AXE-7400SR

4U Edge Server
with
5th/4th Gen Intel® Xeon® Processor Scalable Family

User's Manual



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Part No.: 50M-99307-2000

LEADING EDGE COMPUTING

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Preface

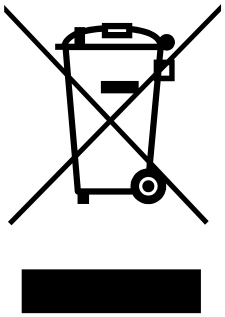
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Revision History

Revision	Release Date	Description of Change(s)
1.0	2026-01-19	Initial release

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Conventions



mise en garde

Information to prevent minor physical injury, component damage, data loss, and/or program corruption when trying to complete a task.

Informations destinées à prévenir les blessures corporelles mineures, les dommages aux composants, la perte de données et/ou la corruption de programme lors de l'exécution d'une tâche.



AVERTISSEME

Information to prevent serious physical injury, component damage, data loss, and/or program corruption when trying to complete a specific task.

Informations destinées à prévenir les blessures corporelles graves, les dommages aux composants, la perte de données et/ou la corruption de programme lors de l'exécution d'une tâche spécifique.

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1 Overview

1.1 Introduction

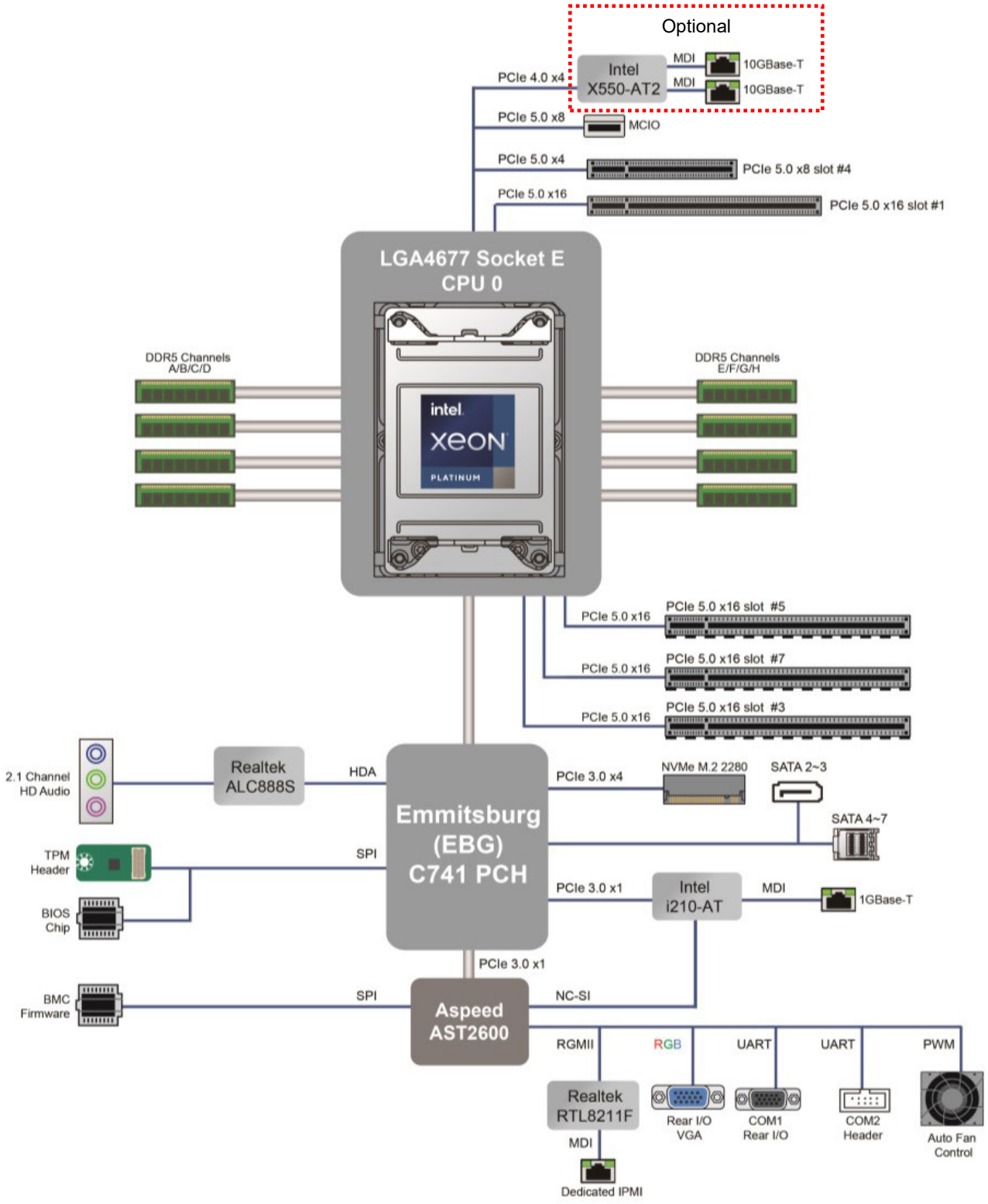
The ADLINK AXE-7400SR is a 4U 19" rackmount edge computing server with 5th/4th Gen Intel® Xeon® Processor Scalable Family Processor.

The main features of the AXE-7400SR include:

- Single Intel® Sapphire Rapids-SP Family Processor
- 8x DDR5 DIMMs, 4800MT/s (8 channels, 1DPC)
- Offering up to eight full-height PCIe slots for GPU/FPGA accelerator cards
- BMC with AST2600, IPMI v2.0/Redfish compliant

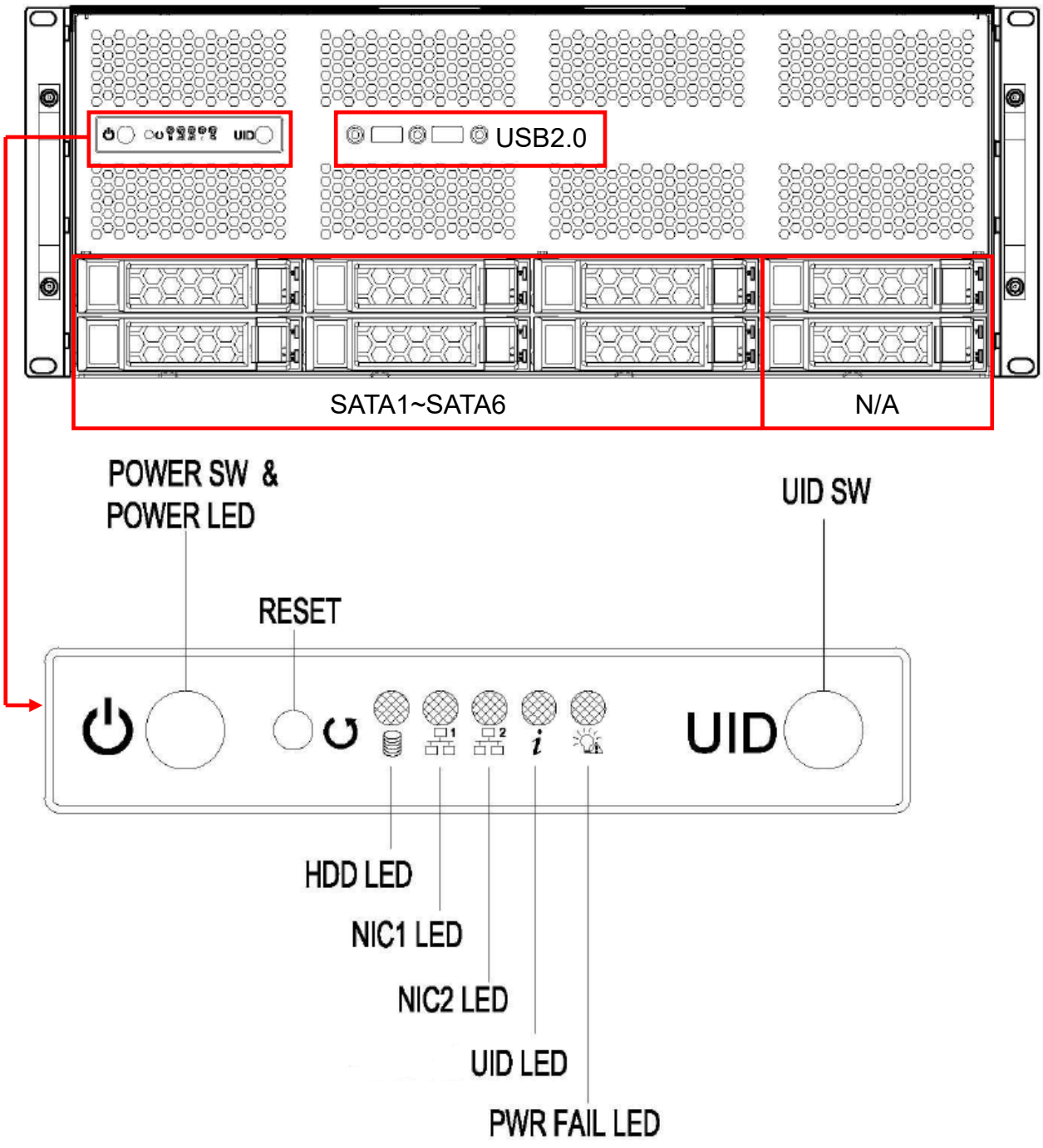
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1.2 Block Diagram

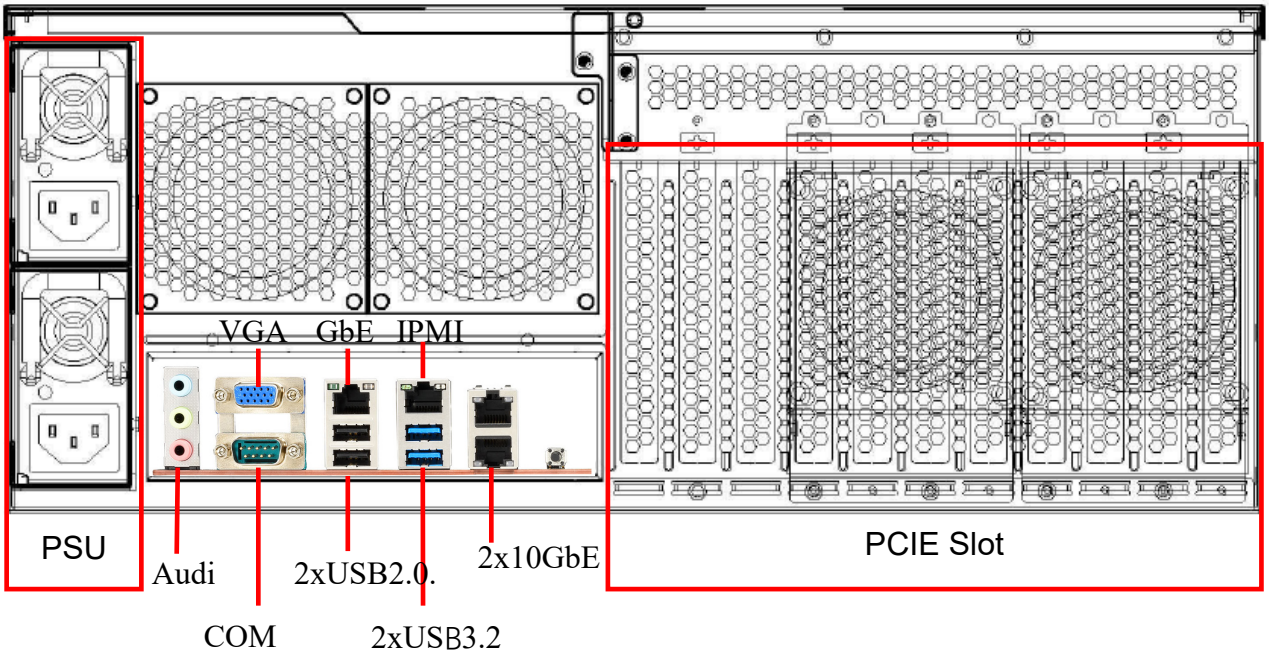


1.3 Mechanical Overview

1.3.1 AXE-7400SR Front Panel

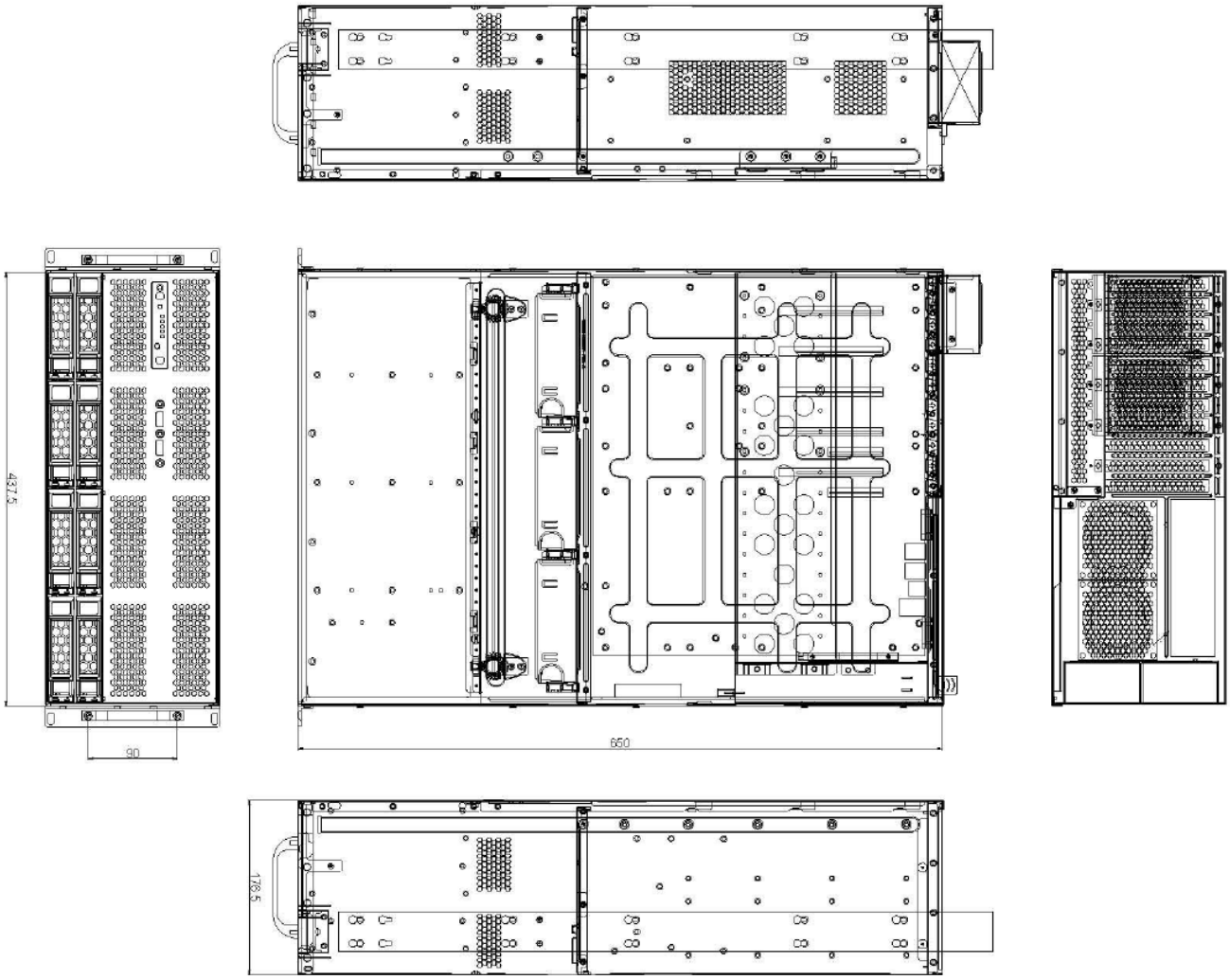


1.3.2 AXE-7400SR Rear Panel



1.3.3 Mechanical Dimensions

Units: mm



2 Specifications

2.1 AXE-7400SR Specifications

CPU/Chipset/Memory	CPU: Single Intel® Sapphire Rapids Scalable Processor Chipset: Emmitsburg C741 PCH Memory: 8x DDR5 DIMMs, 4800MT/s (8 channels, 1DPC)
BIOS	AMI BIOS on SPI flash Memory
I/O Interface	Expansion: 4x FHFL single-slot PCIe Gen.5 x16 slots and 1x FHFL Single-slot PCIe Gen.5 x8 slot OR 4x FHFL dual-slot PCIe Gen.5 x16 slots Ethernet： SKU1：1xGbE port SKU2: 1xGbE + 2x10GbE ports USB: 2x USB3.2 Gen1 (rear) 2x USB2.0 (rear), 2x USB2.0 (front) Graphics: 1xVGA Port 1xDB-9 COM Connector Storage: 1x NVMe M.2 2280 slot (PCIe 3.0 x4) 6x SATA-III 3.5 “/2.5” disk with RAID 0/1/10/5 (Intel RSTe)
BMC Controller	Aspeed AST2600 with IPMI 2.0 & Redfish support 1x GbE dedicated for IPMI
Control Buttons	1x Power button (front) 1x UID button (front) 1x Reset hole (front) 1x UID button (rear)

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LEDS	HDD LED NIC1 LED NIC2 LED UID LED
Operating System	Windows Server 2022 Ubuntu 22.04LTS
Mechanical and Environmental	Form Factor: 4U 19 “ rackmount, 650 x 437.5 x 176.5mm Fans: 3x fans, smart fan speed control Power: 1600W/2000W, AC
TPM	Plug-in TPM 2.0 module (Optional)
Temperature and Humidity	Operating: 0°C to 35°C, 5%-95% RH @40°C, non-condensing Storage: -40°C to 70°C, 5%-90% RH, non-condensing

3 Getting Started

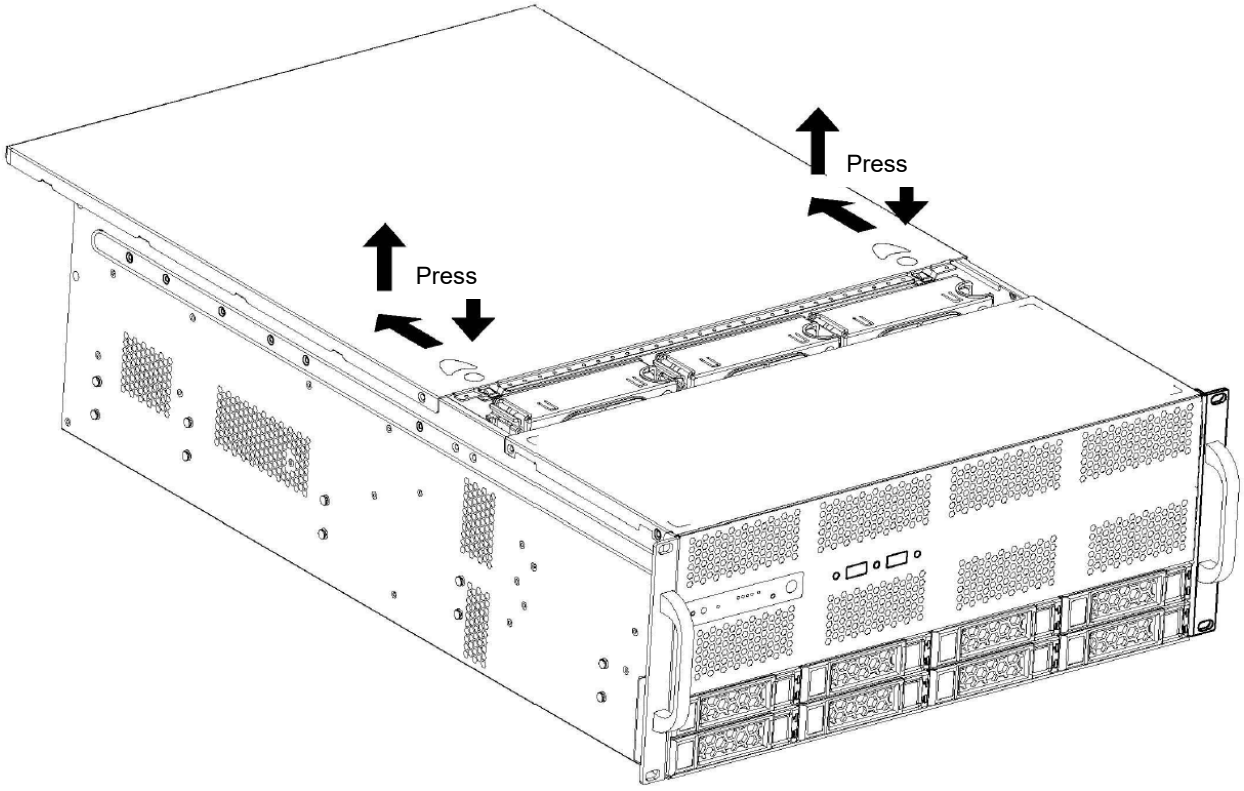
3.1 Removing the Chassis Cover

Follow the instructions below to remove the chassis top cover.

CAUTION:
mise en garde

All installation procedures are restricted to skilled personnel.
Toutes les procédures d'installation sont réservées au personnel qualifié.

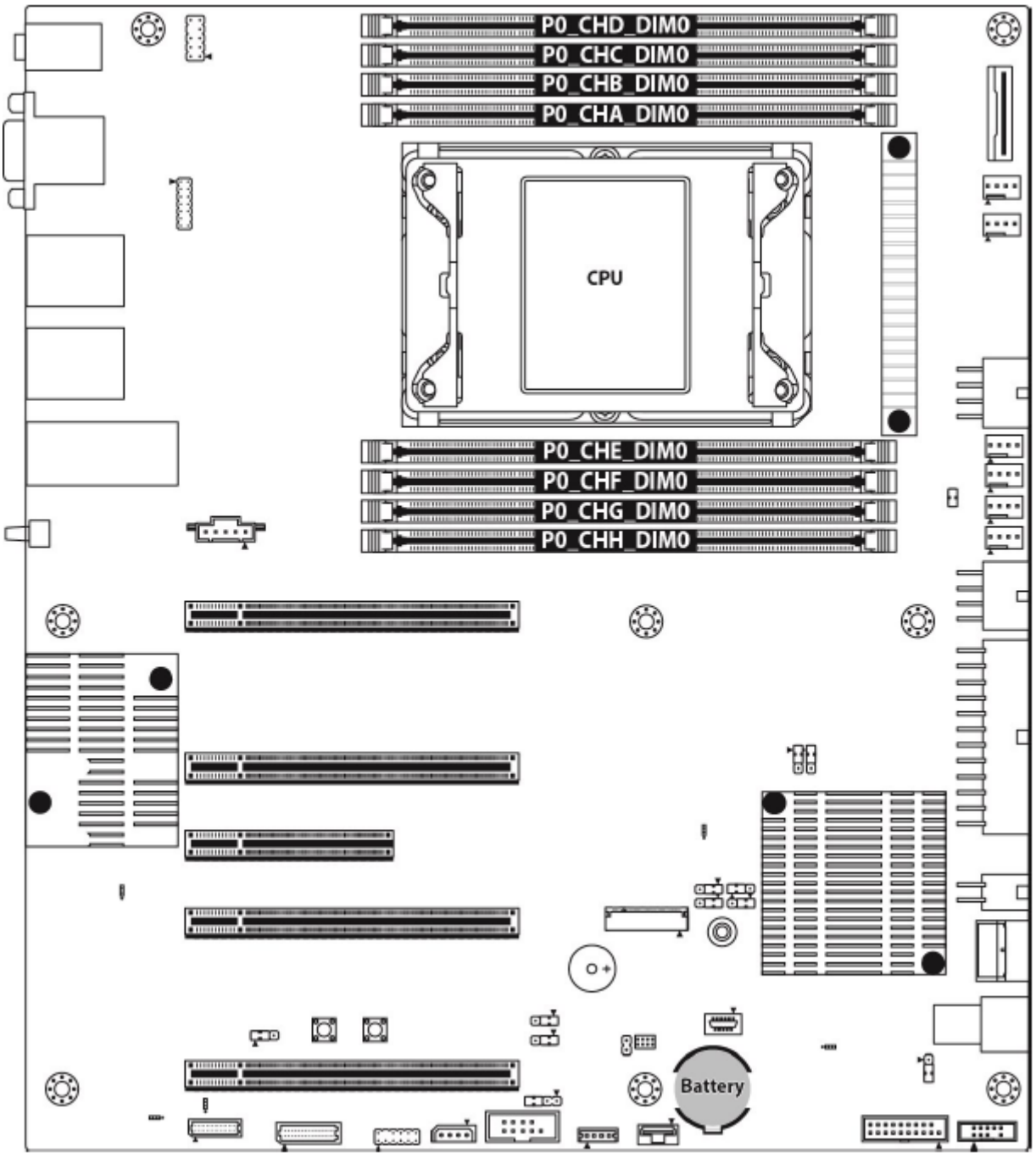
1. Loosen the three screws around the cover.
2. Press down on the top cover lock button, push it back 10-15mm, then lift it open vertically.



To reinstall the cover, slide it towards the front of the chassis, then tighten the screws loosened in Step 1.

3.2 Installing Memory Modules

DIMM location.



All installed memory will be automatically detected. No jumpers or settings need to be changed for memory detection.

All memory must be of the same type and density. Different memory types can NOT be mixed and matched on the same motherboard.

Recommended Memory Population Table:

	Quantity of memory installed											
DDR5	1DDRS				2DDRS		4DDRS	6DDRS				8DDRS
1 DIMM at DIMM A0	√				√		√	√	√		√	√
1 DIMM at DIMM B0		√							√	√	√	√
1 DIMM at DIMM C1						√	√	√	√	√	√	√
1 DIMM at DIMM D0								√		√		√
1 DIMM at DIMM E0			√			√	√	√	√	√		√
1 DIMM at DIMM F0				√				√		√	√	√
1 DIMM at DIMM G1					√		√	√	√		√	√
1 DIMM at DIMM H0									√	√	√	√

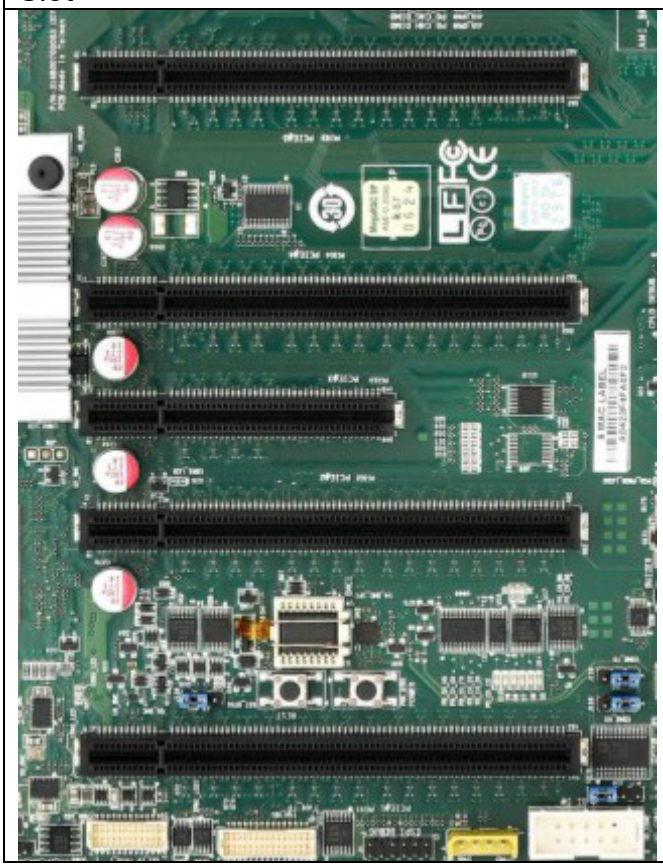
3.3 PCIe Card Installation

Before installing add-in cards, it's helpful to know if they are fully compatible with your motherboard. For this reason, we've provided the diagrams below, showing the slots that may appear on your motherboard.

CAUTION:
mise en garde

All installation procedures are restricted to skilled personnel. Only UL listed PCIe expansion cards or PCIe cards with openings less than 5 mm in any dimension are recommended

Toutes les procédures d'installation sont réservées au personnel qualifié. Seules les cartes d'extension PCIe répertoriées UL ou les cartes PCIe avec des ouvertures inférieures à 5 mm dans n'importe quelle dimension sont recommandées.

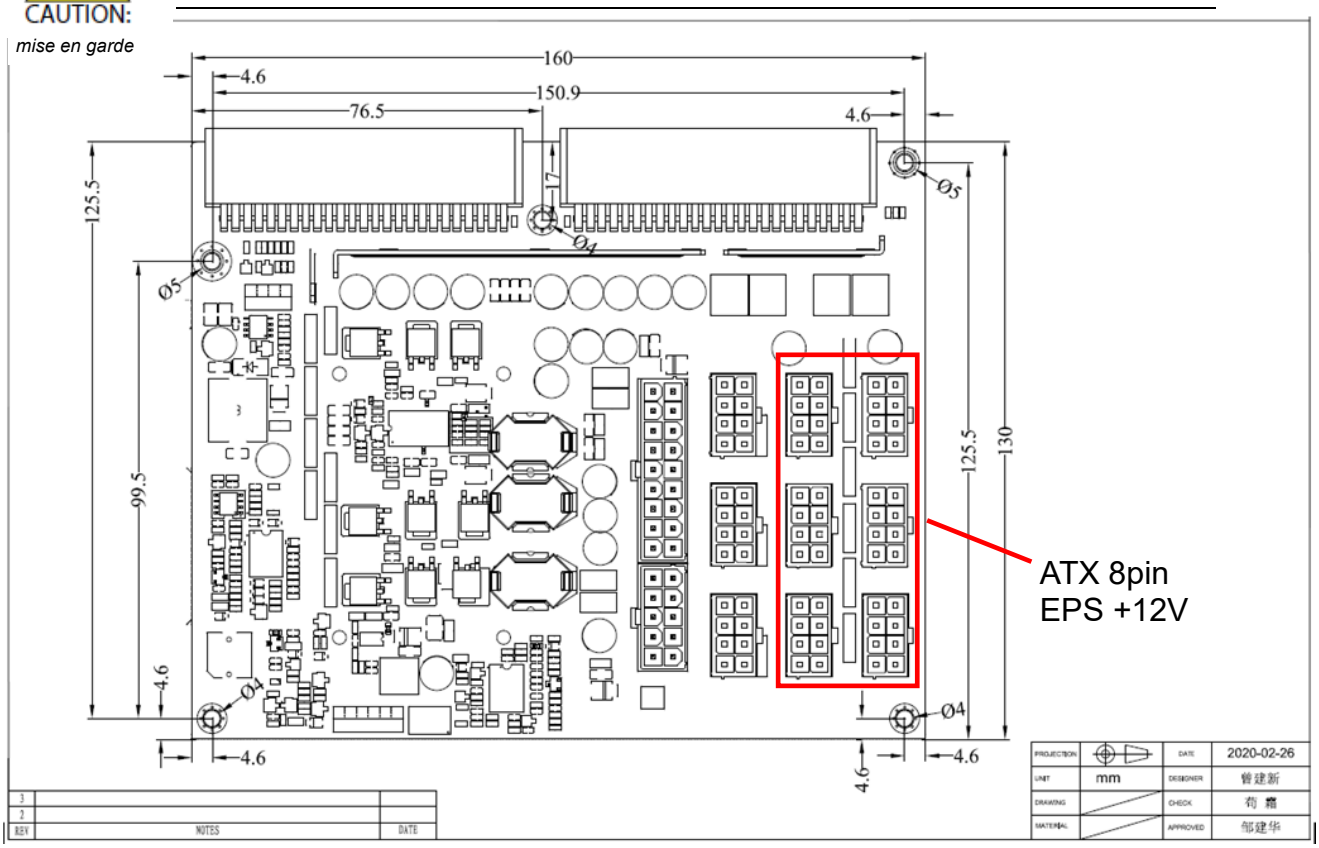
Slot	Support spec	Card install notes
	Standard PCIE x16 slot FH/FL, support PCIE Gen5 16 lanes (PCIE#7)	Double wide FH/FL GPGPU
	Standard PCIE x16 slot FH/FL, support PCIE Gen5 16 lanes (PCIE#5)	Double wide FH/FL GPGPU
	Standard PCIE x8 slot FH/FL, support PCIE Gen5 4 lanes (PCIE#4)	
	Standard PCIE x16 slot FH/FL, support PCIE Gen5 16 lanes (PCIE#3)	Double wide FH/FL GPGPU
	Standard PCIE x16 slot FH/FL, support PCIE Gen5 16 lanes(PCIE#1)	Double wide FH/FL GPGPU

3.4 PCIe Slot Secondary Power Supply

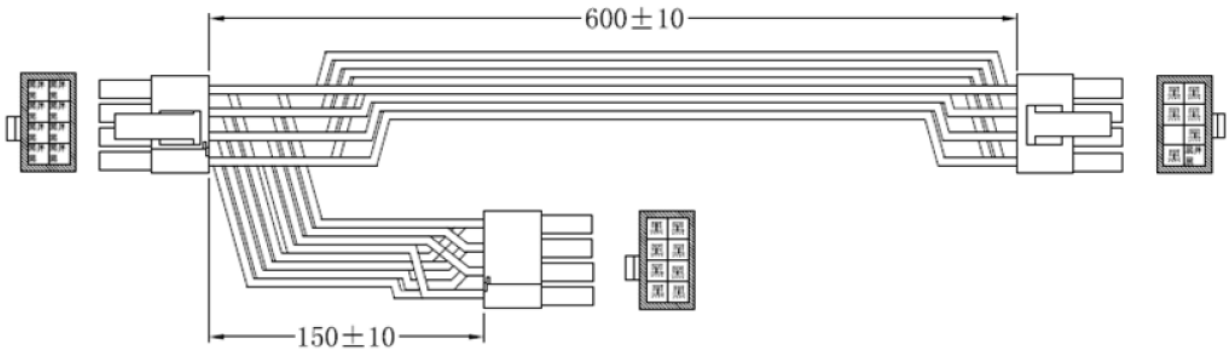
The AXE-7400SR is equipped with six ATX 8pin EPS +12V power connectors on the mainboard to provide secondary power for PCIe expansion cards if required. Two adapter cables are included. The pin definitions of the connectors and cables are described below.

CAUTION:
mise en garde

All installation procedures are restricted to skilled personnel.
Toutes les procédures d'installation sont réservées au personnel qualifié.

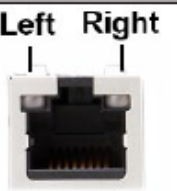


Please use the provided GPU power cable below to supply power to the GPU card.



3.5 Onboard LAN LED Color Definition

Onboard Ethernet ports have green and Amber LEDs to indicate LAN status. The chart below illustrates the different LED states.

X550 100 Mbps /1000 Mbps /10Gbps LAN Link/Activity LED Scheme			
		Left LED (Link/Activity)	Right LED (Speed)
No Link		OFF	OFF
100 Mbps	Link	Solid Green	Solid Green
	Active	Blinking Green	Solid Green
1000 Mbps	Link	Solid Green	Solid Yellow
	Active	Blinking Green	Solid Yellow
(10Gbps)	Link	Solid Yellow	Solid Yellow
	Active	Blinking Yellow	Solid Yellow

I210 10 Mbps /100 Mbps /1Gbps Link/Activity LED Scheme			
		Left LED	Right LED
No Link		OFF	OFF
10 Mbps	Link	Green Solid On	OFF
	Active	Green Blinking	OFF
100 Mbps	Link	Green Solid On	Green Solid On
	Active	Green Blinking	Green Solid On
1Gbps	Link	Green Solid On	Amber Solid On
	Active	Green Blinking	Amber Solid On

3.6 Login in BMC Web

The default IP setting is DHCP. Users can modify the IP in BIOS Menu..

If the BMC is connected to a network, after it get an IP address, it will print the IP address on the BIOS booting screen.



Default login account:
Username: root
Password: superuser

When logging into the BMC web interface for the first time, you will receive a reminder to change the BMC login password. If you do change it, be sure to make a record of it to avoid being unable to log in later.

4 Enter BIOS Setup

To enter the BIOS setup screen, follow these steps:

1. Power on the AXE-7400SR.
2. Press <F2> or <Del> during POST (<Tab> on remote console) to start the BIOS setup utility.

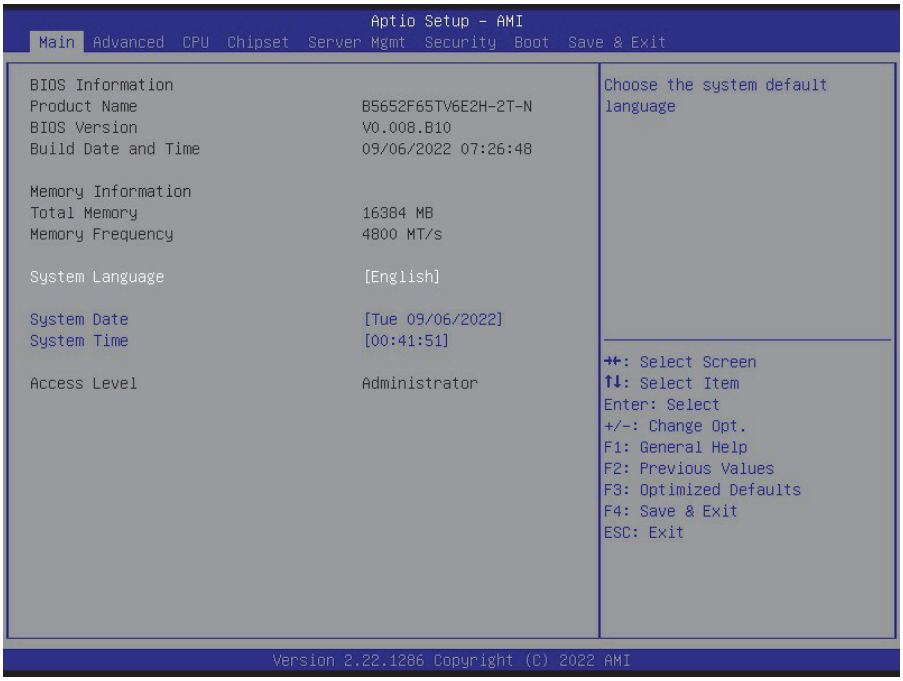
Setup Basics
The table below shows how to navigate in the setup program using the keyboard.

Key	Function
↑↓→←	Move cursor
<Enter>	Execute command or select submenu
<->/<+>	Select the previous or next value/setting of the field
<ESC>	Exit current menu
<F1>	General help
<F2>	Previous values
<F3>	Load the Optimal default configuration values of the menu
<F4>	Save and exit
<K>	Scroll help area upwards
<M>	Scroll help area downwards
<PgUp> / <PgDn>	Move cursor to next/previous page

4.1 Main Menu

In this section, you can alter general features such as the date and time.

Note that the options listed below are for options that can directly be changed within the Main Setup screen.



BIOS Information

It displays BIOS related information.

Product Name

It displays Product information.

BIOS Version

It displays BIOS version information

Build Date and Time

It displays the time when built

Access Level

Administrator

Platform Information

It displays the processor and PCH information

Memory Information Total Memory

It displays the total memory size.

Memory Frequency

It displays Memory frequency

System Language

Choose the system default language.

English / Simplified Chinese **/** Japanese

System Date

Set the Date. Use Tab to switch between Date elements. Default Ranges: Year: 1998-9999

Months: 1-12

Days: dependent on month Range of Years may vary

System Time

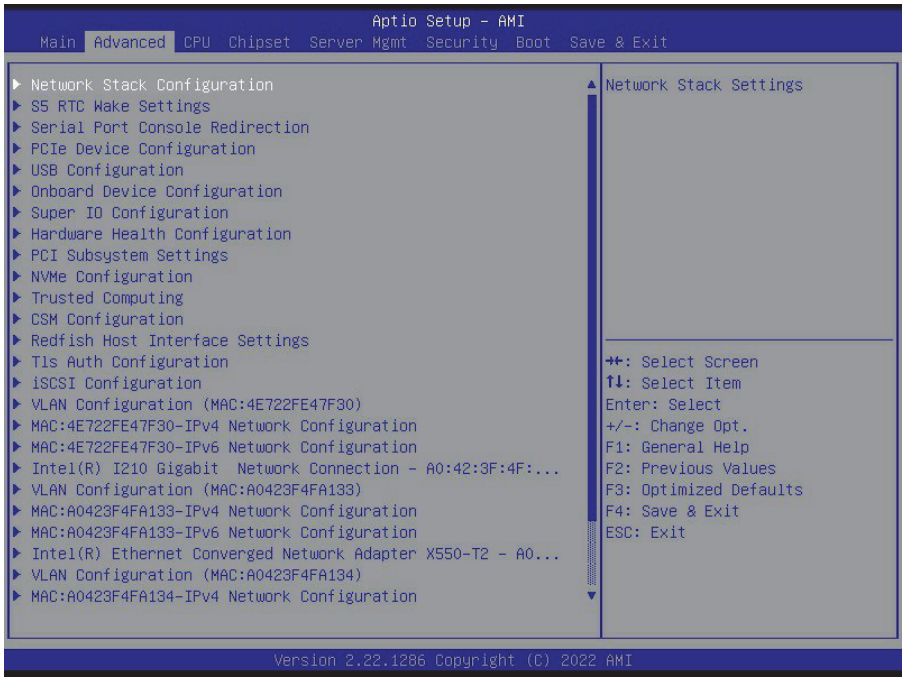
Adjust the system clock.

HH (24 hours format): MM (Minutes): SS (Seconds)

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4.2 Advanced Menu

This section facilitates configuring advanced BIOS options for your system.



NOTE: This is a sample screenshot of the Advanced Menu. The HII network drivers displayed here depend on the card(s) you installed and the functions you enabled.

Network Stack Configuration

Network Stack Settings

S5 RTC Wake Settings

Enable system to wake from S5 using RTC alarm

Serial Port Console Redirection

Serial Port Console Redirection

PCIe Device Configuration

Onboard PCIE Slot Configuration

USB Configuration

USB Configuration Parameters

Onboard Device Configuration

Onboard Device and Function Configuration.

Super IO Configuration

System Super IO Chip Parameters.

Hardware Health Configuration

Hardware Health Configuration

PCI Subsystem Settings

PCI, PCI-X and PCI Express Settings

NVMe Configuration

NVMe Device information

Trusted Computing

Trusted Computing settings.

CSM Configuration

CSM Configuration, Enable/Disable Option ROM execution setting, etc

Redfish Host Interface Settings

Redfish Host Interface Parameters

Tls Auth Configuration

Press<Enter> to select Tls Auth configuration.

iSCSI Configuration

Configure the iSCSI parameters

VLAN Configuration(MAC: 4E722FE47F30)

VLAN Configuration(MAC: 4E722FE47F30)

MAC: 4E722FE47F30-IPv4 Network Configuration

Configure IPv4 network parameters.(MAC: 4E722FE47F30)

MAC: 4E722FE47F30-IPv6 Network Configuration

Configure IPv6 network parameters.(MAC: 4E722FE47F30)

Intel ® I210 Gigabit Network Connection

Configure Gigabit Ethernet device parameters.

VLAN Configuration (MAC:A0423F4FA133)

VLAN Configuration (MAC:A0423F4FA133)

MAC: A0423F4FA133-IPv4 Network Configuration

Configure IPv4 network parameters.(MAC: A0423F4FA133)

MAC: A0423F4FA133-IPv6 Network Configuration

Configure IPv6 network parameters.(MAC: A0423F4FA133)

Intel® Ethernet Converged Network Adapter X550-T2-A0

Configure 10 Gigabit Ethernet device parameters.

VLAN Configuration (MAC:A0423F4FA134)

VLAN Configuration MAC:A0423F4FA134

MAC: A0423F4FA134-IPv4 Network Configuration

Configure IPv4 network parameters.(MAC: A0423F4FA134)

MAC: A0423F4FA134-IPv6 Network Configuration

Configure IPv6 network parameters.(MAC: A0423F4FA134)

Intel® Ethernet Converged Network Adapter X550-T2-A0

Configure 10 Gigabit Ethernet device parameters.

VLAN Configuration (MAC:A0423F4FA135)

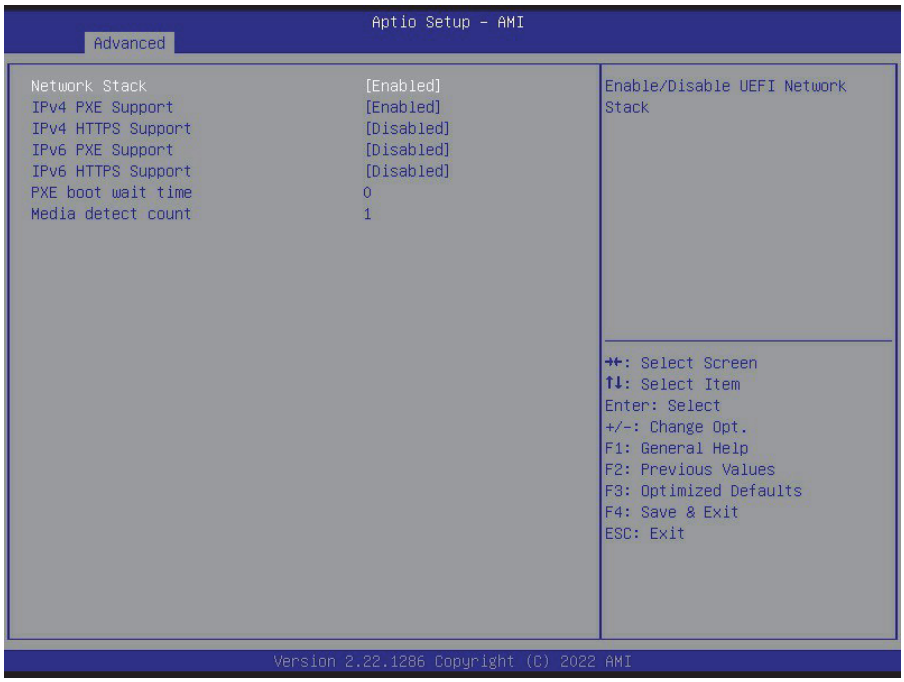
VLAN Configuration MAC:A0423F4FA135

MAC: A0423F4FA135-IPv4 Network Configuration

Configure IPv4 network parameters.(MAC: A0423F4FA135)

MAC: A0423F4FA135-IPv6 Network Configuration

Configure IPv6 network parameters.(MAC: A0423F4FA135)



Network Stack Configuration

Network Stack

Enable/Disable UEFI Network Stack

Disabled / **Enabled**

NOTE: When Network Stack was set to **Enabled,** the following item will appear.

IPv4 PXE Support.

Enable/Disable IPv4 PXE boot support. If disabled, IPv4 PXE boot support will not be available.

Disabled / **Enabled**

IPv4 HTTPs Support

Enable/Disable IPv4 HTTPs boot support. If disabled, IPv4 HTTPS boot support will not be available.

Disabled / Enabled

IPv6 PXE Support

Enable/Disable IPv6 HTTPs boot support. If disabled, IPv6 HTTPS boot support will not be available.

Disabled / Enabled

IPv6 HTTPs Support

Enable/Disable IPv6 HTTPs boot support. If disabled, IPv6 HTTPS boot support will not be available.

Disabled / Enabled

PXE boot wait time

Wait time in seconds to press ESC key to abort the PXE boot. Use either +/- or numeric keys to set the value.

0

Media detect count

Number of times the presence of media will be checked. Use either +/- or numeric keys to set the value.

1

S5 RTC Wake Settings



Wake system from S5

Enable or disable System wake on alarm event. Select Fixed Time, system will wake on the hr::min::sec specified. Select dynamic Time, system will wake on the current time+ increase minute(s)

Disabled / Fixed Time / Dynamic Time

Serial Port Console Redirection



COM1/COM2

Console Redirection

Console redirection enable or disable.

Disabled / Enabled

Legacy Console Redirection

Legacy Console Redirection Settings

Serial Port for Out-Of-Band Management/Windows Emergency Services (EMS) Console Redirection

Console redirection enable or disable.

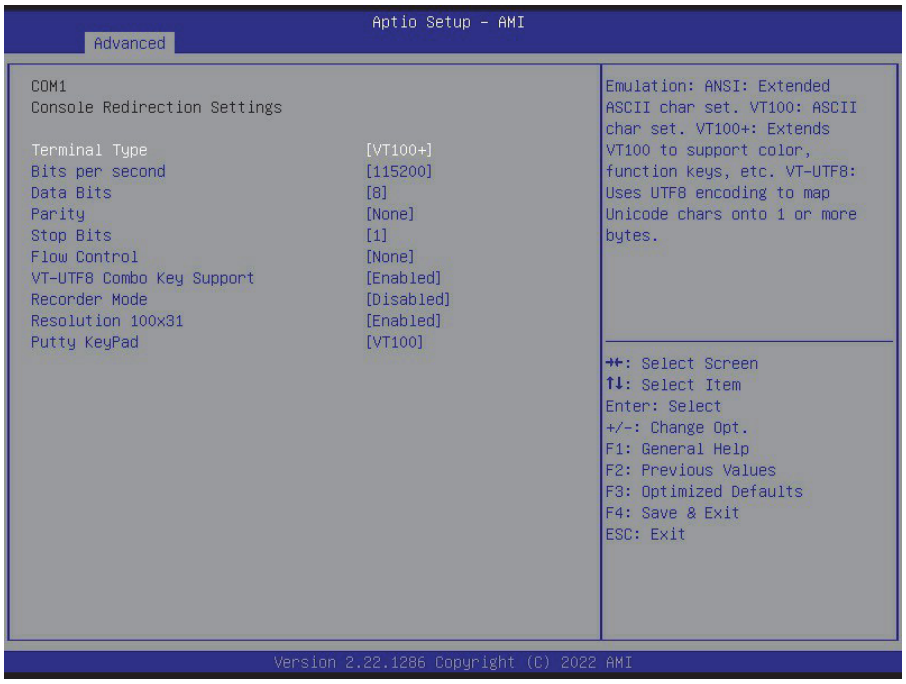
Disabled / Enabled

Console Redirection Settings

The settings specify how the host computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

NOTE: **Console Redirection Settings** menu only be available to set up when **Console Redirection** was set to **[Enabled].**

COM1 Console Redirection Settings



Terminal Type

Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set.

VT100+: Extends VT100 to support color function keys, etc.

VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.

VT100 / **VT100+** / VT-UTF8 **/** ANSI

Bits per Second

Select serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.

9600 / 19200 / 38400 / 57600 **/ 115200**

Data Bits

8 / 7

Parity

A parity bit can be sent with the data bits to detect some transmission errors. Even: parity bit is 0 if the num of 1's in the data bits is even. Odd: parity bit is 0 if the num of 1's in the data bits is odd. Mark: parity bit is always 1. Space: parity bit is always

0. Mark and Space parity do not allow for error detection.

None / Even / Odd / Mark / Space

Stop Bits

Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.

1 / 2

Flow Control

Flow Control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a ‘stop’ signal can be sent to stop the data flow. Once the buffers are empty, a ‘start’ signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signal.

None / Hardware RTS/CTS

VT-UTF8 Combo Key Support

Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals.

Enabled / Disabled

Recorder Mode

With this mode enabled only text will be sent. This is to capture Terminal data.

Disabled / Enabled

Resolution 100x31

Enable or disable extended terminal resolution.

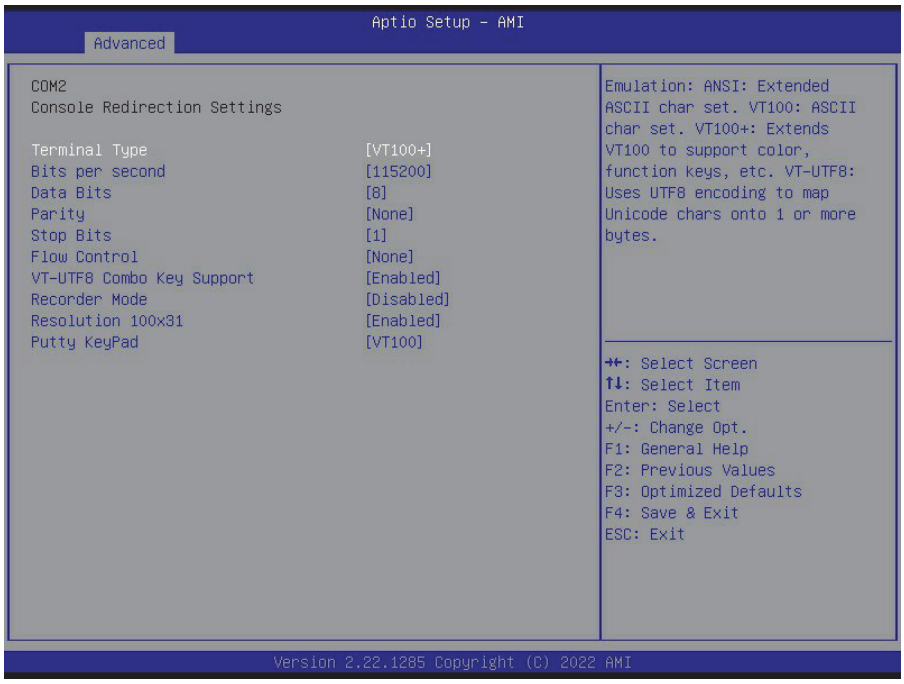
Disabled **/ Enabled**

Putty KeyPad

Select FunctionKey and KeyPad on Putty.

VT100 / LINUX / XTERMR6 / SCO / ESCN / VT400

COM2 Console Redirection Settings



Terminal Type

Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set.

VT100+: Extends VT100 to support color function keys, etc.

VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.

VT100 / **VT100+** / VT-UTF8 **/** ANSI

Bits per Second

Select serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.

9600 / 19200 / 38400 / 57600 / **115200**

Data Bits

8 / 7

Parity

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0. Mark and Space parity do not allow for error detection.

None / Even / Odd / Mark / Space

Stop Bits

Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.

1 / 2

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None / Hardware RTS/CTS

VT-UTF8 Combo Key Support

Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals.

Enabled / Disabled

Recorder Mode

With this mode enabled only text will be sent. This is to capture Terminal data.

Disabled / Enabled

Resolution 100x31

Enable or disable extended terminal resolution.

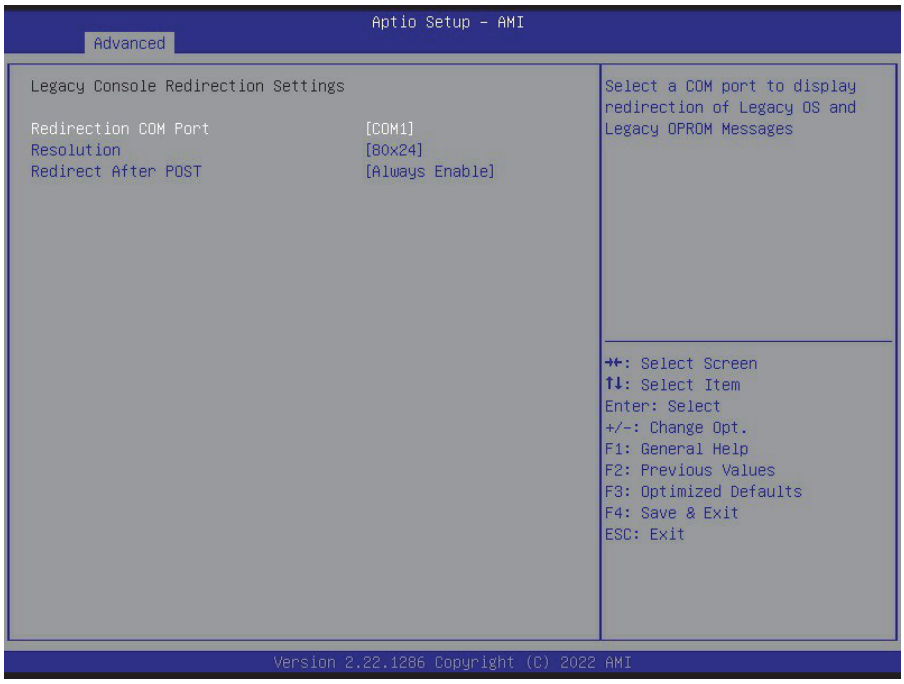
Disabled **/ Enabled**

Putty KeyPad

Select FunctionKey and KeyPad on Putty.

VT100 / LINUX / XTERMR6 / SCO / ESCN / VT400

Legacy Console Redirection Settings



Redirection COM Port

Select a COM port to display redirection of Legacy OS and Legacy OPROM Messages

COM1 / COM2

Resolution

On Legacy OS, the Number of Rows and Columns supported redirection

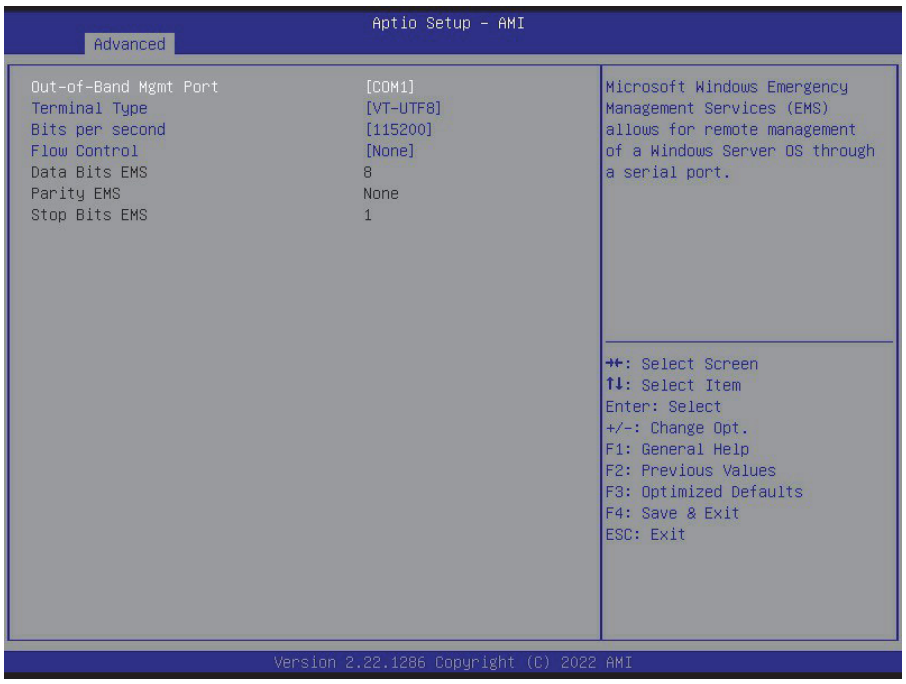
80x24 / **80x25**

Redirect After POST

when Bootloader is selected, then Legacy Console Redirection is disabled before booting to legacy OS, when Always Enable is selected, then Legacy Console Redirection is enabled for Legacy OS. Default setting for this option is set to Always Enable.

Always Enable / BootLoader

Serial Port for Out-Of-Band Management/Windows Emergency Services (EMS) Console Redirection Settings



Out-of Band Mgmt Port

Microsoft Windows Emergency Management Services (EMS) allows for remote management of a Windows Server OS through a serial port.

COM1 / COM2

Terminal Type

VT-UTF8 is the preferred terminal type for out-of-band management. The next best choice is VT100+ and then VT100. See above, in Console Redirection Settings page, for more Help with Terminal Type/Emulation.

VT-UTF8 / VT100 / VT100+ / ANSI

Bits per Second

Select serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.

9600 / 19200 / 57600 / **115200**

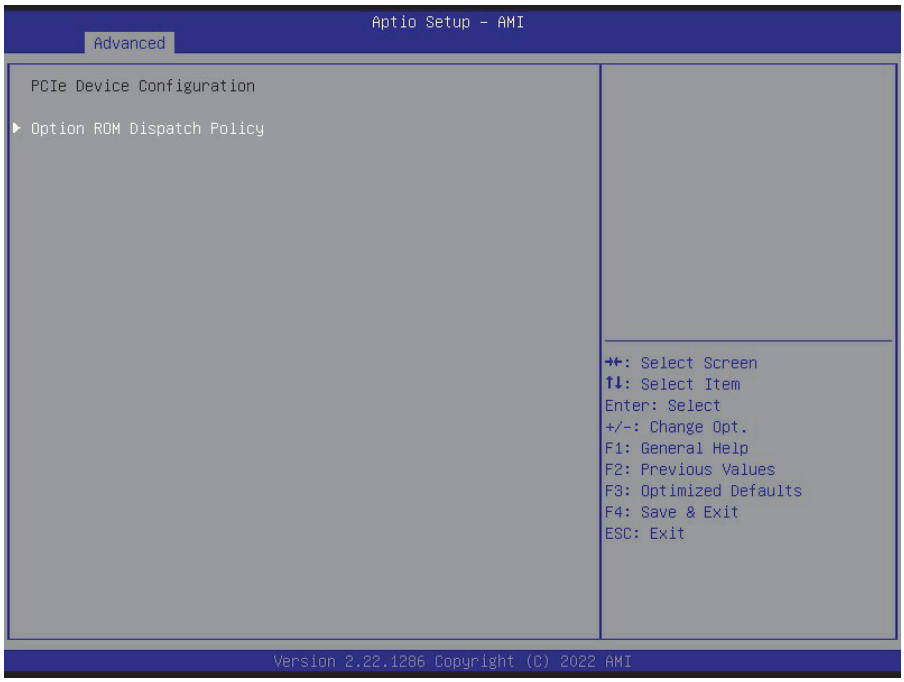
Flow Control

Flow Control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a ‘stop’ signal can be sent to stop the data flow. Once the buffers are empty, a ‘start’ signal can be sent to restart the flow. Hardware flow control uses two wires to send start/stop signal.

None / Hardware RTS/CTS / Software Xon/Xoff

Data Bits EMS / Parity EMS / Stop Bits EMS

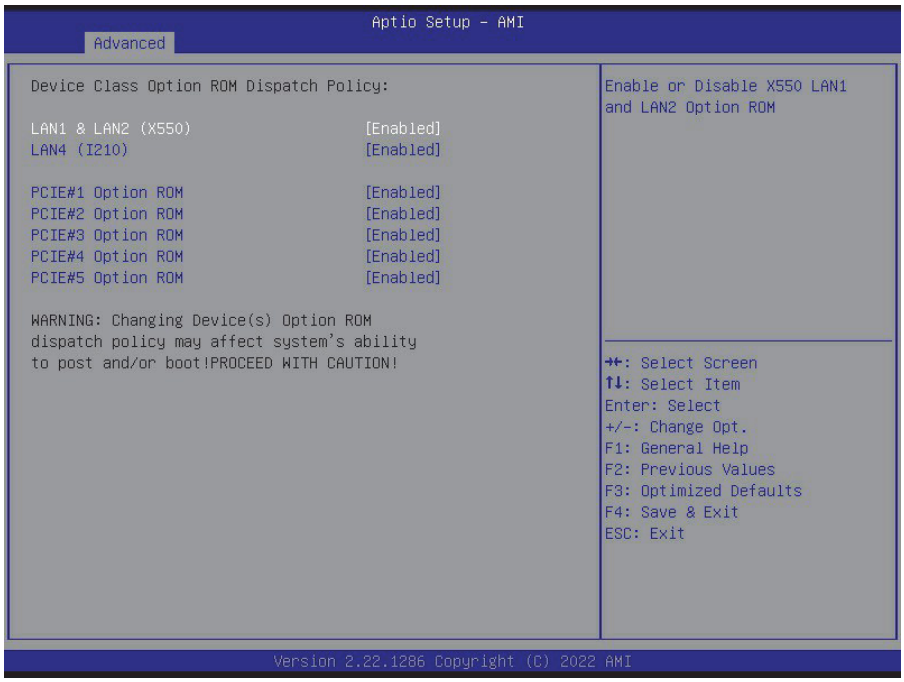
Read only.



PCIe Device Configuration

Option ROM Dispatch Policy

Option ROM Dispatch Policy settings.



Device Class Option ROM Dispatch Policy:

LAN1&LAN2 (X550)

Enable or Disable X550 LAN1 and LAN2 Option ROM

Enabled / Disabled

LAN4 (I210)

Enable or Disable LAN2 Option Rom

Enabled / Disabled

PCIE#1 Option ROM

Enable or Disable Option ROM execution for selected Slot.

Enabled / Disabled

PCIE#2 Option ROM

Enable or Disable Option ROM execution for selected Slot.

Enabled / Disabled

PCIE#3 Option ROM

Enable or Disable Option ROM execution for selected Slot.

Enabled / Disabled

PCIE#4 Option ROM

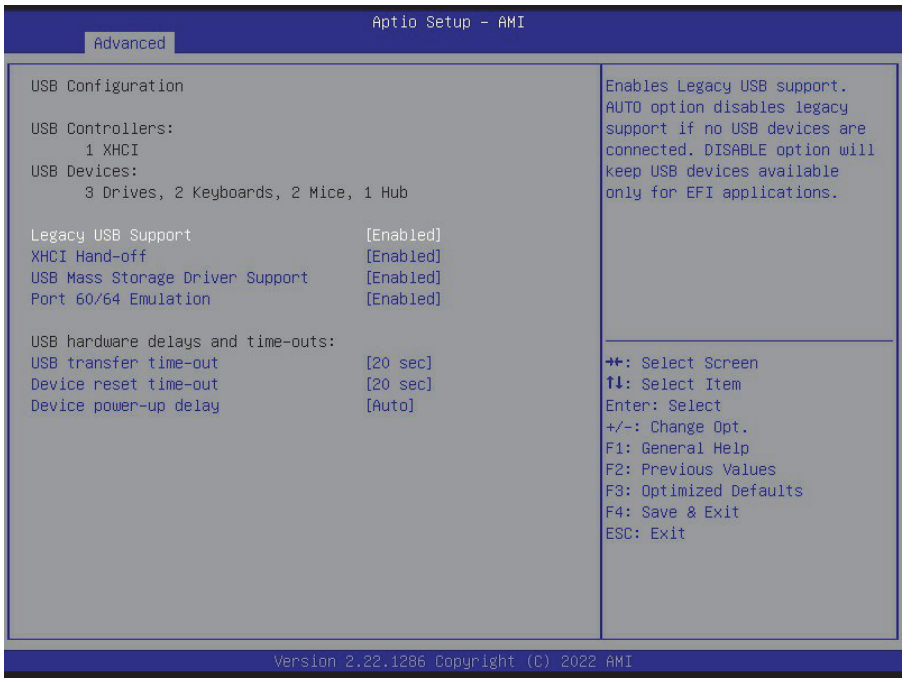
Enable or Disable Option ROM execution for selected Slot.

Enabled / Disabled

PCIE#5 Option ROM

Enable or Disable Option ROM execution for selected Slot.

Enabled / Disabled



USB Configuration

Legacy USB Support

Enables legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.

Enabled / Disabled / Auto

XHCI Hand-off

This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.

Enabled / Disabled

USB Mass Storage Driver Support

Enable/Disable USB Mass Storage Driver Support.

Disabled / **Enabled**

Port 60/64 Emulation

Enable I/O port 60h/64h emulation support. This should be enabled for the complete USB keyboard legacy support for non-USB aware OSes.

Disabled / **Enabled**

USB transfer time-out

The time-out value for Control, Bulk and Interrupt transfers.

1 sec / 5 sec **/** 10 sec / **20 sec**

Device reset time-out

USB mass storage device Start Unit command time-out.

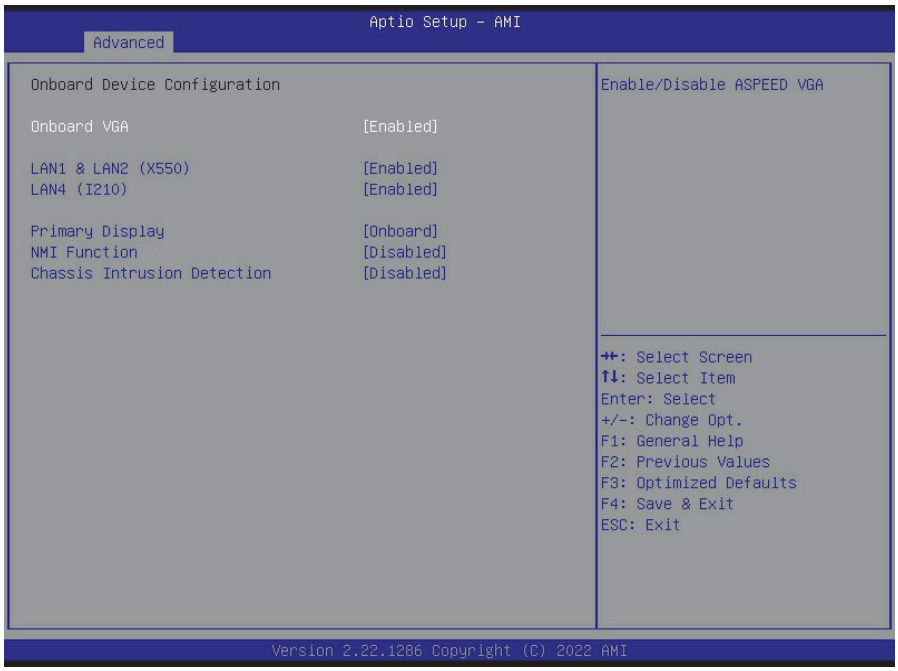
10 sec / **20 sec** / 30 sec / 40 sec

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.

Auto / Manual

Onboard Device Configuration



Onboard VGA

Enable/Disable ASPEED VGA Disabled / **Enabled**

LAN1& LAN2 (X550)

LAN Enable/Disable control function.

Disabled / **Enabled**

LAN4 (I210)

LAN4 Enable/Disable control function.

Disabled / **Enabled**

Primary Display

Select active Video type.

Onboard / External

NMI Button

Enable or disable NMI button.

Disabled / Enabled

Chassis Intrusion Detection

Enabled: When a chassis open event is detected, the BIOS will display the event.

Disabled / Enabled



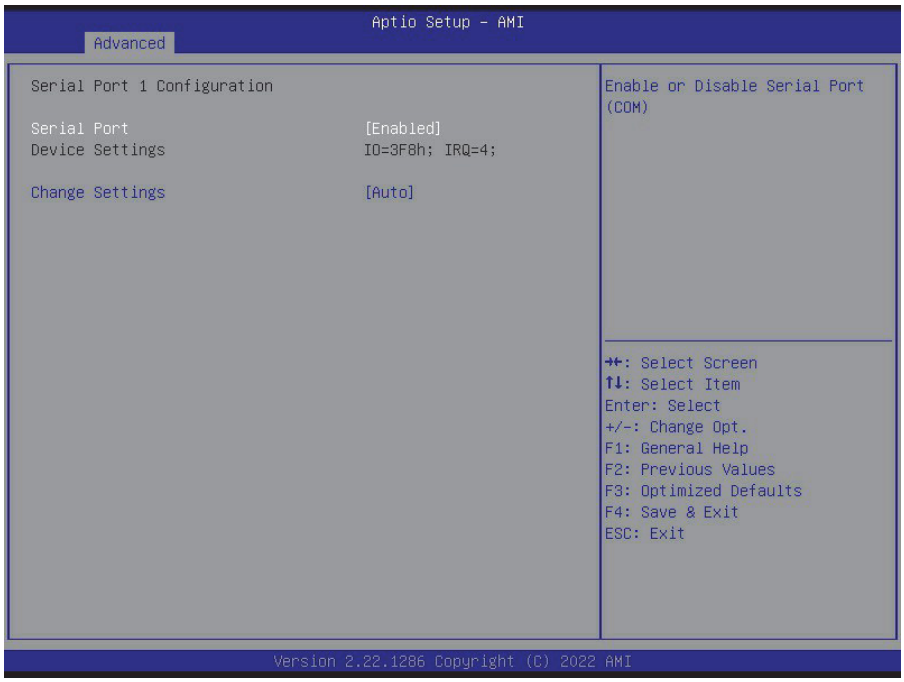
Super IO Configuration

Serial Port 1 Configuration

Set Parameters of serial Port 1 (COMA)

Serial Port 2 Configuration

Set Parameters of serial Port 2 (COMB)



Serial Port 1 Configuration

Serial Port

Select an optimal settings for Super IO Device.

Disabled / **Enabled**

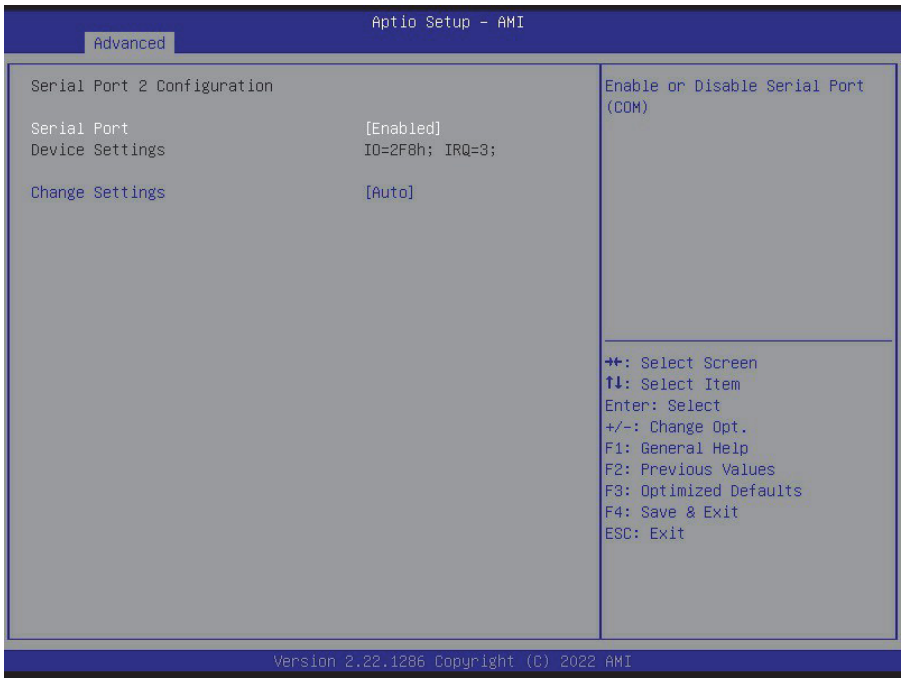
NOTE: Serial Port has set to **Enabled**, the following items will be appear.

Change Settings

Select an optimal settings for Super IO device.

Auto /

IO=3F8h; IRQ=4; / IO=2F8h; IRQ=4; / IO=3E8h; IRQ=4; / IO=2E8h, IRQ=4;



Serial Port 2 Configuration

Serial Port

Enable or Disable Serial Port (COM).

Disabled / **Enabled**

NOTE: Serial Port has set to **Enabled**, the following items will be appear.

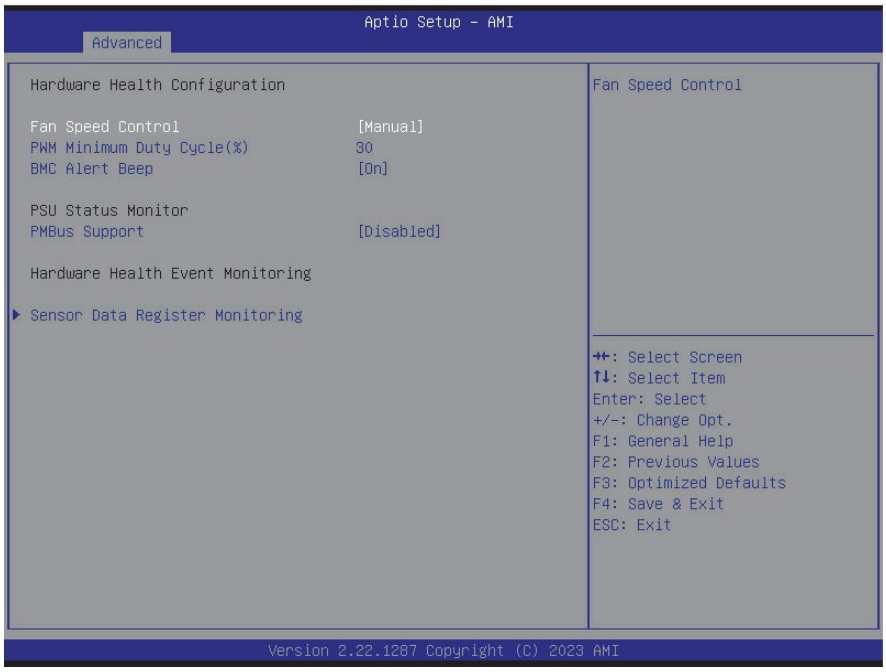
Change Settings

Select an optimal settings for Super IO device.

Auto /

IO=3F8h; IRQ=3; / IO=2F8h; IRQ=3; / IO=3E8h; IRQ=3; / IO=2E8h; IRQ=3;

Hardware Health Configuration



Auto Fan Control

Auto Fan Control help.

Manual / Full Speed

PWM Minimal Duty Cycle

PWM Minimal Duty Cycle (%). This item is available when **Fan Speed Control** is set to [Manual].

30

BMC Alert Beep

Enable/Disable BMC Alert Beep.

On / Off

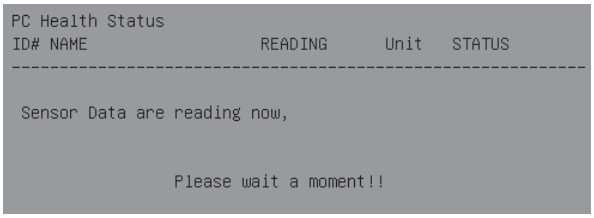
PMBus support

PMBus Support.

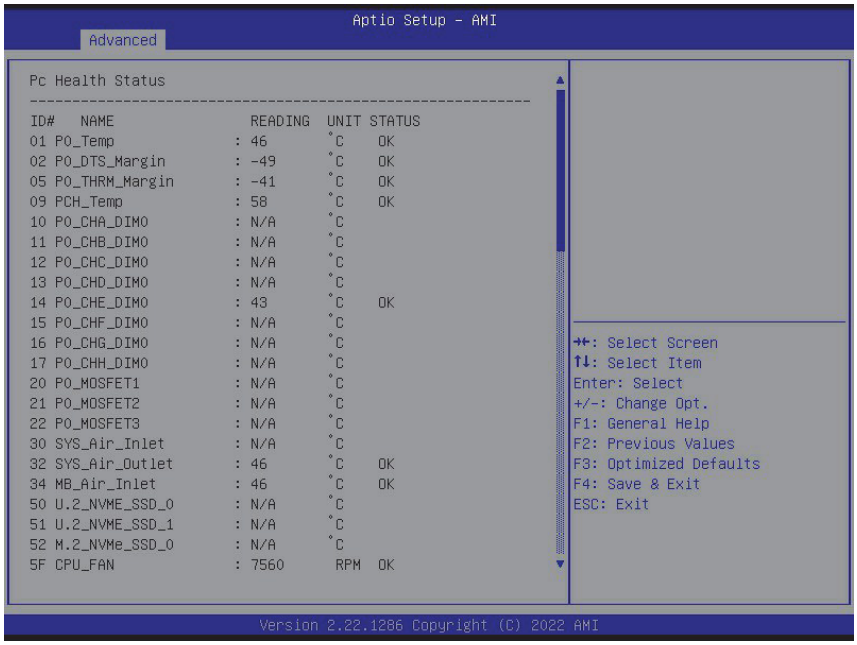
Disabled / Enabled

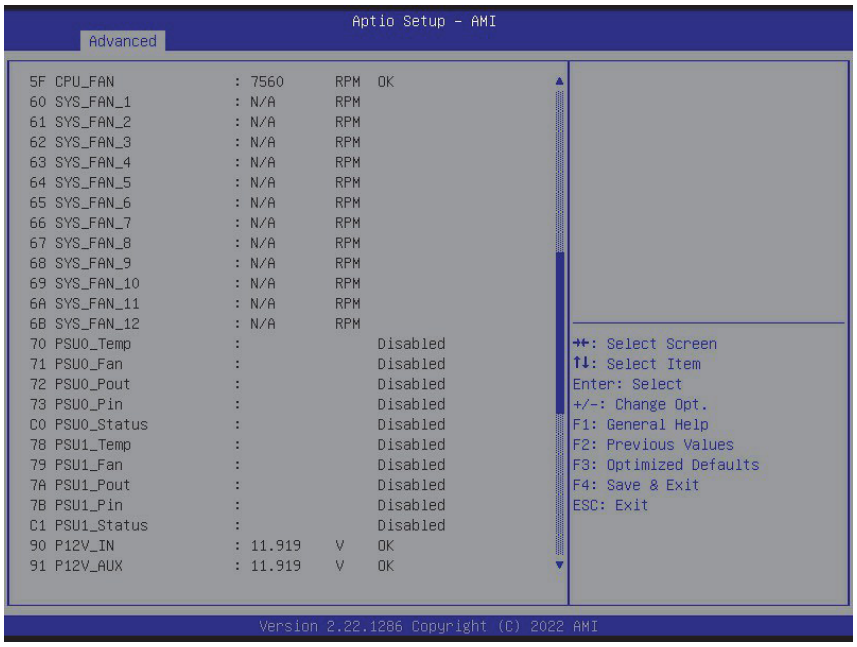
Sensor Data Register Monitoring

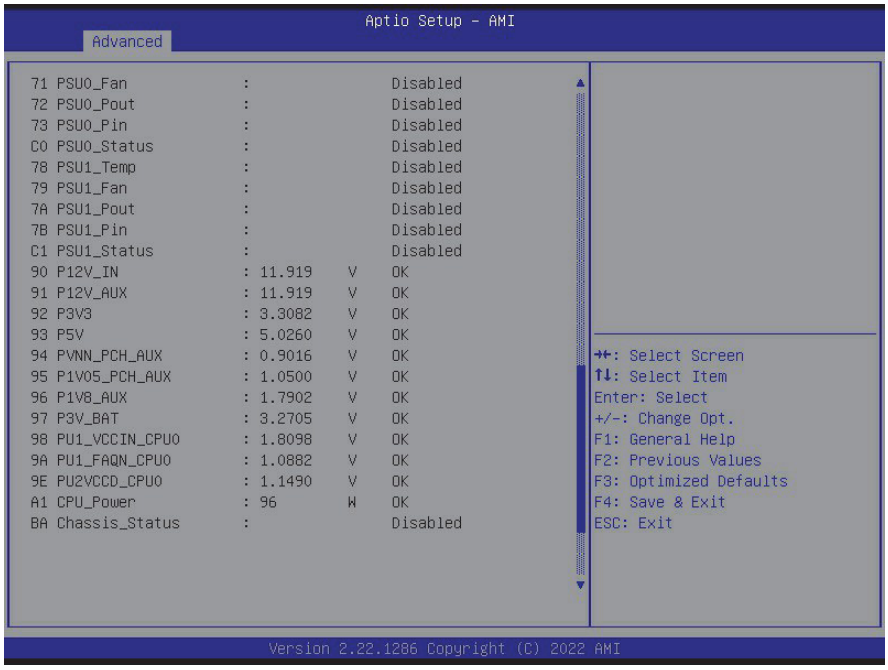
When you enter the **Sensor Data Register Monitoring** submenu, you will see the following dialog window pop out. Please wait 8~10 seconds.

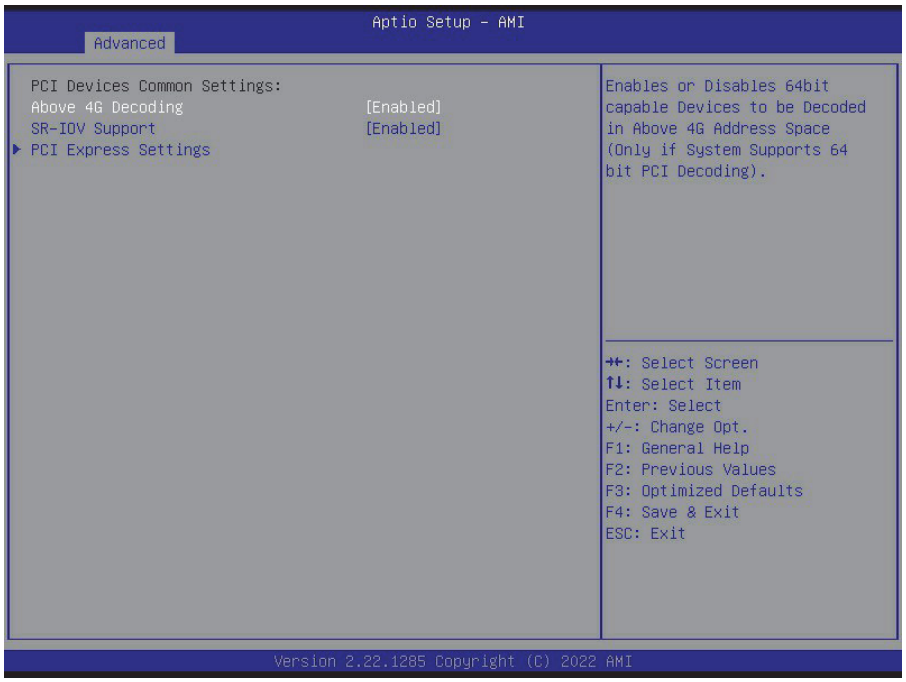


NOTE 1: SDR can not be modified. Read only.


Aptio Setup – AMI
Advanced
Pc Health Status
ID# NAME READING UNIT STATUS
01 P0_Temp : 46 °C OK
02 P0_DTS_Margin : -49 °C OK
05 P0_THRM_Margin : -41 °C OK
09 PCH_Temp : 58 °C OK
10 P0_CHA_DIM0 : N/A °C
11 P0_CHB_DIM0 : N/A °C
12 P0_CHC_DIM0 : N/A °C
13 P0_CHD_DIM0 : N/A °C
14 P0_CHE_DIM0 : 43 °C OK
15 P0_CHF_DIM0 : N/A °C
16 P0_CHG_DIM0 : N/A °C
17 P0_CHH_DIM0 : N/A °C
20 P0_MOSFET1 : N/A °C
21 P0_MOSFET2 : N/A °C
22 P0_MOSFET3 : N/A °C
30 SYS_Air_Inlet : N/A °C
32 SYS_Air_Outlet : 46 °C OK
34 MB_Air_Inlet : 46 °C OK
50 U.2_NVME_SSD_0 : N/A °C
51 U.2_NVME_SSD_1 : N/A °C
52 M.2_NVMe_SSD_0 : N/A °C
5F CPU_FAN : 7560 RPM OK
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.22.1286 Copyright (C) 2022 AMI


Aptio Setup – AMI
Advanced
5F CPU_FAN : 7560 RPM OK
60 SYS_FAN_1 : N/A RPM
61 SYS_FAN_2 : N/A RPM
62 SYS_FAN_3 : N/A RPM
63 SYS_FAN_4 : N/A RPM
64 SYS_FAN_5 : N/A RPM
65 SYS_FAN_6 : N/A RPM
66 SYS_FAN_7 : N/A RPM
67 SYS_FAN_8 : N/A RPM
68 SYS_FAN_9 : N/A RPM
69 SYS_FAN_10 : N/A RPM
6A SYS_FAN_11 : N/A RPM
6B SYS_FAN_12 : N/A RPM
70 PSU0_Temp : Disabled
71 PSU0_Fan : Disabled
72 PSU0_Pout : Disabled
73 PSU0_Pin : Disabled
C0 PSU0_Status : Disabled
78 PSU1_Temp : Disabled
79 PSU1_Fan : Disabled
7A PSU1_Pout : Disabled
7B PSU1_Pin : Disabled
C1 PSU1_Status : Disabled
90 P12V_IN : 11.919 V OK
91 P12V_AUX : 11.919 V OK
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.22.1286 Copyright (C) 2022 AMI


Aptio Setup – AMI
Advanced
71 PSU0_Fan : Disabled
72 PSU0_Pout : Disabled
73 PSU0_Pin : Disabled
C0 PSU0_Status : Disabled
78 PSU1_Temp : Disabled
79 PSU1_Fan : Disabled
7A PSU1_Pout : Disabled
7B PSU1_Pin : Disabled
C1 PSU1_Status : Disabled
90 P12V_IN : 11.919 V OK
91 P12V_AUX : 11.919 V OK
92 P3V3 : 3.3082 V OK
93 P5V : 5.0260 V OK
94 PVNN_PCH_AUX : 0.9016 V OK
95 P1V05_PCH_AUX : 1.0500 V OK
96 P1V8_AUX : 1.7902 V OK
97 P3V_BAT : 3.2705 V OK
98 PU1_VCCIN_CPU0 : 1.8098 V OK
9A PU1_FAQN_CPU0 : 1.0882 V OK
9E PU2VCCD_CPU0 : 1.1490 V OK
A1 CPU_Power : 96 W OK
BA Chassis_Status : Disabled
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.22.1286 Copyright (C) 2022 AMI



PCI Device Common Settings

Above 4G Decoding

Enables or Disables 64bit capable Devices to be decoded in Above 4G Address Space(Only if System supports 64 bit PCI Decoding).

Enabled / Disabled

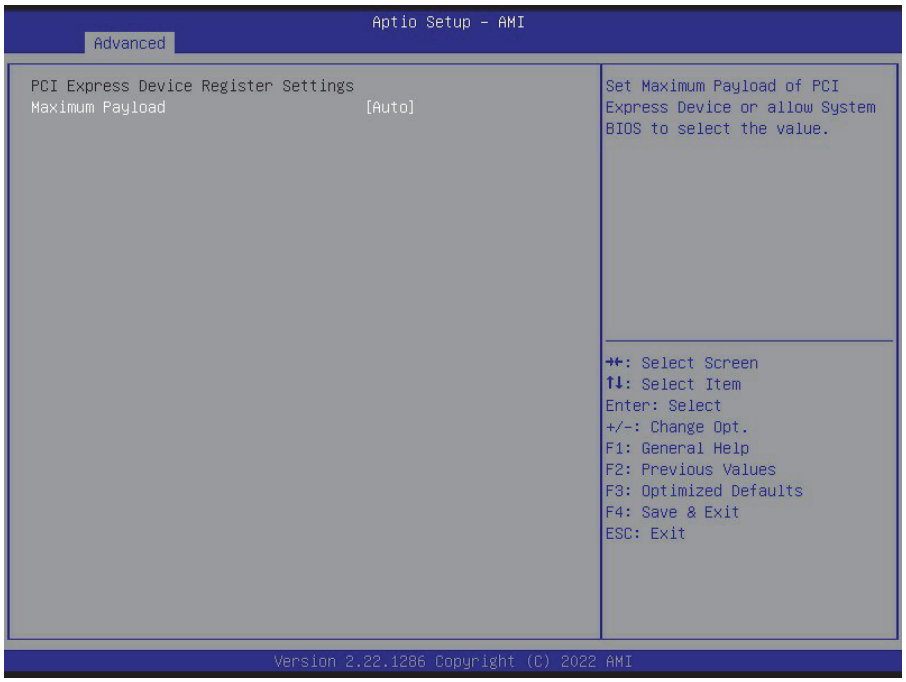
SR-IOV Support

If system has SR-IOV capable PCIe devices, this option Enables or Disables Single Root IO virtualization Support

Enabled / Disabled

PCI Express Settings

Change PCI Express Devices Settings

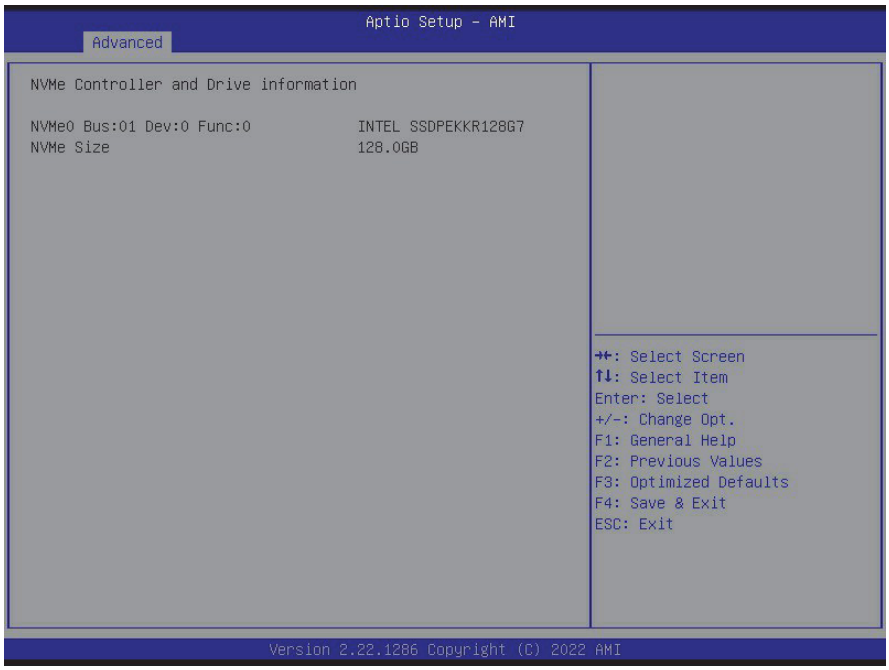


PCI Express Subsystem

Maximum Payload

Set Maximum Payload of PCI Express Device or allow System BIOS to select the value.

Auto / 128 Bytes / 256 Bytes / 512 Bytes / 1024 Bytes / 2048 Bytes / 4096 Bytes



NVMe Configuration



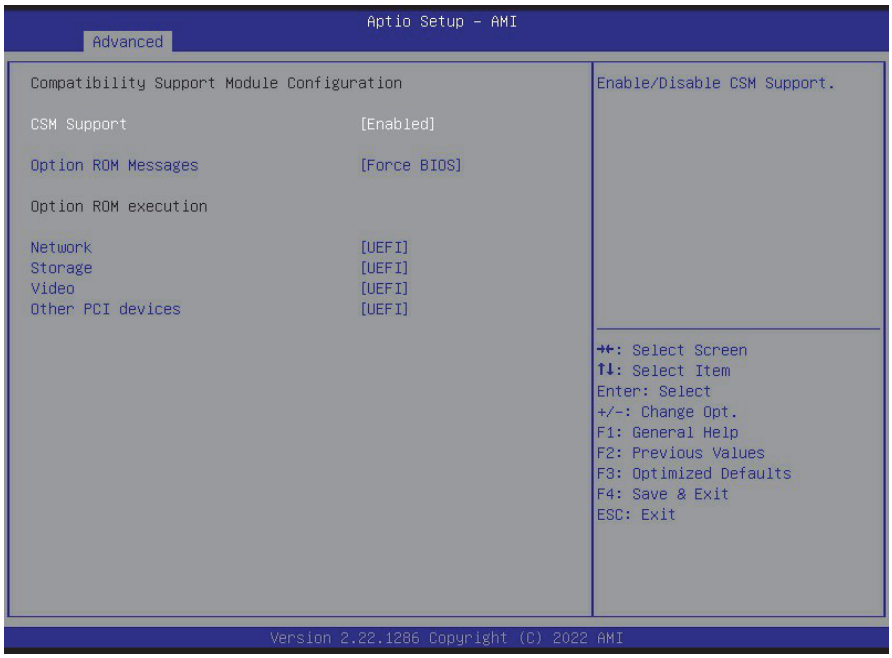
Trusted Computing

Security Device Support

Enables or disables BIOS support for security device. O.S. will not show Security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

Enabled / **Disabled**

.



CSM Configuration

CSM support

Enable/Disable CSM Support

Enabled / **Disabled**

NOTE： When the CSM support set to **Enabled,** the following items will appear.

Option ROM Messages

Set display mode for Option ROM

Force BIOS / Keep Current

Network

Controls the execution of UEFI and legacy PXE OpROM

UEFI / legacy

Storage

Controls the execution of UEFI and legacy PXE OpROM

UEFI / legacy

Video

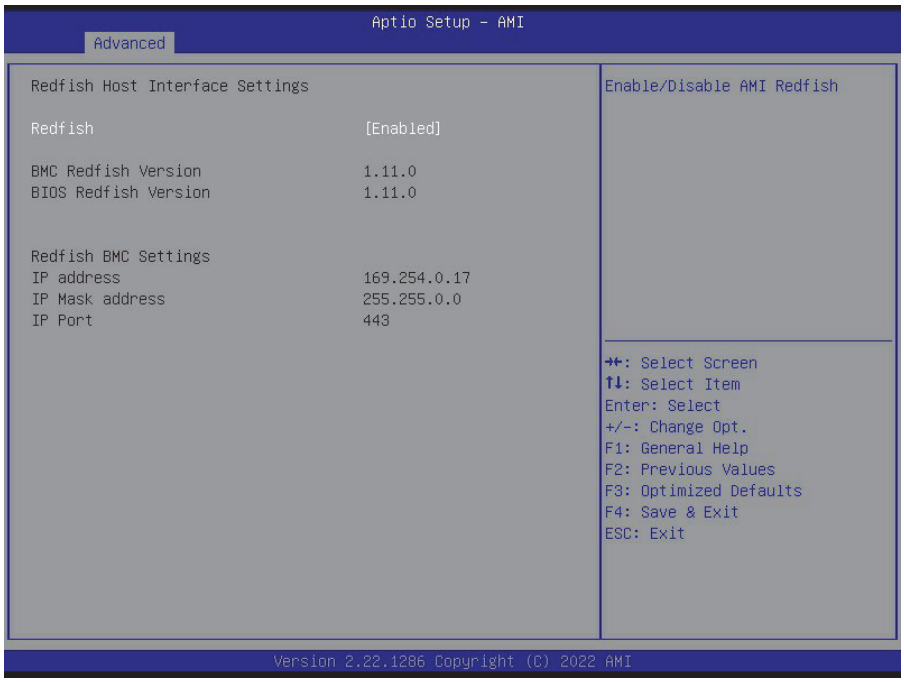
Controls the execution of UEFI and legacy Video OpROM

UEFI / legacy

Other PCI devices

Determines OpRom execution policy for devices other than network, storage, or video

UEFI / legacy

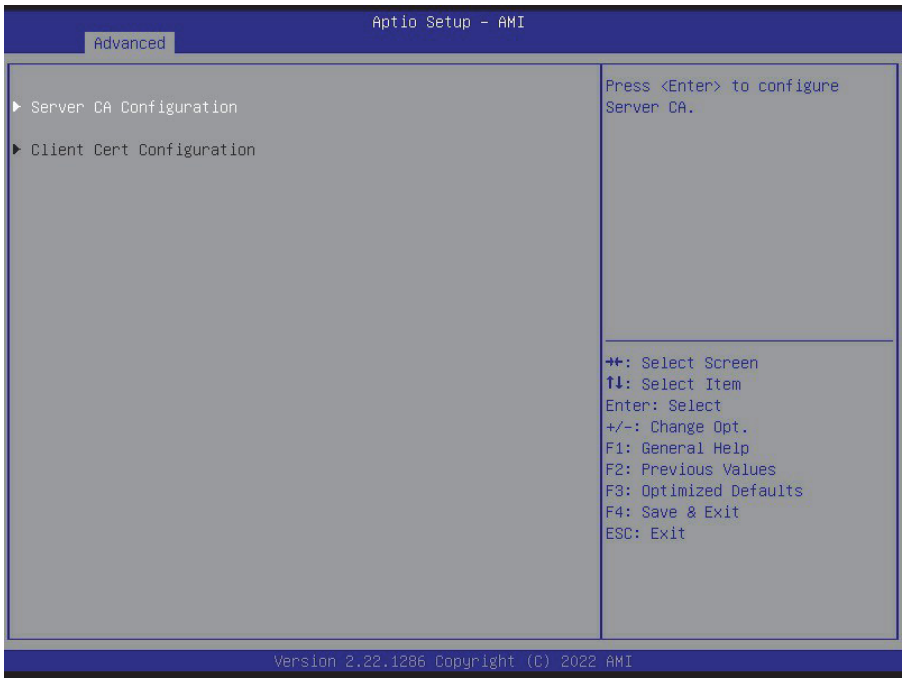


Redfish Host Interface Settings

Redfish

Enable/Disable AMI Redfish.

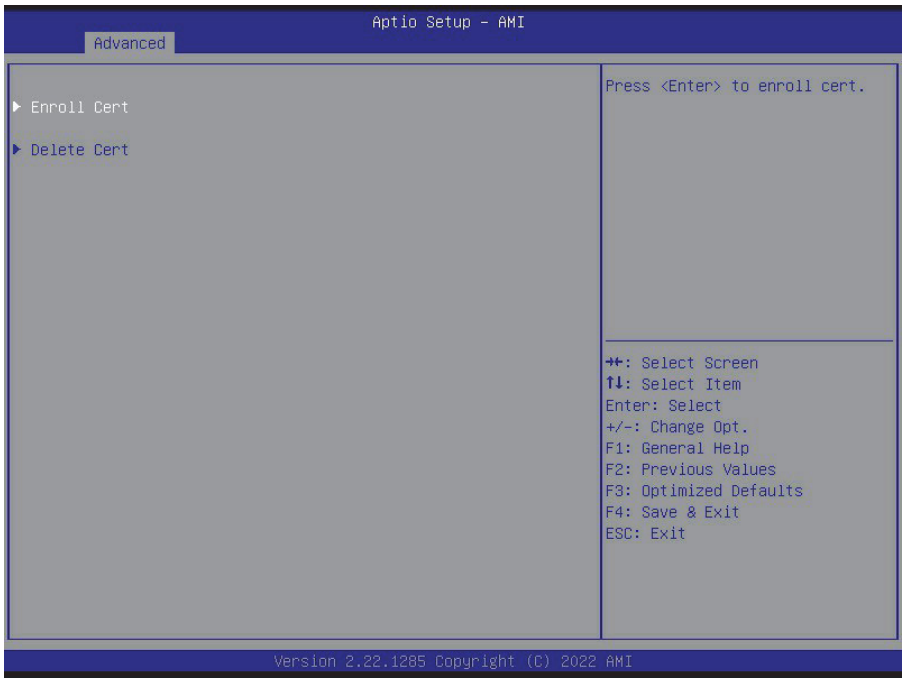
Disabled / **Enabled**



Tls Auth Configuration

Server CA Configuration

Press <Enter> to configure Server CA.



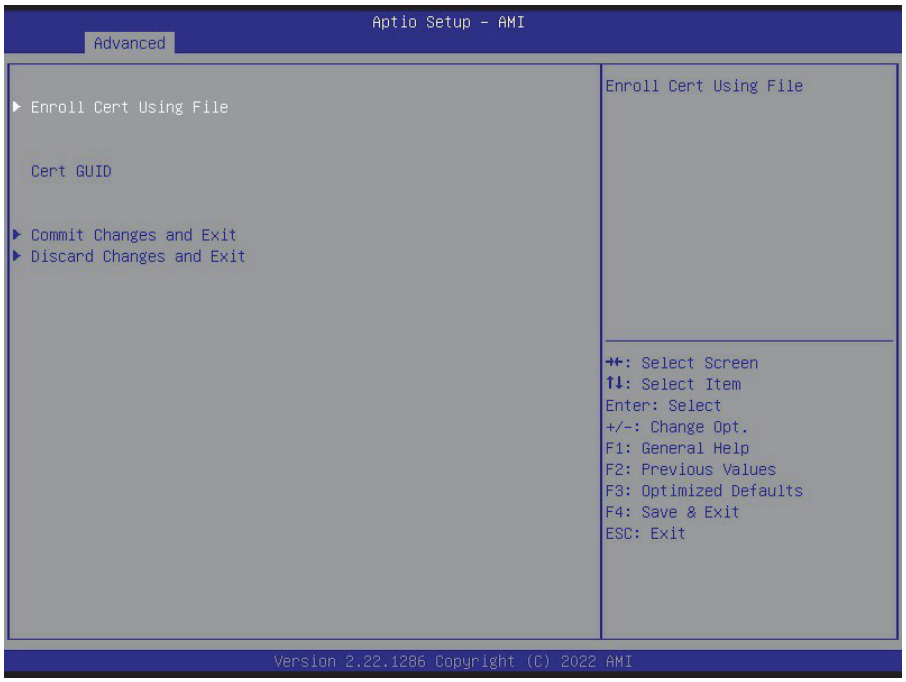
Tls Auth Configuration

Enroll Cert

Press <Enter> to enroll cert.

Delete Cert

Press <Enter> to delete cert.



Enroll Cert Configuration

Enroll Cert Using File

Enroll Cert Using File

Cert GUID

Input digit character in 11111111-2222-3333-4444-1234567890ab format.

Commit Changes and Exit

Commit Changes and Exit

Discard Changes and Exit

Discard Changes and Exit



Delete Cert Configuration

FEXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXX

GUID for CERT

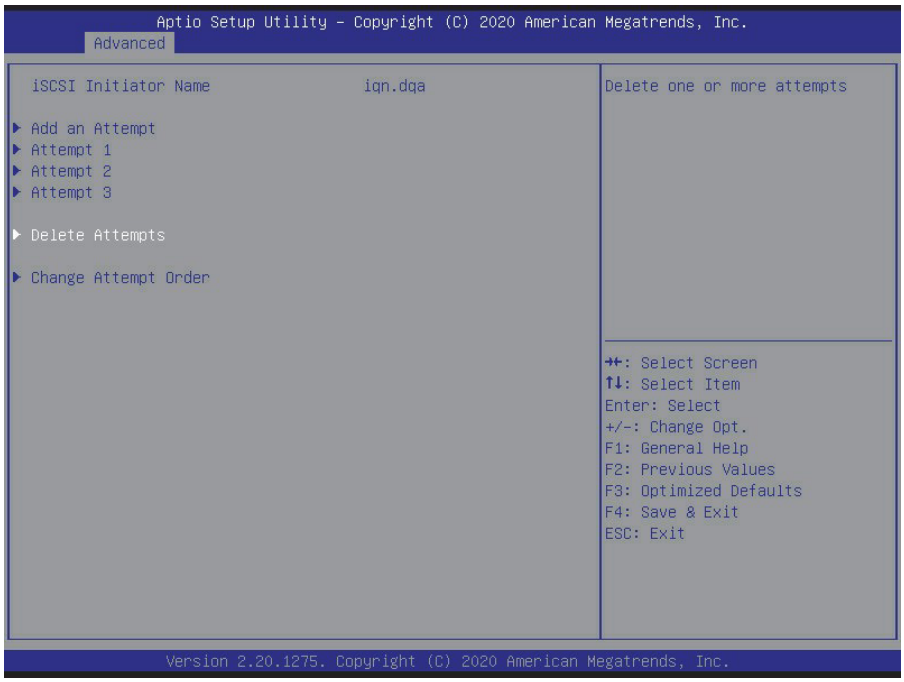
Disabled / Enabled



ISCSI Initiator Configuration

Host iSCSI Configuration

Host iSCSI Configuration settings



Host iSCSI Configuration

Please follow the instructions to initiate the iSCSI function. Step 1.

Select **Advanced** → **CSM Configuration** → **Network** → [UEFI]. Step 2.
Select **Advanced** → **Network Stack Configuration** → **Network Stack** → [Enabled] Step 3.
Save changes and reboot.

iSCSI Initiator Name

The worldwide unique name of iSCSI Initiator. Only IQN format is accepted. Range is from 4 to 223.

Add an Attempt

Add one or more attempts

Attempt 1

Attempt 2

Attempt 3

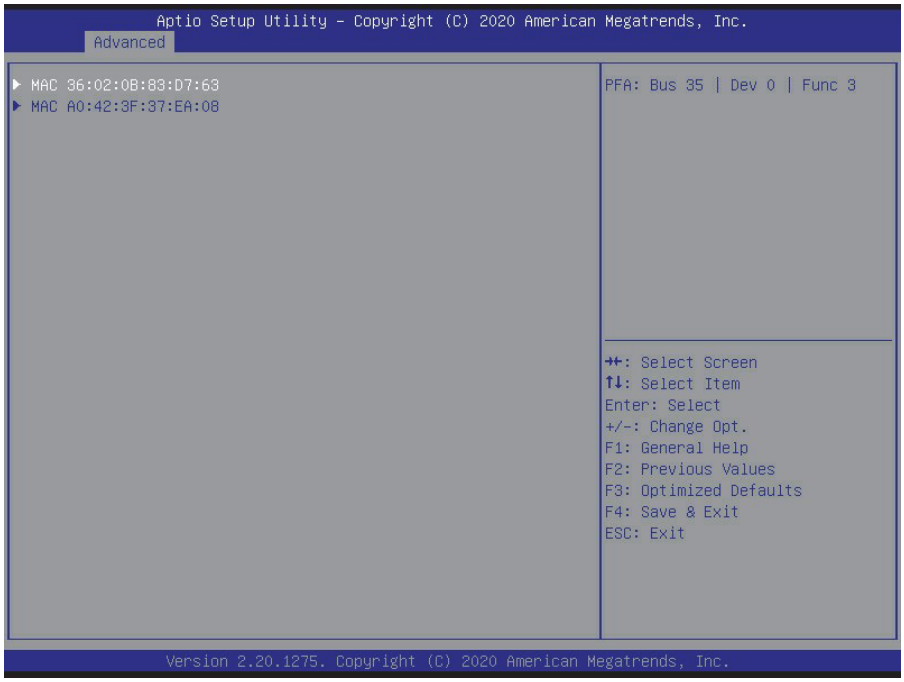
Delete Attempts

Delete one or more attempts

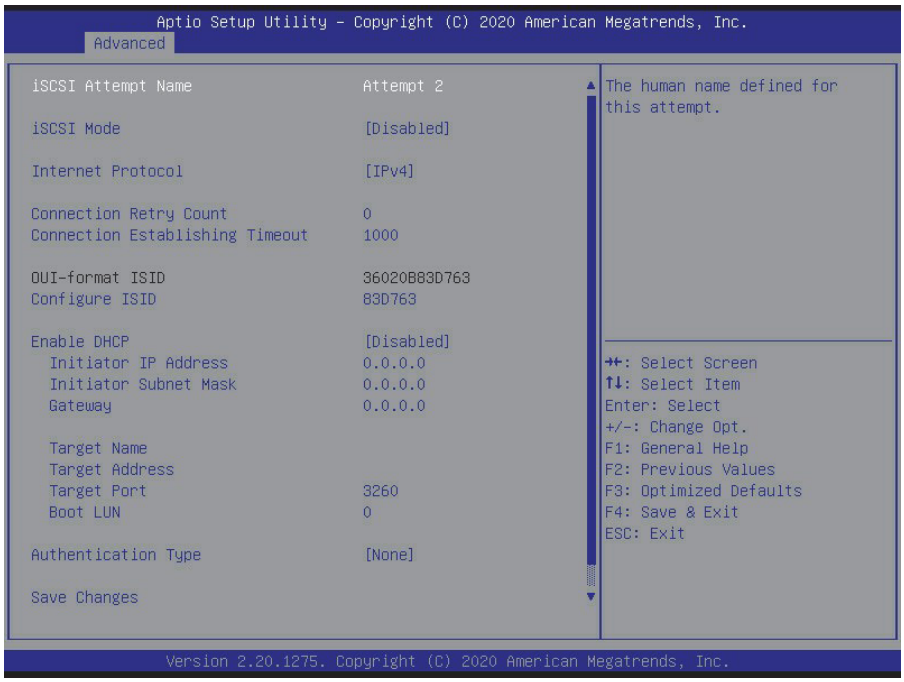
Change Attempt Order

Change attempt sequence

Add an Attempt



Read only.



MAC 36:02:0B:83:D7:63

iSCSI Mode

Disabled, Enabled, Enabled for MPIO.

Disabled / Enabled / Enabled for MPIO

Internet Protocol

Initiator IP address is system assigned in IP6 mode. In Autoconfigure mode, iSCSI driver will attempt to connect iSCSI target via IPv4 stack, if failed then attempt IPv6 stack.

IPv4 / IPv6 / Autoconfigure

Connection Retry Count

The minimum value is 0 and the maximum is 16. 0 means no retry.

Connection Establishing Timeout

The timeout value in milliseconds. The minimum value is 100 milliseconds and the maximum is 20 seconds.

Configure ISID

OUI-format ISID in 6 bytes, default value is derived from MAC address. Only last 3 bytes are configurable. Example: update 0ABBCCDDEEFF to OABBCCF07901 by input F07901.

Enable DHCP

Enable DHCP.

Disabled / Enabled

Initiator IP Address

Enter IP address in dotted-decimal notation.

Initiator Subnet Mask

Enter IP address in dotted-decimal notation.

Gateway

Enter IP address in dotted-decimal notation.

Target Name

The worldwide unique name of the target. Only iqn. format is accepted. Range is from 4 to 223

iqu. xxx

Target Address

Enter Target address in IPv4, IPv6 or URL format. You need to configure DNS server address in advance if input a URL string.

Target Port

Target Port.

Boot LUN

Hexadecimal representation of the LU number. Examples are: 4752-3A4F-6b7e- 3F99, 6734-9-156f-127, 4186-9.

Authentication Type

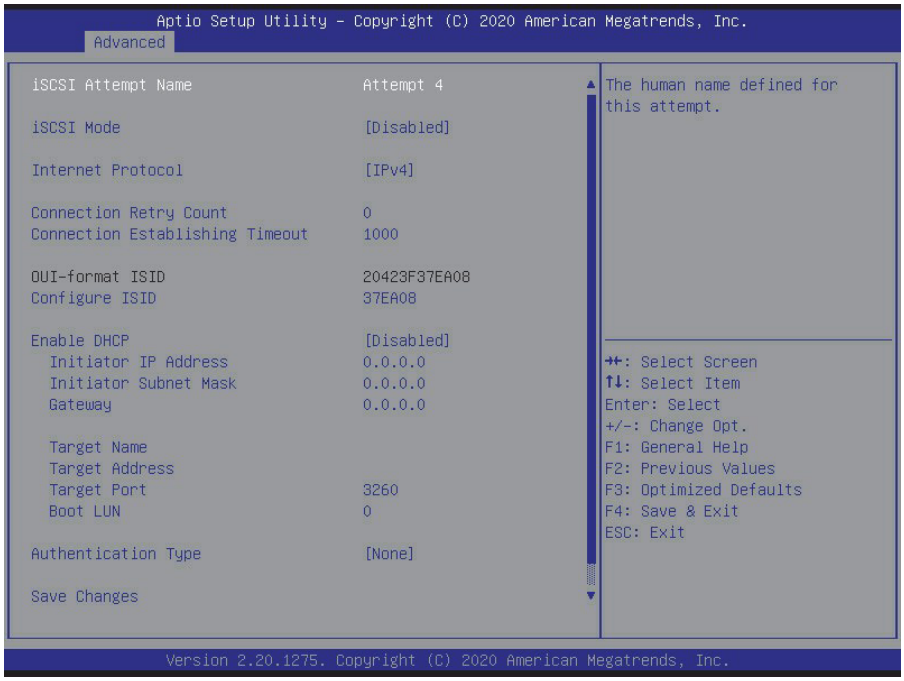
Authentication method: CHAP, Kerberos, or None.

CHAP / **None**

Save Changes

Must reboot system manually for changes to take place.

MAC A0:42:3F:37:EA:08



iSCSI Mode

Disabled, Enabled, Enabled for MPIO.

Disabled / Enabled / Enabled for MPIO

Internet Protocol

Initiator IP address is system assigned in IP6 mode. In Autoconfigure mode, iSCSI driver will attempt to connect iSCSI target via IPv4 stack, if failed then attempt IPv6 stack.

IPv4 / IPv6 / Autoconfigure

Connection Retry Count

The minimum value is 0 and the maximum is 16. 0 means no retry.

Connection Establishing Timeout

The timeout value in milliseconds. The minimum value is 100 milliseconds and the maximum is 20 seconds.

Configure ISID

OUI-format ISID in 6 bytes, default value is derived from MAC address. Only last 3 bytes are configurable. Example: update 0ABBCCDDEEFF to OABBCCF07901 by input F07901.

Enable DHCP

Enable DHCP.

Disabled / Enabled

Initiator IP Address

Enter IP address in dotted-decimal notation.

Initiator Subnet Mask

Enter IP address in dotted-decimal notation.

Gateway

Enter IP address in dotted-decimal notation.

Target Name

The worldwide unique name of the target. Only iqn. format is accepted. Range is from 4 to 223

iqu. xxx

Target Address

Enter Target address in IPv4, IPv6 or URL format. You need to configure DNS server address in advance if input a URL string.

Target Port

Target Port.

Boot LUN

Hexadecimal representation of the LU number. Examples are: 4752-3A4F-6b7e- 3F99, 6734-9-156f-127, 4186-9.

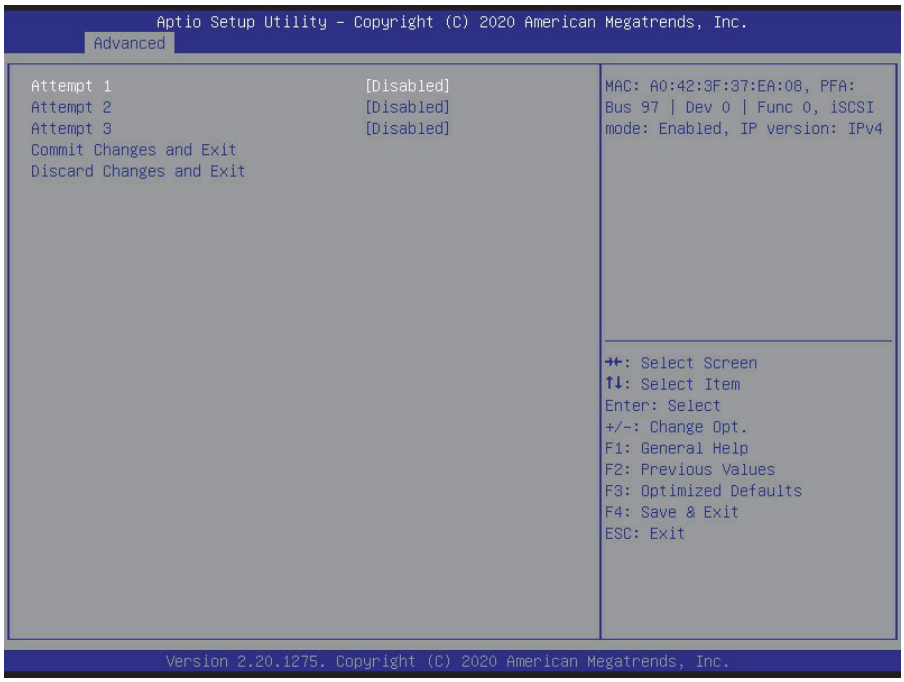
Authentication Type

Authentication method: CHAP, Kerberos, or None.

CHAP / **None**

Save Changes

Must reboot system manually for changes to take place.



Delete Attempts

Attempt 1

MAC: A0:42:3F:37:EA:08, PFA: Bus 97/ Dev 0 / Func 0, iSCSI mode: Enabled, IP version: IPv4.

Disabled / Enabled

Attempt 2

MAC: 36:02:0B:83:D7:63, PFA: Bus 35 / Dev 0 / Func 3, iSCSI mode: Disabled, IP version: IPv4.

Disabled / Enabled

Attempt 3

MAC: 36:02:0B:83:D7:63, PFA: Bus 35 / Dev 0 / Func 3, iSCSI mode: Disabled, IP version: IPv4.

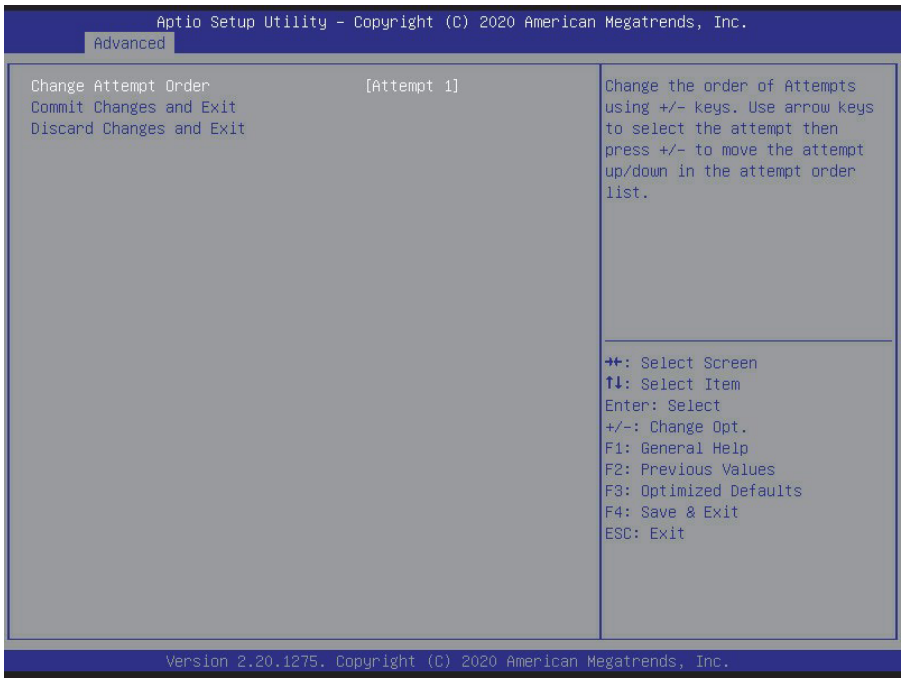
Disabled / Enabled

Commit Changes and Exit

Commit Changes and Exit.

Discard Changes and Exit

Discard Changes and Exit.



Change Attempt Order

Change Attempt Order

Change the order of Attempts using +/- keys. Use arrow keys to select the attempt then press +/- to move the attempt up/down in the attempt order list.

Attempt 1 / Attempt 2 / Attempt 3

Commit Changes and Exit

Commit Changes and Exit.

Discard Changes and Exit

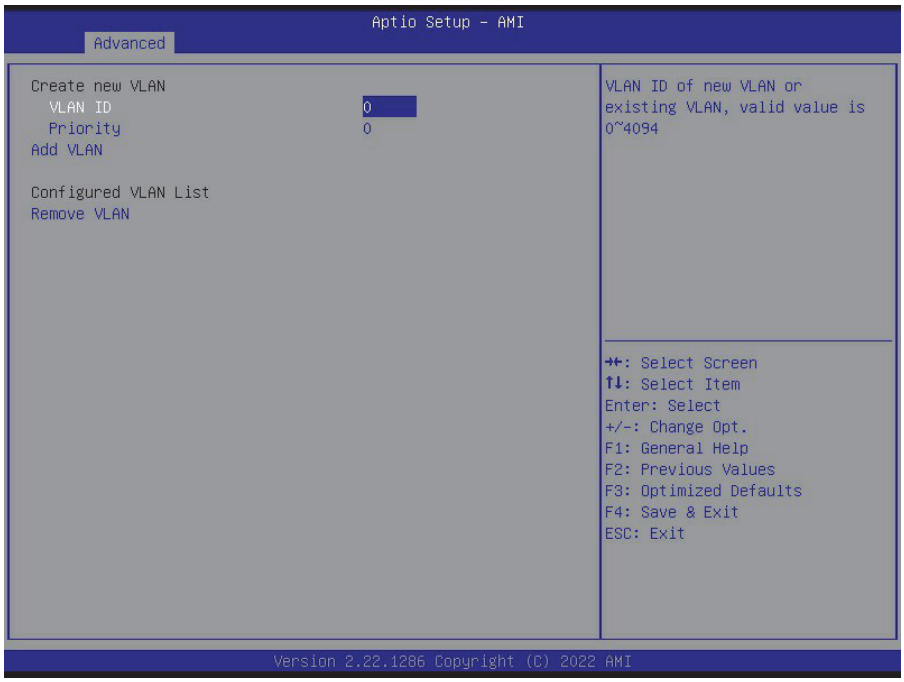
Discard Changes and Exit.



VLAN Configuration

Enter Configuration

Press ENTER to enter configuration menu for VLAN configuration.



Enter Configuration

VLAN ID

VLAN ID of new VLAN or existing VLAN, valid value is 0~4094

Priority

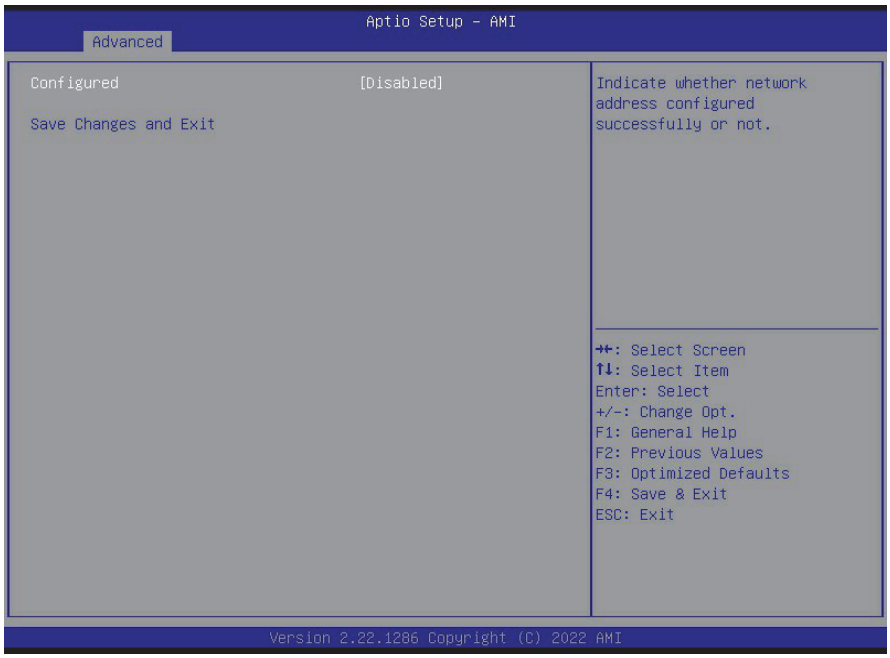
802.1Q Priority, valid value is 0~7

Add VLAN

Create a new VLAN or update existing VLAN

Remove VLAN

Remove selected VLANs



MAC: 4E722FER47F30-IPv4 Network Menu

Configured

Indicate whether network address configured successfully or not.

Disabled / Enabled

NOTE: When Configured was set to **Enabled,** the following items will be available to set up.

Enable DHCP

Indicate whether network address configured successfully or not.

Disabled / Enabled

Local IP Address

Enter IP address in dotted-decimal notation. Example: 162.168.10.12

Local NetMask

Enter Netmask in dotted-decimal notation. Example:255.255.255.0

Local Gateway

Enter Gateway in dotted-decimal notation. Example:192.168.10.1

Local DNS Servers

Enter DNS Servers in dotted-decimal notation. Example:192.168.10.8 192.168.10.9

Save Changes and Exit

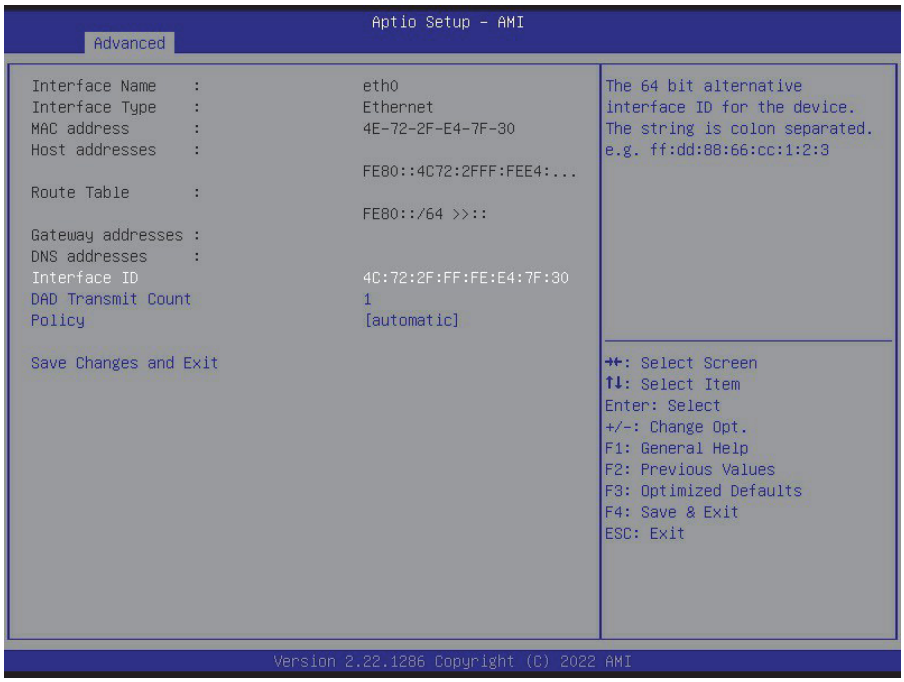
Save Changes and Exit

MAC: 4E722FER47F30-IPv6 Network Menu



Enter Configuration Menu

Press ENTER to enter configuration menu for IPv6 configuration.



Enter Configuration Menu

Interface ID

The 64 bit alternative interface ID for the device. The string is colon separated. e.g. ff:dd:88:66:cc:1:2:3

DAD Transmit Count

The number of consecutive Neighbor Solicitation message sent while performing Duplicate Address Detection on a tentative address. A value of zero indicates that duplicate address detection is not performed.

Policy

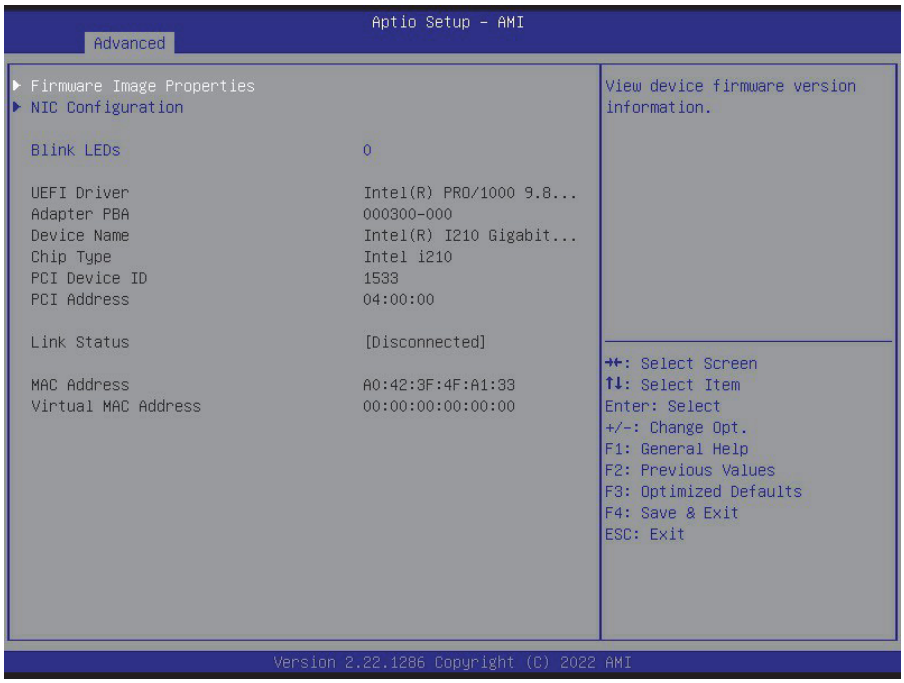
Automatic or manual

Automatic / manual

Save Changes and Exit

Save changes for interface ID, DAD transmit count, policy, and data in advanced configuration.

Intel® I210 Gigabit Network Connection Settings



Firmware Image Properties

View device firmware version information.

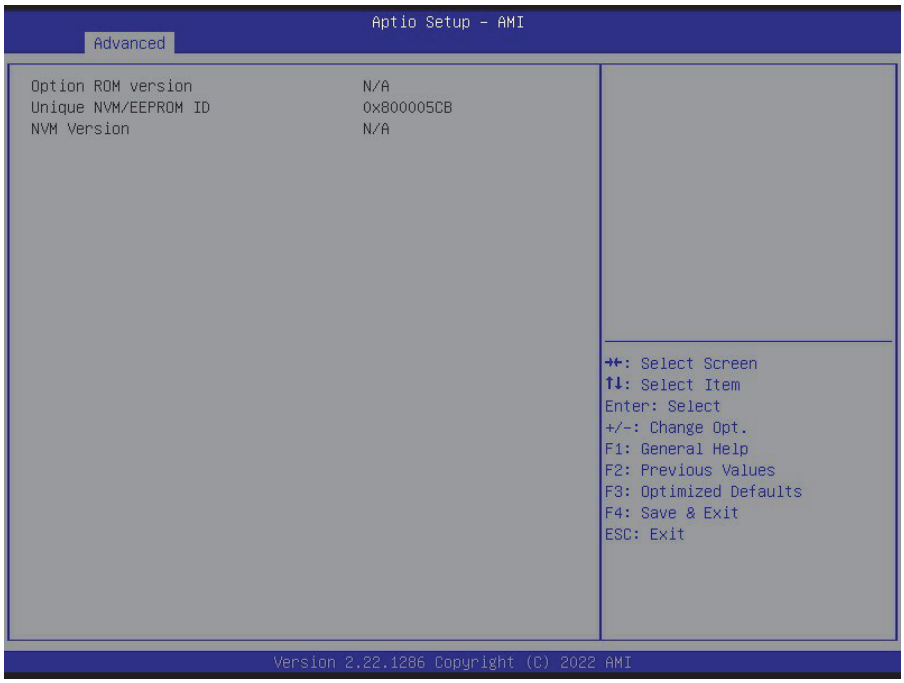
NIC Configuration

Click to configure the network device port.

Blink LEDs

Blink LEDs for a duration up to 15 seconds.

Firmware Image Properties Settings



Only Read

NIC Configuration Settings



Link Speed

Specifies the port speed used for the selected boot protocol

Auto Negotiated / 10 Mbps Half / 10 Mbps Full / 100 Mbps Half / 100 Mbps Full

Wake on LAN

Enables power on of the system via LAN. Note that configuring Wake on LAN in the operating system does not change the value of this setting, but does override the behavior of Wake on LAN in OS controlled power states.

Disabled / **Enabled**

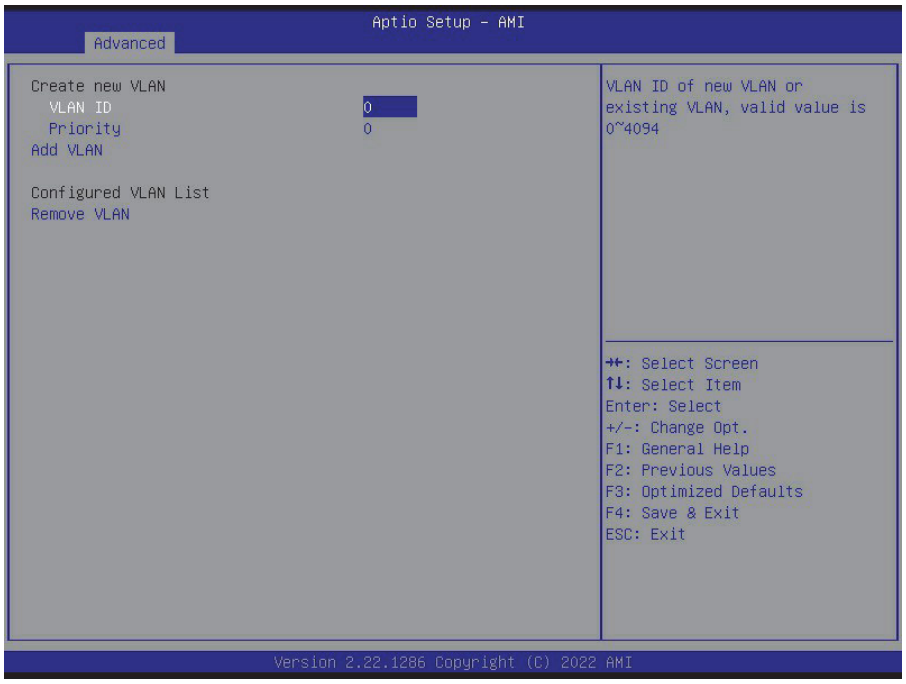


VLAN Configuration (MAC: A0423F4FA133)

Enter Configuration Menu

Press ENTER to enter configuration menu for VLAN configuration.

Enter Configuration Settings



VLAN ID

VLAN ID of new VLAN or existing VLAN, valid value is 0~4094

Priority

802.1Q Priority, valid value is 0~7

Add VLAN

Create a new VLAN or update existing VLAN

Remove VLAN

Remove selected VLANs



MAC: A0423F4FA133-IPv4 Network Menu

Configured

Indicated whether network address configured successfully.

Save Changes and Exit

Save changes and exit.



MAC: A0423F4FA133-IPv6 Network Menu

Enter Configuration Menu

Press ENTER to enter configuration menu for IPv6 configuration.



Enter Configuration Menu

Interface ID

The 64 bit alternative interface ID for the device. The string is colon separated. E.g. ff:dd:88:66::cc:1:2:3

DAD Transmit Count

The number of consecutive Neighbor Solicitation message sent while performing duplicate address detection on a tentative address. A value of zero indicates that duplicate address detection is not performed.

1

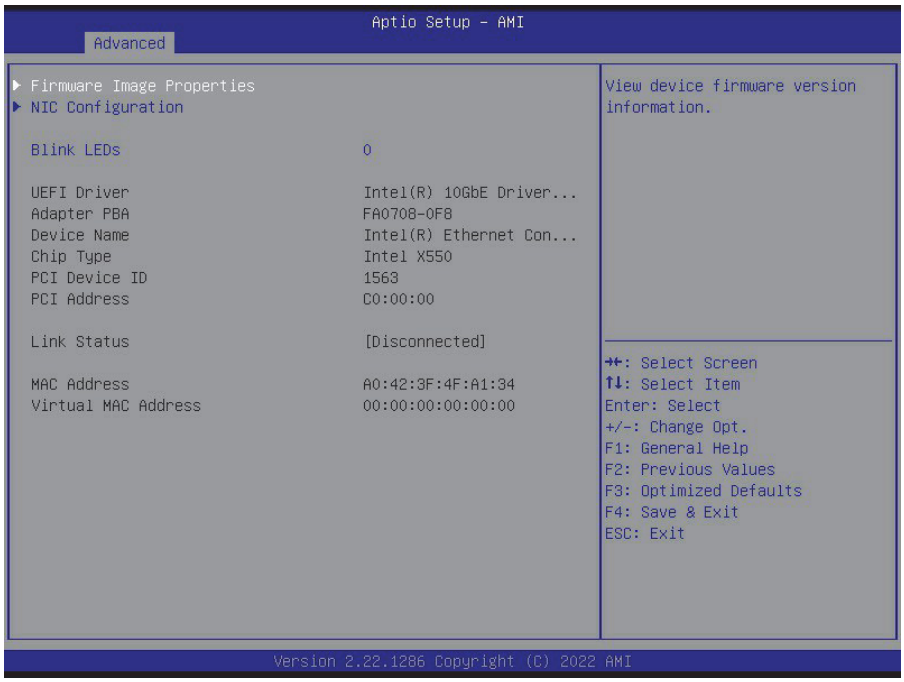
Policy

Automatic or manual

Automatic / manual

Save Changes and Exit

Save Changes for interface ID, DAD transmit count, policy, and data in advanced configuration.



Intel® Ethernet Converged Network Adapter X550-T2-A0

Firmware Image Properties

View device firmware version information.

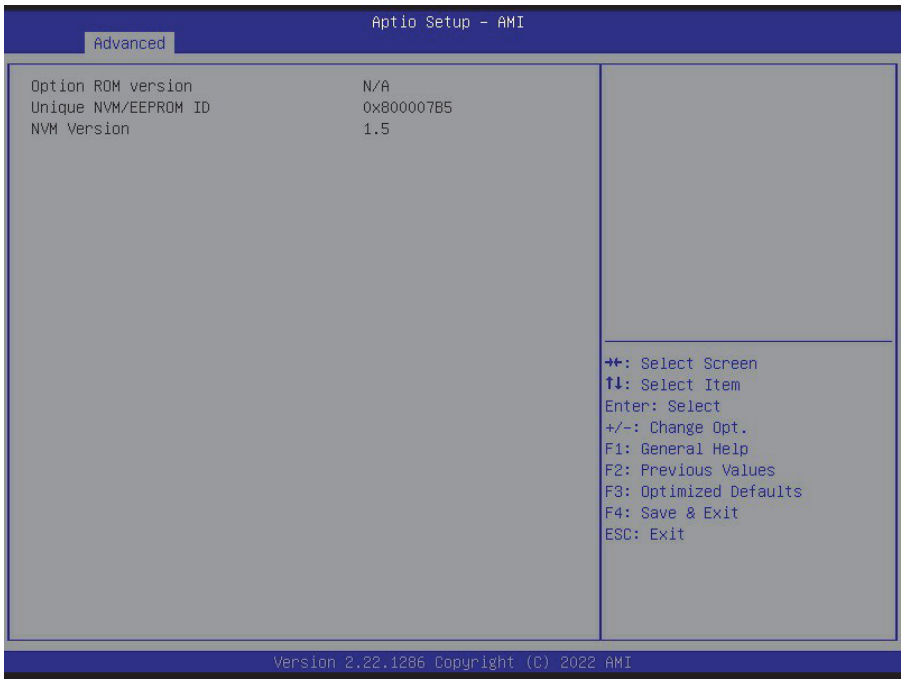
NIC Configuration

Clink to configure the network device port.

Blink LEDs

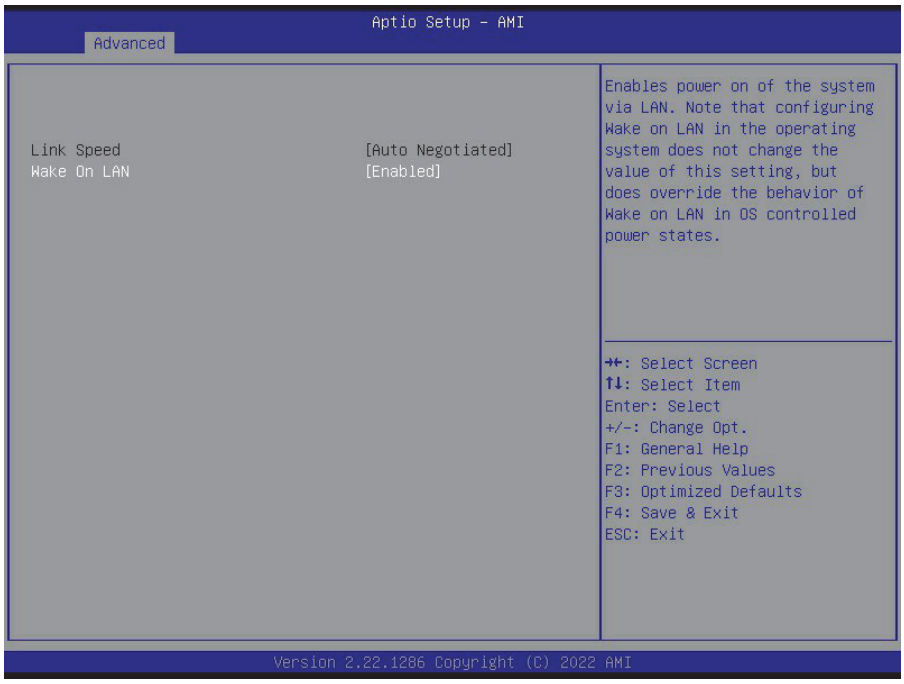
Blink LEDs for a duration up to 15 seconds.

Firmware Image Properties



Only Read

NIC Configuration



Wake on LAN

Enables power on of the system via LAN. Note that configuring Wake on LAN in the operating system does not change the value of this setting, but does override the behavior of Wake on LAN in OS controlled power states.

Enabled / Disabled

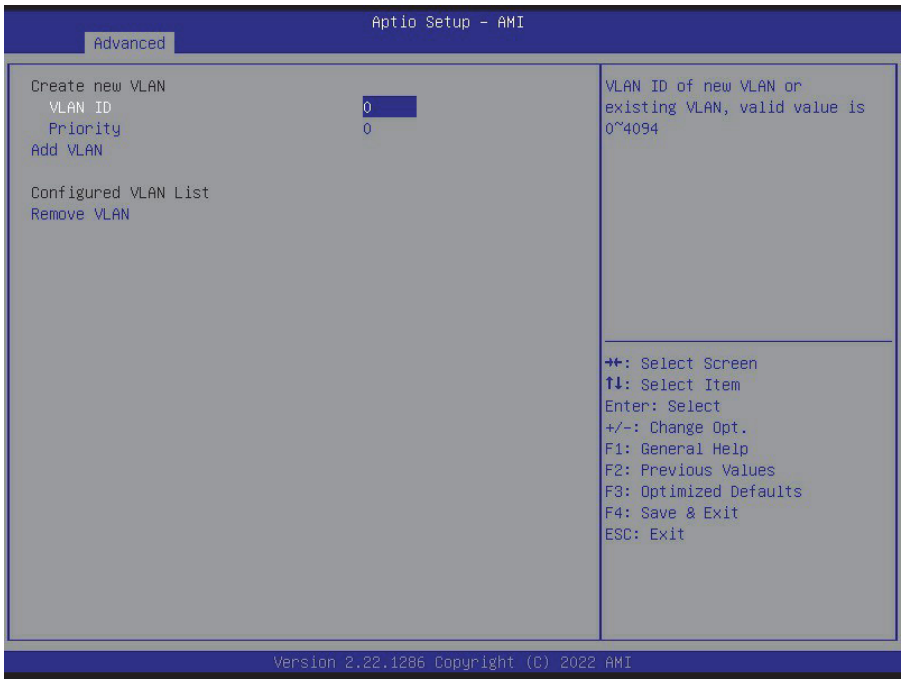
VLAN Configuration (MAC: A0423F4FA134)



Enter Configuration Menu

Press Enter to enter configuration menu for VLAN configuration

Enter Configuration Menu



VLAN ID

VLAN ID of new VLAN or existing VLAN, valid value is 0~4094

Priority

802.1Q Priority, valid value is 0~7

Add VLAN

Create a new VLAN or update existing VLAN

Remove VLAN

Remove selected VLANs



MAC: A0423F4FA134-IPv4 Network Menu

Configured

Indicate whether network address configured sucessfully or not.

Enabled / **Disabled**

Save Changes and Exit

Save Changes and exit



MAC: A0423F4FA134-IPv6 Network Menu

Enter Configuration Menu

Press ENTER to enter configuration menu for IPv6 configuration.



Enter Configuration Menu

Interface ID

The 64 bit alternative interface ID for the device. The string is colon separated. E.g. ff:dd:88:66::cc:1:2:3

DAD Transmit Count

The number of consecutive Neighbor Solicitation message sent while performing duplicate address detection on a tentative address. A value of zero indicates that duplicate address detection is not performed.

1

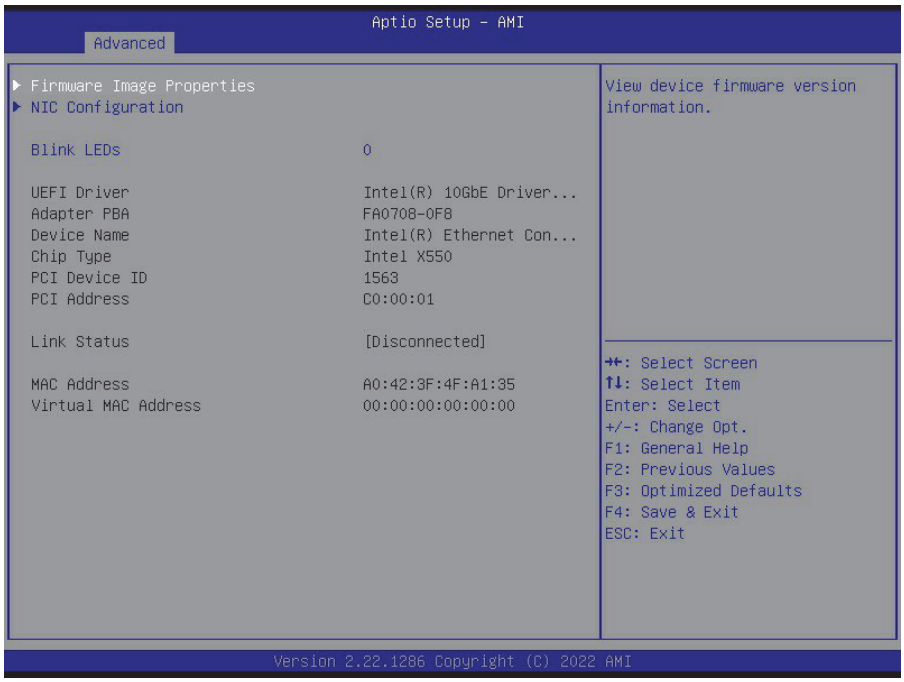
Policy

Automatic or manual

Automatic / manual

Save Changes and Exit

Save Changes for interface ID, DAD transmit count, policy, and data in advanced configuration.



Intel® Ethernet Converged Network Adapter X550-T2-A0

Firmware Image Properties

View device firmware version information.

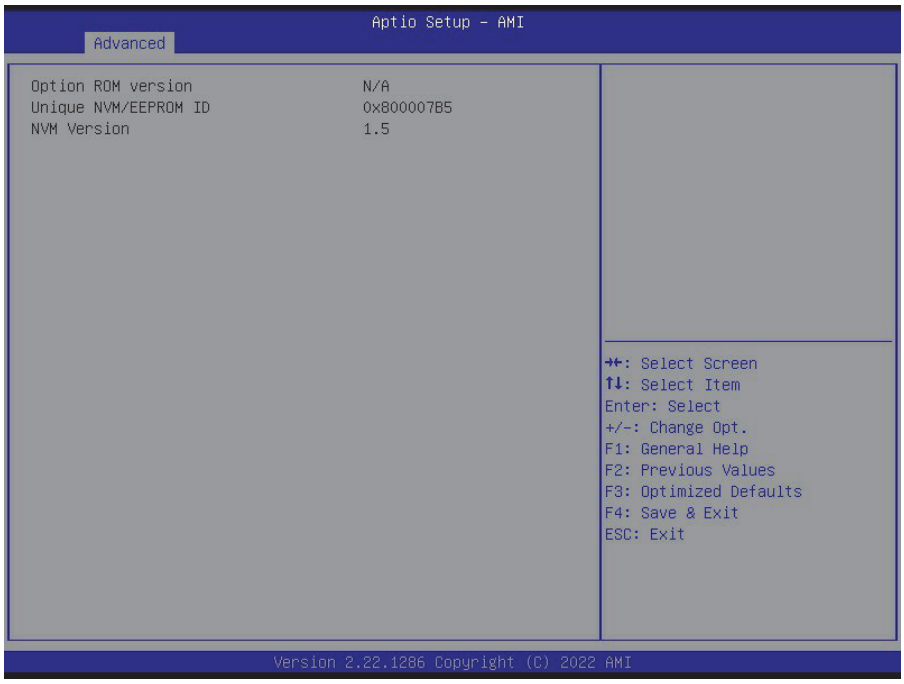
NIC Configuration

Clink to configure the network device port.

Blink LEDs

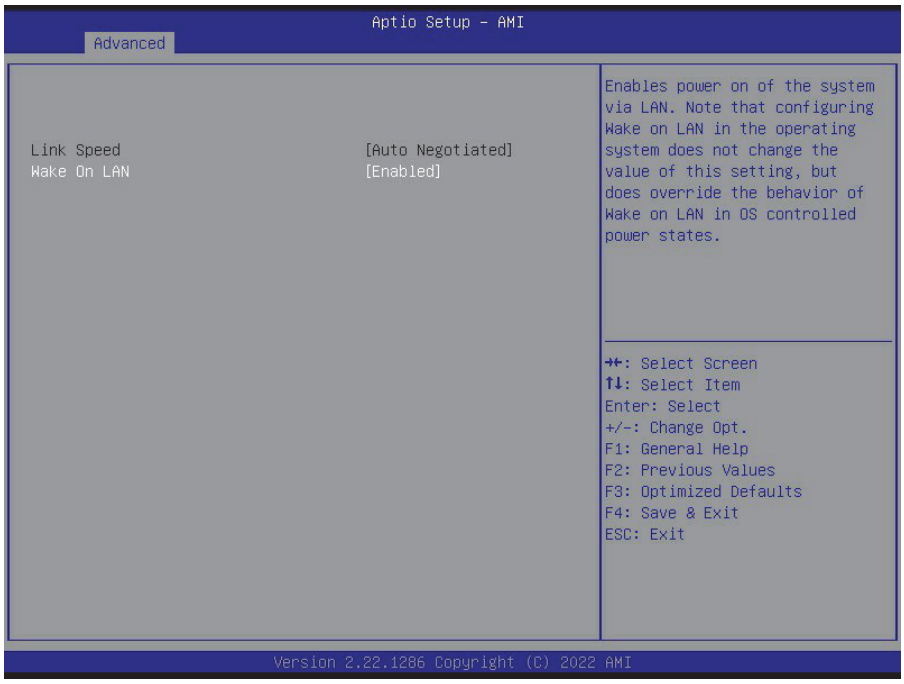
Blink LEDs for a duration up to 15 seconds.

Firmware Image Properties



Only Read

NIC Configuration



Wake on LAN

Enables power on of the system via LAN. Note that configuring Wake on LAN in the operating system does not change the value of this setting, but does override the behavior of Wake on LAN in OS controlled power states.

Enabled / Disabled

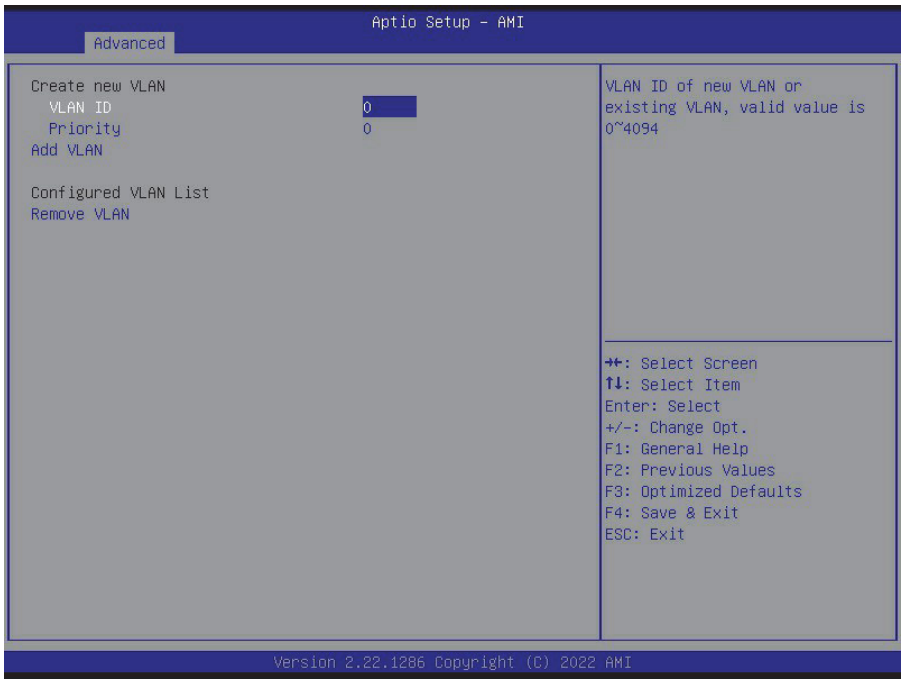
VLAN Configuration (MAC: A0423F4FA135)



Enter Configuration Menu

Press Enter to enter configuration menu for VLAN configuration

Enter Configuration Menu



VLAN ID

VLAN ID of new VLAN or existing VLAN, valid value is 0~4094

Priority

802.1Q Priority, valid value is 0~7

Add VLAN

Create a new VLAN or update existing VLAN

Remove VLAN

Remove selected VLANs



MAC: A0423F4FA135-IPv4 Network Menu

Configured

Indicate whether network address configured sucessfully or not.

Enabled / **Disabled**

Save Changes and Exit

Save Changes and exit



MAC: A0423F4FA134-IPv6 Network Menu

Enter Configuration Menu

Press ENTER to enter configuration menu for IPv6 configuration.



Enter Configuration Menu

Interface ID

The 64 bit alternative interface ID for the device. The string is colon separated. E.g. ff:dd:88:66::cc:1:2:3

DAD Transmit Count

The number of consecutive Neighbor Solicitation message sent while performing duplicate address detection on a tentative address. A value of zero indicates that duplicate address detection is not performed.

1

Policy

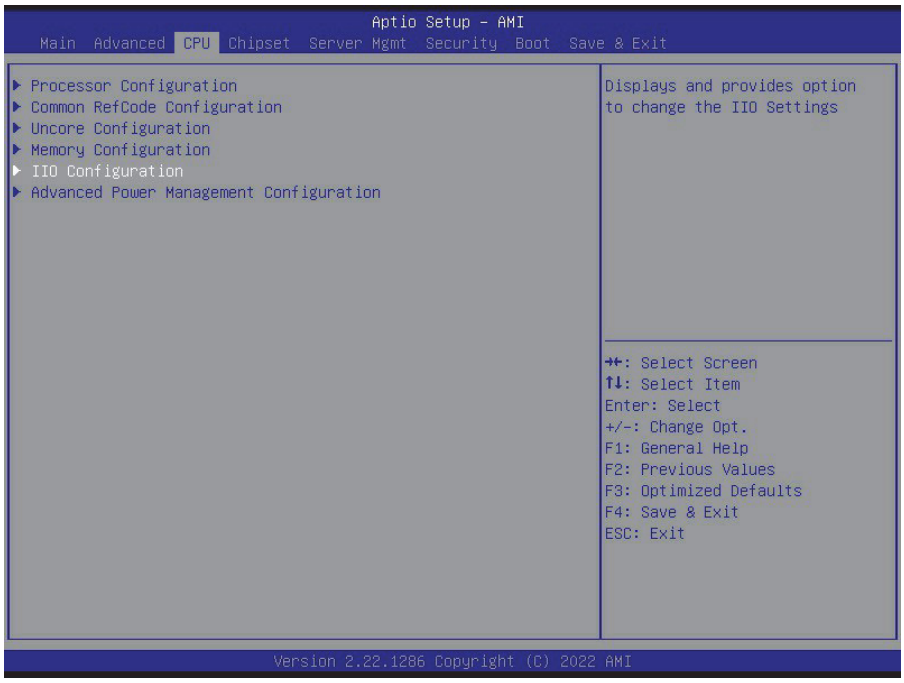
Automatic or manual

Automatic / manual

Save Changes and Exit

Save Changes for interface ID, DAD transmit count, policy, and data in advanced configuration.

4.3 CPU Configuration Subsystem



Processor Configuration

Displays and provides option to change the Processor Settings.

Common RefCode Configuration

Displays and provides option to change the Common RefCode Settings.

Uncore Configuration

Displays and provides option to change the Uncore Settings

Memory Configuration

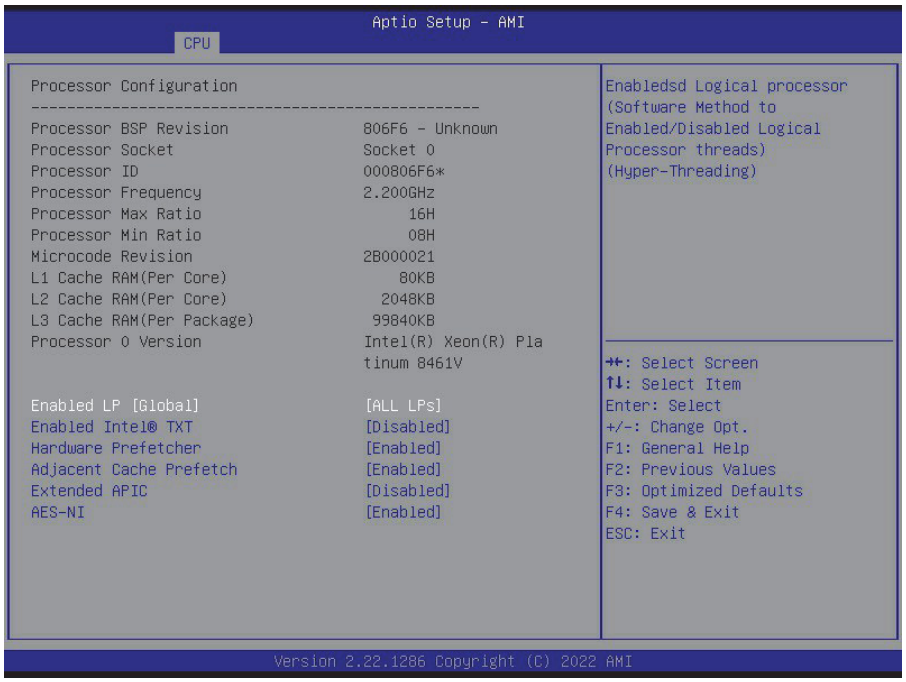
Displays and provides option to change the Memory Settings.

IIO Configuration

Displays and provides option to change the IIO Settings.

Advanced Power Management Configuration

Displays and provides option to change the Power Management Settings.



Processor Configuration

Enabled LP [Global]

Enabled sd Logical processor (software method to Enabled/Disabled logical processor threads) (Hyper-Threading).

ALL LPs / Single LP

Enable Intel® TXT

Enable Intel® TXT.

Disabled / Enabled

Hardware Prefetcher

=MLC Streamer Prefetcher (MSR 1A4h Bit [0]).

Disabled / **Enabled**

Adjacent Cache Prefetch

=MLC Spatial Prefetcher (MSR 1A4h Bit [1]).

Disabled / **Enabled**

Extended APIC

Enabled/Disabled extended APIC support

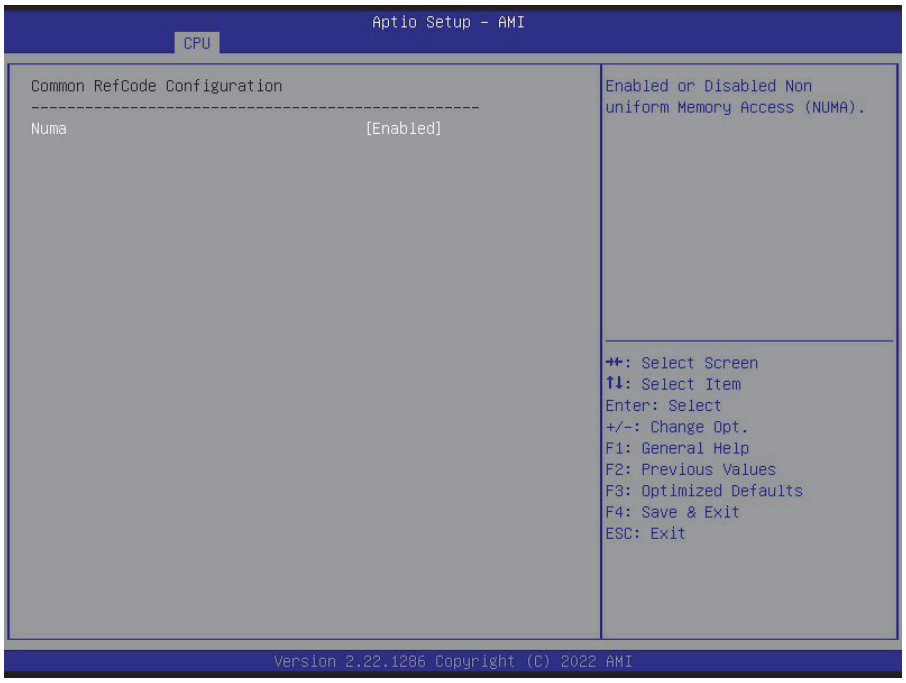
Note: This will Enabled VT-d automatically if x2APIC is Enabled.

Disabled / Enabled

AES-NI

Enabled/Disabled AES-NI support.

Disabled / **Enabled**

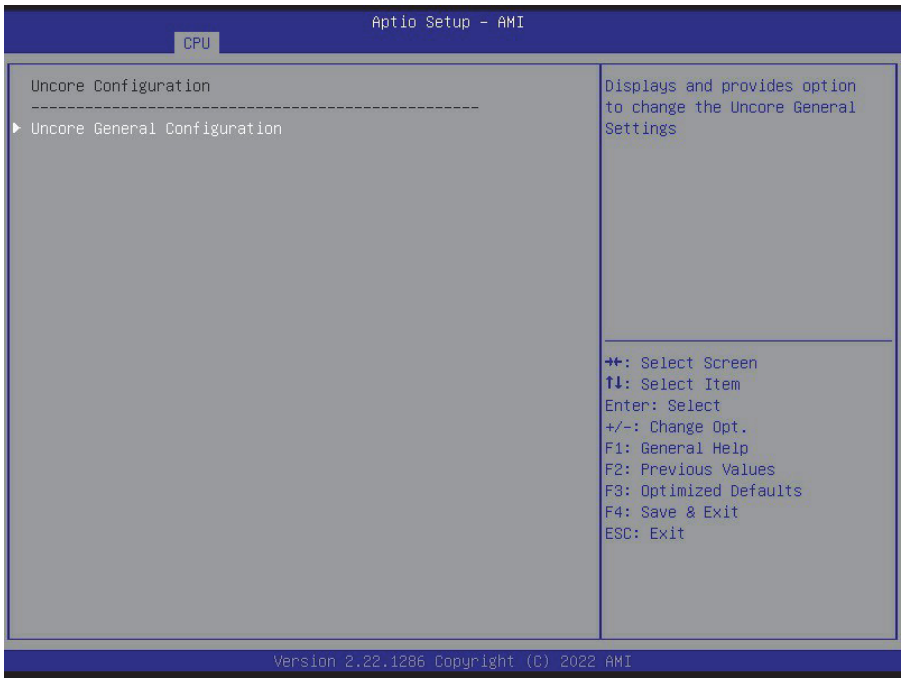


Common RefCode Configuration

Numa

Enabled or Disabled Non uniform Memory Access(NUMA).

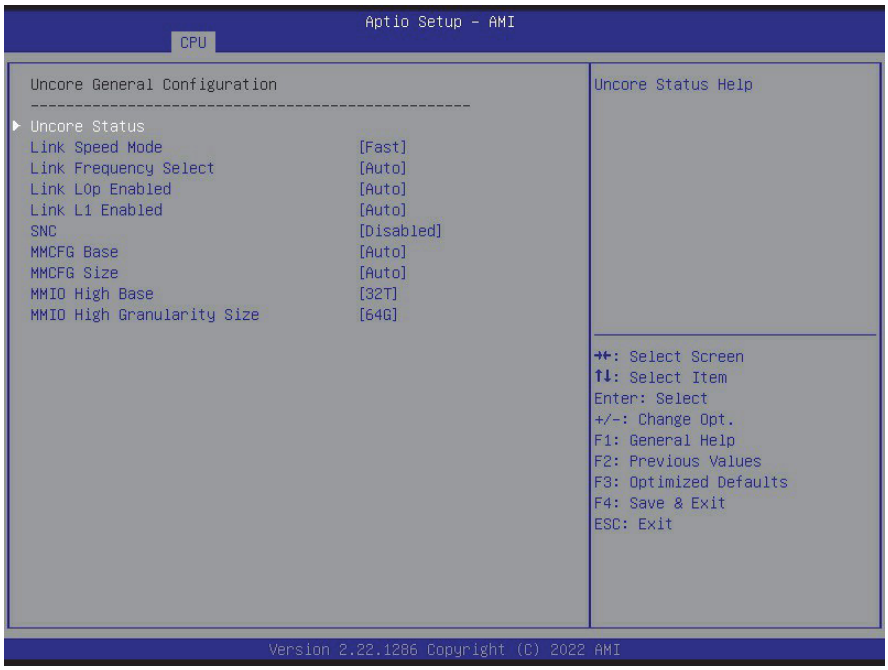
Disabled / **Enabled**



Uncore Configuration

Uncore General Configuration

Displays and provides option to change the uncore General settings.



Uncore General Configuration

Uncore Status

Uncore Status Help

Link Speed Mode

Select the UPI link speed as either the POR speed (fast) default speed (slow) Slow / **Fast**

Link Frequency Select

Allows for selecting the UPI Link frequency

12.8GT/s / 14.4 GT/s / 16.0 GT/s / **Auto** / Use Per Link Setting

Link L0p Enabled

Enabled – Set the c_10p_en, Disabled – Reset it,

Auto – Auto decides based on Si Compatibility.

Disabled / Enabled / **Auto**

Link L1 Enabled

Enabled – Set the c_l1_en, Disabled – Reset it,

Auto – Auto decides based on Si Compatibility.

Disabled / Enabled / **Auto**

SNC

Disabled supports 1-cluster and 4-IMC way interleave. Enabled SNC2 supports 2- clusters SNC and 2-way IMC interleave. Enabled SNC4 supports 4-cluster and 1- IMC way interleave.

Disabled / Enabled SNC2 (2-clusters) / Enabled SNC4 (4-clusters)

MMCFG Base

Select MMCFG Base，

Auto – Auto decides based on Si Compatibility 1G / 1.5G / 1.75G / 2G / 2.25G / 3G / **Auto**

MMCFG Size

Select MMCFG Size,

Auto – Auto decides based on Si Compatibility. 64M / 128M / 256M / 512M / 1G / 2G / **Auto**

MMIO High Base

Select MMIO High Base

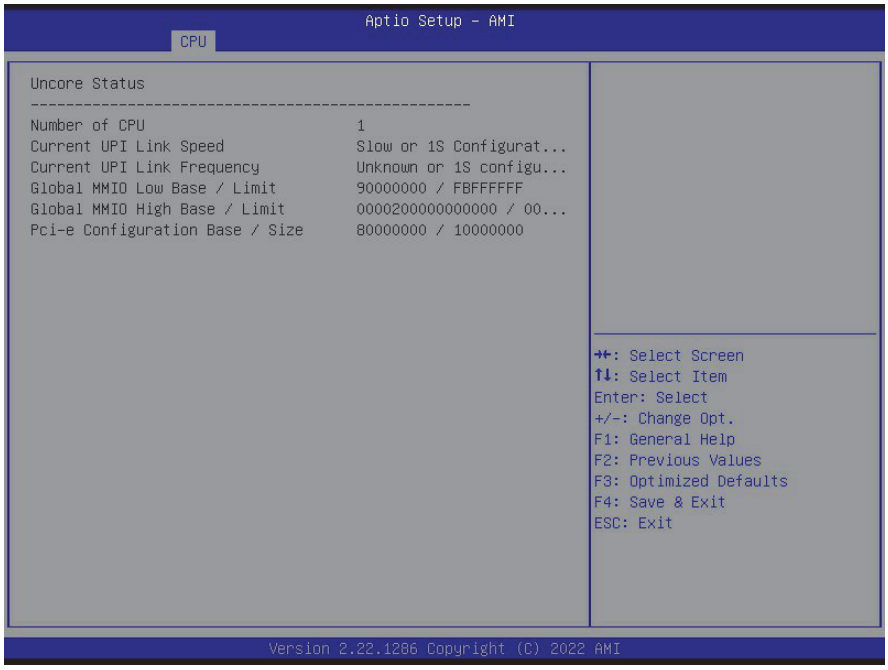
56T / 40T / **32T** / 24T / 16T / 4T / 2T / 1T / 512G / 3584T

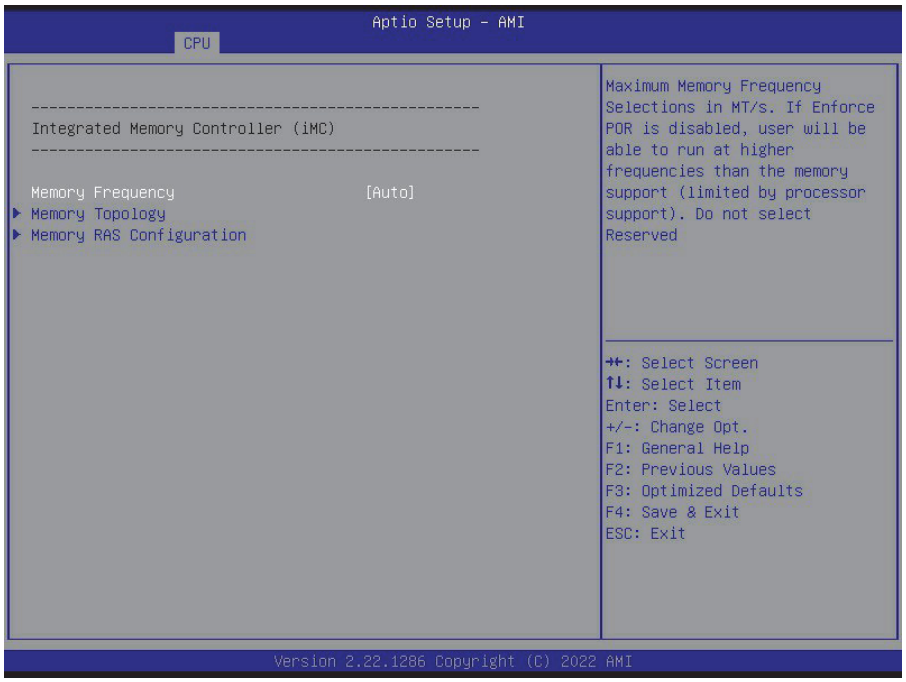
MMIO High Granularity Size

Selects the allocation size used to assign mmioh resources. Total mmioh space can be up to 32x granularity. Per stack mmioh resource asignments are multiples of the granularity where 1 unit per stack is the defalult allocation.

1G / 4G / 16G / **64G** / 256G / 1024G

Uncore General Configuration





Memory Configuration

Memory Frequency

Maximum Memory Frequency Selections in MT/s. If Enforce POR is disabled, user will be able to run at higher frequencies than the memory support (limited by processor support). Do not select Reserved.

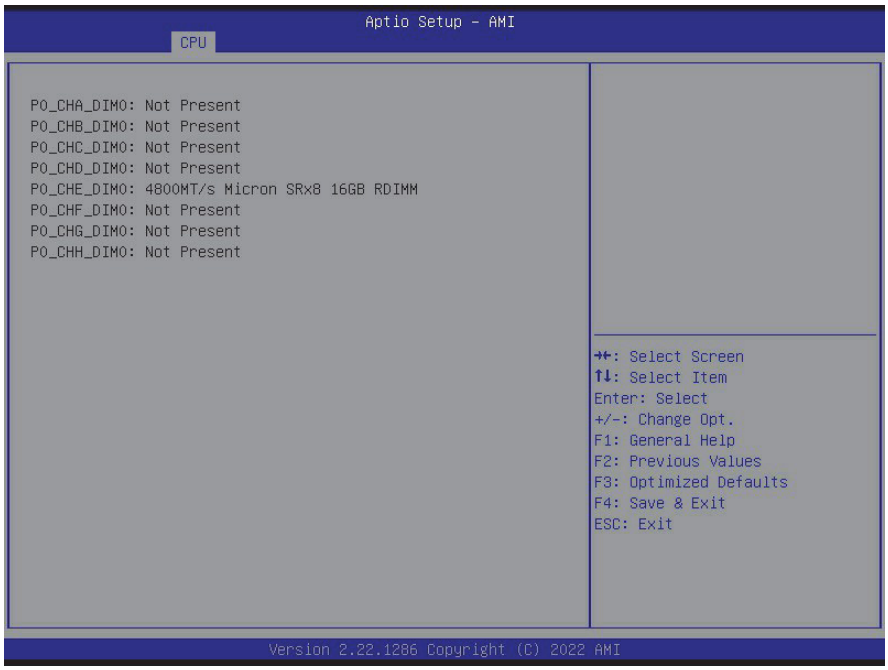
Auto / 4000 / 4400 / 4800

Memory Topology

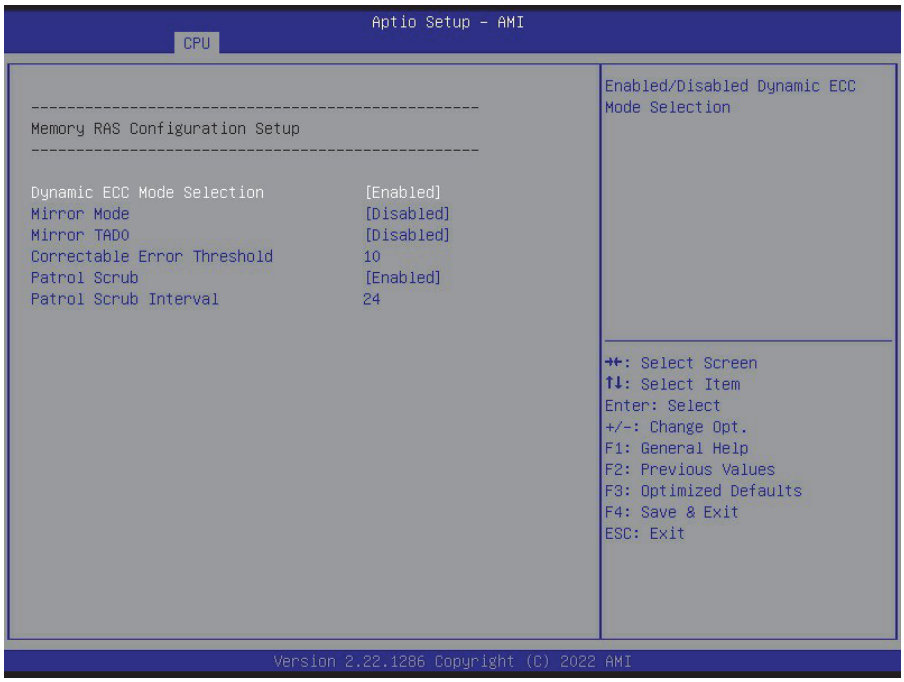
Displays memory topology with Dimm population information

Memory RAS Configuration

Displays and provides option to change the Memory RAS Settings



Memory Topology



Memory RAS Configuration

Dynamic ECC Mode Selection

Enabled/Disabled Dynamic ECC Mode selection Disabled **/ Enabled**

Mirror Mode

Full Mirror mode will set entire 1LM memory in system to be mirrored , consequently reducing the memory capacity by half. Partial Mirror Mode will enable the required size of memory to be mirrored. If rank sparing is enabled partial mirroring will not take effect. Enabling any type of Mirror Mode will disable.

Disabled / Enabled

Mirror TAD0

Enabled Mirror on entire memory for TAD0

Disabled / Enabled

Correctable Error Threshold

Correctable Error Threshold (1-32767) used for sparing, and leaky bucket.

10

Patrol Scrub

Enabled/Disabled Patrol Scrub

Disabled / **Enabled**

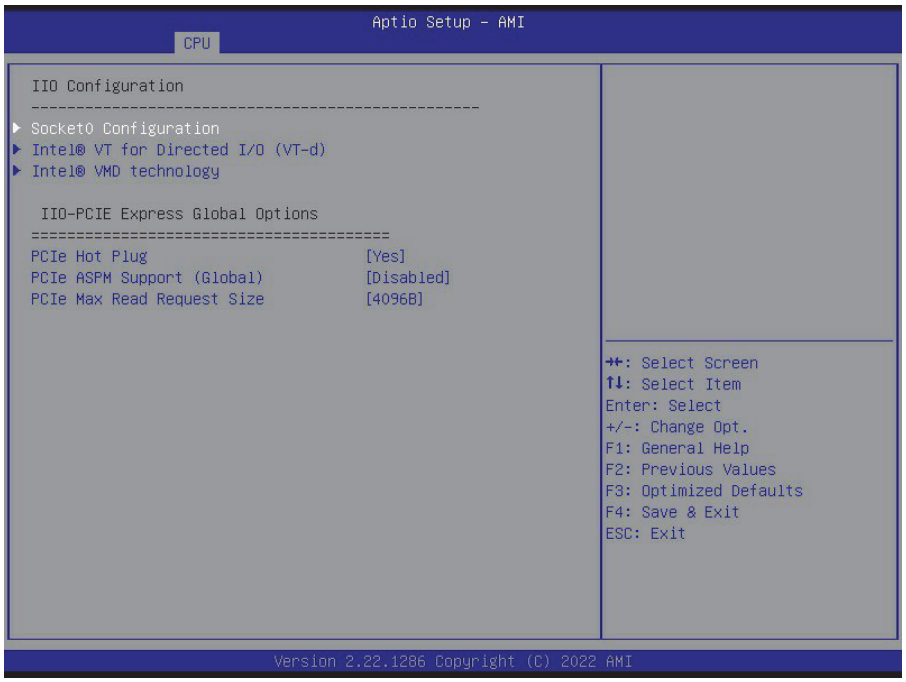
Patrol Scrub Interval

Enabled/Disabled Patrol Scrub Disabled **/ Enabled**

Patrol Scrub Interval

Select the number of hours (1-24) required to complete full scrub. A value of zero means auto!

24



IIO Configuration

Socket0 Configuration

Press <Enter> to bring up the Socket0 Configuration

Intel® VT for Directed I/O (VT-d)

Press <Enter> to bring up the Intel® VT for Directed I/O (VT-d) Configuration menu.

Intel® VMD Technology

Press <Enter> to bring up the Intel® VMD for Volume Management Device Configuration menu.

PCIe Hot Plug

Enabled/Disabled PCIe Hot Plug globally.

No / **Yes**

PCIe ASPM Support (Global)

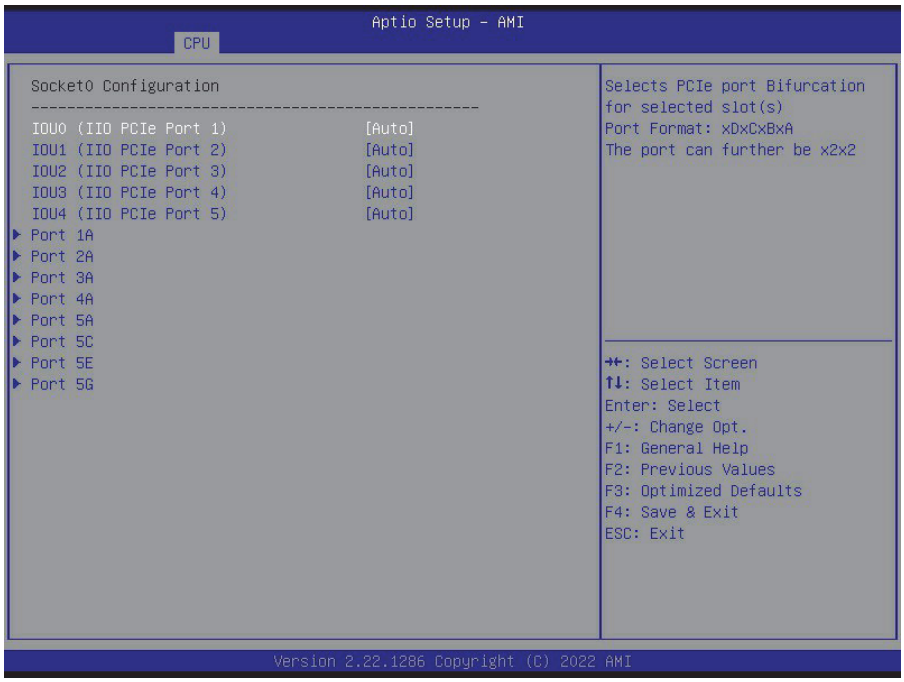
This option can disable ASPM support in all PCIe root ports.

Disabled / Per Port

PCIe Max Read Request Size

This option can set requested Max Read Request Size in PCI Hierarchy.'Default' keeps hardware default.

Auto / 128B / 256B / 512B / 1024B / 2048B / **4096B**



Socket0 Configuration

IOU0 (IIO PCIe Port 1)

Selects PCIe port Bifurcation for selected slot(s) Port Format:xDxCxBxA.

The port can further be x2x2

Auto / x4x4x4x4 / x4x4_x8 / x_x8x4x4 / x_x8x_x8 / x_x_x_x16

IOU1 (IIO PCIe Port 2)

Selects PCIe port Bifurcation for selected slot(s) Port Format: xDxCxBxA.

The port can further be x2x2

Auto / x4x4x4x4 / x4x4_x8 / x_x8x4x4 / x_x8x_x8 / x_x_x_x16

IOU2 (IIO PCIe Port 3)

Selects PCIe port Bifurcation for selected slot(s) Port Format: xDxCxBxA.

The port can further be x2x2

Auto / x4x4x4x4 / x4x4_x8 / x_x8x4x4 / x_x8x_x8 / x_x_x_x16

IOU3 (IIO PCIe Port 4)

Selects PCIe port Bifurcation for selected slot(s) Port Format: xDxCxBxA.

The port can further be x2x2

Auto / x4x4x4x4 / x4x4_x8 / x_x8x4x4 / x_x8x_x8 / x_x_x_x16

IOU4 (IIO PCIe Port 5)

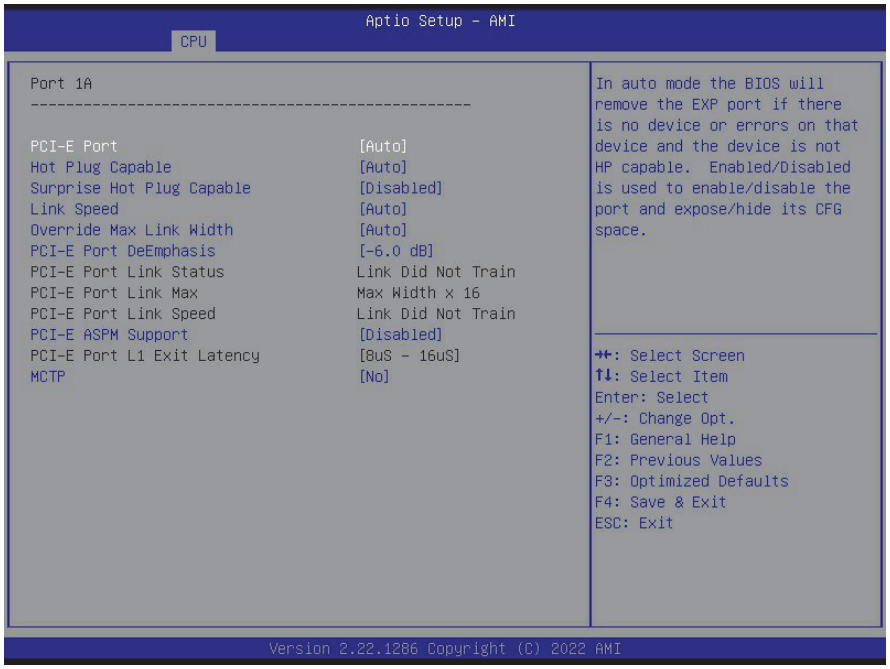
Selects PCIe port Bifurcation for selected slot(s).

Auto / x4x4x4x4 / x4x4_x8 / x_x8x4x4 / x_x8x_x8 / x_x_x_x16

Port 1A/2A/3A/4A/5A/5C/5E/5G

Settings related to PCI Express Ports (0/1A/1B/1C/1D/2A/2B/2C/2D/3A/3B/3C/3D/4A/4B/4C/4D/5A/5B/5C/5D).

Port 1A/2A/3A/4A/5A/5C/5E/5G



PCI-E Port

In auto mode the BIOS will remove the EXP port if there is no device or errors on that device and the device is not HP capable. Enabled/Disabled is used to enable/disable the port and expose/hide its CFG space.

Auto / No / Yes

Hot Plug Capable

This option specifies if the link is considered Hot Plug capable.

Auto / Disabled / Enabled

Surprise Hot Plug Capable

This option specifies if the link is considered Hot Plug capable.

Disabled / Enabled

Link Speed

Choose Link Speed for this PCIe port.

Auto / Gen1 (2.5 GT/s) / Gen2 (5 GT/s) / Gen3 (8 GT/s) / Gen4 (16 GT/s) / Gen 5 (32 GT/s)

Override Max Link Width

Override the max link width that was set by bifurcation.

Auto / x1 / x2 / x4 / x8 / x16

PCIE Port DeEmphasis

De-Emphasis control (LNKCON2[6]) for this PCIe port.

-6.0 dB / -3.5 dB

PCI-E ASPM Support

This option can disable ASPM support in a PCIe root port. ‘Auto’ keeps hardware default.

Disabled / Auto

Hide Port?

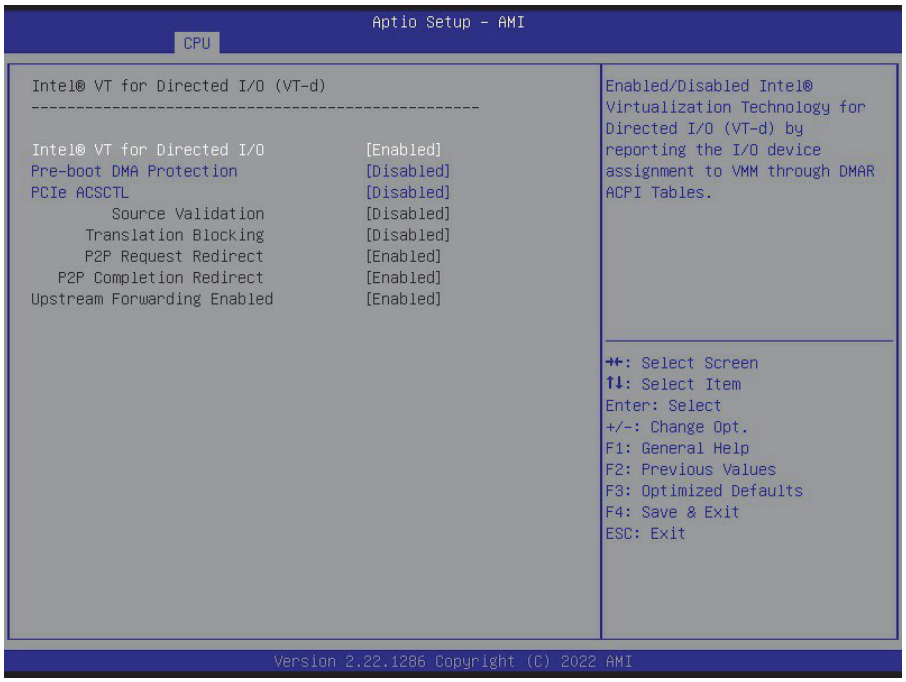
User can force to hide this root port from OS.

no / yes

MCTP

Enabled/Disabled MCTP

No / **Yes**



Intel® VT for Directed I/O (VT-d)

Intel® VT for Directed I/O

Enable/Disable Intel® Virtualization Technology for Directed I/O (VT-d) by reporting the I/O device assignment to VMM through DMAR ACPI Tables.

Enabled / Disabled

Pre-boot DMA Protection

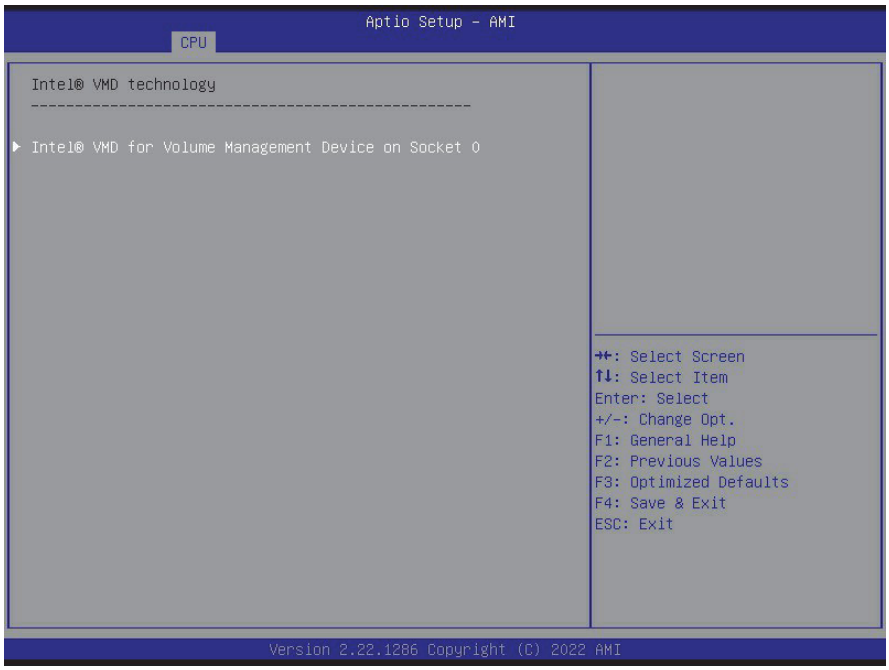
Enable DMA Protection in Pre-boot environment (If DMAR table is installed in DXE and If VTD_INFO_PPI is installed in PEI.)

Enabled / **Disabled**

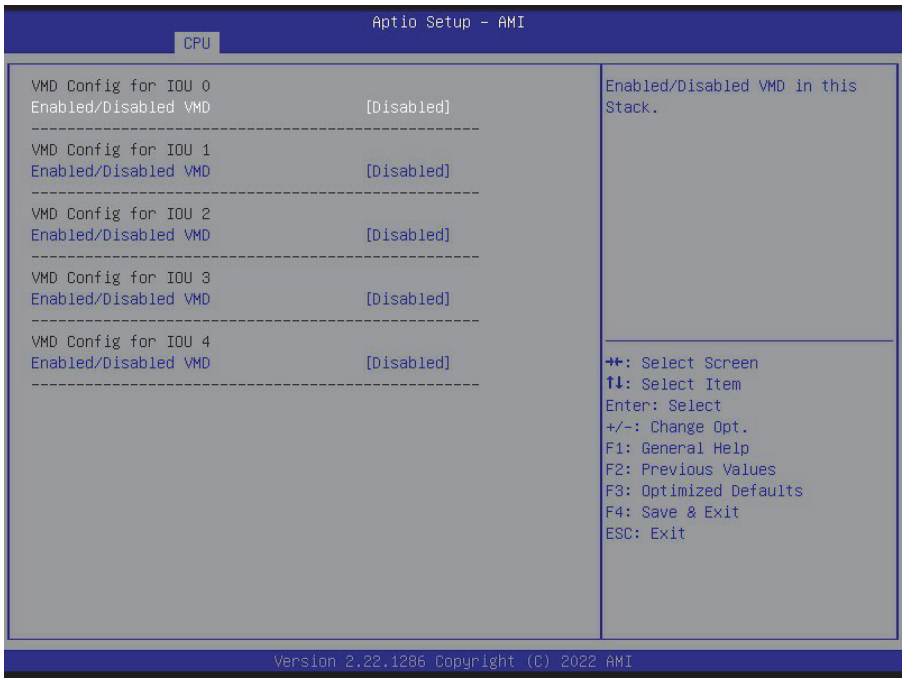
PCIe ACSCTL

Enabled/Disabled overwrite of PCI Access Control Services Control register in PCI root ports.

Enabled / **Disabled**



Intel® VMD Technology



Intel VMD for Volume Management for Socket 0

VMD Config for IOU0

Enable/Disable VMD in this Stack.

Disabled / Enabled

VMD Config for IOU1

Enable/Disable VMD in this Stack.

Disabled / Enabled

VMD Config for IOU2

Enable/Disable VMD in this Stack.

Disabled / Enabled

VMD Config for IOU3

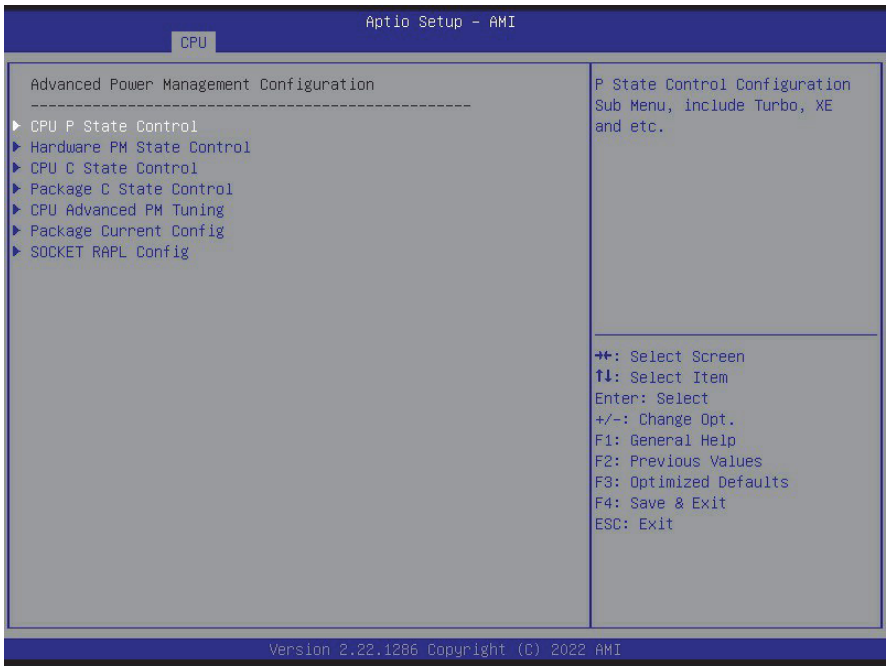
Enable/Disable VMD in this Stack.

Disabled / Enabled

VMD Config for IOU4

Enable/Disable VMD in this Stack.

Disabled / Enabled



Advanced Power Management Configuration

CPU P State Control

P State Control Configuration Sub Menu, include Turbo, XE and ete.

Hardware PM State Control

Hardware P-State setting

CPU C State Control CPU C State setting.

Package C State Control

Package C State setting

CPU Advanced PM Tuning

Setting Energy Per Bias, Pwr_Ctl, PP0 Current SWLTD, SAPM etc

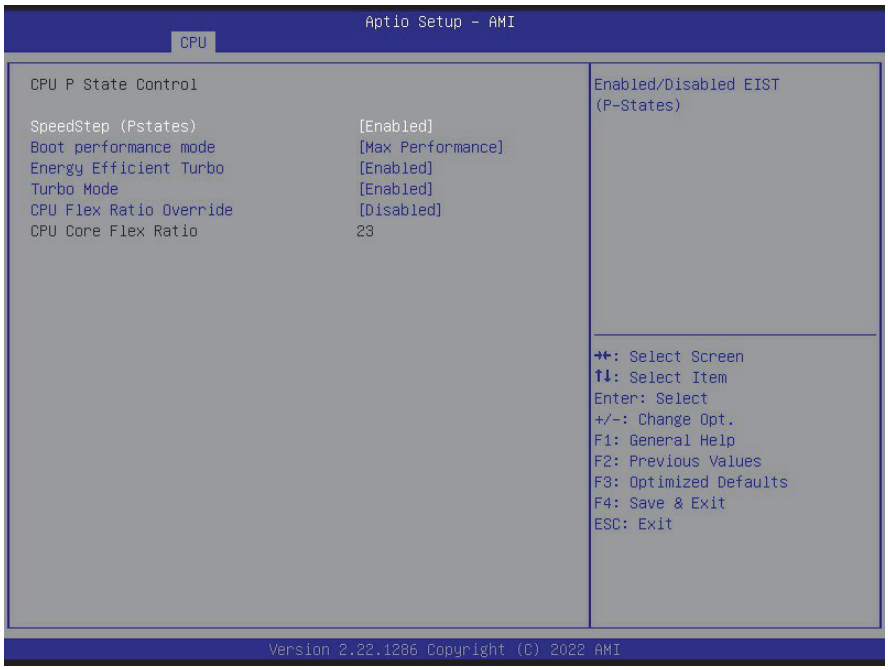
Package Current Config

Program PRI_PLANE_CURT_CFG_CTRI_MSR

0x601 Sub Menu

SOCKET RAPL Config

SOCKET RAPL Configuration Sub Menu – TURBO_POWER_LIMIT CSR & MSR



CPU P State Control Configuration

SpeedStep (Pstates)

Enable/Disable EIST (P-States).

Disabled / **Enabled**

Boot performance mode

Select the performance state that the BIOS will set before OS hand off.

Max Performance / Max Efficient / Set by Intel Node Manager

Energy Efficient Turbo

Energy Efficient Turbo Disable, MSR 0x1FC [19].

Enabled / Disabled

Turbo Mode

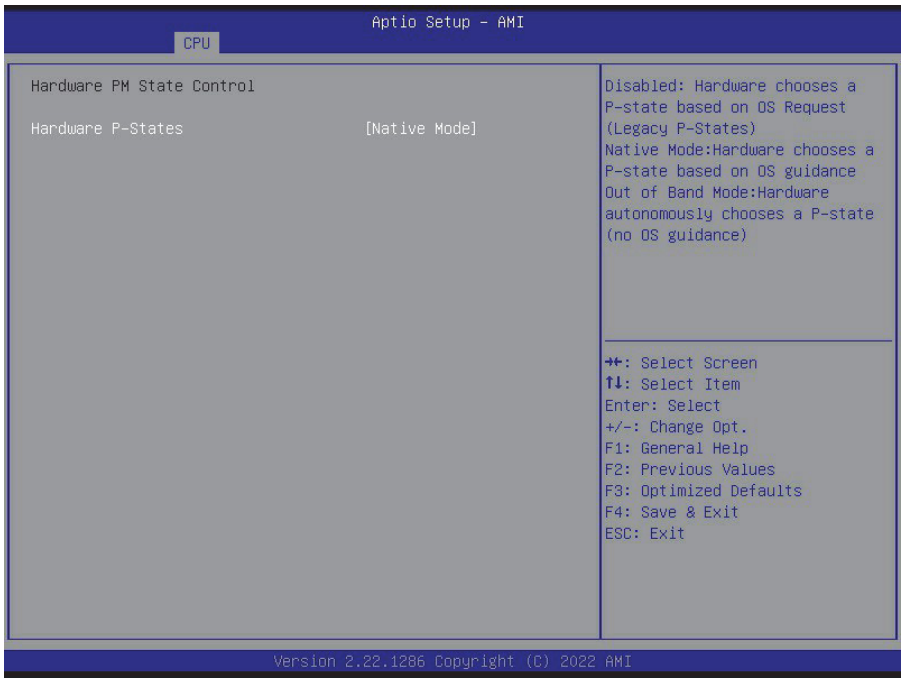
Enable/Disable processor Turbo Mode (requires EMTTM enabled too).

Disabled / **Enabled**

CPU Flex Ratio Override

Enable/Disable CPU Flex Ratio Programming

Disabled / Enabled



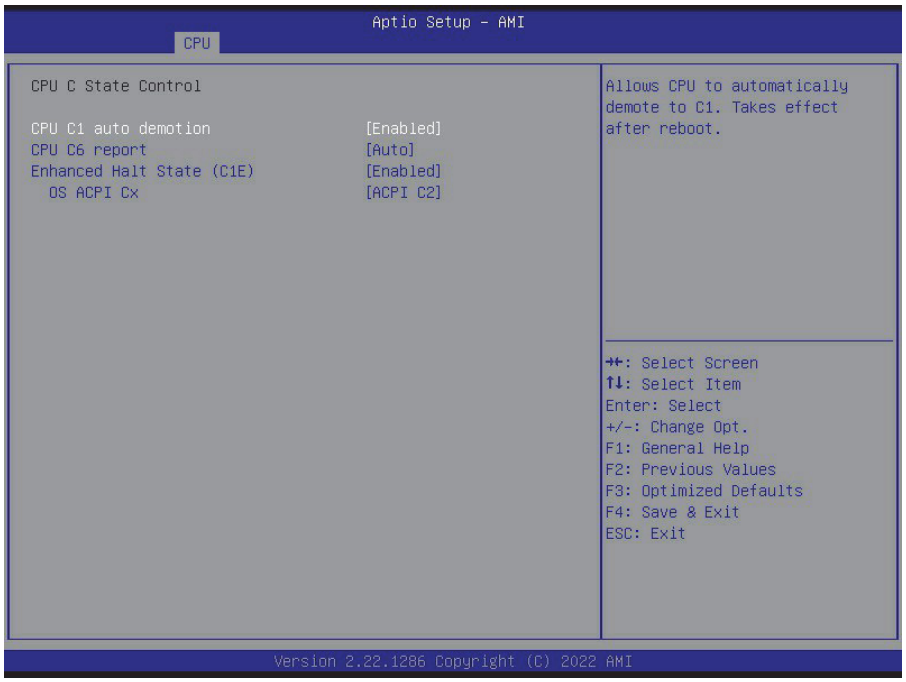
Hardware PM State Control

Hardware P-States

Disabled: Hardware choose a P-state based on OS Request (Legacy P-States) Native Mode: Hardware choose a P-state based on OS guidance

Out of Band Mode: Hardware autonomously chooses a P-state (no OS guidance) Disabled / **Native Mode** / Out of Band Mode / Native Mode with No Legacy

Support



CPU C State Control

CPU C1 auto demotion

Allows CPU to automatically demote to C1. Takes effect after reboot.

Disabled / **Enabled**

CPU C6 report

Enable/Disable CPU C6 (ACPI C3) report to OS. Disabled / Enabled / **Auto**

Enhanced Halt State (C1E)

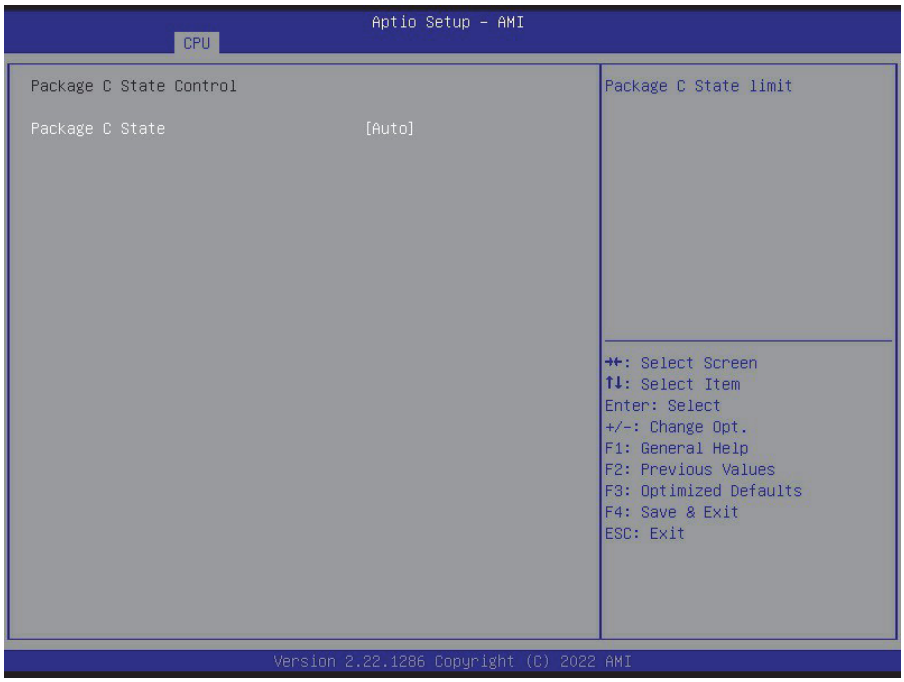
Core C1E auto promotion Control. Take effect after reboot.

Disabled / **Enabled**

OS ACPI Cx

Report CC3/CC6 to OS ACPI C2 or ACPI C3

ACPI C2 / ACPI C3

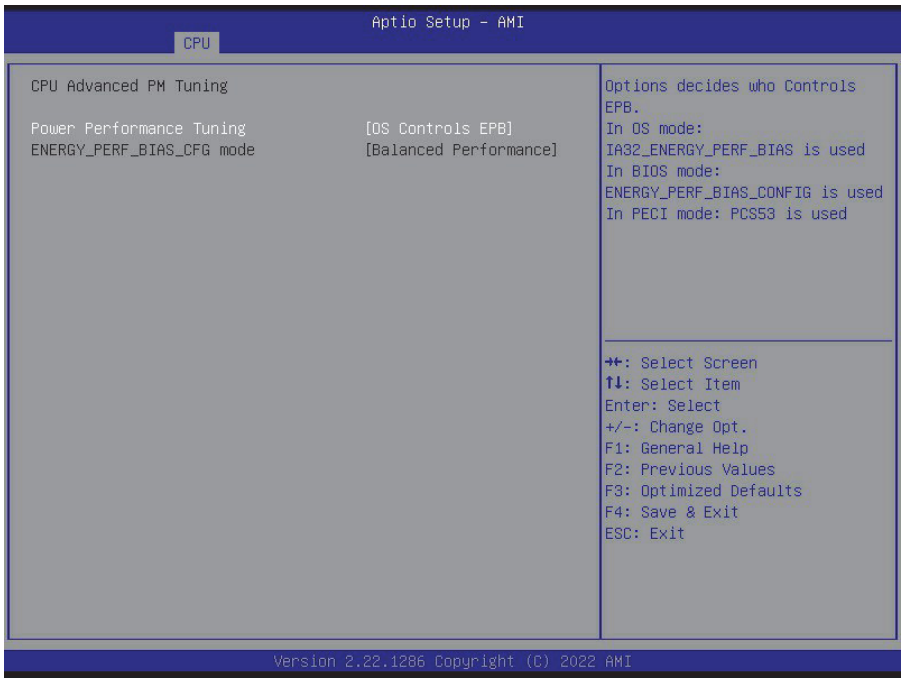


Package C State Control

Package C State

Package C State limit

C0/C1 state / C2 state / C6(non Retention) state / C6(Retention) state / No Limit / **Auto**

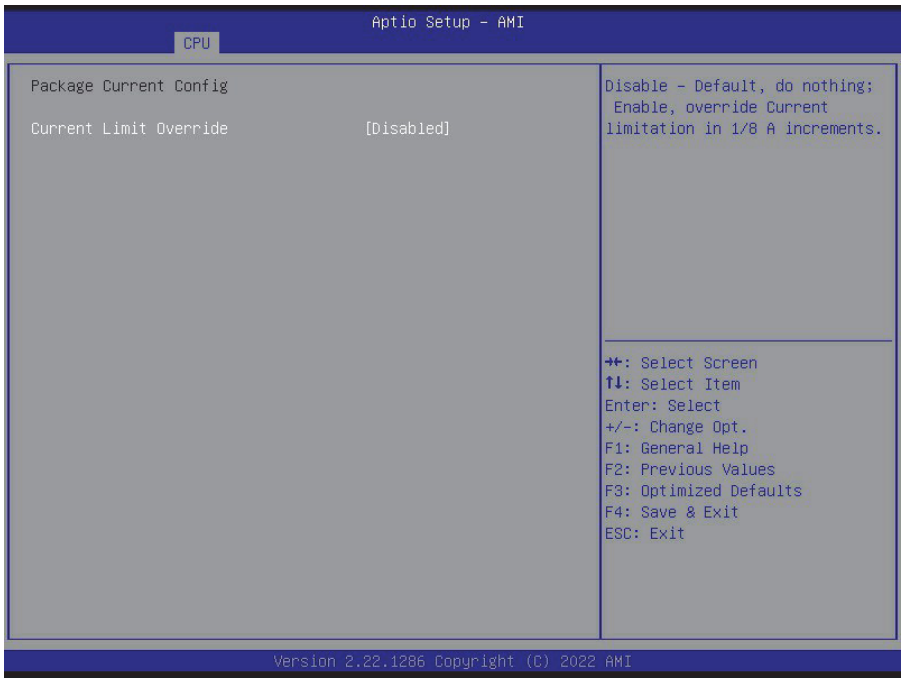


CPU Advanced PM Tuning

Power Performance Tuning

Options decide who Controls EPB. In OS mode: IA32_ENERGY_PERF_BIAS is used In BIOS mode: ENERGY_PERF_BIAS_CONFIG is used In PECI mode: PCS53 is used

OS Controls EPB / BIOS Controls EPB / PECI Controls EPB



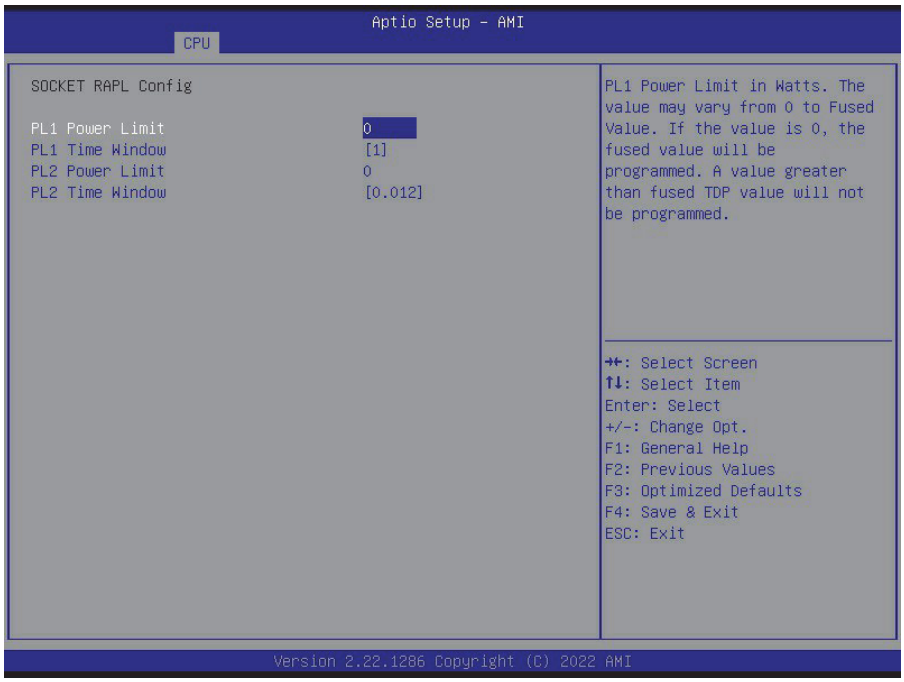
Package Current Config

Current Limit Override

Disable – Default, do nothing;

Enable, override Current limitation in 1/8 A increments.

Disabled / Enabled



SOCKET RAPL Configuration

PL1 Power Limit

PL1 Power Limit in Watts. The value may vary from 0 to Fused Value. If the value is 0, the fused value will be programmed. A value greater than fused TDP value will not be programmed.

0

PL1 Time Window

PL1 value in seconds. The value may vary from 0 to 448. Indicates the time window over which TDP value should be maintained.

1

PL2 Power Limit

PL2 Power Limit in Watts. The value may vary from 0 to Fused Value. If the value is 0, BIOS programs 120%*TDP

0

PL2 Time Window

PL2 value in seconds. The value may vary from 0 to 438. Indicates the time window over which TDP value should be maintained.

0.001 / 0.0012 / 0.0015 / 0.0017 / 0.002 / 0.0024 / 0.003 / 0.0034 / 0.004 / 0.005 / 0.006 / 0.007 / 0.008 / 0.01 / **0.012** / 0.014 / 0.016 / 0.02 / 0.023

4.4 Chipset Menu

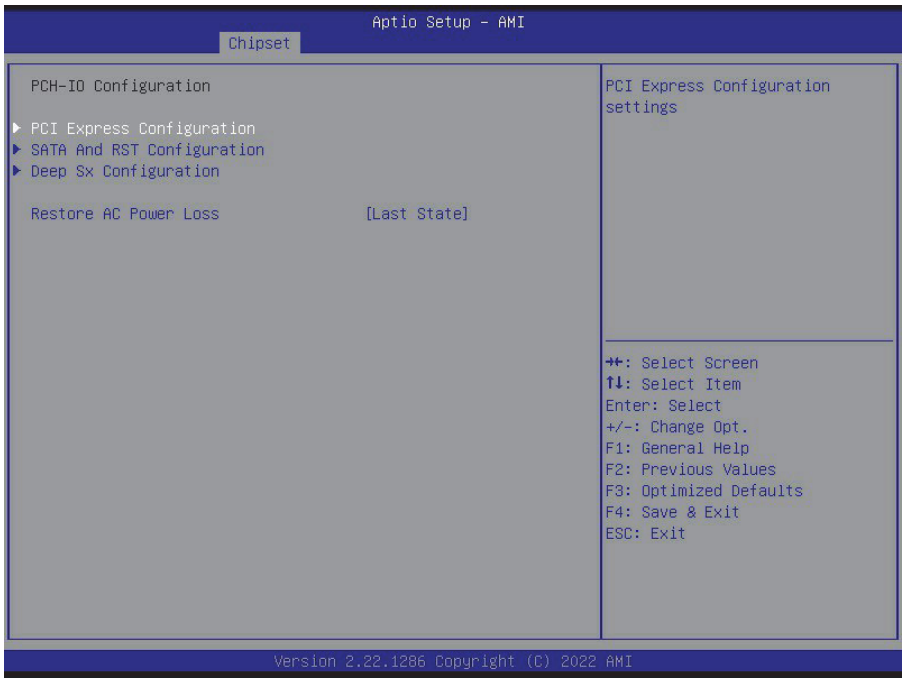


PCH-IO Configuration

PCH Parameters

Server ME Configuration

Configure Server ME Technology Parameters



PCH-IO Configuration

PCI Express Configuration

PCI Express Configuration settings

SATA And RST Configuration

Device Options Settings

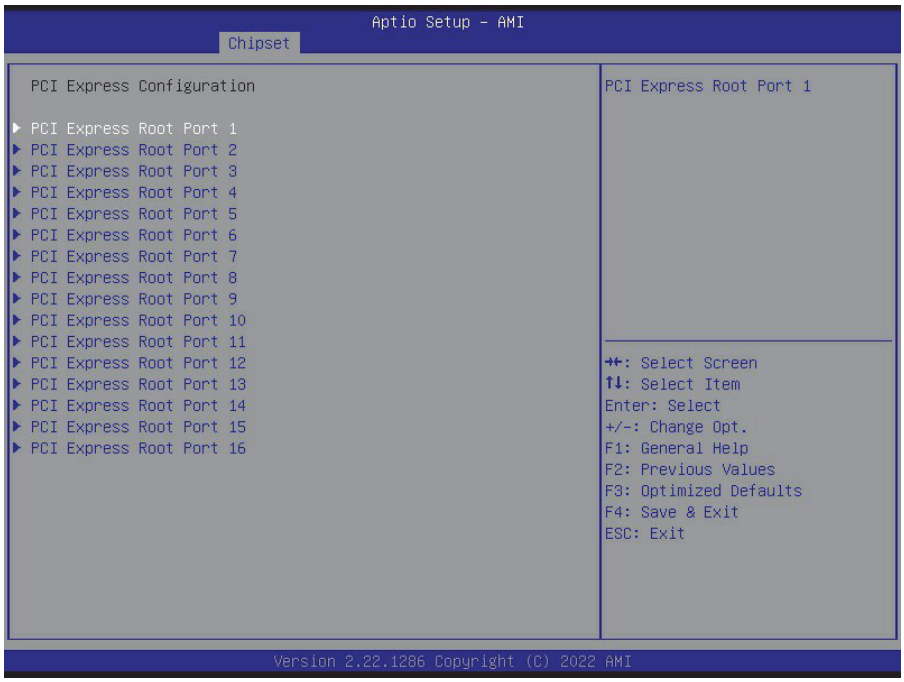
Deep Sx Configuration

Deep Sx Option Settings

Restore AC Power Loss

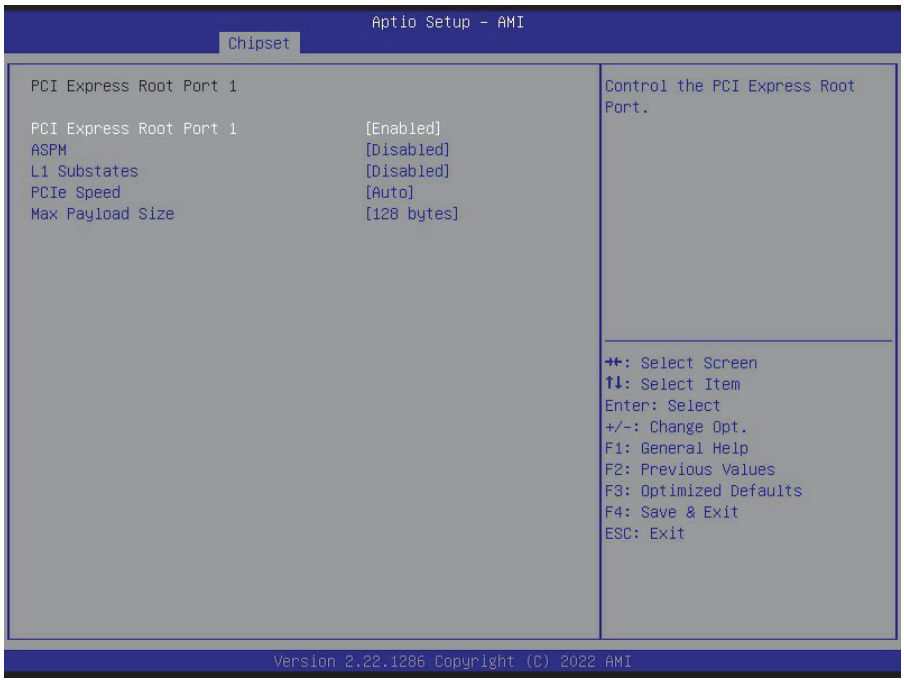
Specify what state to go to when power is re-applied after a power failure (G3 state).

Power On / Power Off / **Last State**



PCI Express Configuration

PCI Express Root Port 1~16



PCI Express Root Configuration1~16

PCI Express Root Port 1

Control the PCI Express Root Port.

Disabled / **Enabled**

ASPM

PCI Express Active State Power Management Settings.

Disabled / L1

L1 Substates

PCI Express L1 Substates settings.

Disabled / L1.1 / L1.2 / L1.1 & L1.2

PCIe Speed

Configure PCIe Speed

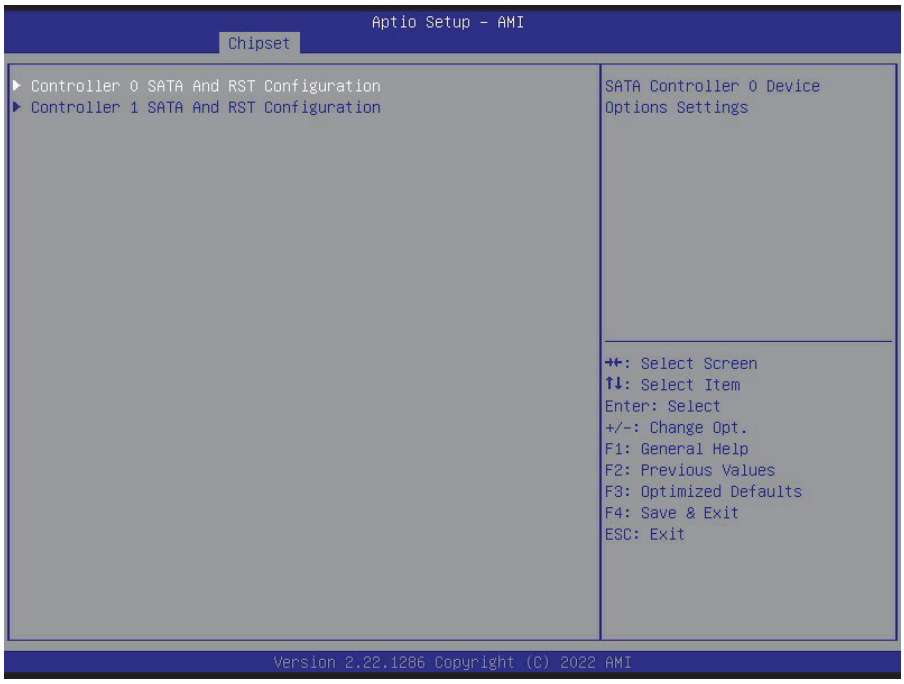
Auto / Gen1 / Gen2 / Gen3

Max Payload Size

Set Maximum TLP payload size

128 bytes / 256 bytes

SATA And RST Configuration



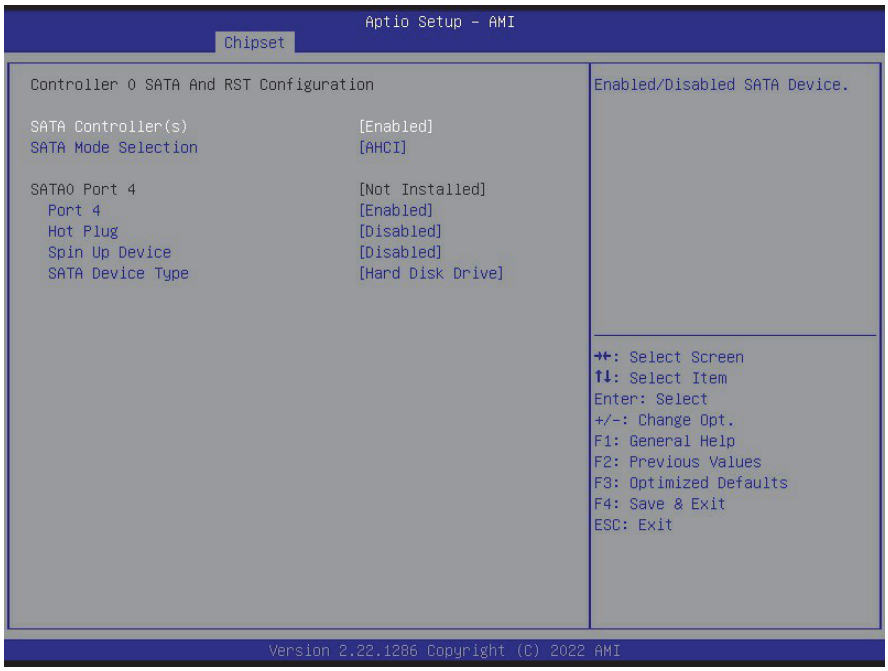
Controller 0 SATA And RST Configuration

SATA Controller 0 Device Options Settings

Controller 1 SATA And RST Configuration

SATA Controller 1 Device Options Settings

Controller 0 SATA And RST Configuration



SATA Controller(S)

Enabled/Disabled SATA Device.

Enabled / Disabled

SATA Mode Selection

Determines how SATA controllers operate.

AHCI / RAID

Port 4

Enabled or Disabled SATA Port

Enabled / Disabled

Hot Plug

Designates this port as Hot Pluggable.

Enabled / **Disabled**

Spin Up Device

If enabled for any of ports Staggerred Spin Up will be performed and only the drives which have this option enabled will spin up at boot. Otherwise all drives spin up at boot.

Enabled / **Disabled**

SATA Device Type

Indentify the SATA port is connected to Solid State Drive or Hard Disk Drive

Hard Disk Drive / Solid State Drive

Controller 1 SATA And RST Configuration



SATA Controller(s)

Enabled/Disabled SATA Device.

Enabled / Disabled

SATA Mode Selection

Determines how SATA controllers operate.

AHCI / RAID

SATA1 Port 2

Port 2

Enable or Disabled SATA Port

Enabled / Disabled

Hot Plug

Designates this port as Hot Pluggable.

Enabled / **Disabled**

Spin Up Device

If enabled for any of ports Staggered Spin Up will be performed and only the drives which have this option enabled will spin up at boot. Otherwise all drives spin up at boot.

Enabled / **Disabled**

SATA Device Type

Indentify the SATA port is connected to Solid State Drive or Hard Disk Drive.

Hard Disk Drive / Solid State Drive

SATA1 Port 3

Port 3

Enable or Disabled SATA Port

Enabled / Disabled

Hot Plug

Designates this port as Hot Pluggable.

Enabled / **Disabled**

Spin Up Device

If enabled for any of ports Staggered Spin Up will be performed and only the drives which have this option enabled will spin up at boot. Otherwise all drives spin up at boot.

Enabled / **Disabled**

SATA Device Type

Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.

Hard Disk Drive / Solid State Drive

SATA1 Port 4

Port 4

Enable or Disabled SATA Port

Enabled / Disabled

Hot Plug

Designates this port as Hot Pluggable.

Enabled / **Disabled**

Spin Up Device

If enabled for any of ports Staggered Spin Up will be performed and only the drives which have this option enabled will spin up at boot. Otherwise all drives spin up at boot.

Enabled / **Disable**

SATA Device Type

Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.

Hard Disk Drive / Solid State Drive

SATA1 Port 5

Port 5

Enable or Disabled SATA Port

Enabled / Disabled

Hot Plug

Designates this port as Hot Pluggable.

Enabled / **Disabled**

Spin Up Device

If enabled for any of ports Staggered Spin Up will be performed and only the drives which have this option enabled will spin up at boot. Otherwise all drives spin up at boot.

Enabled / **Disabled** **SATA Device Type**

Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.

Hard Disk Drive / Solid State Drive

SATA1 Port 6

Port 6

Enable or Disabled SATA Port

Enabled / Disabled

Hot Plug

Designates this port as Hot Pluggable.

Enabled / **Disabled**

Spin Up Device

If enabled for any of ports Staggered Spin Up will be performed and only the drives which have this option enabled will spin up at boot. Otherwise all drives spin up at boot.

Enabled / **Disabled**

SATA Device Type

Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.

Hard Disk Drive / Solid State Drive

SATA1 Port 7

Port 7

Enable or Disabled SATA Port

Enabled / Disabled

Hot Plug

Designates this port as Hot Pluggable.

Enabled / **Disabled**

Spin Up Device

If enabled for any of ports Staggered Spin Up will be performed and only the drives which have this option enabled will spin up at boot. Otherwise all drives spin up at boot.

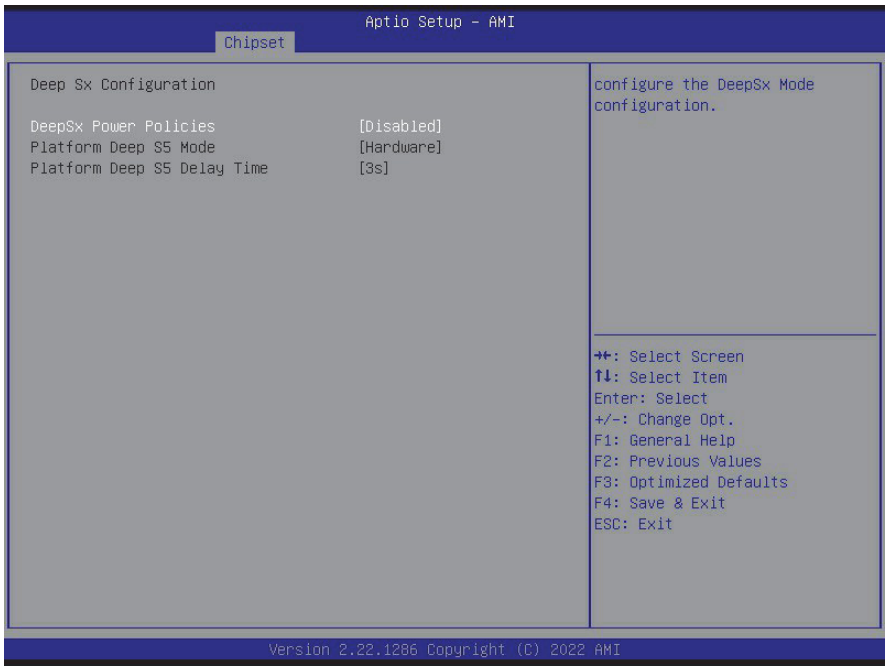
Enabled / **Disabled**

SATA Device Type

Identify the SATA port is connected to Solid State Drive or Hard Disk Drive.

Hard Disk Drive / Solid State Drive

Deep Sx Configuration



DeepSx Power Policies

Configure the DeepSx Mode configuration.

Disabled / Enabled in S5 / Enabled in S4-S5 / Enabled in S3-S4-S5

NOTE: When the DeepSx Power Policies is set to **Enabled in S5/S4-S5/S3-S4-S5,** the following items will be available to set up.

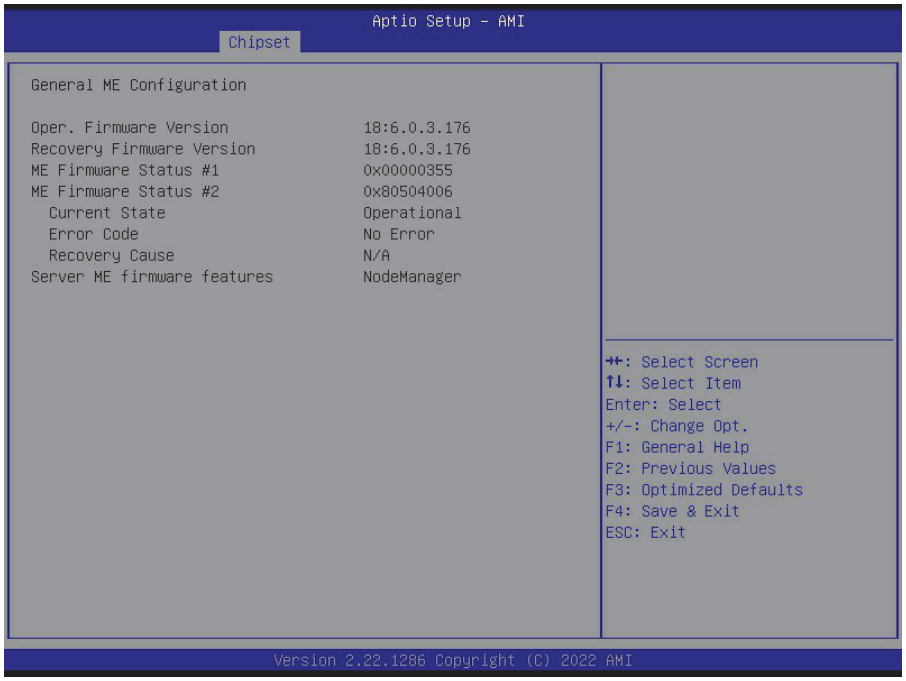
Platform Deep S5 Mode

Enabled – Enabled Platform Deep S5 mode, Disable – Disable Platform Deep S5 mode, Hardware– No support Platform Deep S5 mode

Disabled / Enabled / **Hardware**

Platform Deep S5 Delay Time

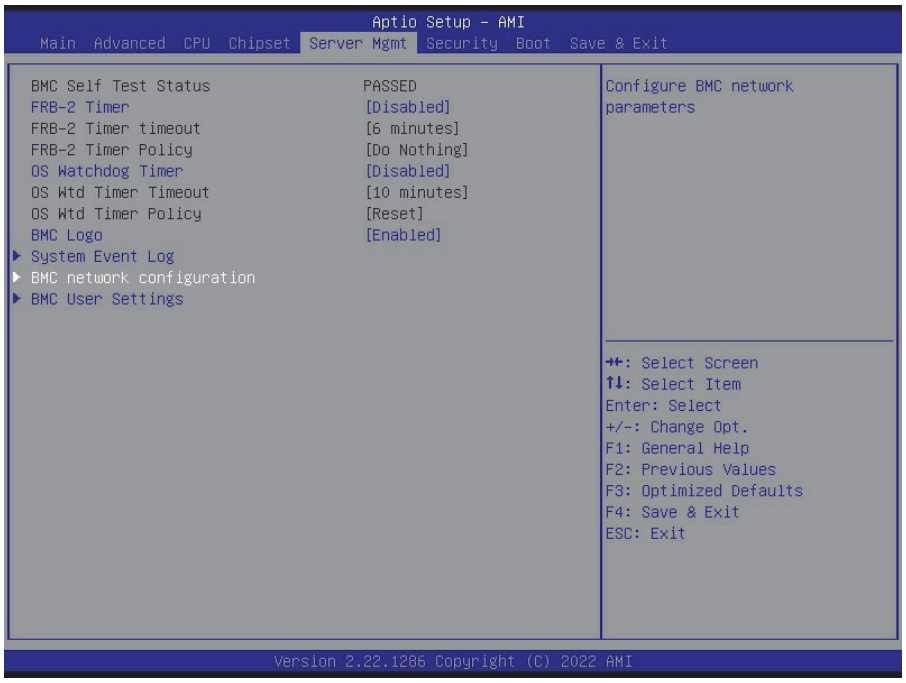
Delay (0/3/6/10) seconds to enter deep S5 state 0S/**3S**/6S/10S



Server ME Configuration

Only Read

4.5 Server Management



FRB-2 Timer

Enable or Disable FRB-2 timer (POST timer).

Enabled / **Disabled**

NOTE: When FRB-2 Timer was set to **Enabled**, the following 3 items will be available.

FRB-2 Timer timeout

Enter value Between 3 to 6 min for FRB-2 Timer Expiration value.

3 minutes / 4 minutes / 5 minutes / **6 minutes** / 12 minutes

FRB-2 Timer Policy

Configure how the system should respond if the FRB-2 Timer expires. Not available if FRB-2 Timer is disabled.

Do Nothing / Reset / Power Down / Power Cycle

OS Watchdog Timer

If enabled, starts a BIOS timer which can only be shut off by Management Software after the OS loads. Helps determine that the OS successfully loaded or follows the OS Boot Watchdog Timer policy.

Enabled / **Disabled**

NOTE: When OS Watchdog Timer was set to **Enabled**, the following 2 items will be available.

OS Wtd Timer timeout

Configure the length of the OS Boot Watchdog Timer. Not available if OS Boot Watchdog timer is disabled.

5 minutes / **10 minutes** / 15 minutes / 20 minutes

OS Wtd Timer Policy

Configure how the system should respond if the OS Boot Watchdog Timer expires. Not available if OS Boot Watchdog timer is disabled.

Do Nothing / **Reset** / Power Down / Power Cycle

BMC Logo

Enable or Disable BMC Logo Disabled / **Enabled**

System Event Log

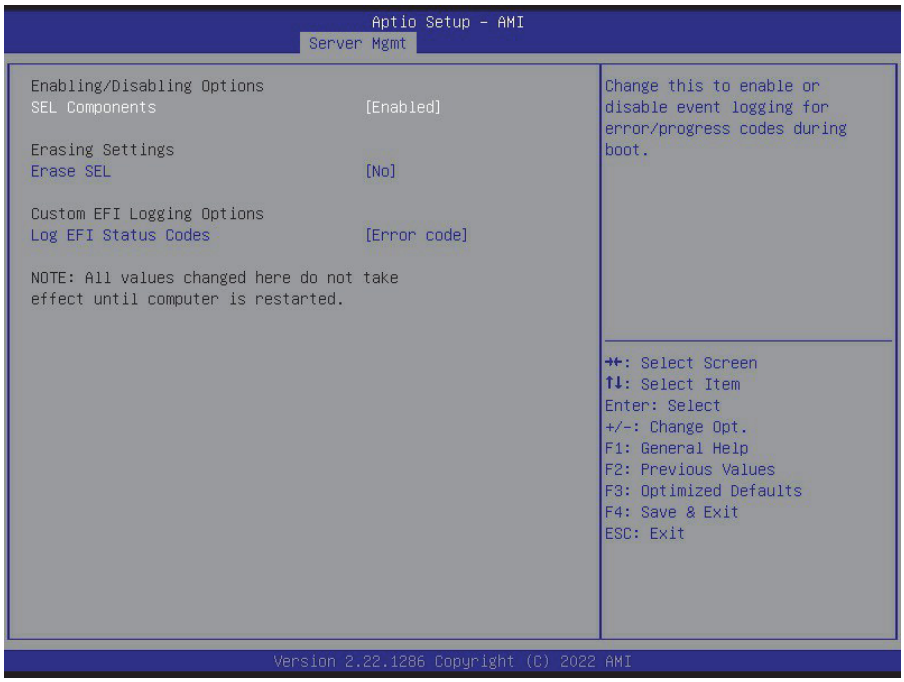
Press<Enter> to change the SEL event log configuration.

BMC network configuration

Configure BMC network parameters

BMC User Settings

Press<Enter> to Add, Delete and Set Privilege level for user.



System Event Log Configuration

SEL Components

Change this to enable or disable event logging for error/progress codes during boot.

Disabled / **Enabled**

Erase SEL

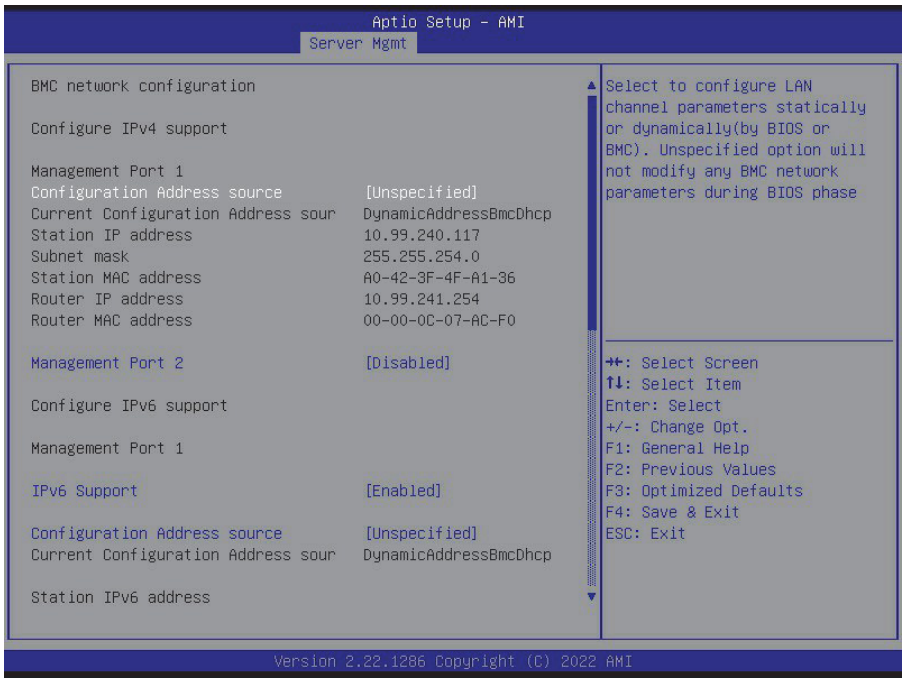
Choose options for erasing SEL.

No / Yes, On next reset / Yes, On every reset

Log EFI Status Codes

Disable the logging of EFI Status Codes or log only error code or only progress code or both.

Disabled / Both / **Error code** / Progress code



BMC Network Configuration

Configure IPV4 Support Management Port 1 Configuration Address Source

Select the configure LAN channel parameters statically or dynamically (by BIOS or BMC). Unspecified option will not modify any BMC network parameters during BIOS phase.

Unspecified / Static / DynamicBmcDhcp / DynamicBmcNonDhcp

Management Port 2

Enable/Disable BMC Share Nic.

Enabled / **Disabled**

Configure IPV6 Support Server Management Port 1 IPV6 Support

Enable or Disable LAN1 IPV6 Support.

Enabled / Disabled

Configuration Address Source

Select the configure LAN channel parameters statically or dynamically (by BIOS or BMC). Unspecified option will not modify any BMC network parameters during BIOS phase.

Unspecified / Static / DynamicBmcDhcp

Server Management Port 2 IPV6 Support

Enable or Disable LAN1 IPV6 Support.

Enabled / **Disabled**

IPv6 Support

Enable or Disable LAN2 IPv6 Support.

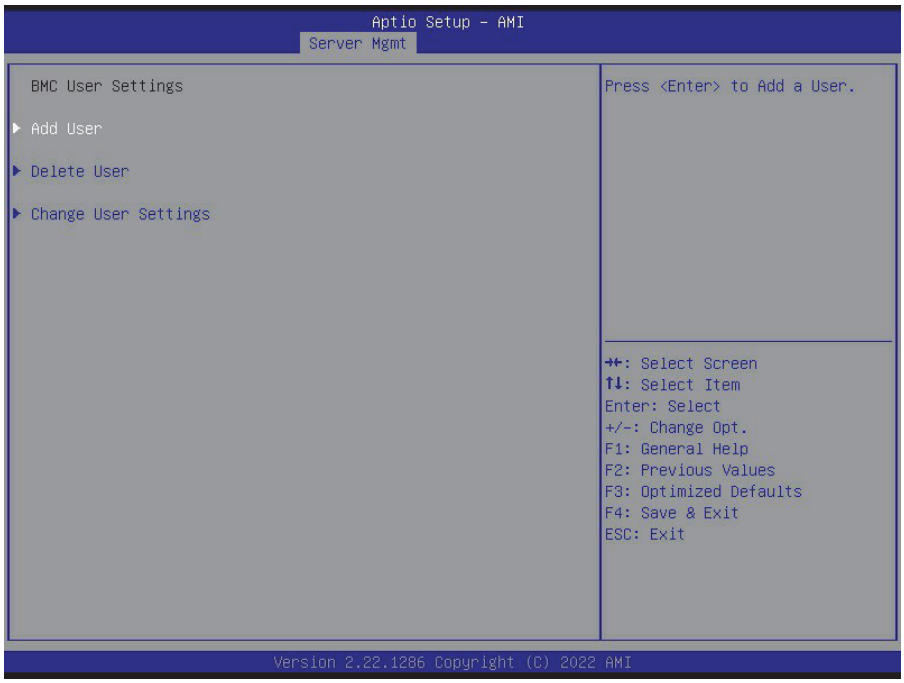
Enabled / Disabled

Configuration Address source

Enable or Disable LAN2 IPv6 Support.

Unspecified / Static / DynamicBmcDhcp

BMC User Setting Configuration



Add User

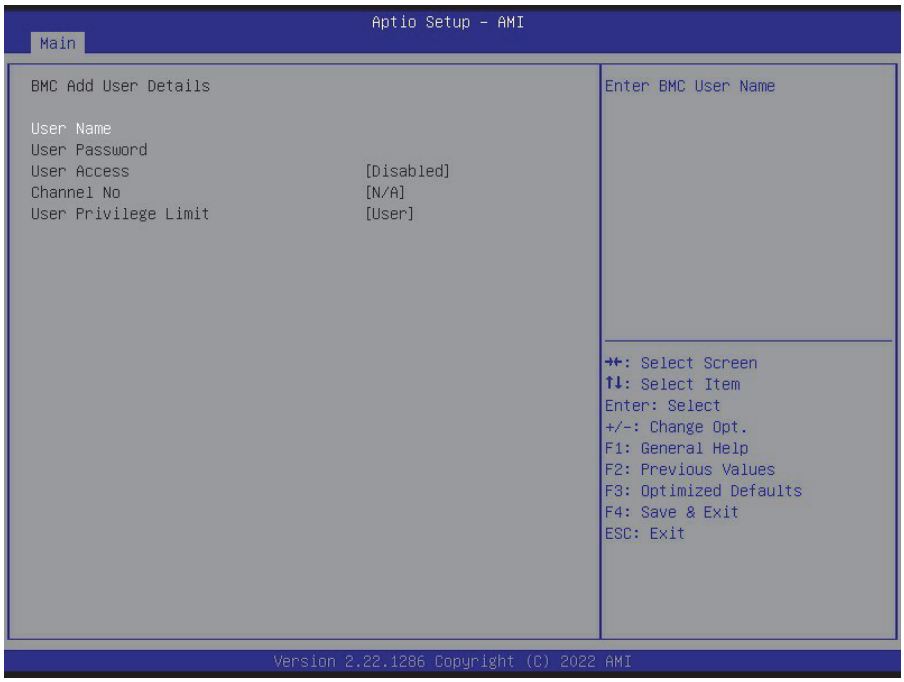
Press< Enter> to Add a User

Delete User

Press<Enter> to Delete a User

Change User Settings

Press<Enter> to Change User settings



BMC Add User Configuration

User Name

Enter BMC User Name



BMC Delete User Configuration

User Name

Enter BMC User Name

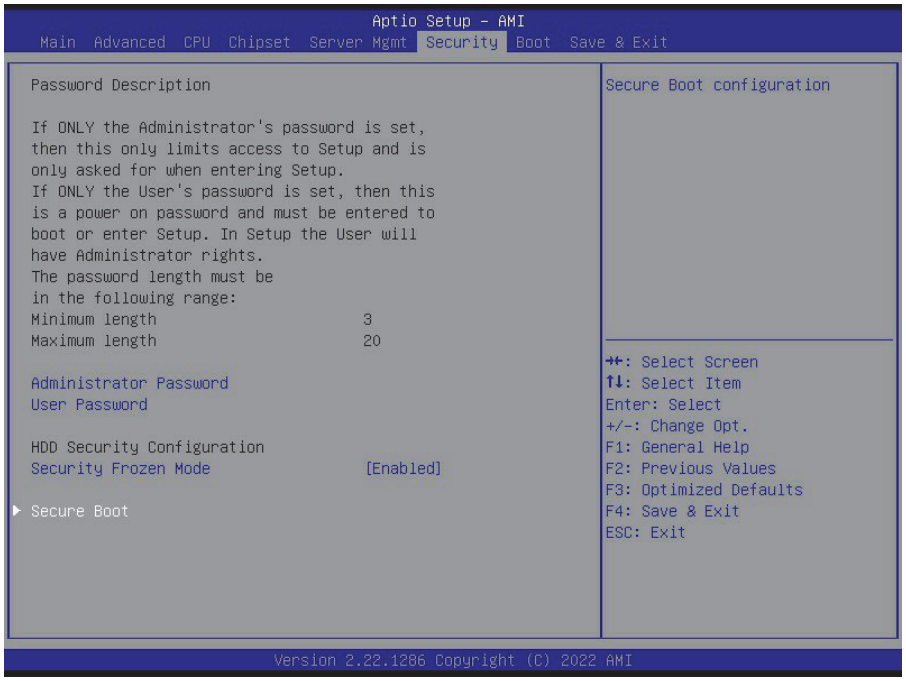


BMC Change User Configuration

User Name

Enter BMC User Name

4.6 Security



Password Description

Read only.

Administrator Password

Set administrator password in the ***Create New Password*** window. After you key in the password, the ***Confirm New Password*** window will pop out to ask for confirmation.

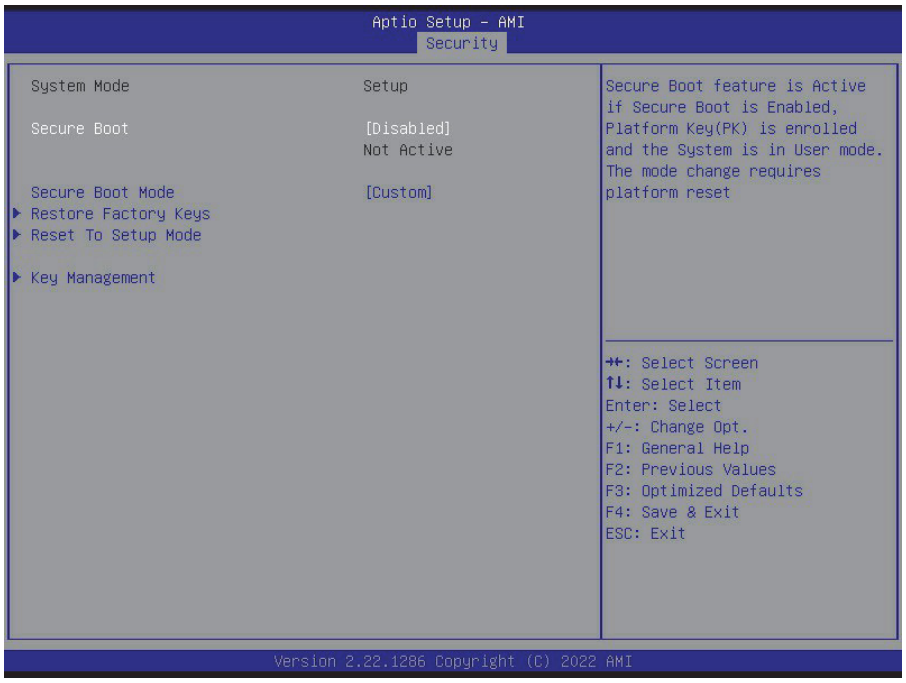
User Password

Set user password in the ***Create New Password*** window. After you key in the password, the ***Confirm New Password*** window will pop out to ask for confirmation.

Security Frozen Mode

Enable or disable HDD security freeze lock. Disable to support secure erase function. For AHCI SATA ports only.

Enabled / Disabled



Secure Boot

Secure Boot

Secure boot feature is Active if Secure Boot is Enabled, Platform Key (PK) is enrolled and System is in User mode. The mode change requires platform reset.

Disabled / Enabled

Secure Boot Mode

Secure Boot mode selector: Standard/Custom. In Custom mode Secure Boot Variables can be configured without authentication.

Standard / **Custom**

NOTE: When Secure Boot Mode was set to [Custom], the following items will be available to change.

Restore Factory Keys

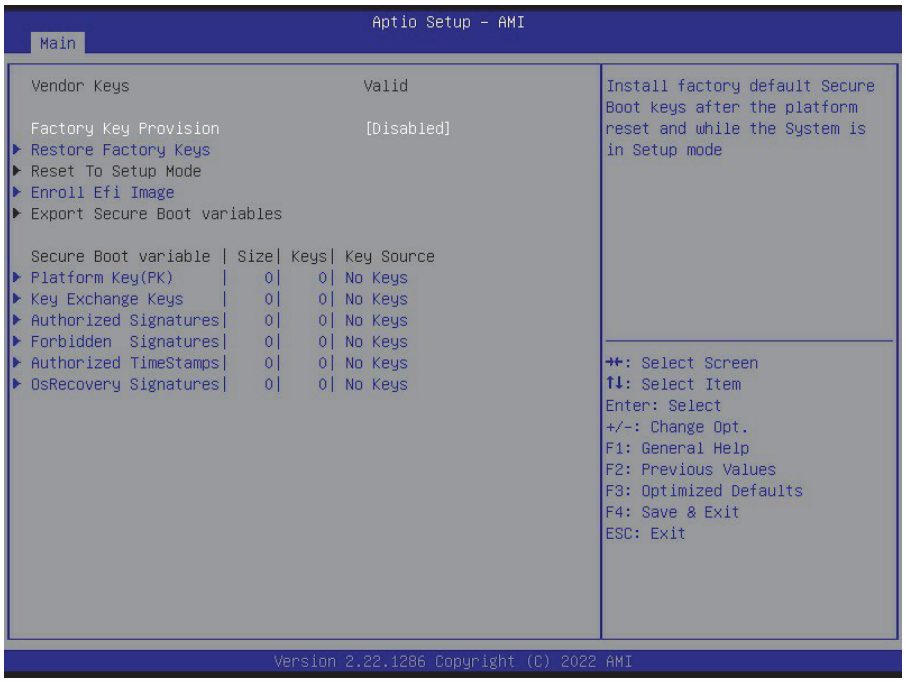
Force System to User Mode. Install factory default Secure Boot Key databases

Reset To Setup Mode

Delete all Secure Boot Key databases from NVRAM

Key Management

Enables expert users to modify Secure Boot Policy variables without full authentication.



Key Management

Factory keys Provision

Allow to provision factory default Secure Boot keys when System is in Setup Mode.

Disabled / Enabled

Restore Factory Keys

Force System to User Mode. Install Factory Default Secure Boot key databases.

Reset To Setup Mode

Delete all Secure Boot key database from NVRAM

Enroll Efi Image

Allow the image to run in Secure Boot mode. Enroll SHA256 has of the binary into Authorized signature Database (db).

Export Secure Boot variables

Copy NVRAM content of Secure Boot variables to files in a root folder on a file system device

Platform Key (PK)

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate:
a) EFI_SIGNATURE_LIST
b) EFI_CERT_X509 (DER)
c) EFI_CERT_RSA2048 (bin)
d) EFI_CERT_SHAXXX
2. Authenticated UEFI Variable
3. EFI PE/C0FF Image (SHA256) Key source: Default, External, Mixed

Update

Key Exchange Keys

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate :
a) EFI_SIGNATURE_LIST
b) EFI_CERT_X509 (DER)
c) EFI_CERT_RSA2048 (bin)
d) EFI_CERT_SHAXXX
2. Authenticated UEFI Variable
3. EFI PE/C0FF Image (SHA256) Key source: Default, External, Mixed
Update / Append

Authorized Signatures

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate:
a) EFI_SIGNATURE_LIST
b) EFI_CERT_X509 (DER)
c) EFI_CERT_RSA2048 (bin)
d) EFI_CERT_SHAXXX
2. Authenticated UEFI Variable
3. EFI PE/C0FF Image (SHA256) Key source: Default, External, Mixed
Update / Append

Forbidden Signatures

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate:
a) EFI_SIGNATURE_LIST
b) EFI_CERT_X509 (DER)
c) EFI_CERT_RSA2048 (bin)
d) EFI_CERT_SHAXXX
2. Authenticated UEFI Variable
3. EFI PE/C0FF Image (SHA256) Key source: Default, External, Mixed
Update / Append

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Authorized TimeStamps

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate:
a) EFI_SIGNATURE_LIST
b) EFI_CERT_X509 (DER)
c) EFI_CERT_RSA2048 (bin)
d) EFI_CERT_SHAXXX
2. Authenticated UEFI Variable
3. EFI PE/C0FF Image (SHA256) Key source: Factory, External, Mixed
Update / Append

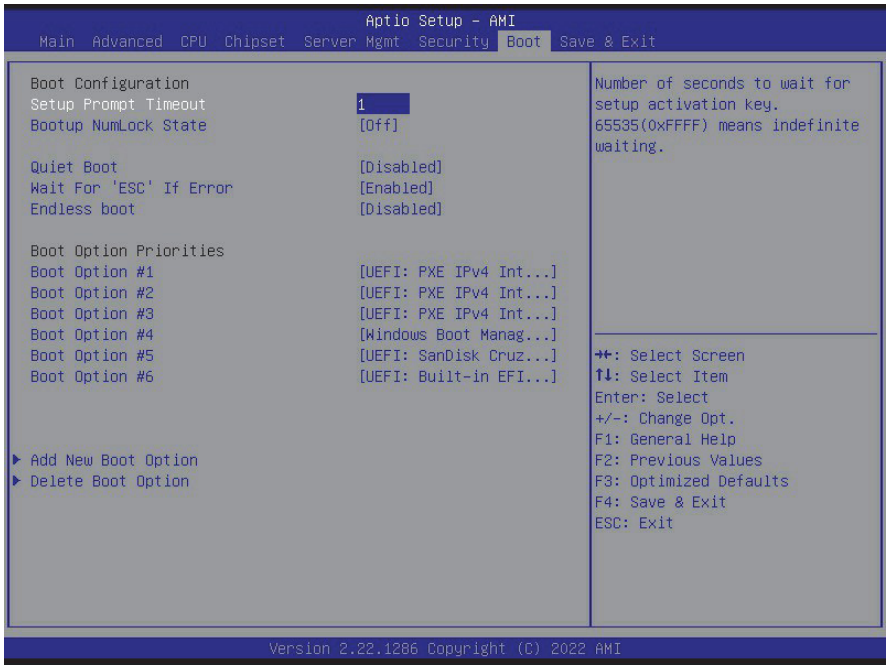
OsRecovery Signatures

Enroll Factory Defaults or load certificates from a file:

1. Public Key Certificate in:
a) EFI_SIGNATURE_LIST
b) EFI_CERT_X509 (DER)
c) EFI_CERT_RSA2048 (bin)
d) EFI_CERT_SHAXXX
2. Authenticated UEFI Variable
3. EFI PE/C0FF Image (SHA256) Key source: Default, External, Mixed
Update / Append

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4.7 Boot



Setup Prompt Timeout

Number of seconds to wait for setup activation key. 65535 (0xFFFF) means indefinite waiting.

1

Bootup NumLock State

Select the keyboard NumLock state.

Off / On

Quiet Boot

Enable or disable Quiet Boot option.

Disabled / Enabled

Wait for ‘ESC’ If Error

Wait for ‘ESC’ key to be pressed if error occurs.

Disabled / **Enabled**

Endless Boot

Enabled: BIOS try bootable devices constantly in loop until finding a bootable device (Excluding Built – in EFI Shell)

Disabled / Enabled

Boot Option Priorities Boot Option #1~#6

Select the first/second boot device.

Device Name / Disabled

Add New Boot Option

Add a new EFI boot option to the boot order

Delete Boot Option

Remove an EFI boot option from the boot order



Add New Boot Management

Add boot option

Create new boot option

Path for boot option

Enter the path to the boot option in the format Fs0:\path\filename.efi

Create

Create the newly formed boot option



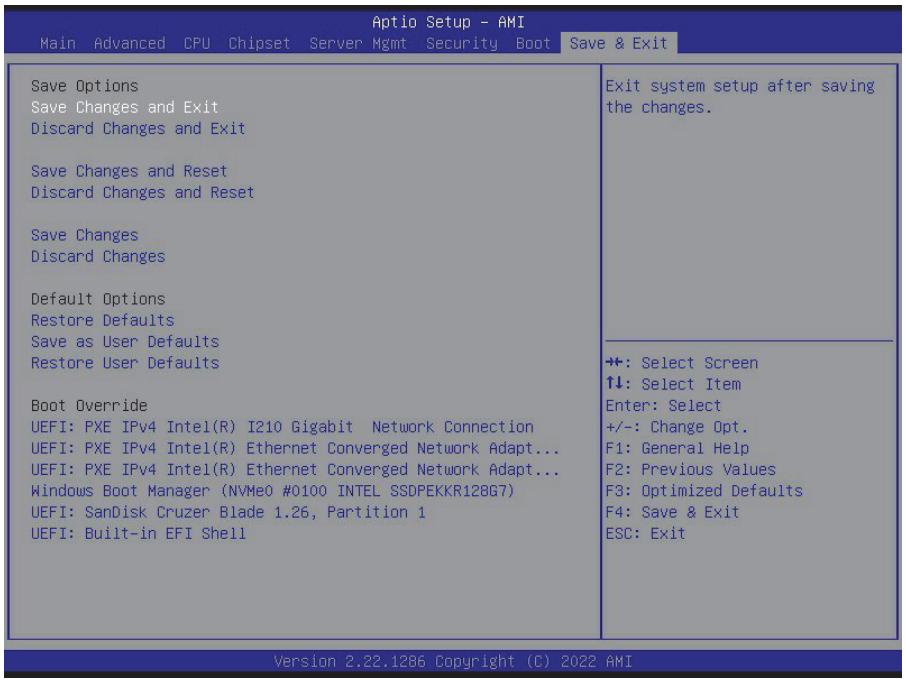
Delete Boot Option

Delete Boot Option

Remove an EFI boot option from the boot order

Select one to Delete / Device Name

4.8 Save & Exit



Save 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

Read only.

5 Diagnostics

5.1 AMIBIOS Post Code (Aptio)

The POST code checkpoints are the largest set of checkpoints during the BIOS pre- boot process. The following table describes the type of checkpoints that may occur during the POST portion of the BIOS:

Checkpoint Ranges

Status Code Range	Description
0x01 – 0x0B	SEC execution
0x0C – 0x0F	SEC errors
0x10 – 0x2F	PEI execution up to and including memory detection
0x30 – 0x4F	PEI execution after memory detection
0x50 – 0x5F	PEI errors
0x60 – 0x8F	DXE execution up to BDS
0x90 – 0xCF	BDS execution
0xD0 – 0xDF	DXE errors
0xE0 – 0xE8	S3 Resume (PEI)
0xE9 – 0xEF	S3 Resume errors (PEI)
0xF0 – 0xF8	Recovery (PEI)
0xF9 – 0xFF	Recovery errors (PEI)

Standard Checkpoints

SEC Phase

Status Code	Description
0x00	Not used
Progress Codes	
0x01	Power on. Reset type detection (soft/hard).
0x02	AP initialization before microcode loading
0x03	North Bridge initialization before microcode loading
0x04	South Bridge initialization before microcode loading
0x05	OEM initialization before microcode loading
0x06	Microcode loading
0x07	AP initialization after microcode loading
0x08	North Bridge initialization after microcode loading
0x09	South Bridge initialization after microcode loading
0x0A	OEM initialization after microcode loading
0x0B	Cache initialization

SEC Error Codes	
0x0C – 0x0D	Reserved for future AMI SEC error codes
0x0E	Microcode not found
0x0F	Microcode not found

SEC Beep Codes None

PEI Phase

Status Code	Description
Progress Codes	
0x10	PEI Core is started
0x11	Pre-memory CPU initialization is started
0x12	Pre-memory CPU initialization (CPU module specific)
0x13	Pre-memory CPU initialization (CPU module specific)
0x14	Pre-memory CPU initialization (CPU module specific)
0x15	Pre-memory North Bridge initialization is started
0x16	Pre-Memory North Bridge initialization (North Bridge module specific)
0x17	Pre-memory North Bridge initialization (North Bridge module specific)
0x18	Pre-Memory North Bridge initialization (North Bridge module specific)
0x19	Pre-memory South Bridge initialization is started
0x1A	Pre-Memory South Bridge initialization (South Bridge module specific)
0x1B	Pre-memory South Bridge initialization (South Bridge module specific)
0x1C	Pre-Memory South Bridge initialization (South Bridge module specific)
0x1D – 0x2A	OEM pre-memory initialization codes
0x2B	Memory initialization. Serial Presence Detect (SPD) data reading
0x2C	Memory initialization. Memory presence detection
0x2D	Memory initialization. Programming memory timing information
0x2E	Memory initialization. Configuring memory
0x2F	Memory initialization (other)
0x30	Reserved for ASL (see ASL Status Codes section below)
0x31	Memory Installed
0x32	CPU post-memory initialization is started
0x33	CPU post-memory initialization. Cache initialization
0x34	CPU post-memory initialization. Application Processor(s) (AP) initialization
0x35	CPU post-memory initialization. Boot Strap Processor (BSP) selection
0x36	CPU post-memory initialization. System Management Mode(SMM) initialization
0x37	Post-Memory North Bridge initialization is started

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Status Code	Description
0x38	Post-Memory North Bridge initialization (North Bridge module specific)
0x39	Post-Memory North Bridge initialization (North Bridge module specific)
0x3A	Post-Memory North Bridge initialization (North Bridge module specific)
0x3B	Post-Memory South Bridge initialization is started
0x3C	Post-Memory South Bridge initialization (South Bridge module specific)
0x3D	Post-Memory South Bridge initialization (South Bridge module specific)
0x3E	Post-Memory South Bridge initialization (South Bridge module specific)
0x3F – 0x4E	OEM post memory initialization codes
0x4F	DXE IPL is started
PEI Error Codes	
0x50	Memory initialization error. Invalid memory type or incompatible memory speed
0x51	Memory initialization error. SPD reading has failed
0x52	Memory initialization error. Invalid memory size or memory modules do not match
0x53	Memory initialization error. No usable memory detected
0x54	Unspecified memory initialization error
0x55	Memory not installed
0x56	Invalid CPU type or speed
0x57	CPU mismatch
0x58	CPU self test failed or possible CPU cache error
0x59	CPU microcode is not found or microcode update is failed
0x5A	Internal CPU error
0x5B	Reset PPI is not available
0x5C – 0x5F	Reserved for future AMI error codes
S3 Resume Progress Codes	
0xE0	S3 Resume is started (S3 Resume PPI is called by the DXE IPL)
0xE1	S3 Boot Script execution
0xE2	Video repost
0xE3	OS S3 wake vector call
0xE4 – 0xE7	Reserved for future AMI progress codes
S3 Resume Error Codes	
0xE8	S3 Resume Failed
0xE9	S3 Resume PPI not Found
0xEA	S3 Resume Boot Script Error
0xEB	S3 OS Wake Error
0xEC – 0xEF	Reserved for future AMI error codes

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Recovery Progress Codes	
0xF0	Recovery condition triggered by firmware (Auto recovery)
0xF1	Recovery condition triggered by user (Forced recovery)
0xF2	Recovery process started
0xF3	Recovery firmware image is found
0xF4	Recovery firmware image is loaded
0xF5 – 0xF7	Reserved for future AMI progress codes
Recovery Error Codes	
0xF8	Recovery PPI is not available
0xF9	Recovery capsule is not found
0xFA	Invalid recovery capsule
0xFB – 0xFF	Reserved for future AMI error codes

DXE Phase

Status Code	Description
0x60	DXE Core is started
0x61	NVRAM initialization
0x62	Installation of the South Bridge Runtime Services
0x63	CPU DXE initialization is started
0x64	CPU DXE initialization (CPU module specific)
0x65	CPU DXE initialization (CPU module specific)
0x66	CPU DXE initialization (CPU module specific)
0x67	CPU DXE initialization (CPU module specific)
0x68	PCI host bridge initialization
0x69	North Bridge DXE initialization is started
0x6A	North Bridge DXE SMM initialization is started
0x6B	North Bridge DXE initialization (North Bridge module specific)
0x6C	North Bridge DXE initialization (North Bridge module specific)
0x6D	North Bridge DXE initialization (North Bridge module specific)
0x6E	North Bridge DXE initialization (North Bridge module specific)
0x6F	North Bridge DXE initialization (North Bridge module specific)
0x70	South Bridge DXE initialization is started
0x71	South Bridge DXE SMM initialization is started
0x72	South Bridge devices initialization
0x73	South Bridge DXE initialization (South Bridge module specific)
0x74	South Bridge DXE initialization (South Bridge module specific)
0x75	South Bridge DXE initialization (South Bridge module specific)

Status Code	Description
0x76	South Bridge DXE initialization (South Bridge module specific)
0x77	South Bridge DXE initialization (South Bridge module specific)
0x78	ACPI module initialization
0x79	CSM initialization
0x7A – 0x7F	Reserved for future AMI DXE codes
0x80 – 0x8F	OEM DXE initialization codes
0x90	Boot Device Selection (BDS) phase is started
0x91	Driver connecting is started
0x92	PCI Bus initialization is started
0x93	PCI Bus Hot Plug Controller initialization
0x94	PCI Bus Enumeration
0x95	PCI BUS Request Resources
0x96	PCI Bus Assign Resources
0x97	Console Output devices connect
0x98	Console Input devices connect
0x99	Super IO initialization
0x9A	USB initialization is started
0x9B	USB Reset
0x9C	USB Detect
0x9D	USB Enable
0x9E -0x9F	Reserved for future AMI codes
0xA0	IDE initialization is started
0xA1	IDE Reset
0xA2	IDE Detect
0xA3	IDE Enable
0xA4	SCSI initialization is started
0xA5	SCSI Reset
0xA6	SCSI Detect
0xA7	SCSI Enable
0xA8	Setup Verifying Password
0xA9	Start of Setup
0xAA	Reserved for ASL (see ASL Status Codes section below)
0xAB	Setup Input Wait
0xAC	Reserved for ASL (see ASL Status Codes section below)
0xAD	Ready To Boot event
0xAE	Legacy Boot event

Status Code	Description
0xAF	Exit Boot Services event
0xB0	Runtime Set Virtual Address MAP Begin
0xB1	Runtime Set Virtual Address MAP End
0xB2	Legacy Option ROM initialization
0xB3	System Reset
0xB4	USB hot plug
0xB5	PCI bus hot plug
0xB6	Clean-up of NVRAM
0xB7	Configuration Reset (reset of NVRAM settings)
0xB8 – 0xBF	Reserved for future AMI codes
0xC0 – 0xCF	OEM BDS initialization codes
DXE Error Codes	
0xD0	CPU initialization error
0xD1	North Bridge initialization error
0xD2	South Bridge initialization error
0xD3	Some of the Architectural Protocols are not available
0xD4	PCI resource allocation error. Out of Resources
0xD5	No Space for Legacy Option ROM
0xD6	No Console Output Devices are found
0xD7	No Console Input Devices are found
0xD8	Invalid password
0xD9	Error loading Boot Option (LoadImage returned error)
0xDA	Boot Option is failed (StartImage returned error)
0xDB	Flash update is failed
0xDC	Reset protocol is not available

ACPI/ASL Checkpoints

Status Code	Description
0x01	System is entering S1 sleep state
0x02	System is entering S2 sleep state
0x03	System is entering S3 sleep state
0x04	System is entering S4 sleep state
0x05	System is entering S5 sleep state
0x10	System is waking up from the S1 sleep state
0x20	System is waking up from the S2 sleep state
0x30	System is waking up from the S3 sleep state

Status Code	Description
0x40	System is waking up from the S4 sleep state
0xAC	System has transitioned into ACPI mode. Interrupt controller is in PIC mode.
0xAA	System has transitioned into ACPI mode. Interrupt controller is in APIC mode.

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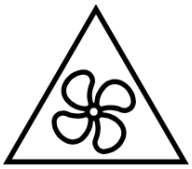
Important Safety Instructions

For user safety, please read and follow all **instructions**, **WARNINGS**, **CAUTIONS,** and **NOTES** marked in this manual and on the associated equipment before handling/operating the equipment.

1. Read these safety instructions carefully.
2. Keep this user's manual for future reference.
3. Read the specifications section of this manual for detailed information on the operating environment of this equipment.
4. The equipment can be operated at an ambient temperature of 55°C.
5. When installing/mounting or uninstalling/removing equipment; or when removal of the chassis lid required for user servicing (Section 3.1-3.5):
   - Turn off power and unplug any power cords/cables, and
   - Reinstall the chassis lid before restoring power.



Hazardous moving parts. Keep body parts out of the motion path.



6. To avoid electrical shock and/or damage to equipment:
   - Keep equipment away from water or liquid sources;
   - Keep equipment away from high heat or high humidity;
   - Keep equipment properly ventilated (do not block or cover ventilation openings);
   - Make sure to use recommended voltage and power source settings;
   - Always install and operate equipment near an easily accessible electrical socket-outlet;
   - Secure the power cord (do not place any object on/over the power cord);
   - Only install/attach and operate equipment on stable surfaces and/or recommended mountings;
   - If the equipment will not be used for long periods of time, turn off and unplug the equipment from its power source.
   - The power cord must be connected to a socket or outlet with a ground connection.
7. Never attempt to fix the equipment. Equipment should only be serviced by qualified personnel.
8. An RTC battery may be provided for uninterrupted, backup or emergency power.



Risk of explosion if battery is replaced with one of an incorrect type. Discard used batteries according to the manufacturer's instructions.

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9. This equipment is not suitable for use in locations where children are likely to be present.
10. Equipment must be serviced by authorized technicians when:
    - The power cord or plug is damaged;
    - Liquid has penetrated the equipment;
    - It has been exposed to high humidity/moisture;
    - It is not functioning or does not function according to the user's manual;
    - It has been dropped and/or damaged; and/or,
    - It has an obvious sign of breakage.
11. Please pay strict attention to all warnings and advisories appearing on the device, to avoid injury or damage.
12. The equipment may have more than one power supply input. To reduce the risk of electrical shock, trained personnel should disconnect all power supply inputs before servicing.



Shock hazard! Disconnect all power supply inputs before servicing.


Shock hazard!


Multiple power sources

13. It is recommended that equipment be installed only in a server room or computer room where access is:
    - Restricted to qualified service personnel or users familiar with restrictions applied to the location, reasons therefor, and any precautions required;
    - Only afforded by the use of a tool or lock and key, or other means of security, and is controlled by the authority responsible for the location.
14. Suitable for installation in Information Technology Rooms in accordance with Article 645 of the National Electrical Code and NFPA 75.
15. This product is intended to be supplied by a certified DC power source providing reinforced/double insulation from AC mains with an output rating of -48V to -60V DC, 12A min., Tma = 55°C. All power connection wiring must be performed by a qualified electrician in accordance with National Electrical Code, ANSI/NFPA 70 and Canadian Electrical Code, Part I, CSA C22.1. The DC power supply should be well-grounded to ensure safe operation. The protective earthing conductor shall be minimum 14 AWG and having green-and-yellow insulation. The ground wire should be installed first (before "+" and "-") and then removed.
16. When using a Fiber Optic Small-Form Pluggable (SFP) module, ensure it is IEC 60825-1, IEC 60825-2 and IEC 60950-1 or IEC 62368-1 certified and a Class 1 Laser Product.

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Consignes de Sécurité Importantes

*Pour assurer la sécurité de l'utilisateur, veuillez lire et suivre toutes les **directives**, ainsi que les **AVERTISSEMENTS**, **MISES EN GARDE** et **REMARQUES** de ce manuel et indiqués sur l'équipement associé avant de manipuler ou utiliser l'équipement.*

1. *Veuillez lire attentivement ces instructions de sécurité avec soin.*
2. *Veuillez conserver ce manuel pour référence future.*
3. *Veuillez lire la section des spécifications de ce manuel pour avoir des informations détaillées sur l'environnement d'exploitation de cet équipement.*
4. *L'équipement peut être utilisé à une température ambiante de 55 °C.*
5. *Lors de l'installation ou du montage et de la désinstallation ou de la dépose de l'équipement; ou lors de la dépose du couvercle du châssis pour procéder à l'entretien par l'utilisateur (Sections 3.1-3.5):*
   - *Coupez l'alimentation et débranchez les cordons et les câbles d'alimentation, et*
   - *Reposez le couvercle du châssis avant de remettre l'alimentation.*



AVERTISSEME

***Pièces mobiles dangereuses.** Gardez les parties du corps hors de la trajectoire.*



6. *Pour éviter un risque d'électrocution et pour éviter d'endommager l'équipement :*
   - *Éloignez l'équipement de l'eau et de toute source liquide;*
   - *Éloignez l'équipement de toute source de chaleur ou d'humidité élevée;*
   - *Gardez l'équipement correctement ventilé (ne pas bloquer ou couvrir les ouvertures de ventilation);*
   - *Veillez à utiliser la tension recommandée et les réglages adéquats pour la source d'alimentation;*
   - *Veuillez toujours installer et exploiter l'équipement à proximité d'une prise de courant facilement accessible;*
   - *Assurez-vous que le cordon d'alimentation est acheminé de manière sécuritaire (ne déposez aucun objet dessus);*
   - *Installez, fixez et utilisez l'équipement sur des surfaces stables ou sur les fixations recommandées uniquement;*
   - *Si l'équipement n'est pas utilisé pendant une longue période, éteignez-le et débranchez-le de sa source d'alimentation.*
   - *Le cordon d'alimentation doit être connecté à une prise ou à une prise de courant avec mise à la terre.*
7. *N'essayez jamais de réparer l'équipement. L'équipement ne doit être réparé que par du personnel qualifié.*
8. *Une pile au lithium peut être installée pour assurer l'alimentation de secours ou d'urgence en continu.*

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mise en garde

***Risque d'explosion** si la batterie est remplacée par une batterie d'un type incorrect. Jetez les piles usagées conformément aux instructions du fabricant.*

9. *Cet équipement ne convient pas à une utilisation dans des lieux pouvant accueillir des enfants.*
10. *L'équipement doit être entretenu par des techniciens agréés lorsque :*
    - *le cordon d'alimentation est endommagé ou lorsque la fiche électrique est endommagée;*
    - *du liquide a pénétré à l'intérieur de l'équipement;*
    - *l'équipement a été exposé à un taux d'humidité élevé;*
    - *l'équipement ne fonctionne pas ou ne fonctionne pas conformément au manuel de l'utilisateur;*
    - *l'équipement est tombé ou lorsqu'il a été endommagé;*
    - *l'équipement présente un signe évident de défaillance.*
11. *Veuillez porter une attention rigoureuse à tous les avertissements et à tous les avis figurant sur l'appareil, pour éviter des blessures ou des dommages.*
12. *L'équipement peut avoir plus d'une entrée d'alimentation. Pour réduire le risque d'électrocution, le personnel qualifié devrait déconnecter toutes les entrées d'alimentation avant de procéder à l'entretien.*



mise en garde

***Risque d'électrocution!** Débranchez toutes les entrées d'alimentation avant de procéder à l'entretien.*


Shock hazard!
Risque d'électrocution!


Multiple power sources
Sources d'alimentation multiples

13. *Il est recommandé que l'équipement soit installé que dans une salle de serveur ou de la salle informatique où:*
    - *L'accès est limité au personnel de maintenance qualifié ou utilisateurs familiers avec les restrictions appliquées à l'emplacement, motifs, et tout les précautions nécessaires, et;*
    - *L'accès est uniquement assurée par l'utilisation d'un outil ou clé, ou d'autres moyens de sécurité, et est contrôlé par l'autorité responsable de l'emplacement.*
14. *Peut être installé dans des salles de matériel de traitement de l'information conformément à l'article 645 du National Electrical Code et à la NFPA 75.*
15. *Ce produit est destiné à être alimenté par une source d'alimentation CC certifiée fournissant une isolation renforcée/double du secteur CA avec une puissance de sortie de -48 V à -60 V CC, 12 A min., Tma = 55°C. Tout le câblage de connexion d'alimentation doit être effectué par un électricien qualifié conformément au Code national de l'électricité, ANSI / NFPA 70 et au Code canadien de l'électricité, Partie I, CSA C22.1. L'alimentation CC doit être bien mise à la terre pour garantir un fonctionnement sûr. Le conducteur de mise à la terre de protection doit être au minimum 14 AWG et avoir une isolation verte et jaune. Le fil de terre doit être installé en premier (avant «+» et «-») puis retiré.*

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Getting Service

Ask an Expert: https://www.adlinktech.com/en/Askanexpert

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Tel: +1-408-360-0200
Toll Free: +1-800-966-5200 (USA only)
Fax: +1-408-600-1189
Email: info@adlinktech.com

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