# CPT400-RS

*Edge AI GPU Computer*


## User's Manual

Revision Date: Jun. 25. 2024

# Safety Information

## Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area.
- If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your local distributor.

## Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter any technical problems with the product, contact your local distributor

## Statement


- All product specifications are subject to change without prior notice

## Revision History

| Revision | Date (yyyy/mm/dd) | Changes |
|---|---|---|
| V1.0 | 2024/06/25 | First release |

## Packing List

| Item | Description | Q'ty |
|---|---|---|
| 1 | CPT400-RS system | 1 |
| 2 | Driver CD | 1 |
| 3 | Wall Mount Brackets | 1 |
| 4 | 2 pin Terminal Block Male Connector | 1 |
| 5 | 4 pin Terminal Block Power Connector | 2 |
| 6 | GPU Power Cable kit | 1 |

**If any of the above items is damaged or missing, please contact your local distributor.**

# Table Content

# Chapter 1: Product Introduction

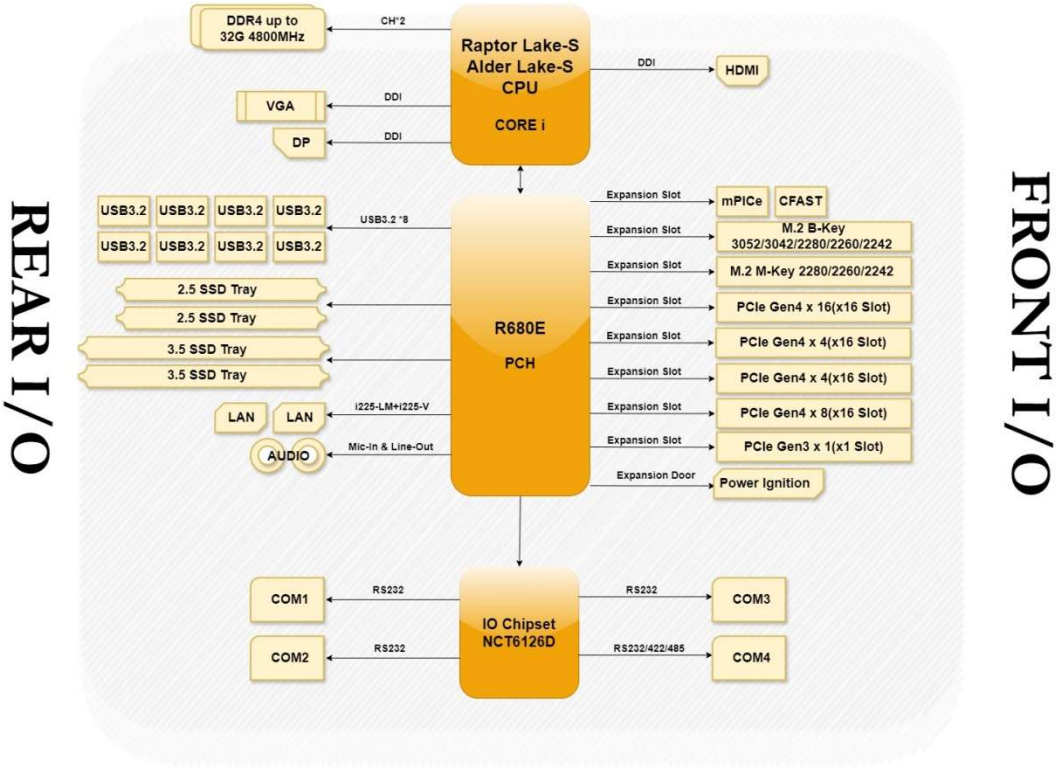
## 1.1 Key Features

### System

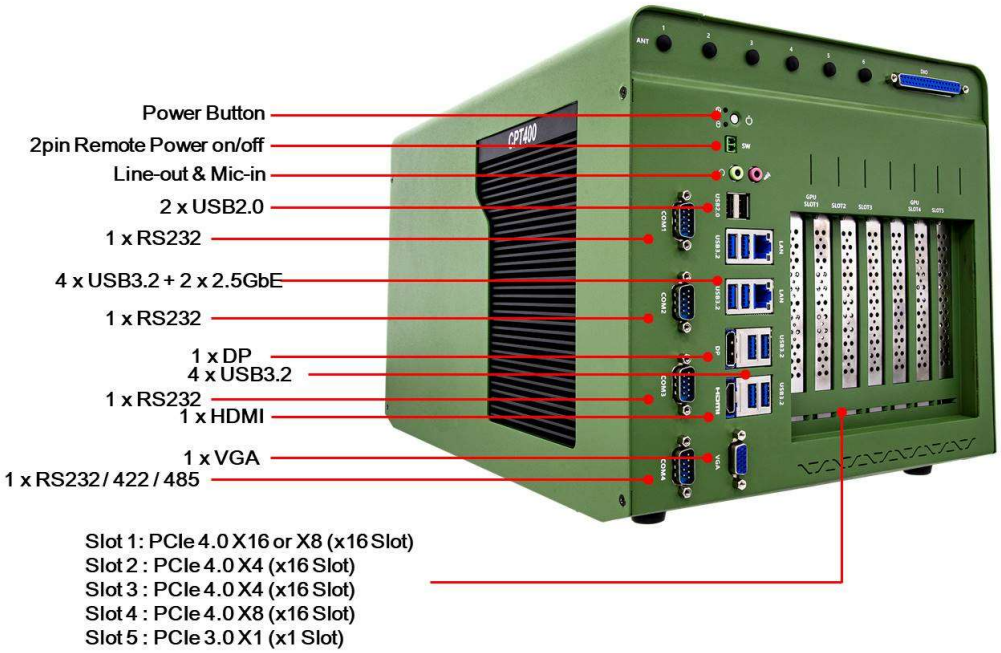
| | |
|---|---|
| CPU | 13th/12th Gen Intel® Raptor Lake-S/Alder Lake-S Core i9/i7/i5/i3/Celeron/Pentium (Up to 125W) |
| Chipset | Intel® R680E |
| Memory type | DDR5 4800MHz, 2 x 262-pin SO-DIMM, Max. 64GB(Non-ECC/ECC) |
| Storage Device | 2 x 2.5" SATAIII HDD / SSD SWAP tray |
| Graphics | Intel®UHD Graphics |
| Display | 1 x VGA, 1 x DisplayPort 1.4, 1 x HDMI 2.0b |
| Storage Slot | 1 x mSATA<br>1 x M.2 B Key 2280/2260/2242 Slot<br>2 x Hot Swappable 2.5" HDD Tray (support 7-9.5mm height)<br>2 x Hot Swappable 3.5" HDD Tray<br>1 x CFast slot / 1 x M.2 M Key 2280/2262/2242 SSD slot *4 x SATA, 2 x M.2 SATA, and 1 x mSATA, all these 7 SATA ports can be configured in SATA RAID 0/1/5/10. |
| Ethernet | 1 x Intel® I225-LM 2.5GbE LAN + 1 x Intel® Ethernet I225-V 2.5GbE LAN |
| Audio | Realtek® Audio ALC888S |
| I/O Chipset | Nuvoton NCT6126D |
| TPM | TPM Header |
| Expansion Slot | 1 x M.2 3052 / 3042 / 2242 / 2260 / 2280 B key (USB3.0 , SATAIII, PCIeX1) w/ SIM slot<br>1 x M.2 2230/ 2242 / 2260 / 2280 M key (PCIeX4 NVME, SATAIII)<br>1 x M.2 2230 E key (CNVi , PCIeX1, USB 2.0)<br>1 x Mini PCIe Full size (USB2.0 / SATAIII / PCIeX1)<br>1 x Mini PCIe Full size (USB2.0 / PCIeX1)<br>#1: 1 x PCIe X16 (Gen4) or PCIe X8 (Gen4)<br>#2: 1 x PCIe X4 in PCIe X16 physical connector (Gen4)<br>#3: 1 x PCIe X4 in PCIe X16 physical connector (Gen4)<br>#4: 1 x PCIe X8 in PCIe X16 physical connector (Gen4 x8 = Gen3 x16 Bandwidth)<br>#5: 1 x PCIe X1 in open ended connector (Gen3) |
| **Front I/O** | |
| Display | 1 x HDMI 2.0b<br>1 X DP1.4<br>1X VGA |
| Terminal Block | 1 x 2-pin Terminal Block Remote Power on / off |

| | |
|---|---|
| COM | 3 X RS232 + 1 X RS232/ 422/ 485 |
| SMA | 6 x SMA hole with rubber cap |
| DIO | 1 x DB37 connector for 32 bit DIO |
| AUDIO | 1 X Mic-in / 1 X Line-out |
| USB | 4 X USB3.2 Gen2<br>4 X USB3.2 Gen1 |
| **REAR I/O** | |
| SIM | 2 x SIM Slot to M.2 B-Key<br>2 x SIM Slot to mPCIe Slot |
| CFast | 1 x CFast |
| GPIO | 8bit(4in/4out) |
| Power Input | 2 x 4-pin Terminal Block |
| **REAR I/O** | |
| Internal Speaker | 1 x Buzzer |
| **Mechanical & Environment** | |
| Dimension<br>(W x H x D) | 264 x 256 x 415 mm |
| Thermal Design | FAN |
| Mounting | Wallmount |
| Material | Top cover: Aluminum Alloy, Bezel and chassis: Stee |
| Operating Temp. | -40°C ~ 70°C (w/ 35W CPU, w/o GPU card)<br>-40°C ~ 60°C (w/ 65W CPU, w/o GPU card)<br>-40°C ~ 50°C (w/ 80W CPU, w/o GPU card)<br>-40°C ~ 40°C (w/ 125W CPU, w/o GPU card)<br>*Max OT limit -10°C w/ dual GPU card / with 0.7m/s Air Flow and Wide Temperature Memory/Storage<br>*Please consult with your sales contact window about the Operating Temperature of GPU Card Configurations |
| Storage Temp. | -40 to +85°C |
| Relative Humidity | 10% to 95%, non-condensing |
| CE/FCC | CE/FCC Compliance |
| OS Support | Windows 10 / 11 , Linux by request |

## 1.2 Block Diagram




## 1.3 Front I/O Placement



## 1.4 Rear I/O Placement


## 1.5 CPU List

| CPU Name | Cache | E Core Boost Clock | P Core Boost Clock | Boost Clock | Cores | Therads | TDP |
|---|---|---|---|---|---|---|---|
| 13th Generation Intel® Raptor Lake-S | | | | | | | |
| Intel® Core™ i9-13900 | 36M | 1.50GHz | 2.00GHz | 5.60GHz | 8+16 | 32 | 65W |
| Intel® Core™ i9-13900E | 36M | 1.30GHz | 1.80GHz | 5.20GHz | 8+16 | 32 | 65W |
| Intel® Core™ i9-13900TE | 36M | 800MHz | 1.00GHz | 5.00GHz | 8+16 | 32 | 35W |
| Intel® Core™ i7-13700 | 30M | 1.50GHz | 2.00GHz | 5.20GHz | 8+8 | 32 | 65W |
| Intel® Core™ i7-13700E | 30M | 1.30GHz | 1.90GHz | 5.10GHz | 8+8 | 32 | 65W |
| Intel® Core™ i7-13700TE | 30M | 800MHz | 1.10GHz | 4.80GHz | 8+8 | 32 | 35W |
| 12th Generation Intel® Alder Lake-S | | | | | | | |
| Intel® Core™ i9-12900 | 30M | 1.80GHz | 2.40GHz | 5.10GHz | 8+8 | 24 | 65W |
| Intel® Core™ i9-12900E | 30M | 1.70GHz | 2.30GHz | 5.00GHz | 8+8 | 24 | 65W |
| Intel® Core™ i9-12900TE | 30M | 1.00GHz | 1.10GHz | 4.80GHz | 8+8 | 24 | 35W |
| Intel® Core™ i7-12700 | 25M | 1.60GHz | 2.10GHz | 4.90GHz | 4+8 | 20 | 65W |
| Intel® Core™ i7-12700E | 25M | 1.60GHz | 2.10GHz | 4.80GHz | 4+8 | 20 | 65W |
| Intel® Core™ i7-12700TE | 25M | 1.00GHz | 1.40GHz | 4.60GHz | 4+8 | 20 | 35W |

## 1.6 GPU List

| GPU Name | Display | Memory | CUDA | TDP |
|---|---|---|---|---|
| NVIDIA A40 48GB<br>*with optional fan duct kit | 3 x DP1.4a | 48GB GDDR6 | 10,752 | 300W |
| NVIDIA RTX 6000 Ada Gen. | 4 x DP1.4a | 24GB GDDR6 | 18,176 | 300W |
| NVIDIA RTX A6000 48GB | 4 x DP1.4a | 48GB GDDR6 | 10,752 | 300W |
| NVIDIA RTX A5500 24GB | 4 x DP1.4a | 24GB GDDR6 | 10,240 | 230W |
| NVIDIA RTX A5000 24GB | 4 x DP1.4a | 24GB GDDR6 | 8,192 | 230W |
| NVIDIA RTX A4500 20GB | 4 x DP1.4a | 20GB GDDR6 | 7,168 | 200W |
| NVIDIA RTX 4000 SFF Ada Gen. 20GB | 4 x mDP1.4a | 20GB GDDR6 | 6,144 | 70W |
| NVIDIA RTX A4000 16GB | 4 x DP1.4a | 16GB GDDR6 | 6,144 | 140W |
| NVIDIA RTX A2000 12GB | 4 x mDP1.4a | 12GB GDDR6 | 3,328 | 70W |
| NVIDIA Quadro T1000 8GB | 4 x mDP1.4a | 8GB GDDR6 | 896 | 50W |
| NVIDIA Quadro T1000 4GB | 4 x mDP1.4a | 4GB GDDR6 | 896 | 50W |
| NVIDIA Quadro T400 4GB | 3 x mDP1.4a | 4GB GDDR6 | 384 | 30W |
| Leadtek RTX 4090 AI Blower 24GB | 1 x HDMI2.1<br>3 x DP1.4a | 24GB GDDR6 | 16,384 | 450W |
| Leadtek RTX 4080 AI Blower 16GB | 1 x HDMI2.1<br>3 x DP1.4a | 16GB GDDR6 | 9,728 | 320W |
| Leadtek RTX 4070 AI BLOWER 12GB | 1 x HDMI2.1<br>3 x DP1.4a | 12GB GDDR6 | 5,888 | 200W |
| Leadtek RTX 3060 Classic 12GB<br>(LHR)ver.B | 1 x HDMI2.1<br>3 x DP1.4a | 12GB GDDR6 | 3,584 | 170W |

# Chapter 2: Connectors Pin Define

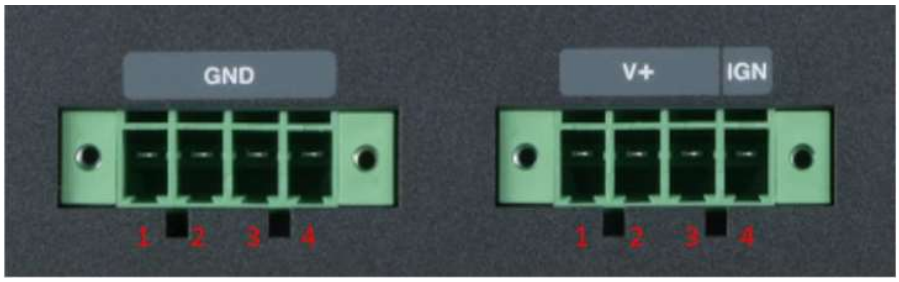
## 2.1 External Connector Pin Definition

DC input power connector at DC_P1 & DC_P2 location

V_IN_A input PWR range from +12V~48V

12V max PWR = 600W

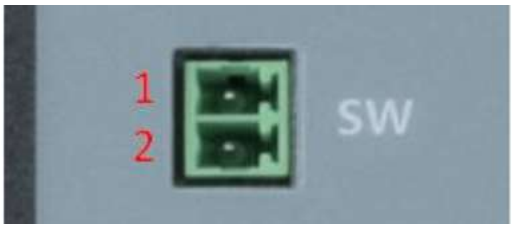
48V max PWR = 1500W




| DC_P1 | |
|---|---|
| Pin | Signal Name |
| 1 | V_IN_A |
| 2 | V_IN_A |
| 3 | V_IN_A |
| 4 | CAR_IGN |

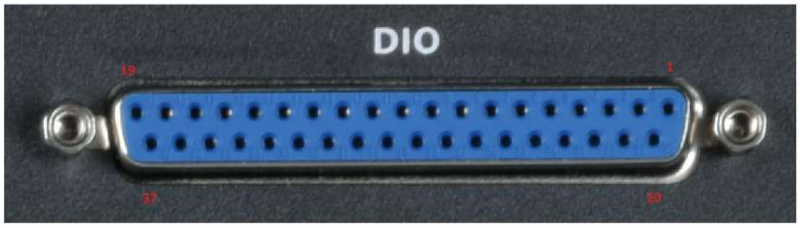
| DC_P2 | |
|---|---|
| Pin | Signal Name |
| 1 | GND |
| 2 | GND |
| 3 | GND |
| 4 | GND |

2-pin Terminal Block for Remote Power ON/OFF



| Pin | Signal |
|---|---|
| 1 | EXT_PWRBT_ON/OFF |
| 2 | GND |

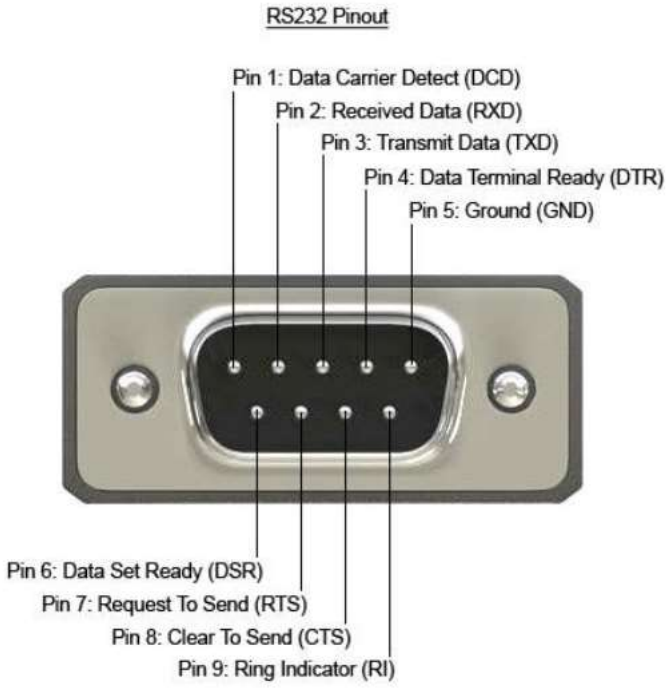
32-bit GPIO in DB37




| Pin | DB37 | Default GPIO Type |
|---|---|---|
| 1 | VCC | - |
| 2 | VCC | - |
| 3 | USBM_GPIOA0 | Output Low |
| 4 | USBM_GPIOA1 | Output Low |
| 5 | USBM_GPIOA2 | Output Low |
| 6 | USBM_GPIOA3 | Output Low |
| 7 | USBM_GPIOA5 | Output Low |
| 8 | USBM_GPIOA6 | Output Low |
| 9 | USBM_GPIOA7 | Output Low |
| 10 | USBM_GPIOA8 | Output Low |
| 11 | USBM_GPIOB0 | Output Low |
| 12 | USBM_GPIOB1 | Output Low |
| 13 | USBM_GPIOB2 | Output Low |
| 14 | USBM_GPIOB3 | Output Low |
| 15 | USBM_GPIOB4 | Output Low |
| 16 | USBM_GPIOB5 | Output Low |
| 17 | USBM_GPIOB6 | Output Low |
| 18 | USBM_GPIOB7 | Output Low |
| 19 | GND | - |
| 20 | GND | - |
| 21 | USBM_GPIOC0 | Input |
| 22 | USBM_GPIOC1 | Input |
| 23 | USBM_GPIOC2 | Input |
| 24 | USBM_GPIOC3 | Input |
| 25 | USBM_GPIOC4 | Multi Function for UART0_TX |

| Pin | DB37 | Default GPIO Type |
|---|---|---|
| 26 | USBM_GPIOC5 | Multi Function for UART0_RX |
| 27 | USBM_GPIOC6 | Input |
| 28 | USBM_GPIOC7 | Output low for Power LED |
| 29 | USBM_GPIOD0 | Input |
| 30 | USBM_GPIOD1 | Input |
| 31 | USBM_GPIOD2 | Input |
| 32 | USBM_GPIOD3 | Input |
| 33 | USBM_GPIOD4 | Input |
| 34 | USBM_GPIOD5 | Input |
| 35 | USBM_GPIOD6 | Input |
| 36 | USBM_GPIOD7 | Input |
| 37 | GND | - |

COM#1 / COM#2 / COM#3 / COM#4




| Pin | PWR RS232 | RS232 | RS422 | RS485 |
|---|---|---|---|---|
| 1 | DCD | DCD | TX- [TX(B)] | RS485 D-(B) |
| 2 | RX | RX | TX+ [TX(A)] | RS485 D+(A) |
| 3 | RTX | RTX | RX+ [RX(A)] | NC |
| 4 | DTR | DTR | RX- [RX(B)] | NC |
| 5 | GND | GND | GND | GND |

| Pin | PWR RS232 | RS232 | RS422 | RS485 |
|---|---|---|---|---|
| 6 | DSR | DSR | NC | NC |
| 7 | RTS | RTS | NC | NC |
| 8 | CTS | CTS | NC | NC |
| 9 | 5V/12V | RI | NC | NC |

# Chapter 3: SYSTEM SETUP

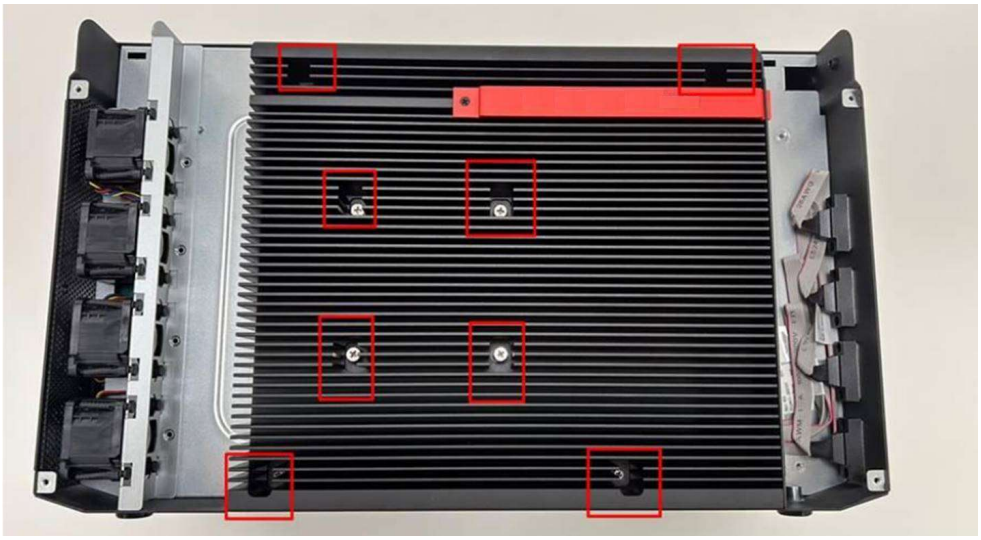
This chapter provides information about how to set up the CPT400-RS GPU Computing System hardware installation.

## 3.1 CPU, Memory, and M.2 M Key Module Installation

Please follow the instructions to install CPU & memory as below.

- Loosen 7 screws to release heatsink front cover


- Loosen 8 screws for heatsink



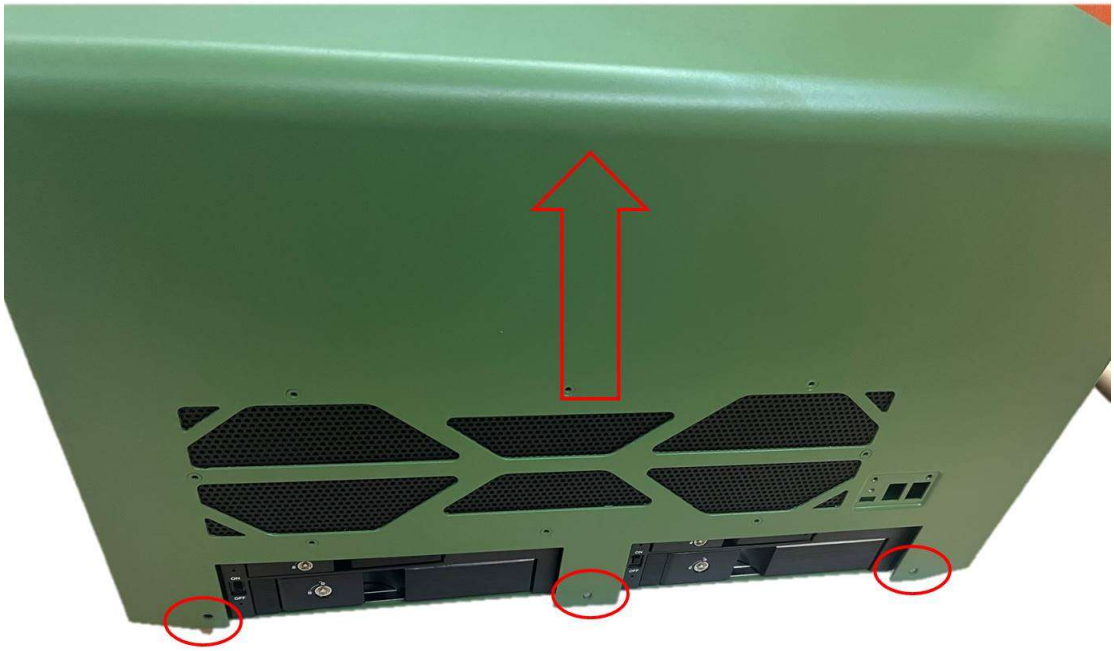
- Remove black mylar and CPU socket cover, and follow CPU direction to install CPU.

- Assemble SO-DIMM DDR5 memory to slots

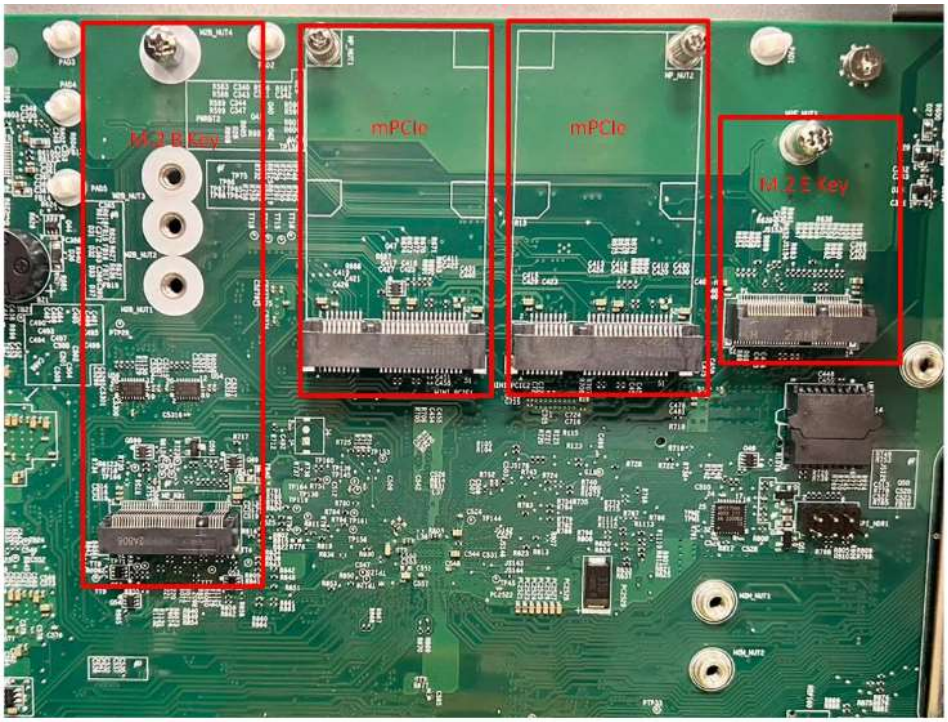
- Assemble M.2 M key/B-M key module to M.2 M key slot


## 3.2 M.2 B Key/E Key/mPCIe Module Installation

- Loosen 7 screws and move chassis cover as below direction

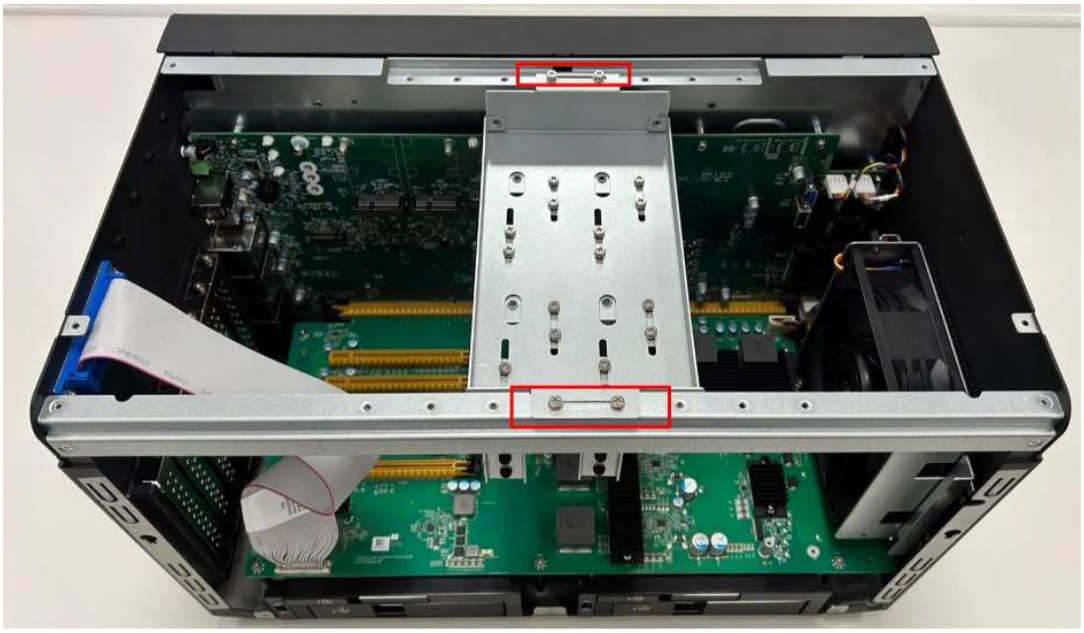


- Assemble M.2 B key/E key/mPCIe module as below location on the bottom of main board

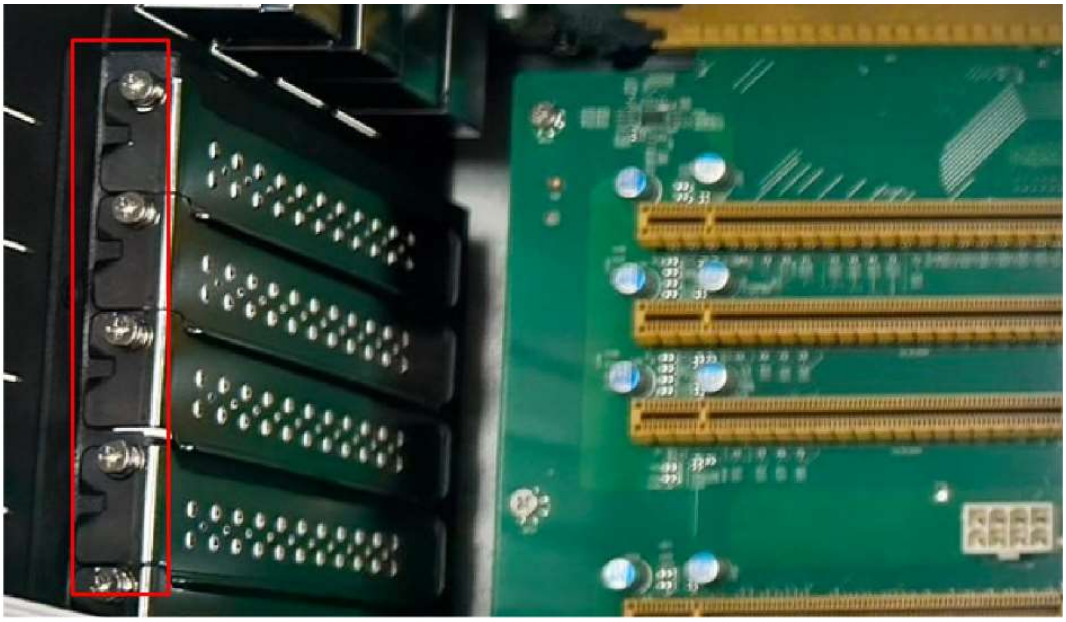


## 3.3 PCIe Card Installation

- Loosen 4 screws to release PCIe card holder bracket



- Loosen 1 screw for PCIe door plate which will be used for expansion card and assemble with PCIe card bracket. Then adjust PCIe card holder to fix the card to resist S&V conditions



# Chapter 4: AMI BIOS UTILITY

This chapter provides users with detailed descriptions on how to set up a basic system configuration through the AMI BIOS setup utility.

## 4.1 Starting

To enter the setup screens, perform the following steps:

- Turn on the computer and press the <Del> key immediately.
- After the <Del> key is pressed, the main BIOS setup menu displays. Other setup screens can be accessed from the main BIOS setup menu, such as the Chipset and Power menus.

## 4.2 Navigation Keys

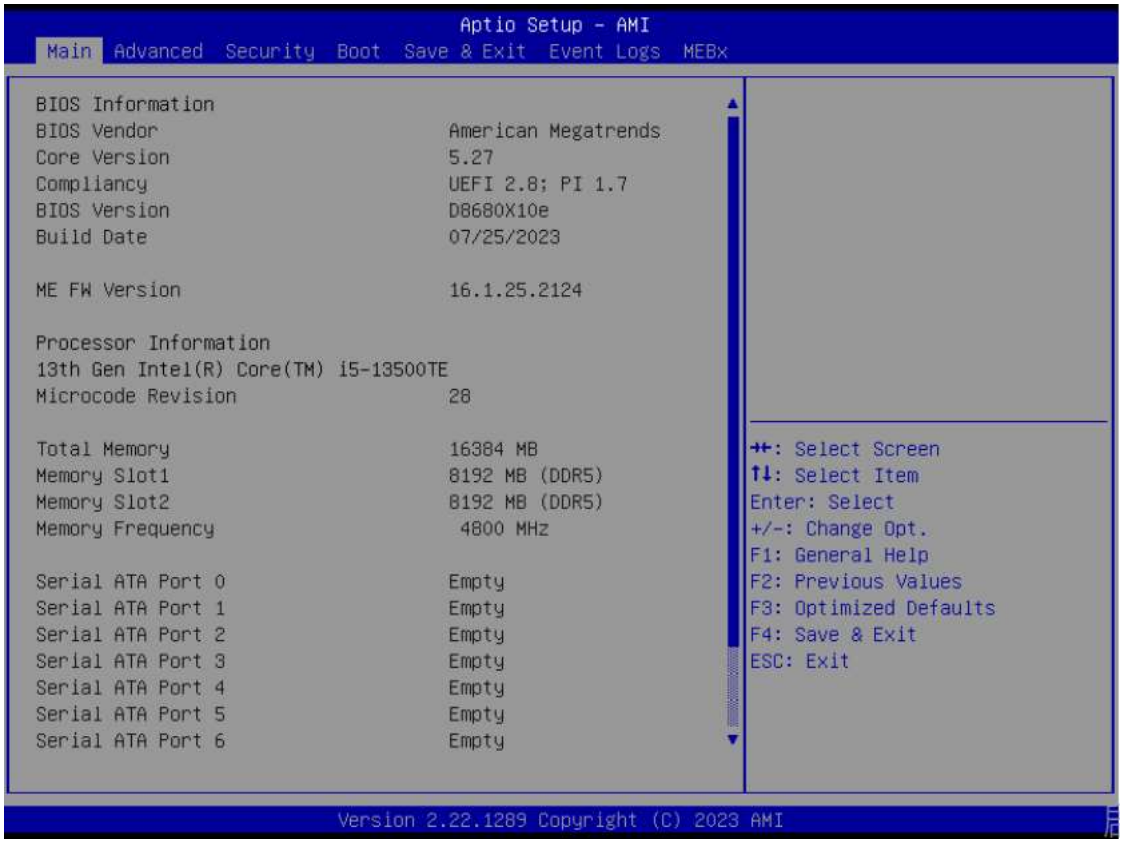
The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process.
Some of the hot keys are <F1>, <F10>, <Enter>, <ESC>, and <Arrow> keys.

Some of the navigation keys may differ from one screen to another.

| | |
|---|---|
| Left/Right | The Left and Right <Arrow> keys moves the cursor to select a menu. |
| Up/Down | The Up and Down <Arrow> keys moves the cursor to select a setup screen or sub-screen. |
| +− Plus/Minus | The Plus and Minus <Arrow> keys changes the field value of a particular setup setting. |
| Tab | The <Tab> key selects the setup fields. |
| F1 | The <F1> key displays the General Help screen. |
| F10 | The <F10> key saves any changes made and exits the BIOS setup utility. |
| Esc | The <Esc> key discards any changes made and exits the BIOS setup utility. |
| Enter | The <Enter> key displays a sub-screen or changes a selected or highlighted option in each menu. |

## 4.3 Main Page

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.




| Field Name | BIOS Vender |
|---|---|
| Default Value | American Megatrends |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | Core Version |
|---|---|
| Default Value | 5.24 |
| Comment | This field is not selectable. There is no help text associated with it |

| Field Name | Compliancy |
|---|---|
| Default Value | UEFI 2.8 ; PI 1.7 |
| Comment | This field is not selectable. There is no help text associated with it |

| Field Name | BIOS Version |
|---|---|
| Default Value | Display the version of the BIOS |
| Comment | This field is not selectable. There is no help text associated with it |
| **Field Name** | **BIOS Version** |

| | |
|---|---|
| Default Value | Display build date of the BIOS |
| Comment | This field is not selectable. There is no help text associated with it. |

| **Field Name** | **ME FW Version** |
|---|---|
| Default Value | ME Firmware Version. |
| Comment | This field is not selectable. There is no help text associated with it. |

| **Field Name** | **Processor Information** |
|---|---|
| Default Value | Display the installed CPU brand. |
| Comment | This field is not selectable. There is no help text associated with it. |

| **Field Name** | **Microcode Version** |
|---|---|
| Default Value | Display the CPU microcode revision. |
| Comment | This field is not selectable. There is no help text associated with it. |

| **Field Name** | **Total Memory** |
|---|---|
| Default Value | Display the installed memory size. |
| Comment | This field is not selectable. There is no help text associated with it. |

| **Field Name** | **Memory Slot1** |
|---|---|
| Default Value | Display the installed memory size of slot1. |
| Comment | This field is not selectable. There is no help text associated with it |

| **Field Name** | **Memory Slot2** |
|---|---|
| Default Value | Display the installed memory size of slot2. |
| Comment | This field is not selectable. There is no help text associated with it |

| **Field Name** | **Memory Frequency** |
|---|---|
| Default Value | Display the installed memory Frequency |
| Comment | This field is not selectable. There is no help text associated with it. |

| **Field Name** | **Serial ATA Port 1** |
|---|---|
| Value | Display the installed SATA device model/size of port 1. |
| Comment | This field is not selectable. There is no help text associated with it. |

| **Field Name** | **Serial ATA Port 2** |
|---|---|
| Value | Display the installed SATA device model/size of port 2. |

| | |
|---|---|
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | Serial ATA Port 3 |
|---|---|
| Value | Display the installed SATA device model/size of port 3. |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | Serial ATA Port 4 |
|---|---|
| Value | Display the installed SATA device model/size of port 4. |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | Serial ATA Port 5 |
|---|---|
| Value | Display the installed SATA device model/size of port 5. |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | Serial ATA Port 6 |
|---|---|
| Value | Display the installed SATA device model/size of port 6. |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | Serial ATA Port 7 |
|---|---|
| Value | Display the installed SATA device model/size of port 7. |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | System Date |
|---|---|
| Default Value | [Www mm/dd/yyyy] |
| Possible Value | Www : Mon/Tue/Wed/Thu/Fri/Sat/Sun<br>mm : 1-12<br>dd : 1-31<br>yyyy : 1900-9999 |
| Help | Set the Date. Use Tab to switch between Date elements. Default Rangers:<br>Year : 1900-9999<br>Months : 1-12<br>Days : Dependent on month Range of Years may vary. |

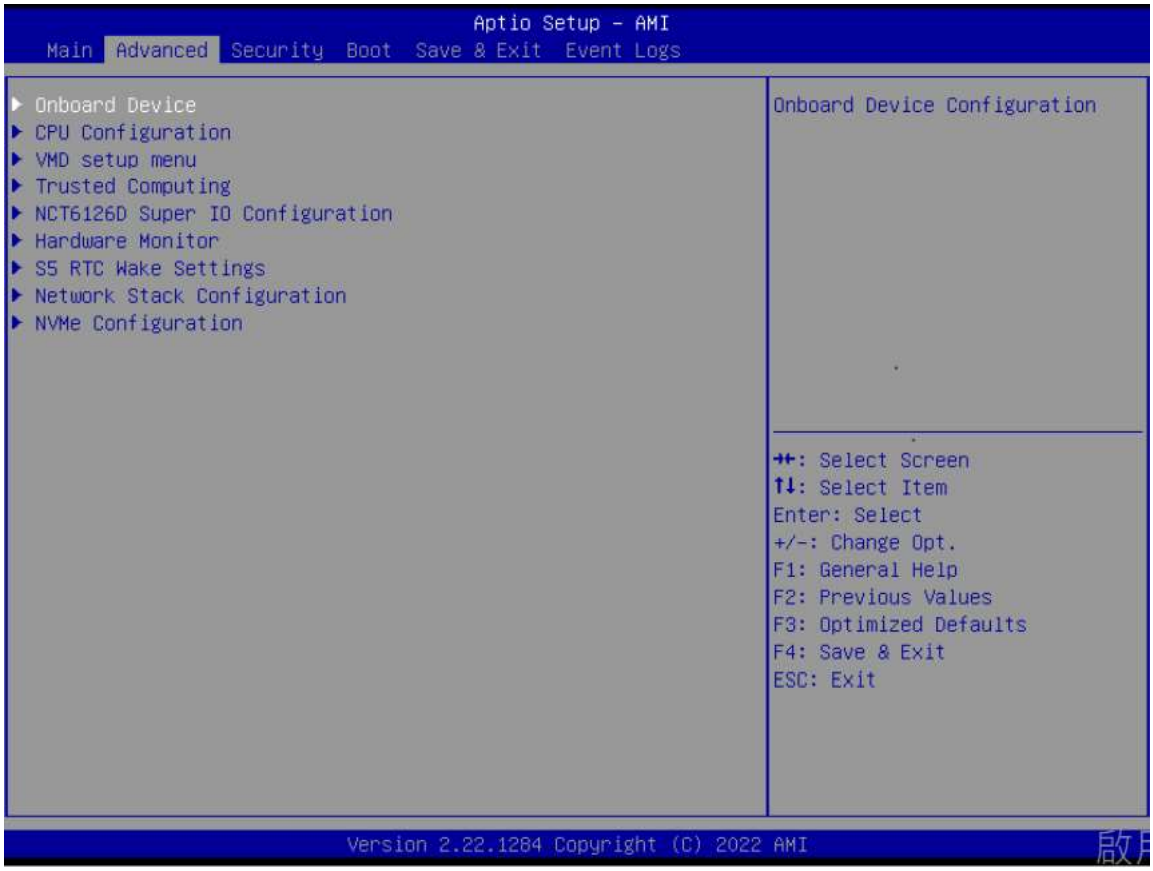
| Field Name | System Time |
|---|---|
| Default Value | [hh :mm :ss] |
| Possible Value | hh : 0-23<br>mm : 0-59 |

| | |
|---|---|
| | ss : 0-59 |
| Help | Set the Time. Use Tab to switch between Time elements. |

## 4.4 Advanced Page

The Advanced Menu allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.

***Setting incorrect field values may cause the system to malfunction.***




| Field Name | Onboard Device |
|---|---|
| Help | Onboard Device Configuration |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| Field Name | CPU Configuration |
|---|---|
| Help | CPU Configuration Parameters. |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| Field Name | VMD setup menu |
|---|---|

| | |
|---|---|
| Help | VMD setup menu |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| **Field Name** | **Trusted Computing** |
|---|---|
| Help | Trusted Computing Settings |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| **Field Name** | **Super IO Configuration** |
|---|---|
| Help | System Super IO Chip Parameters. |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

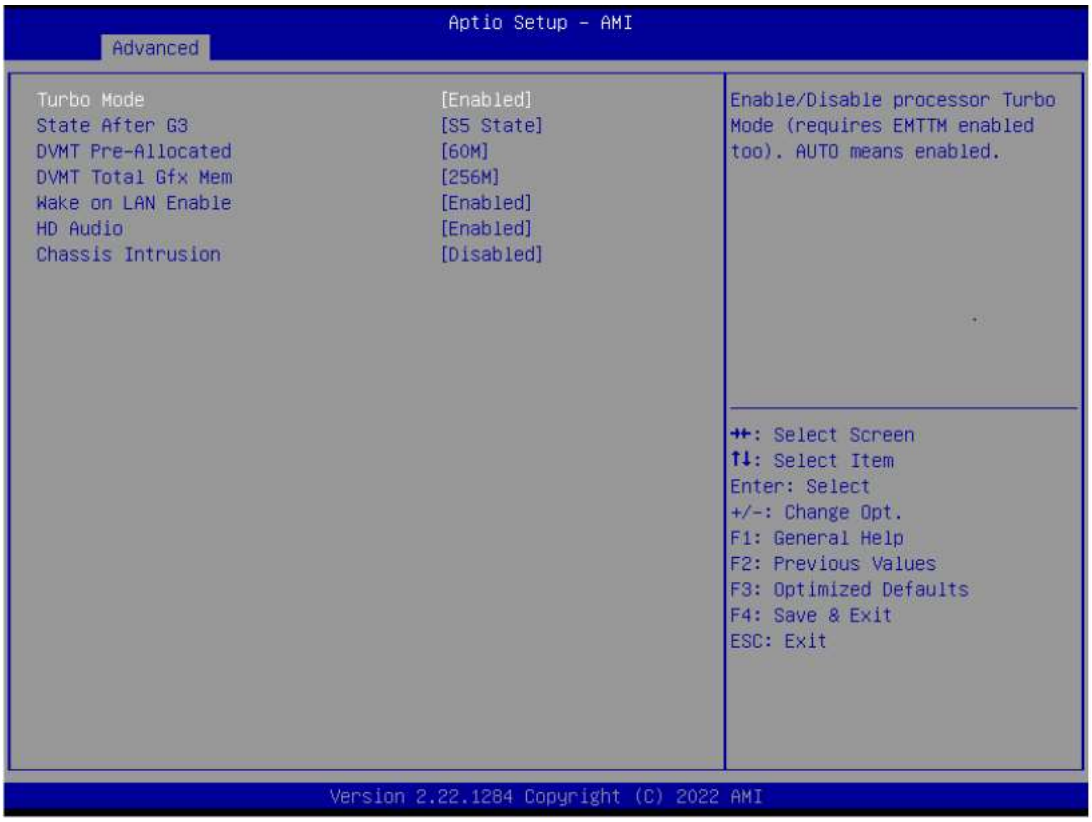
| **Field Name** | **HW Monitor** |
|---|---|
| Help | Monitor hardware status |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| **Field Name** | **S5 RTC Wake Settings** |
|---|---|
| Help | Enable system to wake from S5 using RTC alarm |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| **Field Name** | **Network Stack Configuration** |
|---|---|
| Help | Network Stack Settings. |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| **Field Name** | **NVMe Configuration** |
|---|---|
| Help | NVMe Device Options Settings |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

### 4.4.1 Onboard Device




| Field Name | Turbo Mode |
|---|---|
| Default Value | [256M] |
| Possible Value | 128M<br>256M<br>MAX |
| Help | Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device. |

| Field Name | State After G3 |
|---|---|
| Default Value | [S5 State] |
| Possible Value | S0 State<br>S5 State |
| Help | Specify what state to go to when power is re-applied after a power failure (G3 state). |

| Field Name | DVMT Pre-Allocated |
|---|---|
| Default Value | [60M] |
| Possible Value | 64M |

| | |
|---|---|
| | 32M/F7<br>36M<br>40M<br>44M<br>48M<br>52M<br>56M<br>60M |
| Help | Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device. |

| **Field Name** | **DVT Total Gfx Mem** |
|---|---|
| Default Value | [256M] |
| Possible Value | 128M<br>256M<br>MAX |
| Help | Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device. |

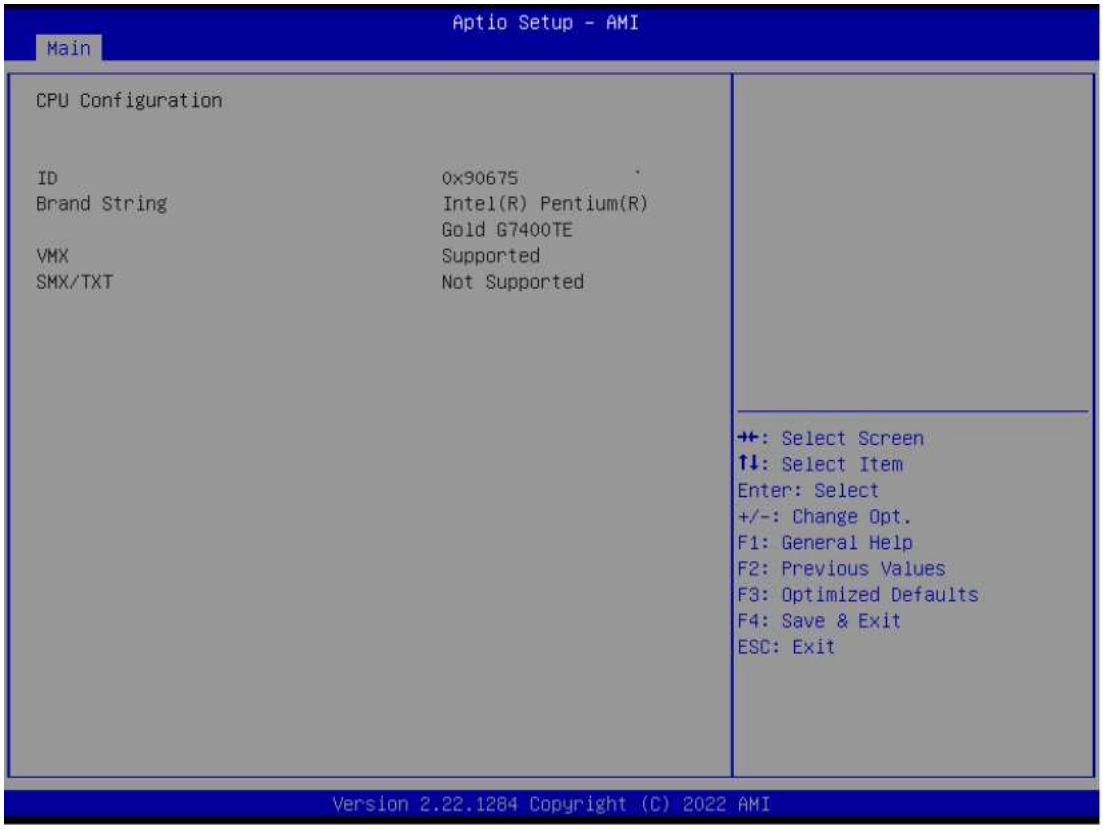
| **Field Name** | **HD Audio** |
|---|---|
| Default Value | [Enabled] |
| Possible Value | Enabled<br>Disabled |
| Help | Control Detection of the HD-Audio device.<br>Disabled = HDA will be unconditionally disabled<br>Enabled = HDA will be unconditionally enabled. |

| **Field Name** | **M2 key BSIM card switch** |
|---|---|
| Default Value | [M2B SIM1] |
| Possible Value | M2B SIM2<br>M2B SIM1 |
| Help | M2 key B SIM card Switch function |

| **Field Name** | **Mini Pcie SIM card swtich** |
|---|---|
| Default Value | [MPE SIM1_ MPE2 SIM2] |
| Possible Value | MPE1 SIM2_ MEP2 SIM1<br>MPE1 SIM1_ MEP2 SIM2 |

| | |
|---|---|
| Help | Mini Pcie SIM card Switch function<br>MPE SIM1_ MPE2 SIM2<br>MP1->MPE SIM1<br>MP2->MPE SIM2<br>MPE SIM2_ MPE2 SIM1<br>MP1->MPE SIM2<br>MP2->MPE SIM1 |

### 4.4.2 CPU Configuration




| Field Name | ID |
|---|---|
| Default Value | Displays CPU Signature |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | Brand String |
|---|---|
| Default Value | Displays the CPU brand string |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | VXM |
|---|---|
| Default Value | L3 Cache Size |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | SMX/TXT |
|---|---|
| Default Value | SMX/TXT Supported or Not |
| Comment | This field is not selectable. There is no help text associated with it. |

### 4.4.3 VMD Setup Menu


| Field Name | VMD Configuration |
|---|---|
| Default Value | VMD Configuration. |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | Enable VMD controller |
|---|---|
| Default Value | [Disabled] |
| Possible Value | Enabled<br>Disabled |
| Help | Enable/Disable to VMD controller. |

### 4.4.4 Trusted Computing

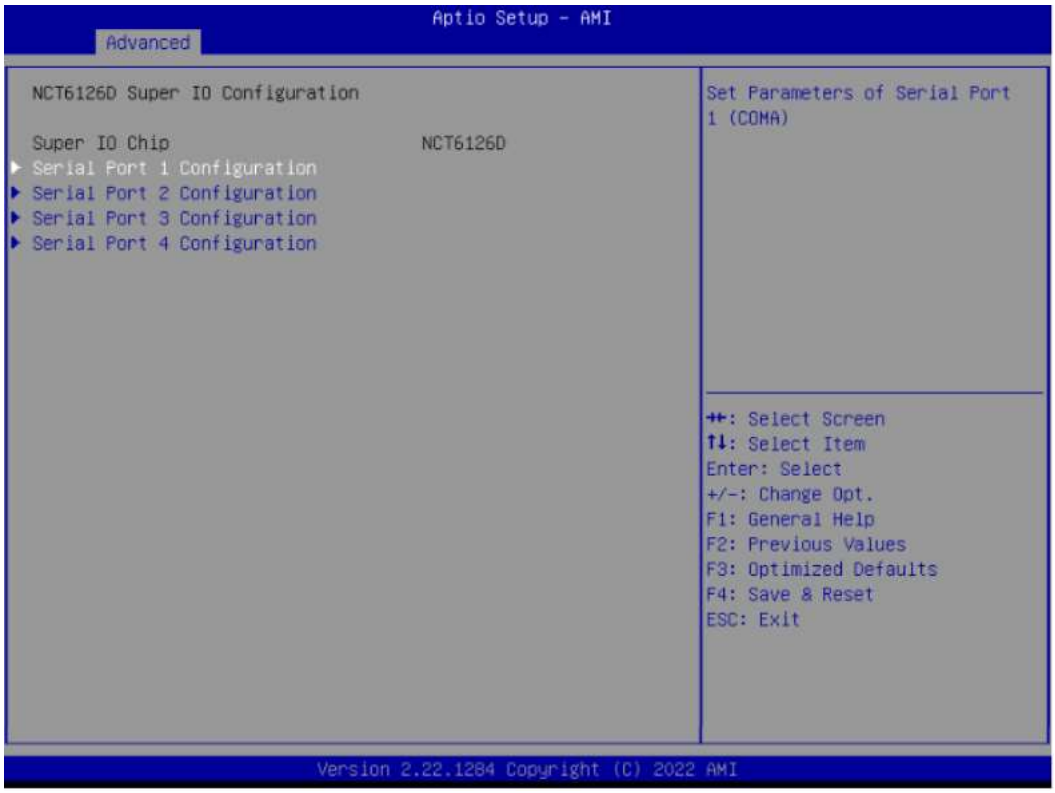

| Field Name | FW Version |
|---|---|
| Default Value | TPM module version |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | Vender |
|---|---|
| Default Value | TPM module version |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | Security Device Support |
|---|---|
| Default Value | [Enable] |
| Possible Value | Enable<br>Disable |
| Help | Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available. |

| Field Name | Pending operation |
|---|---|
| Default Value | [None] |
| Possible Value | None<br>TPM Clear |
| Help | Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device. |

### 4.4.5 Super IO Configuration



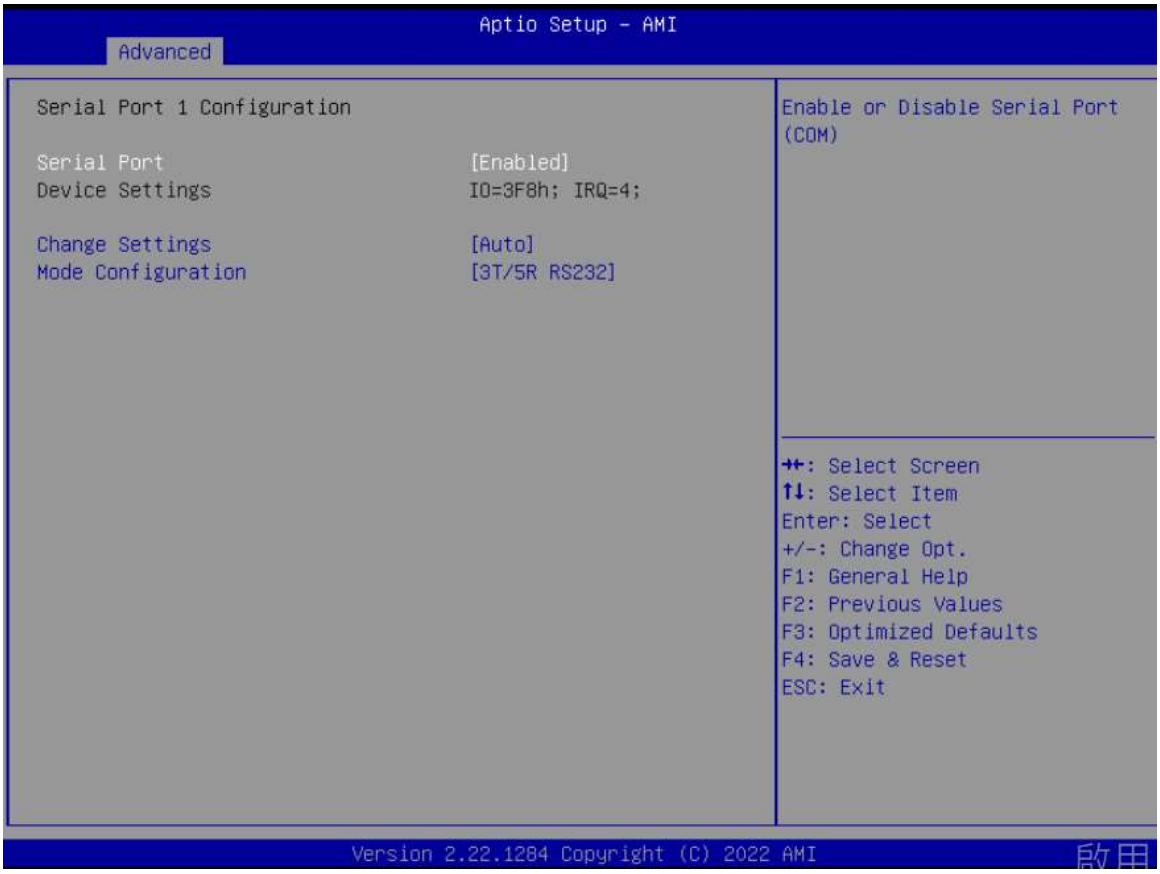

| Field Name | Serial Port 1 Configuration |
|---|---|
| Help | Set Parameters of Serial Port 1 (COMA) |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| Field Name | Serial Port 2 Configuration |
|---|---|
| Help | Set Parameters of Serial Port 2 (COMB) |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| Field Name | Serial Port 3 Configuration |
|---|---|
| Help | Set Parameters of Serial Port 3 (COMC) |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| Field Name | Serial Port 4 Configuration |
|---|---|
| Help | Set Parameters of Serial Port 4 (COMD) |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

### 4.2.5.1 Serial Port 1 Configuration



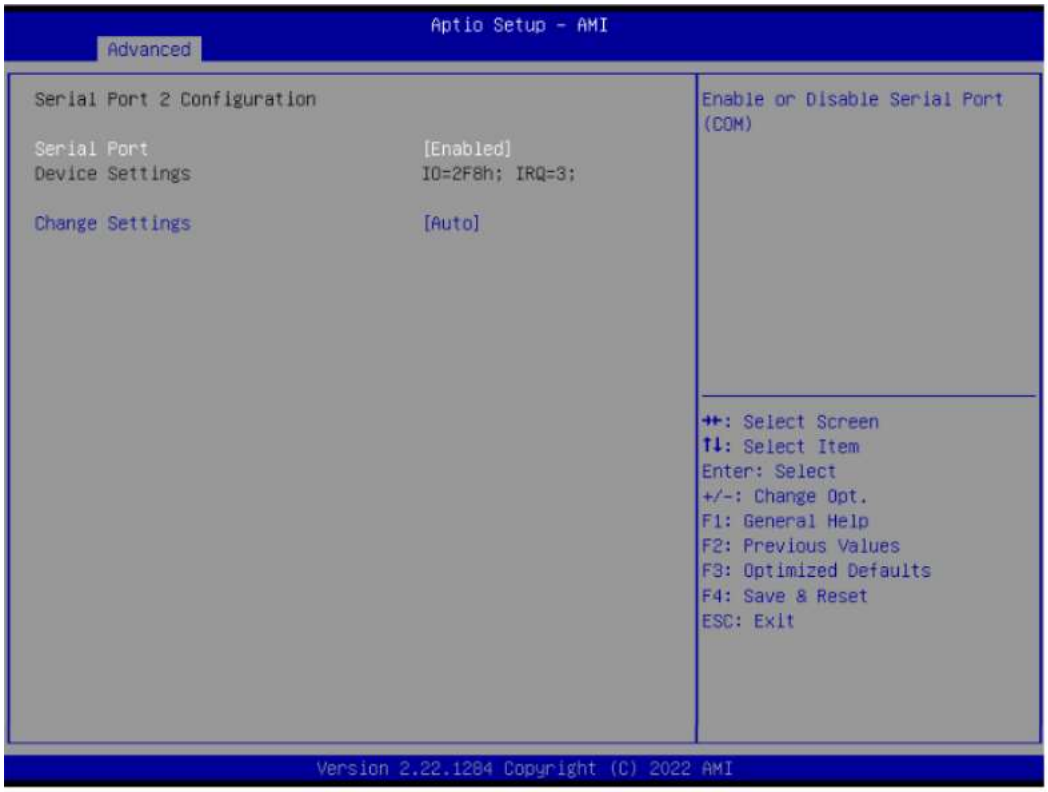

| Field Name | Serial Port |
|---|---|
| Default Value | [Enabled] |
| Possible Value | Disabled<br>Enabled |
| Help | Enable or Disable Serial Port(COM) |

| Field Name | Device Settings |
|---|---|
| Default Value | Device Super IO COM1 Address and IRQ. |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | Change Settings |
|---|---|
| Default Value | [AUTO] |

| | |
|---|---|
| Possible Value | Auto<br>IO=3F8h; IRQ=4;<br>IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12; |
| Help | Select an optimal settings for Super IO Device |

### 4.2.5.2 Serial Port 2 Configuration

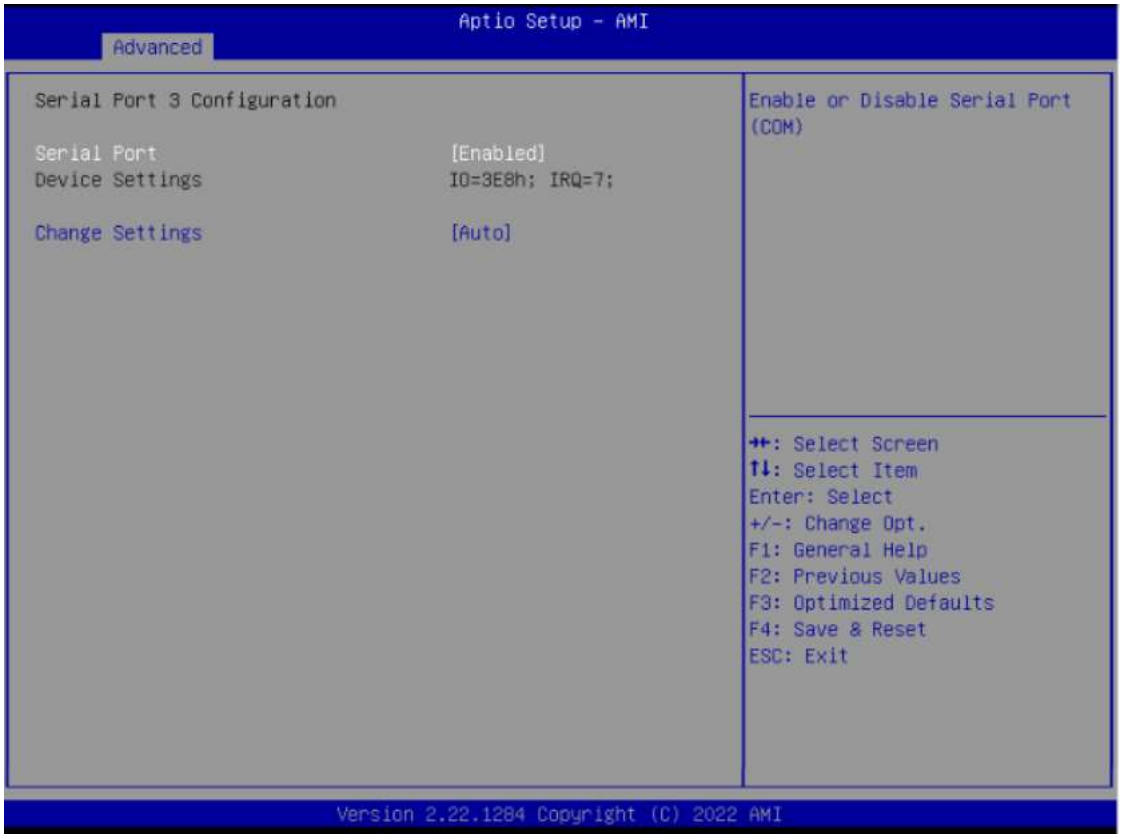



| **Field Name** | **Serial Port** |
|---|---|
| Default Value | [Enabled] |
| Possible Value | Disabled<br>Enabled |
| Help | Enable or Disable Serial Port(COM) |

| **Field Name** | **Device Settings** |
|---|---|
| Default Value | Device Super IO COM2 Address and IRQ. |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | Change Settings |
|---|---|
| Default Value | [AUTO] |
| Possible Value | Auto<br>IO=2F8h; IRQ=3;<br>IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12; |
| Help | Select an optimal settings for Super IO Device |

### 4.2.5.3 Serial Port 3 Configuration




| Field Name | Serial Port |
|---|---|
| Default Value | [Enabled] |
| Possible Value | Disabled<br>Enabled |
| Help | Enable or Disable Serial Port(COM) |

| Field Name | Device Settings |
|---|---|
| Default Value | Device Super IO COM3 Address and IRQ. |
| Comment | This field is not selectable. There is no help text associated with it. |

| Field Name | Change Settings |
|---|---|
| Default Value | [AUTO] |
| Possible Value | Auto<br>IO=3E8h; IRQ=7;<br>IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=220h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=228h; IRQ=3,4,5,6,7,9,10,11,12; |
| Help | Select an optimal settings for Super IO Device |

### 4.2.5.4 Serial Port 4 Configuration

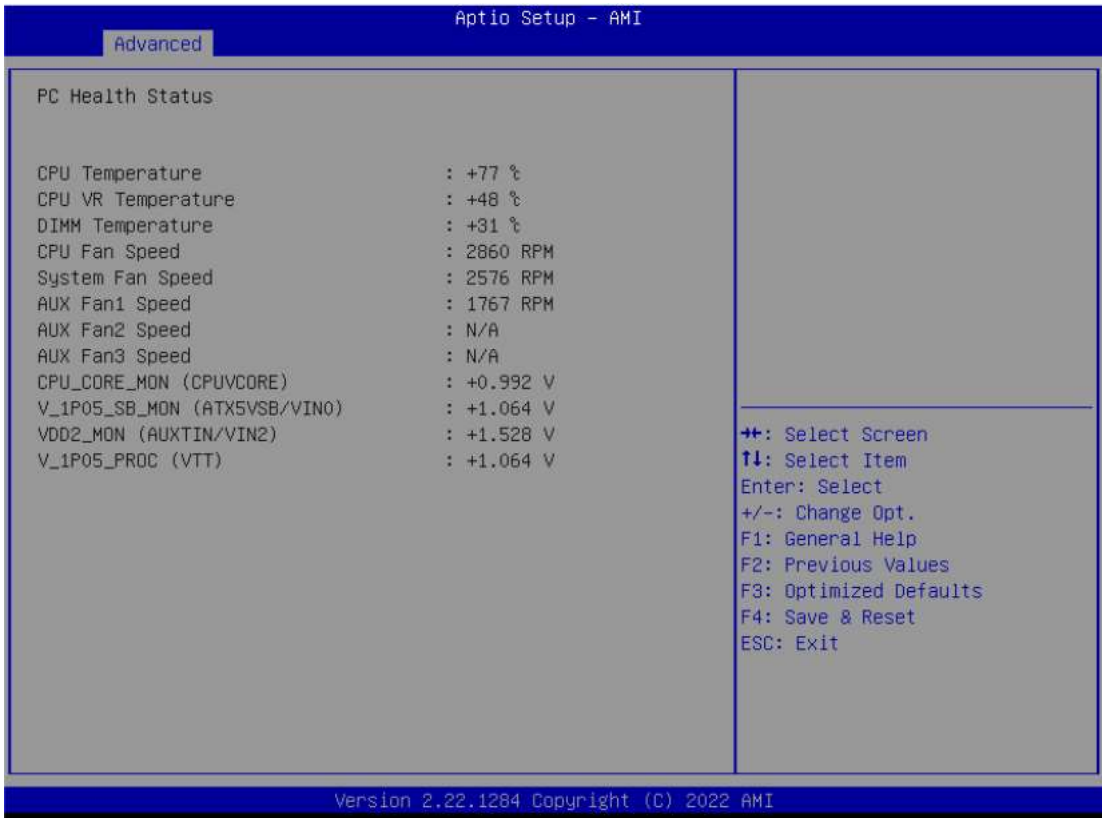

| Field Name | Serial Port |
|---|---|
| Default Value | [Enabled] |

| | |
|---|---|
| Possible Value | Disabled<br>Enabled |
| Help | Enable or Disable Serial Port(COM) |

| **Field Name** | **Device Settings** |
|---|---|
| Default Value | Device Super IO COM4 Address and IRQ. |
| Comment | This field is not selectable. There is no help text associated with it. |

| **Field Name** | **Change Settings** |
|---|---|
| Default Value | [AUTO] |
| Possible Value | Auto<br>IO=2E8h; IRQ=12;<br>IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=220h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=228h; IRQ=3,4,5,6,7,9,10,11,12; |
| Help | Select an optimal settings for Super IO Device |

### 4.4.6 HW Monitor




| Type | Range |
|---|---|
| CPU Temperature | -20 ~ (By Processor Tjmax) °C |
| CPU VR Temperature | -20 ~ 120 °C |
| DIMM Temperature | -20 ~ 120 °C |
| CPU Fan Speed | There are many kinds of the fan could be installed into the system, so we could only set 0 RPM for the failed fan speed, and there is also no high RPM limitation. |
| System Fan Speed | |
| AUX Fan1 Speed | |
| AUX Fan2 Speed | |
| AUX Fan3 Speed | |
| CPU_CORE_MON | 0~1.72V |
| V_1P05_SB_MON | 0.9975~1.1025V |
| VDD2_MON | 1.045~1.155V |
| V_1P05_PROC | 0.9975~1.1025V |

### 4.4.7 S5 RTC Wake Setting

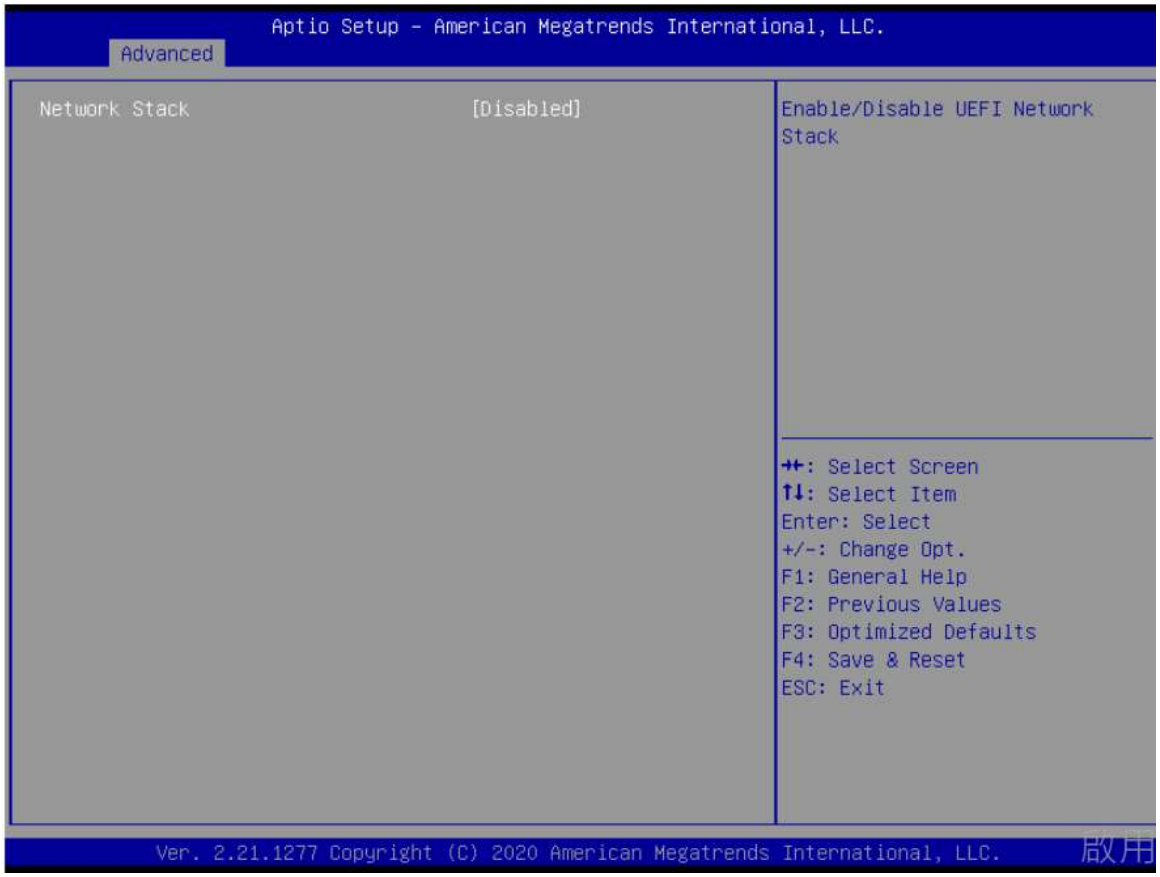

| Field Name | Wake system from S5 |
|---|---|
| Default Value | [Disabled] |
| Possible Value | Disabled<br>Fixed Time |
| Help | Enable or disable System wake on alarm event, Select FixedTime, system will wake on the hr::min::sec specified. |

| Field Name | Wake up hour(Show when Wake system from S5 set to Fixed Time) |
|---|---|
| Default Value | 0 |
| Possible Value | 0-23 |
| Help | Select 0-23 For example enter 3 for 3am and 15 for 3pm |

| Field Name | Wake up hour(Show when Wake system from S5 set to Fixed Time) |
|---|---|
| Default Value | 0 |
| Possible Value | 0-59 |
| Help | Select 0-59 For Minute |

| Field Name | Wake up hour(Show when Wake system from S5 set to Fixed Time) |
|---|---|
| Default Value | 0 |
| Possible Value | 0-59 |
| Help | Select 0-59 For Second |

### 4.4.8 Network Stack Configuration

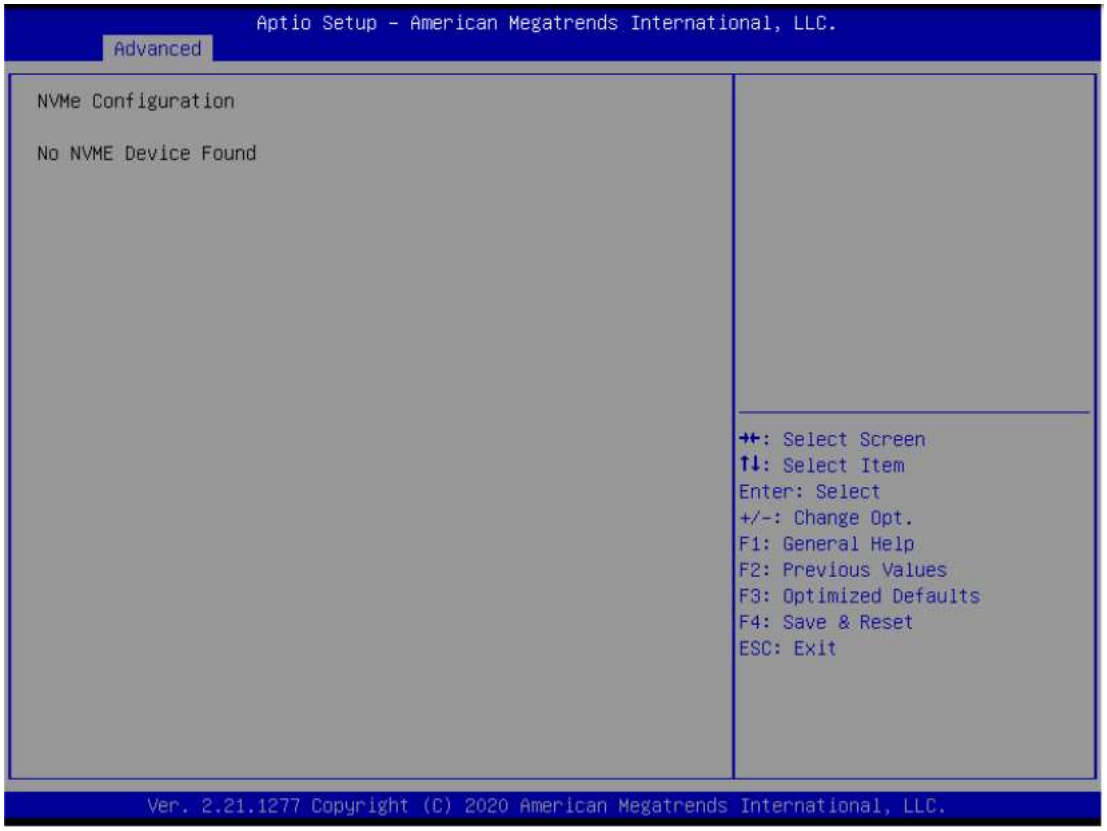



| Field Name | Network stack |
|---|---|
| Default Value | [Disabled] |
| Possible Value | Disabled<br>Enabled |
| Help | Enable/Disable UEFI Network stack. |

| Field Name | Ipv4 PXE Support (Available when Network stack Enabled) |
|---|---|
| Default Value | [Enabled] |
| Possible Value | Disabled<br>Enabled |
| Help | Enable/Disable Ipv4 PXE Boot Support. If disabled IPV4 PXE boot support will not be available. |

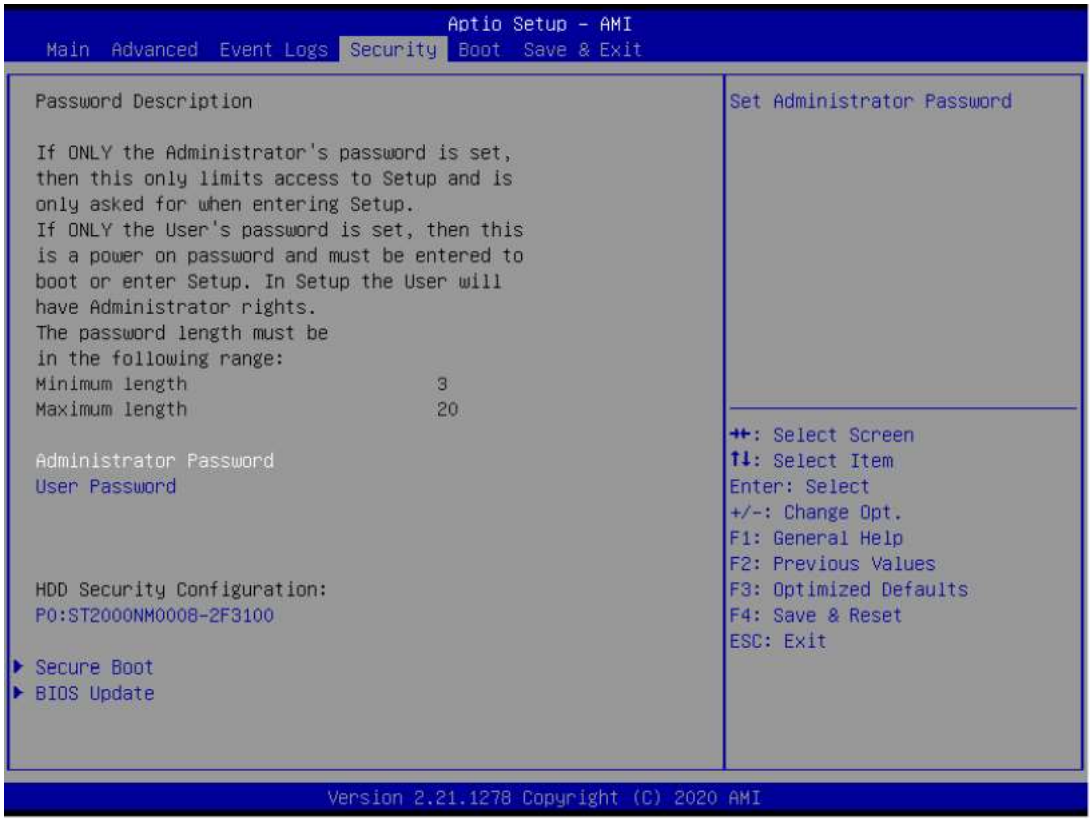
| Field Name | Ipv6 PXE Support (Available when Network stack Enabled) |
|---|---|
| Default Value | [Enabled] |
| Possible Value | Disabled<br>Enabled |
| Help | Enable/Disable Ipv6 PXE Boot Support. If disabled IPV6 PXE boot support will not be available. |

### 4.4.9 NVMe Configuration




| Field Name | (Device) |
|---|---|
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

## 4.5 Security Page




| Field Name | Administrator Password |
|---|---|
| Help | Set Administrator Password |

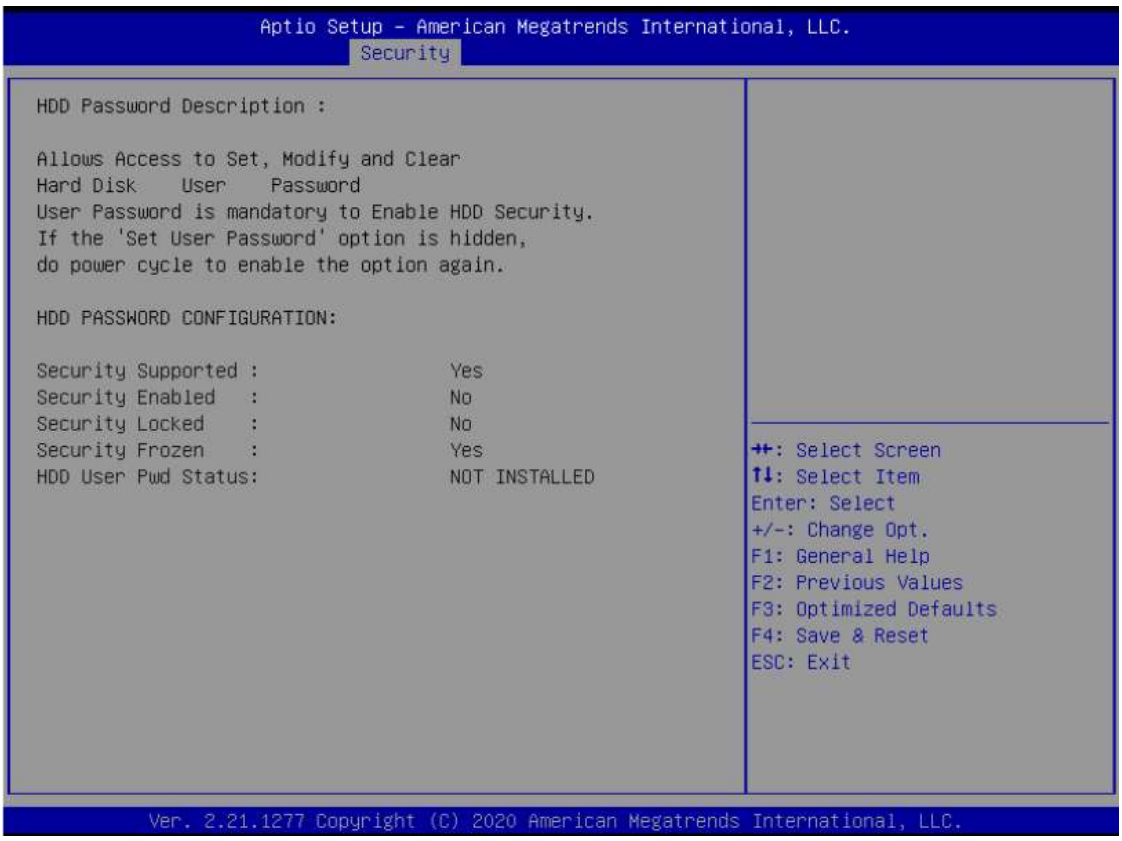
| Field Name | User Password |
|---|---|
| Help | Set User Password. |

| Field Name | HDD Security drive |
|---|---|
| Help | HDD Security Configuration for selected drive |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| Field Name | Secure Boot |
|---|---|
| Help | Set User Password. |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

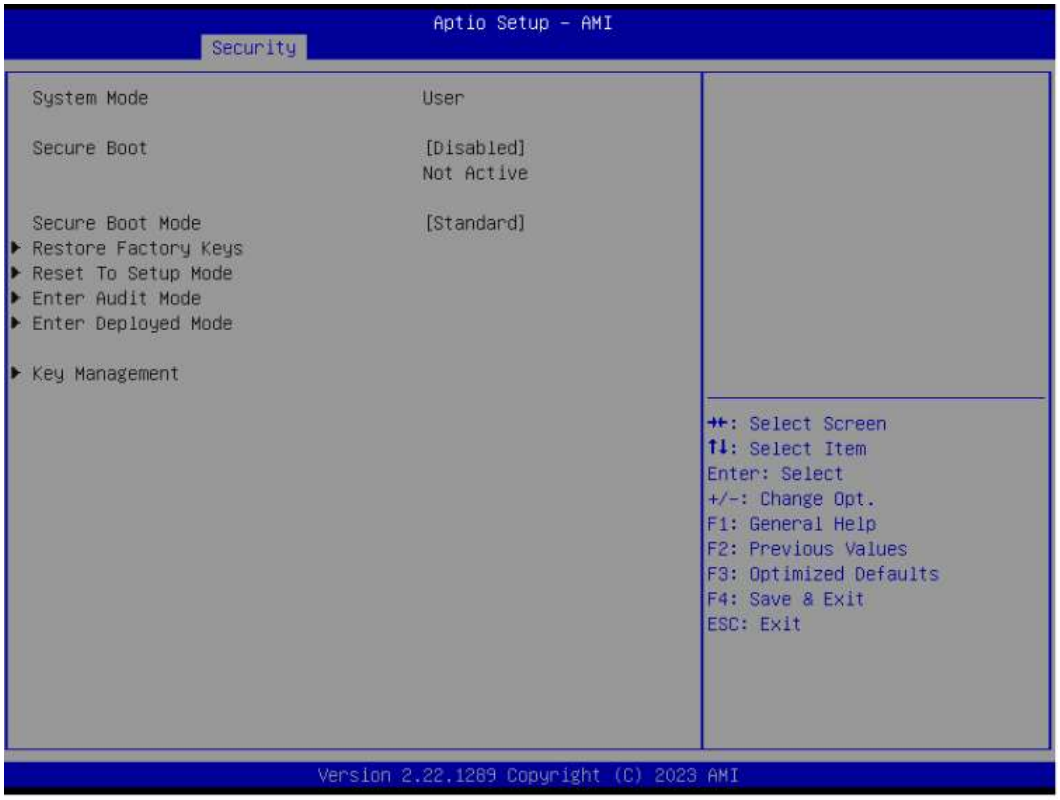
| Field Name | BIOS Update |
|---|---|
| Help | BIOS Update support |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

### 4.5.1 HDD Security




| Field Name | Set User Password |
|---|---|
| Help | Set HDD User Password. *** Advisable to Power Cycle System after Setting Hard Disk Passwords ***.Discard or Save changes option in setup does not have any impact on HDD when password is set or removed. If the 'Set HDD User Password' option is hidden, do power cycle to enable the option again |

### 4.5.2 Secure Boot




| Field Name | Secure Boot |
|---|---|
| Default Value | [Enabled] |
| Possible Value | Enabled<br>Disabled |
| Help | Secure Boot feature is Active if Secure Boot is Enabled,Platform Key(PK) is enrolled and the System is in User mode.The mode change requires platform reset |

| Field Name | Secure Boot Mode |
|---|---|
| Default Value | [Standard] |
| Possible Value | Standard<br>Custom |
| Help | Secure Boot mode options:Standard or Custom.In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication |

| Field Name | Restore Factory Keys |
|---|---|
| Help | Force System to User Mode. Install factory default Secure Boot key |

| | |
|---|---|
| | databases |

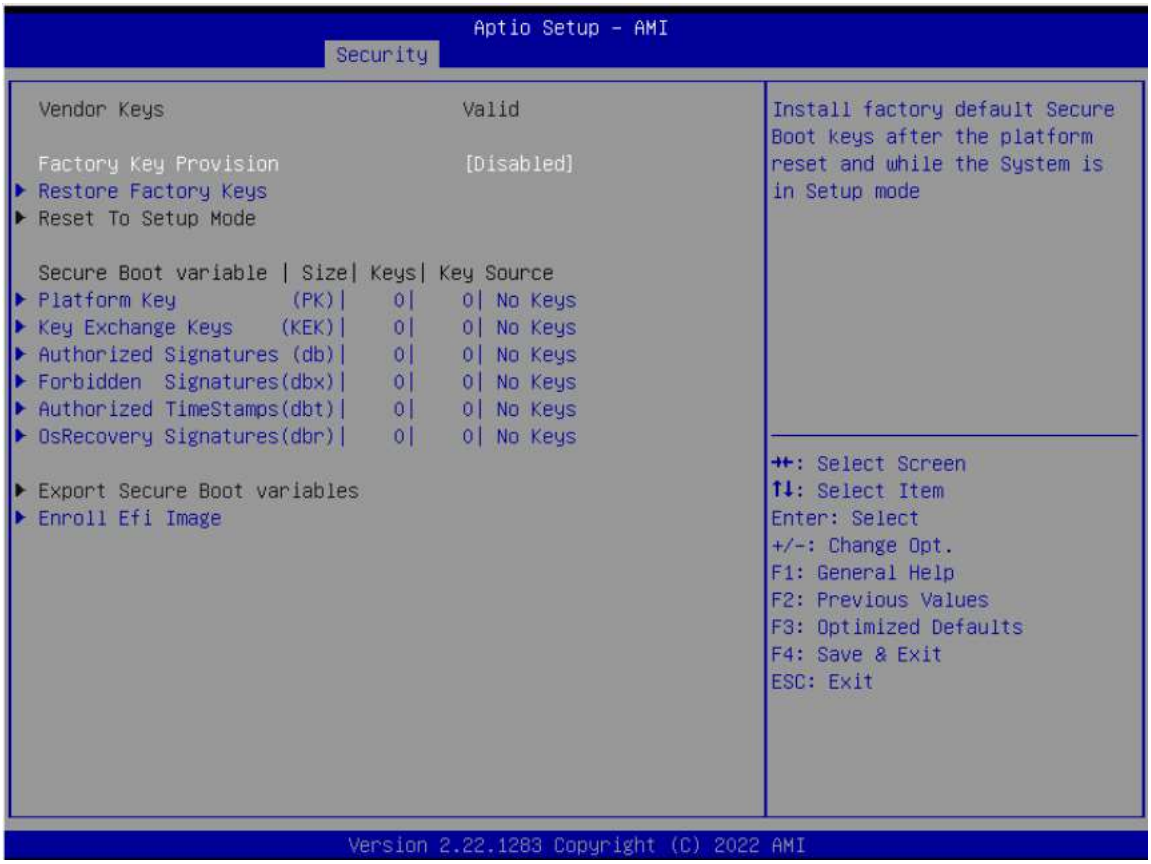
| Field Name | Reset to Setup Mode |
|---|---|
| Help | Delete all Secure Boot key databases from NVRAM |

| Field Name | Enter Audit Mode |
|---|---|
| Help | Enter Audit Mode workflow.<br>Transitions from User to Audit Mode will result in erasing of PK variable |
| Comment | Enter Audit Mode workflow.<br>Transitions from User to Audit Mode will result in erasing of PK variable |

| Field Name | Enter Deployed Mode |
|---|---|
| Help | Transition between Deployment and User Modes |
| Comment | Transition between Deployment and User Modes |

| Field Name | Key Management |
|---|---|
| Help | Enables expert users to modify Secure Boot Policy variables without full authentication |
| Comment | Enables expert users to modify Secure Boot Policy variables without full authentication |

#### 4.5.2.1 Key Management




| Field Name | Factory Key Provision |
|---|---|
| Default Value | [Disabled] |
| Possible Value | Enabled<br>Disabled |
| Help | Install factory default Secure Boot keys after the platform reset and while the System is in Setup mode |

| Field Name | Restore Factory Keys |
|---|---|
| Help | Force System to User Mode. Install factory default Secure Boot key databases |

| Field Name | Reset to Setup Mode |
|---|---|
| Help | Delete all Secure Boot key databases from NVRAM |

| Field Name | Platform Key (PK) |
|---|---|
| Default Value | Size:0, Keys:0, Key source: No Keys |
| Help | Enroll Factory Defaults or load certificates from a file: |

| | |
|---|---|
| | 1.Public Key Certificate:<br>a)EFI_SIGNATURE_LIST<br>b)EFI_CERT_X509 (DER)<br>c)EFI_CERT_RSA2048 (bin)<br>d)EFI_CERT_SHAXXX<br>2.Authenticated UEFI Variable<br>3.EFI PE/COFF Image(SHA256)<br>Key Source:<br>Factory,External,Mixed |
| Comment | Press Enter when selected to go into the associated Sub-Menu "Key Management". |

| **Field Name** | **Key Exchange Keys** |
|---|---|
| Default Value | Size:0, Keys:0, Key source: No Keys |
| Help | Enroll Factory Defaults or load certificates from a file:<br>1.Public Key Certificate:<br>a)EFI_SIGNATURE_LIST<br>b)EFI_CERT_X509 (DER)<br>c)EFI_CERT_RSA2048 (bin)<br>d)EFI_CERT_SHAXXX<br>2.Authenticated UEFI Variable<br>3.EFI PE/COFF Image(SHA256)<br>Key Source:<br>Factory,External,Mixed |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| **Field Name** | **Authorized Signatures** |
|---|---|
| Default Value | Size:0, Keys:0, Key source: No Keys |
| Help | Enroll Factory Defaults or load certificates from a file:<br>1.Public Key Certificate:<br>a)EFI_SIGNATURE_LIST<br>b)EFI_CERT_X509 (DER)<br>c)EFI_CERT_RSA2048 (bin)<br>d)EFI_CERT_SHAXXX<br>2.Authenticated UEFI Variable<br>3.EFI PE/COFF Image(SHA256)<br>Key Source: |

| | |
|---|---|
| | Factory,External,Mixed |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| **Field Name** | **Forbidden Signatures** |
|---|---|
| Default Value | Size:0, Keys:0, Key source: No Keys |
| Help | Enroll Factory Defaults or load certificates from a file:<br>1.Public Key Certificate:<br>a)EFI_SIGNATURE_LIST<br>b)EFI_CERT_X509 (DER)<br>c)EFI_CERT_RSA2048 (bin)<br>d)EFI_CERT_SHAXXX<br>2.Authenticated UEFI Variable<br>3.EFI PE/COFF Image(SHA256)<br>Key Source:<br>Factory,External,Mixed |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| **Field Name** | **Authorized TimeStamps** |
|---|---|
| Default Value | Size:0, Keys:0, Key source: No Keys |
| Help | Enroll Factory Defaults or load certificates from a file:<br>1.Public Key Certificate:<br>a)EFI_SIGNATURE_LIST<br>b)EFI_CERT_X509 (DER)<br>c)EFI_CERT_RSA2048 (bin)<br>d)EFI_CERT_SHAXXX<br>2.Authenticated UEFI Variable<br>3.EFI PE/COFF Image(SHA256)<br>Key Source:<br>Factory,External,Mixed |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

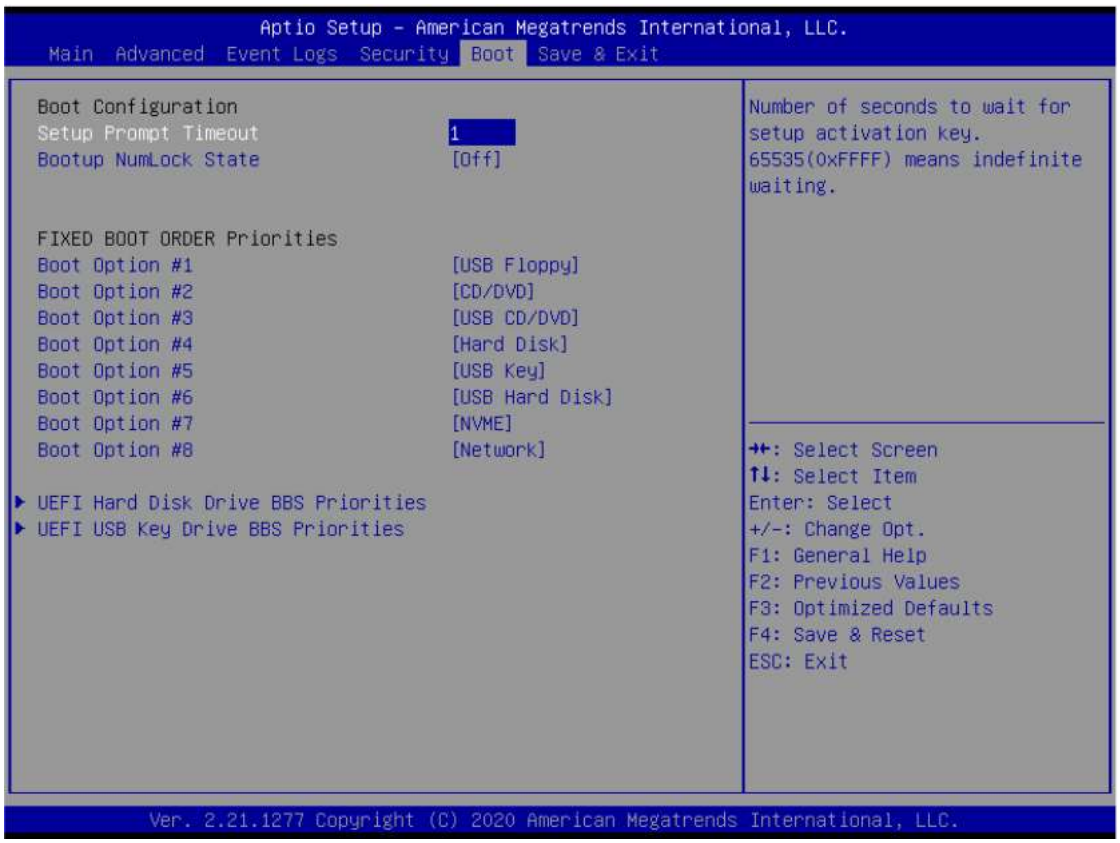
| **Field Name** | **OsRecovery Signatures** |
|---|---|
| Default Value | Size:0, Keys:0, Key source: No Keys |
| Help | Enroll Factory Defaults or load certificates from a file:<br>1.Public Key Certificate:<br>a)EFI_SIGNATURE_LIST<br>b)EFI_CERT_X509 (DER) |

| | |
|---|---|
| | c)EFI_CERT_RSA2048 (bin)<br>d)EFI_CERT_SHAXXX<br>2.Authenticated UEFI Variable<br>3.EFI PE/COFF Image(SHA256)<br>Key Source:<br>Factory,External,Mixed |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| **Field Name** | **Export Secure Boot variables** |
|---|---|
| Help | Copy NVRAM content of Secure Boot variables to files in a root folder on a file system device |

| **Field Name** | **Enroll Efi Image** |
|---|---|
| Help | Allow the image to run in Secure Boot mode. Enroll SHA256 Hash certificate of a PE image into Authorized Signature Database (db) |

## 4.6 Boot Page




| Field Name | Setup Prompt Timeout |
|---|---|
| Default Value | 1 |
| Possible Value | 1~65535 |
| Comment | Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting. |

| Field Name | Bootup NumLock State |
|---|---|
| Default Value | [Off] |
| Possible Value | On<br>Off |
| Comment | Select the keyboard NumLock state |

| Field Name | Boot Option #1 |
|---|---|
| Default Value | [USB Floppy] |
| Possible Value | USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , NVME, Network, Disabled |
| Comment | Sets the system boot order |

| Field Name | Boot Option #2 |
|---|---|
| Default Value | [CD/DVD] |
| Possible Value | USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , NVME, Network, Disabled |
| Comment | Sets the system boot order |

| Field Name | Boot Option #3 |
|---|---|
| Default Value | [USB CD/DVD] |
| Possible Value | USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , NVME, Network, Disabled |
| Comment | Sets the system boot order |

| Field Name | Boot Option #4 |
|---|---|
| Default Value | [Hard Disk] |
| Possible Value | USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , NVME, Network, Disabled |
| Comment | Sets the system boot order |

| Field Name | Boot Option #5 |
|---|---|
| Default Value | [USB Key] |
| Possible Value | USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , NVME, Network, Disabled |
| Comment | Sets the system boot order |

| Field Name | Boot Option #6 |
|---|---|
| Default Value | [USB Hard Disk] |
| Possible Value | USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , NVME, Network, Disabled |
| Comment | Sets the system boot order |

| Field Name | Boot Option #7 |
|---|---|
| Default Value | [NVME] |
| Possible Value | USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , NVME, Network, Disabled |
| Comment | Sets the system boot order |

| Field Name | Boot Option #8 |
|---|---|
| Default Value | [Network] |
| Possible Value | USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , NVME, Network, Disabled |
| Comment | Sets the system boot order |

| Field Name | (UEFI) USB Floppy Drive BBS Priorities |
|---|---|
| Help | Specifies the Boot Device Priority sequence from available USB Floppy Drives. |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| Field Name | (UEFI) CDROM/DVD ROM Drive BBS Priorities |
|---|---|
| Help | Specifies the Boot Device Priority sequence from available USB CDROM/DVD Drives. |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| Field Name | (UEFI) USB CDROM/DVD ROM Drive BBS Priorities |
|---|---|
| Help | Specifies the Boot Device Priority sequence from available USB CDROM/DVD Drives. |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

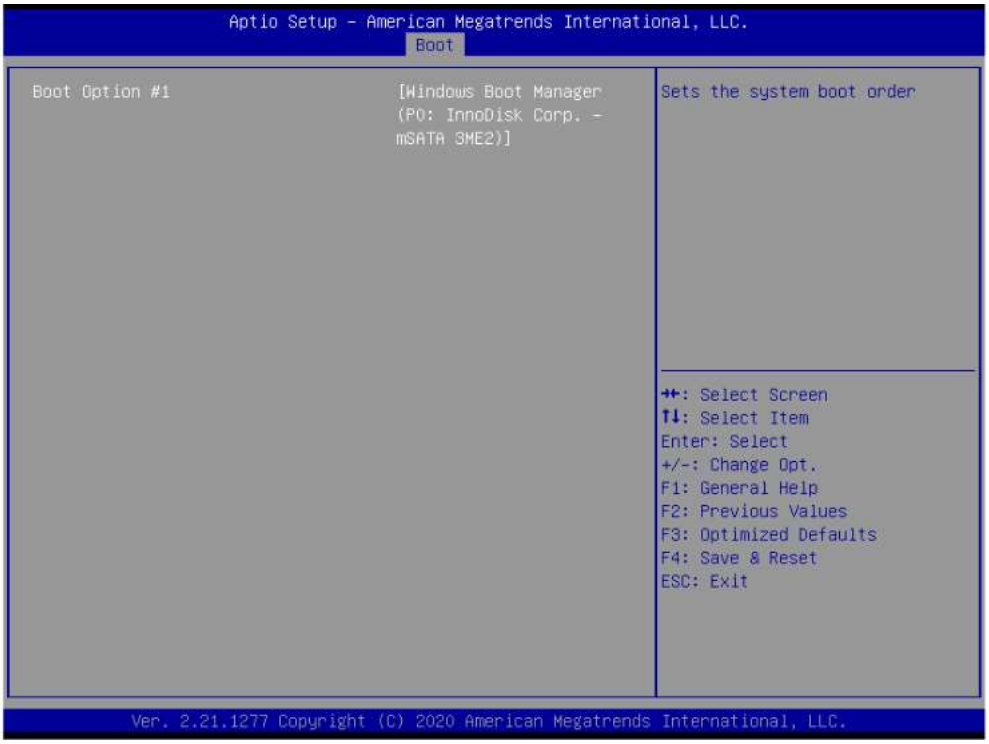
| Field Name | (UEFI) Hard Disk Drive BBS Priorities |
|---|---|
| Help | Specifies the Boot Device Priority sequence from available Hard Disk Drives. |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| Field Name | (UEFI) USB KEY Drive BBS Priorities |
|---|---|
| Help | Specifies the Boot Device Priority sequence from available Hard Disk Drives. |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |
| **Field Name** | **(UEFI) USB Hard Disk Drive BBS Priorities** |
| Help | Specifies the Boot Device Priority sequence from available Hard Disk Drives. |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| Field Name | (UEFI) NETWORK Drive BBS Priorities |
|---|---|
| Help | Specifies the Boot Device Priority sequence from available Hard Disk |

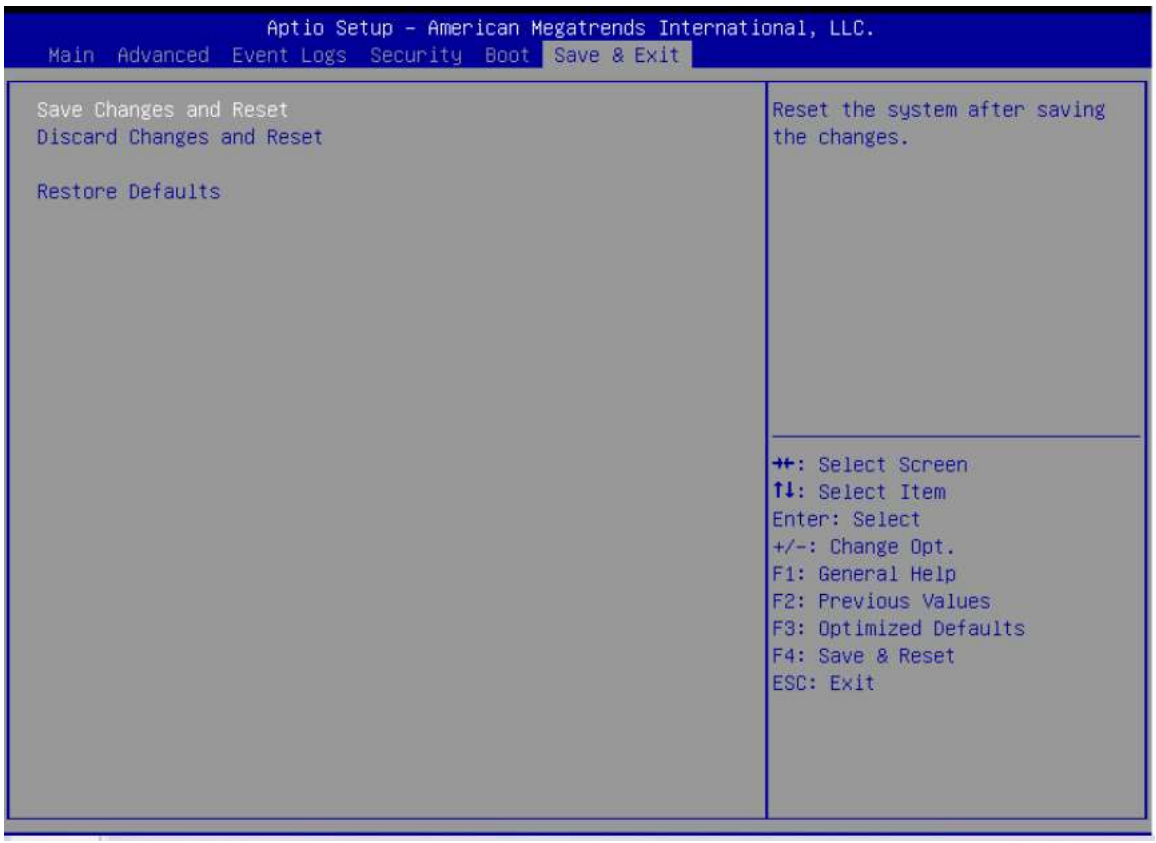
| | |
|---|---|
| | Drives. |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

### 4.6.1 (List Boot Device Type) Drive BBS Priorities




| Field Name | Boot Option #1 |
|---|---|
| Default Value | |
| Possible Value | Boot Device Name 1 of this type |
| Help | Sets the system boot order |

## 4.7 Save & Exit Page

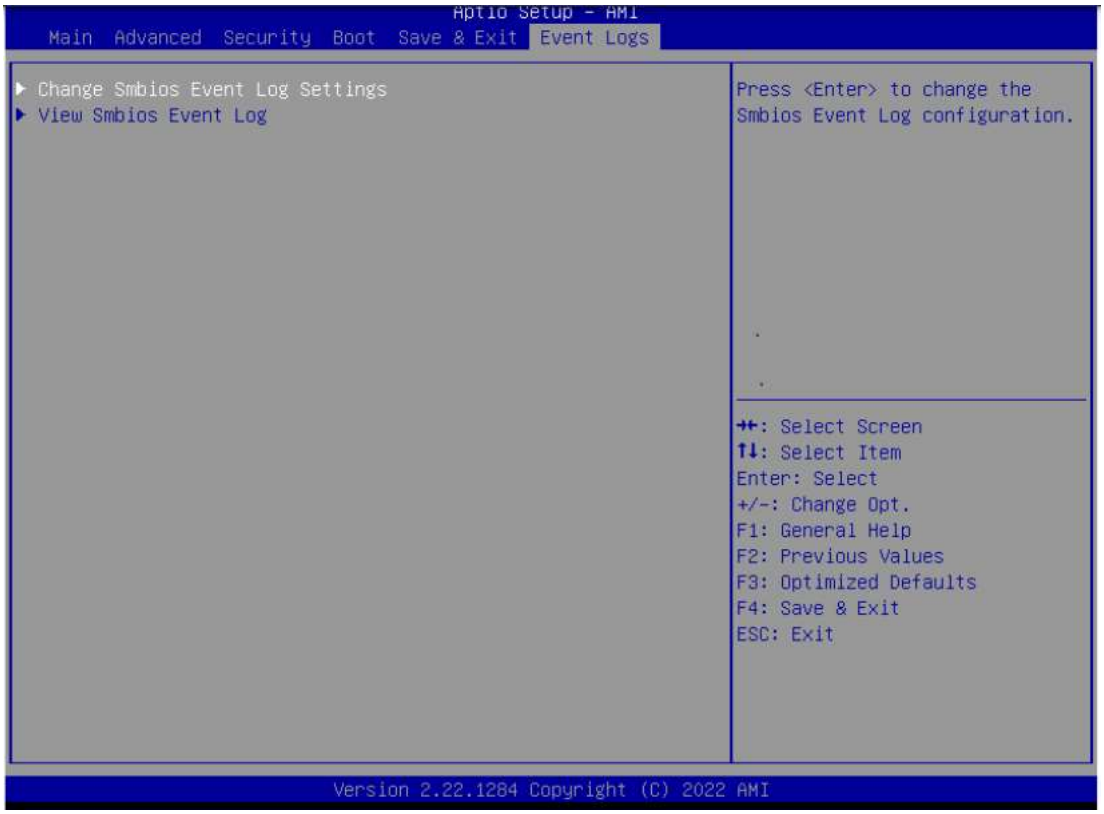



| Field Name | Discard Changes and Exit |
|---|---|
| Help | Exit system setup without saving any changes. |

| Field Name | Save Changes and Reset |
|---|---|
| Help | Reset the system after saving the changes. |

| Field Name | Restore Defaults |
|---|---|
| Help | Restore/Load Default values for all the setup options. |

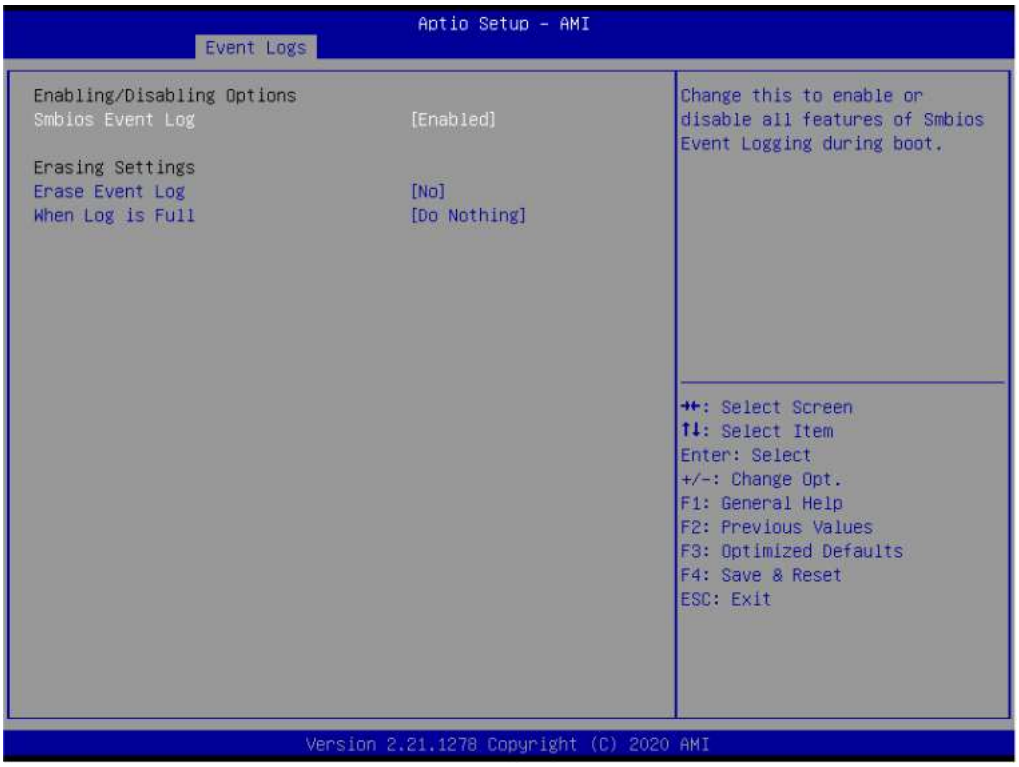
## 4.8 Event Logs




| Field Name | Change Smbios Event Log Settings |
|---|---|
| Help | Press <Enter> to change the Smbios Event Log configuration. |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

| Field Name | View Smbios Event Log |
|---|---|
| Help | Press <Enter> to change the Smbios Event Log configuration. |
| Comment | Press Enter when selected to go into the associated Sub-Menu. |

### 4.8.1 Change Smbios Event Log Settings




| Field Name | Smbios Event Log |
|---|---|
| Default Value | [Enabled] |
| Possible Value | Enabled<br>Disabled |
| Help | Change this to enable or disable all feature of Smbios Event Logging during boot. |

| Field Name | Erase Event Log |
|---|---|
| Default Value | [No] |
| Possible Value | No / Yes, Next reset / Yes, Every reset |
| Help | Choose options for erasing Smbios Event Log. Erasing is done prior to any logging activation during reset. |

| Field Name | When Log is Full |
|---|---|
| Default Value | [Do Nothing] |
| Possible Value | Do Nothing<br>Erase Immediately |
| Help | Choose options for reactions to a full Smbios Event Log. |

### 4.8.2 View Smbios Event Log


| Field Name | DATE / TIME / ERROR CODE / SEVERITY / COUNT |
|---|---|
| Default Value | MM/DD/YY HH:MM:SS Smbios 0x16 N/A N/A |
| Possible Value | By Events. |
| Help | By Events. |