

DS-380

Fanless Embedded Box Computer

ADVANTECH

Enabling an Intelligent Planet

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- Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Technical Support and Assistance

1. Visit the Advantech website at www.advantech.com/support where you can find the latest information about the product.
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 you call:
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 - Description of your peripheral attachments
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 - A complete description of the problem
 - The exact wording of any error messages

Warnings, Cautions and Notes



Warning! Warnings indicate conditions, which if not observed, can cause personal injury!



Caution! Cautions are included to help you avoid damaging hardware or losing data. e.g. There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.



Note! Notes provide optional additional information.



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



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



restricted access area

area accessible only to skilled persons and instructed persons with the proper authorization

CE

**UK
CA**

Avertissements, mises en garde et notes



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



Mise en garde! 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.

Remarque! Les notes fournissent des informations supplémentaires facultatives.



L'équipement n'est pas adapté à une utilisation dans des endroits où des enfants sont susceptibles d'être présents.



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



zone d'accès restreint

zone accessible uniquement aux personnes qualifiées et aux personnes instruites avec l'autorisation appropriée



Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
 - The power cord or plug is damaged
 - Liquid has penetrated the equipment.
 - The equipment has been exposed to moisture.
 - The equipment does not work well, or you cannot get it to work according to the user's manual.
 - The equipment has been dropped and damaged.
 - The equipment has obvious signs of breakage.
15. **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.**
16. **CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.**
17. The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).
18. **RESTRICTED ACCESS AREA:** The equipment should only be installed in a Restricted Access Area.
19. **DISCLAIMER:** This set of instructions is given according to IEC 704-1. Advantech disclaims all

responsibility for the accuracy of any statements contained herein.

20. By means of a power cord connected to a socket-outlet with earthing connection.
21. The product is intended to be supplied by an UL Listed Adapter or DC power source suitable for use at Tma 40°C min. which output meets PS2(or LPS) and is rated: 19Vdc, 3.42A min. with mating connector. If need further assistance, please contact Advantech for further information.

Consignes de sécurité

1. Lisez attentivement ces instructions de sécurité.
2. Conservez ce manuel de l'utilisateur pour référence ultérieure.
3. 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. Pour les équipements enfichables, la prise de courant doit être située à proximité de l'équipement et doit être facilement accessible.
5. Gardez cet équipement à l'abri de l'humidité.
6. Placez cet équipement sur une surface fiable lors de l'installation. Le laisser tomber ou le laisser tomber peut causer des dommages.
7. 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. Assurez-vous que la tension de la source d'alimentation est correcte avant de connecter l'équipement à la prise de courant.
9. Positionnez le cordon d'alimentation de sorte que personne ne puisse marcher dessus. Ne placez rien sur le cordon d'alimentation.
10. Tous les avertissements et mises en garde sur l'équipement doivent être notés.
11. 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. Ne jamais verser de liquide dans une ouverture. Cela pourrait provoquer un incendie ou un choc électrique.
13. Ne jamais ouvrir l'équipement. Pour des raisons de sécurité, l'équipement ne doit être ouvert que par du personnel qualifié.
14. Si l'une des situations suivantes se produit, faites vérifier l'équipement par le personnel de service:
 1. Le cordon d'alimentation ou la fiche est endommagé
 2. Un liquide a pénétré dans l'équipement.
 3. L'équipement a été exposé à l'humidité.
 4. L'équipement ne fonctionne pas bien ou vous ne pouvez pas le faire fonctionner conformément au manuel d'utilisation.
 5. L'équipement est tombé et a été endommagé.
 6. L'équipement présente des signes évidents de rupture.
15. **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. **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. 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. **ZONE D'ACCÈS RESTRICTED:** L'équipement ne doit être installé que dans une zone d'accès restreint.
19. **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.
20. Au moyen d'un cordon d'alimentation relié à une prise de courant avec mise à la terre.
21. Le produit est destiné à être alimenté par un adaptateur répertorié UL ou une source d'alimentation CC

adaptée à une utilisation à Tma 40°C min. dont la sortie est conforme à PS2 (ou LPS) et est évaluée :
19 Vdc, 3,42 A min. avec connecteur correspondant. Si vous avez besoin d'aide supplémentaire, veuillez
contacter Advantech pour plus d'informations.

Packing List

Before installation, please ensure the following items are included and in good condition. If any items does not accord with the list, contact your dealer immediately.

- 1 x DS-380 Unit
- 1 x 19V Adapter
- 2 x Wall mount bracket and 4 screws
- 1 x Thermal Pad Kit (3 for DDR5, 1 for SSD, 1 for WiFi)

DS-380 Series Part Number:

Part Number	Description
DS-3800F-U0A1E	DS-380, MTL135H, 2LAN, Barebones
DS-3800F-U1A1E	DS-380, MTL125H, 2LAN, Barebones
DS-3800F-U1A2E	DS-380, MTL125H, 2LAN, no EDID Barebones
DS-3800F-U0A1U	DS-380, MTL135H, 2LAN, Barebones, MIT
DS-3800F-U1A1U	DS-380, MTL125H, 2LAN, Barebones, MIT
DS-3800F-U1A2U	DS-380, MTL125H, 2LAN, no EDID Barebones, MIT

Contents

Contents.....	13
1.1 Introduction	16
1.2 Product Features	16
1.3 Hardware & Software Specifications	17
1.4 Mechanical Specification	18
1.5 Power Requirements	19
1.6 Environmental Specifications	19
2.1 Introduction	21
2.1.1 LED	21
2.1.2 Power Button	21
2.1.3 HDMI Connector	21
2.1.4 USB 2.0 Connector	22
2.1.5 USB 3.2 - Gen1 connector	22
2.1.6 Ethernet Connector (2.5GbE)	23
2.1.7 COM1 Connector	23
2.1.8 IR Phone Jack	24
2.1.9 Audio Connector	24
2.1.10 EDID RST Button.....	24
2.1.11 WiFi Antenna	25
2.2 Jumpers.....	25
2.2.1 Jumper List.....	25
2.2.2 Jumper Settings	26
2.2.2.1 AT/ATX Mode (PSON1)	26
2.2.2.2 Clear CMOS (JCMOS1)	26
2.3 Connectors.....	26
2.3.1 DS-380 External I/O Locations	錯誤! 尚未定義書籤。
2.4 Installation	26
2.4.1 Exploded View	26
2.4.2 Memory and M.2 M-key/E-key Installation	錯誤! 尚未定義書籤。
3.1 BIOS Introduction	30
3.2 Entering the Setup	31
3.2.1 Main setup	31
3.2.2 Advanced BIOS Features Setup.....	32
3.2.3 Advanced → CPU Configuration	33
3.2.4 Advanced → Power & Performance	34
3.2.5 Advanced → PCH-FW Configuration	37
3.2.5.1 Advanced → PCH-FW Configuration → Firmware Update Configuration ..	錯誤! 尚未定義書籤。
3.2.5.1 Advanced → PCH-FW Configuration → Firmware update Configuration	38
3.2.5.2 Advanced → PCH-FW Configuration → TPM Device Configuration.....	39
3.2.6 Advanced → Trusted Computing	錯誤! 尚未定義書籤。
3.2.7 Advanced → ACPI Settings	40
3.2.8 Advanced → IT5121 HW Monitor	41
3.2.9 Advanced → IT5121 Super IO Configuration	42
3.2.9.1 Advanced → IT5121 Super IO Configuration → Serial Port 1 Configuration	43
3.2.10 Advanced → EDID Configuration	44

3.2.11 Advanced → S5 RTC Wake Settings.....	46
3.2.11 Advanced → Serial Port Console Redirection	47
3.2.12 Advanced → Intel TXT Information.....	48
3.2.13 Advanced → USB Configuration.....	49
3.2.14 Advanced → Network Stack Configuration.....	50
3.2.15 Advanced → NVMe Configuration.....	51
3.3 Chipset.....	51
3.3.1 Chipset → System Agent (SA) Configuration.....	53
3.3.1.1 Chipset → System Agent (SA) Configuration → Memory Configuration	54
3.3.1.2 Chipset → System Agent (SA) Configuration → VMD Configuration	55
3.3.1.3 Chipset → System Agent (SA) Configuration → NPU Configuration 錯誤! 尚未定義書籤。	
3.3.2 Chipset → PCIe Configuration.....	56
3.3.3 Chipset → PCH-IO Configuration	57
3.3.3.1 Chipset → PCH-IO Configuration → USB Configuration.....	58
3.3.3.2 Chipset → PCH-IO Configuration → Security Configuration	59
3.3.3.4 Chipset → PCH-IO Configuration → HD Audio Configuration.....	60
3.4 Security.....	61
3.4.1 Security → Secure Boot	62
3.4.2 Security → Expert Key Management	64
3.5 Boot.....	65
3.6 Save & Exit	66

Chapter 1

General Introduction

1.1 Introduction

The DS-380 is a compact, fanless box pc power by Intel® Core™ Ultra 5 Processors. Quad Display, Compact Size and Versatile I/O Designed for outdoor environments, the DS-380 supports a wide operating temperature range of -10 to 50°C and 19V voltage input. Despite its compact size, the DS-380 offers comprehensive I/O options. Including four independent display outputs (one HDMI 2.1 FRL and three HDMI 2.1 TMDS, two 2.5GbE port, two USB 3.2 Gen1 and two USB 2.0 ports, one COM (RS-232, 2-wire) ports and one IR phone jack. Additionally, internal expansion includes M.2 M Key 2242 and E Key 2230.

1.2 Product Features

1.2.1 General

- **CPU:**
 - Build-in Intel Meteor Lake Ultra 5 CPU (11 TOPs NPU inside)
- **BIOS:** AMI 256 Mbit Flash BIOS
- **System Memory:**
 - Dual channel DDR5 5600 MHz 262 pin SO-DIMM
 - Max capacity 48GB (24GB per DIMM)
- **Serial Port:** 1 x RS-232, 2-wire,
- **IR:** 1 x IR phone jack
- **USB Port:** 2 x USB 3.2 Gen1 + 2 x USB 2.0
- **Audio:** 3.5mm Audio Jack for jack sense (Line-in/out or Mic-in)
- **Internal Expansion:**
 - 1 x M.2 M-key 2242 (NVMe) for Storage
 - 1 x M.2 E-key 2230 for WiFi, can be integrated with WiFi and Bluetooth combo module

1.2.2 Display

- **Controller:** Intel® Arc™ chipset
- **Resolution:**
 - HDMI1: HDMI 2.1 FRL x 1 @7680x4320 60Hz (8K60)
 - HDMI2: HDMI 2.1 TMDS x 1 @3840x2160 60Hz (4K60)
 - HDMI3: HDMI 2.1 TMDS x 1 @3840x2160 60Hz (4K60)
 - HDMI4: HDMI 2.1 TMDS x 1 @3840x2160 60Hz (4K60)

Note: Due to 4K pipeline design in GFX, DS-380 can support 4 x 4K screens, or 1 x 8K + 2 x 4K HDMI screens.

1.2.3 Ethernet

- Chipset:
 - LAN1 / LAN2 Intel® I226, 2.5GBE
- LAN1 / LAN2 Speed : 10/100/1000/2500 Mbps

- Interface : 2 x RJ45

1.3 Hardware & Software Specifications

- **CPU** : Intel® Core™ Ultra 5 Processor (Meteor Lake)
- **System Chipset**: Built-in CPU
- **Graphic chipset**: Integrated graphics built in Processor
- **BIOS** AMI uEFI 256 Mbit
- **System Memory**: Dual channel DDR5 5600 MHz 262 pin SO-DIMM
- **Storage**: M.2 2242 M Key (NVMe)
- **SUSI**: SUSI is Advantech unique hardware management that provided in standard DS-380 Win11/Win10 IoT image. Below function are included.
 - Watchdog Timer
 - Hardware Monitor
 - System information
- **IO Interfaces**
 - 4 x HDMI 2.1
 - 2 x USB 3.2 Gen1
 - 2 x USB 2.0
 - 2 x RJ45
 - 1 x COM RS-232, DB9
 - 1 x IR phone jack
 - 1 x Audio Jack
 - 1 x EDID_CLR (optional)
- **Ethernet Chipset**:
 - Speed: 10/100/1000/2500 Mbps
 - Interface: 2 x RJ-45 jacks with LED
 - Standard: IEEE 802.3z/ab (1000 Base-T) or IEEE 802.3u 100 Base-T and IEEE 802.3bz 2.5GBASE-T compliant
- **Resolution**:
 - 4 x HDMI 2.1 TMDS, @3840x2160 60Hz or
 - 1 x HDMI 2.1 FRL, @7680x4320 60Hz + 2 x HDMI 2.1 TMDS, @3840x2160 60Hz
- **Expansion**
 - M.2 2242 M Key x 1 for Storage (NVMe)
 - M.2 2230 E Key x 1 for WIFI/Bluetooth Module
- **Operating System**:
 - Windows 11 IoT LTSC, Windows 10 IoT LTSC, Linux (support by project)

1.4 Mechanical Specification

1.4.1 Dimension

180 x 177 x 38 mm (L x W x H)

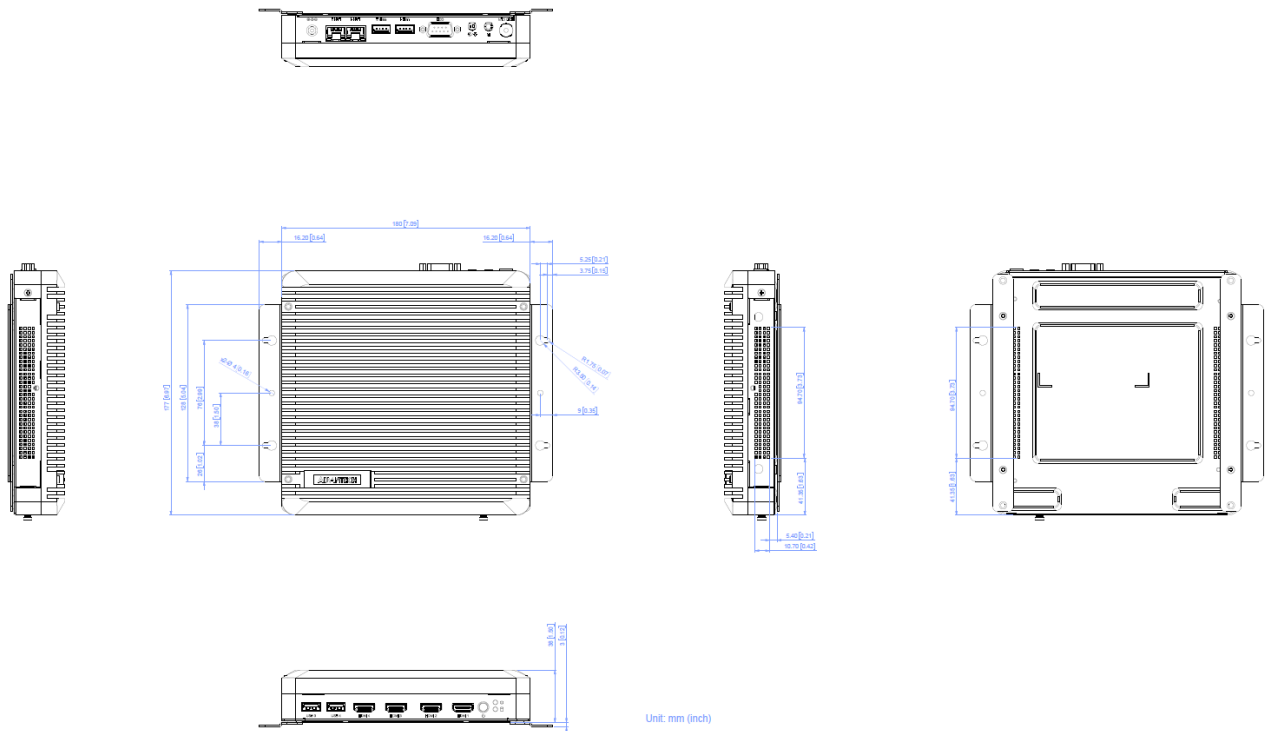


Figure1.1 : Dimensions

1.4.2 Weight

2 kg (without wall mount)

1.5 Power Requirements

1.5.1 System Power

Power Input : DC IN 19V

1.5.2 RTC Battery

Lithium 3V 195mAH BR2032

1.6 Environmental Specifications

1.6.1 Operating Temperature

-10°C ~ 50°C @0.7m/s air flow (0° C - 40°C for Safety Cefication)

1.6.2 Relative Humidity

95% @ 40°C (Non Condensing)

1.6.3 Storage Temperature

-40 ~ 85°C (-40 ~185°F)

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 Safety Certification

UL, CB, BSMI, CCC

1.6.7 EMC Certification

CE/FCC Class B, CCC, BSMI, UKCA

Chapter 2

Hardware configuration

This chapter introduces external IO
and the installation of DS-380 series
Hardware

2.1 Introduction

2.1.1 DS-380 External I/O Locations

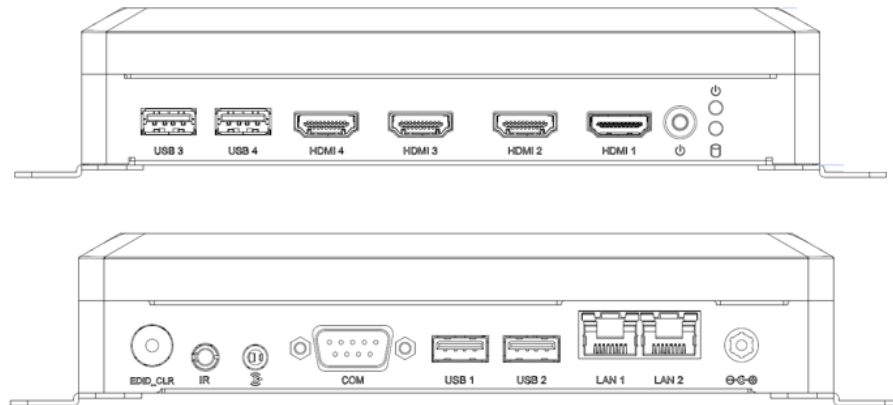


Figure2.1 : DS-380 Front and Rear I/O Connector Diagrams

2.1.2 LED

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



Figure2.1 : Power

Below LED indicator means SSD status when it shows yellow.



Figure2.2 : LED - SSD

2.1.3 Power Button

Push below button to power on/off DS-380.



Figure2.3 : Power ON/OFF Button

2.1.4 HDMI Connector

The HDMI (High-Definition Multimedia Interface) provides an all-digital audio/video interface to transmit the uncompressed audio/video signals and is HDCP compliant. Connect the HDMI audio/video device to this port. HDMI technology can support a maximum resolution of Port 1 8K, port 2~4 4K, but the actual resolution supported depends on the monitor being used.

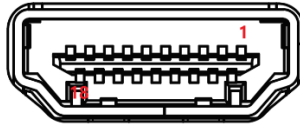


Figure 2.4: HDMI Connector

Table 2.1 : HDMI Connector Pin Definition

Pin	Signal
1	TMDS Data 2+
2	TMDS Data 2 shield
3	TMDS Data 2-
4	TMDS Data 1+
5	TMDS Data 1 shield
6	TMDS Data 1-
7	TMDS Data 0+
8	TMDS Data 0 shield
9	TMDS Data 0-
10	TMDS Clock+
11	TMDS Clock shield
12	TMDS Clock-
13	Reserved
14	Reserved
15	SCL
16	SDA
17	DDC/CEC Ground
18	+5V
19	Hot Plug Detect

2.1.5 USB 2.0 Connector

The DS-380 supports 2 x USB 2.0. Please refer to Table 2.2 for its pin assignments.



Figure 2.5 : USB 2.0 connector

Table 2.2 : USB 2.0 Connector Pin Definition

Pin	Signal
1	VCC
2	USB Data
3	USB Data+
4	GND

2.1.6 USB 3.2 - Gen1 connector

The DS-380 supports 2 x USB 3.2 Gen1. The USB interfaces comply with USB UHCI, Rev. 3.2 standards. Please refer to Table 2.3 for pin assignments.

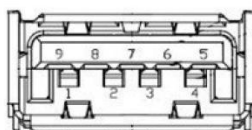


Figure 2.6 : USB 3.2 connector

Table 2.3 : USB 3.2 Gen1 Connector Pin Assignments

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

2.1.7 Ethernet Connector (2.5GbE)

The DS-380 is equipped with up to 2 x Ethernet controllers that are fully compliant with IEEE 802.3bz 10/100/1000/2500 Mbps CSMA/CD standards. These Ethernet ports provide a standard RJ-45 jack connector with LED indicators on the front side to show Active/Link status (Green LED on the right) and Speed status (Yellow/Green LED on the left).

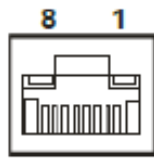


Figure 2.7 : RJ45 connector

Table 2.4: Ethernet Connector Pin Assignment

Pin	10/100/1000/2500 BaseT Signal Name
1	MDI0+
2	MDI0-
3	MDI1+
4	MDI1-
5	MDI2+
6	MDI2-
7	MDI3+
8	MDI3-

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
10/100Mbps	Always off
1 Gbps	Orange
2.5 Gbps	Green

2.1.8 COM1 Connector

DS-380 provides one 9-pin COM connector, which support pure RS232 serial communication interface ports.

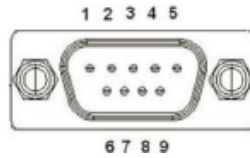


Figure 2.8 : COM connector

Table 2.5: COM Connector Pin Definition

Pin	RS-232
1	--
2	RxD
3	TxD
4	--
5	GND
6	--
7	--
8	--
9	--

2.1.9 IR Phone Jack

DS-380 Series provides 3.5mm phone jack to connect with IR receiver for remote controller possibility.



Figure 2.9 : IR Phone Jack

2.1.10 Audio Connector

The DS-380 features 1 audio jack connectors that support stereo Line-In/Out and Mic-In audio ports. The audio chip is controlled by ALC888S and is compliant with the Azalea standard.



Figure 2.10 : Audio connector

2.1.11 EDID RST Button

After enable EDID from Bypass mode to MCU mode in the BIOS' chipset section, to press the EDID CLR button below can reset and unlock the screen resolution and information. Please press the EDID CLR button when the filed TV Wall change the screen, or resolution is abnormal on the screen.



Figure 2.11 : EDID Button

2.1.12 WiFi Antenna

DS-380 provides two WiFi antenna connectors to connect with SMA antenna.



ANT

Figure 2.12 : SMA connector

2.2 Jumpers

The DS-380 has a number of jumpers that allow you to configure your system to suit your application. The table below lists the functions of the various jumpers.

2.2.1 Jumper List

Table 2.6 : Jumper List

PSON1	AT/ATX
JCMOS1	Clear CMOS

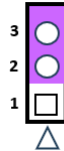


2.2.2 Jumper Settings

2.2.2.1 AT/ATX Mode (PSON1)

Table 2.7 : PSON1 AT/ATX Mode Setting

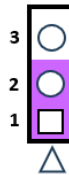
Description	PIN HEADER 3x1P2.0mm 180D(M)DIP 2000-13WS
Setting	Function
(1-2)	Boot up by AT
(2-3)	Boot up by ATX (Default)



2.2.2.2 Clear CMOS (JCMOS1)

Table 2.8 : JCMOS1 Clear CMOS Settings

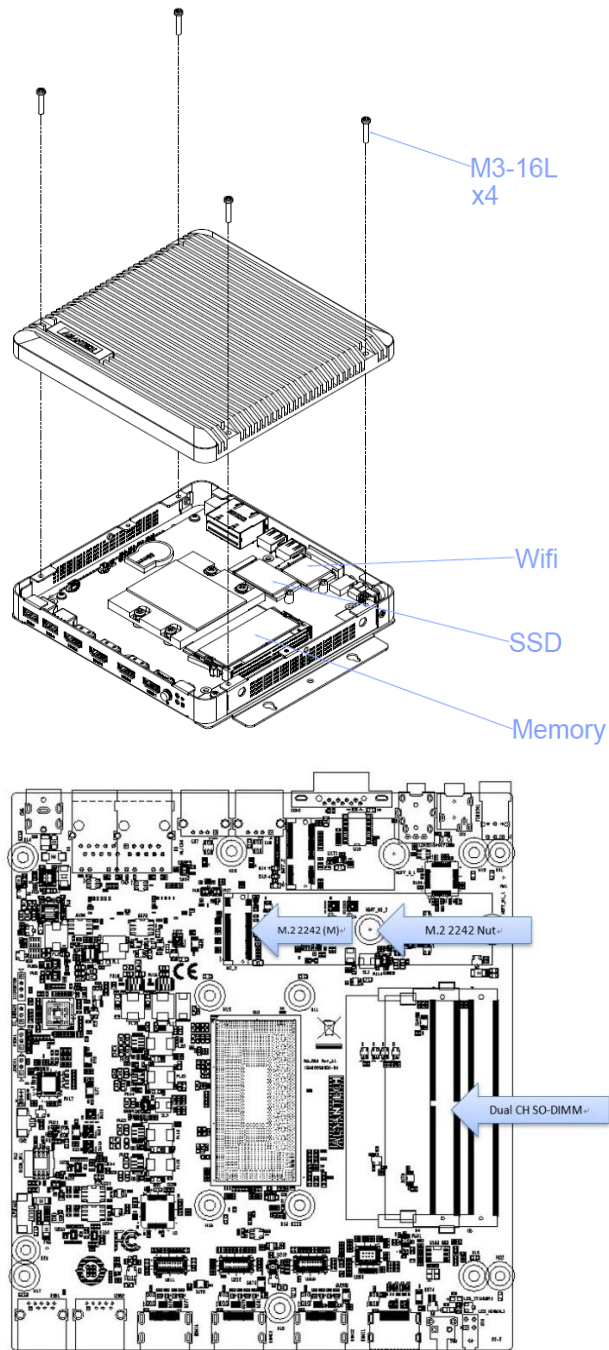
Description	PIN HEADER 1X3P 2.00mm 180D(M) DIP
Setting	Function
(1-2)	Normal Operation (Default)
(2-3)	Clear CMOS



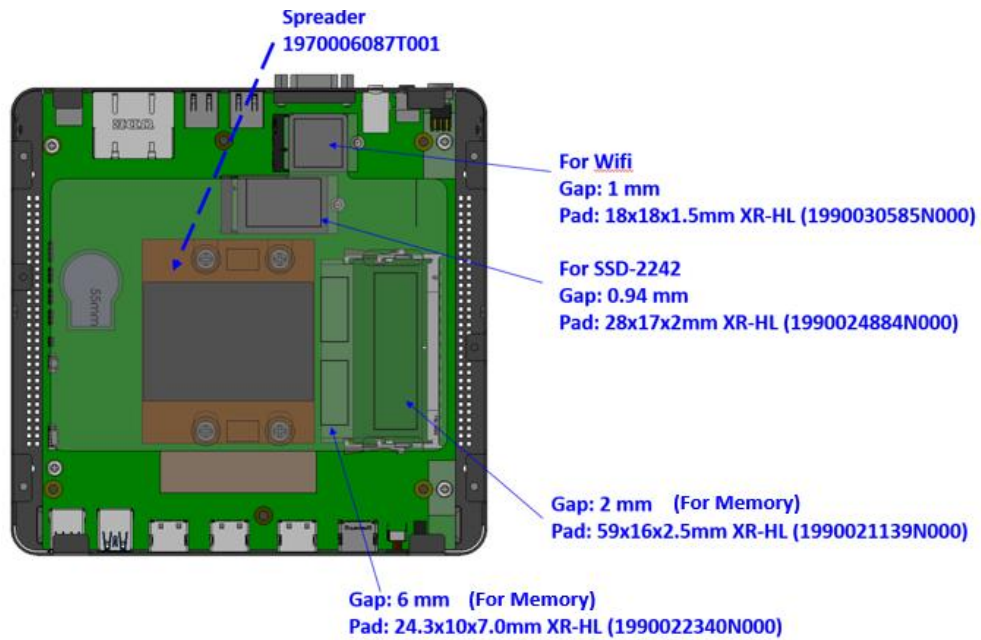
2.3 Installation

2.3.1 Memory and M.2 M-key/E-key Installation

- Remove 4 (M3-16L) screws of top cover.
- Remove top cover and install M.2 2242 module and fix screw.
- Install DDR5* SO-DIMM with thermal pads in the plastic pack.
(Dual-CH DDR5 are suggested to get the best CPU/GPU/NPU performance.)

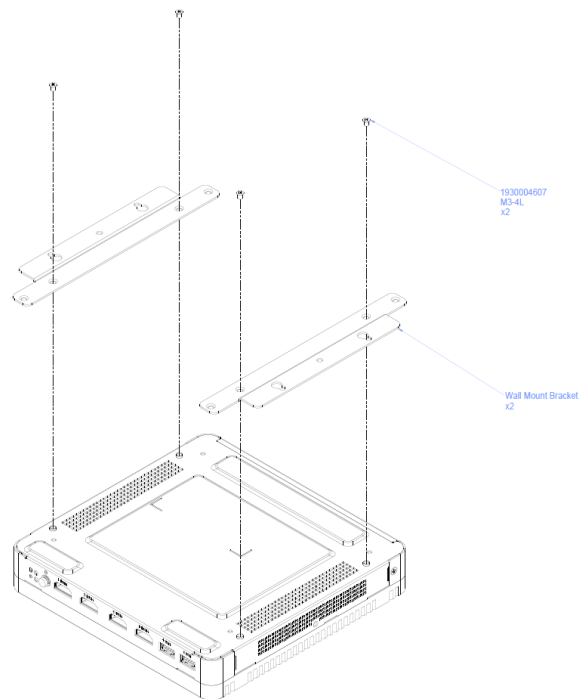


- Install the DDR5 SO-DIMM and attach the thermal pads to the top cover.
- Install M.2 M Key (SSD) and attach the thermal pad on the module.
- Install M.2 E Key (WiFi/BT) and attach the thermal pad on the module.



2.4.3 Wall mount Installation

When installing the system by wall mount kit, Please screw the four M3-4L (7mm) screws according to the arrow directions.



Chapter 3

BIOS Settings

3.1 BIOS Introduction

AMIBIOS has been integrated into motherboards for over two decades. With the AMIBIOS Setup program, users can modify BIOS settings and control various system features. This chapter describes the basic navigation of the DS-380 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 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.

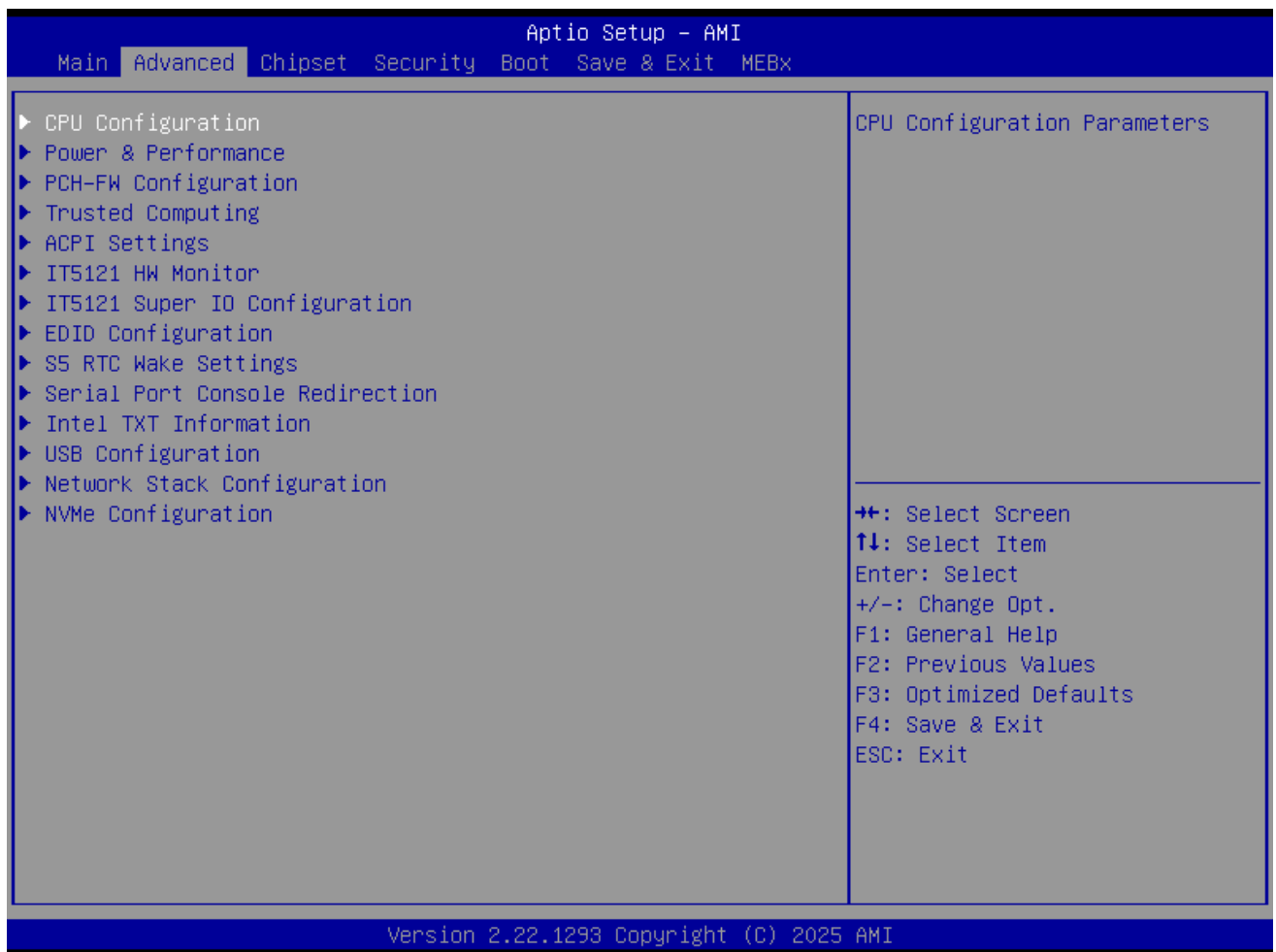
Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it.

■ System time/System date

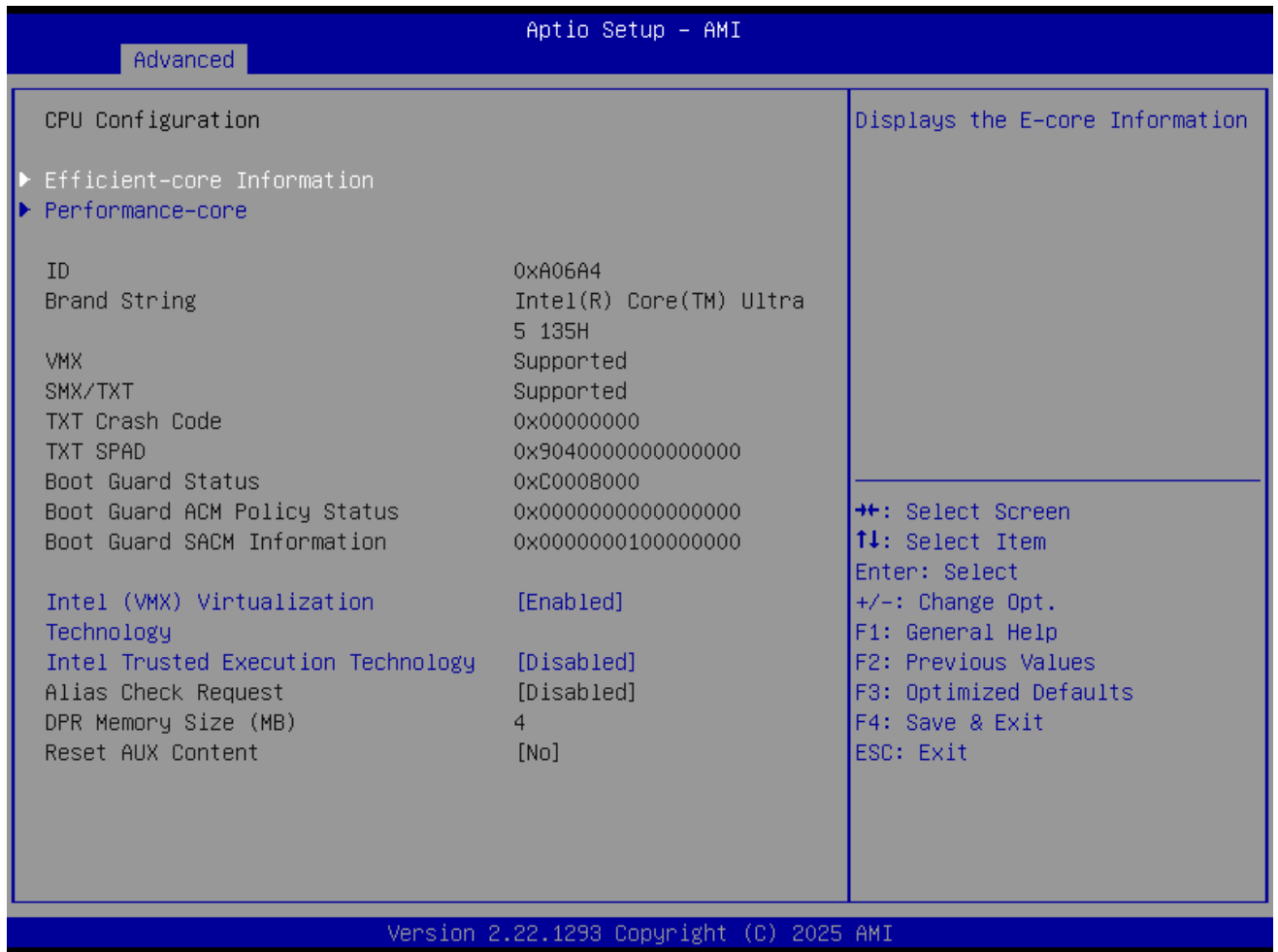
Use this option to change the system time and date. Highlight System Time or System Date using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time must be entered in HH:MM:SS format.

3.2.2 Advanced BIOS Features Setup

Select the Advanced tab from the BIOS Setup Utility to enter the Advanced BIOS Setup page. Select any of the items in the left frame of the screen, such as CPU Configuration, to access the sub menu for that item. The options for any of the Advanced BIOS Setup items can be displayed by highlighting the item using the keys.

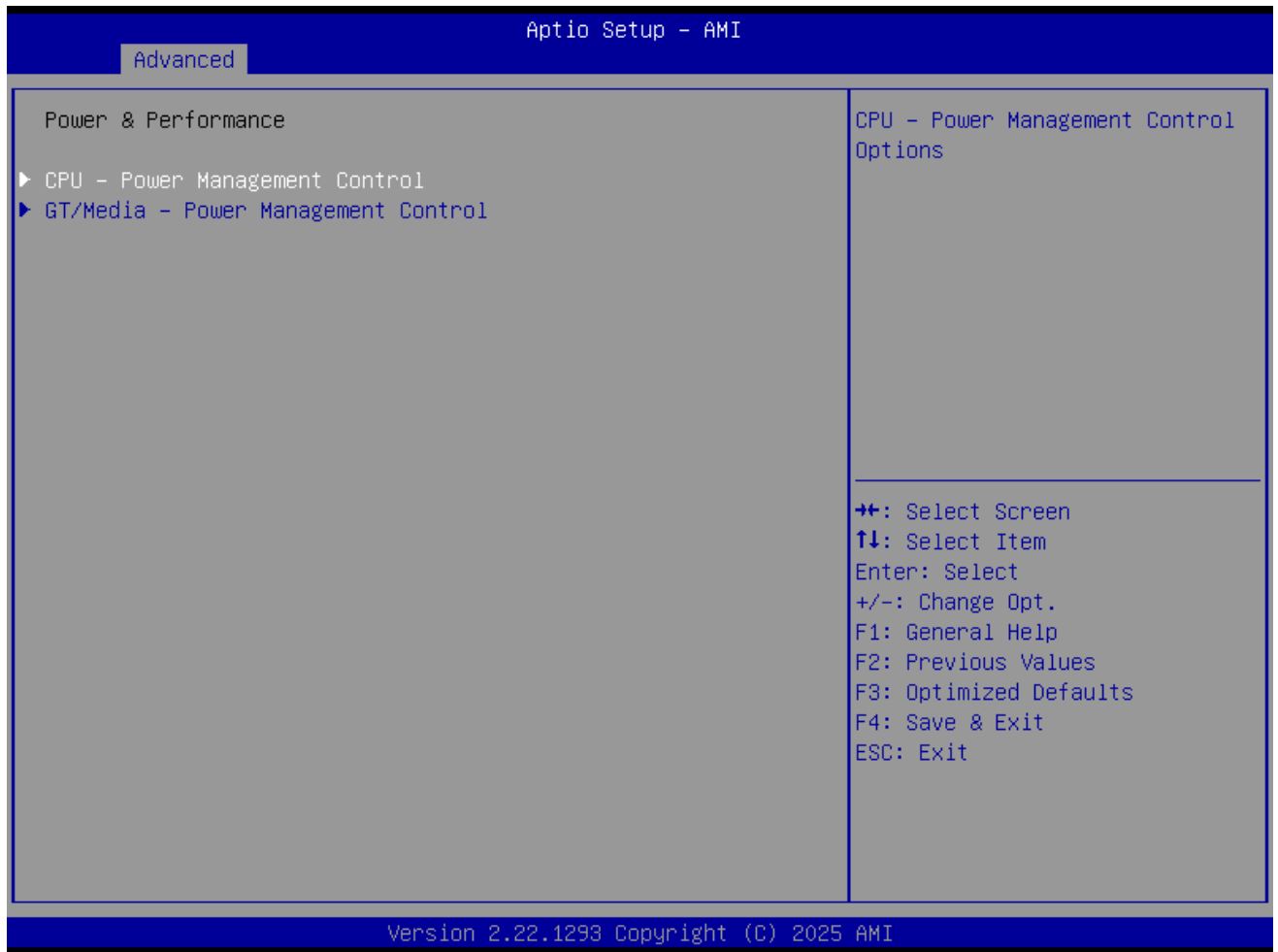


3.2.3 Advanced → CPU Configuration



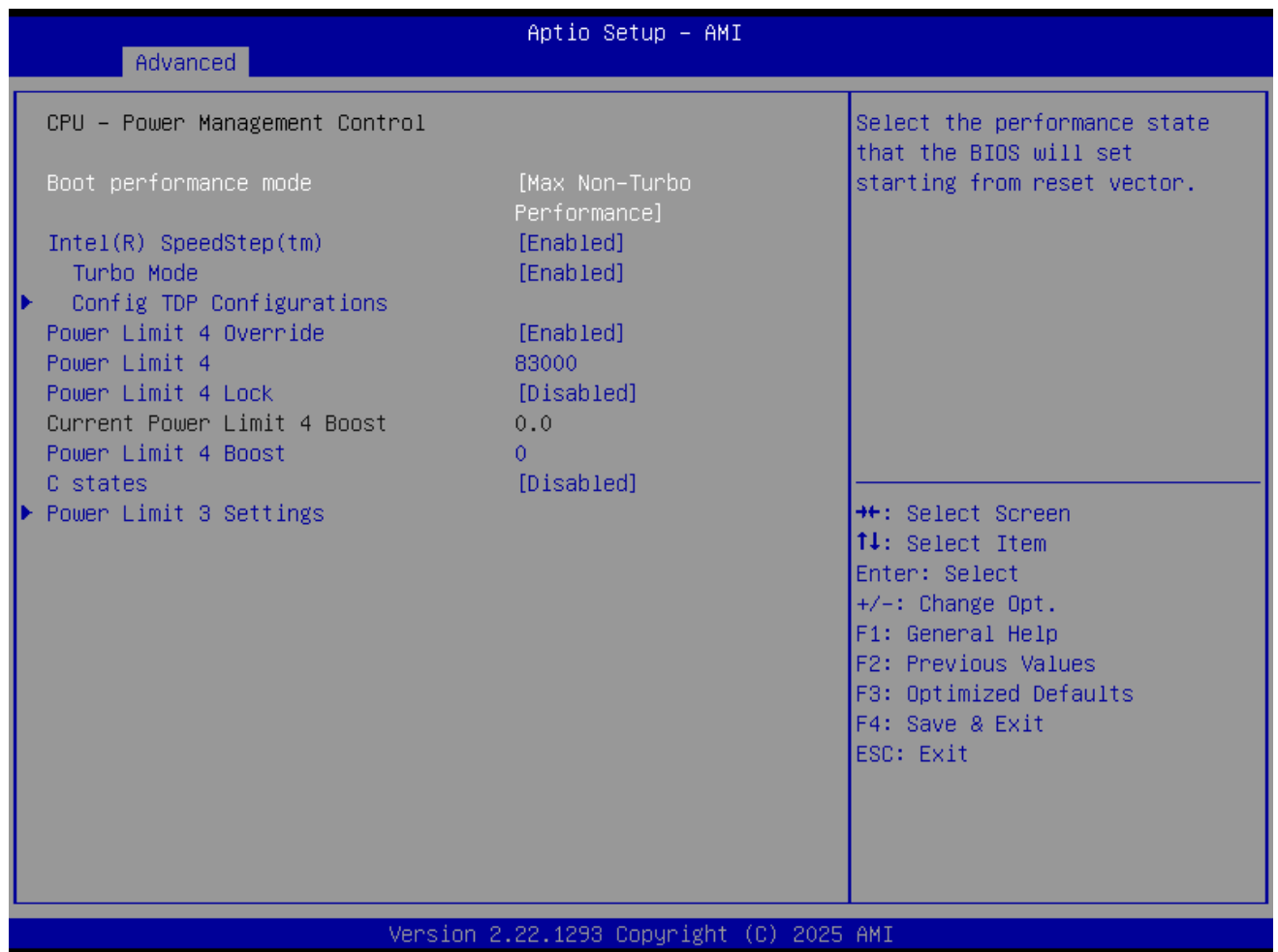
- **Efficient-core Information**
Shows the information of E-core.
- **Performance-core**
Shows the information of P-core.
- **Intel (VMX) Virtualization**
Enable or Disable Intel VMX Virtualization support.
- **Intel Trusted Execution Technology**
Enables utilization of additional Intel® Trusted Execution Technology.
- **Alias Check Request**
Enable or Disable Alias check request.
- **Reset AUX Content**
To Reset AUX Content.

3.2.4 Advanced → Power & Performance



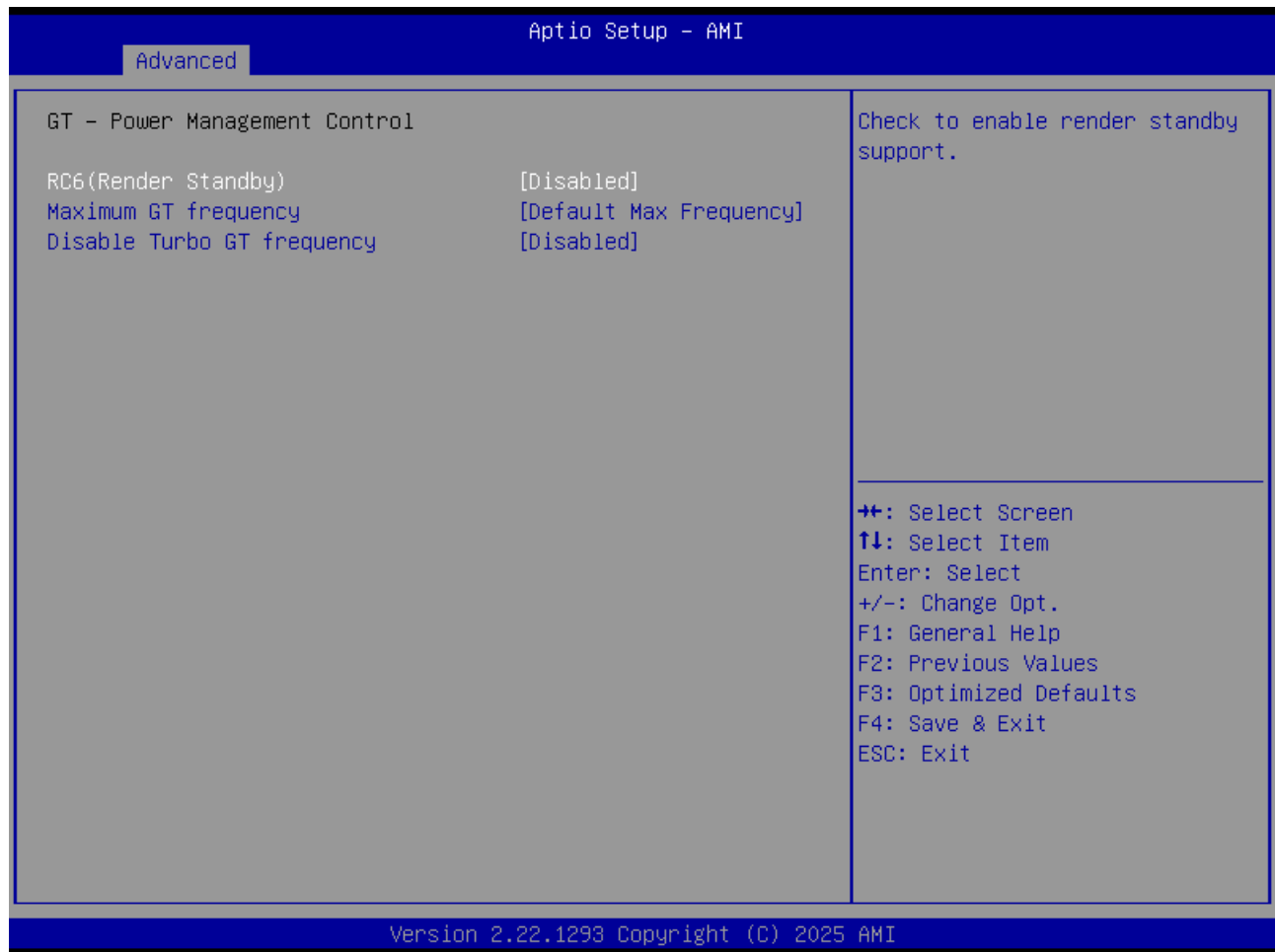
- **CPU – Power Management Control**
CPU – Power Management Control Options.
- **GT – Power Management Control**
GT – Power Management Control Options.

3.2.4.1 Advanced → Power & Performance → CPU - Power Management Control



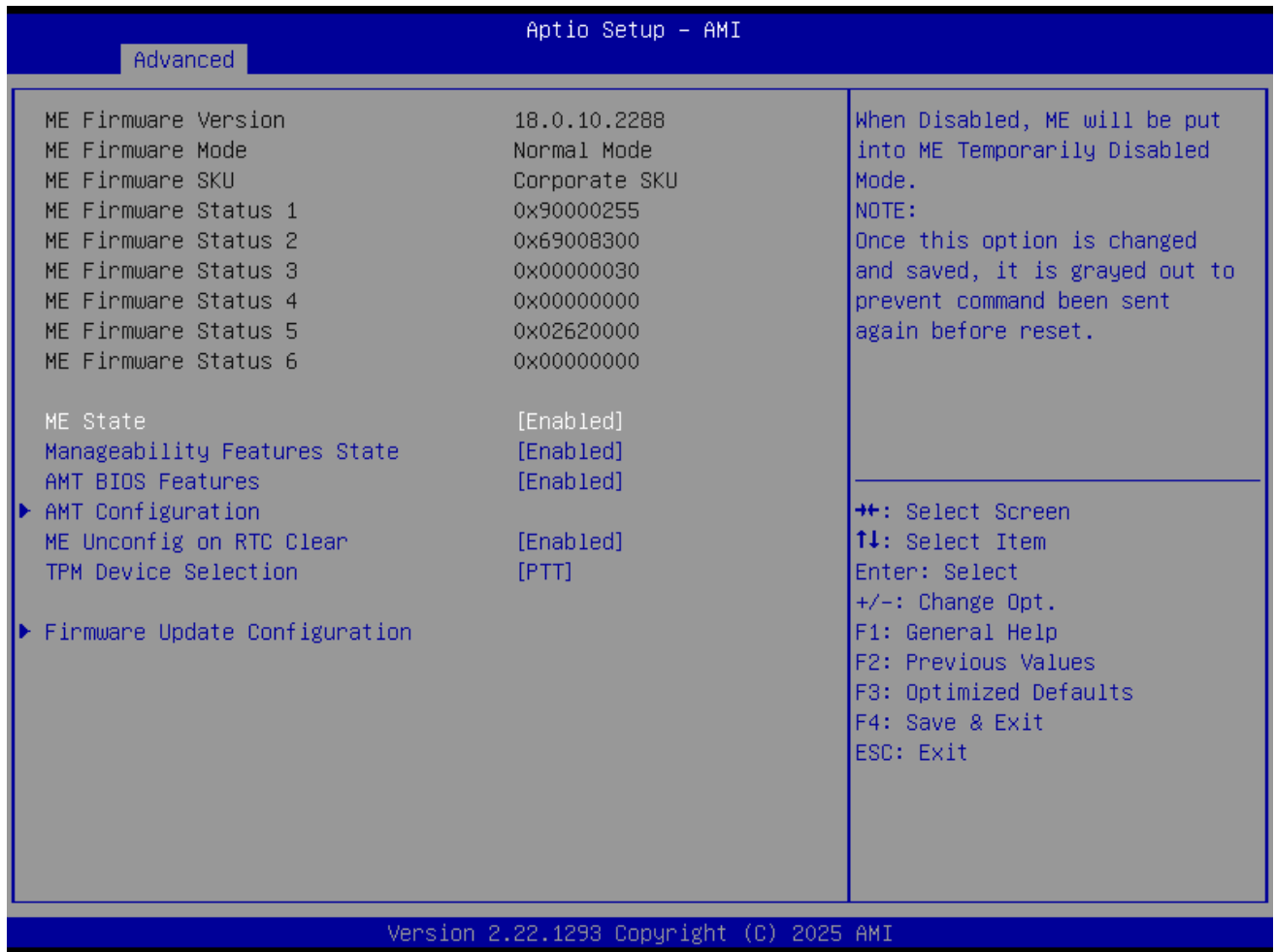
- **Boot performance mode Max non-Turbo performance. Max battery.**
Turbo performance.
- **Intel SpeedStep**
Enable or disable Intel SpeedStep support.
- **Turbo mode**
Enable or disable Turbo mode.
- **config TDP Configurations**
Config Power limit 4 related parameter.
- **C states**
Enable or disable C states.
- **Power Limit 3 settings**
The Power limit 3 related settings.

3.2.4.2 Advanced → Power & Performance → GT - Power Management Control



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

3.2.5 Advanced → PCH-FW Configuration



- **ME State**
When Disabled ME will be put ME into Temporarily Disabled Mode.
- **Manageability Feature State**
Enable/Disable Intel® Manageability Feature.
- **AMT BIOS Features**
When disabled AMT BIOS Features are no longer supported and user is no longer able to access MEBx Setup.
- **AMT Configuration**
Configure Intel® Active Management Technology Parameters.
- **ME Unconfig on RTC Clear**
When Disabled, ME will not be unconfigured on RTC Clear.
- **TPM Device Selection**
Select TPM device: PTT or dTPM.
- **Firmware Update Configuration**
Configure Management Engine Technology Parameters.

3.2.5.1 Advanced → PCH-FW Configuration → Firmware update Configuration



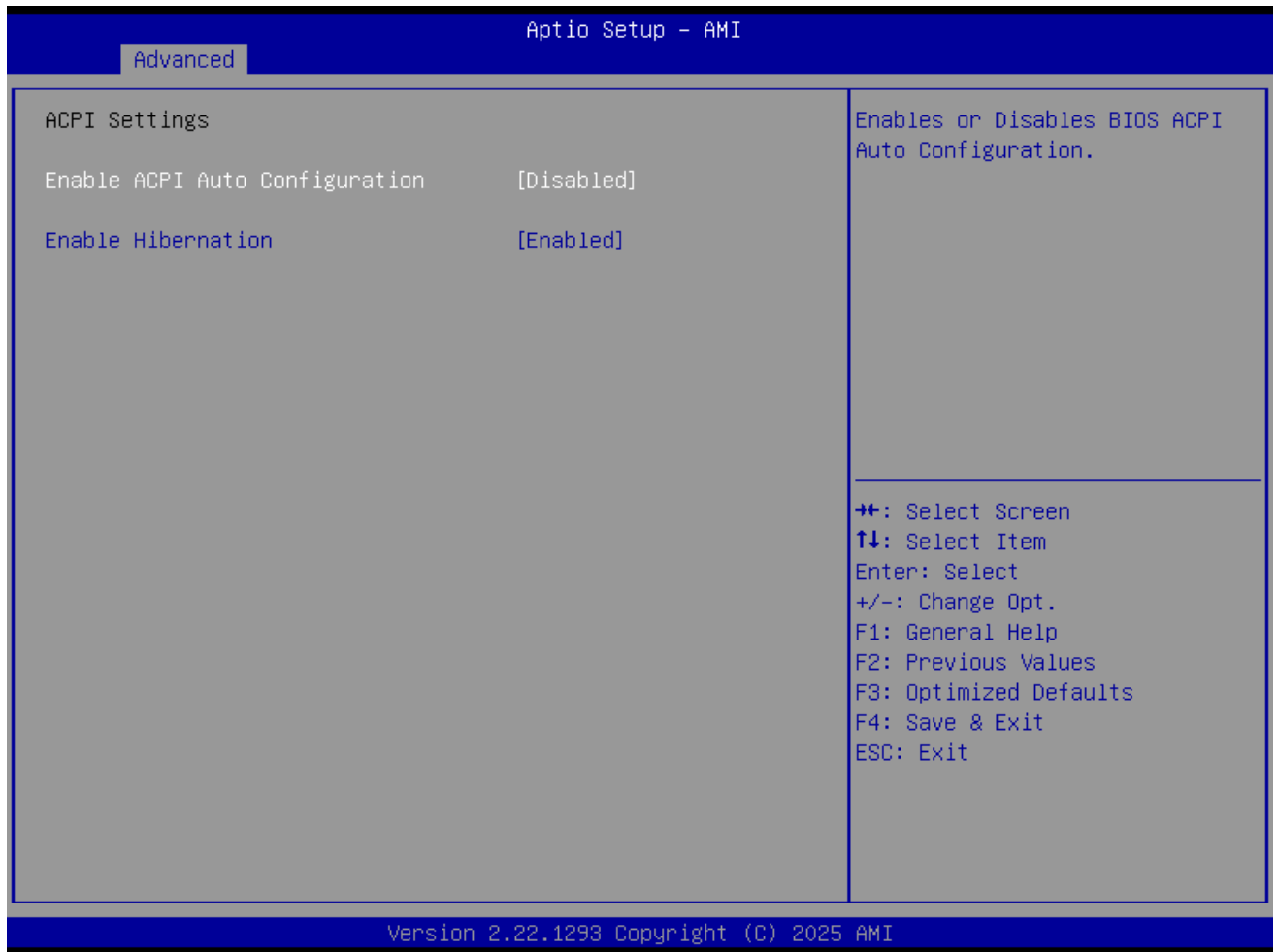
- **Me FW Image Re-Flash**
Enable or disable Me FW Image Re-Flash.
- **FW Update**
Enable or disable FW Update.

3.2.6 Advanced → Trusted Computing



- **Security Device Support**
Enable or disable BIOS support for security device.
- **SHA256 PCR Bank**
Enable or Disable SHA256 PCR Bank.
- **SHA384 PCR Bank**
Enable or Disable SHA384 PCR Bank.
- **SM3_256 PCR Bank**
Enable or Disable SM3_256 PCR Bank.
- **Pending operation**
Schedule an Operation for the Security Device.
- **Platform Hierarchy**
Enable or Disable Platform Hierarchy.
- **Storage Hierarchy**
Enable or Disable Storage Hierarchy.
- **Endorsement Hierarchy**
Enable or Disable Endorsement Hierarchy.
- **Physical Presence Spec Version**
Select to Tell O.S. to support PPI Spec Version 1.2 or 1.3.
- **PH Randomization**
Enable or Disable PH Randomization.
- **Device Select**
TPM 1.2 will restrict support to TPM 1.2 devices, TPM 2.0 will restrict support to TPM 2.0 devices.

3.2.7 Advanced → ACPI Settings



- **Enable ACPI Auto Configuration**
Enable or disable BIOS ACPI auto configuration.
- **Enable Hibernation**
Enables or Disables System ability to Hibernation (OS/S4 Sleep State). This option may be not effective with some OS.

3.2.8 Advanced → IT5121 HW Monitor

The screenshot displays the 'Advanced' menu in the Aptio Setup - AMI utility. The 'PC Health Status' section provides real-time monitoring data for various system components. The navigation instructions on the right side of the screen detail the keyboard shortcuts for navigating through the setup utility.

PC Health Status	
EC Firmware Version	I2160X0001
CPU temperature	: +44 °C / +111 °F
System temperature	: +41 °C / +105 °F
PCH temperature	: +37 °C / +98 °F
+VBAT	: +2.978 V
+5VSB	: +5.008 V
+5V	: +5.014 V
+3.3VSB	: +3.278 V
Current	: +0.950 A

Navigation Instructions:

- ←→: Select Screen
- ↑↓: Select Item
- Enter: Select
- +/-: Change Opt.
- F1: General Help
- F2: Previous Values
- F3: Optimized Defaults
- F4: Save & Exit
- ESC: Exit

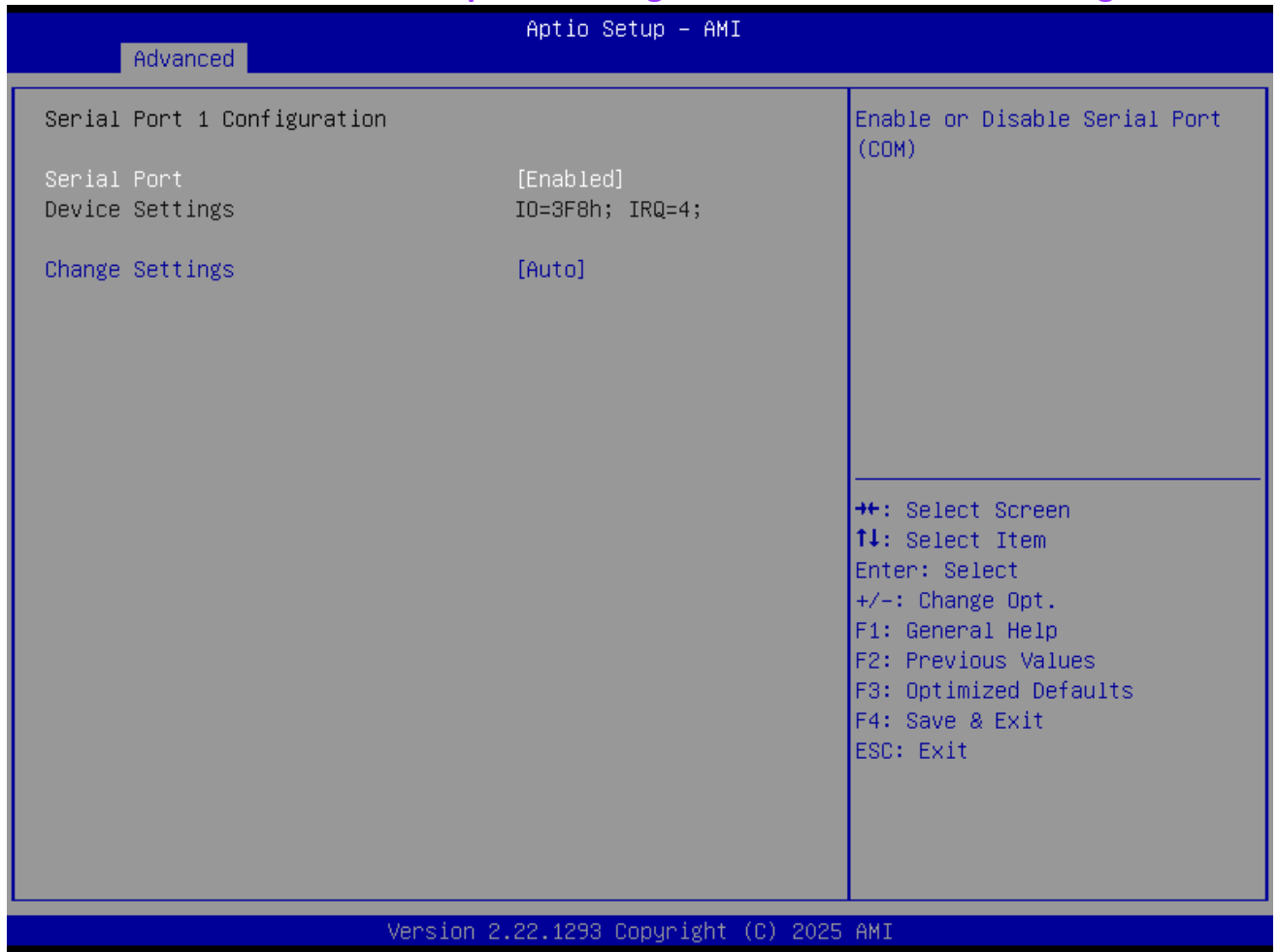
Version 2.22.1293 Copyright (C) 2025 AMI

3.2.9 Advanced → IT5121 Super IO Configuration



- **Serial Port 1 Configuration**
Set Parameters of Serial Port 1.
- **ACPI Shutdown Temperature**
Enable/Disable CPU Shutdown Temperature.
- **Power Saving Mode**
Enable/Disable power saving mode.
- **Watch Dog Timer Configuration (PreBoot)**
Watch Dog Timer Configuration (PreBoot)
- **Watch Dog Timer Configuration**
Watch Dog Timer Configuration.

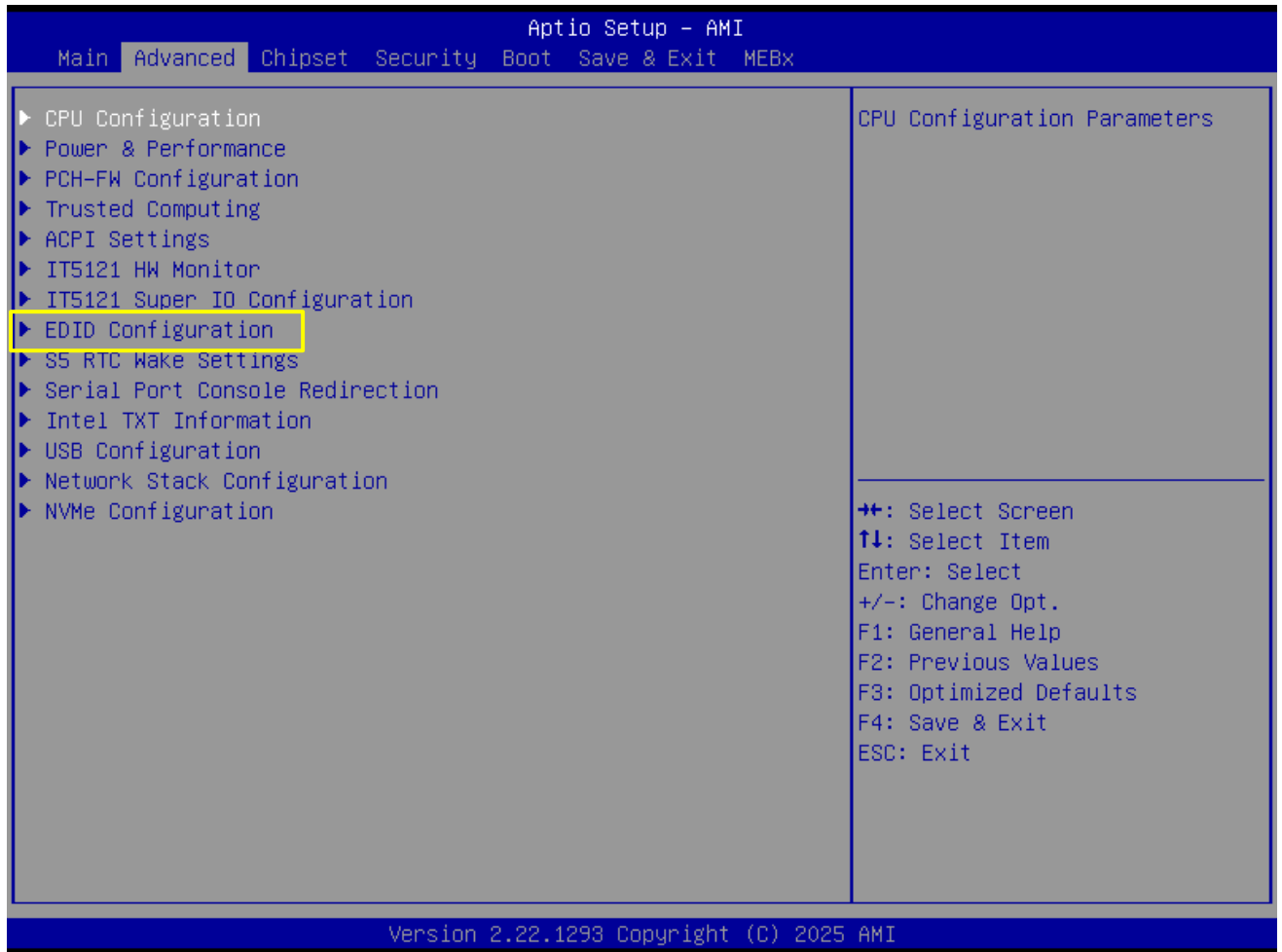
3.2.9.1 Advanced → IT5121 Super IO Configuration → Serial Port 1 Configuration

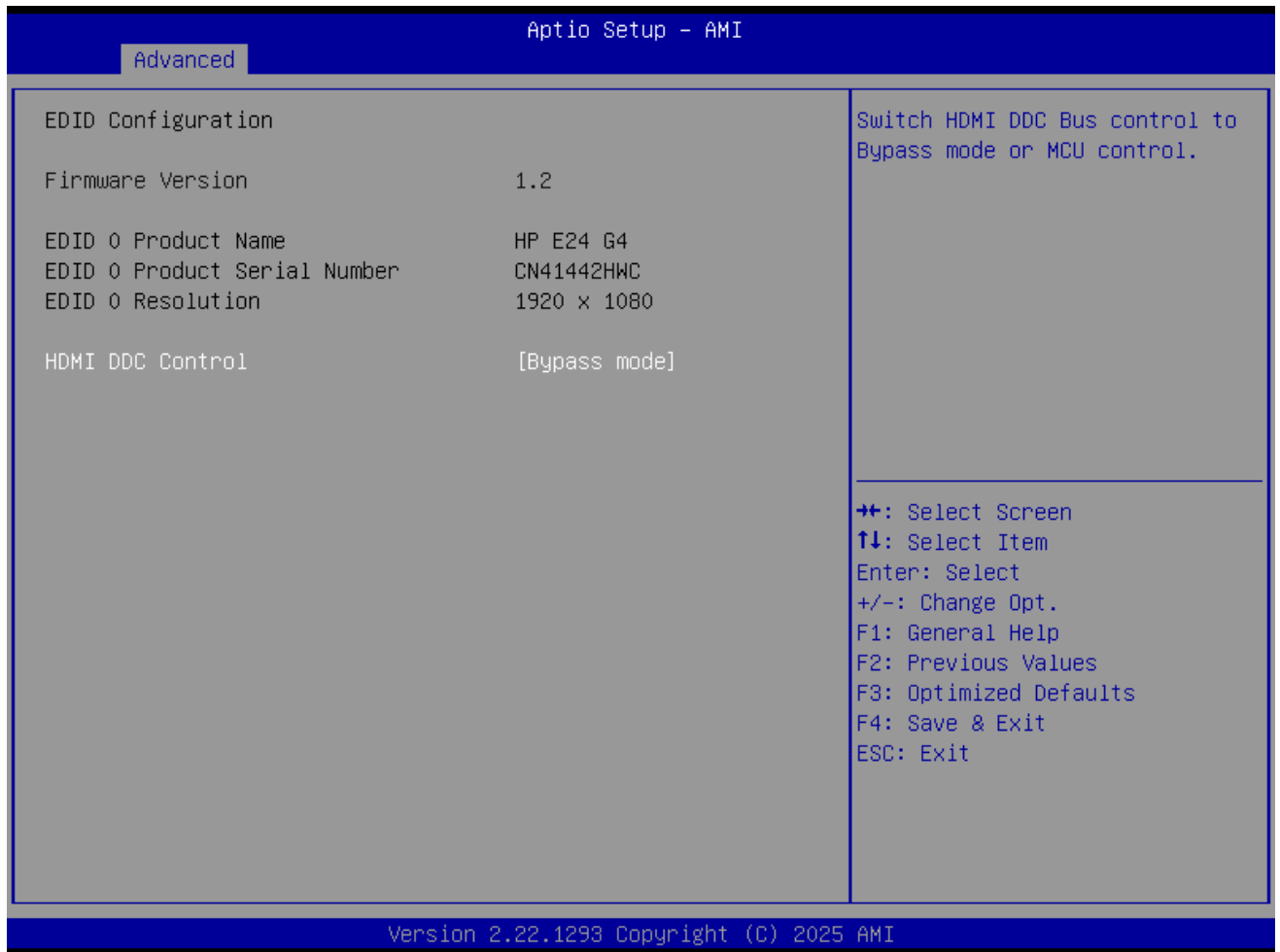


- **Serial Port**
Enable or Disable Serial Port (COM).
- **Change Settings**
Select an optimal settings for Super IO device.

3.2.10 Advanced → EDID Configuration

This EDID Configuration can Enable/Disable the EDID Control option, Please refer to section EDID_CLR Button description to re-acquire the EDID of the Screens.





- **HDMI DDC Control**

Bypass mode: Bypass Hardware EDID emulation function.

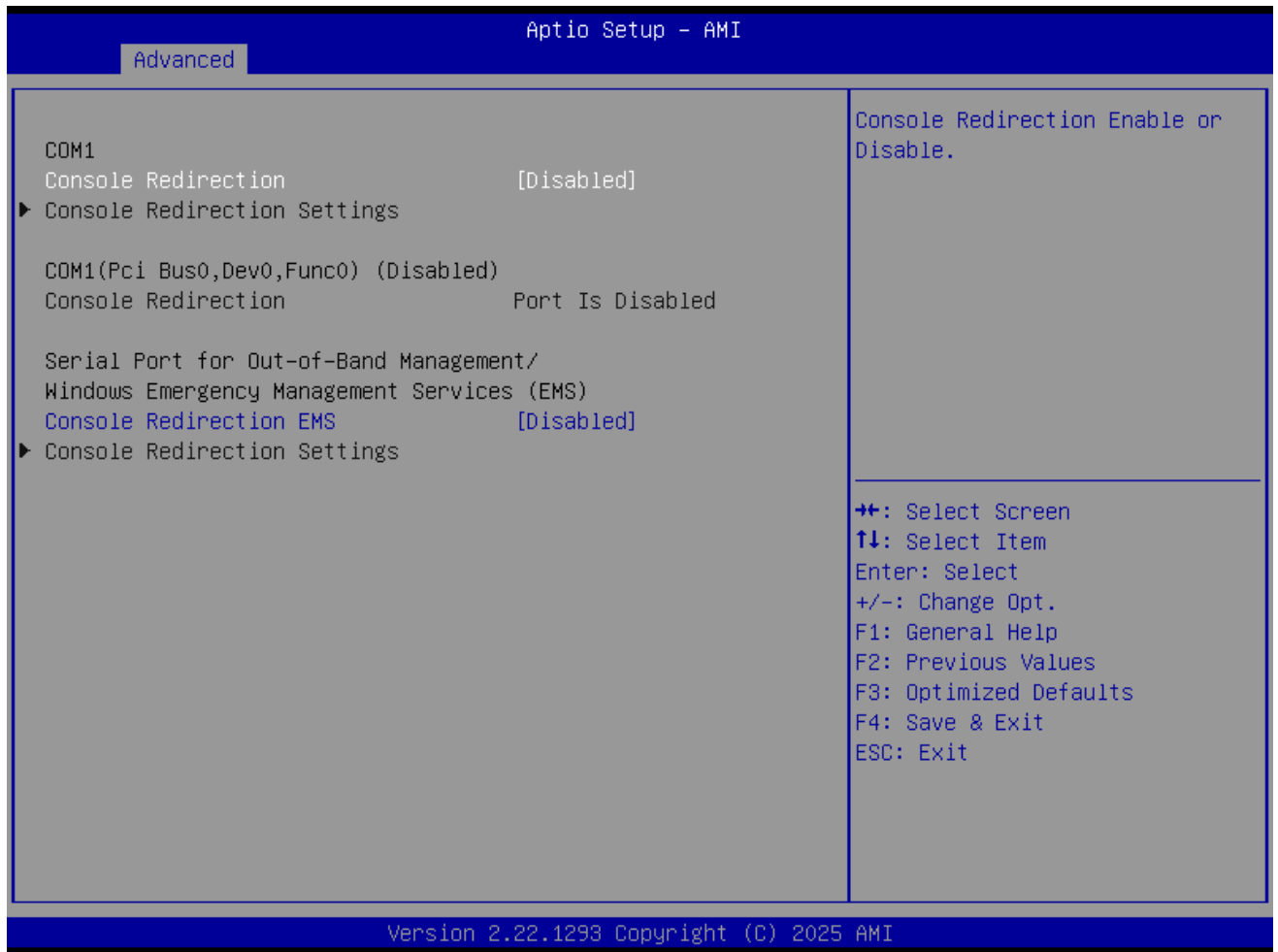
MCU Control: Enable Hardware EDID emulator by MCU control.

3.2.11 Advanced → S5 RTC Wake Settings



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

3.2.11 Advanced → Serial Port Console Redirection



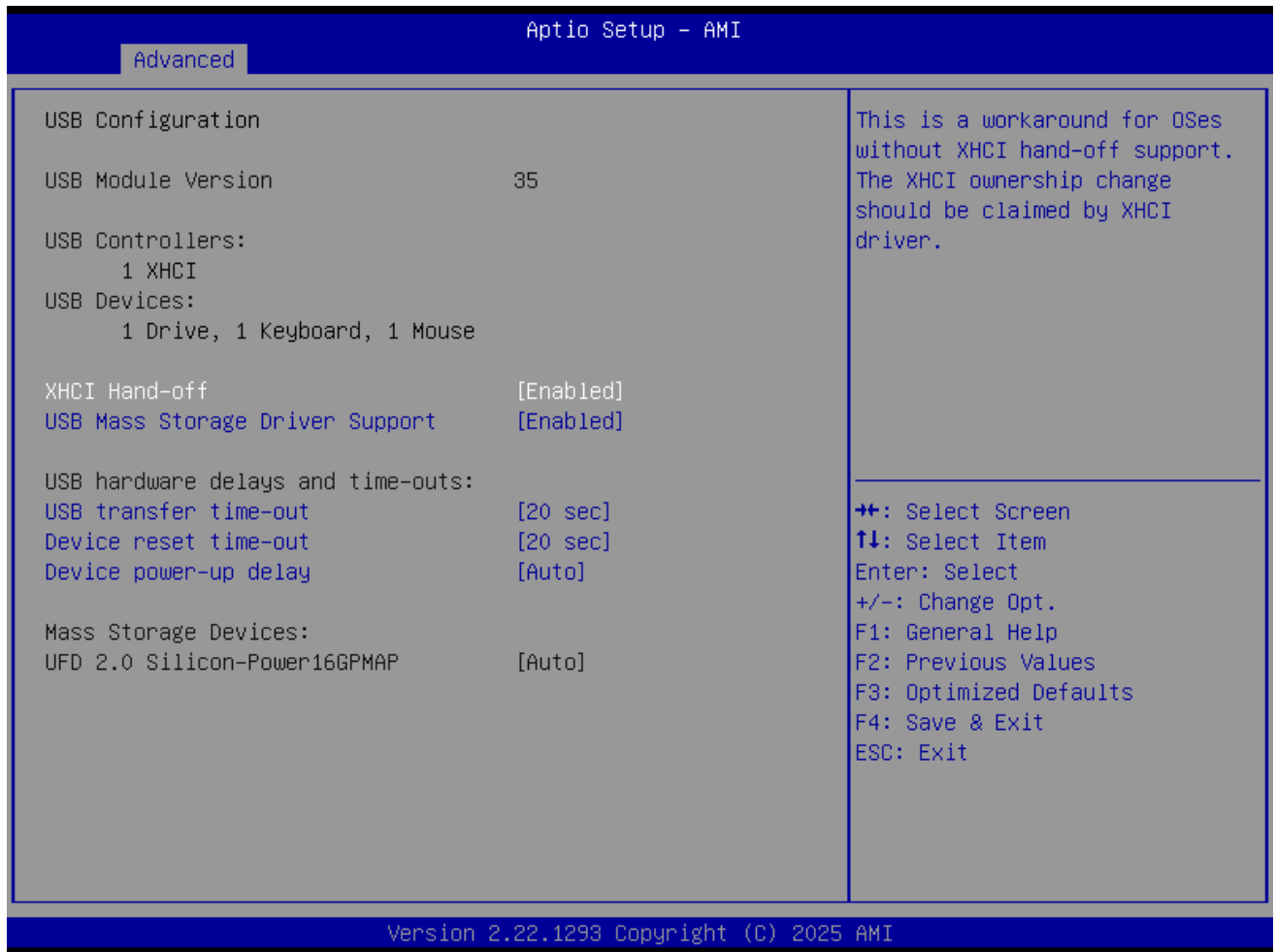
- **Console Redirection**
Console Redirection Enable or Disable.
- **Console Redirection EMS**
This item allows users to Enable or Disable console redirection for Microsoft Windows Emergency Management Services (EMS)

3.2.12 Advanced → Intel TXT Information



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

3.2.13 Advanced → USB Configuration



- **XHCI Hand-off**
This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
- **USB Mass Storage Driver Support**
Enable/Disable USB Mass Storage Driver Support.
- **USB transfer time-out**
Time-out value for control, Bulk, and interrupt transfers.
- **Device reset time-out**
USB mass storage device start unit command time-out.
- **Device power-up delay**
Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor.

3.2.14 Advanced → Network Stack Configuration



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

3.2.15 Advanced → NVMe Configuration

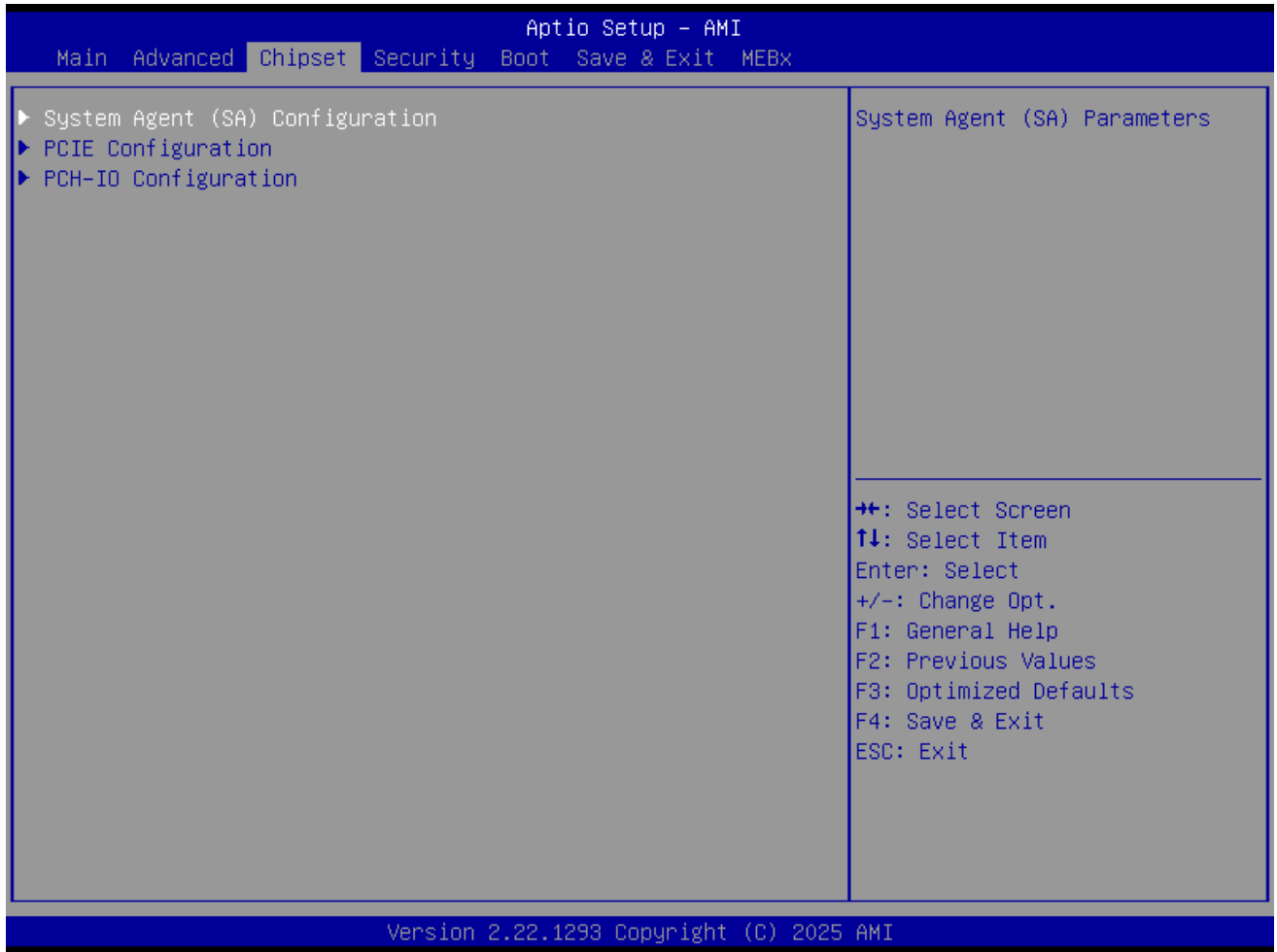


- **Shows the NVMe device**
To config or shows the NVMe information.

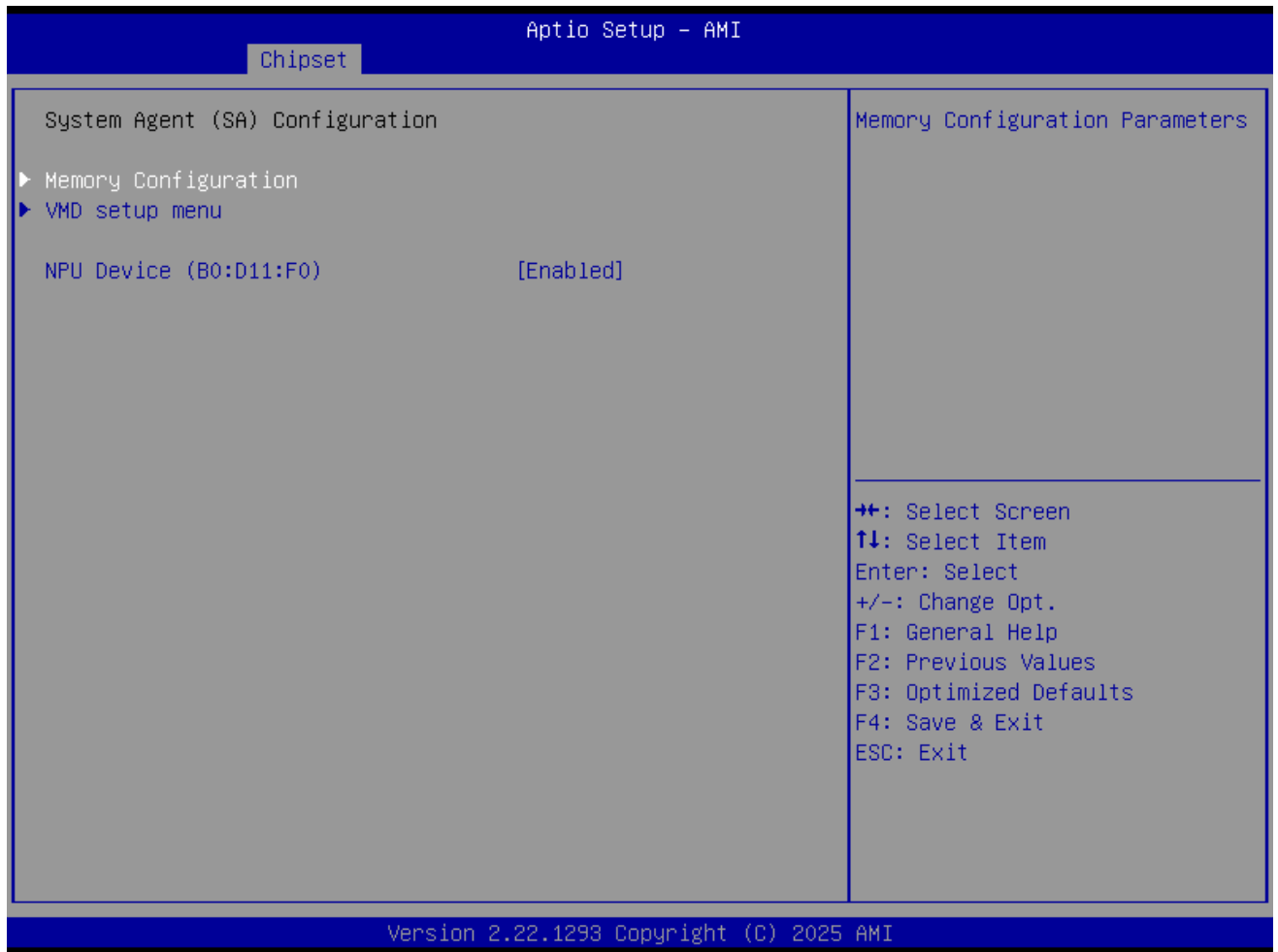
3.3 Chipset

Select the Chipset tab from the DS-380 setup screen to enter the Chipset BIOS Setup screen. You can display a Chipset BIOS Setup option by highlighting it using the <Arrow> keys. All Plug and Play BIOS Setup options are described in this section.

The Plug and Play BIOS Setup screen is shown below.

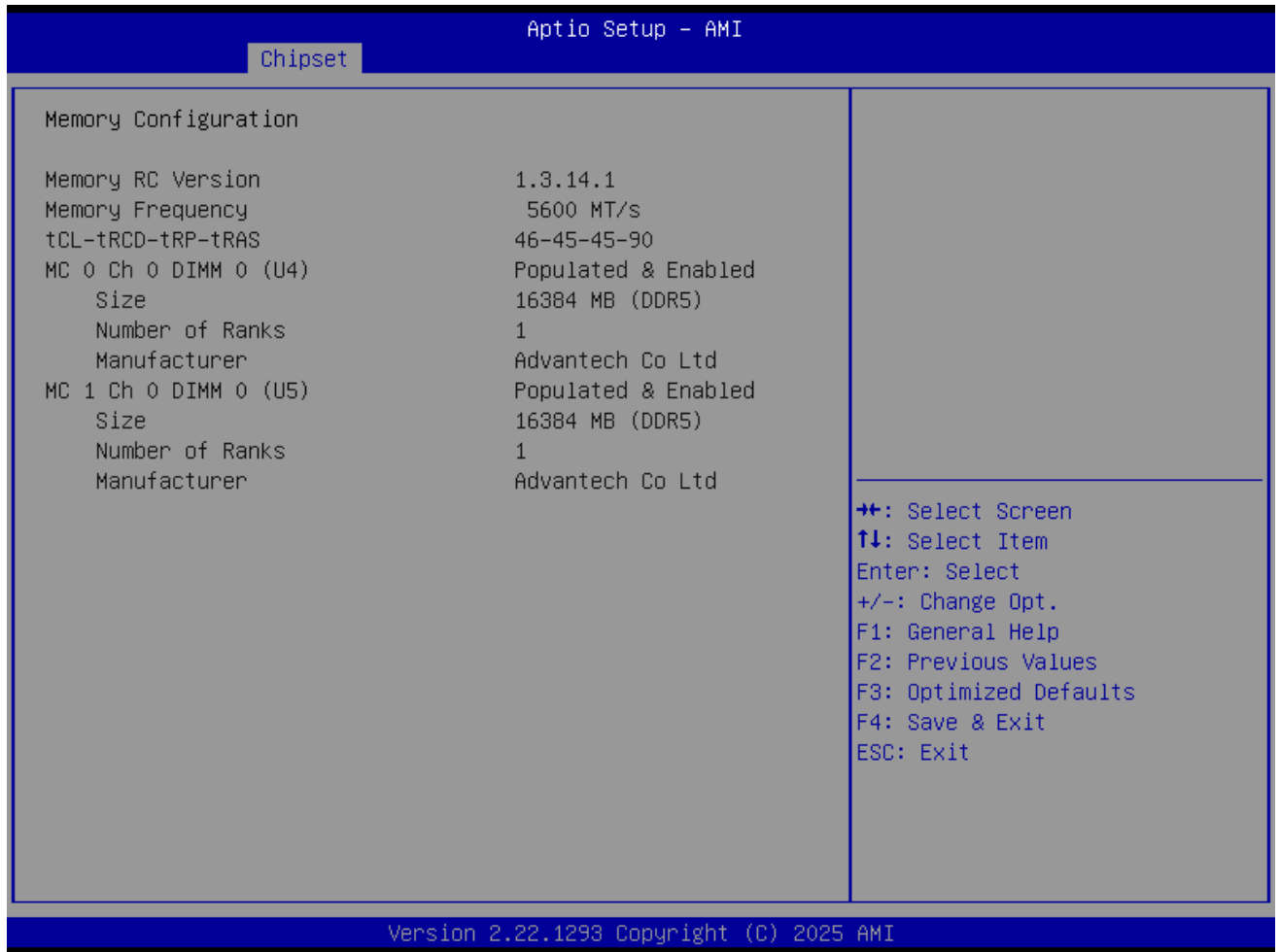


3.3.1 Chipset → System Agent (SA) Configuration



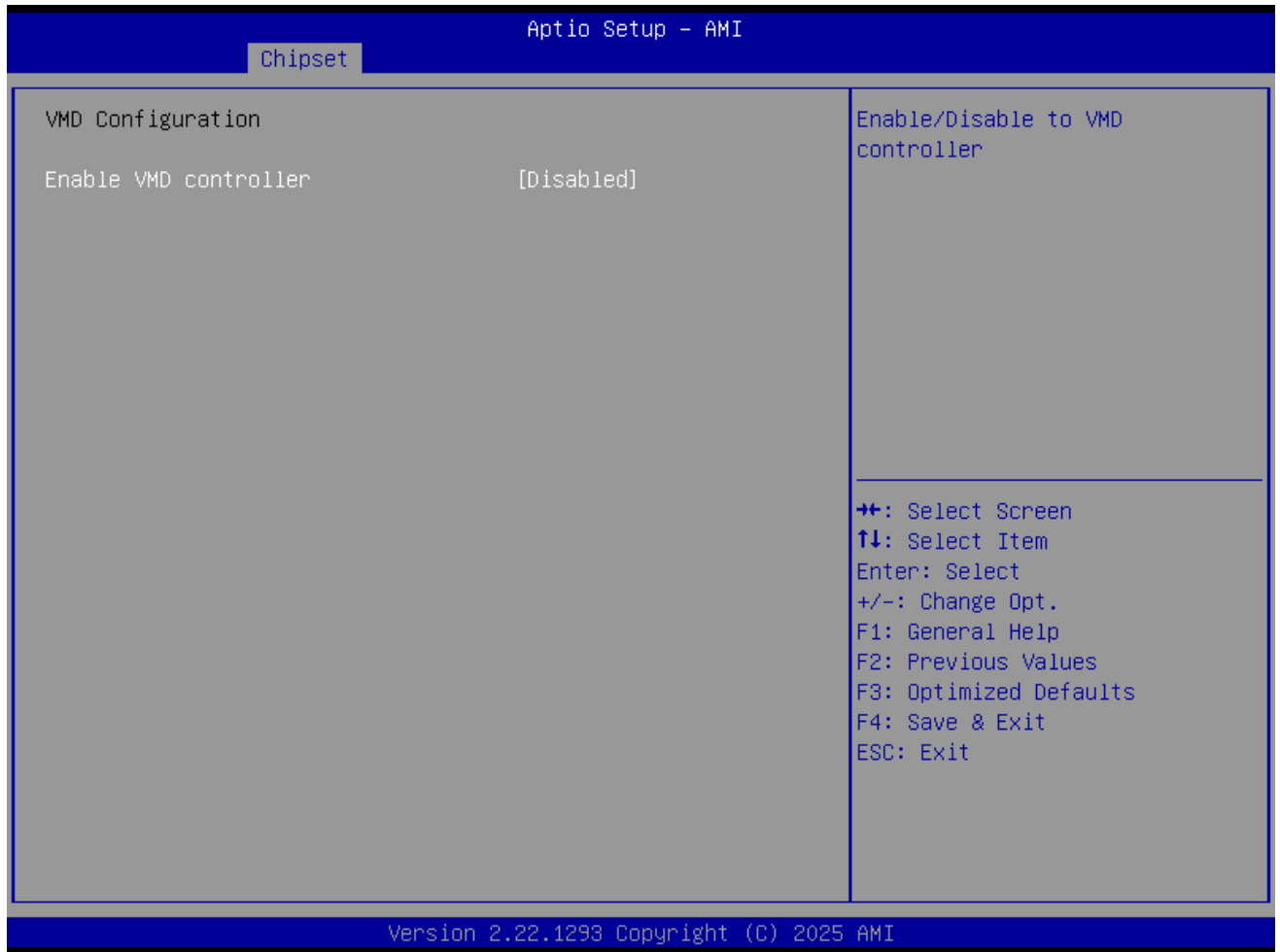
- **Memory Configuration**
Memory Configuration Parameters.
- **NPU Device (B0:D11:F0)**
Enable / Disable NPU Device.

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



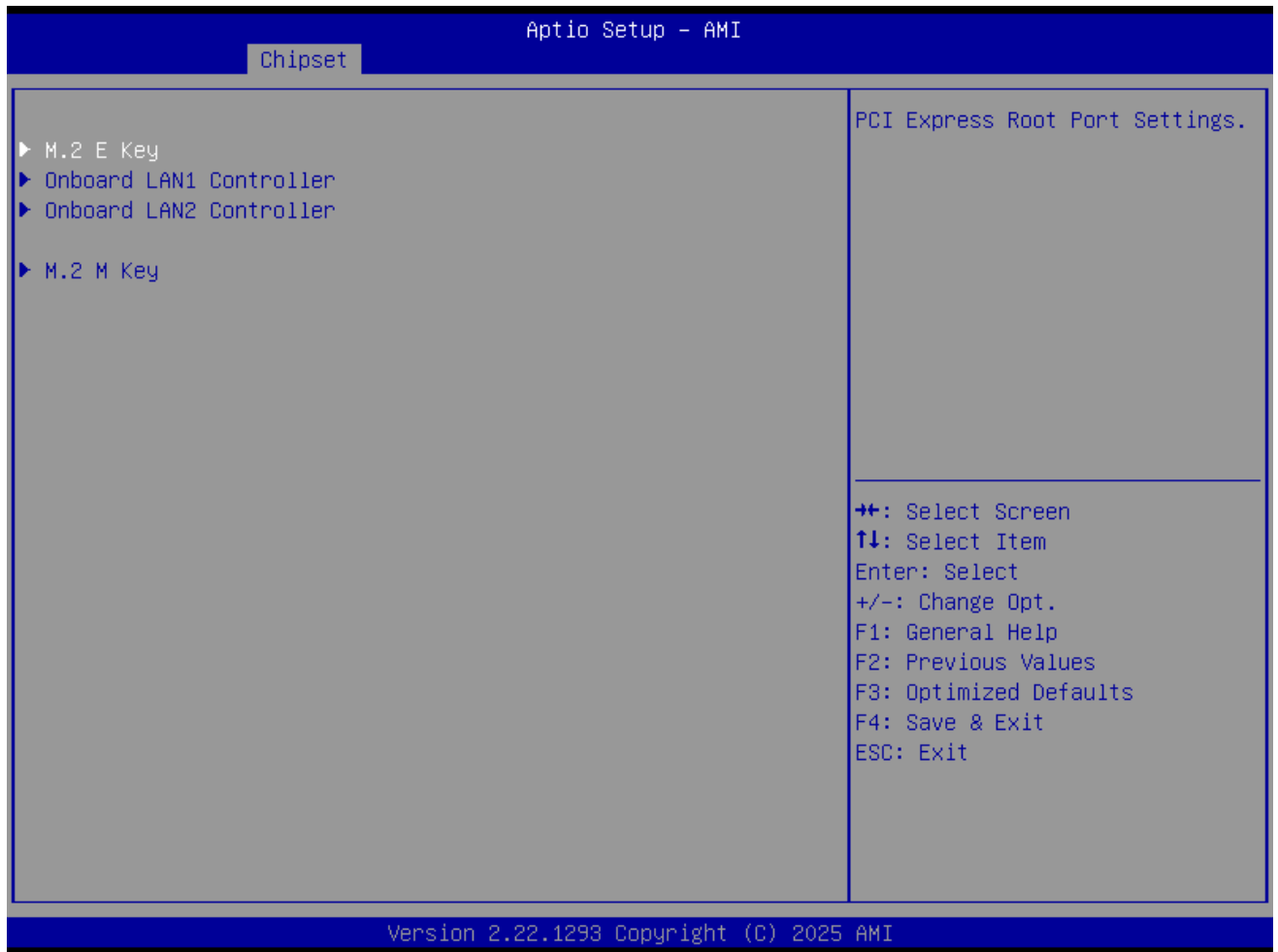
- **Memory Configuration**
Memory Configuration Parameters.

3.3.1.2 Chipset → System Agent (SA) Configuration → VMD Configuration



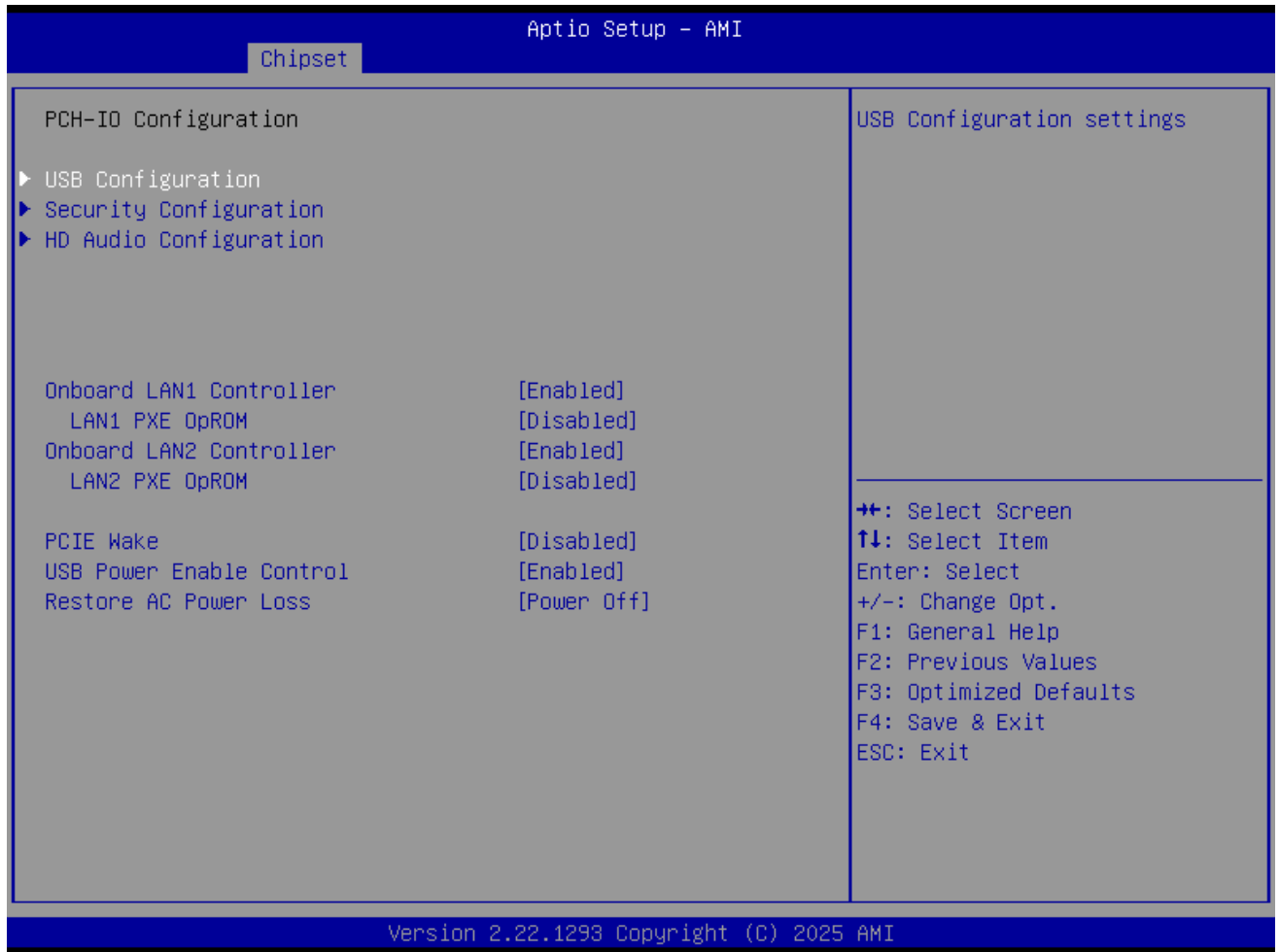
- **Enable VMD Controller**
Enable/Disable VMD Controller

3.3.2 Chipset → PCIe Configuration



- **PCI Express Root Port PXPB1/PXPB3/PXPD/PXPE**
PCI Express Root Port Settings.

3.3.3 Chipset → PCH-IO Configuration



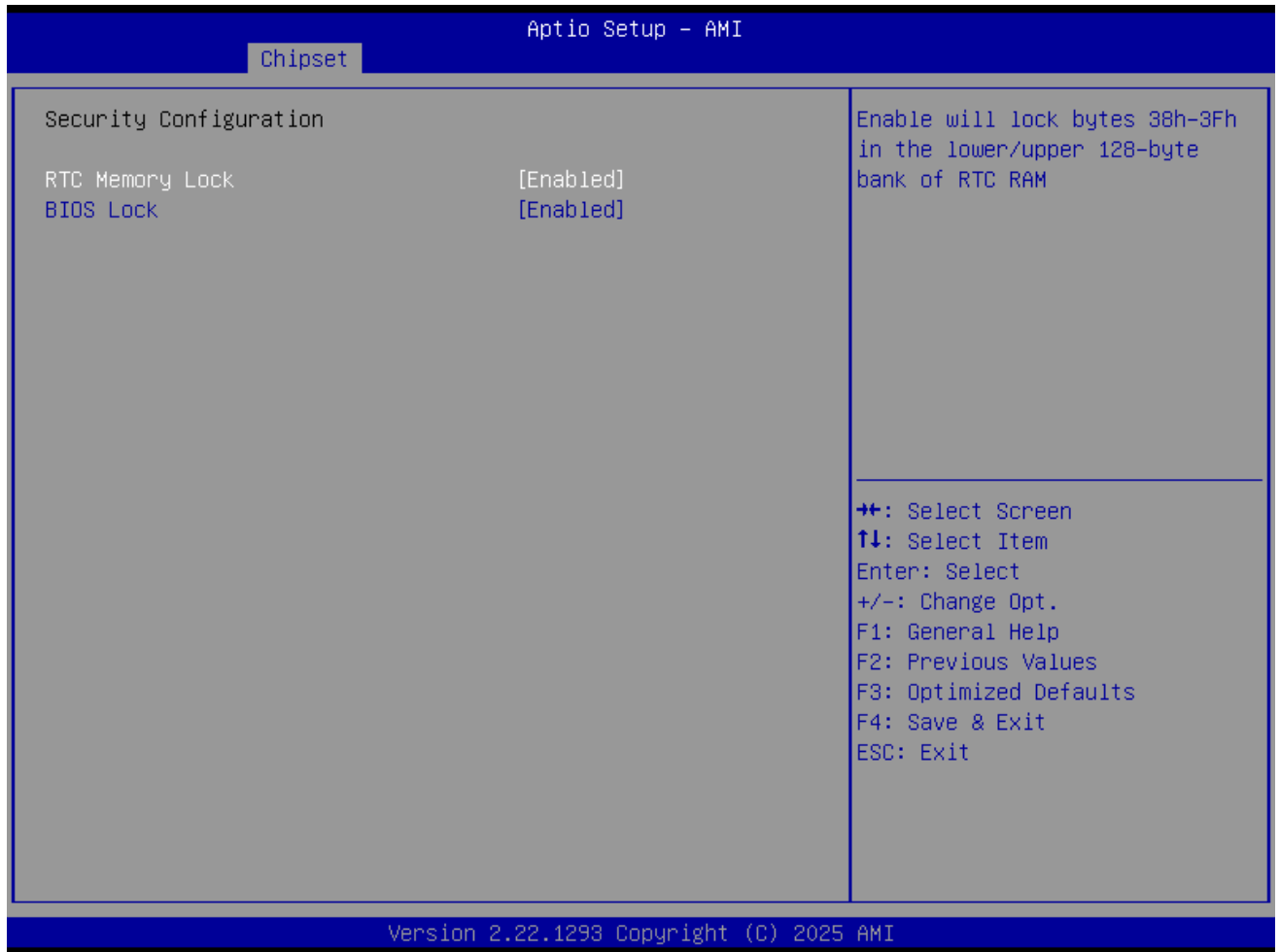
- **USB Configuration**
USB Configuration Settings.
- **Security Configuration**
Security Configuration Settings.
- **HD Audio Configuration**
HD Audio Subsystem Configuration Settings.
- **Onboard LAN Controller**
Enable or disable Onboard LAN Controller.
- **LAN1 PXE OpROM**
Enable or disable LAN1 PXE OpROM.
- **PCIE Wake**
Enable or disable PCIE Wake.
- **Restore AC Power Loss**
Specify what state to go to when power is re-applied after a power failure (G3 state).

3.3.3.1 Chipset → PCH-IO Configuration → USB Configuration



- **USB Port Disable Override**
Enable or disable USB Port.

3.3.3.2 Chipset → PCH-IO Configuration → Security Configuration



- **RTC Memory Lock**
To enable/disable RTC Memory Lock.
- **BIOS Lock**
To enable/disable BIOS Lock.

3.3.3.4 Chipset → PCH-IO Configuration → HD Audio Configuration



- **HD Audio**
Enable or disable HD Audio.

3.4 Security

Select Security Setup from the DS-380 Setup main BIOS setup menu. All Security Setup options, such as password protection and virus protection are described in this section.



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

- **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.
- **Restore Factory Keys**
To Enable or disable Factory Key.
- **Reset to Setup Mode**
To reset to Setup Mode.
- **Expert Key Management**
To Enable or disable Expert Key Management.

TCG Storage Security Password Description :

Allows access to Set, Modify and Clear TCG Storage device Admin and User Password.

Admin Password must be installed at first to enable TCG Storage Security. User Password can be created only when Admin password is installed.

TCG Storage device can be locked and unlocked using Admin password alone, User password acts as optional credential to unlock the Device in POST.

Set Admin/User Password options are greyed out when System enters Setup after Boot fail as Device security is frozen. Power-off, Power-on and press hot key to enter into setup.

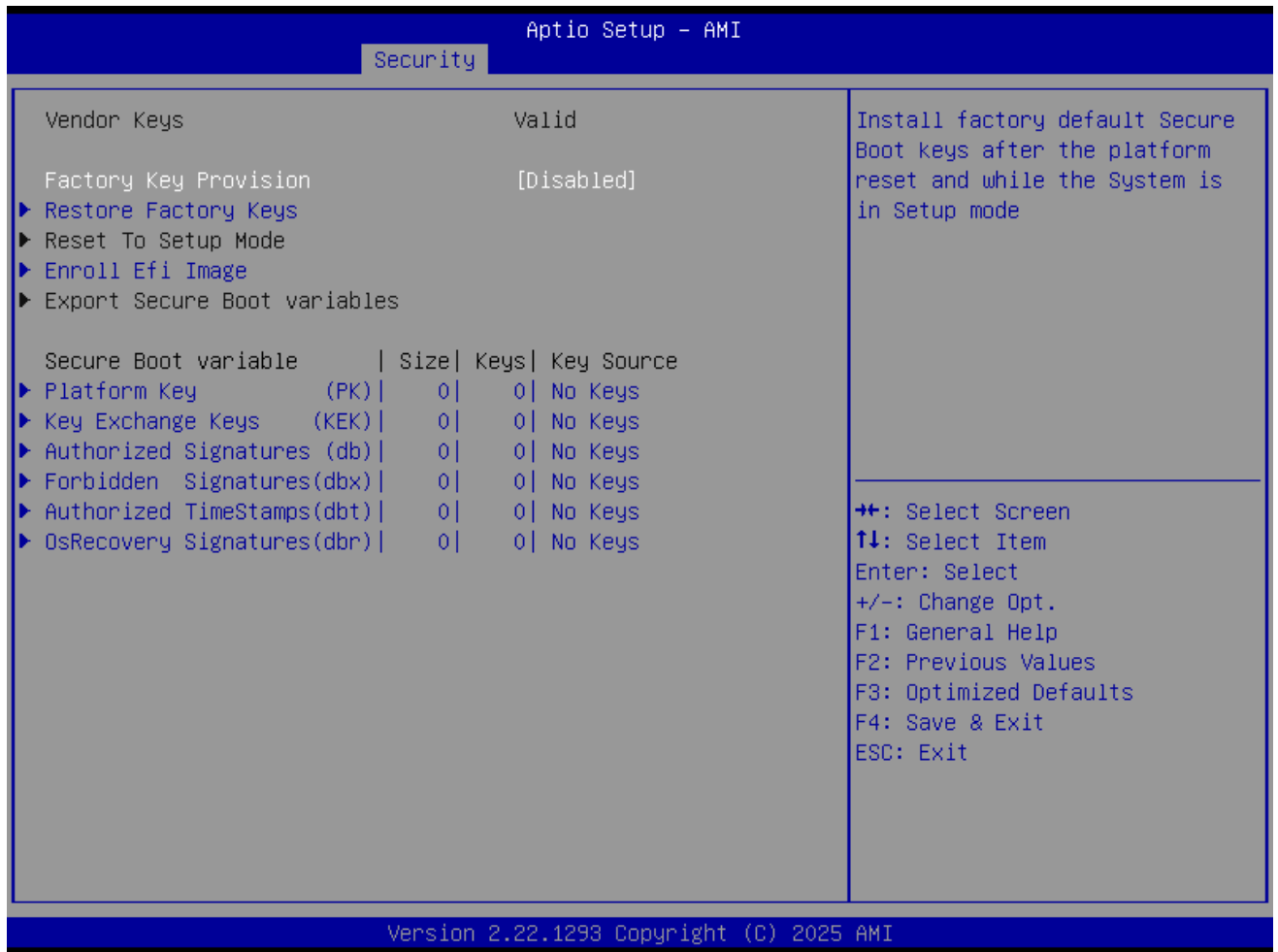
PASSWORD CONFIGURATION:

Security Subsystem Class	:	Opal
Security Supported	:	Yes
Security Enabled	:	No
Security Locked	:	No
Security Frozen	:	No
User Pwd Status	:	NOT INSTALLED
Admin Pwd Status	:	NOT INSTALLED

Set Admin Password

⇐⇐: Select Screen
 ⇑⇓: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F3: Optimized Defaults
 F4: Save & Exit
 ESC: Exit

3.4.2 Security → Expert Key Management



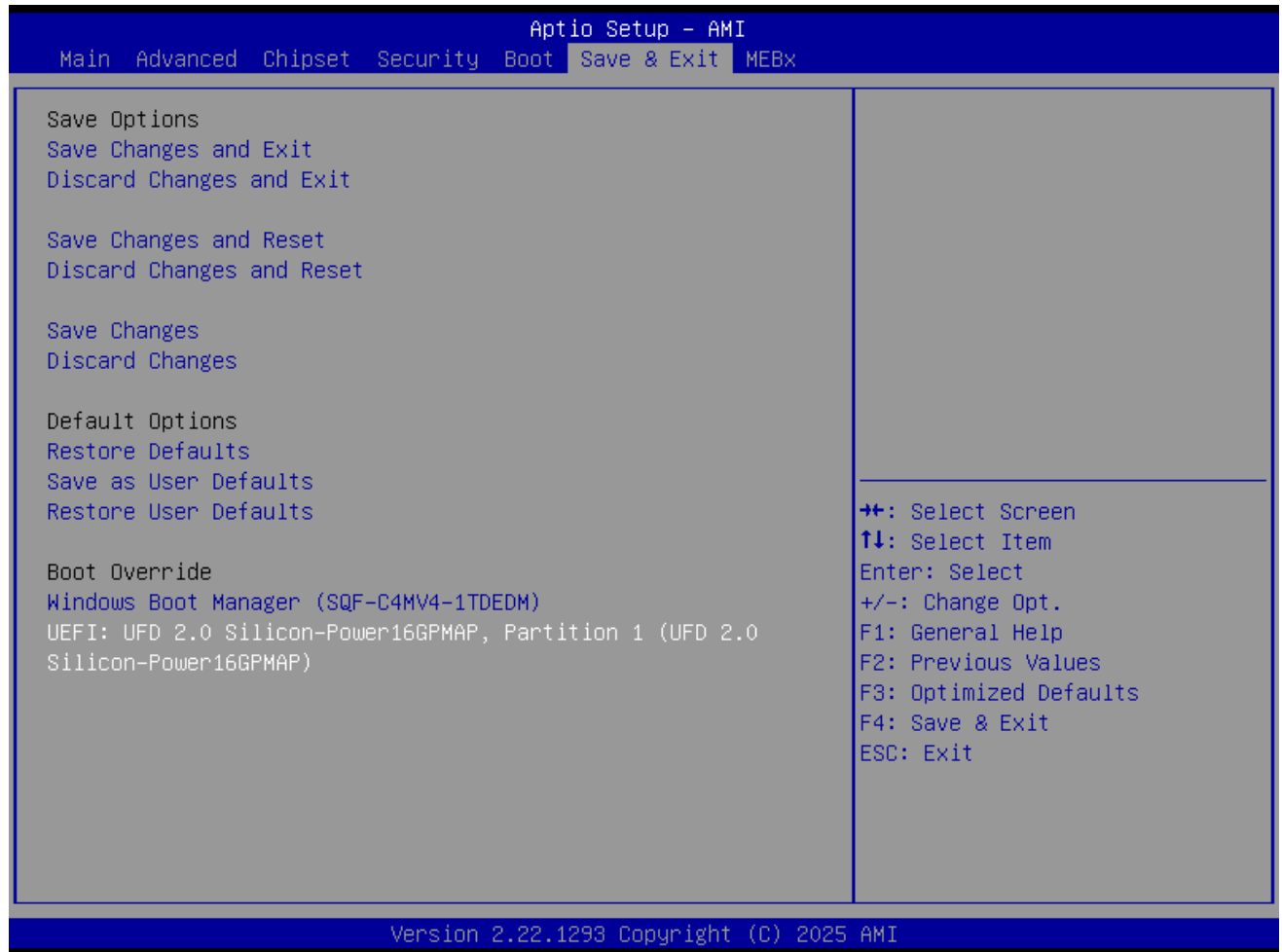
- **Factory Key Provision**
Enable or disable Factory Key Provision

3.5 Boot



- **Setup Prompt Timeout**
Number of seconds that the firmware will wait before initiating the original default boot selection. A value of 0 indicates that the default boot selection is to be initiated immediately on boot. A value of 65535(0xFFFF) indicates that firmware will wait for user input before booting. This means the default boot selection is not automatically started by the firmware.
- **Bootup NumLock State**
Select the keyboard NumLock state.
- **Quiet Boot**
Enable/Disable Quiet Boot option.
- **Boot Option #1**
Sets the system boot order

3.6 Save & Exit



- **Changes and Exit**
Exit system setup after saving the changes.
- **Discard Changes and Exit**
Exit system setup without saving any changes.
- **Save Changes and Reset**
Reset the system after saving the changes.
- **Discard Changes and Reset**
Reset system setup without saving any changes.
- **Save Changes**
Save Changes done so far to any of the setup options.
- **Discard Changes**
Discard Changes done so far to any of the setup options.
- **Restore Defaults**
Restore/Load Default values for all the setup options.
- **Save as User Defaults**
Save the changes done so far as User Defaults.
- **Restore User Defaults**
Restore the User Defaults to all the setup options.
- **Boot Override**
Boot device select can override your boot priority

The Advantech logo consists of the word "ADVANTECH" in a bold, white, sans-serif font, centered within a dark blue rectangular background.

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