ROC285B

MIL-STD Rugged Computer

User's Manual

User's Manual

Revision Date: Jul. 22. 2019

Safety Information

Electrical safety

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

Operation safety

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

Statement

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- All product specifications are subject to change without prior notice

Revision History

Revision	Date (yyyy/mm/dd)	Changes
Version 1.0	2019/9/23	Initial release

Packing list

□ 19" 1U Rack-mount Intel® Q370 Fanless Rugged System

□ Accessories

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

Ordering Information

Model Number	Description
ROC285B	1U Rackmount Fanless System with Intel® Q370, 3 x DisplayPort, 1 1 x PCIex16 slot, 90~264V AC-In, operating Temp -20 to 60°C
ROC285BB	1U Rackmount Fanless System with Intel® Q370, 3 x DisplayPort, 1 x PCIex16 slot, 90~264V Redundant AC-In, operating Temp -20 to 60°C

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Chapter 1: Product Introduction

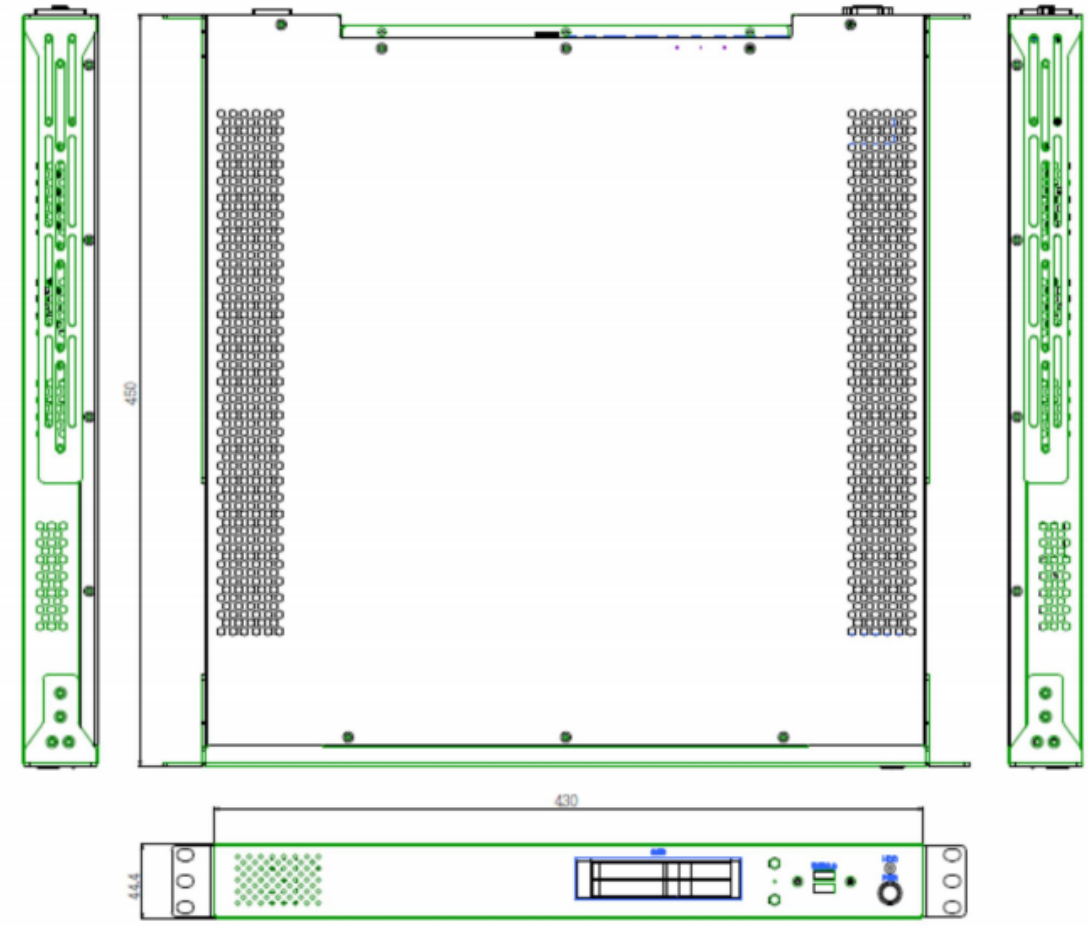
1-1 Key Features

System	
High Performance Processor	Socket LGA 1151 for Intel® Core i7/i5/i3/Celeron® (Supports up to 65W) Intel® Core™ i7-9700TE (8C x 3.8 GHz), 12MB Cache
Memory type	2 x SO-DIMM DDR4 2400/2666 MHz up to 64GB
Chipset	Intel® Q370 Chipset
Expansion Slot	1 x PCIe x16 (Graphics card dimension should not be large than 170x110mm) 1x M.2 (Key M, 2242/2260/2280) with PCIe x4 and SATA3
Display	
VGA	Resolution up to 1920×1200@60Hz
Storage	
Display Port	Resolution up to 4096 x 2304 60@Hz
HDD/SDD	2 x 2.5" SATA HDD/SSD easy swap tray
Ethernet	
Ethernet	Intel® I210 & I219LM GbE LAN (support 10/100/1000 Mbps for x2 RJ45 ports)
Rear I/O	
Display Port	3 x DP, resolution up to 4096 x 2304
Ethernet	2 x RJ45 Intel® I210 & I219LM GbE LAN (support 10/100/1000 Mbps)
Audio	2 x 3.5mm Audio Jacks (1 x MIC, 1 x Line-Out)
COM	1 x RS232/422/485
USB Port	4 x USB 3.1(10Gb/s)
AC-IN	1 x AC Inlet
Front I/O	
Button	1 x Power Button w/Indicator LED
Indicator LED	HDD
USB Port	2 x USB 2.0
Easy Swap SSD Tray	2
Applications, Operating System	
Applications	Commercial and Industrial Platforms, Embedded Computing, Process Control,

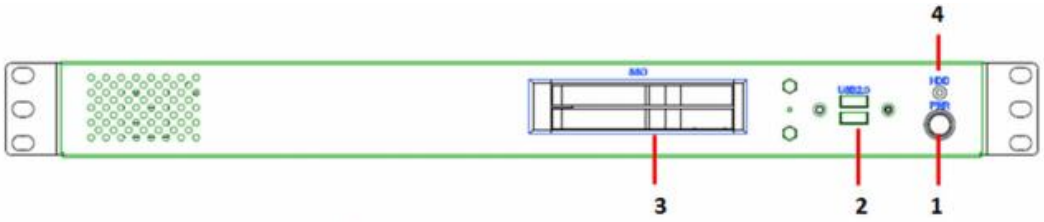
	Intelligent Automation and manufacturing applications
Operating System	Windows 10 64Bit Ubuntu13.04, Ubuntu13.10, Ubuntu14.04, Fedora 20
PHYSICAL	
Dimension (W x D x H)	440 x430 x 44 mm
Weight	8.5Kg
Chassis	SECC
Heatsink	Aluminum Alloy, Corrosion Resistant
Finish	Anodic aluminum oxide
ENVIRONMENTAL	
MIL-STD-810G Test	Method 507.5, Procedure II (Temperature & Humidity) Method 501.5, Procedure I (Storage/High Temperature) Method 501.5, Procedure II (Operation/High Temperature) Method 502.5, Procedure I (Storage/Low Temperature) Method 502.5, Procedure II (Operation/Low Temperature) Method 503.5, Procedure I (Temperature shock)
Green Product	RoHS compliance
Operating Temperature	w/o Graphic Card (ET: -20 to 60°C; UT: -30 to 70°C) ; w/Graphic Card (0 to 50°C)
Storage Temperature	-40 to 85°C
Relative Humidity	5% to 95%, non-condensing
EMC	CE and FCC compliance

Specifications are subject to change without notice

1.2 Mechanical Dimensions

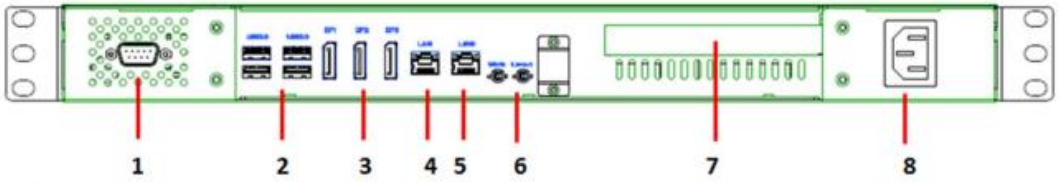


1.3 Panel Component



1	Power Button w/LED
2	USB 2.0 x 2
3	2.5" HDD tray x 2
4	HDD LED

1.3 Rear Panel Components



1	COM1: RS232
2	USB 3.1 x 4
3	DisplayPort x 3
4	LAN1 (Intel® I210)
5	LAN2 (Intel® I219LM)
6	Audio jack (Mic-in, Line-out)
7	PCIex16 Expansion Slot
8	IEC C14 Inlet, 90V to 264V AC-in

Chapter 2: Jumpers and Connectors Locations

2.1 Rear Panel Connector Pin Definitions

LAN1 and LAN2 LED

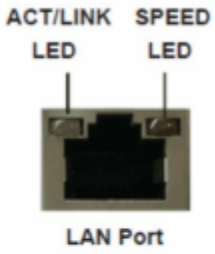
LAN Port LED Indications

Activity/Link LED

Status	Description
Off	No Link
Blinking	Data Activity
On	Link

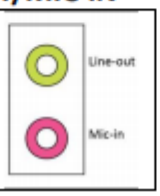
SPEED LED

Status	Description
Off	10Mbps connection
Yellow	100Mbps connection
Green	1Gbps connection



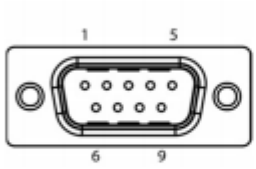
AUDIO: LINE-OUT/MIC-IN

Pin	Definition
1	Line-out
2	Mic-in



COM1: RS232

Pin	RS-232
1	DCD-
2	RXD
3	TXD
4	DTR-
5	GND
6	DSR-
7	RTS-
8	CTS-
9	PWR (5V)



Chapter 3 Getting Started

This chapter provides more detailed information and let you know how to install components into the ROC285B series embedded System.

Prior to removing the chassis cover, make sure the unit's power is off and disconnected from the power sources to prevent electric shock or system damage.

3.1 2.5" Easy Swap SSD installation

ROC285B series supports two 2.5" Easy Swap SSD

- Use Tri-angle security key to open keylock and pull out the 2.5" HDD tray.
- Put 2.5" SSD/HDD on the tray and make sure SSD/HDD is fixed and push the tray back.
- Use Tri-angle security key to lock the tray door.

Chapter 4: AMI BIOS UTILITY

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

4.1 Starting

To enter the setup screens, perform the following steps:

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

4.2 Navigation Keys

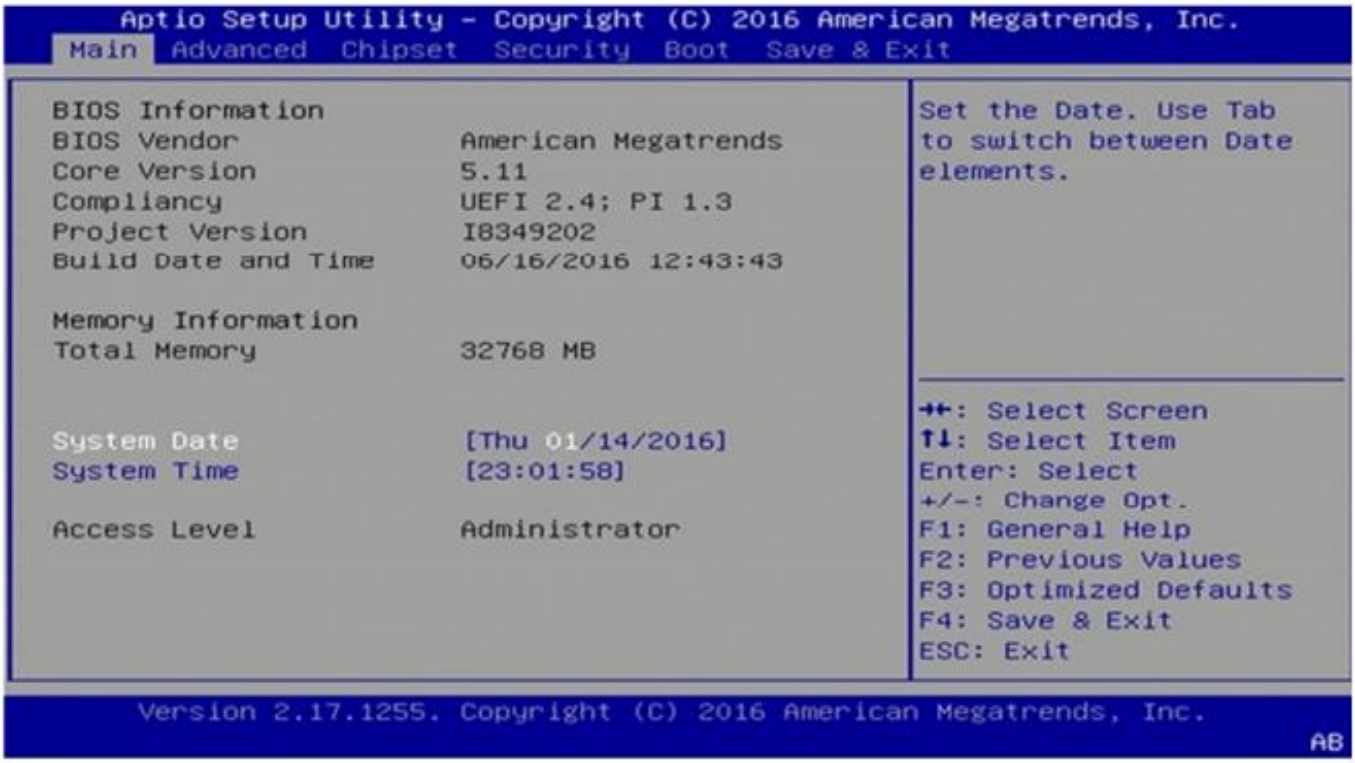
The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process.
Some of the hot keys are <F1>, <F10>, <Enter>, <ESC>, and <Arrow> keys.

Some of the navigation keys may differ from one screen to another.

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

4.3 Main

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.



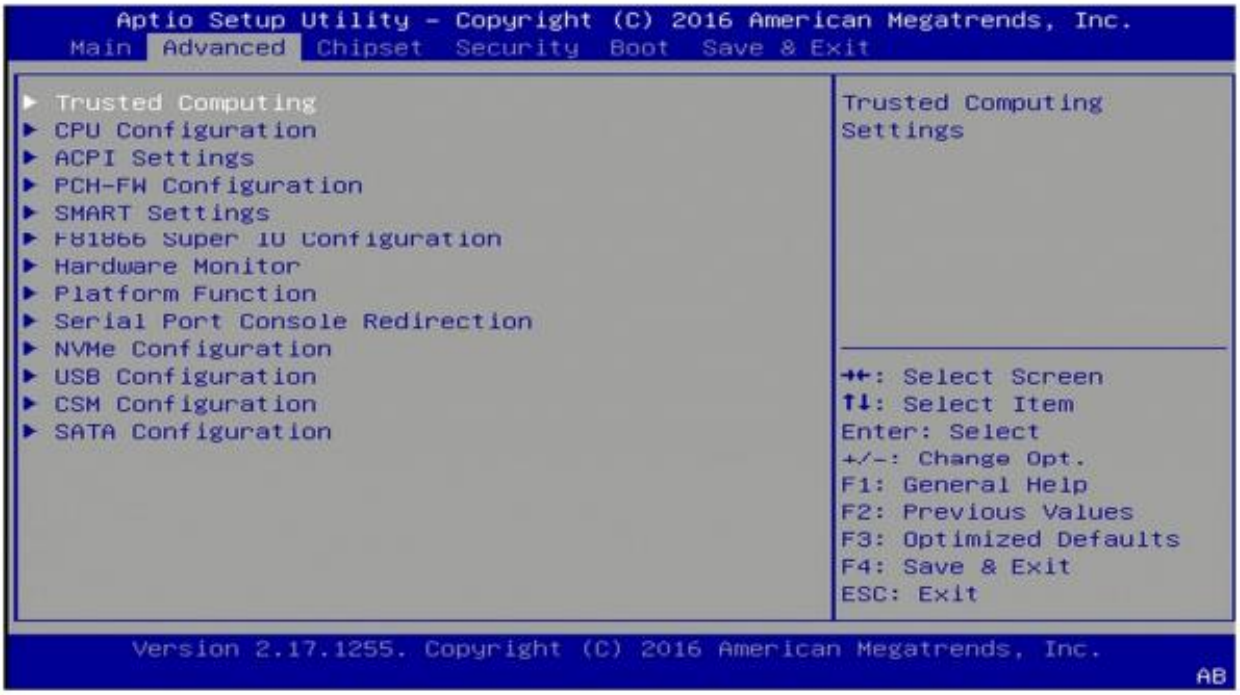
System Date
Use this function to change the system date.
Select System Date using the Up and Down <Arrow> keys. Enter the new values through the keyboard. Press the Left and Right <Arrow> keys to move between fields.
The date setting must be entered in MM/DD/YY format.

System Time
Use this function to change the system time.
Select System Time using the Up and Down <Arrow> keys. Enter the new values through the keyboard. Press the Left and Right <Arrow> keys to move between fields.
The time setting is entered in HH:MM:SS format.
Note: The time is in 24-hour format. For example, 5:30 A.M. appears as 05:30:00, and 5:30 P.M. as 17:30:00.

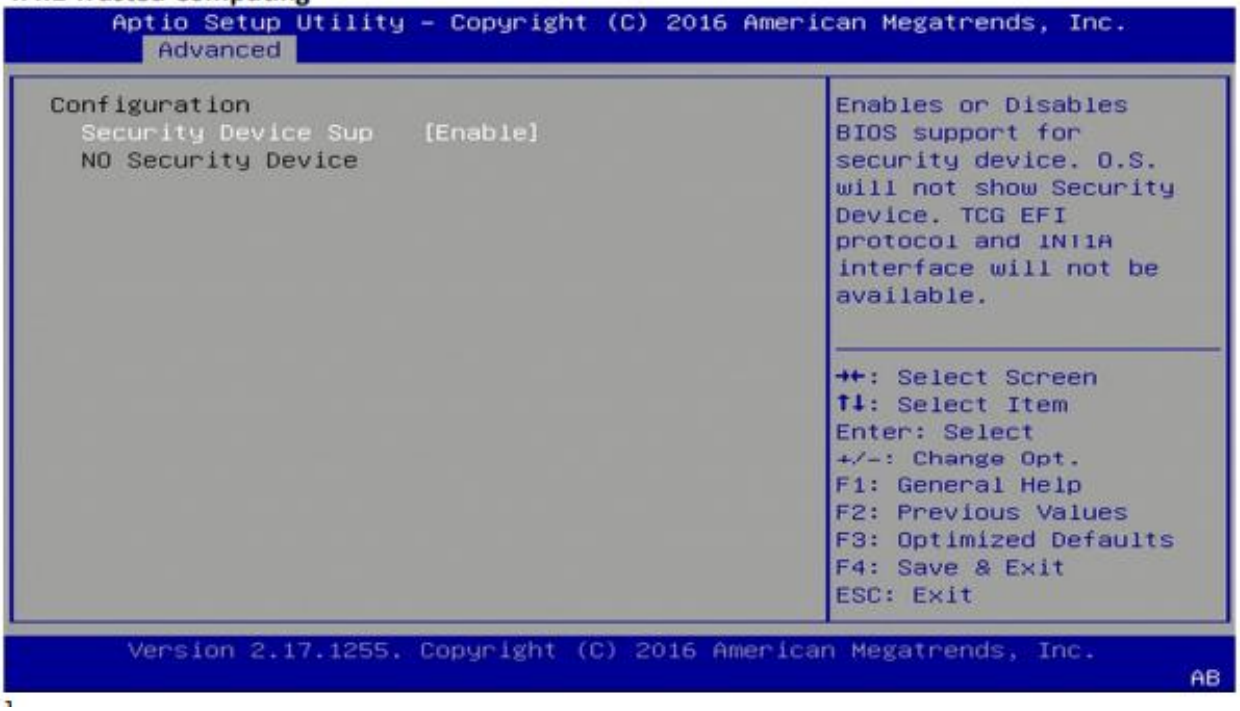
Access Level
Display the access level of the current user in the BIOS.

4.4 Advanced

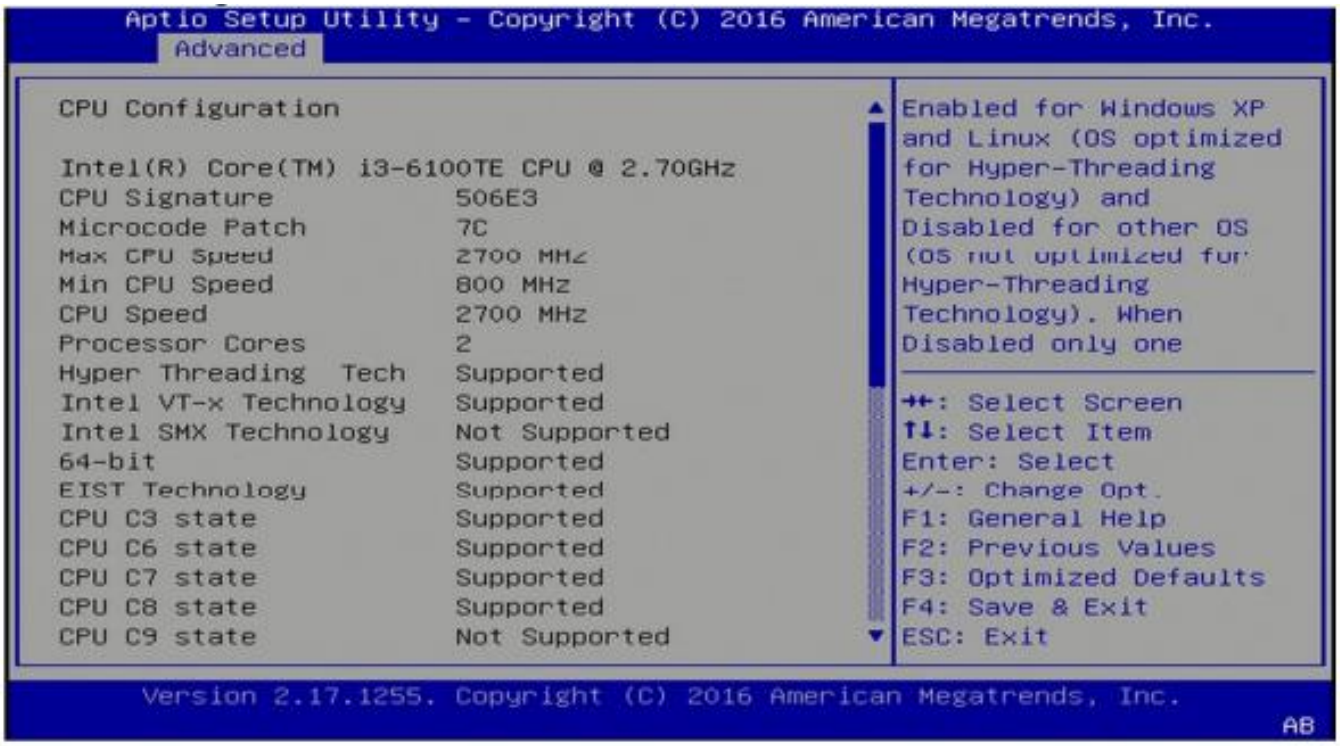
The Advanced Menu allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference. ***Setting incorrect field values may cause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

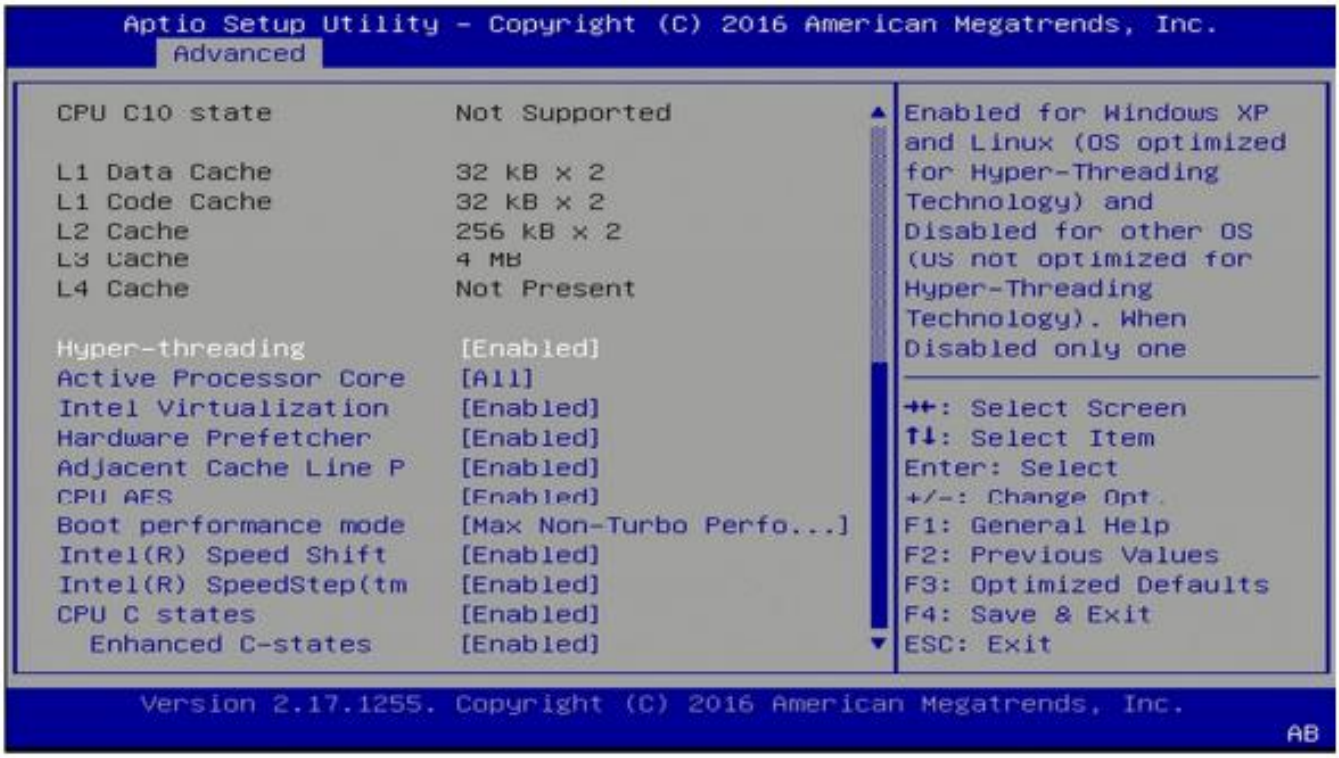


4.4.1 Trusted Computing

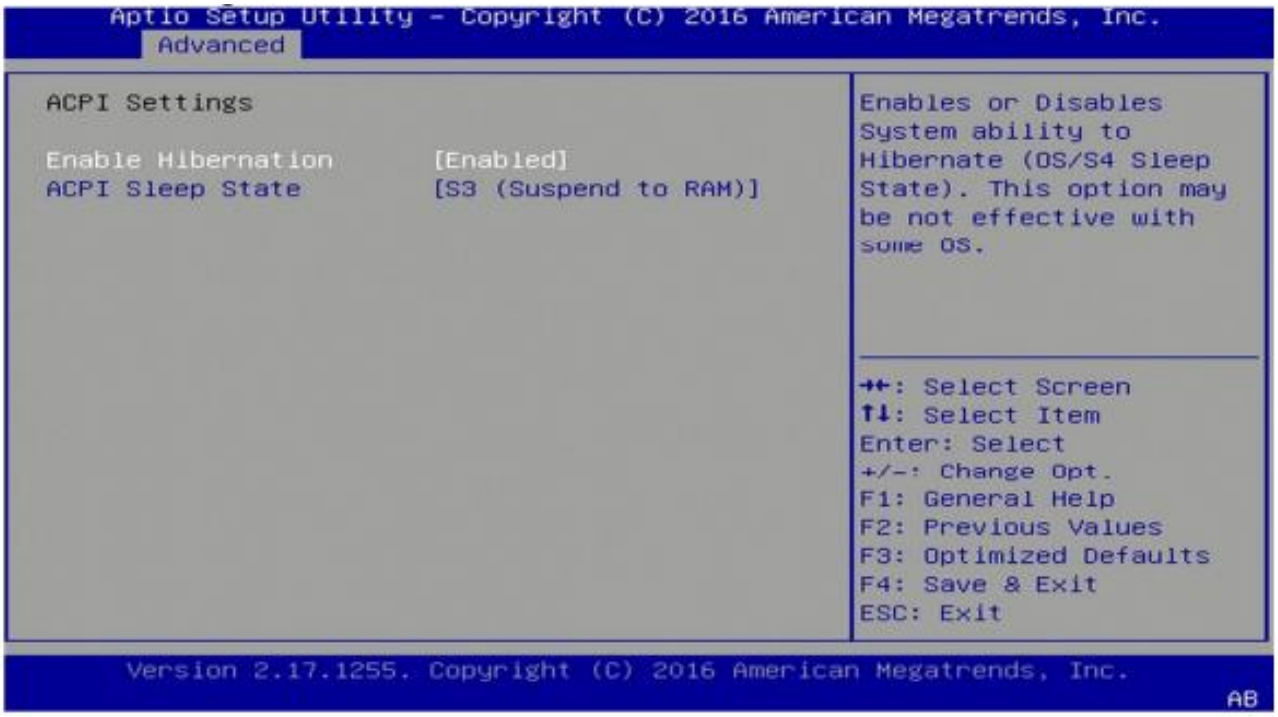


4.4.2 CPU Configuration

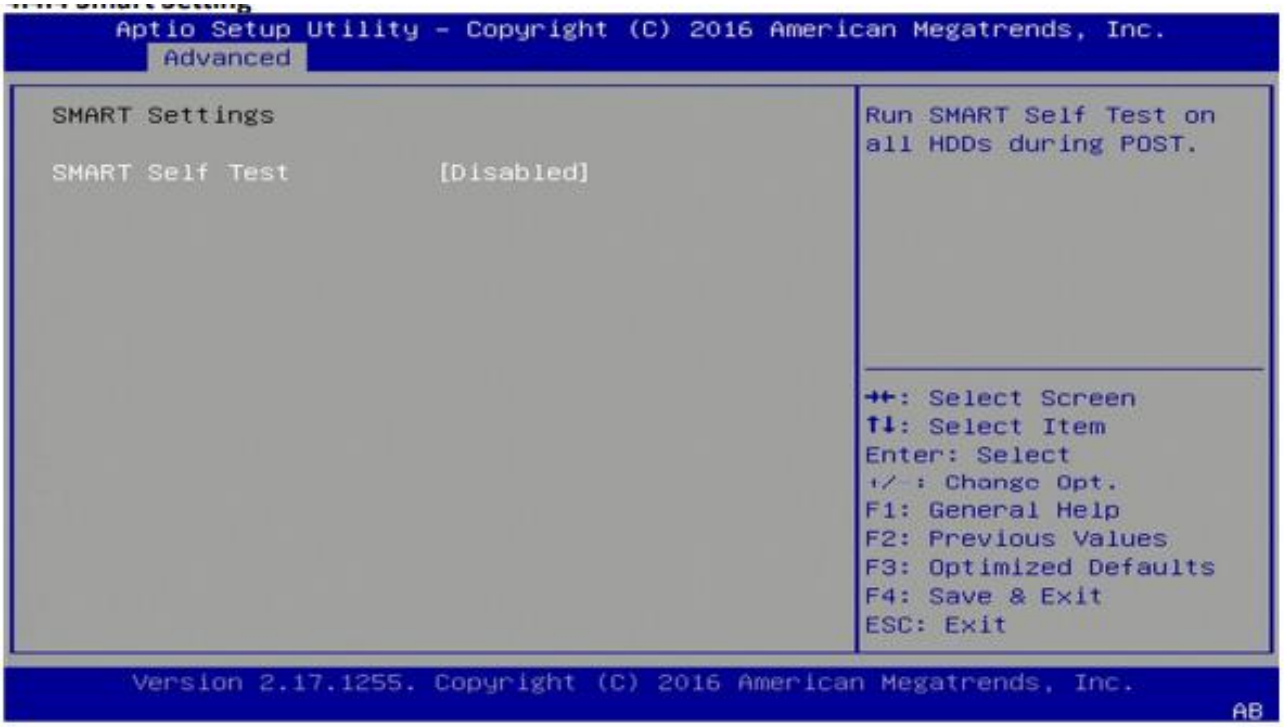




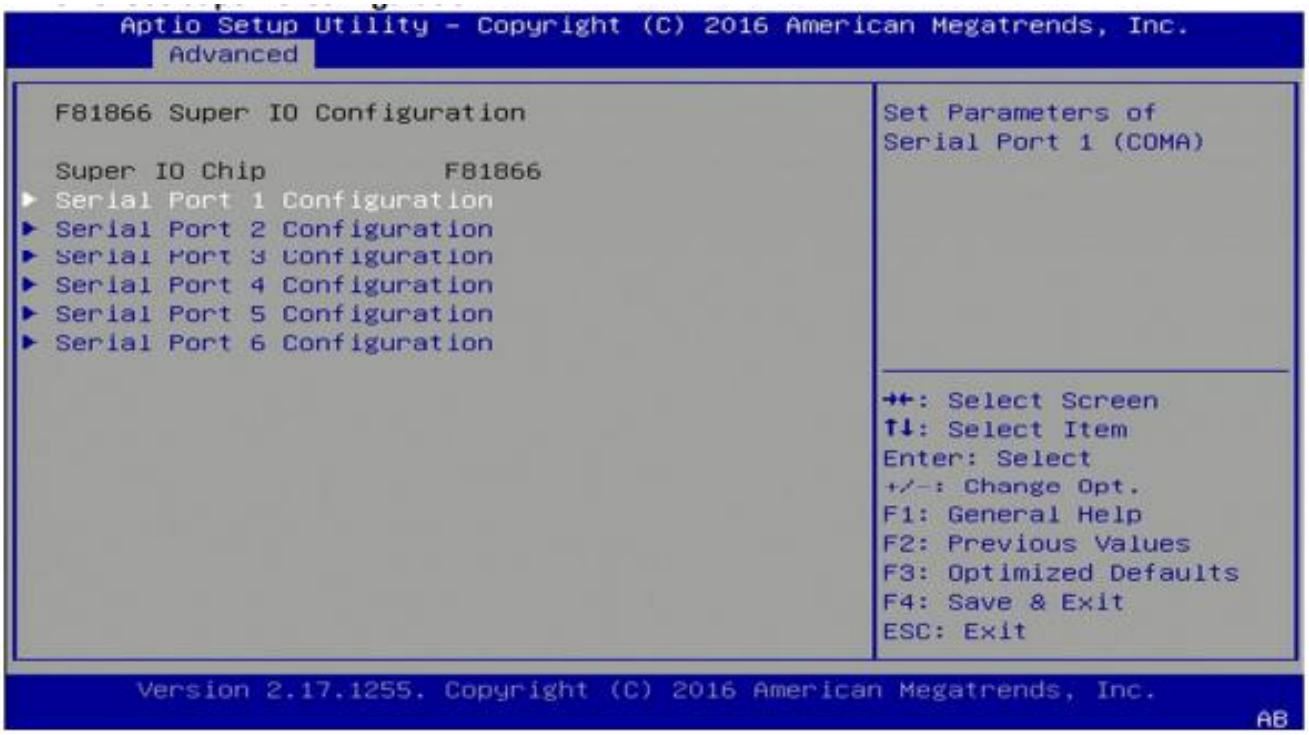
4.4.3 ACPI Setting

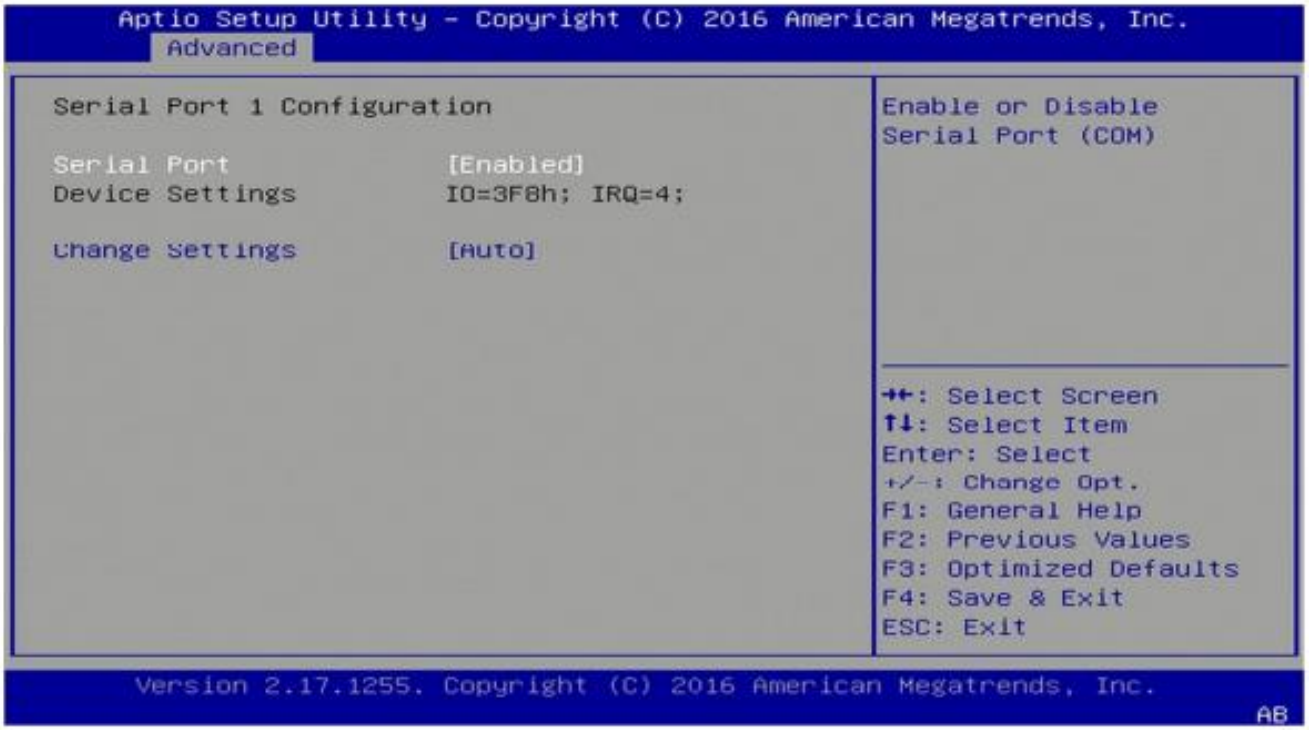


4.4.4 Smart Setting

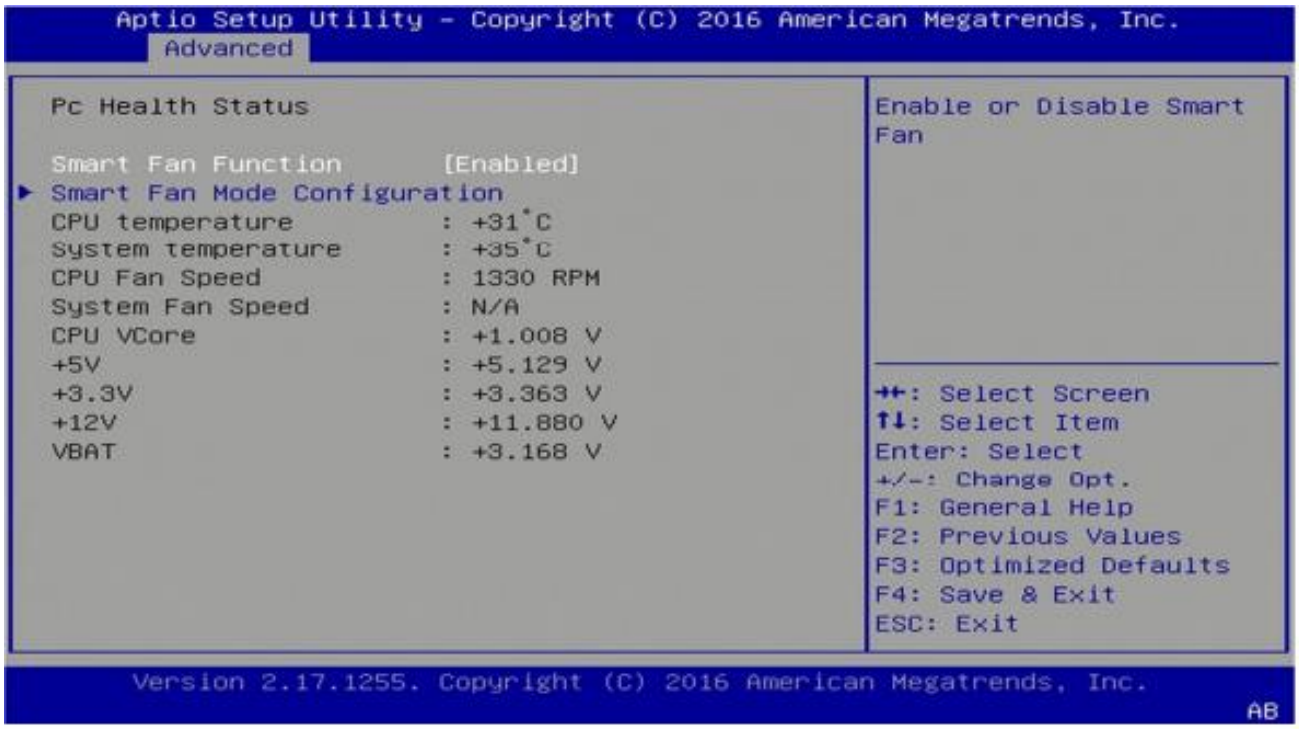


4.4.5 F81866 Super IO Configuration

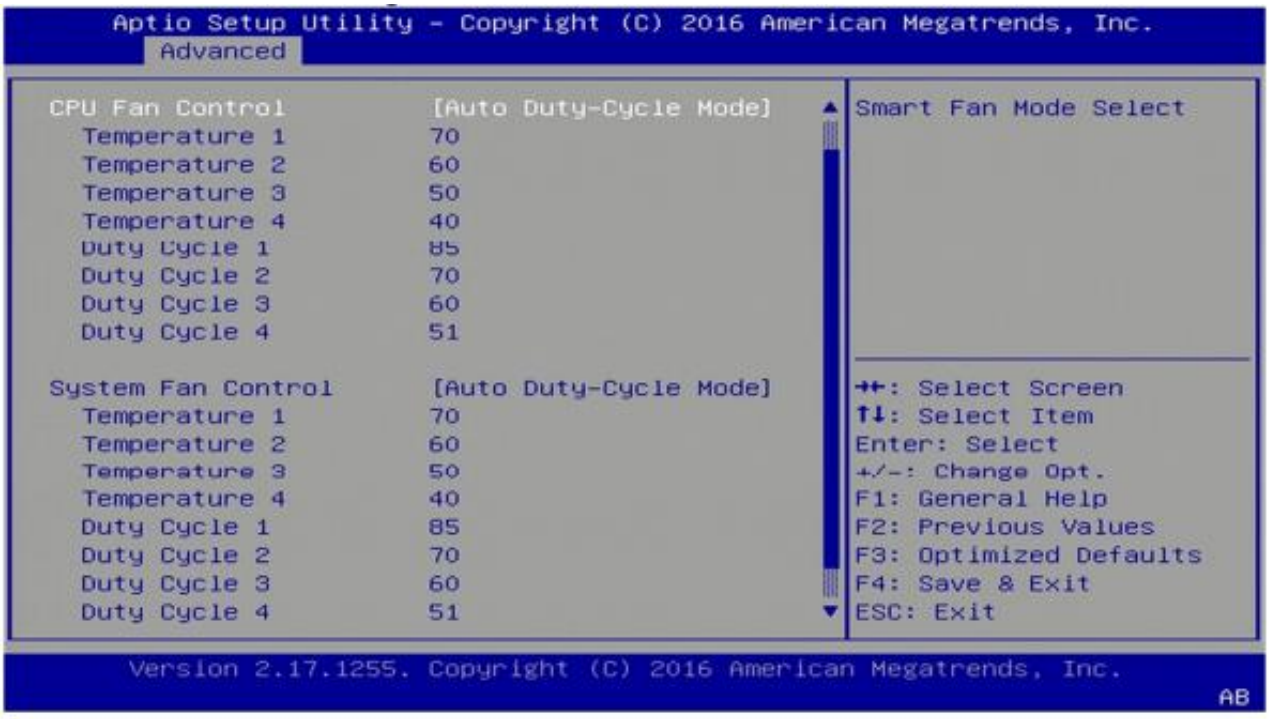




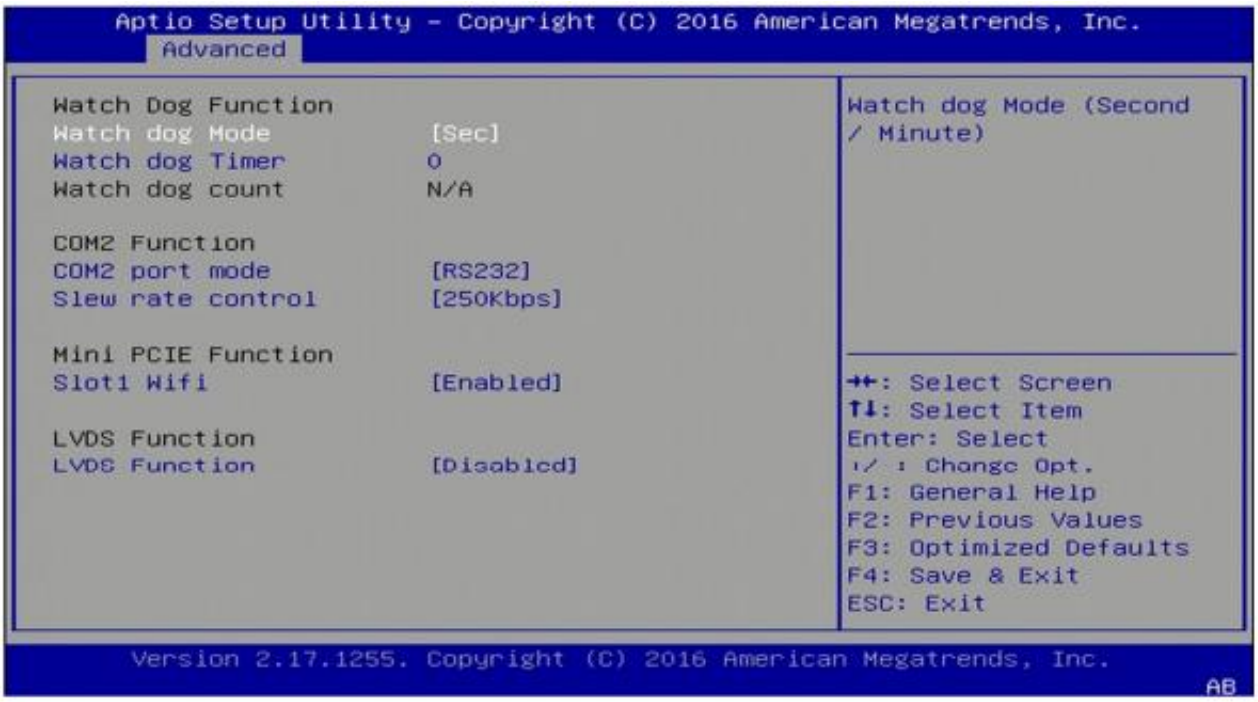
4.4.6 Hardware Monitor

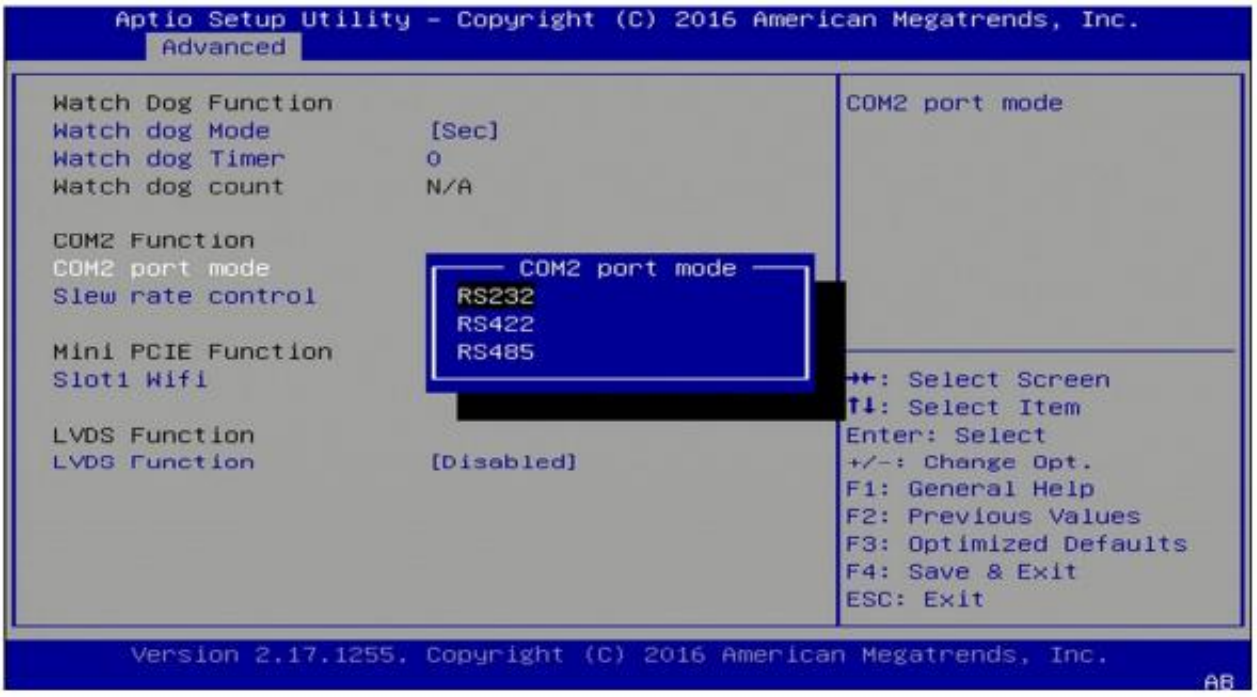


4.4.6.1 Smart Fan Mode Configuration

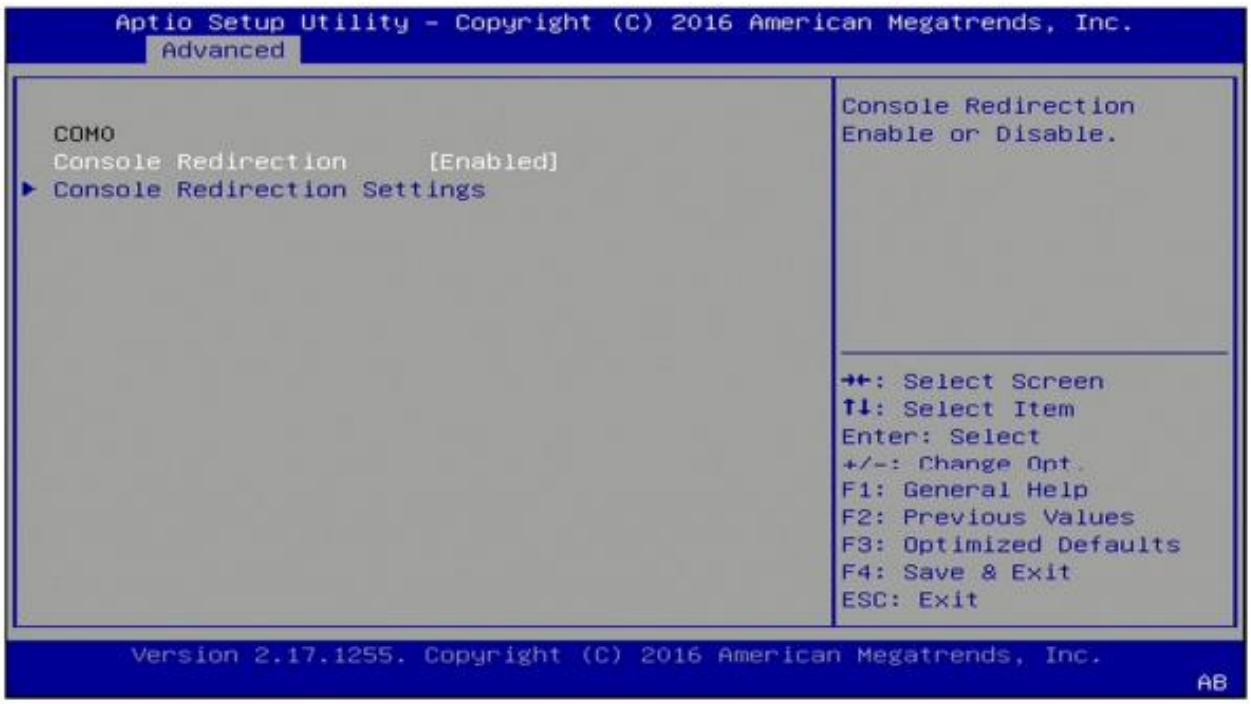


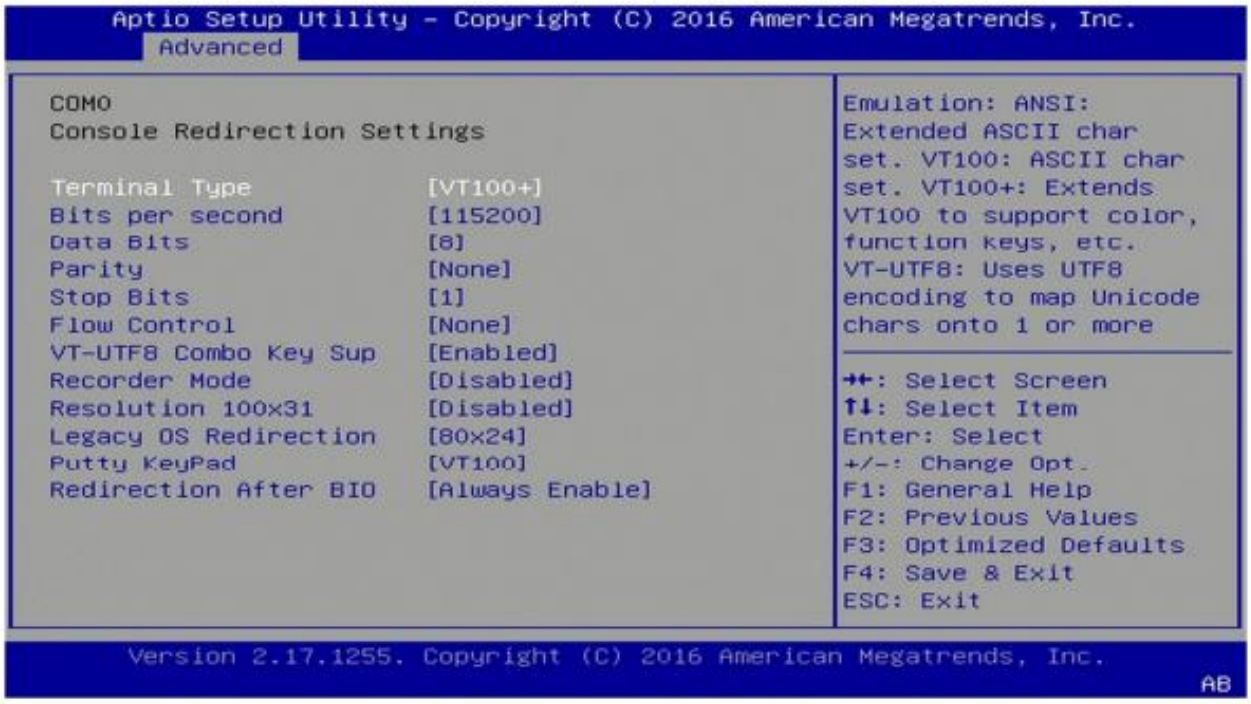
4.4.7 Platform Function



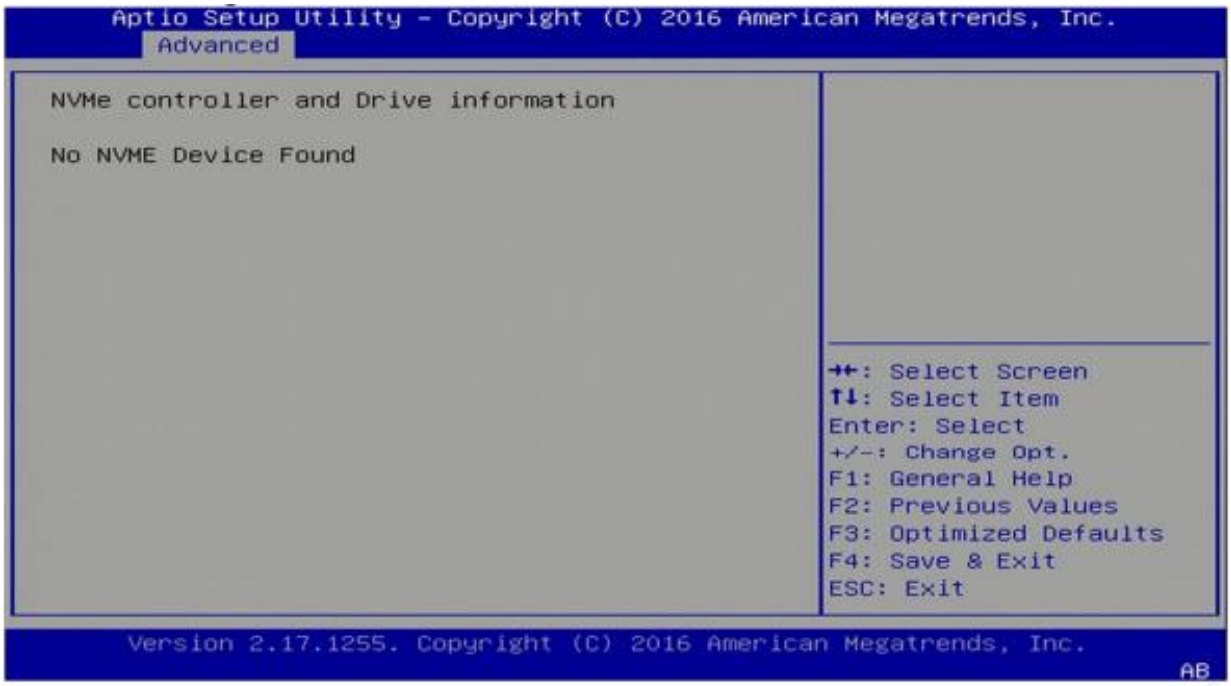


4.4.8 Serial Consolr Redirection



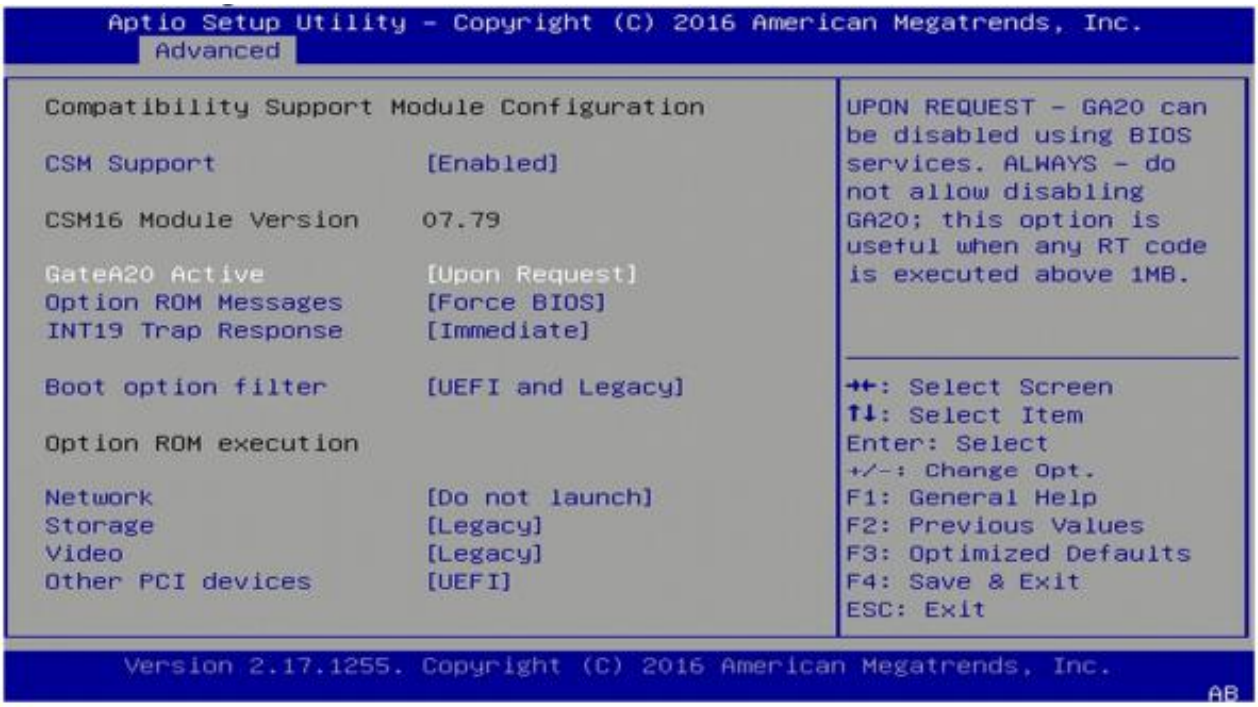


4.4.9 NVMe Configuration

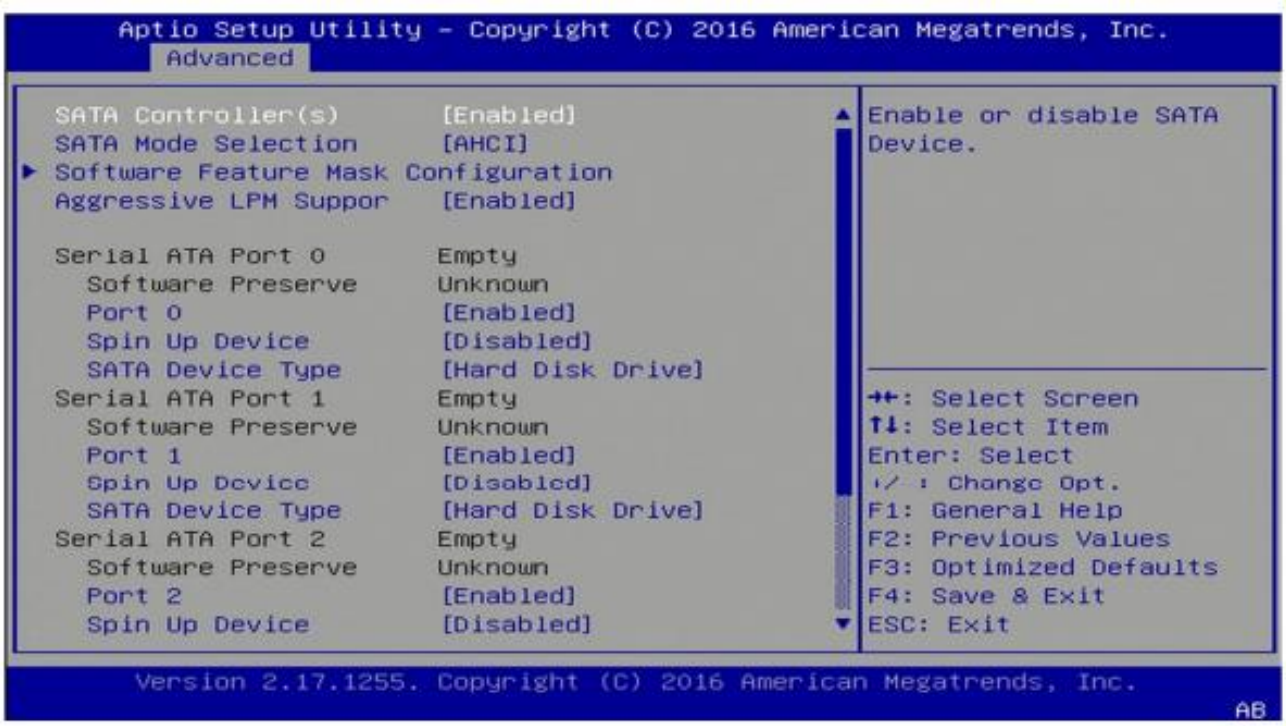


4.4.10 USB Configuration

4.4.11 CSM Configuration

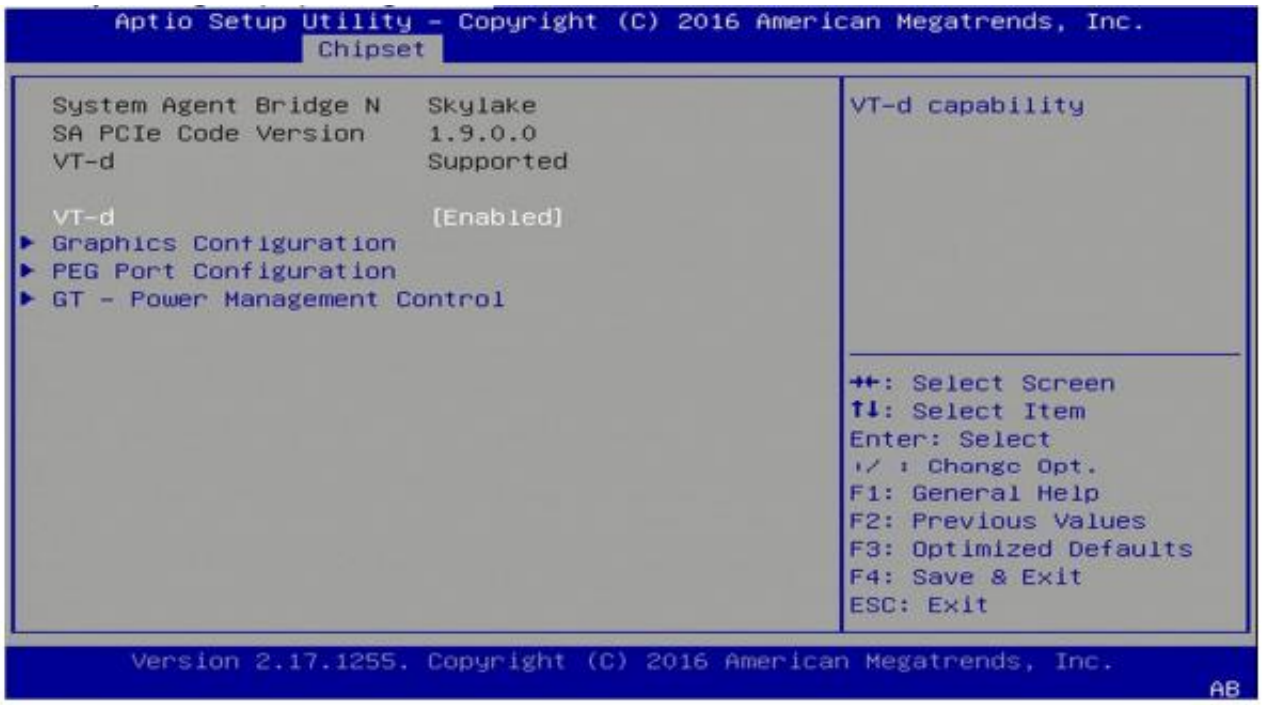


4.4.12 SATA Configuration

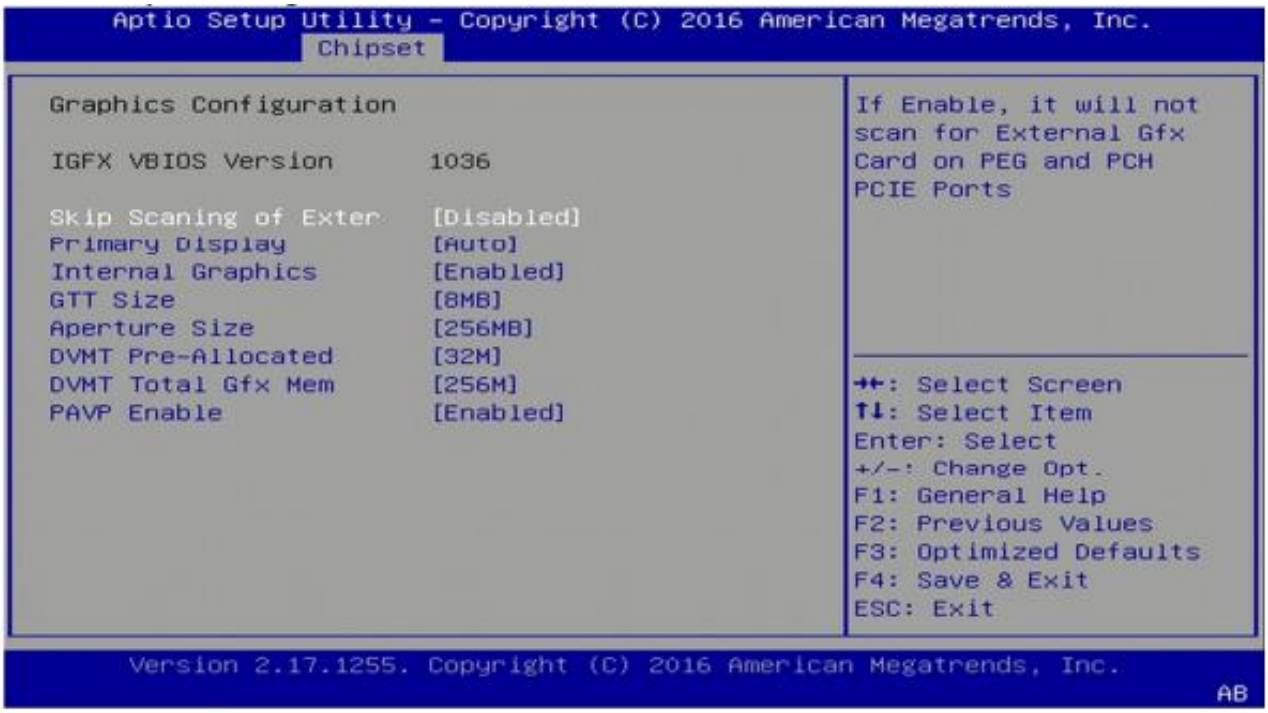


4.5 Chipset Menu

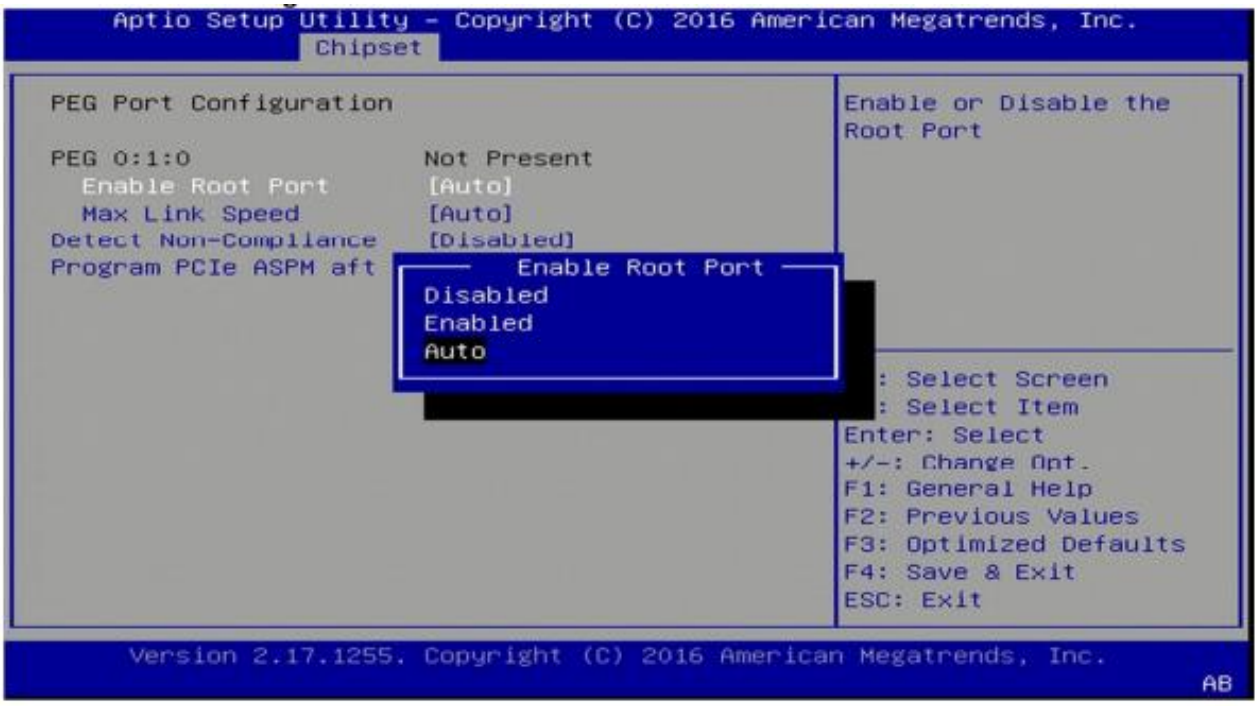
4.5.1 System Agent (SA) Configuration



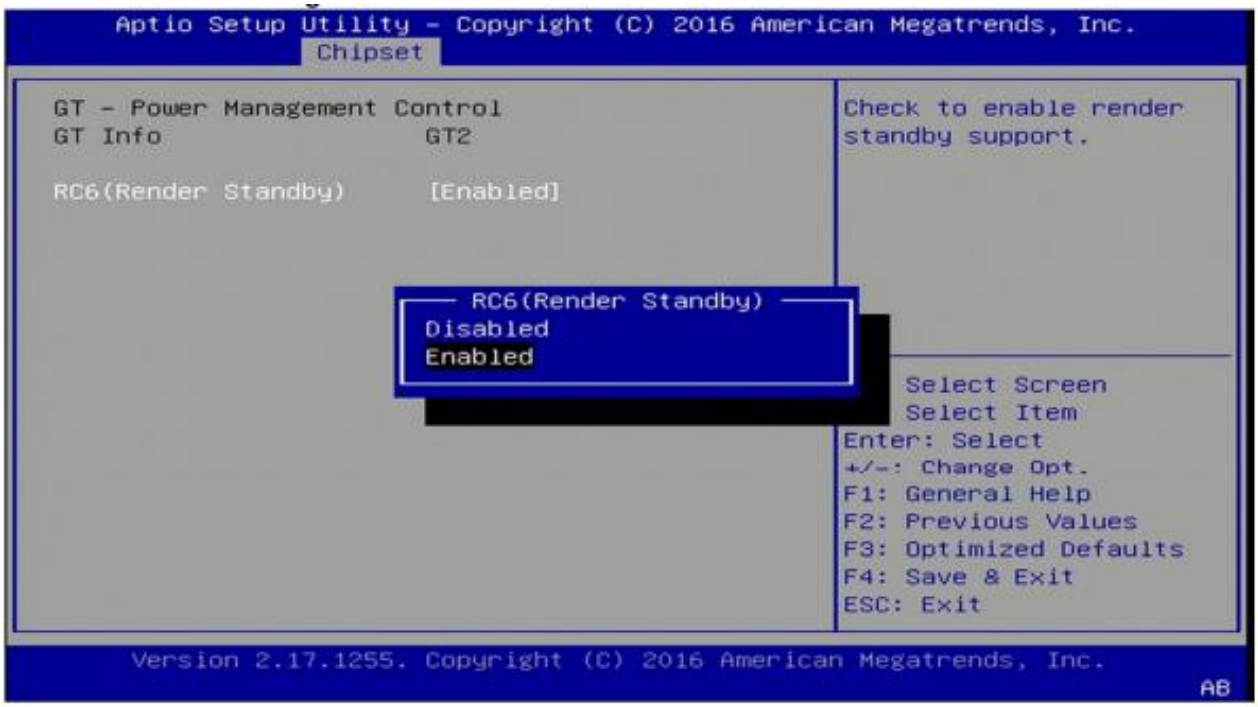
4.5.1.1 Graphics Configuration



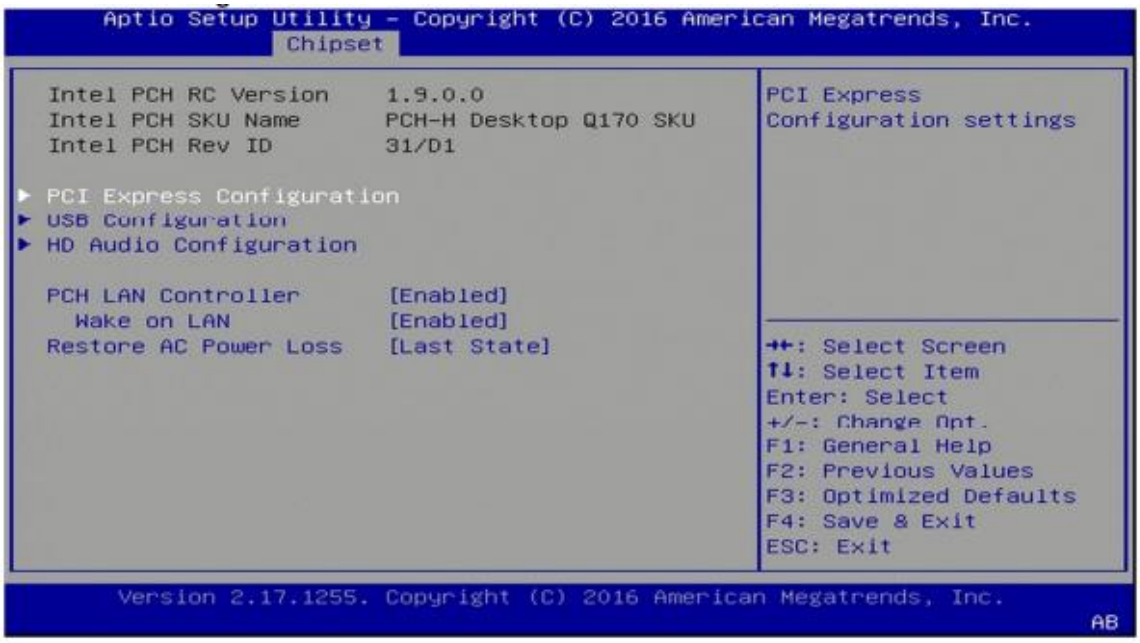
4.5.1.2 PEG Port Configuration

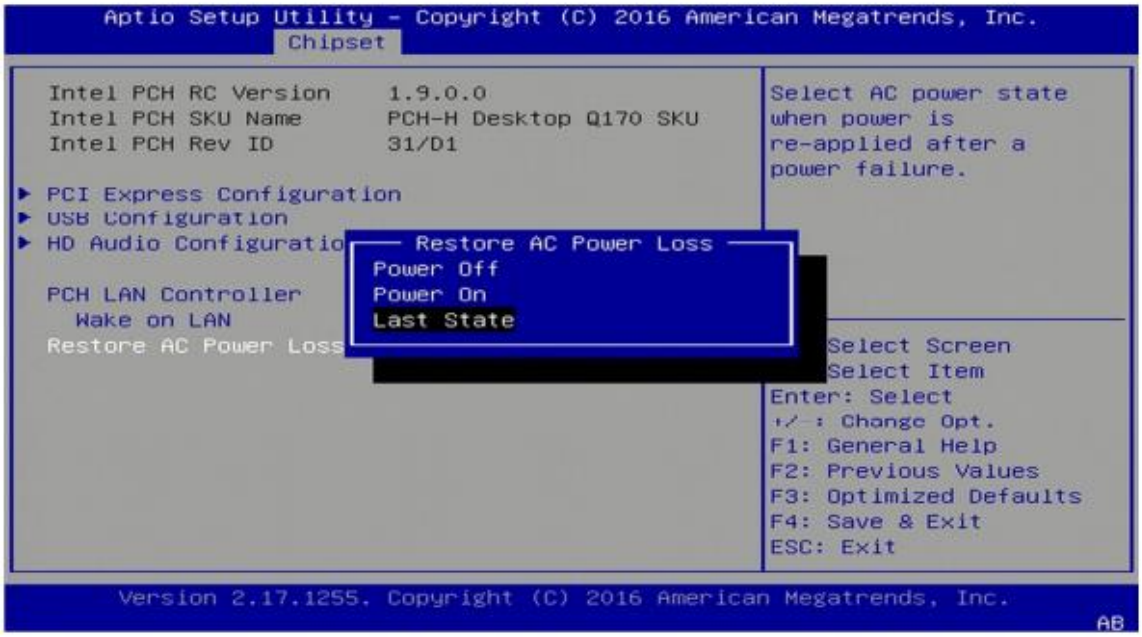


4.5.1.3 GT-Power Management Control

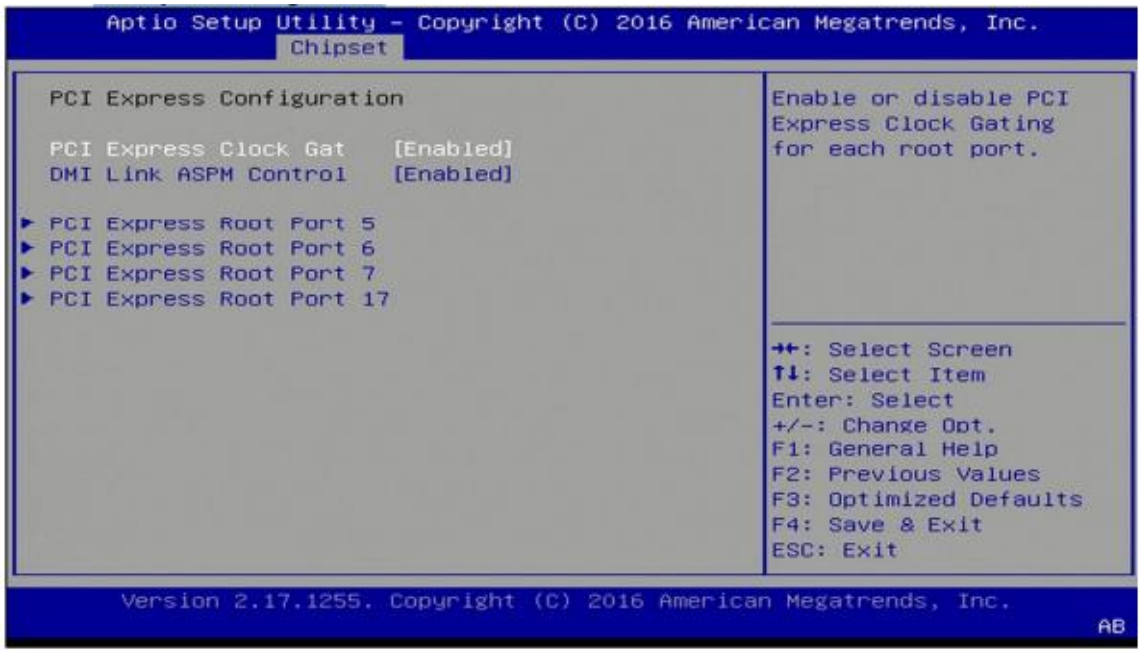


4.5.2 PCH-IO Configuration

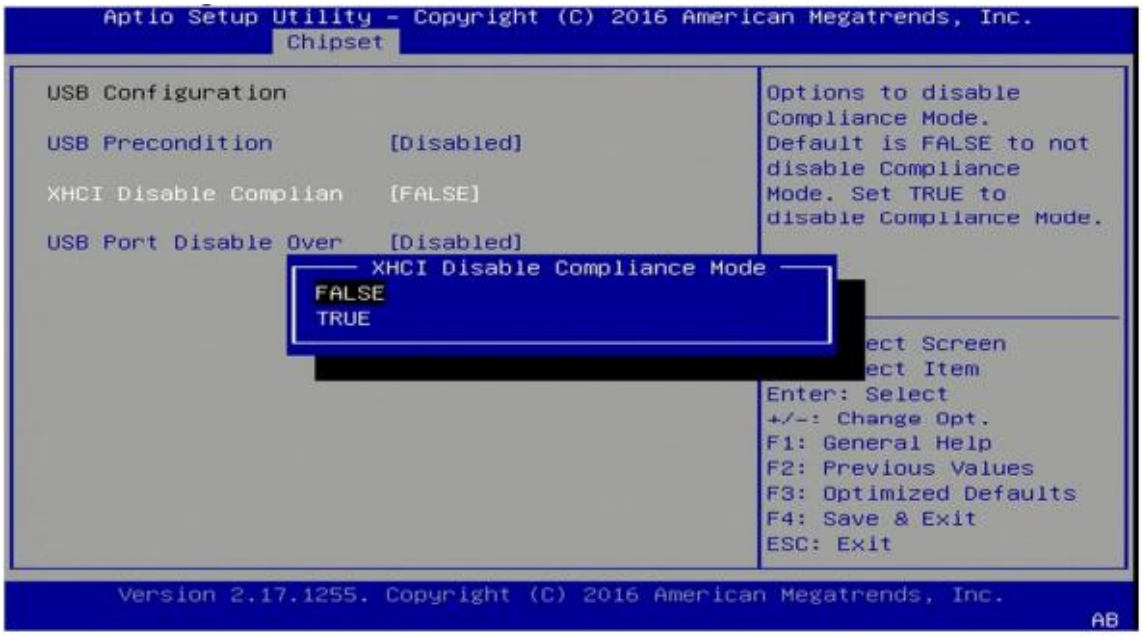


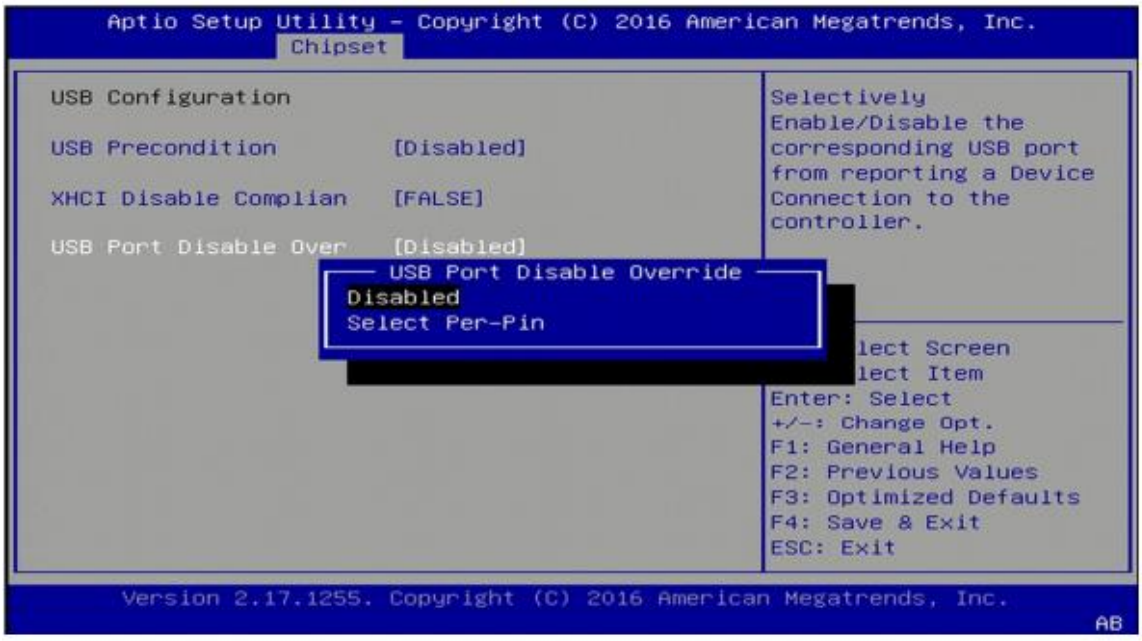


4.5.2.1 PCI Express Configuration

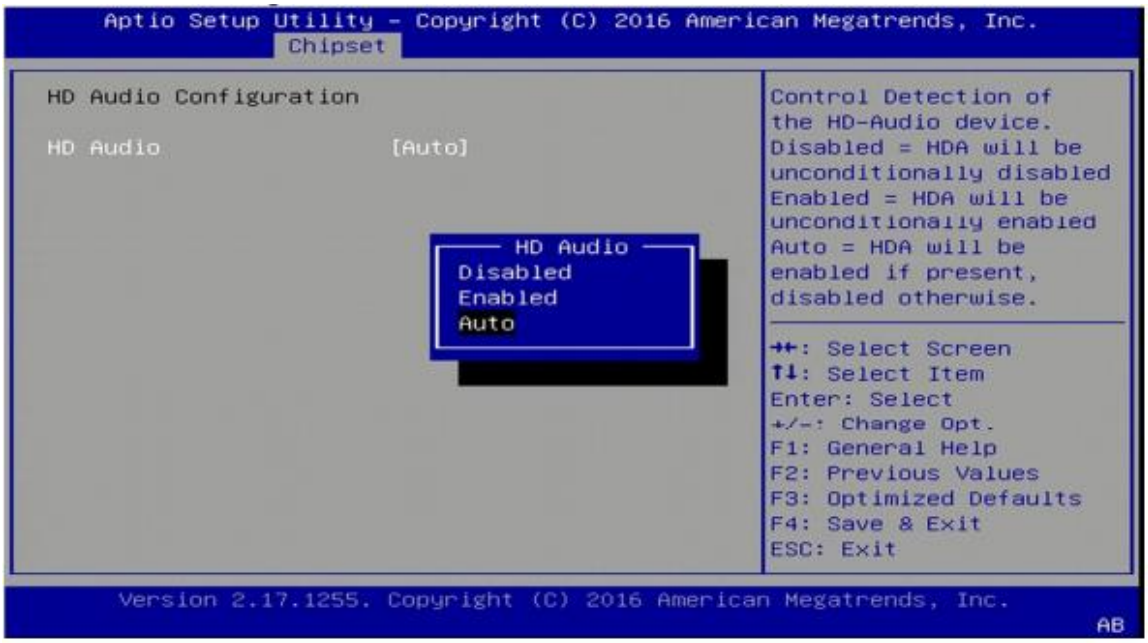


4.5.2.2 USB configuration





4.5.2.3 HD Audio Configuration



4.6 Security Menu

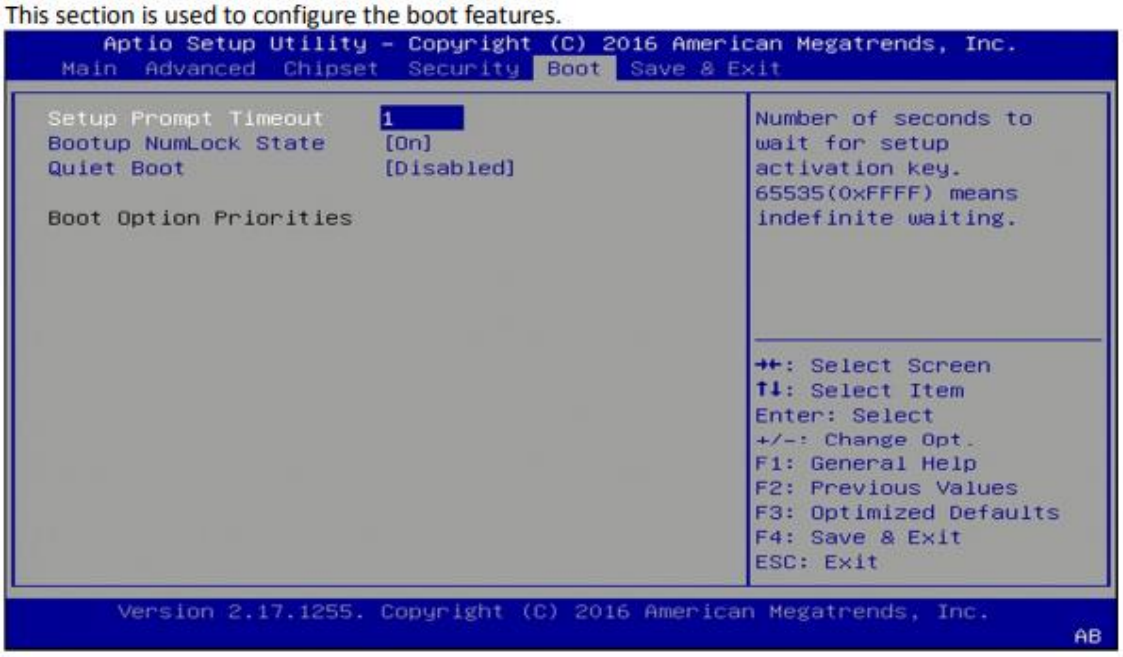
Use the Security Menu to establish system passwords

Administrator Password
Set administrator password.

User Password
Set user Password.

4.7 Boot Menu

This section is used to configure the boot features.



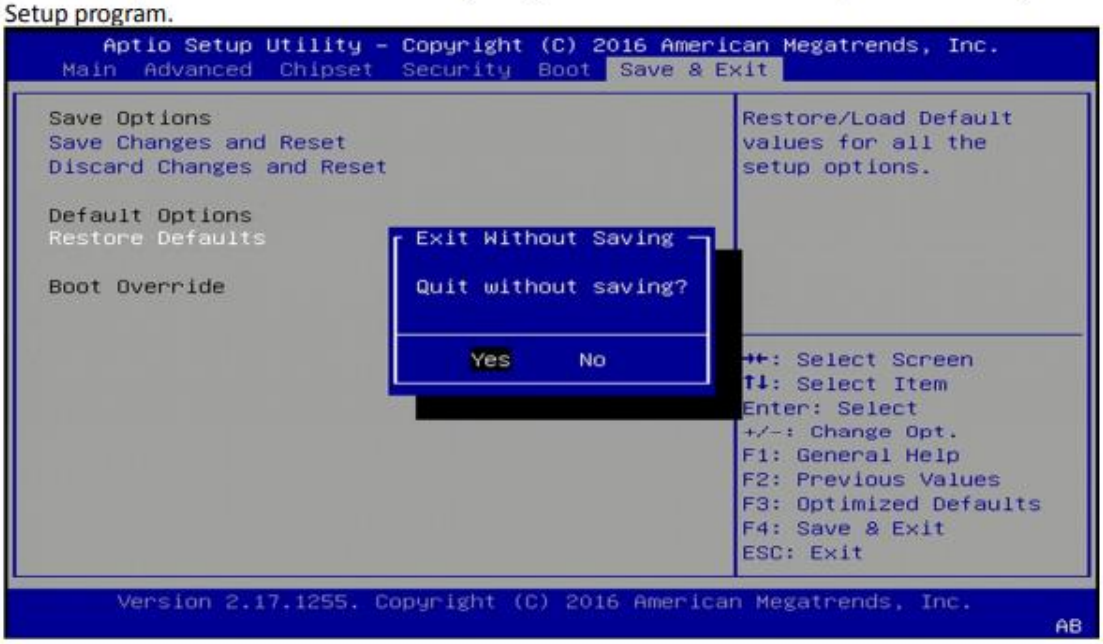
Setup Prompt Timeout
Number of seconds to wait for setup activation key. 65535 (0xFFFF) means indefinite waiting.

Bootup NumLock State
Select the keyboard NumLock state

Quiet Boot
Enables or disables quiet boot option

4.8 Save & Exit

This screen provides functions for handling changes made to the BIOS settings and the exiting of the Setup program.



Save Changes and Exit
Exit system setup after saving the changes

Discard Changes and Exit
Exit system setup without saving changes

Restore Defaults
Restore/Load default values for all the setup options