TM-5900-24
USER MANUAL

Medical Panel PC System

2022

Version 1.0

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Safety

IMPORTANT SAFETY INSTRUCTIONS

1) To disconnect the machine from the electrical power supply, turn off the power switch and remove the power cord plug from the wall socket. The wall socket must be easily accessible and in close proximity to the machine.
2) Read these instructions carefully. Save these instructions for future reference.
3) Follow all warnings and instructions marked on the product.
4) Do not use this product near water.
5) Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
6) Slots and openings in the cabinet and the back or bottom are provided for ventilation to ensure reliable operation of the product and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register or in a built-in installation unless proper ventilation is provided.
7) This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
8) Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.
9) Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
10) To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.
11) No modification of this equipment is allowed.
12) Power supply is specified as part of medical equipment.
13) The medical PC can be cleaned in accordance with normal clinical cleaning practices, including wiping with water or medical grade wipes, provided no substance containing acids or cleaning alkali liquids is used.
14) Medical grade wipes must not contain more than 75% alcohol content measured against the total content of the wipe.
15) Operator shall not contact patient simultaneously when in use with the medical computer.

Sécurité

INSTRUCTIONS IMPORTANTES RELATIVES À LA SECURITE

1. Pour débrancher la machine de l'alimentation électrique, éteignez l'interrupteur d'alimentation et retirez le cordon d'alimentation de la prise murale. La prise murale doit être facilement accessible et à proximité de la machine.
2. Lisez attentivement ces instructions. Conservez ces instructions pour une référence future .
3. Suivez tous les avertissements et les instructions indiquées sur le produit.
4. Ne pas utiliser ce produit à proximité de l'eau.
5. Ne pas placer ce produit sur un chariot, un support ou une table. Le produit peut tomber,causant de graves dommages à l'appareil.
6. Les fentes et les ouvertures dans le boîtier, l'arrière ou le fond sont prévues pour la ventilation afin d'assurer un fonctionnement fiable du produit et le protéger de la surchauffe. Ces ouvertures ne doivent pas être obstruées ou couvertes. Les ouvertures ne doivent jamais être bloquées en plaçant l'appareil sur un lit, un canapé, un tapis ou autre surface similaire. Ce produit ne doit jamais être placé : à proximité ou sur un radiateur, sur un registre de chaleur ou dans une installation intégrée à moins qu'une ventilation adéquate soit prévue.
7. Ce produit doit être utilisé avec le type d'alimentation indiqué sur l'étiquette.Si vous n'êtes pas sûr du type d'alimentation disponible, consultez votre revendeur ou représentant local de l'entreprise.
8. Ne laissez rien reposer sur le cordon d'alimentation. Ne placez pas ce produit là oùdes personnes peuvent marcher sur le cordon.
9. N'introduisez jamais d'objets d'aucune sorte dans ce produit à travers les fentes du coffret car ils pourraient entrer en contact avec des points sous tension dangereux ou court-circuiter des pièces. Ne renversez jamais de liquide d'aucune sorte sur le produit.
10. Pour éviter tout risque de choc électrique, cet équipement ne doit être branché que sur une prise secteur avec terre.
11. Aucune modification de cet équipement n'est autorisée.
12. L'alimentation est spécifiée comme faisant partie du matériel médical.
13. L'ordinateur médical peut être nettoyé conformément aux pratiques de nettoyage cliniques habituelles, notamment en essuyant avec de l'eau ou des lingettes de qualité médicale, à condition qu'aucune substance contenant des acides ou des liquides de nettoyage alcalins ne soient utilisés.
14. Les lingettes de qualité médicale ne doivent pas contenir plus de 75% d'alcool par rapport au contenu total de la lingette.
15. L'opérateur ne doit pas toucher le patient lorsqu'il utilise l'ordinateur médical.

FCC

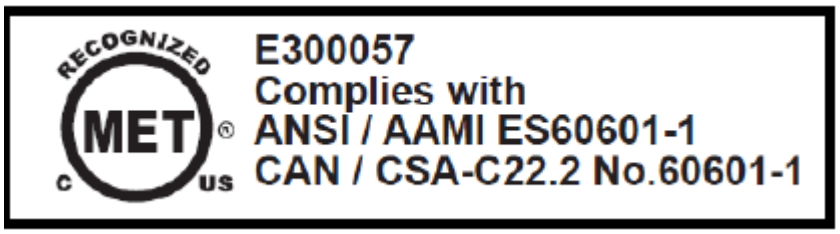
This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

a) This device may not cause harmful interference.
b) This device must accept any interference received, including interference that may cause undesired operation.

CE MARK

This device complies with the requirements of the EEC directive 2014/30/EU with regard to “Electromagnetic compatibility” and 2014/35/EU “Low Voltage Directive”.

EU legislation	UK legislation
Electromagnetic Compatibility - Directive 2014/30/EU	Electromagnetic Compatibility Regulations 2016
Low Voltage Directive 2014/35	Electrical Equipment (Safety) Regulations 2016
Radio equipment - Directive 2014/53/EU	Radio Equipment Regulations 2017



CAUTION ON LITHIUM BATTERIES

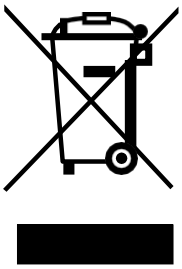
There is a danger of explosion if the battery is replaced incorrectly. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer’s instructions.

Battery Caution

Risk of explosion if battery is replaced by an incorrectly type. Dispose of used battery according to the local disposal instructions.

LEGISLATION AND WEEE SYMBOL

2012/19/EU Waste Electrical and Electronic Equipment Directive on the treatment, collection, recycling and disposal of electric and electronic devices and their components.



The crossed dust bin symbol on the device means that it should not be disposed of with other household wastes at the end of its working life. Instead, the device should be taken to the waste collection centers for activation of the treatment, collection, recycling and disposal procedure.
To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract.

This product should not be mixed with other commercial wastes for disposal.

IEC standards

Accessory equipment connected to the analog and digital interfaces must be in compliance with the respective nationally harmonized IEC standards (i.e. IEC 60950 for data processing equipment, IEC 60065 for video equipment, IEC 61010-1 for laboratory equipment, and IEC 60601-1 for medical equipment.)
Furthermore, all configurations shall comply with the system standard IEC 606 01-1. Anyone who connects additional equipment to the signal input part or signal output part is configuring a medical system, and is therefore, responsible that the system complies with the requirements of the system standard IEC 60601-1.
The unit is for exclusive interconnection with IEC 60601-1 certified equipment in the patient environment and IEC 60XXX certified equipment outside of the patient environment. If in doubt, consult the technical services department or your local representative.

Symbol Definition

Symbol	Definition	Symbol	Definition
	ISO 7010 - M002: Instructions for use		IEC 60417 - 5032: Alternating Current
	ISO 15223-1: 2021: Medical Device		ISO 7000 – 2497: Data of manufacture
	IEC 60417 - 5009: STAND-BY		IEC 60417 - 5031: Direct Current
	Handle with care		Fragile
	Keep away from rain		This side up

Consult instructions for use or consult electronic instructions for use

Troubleshooting

For your own safety and that of your equipment, always take the following precautions. Disconnect the power plug (by pulling the plug, not the cord), from your computer if any of the following conditions exists:

1) You suspect that your computer needs service or repair.
2) You want to clean the computer or screen.
3) Your computer has been dropped or damaged.
4) The power cord or plug becomes frayed or otherwise damaged.
5) You spill something into the system.

Repair of the device may only be carried out by the manufacture.
We that a service contract be obtained with supplier and that all repairs also be carried out by them. Otherwise the correct functioning of the device may be compromised.

1) Please use suitable mounting apparatus to avoid risk of injury. It shall be mounted by trained and authorized personnel on adequate allowances for quality of materials used to make the connection.
2) In case of serious incident that has occurred, please contact the manufacturer and local authorities immediately.
3) To prevent unauthorized access, it is recommended to install suitable anti-virus software or do not connect to unsafe external networks.
4) It is recommended to install the appropriate software, if have any question, please contact the manufacturer for further assistance.

Revision History

Changes to the original user manual are listed below:

Revision	Description	Date
1.0	• Initial release	June,2022

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1 Instructions for use

The Medical Computer is a computing device capable of storing, retrieving and sending data electronically. This Medical Computer, including its user interface, RTC battery, PCB and power supply, the device can be attached with VESA wall mount in medical care environment. wall mount in medical care environment.

This Medical Computer Hardware System is intended to be used in a professional medical setting, by authorized doctors, nurses or patients only...

Application:

1) Access to patient records
2) Hospital administration system
3) Bed management.

Cleaning method

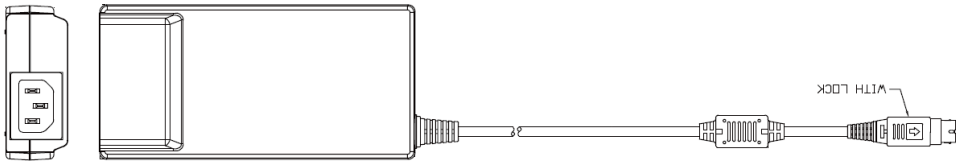
1) Turn off the system and disconnect the power cord and remove batteries before cleaning the system.
2) monitor can be cleaned by wiping external surface of enclosure with ethanol solution, as needed between uses.
3) The monitor can be cleaned by wiping external surface of enclosure with ethanol (not morethan75%) solution, 2 times a week.
4) Spread the cleaning liquid on to a sponge or cloth and then wipe the touch screen gently.
5) When wiping, avoid any openings and gaps and be careful not to allow liquid to seep into the place.

2 Packing List

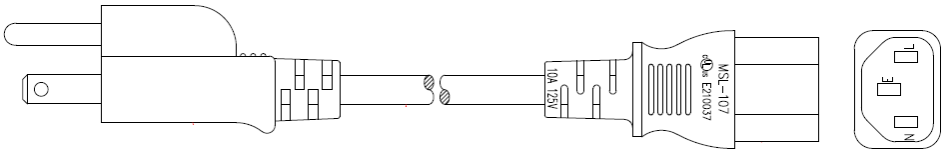
2.1 Standard Items

A. System

B. Power adapter



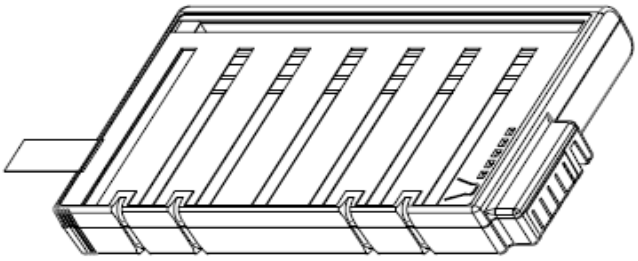
C. Power cord



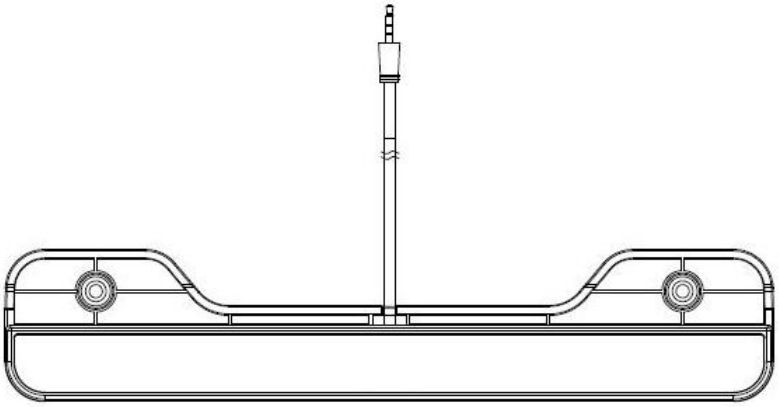
Note: Power cord will be supplied differently according to various region or country.

2.2 Optional Items

A. Removable Backup Battery
DR-202-GA / RRC-2020

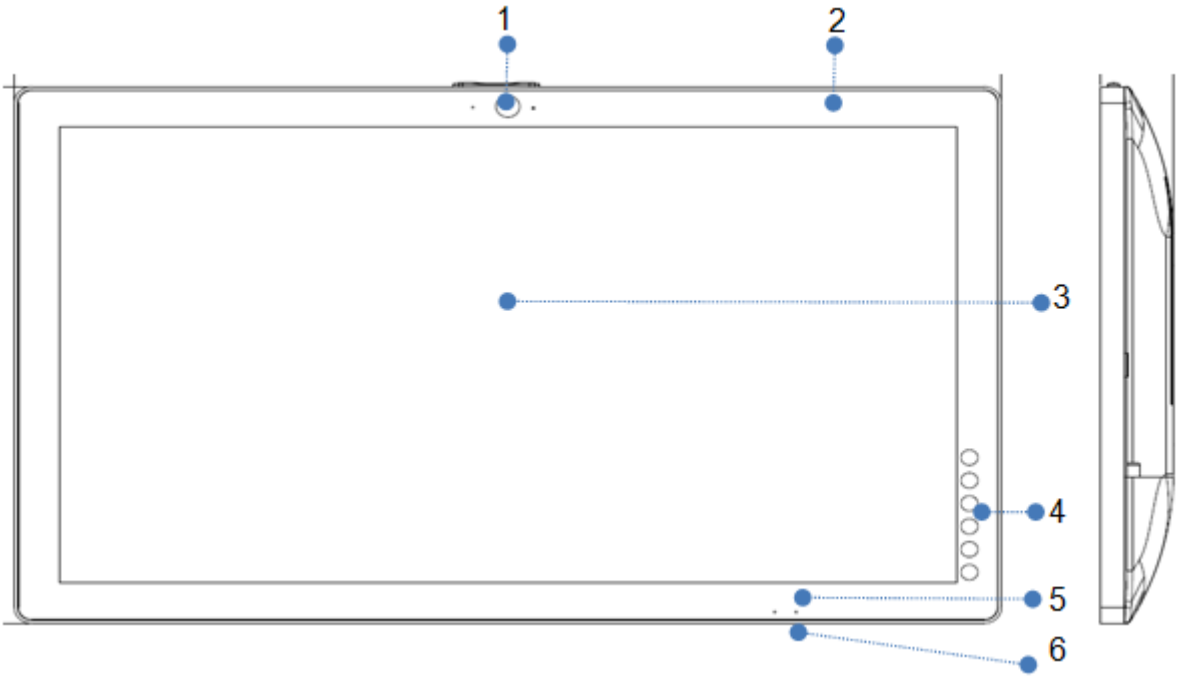


B. Speaker Box



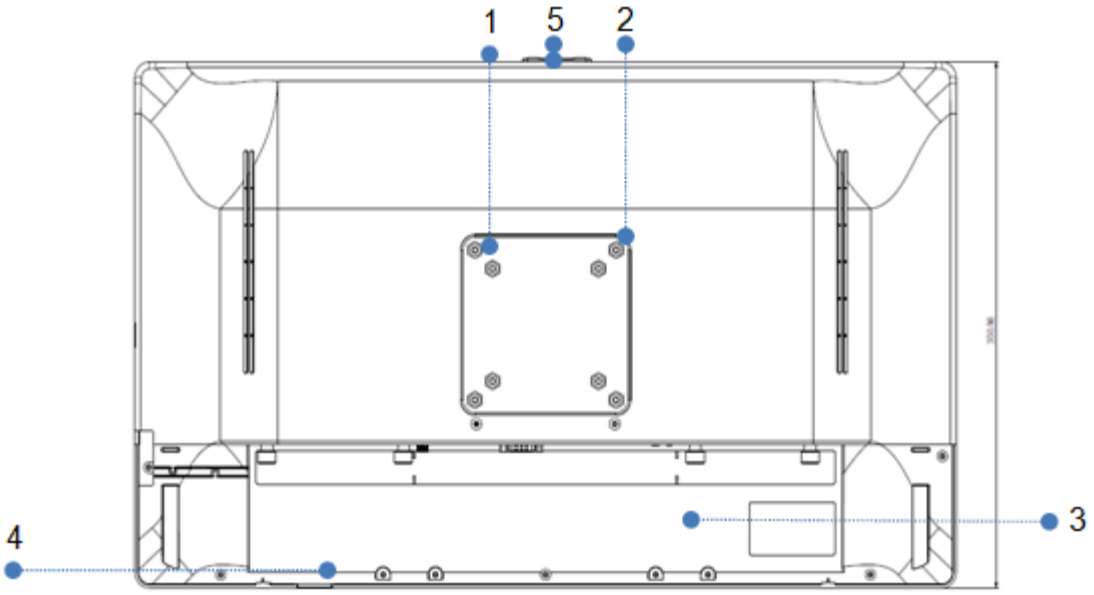
3 System View

3.1 Front & Side View



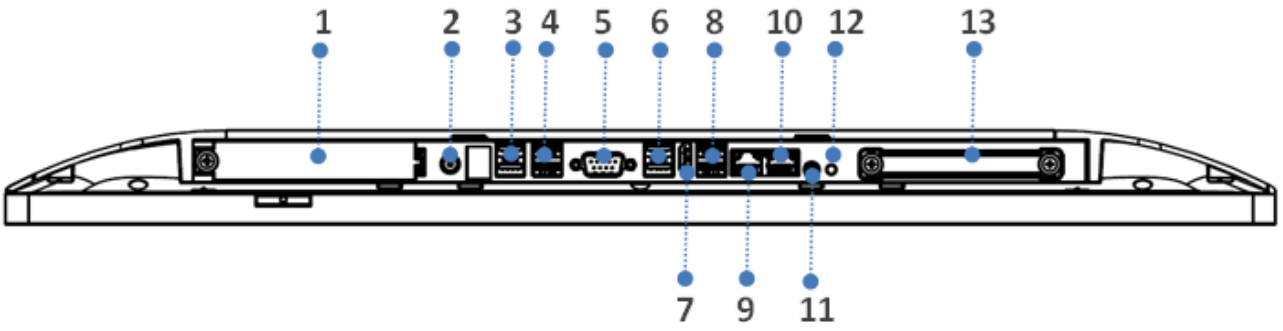
Item No.	Description
1	Front Camera (5M)
2	RFID
3	23.8” true flat PCAP multi-touch
4	Function keys: • *Brightness up* • *Brightness down* • *Volume up* • *Volume down* *Touch Lock*
5	*LED Indicator Light:* • *Batteries status* • *Power status*
6	Power button

3.2 Rear & Bottom View



Item No.	Description
1	75 x 75 VESA mounting holes
2	100 x 100 VESA mounting holes
3	Cable door
4	LED Indicator Light
5	Camera Privacy Latch

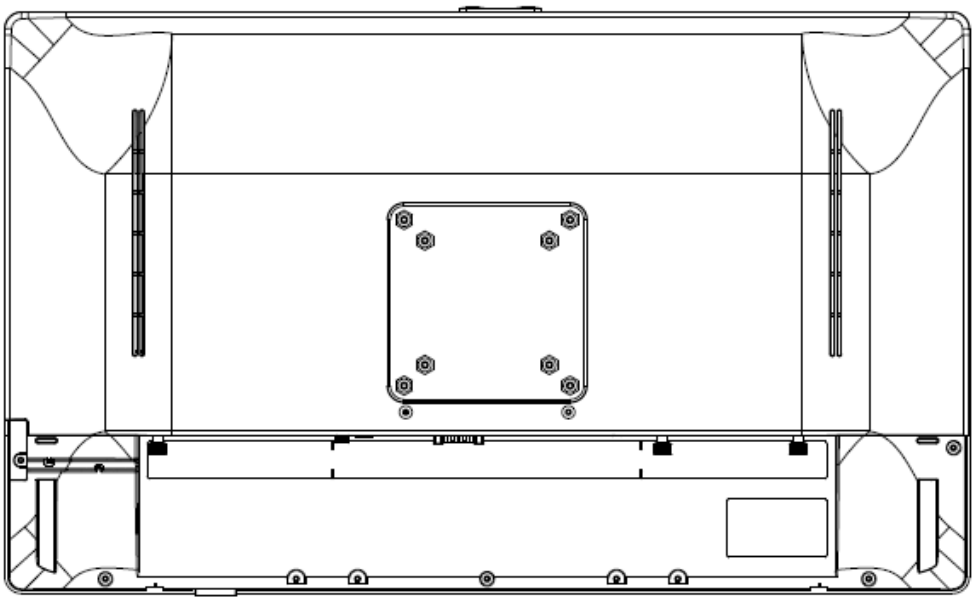
3.3 I/O View

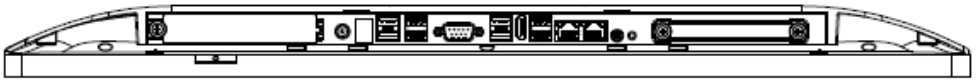


Item No.	Description
1	Battery Cover / Battery slot
2	DC input
3	USB 2.0(x2)
4	USB 3.0(x2)
5	Serial port 1
6	USB 2.0(x2)
7	HDMI USB 3.0(x2)
8	USB 3.0(x2)
9	LAN1
10	LAN 2
11	Speaker BOX
12	Power button
13	HDD Cover / 2.5” HDD Slot

3.4 Dimension

Dimensions(W x D x H) : 581 x 351 x 44 mm





4 Basic Operation

This device is only intended to be used as SIP/SOP facing downward.

4.1 Powering ON &OFF

To activate the system, push and quickly release the power button and the display will come on in a few seconds.

NOTE: The system must be plugged into power adapter or battery charged before turning on for the first time.
To turn off the system, power off the device safely using software “function that “shuts down computer” provide 12din the operating system.

4.2 Charging the Battery

System with hot-swappable battery.

1. Requires DC power for Hot Swappable
2. The batteries may be charged by connecting the supplied power adapter directly to the DC-in port on the system.
3. Open the cable cover and plug the cable directly into the connector. Then plug the adapter directly into the power outlet.
4. Status will show the capacity of each battery.

DC in mode : Plugged in and charging

Battery mode : Discharging

4.3 Battery Level Indication

Each battery provides a battery level indicator LED on the front of the system. The signal charge status are as follows:

LED_1 (blue light) Power Status:

No AC input (no light)
PWRON_LED (constant light)
Standby LED (flashing)

LED_2 (orange light) Battery Status:

Normal (no light)
Charging (constant light)
Low battery voltage (flashing)

5 System Assembly

5.1 Opening the Cable Cover

1. Place the system face down, make sure not to scratch the screen.
2. Press and pull the cable cover outwards to release it from the system.

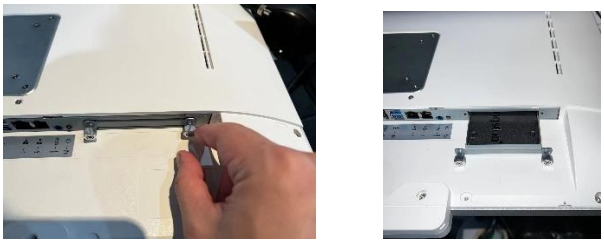
5.2 Replacing the Battery

1. Place the system face down, make sure not to scratch the screen.

5.3 Replacing the HDD

1. The system does not support hot-plug hard drives.

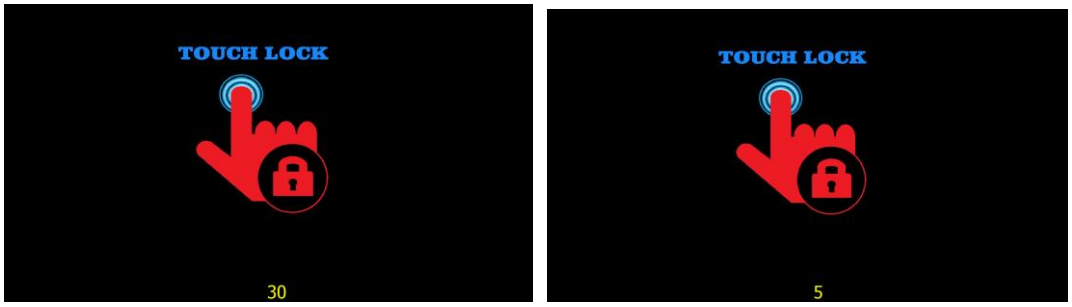
2. Place the system face down, make sure not to scratch the screen.



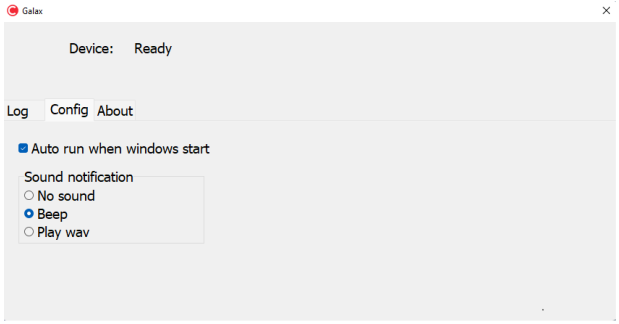
5.4 How to use screen lock

1. After installing the Touch lock driver.
2. Press and hold the Touch lock icon for 5 seconds.

3. A 30-second countdown to Touch Lock will appear on the screen
4. When there are 5 seconds left, there will be a warning sound to inform that the Touch Lock function will be terminated.



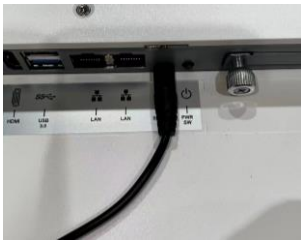
5. Different alert sounds can be modified in the driver settings.



5.5 How to install speaker box and screws required

1. Speaker box module includes Speaker box and 2 screws (m3 x 10mm)

2. Install the speaker box audio cable on the audio jack of the speaker icon.



3. Install two M3 x10mm screws to fix the speaker box.

Operation Caution

We recommend that contacting your service contract to assemble and remove such parts.

6 Specification

Model Name	TM-5900-24
CPU	*11th Generation Intel Tiger Lake (w/o vPro)* *Celeron 6305E / i3-1115GRE / i5-1135-G7 / i7-1165G7*
System memory	DDR4 2133 MHz (32GB Max); 2 Channel
LCD/Touch Panel	
LCD size	23.8" LED LCD
Brightness	250 nits
Maximal resolution	1920 x 1080
Touch screen type	True flat projected capacitive touch
HDD/SSD	
HDD	2.5" Slim HDD bay, SATA HDD
M.2 SSD	M.2.B/M (2280): 64GB-1TB
Peripherals	
Web cam	5MP / Wide View angle 110 Degrees
Microphones	2 x Built-in Microphones
WIFI/BT	Wi-Fi 802.11 a/b/g/n/ac: Bluetooth 5.2
RFID	RFID pcProx® Nano OEM Module
External I/O Ports	
USB	4x USB 2.0, 4x USB 3.0
Serial / Com	1 x COM
Ethernet / LAN	2 x RJ45GbE LAN
Video Outputs	1 x HDMI
Audio	1 x 3.5mm Speaker Box Jack / Compatible with Speaker Box Expansion module
DC jack	1 x Lock type (2pin) / Barrel type with threaded lock
Control/ Indicate	
Power button	1
LED indicator	1_LED (blue light) Power Status 1_LED (orange light) Battery Status
Audio	
Speaker	2 x 3W (Max)
Power	
Power adapter	19V /4.74 Amp AC/DC Adapter
Battery	
Removable/Swappable battery	1 x hot swappable battery
Environment	
EMC & Safety	FCC/CE Class B
Certification	ANSI/AAMI ES60601-1:2005/(R) 2012; CAN/CSA-C22.2 No. 60601-1:14 (R2018) Medical electrical equipment — Part 1: General requirements for basic safety and essential performance, Rev. November 2018
Operating **Temperature**	0°C ~ 35°C (32°F ~ 95°F)
Storage/Transportation	-20° ~ 60°C (-4°F ~ 140°F)

Model Name	TM-5900-24
Temperature	
Operating /Storage/ Transportation **Humidity**	10% - 90% RH non-condensing
Atmospheric Pressure Range	700~1060hPa
Dust & Water proof	IP 65 (front panel)
Dimensions (W x D x H)	581 x 351 x 44 mm (22.9 x 13.8 x 1.69 in)
Weight (N.W.)	N.W: 7.3 KG
Mounting	VESA mount holes (max: M4* 6mm) 75 x 75 mm /100 x 100 mm
OS support	Windows IOT, Pro 10 /11(64-bit)

*This specification is subject to change without prior notice.

Manufactory information:

Factory: TEGUAR Corporation

Address: 2920 Whitehall Park Drive Charlotte, NC 28273

http://www.teguar.com

Adaptor Manufacturer:

Company	Model	AC rating
FSP Group Inc	**FSP090M-RBA**	I/P: 100-240Vac, 1.5A, 47-63Hz

*These adapters are the forming part of the

Device. Battery Manufacturer:

- Japone Technology Inc. / Model: DR-202-GA
- RRC Technology Inc. / Model: RRC-2020

Notice:

1. The battery will be set to shipping mode when shipped.
2. It is suggested to charge the battery every 3 months if it is not used.
3. Use only the following specification power cords: 18AWGmin., Type SJT, 125V/10A, UL or CSAl is ted, 3m max, hospital grade (if applicable for US/Canada market).
4. In Europe and United Kingdom, the three-core power cord must be 3x0.75mm^2, Type H05VV-F, 250V/6A, VDE or BSI, 3m max.

7 BIOS Introduction

BIOS (Basic Input Output System) is the basic program responsible for motherboard POST (Power-On-Self-Test), initializing the central processing unit, memory and other hardware, detecting input/output devices and booting the system.

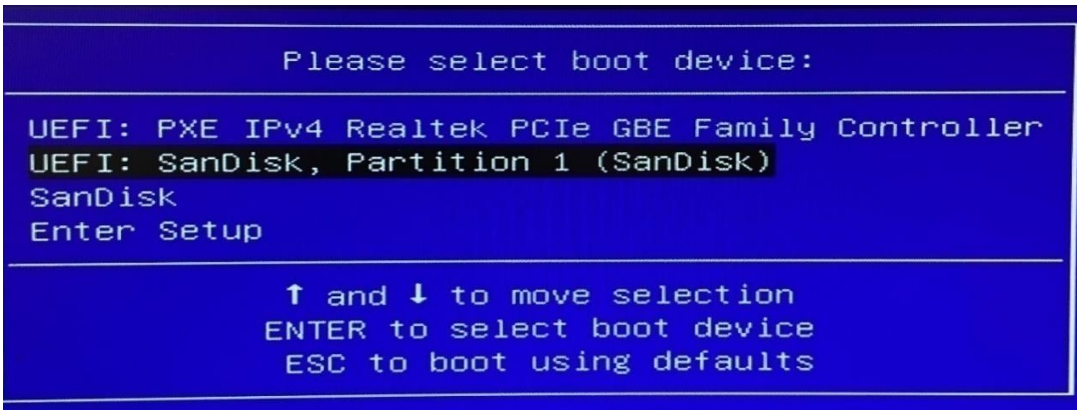
BIOS of this platform is developed based on AMI UEFI (Unified Extensible Firmware Interface) BIOS, which is safe, stable, reliable and provides rich functions.

It supports to update BIOS under UEFI Shell and Windows 10 environment.

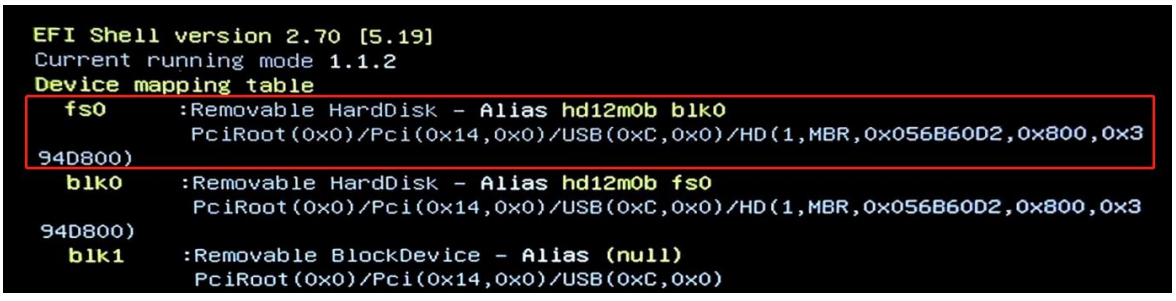
7.1 General BIOS Update

7.1.1 Updating BIOS under UEFI Shell Environment

1) Connect the U disk which stores BIOS update tool and BIOS file to the motherboard. Turn on the board, while screen displays POST interface, press “F7” key. After this, screen shows boot device selection menu, select “UEFI: Built-in EFI Shell” to boot.

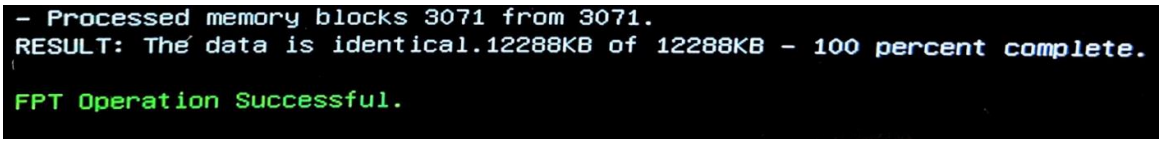


2) After entering into UEFI Shell, Find USB disk number under Device mapping table as shown in the figure below. In the figure, USB is mapped to **fs0**:(while there are more than one storage devices, the mapping number may not be [0]), and then type “fs0:” and press “Enter” key.



3) Use the “**cd [folder path]**” command to enter the directory where the update tool and BIOS files are store. After this, type the command “**Fpt.efi /f [BIOS File Name] /bios**” to update BIOS, where “/f” means flash the ROM, “/bios” means flash the BIOS region only.

4) After the step 3), it goes to update BIOS. Do not reboot, turn off and disconnect power until screen shows green strings" FPT Operation Successful".

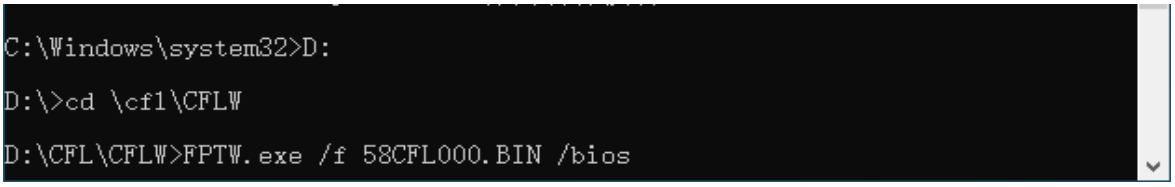


5) Press power button and disconnect power source for several seconds, and restart the motherboard. The first-time power on, it will reboot for loading defaults and others normally. It is recommended that press "F3-Enter-F4-Enter"in BIOS Setup Utility to load defaults again.

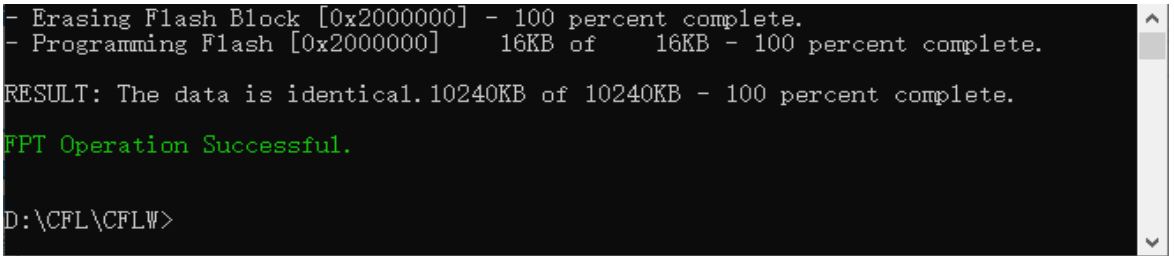
6) Do not reboot, turn off, disconnect power or perform other actions while updating BIOS.

7.1.2 Updating BIOS under Windows Environment

1) Run Windows command prompt as administrator;
2) Type "driver letter:", for example "D:", enter to the partition where stores update tools and BIOS file. Use the "**cd [folder path]**" command to enter the directory.
3) Type the command "**FPTW.exe /f [BIOS File Name] /bios**" to update BIOS, where "/f" means flash the ROM, "/bios" means flash the BIOS region only.



4) After the step 3), it goes to update BIOS. Do not reboot, turn off and disconnect power until screen shows green strings "FPT Operation Successful".



5) Shut down and disconnect power source for several seconds, and restart the motherboard. The first-time power on, it will reboot for loading defaults and others normally. It is recommended that press "F3-Enter-F4-Enter"in BIOS Setup Utility to load defaults again.

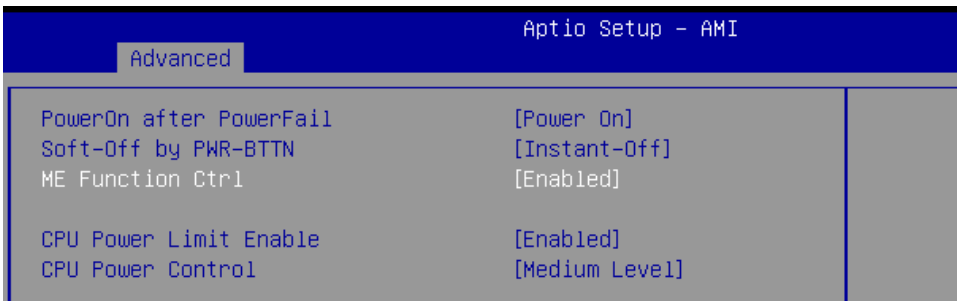
7.1.3 Updating BIOS under Linux Environment

Please refer to the update method under Windows. Administrator under Windows means that Linux Root privilege, command prompt corresponds to Linux Shell.

7.2 Intel ME Firmware Update

7.2.1 Updating Intel ME Firmware under UEFI Shell Environment

1) Press “Delete” to enter BIOS Setup Utility while POST screen shows, set “Advanced–Power Control - ME Function Ctrl” to “Disabled”.



2) Press power button and **keep power source connected,** and then power on the board. Do the step 1) and 2) in part 2.1.1.

3) Use the “**cd [folder path]**” command to enter the directory where the update tool and BIOS files are store. After this, type the command “**Fpt.efi /f [BIOS File Name]**” to update BIOS, where “/f” means flash the ROM, no “/bios” means that flash the whole ROM region.

If it shows red warning strings, there is no write access to ME region generally. Please redo step 1) and 2) in this part.

4) After the step 3), it goes to update BIOS. Do not reboot, turn off and disconnect power until screen shows green strings” FPT Operation Successful”.

5) Press power button and disconnect power source for several seconds, and restart the motherboard. The first-time power on, it will reboot for loading defaults and others normally. It is recommended that press “F3-Enter-F4-Enter”in BIOS Setup Utility to load defaults again.

Please re-brush the MACorSeek technical support to provide an upgrade package while there is an intel i219 network adapter.

7.2.2 Updating Intel ME Firmware under Windows Environment

1) Press “Delete” to enter BIOS Setup Utility while POST screen shows, set “Advanced - Power Control - ME Function Ctrl” to “Disabled”.

2) Press power button and **keep power source connected,** and then power on the board. Do the step 1) and 2) in part 2.1.2.

3) Type the command “**FPTW.exe /f [BIOS File Name] /bios**” to update BIOS, where “/f” means flash the ROM, no “/bios” means that flash the whole ROM region.

4) After the step 3), it goes to update BIOS. Do not reboot, turn off and disconnect power until screen shows green strings” FPT Operation Successful”.

5) Shut down and disconnect power source for several seconds, and restart the motherboard. The first-time power on, it will reboot for loading defaults and others

normally. It is recommended that press “F3-Enter-F4-Enter”in BIOS Setup Utility to load defaults again.

7.2.3 Updating Intel ME Firmware under Linux Environment

Please refer to the update method under Windows. Administrator under Windows means that Linux Root privilege, command prompt corresponds to Linux Shell.

7.3 Enter BIOS Setup Utility and Basic BIOS Operation

AMI UEFI BIOS supports Multiple function settings with it’s BIOS Setup Utility. Press “Delete” to enter BIOS Setup Utility while POST screen shows.

In the BIOS Setup Utility, the meaning of different font colors and signs is as follow：

Color/Sign	**Meaning**
Blue	Items allowed to be set or changed
Black	Items that cannot be set or changed
White	Items currently selected
►	There are submenu pages for this option

The operation keys are described as follows：

Control button	
→←	Select Screen
↑↓	Select Item
<Enter>	Select
+/-	Change Option
F1	General Help
F2	Previous Values
F3	Optimized Defaults
F4	Save & Exit
F7	In the post interface, press to open the boot selection menu
<Esc>	Exit

7.4 Save Changes

Operation steps:

1) Press F4 to save the settings and exit in the BIOS Setup Utility.

7.5 Setting Date & Time

Operation steps:

1) Enter BIOS, and in the main menu page. Select system date and system time by "↑↓" key.
2) On the selected item, change the selected date or time by entering a numeric value or pressing "+ / -". Date format is "month / day / year", time format is "hour / minute / second".

7.6 Set BIOS password

When you set up an administrator password, it is recommended that you enter the administrator password when you enter the BIOS setup program to avoid some BIOS information or settings that are unavailable because user rights are insufficient (no password is entered as a user).
When you set a user password, you must use the user password to access the BIOS setup program, which means that you need to enter the user password when booting the operating system (using the BIOS boot feature).

Set/Change the Administrator Password Procedure:

1) Select "Security - Administrator Password";
2) Enter the password you want to set in the "Create New Password" window and press enter. You will need to enter your current password to confirm when changing your administrator password before the "Create New Password" window;
3) Enter the password you want to set again to make sure it is entered correctly.

When you want to delete an administrator password, you should change the password by pressing carriage return directly in the Create New Password window to clear the password.

Set/Change the User Password Procedure:

1) Select "Security - User Password";
2) Enter the password you want to set in the "Create New Password" window that appears and press enter. You will need to enter the current password to confirm when changing the user's password before the "Create New Password" window;
3) Enter the password you want to set again to make sure it is entered correctly.

When you want to delete a user password, you should change the password by pressing carriage return directly in the Create New Password window to clear the password.

7.7 Set Up Power-on Self & Timed Power On

Set Up Power-on Self:

1) Select “Advanced - Power Control–PowerOn after PowerFail”;
2) Change “PowerOn after PowerFail” value: Power Off, Power On, Last State.

Set Up Timed Power On:

3) Select “Advanced - S5 RTC Wake Setting – Wakesystemfrom S5”;
4) Change it from Disabled to Fixed Time;
5) Set the point in time to customize the boot settings in the “Wake up day, Wake up hour, Wake up minute, wake up second” that appears. Such as day: 2, hour: 13, minute:0, second:0 means 2nd of each month at 13 o'clock on the boot. When day is 0, it means that the point in time set every day is turned on.

7.8 Set Up Fan Control & Hardware Monitoring

Set Up Fan Control:

1) Select “Advanced – Hardware Monitor – Fan Function” item (This menu shows only this function is supported);
2) Select the fan to set up, such as “CPU_FAN1 Mode”. Select the operating mode for this fan: Full on Mode, AutomaticMod, Manual Mode；
3) After selecting manual Mode manual speed mode, the Manual PWM Setting input PWM (set range 0-255) value specifies the fan speed;
4) After selecting Automatic Mode, there will be Fan off temperature limit, Fan start temperature limit, Fan start PWM, PWM SLOPE SETTING options to set up.
5) Generally due to differences in fan performance, the actual performance of smart fans will differ from the set value, it is generally recommended to set THE PWM SLOPE SETTING to 8PWM to ensure that the fan speed with the temperature rise speed.

7.9 Set Up Chassis Open Detection

Set Up Chassis Open Detection：

1) Select “Advanced - Super IO Configuration - CHASSIS OPEN” items (This menu shows only this function is supported);
2) Set the item to “Enabled”.

When the open-box detection cap is shorted, the chassis is considered to have been compromised. The post interface will prompt the chassis for intrusion alarms and the status

record needs to be cleared to close the alarm.

Clear Chassis Open Status：

3) In the BIOS Setup Utility, press the F3 key and enter key to load the optimization default value. Then save & exit to clear the out-of-box status record.

7.10 Instructions for the Display Settings

Instructions for the Display Settings:

1) Advanced–LVDS Control:
2) It can be controlled LVDS by modifying the options;
3) Advanced - Display Configuration - LCD Panel Type:
4) When the motherboard supports LVDS/eDP display, it is used to change the built-in screen output resolution;

Built-in screen-related options are displayed when the motherboard is supported, and the options vary more, please take the actual BIOS of the motherboard as the prevailing. The built-in screen option setting values should match the actual screen-to-screen specifications, otherwise it may cause an abnormal display.

7.11 Setting Boot Order of Startup Disk

Set Boot Sequence:

1) Select “Boot” menu page；
2) Change “Boot Option#1”to the desired device；
3) If there are more than one similar device, such as more than one hard drive. Enter “Hard Disk Drive BBS Priorities” and change the boot order priority between multiple drives first.

When the Boot page has the Boot mode select option, it is recommended that the value of dual so that both Legacy and UEFI boot projects can be booted. UEFI boot items will be filtered when selected for Legacy, and legacy boot items will be filtered when selected as UEFI.

7.12 Setting PXE Boot

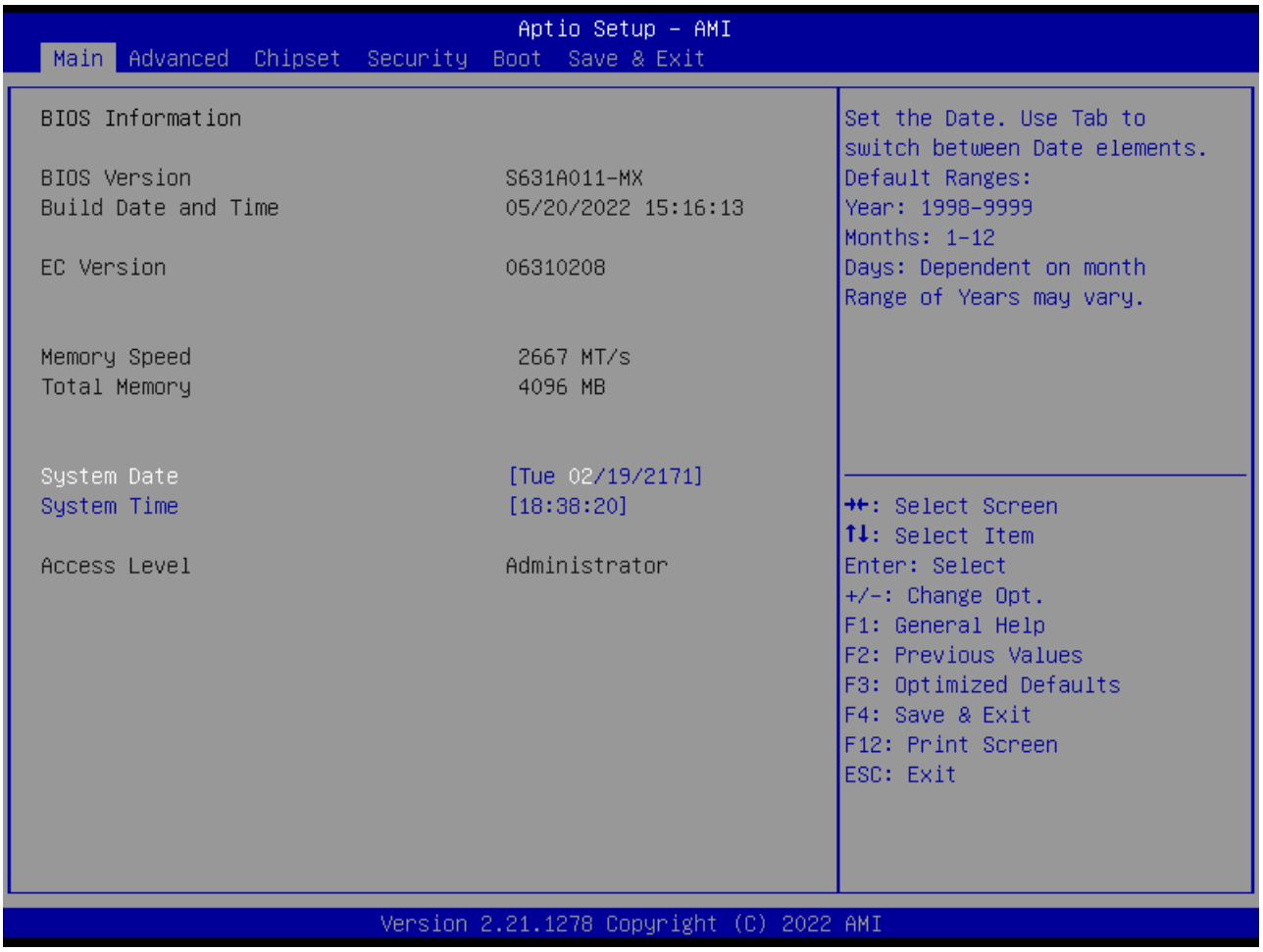
Open UEFI PXE:

1) Please select the “Advanced - Network Stack Configuration ”item;
2) Set Network Stack or UEFI PXE to Enabled；

7.13 Description of the BIOS Options

Due to the differences in the specific model of the motherboard and the update of the BIOS version, there may be a few menus that do not match this manual, please take the actual basis.

7.13.1 Main



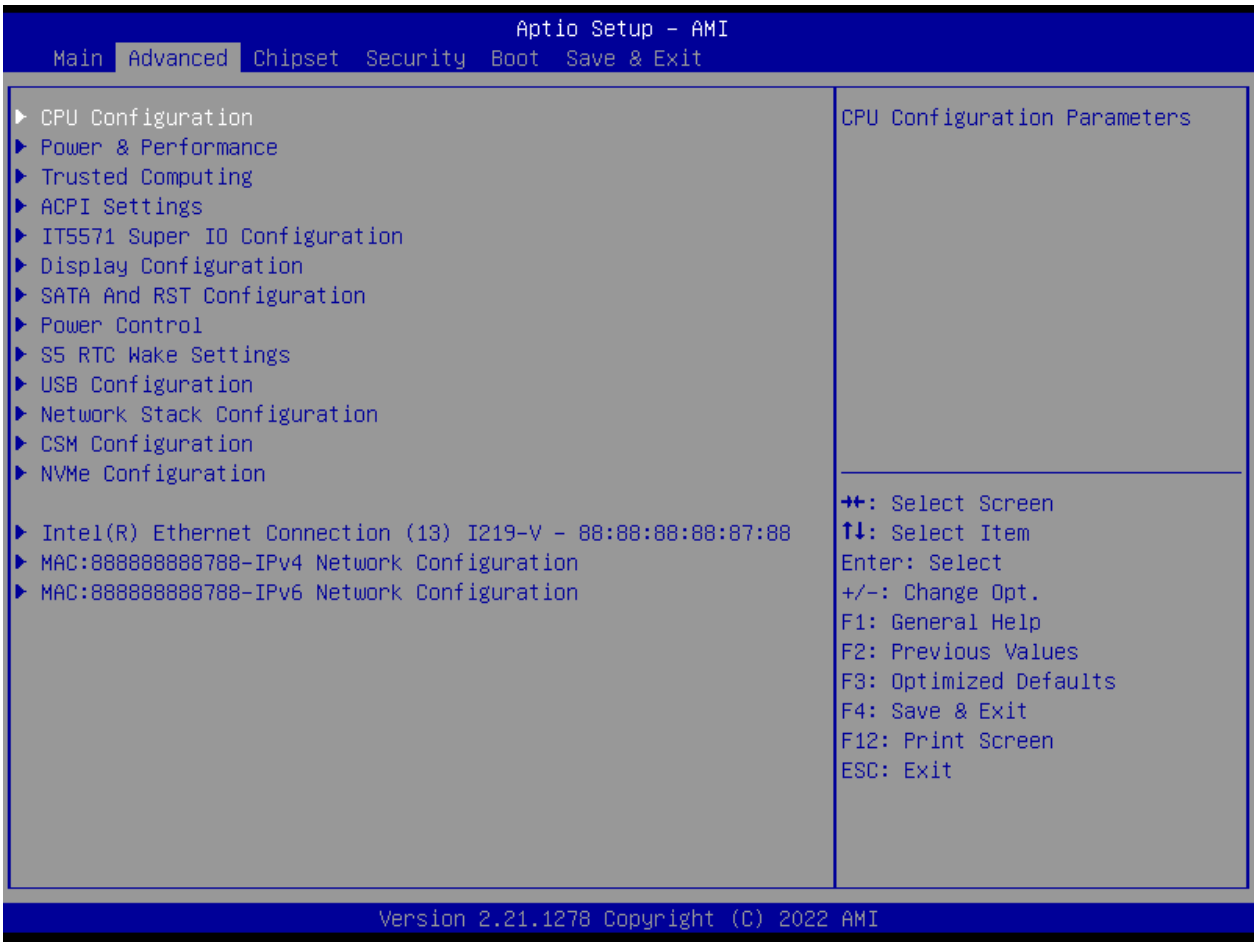
This menu contains the following information:

- BIOS Version
  Display BIOS Version Information
- Build Date and Time
  Display BIOS Date and Time
- EC Version
  Display current EC Version
- Memory Speed
  Display the Memory Speed
- Total Memory
  Display the Total Memory
- System Date
  Set the System Date. Date format is “month/day/year”. Use Tab to switch between Date elements. Make the modification by entering the number or pressing the “+/-” key.
  Default Ranges:

Year: 2005-2099
Months: 1-12
Days: dependent on month

- System Time
  Set the system time. Time format is “hh/mm/s”. Use Tab to switch between Time elements. Make the modification by entering the number or pressing the key of “+/-”. The setting value should meet the time format requirements.
- Access Level
  Display the current access level to BIOS Setup Utility.

7.13.2 Advanced

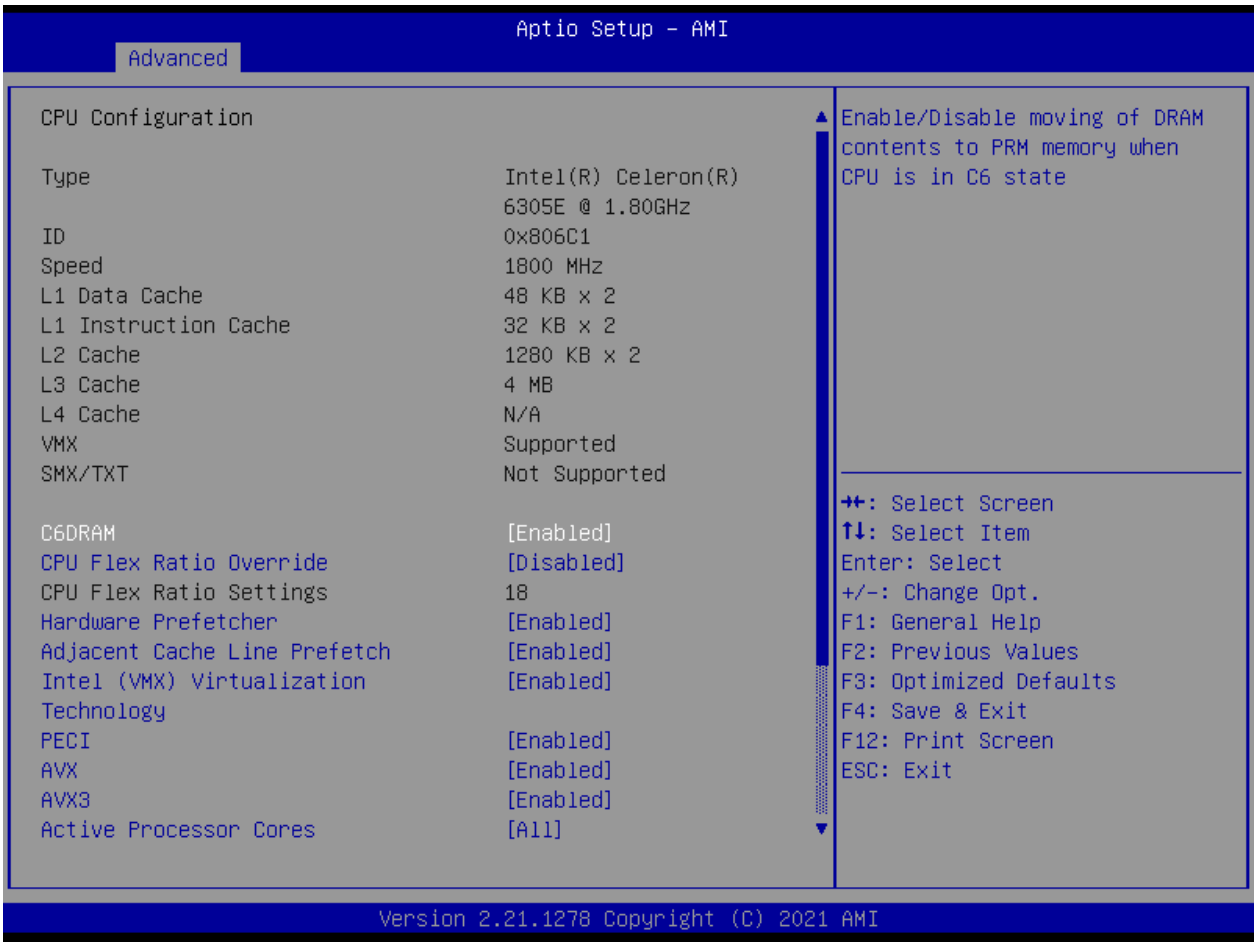


This menu contains the following information:

- CPU Configuration
  CPU Configuration Parameters
- Power & Performance
  Power & Performance option
- Trusted Computing
  Trusted Computing Settings
- ACPI Settings
  ACPI(Advanced Configuration and Power Management Interface) Parameters
- IT5571 Super IO Configuration
  System Super IO Chip Parameters
- Display Configuration
  Display Configuration Parameters

- SATA and RST Configuration
  SATA Device options settings
- Power Control
  Power Button Control Settings
- S5 RTC Wake Setting
  Enable system to wake from S5 using RTC alarm.
- USB Configuration
  USB Configuration Parameters
- Network Stack Configuration
  Network Stack Settings
- CSM Configuration
  CSM (Compatibility Support Module) Configuration: Enable/Disable, Option ROM execution settings, etc.
- NVMe Configuration
  NVMe Device Options Settings
- Intel (R) Ethernet Controller (3) I225-V-00:A0:C9:00:00:00
  Configure Gigabit Ethernet device parameters

7.13.2.1 CPU Configuration



This menu contains the following information:

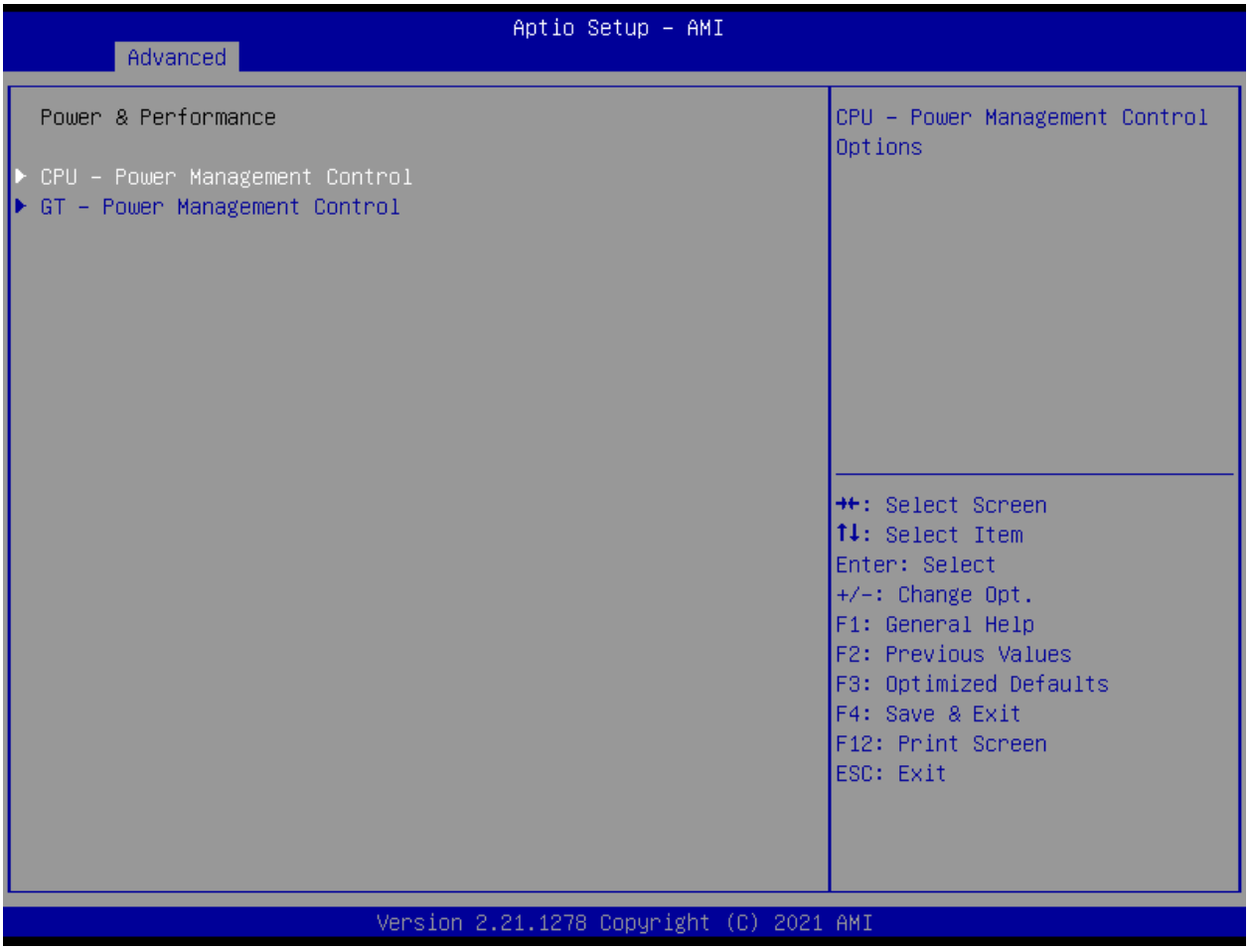
- Type

Display the Processor Type.

- ID
  Display the Processor ID.
- Speed
  Display the Processor Speed.
- L1 Data Cache
  Display the Processor L1 Data Cache size.
- L1 Instruction Cache
  Display the Processor L1 Instruction Cache size.
- L2 Cache
  Display the Processor L2 Data Cache size.
- L3 Cache
  Display the Processor L3 Data Cache size.
- L4 Cache
  Display the Processor L4 Data Cache size.
- VMX
  VMX Supported or Not
- SMX/TXT
  SMX/TXT Supported or Not
- C6DRAM
  Enable/Disable moving of DRAM contents to PRM memory when CPU is in C6 state
- CPU Flex Ratio Override
  Enable/Disable CPU Flex Ration Programming
- CPU Flex Ratio Settings 18
  CPU Flex Ratio value
- Hardware Prefetcher
  To turn on/off the MLC streamer prefetcher
- Adjacent Cache Line Prefetch
  To turn on/off prefetching of adjacent cache lines
- Intel (VMX) Virtualization Technology
  When enabled, a VMM can utilize the additional hardware capabilities provided by Vander pool Technology.
- PECI
  Enable /disable PECI
- AVX
  Enable/disable the AVX 2/3 Instructions
- AVX3
  Enable/disable the AVX 3 Instructions
- Active Processor Cores
  Number of cords to enable in each processor package
- BIST
  Enable/disable BIST (Built-In-Self Test) on reset
- AP threads Idle Manner
  AP threads Idle Manner for waiting signal to run
- AES
  Enable/disable AES (Advanced Encryption Standard)

- Machine Check
  Enable/disable Machine Check
- MonitorMWait
  Enable/disable MonitorMWait
- BIOS Guard
  Configure Tools Interface
- CPU SMM Enhancement
  CPU SMM Enhancement Settings

7.13.2.2 Power & Performance



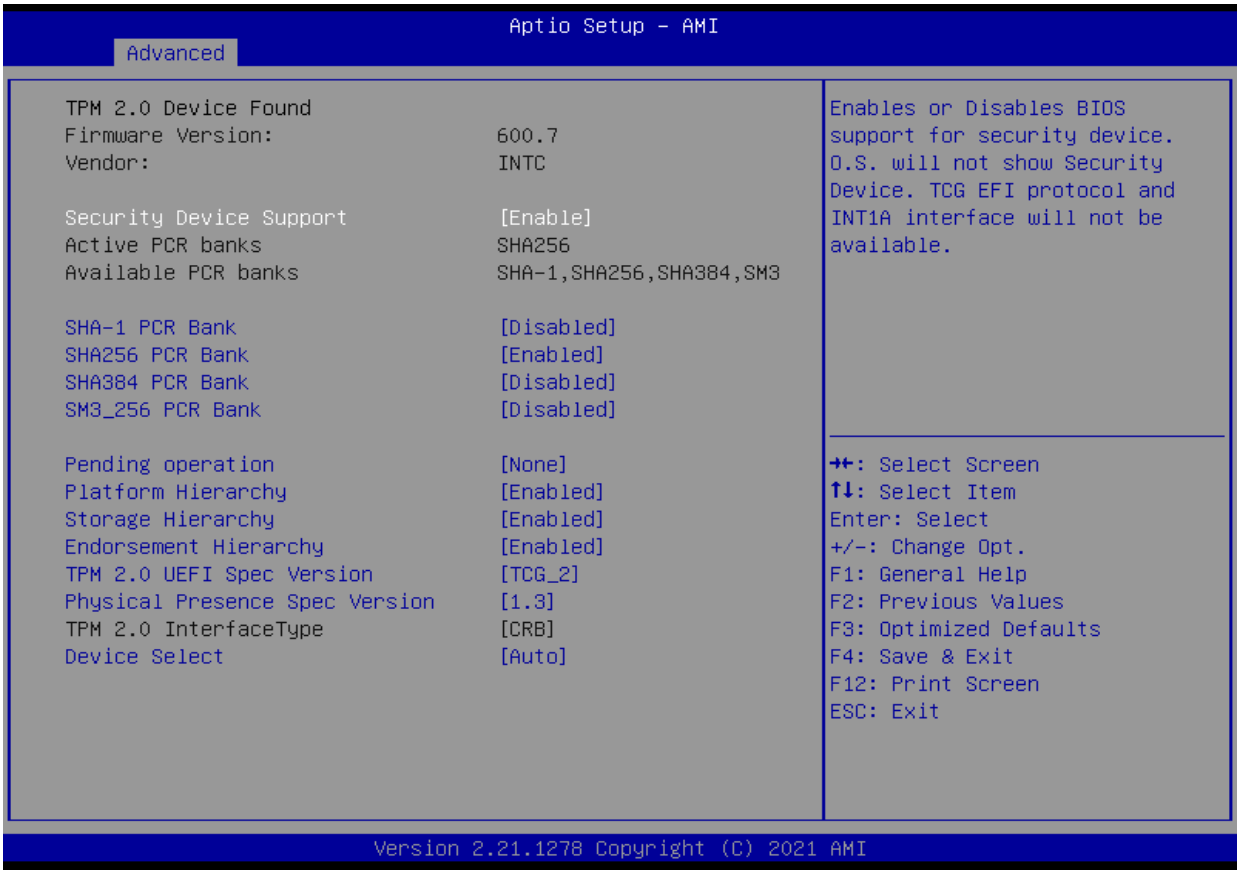
This menu contains the following information:

- CPU-Power Management Control
  CPU-Power Management Control Options

  The options after entering the interface settings above are as follows.
  Set Parameters of CPU-Power Management Control, please refer to the actual BIOS interface for relevant parameters
- GT-Power Management Control
  GT-Power Management Control Options

  The options after entering the interface settings above are as follows.
  RC6(Render Standby): Check to enable render standby support
  Maximum GT frequency : Maximum GT frequency limited by the user. Choose between 100MHZ and 1300MHZ. Value beyond the range will be clipped to min/max supported by SKU.

7.13.2.3 Thrusted Computing



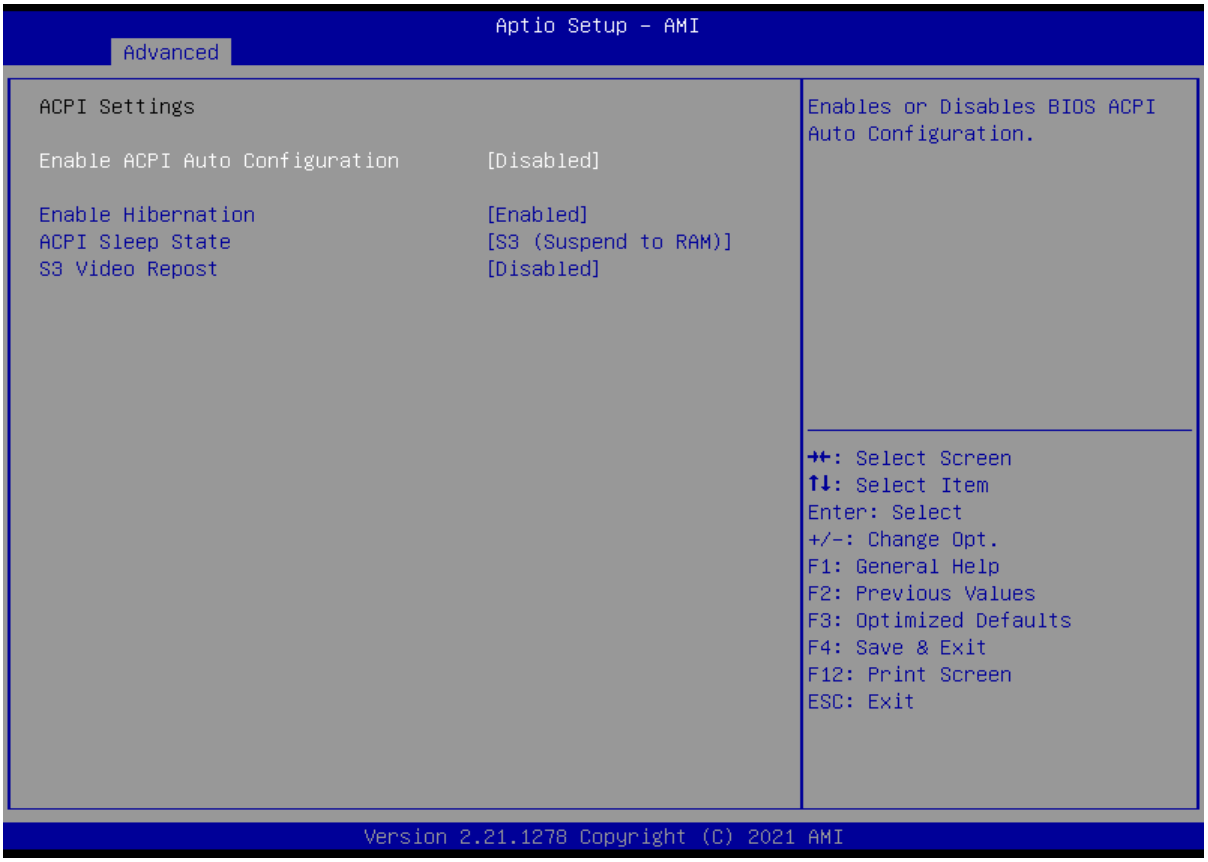
This menu contains the following information:

- TPM2.0 Device information
  Display the information of the TPM 2.0 Device
- Security Device Support
  Enable or Disable BIOS support for security device
- SHA-1PCR Bank
  Enable or disable SHA-1 PCR Bank
- SHA256 PCR Bank
  Enable or disable SHA256 PCR Bank
- SHA384 PCR Bank SM3_256 PCR Bank
  Enable or disable SHA384 PCR Bank SM3_256 PCR Bank
- Pending operation
  Schedule an operation for the security device. Note: Your computer will reboot during restart in order to change state of security device.
- Platform Hierarchy
  Enable or disable Platform Hierarchy
- Storage Hierarchy
  Enable or disable Storage Hierarchy
- Endorsement Hierarchy
  Enable or disable Endorsement Hierarchy
- 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 TCG_2 protocol and event format for Win10 or later.
- 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.

- TPM 2.0 Interface Type
  Select the TPM 2.0 Interface Type, default CRB.
- Device Select
  TPM 1.2 will restrict support to TPM 1.2 devices, TPM2.0 will restrict support to TPM 2.0 devices. Auto will support both with the default set to TPM 2.0devices if not found, TPM 1.2 devices will be enumerated.

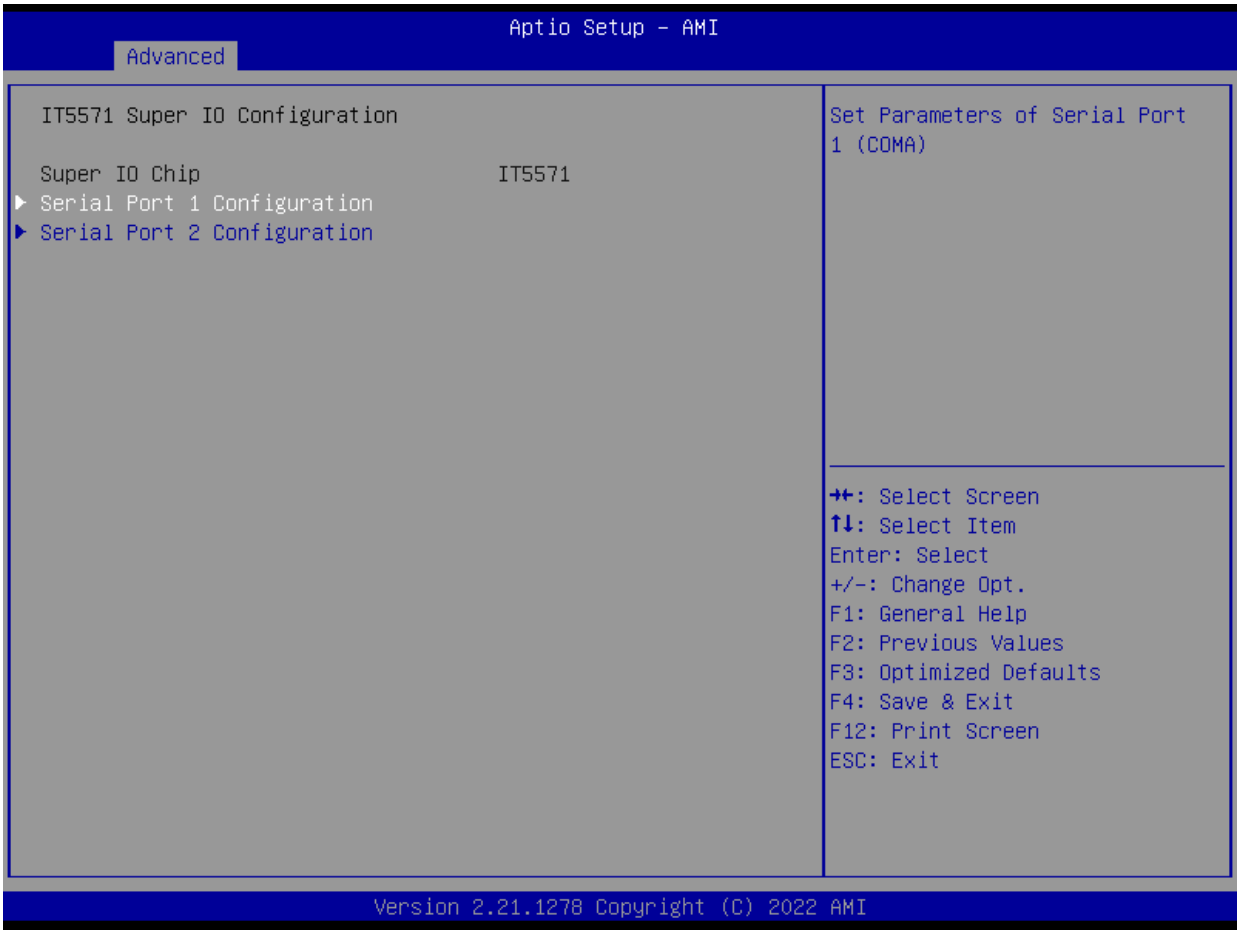
7.13.2.4 ACPI Settings



This menu contains the following information:

- Enable ACPI Auto Configuration
  Enable/Disable BIOS ACPI Auto Configuration.
- Enable Hibernation
  Enable/Disable System ability to Hibernate (OS/S4 Sleep State). This option may not be effective with some operating systems.
- ACPI Sleep State
  Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
- S3 Video Repost
  Enable/Disable S3 Video Repost.

7.13.2.5 IT5571 Super IO Configuration



This menu contains the following information:

- Serial Port 1 Configuration
  Set Parameters of Serial Port 1-6.

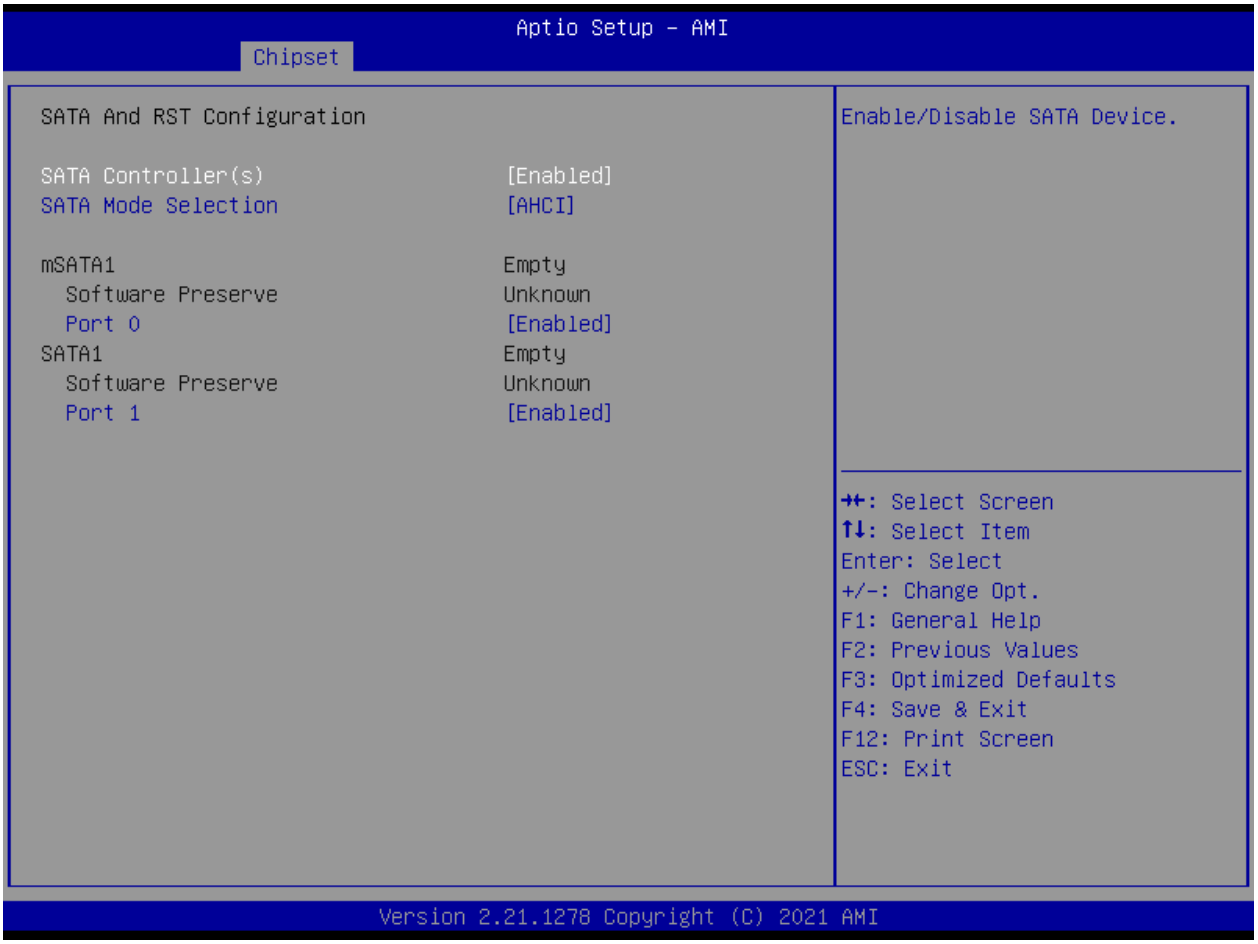
  The options after entering the interface settings above are as follows.
  Serial Port: Enable/Disable Serial Port (COM)
  Device Settings: Display the Current Device Settings
  Change Settings: If the board supported, this menu shows. Select an optimal setting for Super IO Device.

7.13.2.6 Display Configuration

This menu contains the following information:

- LCD Panel Type
  it is used to change the built-in screen output resolution

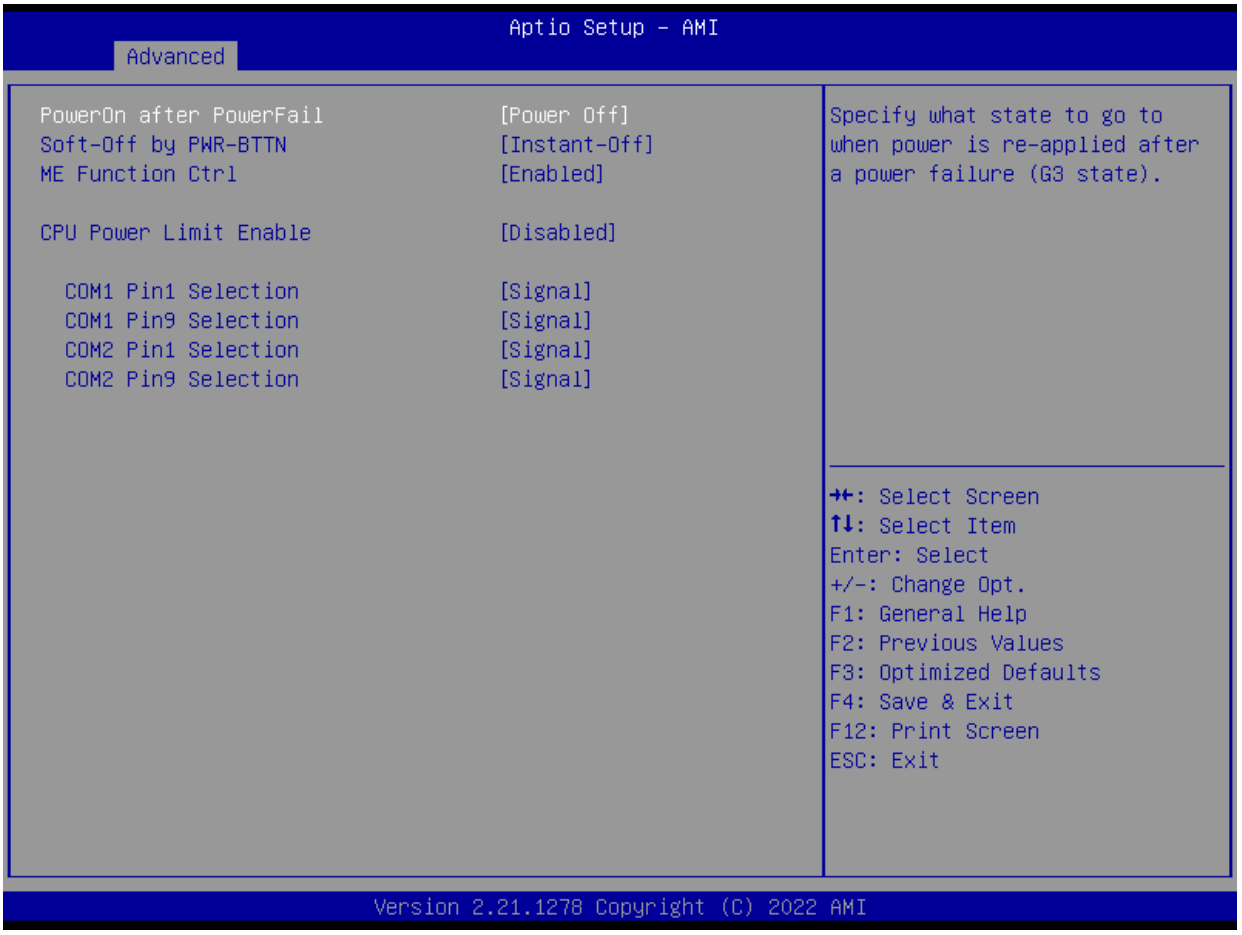
7.13.2.7 SATA And RST Configuration



This menu contains the following information:

- SATA Controller(s)
  Enable/Disable SATA Device.
- SATA Mode Selection
  Determine how SATA controller(s) operate.
- Serial ATA Port X
  Display Serial ATA Port X Device Information
- Port X
  Enable/Disable SATA Port X

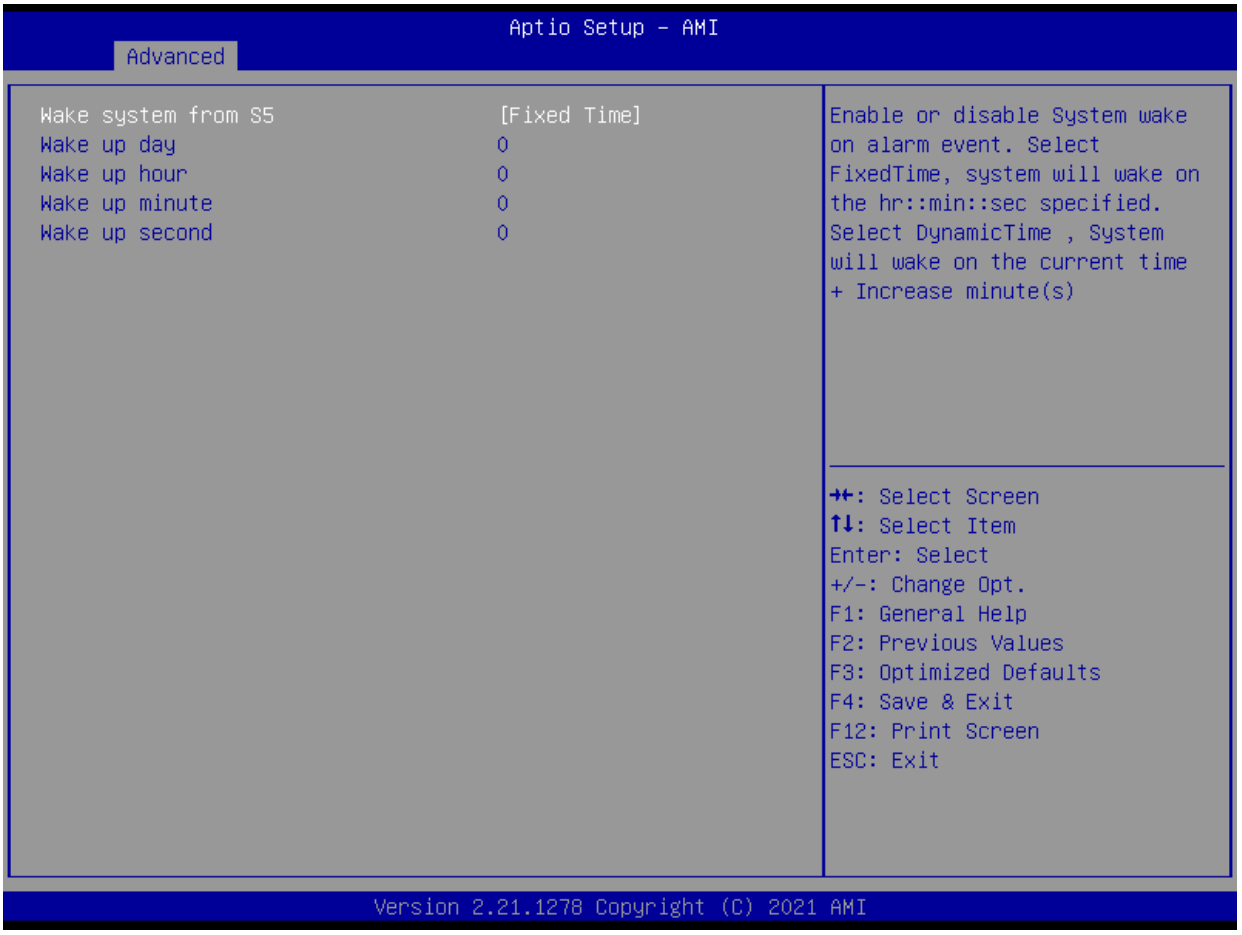
7.13.2.8 Power Control



This menu contains the following information:

- PowerOn after Powerfail
  Specify which state to go to when power is re-applied after a power failure.
- Soft-off by PWR-BTTN
  Select the mode of Soft-Offby PWR-BTTN, Instant-Off/Delay 4 Sec.
- ME Function Ctrl
  Enable/Disable ME Function Control.
- CPU Power Limit Enable
  Enable or disable CPU Power Limit override. If this option is disabled, BIOS will leave the default values for CPU Power Limit.
- COM1 Pin1 Selection
  This option allows select different settings: signal、+5V、+12V
- COM1 Pin9 Selection
  This option allows select different settings: signal、+5V、+12V
- COM2 Pin1 Selection
  This option allows select different settings: signal、+5V、+12V
- COM2 Pin9 Selection
  This option allows select different settings: signal、+5V、+12V

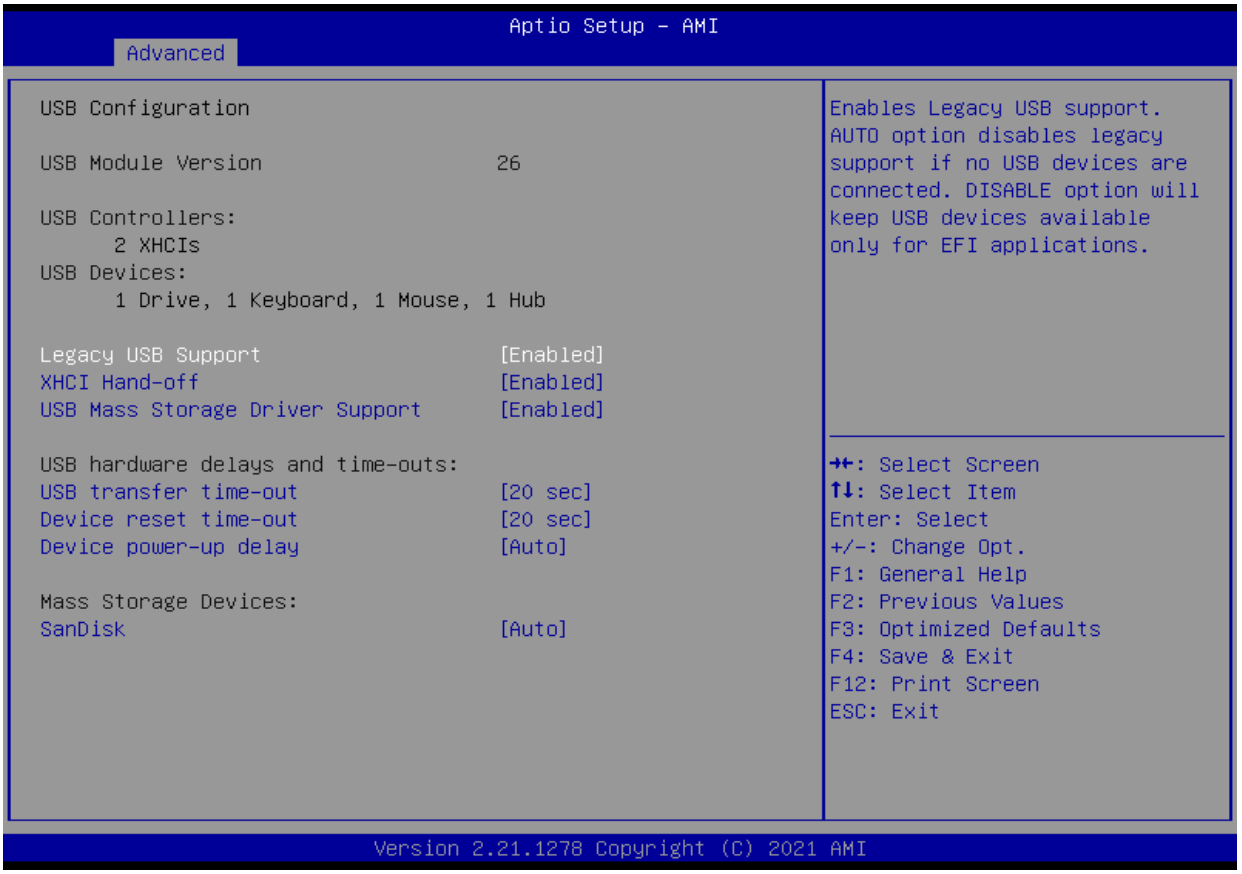
7.13.2.9 S5 RTC Wake Settings



This menu contains the following information:

- Wake a system form 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)
- Fixed Time:
  1) Select “Advanced - S5 RTC Wake Settings - Wake system from S5”;
  2) Change it from Disabled to Fixed Time;
  3) Set the point in time to customize the boot settings in the “wake up day, wake up hour, wake up minute, wake up second” that appears. Such as day: 2, hour: 13, minute:0, second:0, means 2nd of each month at 13 o'clock on the boot. When day is 0, it means that the point in time set every day is turned on.

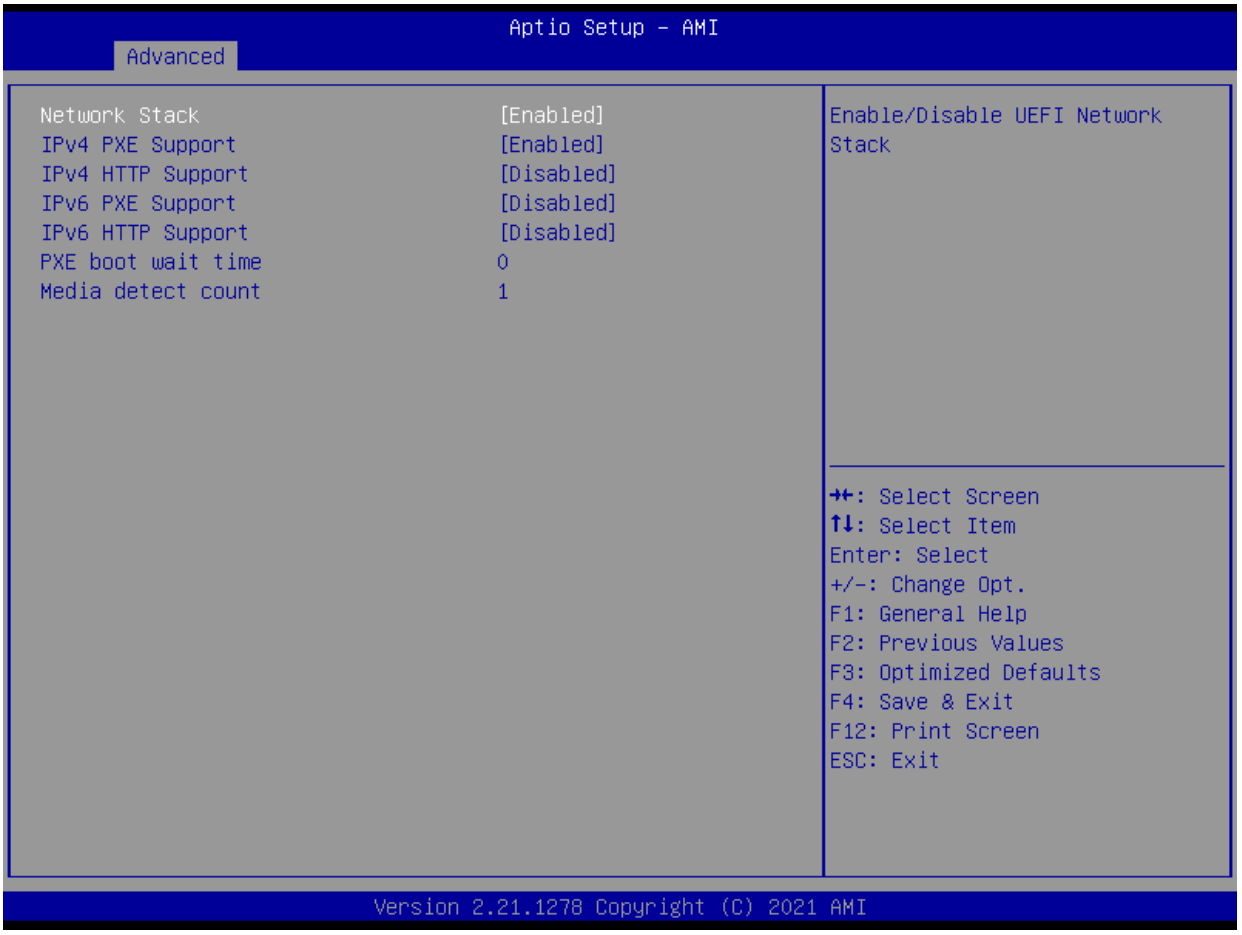
7.13.2.10 USB Configuration



This menu contains the following information:

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

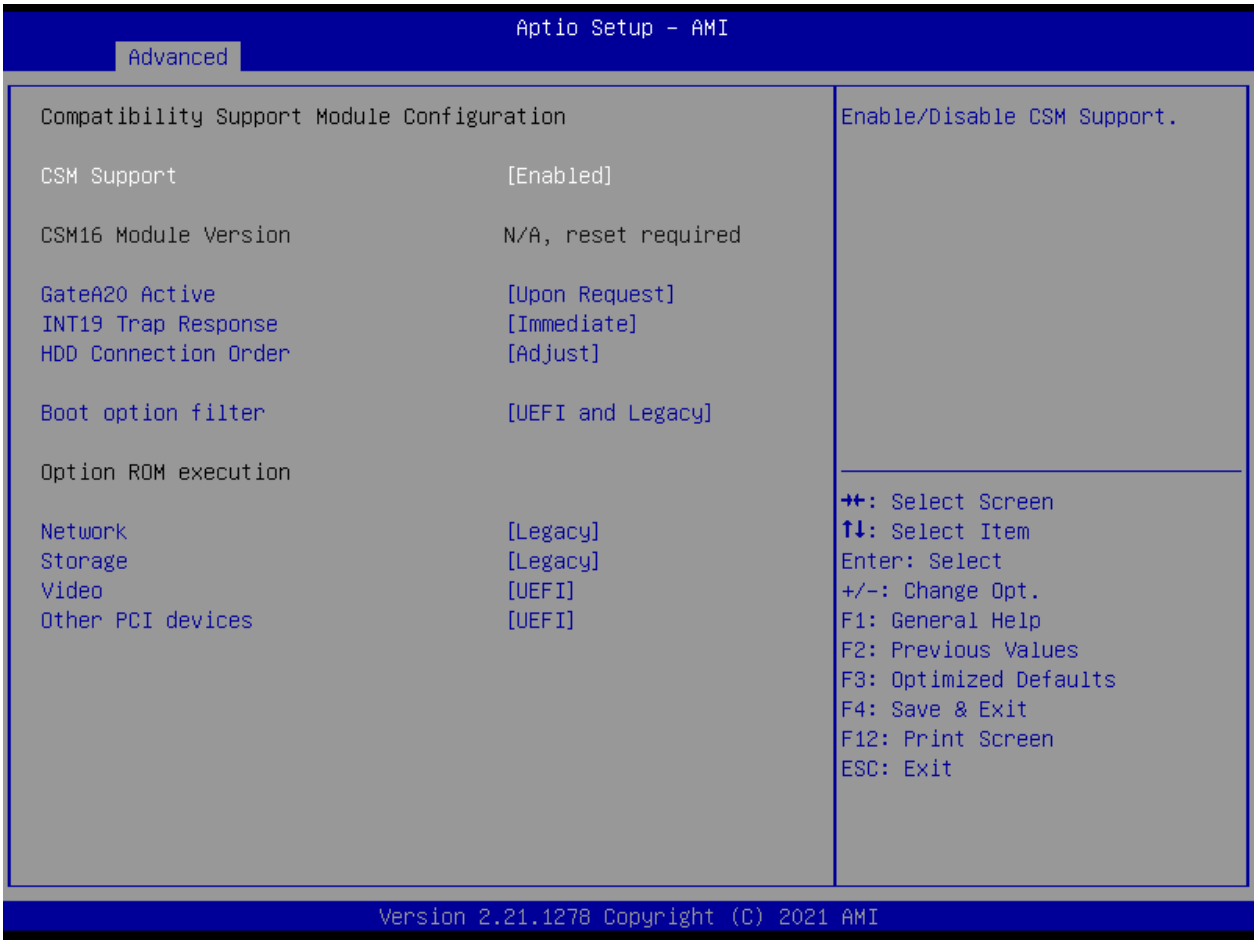
7.13.2.11 Network Stack Configuration



This menu contains the following information:

- Network Stack
  Enable/Disable UEFI Network Stack
- Ipv4 PXE Support
  Enable/Disable Ipv4 PXE boot support. If disabled, Ipv4 PXE boot support will not be available.
- Ipv4 HTTP Support
  Enable/Disable Ipv4 HTTP boot support. If disabled, Ipv4 HTTP boot support will not be available.
- Ipv6 PXE Support
  Enable/Disable Ipv6 PXE boot support. If disabled, Ipv6 PXE boot support will not be available.
- Ipv6 HTTP Support
  Enable/Disable Ipv6 HTTP boot support. If disabled, Ipv6 HTTP boot support will not be available.
- 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.
- Media detect count
  Number of times the presence of media will be checked. Use either +/- or numeric keys to set the value.

7.13.2.12 CSM Configuration



This menu contains the following information:

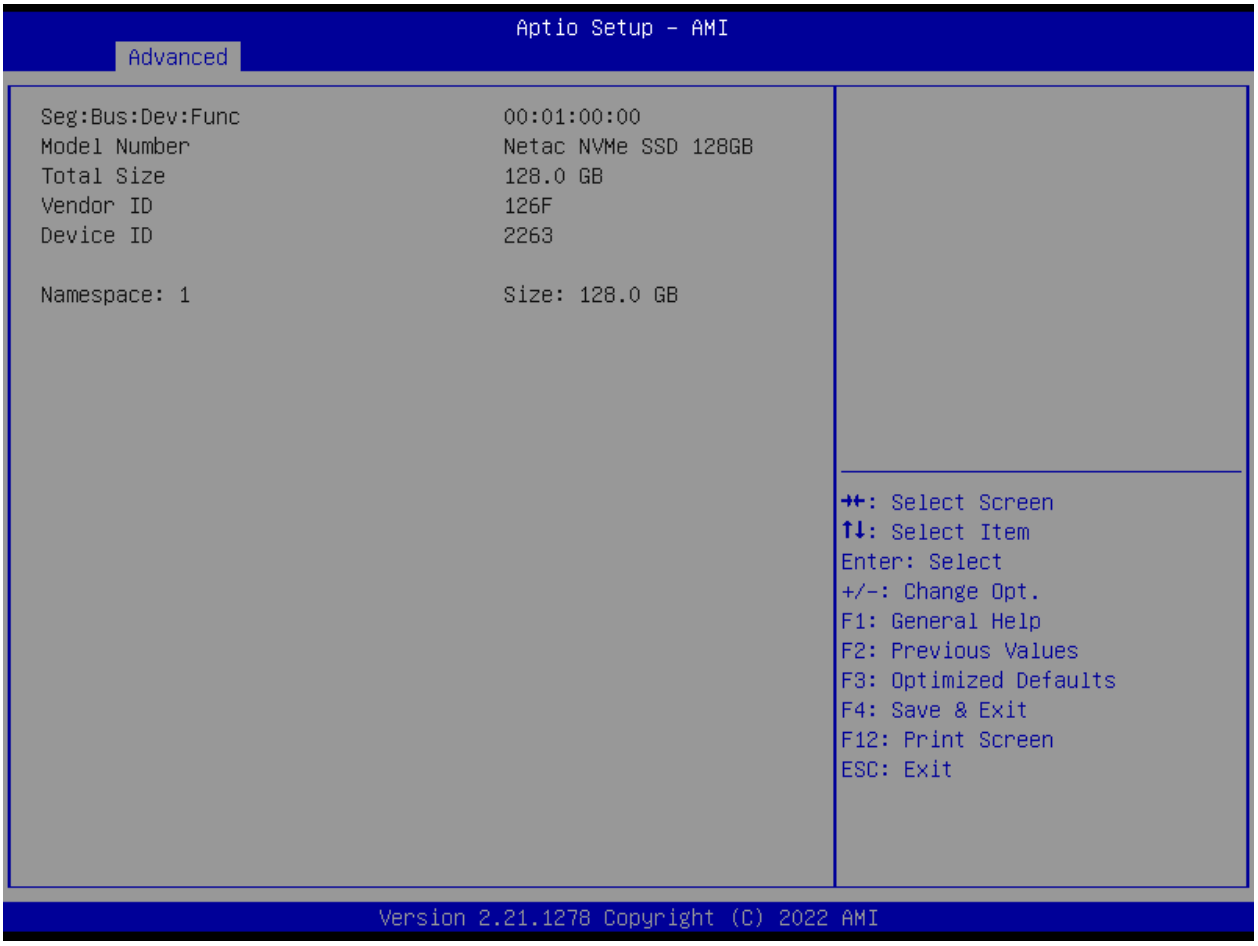
- CSM Support
  Enable/Disable CSM Support
- CSM16 Module Version
  Display the CSM16 Module Version information.
- GateA20 Active
  UPON REQUEST - GA20 can be disabled using BIOS services. ALWAYS - do not allow disabling GA20; this option is useful when any RT code is executed above 1MB
- INT19 Trap Response
  BIOS reaction on INT19 trapping by Option ROM: IMMEDIATE - execute the trap right away; POSTPONED - execute the trap during legacy boot
- HDD Connection Order
  Some OS require HDD handles to be adjusted, i.e. OS is installed on drive 80h
- Boot option filter
  Thisoptioncontrols Legacy/UEFI ROMs priority

Option ROM execution

- Network
  Controls the execution of UEFI and Legacy Network OpROM
- Storage
  Control the execution of UEFI and Legacy StorageOpROM
- Video
  Control the execution of UEFI and Legacy VideoOpROM

- Other PCI devices
  Determine OpROM execution policy for devices other than Network, Storage or Video

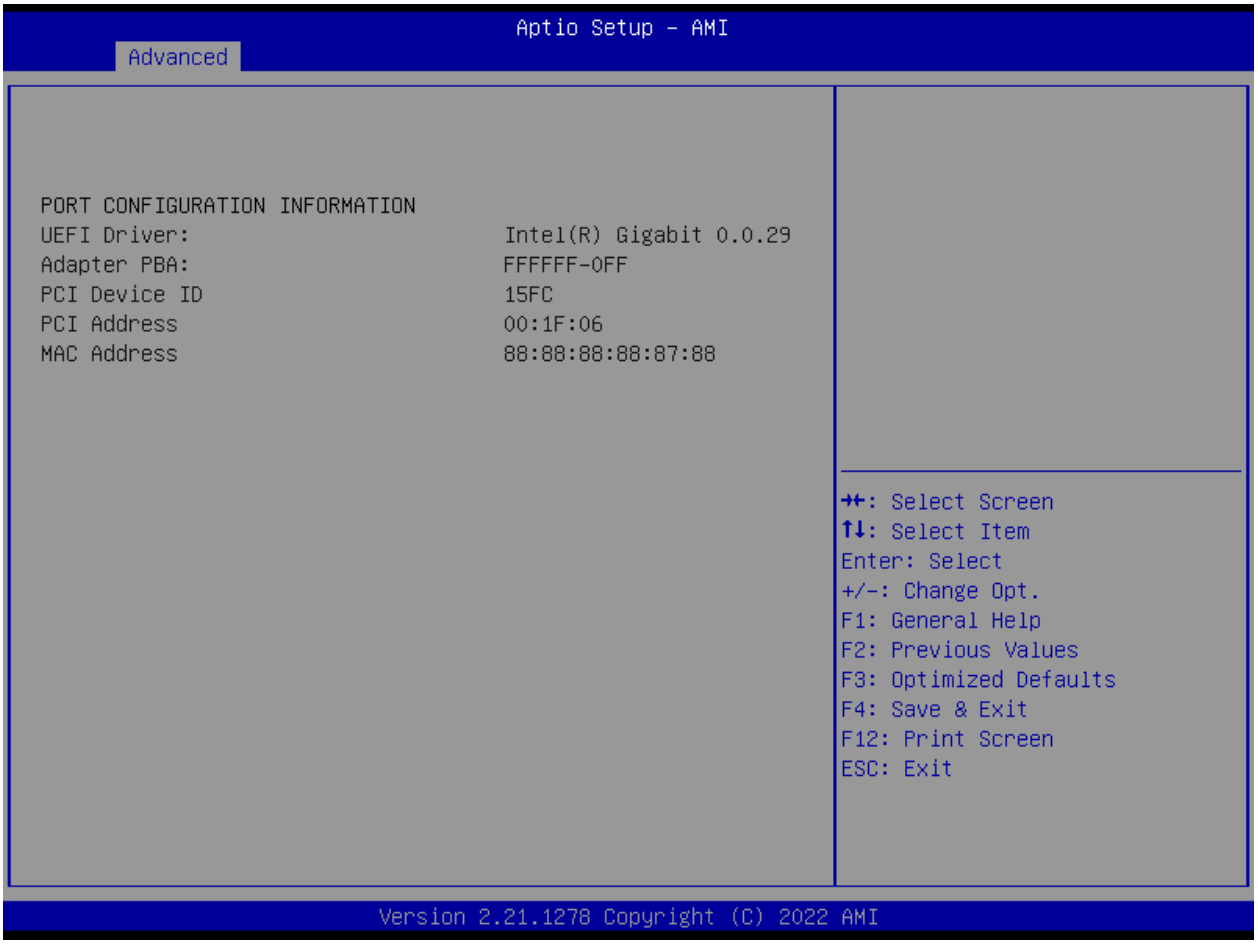
7.13.2.13 NVMe Configuration



This menu contains the following information:

- NVMe Configuration
  Display NVMe Device information

7.13.2.14 Intel(R) Ethernet Controller (3) I225-V



This menu contains the following information:

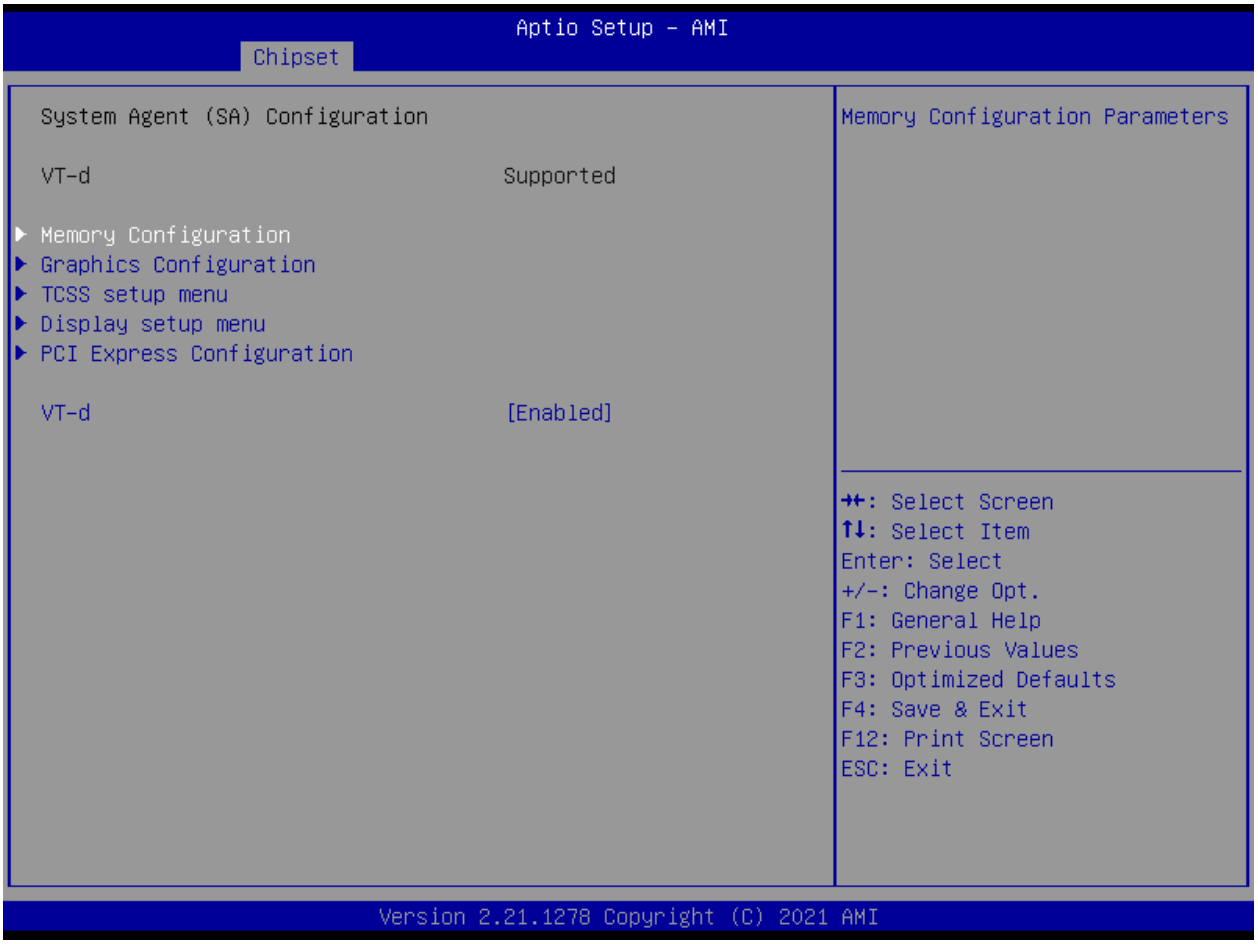
- Driver Information
  Display Driver Information, MAC address, Patent Information, etc.

7.14 Chipset

This menu contains the following information:

- System Agent(SA) Configuration
  System Agent (SA) Parameters
- PCH-IO Configuration
  PCH Parameters

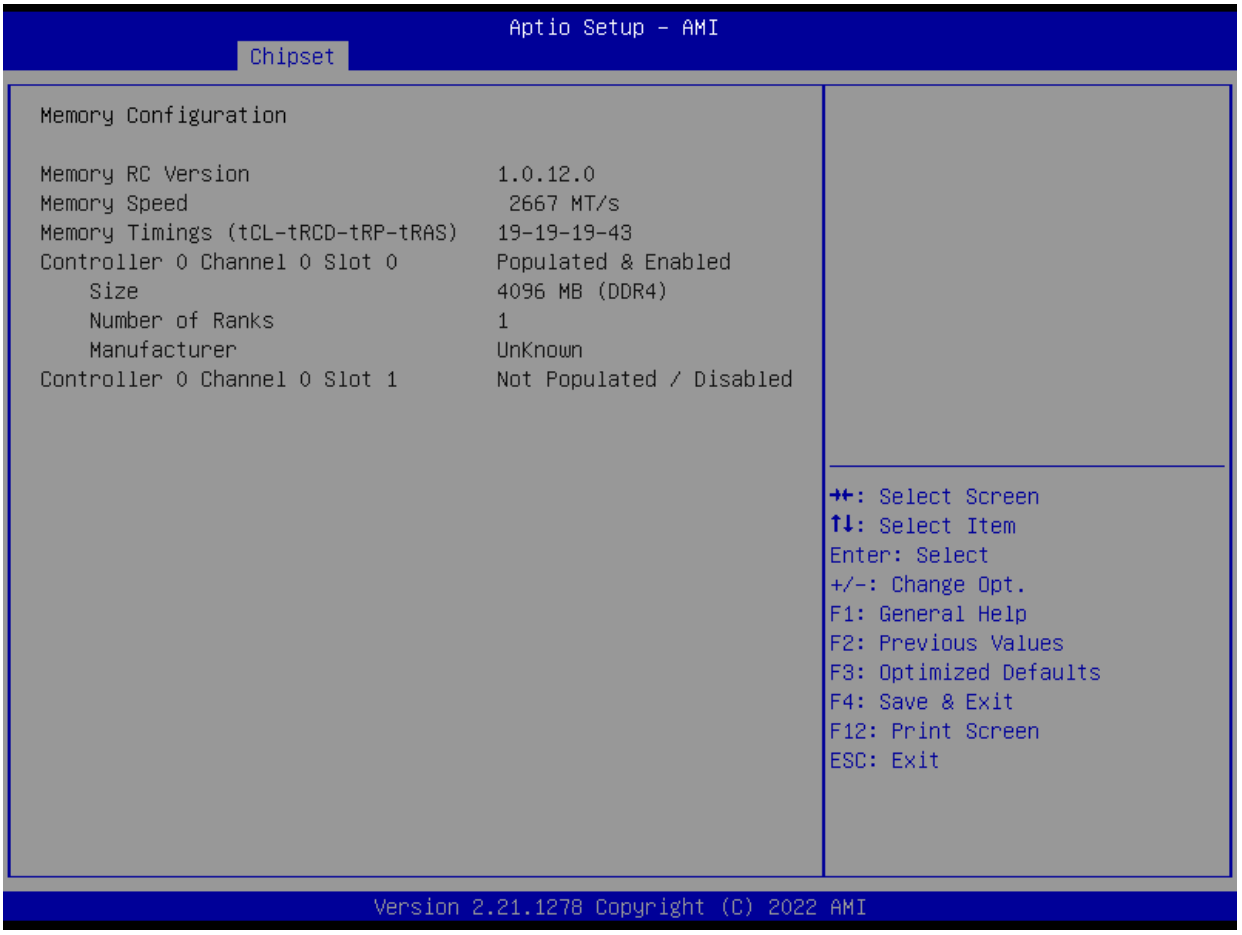
7.14.1 System Agent (SA) Configuration



This menu contains the following information:

- Memory Configuration
  Memory Configuration Parameters.
- Graphics Configuration
  Graphics Configuration Settings
- TCSS setup menu
  TCSS Configuration Settings
- Display setup menu
  Display Configuration Settings
- PCI Express Configuration
  PCI Express Configuration Settings
- VT-d

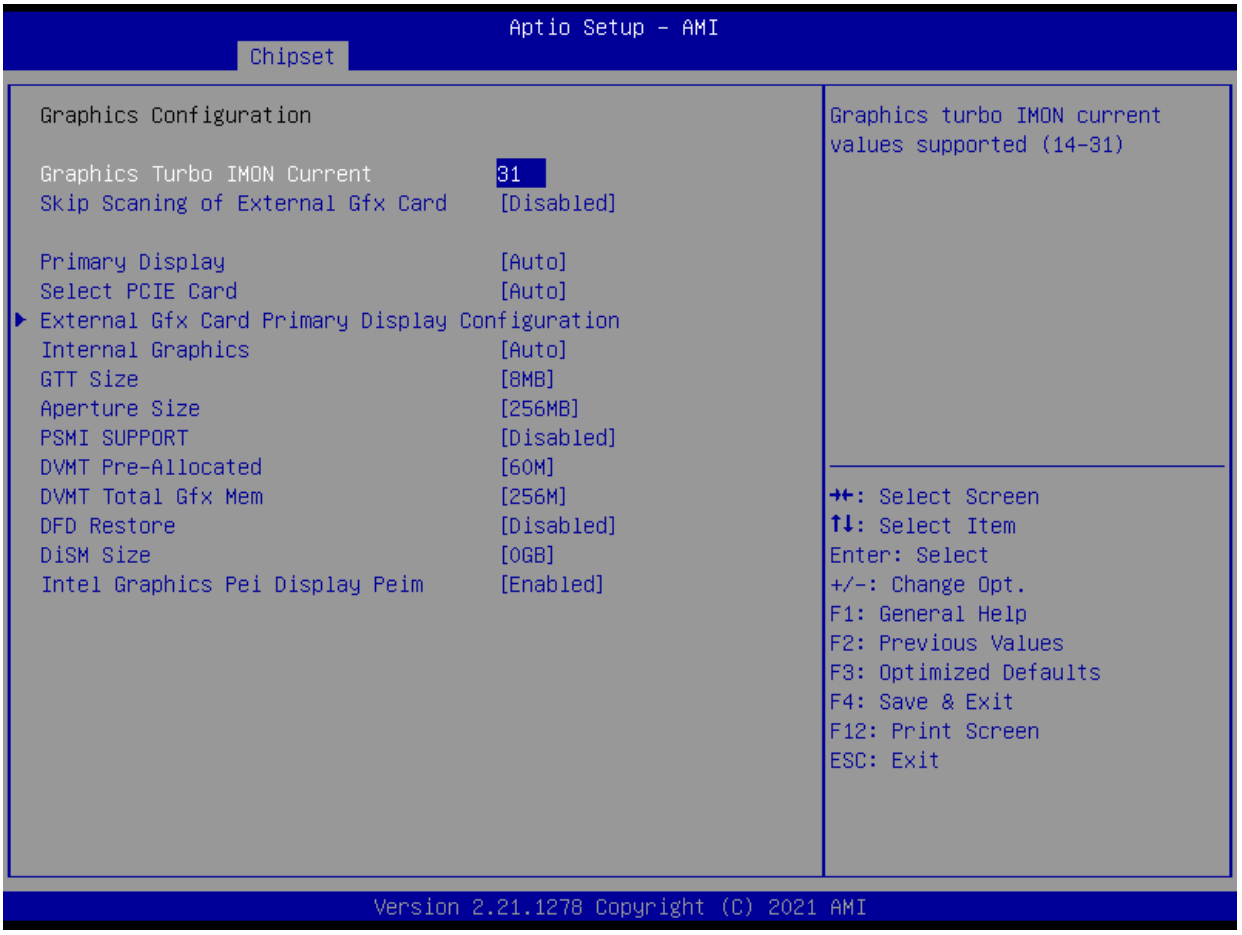
7.14.1.1 Memory configuration



This menu contains the following information:

- Display the Memory RC version, speed, Timings, etc.

7.14.1.2 Graphics Configuration

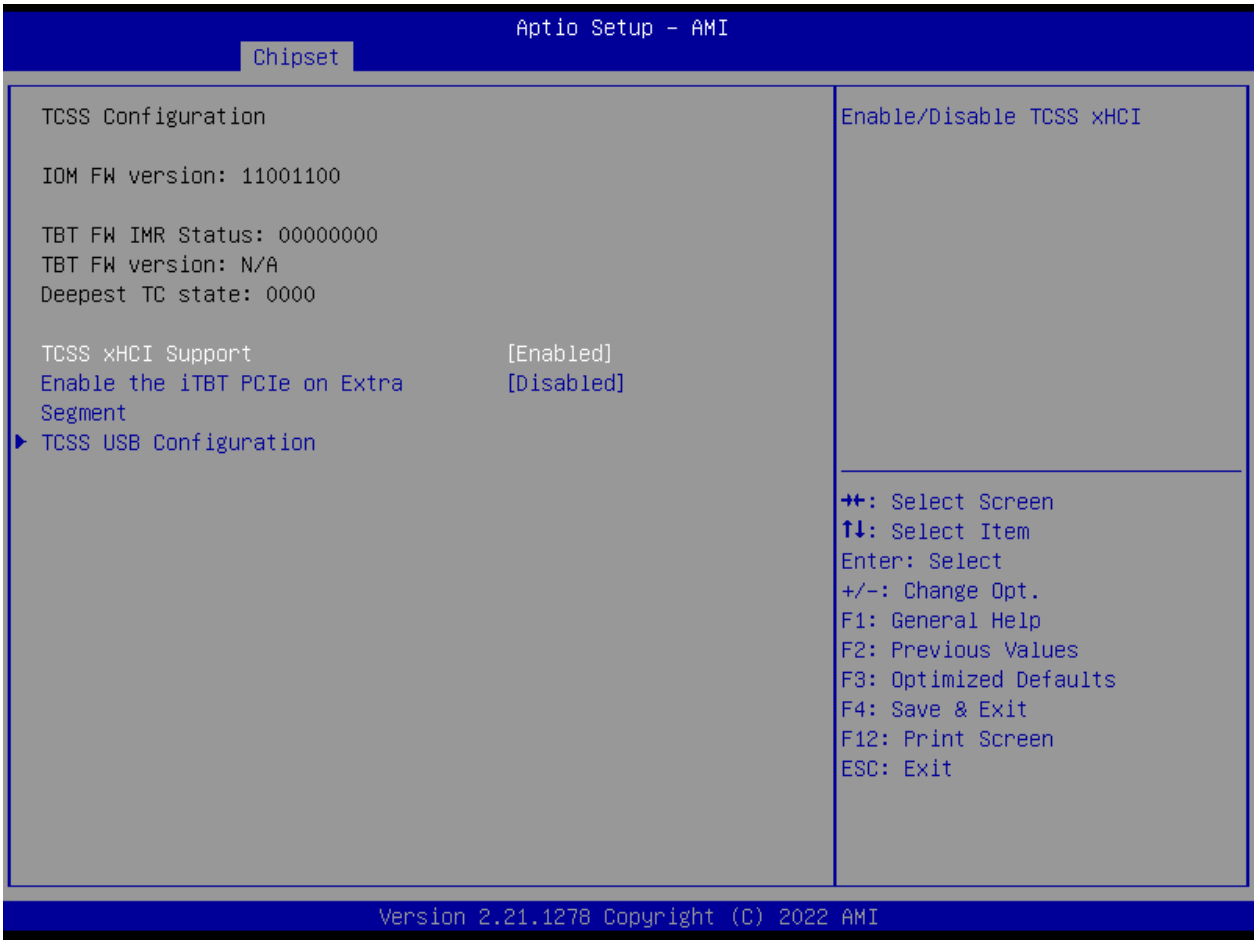


This menu contains the following information:

- Graphics Turbo IMON Current
  Graphics turbo IMON current values supported (14-31)
- Skip Scaning of External Gfx Card
  If enable, it will not scan for external Gfx Card on PEG and PCH PCIE Ports
- Primary Display
  Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select HG for Hybrid Gfx
- Select PCIE Card
  Select the card used on the platform. Auto:Skip GPIO based power enable to dgpu.Elk Creek 4:DGPU Power enable =ActiveLow. PEG Eval: DGPU Power Enable =Activehigh
- External Gfx Card Primary Display
  External Gfx Card Primary Display Configuration
- Internal Graphics
  Keep IGFX enabled based on the setup options
- GTT Size
  Select the GTT Size
- Aperture Size
  Select the Aperture Size\n\nNote : Above 4GB MMIO BIOS assignment is automatically enabled when selecting 2048MB aperture. To use this feature, please disable CSM Support
- PSMI SUPPORT
  Enable or disable PSMI

- DVMT Pre-Allocated
  Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device
- DVMT Total Gfx Mem
  Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device
- DFD Restore
  Select Display memory map programming for DFD Restore
- DiSM Size
  DiSM Size for 2LM Sku
- Inte1 Graphics Pei Display Peim
  Enable or disable Pei (Early) Display

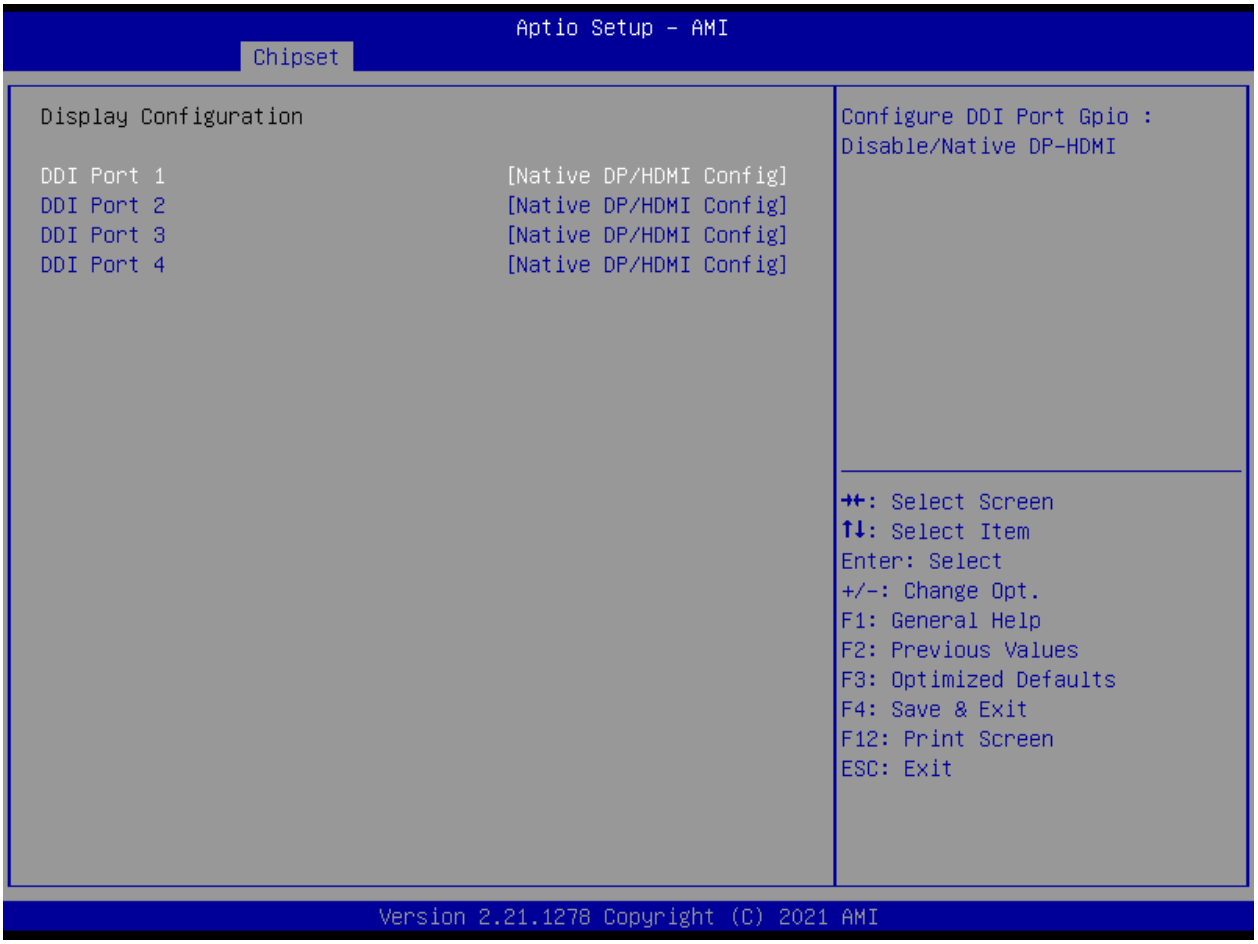
7.14.1.3 TCSS setup menu



This menu contains the following information:

- TCSS XHCI Support
  Enable or disable TCSS XHCI
- Enable the ITBT PCIE on Extra Segment
  If disabled, all ITBT PCIE will be enumerated on segment0, if enabled, all ITBT PCIE will be enumerated on Segment1.
- TCSS USB Configuration
  SA TCSS USB Configuration settings, default off.

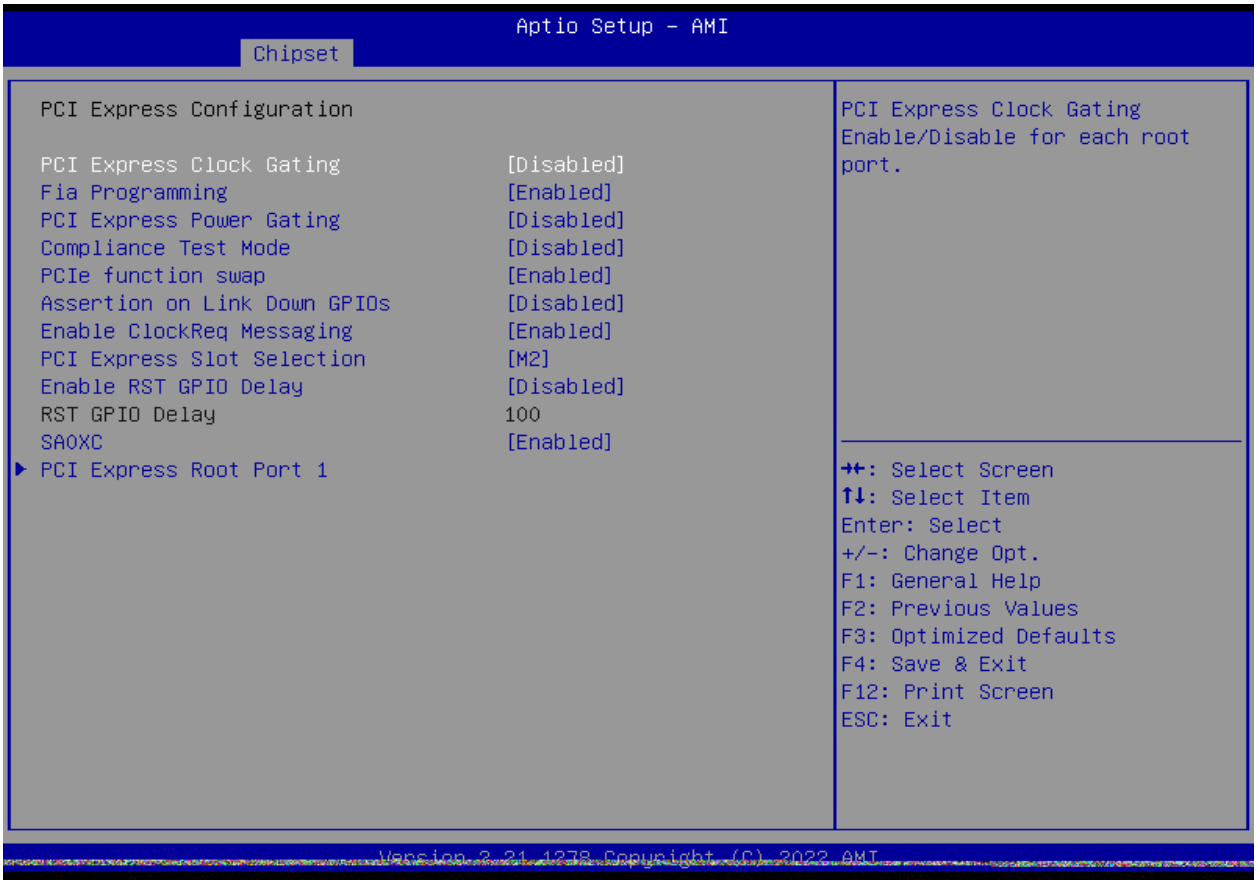
7.14.1.4 Display setup menu



This menu contains the following information:

- DDI Port X
  Configuration DDI Port GPIO: disable or native DP-HDMI

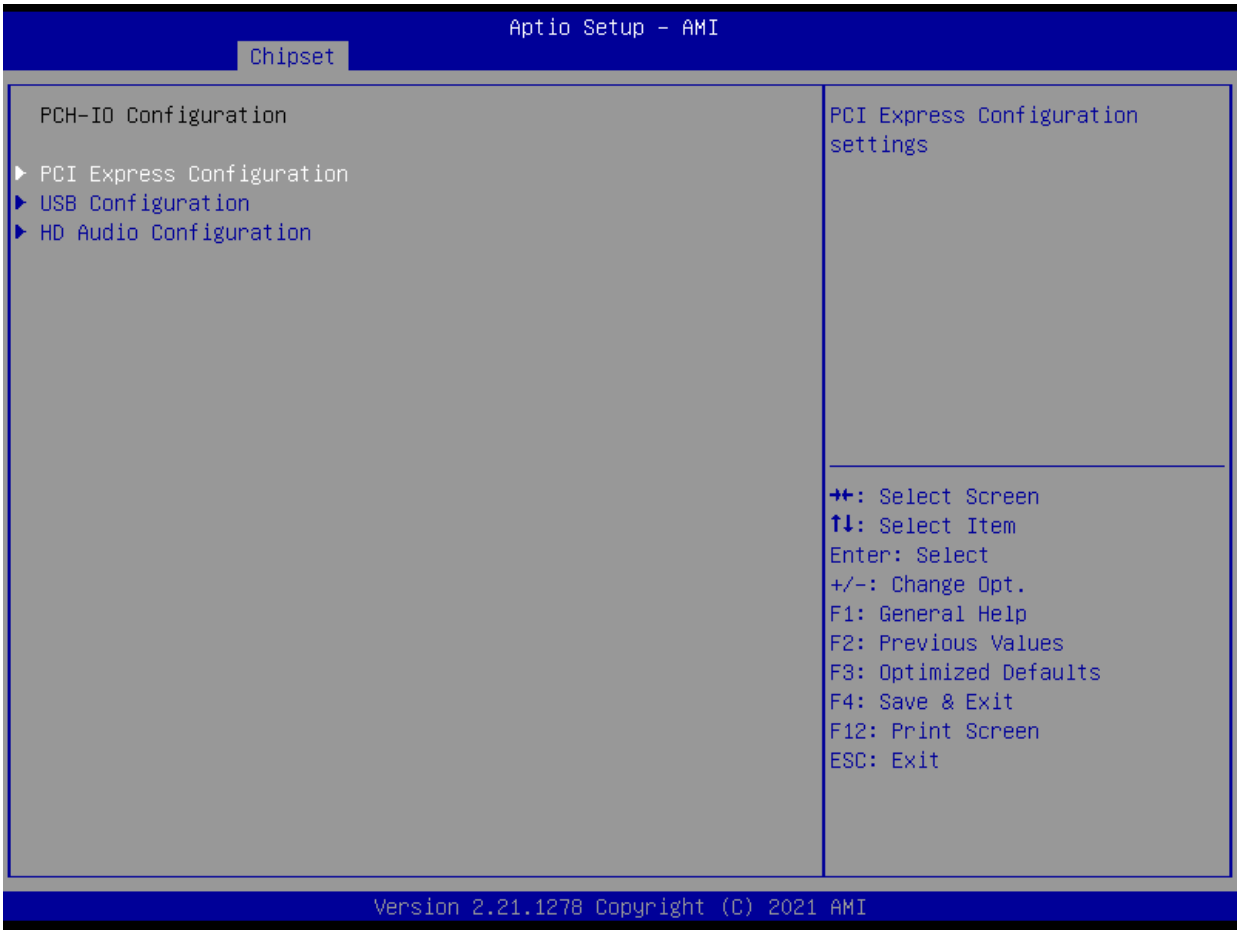
7.14.1.5 PCI Express Configuration



This menu contains the following information:

- PCI Express Clock Gating
  PCI Express Clock Gating enable or disable for each root port
- Fia Programming
  Load Fia Configuration if enabled for each root port.
- PCI Express power Gating
  PCI Express power gating enable/disable for each root port
- Compliance Test Mode
  Enable when using compliance load board
- PCIE function swap
  When disabled, prevents PCIE root port function swap. If any function other than 0th is enabled, 0th will become visible.
- Assertion on Link Down GPIOS
  GPIO Assertion on link Down
- Enable ClockReq Messaging
  Enable or disable ClockReq Messaging
- PCI Express slot selection
  Select the PCIE M2 or CEMx4 slot
- Enable RST GPIO Delay
  Enable or disable RST GPIO delay
- PCI Express Root Port 1
  Show the PCI Express Root Port Settings

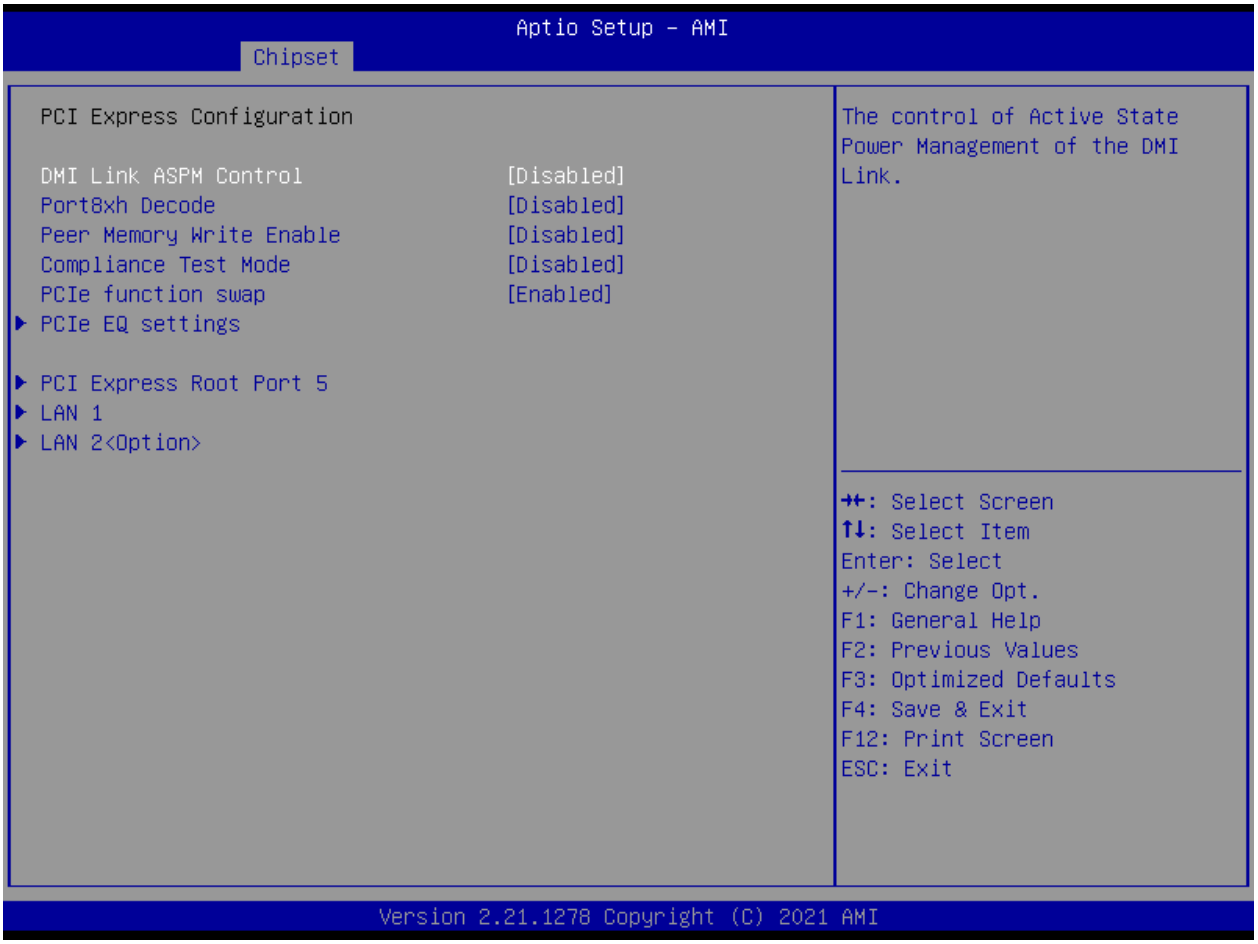
7.14.2 PCH-IO Configuration



This menu contains the following information:

- PCI Express Configuration
  PCI Express Configuration settings.
- USB Configuration
  USB Configuration settings.
- HD Audio Configuration
  HD Audio Subsystem Configuration Settings.

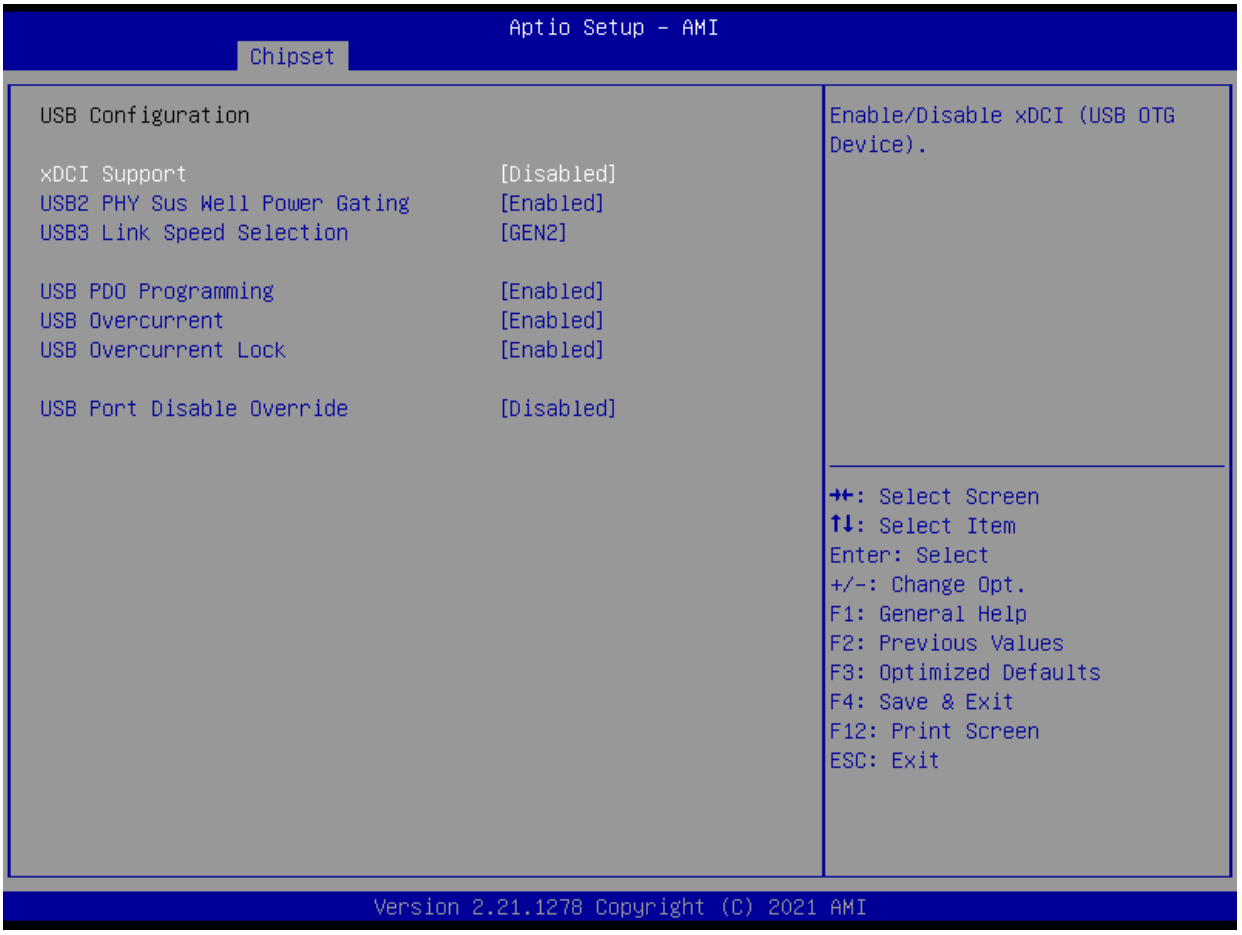
7.14.2.1 PCI Express Configuration



This menu contains the following information:

- DMI Link ASPM Control
  The control of Active state power Management of the DMI Link
- Port8xh Decode
  Enable or disable PCI Express Port8xh Decode
- Peer Memory Write Enable
  Enable or disable Peer Memory Write
- Compliance Test Mode
  Enable when using Compliance Load Board
- PCIe function swap
  When disabled, prevents PCIE root port function swap. If any function other than 0th is enabled, 0th will become visible
- PCIe EQ settings
  This form contains options for controlling PCIE EQ process
- PCI Express Root Port 5
  PCI Express Root Port Settings
- PCI Express Root port 9
  PCI Express Root Port Settings

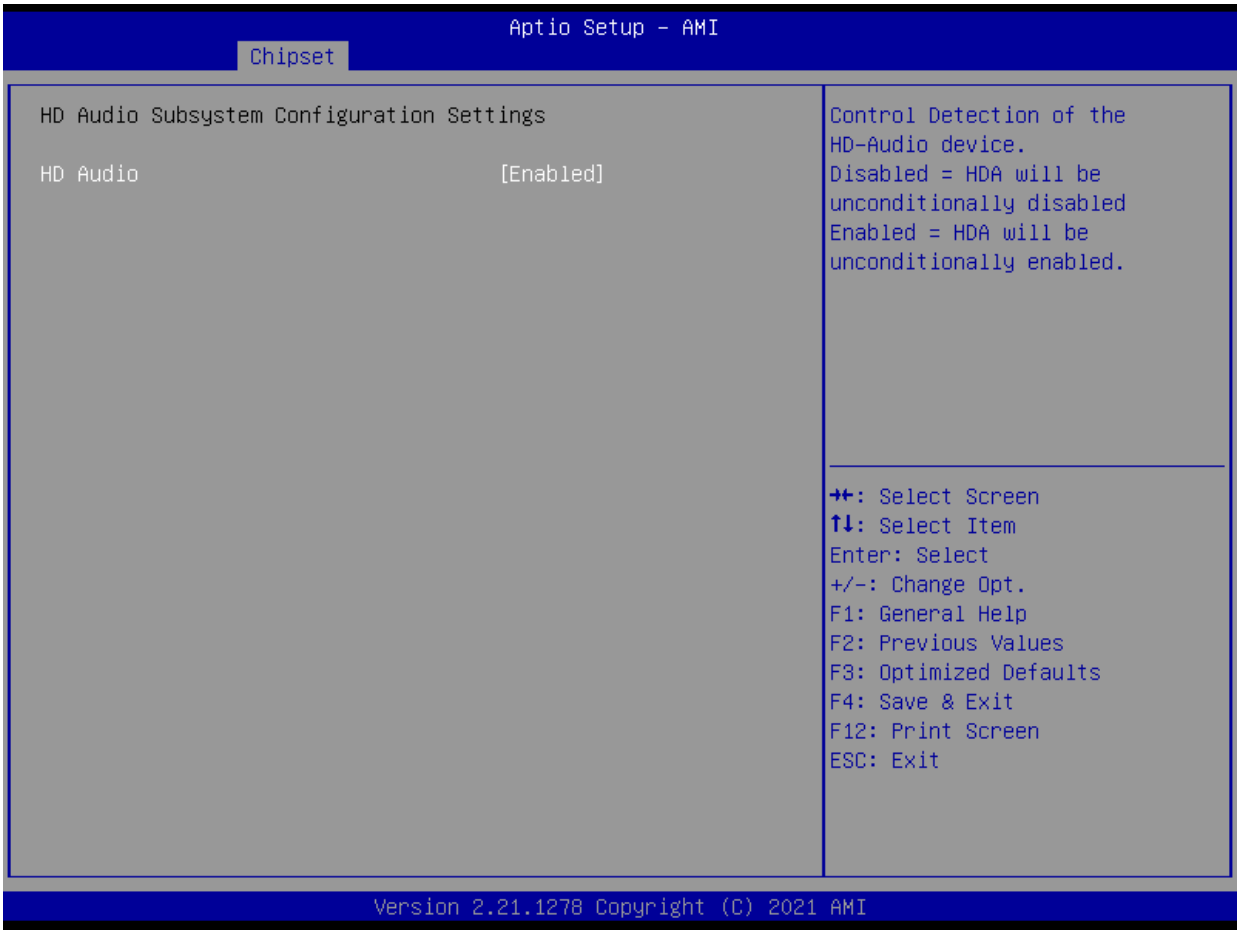
7.14.2.2 USB Configuration



This menu contains the following information:

- xDCI Support
  Enable/Disable xDCI (USB OTG Device).
- USB2 PHY Sus Well Power Gating
  Select “Enabled” to enable sus well PG for USB2 PHY. This option has no effect on PCH-H
- USB3 Link Speed Selection
  This option is to select USB3 Link Speed GEN1 or GEN2
- USB PDO Programming
  Select “Enabled” if Port Disable override functionality is used
- USB Overcurrent
  Select 'Disabled' for pin-based debug. If pin-based debug is enabled but USB overcurrent is not disabled, USB DbC does not work
- USB Overcurrent Lock
  Select 'Enabled' if Overcurrent functionality is used. Enabling this will make xHCI controller consume the Overcurrent mapping data
- USB Port Disable Override
  Selectively Enable/Disable the corresponding USB port from reporting a Device Connection to the controller.

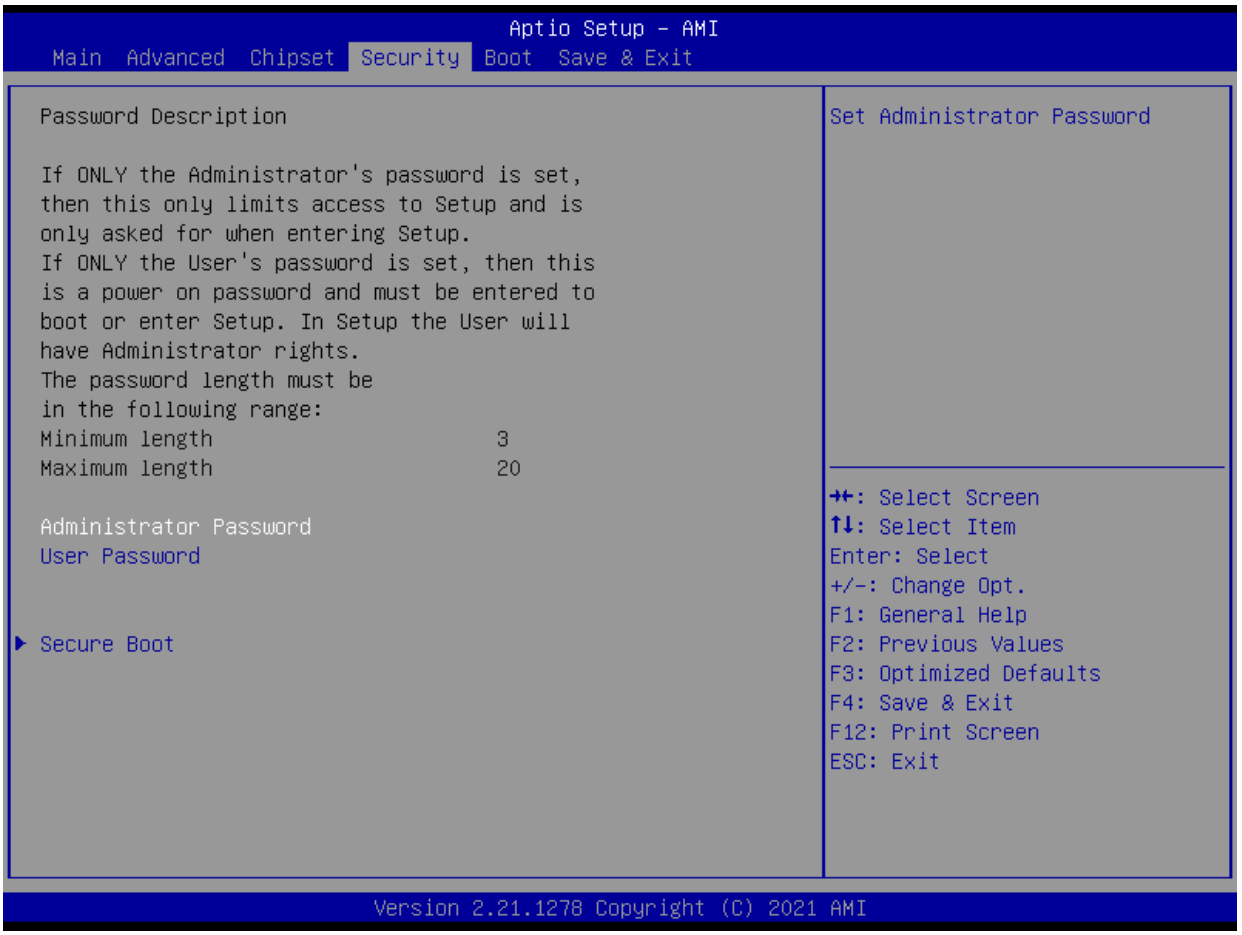
7.14.2.3 HD Audio Configuration



This menu contains the following information:

- HD Audio
  Control Detection of the HD-Audio device.
  Disabled = HDA will be unconditionally disabled.
  Enabled = HDA will be unconditionally enabled.

7.15 Security

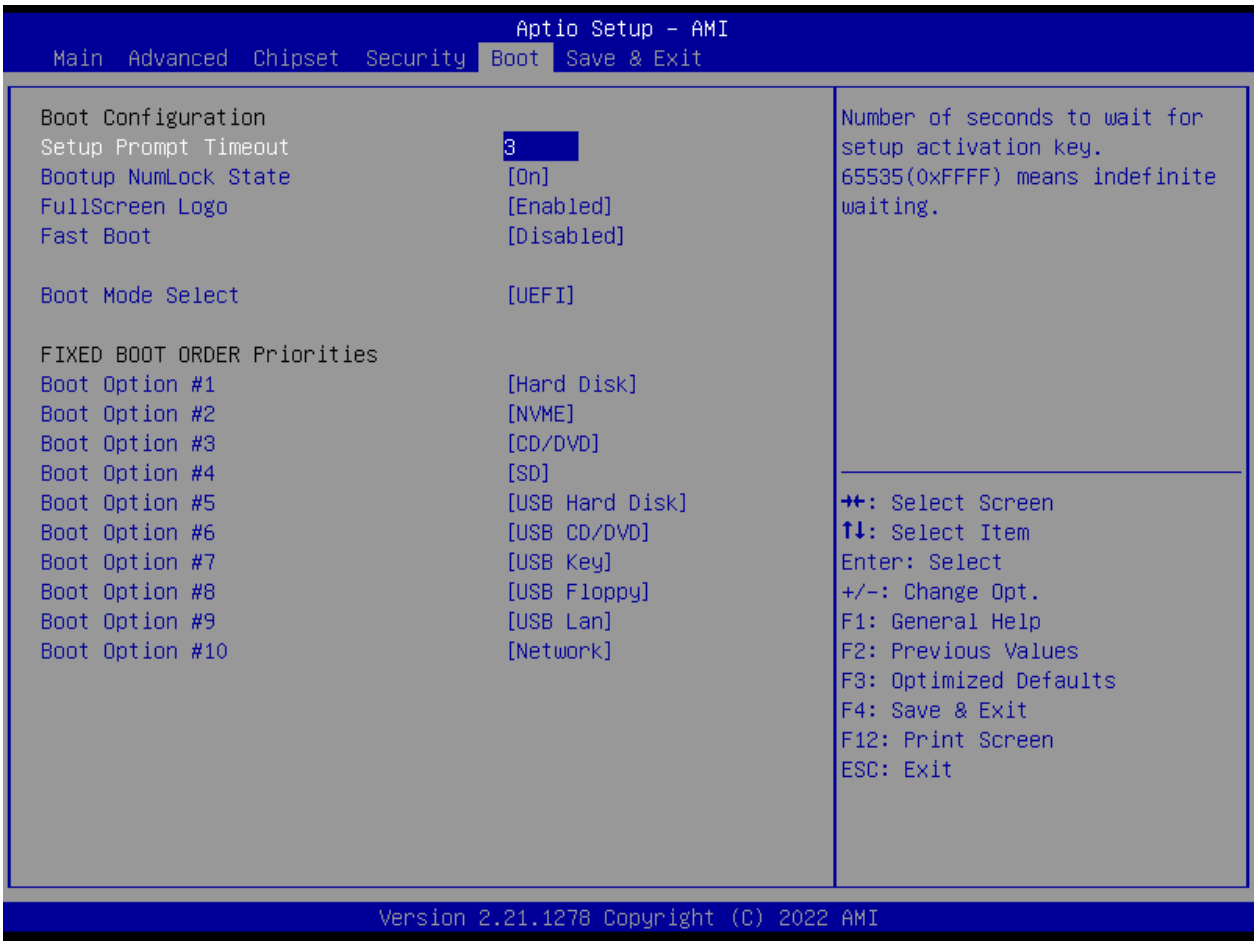


This menu contains the following information:

- Administrator Password
  Set Administrator Password
- User Password
  Set User Password

. Secure Boot

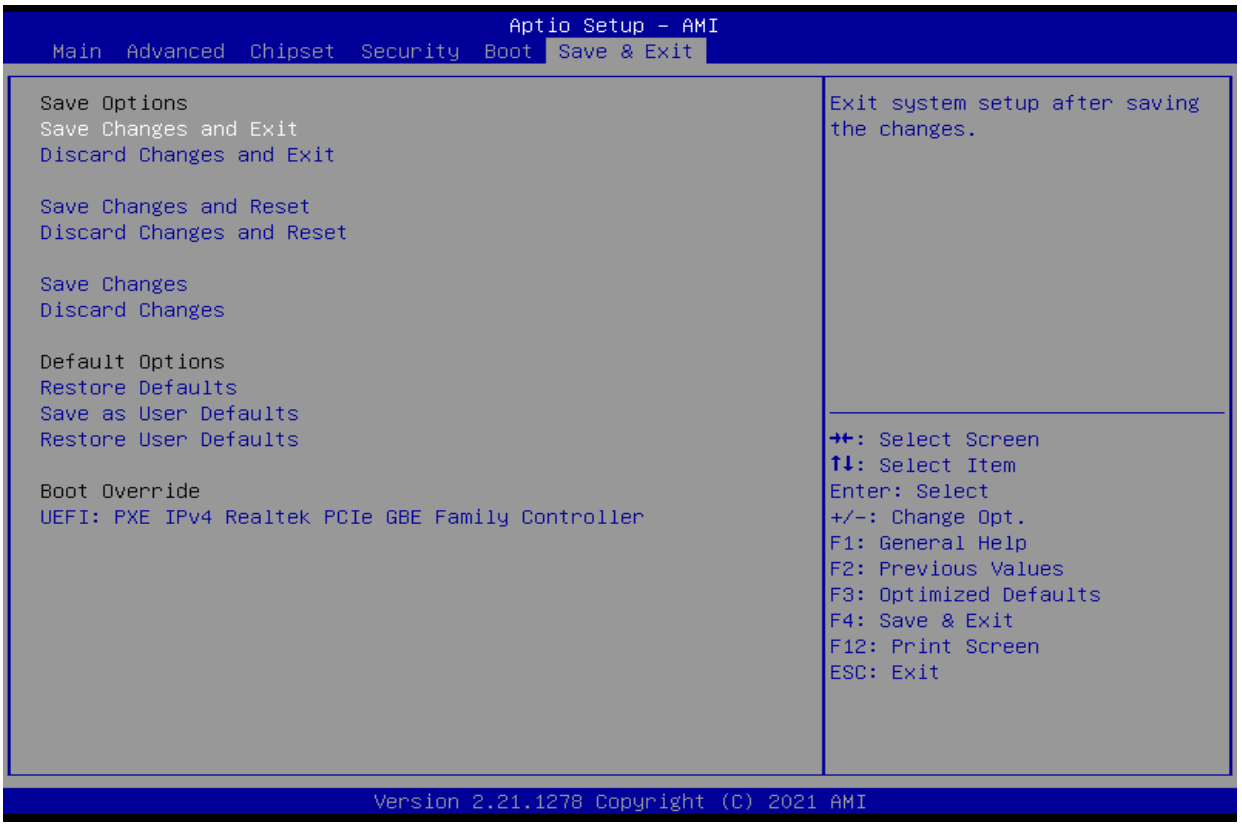
7.16 Boot



This menu contains the following information:

- Setup Prompt Timeout
  Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
- Bootup NumLock State
  Select the keyboard NumLock state
- Full Screen Logo
  Enable/Disable Full Screen Logo
- Fast Boot
  Enabled or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.
- Boot Mode Select
  Select boot mode Legacy/UEFI
- FIXED BOOT ORDER Priorities
  Display Boot order, and allow to set Hard Drive/USB/XXX boot order in this group

7.17 Save& Exit



This menu contains the following information:

Save Options

- 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.

Default 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

- UEFI: Built-in EFI shell
  Launch BIOS Built-in UEFI Shell