Lanner

# Network Appliance Platforms

Hardware Platforms for Network Computing

# NCS2-VT04
# User Manual

Version: 1.1

Date of Release: 2021-12-13

# About this Document

This manual describes the overview of the various functionalities of this product, and the information you need to get it ready for operation. It is intended for those who are:

- responsible for installing, administering and troubleshooting this system or Information Technology professionals.
- assumed to be qualified in the servicing of computer equipment, such as professional system integrators, or service personnel and technicians.

The latest version of this document can be found on Lanner's official website, available either through the product page or through the Lanner Download Center page with a login account and password.

# Conventions & Icons

## Icon Descriptions

| Icon | Usage |
|---|---|
|  Note or Information | This mark indicates that there is something you should pay special attention to while using the product. |
|  Warning or Important | This mark indicates that there is a caution or warning and it is something that could damage your property or product. |

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# Documentation Feedback

Your feedback is valuable to us, as it will help us continue to provide you with more accurate and relevant documentation. To provide any feedback, comments or to report an error, please email to contact@lannerinc.com, Thank you for your time.

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# Safety Guidelines

Follow these guidelines to ensure general safety:

- Keep the chassis area clear and dust-free during and after installation.
- Do not wear loose clothing or jewelry that could get caught in the chassis. Fasten your tie or scarf and roll up your sleeves.
- Wear safety glasses if you are working under any conditions that might be hazardous to your eyes.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.
- Disconnect all power by turning off the power and unplugging the power cord before installing or removing a chassis or working near power supplies
- Do not work alone if potentially hazardous conditions exist.
- Never assume that power is disconnected from a circuit; always check the circuit.

# Consignes de sécurité

Suivez ces consignes pour assurer la sécurité générale :

- Laissez la zone du châssis propre et sans poussière pendant et après l'installation.
- Ne portez pas de vêtements amples ou de bijoux qui pourraient être pris dans le châssis. Attachez votre cravate ou écharpe et remontez vos manches.
- Portez des lunettes de sécurité pour protéger vos yeux.
- N'effectuez aucune action qui pourrait créer un danger pour d'autres ou rendre l'équipement dangereux.
- Coupez complètement l'alimentation en éteignant l'alimentation et en débranchant le cordon d'alimentation avant d'installer ou de retirer un châssis ou de travailler à proximité de sources d'alimentation.
- Ne travaillez pas seul si des conditions dangereuses sont présentes.
- Ne considérez jamais que l'alimentation est coupée d'un circuit, vérifiez toujours le circuit. Cet appareil génère, utilise et émet une énergie radiofréquence et, s'il n'est pas installé et utilisé conformément aux instructions des fournisseurs de composants sans fil, il risque de provoquer des interférences dans les communications radio.

# Operating Safety

- Electrical equipment generates heat. Ambient air temperature may not be adequate to cool equipment to acceptable operating temperatures without adequate circulation. Be sure that the room in which you choose to operate your system has adequate air circulation.
- Ensure that the chassis cover is secure. The chassis design allows cooling air to circulate effectively. An open chassis permits air leaks, which may interrupt and redirect the flow of cooling air from internal components.
- Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. ESD damage occurs when electronic components are improperly handled and can result in complete or intermittent failures. Be sure to follow ESD-prevention procedures when removing and replacing components to avoid these problems.
- Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. If no wrist strap is available, ground yourself by touching the metal part of the chassis.
- Periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohms (Mohms).
-

# Sécurité de fonctionnement

- L'équipement électrique génère de la chaleur. La température ambiante peut ne pas être adéquate pour refroidir l'équipement à une température de fonctionnement acceptable sans circulation adaptée. Vérifiez que votre site propose une circulation d'air adéquate.
- Vérifiez que le couvercle du châssis est bien fixé. La conception du châssis permet à l'air de refroidissement de bien circuler. Un châssis ouvert laisse l'air s'échapper, ce qui peut interrompre et rediriger le flux d'air frais destiné aux composants internes.
- Les décharges électrostatiques (ESD) peuvent endommager l'équipement et gêner les circuits électriques. Des dégâts d'ESD surviennent lorsque des composants électroniques sont mal manipulés et peuvent causer des pannes totales ou intermittentes. Suivez les procédures de prévention d'ESD lors du retrait et du remplacement de composants.
- Portez un bracelet anti-ESD et veillez à ce qu'il soit bien au contact de la peau. Si aucun bracelet n'est disponible, reliez votre corps à la terre en touchant la partie métallique du châssis.
- Vérifiez régulièrement la valeur de résistance du bracelet antistatique, qui doit être comprise entre 1 et 10

mégohms (Mohms).

# Table of Contents

# CHAPTER 1: PRODUCT OVERVIEW

The NCS2-VT04's support for 10bit HEVC encoding enables de-interlacing, image scaling, frame rate conversion and graphical acceleration for transcoding efficiency that makes available high quality and bandwidth-hungry video content.

## Ordering Information

| SKU No. | Main Features |
|---|---|
| **NCS2-VT04A** | VT04A + sub NCS2-VT04A (i7-1185G7E Tiger Lake U CPU) |
| **NCS2-VT04D** | VT04D + sub NCS2-VT04A (Celeron 6305E Tiger Lake U CPU) |

## Optional Accessories

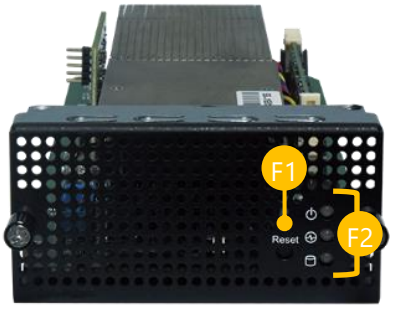
| Type | Description |
|---|---|
| **Storage** | M.2 SATA 2422 Card |

## System Specifications

| | | |
|---|---|---|
| **System Compatibility** | | Lanner x86 Appliances |
| **Platform** | Processor Options | SKU A: i7-1185G7E Tiger Lake U<br>SKU B: Celeron 6305E Tiger Lake U |
| | CPU TDP | Up to 28W |
| | CPU Socket | Onboard |
| | Chipset | SoC |
| | Cooling | Active CPU heat sink |
| **System Memory** | Technology | DDR4 3200MHz non-ECC UDIMM (VLP memory only) |
| | Max. Capacity | 32GB |
| | Socket | 1x 260-pin SO-DIMM |
| **Storage** | | 1x M.2 SATA 2242 (Optional) |
| **Environmental Parameters** | Temperature | 0~40°C Operating,<br>-40~70°C Non-Operating |
| | Humidity (RH) | 5~90% RH, Non-condensing |
| **Dimensions** | (WxDxH) | 39 x 77.2 x 196.1mm |
| | Weight | 1kg |
| **Approvals and Compliance** | | CE/FCC Class A, UL, RoHS |

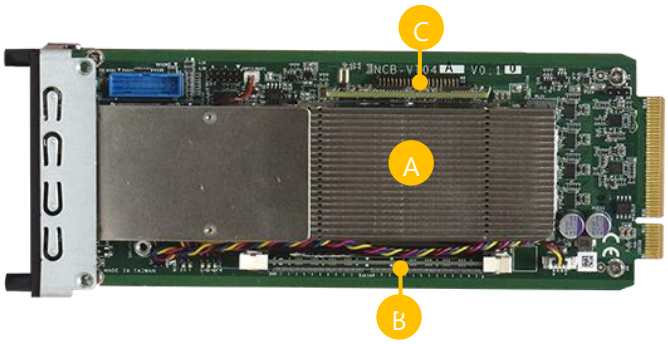
# Physical Overview

## Front View




| No. | Description | |
|---|---|---|
| F1 | Reset Button | 1x Reset Button |
| F2 | LED | Power/LAN/Status refer to Appendix A |

## Top View

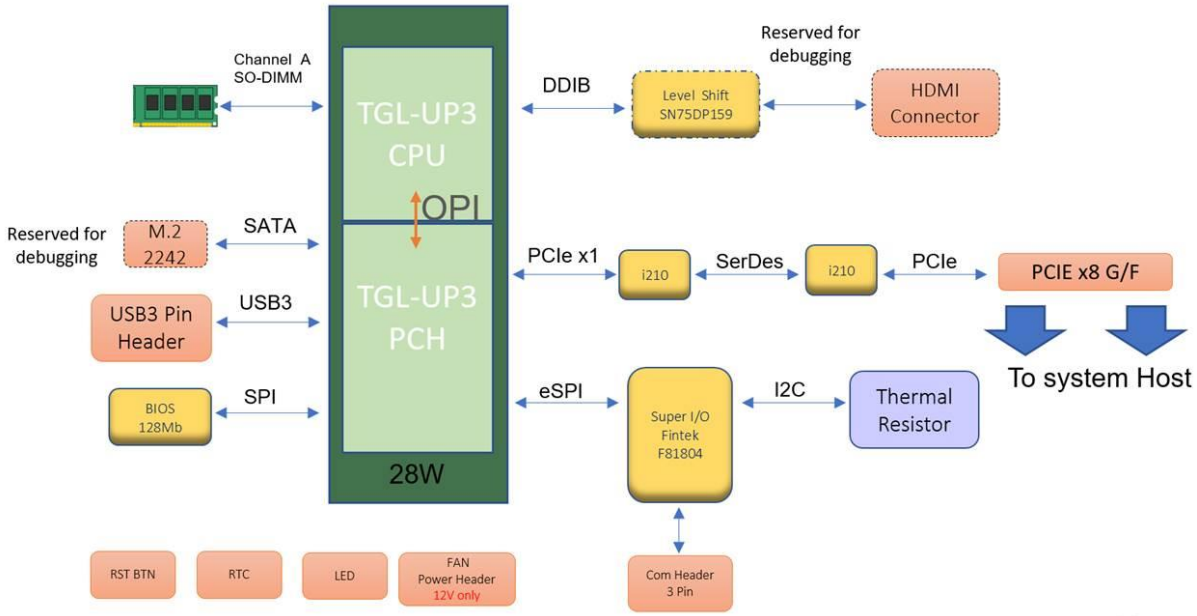



| No. | Description | |
|---|---|---|
| A | CPU | CPU |
| B | Memory | SO-DIMM |
| C | Power Board | Power Board |

# CHAPTER 2: BOARD INFORMATION

## Block Diagram

The block diagram indicates how data flows among components on the board. Please refer to the following figure for your motherboard's layout design.



# CHAPTER 3: HARDWARE SETUP

To reduce the risk of personal injury, electric shock, or damage to the system, please remove all power connections and wear ESD protection gloves when handling the installation steps.

**Warning**

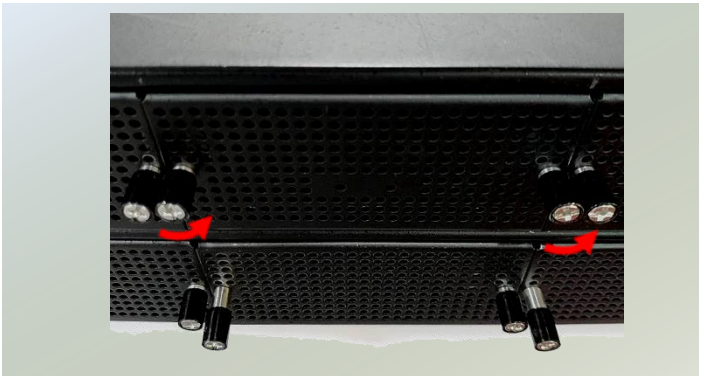
(1) To reduce the risk of personal injury, electric shock, or damage to the equipment, please remove all power sources. (2) Please wear ESD protected gloves before conducting the following steps. This exclamation point indicates that there is a caution or warning and it is something that could damage your property or product.

## Installing NIC Module in Your System

1. Power off the system and select an NCS2 slot on the system.

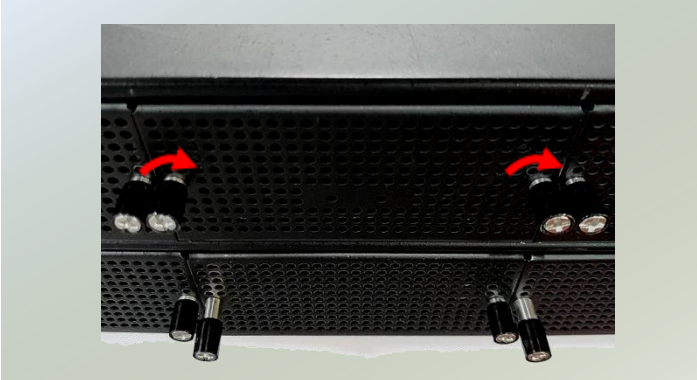
Note: The system shown in the image below is for reference only.

2. Rotate clockwise and loosen the two lock-screws on the door.



3. Remove the door and insert the module. Align the golden fingers to the socket on the motherboard carefully while inserting the module.

4. Once the module is firmly seated, rotate counter-clockwise and tighten the two (2) lock-screws. The NIC module has been successfully installed.



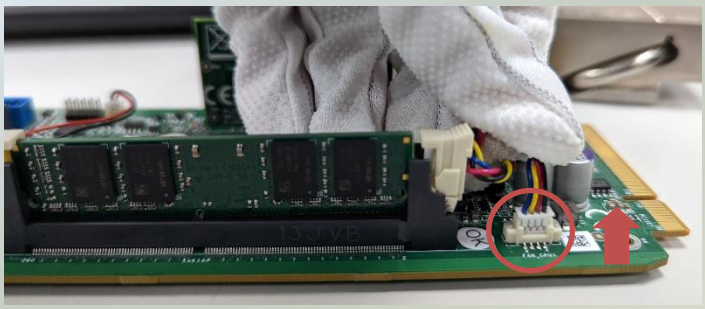
# Installing Memory Card (Optional)

## Revealing the M.2 Socket

1. Unscrew the four (4) screws holding down the motherboard.

2. Turn the motherboard over and unscrew the four (4) screws securing the heatsink.

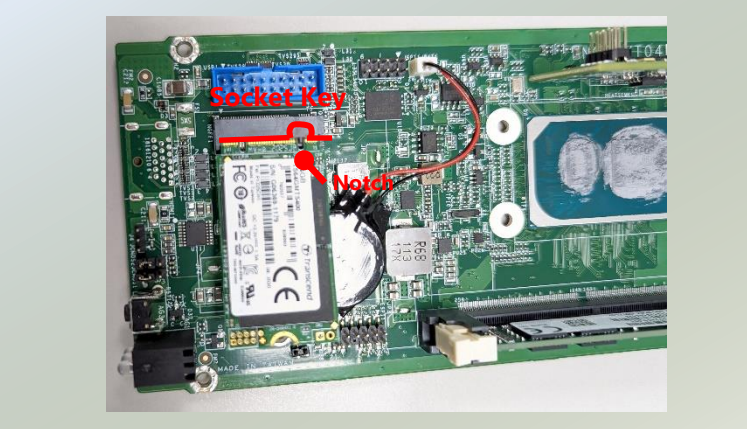
3. Turn the motherboard back around and carefully lift up the heatsink. Disconnect the connector cable from the connector pin.



## Installing the M.2 Module Card

4. Locate the M.2 slot on the motherboard

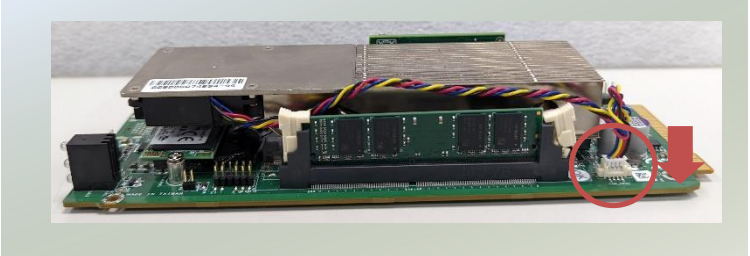
5. Align the notch of the M.2 memory card with the socket key in the pin slot.




6. Insert the M.2 memory card pins at 30 degrees into the socket until it is fully seated.

7. Push down on the module and secure it with a screw.

8. Carefully place the heatsink back on the motherboard. Connect the heat sink connector cable to the connector pin.



9. Turn the motherboard around, and line up the four (4) holes and re-secure the heatsink on the motherboard.

10. Turn the motherboard back around and secure the motherboard with four (4) screws.

# CHAPTER 4: BIOS SETUP

BIOS (Basic Input / Output System) is the program that controls the computer boot process.
NCS2-TV04 supports Intel® Media SDK and OpenVINO™ Toolkit, for additional information, please inquire Lanner Technical Support.

## Entering Setup

BIOS is a firmware embedded on an exclusive chip on the system's motherboard. The module has AMI BIOS built-in, with a setup utility that allows users to configure required settings or to activate certain system features.

To enter the BIOS setup utility, simply follow the steps below:

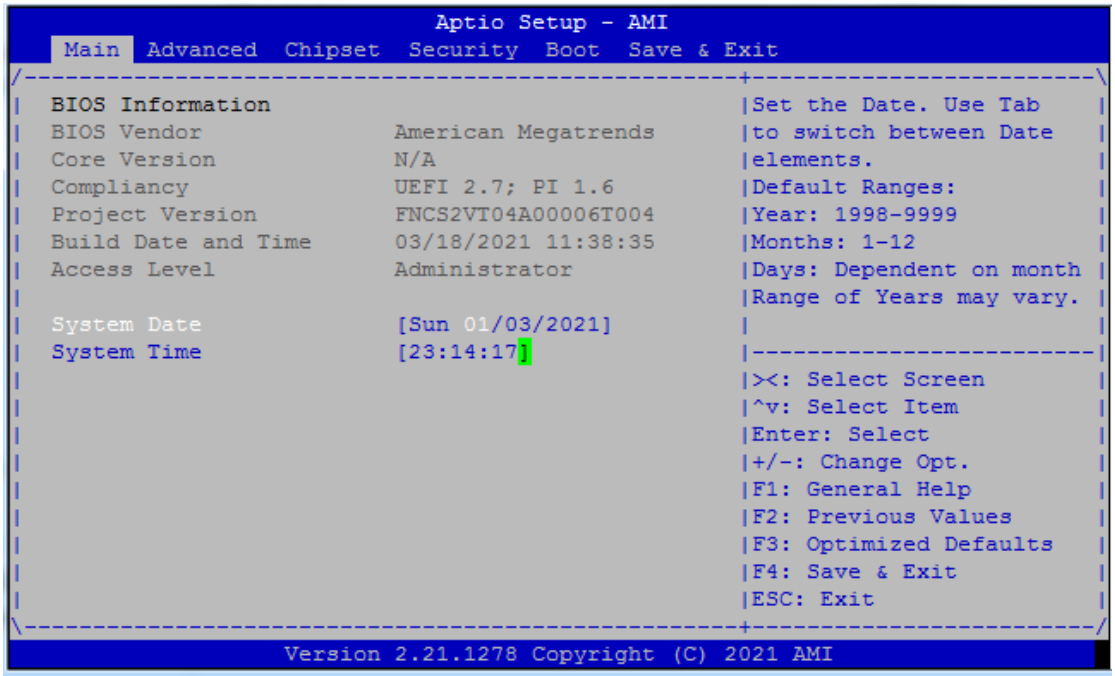
1. Boot up the system.
2. Pressing the **<Tab>** or **<Del>** key immediately allows you to enter the Setup utility, and then you will be directed to the BIOS main screen. The instructions for BIOS navigations are as below:

| Control Keys | Description |
|---|---|
| →← | select a setup screen |
| ↑↓ | select an item/option on a setup screen |
| **<Enter>** | select an item/option or enter a sub-menu |
| **+/-** | adjust values for the selected setup item/option |
| **F1** | display General Help screen |
| **F2** | retrieve previous values, such as the last configured parameters during the last time you entered BIOS |
| **F3** | load optimized default values |
| **F4** | save configurations and exit BIOS |
| **<Esc>** | exit the current screen |

**Note**: the images in the following section are for reference only.

# Main Page

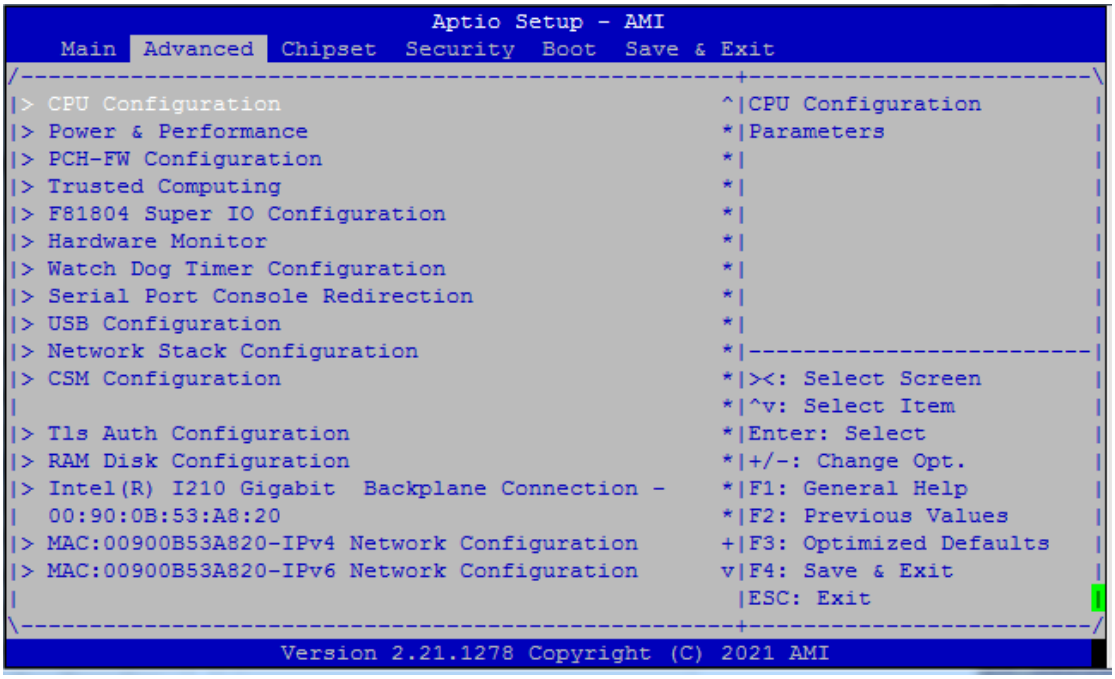
Setup main page contains BIOS information and project version information.



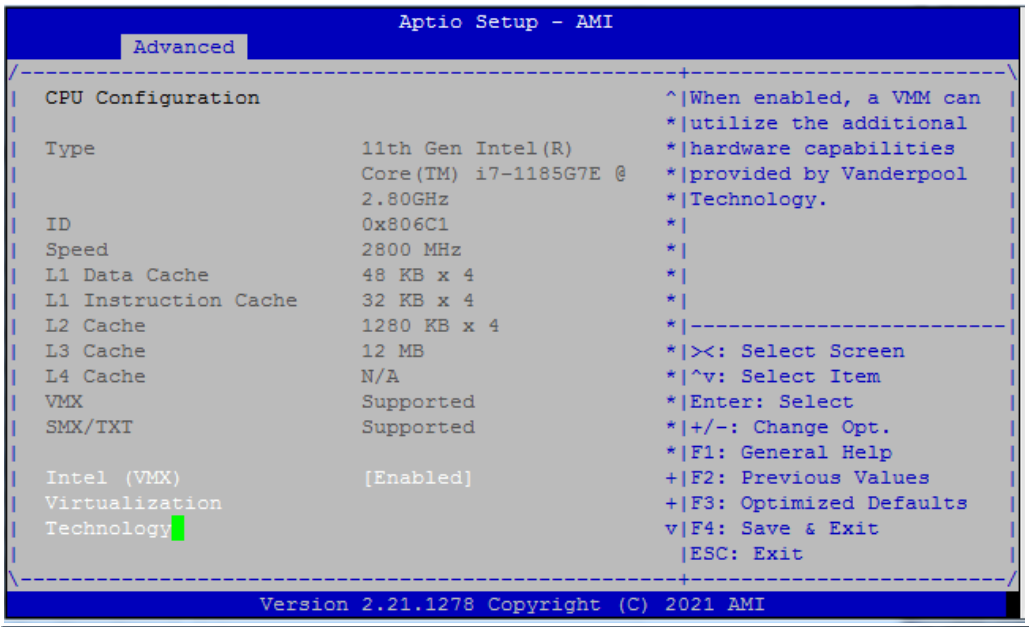

| Feature | Description |
|---|---|
| BIOS Information | BIOS Vendor: American Megatrends<br>Core Version: AMI Kernel version, CRB code base, X64<br>Compliancy: UEFI version, PI version<br>Project Version: BIOS release version<br>Build Date and Time: MM/DD/YYYY<br>Access Level: Administrator / User |
| System Date | To set the Date, use **<Tab>** to switch between Date elements. Default<br>Range of Year: 2005-2099<br>Default Range of Month: 1-12<br>Days: dependent on Month. |
| System Time | To set the Date, use **<Tab>** to switch between Date elements. |

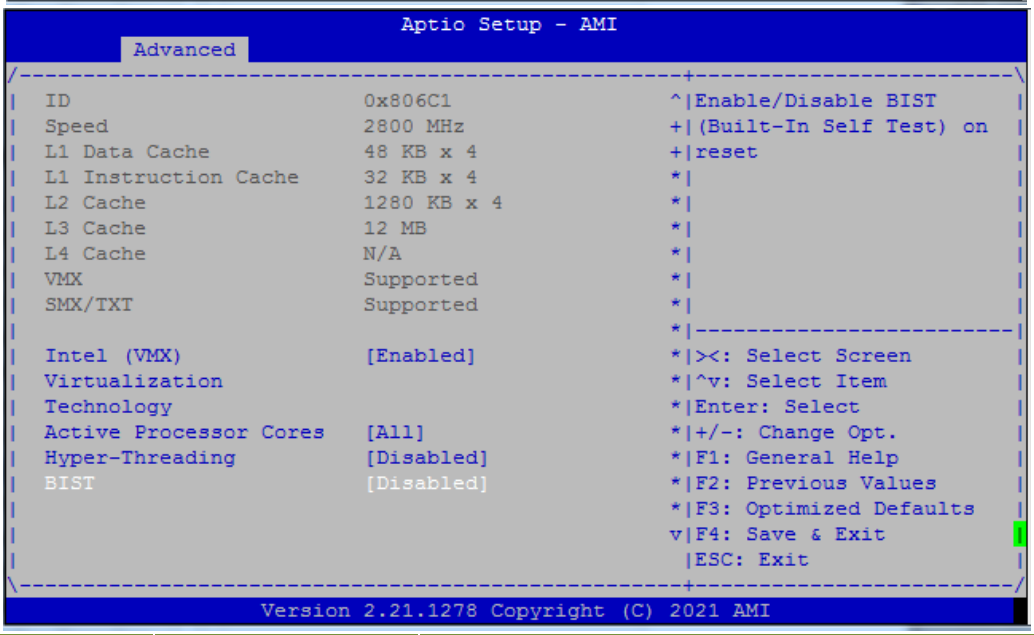
# Advanced

Select the **Advanced** menu item from the BIOS setup screen to enter the "Advanced" setup screen. Users can select any of the items in the left frame of the screen.



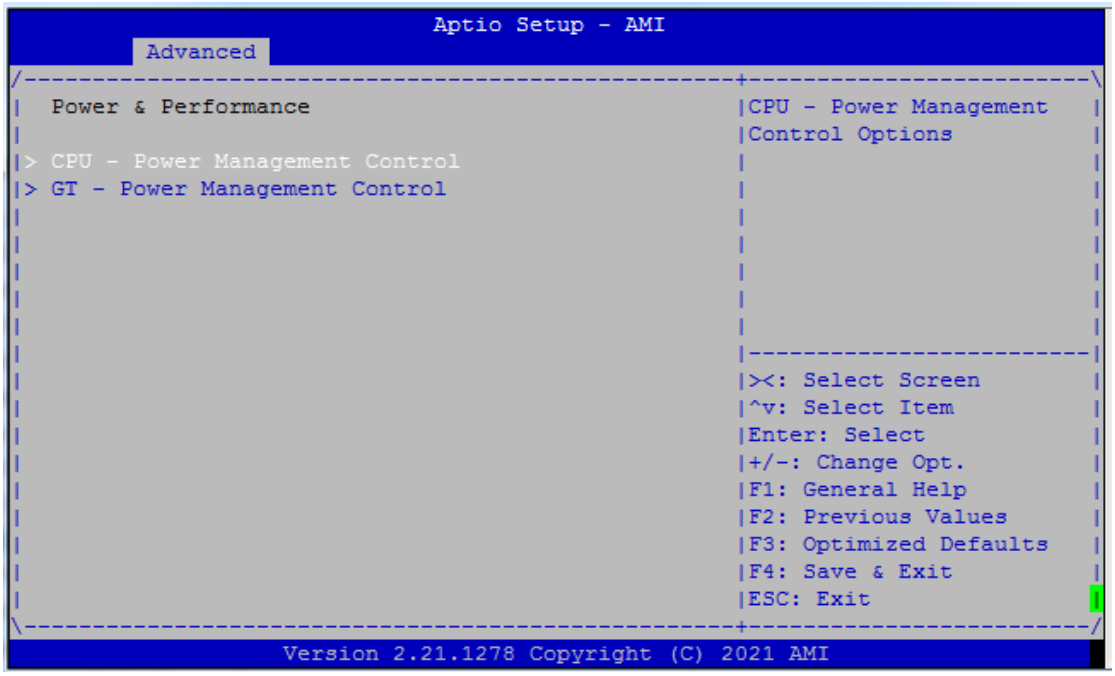
## CPU Configuration




| Feature | Options | Description |
|---|---|---|
| Intel (VMX) Virtualization Technology | Enabled<br>Disabled | When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology. |
| Active Processor Cores | All<br>1<br>2<br>3 | Number of cores to enable in each processor package. |
| Hyper-Threading | Enabled<br>Disabled | Enable or Disable Hyper-Threading Technology. |
| BIST | Enabled<br>Disabled | Enable/Disable BIST (Built-In Self Test) on reset |

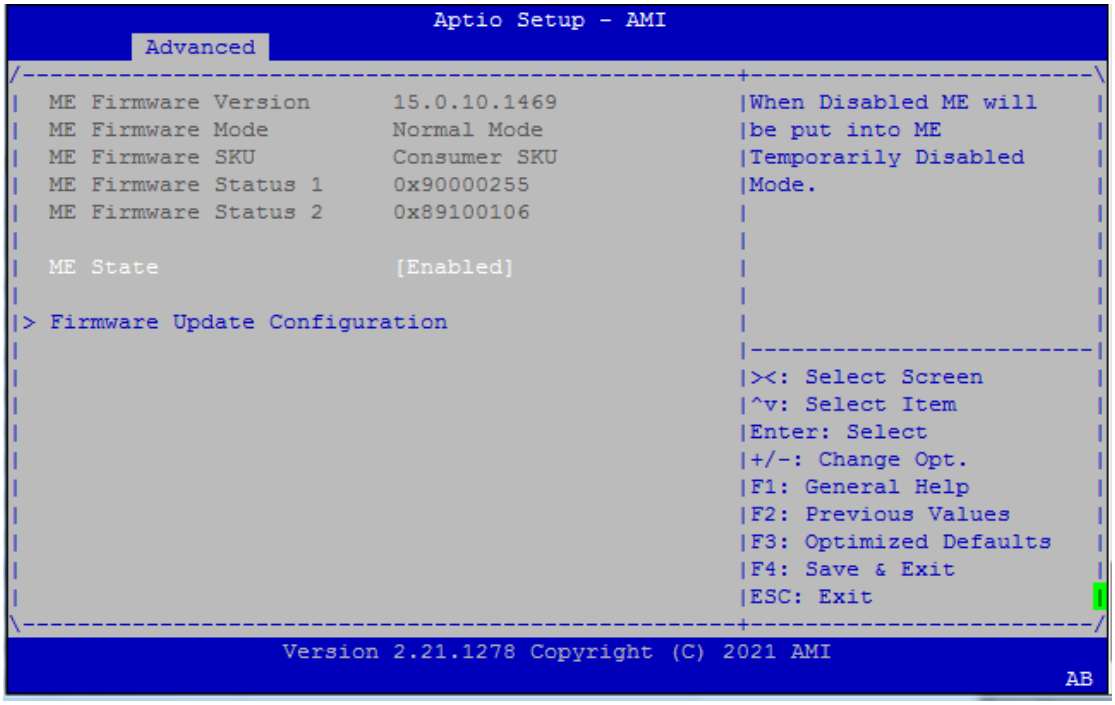
## Power & Performance




This feature can be available upon customer request, Standard will hide these features.

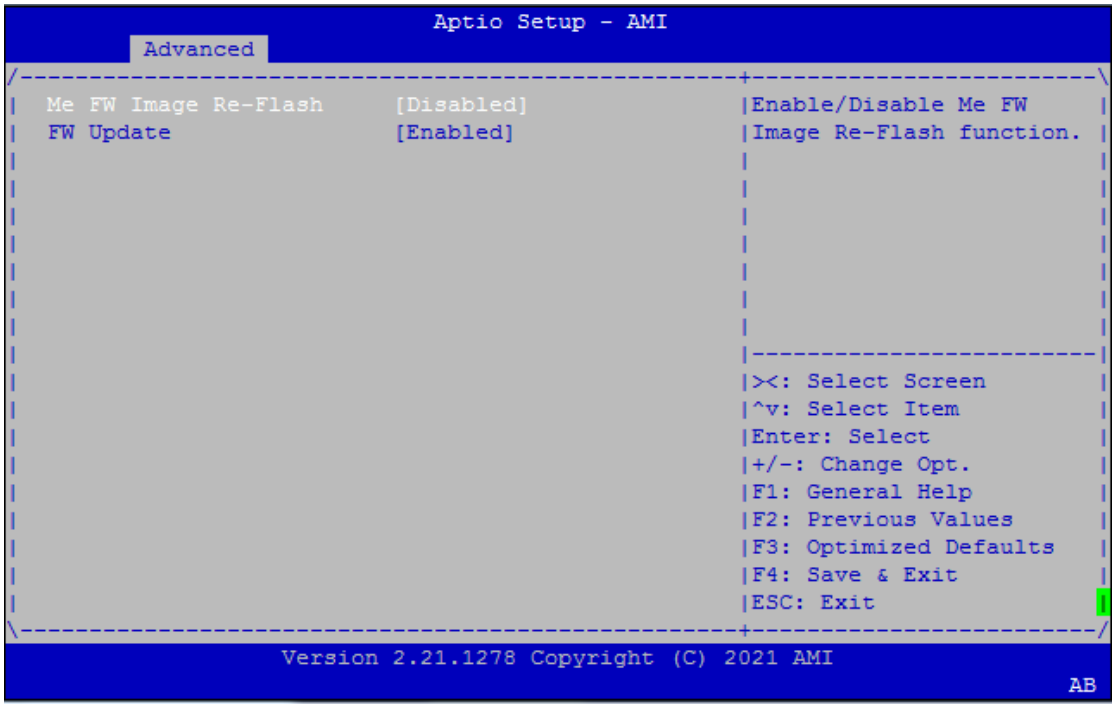
This feature specifications have not yet been determined by customer.

## PCH-FW Configuration



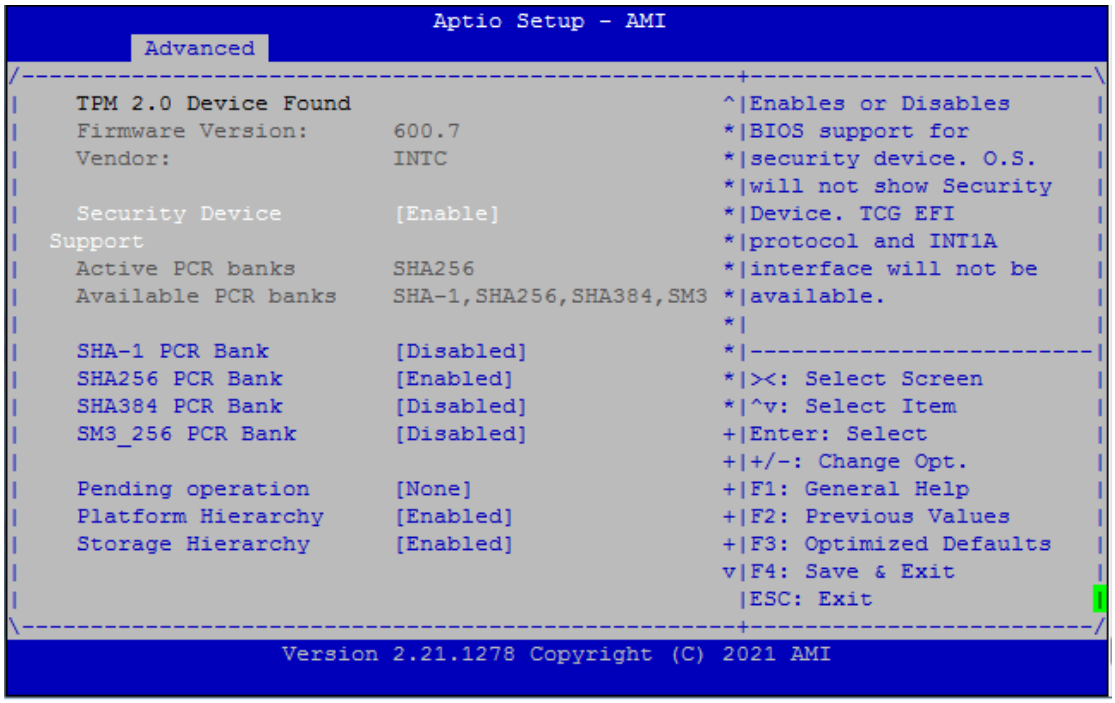

| Feature | Options | Description |
|---|---|---|
| ME State | Enabled<br>Disabled | Configure Management Engine Technology Parameters |

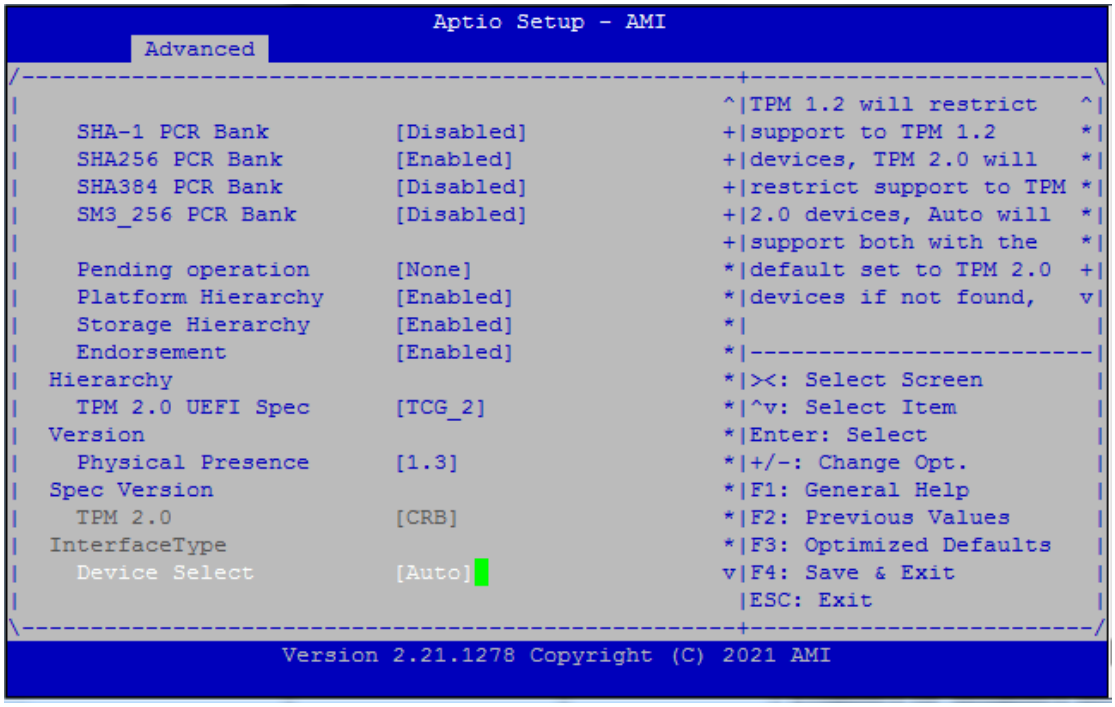
## Firmware Update Configuration




| Feature | Options | Description |
|---|---|---|
| Me FW Image Re-Flash | Enabled<br>Disabled | Enable/Disable ME FW Image Re-Flash function. |
| FW Update | Enabled<br>Disabled | Enable/Disable ME FW Update function. |

## Trusted Computing

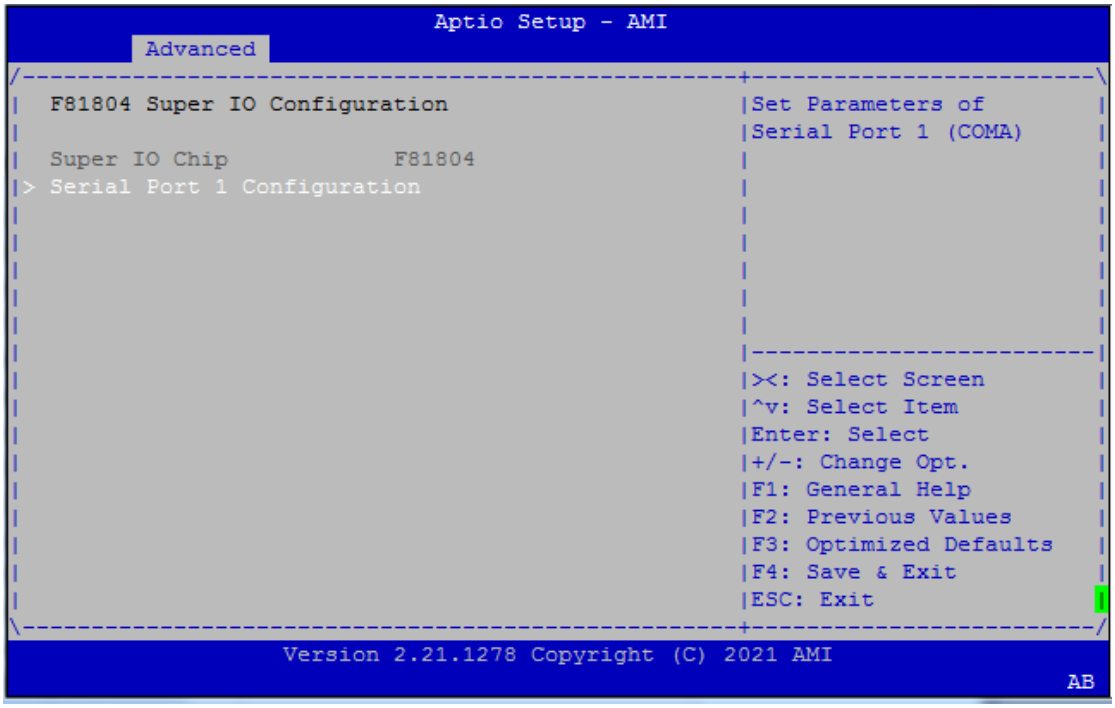


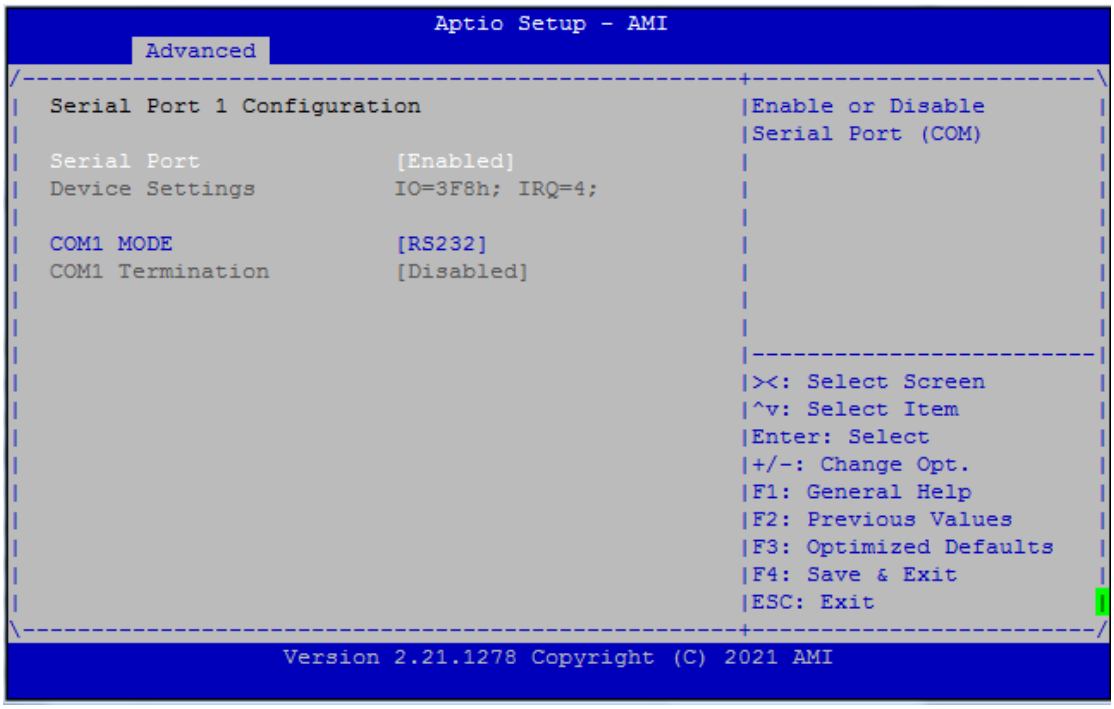

| Feature | Options | Description |
|---|---|---|
| Security Device Support | Enabled<br>Disabled | Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available. |
| SHA-1 PCR Bank | Enabled<br>Disabled | Enables or Disables SHA-1 PCR Bank. |
| SHA256 PCR Bank | Enabled<br>Disabled | Enables or Disables SHA256 PCR Bank. |

| | | |
|---|---|---|
| SHA384 PCR Bank | Enabled<br>Disabled | Enables or Disables SHA384 PCR Bank. |
| SM3_256 PCR Bank | Enabled<br>Disabled | Enables or Disables SM3_256 PCR Bank. |
| Pending operation | None<br>TPM Clear | Schedules an Operation for the Security Device.<br>NOTE: Your computer will reboot during restart in order to change State of Security Device. |
| Platform Hierarchy | Enabled<br>Disabled | Enables or disables Platform Hierarchy. |
| Storage Hierarchy | Enabled<br>Disabled | Enables or disables Storage Hierarchy. |
| Endorsement Hierarchy | Enabled<br>Disabled | Enables or disables Endorsement Hierarchy. |
| TPM2.0 UEFI Spec Version | TCG_1_2<br>TCG_2 | Select the TCG2 Spec Version,<br>**TCG_1_2**: the Compatible mode for Win8/Win10<br>**TCG_2**: Supports new TCG2 protocol and event format for Win10 or later. |
| Physical Presence Spec Version | 1.2<br>1.3 | Select to tell OS to support PPI Spec Version 1.2 or 1.3.<br>NOTE: Some HCK tests might not support 1.3. |
| Device Select | TPM 1.2<br>TPM 2.0<br>Auto | **TPM 1.2** will restrict support to TPM 1.2 devices; while **TPM 2.0** will restrict support to TPM 2.0 devices; **Auto** will support both with the default set to TPM 2.0 devices. If not found, TPM 1.2 devices will be enumerated. |

## F81804 Super IO Configuration

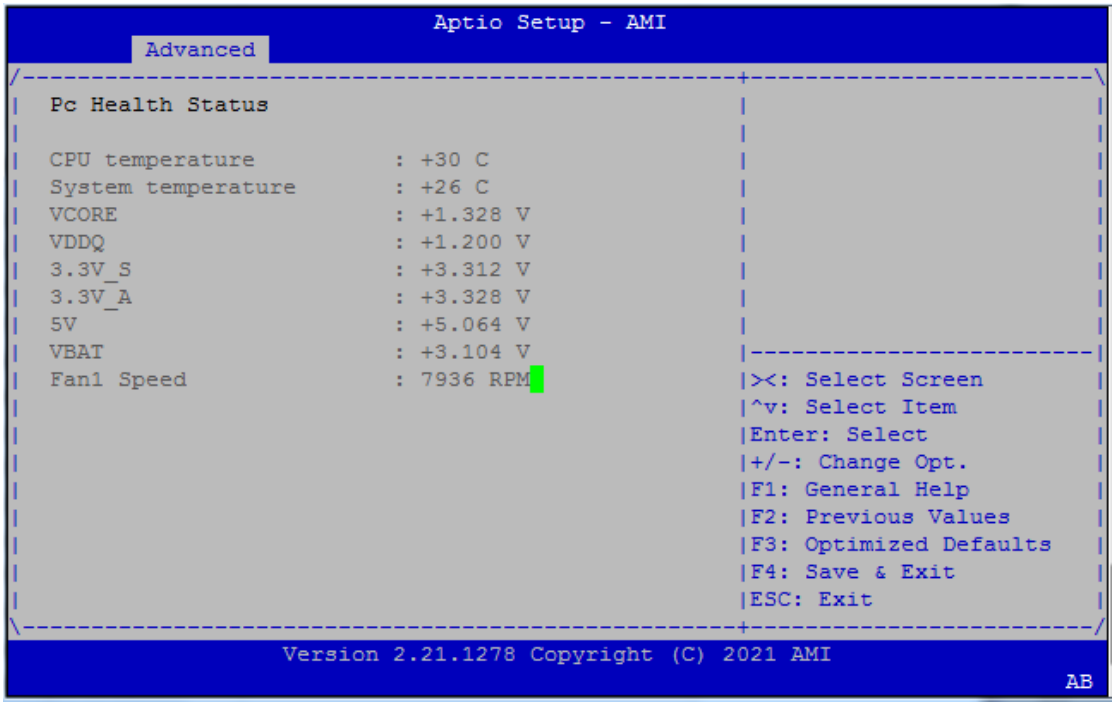


## Serial Port 1 Configuration



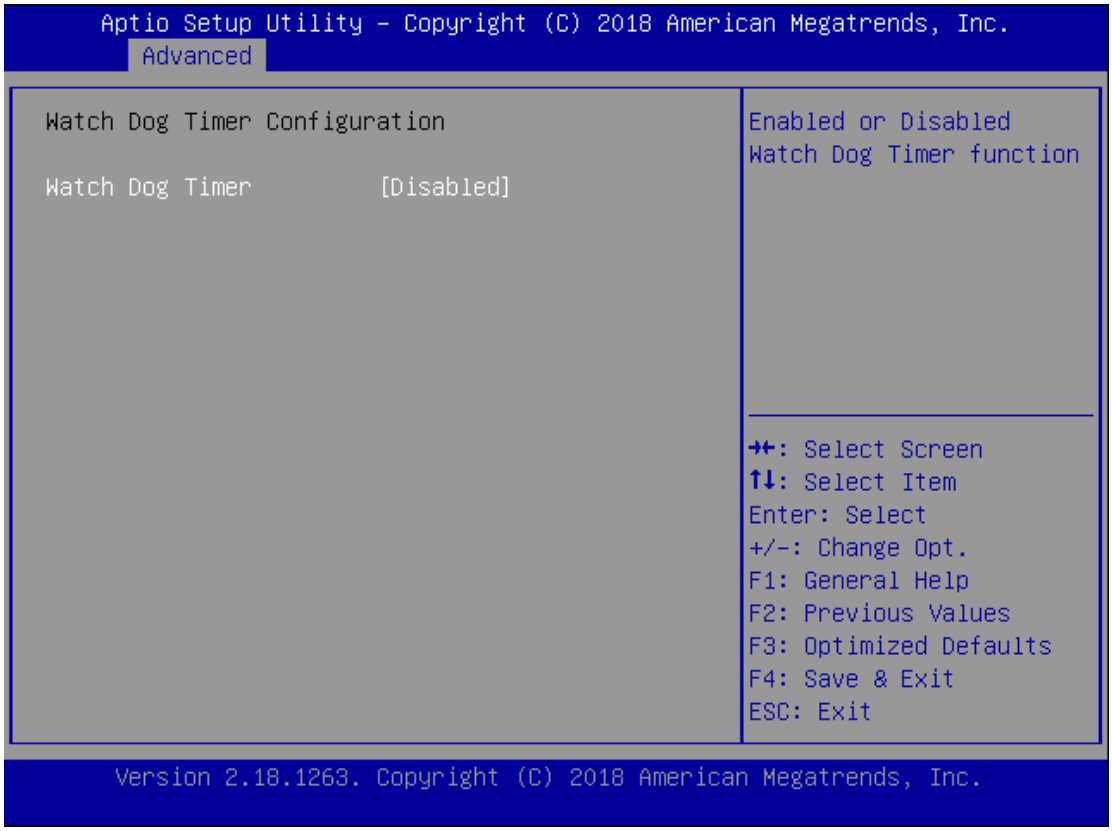

| Feature | Options | Description |
|---|---|---|
| Serial Port | Enabled<br>Disabled | Enables or Disables Serial Port (COM) |
| Device Settings | NA | IO=3F8h; IRQ = 4 |

## Hardware Monitor



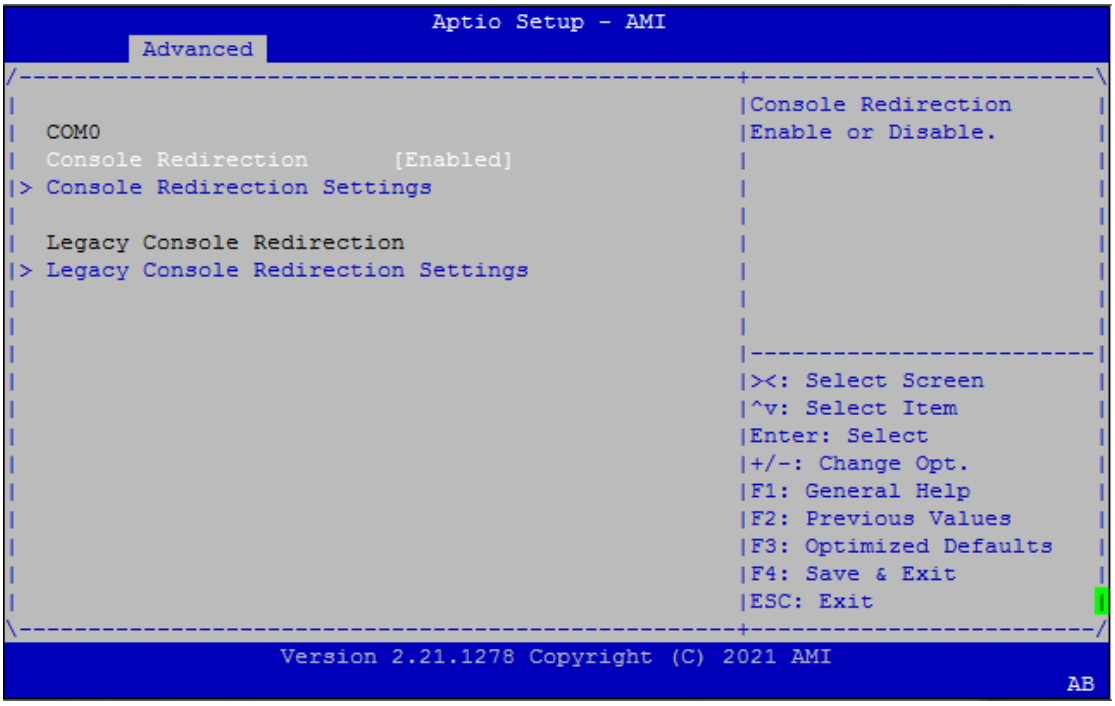

| Feature | Description |
|---|---|
| CPU Temp | This value reports the CPU temperature. |
| SYS Temp | This value reports the System temperature. |
| VCORE | This value reports the CPU VCORE. |
| VDDQ | This value reports the VDDQ. |
| 3.3V_S | This value reports the 3.3V_S Input voltage. |
| 3.3V_A | This value reports the 3.3V_A Input voltage. |
| 5V | This value reports the 5V Input voltage. |
| VBAT | This value reports the VBAT Input voltage. |
| Fan1 Speed | This value reports the FAN1 speed |

## Watch Dog Timer Configuration



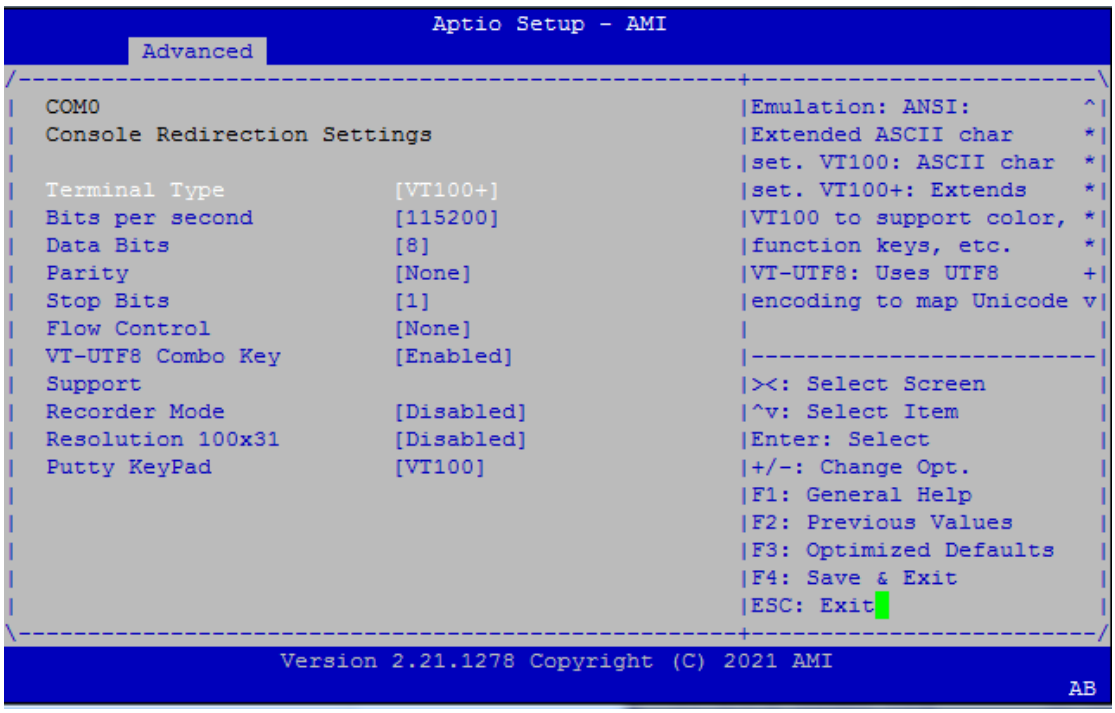

| Feature | Options | Description |
|---|---|---|
| Watch Dog Timer | Enabled<br>Disabled | Enable or Disable Watch Dog function |

## Serial Port Console Redirection




| Feature | Options | Description |
|---|---|---|
| COM0 Console Redirection | Enabled<br>Disabled | Enables or disables Console Redirection |

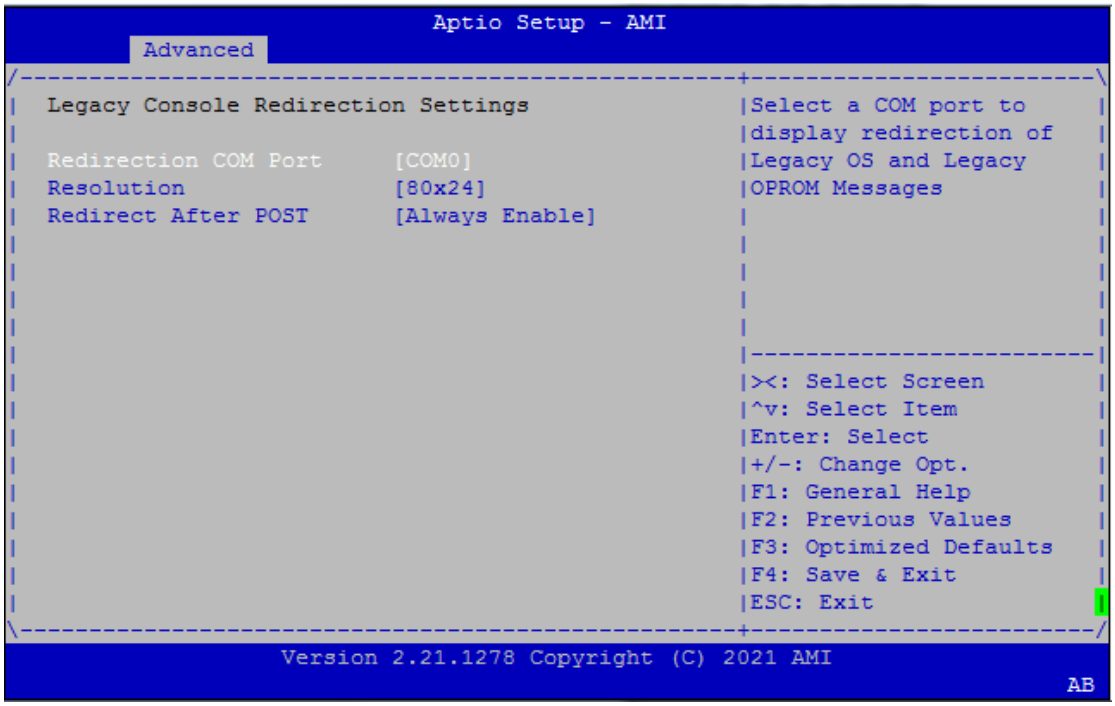
## Console Redirection Settings




| Feature | Options | Description |
|---|---|---|
| Terminal Type | VT100<br>VT100+<br>VT-UTF8<br>ANSI | ANSI: Extended ASCII char set.<br>VT100: ASCII char set.<br>VT100+: Extends VT100 to support color, function keys, etc.<br>VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes. |
| Bits per second | 9600<br>19200<br>38400<br>57600<br>115200 | Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds. |
| Data Bits | 7<br>8 | Data Bits |
| Parity | None<br>Even<br>Odd<br>Mark<br>Space | A parity bit can be sent with the data bits to detect some transmission errors. |
| Stop Bits | 1<br>2 | Stop bits indicate the end of a serial data packet. |
| Flow Control | None<br>Hardware RTS/CTS | Flow control can prevent data loss from buffer overflow. |
| VT-UTF8 Combo Key Support | Disabled<br>Enabled | Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals |

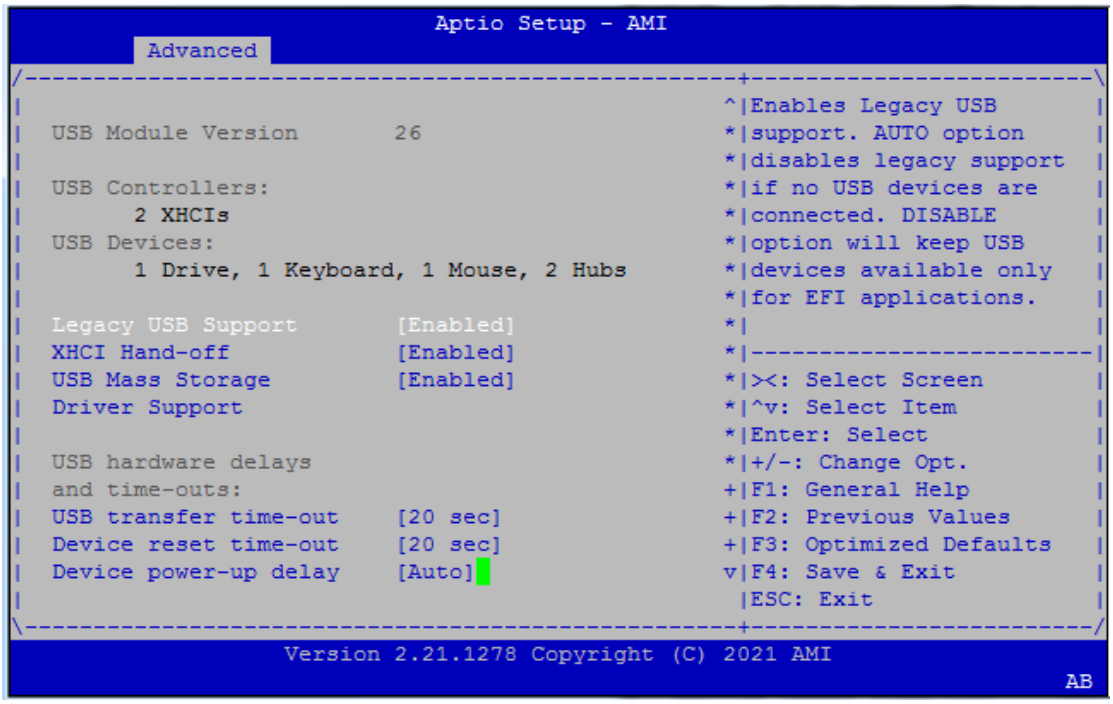
| | | |
|---|---|---|
| Recorder Mode | Disabled<br>Enabled | With this mode enabled only text will be sent. This is to capture Terminal data. |
| Resolution 100x31 | Disabled<br>Enabled | Enables or disables extended terminal resolution. |
| Putty KeyPad | VT100<br>LINUX<br>XTERM86<br>SCO<br>ESCN<br>VT400 | Select FunctionKey and KeyPad on Putty. |

## Legacy Console Redirection Setting



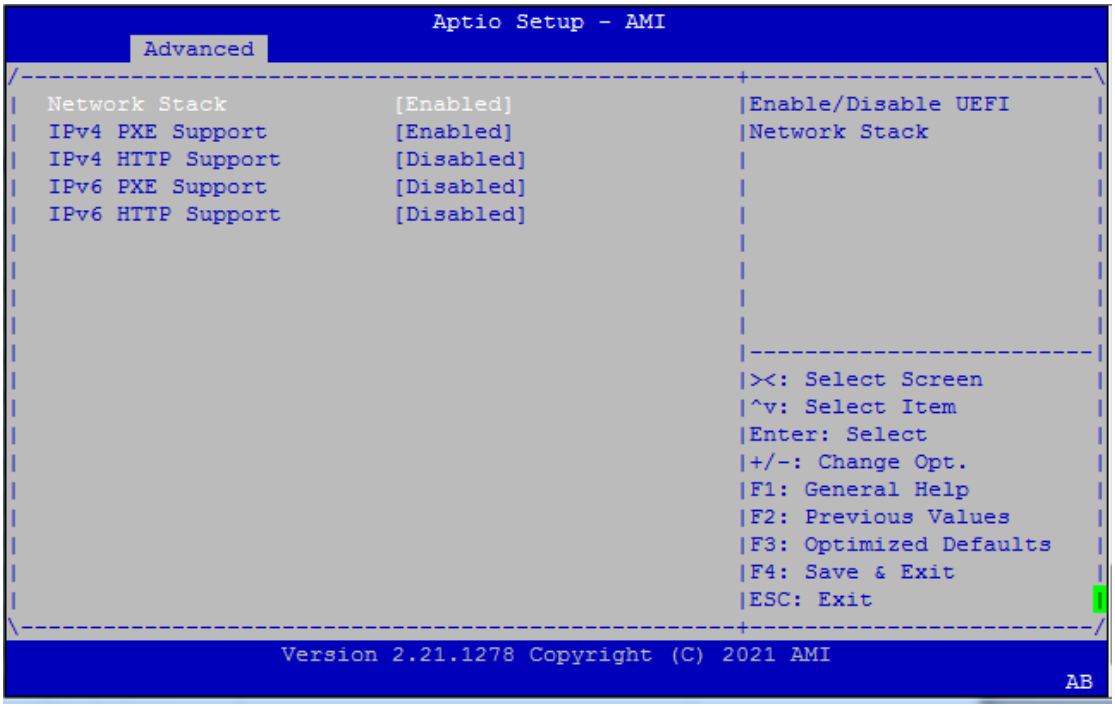

| Feature | Options | Description |
|---|---|---|
| Redirection COM Port | COM0<br>COM1 | Select a COM port to display redirection of Legacy OS and Legacy OPROM Messages |
| Resolution | 80x24<br>80x25 | On Legacy OS, the Number of Rows and Columns supported redirection. |
| Redirection After POST | Always Enable<br>BootLoader | When Bootloader is selected, then Legacy Console Redirection is disabled before booting to legacy OS. When Always Enable is selected, then Legacy Console Redirection is enabled for legacy OS. Default setting for this option is set to Always Enable. |

## USB Configuration



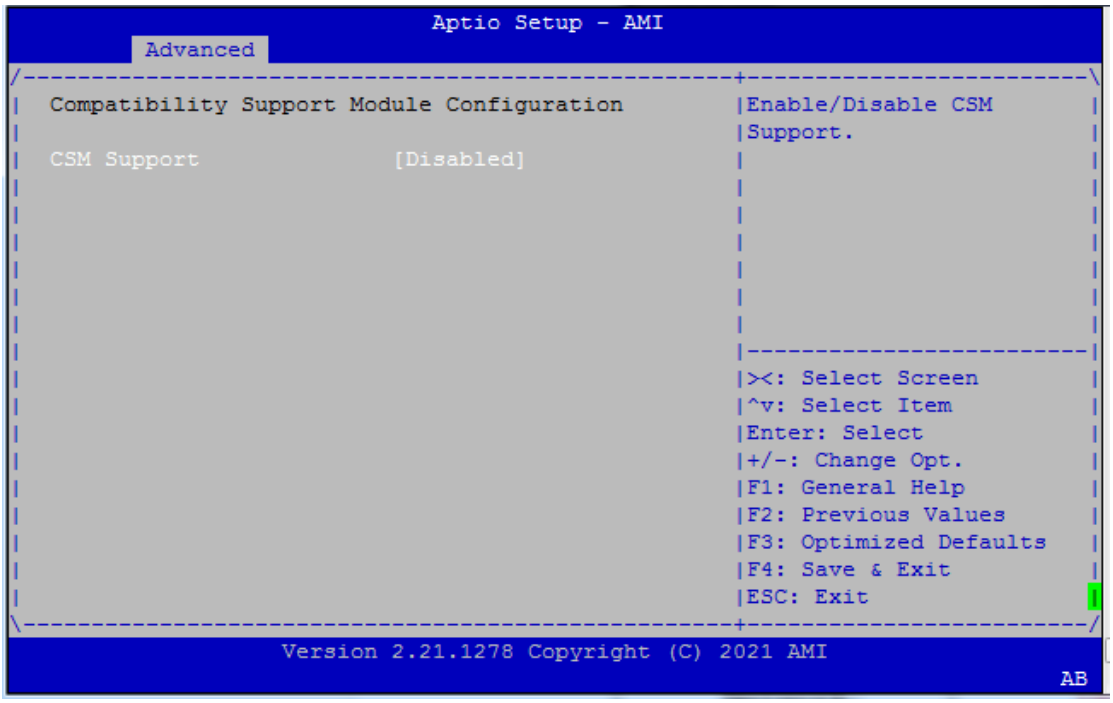

| Feature | Options | Description |
|---|---|---|
| Legacy USB Support | Enabled<br>Disabled<br>Auto | Enables Legacy USB support.<br>**Auto** option disables legacy support if no USB devices are connected;<br>**Disabled** option will keep USB devices available only for EFI applications. |
| XHCI Hand-off | Enabled<br>Disabled | 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 | Enabled<br>Disabled | Enables or disables USB Mass Storage Driver Support. |
| USB transfer time-out | 1 sec<br>5 sec<br>10 sec<br>20 sec | The time-out value for Control, Bulk, and Interrupt transfers |
| Device reset time-out | 1 sec<br>5 sec<br>10 sec<br>20 sec | USB mass storage device Start Unit command time-out |
| Device power-up delay | Auto<br>Manual | Maximum time the device will take before it properly reports itself to the Host Controller. **Auto** uses default value: for a Root port, it is 100 ms, for a Hub port the delay is taken from Hub descriptor. |

## Network Stack Configuration



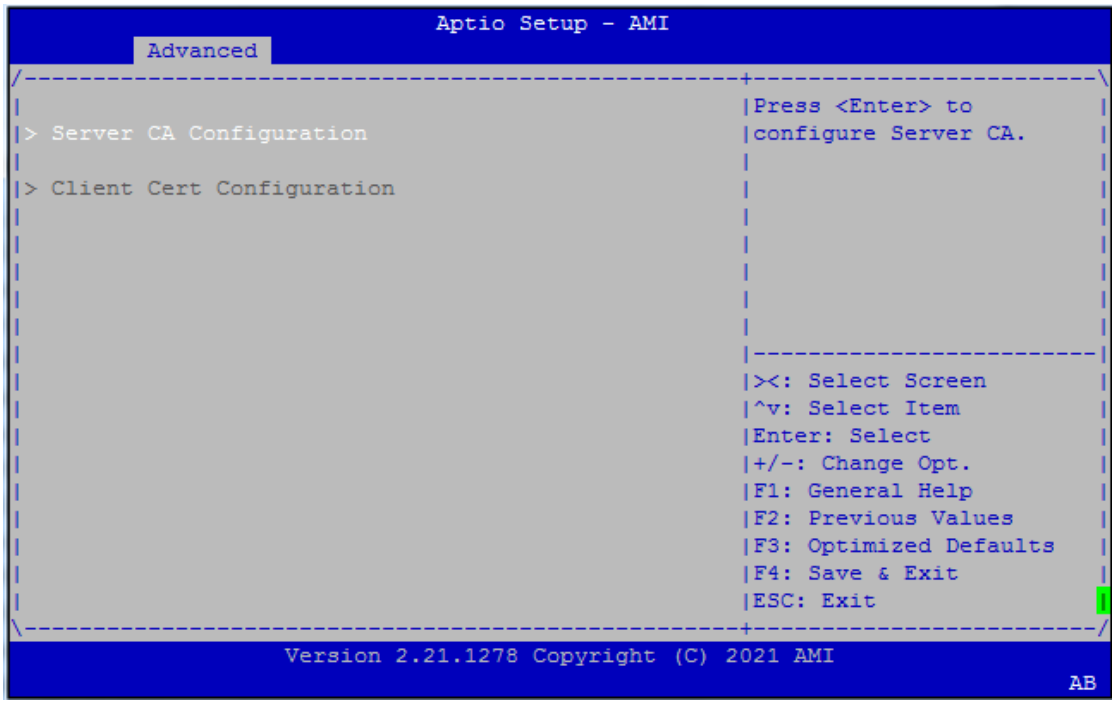

| Feature | Options | Description |
|---|---|---|
| Network Stack | Disabled<br>Enable | Enable/Disable UEFI Network Stack |
| IPv4 PXE Support | Disabled<br>Enable | Enable/Disable IPv4 PXE boot support. If disabled, IPv4 PXE boot support will not be available. |
| IPv4 HTTP Support | Disabled<br>Enable | Enable/Disable IPv4 HTTP boot support. If disabled, IPv4 HTTP boot support will not be available. |
| IPv6 PXE Support | Disabled<br>Enable | Enable/Disable IPv6 PXE boot support. If disabled, IPv6 PXE boot support will not be available. |
| IPv6 HTTP Support | Disabled<br>Enable | Enable/Disable IPv6 HTTP boot support. If disabled, IPv6 HTTP boot support will not be available. |

## CSM Configuration

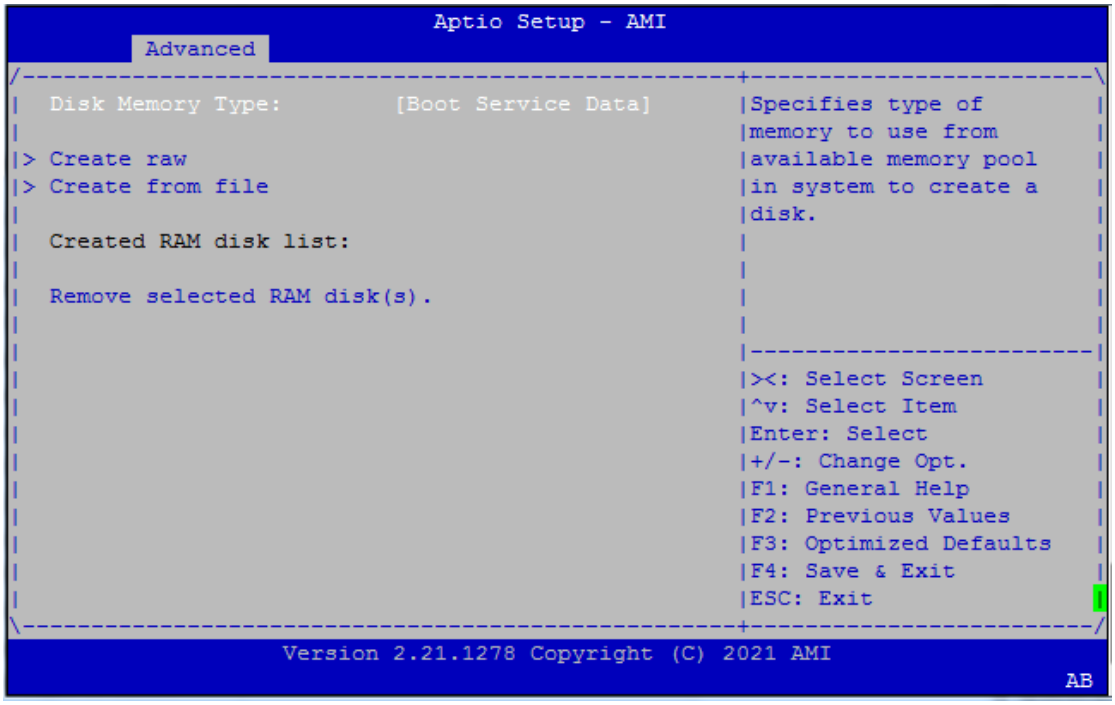



| Feature | Options | Description |
|---|---|---|
| CSM Support | Disabled<br>Enabled | Enables or disables CSM Support |

## TIs Auth Configuration



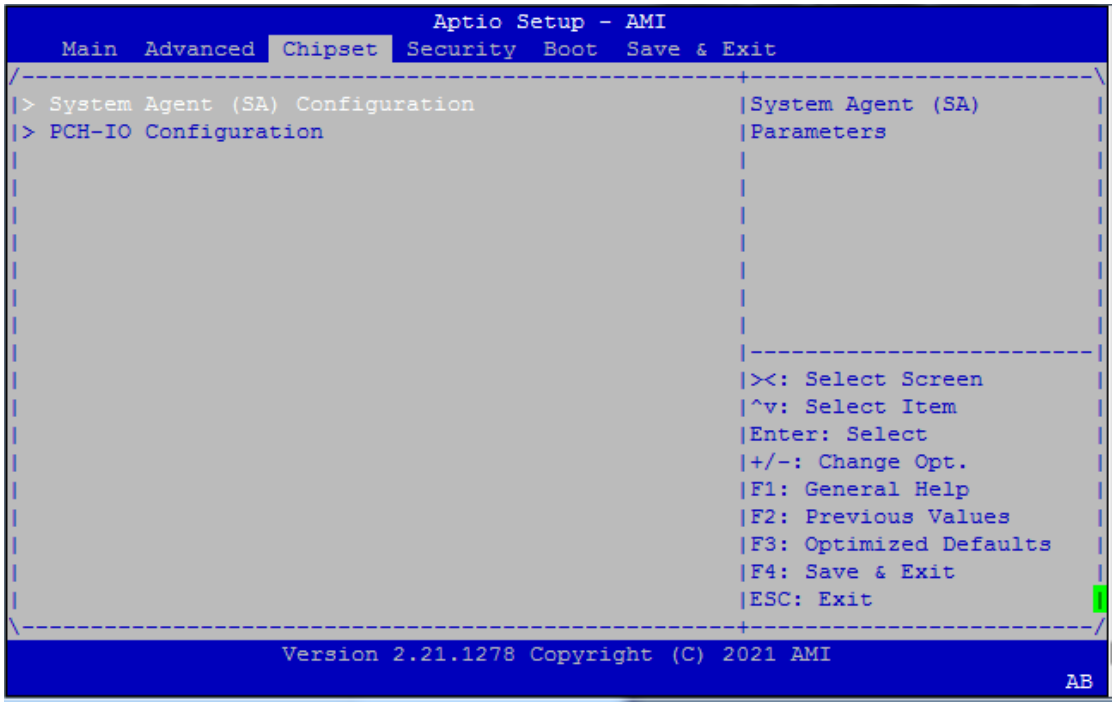
## RAM Disk Configuration



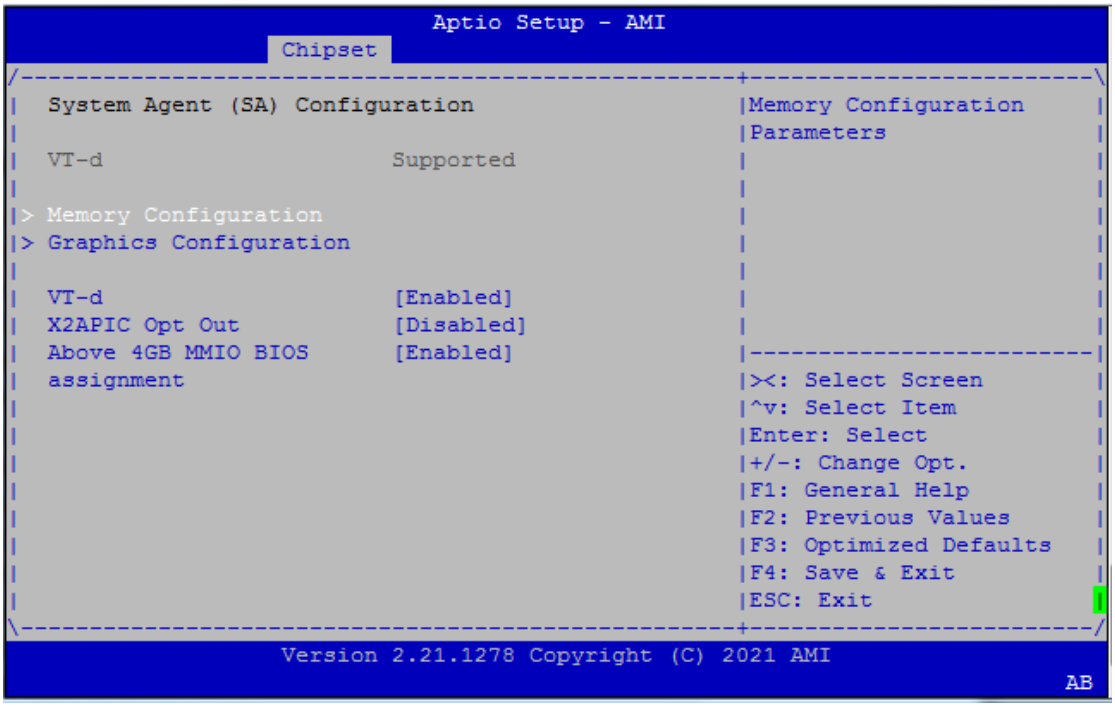

| Feature | Options | Description |
|---|---|---|
| Disk Memory Type | Boot Service Data<br>Reserved | Specifies type of memory to use from available memory pool in system to create a disk. |

# Chipset

Select the **Chipset** menu item from the BIOS setup screen to enter the "Chipset" setup screen. Users can select any of the items in the left frame of the screen.

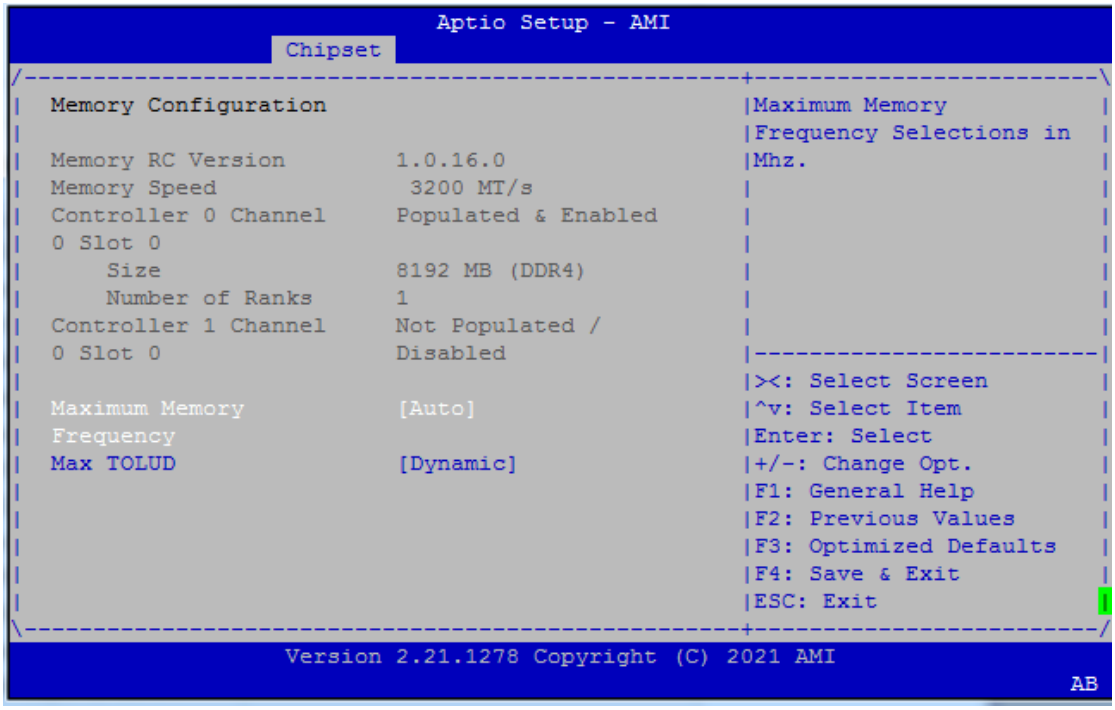


## System Agent (SA) Configuration




| Feature | Options | Description |
|---|---|---|
| VT-d | Enabled<br>Disabled | VT-d capability |
| X2APIC Opt Out | Enabled<br>Disabled | Enable/Disable X2APIC_OPT_OUT bit |
| Above 4GB MMIO BIOS assignment | Enabled<br>Disabled | Enable/Disable above 4GB MemoryMappedIO BIOS assignment This is disabled automatically when Aperture Size is set to 2048MB |

## Memory Configuration



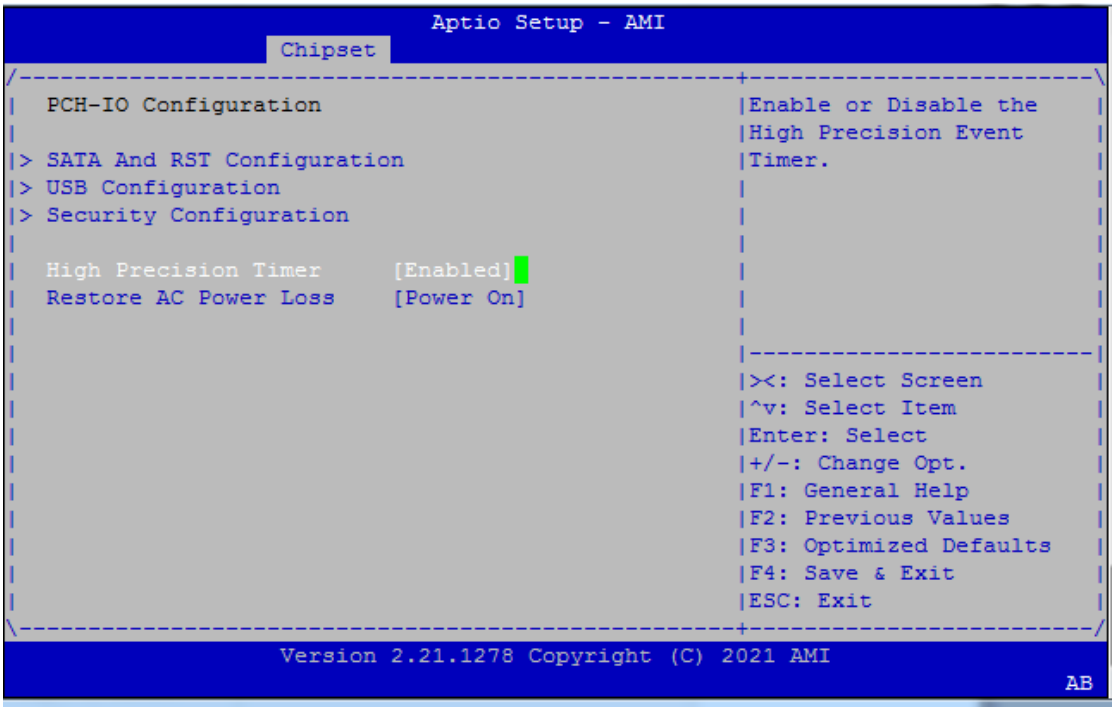

| Feature | Options | Description |
|---|---|---|
| Maximum Memory Frequency | Auto<br>1067-8400 | Maximum Memory \|Frequency Selections in Mhz. |
| Max TOLUD | Dynamic<br>1GB – 3.5 GB | Maximum Value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller |

## Graphics Configuration

This feature can be available upon customer request, Standard will hide these features.

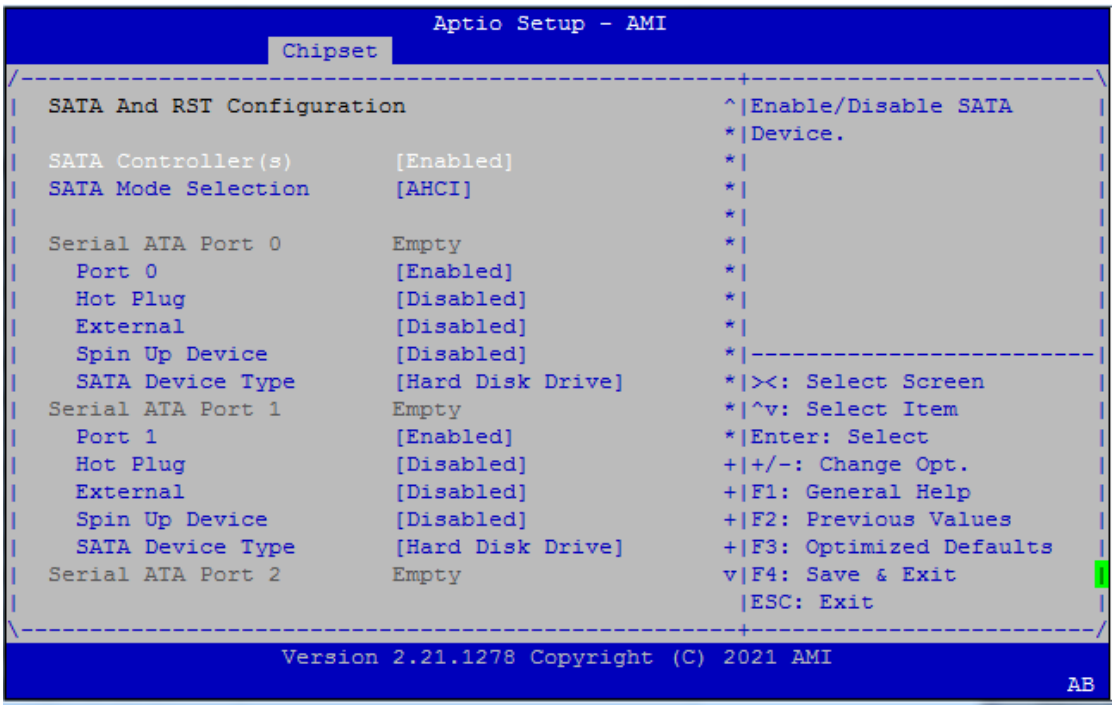
This feature specifications have not yet been determined by customer.

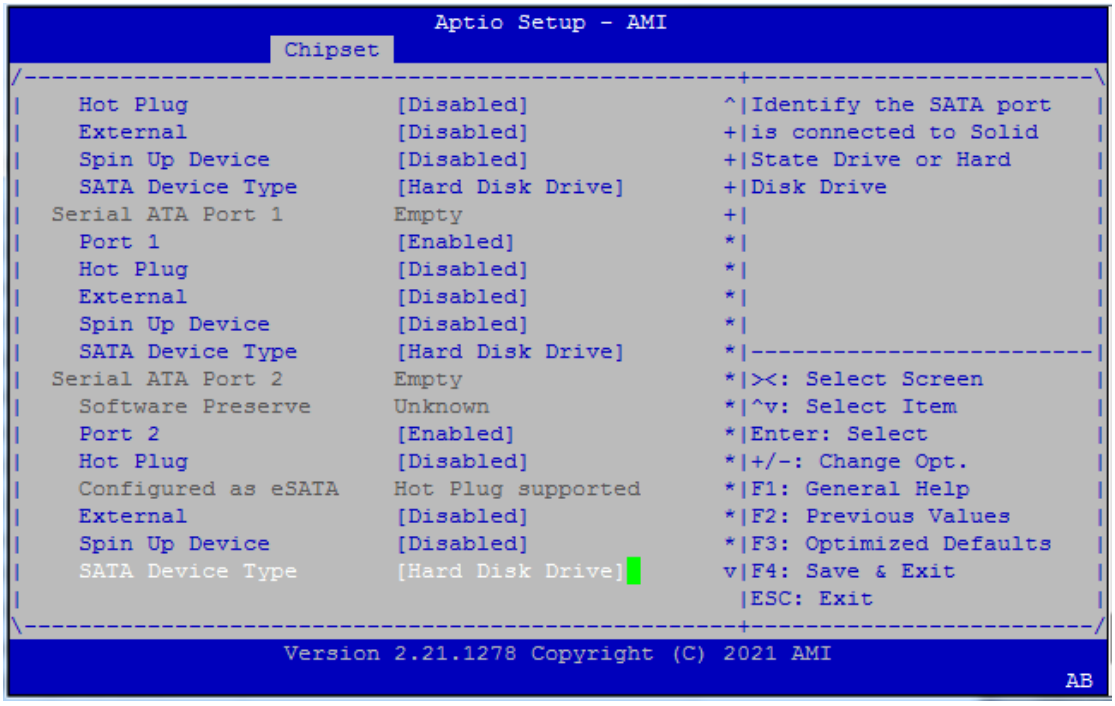
## PCH-IO Configuration




| Feature | Options | Description |
|---|---|---|
| High Precision Timer | Enabled<br>Disabled | Enable or Disable the High Precision Event Timer. |
| Restore AC Power Loss | Power On<br>Power Off | Specify what state to go to when power is re-applied after a power failure (G3 state). |

## SATA and RST Configuration

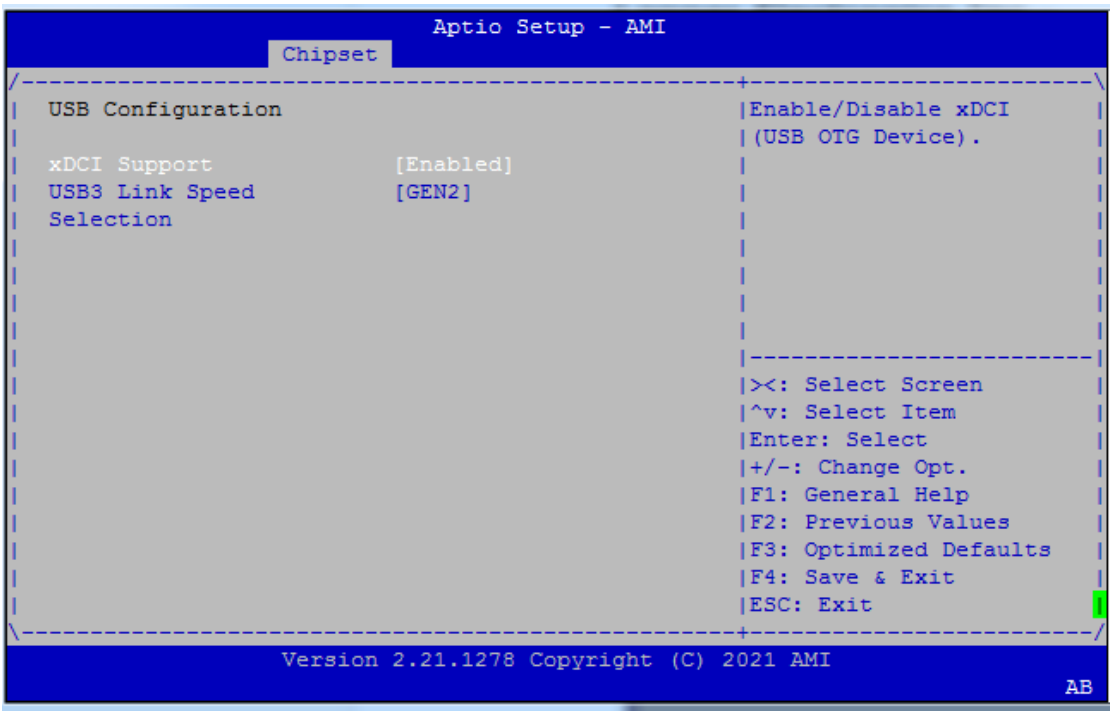



| Feature | Options | Description |
|---|---|---|
| SATA Controller(s) | Enabled<br>Disabled | Enable/Disable SATA Device. |
| SATA Mode Selection | AHCI<br>Intel RST | Determines how SATA controller(s) operate. |
| Port 0 | Enabled<br>Disabled | Enable or Disable SATA Port |
| Hot Plug | Enabled<br>Disabled | Designates this port as Hot Pluggable. |

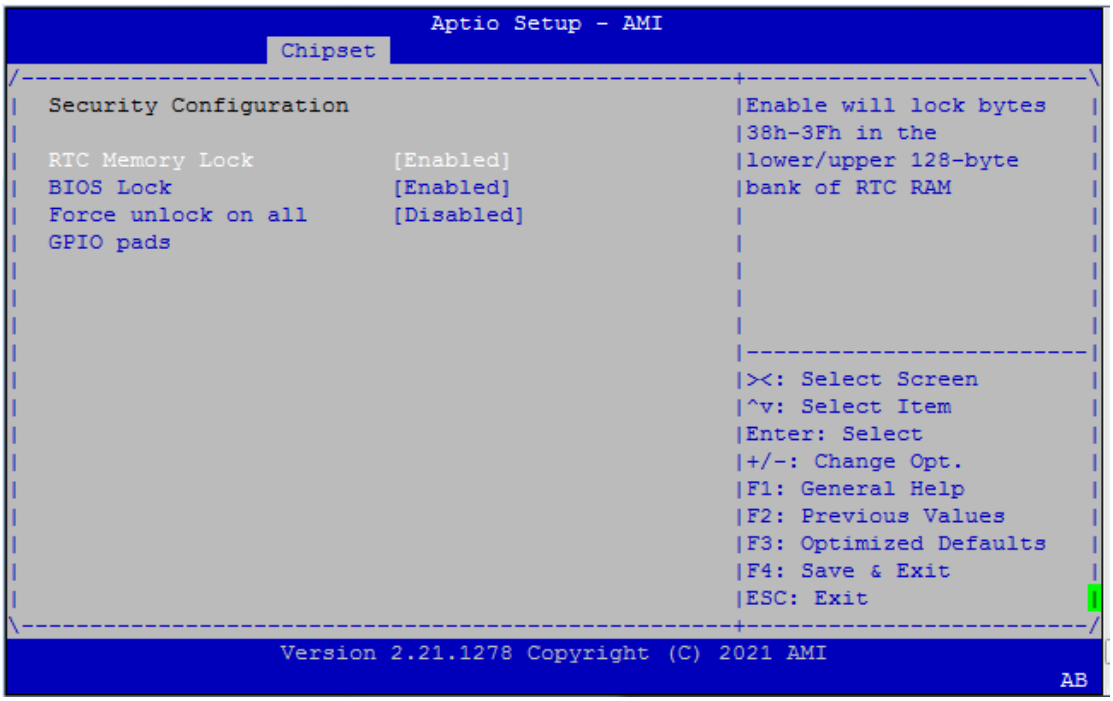
| | | |
|---|---|---|
| External | Enabled<br>Disabled | Marks this port as external. |
| Spin Up Device | Enabled<br>Disabled | If enabled for any of ports Staggerred Spin Up will be performed and only the drives which have this option enabled will spin up at boot. Otherwise all drives spin up at boot. |
| SATA Device Type | Hard Disk Drive<br>Solid State Drive | Identify the SATA port is connected to Solid State Drive or Hard Disk Drive |
| Port 1 | Enabled<br>Disabled | Enable or Disable SATA Port |
| Hot Plug | Enabled<br>Disabled | Designates this port as Hot Pluggable. |
| External | Enabled<br>Disabled | Marks this port as external. |
| Spin Up Device | Enabled<br>Disabled | If enabled for any of ports Staggerred Spin Up will be performed and only the drives which have this option enabled will spin up at boot. Otherwise all drives spin up at boot. |
| SATA Device Type | Hard Disk Drive<br>Solid State Drive | Identify the SATA port is connected to Solid State Drive or Hard Disk Drive |
| Port 2 | Enabled<br>Disabled | Enable or Disable SATA Port |
| Hot Plug | Enabled<br>Disabled | Designates this port as Hot Pluggable. |
| External | Enabled<br>Disabled | Marks this port as external. |
| Spin Up Device | Enabled<br>Disabled | If enabled for any of ports Staggerred Spin Up will be performed and only the drives which have this option enabled will spin up at boot. Otherwise all drives spin up at boot. |
| SATA Device Type | Hard Disk Drive<br>Solid State Drive | Identify the SATA port is connected to Solid State Drive or Hard Disk Drive |

## USB Configuration




| Feature | Options | Description |
|---|---|---|
| xDCI Support | Enable<br>Disable | Enable/Disable xDCI (USB OTG Device). |
| USB3 Link Speed Selection | GEN1<br>GEN2 | This option is to select USB3 Link Speed GEN1 or GEN2 |

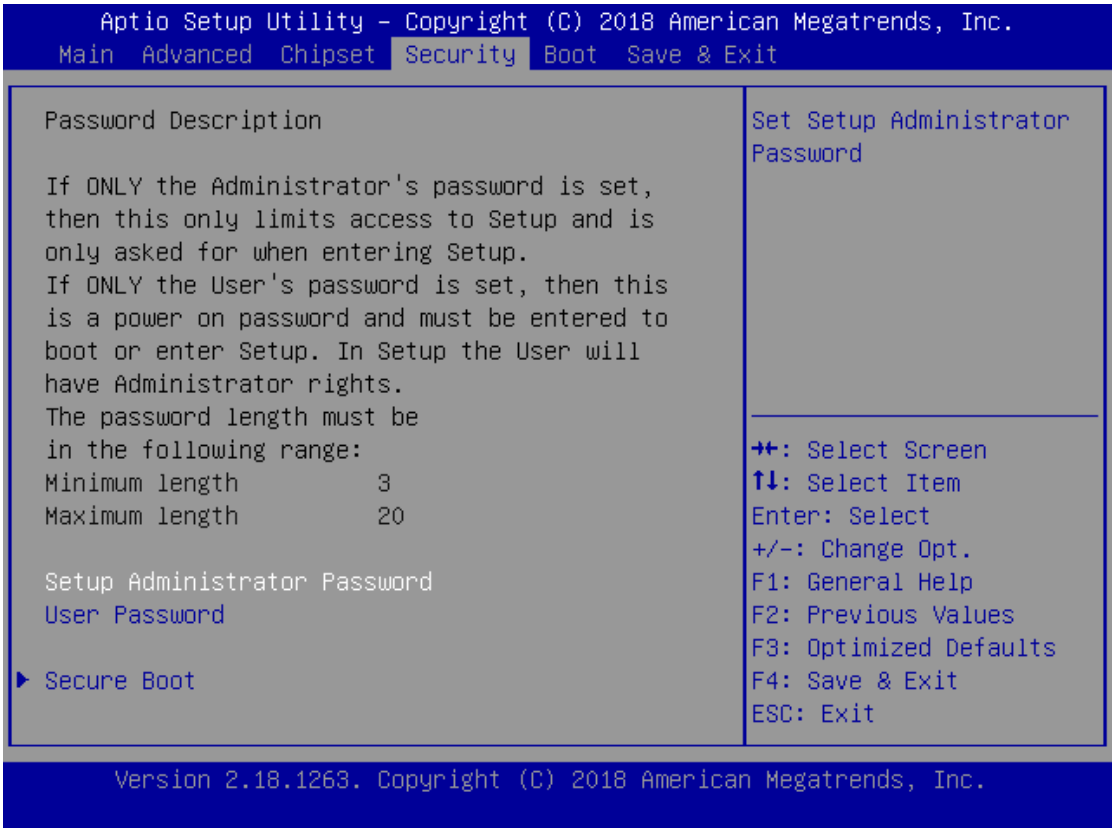
## Security Configuration




| Feature | Options | Description |
|---|---|---|
| RTC Memory Lock | Enabled<br>Disabled | Enable will lock bytes 38h-3Fh in the lower/upper 128-byte bank of RTC RAM |
| BIOS Lock | Enabled<br>Disabled | Enable/Disable the PCH BIOS Lock Enable feature. Required to be enabled to ensure SMM protection of flash. |
| Force unlock on all GPIO pads | Enabled<br>Disabled | If Enabled BIOS will force all GPIO pads to be in unlocked state |

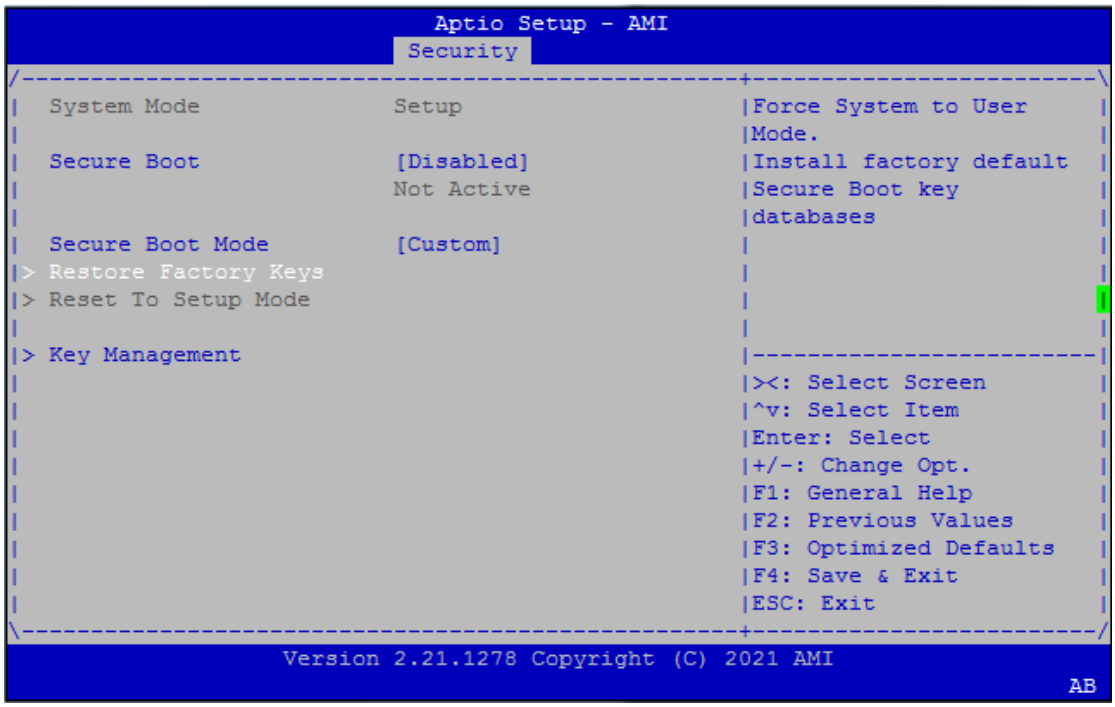
# Security

Select the **Security** menu item from the BIOS setup screen to enter the "Security" setup screen. Users can select any of the items in the left frame of the screen.



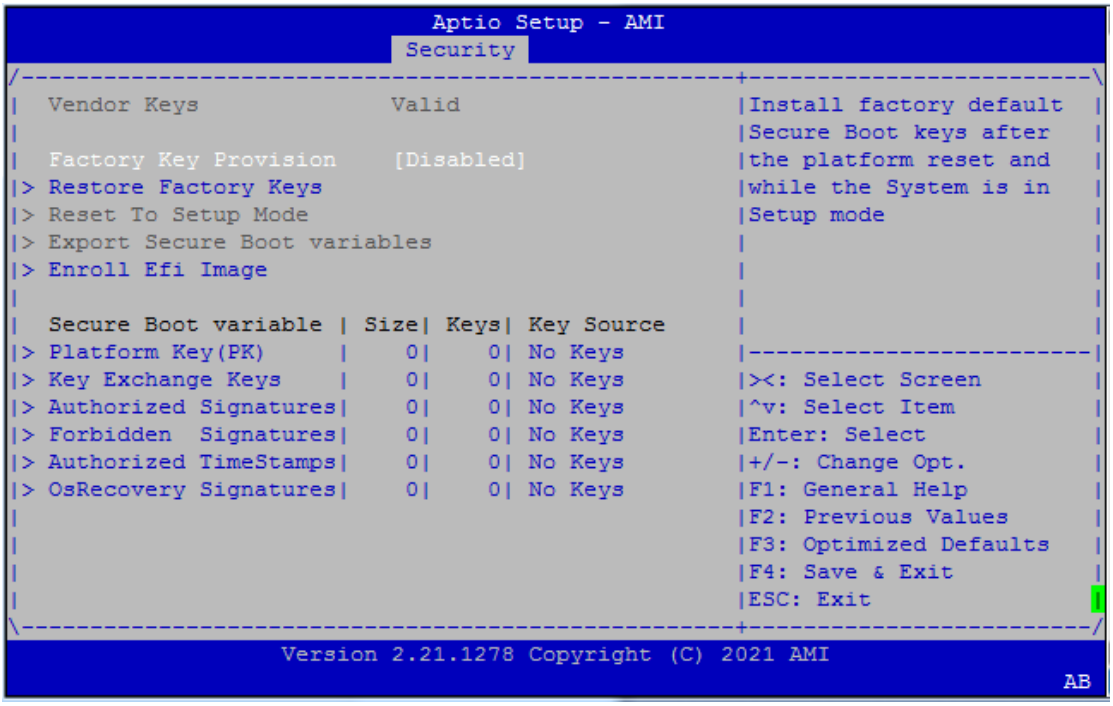

| Feature | Description |
|---|---|
| Setup Administrator Password | If ONLY the Administrator's password is set, it only limits access to Setup and is only asked for when entering Setup. |
| User Password | If ONLY the User's password is set, it serves as a power-on password and must be entered to boot or enter Setup. In Setup, the User will have Administrator rights. |

## Secure Boot




| Feature | Options | Description |
|---|---|---|
| Secure Boot | Disabled<br>Enabled | Secure Boot feature is Active if Secure Boot is Enabled,Platform Key(PK) is enrolled and the System is in User mode. The mode change requires platform reset |
| Secure Boot Mode | Standard<br>Custom | Secure Boot mode options: Standard or Custom. In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication |

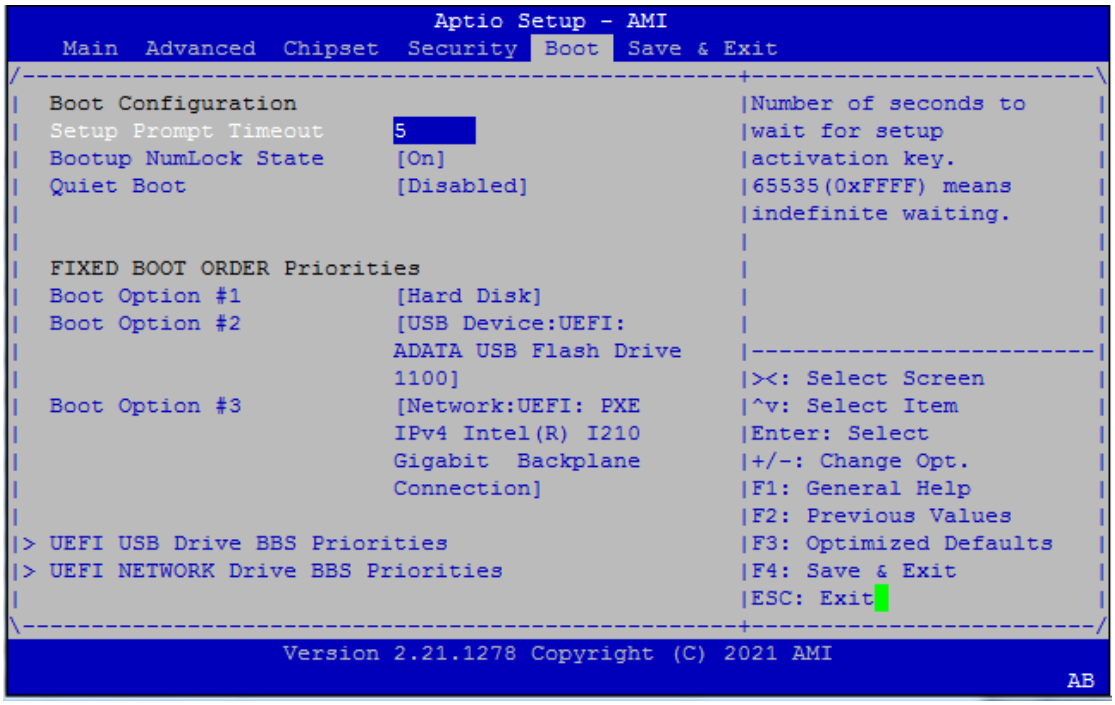
## Key Management




| Feature | Options | Description |
|---|---|---|
| Factory Key Provision | Disabled<br>Enabled | Install factory default Secure Boot keys after the platform reset and while the System is in Setup mode |
| Restore Factory Keys | None | Force System to User Mode. Install factory default Secure Boot key databases |
| Reset To Setup Mode | None | Delete all Secure Boot key databases from NVRAM |
| Export Secure Boot variables | None | Copy NVRAM content of Secure Boot variables to files in a root folder on a file system device |
| Enroll Efi Image | None | Allow the image to run in Secure Boot mode. Enroll SHA256 Hash certificate of a PE image into Authorized Signature Database (db) |

# Boot Menu

Select the **Boot** menu item from the BIOS setup screen to enter the "Boot" setup screen. Users can select any of the items in the left frame of the screen.

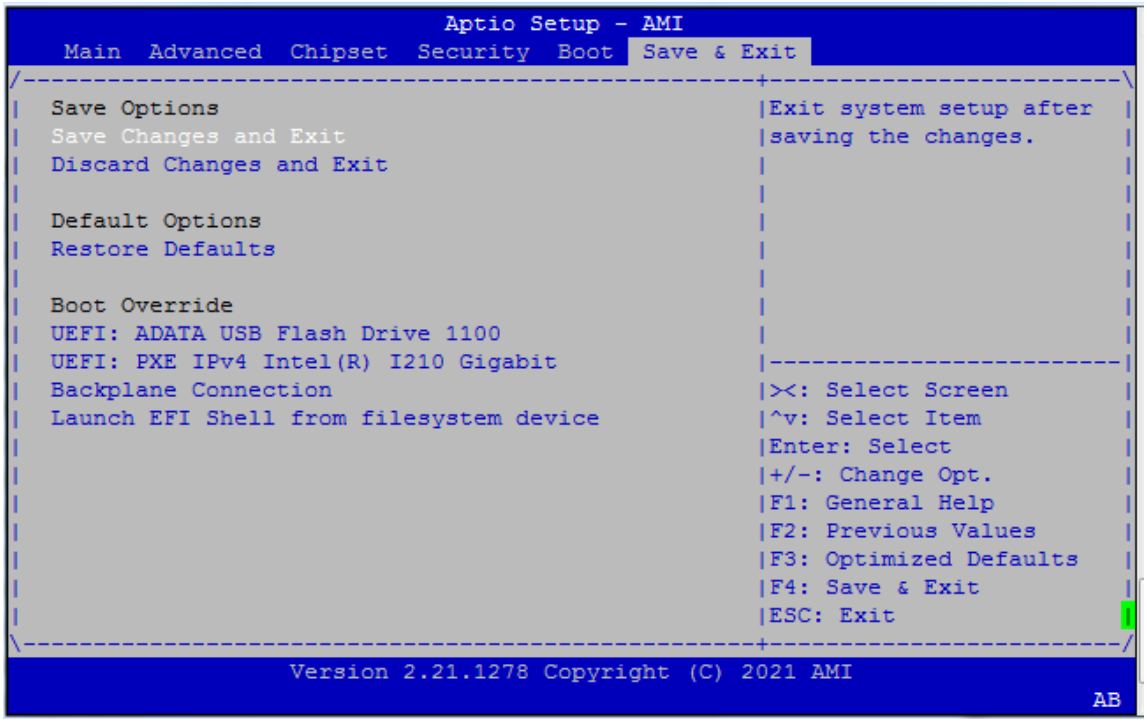



| Feature | Options | Description |
|---|---|---|
| Setup Prompt Timeout | 5 | The number of seconds to wait for setup activation key. 65535 means indefinite waiting. |
| Bootup NumLock State | On<br>Off | Select the keyboard NumLock state |
| Quiet Boot | Disabled<br>Enabled | Enables or disables Quiet Boot option. |

- Choose boot priority from boot option group.
- Choose specific boot device priority sequence from available Group device.

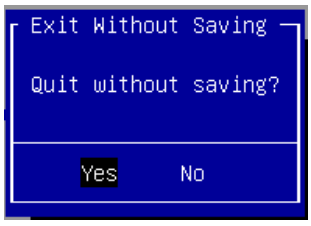
# Save and Exit Menu

Select the **Save and Exit** menu item from the BIOS setup screen to enter the "Save and Exit" setup screen. Users can select any of the items in the left frame of the screen.



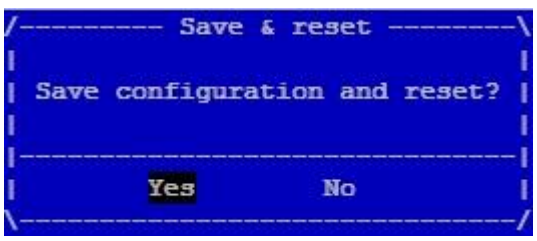

### ■ Discard Changes and Exit

Select this option to quit Setup without saving any modifications to the system configuration. The following window will appear after the "**Discard Changes and Exit**" option is selected. Select "**Yes"** to Discard changes and Exit Setup.



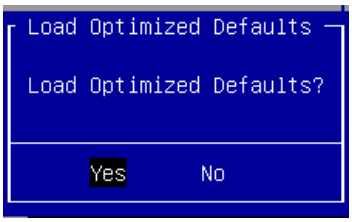

### ■ Save Changes and Reset

When Users have completed the system configuration changes, select this option to save the changes and reset from BIOS Setup in order for the new system configuration parameters to take effect. The following window will appear after selecting the "**Save Changes and Reset**" option is selected. Select "**Yes**" to Save Changes and reset.



### ■ Restore Defaults

Restore default values for all setup options. Select "**Yes"** to load Optimized defaults.




NOTE: The features under Boot Override may not be the same as image above. It would depend on the devices connected to system.

# APPENDIX A: LED INDICATOR EXPLANATIONS

- **System Power / LAN / Status LED**

| LED | COLOR | LED ACTION | DESCRIPTION |
|---|---|---|---|
| **POWER** | **Green** | Steady | When system power on |
| | OFF | N/A | No power on |
| **LAN** | **Green** | Blink | control by GPIO |
| | OFF | N/A | control by GPIO (Default),<br>No Power ON/ Power OFF |
| **STATUS** | **Red** | OS Ready | Control by customer when OS ready |
| | **OFF** | N/A | No data access or No Power ON |
| | **Green** | OS Ready | Control by customer when OS ready |

NC Standard LCM: **0TLW2002PK001** (**2 x 20-character**, backlight: Yellow Green, **LPT interface**)
**092W209000004** (Mylar 0.5T 58.4x23.6mm)
**092W000082000** (LCM Button)

On board LED PN: **047W216110001** (RoHS LED & HOLDER G, R/G, Y KTL-51(G/GE W/Y)-3 150mA DIP)

# APPENDIX B: TERMS AND CONDITIONS

## Warranty Policy

1. All products are under warranty against defects in materials and workmanship for a period of one year from the date of purchase.
2. The buyer will bear the return freight charges for goods returned for repair within the warranty period; whereas the manufacturer will bear the after-service freight charges for goods returned to the user.
3. The buyer will pay for repair (for replaced components plus service time) and transportation charges (both ways) for items after the expiration of the warranty period.
4. If the RMA Service Request Form does not meet the stated requirement as listed on "RMA Service, "RMA goods will be returned at customer's expense.
5. The following conditions are excluded from this warranty:
   - Improper or inadequate maintenance by the customer
   - Unauthorized modification, misuse, or reversed engineering of the product
   - Operation outside of the environmental specifications for the product.

## RMA Service

### Requesting an RMA#

1. To obtain an RMA number, simply fill out and fax the "RMA Request Form" to your supplier.
2. The customer is required to fill out the problem code as listed. If your problem is not among the codes listed, please write the symptom description in the remarks box.
3. Ship the defective unit(s) on freight prepaid terms. Use the original packing materials when possible.
4. Mark the RMA# clearly on the box.

**Note**: Customer is responsible for shipping damage(s) resulting from inadequate/loose packing of the defective unit(s). All RMA# are valid for 30 days only; RMA goods received after the effective RMA# period will be rejected.

# RMA Service Request Form

When requesting RMA service, please fill out the following form. Without this form enclosed, your RMA cannot be processed.

| | |
|---|---|
| **RMA No:** | Reasons to Return: ▫ Repair(Please include failure details)<br>▫ Testing Purpose |
| Company: | Contact Person: |
| Phone No. | Purchased Date: |
| Fax No.: | Applied Date: |
| Return Shipping Address: _____ | |
| Shipping by: ▫ Air Freight ▫ Sea ▫ Express_____<br>▫ Others:_____ | |

| Item | Model Name | Serial Number | Configuration |
|---|---|---|---|
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| Item | Problem Code | Failure Status |
|---|---|---|
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| | | |
| | | |

*Problem Code:

| | | | |
|---|---|---|---|
| 01:D.O.A. | 07: BIOS Problem | 13: SCSI | 19: DIO |
| 02: Second Time R.M.A. | 08: Keyboard Controller Fail | 14: LPT Port | 20: Buzzer |
| | 09: Cache RMA Problem | 15: PS2 | 21: Shut Down |
| 03: CMOS Data Lost | 10: Memory Socket Bad | 16: LAN | 22: Panel Fail |
| 04: FDC Fail | 11: Hang Up Software | 17: COM Port | 23: CRT Fail |
| 05: HDC Fail | 12: Out Look Damage | 18: Watchdog Timer | 24: Others (Pls specify) |
| 06: Bad Slot | | | |

***Request Party***

_____

**Authorized Signature / Date**

***Confirmed By Supplier***

_____

**Authorized Signature / Date**