



SR700-X4

IP65 MIL-STD-810G Rugged Computer

with Intel® 9th Gen Coffee Lake Xeon®

E-2276ML Processor

9V to 36V DC-in, Extended Temp

-40 to 60°C



User's Manual

Revision Date: May.11.2023

Safety Information

Electrical safety

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

Operation safety

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

Statement

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- All trademarks are the properties of the respective owners.
- All product specifications are subject to change without prior notice

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Revision History

Revision	Date (yyyy/mm/dd)	Changes
Version 1.0	2019/10/16	Initial release at SR700-X3
Version 1.1	2023/5/11	Update to SR700-X4

Packing list

<input checked="" type="checkbox"/>	SR700-X4 Rugged Fanless System
<input checked="" type="checkbox"/>	CD (Driver)
<input type="checkbox"/>	Testing Cable

Ordering information

Model Number	Description
SR700-X4	IP65 MIL-STD-810G Rugged Computer with Intel® 9th Gen Coffee Lake Xeon® E-2276ML Processor 9V to 36V DC-in, Extended Temp -40 to 60°C



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

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Chapter 1: Product Introduction

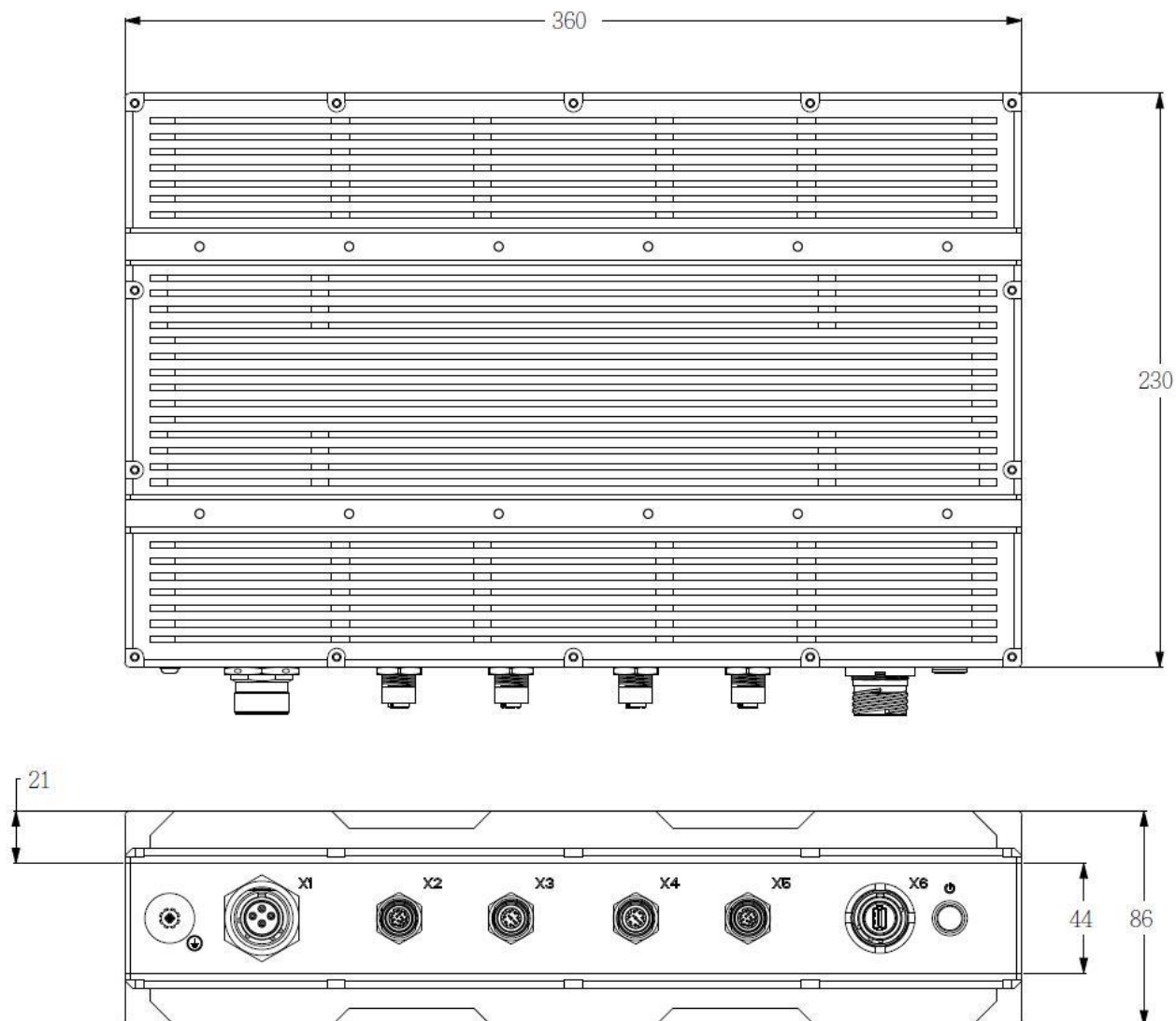
1.1 Key Features

System	
CPU	Intel® 9th Gen Coffee Lake Xeon® E-2276ML Processor
MB	OXY5741A-04P1
BIOS	AMI UEFI BIOS
Memory Type	1x DDR4 SO-DIMM DDR4 16GB SO-DIMM 2666MHz (Up to 128GB)
Storage Device	1x 2.5" SATA III 512Gb SSD
Front I/O	
Ground Screw	1(M4)
X1	DC-IN
X2	2x USB2.0
X3	1x GbE LAN
X4	1x GbE LAN
X5	1x RS232+ 1x RS485
X6	1x mini-DP
Power Button	1x Power Button with LED light
Mechanical & Environment	
Constructio	Aluminum chassis with fanless design
Power requirement	9V ~ 36V DC-IN
Dimension	360 x 230 x 86mm (W x D x H)
Operating Temp.	-40 to 60°C
Storage Temp	-40 to 85°C
Relative Humidity	5% t0 95%, non-condensing
*Specification are subject to change without notice.	

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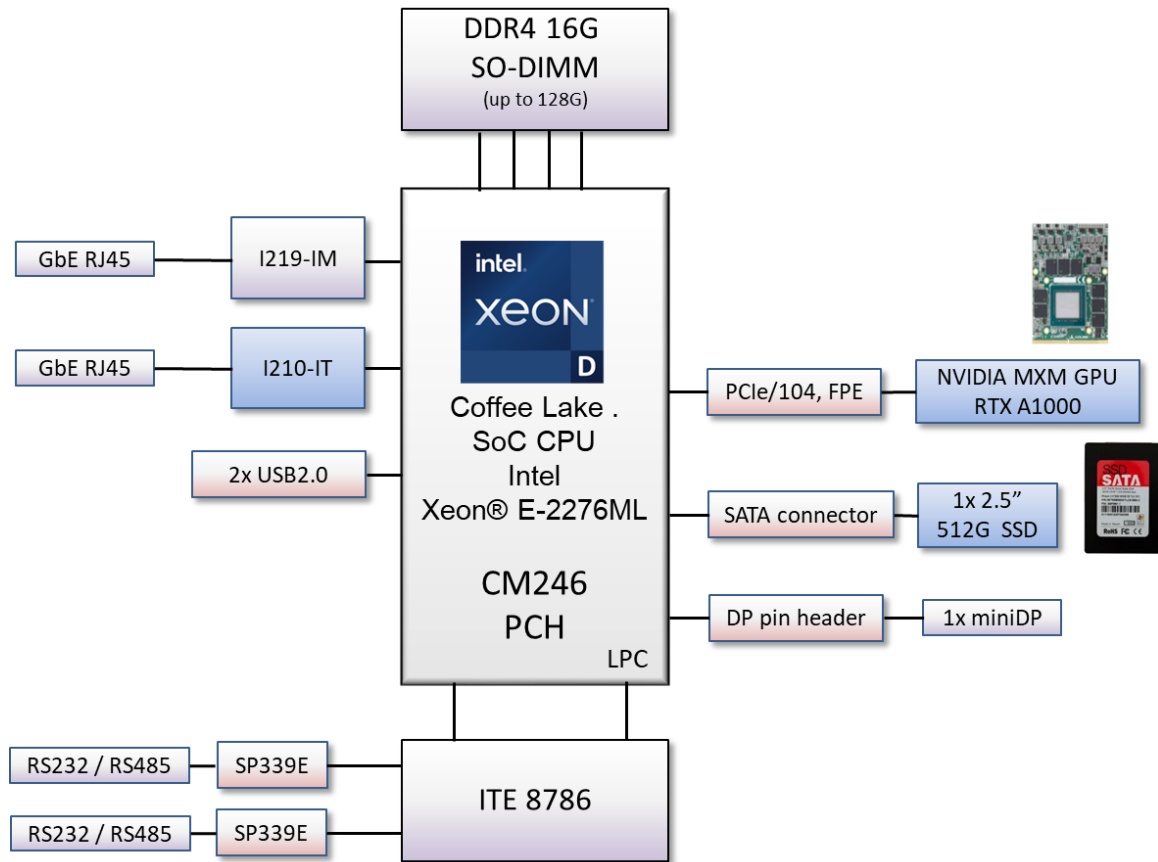
1.2 Dimensions



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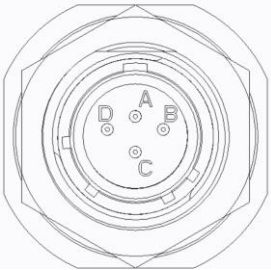

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1.3 System Diagram block



Chapter 2: Connector pin definition

1. INT POWER CABLE

	X1			Pin define	D38999	
	POWER DC IN	Y端 	TN1	(+)	A	
			TN2	(+)	D	
			TN3	(-)	B	
			TN4	(-)	C	
			PE	G	PE	

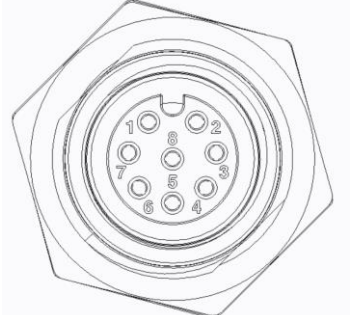
CON1
AMPHENOL TV07RW13-4P

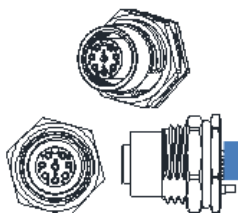


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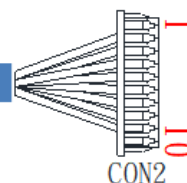
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2. INT USB2.0 CABLE

X2	CON1	Pin define	CON2
	1	VBUS	10
	2	D-	9
	3	D+	8
	4	GND	7
	5	VBUS	5
	6	D-	4
	7	D+	3
	8	GND	2
	Shell	GND	1



CON1
Amphenol LTW M12A-08PFFS-SF8001

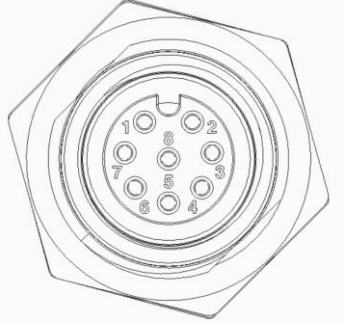


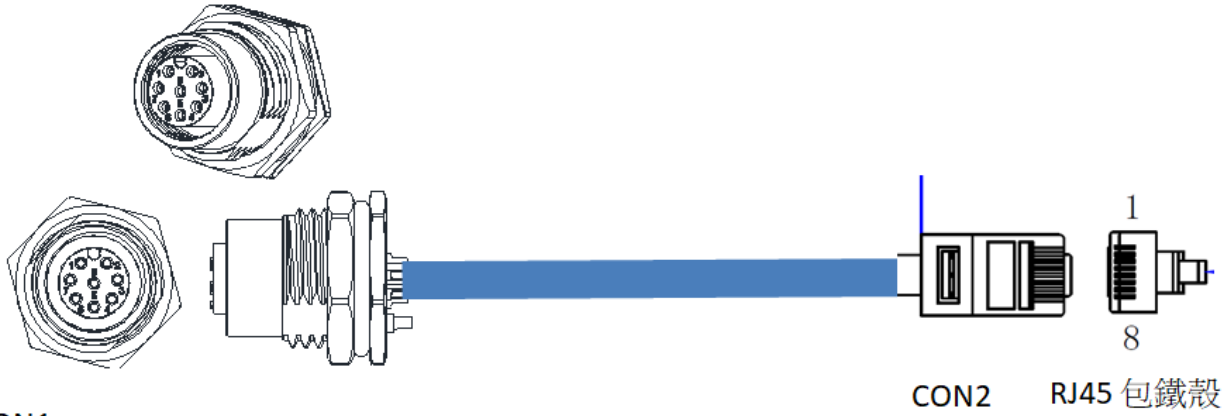
CON2
MOLEX51021-1000
1*10 P-1.25

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3. INT LAN CABLE

X3,X4	CON1	Pin define	CON2	
	1	D1+	1	WHITE / ORANGE
	2	D1-	2	ORANG
	3	D2+	3	WHITE / GREEN
	4	D2-	4	BLUE
	5	D3+	5	WHITE / BLUE
	6	D3-	6	GREEN
	7	D4+	7	WHITE / BROWN
	8	D4-	8	BROWN
	Shell			Shell



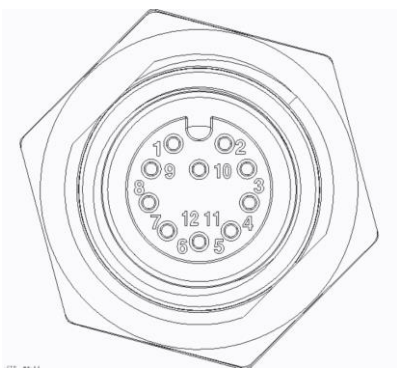
CON1
Amphenol LTW M12A-08PFFS-SF8001

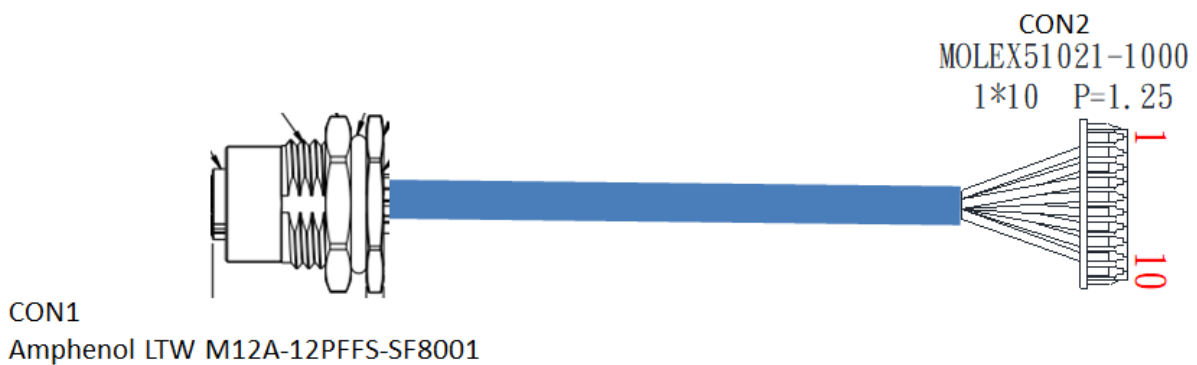
CON2 RJ45 包鐵殼

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4. INT RS232 CABLE

X5	D38999	Pin define	CON2
	A	DCD	10
	B	RXD	8
	C	TXD	6
	D	DTR	4
	E	GND	2
	F	DSR	9
	G	RTS	7
	H	CTS	5
	J	RI	3
	Shell		



5. INT Mini DP



Chapter 3: AMI BIOS UTILITY

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

3.1 Starting

To enter the setup screens, perform the following steps:

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

3.2 Navigation Keys

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process.

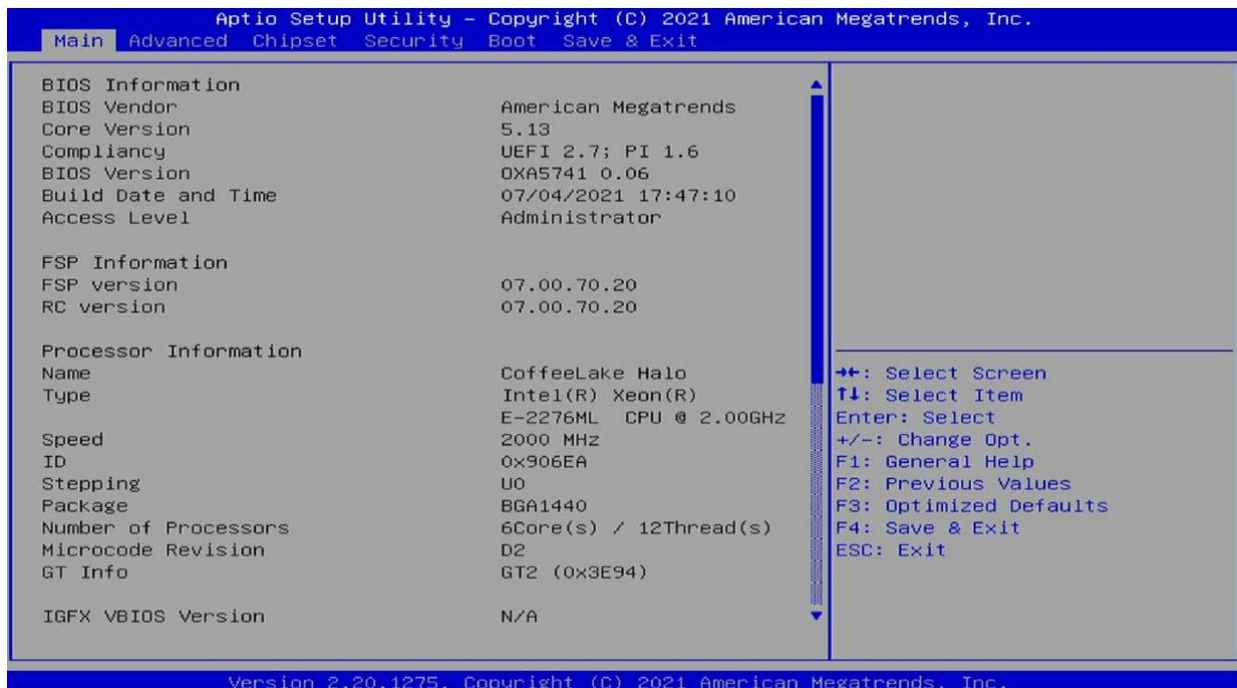
Some of the hot keys are <F1>, <F10>, <Enter>, <ESC>, and <Arrow> keys.

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

3.3 Main Menu

The Main menu is the screen that first displays when BIOS Setup is entered, unless an error has occurred.

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



The Main BIOS setup screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured; options in blue can. The right frame displays the key legend. Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it.

● System Date

Use this function to change the system date.

Select System Date using the Up and Down <Arrow> keys. Enter the new values through the keyboard. Press the Left and Right <Arrow> keys to move between fields. The date setting must be entered in MM/DD/YY format.

● System Time

Use this function to change the system time.

Select System Time using the Up and Down <Arrow> keys. Enter the new values through the keyboard. Press the Left and Right <Arrow> keys to move between fields. The time setting is entered in HH:MM:SS format.

Note: The time is in 24-hour format. For example, 5:30 A.M. appears as 05:30:00, and 5:30 P.M. as 17:30:00.

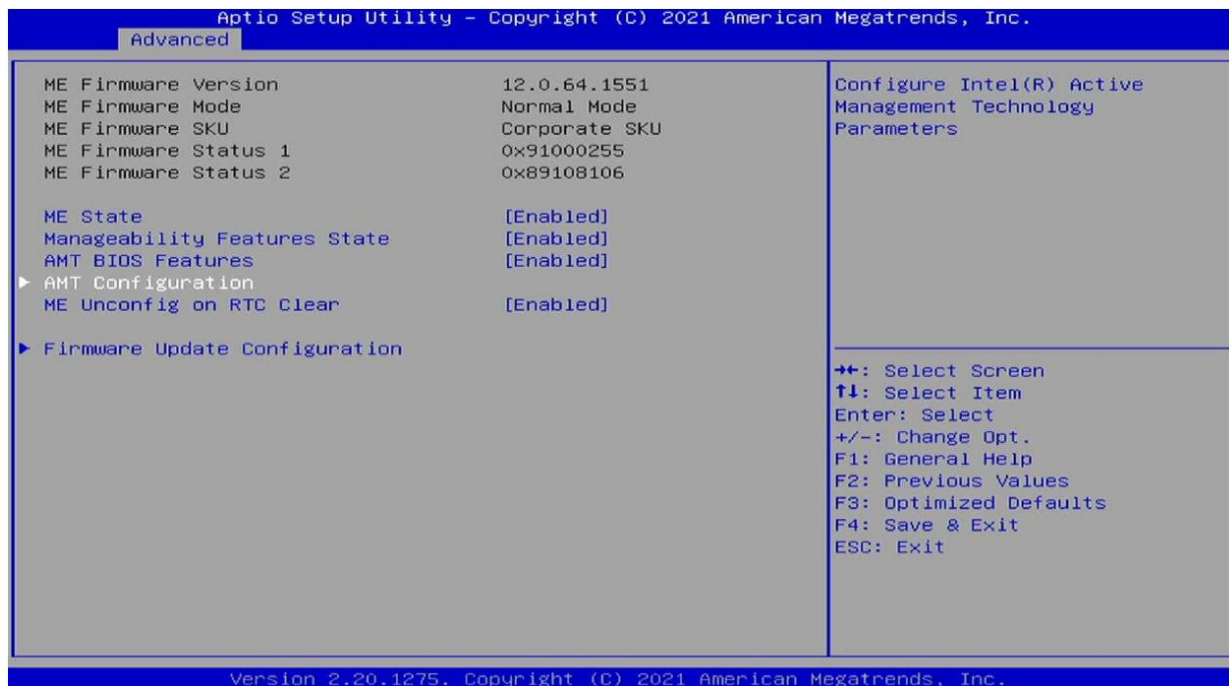
● Access Level

Display the access level of the current user in the BIOS.

3.4 Advanced Menu

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

3.4.4 AMT Configuration



Field Name	ASF support
Default Value	[Enabled]
Possible Value	Disabled Enabled

Field Name	USB Provisioning of AMT
Default Value	[Disabled]
Possible Value	Disabled Enabled

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3.4.4.1 CIRA Configuration

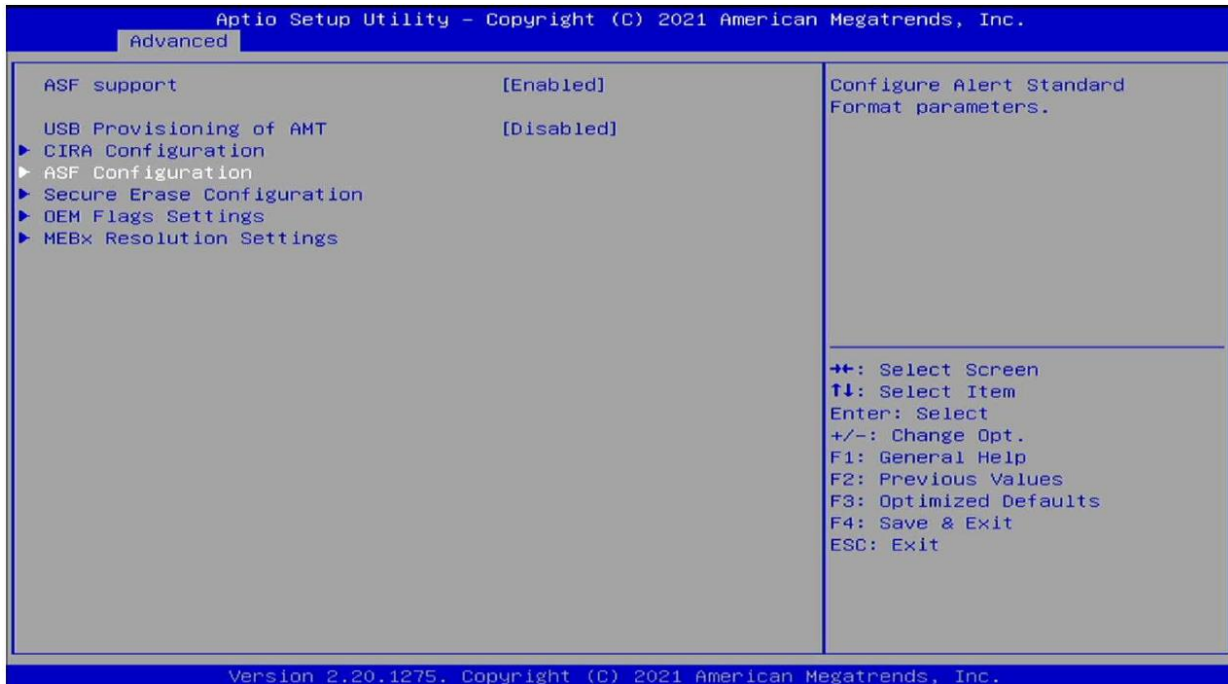


Field Name	ASF support
Default Value	[Enabled]
Possible Value	Disabled Enabled

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3.4.4.2 ASF Configuration



Field Name	PET Progress
Default Value	[Enabled]
Possible Value	Disabled Enabled

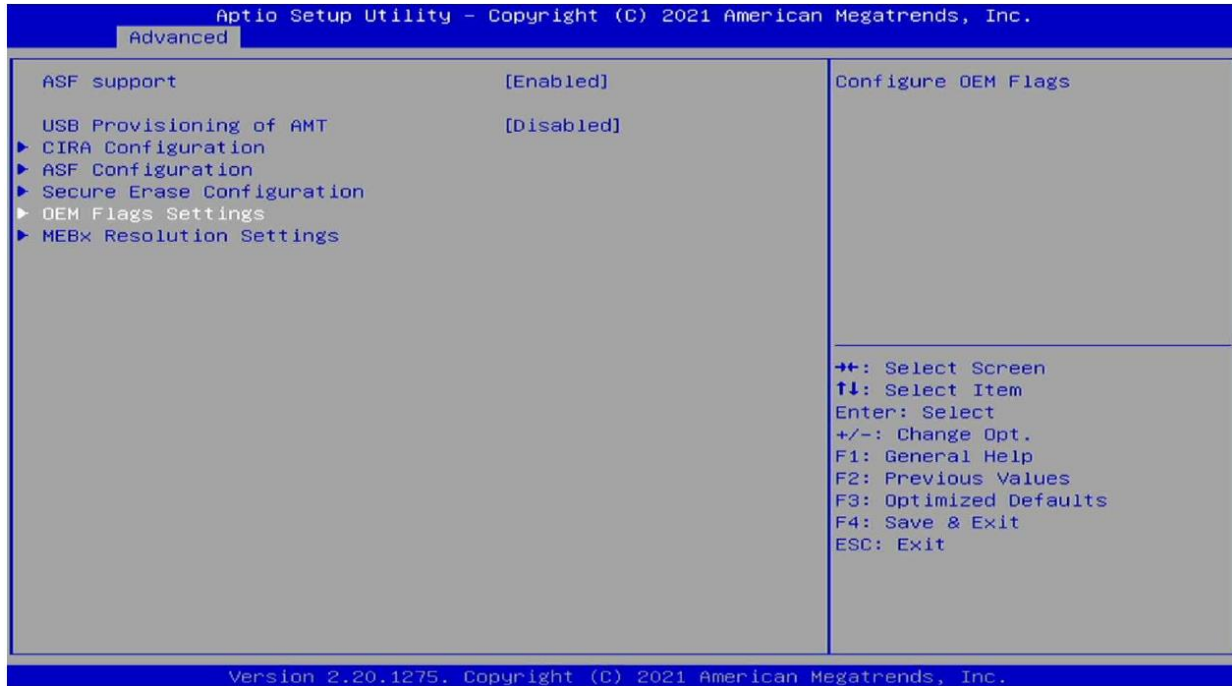
Field Name	WatchDog
Default Value	[Disabled]
Possible Value	Disabled Enabled

Field Name	ASF Sensors Table
Default Value	[Disabled]
Possible Value	Disabled Enabled

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3.4.4.4 OEM Flags Settings



Field Name	MEBx hotkey Pressed
Default Value	[Disabled]
Possible Value	Disabled Enabled

Field Name	MEBx Selection Screen
Default Value	[Disabled]
Possible Value	Disabled Enabled

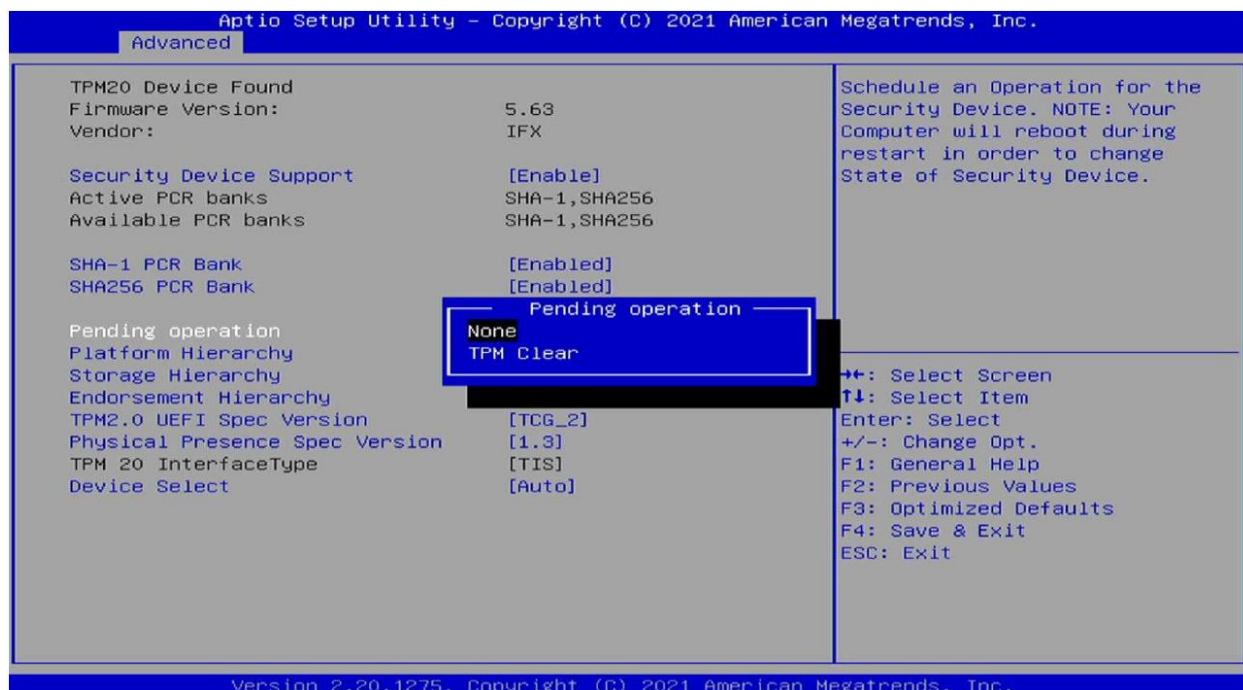
Field Name	Hide Unconfigure ME Confirmation Prompt
Default Value	[Disabled]
Possible Value	Disabled Enabled

Field Name	MEBx OEM Debug Menu Enable
Default Value	[Disabled]
Possible Value	Disabled Enabled

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	800x600
	1024x768

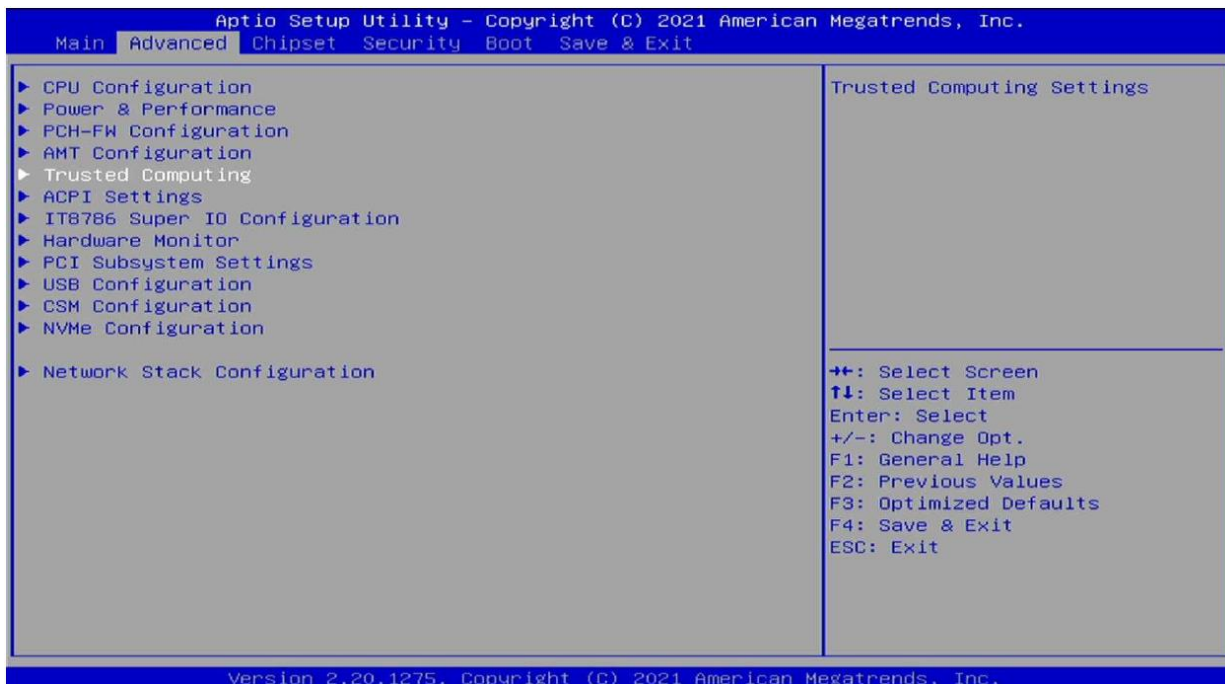


Field Name	Pending operation
Default Value	[None]
Possible Value	None TPM Clear

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3.4.5 Trusted Computing



Field Name	Security Device Support
Default Value	[Enabled]
Possible Value	Disabled Enabled

Field Name	SHA-1 PCR Bank
Default Value	[Enabled]
Possible Value	Disabled Enabled

Field Name	SHA256 PCR Bank
Default Value	[Enabled]
Possible Value	Disabled Enabled

Field Name	Pending operation
Default Value	[None]
Possible Value	None TPM Clear

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Field Name	Platform Hierarchy
Default Value	[Enabled]
Possible Value	Disabled Enabled

Field Name	Storage Hierarchy
Default Value	[Enabled]
Possible Value	Disabled Enabled

Field Name	Endorsement Hierarchy
Default Value	[Enabled]
Possible Value	Disabled Enabled

Field Name	TPM2.0 UEFI Spec Version
Default Value	[TCG_2]
Possible Value	TCG_1_2 TCG_2

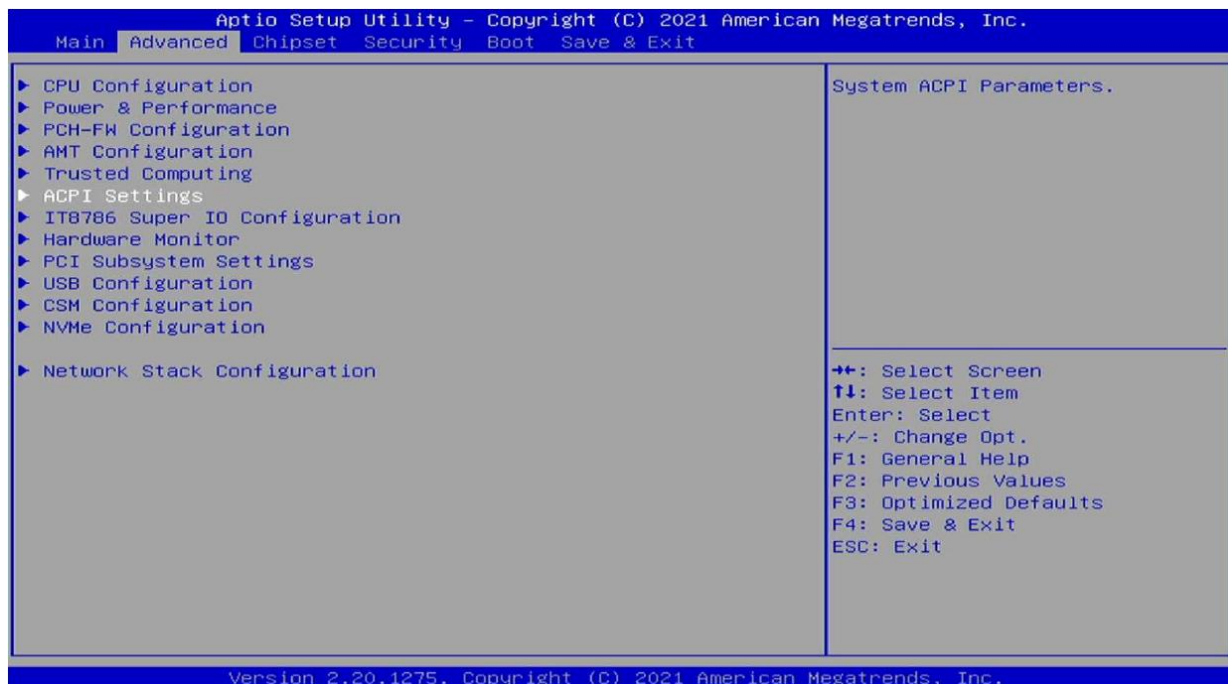
Field Name	Physical Presence Spec Version
Default Value	[1.3]
Possible Value	1.2 1.3

Field Name	Device Select
Default Value	[Auto]
Possible Value	TPM 1.2 TPM 2.0 Auto

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3.4.6 ACPI Setting



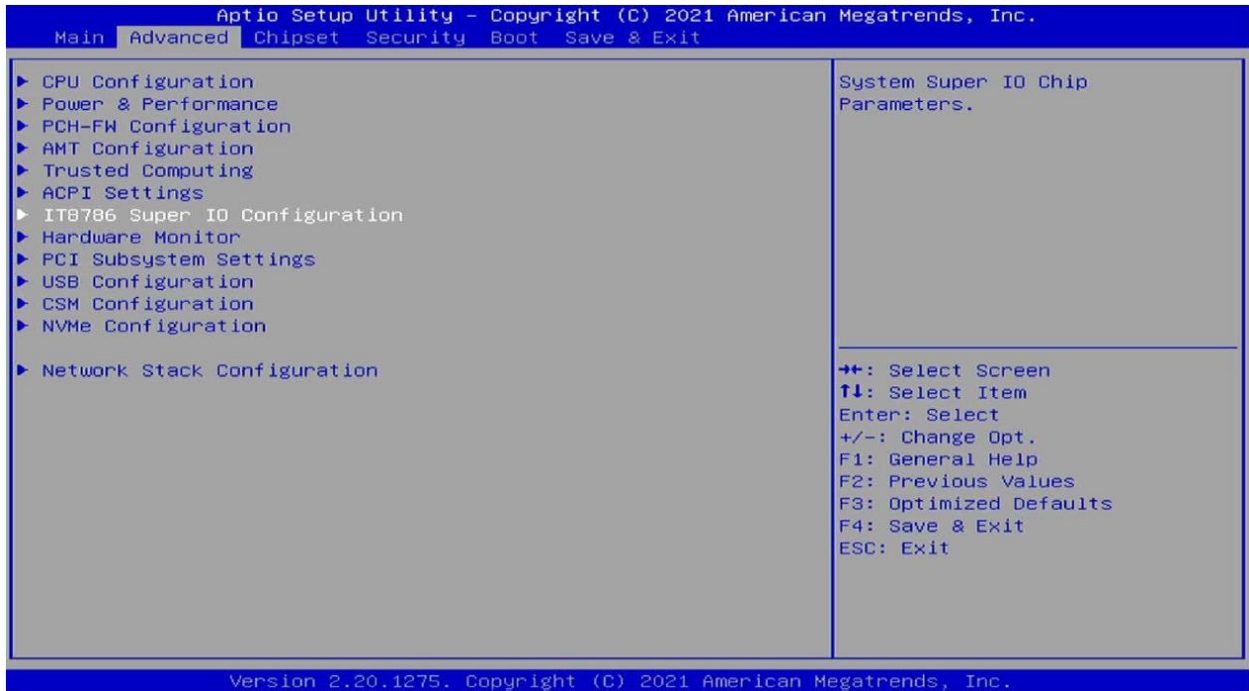
Field Name	Enable ACPI Auto Configuration
Default Value	[Disabled]
Possible Value	Disabled Enabled

Field Name	Enable Hibernation
Default Value	[Enabled]
Possible Value	Disabled Enabled

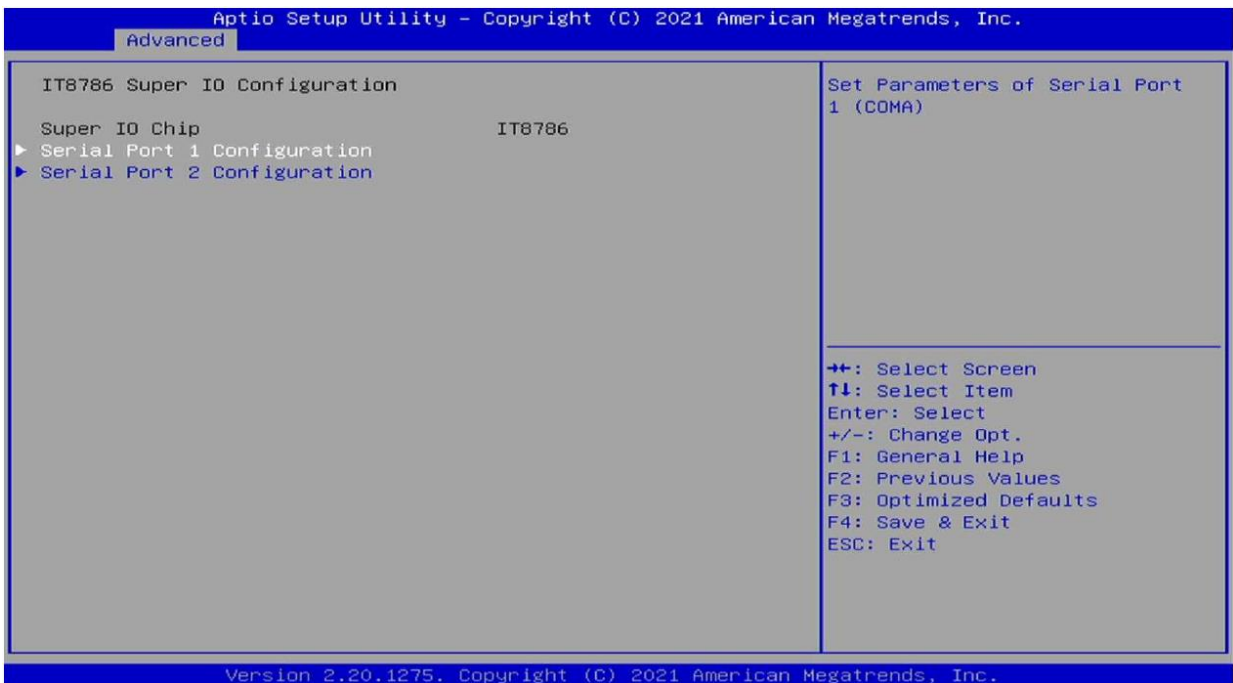
Field Name	ACPI Sleep State
Default Value	[S3(Suspend to RAM)]
Possible Value	Suspend Disabled S3(Suspend to RAM)

Field Name	Lock Legacy Resources
Default Value	[Disabled]
Possible Value	Disabled Enabled

3.4.7 IT8786 Super IO Configuration



3.4.7.1 Serial Port 1 Configuration



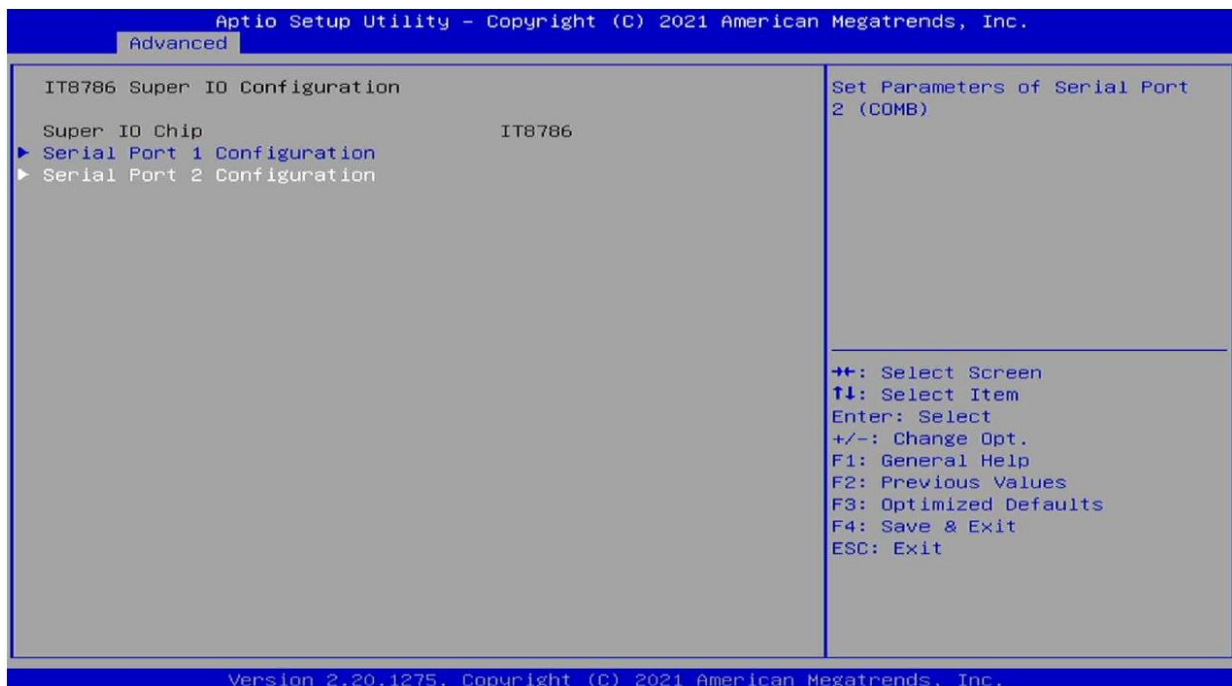
Field Name	Serial Port
Default Value	[Enabled]
Possible Value	Disabled Enabled

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Field Name	COM1 Control
Default Value	[RS232]
Possible Value	Loopback RS-232 RS-485 Half Duplex RS-485/422 Full Duplex

3.4.7.2 Serial Port 2 Configuration



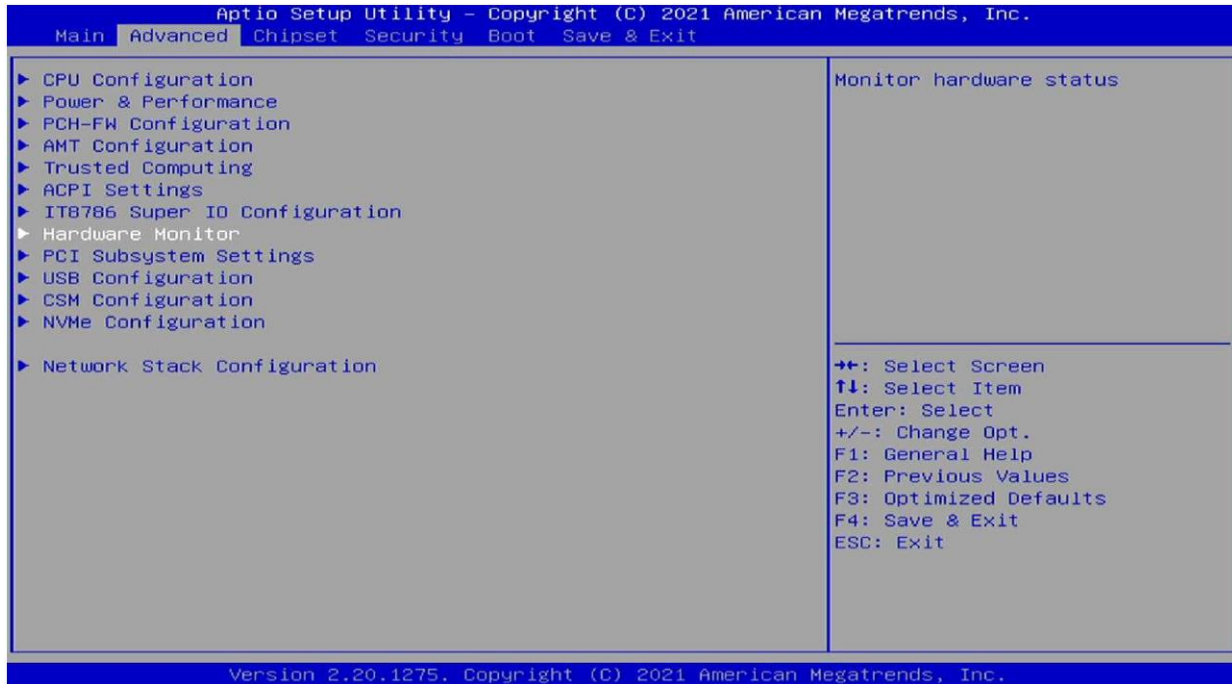
Field Name	Serial Port
Default Value	[Enabled]
Possible Value	Disabled Enabled

Field Name	COM1 Control
Default Value	[RS232]
Possible Value	Loopback RS-232 RS-485 Half Duplex RS-485/422 Full Duplex

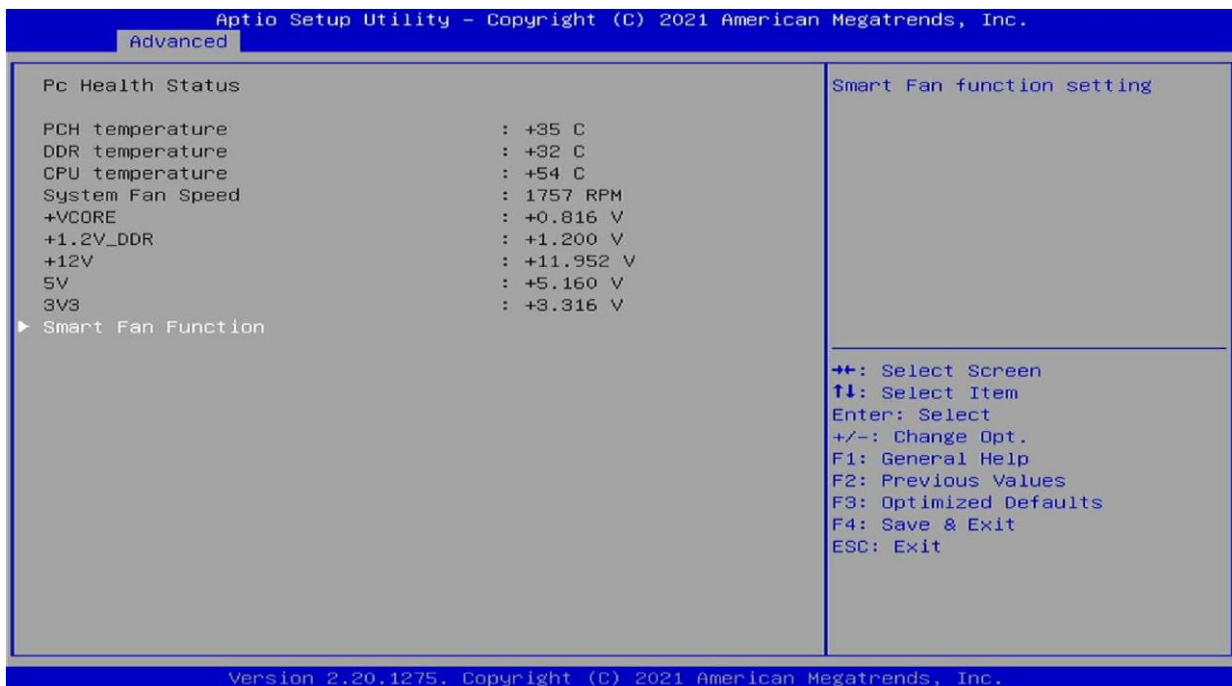
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3.4.8 Hardware Monitor



3.4.8.1 Smart Fan Function



Field Name	FAN_CTL Polarity
Default Value	[Active high]
Possible Value	Active low Active high

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Field Name	Legacy USB Support
Default Value	[Enabled]
Possible Value	Enabled Disabled Auto

Field Name	XHCI Hand-Off
Default Value	[Enabled]
Possible Value	Enabled Disabled

Field Name	USB Mass Storage Driver Support
Default Value	[Enabled]
Possible Value	Disabled Enabled

Field Name	USB transfer time-out
Default Value	[20 sec]
Possible Value	1 sec 5 sec 10 sec 20 sec

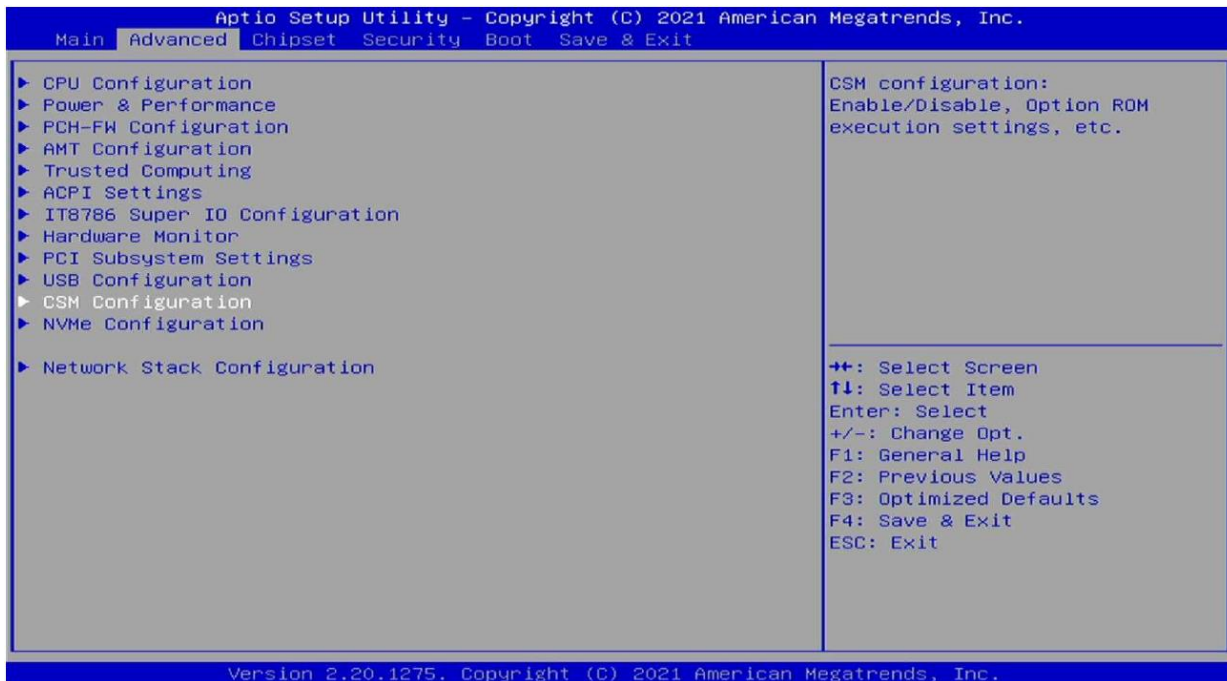
Field Name	Device reset time-out
Default Value	[20 sec]
Possible Value	1 sec 5 sec 10 sec 20 sec

Field Name	Device Power-up delay
Default Value	[Auto]
Possible Value	Auto Manual

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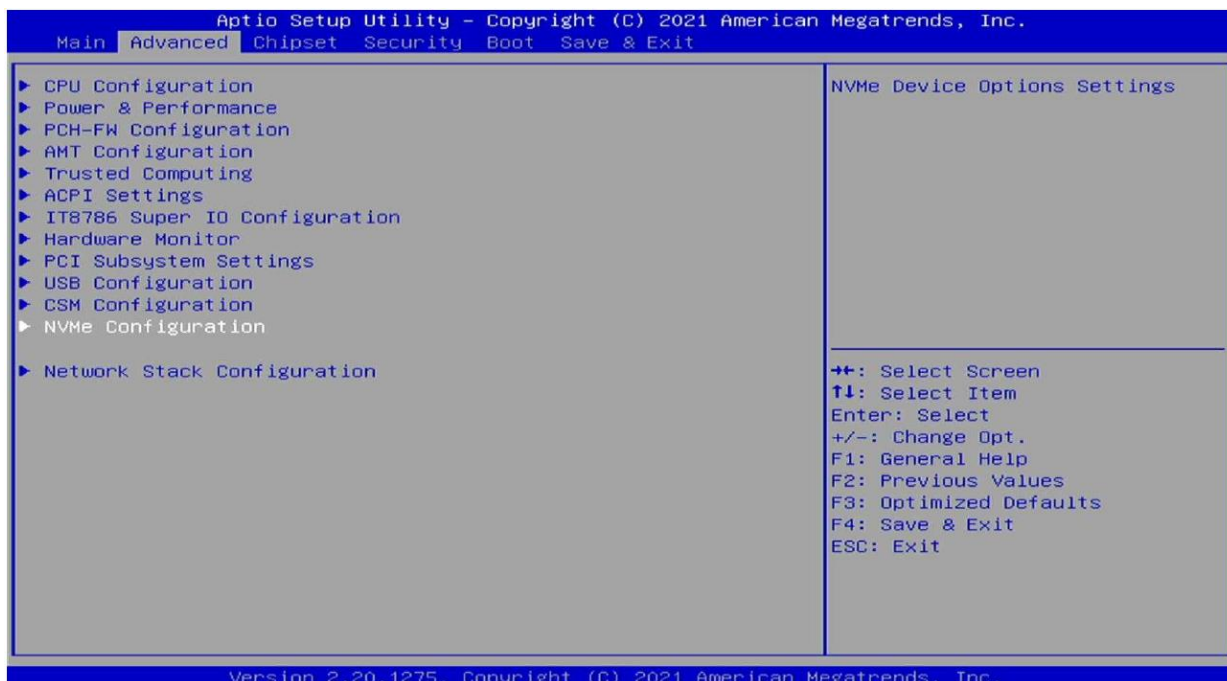
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3.4.11 CSM Configuration



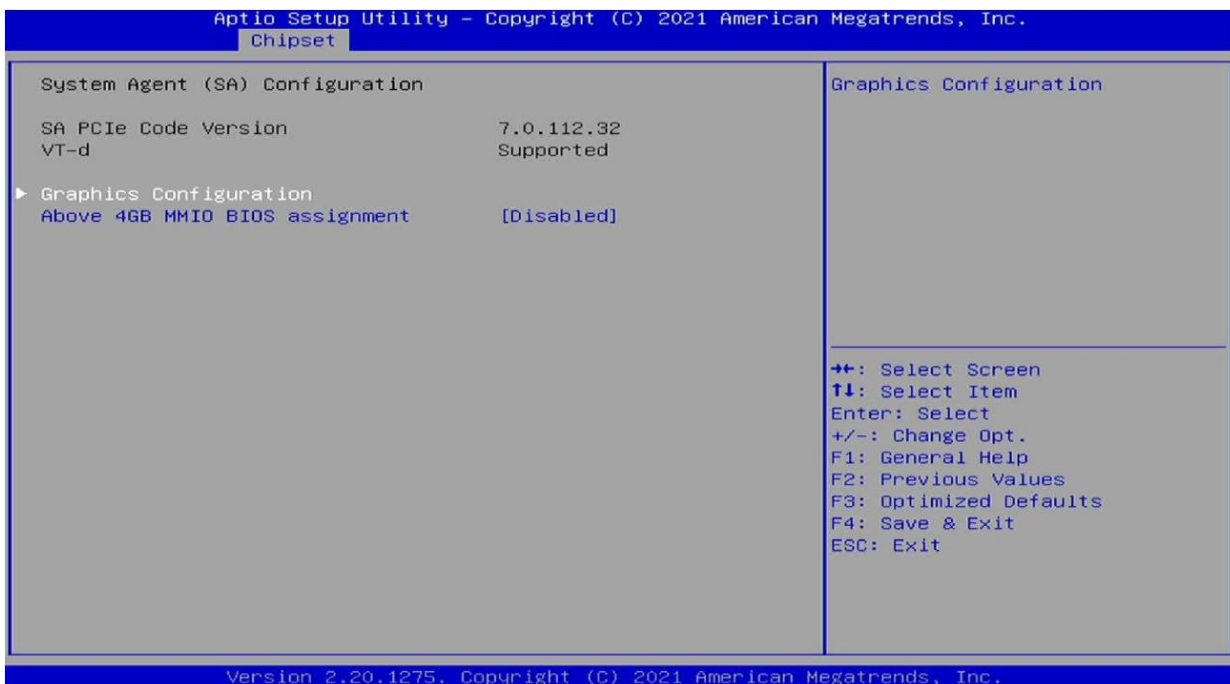
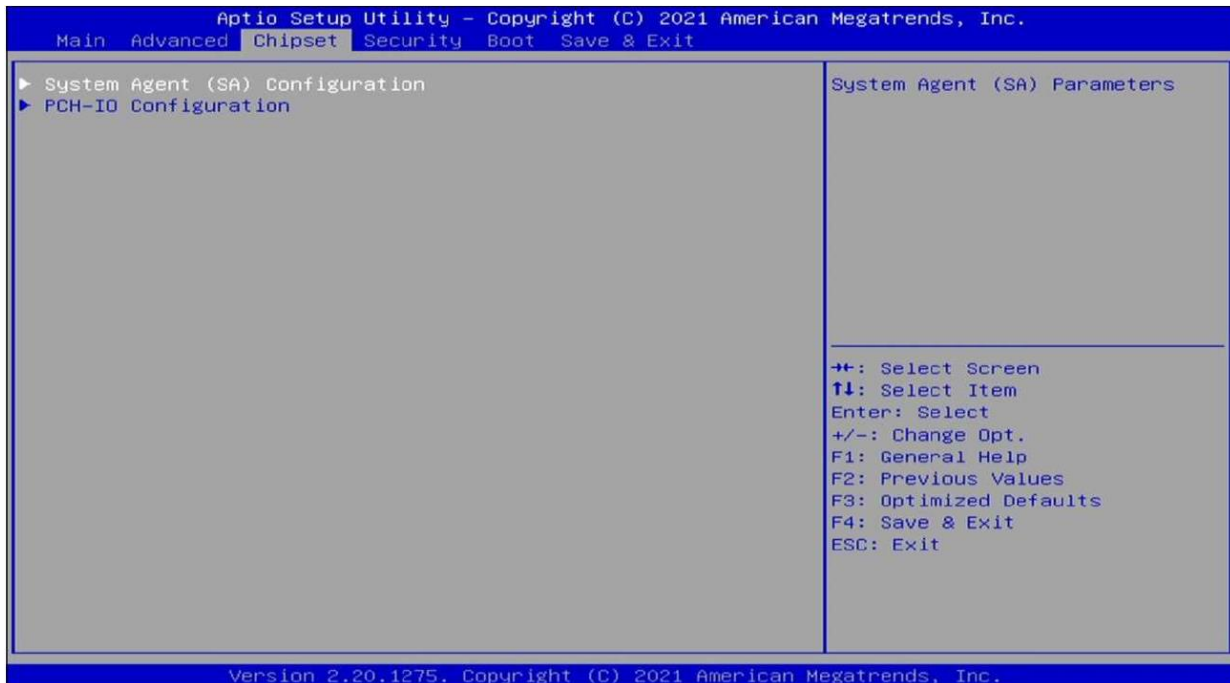
Field Name	CSM Support
Default Value	[Disabled]
Possible Value	Disabled Enabled

3.4.12 NVMe Configuration



3.5 Chipset

3.5.1 System Agent (SA) Configuration



Field Name	Primary Display
Default Value	[Auto]
Possible Value	Auto IGFX

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	PEG PCI SG
--	------------------

Field Name	Internal Graphics
Default Value	[Auto]
Possible Value	Auto Disabled Enabled

Field Name	GTT Size
Default Value	[8MB]
Possible Value	2MB 4MB 8MB

Field Name	Aperture Size
Default Value	[256MB]
Possible Value	128MB 256MB 512MB 1024MB 2048MB

Field Name	DVMT Pre-Allocated
Default Value	[32M]
Possible Value	0M 32M 64M 4M 8M 12M 16M 20M 24M 28M 32M/F7

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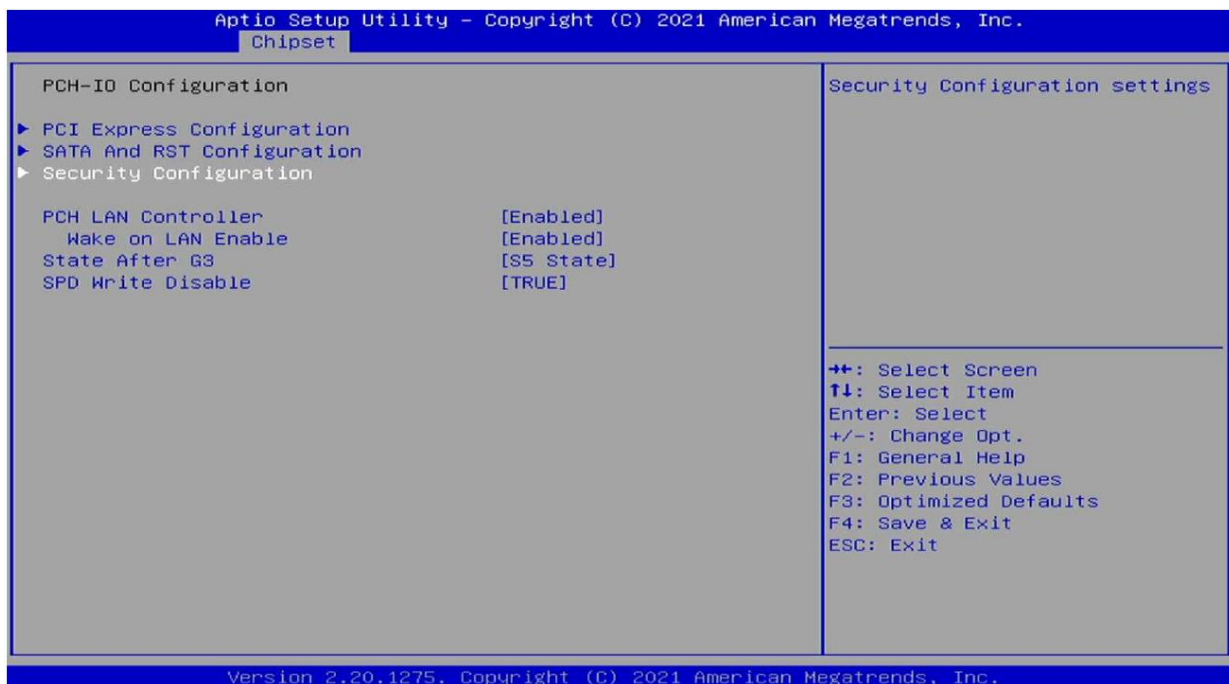
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Field Name	Port 2
Default Value	[Enabled]
Possible Value	Disabled Enabled

Field Name	Port 3
Default Value	[Enabled]
Possible Value	Disabled Enabled

Field Name	Port 4
Default Value	[Enabled]
Possible Value	Disabled Enabled

3.5.2.3 Security Configuration



Field Name	RTC Memory Lock
Default Value	[Enabled]
Possible Value	Disabled Enabled

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Field Name	BIOS Lock
Default Value	[Enabled]
Possible Value	Disabled Enabled

Field Name	Force unlock on all GPIO pads
Default Value	[Disabled]
Possible Value	Disabled Enabled

Field Name	PCH LAN Controller
Default Value	[Enabled]
Possible Value	Enabled Disabled

Field Name	Wake on LAN Enable
Default Value	[Enabled]
Possible Value	Enabled Disabled

Field Name	State After G3
Default Value	[S5 State]
Possible Value	S0 State S5 State

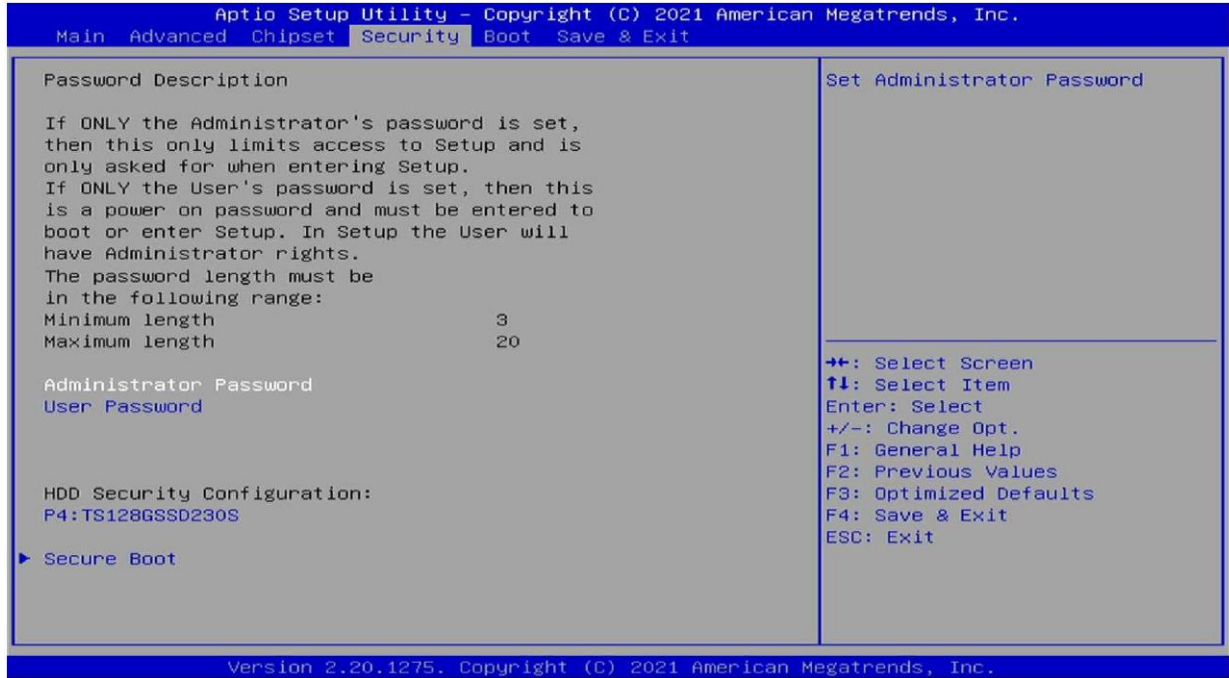
Field Name	SPD Write Disable
Default Value	[TRUE]
Possible Value	TRUE FALSE

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3.6 Security

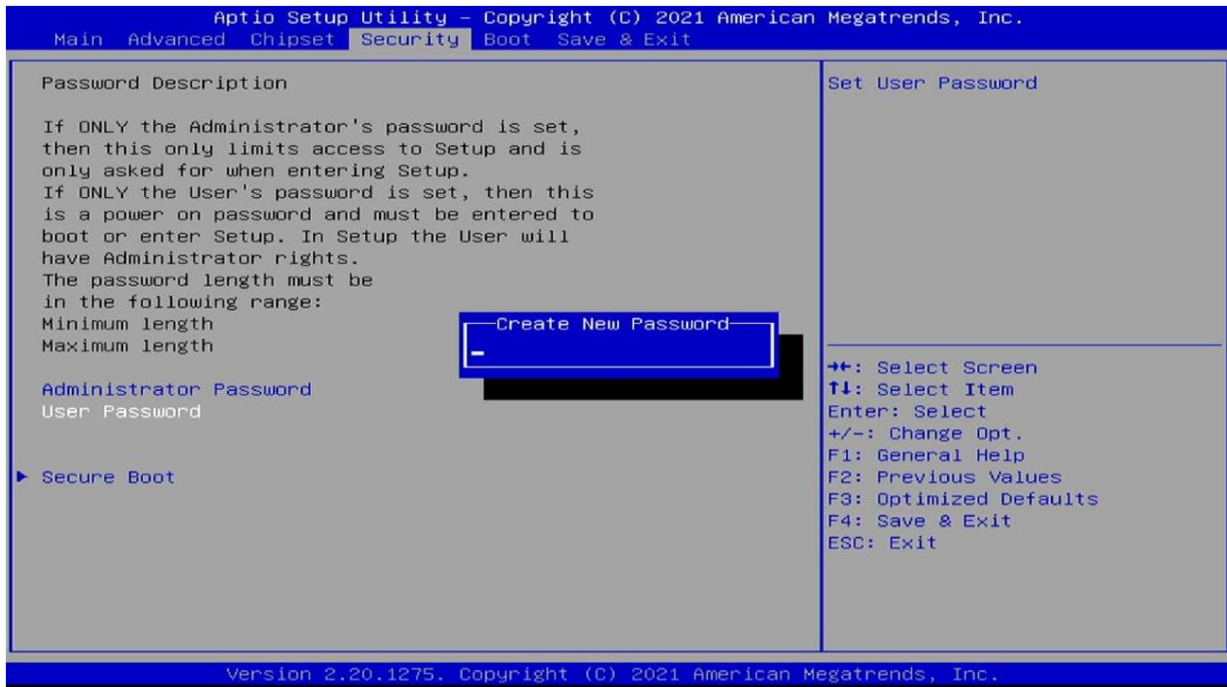
3.6.1 Administrator Password



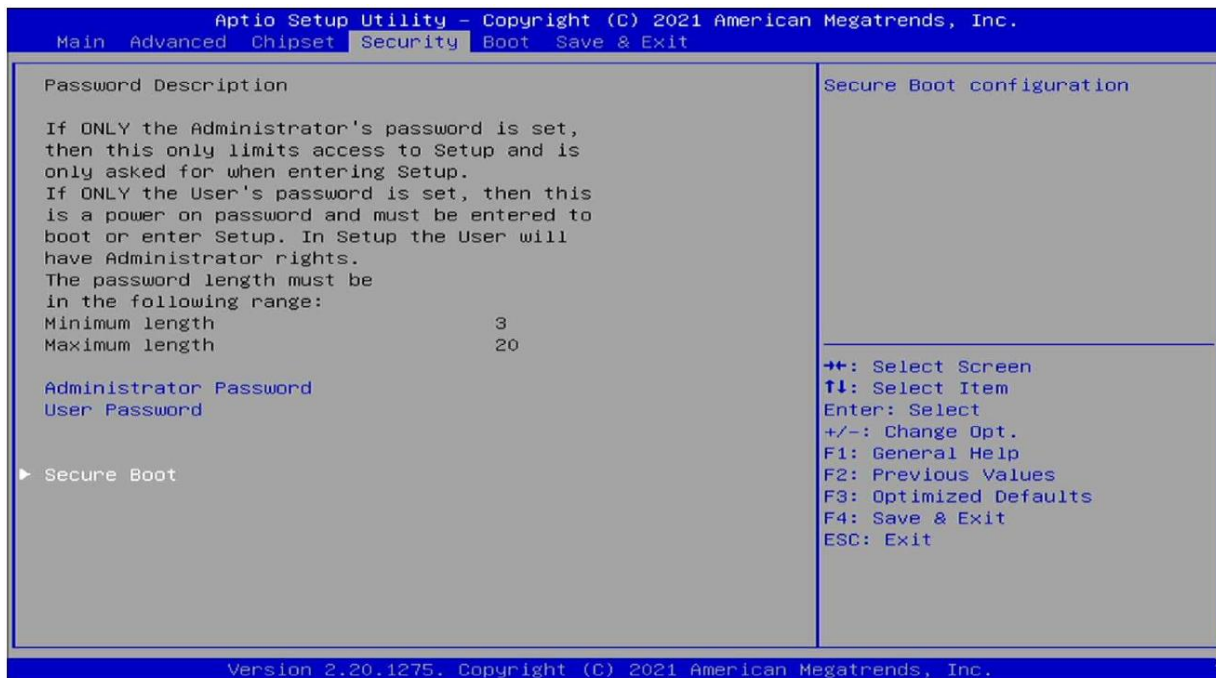
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3.6.2 User Password



3.6.3 Secure Boot



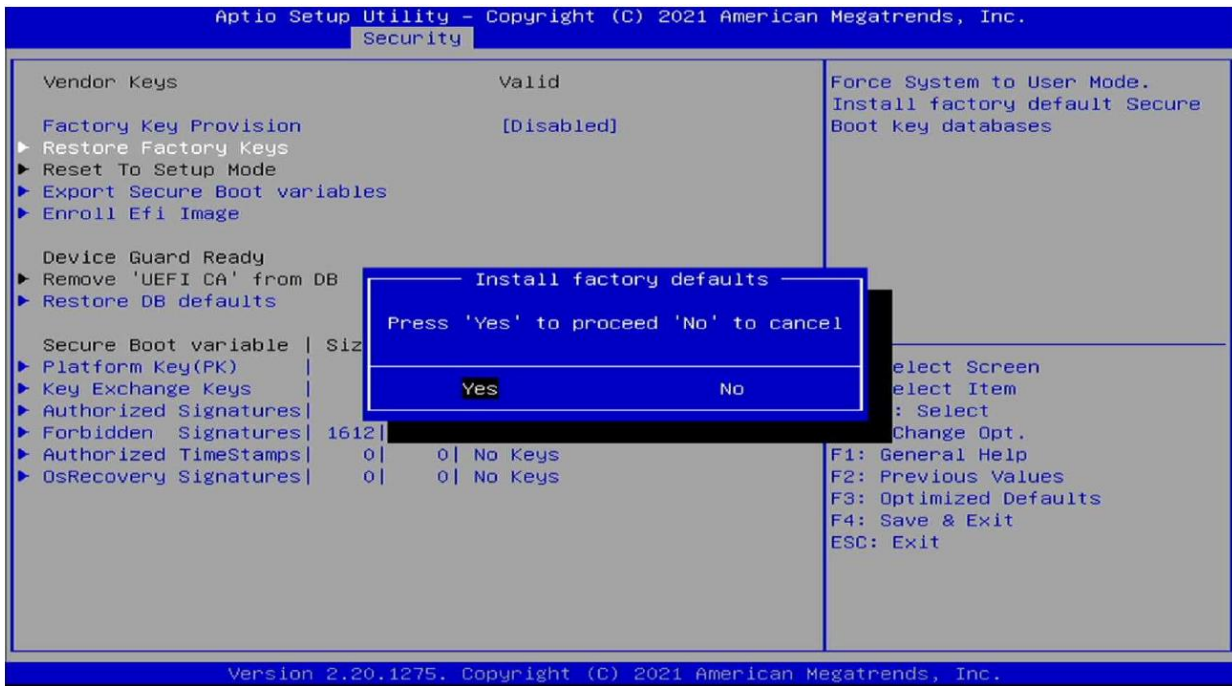
Field Name	Secure Boot
Default Value	[Enabled]
Possible Value	Disabled Enabled

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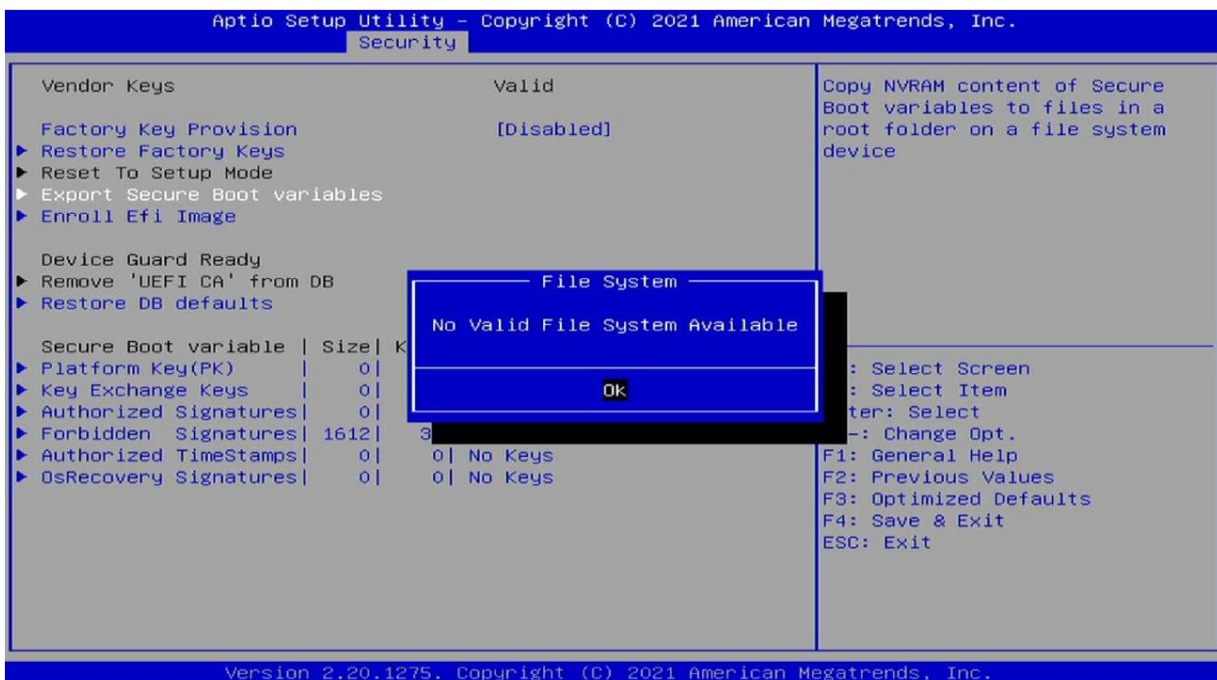
Revision Date: May.11.2023

Field Name	Factory Key Provision
Default Value	[Disabled]
Possible Value	Disabled Enabled

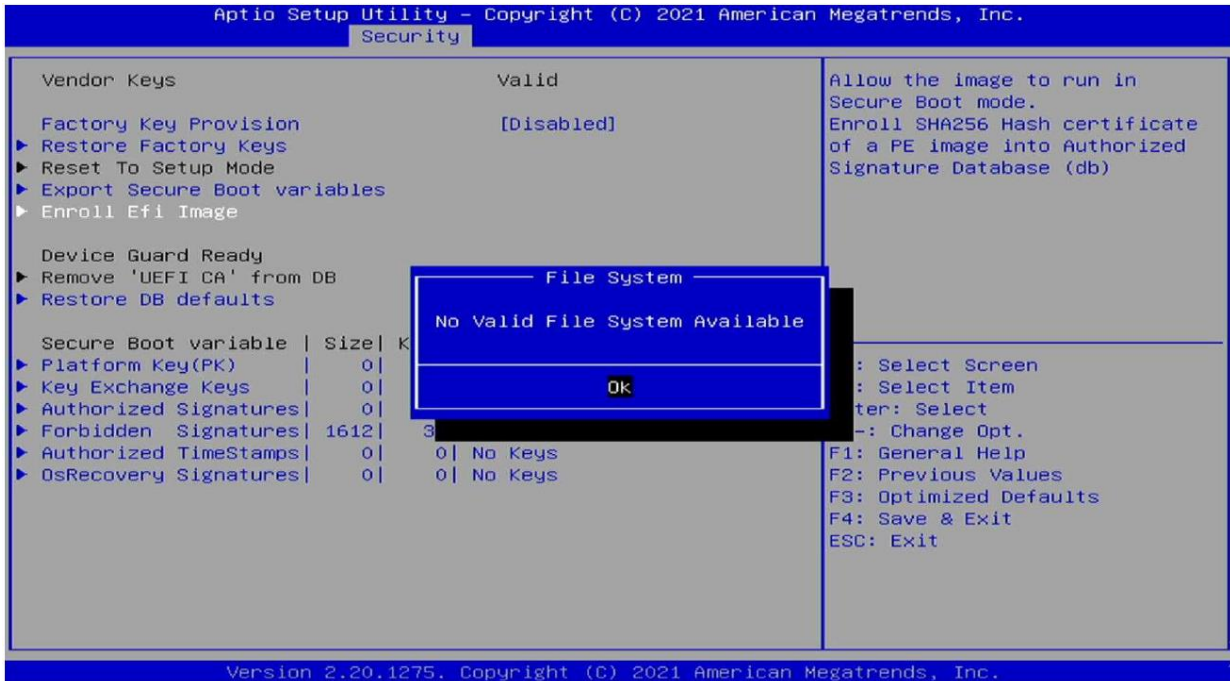
3.6.3.3 Install factory defaults



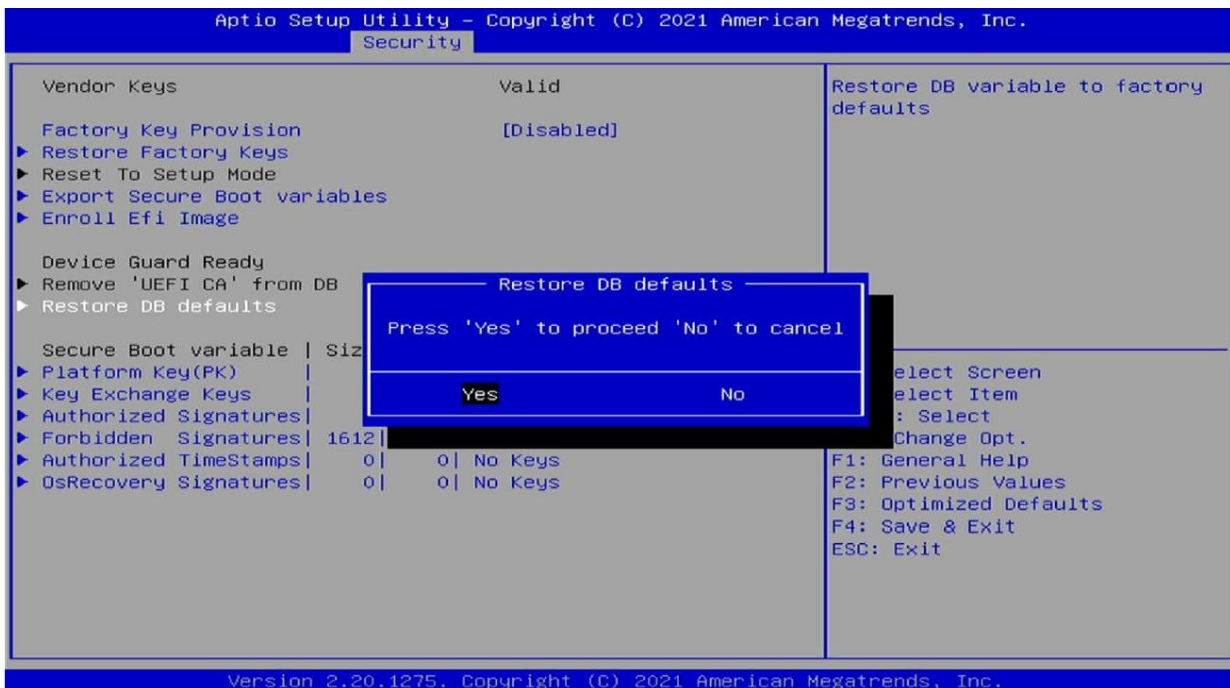
3.6.3.4 File System



3.6.3.5 File System



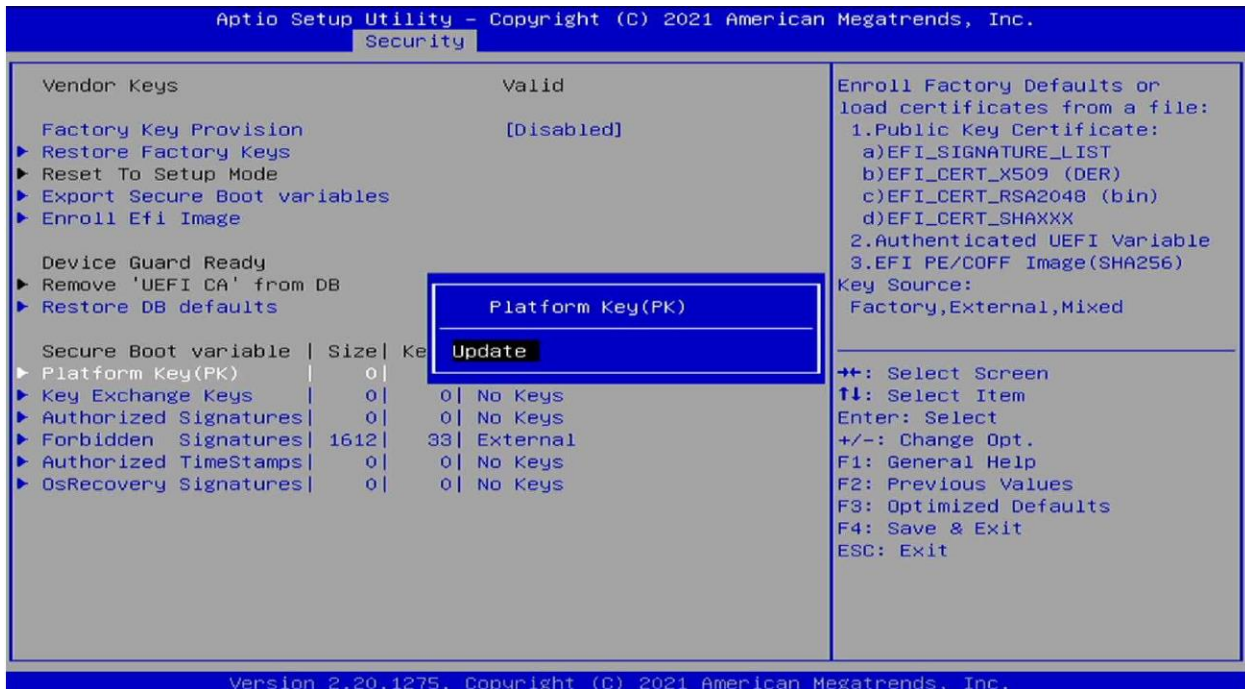
3.6.3.6 Restore DB defaults



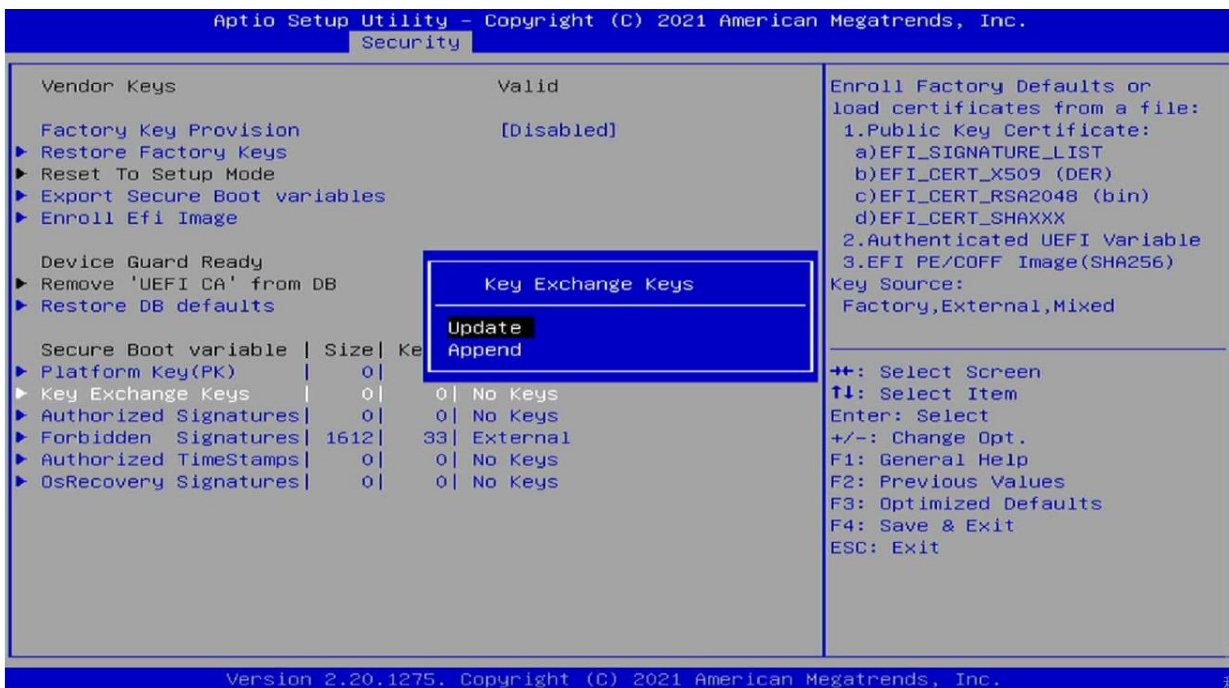
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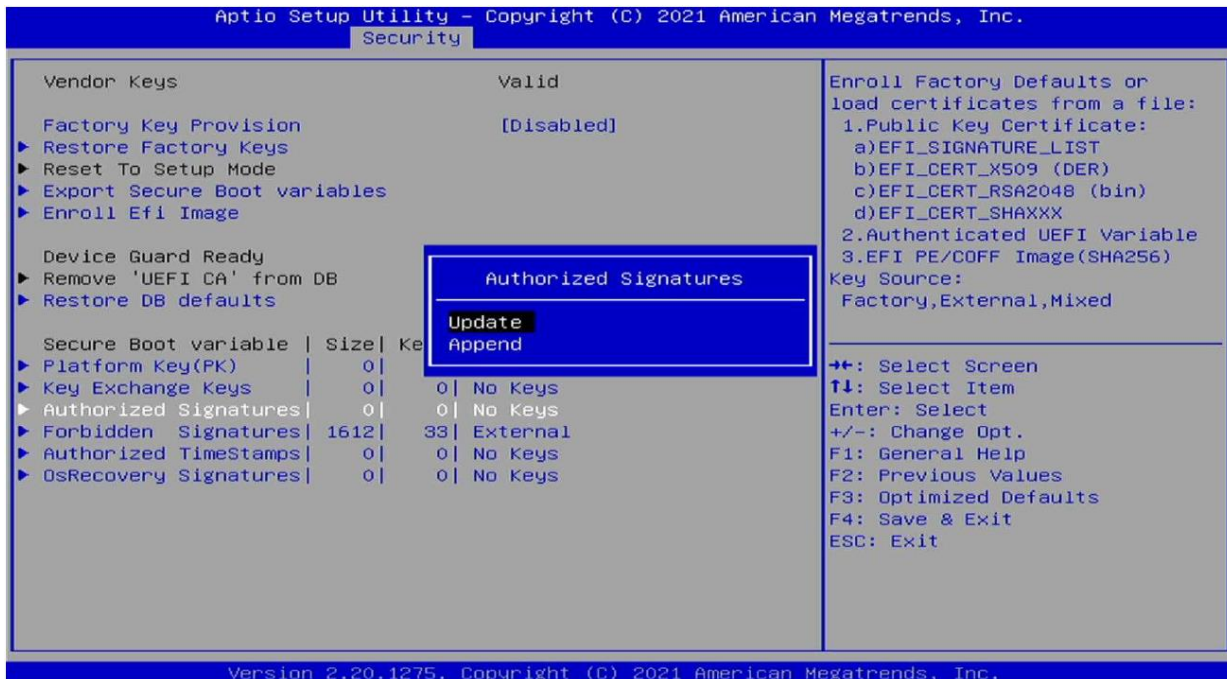
3.6.3.7 Platform Key(PK)



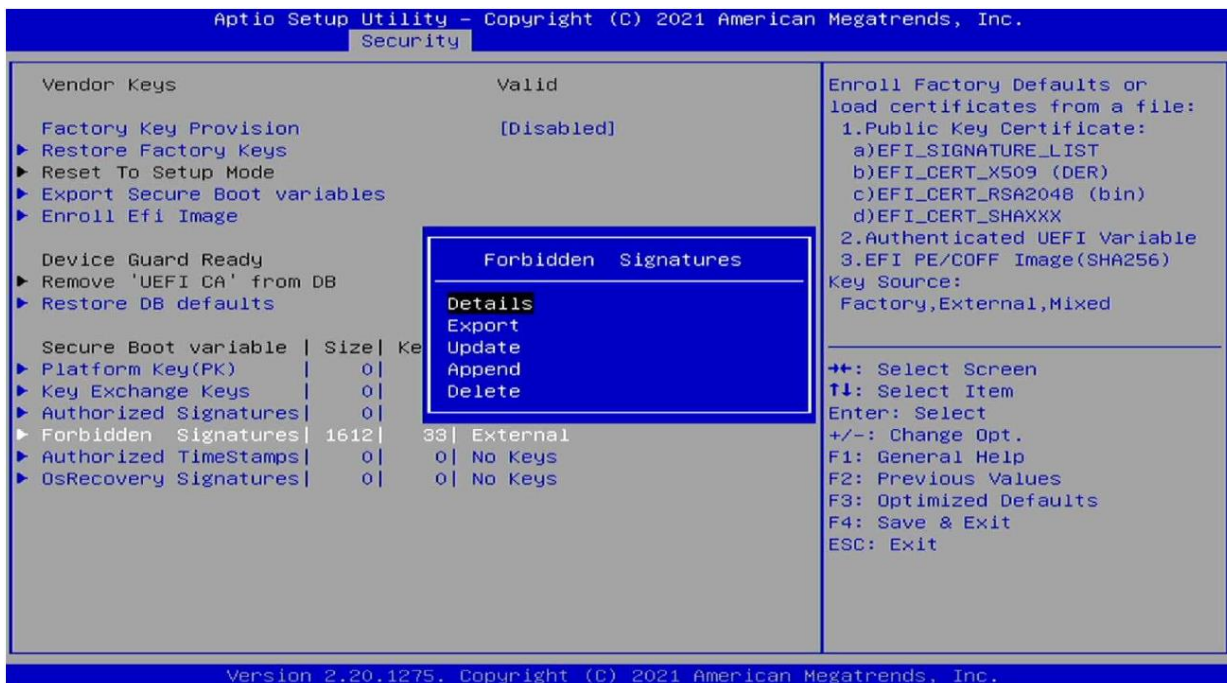
3.6.3.8 Key Exchange keys



3.6.3.9 Authorized Signatures



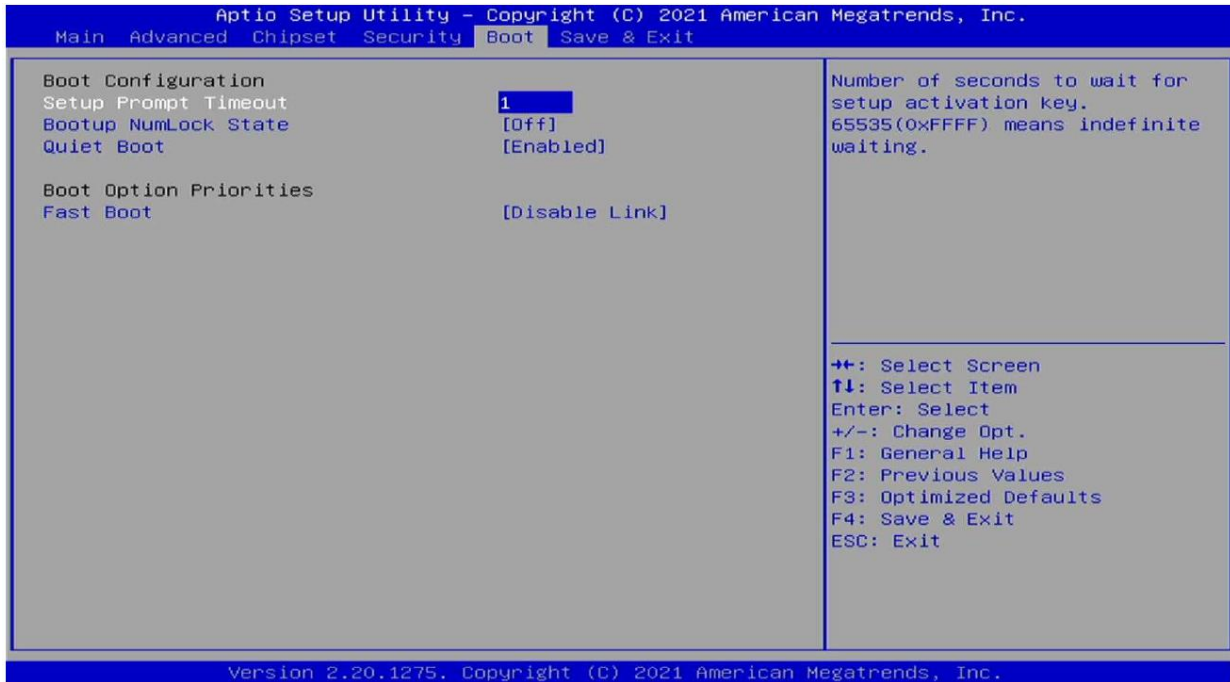
3.6.3.10 Forbidden Signatures



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3.7 Boot



Field Name	Bootup NumLock State
Default Value	[Off]
Possible Value	On Off

Field Name	Quiet Boot
Default Value	[Enabled]
Possible Value	Disabled Enabled

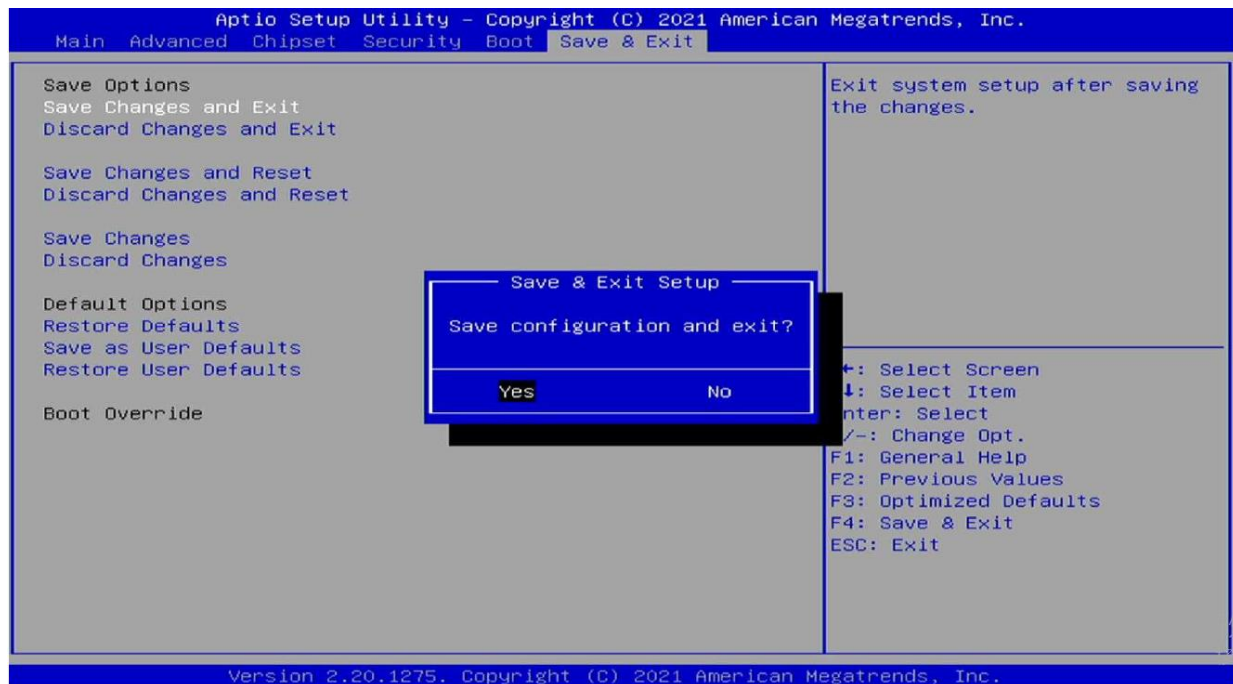
Field Name	Fast Boot
Default Value	[Disable Link]
Possible Value	Disable Link Enabled

3.8 Save & Exit

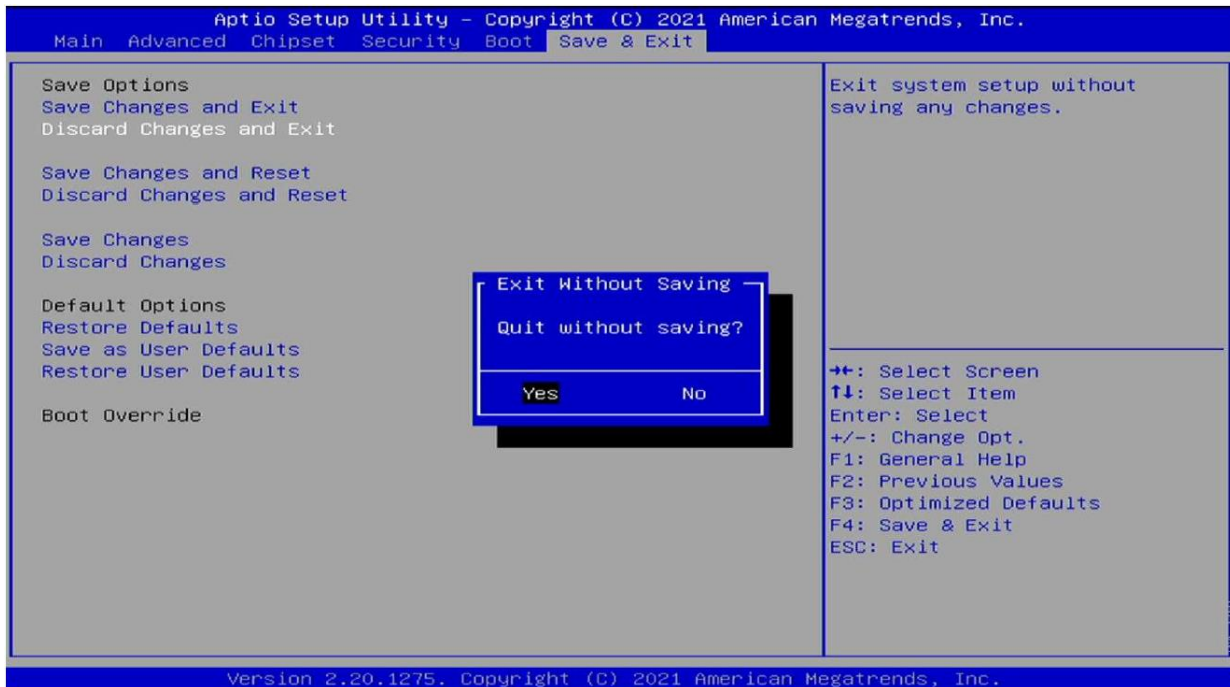
3.8.1 Save Changes and Exit



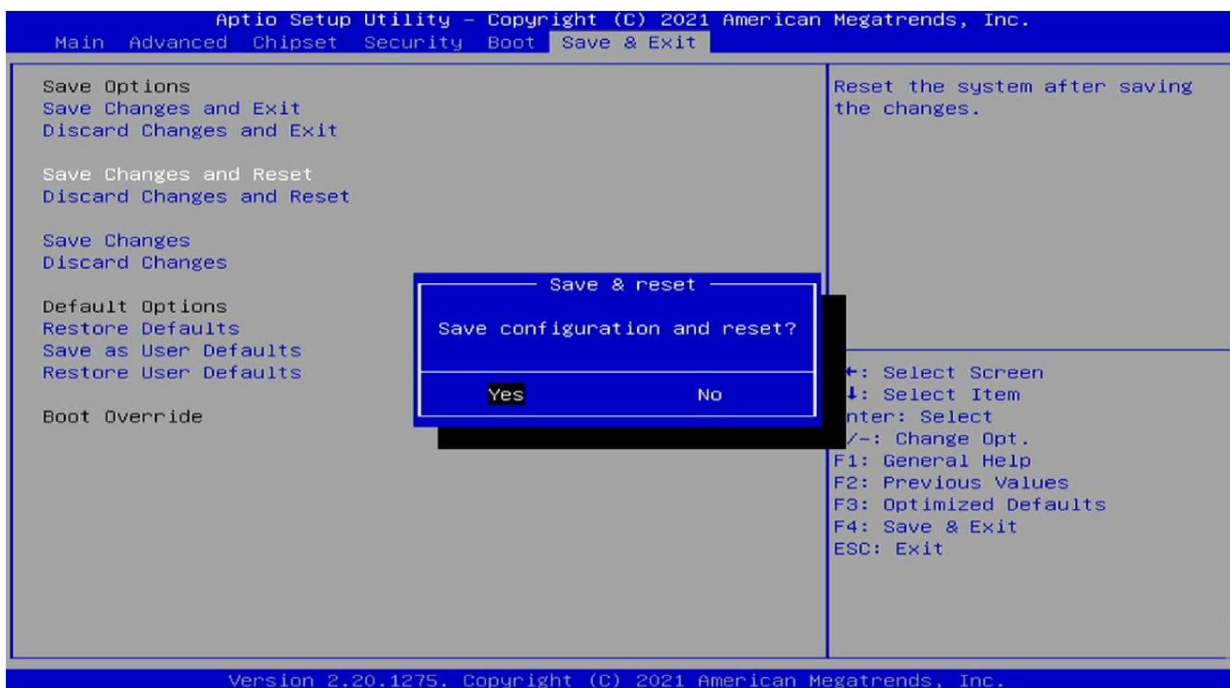
3.8.1.1 Save & Exit Setup



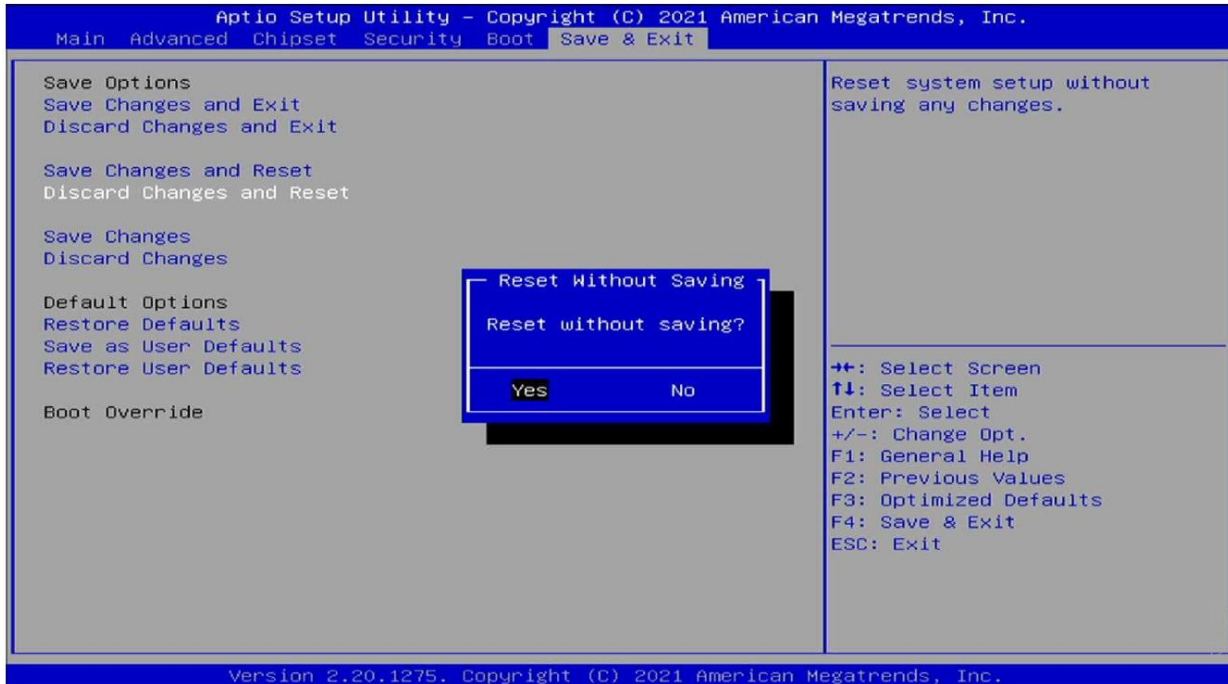
3.8.2 Exit without Saving



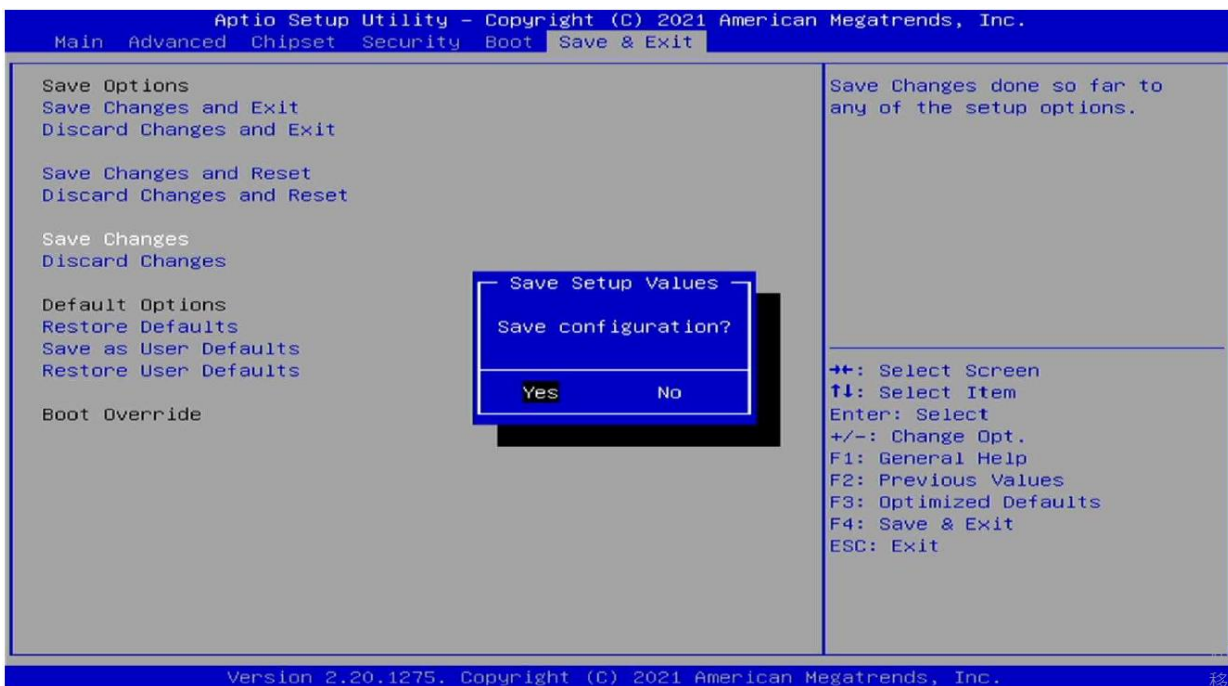
3.8.3 Save & reset



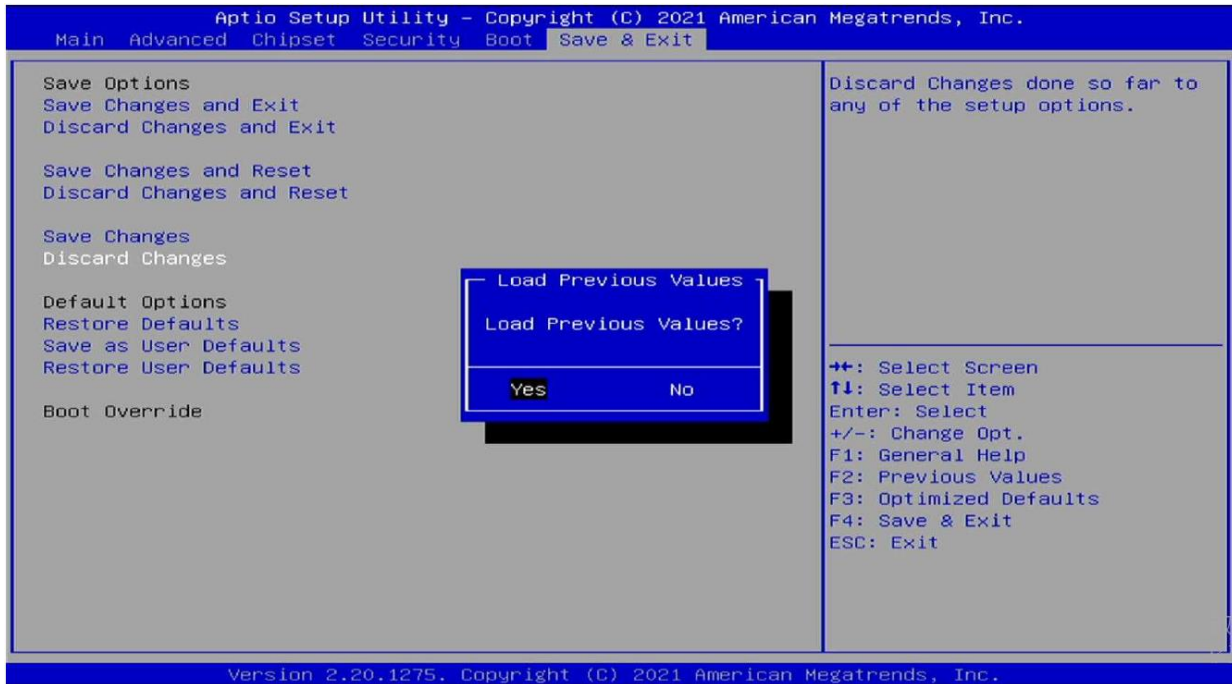
3.8.4 Reset Without Saving



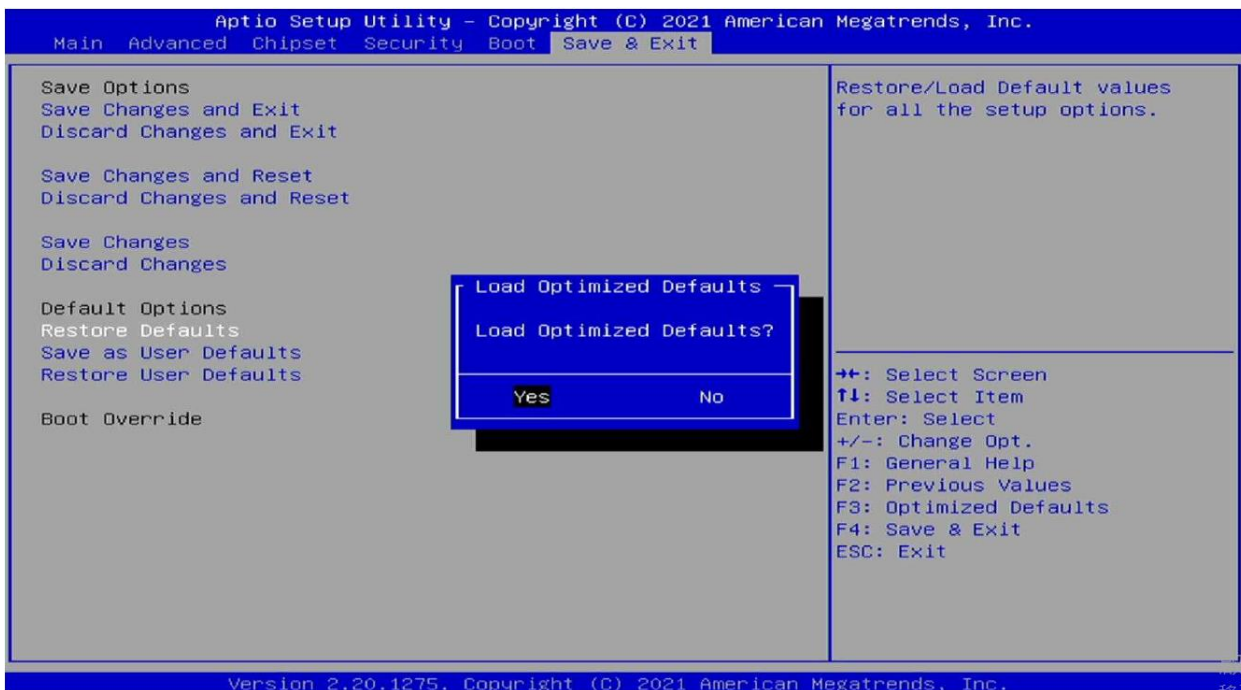
3.8.5 Save Setup Values



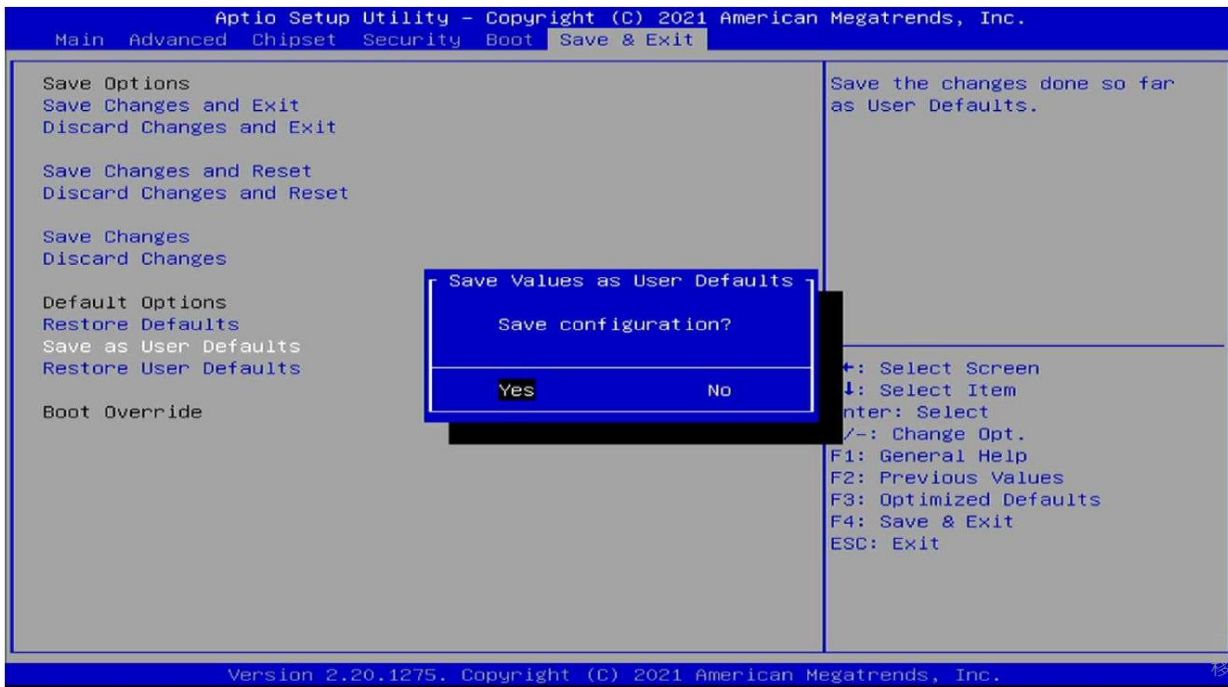
3.8.6 Load Previous Values



3.8.7 Load Optimized Defaults



3.8.8 Save Values as User Defaults



3.8.9 Restore User Defaults

