Module (Optional)**
  – Supports Intel® Wi-Fi 7 (802.11be) module via M.2 Key E (2230) slot.
  – Wi-Fi 7 operation is **limited to normal ambient temperature conditions (commercial environment)**.
  – Wi-Fi 7 functionality is supported only under **Windows 11 or later** operating systems.

System Specification

- **10.1" WXGA TFT LCD**

  10.1" WXGA TFT LCD 350nits, PCAP, resolution:1280x800

- **Weight(Net/Gross)**

  1.74 kg (3.84 lb)/3.16 kg (6.97 lb)

- **Dimensions**

  System (W x D x H): 263.4 x 38 x 182.4 mm (10.37" x 1.49" x 7.18")

  Packing (W x D x H): 433 x 368 x 222 mm (16.61" x 14.49" x 8.74")

- **Operating temperatures**

  -10°C to +50°C (+14°F to +122°F)

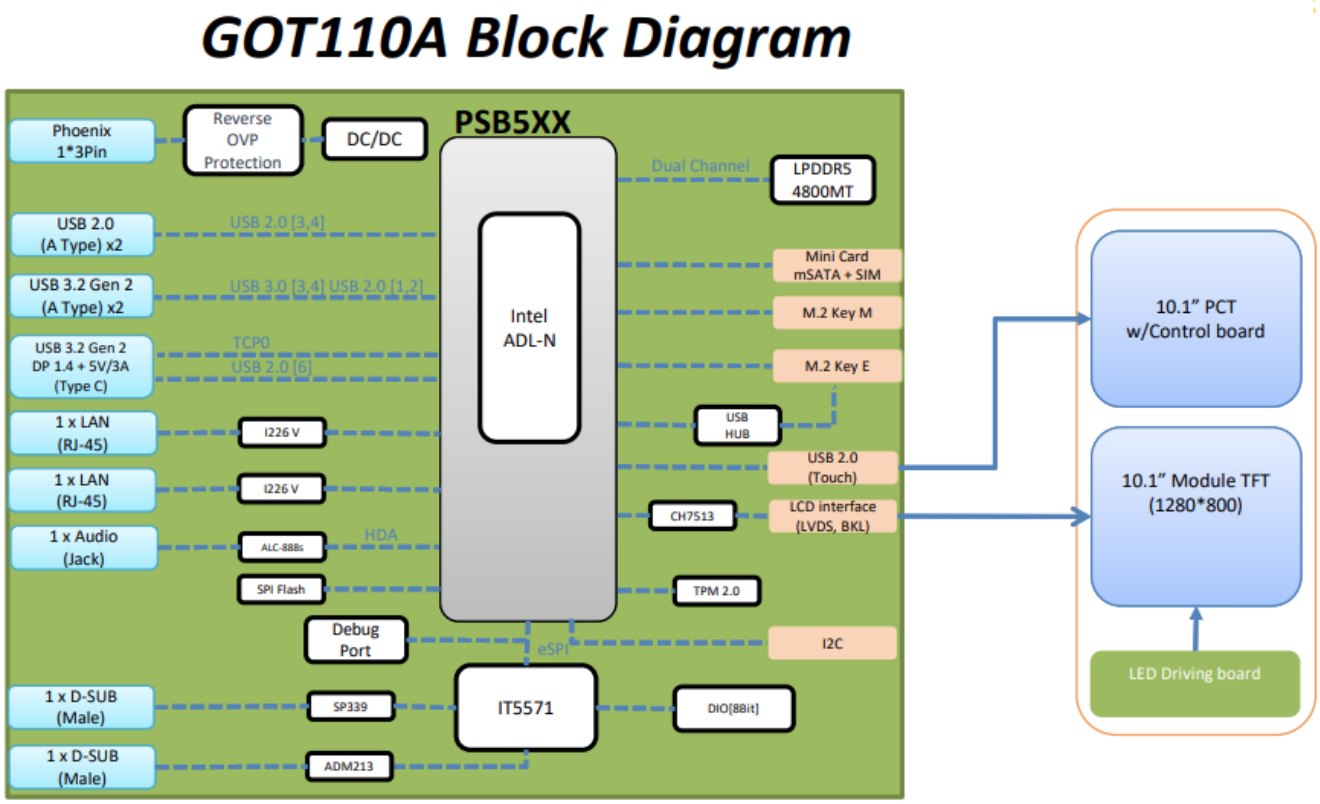
- **Storage temperatures**
  - -30~80 °C depend on LCD Storage temperature

- **Relative humidity**

  10% to 95% @ +40°C, Non-condensing

- **System power input**
  - DC power input: +9 to 36VDC

- **System Block diagram**

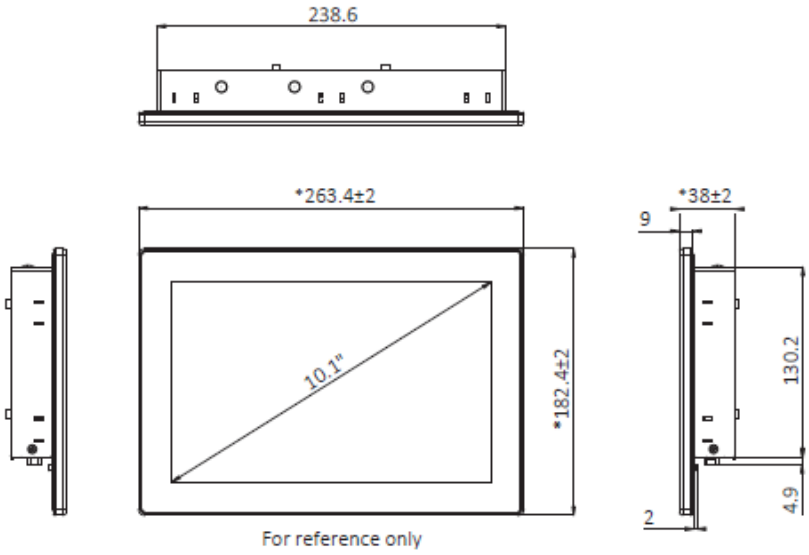


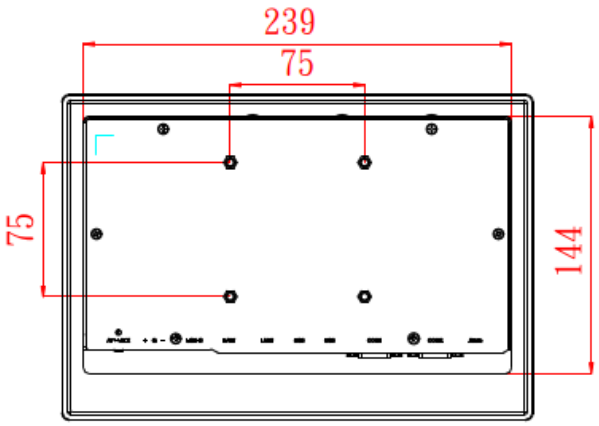
【Note】 1. ***All specifications and images are subject to change without notice.***

2. ***The performance of the system might be adversely affected at an operating temperature above 40°C.***

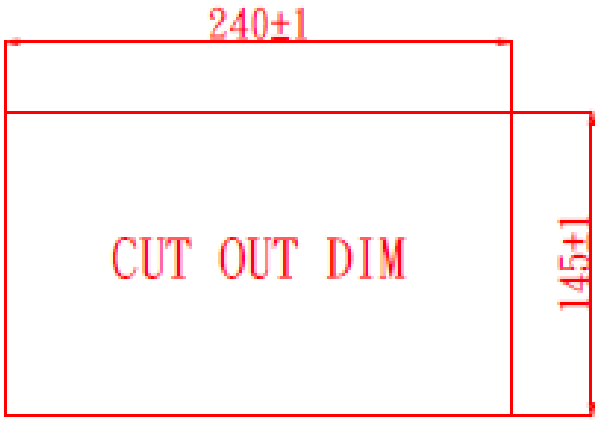
1.3 Dimensions and Outlines

The figures below show the dimensions and outlines of the GOT110A-TWL-WCD panel PC.





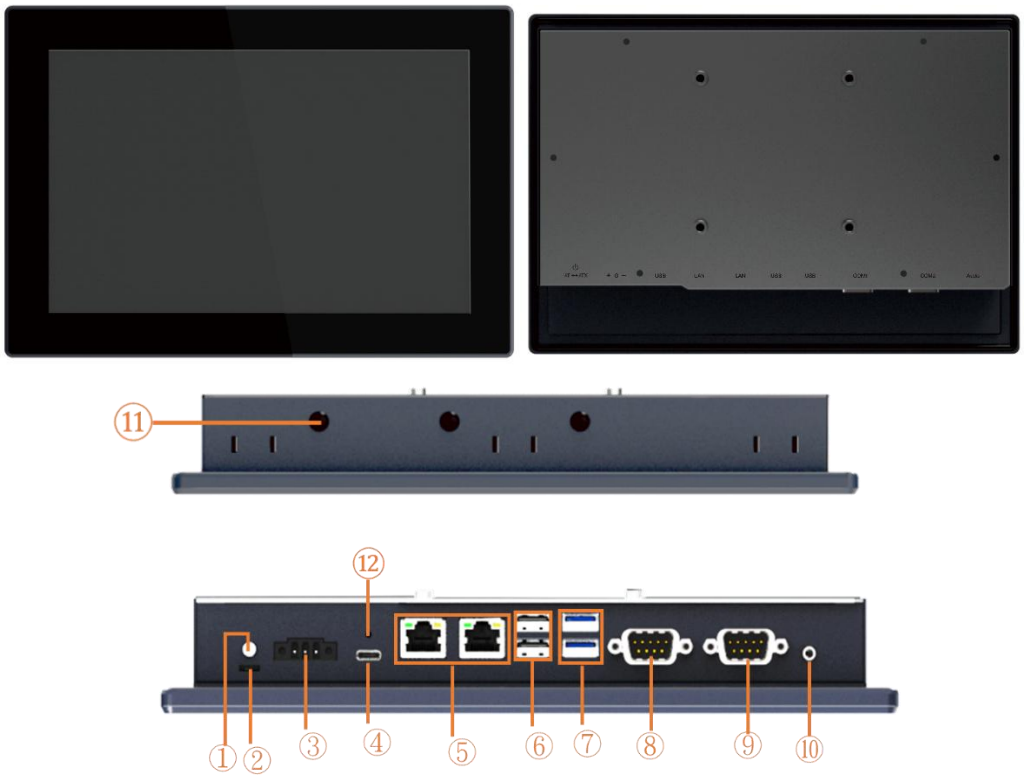
Cut out dimension of GOT110A-TWL-WCD: 240 x 145 mm



1.4 I/O Outlets

Please refer to figure 1-4 for the I/O locations of the GOT110A-TWL-WCD.

Figure 1-4: Front and bottom views of the GOT110A-TWL-WCD.



No.	Note.	No.	Note.
1	Power Button	7	2 x USB 3.2 Gen 2
2	AT/ATX SWITCH	8	COM1 (RS-232/422/485)
3	DC power input	9	COM2 (RS-232)
4	USB Type-C	10	Audio
5	2 x 2.5GbE LAN	11	3 x Antenna hole
6	2 x USB 2.0	12	Lock hole for Type-C port

1.5 Packing List

A complete bundled package should contain the following items:

- GOT110A-TWL-WCD unit x 1

Please contact an Axiomtek distributor immediately if any of the above-mentioned items are missing.

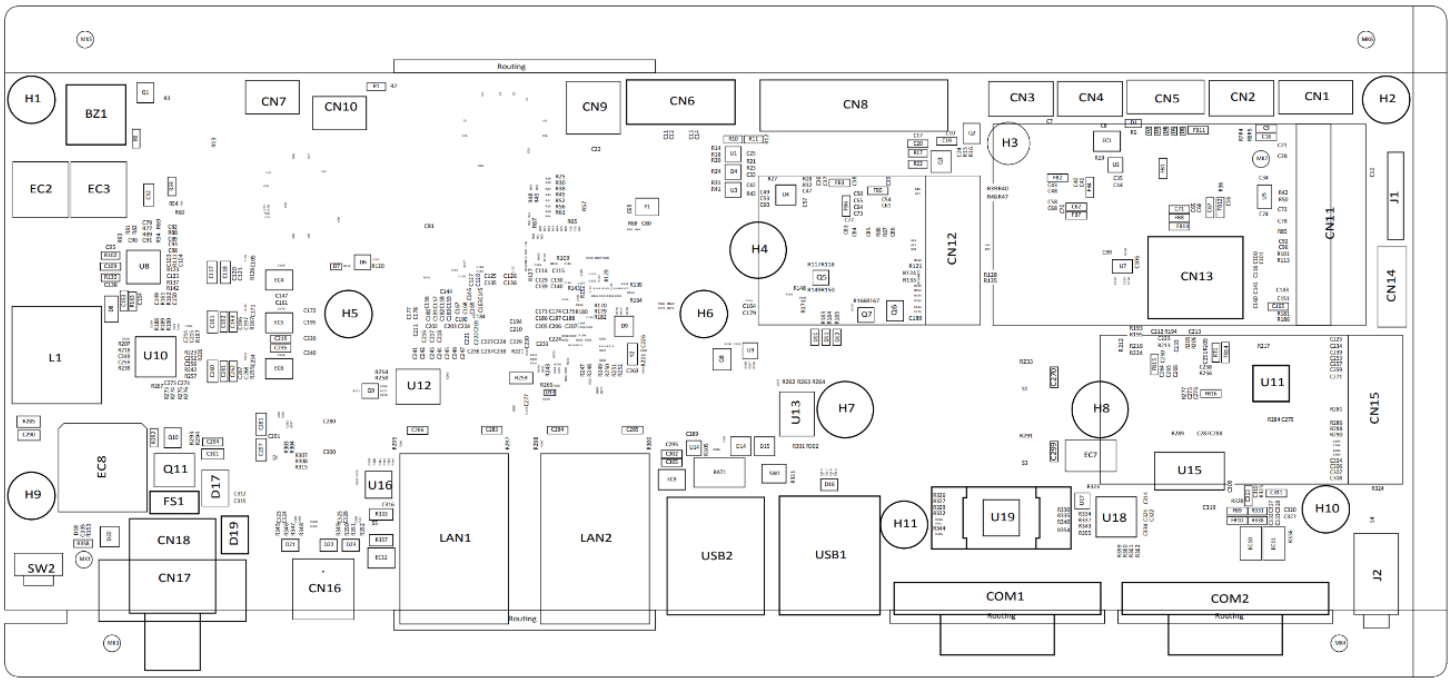
SECTION 2
SYSTEM CONFIGURATIONS

The GOT110A-TWL-WCD provides rich I/O ports and flexible expansion features for users to perform various tasks. This section provides detailed information on the hardware components of the panel PC as well as installation instructions, including the following subsections:

- Board Layout
- I/O Pin Assignment
- Hardware Installation (Optional)
- VESA mounting (Optional)

2.1 Board Layout

Component Side



2.2 Connectors

The GOT110A-TWL-WCD has two serial ports COM1 (RS-232/422/485) and COM2 (RS-232), USB ports(2 x USB 2.0, 2 x USB 3.2 Gen 2 and 1 x Type-C), has two 2.5GBE LAN and DC-in 9V~36V connecter.

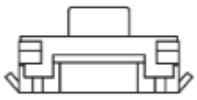
The connectors allow the CPU Board to connect with other parts of the system. Ensure that all connectors are in place and firmly attached. The following table lists the function of each connector on the **PSB566.**

External connectors	Label
Restore BIOS Optimal Defaults	SW1
Power Button connector	SW2
ATX/AT Quick Switch	SW3
DC-in Phoenix Power Connector	CN17
Ethernet connector	LAN1,LAN2
USB2.0 connector	USB2
USB3.2 connector	USB1
Type-C connector	CN16
RS232/422/485 Port connector	COM1~COM2
Audio out connector	J2
Internal connectors	**Label**
Full size min-PCIe connector	CN11
SIM card connector	CN13
M.2 Key E connector	CN12
M.2 Key M connector	CN15

Restore BIOS Optimal Defaults (SW1)

Touch Switches push (down) for 5 seconds. Doing this procedure can restore BIOS optimal default.

Function	Setting
Normal operation (Default)	OPEN
Restore BIOS optimal defaults	Push (down) 5s



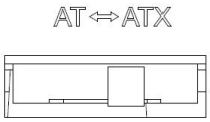
Power button connector: SW2

Power button LED	Description
Null	System shut down
Blue	System power on

AX/ATX Quick Switch (SW3)

If you set ATX /AT switch to AT mode, the system will be automatically power on

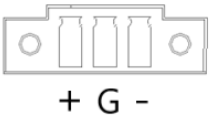
without pressing soft power button during power input; we can use this switch to achieve auto power on demand.



DC-in Phoenix Power Connector : CN17

The system supports 9~36V Phoenix DC-in connector for system power input.

Pins	Signals
1	DC+
2	GND
3	DC-



Ethernet Connector: LAN1, LAN2

The GOT110A-TWL-WCD has two RJ-45 connectors: LAN1 and LAN2.
LAN1 is designed by Intel i226-V and LAN2 is Intel i226-V.

Table 2-5 Pin assignment for LAN1

Pin	1000 Base-T	100/10 Base-T	Description
L1	BI_DA+	TX+	Bidirectional or Transmit Data+
L2	BI_DA-	TX-	Bidirectional or Transmit Data-
L3	BI_DB+	RX+	Bidirectional or Receive Data+
L4	BI_DC+	N.C.	Bidirectional or Not Connected
L5	BI_DC-	N.C.	Bidirectional or Not Connected
L6	BI_DB-	RX-	Bidirectional or Receive Data-
L7	BI_DD+	N.C.	Bidirectional or Not Connected
L8	BI_DD-	N.C.	Bidirectional or Not Connected
A	Active Link LED (Yellow) Off: No link Blinking: Data activity detected		
B	Speed LED 1000: Orange 100/10: Green/OFF		

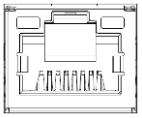
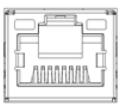


Table 2-6 Pin assignment for LAN2 (CN21)

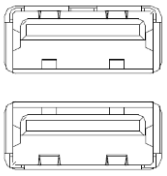
Pin	2500/1000 Base-T	100/10 Base-T	Description
L1	BI_DA+	TX+	Bidirectional or Transmit Data+



L2	BI_DA-	TX-	Bidirectional or Transmit Data-
L3	BI_DB+	RX+	Bidirectional or Receive Data+
L4	BI_DC+	N.C.	Bidirectional or Not Connected
L5	BI_DC-	N.C.	Bidirectional or Not Connected
L6	BI_DB-	RX-	Bidirectional or Receive Data-
L7	BI_DD+	N.C.	Bidirectional or Not Connected
L8	BI_DD-	N.C.	Bidirectional or Not
A	Active Link LED (Yellow) Off: No link Blinking: Data activity detected		
B	Speed LED 2500: Green 1000: Orange 100/10: OFF		

USB 2.0 Connector: USB2

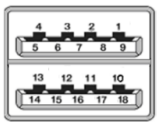
Pin	Signal USB Port 0	Pin	Signal USB Port 1
1	USB_VCC (+5V level standby power)	5	USB_VCC (+5V level standby power)
2	USB_Data-	6	USB_Data-
3	USB_Data+	7	USB_Data+
4	GND	8	GND



USB 3.2 Connector: USB1

The system has four USB port, four ports compliant with USB 3.2 gen2 (10GB/s), and ideally for installing USB peripherals such as scanner, camera, and USB devices, etc.

Pin	Signal USB Port 0	Pin	Signal USB Port 1
1	USB_VCC (+5V level standby power)	10	USB_VCC (+5V level standby power)
2	USB_Data-	11	USB_Data-
3	USB_Data+	12	USB_Data+
4	GND	13	GND
5	SSRX-	14	SSRX-
6	SSRX+	15	SSRX+
7	GND	16	GND
8	SSTX-	17	SSRX-
9	SSTX+	18	SSRX+



Type-C connector : CN16

Pin	Signal USB Port 0	Pin	Signal USB Port 1
A1	GND	B1	GND
A2	SSTX+	B2	SSTX+
A3	SSTX-	B3	SSTX-
A4	USB_VCC	B4	USB_VCC
A5	N.C	B5	N.C
A6	USB D+	B6	USB D+
A7	USB D-	B7	USB D-
A8	N.C	B8	N.C
A9	USB_VCC	B9	USB_VCC
A10	SSRX-	B10	SSRX-
A11	SSRX+	B11	SSRX+
A12	GND	B12	GND

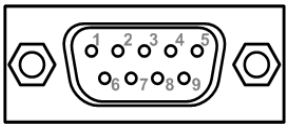
Serial Port Connector (COM1~2)

The system has two serial ports. COM1 is RS-232/422/485 ports and COM2 is RS-232.

Please refer to Chapter 4 for the detail of BIOS setting.

Table 2-4 Pin assignment for RS-232/ 422/ 485

Pin	RS-232	RS-422	RS-485
1	DCD	TX-	Data-
2	RXD	TX+	Data+
3	TXD	RX+	N/C
4	DTR	RX-	N/C
5	GND	GND	GND
6	DSR	N/C	N/C
7	RTS	N/C	N/C
8	CTS	N/C	N/C
9	N/C	N/C	N/C



Audio out connector: J2

Pin	Signal
1	Line Out

Full-Size PCI Express Mini Card Slot : CN11

The GOT110A-TWL-WCD supports one full-size PCI-Express Mini Card slots. CN16 is applying for PCI-Express or SATA (mSATA) via BIOS selection and USB signals; PCI-Express complies with PCI-Express Mini Card Spec. V1.2. Thus, users can install mSATA or WLAN/WWAN cards into this slot. Please refer to the SATA of BIOS setting to enable or disable mSATA supported.

Pin	Signal	Pin	Signal
1	WAKE#	2	+3.3VSB
3	No use	4	GND
5	No use	6	+1.5V
7	CLKREQ# 8 No use	8	UIM_PWR
9	GND	10	UIM_DATA
11	REFCLK-	12	UIM_CLK
13	REFCLK+	14	UIM_RESET
15	GND	16	UIM_VPP
17	No use	18	GND
19	No use	20	W_DISABLE#
21	GND	22	PERST#
23	PE_RXN3/	24	+3.3VSB
25	PE_RXP3/	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PE_TXN3/	32	SMB_DATA
33	SATA_TXN	34	GND
35	GND	36	USB_D8-
37	GND	38	USB_D8+
39	+3.3VSB	40	GND
41	+3.3VSB	42	No use
43	GND	44	No use
45	No use	46	No use
47	No use	48	+1.5V
49	No use	50	GND
51	mSATA detect	52	+3.3VSB

SIM Slot : CN13

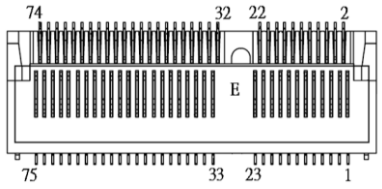
The GOT110A-TWL-WCD has one SIM slots: CN16 on top side that support mini PCIe slot (for CN16). It is mainly used in wireless network application.

Pin	Signal
1	PWR
2	RST
3	CLK
4	NC
5	GND
6	VPP
7	I/O
8	NC

M.2 Key E: CN12

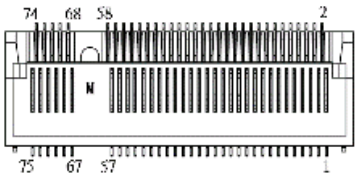
The M.2 Key E for Wireless Module.

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	2	+3.3V	3	USB_D+	4	+3.3V
5	USB_D-	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	NC	23	NC	24	CONNECTOR KEY E
25	CONNECTOR KEY E	26	CONNECTOR KEY E	27	CONNECTOR KEY E	28	CONNECTOR KEY E
29	CONNECTOR KEY E	30	CONNECTOR KEY E	31	CONNECTOR KEY E	32	NC
33	GND	34	NC	35	PETp0	36	NC
37	PETn0	38	NC	39	GND	40	NC
41	PERp0	42	NC	43	PERn0	44	NC
45	GND	46	NC	47	REFCLKp0	48	NC
49	REFCLKn0	50	SUSCLK	51	GND	52	PERST0#
53	CLKREQ0#	54	W_DISABLE2#	55	PEWAKE0#	56	W_DISABLE1#
57	GND	58	NC	59	NC	60	NC
61	NC	62	NC	63	GND	64	NC
65	NC	66	NC	67	NC	68	NC
69	GND	70	NC	71	NC	72	+3.3V
73	NC	74	+3.3V	75	GND		



M.2 KeyM: CN15

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	2	+3.3V	3	GND	4	+3.3V
5	NC	6	NC	7	NC	8	NC
9	GND	10	NC	11	NC	12	+3.3V
13	NC	14	+3.3V	15	GND	16	+3.3V
17	NC	18	+3.3V	19	NC	20	NC
21	GND	22	NC	23	NC	24	NC
25	NC	26	NC	27	GND	28	NC
29	PERn1	30	NC	31	PERp1	32	NC
33	GND	34	NC	35	PETn1	36	NC
37	PETp1	38	NC	39	GND	40	NC
41	PERn0	42	NC	43	PERp0	44	NC
45	GND	46	NC	47	PETn0	48	NC
49	PETp0	50	PERST#	51	GND	52	CLKREQ#
53	REFCLKn	54	PEWAKE#	55	REFCLKp	56	NC
57	GND	58	NC	59	CONNECTOR Key M	60	CONNECTOR Key M
61	CONNECTOR Key M	62	CONNECTOR Key M	63	CONNECTOR Key M	64	CONNECTOR Key M
65	CONNECTOR Key M	66	CONNECTOR Key M	67	NC	68	NC
69	NC	70	+3.3V	71	GND	72	+3.3V
73	GND	74	+3.3V	75	GND		

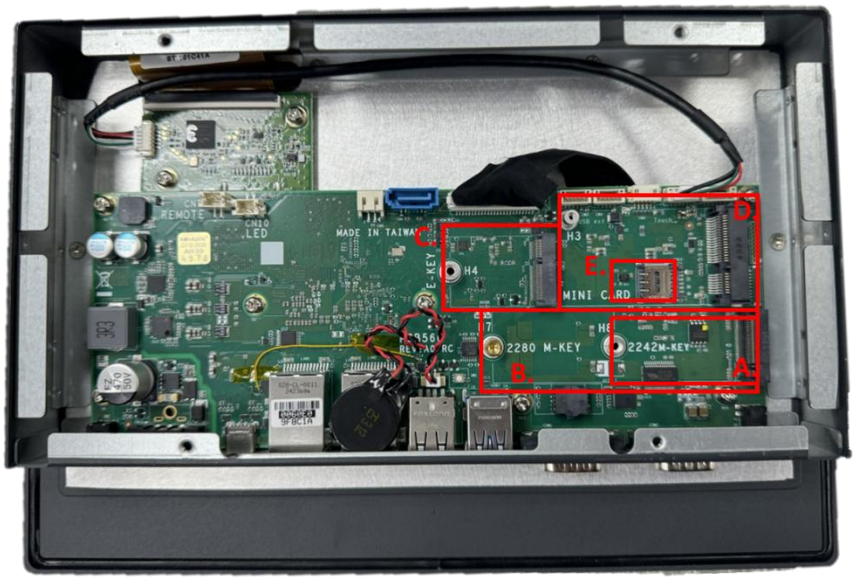


2.3 Hardware Installation (Optional)

2.3.1 Installing the NVMe SSD, Mini Card & M.2 key M Module

The GOT110A-TWL-WCD comes equipped with a mini card slot, two optional M.2 key M slot and a M.2 key E slot for users to install wireless LAN cards and SSD.

Please refer to the following instructions and illustrations for the installation of the wireless LAN and SSD.



A. 1 x M.2 key M 2242 (PCIe Gen3 x2 NVMe)

B. 1 x M.2 key M 2280 (PCIe Gen3 x2 NVMe)

C. 1 x M.2 Key E 2230 slot (for Wi-Fi)

D. 1 x full-size mini card slot for Wi-Fi/LTE module or mSATA

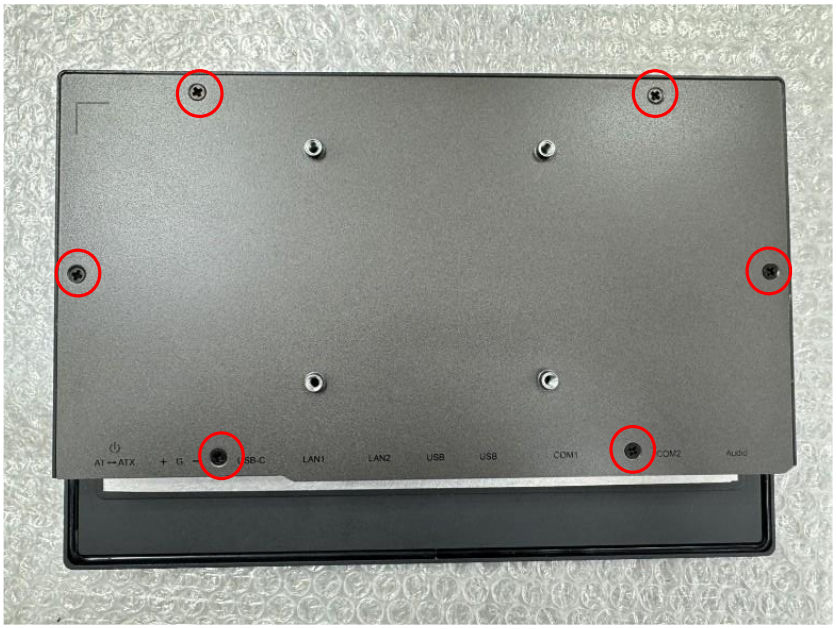
E. 1 x SIM socket for mini PCIe

2.3.2 NVMe Installation

Installing M.2 key M 2280 (PCIe Gen3 x2 NVMe)

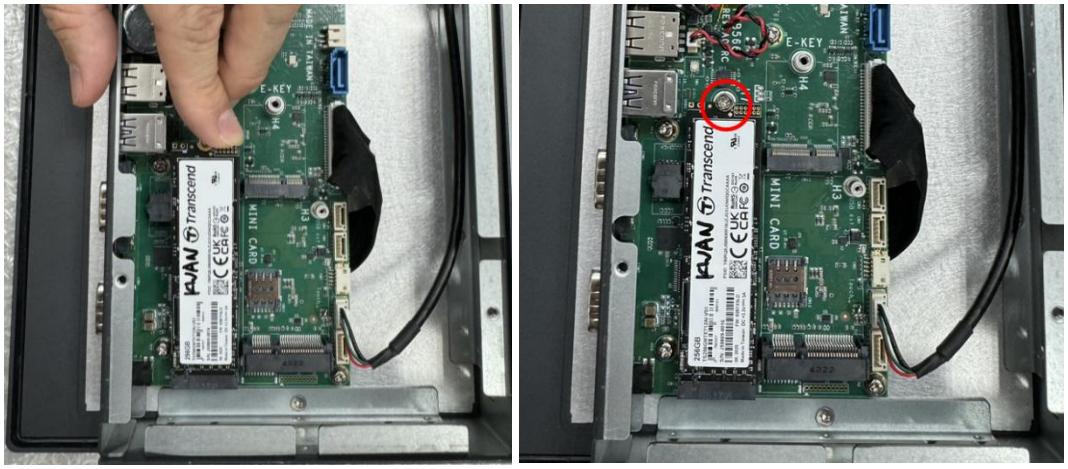
Step 1 Remove the six screws (see red circles in Figure 2-3-1) on the back cover.

Figure 2-3-1: Back cover



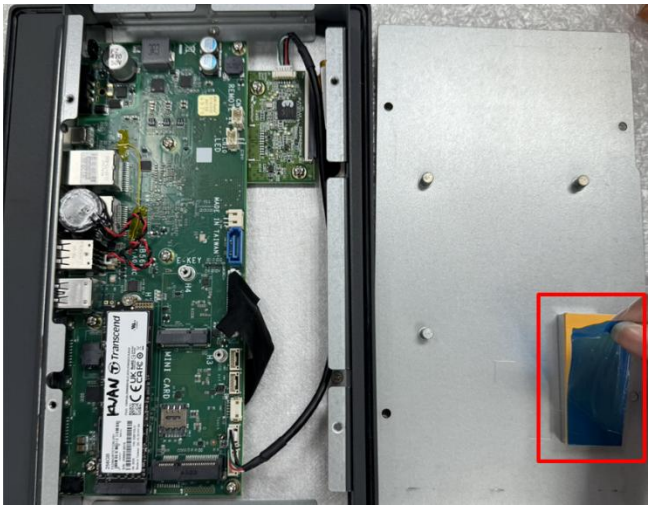
Step 2 Remove the back cover.

Step 3 Insert the 2280 NVMe SSD into the designated M.2 slot. Ensure it is aligned properly with the connector, then gently push down and secure it with a screw.



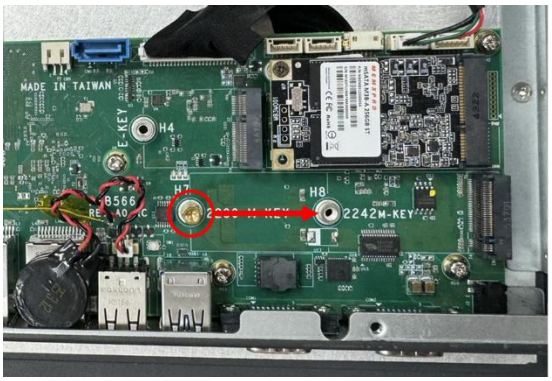
Step 4 Prepare thermal pad, the system will come with 1pcs thermal pad in accessory pack. The thermal pad has a protective plastic liner on one side.

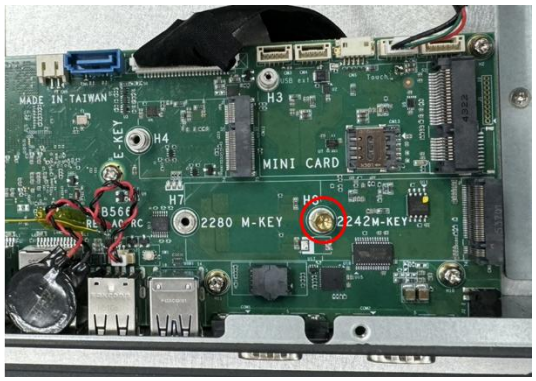
Carefully stick the exposed side of the thermal pad on top of the NVMe heatsink, as shown in the red box of the picture, to ensure proper heat dissipation.



Installing M.2 key M 2242 (PCIe Gen3 x2 NVMe)

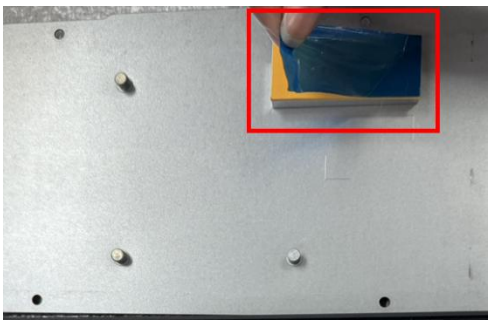
Step 1 Remove the brass standoff from its original position on the motherboard. Then, move and reinstall it to the adjacent mounting hole, as indicated by the red circle in the picture.





Step 2 Insert the 2242 NVMe SSD into the designated M.2 slot. Ensure it is aligned properly with the connector, then gently push down and secure it with a screw.

Step 3 Take out the thermal pad from the accessory pack. Peel off the plastic liner and stick the thermal pad on top of the NVMe heatsink, same as Step 4 for M.2 Key M 2280 installation.

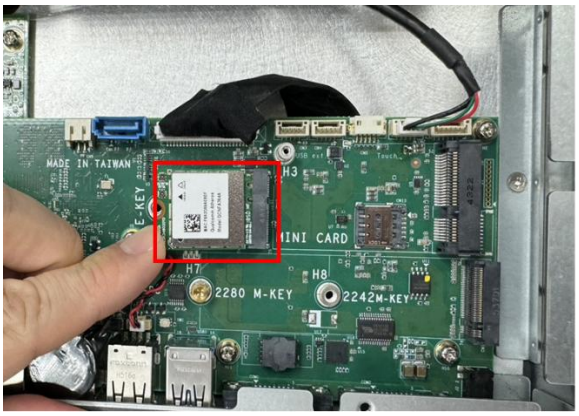


Installing the Mini Card

Align the Mini Card with the Mini PCIe slot. Insert it carefully into the slot, ensuring the pins match up. Once in place, use a screw to fasten the card.

2.3.3 Installing the M.2 key E 2230 Module

Step1: Position the M.2 key E module in its corresponding slot. Align it correctly and push it into place, then fasten it with a screw to secure.



Step2: Install the antenna onto the antenna connector.

2.4 Mounting the Panel PC

There are four ways to install the GOT110A-TWL-WCD, namely: panel/ VESA/ wall/ desktop mount.

2.4.1 VESA / Desk Mount (Support VESA standard 75 x 75)

GOT110A-TWL-WCD supports VESA mounting. Using the kit installed on the back, users can tilt or rotate the tablet for the best viewing angle.

Refer to the following steps when adopting VESA /Desk Mount for the panel PC, as shown in Diagram 2-1 and Diagram 2-2.

Step 1 Locate the four screwing holes on the back side of the panel PC.

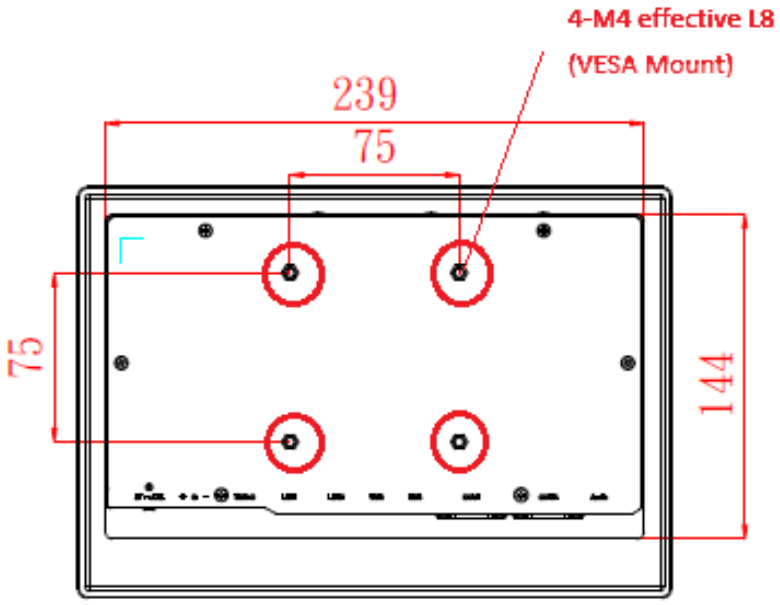


Diagram 2-1 VESA / desktop mount (back chassis)

Step 2 As illustrated below, assemble the VESA / desktop kit to the back chassis of the panel PC. Tighten the four screws to fasten the VESA / desktop kit firmly to the back chassis.

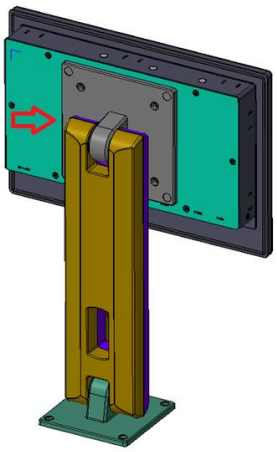


Figure 2-2: Assembling the VESA / desktop kit to the panel PC

2.4.2 Wall Mount (Support VESA standard 75 x 75)

Attach the wall mount bracket to the back of the panel PC by aligning the screwing openings on the top and bottom edges of the bracket with the screwing holes on the back chassis. Then screw the bracket firmly to the back of the panel PC, as illustrated in Figure 2-3.

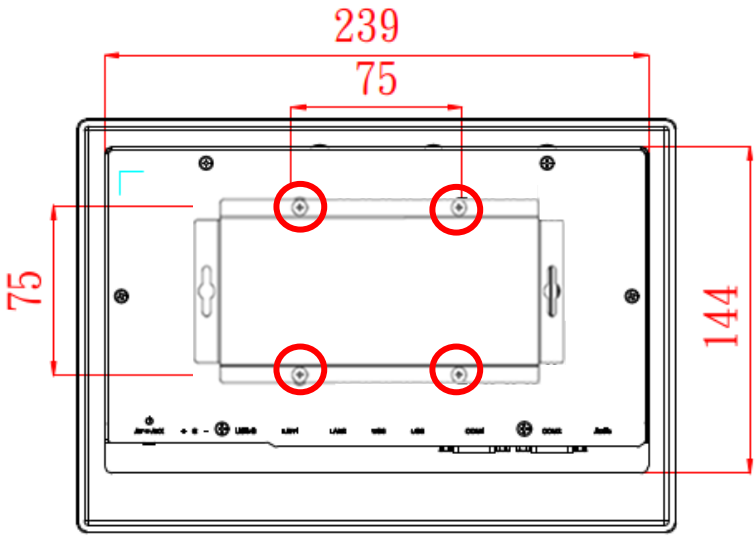


Diagram 2-3 Wall mount (back chassis)

2.4.3 Panel-Mounting

The GOT110A-TWL-WCD is designed for panel mount application. To mount the GOT110A-TWL-WCD, the standard set of mounting kit (7pcs included in the system packaging) is needed. (see Fig Diagram 2-4).

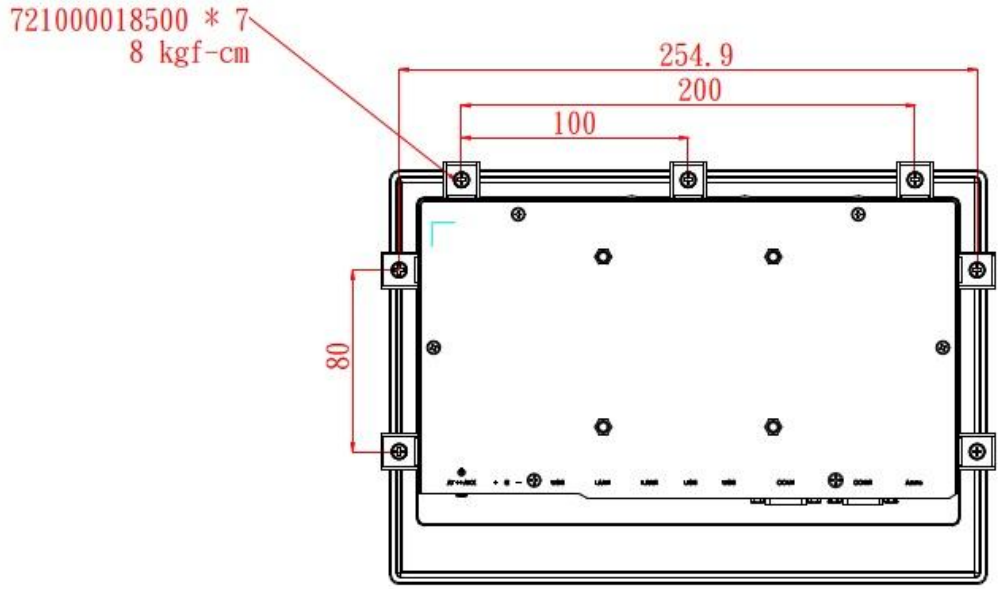


Diagram 2-4 Panel mount kit

WARNING

Only trained and qualified technicians are permitted to mount the product. To prevent accidental damage to the product or human injury when mounting the product, at least two people are required to perform the installation.

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SECTION 3
AMI BIOS SETUP UTILITY

This section provides users with detailed descriptions about how to set up basic system configurations through the AMI BIOS setup utility.

3.1 Starting

To enter the setup screens, follow the steps below:

1. Turn on the computer and press the <Del> key immediately.
2. After pressing the <Del> key, the main BIOS setup menu displays. Users can access to other setup screens, such as the Advanced and Chipset menus, from the main BIOS setup menu.

3.2 Navigation Keys

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process. These keys include <F1>, <F2>, <Enter>, <ESC>, <Arrow> keys, and so on.

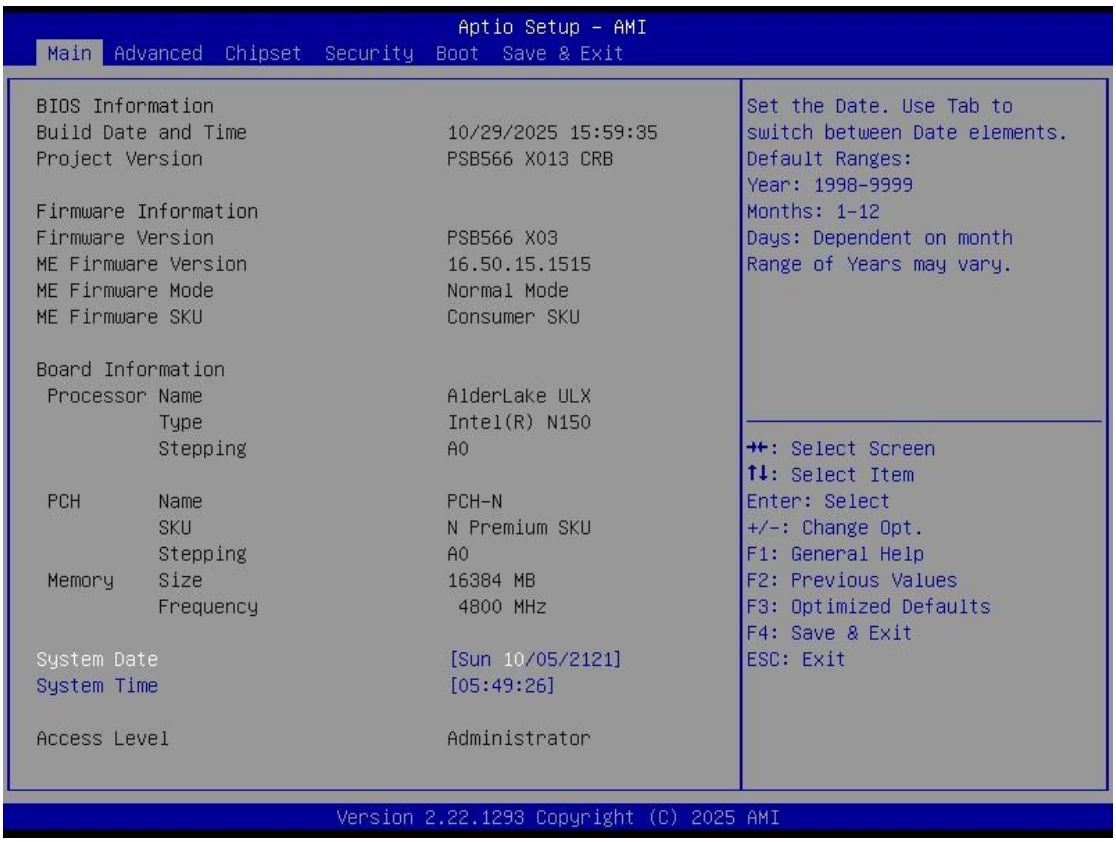
【Note】 ***Some of the navigation keys differ from one screen to another.***

Table 3-1 Descriptions of hot keys

Hot Keys	Description
→← **Left/Right**	The Left and Right <Arrow> keys allow you to select a setup screen.
↑↓ **Up/Down**	The Up and Down <Arrow> keys allow you to select a setup screen or sub screen.
Enter	The <Enter> key allows you to display or change the setup option listed for a particular setup item. The <Enter> key can also allow you to display the setup sub screens.
+– Plus/Minus	The Plus and Minus <Arrow> keys allow you to change the field value of a particular setup item.
F1	The <F1> key allows you to display the General Help screen.
F2	The <F2> key allows you to Load Previous Values.
F3	The <F3> key allows you to Load Optimized Defaults.
F4	The <F4> key allows you to save any changes you have made and exit Setup. Press the <F4> key to save your changes.
Esc	The <Esc> key allows you to discard any changes you have made and exit the Setup. Press the <Esc> key to exit the setup without saving your changes.

3.3 Main Menu

When you first enter the setup utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. System Time/Date can be set up as described below. The Main BIOS setup screen is shown below



BIOS Information
Display the BIOS information.

System Date/Time

Use this option to change the system time and date. Highlight System Time or System Date using the keys. Enter new values through the keyboard. Press the key or the keys to move between fields. The date must be entered in MM/DD/YY format. The time is entered in HH:MM:SS format.

Access Level

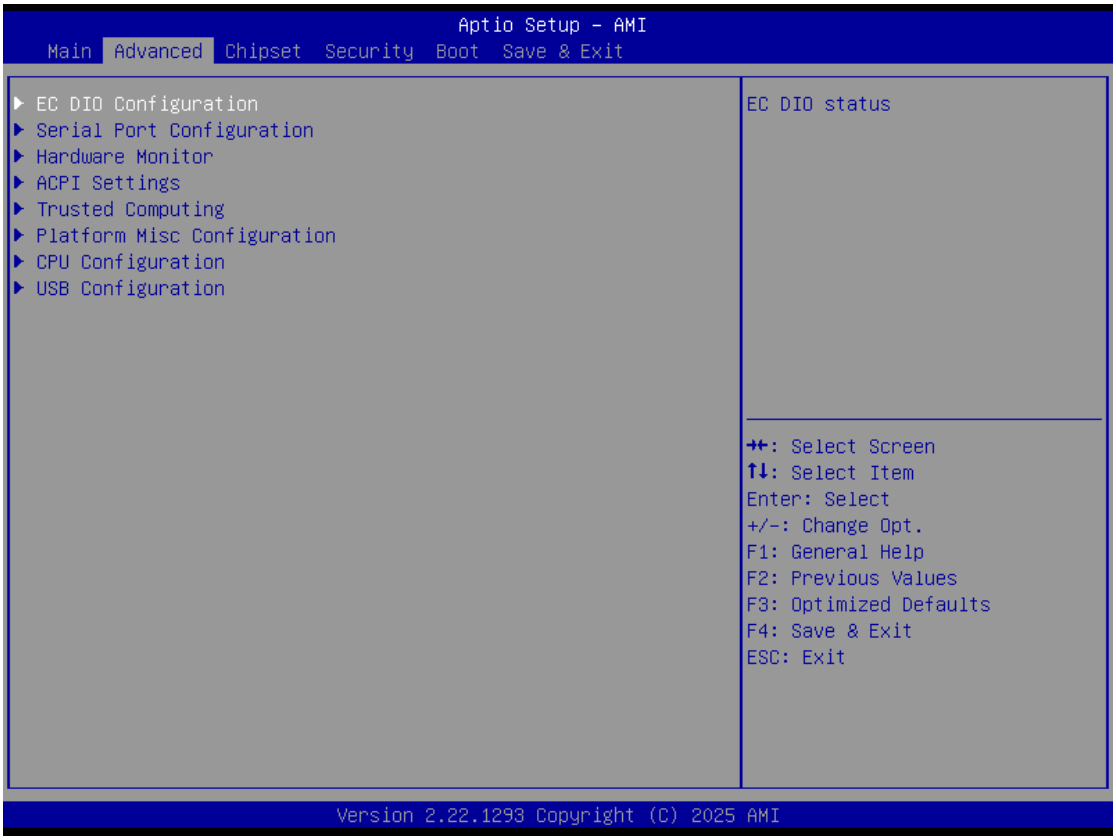
Display the access level of current user.

3.4 Advanced Menu

The Advanced menu allows users to configure the CPU and other system devices. You can select any of the items in the left frame of the screen to go to the sub menus

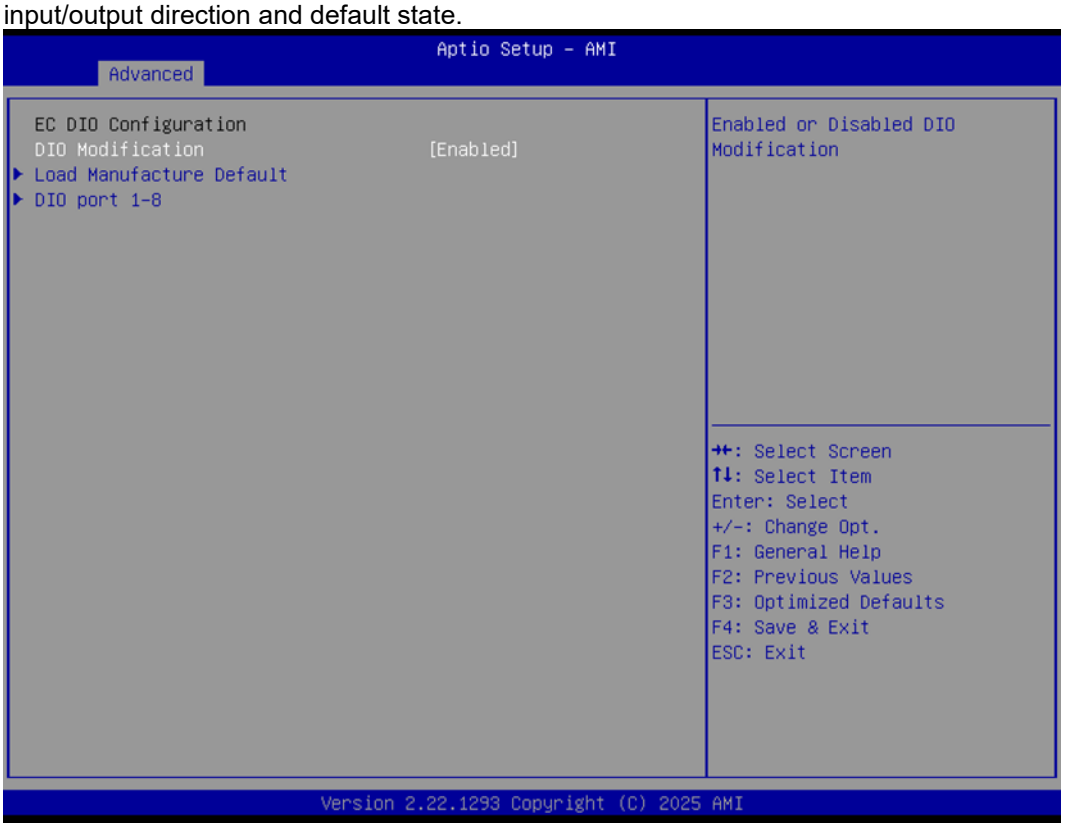
- ► EC DIO Configuration
- ► Serial Port Configuration
- ► Hardware Monitor
- ► ACPI Setting
- ► Trusted Computing
- ► Platform Misc Configuration
- ► CPU Configuration
- ► USB Configuration

For items marked with "►", please press <Enter> for more options.



3.4.1 EC DIO Configuration

This menu allows users to configure the system's Digital Input/Output (DIO) behavior controlled by the Embedded Controller (EC). These settings define each DIO port's input/output direction and default state.



DIO Modification

Enables or disables DIO Modification.

When enabled, it allows a single physical processor to multitask as multiple logical processors. When disabled, only one thread per enabled core is enabled.

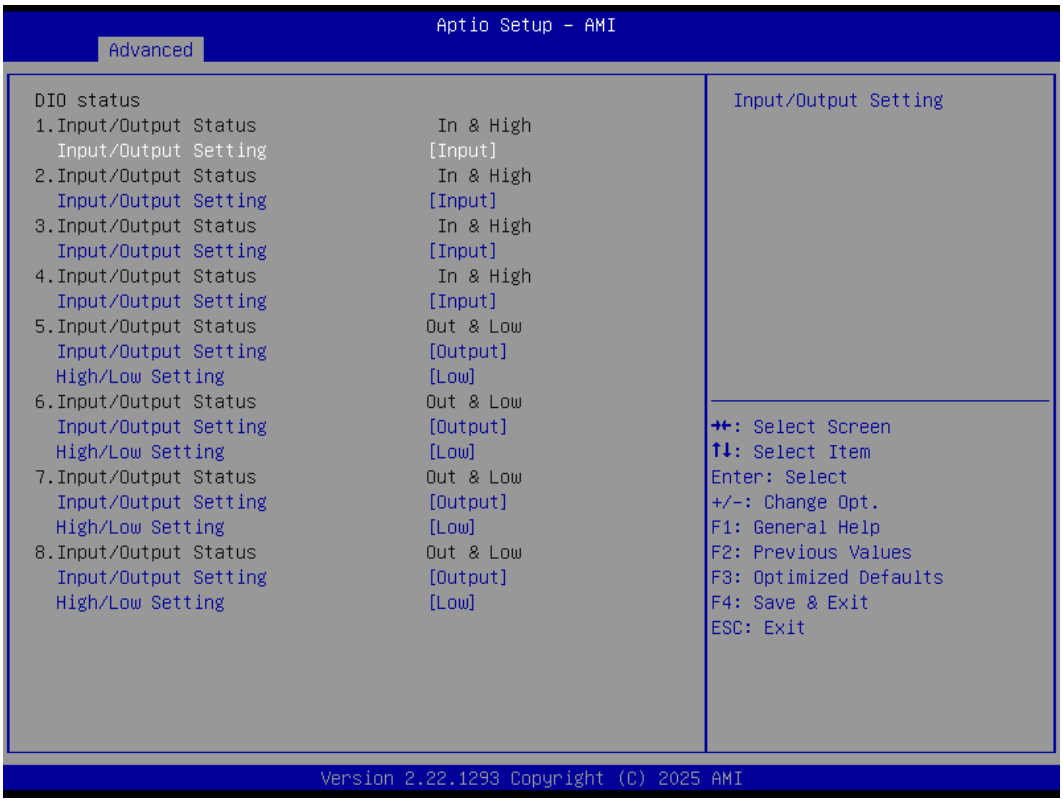
► Load Manufacture Default

Restores the default factory DIO configuration defined by the manufacturer. Use this option to reset all DIO settings.

► DIO Port 1-8

This page provides an overview of the EC-controlled DIO interface. Each DIO channel (1–8) can be configured individually as Input or Output depending on the application requirements.

This submenu allows you to manually configure the direction (Input or Output) and default value of each DIO channel.



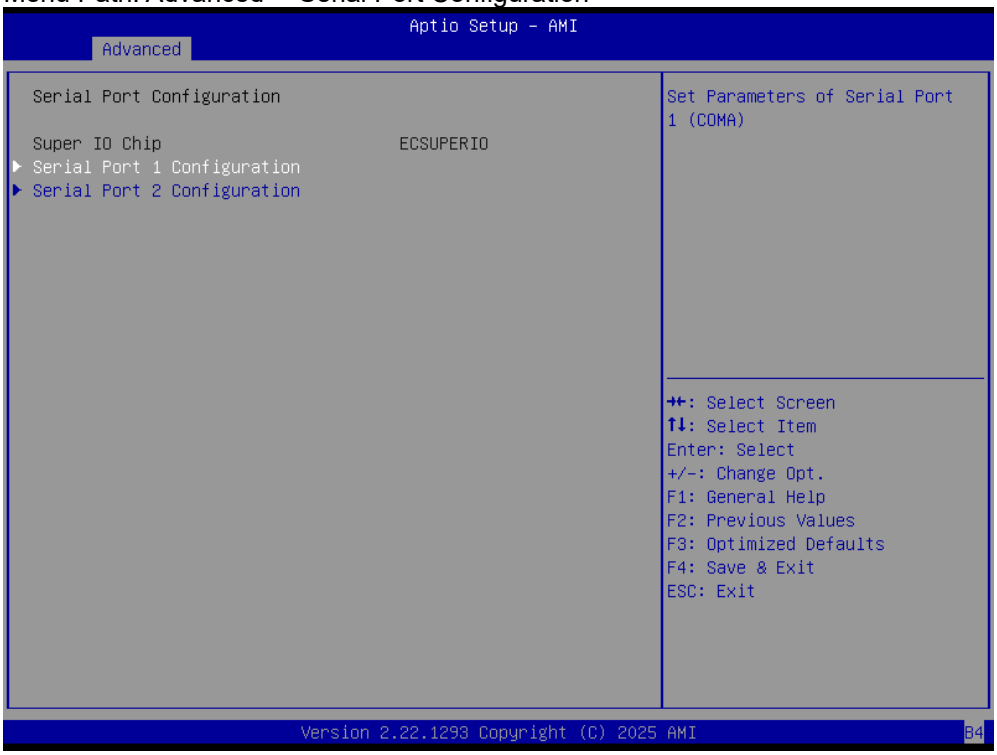
DIO Port 1–8 Direction:
Set each DIO channel as Input or Output.
Default Output Value:
When configured as Output, define logic level: Low (0) or High (1).
Input State Monitor:
When set to Input, displays the current signal status (read-only).

Note:
— DIO control is managed by the onboard EC (Embedded Controller).
— BIOS DIO settings can be accessed and monitored through the Axiomtek's AXEAPI in Windows or Linux.

3.4.2 Serial Port Configuration

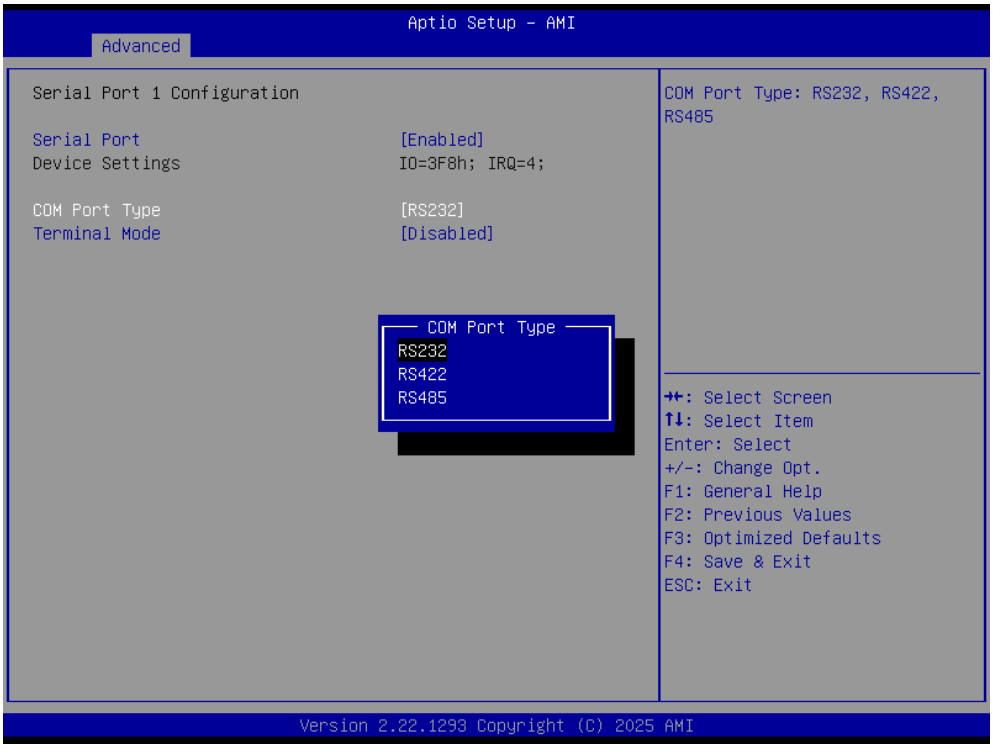
The system provides configurable serial ports that allow users to set the communication parameters, including I/O address, interrupt, mode, and interface type. Each port can be configured individually to support RS-232, RS-422, or RS-485 modes depending on the hardware design.

Menu Path: Advanced →Serial Port Configuration



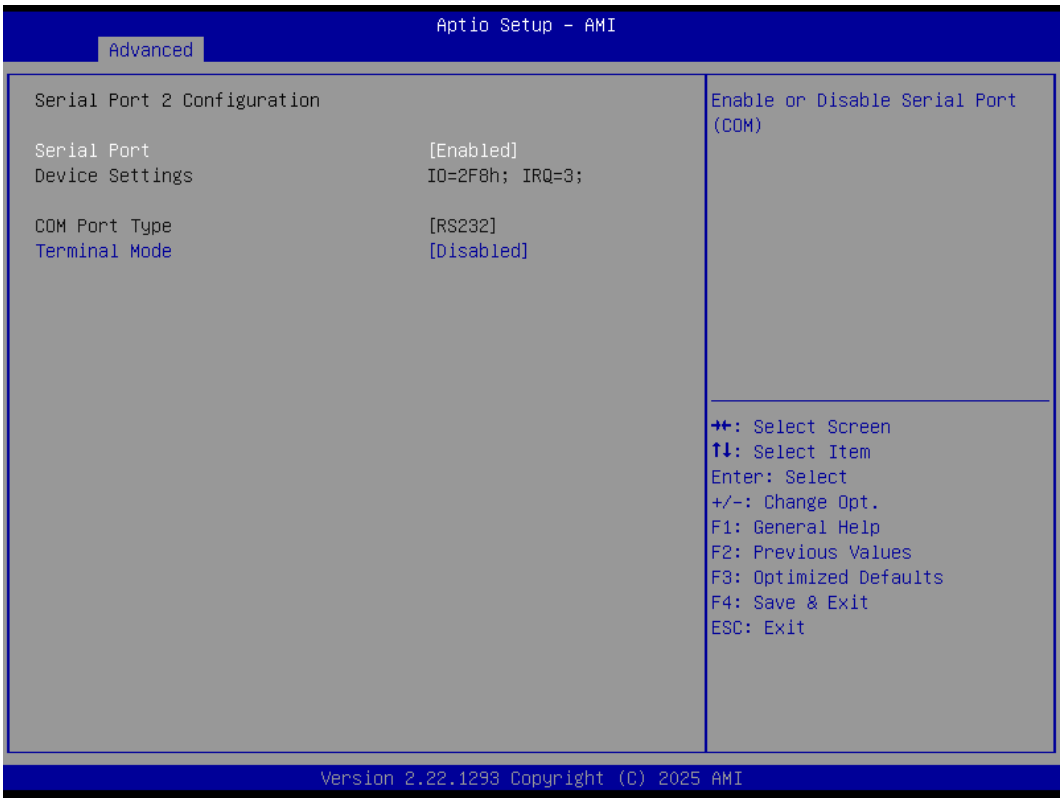
► Serial Port 1 Configuration

This page allows users to configure COM1. The port can be set to RS-232, RS-422, or RS-485 mode depending on external device connection.



► Serial Port 2 Configuration

This page allows users to configure COM2. The port typically supports RS-232 mode only and can be enabled or disabled as required.



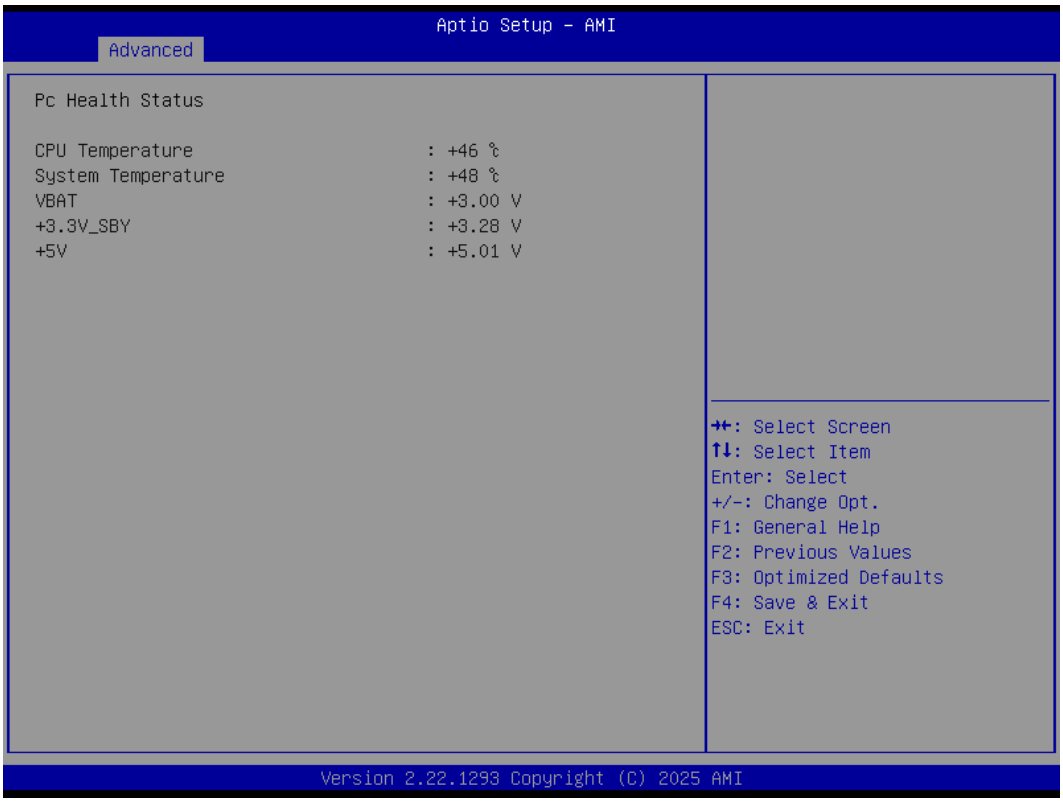
Serial Port: Enables or disables the selected serial port.
Dvice Settings:
I/O Address & IRQ: Displays or allows configuration of the base I/O address and interrupt request line.
COM Port Type: Selects communication standard: RS-232, RS-422, or RS-485.
Terminal Mode: Enables hardware flow control options if supported.

Note:
- COM1 supports RS-232/422/485 configuration through BIOS.
- COM2 supports RS-232 mode only.
- The serial ports can also be configured and tested under the operating system using Axiomtek's AXEAPI.

3.4.3 Hardware Monitor

The Hardware Monitor page displays real-time system health information, including M/B temperature & voltage. These parameters are monitored by the EC (Embedded Controller) to ensure stable system operation.

Menu Path: Advanced → Hardware Monitor



This screen provides read-only values of key system parameters.

CPU Temperature : Displays the current CPU temperature (°C)

System Temperature : Displays the system board temperature

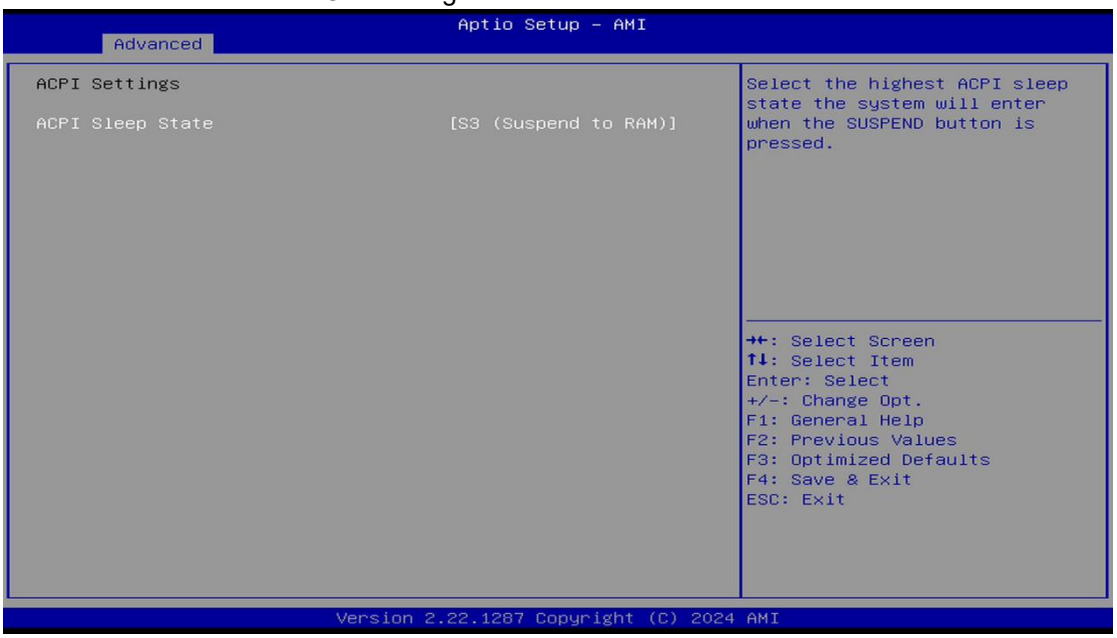
VBAT: Shows current battery voltage

+3.3V_SBY : Shows current +3.3V standby voltage

+5V : Shows current +5V voltage

3.4.4 ACPI Setting

The ACPI Settings menu allows configuration of system power behavior and sleep states according to the ACPI (Advanced Configuration and Power Interface) standard.
Menu Path: Advanced → ACPI Settings



- **ACPI Sleep State:**

Select system suspend mode:

- S3 – Suspend to RAM
- Disabled – Suspend function off

Note: For stable operation in embedded systems, it is recommended to use S5 mode if deep sleep (S3) is not required.

3.4.5 Trusted Computing

The Trusted Computing page manages the onboard TPM (Trusted Platform Module) used for system security features such as encryption and secure boot.

Menu Path: Advanced → Trusted Computing

This page allows enabling or disabling of TPM functionality and viewing device information.

Security Device Support: Enables or disables TPM device functionality.

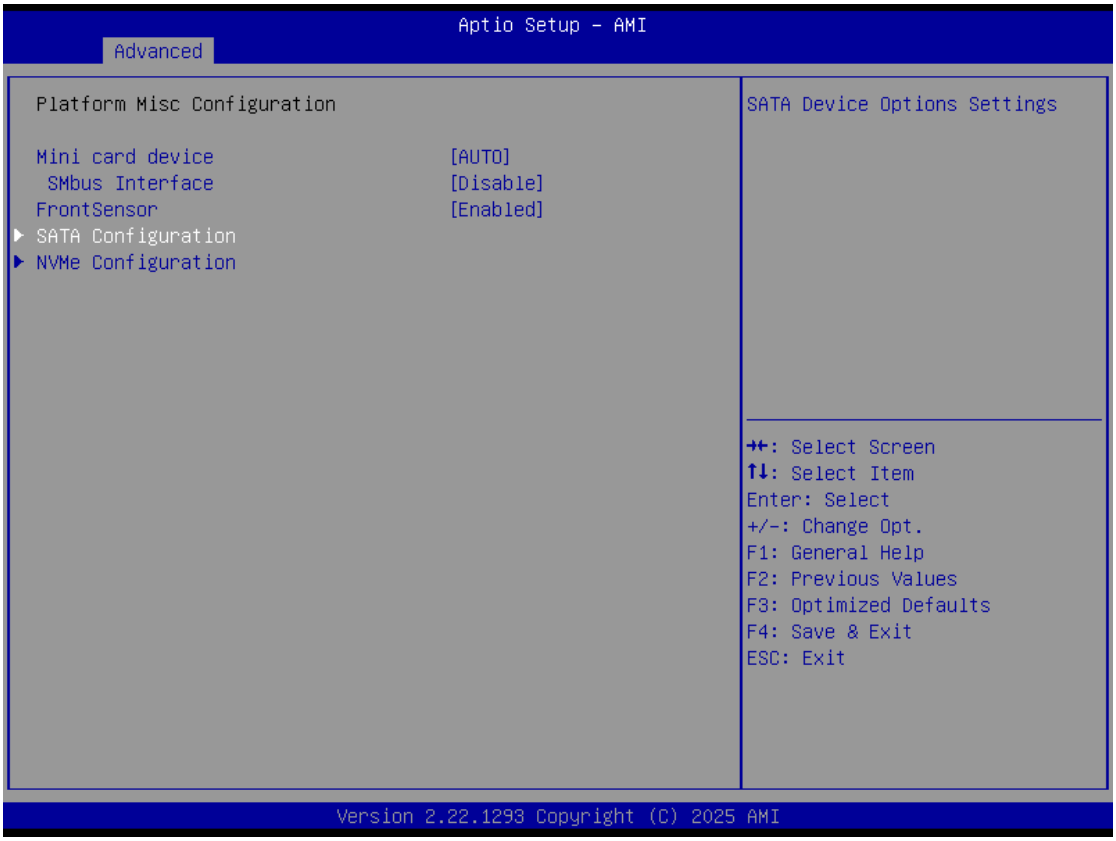
TPM State: Shows whether the TPM is activated and operational.

TPM Device Selection: Selects between TPM 2.0 or discrete TPM module if supported.

Clear TPM: Erases TPM ownership and all stored keys (requires confirmation).

Caution: Clearing the TPM will permanently erase all encryption keys associated with Windows BitLocker or other security software. Always back up sensitive data before performing this operation.

3.4.6 Platform Misc Configuration

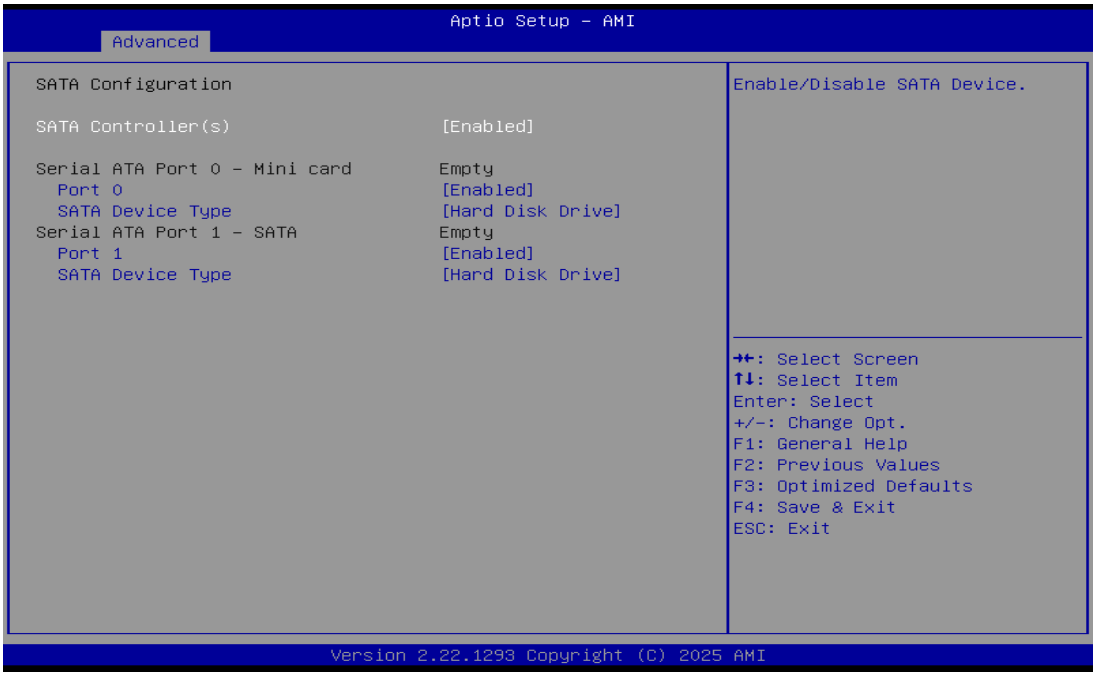


Mini Card Device: Auto detect Mini Card device.

SMBus Interface: Enable or disable the SMBus (System Management Bus) interface for system monitoring and control.

Front Sensor: Enable or disable the front panel sensor function.

► SATA Configuration

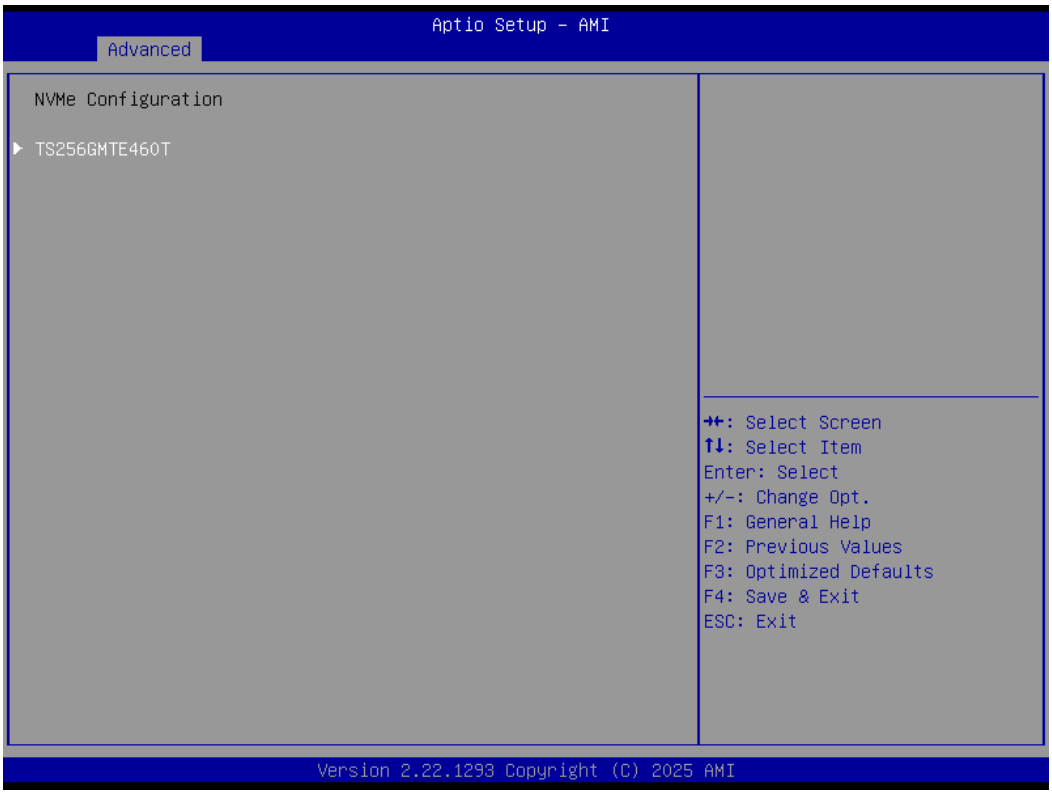


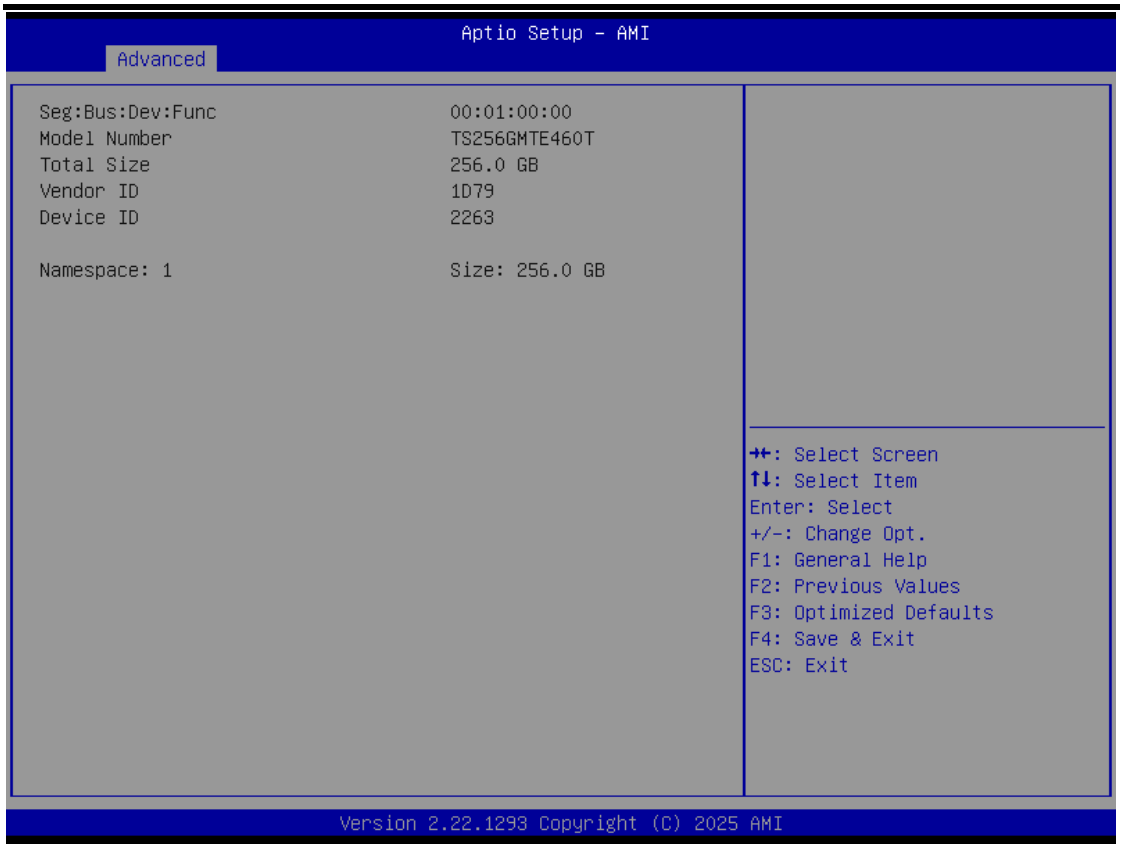
Serial ATA Port 0 – Mini Card: Display SATA device information and allow enabling or disabling the device.

Serial ATA Port 1 – SATA: Display SATA device information and allow enabling or disabling the device.

SATA Device Type: Show the type of connected SATA device (e.g., HDD, SSD, or Empty).

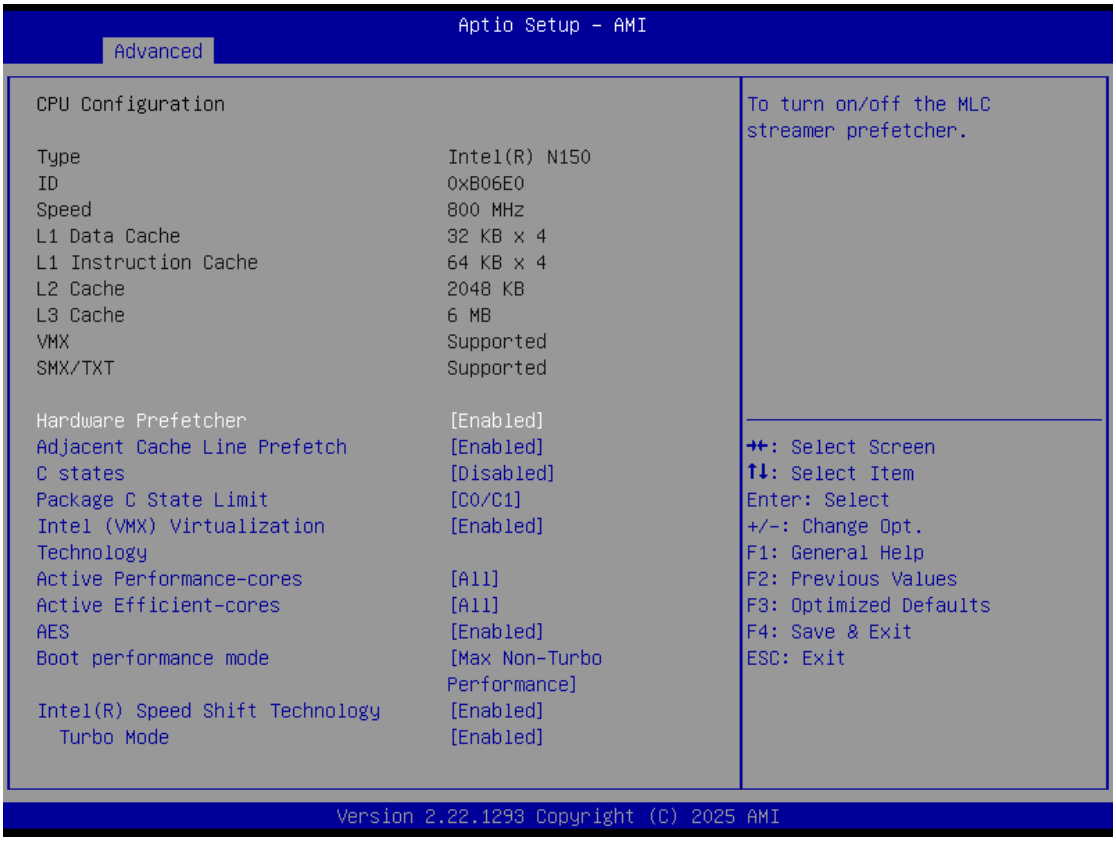
► NVMe Configuration





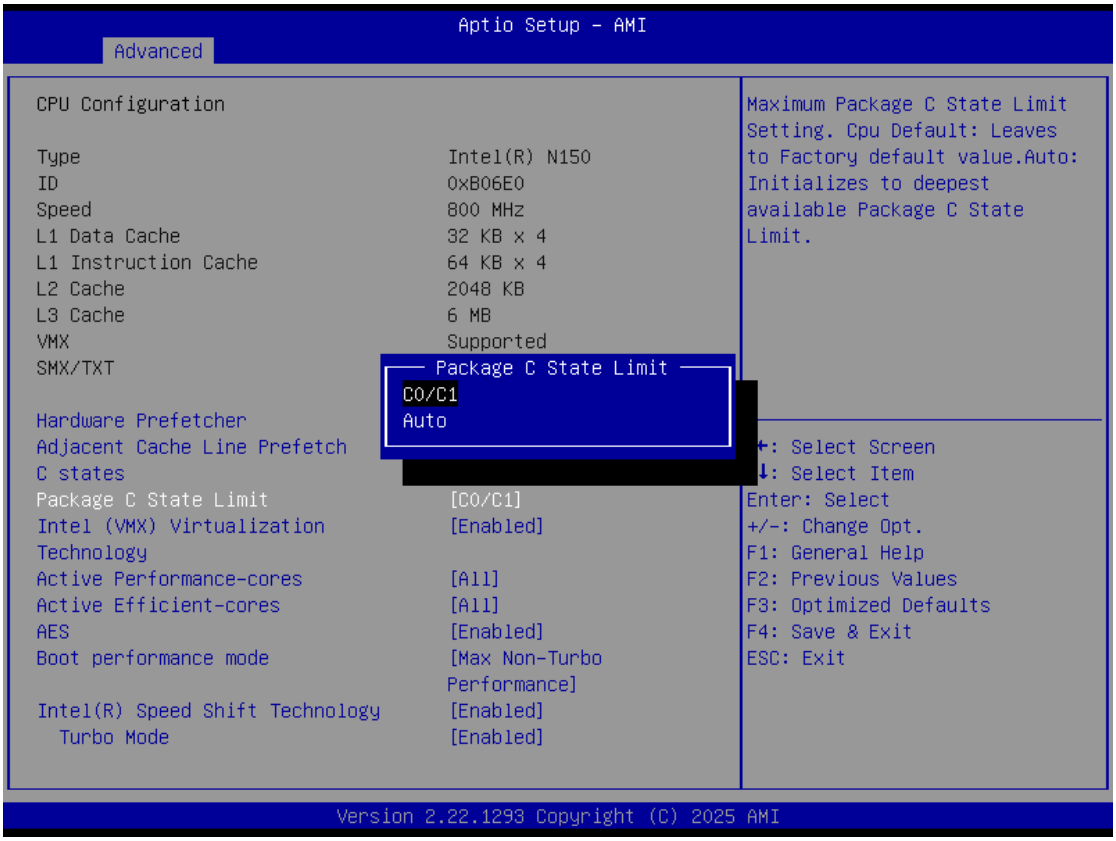
- **Segment:Bus:Dev:Func:** Show the PCIe bus address of the NVMe controller.
- **Model Number:** Display NVMe drive model (e.g., TS256GMTE460T).
- **Total Size:** Indicate the total capacity of the installed NVMe drive.
- **Vendor ID / Device ID:** Show PCI vendor and device identification numbers.
- **Namespace:** List available namespaces and corresponding storage sizes.

3.4.7 CPU Configuration



- **Hardware Prefetcher:** Enables or disables the processor's hardware prefetch mechanism for improved performance.
- **Adjacent Cache Line Prefetch:** Allows the processor to prefetch adjacent cache lines, enhancing memory throughput.
- **C States:** Controls CPU power-saving states. Enabling allows entry into low-power modes when idle.

- **Package C State Limit:** Sets the maximum package-level C-State for power saving. Deeper states save more power but may add latency.

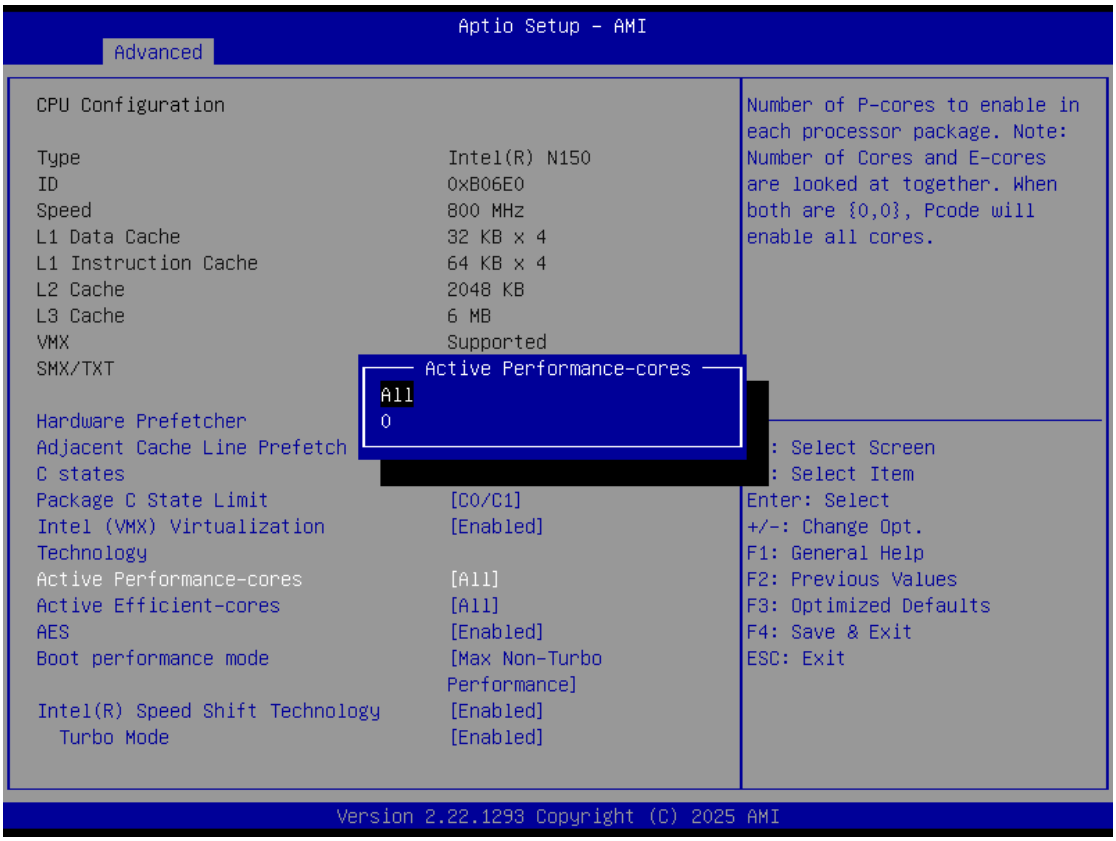


► **C0/C1**: Enables only the basic power-saving states (C0 active, C1 halt). This option provides faster response time and is suitable for applications requiring real-time performance.

► **Auto**: Allows the system to automatically enter the deepest supported C-State for optimal power efficiency.

- **Intel Virtualization Technology (VT-x):** Enables Intel hardware-assisted virtualization for better virtual machine performance.

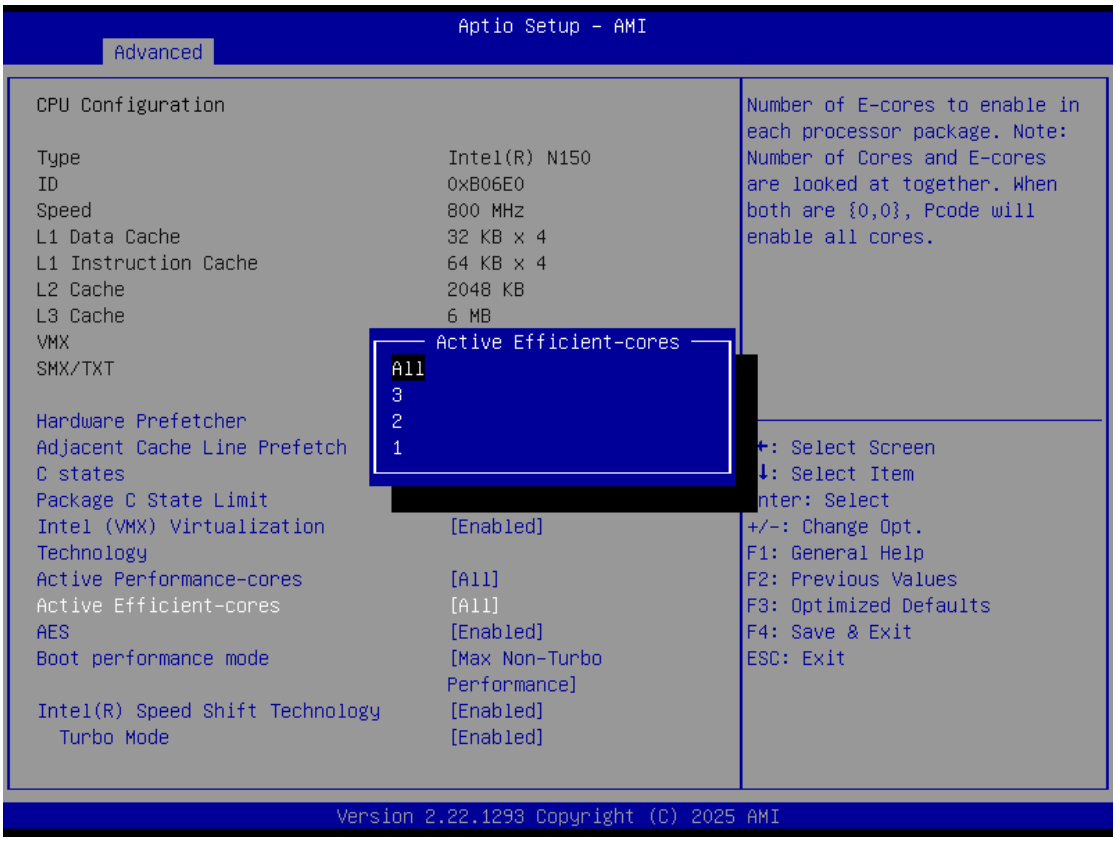
- **Active Performance Cores:** Selects the number of performance cores (P-cores) enabled in the processor.



► **All**: Enables all available Performance Cores for maximum performance.

► **0**: Disables all Performance Cores. The system operates using only Efficient Cores (if available).

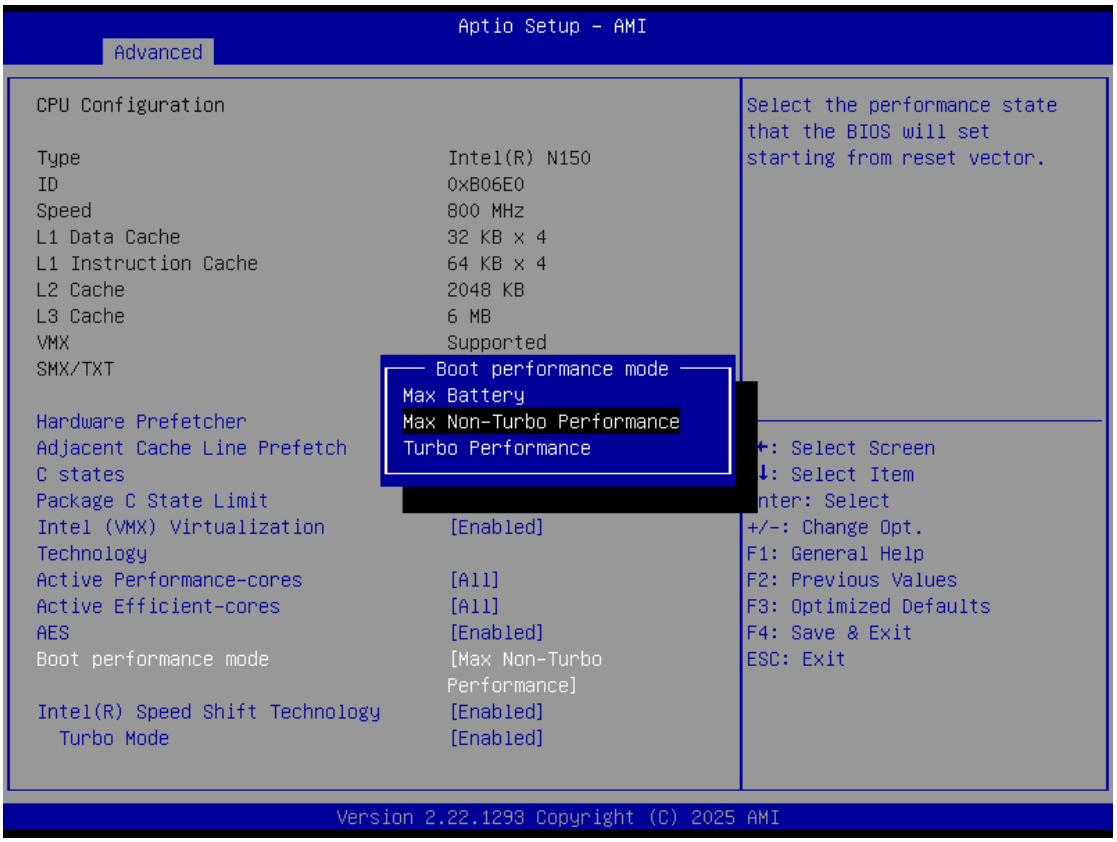
- **Active Efficient Cores:** Selects the number of efficient cores (E-cores) enabled in the processor.



► **All**: Enables all available Efficient Cores for maximum multi-threaded performance.

► **3 / 2 / 1**: Enables the specified number of Efficient Cores. Reducing the number of active cores can lower power consumption and thermal output, but may decrease overall performance.

- **AES:** Enables or disables AES-NI instructions for hardware-accelerated encryption.
- **Boot Performance Mode:** Determines the performance state (e.g., Max Non-Turbo Performance) during system boot.



Selects the CPU performance state during the boot process before the operating system loads.

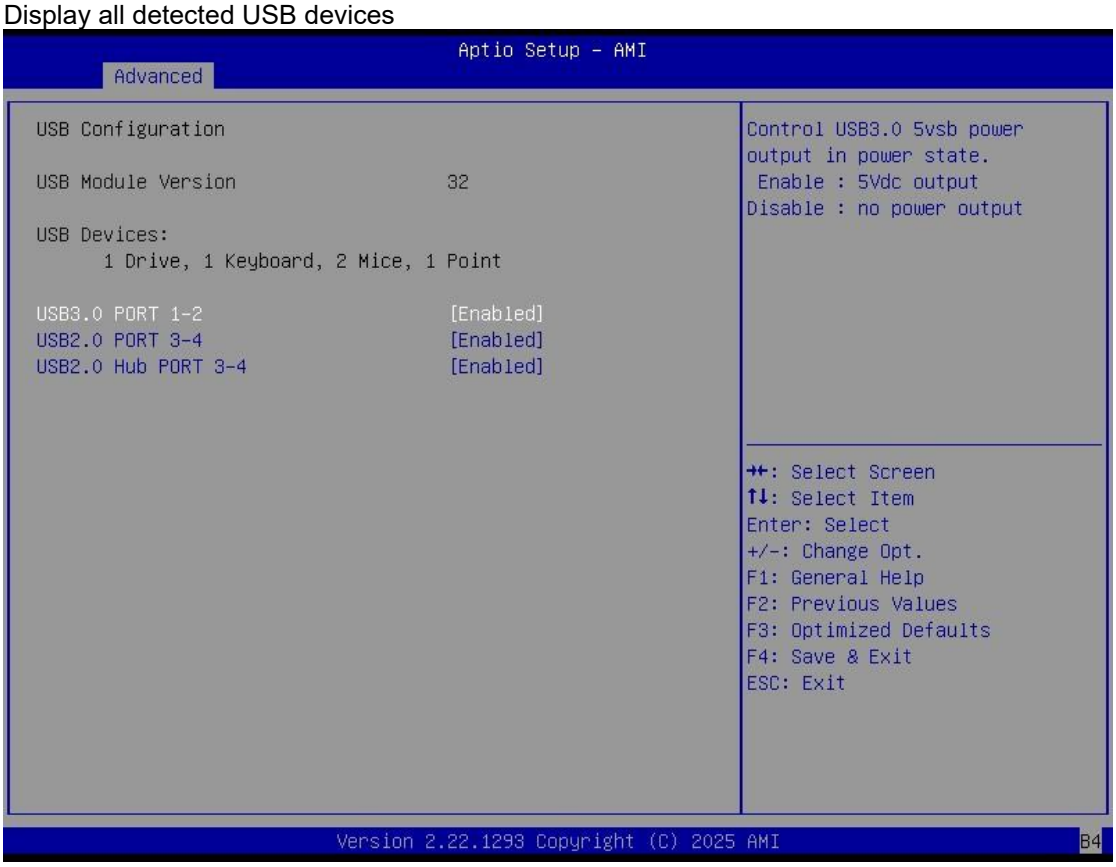
- ► **Max Battery:** Minimizes power consumption by running the CPU at its lowest frequency during system startup.
- ► **Max Non-Turbo Performance:** Runs the CPU at the highest non-turbo frequency for balanced performance and stability.
- ► **Turbo Performance:** Enables Turbo Mode during system boot for maximum performance at higher power and thermal levels.

- **Intel Speed Shift Technology:** Allows the CPU to dynamically manage frequency and voltage for optimal power and performance.
- **Turbo Mode:** Enables Intel Turbo Boost to temporarily increase CPU frequency above the base clock under heavy loads.

3.4.8 USB Configuration

USB Devices

Display all detected USB devices



3.5 Chipset Menu

The Chipset menu here shows the System Agent (SA) Configuration options, which allow you to control various advanced chipset settings.

System Agent (SA) Configuration Options:

- **VT-d:**

Shows whether Intel® VT-d (I/O Virtualization Technology) is supported by the platform.

Enables or disables Intel® VT-d function. When enabled, the system supports I/O virtualization and device passthrough for virtual machines. Disable it if virtualization is not required or for compatibility reasons.

- **Control IOMMU Pre-boot Behavior**

Defines when the IOMMU is activated.

- *Enable IOMMU during boot*: IOMMU is active during system boot.
- *Disable IOMMU during boot*: IOMMU will be activated by the operating system later. Enabling this option helps devices that need IOMMU at boot time but may affect compatibility with some legacy devices.

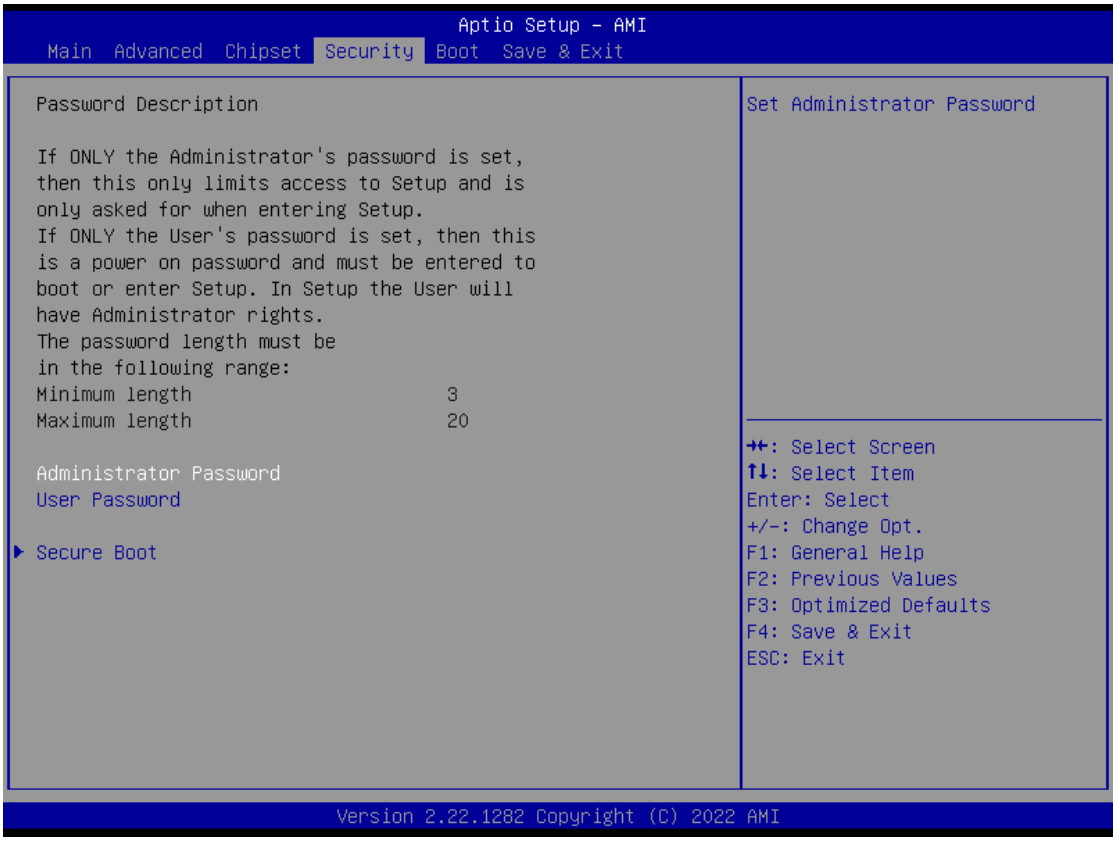
- **Above 4GB MMIO BIOS assignment [Enabled/Disabled]**

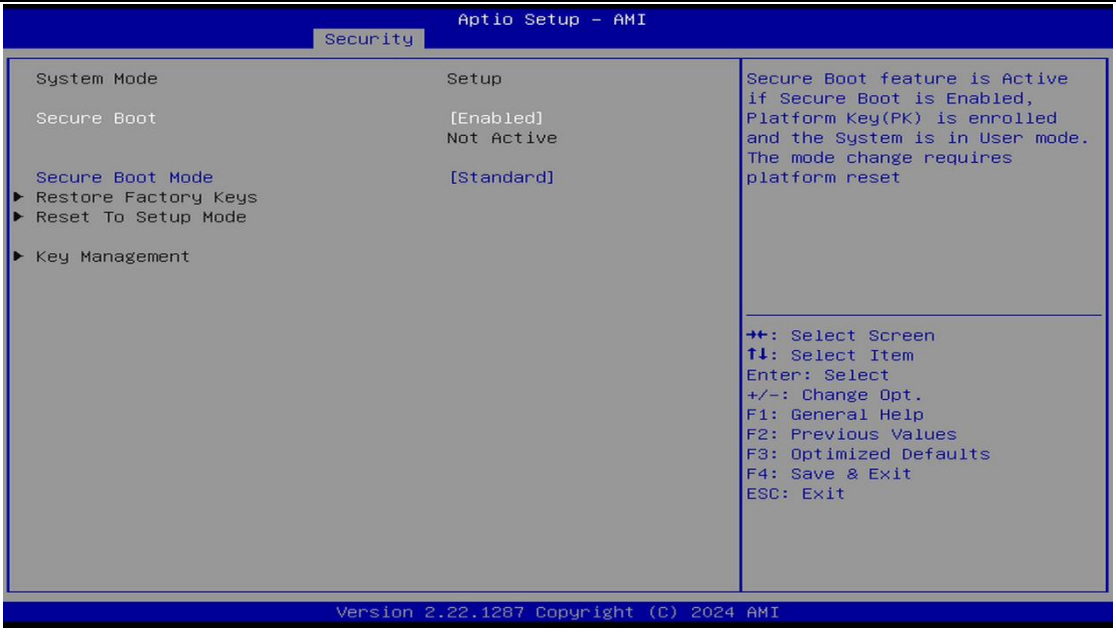
Allows the BIOS to allocate MMIO (Memory-Mapped I/O) space above 4GB address range. Enable this option when using large PCIe devices (e.g., GPU or RAID cards) that require more address space.

3.6 Security Menu

The Security menu allows users to change the security settings for the system.

- **Administrator Password**
  Set administrator password.
- **User Password**
  Set user password.
- **Secure Boot**
  Setting Secure boot



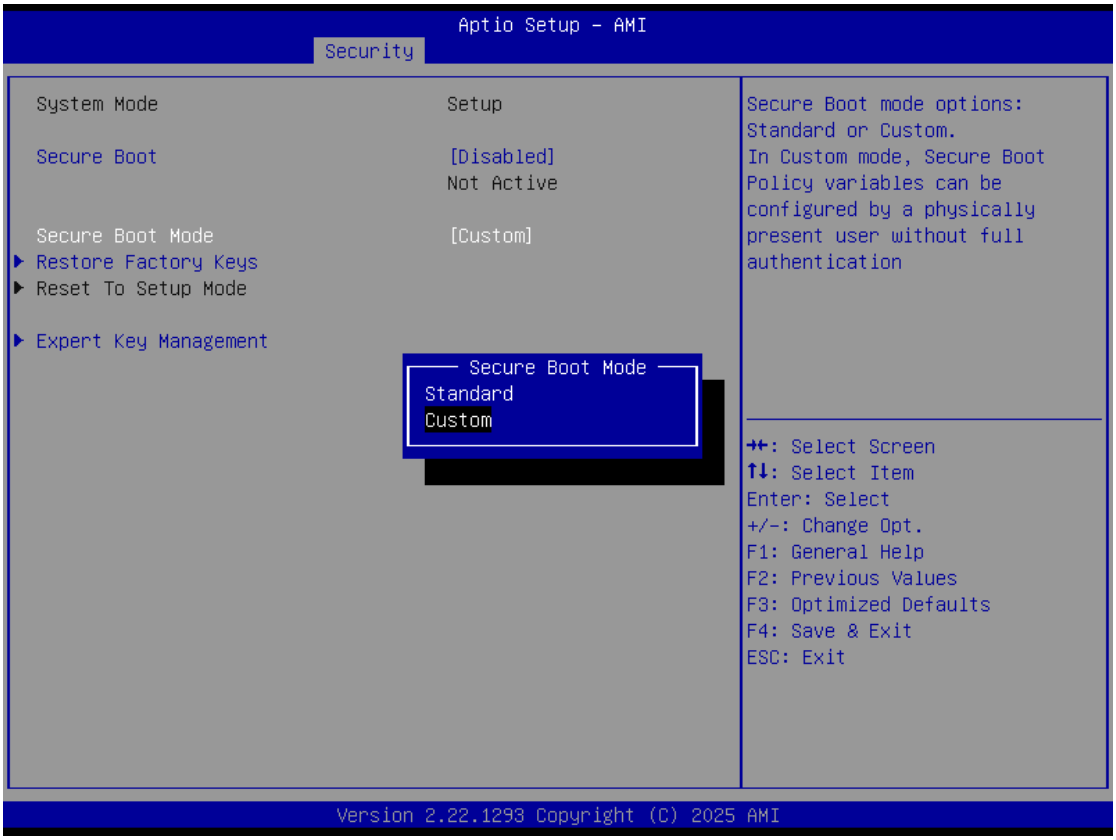


Secure Boot

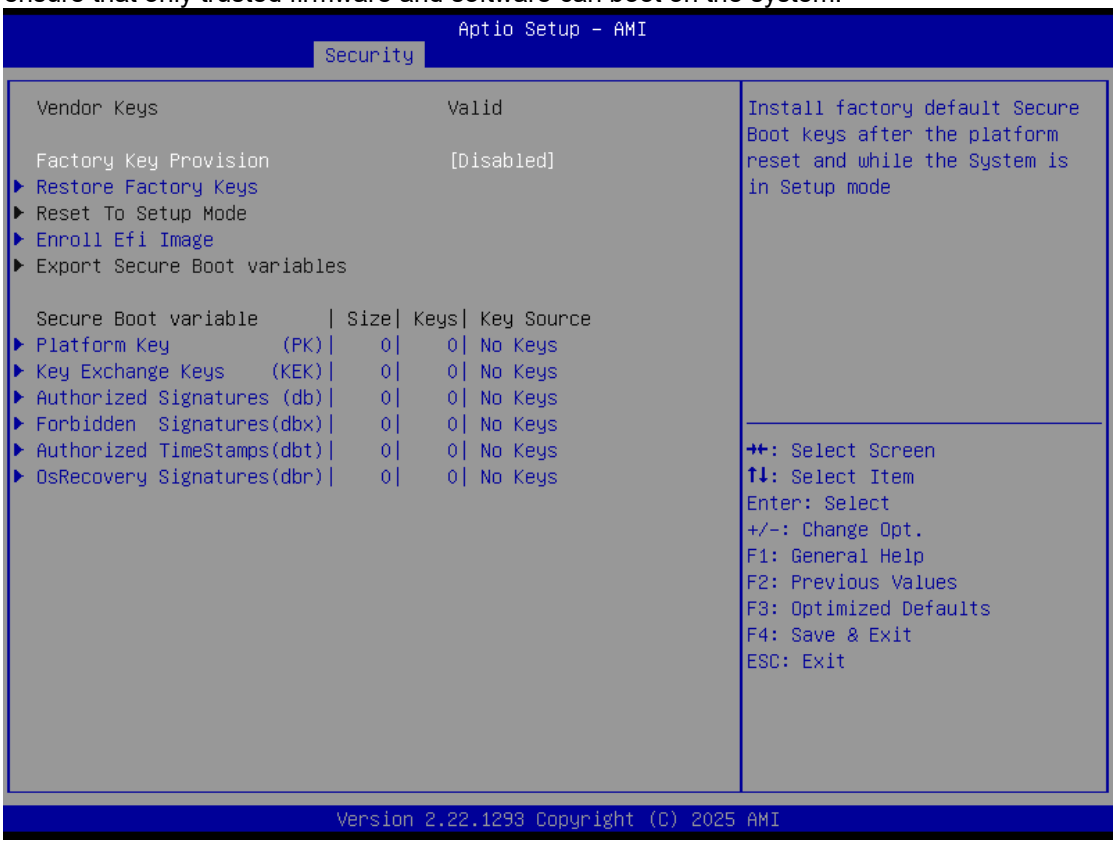
Enables or disables Secure Boot, which ensures only trusted UEFI binaries are executed during boot.

Secure Boot Mode

Selects the operational mode for Secure Boot. Options: Standard, Custom. Default: Standard.



Secure Boot (Advanced Settings):
This menu allows users to manage Secure Boot keys and related settings. Secure Boot helps ensure that only trusted firmware and software can boot on the system.



Factory Key Provision [Enabled / Disabled]
Enables or disables automatic installation of factory default Secure Boot keys after a system reset.

► Restore Factory Keys
Restores all Secure Boot keys (PK, KEK, db, dbx, dbt, dbr) to the factory default values. Use this option if the keys were deleted or replaced and you want to return to the original configuration.

► Reset To Setup Mode
Clears all Secure Boot keys and switches the system to *Setup Mode*.
In this mode, Secure Boot is disabled until new keys are enrolled.

► Enroll EFI Image
Allows the user to manually enroll a trusted EFI image (such as a bootloader or driver) into the authorized database (db). Used when adding a custom boot image to the Secure Boot trust list.

► Export Secure Boot Variables
Exports the current Secure Boot key data (PK, KEK, db, dbx, etc.) to a file.
This can be used for backup or transferring keys to another system.

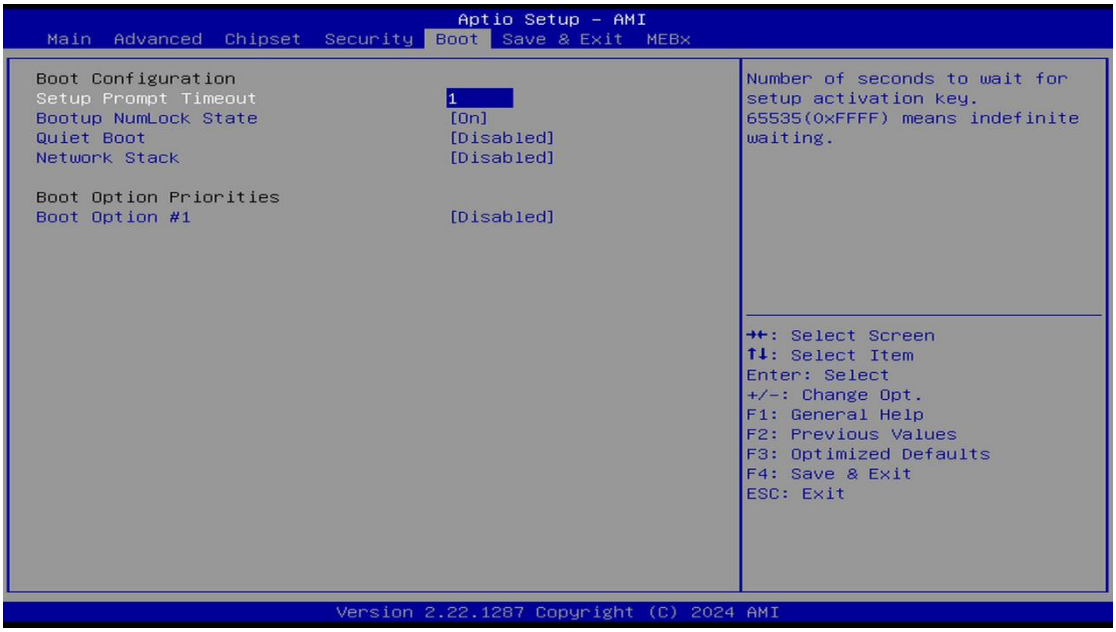
Secure Boot Variables Table

Displays the current status of Secure Boot key databases.

- ► Platform Key (PK): The main key that authorizes updates to other Secure Boot keys.
- ► Key Exchange Keys (KEK): Used to update and manage the Secure Boot databases.
- ► Authorized Signatures (db) : Contains allowed (trusted) digital signatures or certificates.
- ► Forbidden Signatures (dbx): Contains blacklisted or revoked signatures.
- ► Authorized TimeStamps (dbt): Optional list for signed timestamps.
- ► OS Recovery Signatures (dbr): Used to verify recovery images.

3.7 Boot Menu

The Boot menu allows users to change boot options of the system.

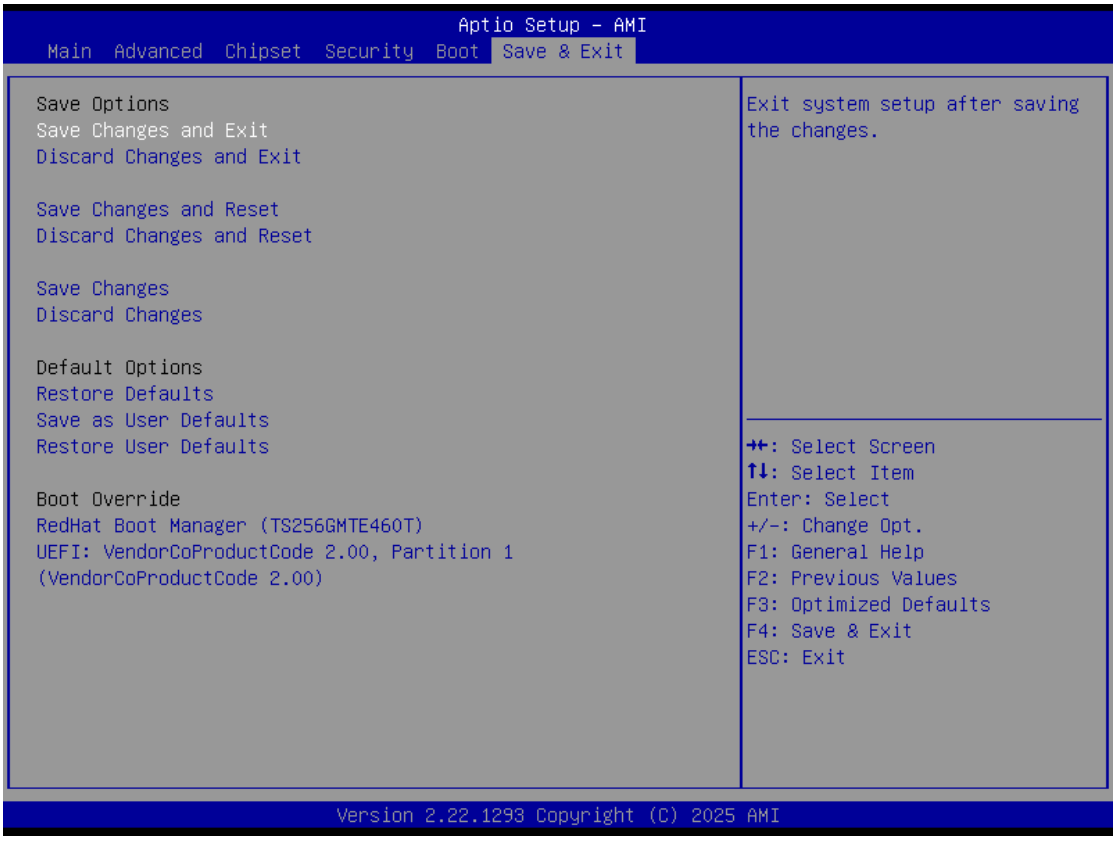


Boot Configuration Options:

Boot Option Priorities
Lists and prioritizes bootable devices such as SSD, USB, and network PXE. The system will boot following this order.
Fast Boot
Reduces POST time by skipping some hardware initializations. Options: Enabled, Disabled. Default: Disabled.
CSM Support
Enables or disables Compatibility Support Module for legacy boot mode. Options: Enabled, Disabled. Default: Disabled.
Boot Mode Select
Chooses between UEFI or Legacy boot modes. Options: UEFI, Legacy. Default: UEFI.
Network Stack
Enables the network stack for PXE boot capability. Options: Enabled, Disabled. Default: Disabled.

3.8 Save & Exit Menu

The Save & Exit menu allows users to load your system configuration with optimal or fail-safe default values.



Save & Exit Configuration Options:

Save Changes and Exit
Saves all current BIOS settings and exits Setup Utility.

Discard Changes and Exit
Exits BIOS without saving any changes made during the current session.

Save Changes and Reset
Saves settings and reboots the system immediately.

Discard Changes
Discards all modifications without leaving BIOS setup.

Restore Defaults
Loads factory default BIOS settings. Use this option for troubleshooting or reverting changes.

Boot Override
Allows temporary boot from a specific device without changing permanent boot order.

SECTION 4
DRIVER AND INSTALLATION

4.1 Operating System

The GOT110A-TWL-WCD is compatible with operating systems Windows 10/11 and Windows 10/11 IoT Enterprise. To facilitate the installation of system drivers, please carefully read the instructions in this section before any of such installation.

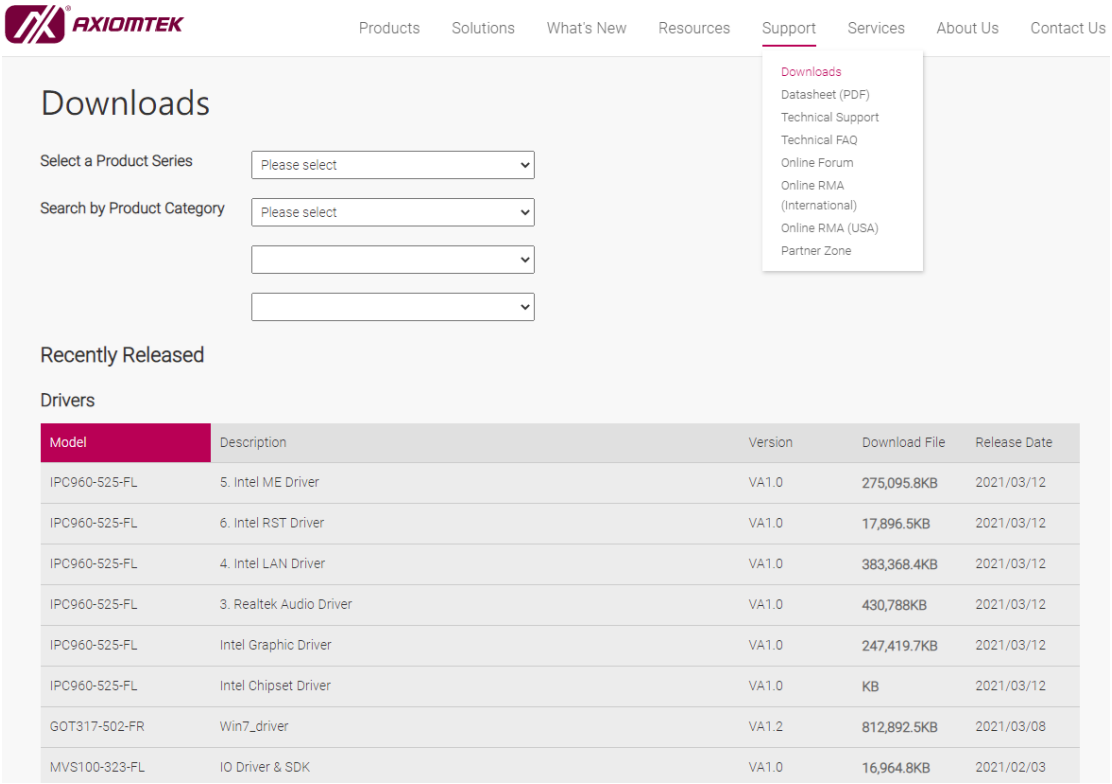
4.1.1 Driver download

1. Please download the following GOT110A-TWL-WCD driver from Axiomtek official website

Support->Downloads->select a product series->Search by Product Category

2. Please follow below Steps to install driver in GOT110A-TWL-WCD.

- Step 1. Chipset
- Step 2. LAN
- Step 3. ME
- Step 4. Serial IO
- Step 5. Graphics



4.2 Touch Screen

The GOT110A-TWL-WCD is designed based on the technology of projected capacitive multi-touch screen of which specifications are listed below

4.2.1 Specification

Touch Screen	**10-point Projected capacitive multi-touch**
Communications	**USB interface**
Transparency	**> 85%**
Input Method	**Finger or Cap.Stylus**

4.3 Embedded O.S.

The GOT110A-TWL-WCD provides the Windows® 11 Embedded. The O.S. is supported devices which are listed below.

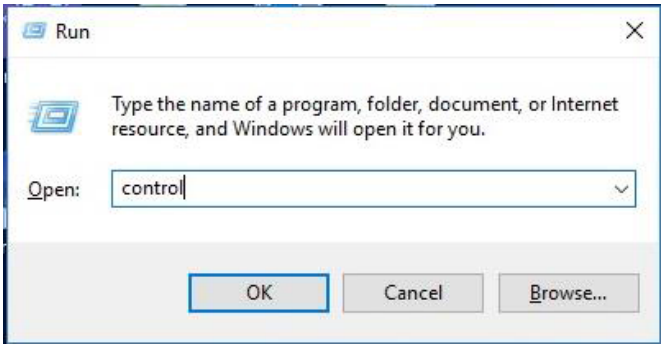
WES 11

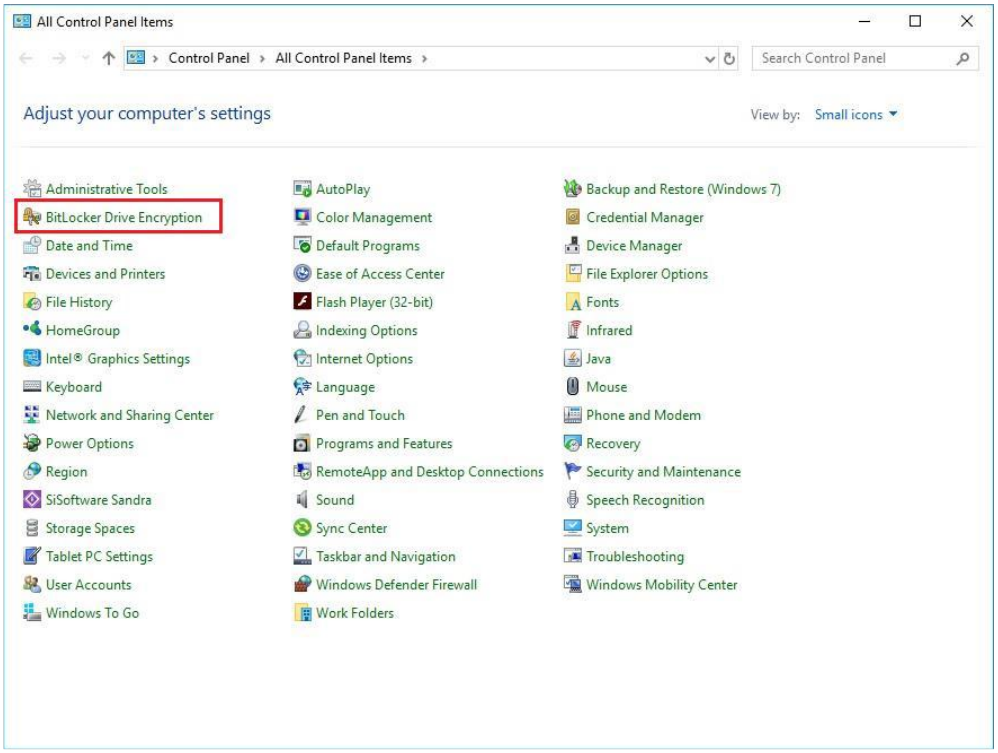
Here are supported onboard devices:

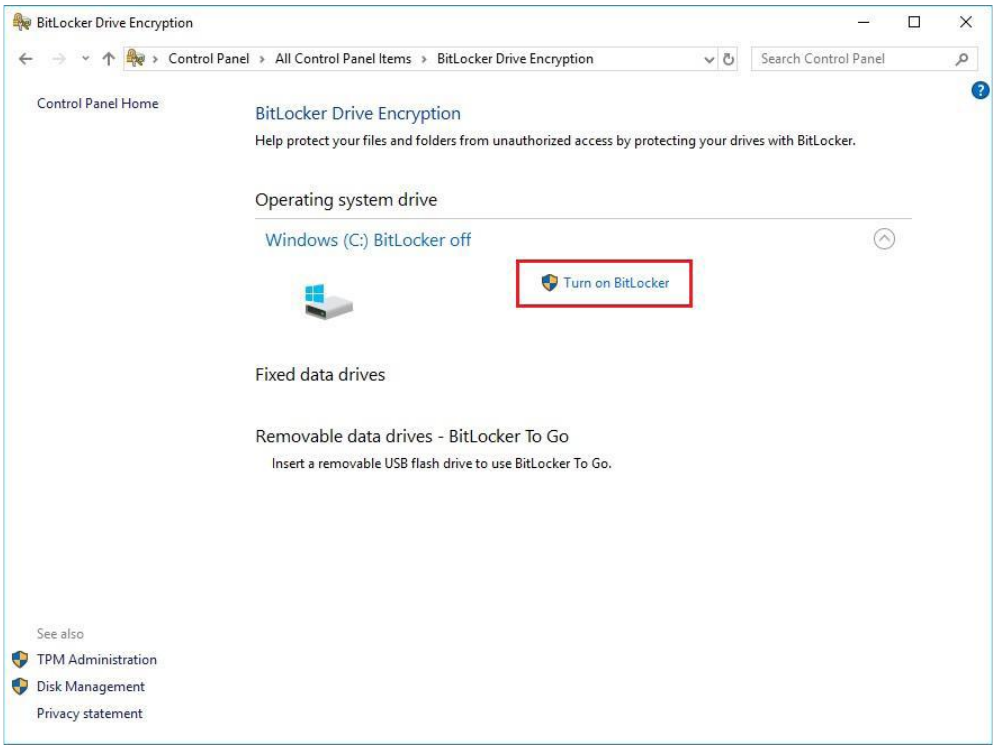
- Onboard Multi I/O
- USB
- LCD display
- 10/100/1000 base-T Ethernet
- mSATA
- Touch Screen

APPENDIX A
TPM BITLOCKER SETTINGS

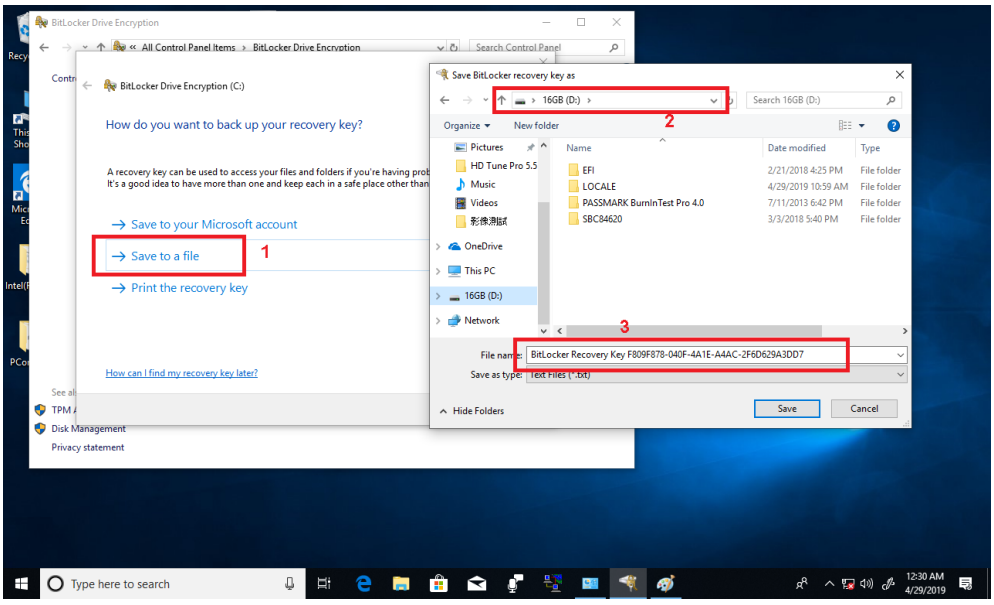
1. Set up BitLocker Drive Encryption main storage. Press <Win + R> and type "Control Panel", and then select BitLocker Drive Encryption.



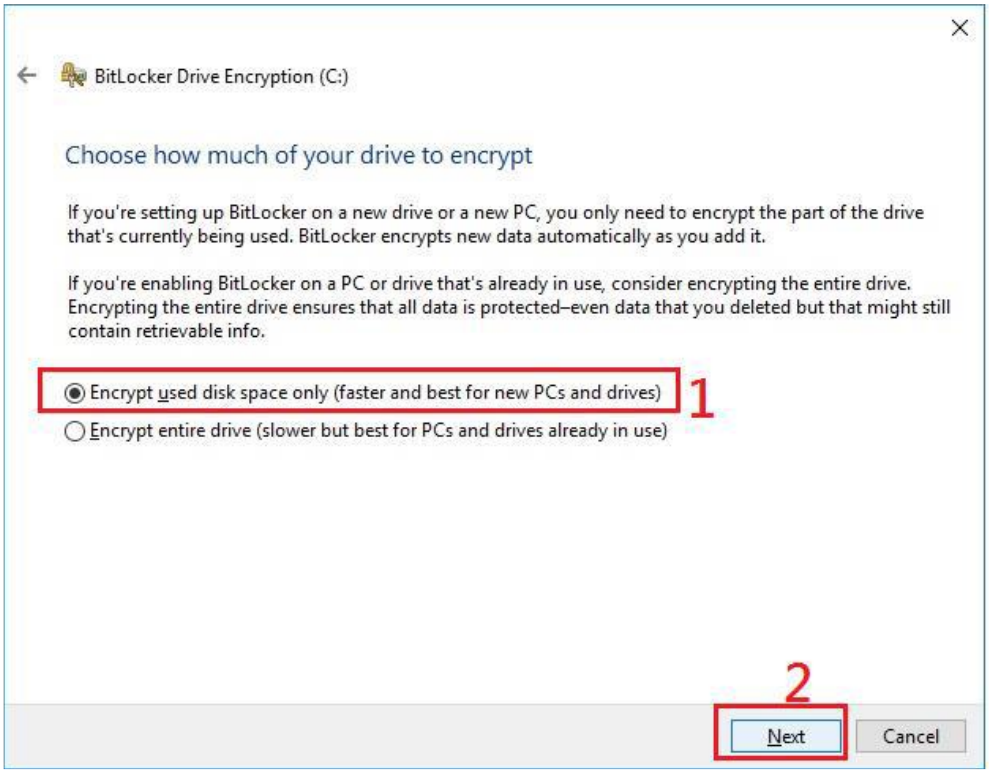


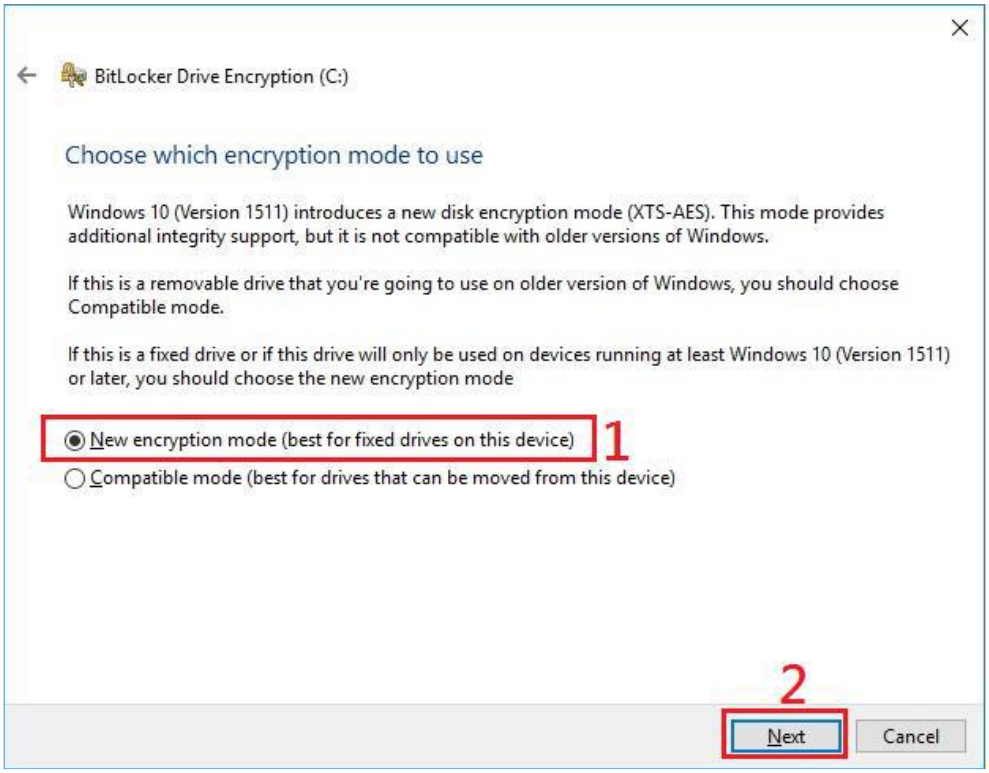


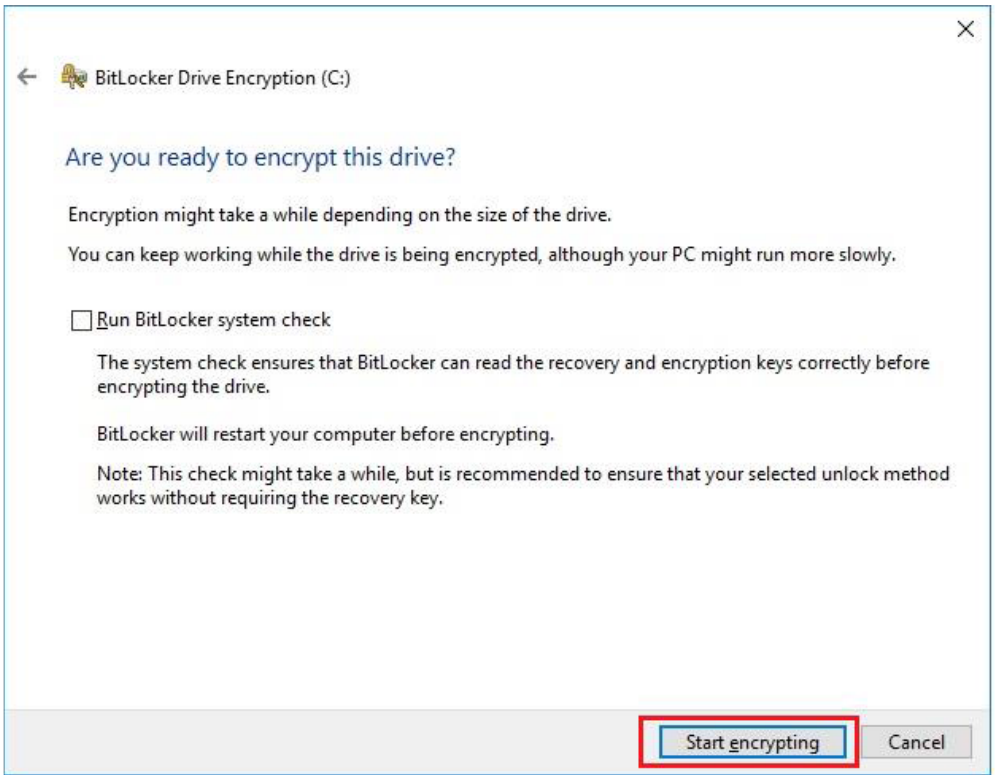
2. Insert an external storage device, for example USB Storage. Back up BitLocker Recovery Key in a new file and save it to the USB Storage.



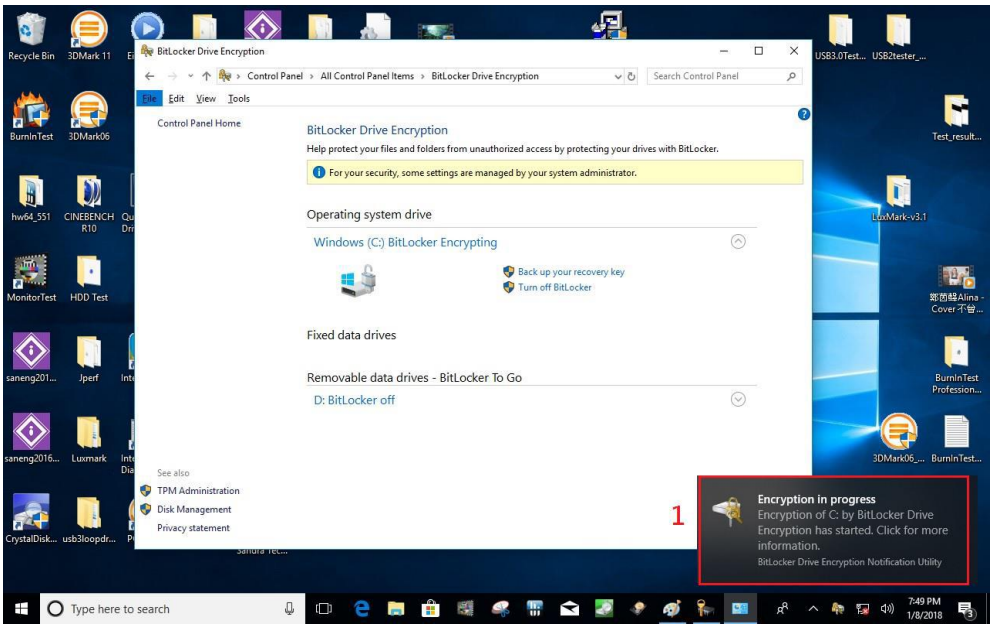
3. Please follow the steps below to encrypt your storage device:



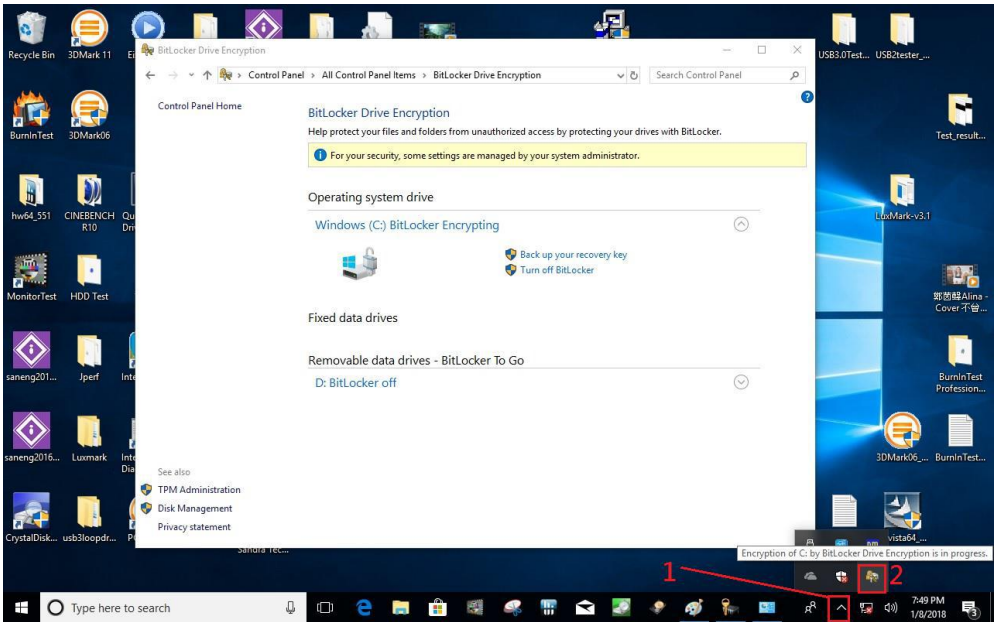


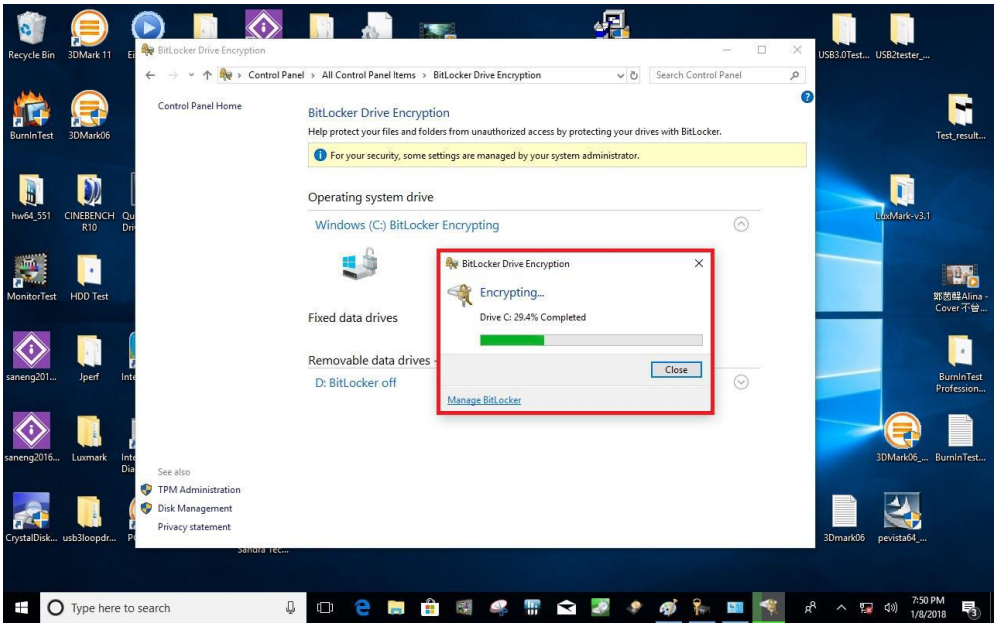


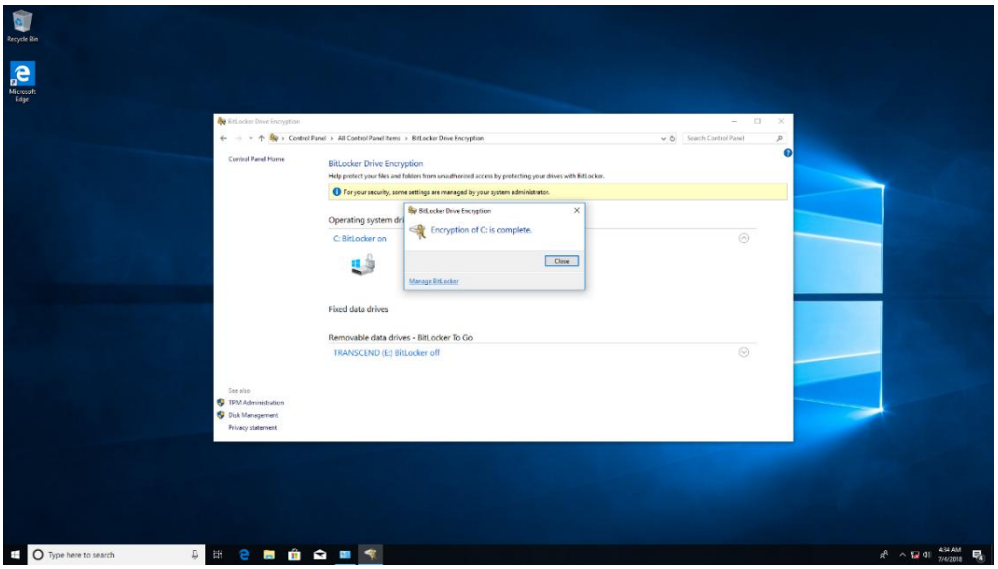
Now, the system prompts that the operating system drive encryption is in progress, and the encryption progress is checked.



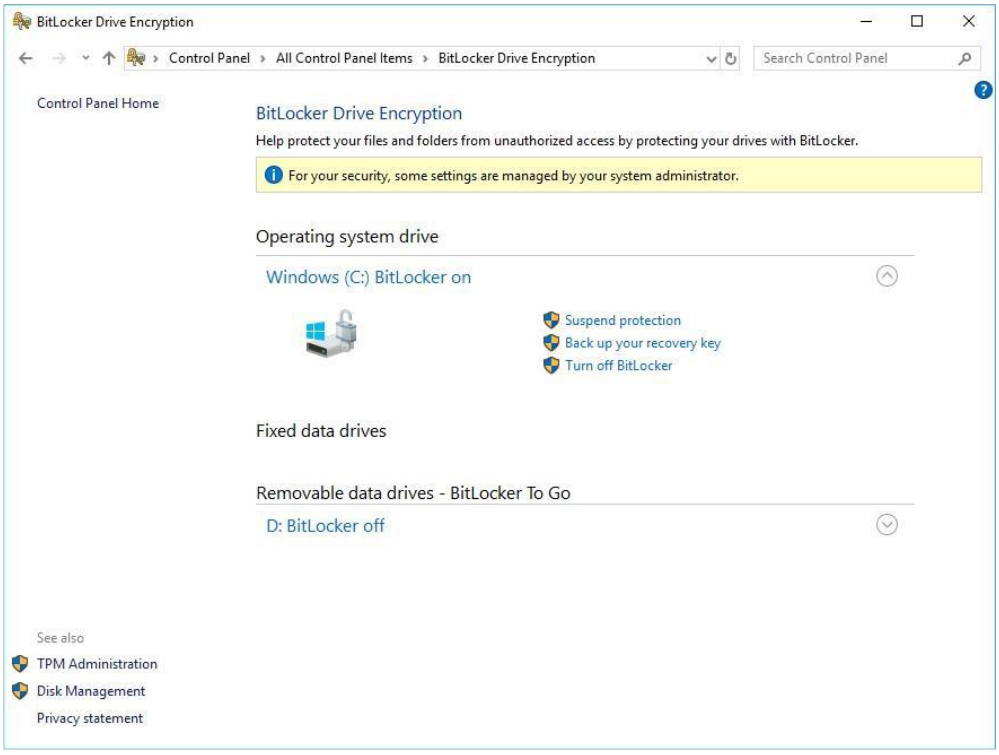
Select and click the icon in the lower right corner to complete the encryption.





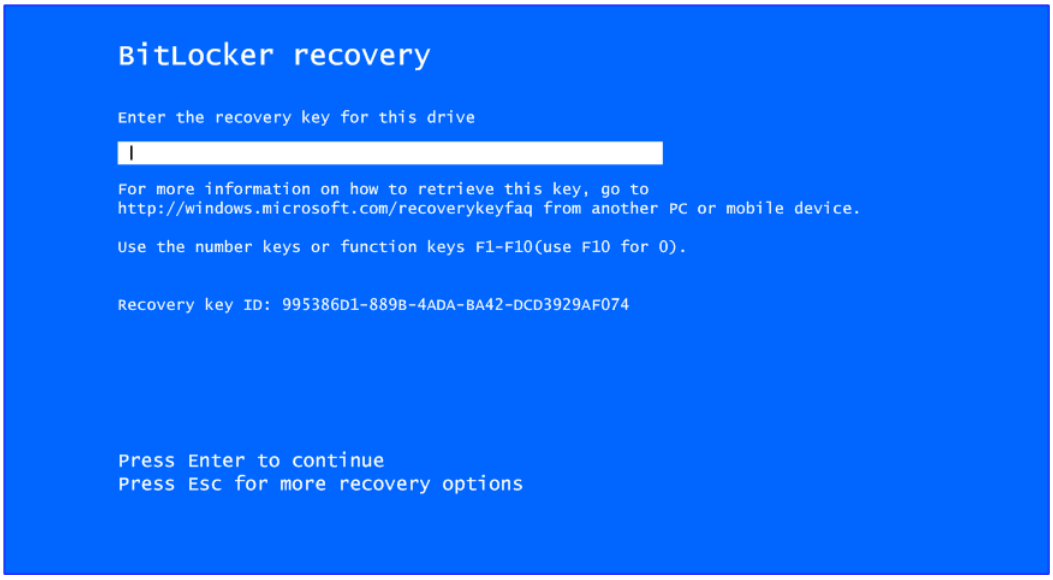


4. Confirm the completion of encryption.



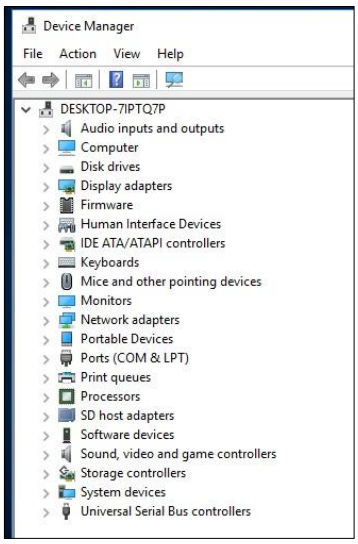
5. Disable the TPM function in BIOS Setup Utility.

6. If you see the following screen when the system is powered on, it means that the TPM module function is working fine. Note that BitLocker cannot be executed if your system does not support the TPM function.

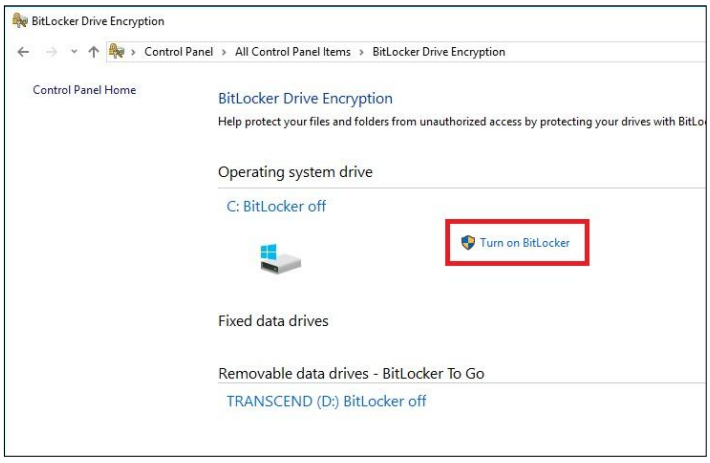


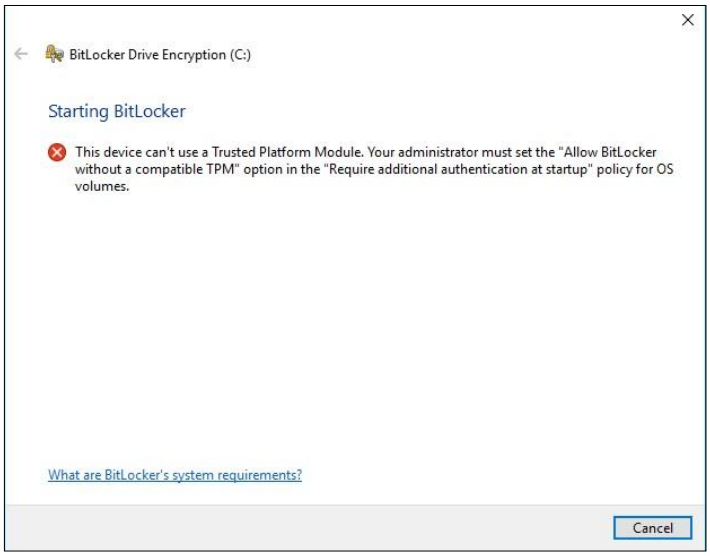
【Note】 ***The user will experience the following situation when using a system not supporting TPM.***

1. ***TPM information is not found in Device Manager.***



2. ***When trying to turn on Bitlocker, the following error message shows up.***




BitLocker Drive Encryption (C:)
Starting BitLocker
This device can't use a Trusted Platform Module. Your administrator must set the "Allow BitLocker without a compatible TPM" option in the "Require additional authentication at startup" policy for OS volumes.
What are BitLocker's system requirements?
Cancel