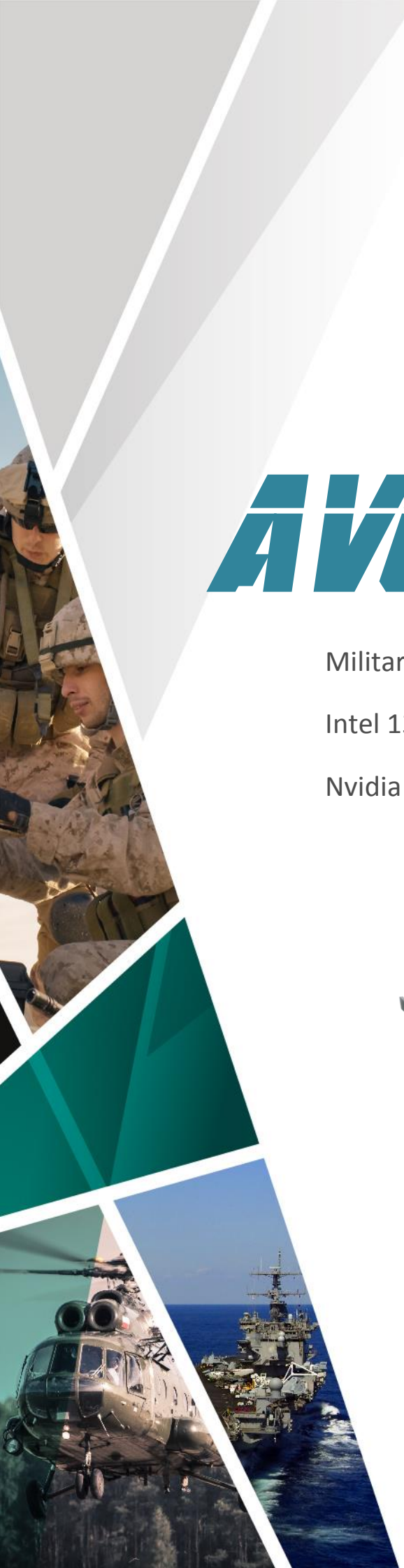

AV600-RH-A15

Military IP65 GPU Computer

Intel 13th Raptor Lake-H i7-13800HRE Processor,

Nvidia MXM A4500 GPU

User's Manual

Revision Date: Sep.04 2024

Safety Information

Electrical safety

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

Operation safety

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

Statement

Revision History

Revision	Date (yyyy/mm/dd)	Changes
Version 1.0	2024/09/04	Initial release

Packing list

- ▶ **AV600-RH-A45 Military IP65 GPU Rugged System**
- ▶ **CD (Driver + Quick Installation Guide)**

Ordering information

Model No.		AV600-RH-A204	AV600-RH-A208	AV600-RH-A45
Architecture		COM Express		
Cooling		Conduction Cooling		
CPU		Intel® 13th Raptor Lake-H i7-13800HRE		
RAM		16GB DDR5 5200MHz SO-DIMM (Up to 96GB)		
MXM GPU		MXM A2000(4G)	MXM A2000(8G)	MXM A4500(16G)
Storage		2x 2.5" SATA III SSD (up to 16TB each)		
		1x M.2 2280 NVMe SSD (up to 2TB)		
I/O	Power	1x DC-IN		
	X1	4x RS232 (RS422/485 option)		
	X2	2x GbE + 2x USB2.0		
	X3	4x DI/4x DO + 1x VGA (option)		
	X4	1x USB3.0		
3G-SDI		2x In/Out 3G-SDI or 4x In 3G-SDI (option)		
Dimension		250 x 325 x 100 mm		250 x 325 x122mm
MIL-STD-461		Compliance		
MIL-STD-810		Compliance		

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

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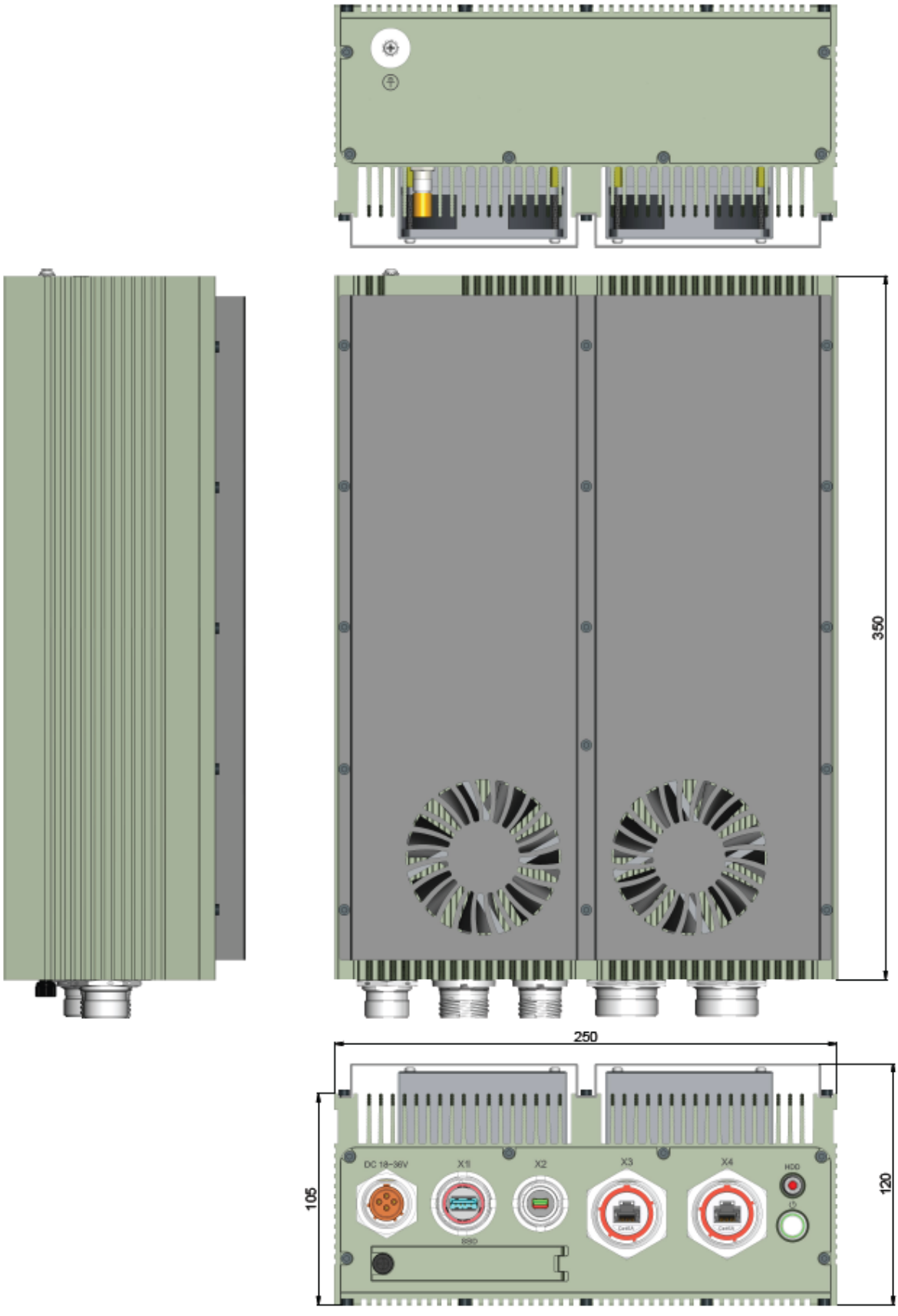
CHAPTER 1: PRODUCT INTRODUCTION

1-1. Key Features

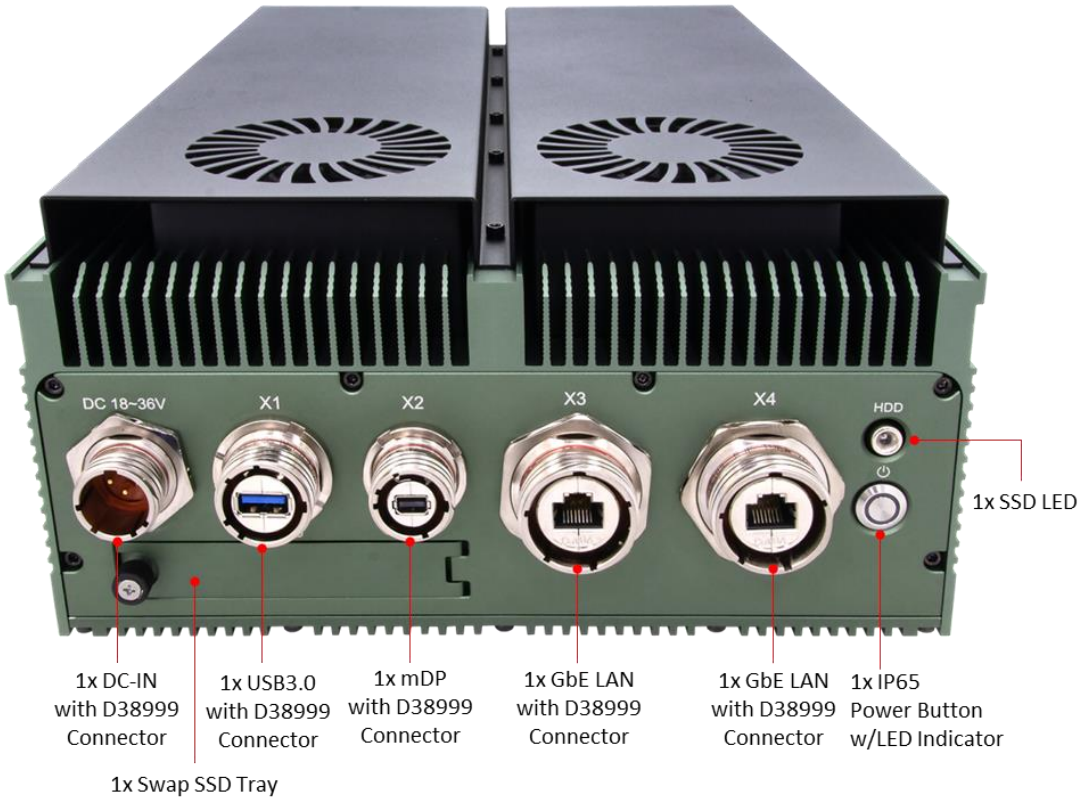
System	
CPU	Intel® 13th Raptor Lake-H i7-13800HRE,14C/20T, 2.5/5.0GHz, 24MB cache, 45W
Memory Type	2x 8GB DDR5 5200MHz SO-DIMM (up to 96GB), non-ECC
GPU	NVidia® RTX A4500 5888 CUDA® cores, 16GB GDDR6
Expansion slot	2x Full-size mini PCIe (with SIM card slot)
	2x M.2 2280 M key (both PCIe x4 from PEG)
	1x SATAIII 2.5" SSD (Swappable SSD Tray)
Front I/O	
DC IN	1x DC-IN with D38999-20FB5PN connector
X1	1x USB3.0 with D38999 connector
X2	1x mini-DP port with D38999 connector
X3	1x GbE LAN RJ45 D38999 connector
X4	1x GbE LAN RJ45 D38999 connector
LED	1x SSD LED indicator
SSD	1x Swappable SSD Tray
Power Button with LED backlight	
Applications	
Applications	Military IP65 GPU Rugged Mission MIL-STD 810 Computer is built to meet strict size, weight, and power (SWaP) requirements and to withstand harsh environments, including temperature extremes, shock/vibe, sand/dust, and salt/fog.
Operation System	
OS Support	Windows 10 / 11 64Bit, Linux by option
Mechanical & Environment	
Chassis	Aluminum Alloy, Corrosion design
Finish	Anodic aluminum oxide
Cooling	Natural Passive Convection/Conduction. No Moving Parts
Ingress Protection	IP65
Power Requirements	Power Supply, 18-36V DC In
Dimension (W x D x H)	250 x 350 x 120mm (9.84" x 13.78" x 4.72")
Operating Temp.	-40 to 60°C
Storage Temp.	-40 to 85°C
Relative Humidity	5% to 95%, non-condensing

*All specifications and photos are subject to change without notice.

1-2. Dimensions(2D)



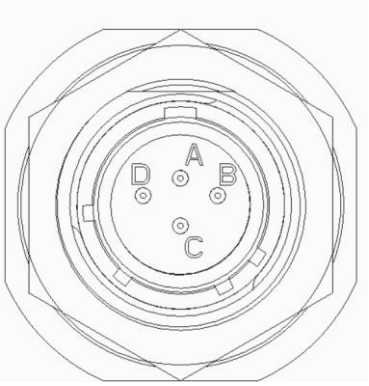
1-3. Panel Component



CHAPTER 2: JUMPERS AND CONNECTORS LOCATIONS

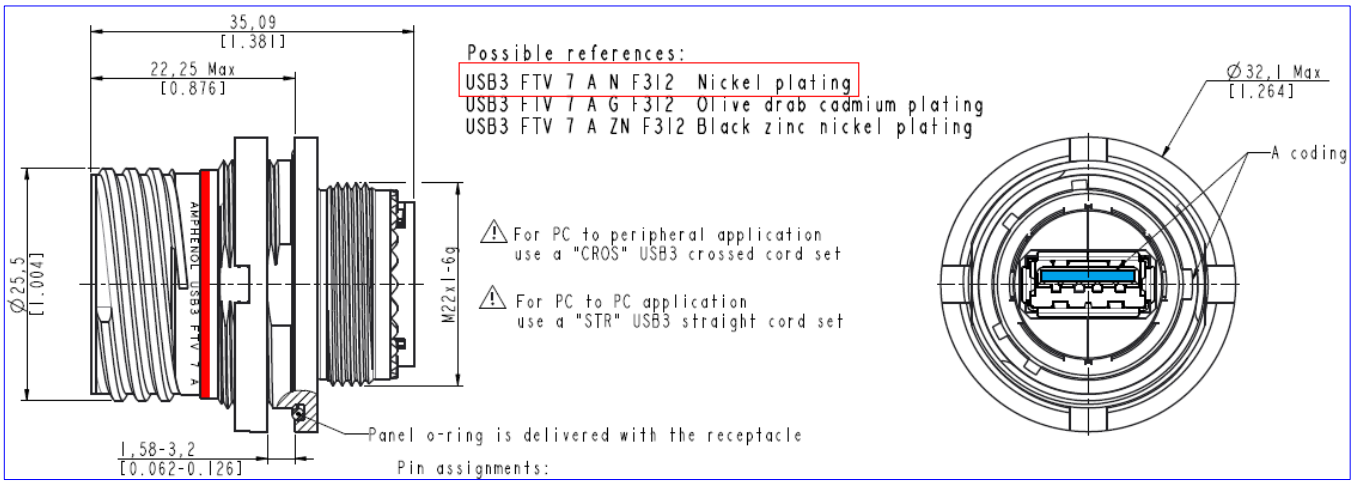
2.1. D38999 Connect Pin Definitions

DC-In



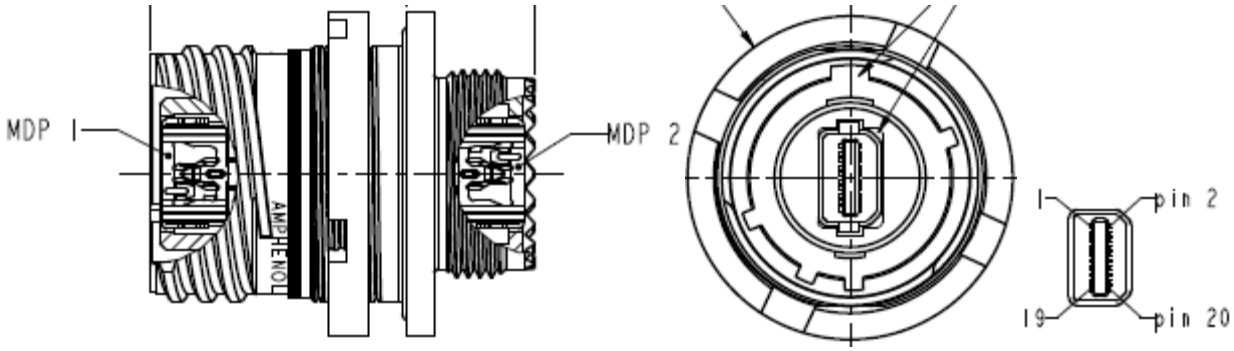
	CON1	
黃	A	TN1
黃	B	
黑	C	TN2
黑	D	
綠	Shell	O 端

X1: 1x USB3.0



USB3.0 Standard A front coupling side connector to USB3.0 Standard A back side connector		
Pin Number	Signal Name	Description
1	VBUS	Power
2	D-	USB2.0 differential pair
3	D+	
4	GND	Ground for Power return
5	StdA-SSRX-	Super speed receiver
6	StdA-SSRX+	Differential pair
7	GND_DRAIN	Ground for Signal return
8	StdA-SSTX-	Super speed transmitter
9	StdA-SSTX+	Differential pair
Shell	sHIELD	Connector metal shell

X2: 1x min-DP



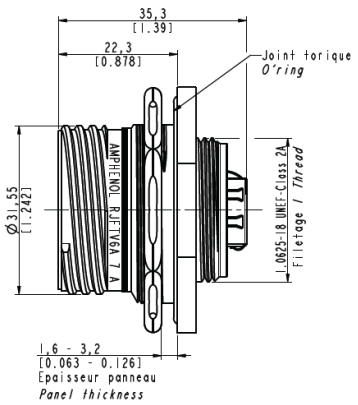
CON1	CON2			CON1	CON2		
1	1	GND	GND	2	37	PURPLE	DET
3	3	WHITE	TP0	4	35	BLUE	GND
5	5	RED	TN0	6	35	WHITE	GND
7	7	GND	GND	8	25	GND	GND
9	9	WHITE	TP1	10	21	WHITE	TP3
11	11	GREEN	TN1	12	23	BLACK	TN3
13	13	GND	GND	14	25	GND	GND
15	15	WHITE	TP2	16	31	WHITE	AUX P
17	17	BLUE	TN2	18	33	BROWN	AUP N
19	19	GREEN	GND	20	39	RED	PWR

X3 & X4: 1x GbE LAN RJ45

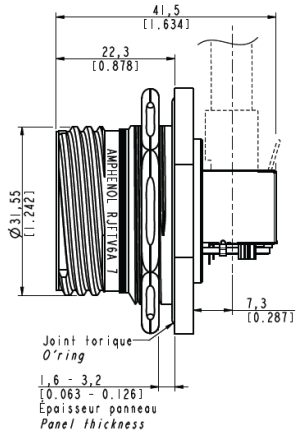
Data Transmission:

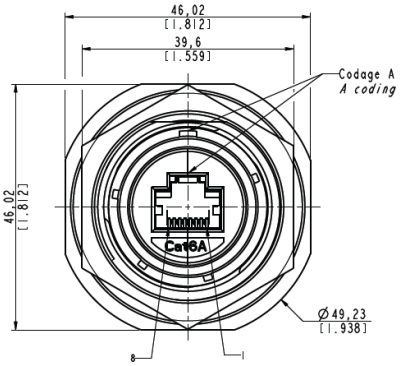
- 10 BaseT, 100 BaseTX, 1000 BaseT and 10G Base T up to 500 MHz networks
- Cat.6A connector according to TIA568C.2 and ISO/IEC11801 standard

RJFTV6A 7 X 1 X



RJFTV6A 7 X 1RA X





CHAPTER 3: BIOS SETUP ITEMS

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

3.1 INTRODUCTION

The following section describes the BIOS setup program. The BIOS setup program can be used to view and change the BIOS settings for the module. Only experienced users should change the default BIOS setting.

3.2 BIOS SETUP

Power on the computer and the system will start POST (Power on Self Test) process. When the message below appears on the screen, press <Delete> or <ESC> key will enter BIOS setup screen.

Press <ESC > or <Delete> to enter SETUP

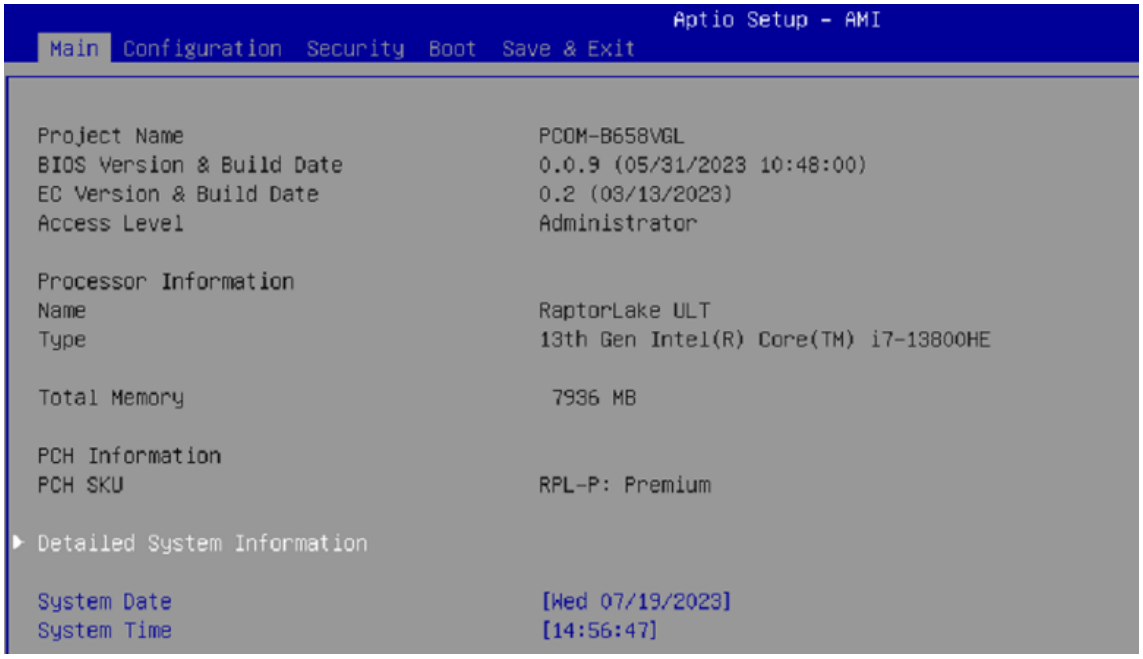
If the message disappears before responding and still wish to enter Setup, please restart the system by turning it OFF and On or pressing the RESET button. It can be also restarted by pressing <Ctrl>, <Alt>, and <Delete> keys on keyboard simultaneously.

Press <F1> to Run General Help or Resume

The BIOS setup program provides a General Help screen. The menu can be easily called up from any menu by pressing <F1>. The Help screen lists all the possible keys to use and the selections for the highlighted item. Press <Esc> to exit the Help Screen.

3.2.1 MAIN

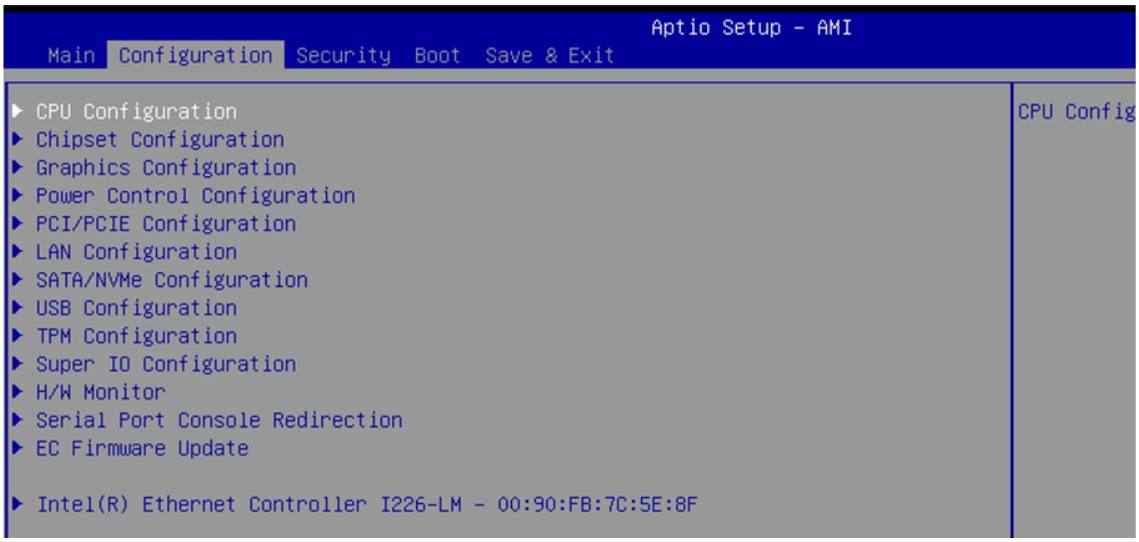
Use this menu for basic system configurations, such as time, date etc.



Feature	Description	Options
Detailed System Information		
System Date	The date format is <Day>, <Month> <Date> <Year>. Use [+] or [—] to configure system Date.	
System Time	The time format is <Hour> <Minute> <Second>. Use [+] or [—] to configure system Time.	

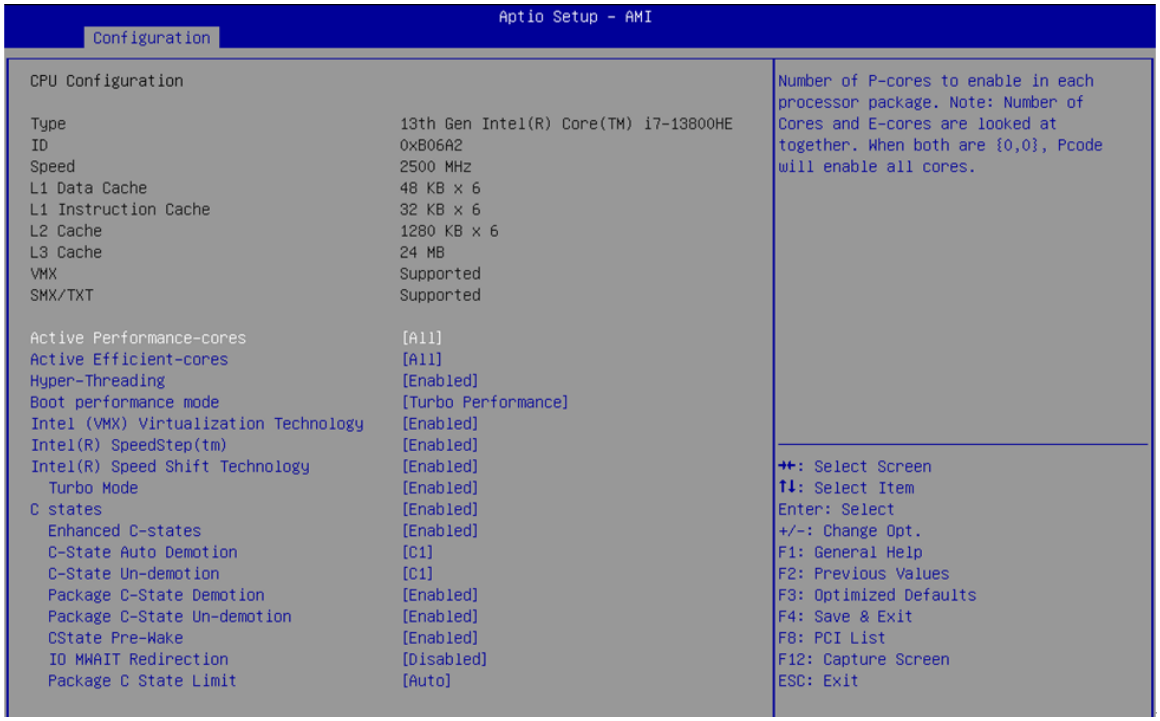
3.2.2 CONFIGURATION

Use this menu to set up the items of special enhanced features.



3.2.2.1 CPU CONFIGURATION

CPU Configuration Parameters.

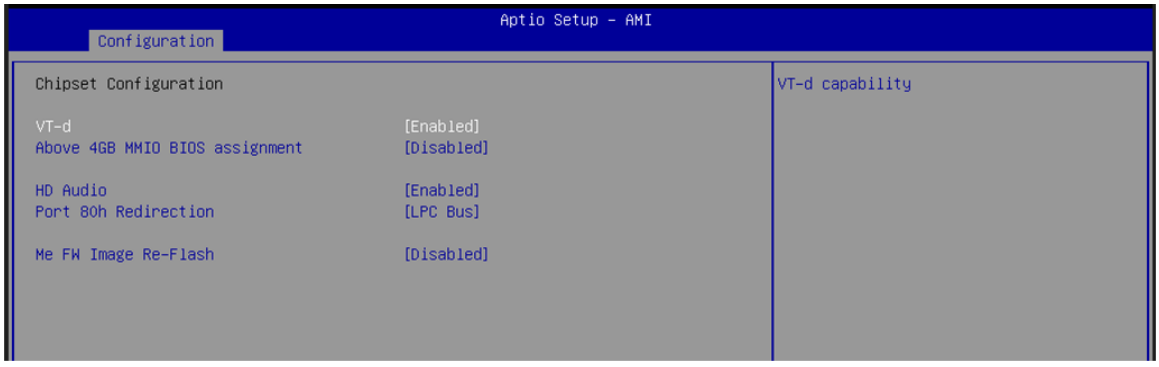


Feature	Description	Options
Active Performance-cores	Number of P-cores to enable in each processor package. Note: Number of Cores and E-cores are looked at together. When both are {0,0}, Pcode will enable cores	★All, 5, 4, 3, 2, 1
Active Efficient-cores	Number of E-cores to enable in each processor package. Note: Number of Cores and E-cores are looked at together. When both are {0,0}, Pcode will enable cores	★All, 7, 6, 5, 4, 3, 2, 1, 0
Hyper-Threading	Enabled or Disabled Hyper-Threading Technology.	★Enabled, Disabled
Boot performance mode	Select the performance state that the BIOS will set starting from reset vector	Max Battery, Max Non-Turbo Performance ★Turbo Performance,
Intel (VMX) Virtualization Technology	When enabled, a VMM can utilize the additional hardware capabilities provided by Vander pool Technology.	Disabled, ★Enabled
Intel® Speed Step™	Allows more than two frequency ranges to be supported.	Disabled, ★Enabled
Intel® Speed Shift Technology	Enable/Disable Intel® Speed Shift Technology support. Enabling will expose the CPPC v2 interface to allow for hardware controlled P-states	Disabled, ★Enabled
Turbo Mode	Enable/Disable processor Turbo Mode (requires Intel Speed Step or Intel Speed Shift to be available and enabled)	Disabled, ★Enabled
C states	Enable/disable CPU Power Management. Allows CPU to go to C states It's not 100% utilized	Disabled, ★Enabled

Enhanced C-States	Enable/disable C1E. When enabled, CPU will switch to minimum speed when all cores enter C-State.	Disabled, ★Enabled
C-State Auto Demotion	Configure C-State Auto Demotion	Disable, C1 ,C3 , ★C1 and C3
C-State Un-demotion	Configure C-State Un-demotion	Disable, C1 ,C3 , ★C1 and C3
Package C State Demotion	Package C-State Demotion	★Disabled, Enabled
Package C State Un-demotion	Package C-State Un-demotion	★Disabled, Enabled
CState Pre-Wake	Disable – Sets bit 30 of POWER_CTL MSR(0x1FC) to 1 to disable the Cstate Pre-Wake	Disabled, ★Enabled
IO MWAIT Redirection	When set, will map IO_read instructions sent to IO registers PMG_IO_BASE_ADDRBASE+offset to MWAIT(offset)	★Disabled, Enabled
Package C State Limit	Maximum Package C State Limit Setting. Cpu Default: Leaves to Factory default value. Auto: Initializes to deepest available Package C States Limit	★Auto,C0/C1,C2,C3,C6,C7, C7S,C8,C9,C10,Cpu Default,

3.2.2.2 CHIPSET CONFIGURATION

Configuration Chipset feature.



Feature	Description	Options
VT-d	VT-d Capability	★Enabled ,Disabled
Above 4GB MMIO BIOS assignment	Enable/Disable above 4GB MemoryMappedIO BIOS assignment This is enabled automatically when Aperture Size is set to 2048MB	★Disabled, Enabled
HD Audio	Control Detection of the HD-Audio device. Disabled= HAD will be unconditionally disabled Enabled= HAD will be unconditionally enabled.	★Enabled ,Disabled
Port 80h Redirection	Control where the Port 80h cycles are sent	★LPC Bus, PCIE Bus
Me FW Image Re-Flash	Enable/Disable Me FW Image Re-Flash function	★Disabled, Enabled

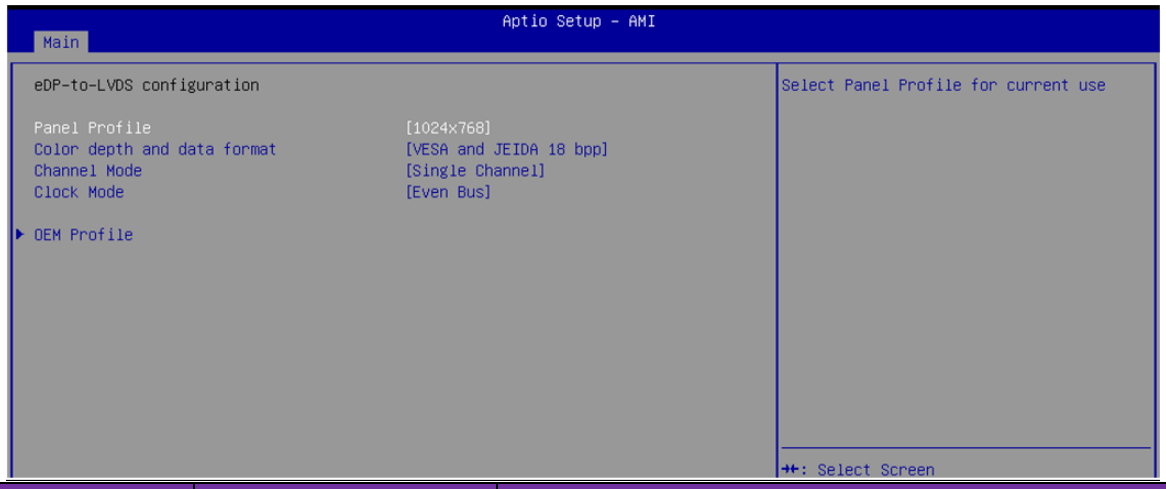
3.2.2.3 GRAPHICS CONFIGURATION

Configuration Graphics Settings.

Feature	Description	Options
Primary Display	Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.	★Auto, IGFX, PEG, PCI
Internal Graphics	Keep IGFX enable based on the setup options.	★Auto, Disable, Enable
DVMT Pre-Allocated	Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.	0M,32M,64M,4M,8M,12M,16M,20M,24M,28M,32M/F7,36M,40M,44M,48M,52M,56M,★60M
DVMT Total Gfx Mem	Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device	★256M, 128M, MAX

3.2.2.4 EDP-TO-LVDS CONFIGURATION

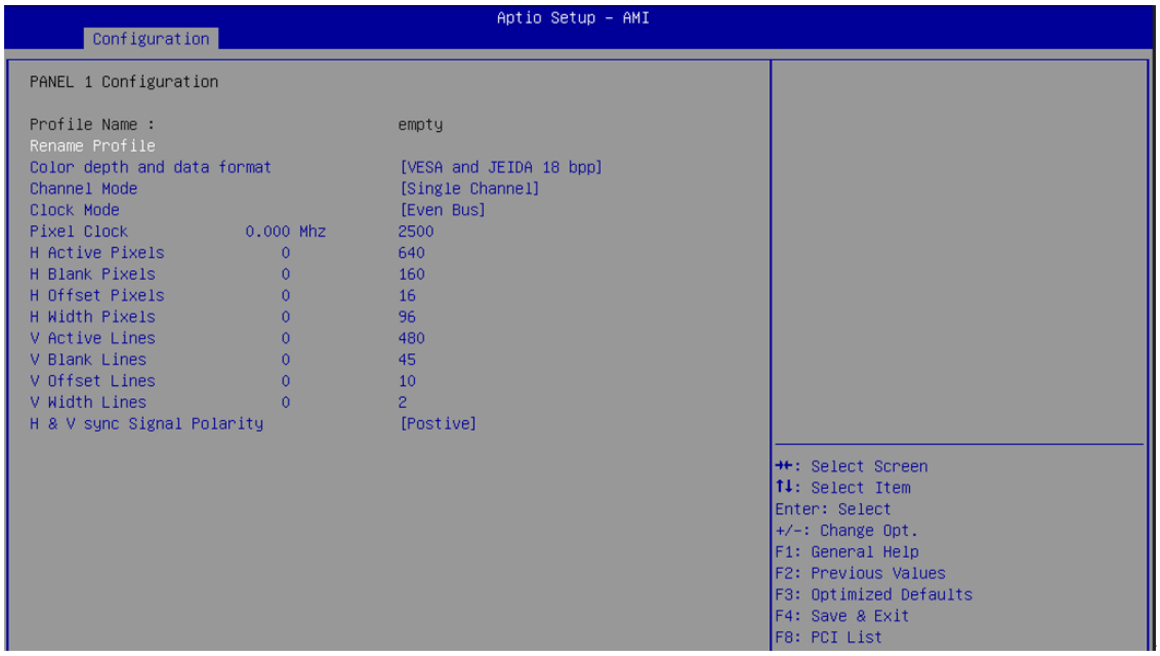
eDP-to-LVDS.



Feature	Description	Options
Panel Profile	Select Panel Profile for current use.	★1024x768,640x480,800x480,800x600,1280x800 1280x1024,1366x768,1440x900,1920x1080,OEM Profile
Color depth and data format	Select Color depth and data format	★VESA and JEIDA 18 bpp, VESA 24 bpp, JEIDA 24 bpp
Channel Mode	Select LVDS Channel Mode	★Single Channel, Dual Channel
Clock Mode	Select clock output for LVDS.	★Even Bus, Odd Bus, Both Buses

3.2.2.5 OEM PROFILE

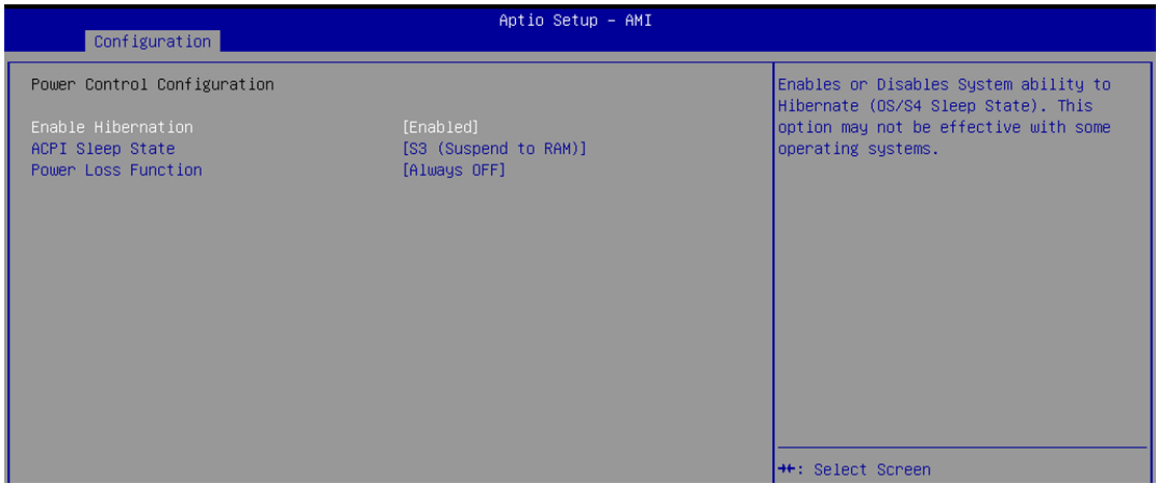
PANEL 1 Configuration.



Feature	Description	Options
Color depth and data format	Select Color depth and data format	★VESA and JEIDA 18 bpp, VESA 24 bpp, JEIDA 24 bpp
Channel Mode	Select LVDS Channel Mode	★Single Channel, Dual Channel
Clock Mode	Select clock output for LVDS.	★Even Bus, Odd Bus, Both Buses
Pixel Clock	Pixel Clock(10Khz)	★2500
H Active Pixels	H Active Pixels (Pixel)	★640
H Blank Pixels	H Blank Pixels (Pixel)	★160
H Offset Pixels	H Offset Pixels (Pixel)	★16
H Width Pixels	H Width Pixels (Pixel)	★96
V Active Lines	V Active Lines (Line)	★480
V Blank Lines	V Blank Lines (Line)	★45
V Offset Lines	V Offset Lines (Line)	★10
V Width Lines	V Width Lines (Line)	★2
H&V sync Signal Polarity	Flag: 0x1E Signal Polarity is Postive 0x18 Signal Polarity is Non-Postive	★Postive, Non-Postive

3.2.2.6 POWER CONTROL CONFIGURATION

System Power Control Configuration Parameters.



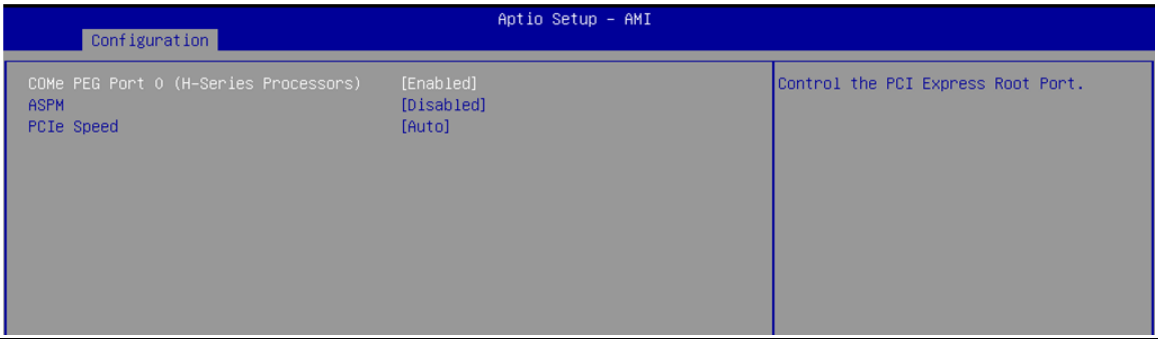
Feature	Description	Options
Enable Hibernation	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some operating system	Disabled, ★Enabled
ACPI Sleep State	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.	Suspend Disabled ,★S3 (Suspend to RAM)
Power Loss Function	Control SIO Power Loss Function. ON is always ON, OFF is always OFF, Last state will depends on last power state	★Always OFF, Always ON, Last State,

3.2.2.7 PCI/PCIE CONFIGURATION

PCI, PCI-X and PCI Express Settings.

3.2.2.8 COMe PEG Port 0, 8, 12

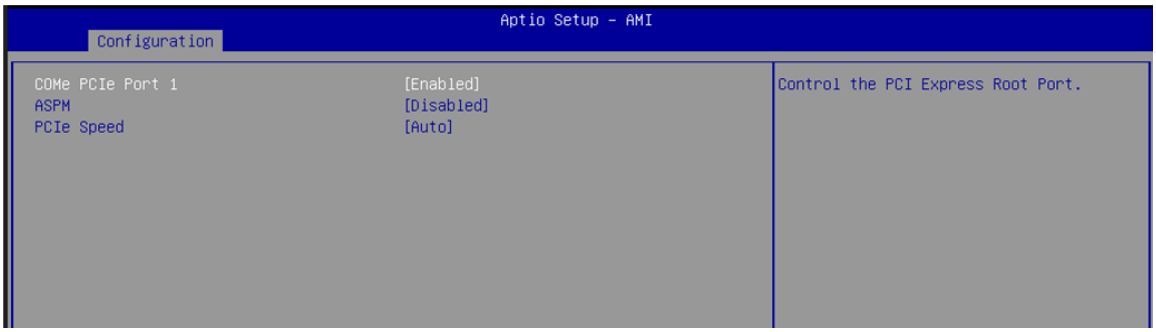
PCI Express Root Port Settings.



Feature	Description	Options
COMe PEG Port 0,8, 12	Control the PCI Express Root Port.	Disabled, ★Enabled
ASPM	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO - BIOS auto configure DISABLE – Disables ASPM	★Disabled, L0s, L1, L0sL1, Auto
PCIe Speed	Configure PCIe Speed	★Auto, Gen1, Gen2, Gen3

3.2.2.9 PCH PCI Express Root Port 1~5

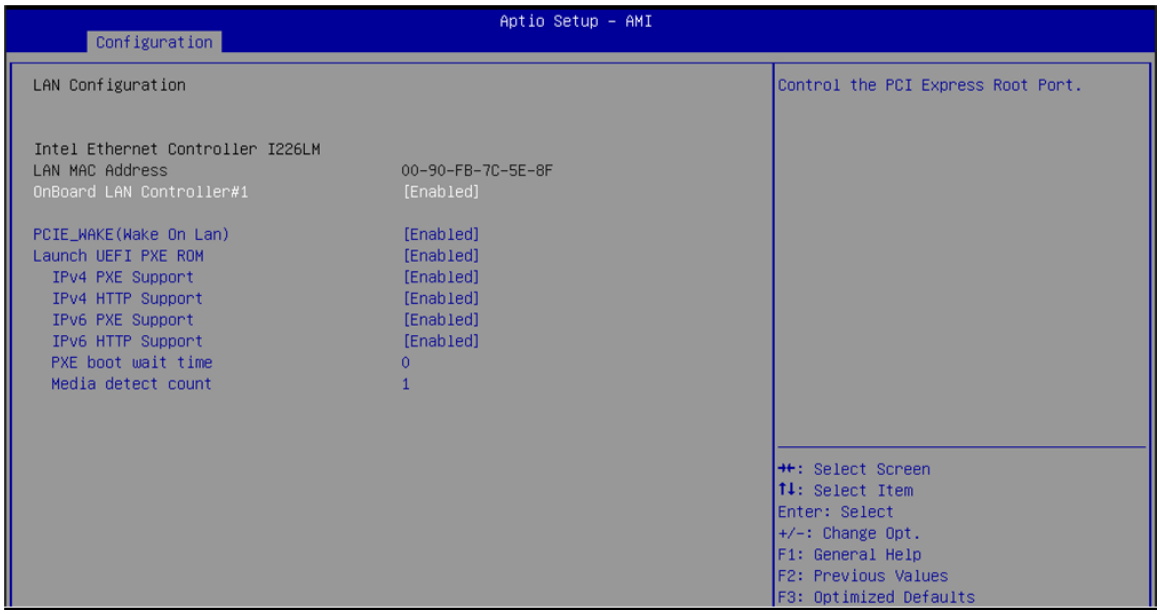
PCI Express Root Port Settings.



Feature	Description	Options
COMe PCIe Port 1~5	Control the PCI Express Root Port.	Disabled, ★Enabled
ASPM	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO - BIOS auto configure DISABLE – Disables ASPM	★Disabled, L0s, L1, L0sL1, Auto
PCIe Speed	Configure PCIe Speed	★Auto, Gen1, Gen2, Gen3

3.2.2.10 LAN CONFIGURATION

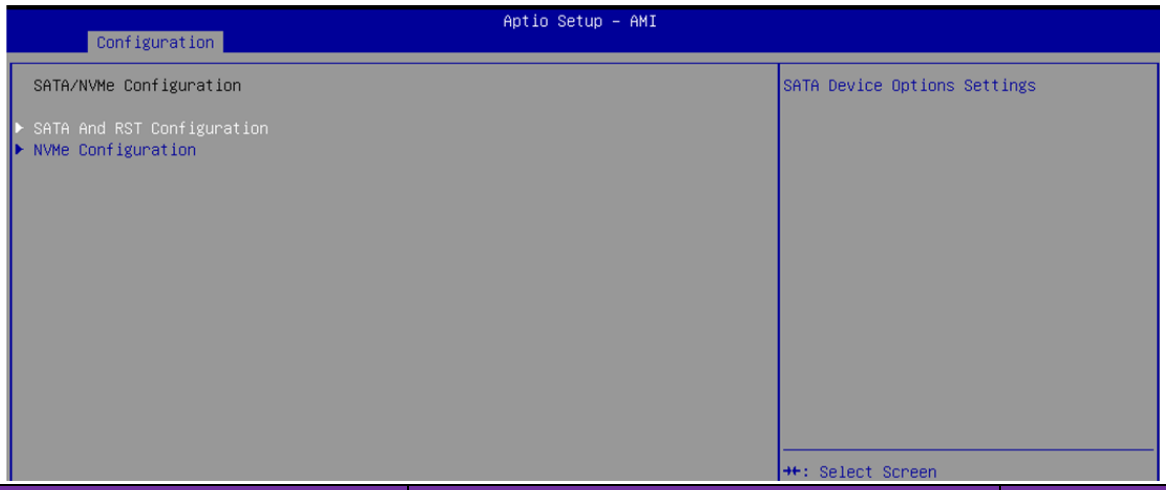
Configuration On Board LAN Device.



Feature	Description	Options
Onboard LAN Controller #1	Enable/Disable onboard NIC	★Enabled , Disabled
PCIE_WAKE (Wake on LAN)	Control PCIE wake# pin for Wake On Lan function	★Enabled , Disabled
Launch UEFI PXE ROM	Enable/Disable UEFI Network Stack	★Disabled, Enabled
Launch UEFI PXE ROM[Enable]		
Ipv4 PXE Support	Enable/Disable Ipv4 PXE boot support.	Disabled, ★Enabled
Ipv4 HTTP Support	Enable/Disable Ipv4 HTTP boot support. If disable, IPv4 HTTP boot support will not be available.	Disabled, ★Enabled
Ipv6 PXE Support	Enable/Disable Ipv6 PXE boot support. If disable, IPv6 PXE boot support will not be available.	Disabled, ★Enabled
Ipv6 HTTP Support	Enable/Disable Ipv6 HTTP boot support. If disable, IPv6 HTTP boot support will not be available.	Disabled, ★Enabled
IPSEC Certificate	Support to Enable/Disable IPSEC certificate for Ikev	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 values	★0
Media detect count	Number of times the presence of media will be checked. Use either +/- or numeric keys to set the values.	★1

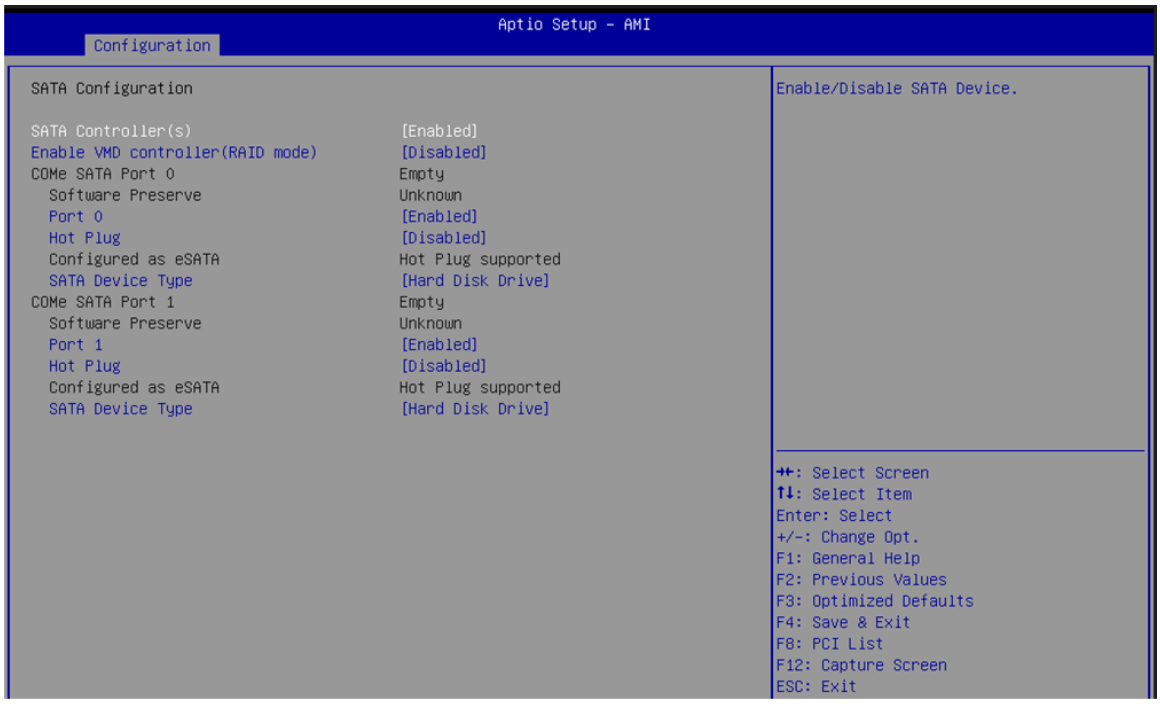
3.2.2.11 SATA CONFIGURATION

SATA/NVMe Device Options Settings.



Feature	Description	Options
SATA And RST Configuration	SATA Device Options Settings	
NVMe Configuration	NVMe Device Options Settings	

3.2.2.12 SATA AND RST CONFIGURATION

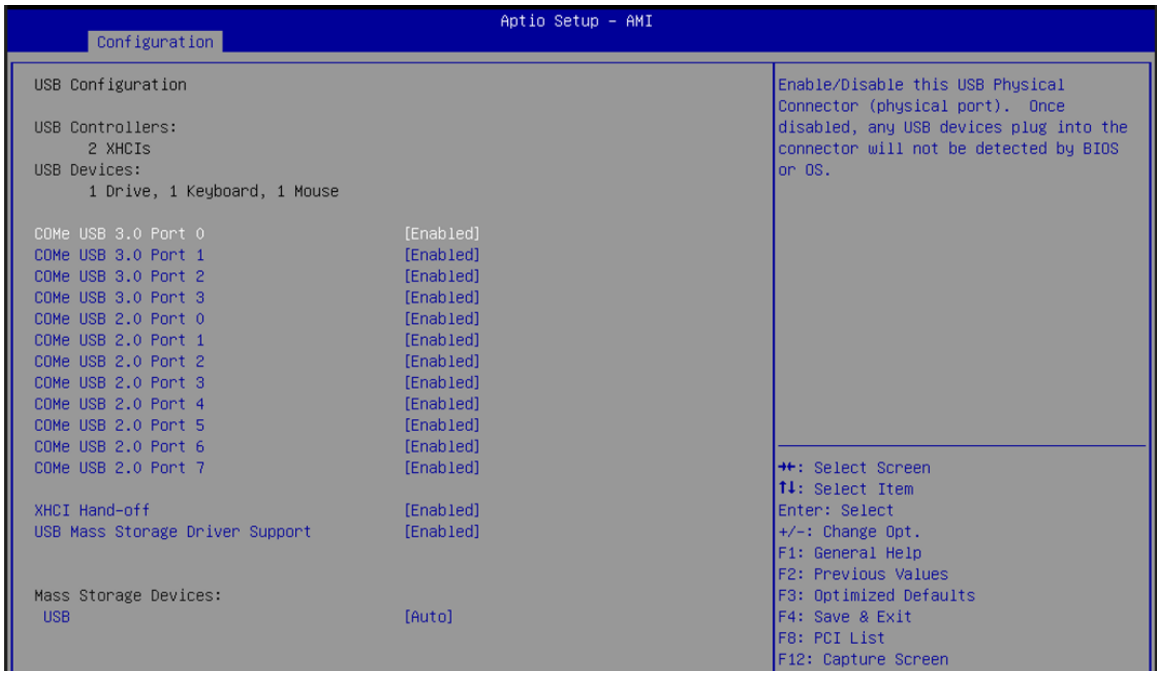


Feature	Description	Options
SATA Controller(s)	Enable/Disable the SATA Device.	★Enabled , Disabled
Enable VMD controller(RAID Mode)	Enable/Disable to VMD controller	★Disabled, Enabled
COMe SATA Port 0~1		

Port 0~1	Enable or Disable SATA Port	★Enabled ,Disabled
Hot Plug	Designates this port as Hot Pluggable	★Disabled, Enabled
SATA Device Type	Identify the SATA port is connected to Solid State Drive or Hard Disk Drive	★Hard Disk Drive,Solid State Drive

3.2.2.13 USB CONFIGURATION

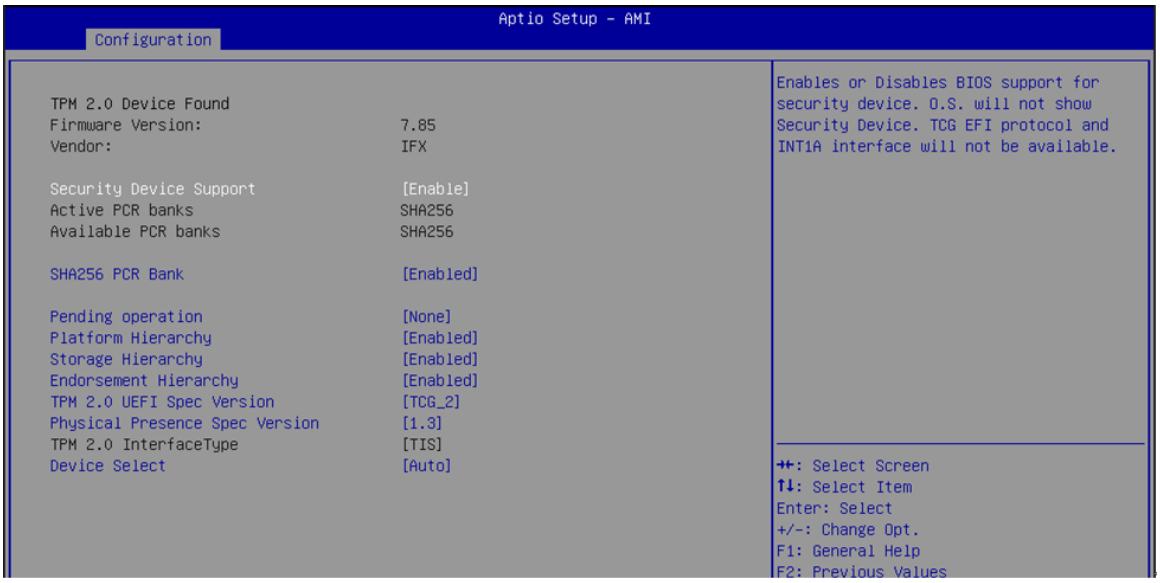
USB Configuration Parameters.



Feature	Description	Options
COMe USB 3.0 Port #0~7	Enable/Disable this USB Physical Connector (physical port). Once disable, any USB devices plug into the connector will not be detected by BIOS or OS	★Enabled ,Disabled
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	★Enabled ,Disabled
USB	Mass storage device emulation type. 'AUTO' enumerates devices according to their media format. Optical drives are emulated as 'CDROM', drives with no media will be emulated according to a drive type	★Auto, Floppy, Forced FDD, Hard Disk, CD-ROM

3.2.2.14 TPM CONFIGURATIN

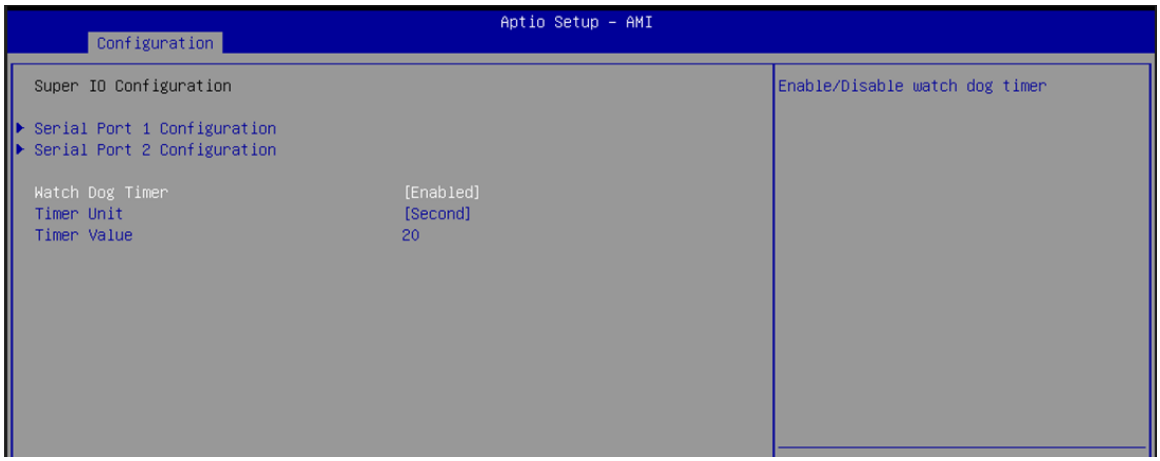
Trust Computing Settings.



Feature	Description	Options
Security Device Support	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A Interface will not be available.	Disabled, ★Enabled
SHA256 PCR Bank	Enables or Disables SHA256 PCR Bank	Disabled, ★Enabled
Pending operation	Schedule an Operation for the Security Device. Note: Your Computer will reboot during restart in order to change State of Security Device	★None, TPM Clear
Platform Hierarchy	Enables or Disables Platform Hierarchy	Disabled, ★Enabled
Storage Hierarchy	Enables or Disables Storage Hierarchy	Disabled, ★Enabled
Endorsement Hierarchy	Enables or Disables Endorsement Hierarchy	Disabled, ★Enabled
TPM 2.0 UEFI Spec Version	Select the TCG2 Spec Version Support, TCG_1_2: the Compatible mode for Win8/Win10 TCG_2: Support new TCG2 protocol and event format for Win10 or later	TCG_1_2, ★TCG_2
Physical Presence Spec Version	Select to Tell O.S. to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3.	1.2, ★1.3
Device Select	TPM 1.2 will restrict support to TPM 1.2 devices, TPM 2.0 will restrict support to TPM 2.0 devices, Auto will support both with the default set to TPM2.0 devices if not found, TPM 1.2 devices will be enumerated	TPM1.2, TPM2.0, ★Auto

3.2.2.15 SUPER IO CONFIGURATION

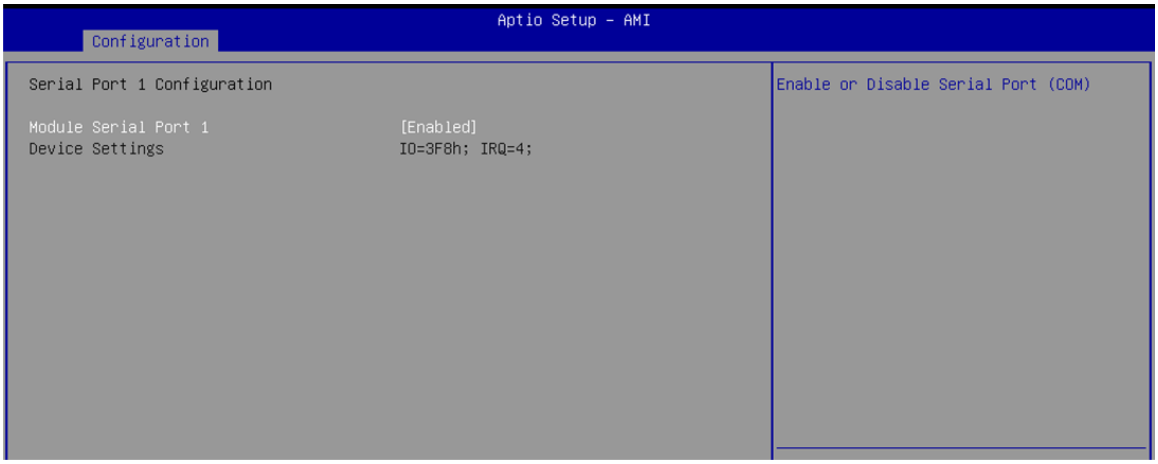
System Super IO Chip Parameters.



Feature	Description	Options
Watch Dog Timer	Enable/Disable Watch Dog Timer	★Disabled, Enabled
Watch Dog Timer [Enable]		
Timer Unit	Select Timer count unit of WDT	★Second, Minute
Timer value	Set WDT Timer value seconds/minutes	★20

3.2.2.16 SERIAL PORT 1 CONFIGURATION

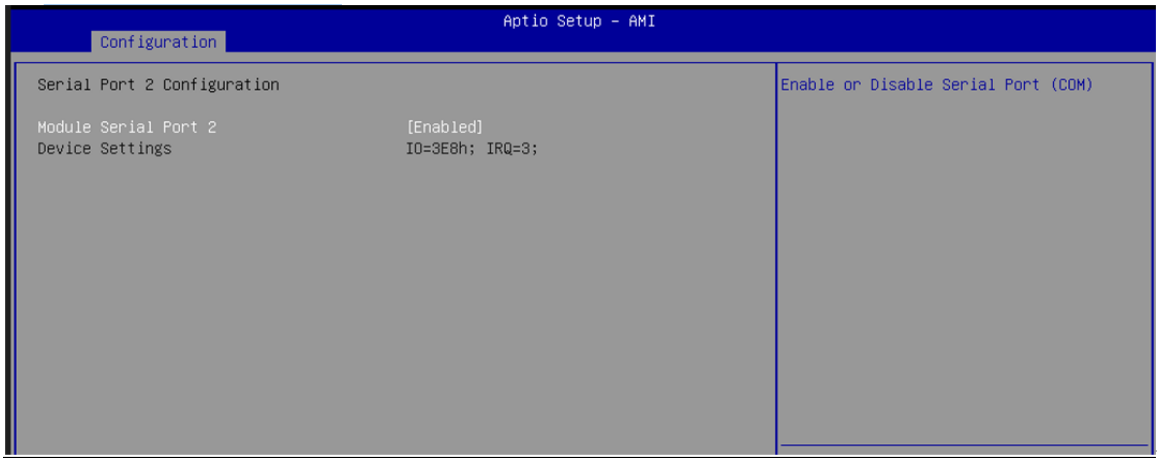
Set Parameters of Serial Port 1.



Feature	Description	Options
Module Serial Port 1	Enable or Disable Serial Port (COM)	★Enabled, Disabled

3.2.2.17 SERIAL PORT 2 CONFIGURATION

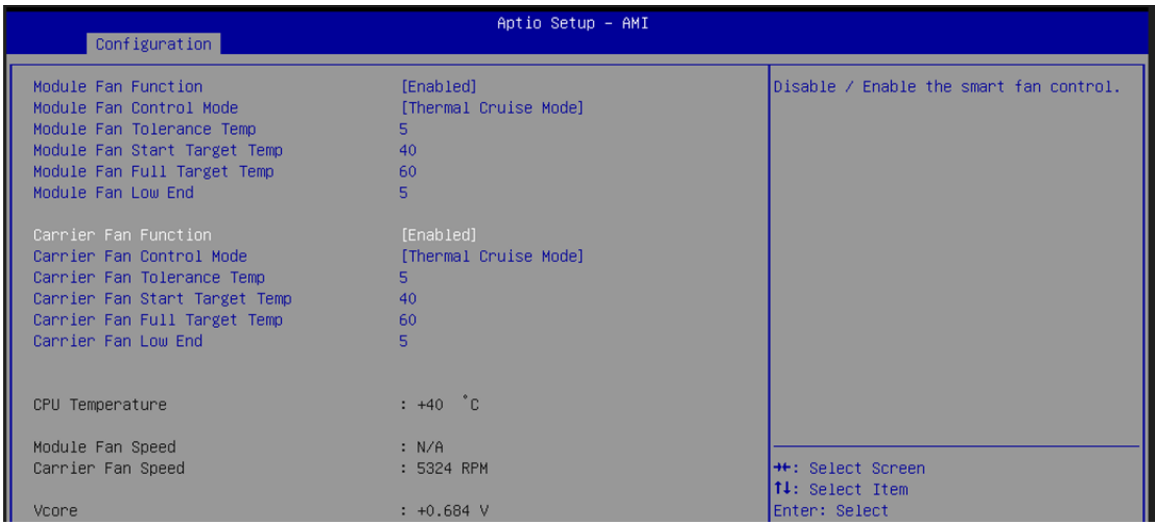
Set Parameters of Serial Port 2.



Feature	Description	Options
Serial Port 2	Enable or Disable Serial Port (COM)	★Enabled, Disabled

3.2.2.18 H/W MONITOR

Monitor hardware status.

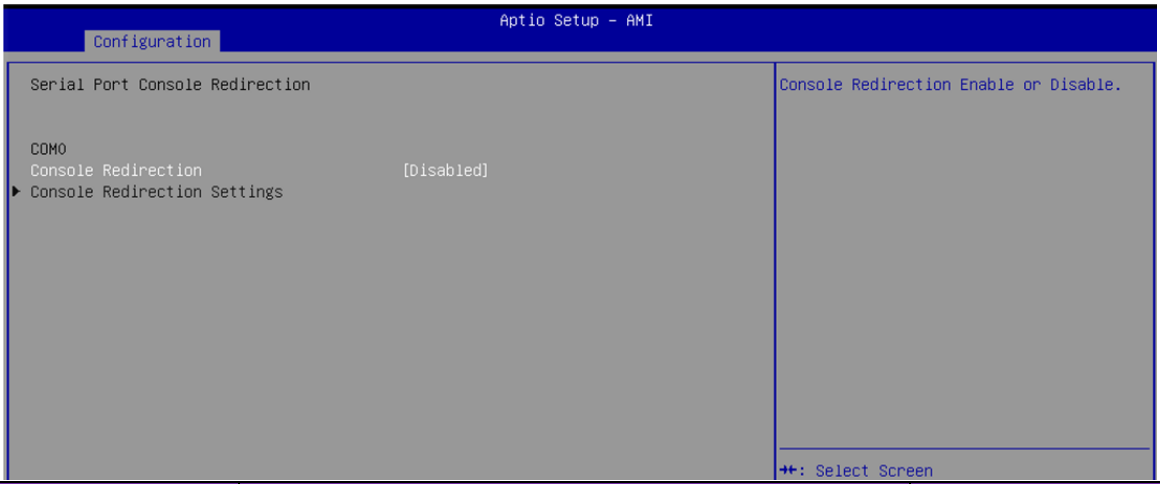


Feature	Description	Options
Module Fan Function	Enable/Disable the smart fan control	★Disabled, Enabled
Module Fan Function [Enable]		
Module Fan Control Mode	Smart Fan Mode Select	★Thermal Cruise Mode, Fan Control Mode

Module Fan Tolerance Temp	In Thermal Cruise Mode: Tolerance of Target Temperature	★5
Module Fan Start Target Temp	In Thermal Cruise Mode: Start Temperature	★40
Module Fan Full Target Temp	In Thermal Cruise Mode: Full Speed Temperature	★60
Module Fan Low End	In Thermal Cruise Mode: Low end of fan speed (0~100%)	★5
Carrier Fan Function	Enable/Disable the smart fan control	★Disabled, Enabled
Carrier Fan Function [Enable]		
Carrier Fan Control Mode	Smart Fan Mode Select	★Thermal Cruise Mode, Fan Control Mode
Carrier Fan Tolerance Temp	In Thermal Cruise Mode: Tolerance of Target Temperature	★5
Carrier Fan Start Target Temp	In Thermal Cruise Mode: Start Temperature	★40
Carrier Fan Full Target Temp	In Thermal Cruise Mode: Full Speed Temperature	★60
Carrier Fan Low End	In Thermal Cruise Mode: Low end of fan speed (0~100%)	★5

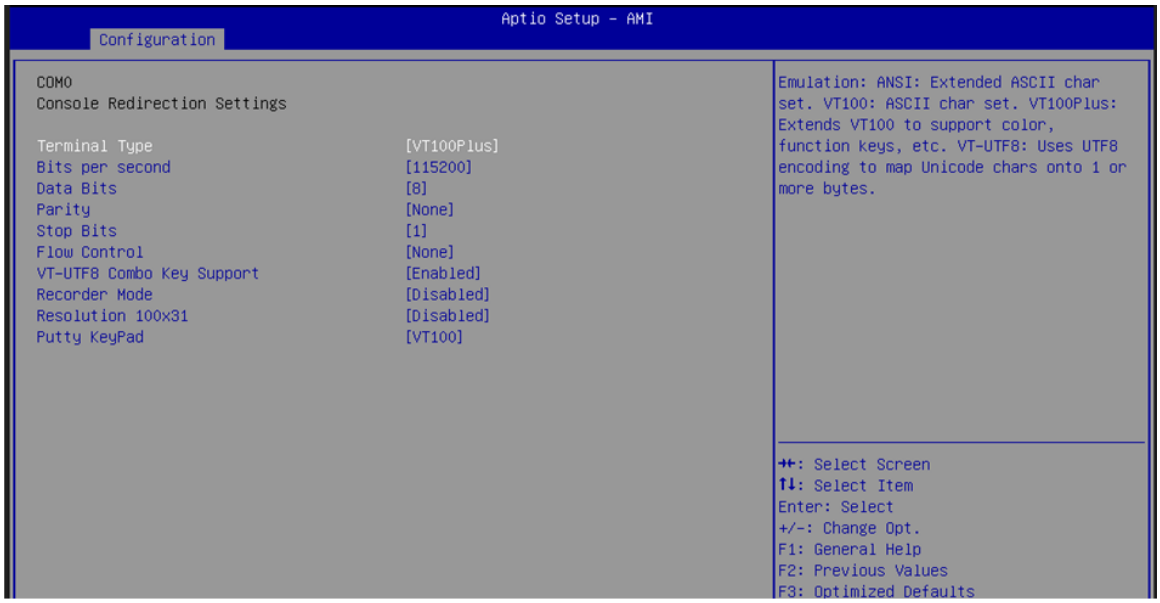
3.2.2.19 SERIAL PORT CONSOLE REDIRECTION

Serial Port Console Redirections.



Feature	Description	Options
Console Redirection	Console Redirection Enable or Disable	★Disabled, Enabled

3.2.2.20 COM0 CONSOLE REDIRECTION SETTINGS

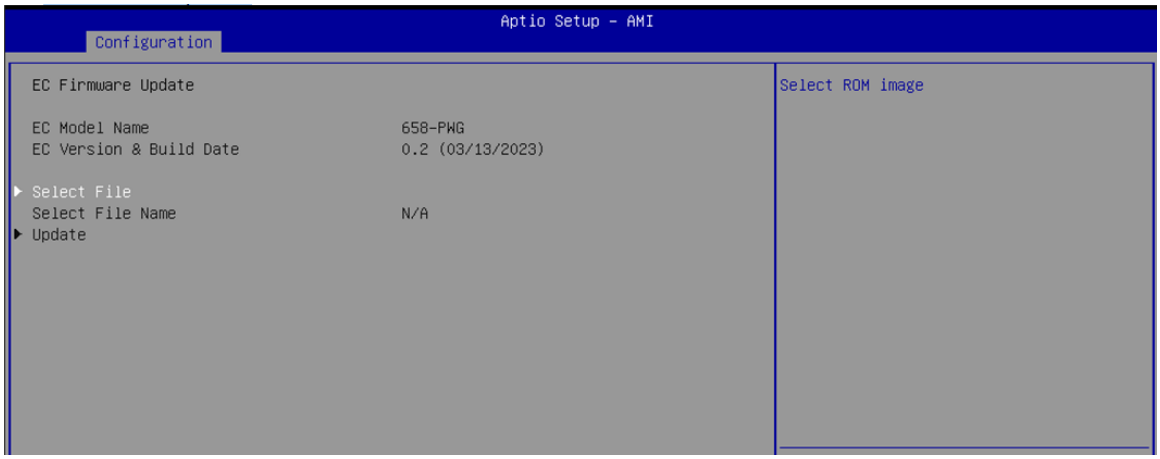


Feature	Description	Options
Terminal Type	Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color , function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.	VT100,★VT100 Plus, VT-UTF8, ANSI
Bits per second	Select Serial port transmission speed. The speed must be matched on other side. Long or noisy lines may require lower speeds.	★115200, 9600, 19200, 38400, 57600
Data bits	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 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. They can be used as an additional data bit.	★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-UTFB 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	Enables or disables extended terminal resolution	★Disabled, Enabled
Putty KeyPad	Select FunctionKey and KeyPad on Putty	★VT100, LINUX,XTERM R6, SCO,ESCN,VT400

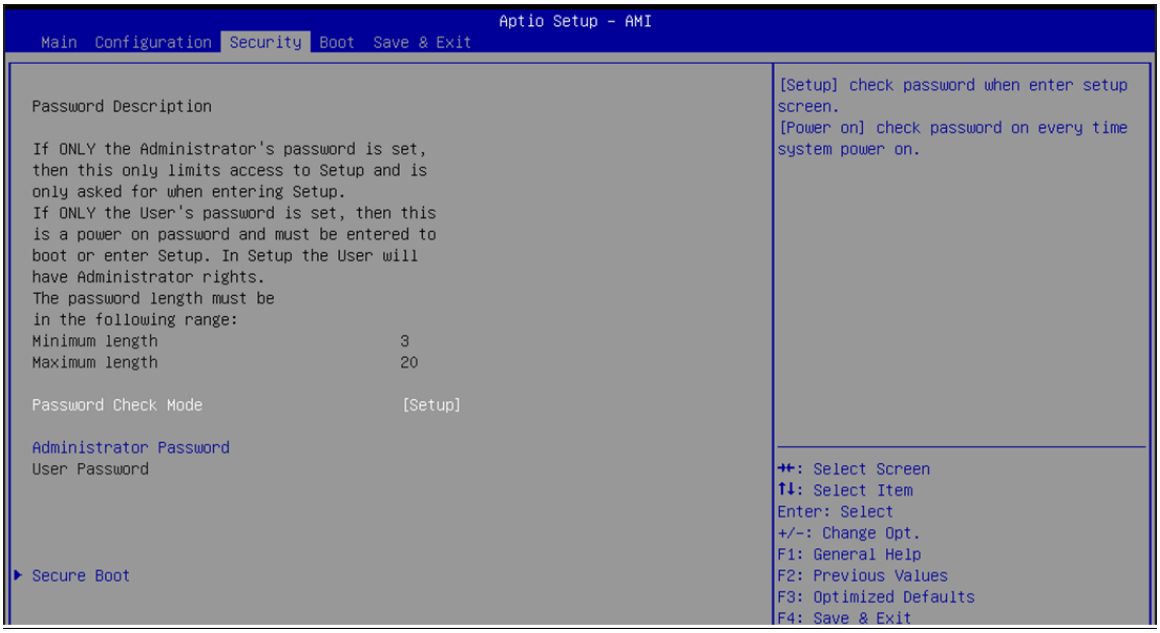
3.2.2.21 EC FIRMWARE UPDATE

EC Firmware Update.



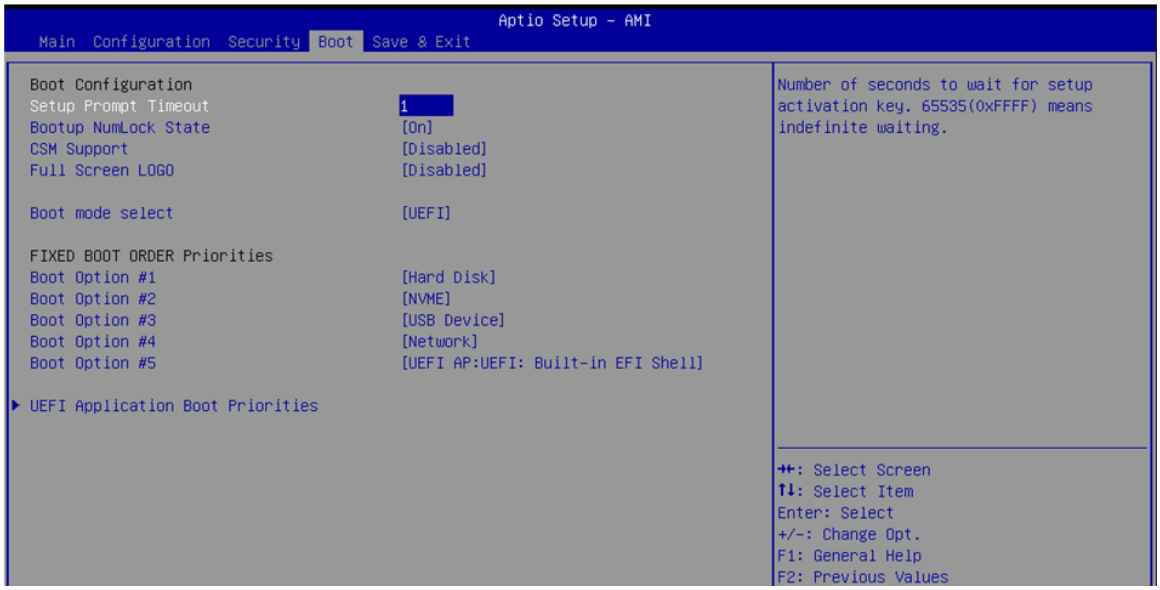
Feature	Description	Options
Select File	Select ROM image	

3.2.3 SECURITY



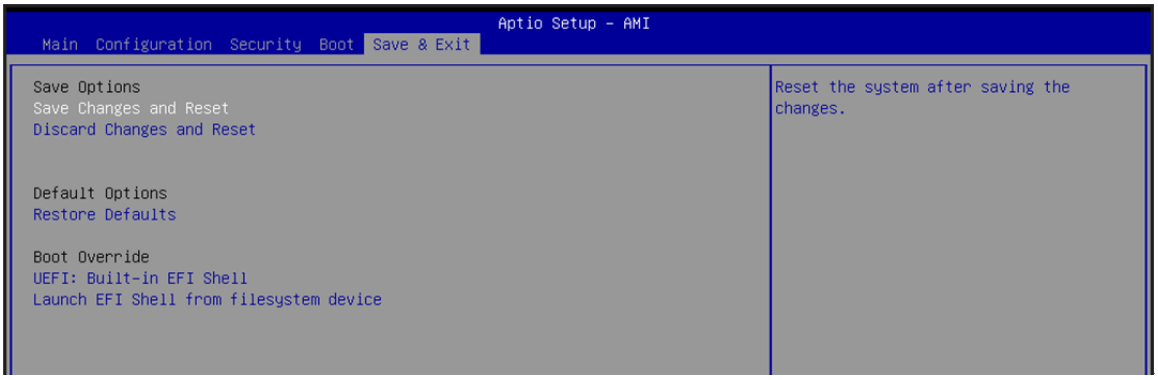
Feature	Description	Options
Password Check Mode	[Setup] check password when enter setup screen. [Power on] check password on every time system power on.	★Setup, Power on
Administrator Password	Set Administrator Password	

3.2.4 Boot



Feature	Description	Options
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	★On, Off
CSM Support	Enable/Disable CSM support	★Disabled
Full Screen LOGO	Enables or disables Quiet Boot option and Full screen Logo.	★Disabled, Enabled
Boot mode select	Select boot mode LEGACY/UEFI	★UEFI ,Legacy
Boot Option #1~5	Sets the system boot order	★Hard Disk, NVME, USB Device, Network, UEFI AP: UEFI: Built-in EFI Shell, Disabled
UEFI Application Boot Priorities	Specifies the Boot Device Priority sequence from available UEFI Application	

3.2.5 SAVE & EXIT



Feature	Description	Options
Save Changes and Reset	Reset the system after saving the changes.	
Discard Changes and Reset	Reset system setup without saving any changes.	
Restore Defaults	Restore/Load Default values for all the setup options.	
UEFI: Built-in EFI Shell	Reset the system after saving the changes. (Boot option filter: UEFI only)	
Launch EFI Shell from filesystem device	Attempts to Launch EFI Shell application (Shell.efi) from one of the available filesystem devices.	

3.3 BIOS / EC UPDATE

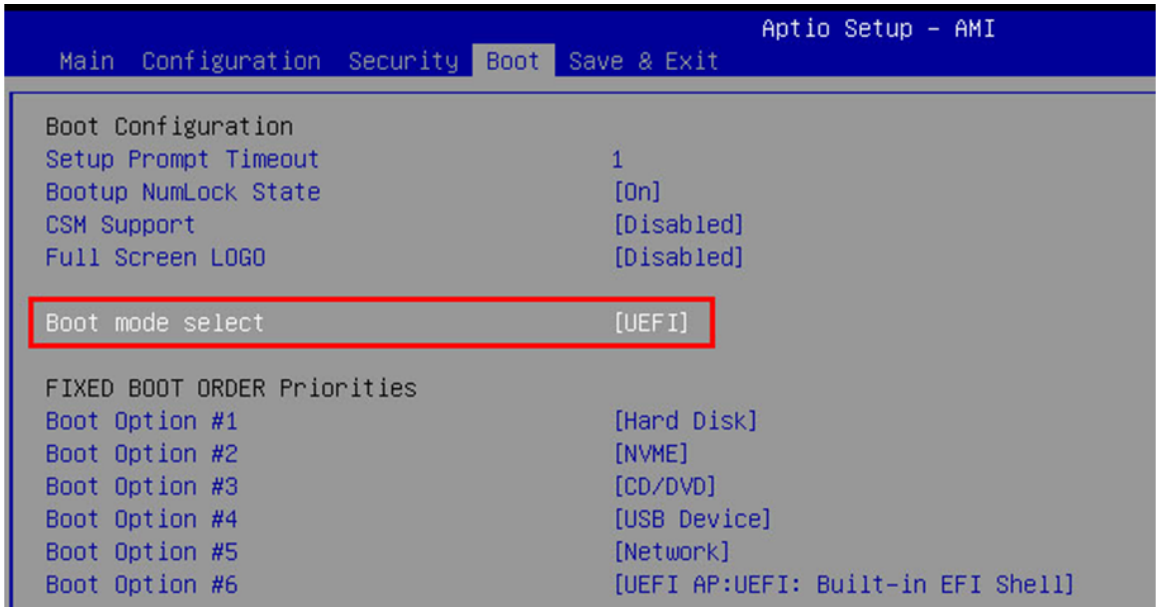
PCOM-B658VGL only support BIOS/EC update under UEFI shell environment, refer the following step, please.

3.3.1 BIOS UPDATE

Step 1. Unzip update file to the USB DOK (USB DOK must be FAT or FAT32 format)

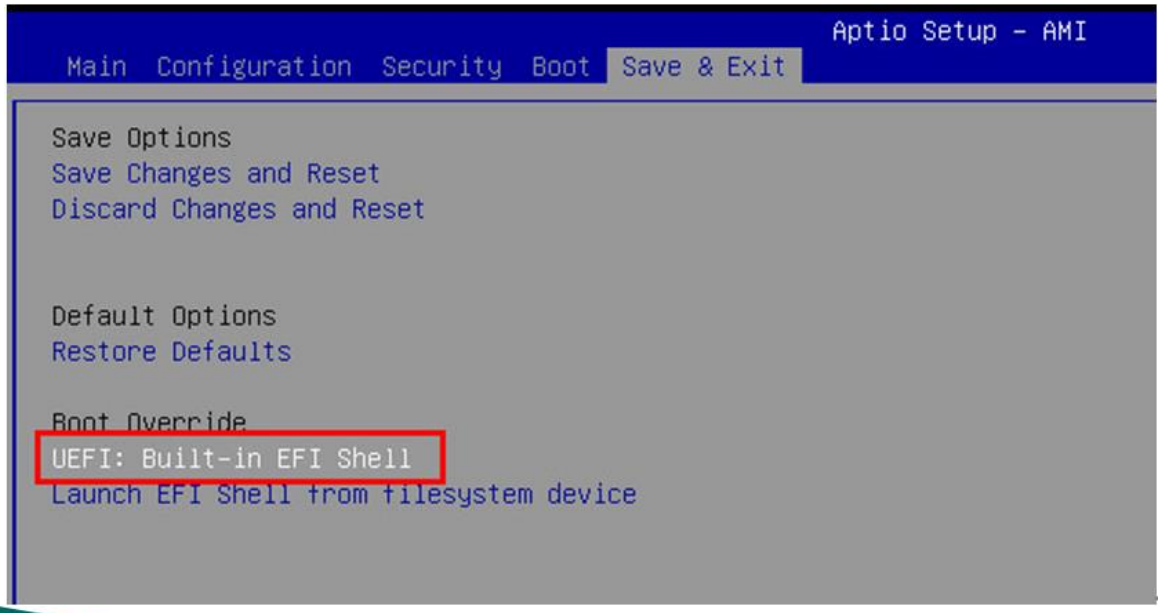
Step 2. Make sure "Boot mode select" item is "UEFI" in the BIOS "Boot" page

Shown as below picture.



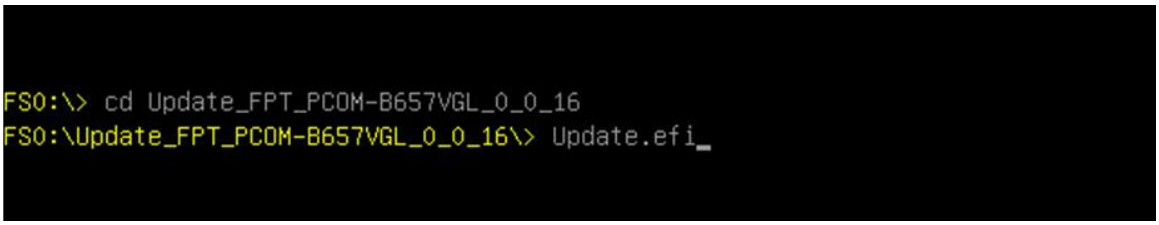
Step 3. Plug the USB DOK on the target system and select "Built-in EFI Shell" in the BIOS "Save & Exit" page

Shown as below picture



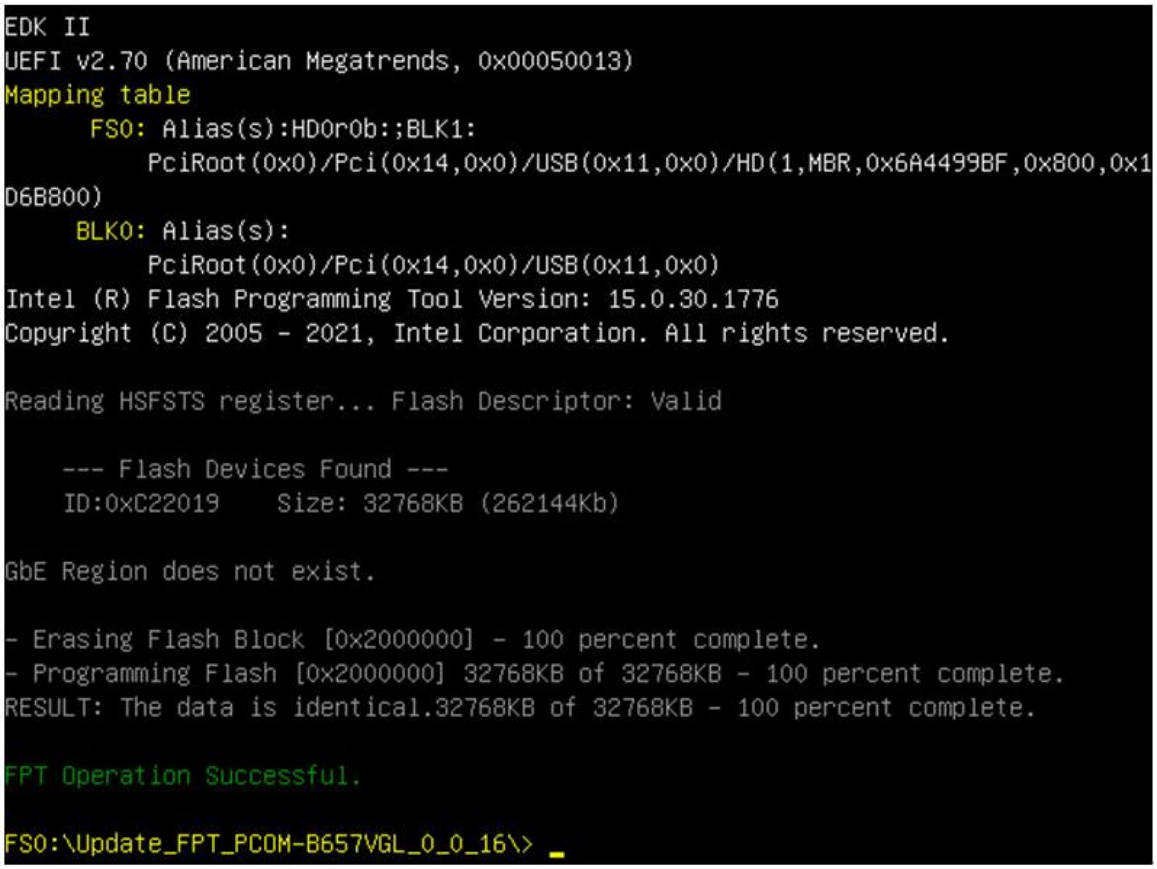
Step 4. Under the UEFI shell, change prompt to your USB DOK, the below example is " fs0: "

Step 5. Then change the folder with updated file and use command: " update " and press enter



Step 6. The updating process will start and show the updating progress

Step 7. Please power off and restart the system once updating finished

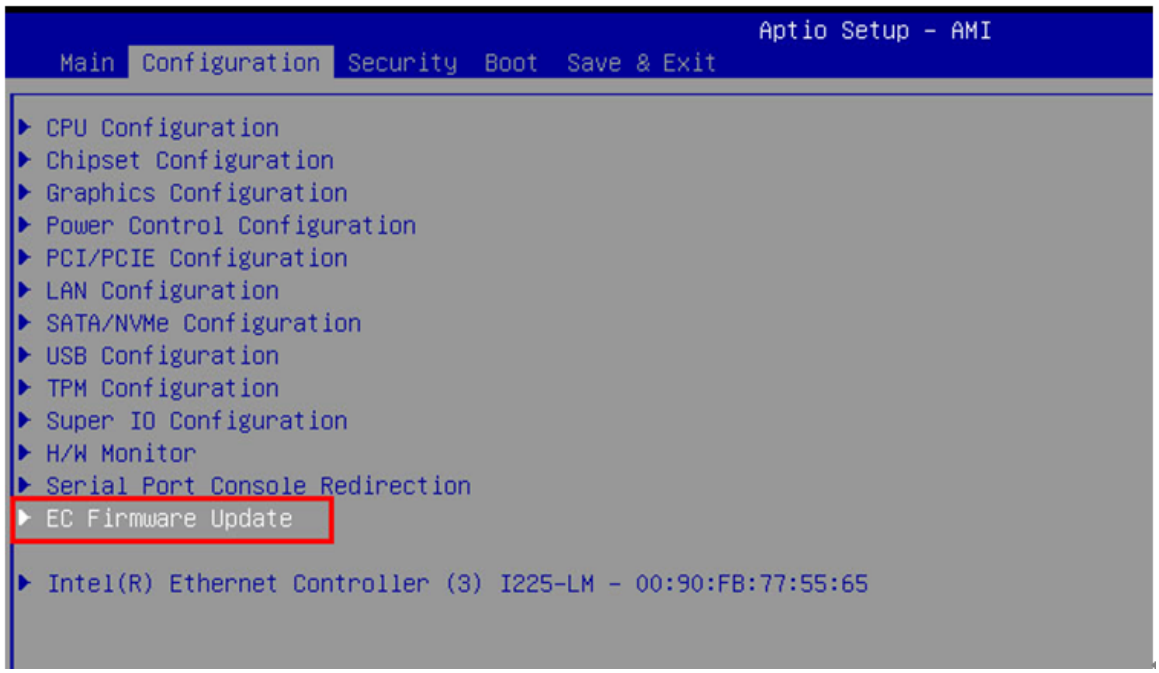


(BIOS updating finished)

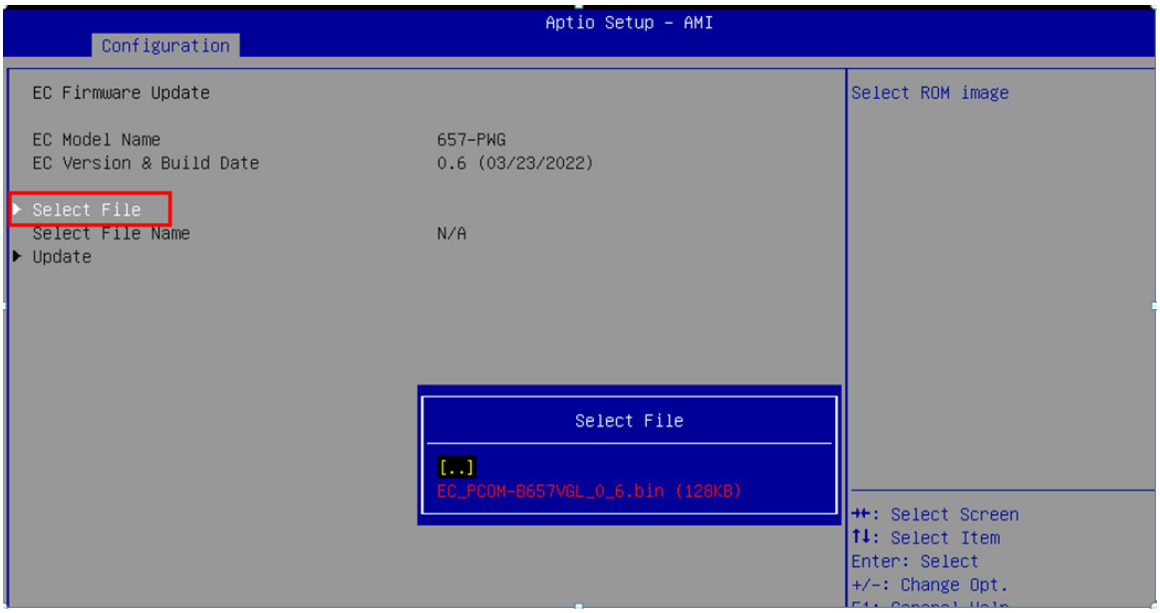
3.3.2 EC UPDATE

Step 1. Unzip EC binary file to the USB DOK (USB DOK must be FAT or FAT32 format)

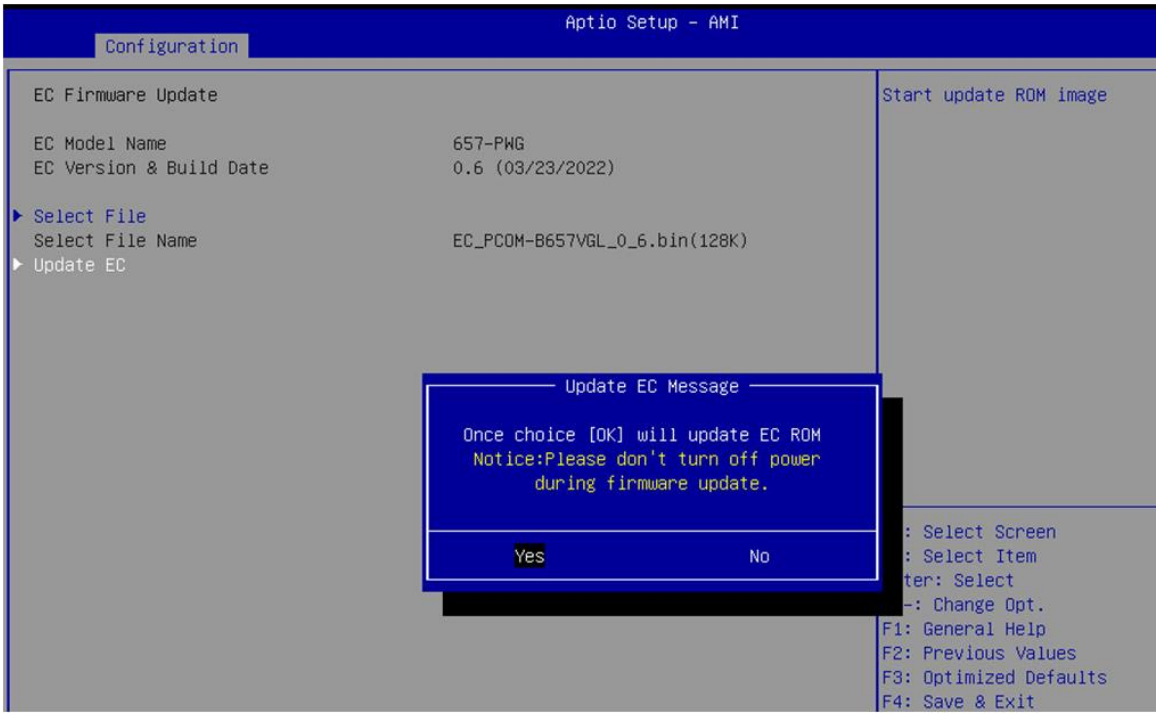
Step 2. Select "EC Firmware Update" item in BIOS setup menu



Step 3. Select EC binary file by option item shown as below



Step 4. Select "Yes" to start EC update (Please don't turn off power during firmware update)



Step 5. Turn off power to make system into G3 status once updating finished, then power on the system