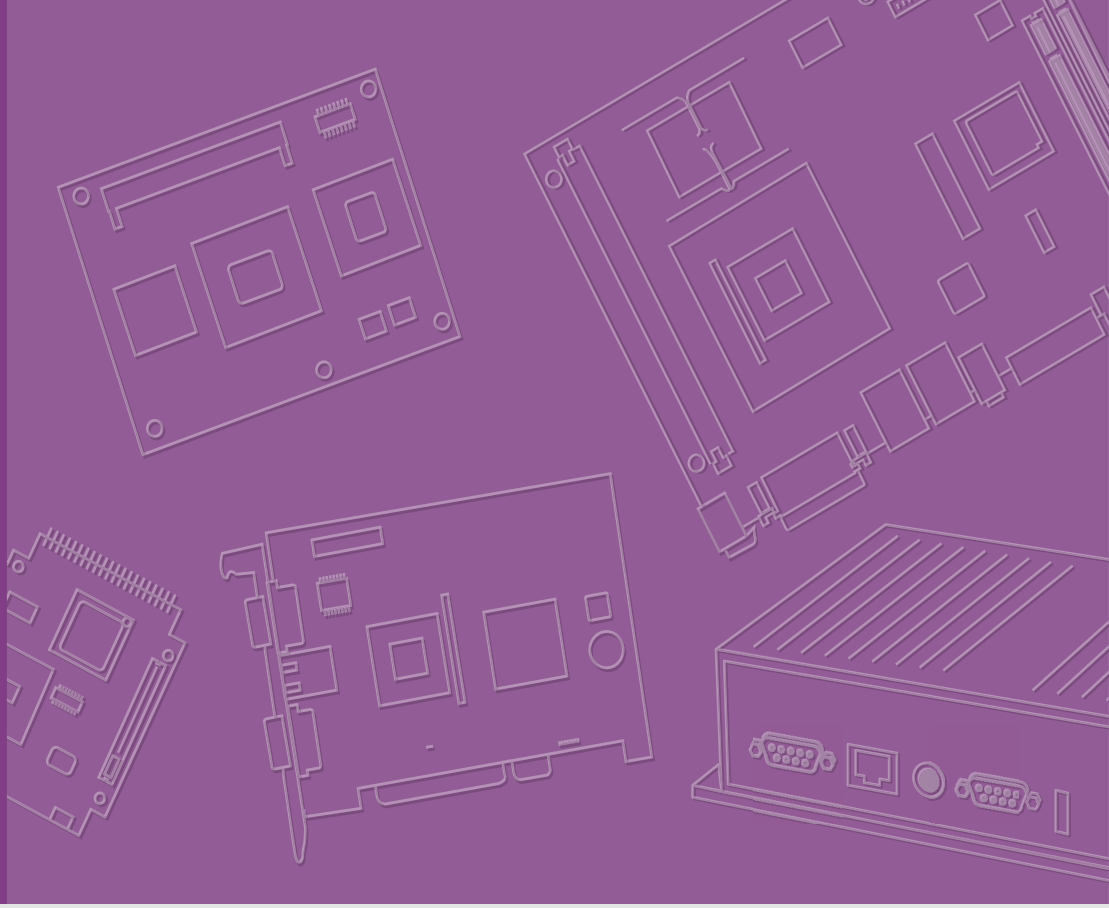

User Manual

DS-450 Computer

Palm-Size Mini-PC with HDMI x2 + Function Port x1

ADVANTECH

Enabling an Intelligent Planet

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Product Warranty (2 years)

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

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

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

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

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

Declaration of Conformity

FCC Class B

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

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

Technical Support and Assistance

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

Warnings, Cautions, and Notes/Avertissements, mises en garde et remarques

Warning! *Warnings indicate conditions that if not observed can cause personal injury!*

Les avertissements indiquent des conditions qui, si elles ne sont pas observées, peuvent causer des blessures!

Caution! *Cautions are included to help prevent hardware damage and data losses. For example,*

Batteries are at risk of exploding if incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Des précautions sont incluses pour vous aider à éviter d'endommager le matériel ou à perdre des données. par exemple.
Une pile neuve risque d'exploser si elle n'est pas installée correctement. N'essayez pas de recharger, d'ouvrir de force ou de chauffer la batterie. Remplacez la pile uniquement par le même type ou un type équivalent recommandé par le fabricant. Jetez les piles usagées conformément aux instructions du fabricant.

Note! *Notes provide additional optional information.*

Les notes fournissent des informations supplémentaires facultatives.

Warning! *The equipment is not suitable for use in locations where children are likely to be present.*

Cet équipement ne convient pas à une utilisation dans des lieux pouvant accueillir des enfants.

Caution! *To avoid risk of electric shock, this equipment must only be connected to supply mains with protective earth.*

Pour éviter tout risque d'électrocution, cet équipement ne doit être branché réseau d'alimentation avec une terre de protection.

Warning! *Restricted access area*
Area accessible only to skilled persons and instructed persons with the proper authorization.

Safety Instructions

1. Read these safety instructions carefully.
   Lisez attentivement ces instructions de sécurité.
2. Retain this user manual for future reference.
   Conservez ce manuel de l'utilisateur pour référence ultérieure.
3. Disconnect the equipment from all power outlets before cleaning. Use only a damp cloth for cleaning. Do not use liquid or spray detergents.
   Débranchez cet appareil de toute prise secteur avant le nettoyage. Utilisez un chiffon humide. N'utilisez pas de détergents liquides ou en aérosol pour le nettoyage.
4. For pluggable equipment, the power outlet socket must be located near the equipment and easily accessible.
   Pour les équipements enfichables, la prise de courant doit être située à proximité de l'équipement et doit être facilement accessible.
5. Protect the equipment from humidity.
   Gardez cet équipement à l'abri de l'humidité.
6. Place the equipment on a reliable surface during installation. Dropping or letting the equipment fall may cause damage.
   Placez cet équipement sur une surface fiable lors de l'installation. Le laisser tomber ou le laisser tomber peut causer des dommages.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. Do not cover the openings.
   Les ouvertures sur le boîtier sont destinées à la convection de l'air. Protégez l'équipement de la surchauffe. NE COUVREZ PAS LES OUVERTURES.
8. Ensure that the voltage of the power source is correct before connecting the equipment to a power outlet.
   Assurez-vous que la tension de la source d'alimentation est correcte avant de connecter l'équipement à la prise de courant.
9. Position the power cord away from high-traffic areas. Do not place anything over the power cord.
   Positionnez le cordon d'alimentation de sorte que personne ne puisse marcher dessus. Ne placez rien sur le cordon d'alimentation.
10. All cautions and warnings on the equipment should be noted.
    Tous les avertissements et mises en garde sur l'équipement doivent être notés.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage from transient overvoltage.
    Si l'équipement n'est pas utilisé pendant une longue période, débranchez-le de la source d'alimentation pour éviter tout dommage dû à une surtension transitoire.
12. Never pour liquid into an opening. This may cause fire or electrical shock.
    Ne jamais verser de liquide dans une ouverture. Cela pourrait provoquer un incendie ou un choc électrique.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
    Ne jamais ouvrir l'équipement. Pour des raisons de sécurité, l'équipement ne doit être ouvert que par du personnel qualifié.
14. If any of the following occurs, have the equipment checked by service personnel:
    Si l'une des situations suivantes se produit, faites vérifier l'équipement par le personnel de service:
    – The power cord or plug is damaged.
      Le cordon d'alimentation ou la fiche est endommagé.

- Liquid has penetrated the equipment.
  Un liquide a pénétré dans l'équipement.
- The equipment has been exposed to moisture.
  L'équipement a été exposé à l'humidité.
- The equipment is malfunctioning, or does not operate according to the user manual.
  L'équipement ne fonctionne pas bien ou vous ne pouvez pas le faire fonctionner conformément au manuel d'utilisation.
- The equipment has been dropped and damaged.
  L'équipement est tombé et a été endommagé.
- The equipment shows obvious signs of breakage.
  L'équipement présente des signes évidents de rupture.

15. Do not leave the equipment in an environment with a storage temperature of below -20° C (-4° F) or above 60° C (140° F) as this may damage the components. The equipment should be kept in a controlled environment.
    Ne pas laisser cet équipement dans un environnement o la température de stockage pourrait être inférieure à -20 ° c (-4 ° f) ou supérieure à 60 ° C (140 ° F). Cela pourrait endommager l'équipement. L'équipement doit être dans un environnement contrôlé.
16. CAUTION: Batteries are at risk of exploding if incorrectly replaced. Replace only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.
    Attention: Danger d'explosion en cas de remplacement incorrect de la batterie. Remplacez uniquement avec le même type ou le type équivalent recommandé par le fabricant, déposez les piles utilisées selon les instructions du fabricant.
17. In accordance with IEC 704-1:1982 specifications, the sound pressure level at the operator's position does not exceed 70 dB (A).
    Le niveau de pression acoustique au poste de l'opérateur selon la norme CEI 704-1: 1982 n'est pas supérieur à 70 dB (A).
18. RESTRICTED ACCESS AREA: The equipment should only be installed in a Restricted Access Area.
    ZONE D'ACCÈS RESTRICTED: L'équipement ne doit être installé que dans une zone d'accès restreint.
19. The product is intended to be supplied bu an UL listed power supply suitable for use at Minimum Tma 45 degree C whose output is rated:19Vdc,3.42A min. if need further Assistance, please contact Advantech for further information.

DISCLAIMER: These instructions are provided according to IEC 704-1 standards. Advantech disclaims all responsibility for the accuracy of any statements contained herein.
AVERTISSEMENT: Cet ensemble d'instructions est donné conformément à la norme CEI 704-1. Advantech décline toute responsabilité quant à l'exactitude des déclarations contenues dans ce document.

Packing List

Before installation, please ensure the following items have been shipped:

- 1 x DS-450 series player
- 2 x Mount bracket and 6 x screws
- 1 x 19V power adapter

DS-450 Series Part Number

	Remark
DS-450GB-U0A1E	DS-450, J6412, Barebones, 4GB LPDDR4
DS-450GB-U1A1E	DS-450, J6412, Barebones, 8GB LPDDR4
DS-450GB-U0A1U	DS-450, J6412, Barebones, 4GB LPDDR4, for US
DS-450GB-U1A1U	DS-450, J6412, Barebones, 8GB LPDDR4, for US

DS-450GB-U0A1U	DS-450GB-U1A1U	DS-450GB-U2A1U	DS-450GB-U3A1U	DS-450GB-U4A1U	DS-450GB-U5A1U
DS-450GB-U0A1E	DS-450GB-U1A1E	DS-450GB-U2A1E	DS-450GB-U3A1E	DS-450GB-U4A1E	DS-450GB-U5A1E
DS-450GB-U0A1R	DS-450GB-U1A1R	DS-450GB-U2A1R	DS-450GB-U3A1R	DS-450GB-U4A1R	DS-450GB-U5A1R
DS-450GB-U0A1S	DS-450GB-U1A1S	DS-450GB-U2A1S	DS-450GB-U3A1S	DS-450GB-U4A1S	DS-450GB-U5A1S
DS450GB2401-T	DS450GB2402-T	DS450GB2403-T	DS450GB2404-T	DS450GB2405-T	DS450GB2406-T
DS450GB2407-T	DS450GB2408-T	DS450GB2409-T	DS450GB2410-T	DS450GB2411-T	DS450GB2412-T
DS450GB2501-T	DS450GB2502-T	DS450GB2503-T	DS450GB2504-T	DS450GB2505-T	DS450GB2506-T
DS450GB2507-T	DS450GB2508-T	DS450GB2509-T	DS450GB2510-T	DS450GB2511-T	DS450GB2512-T
DS450GB2601-T	DS450GB2602-T	DS450GB2603-T	DS450GB2604-T	DS450GB2605-T	DS450GB2606-T
DS450GB2607-T	DS450GB2608-T	DS450GB2609-T	DS450GB2610-T	DS450GB2611-T	DS450GB2612-T
DS450GB2701-T	DS450GB2702-T	DS450GB2703-T	DS450GB2704-T	DS450GB2705-T	DS450GB2706-T
DS450GB2707-T	DS450GB2708-T	DS450GB2709-T	DS450GB2710-T	DS450GB2711-T	DS450GB2712-T

Contents

Chapter 1 General Introduction 1

1.1 Introduction 2
1.2 Product Features.....2
1.2.1 General 2
1.2.2 Display 2
1.2.3 Thermal Solution.....2
1.3 Hardware & Software Specifications.....2
1.4 Mechanical Specification.....3
1.4.1 Dimension 3
Figure 1.1 Dimensions.....3
1.4.2 Weight.....3
1.5 Power Requirements.....3
1.5.1 Adapter Power 3
1.5.2 RTC Battery 3
1.6 Environmental Specifications 3
1.6.1 Operating Temperature.....3
1.6.2 Relative Humidity 3
1.6.3 Storage Temperature.....3
1.6.4 Vibration Loading During Operation.....3
1.6.5 Shock During Vibration 4
1.6.6 EMC 4

Chapter 2 Hardware Configuration.....5

2.1 DS-450 Series I/O 6
Figure 2.1 DS-450 I/O.....6
2.1.1 LED 6
Figure 2.2 Power 6
Figure 2.3 LED - HDD.....6
2.1.2 Power On/off 6
Figure 2.4 Power Button 6
2.1.3 USB 3.0 Gen2.....7
Figure 2.5 USB connector 7
Table 2.1: USB 3.0 Connector.....7
2.1.4 LAN Connector 7
Figure 2.6 RJ45 connector 7
Table 2.2: LAN Port Pin Assignments 7
Table 2.3: Right Side LED: Green LED 8
2.1.5 WiFi Antenna 8
Figure 2.7 SMA connector 8
2.1.6 Function Port.....8
Table 2.4: Function Port 8
2.2 Jumpers Location.....9
Figure 2.8 Jumper Layout.....9
2.2.1 Clear CMOS (JCMOS1).....9
Table 2.5: Clear CMOS (JCMOS1) 9
2.2.2 AT/ATX (PSON1).....9
Table 2.6: AT/ATX (PSON1) 9
2.3 Hardware Installation 10
2.3.1 Mounting Bracket Installation.....10
2.3.2 WiFi & Storage Installation.....10

Chapter 3 BIOS Settings 11

3.1 BIOS Introduction 12
3.2 Entering the Setup 13
3.2.1 Main Setup 13
3.2.2 Advanced 14
3.2.3 Advanced → CPU Configuration 15
3.2.4 Advanced → Power & Performance 16
3.2.5 Advanced → PCH-FW Configuration 18
3.2.6 Advanced → ACPI Settings 21
3.2.7 Advanced → IT5121 HW Monitor 22
3.2.8 Advanced → IT5121 Super IO Configuration 23
3.2.9 Advanced → Trusted Computing 25
3.2.10 Advanced → S5 RTC Wake Settings 26
3.2.11 Advanced → USB Configuration 26
3.2.12 Advanced → Network Stack Configuration 28
3.3 Chipset 28
3.3.1 Chipset → System Agent (SA) Configuration 29
3.3.2 Chipset → PCH-IO Configuration 30
3.4 Security 34
3.4.1 Security → Secure Boot 35
3.5 Boot 37
3.6 Save & Exit 38

Chapter 1

General Introduction

This chapter gives background information on DS-450 series.

1.1 Introduction

The DS-450 design is a mini-PC powered by Intel® processors. DS-450 delivers 4K UHD output by HDMI.

DS-450 mini-PC save the space, also features built-in I/O such as HDMI, USB 3.0 Gen2, RS232 (DB9), and dual-LAN (RJ-45).

DS-450 enables media playback and display and is ideal for all-in-one signage applications with space constraints.

1.2 Product Features

1.2.1 General

- Supports Intel J6412
- Supports HDMI 2.0, HDMI 1.4
- Supports M.2 2242 M Key for storage
- Built-in M.2 2230 E Key slot for WIFI module expansion

1.2.2 Display

- HDMI 2.0 x 1 @3840x2160 60Hz, HDMI 1.4 x 1 @3840x2160 30Hz

1.2.3 Thermal Solution

- Active cooling by fan

1.3 Hardware & Software Specifications

- **CPU:** Intel J6412
- **System Chipset:** Built-in CPU
- **Graphic chipset:** Intel UHD graphics
- **BIOS:** AMI uEFI 256 Mbit
- **System Memory:** 4GB or 8GB DDR4 on board
- **Storage:** M.2 2242 M Key (mSATA)
- **SUSI:** SUSI is Advantech unique hardware management that provided in standard DS-450 Win10 IoT image. Below function are included.
  - Watchdog Timer
  - Hardware Monitor
  - System information
- **IO Interfaces:**
  - 1 x HDMI 2.0
  - 1 x HDMI 1.4
  - 2 x USB 3.0 Gen2, 4 x USB 2.0
  - 1x Function Port (DB9) 2xRS232, Remote Power on/off, 2pin x GPIO
- **Ethernet Chipset:**
  - **Speed:** 10/100/1000Mbps
  - **Interface:** 2 x RJ-45 jacks with LED
  - **Standard:** IEEE 802.3z/ab (1000 Base-T) or IEEE 802.3u 100 Base-T compliant
- **Resolution:** HDMI 2.0 x 1, @3840x2160 60Hz, HDMI 1.4 x 1 @3840x2160 30Hz
- **Expansion:** M.2 2230 E Key x 1 (for WIFI module)

1.4 Mechanical Specification

1.4.1 Dimension

160 x 115 x 44 mm (L x W x H)

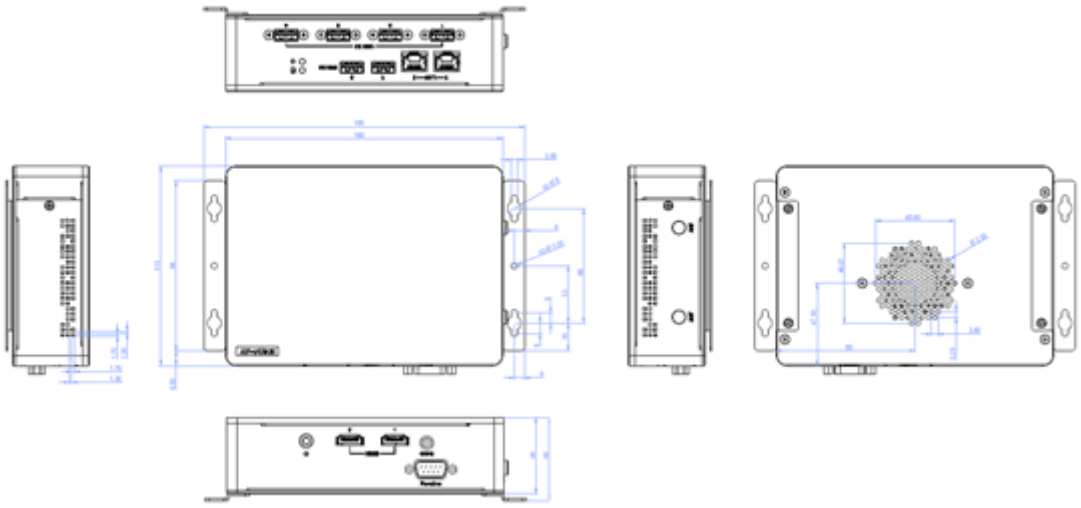


Figure 1.1 Dimensions

1.4.2 Weight

- 0.7 kg

1.5 Power Requirements

1.5.1 Adapter Power

- **Max:** 19V_{DC}, 3.42A, 65W

1.5.2 RTC Battery

- **Battery:** 3V 210mAH CR2032M1S8-LF

1.6 Environmental Specifications

1.6.1 Operating Temperature

- 0° C - 45°C @0.7m/s air flow

1.6.2 Relative Humidity

- 95% @ 40°C (Non Condensing)

1.6.3 Storage Temperature

- 0~70 °C

1.6.4 Vibration Loading During Operation

- 0.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.

1.6.5 Shock During Vibration

- 20 G, IEC 60068-2-27, half sine, 11 ms duration

1.6.6 EMC

- CE, FCC Class B

Chapter 2

Hardware Configuration

This chapter introduces external IO and the installation of DS-450 series Hardware.

2.1 DS-450 Series I/O

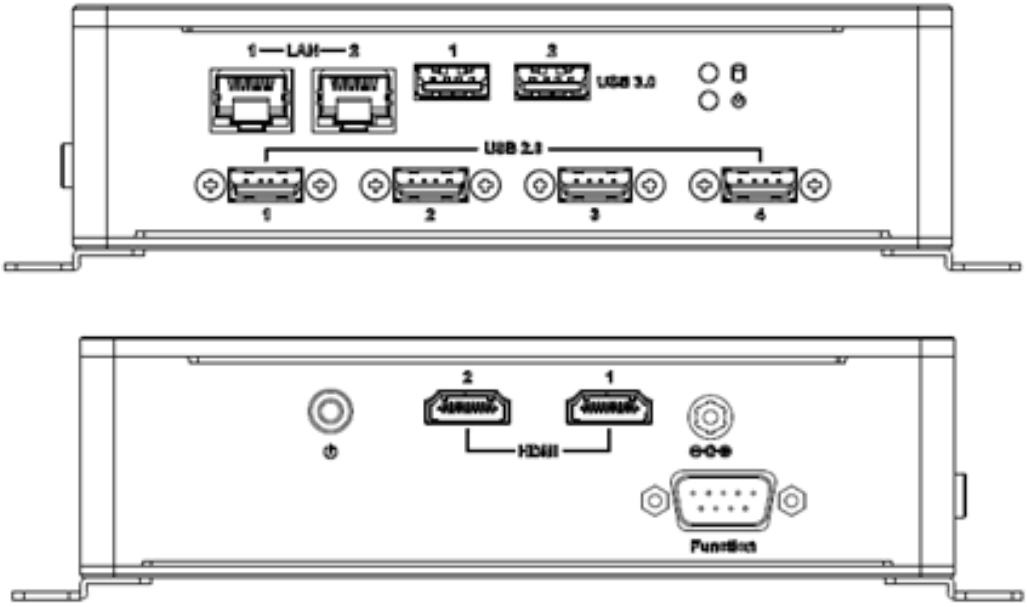


Figure 2.1 DS-450 I/O

2.1.1 LED

Below LED indicator means power on status when it shows green.

Figure 2.2 Power

Below LED indicator means SSD status when it shows orange.

Figure 2.3 LED - HDD

2.1.2 Power On/off

Push below button to power on/off DS-450.

Figure 2.4 Power Button

2.1.3 USB 3.0 Gen2

DS-450 supports 2 x USB 3.0 interfaces. The USB interfaces complies with USB UHCI, Rev. 3.0 standards. Please refer to Table 2.5 for its pin assignments. USB 3.0 connectors contain legacy pins to interface with USB 2.0 devices, and a new set of pins for USB 3.0 connectivity.

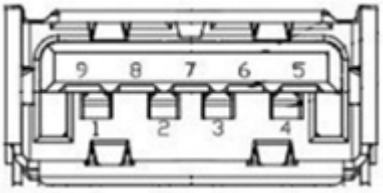


Figure 2.5 USB connector

Table 2.1: USB 3.0 Connector

Pin	Signal Name	Pin	Signal Name
1	+5V	2	USB_Data-
3	USB_Data+	4	GND
5	SSRX-	6	SSRX+
7	GND	8	SSTX-
9	SSTX+		

2.1.4 LAN Connector

DS-450 provides two RJ-45 LAN interface connector, fully compliant with IEEE802.3u 10/100/1000 Base-T CSMA/CD standards. The Ethernet port provides a standard RJ-45 jack connector with LED indicators to show its Active/Link status and speed status.

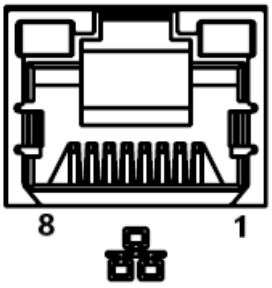


Figure 2.6 RJ45 connector

Table 2.2: LAN Port Pin Assignments

Pin	Signal
1	MDI0+
2	MDI0-
3	MDI1+
4	MDI1-
5	GND
6	GND
7	MDI2+
8	MDI2-

Table 2.3: Right Side LED: Green LED	
Link Status	Always turn on without transmitting/receiving data
Activity status	Flash
Left side LED: Green/Orange LED	
Status	**Display**
10Mbps	Always off
100Mbps	Green
1000Mbps	Orange

2.1.5 WiFi Antenna

DS-450 provides two WiFi antenna connectors to connect with SMA antenna.

Figure 2.7 SMA connector

2.1.6 Function Port

DS-450 provides two RS232 (Tx/Rx) and one Remote Power On/Off Control pin, and two pins GPIO, please make or order the external cable PN for other kiosk or mini-PC setup demands.

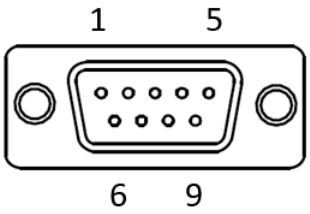


Table 2.4: Function Port	
Function	**Pin**
TX1	1
RX1	2
PWR	3
GND	4
GND	5
TX2	6
RX2	7
GP0	8
GP1	9

Note! *When using RS-232, GND needs to be connected.*

2.2 Jumpers Location

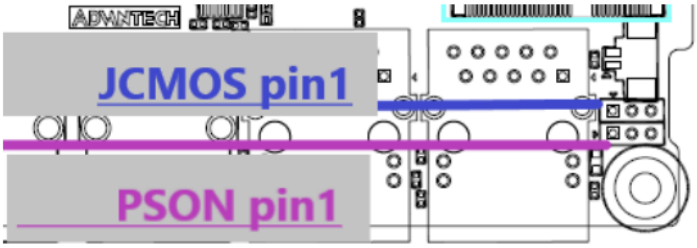
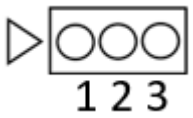


Figure 2.8 Jumper Layout

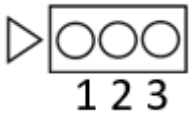
2.2.1 Clear CMOS (JCMOS1)

Table 2.5: Clear CMOS (JCMOS1)	
Location	JCMOS1
Setting	**Function**
(1-2)*	Normal operation (Default)
(2-3)	Clear CMOS



2.2.2 AT/ATX (PSON1)

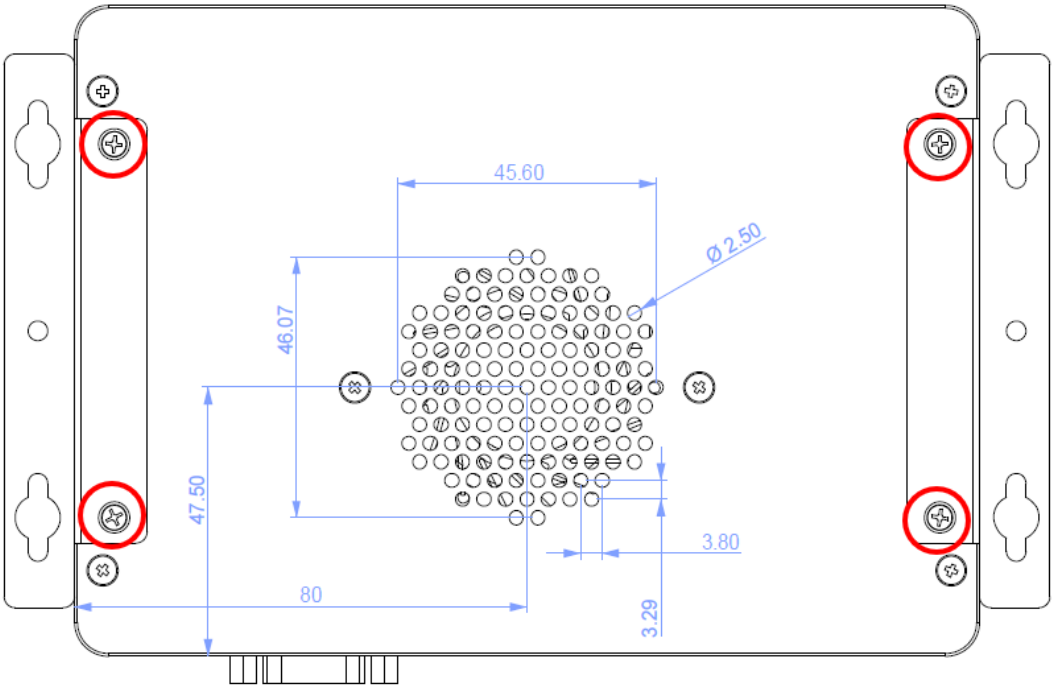
Table 2.6: AT/ATX (PSON1)	
Location	PSON1
Setting	**Function**
(1-2)	AT
(2-3)*	ATX (Default)



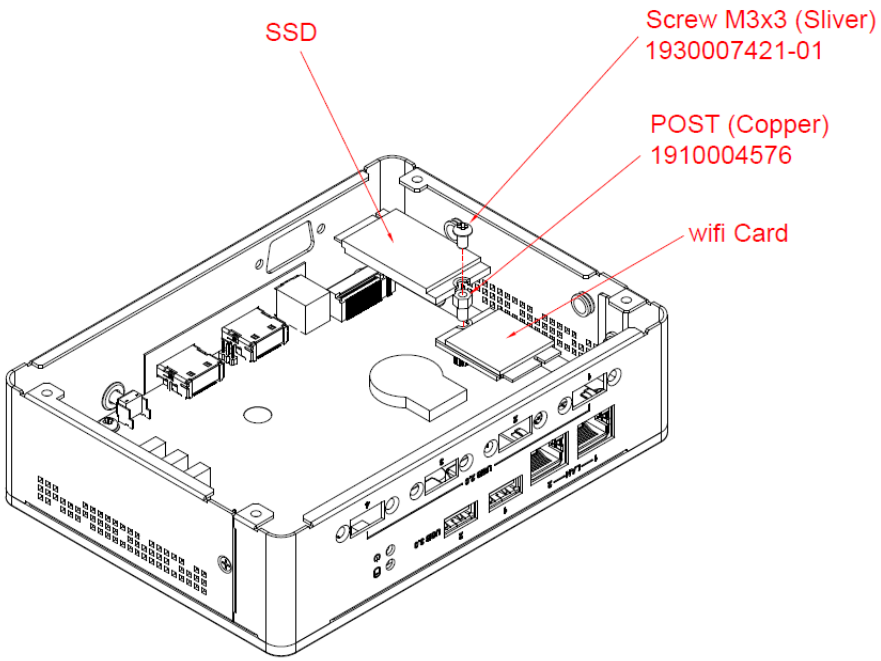
2.3 Hardware Installation

2.3.1 Mounting Bracket Installation

Find 4 pcs of M3(L=5mm) screws to affix the mounting brackets on system bottom. (The screws and mounting brackets are both included in the system accessory box)
Trouvez 4 vis M3 (L = 5 mm) pour fixer les supports de montage au bas du système. (Les vis et les supports de montage sont tous deux inclus dans la boîte d'accessoires du système)



2.3.2 WiFi & Storage Installation



Chapter 3

BIOS Settings

3.1 BIOS Introduction

AMI's BIOS has been integrated into motherboards for over two decades. With the AMI's BIOS Setup program, users can modify BIOS settings and control various system features. This chapter describes the basic navigation of the DS-450 BIOS setup screens.

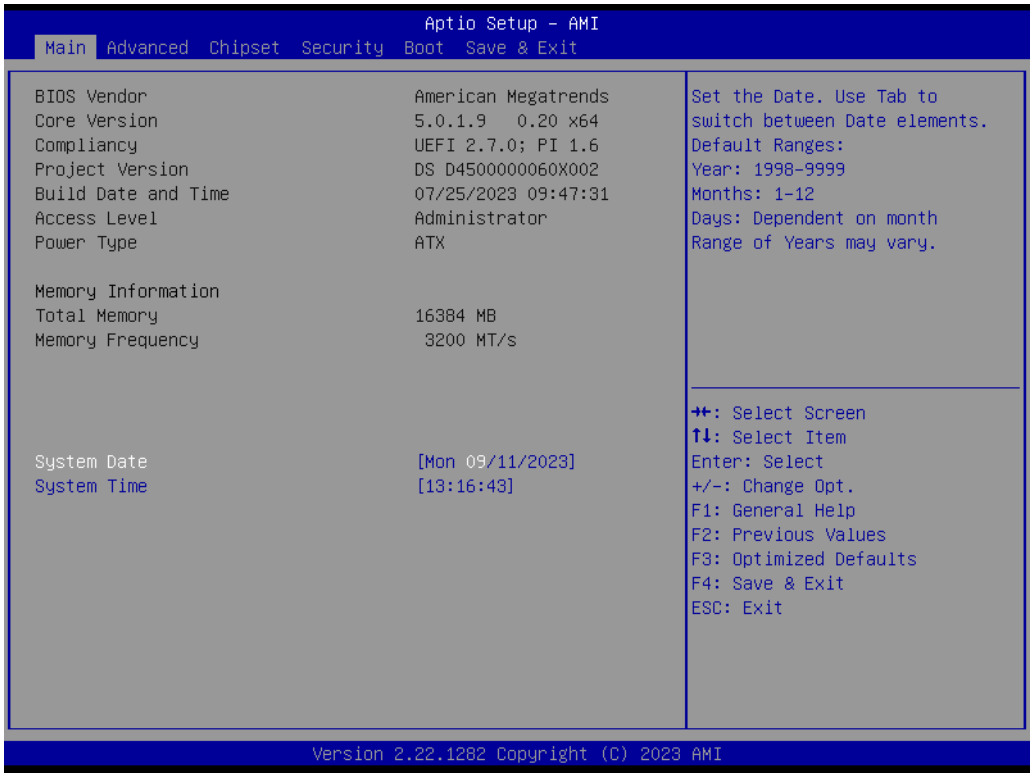
AMI's BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This information is stored in flash ROM so it retains the Setup information when the power is turned off.

3.2 Entering the Setup

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

3.2.1 Main Setup

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

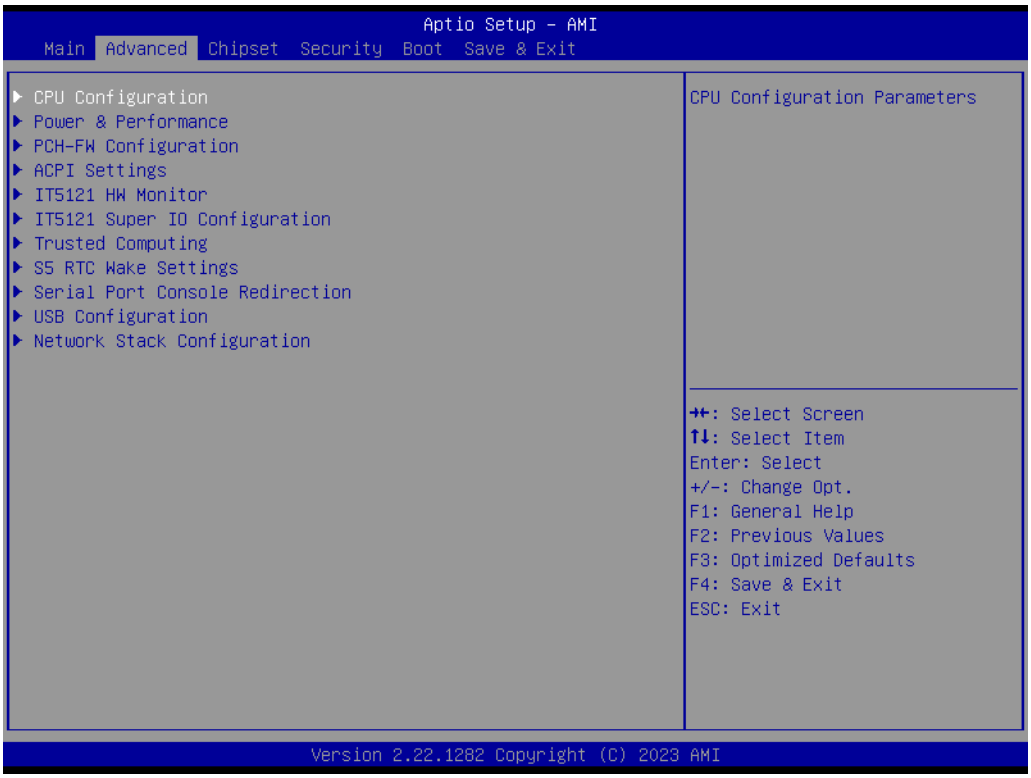


The Main BIOS setup screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured; options in blue can. The right frame displays the key legend.

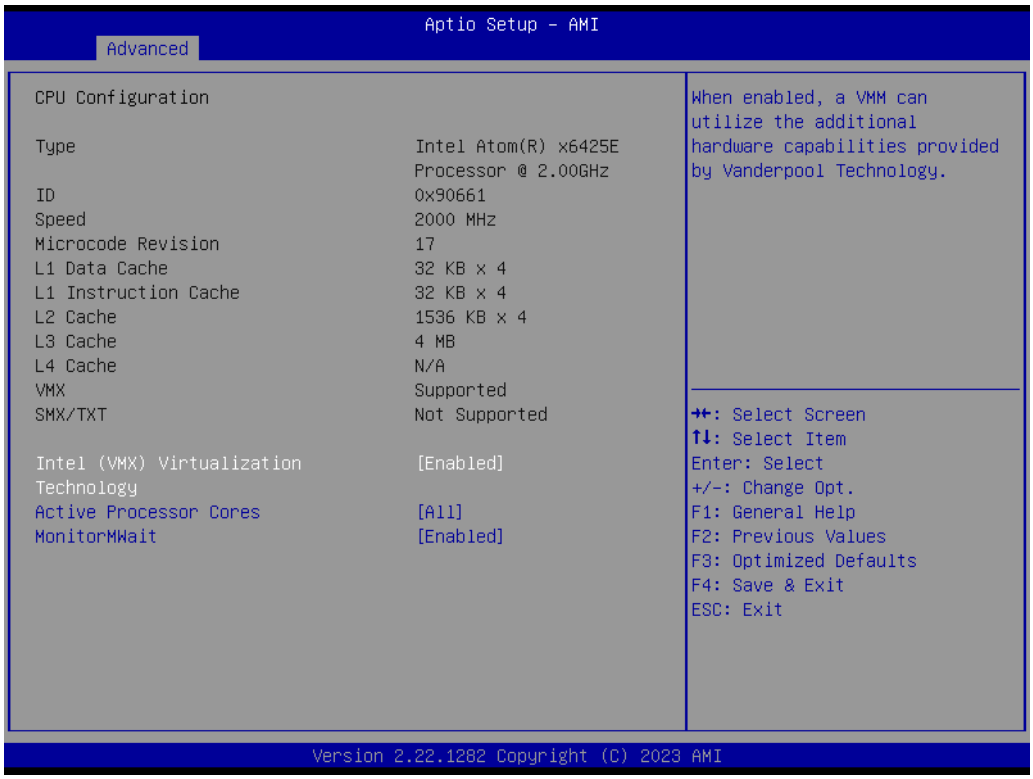
Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it.

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

3.2.2 Advanced

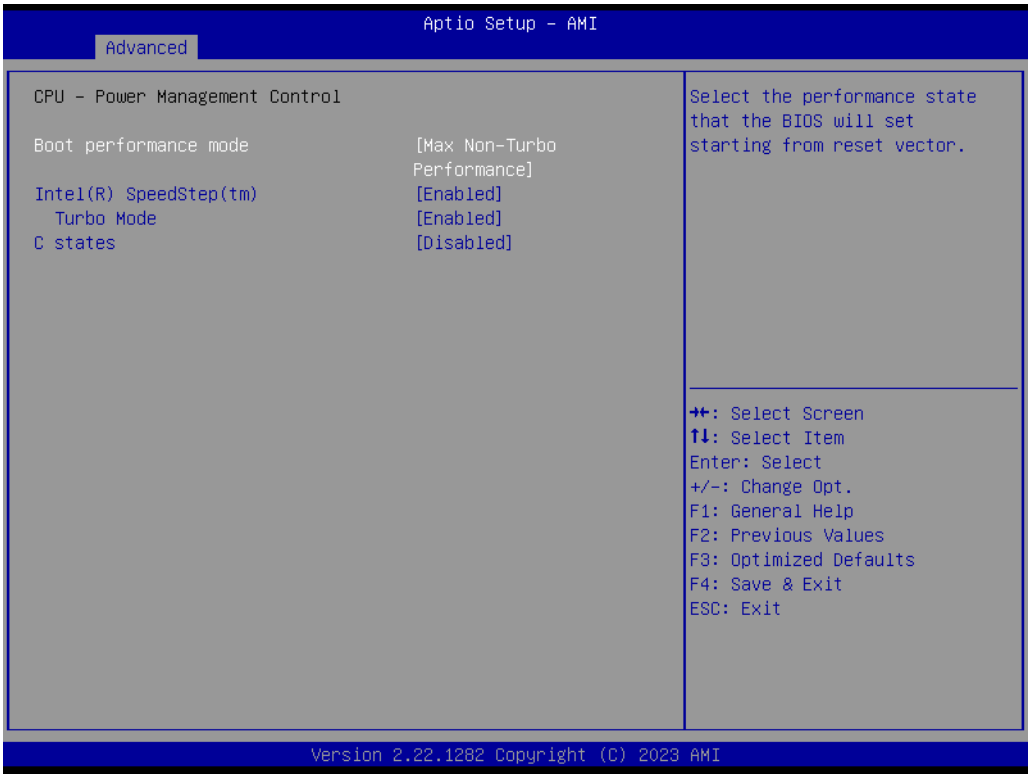


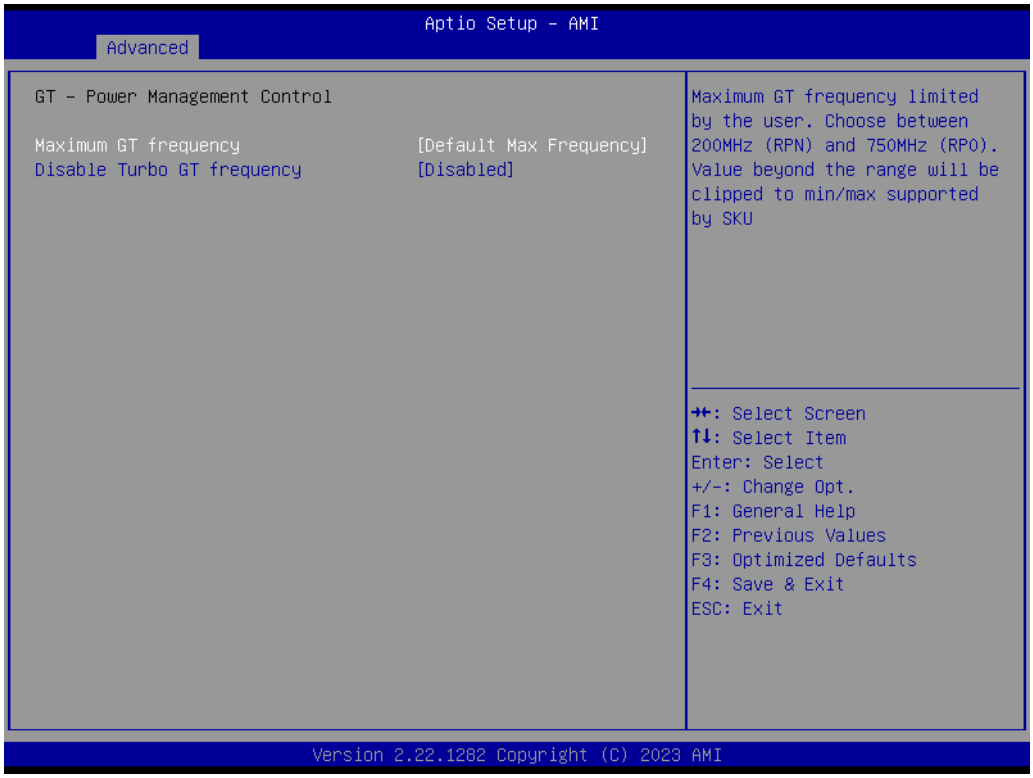
3.2.3 Advanced → CPU Configuration



- **Intel (VMX) Virtualization**
  Enable or Disable Intel VMX Virtualization support.
- **Active Processor Cores**
  Enable all or 1/2/3.
- **MonitorMWait**
  Enable or disable MonitorMWait support.

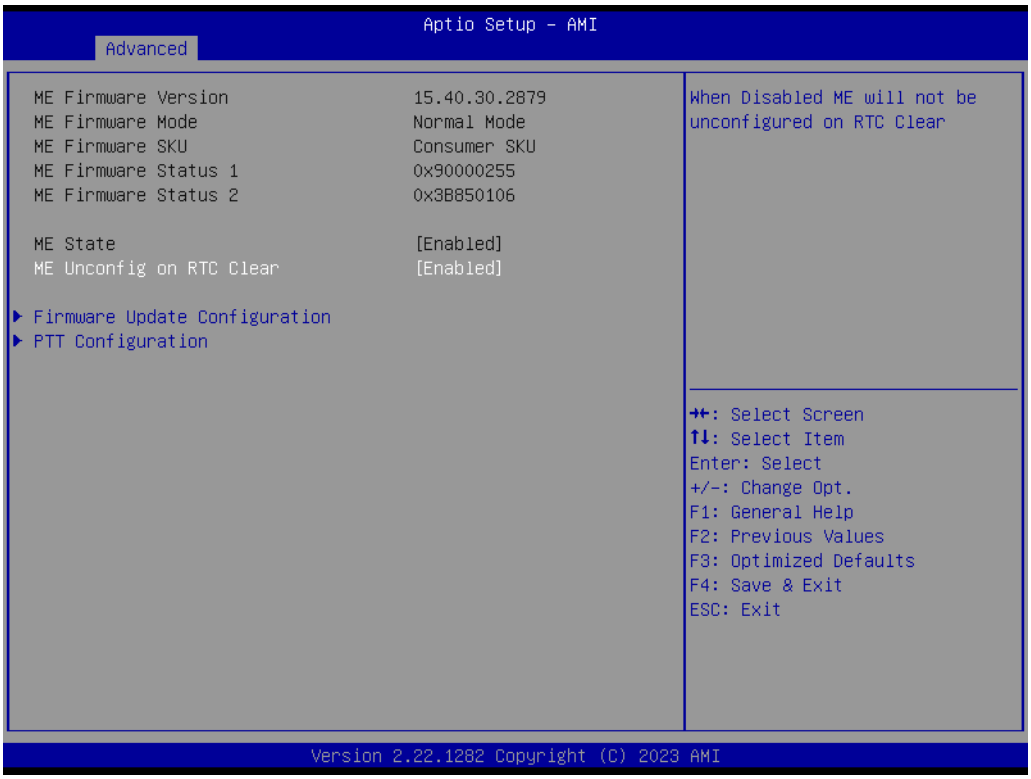
3.2.4 Advanced → Power & Performance





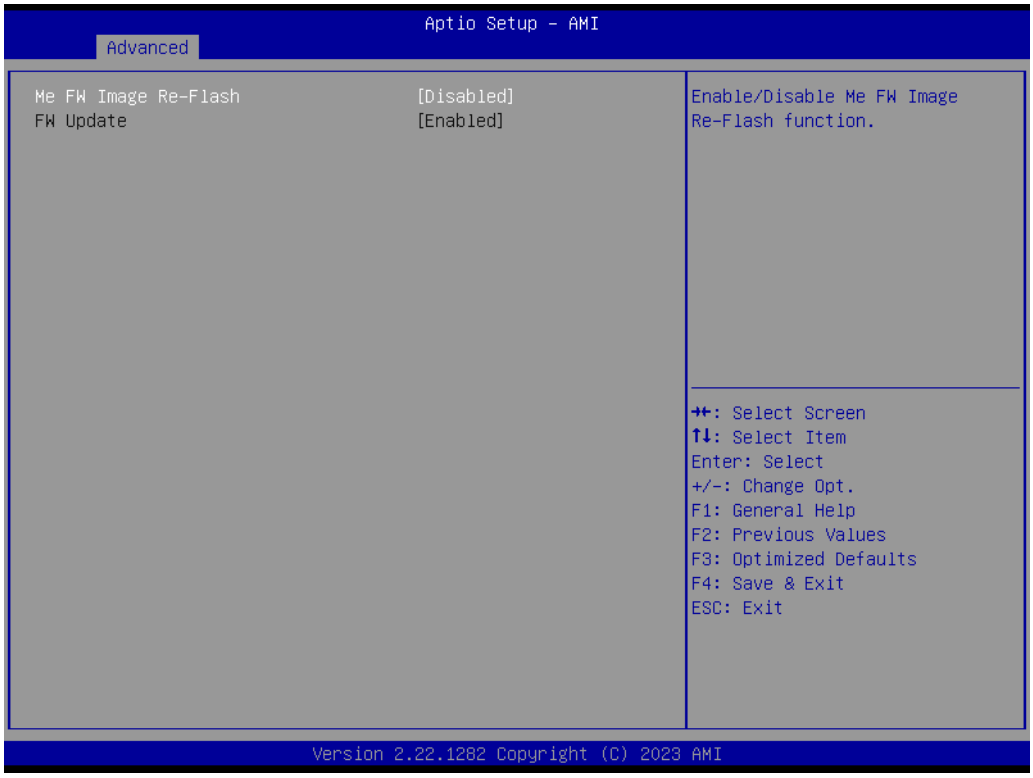
- **Boot performance mode**
  Max non-Turbo performance.
  Max battery
  Turbo performance
- **Intel SpeedStep**
  Enable or disable Intel SpeedStep support.
- **Turbo mode**
  Enable or disable Turbo mode.
- **C states**
  Enable or disable C states.

3.2.5 Advanced → PCH-FW Configuration



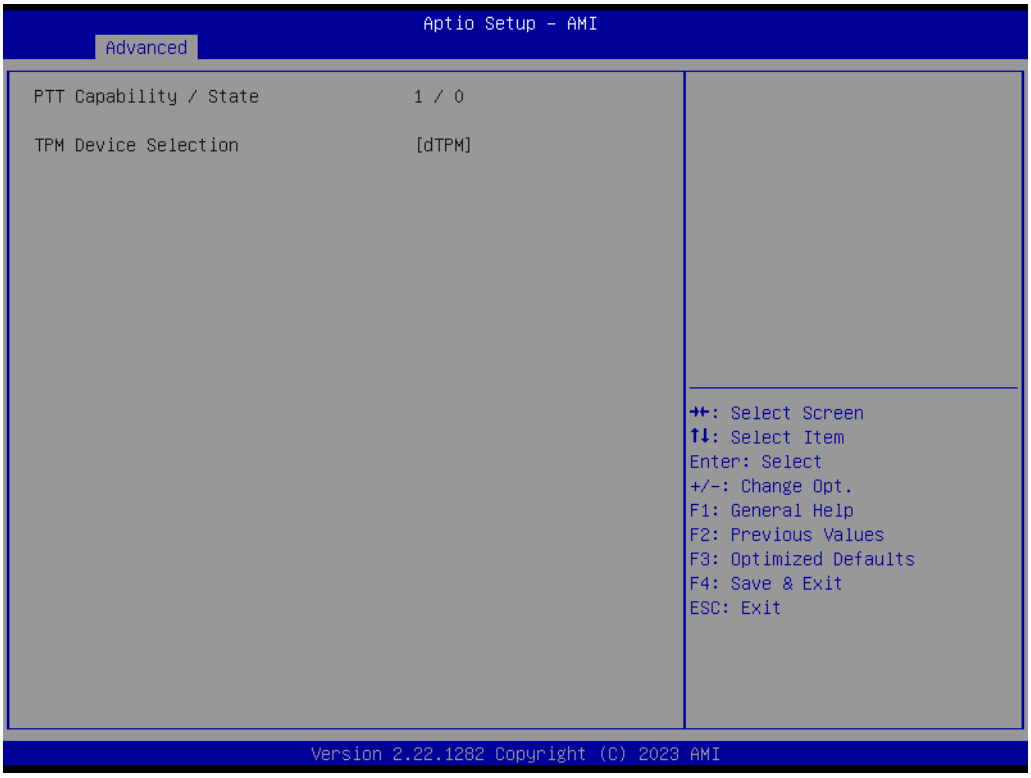
- **ME State**
  Enable or disable ME State.
- **ME Unconfig on RTC Clear**
  Enable or disable ME Unconfig on RTC Clear.

3.2.5.1 Advanced → PCH-FW Configuration → Firmware update Configuration



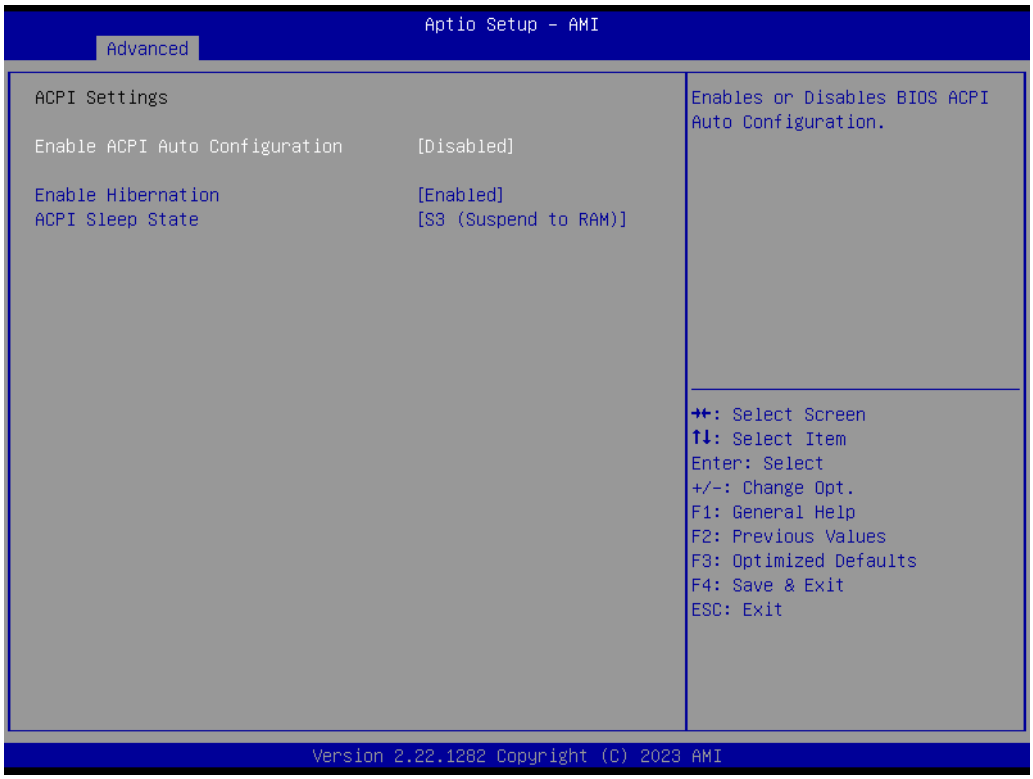
- **Me FW Image Re-Flash**
  Enable or disable Me FW Image Re-Flash.
- **FW Update**
  Enable or disable FW Update.

3.2.5.2 Advanced → PCH-FW Configuration → PTT Configuration



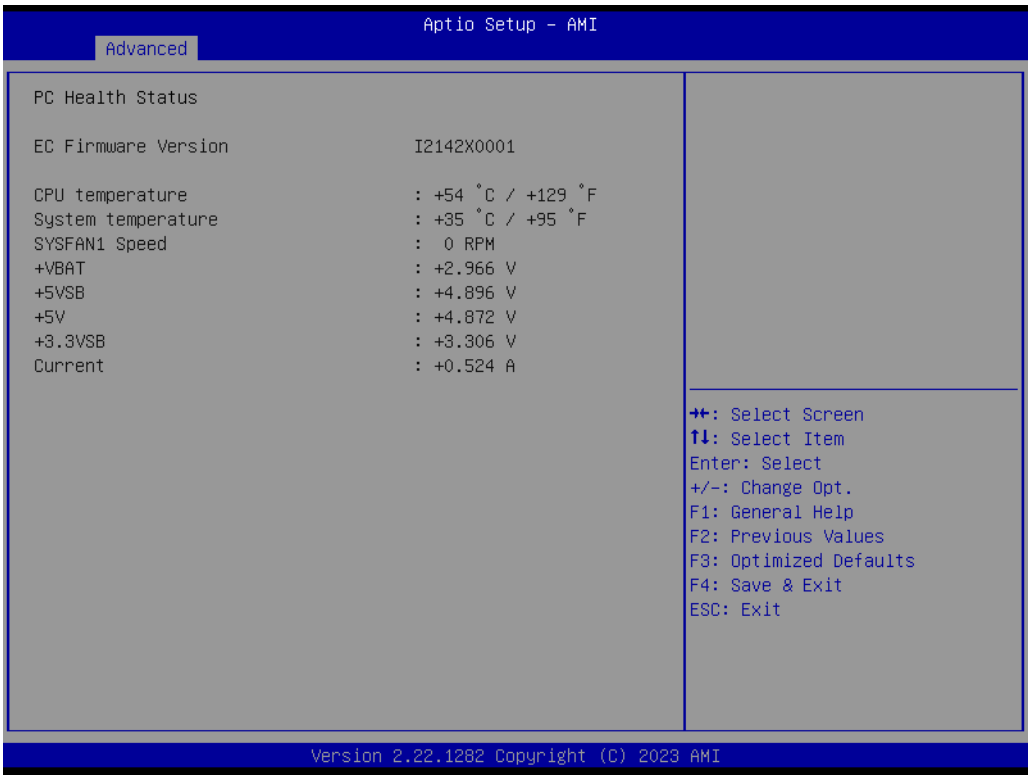
- **TPM Device Selection**
  Select PTT or dTPM.

3.2.6 Advanced → ACPI Settings

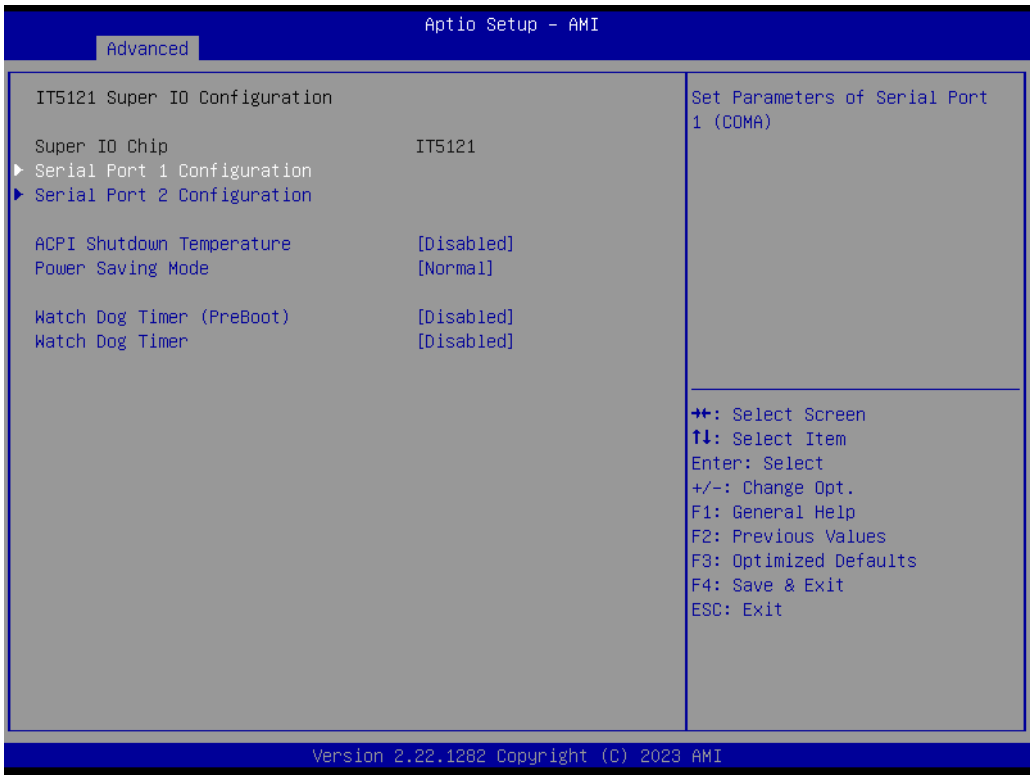


- **Enable ACPI Auto Configuration**
  Enable or disable ACPI Auto Configuration.
- **Enable Hibernation**
  Enable or disable Hibernation.
- **ACPI Sleep State**
  Select S3 (Suspend to RAM) or suspend Disabled.

3.2.7 Advanced → IT5121 HW Monitor

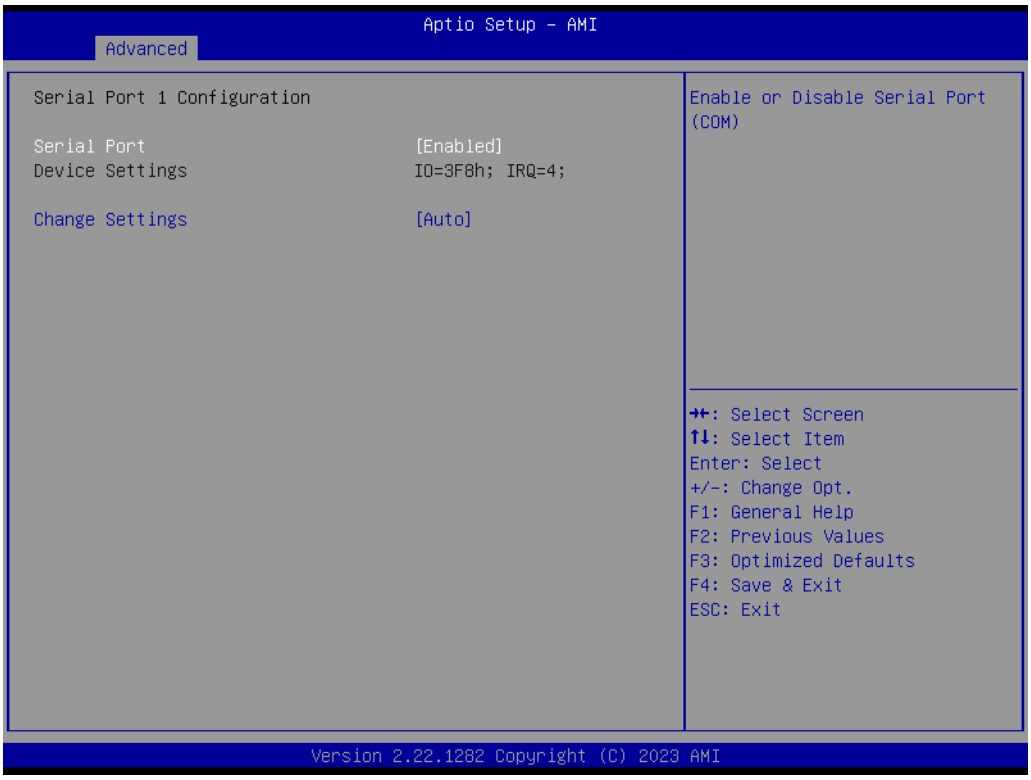


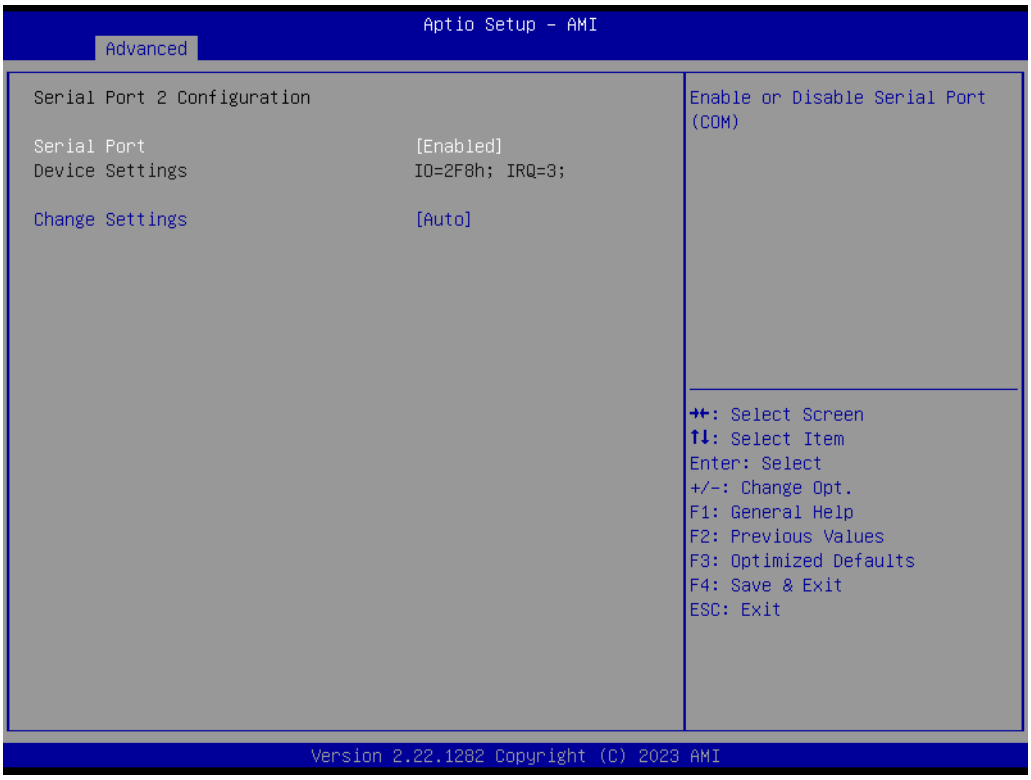
3.2.8 Advanced → IT5121 Super IO Configuration



- **ACPI Shutdown Temperature**
  Disabled
  70° C/158° F
  75° C/167° F
  80° C/176° F
  85° C/185° F
  90° C/194° F
  95° C/205° F
- **Watch Dog Timer (PreBoot)**
  Enable or disable Watch Dog Timer (PreBoot).
- **Watch Dog Timer**
  Enable or disable Watch Dog Timer.

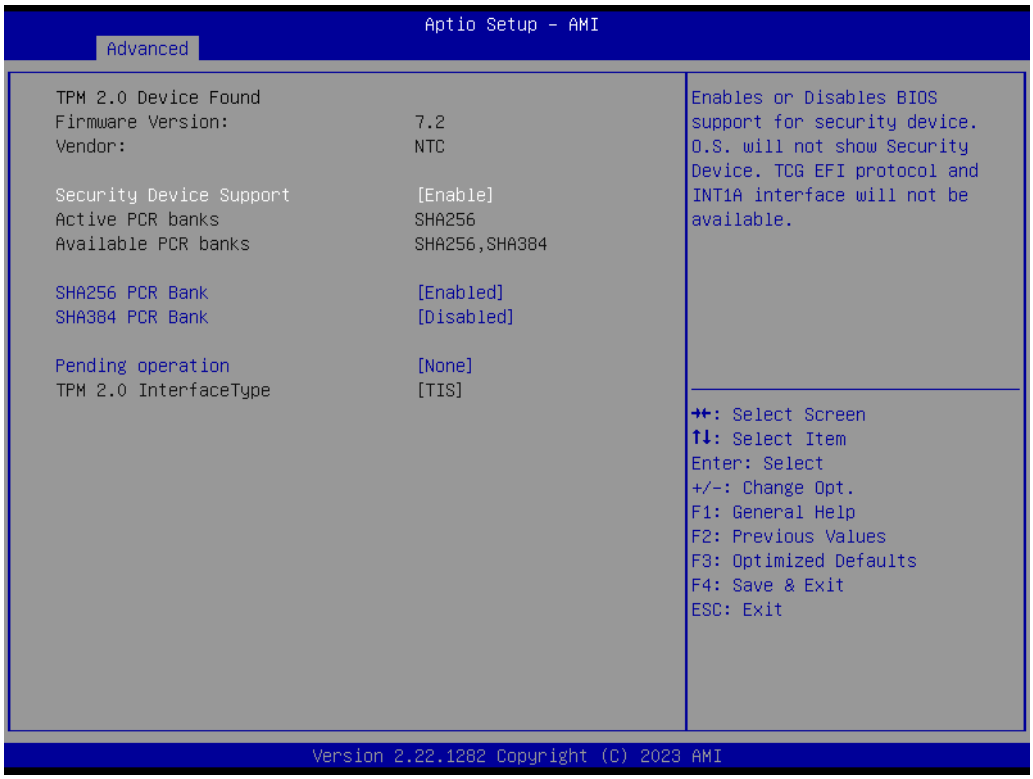
3.2.8.1 Advanced⟶ IT5121 Super IO Configuration ⟶ Serial Port 1 Configuration





- **Serial Port**
  Enable or disable Serial Port.
- **Change Settings**
  Auto or Change IRQ setting.

3.2.9 Advanced → Trusted Computing

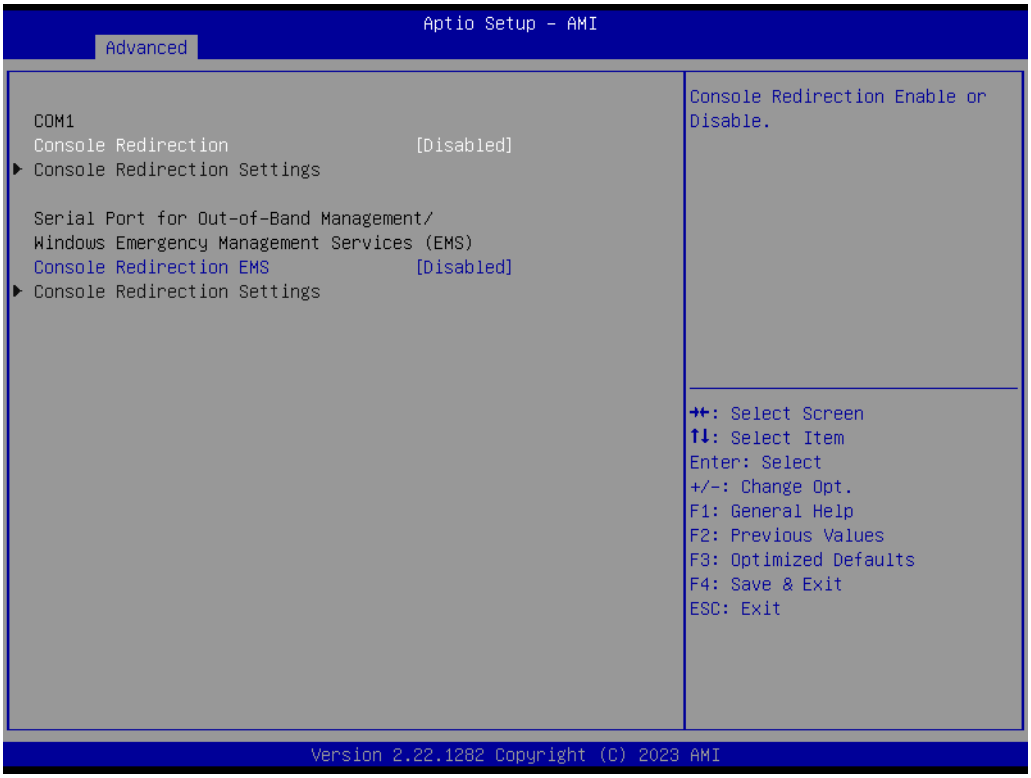


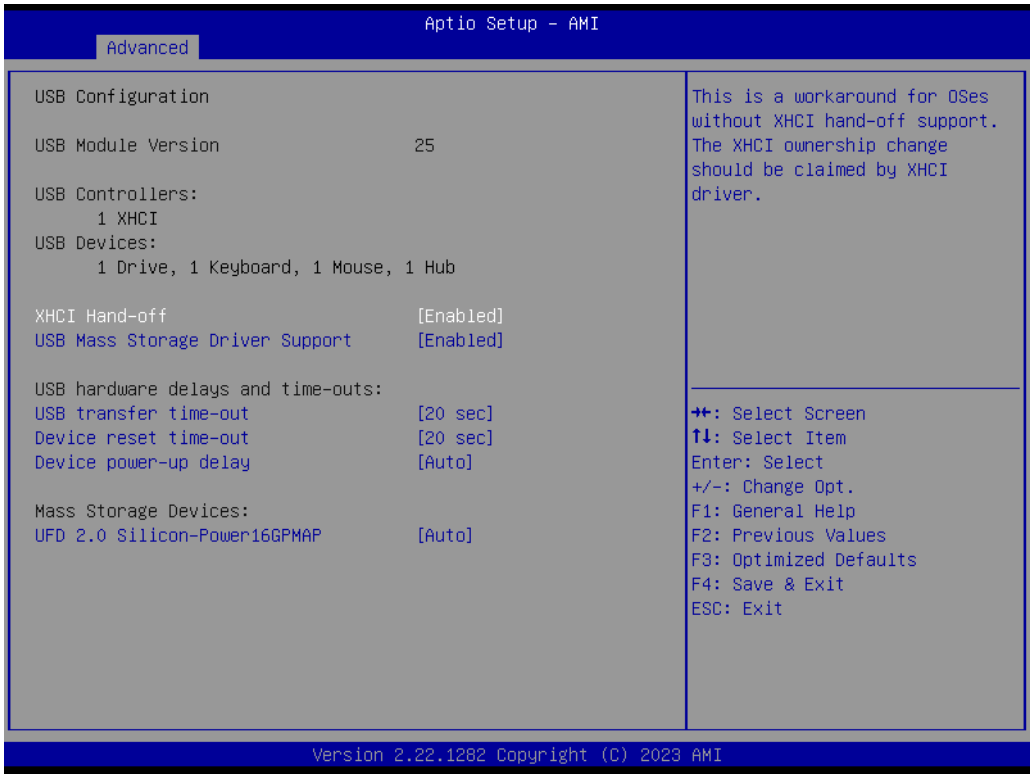
- **Security Device Support**
  Enable or disable Security Device Support.
- **SHA256 PCR Bank**
  Enable or disable SHA256 PCR Bank.
- **Pending operation**
  None or TPM Clear.

3.2.10 Advanced → S5 RTC Wake Settings

- **Wake system from S5**
  Enable or disable Wake system from S5.

3.2.11 Advanced → USB Configuration





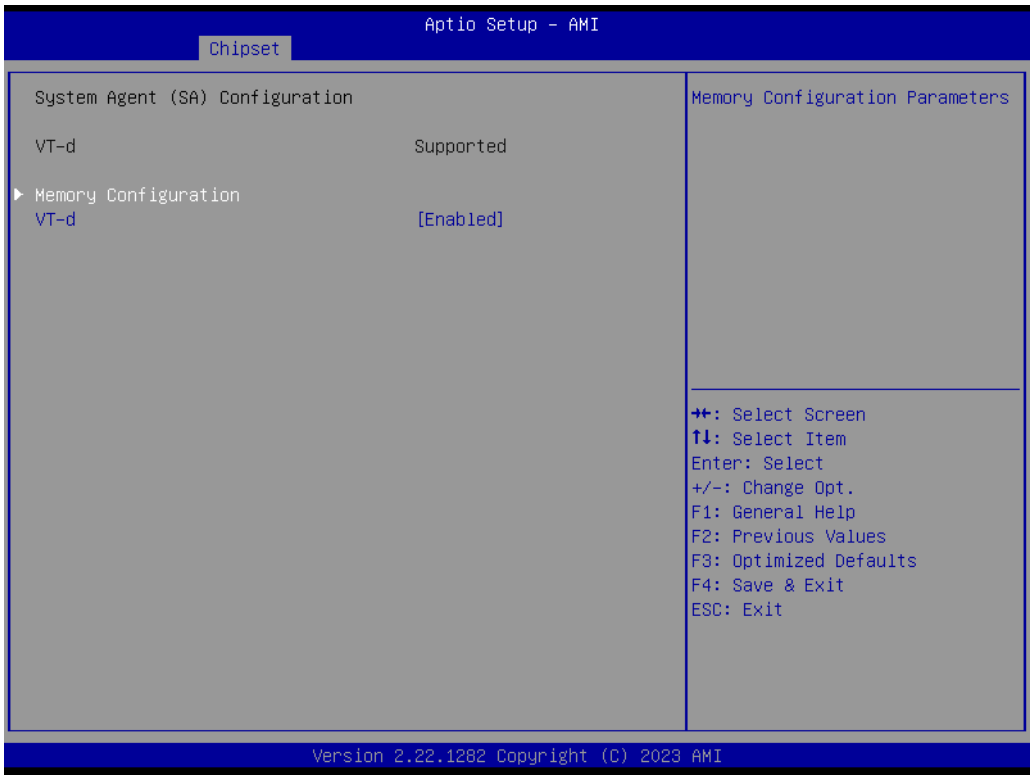
- **XHCI Hand-off**
  Enable or disable XHCI Hand-off.
- **USB Mass Storage Driver Support**
  Enable or disable USB Mass Storage Driver Support.
- **USB transfer time-out**
  Configure time for USB transfer time-out.
- **Device reset time-out**
  Configure time for Device reset time-out.
- **Device power-up delay**
  Auto or Manual set.
- **UFD 2.0 Silicon-Power16GPMAP**
  Auto or Floppy or Forced FDD or Hard Disk or CD-ROM.

3.2.12 Advanced → Network Stack Configuration

- **Network Stack**
  Enable or disable Network Stack.

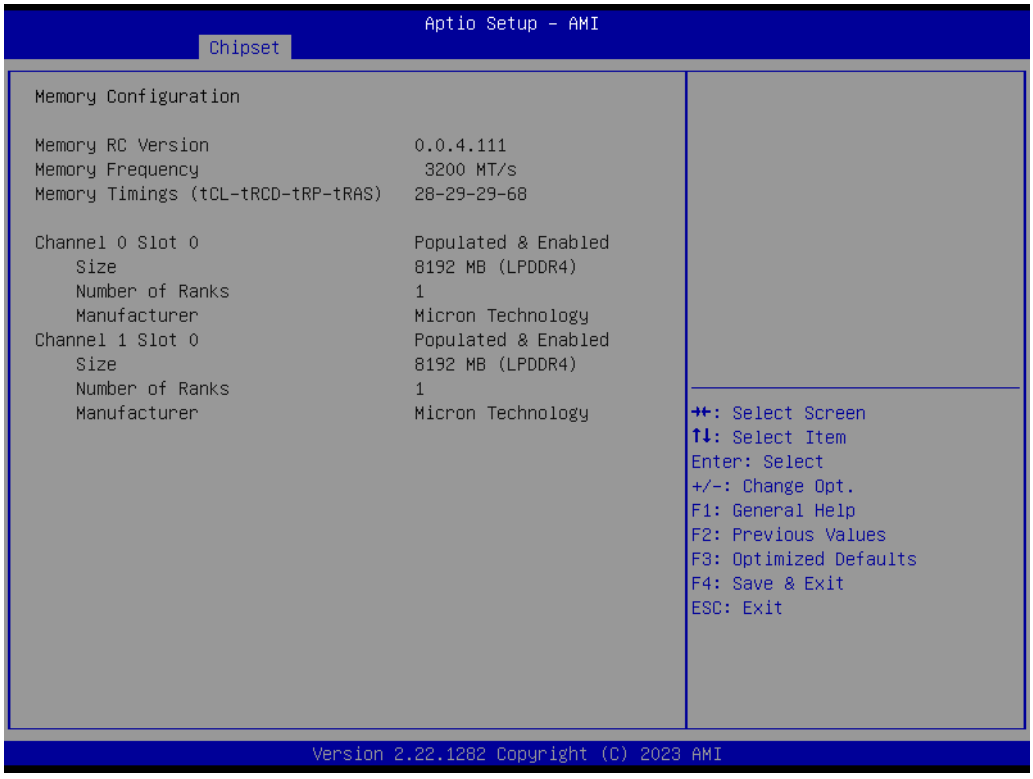
3.3 Chipset

3.3.1 Chipset → System Agent (SA) Configuration

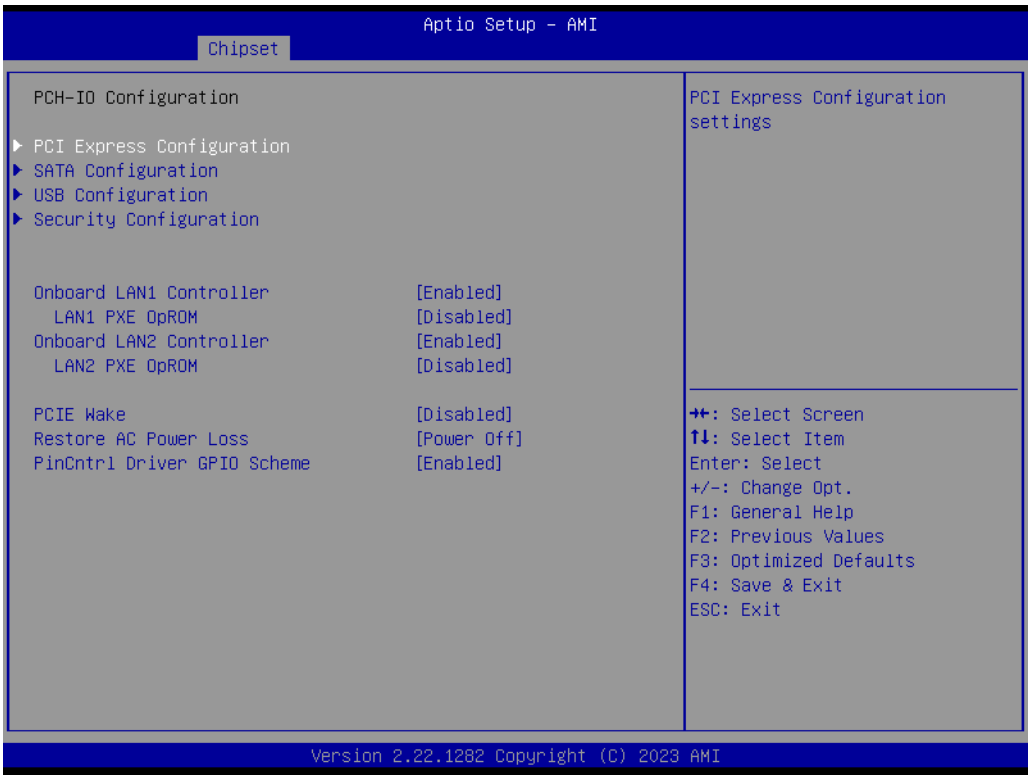


- **VT-d**
  Enable or disable VT-D.

3.3.1.1 Chipset → System Agent (SA) Configuration → Memory Configuration

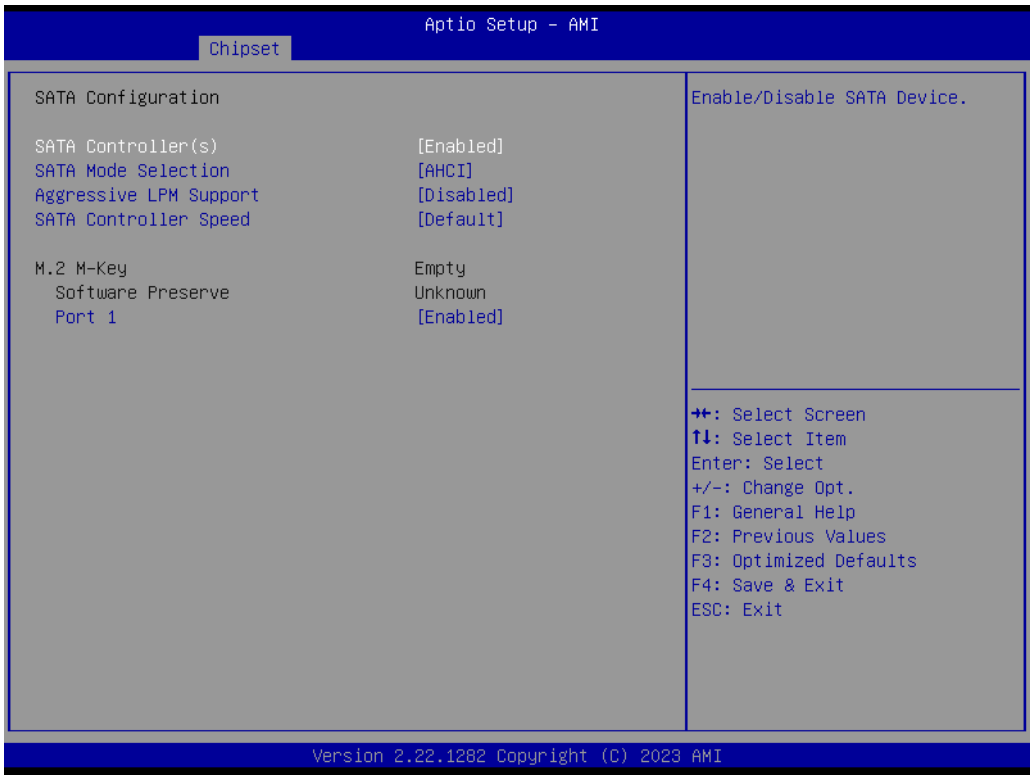


3.3.2 Chipset → PCH-IO Configuration



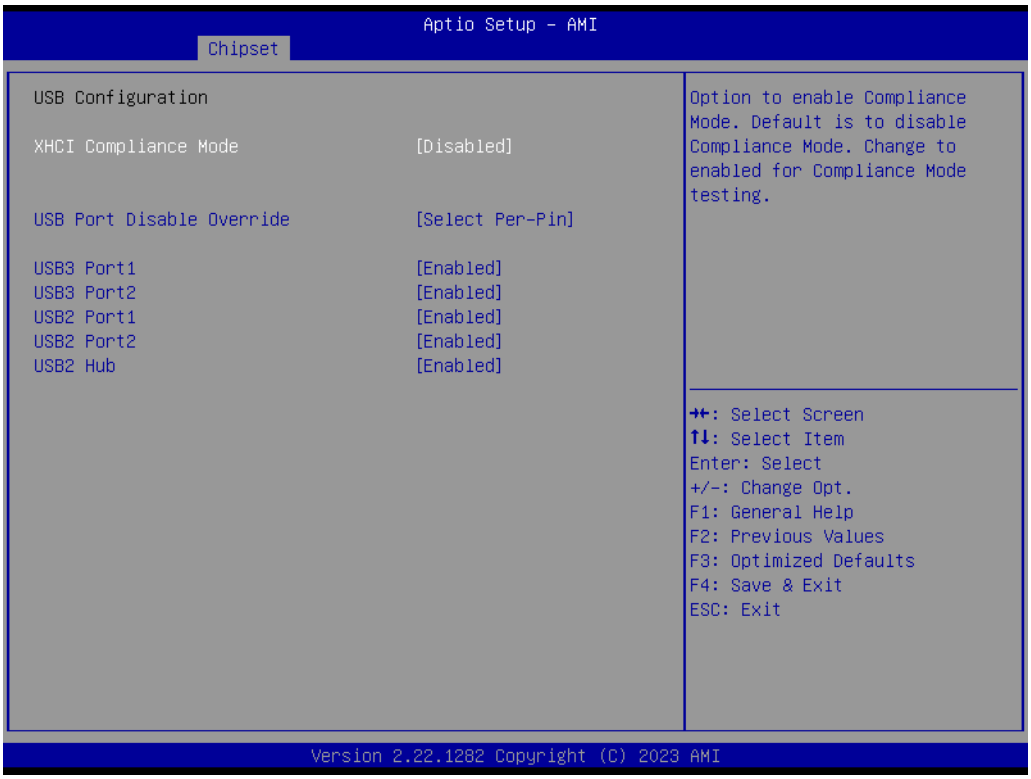
- **Onboard LAN Controller**
  Enable or disable Onboard LAN Controller.
- **LAN1 PXE OpROM**
  Enable or disable LAN1 PXE OpROM.
- **PCIE Wake**
  Enable or disable PCIE Wake.
- **PinCntrl Driver GPIO Scheme**
  Enable or disable PinCntrl Driver GPIO Scheme.

3.3.2.1 Chipset → PCH-IO Configuration → SATA Configuration



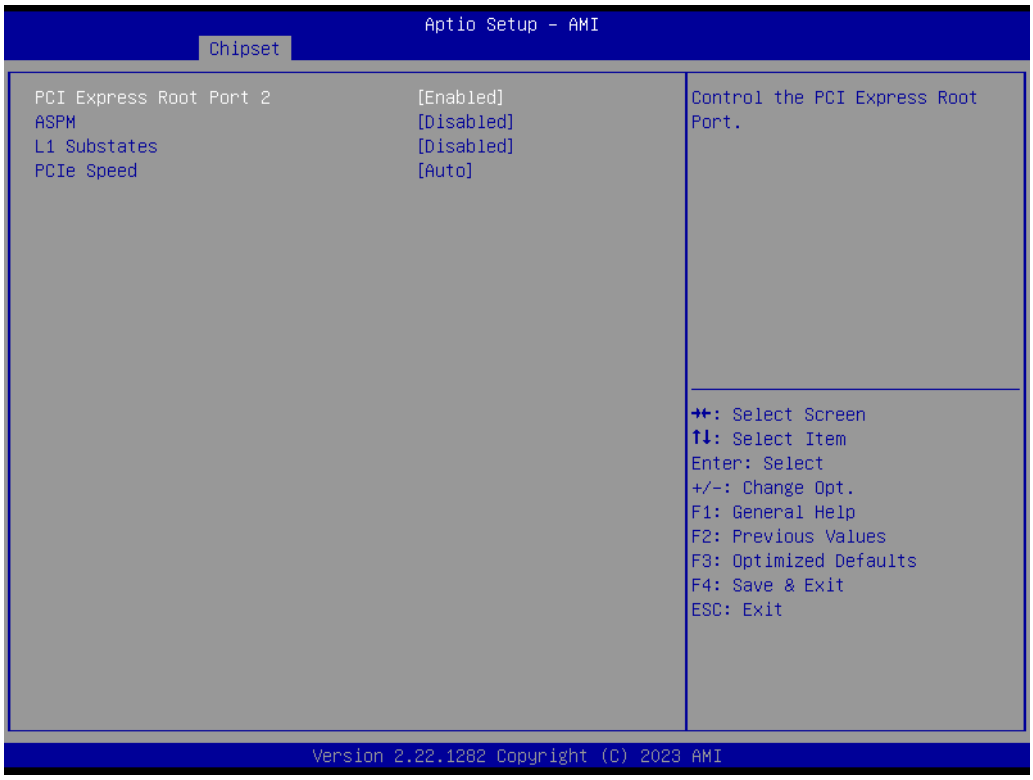
- **SATA Controller(s)**
  Enable or disable SATA Controller(s).
- **SATA Mode Selection**
  Select AHCI.
- **Aggressive LPM Support**
  Enable or disable Aggressive LPM Support.
- **SATA Controller Speed**
  Select Default or Gen1 or Gen2 or Gen3.
- **M.2 M-Key → Port 1**
  Enable or disable M.2 M-Key.

3.3.2.2 Chipset → PCH-IO Configuration → USB Configuration



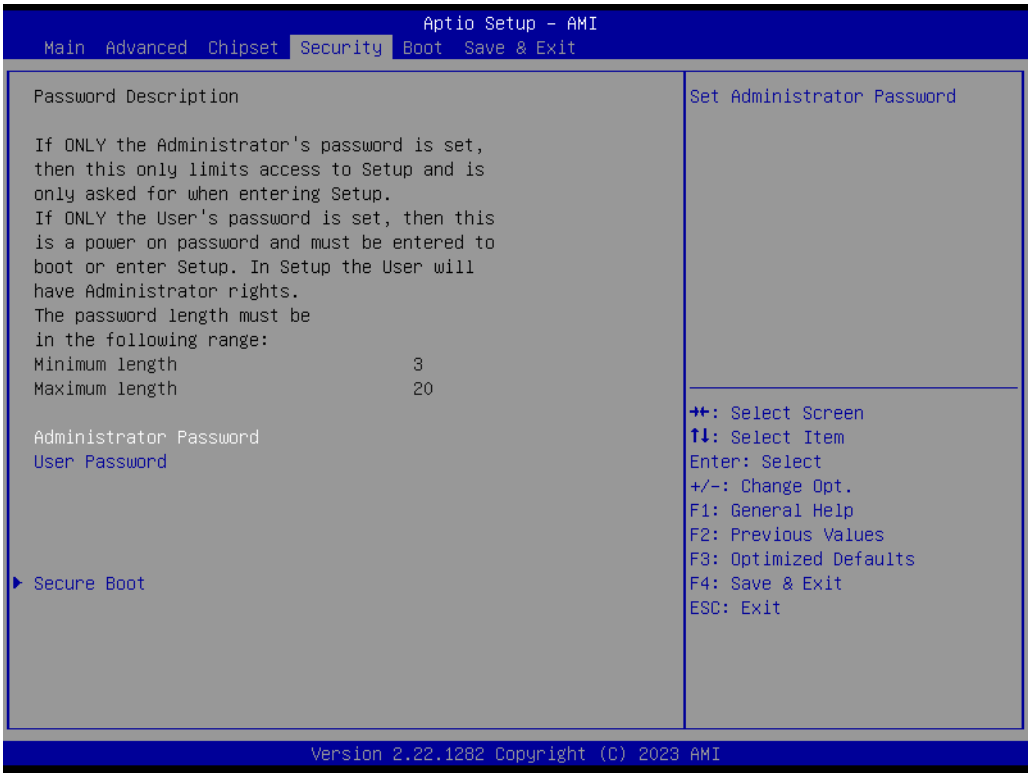
- **XHCI Compliance Mode**
  Enable or disable XHCI Compliance Mode.
- **USB3 Port 1**
  Enable or disable USB3 Port 1.
- **USB3 Port 2**
  Enable or disable USB3 Port 2.
- **USB2 Port 1**
  Enable or disable USB2 Port 1.
- **USB2 Port 2**
  Enable or disable USB2 Port 2.
- **USB2 Hub**
  Enable or disable USB2 Hub.
- **M.2 E-Key Port**
  Enable or disable M.2 USB Port.

3.3.2.3 Chipset → PCH-IO Configuration → PCI Express Configuration



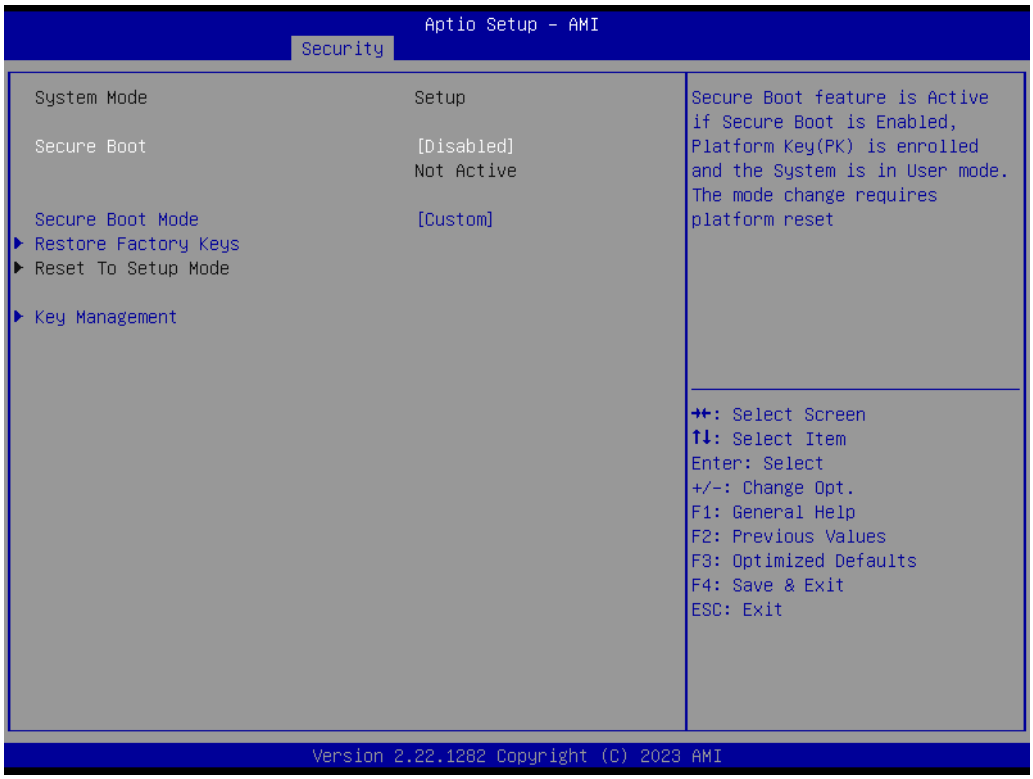
- **PCI Express Root Port 2**
  Enable or disable PCIe of M.2.

3.4 Security



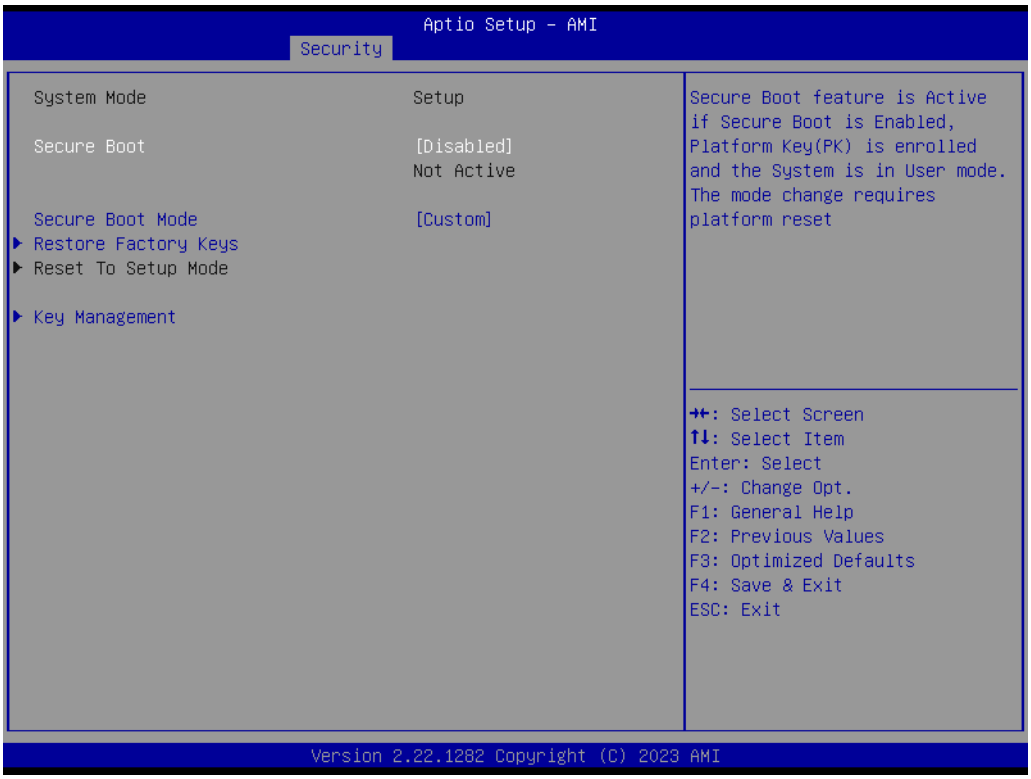
- **Administrator Password**
  Set/Configure Administrator Password.
- **User Password**
  Set/Configure User Password.

3.4.1 Security → Secure Boot



- **Secure Boot**
  Enable or disable Secure Boot.
- **Secure Boot Mode**
  Select Custom or Standard.

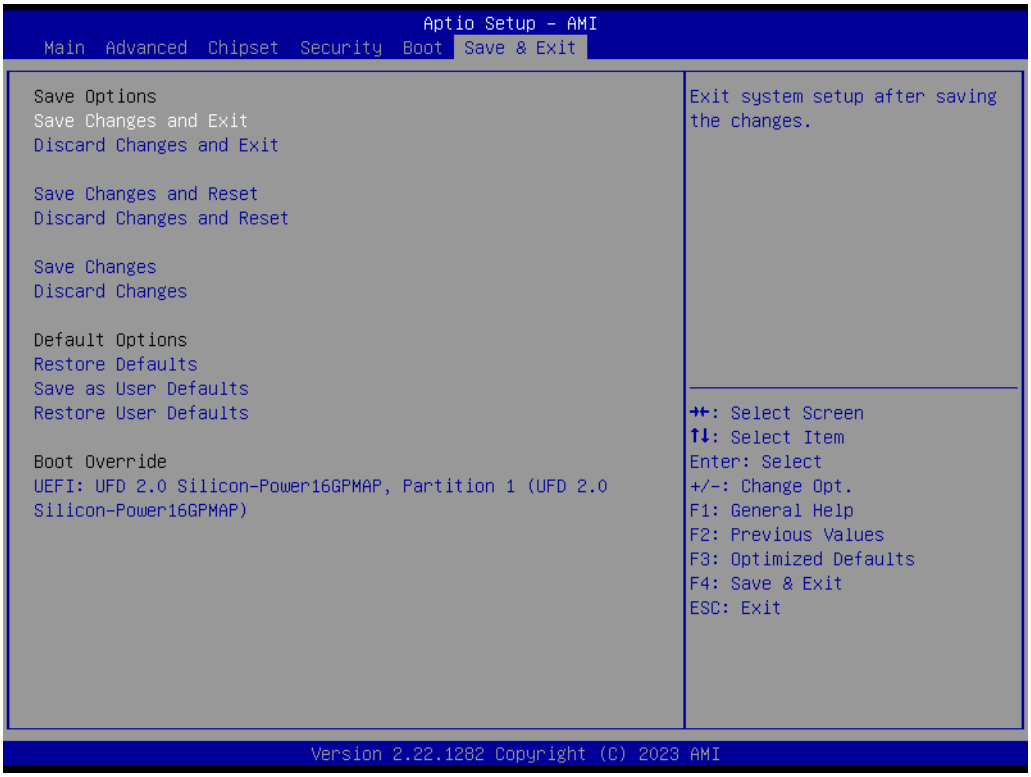
3.4.1.1 Security → Secure Boot



3.5 Boot

- **Setup Prompt Timeout**
  Configure Setup Prompt Timeout.
- **Bootup Numlock State**
  Select On or off.
- **Quiet Boot**
  Enable or disable Quiet Boot.

3.6 Save & Exit



- **Save Changes and Exit**
  Save your changes and exit BIOS setting.
- **Discard Changes and Exit**
  Discard your changes and exit BIOS setting.
- **Save Changes and Reset**
  Save your changes and reset the system.
- **Discard Changes and Reset**
  Discard your changes and reset the system.
- **Save Changes**
  Save your changes.
- **Discard Changes**
  Discard your changes.
- **Restore Defaults**
  Restore all the changes and back to default.
- **Save as User Defaults**
  Save all your changes as user defaults.
- **Restore User Defaults**
  Restore back to user defaults.

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