HIGHNESS™

One of a kind

USER'S MANUAL

MHSD-XX00RC

MODEL

MHSD-2100RC, MHSD-2400NRC,
MHSD-2700RC, MHSD-3200RC,
MHSD-4200RC, MHSD-5500RC

MEDICAL & HEALTHCARE
MEDICAL GRADE
SURGICAL MONITORS

For safe and efficient use of the product, read the manual thoroughly.

Warning : Neglecting this sign and misusing the product may result in fatality or severe injury.

Caution : Neglecting this sign and misusing the product may result in Injury/Physical Damage.

Prohibited : This sign indicates the actions that should be prohibited.

Compulsory : This sign indicates the actions that must be followed.

Reference : This sign proposes or suggests the ideal ways to use the product.

Longtime use of the product may cause dizziness. Frequent rest is recommended while in use. When the dizziness is severe, stop the use of the product immediately.

- The dizziness may last varying from a person to another.
- Usage for other purposes may cause physical harm.

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1. Precautions

Power 4

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Move 6

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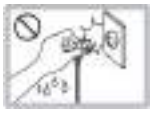
1. Power

Warning :

Connect the power plug to an outlet which is GROUNDED. Otherwise electric shock or injury may occur (limited to insulation-type 1 devices).

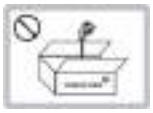
During thunder and lightning, disconnect the power cable and signal cable from the monitor, otherwise electric shock or fire may occur. Also, disconnect the power plug from the outlet.



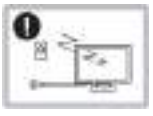
DO NOT touch the power plug with wet hands. Moisture may cause electric shock.

While disconnecting the power cable, hold the plug and do not bend the power cord excessively, or put heavy objects on it.

Caution :



Use the power adaptor provided for the monitor. The adaptors of other companies are manufactured by different standards, which may cause damage to the monitor, fire or electric shock.



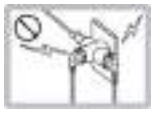
In cases where the product is intended not to be used for a long time (left over for going outside) from the house, disconnect the power cable from the monitor. Dust may generate heat and cause fire.

Disconnecting the power cord during the use of the monitors may cause electric shock and damage the monitor.

Contact the service centre first for the usage of a power other than 110-220V. The product is set to be used at the power of 110-220V/60Hz when shipped from the plant.

2. Installation

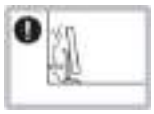
Warning :



DO NOT use multiple products with a single outlet at the same time. Electric shock or fire may occur.

DO NOT install at the locations where excessive heat is produced such as a place with an electric heater. Electric shock, fire, malfunctioning, or deformation may occur.

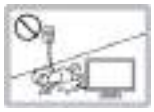
DO NOT put into the monitor the metallic objects (coins, hairpins, chopsticks, wires, etc.), or flammable objects (paper, matchsticks, etc.). Please do not let your children play with the monitor and always supervise their usage of the monitor. Electric shock, fire, or injury may occur. If foreign objects get into the product, turn off the power immediately and contact the service centre.



DO NOT block the ventilator of the monitor. The product should be installed in a wide place where it is ventilated well, by no less than 10cm off the wall. The monitor's deformation or even the fire can occur due to the increase in the internal temperature.

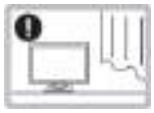
Install the product at a place free of electromagnetic interference. High-Tension wires, and some specific electric devices emit excessive electromagnetic waves, thereby affecting the performance of the monitor.

DO NOT place heavy objects on the monitor or climb up on the monitor. Injuries may occur for being dropped down from the monitor : especially for children. Please do not let your children play with the monitor and always supervise their usage of the monitor.



DO NOT leave the power cable or signal cable on the passage way. Falling over the cable may cause electric shock, fire, the damage of product, or injuries.

Caution :



Place the monitor on a flat and stable space lest it fall down and where there is no sunlight.

Place the monitor in a clean and dry space. If you smell smoke, hear a loud noise, or any strange odor is coming from the monitor, turn off the power and contact the service centre.

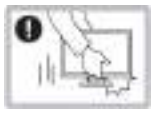
If the Monitor is dropped, or its cover case is damaged, turn the power off and contact the service centre.

3. Move

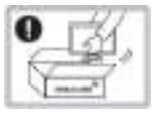
Warning :

Turn the power off first before moving the product.

Disconnect all the cables before moving the product.



Ensure that the product is not dropped or bumped in any way while being moved.



Keep the box in which the product was delivered. It will be of use for moving the product.

Ensure that the product's panel faces forward, carry by grabbing it with both hands. If the product is dropped, and it is damaged, electric shock or fire may occur. Contact the service centre and have the product repaired.

4. Usage

Warning :

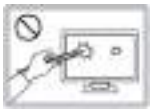
DO NOT disassemble, repair, or remodel the product yourself. Only our trained professionals at the service centre can repair the monitor.

When cleaning, DO NOT use flammable sprays directly on the monitor, or wipe it with flammable solutions (paint thinner, benzene, etc.).

DO NOT spray the product with water, or have it wet. Fire, electric shock, or malfunctioning may occur.

Prior to the cleaning of the panel, disconnect the power cord. Wipe the panel Lightly with smooth cloth to prevent any scratches. Wet cloth is never to be used.

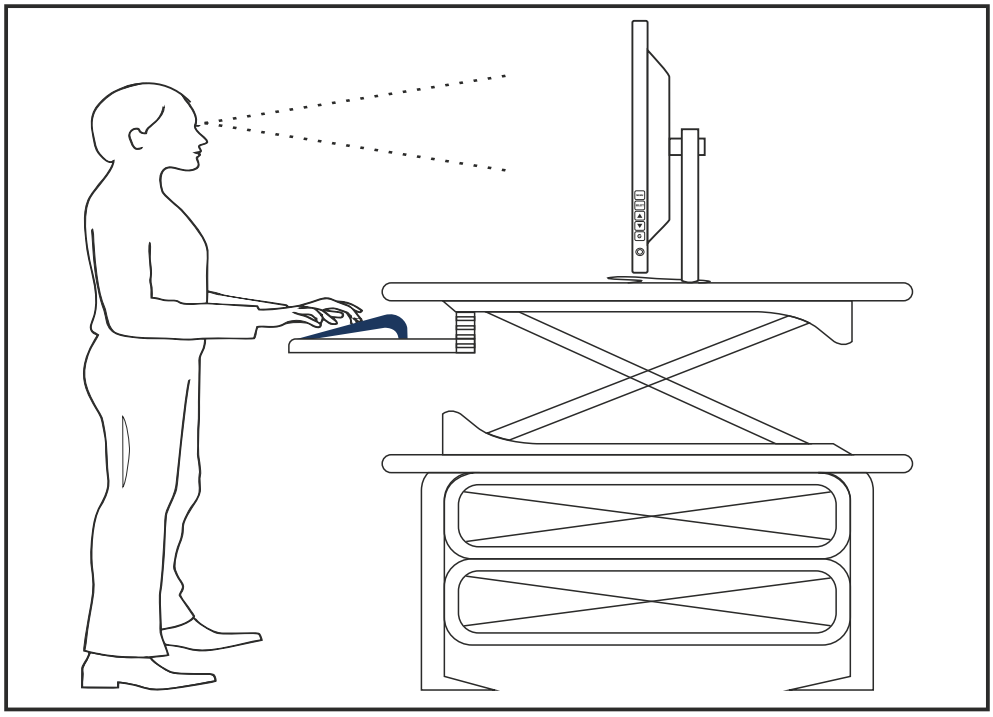
Caution :



DO NOT stab or scratch the panel with a hand or any sharp objects (nail, pencil, pen etc.). The panel can be scarred, which may cause malfunctioning.

In case where monitor is used for a long time, dizziness or fatigue can be felt. To protect the eyes and reduce the fatigue on muscles, frequent rest is highly recommended.

Proper postures for watching the Monitor :



2. Product Description

Product Components 9

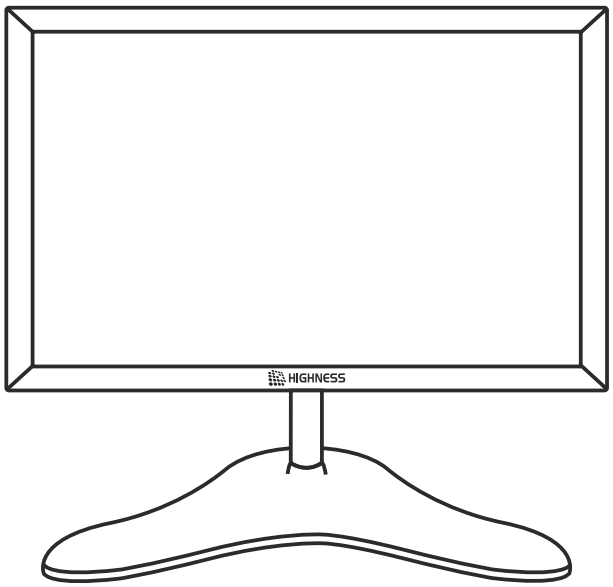
Name of Components 10

Side View 11

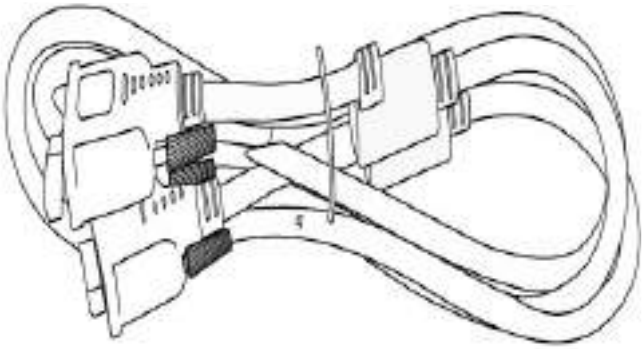
1. Product Components

Check if all the parts and accessories are in the box. If any components are missing from what is stated below, please contact the retail store where the product was purchased. For purchasing additional parts or accessories, contact the service centre.

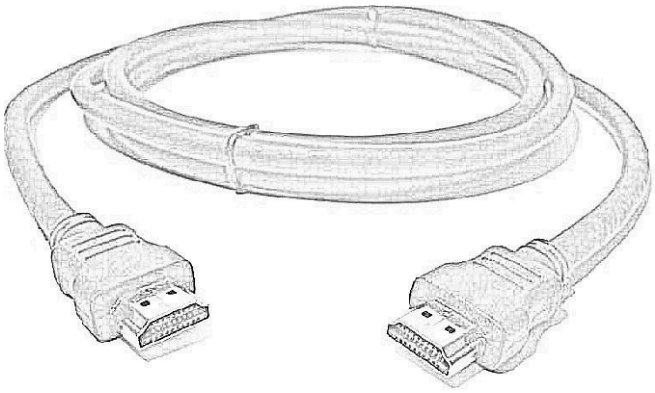
Monitor :



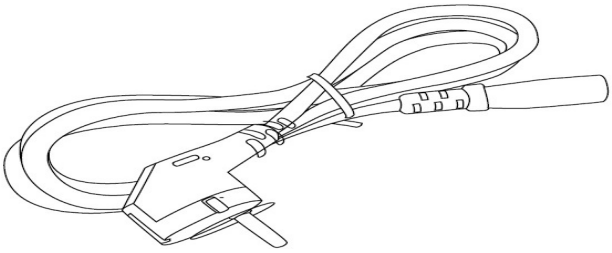
DVI Cable :



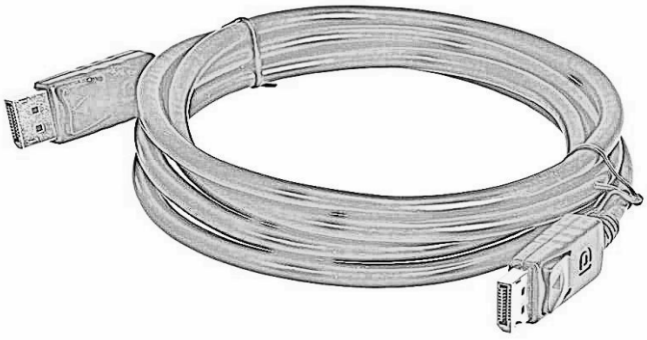
HDMI Cable :



Power Cord :



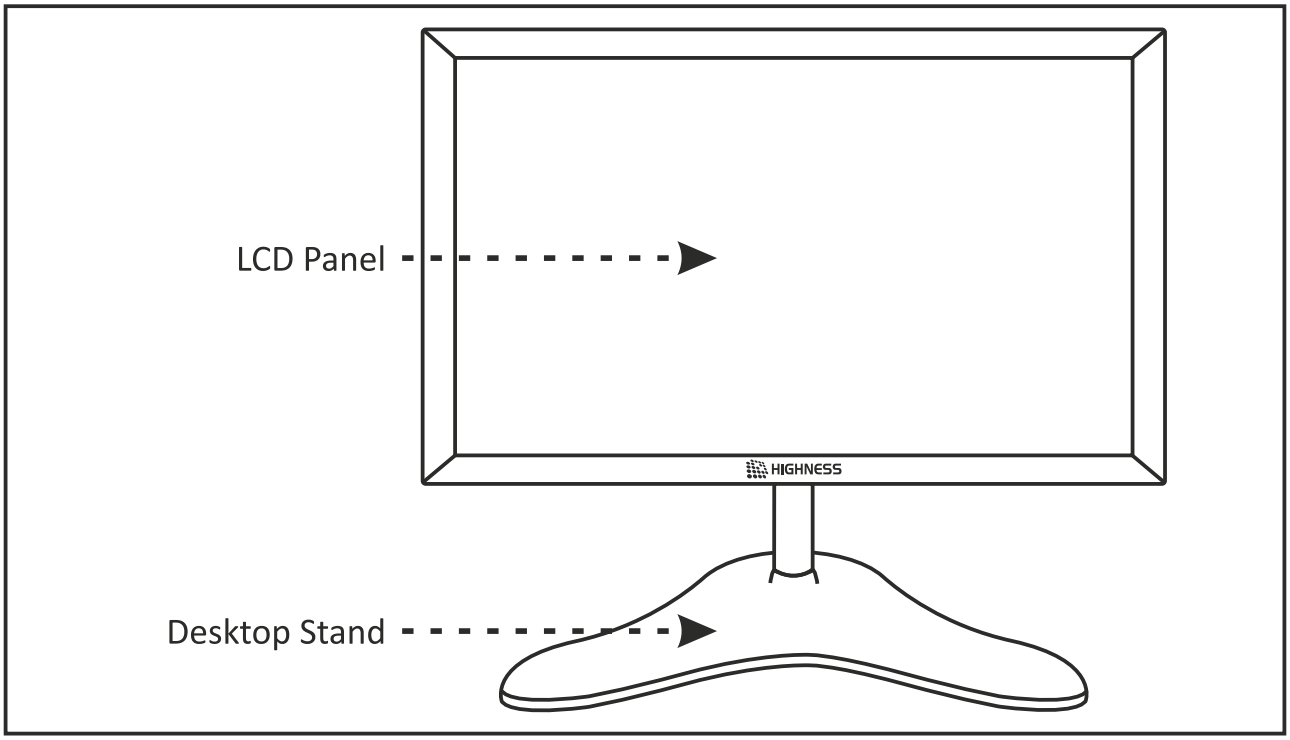
DP Cable :



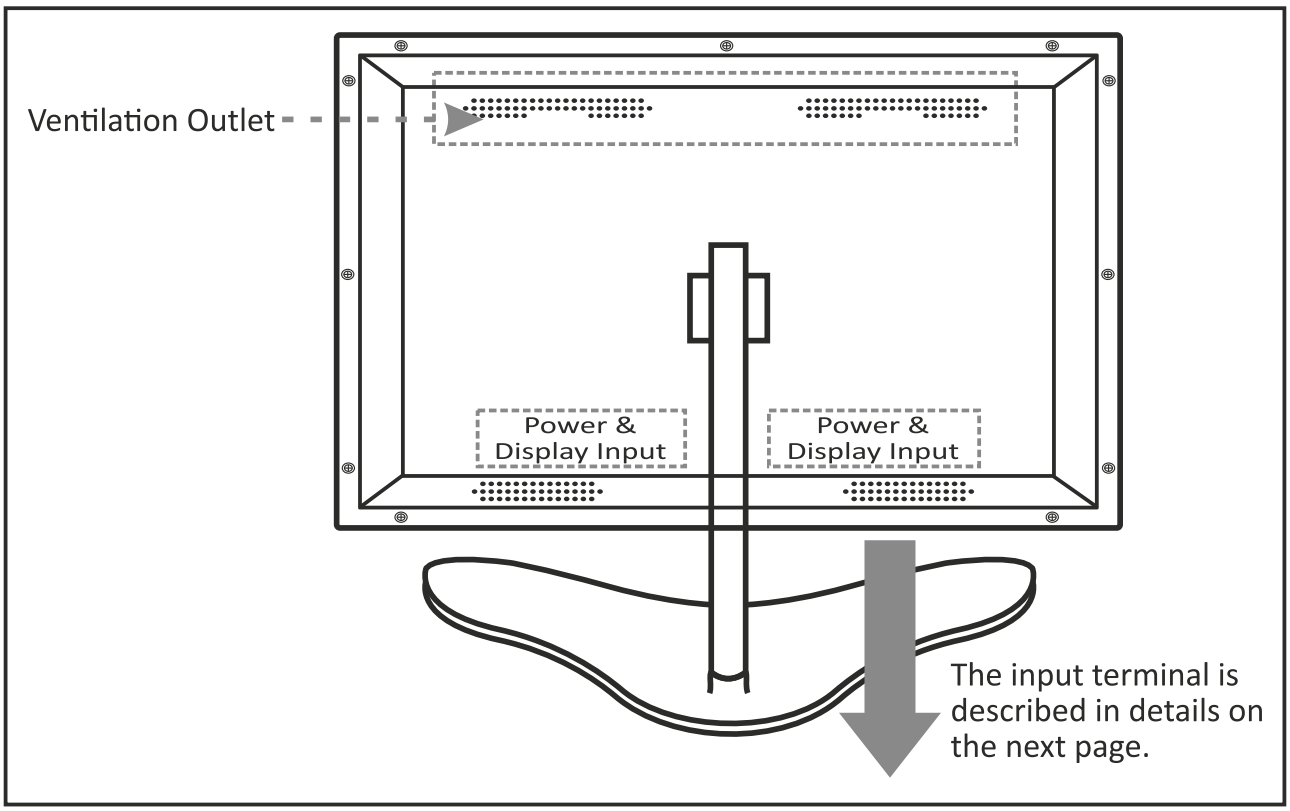
3G-SDI (BNC) CABLE :

2. Name of Components

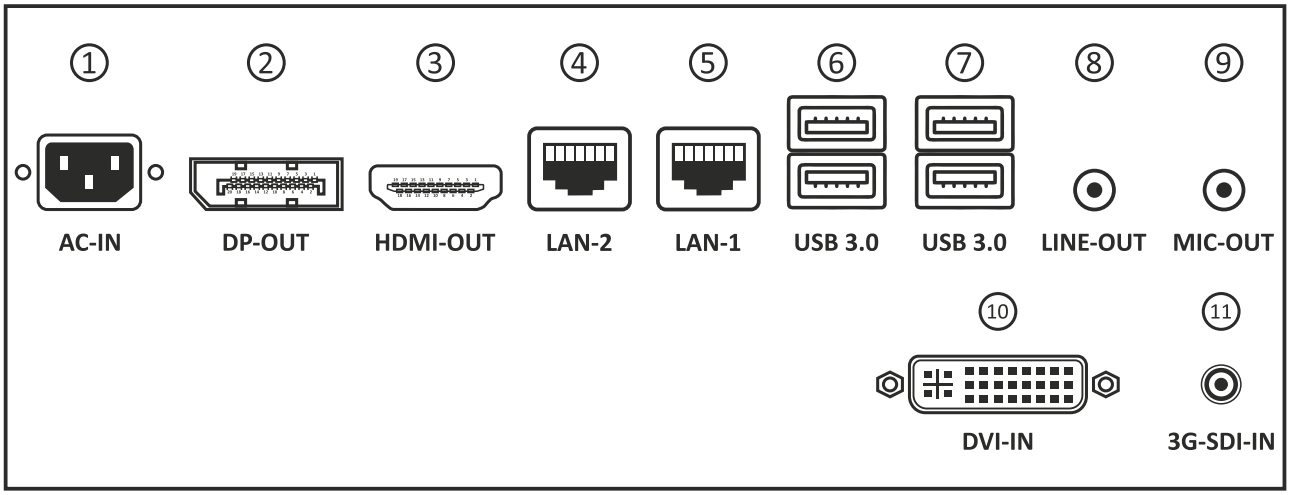
1. Front Side :



2. Back Side :



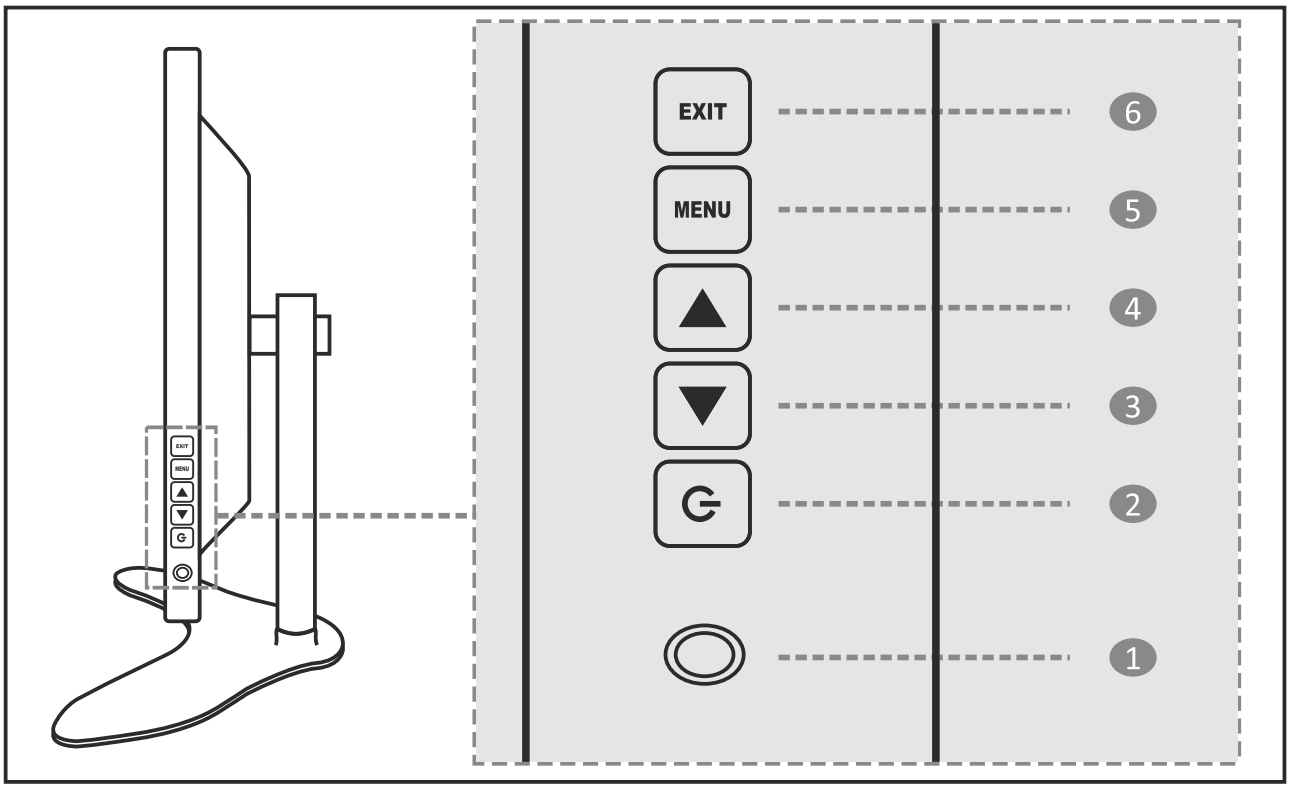
3. Detailed Description on Terminal :



1. AC-IN Power Input Terminal.
2. DP Output Terminal.
3. HDMI Output Terminal.
4. LAN 2 Input Terminal.
5. LAN 1 Input Terminal.
6. USB 3.0 Input Terminal.
7. USB 3.0 Input Terminal.
8. Line Output Terminal.
9. Misc Input Terminal.
10. DVI Input Terminal.
11. 3G-SDI Input Terminal.

3. Side View

1. Detail Description on Button :

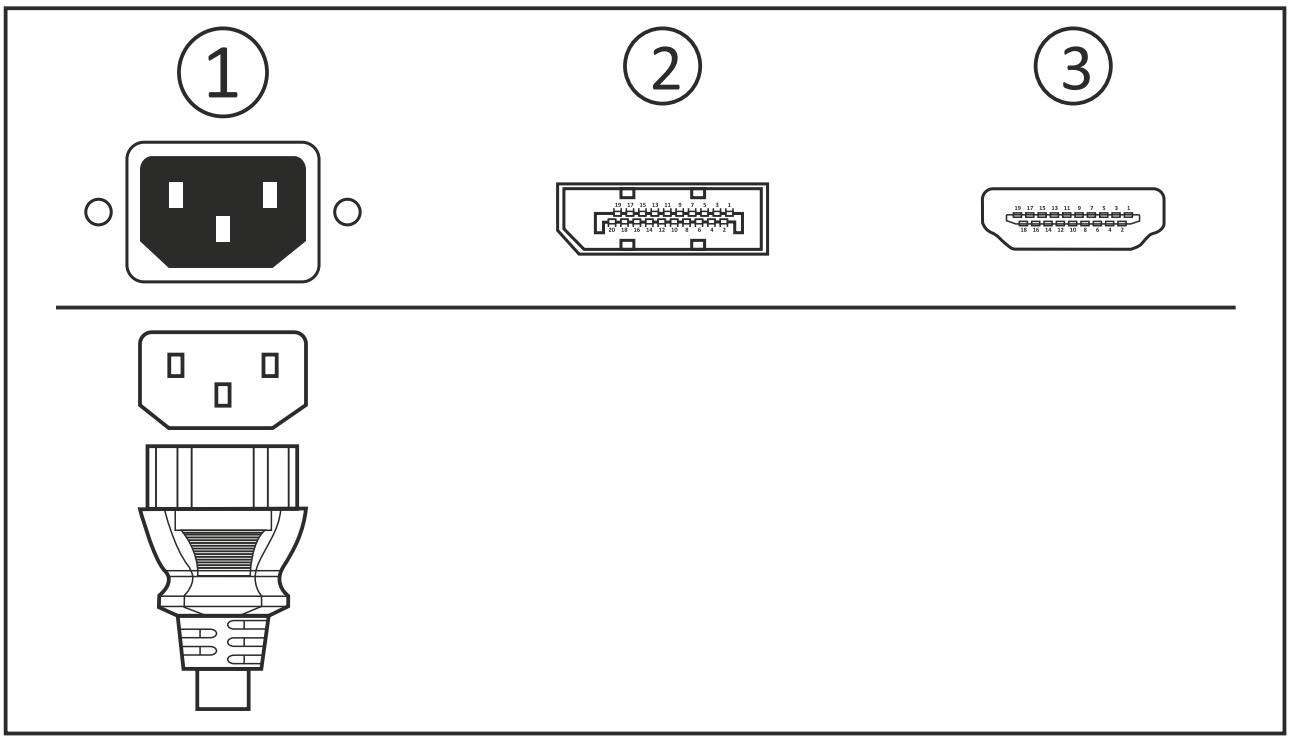


1. Power LED
2. Power ON
3. Not in Use
4. Not in Use
5. Not in Use
6. Not in Use

- Connect the power cord to the Monitor power Connector.
- Connect the plug of the AC power device to the power input terminal at the back of the monitor.

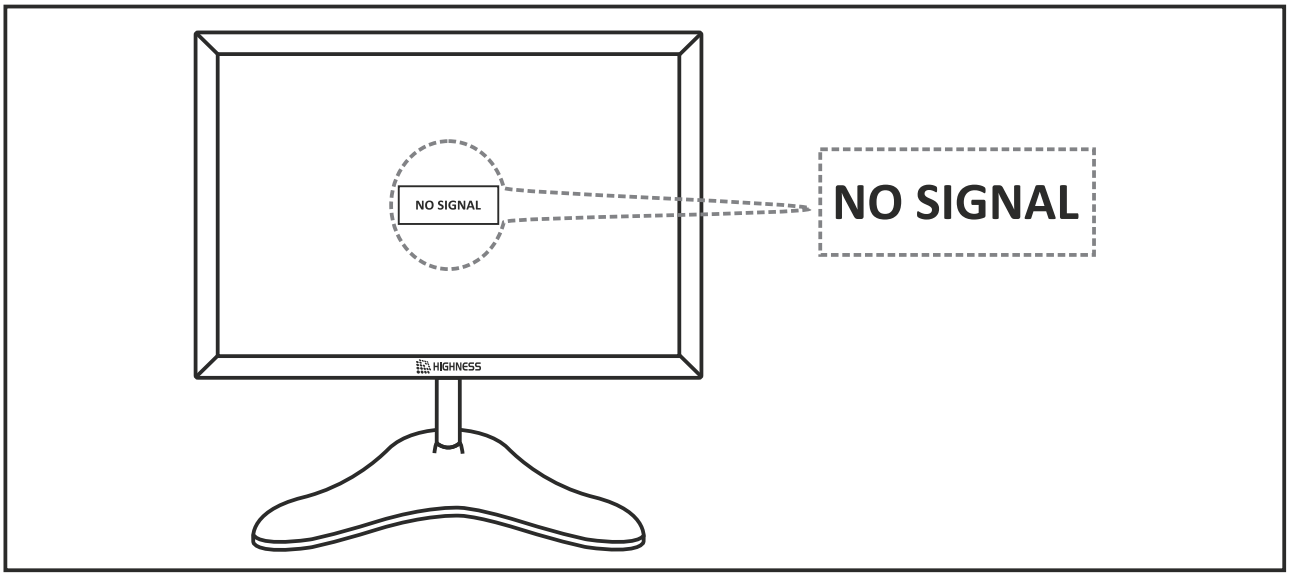
Only use the adaptor provided together with the computer, or compatible adaptors. The use of incompatible adaptors may damage the computer. (Selected Model Only)

2. Power Connection :

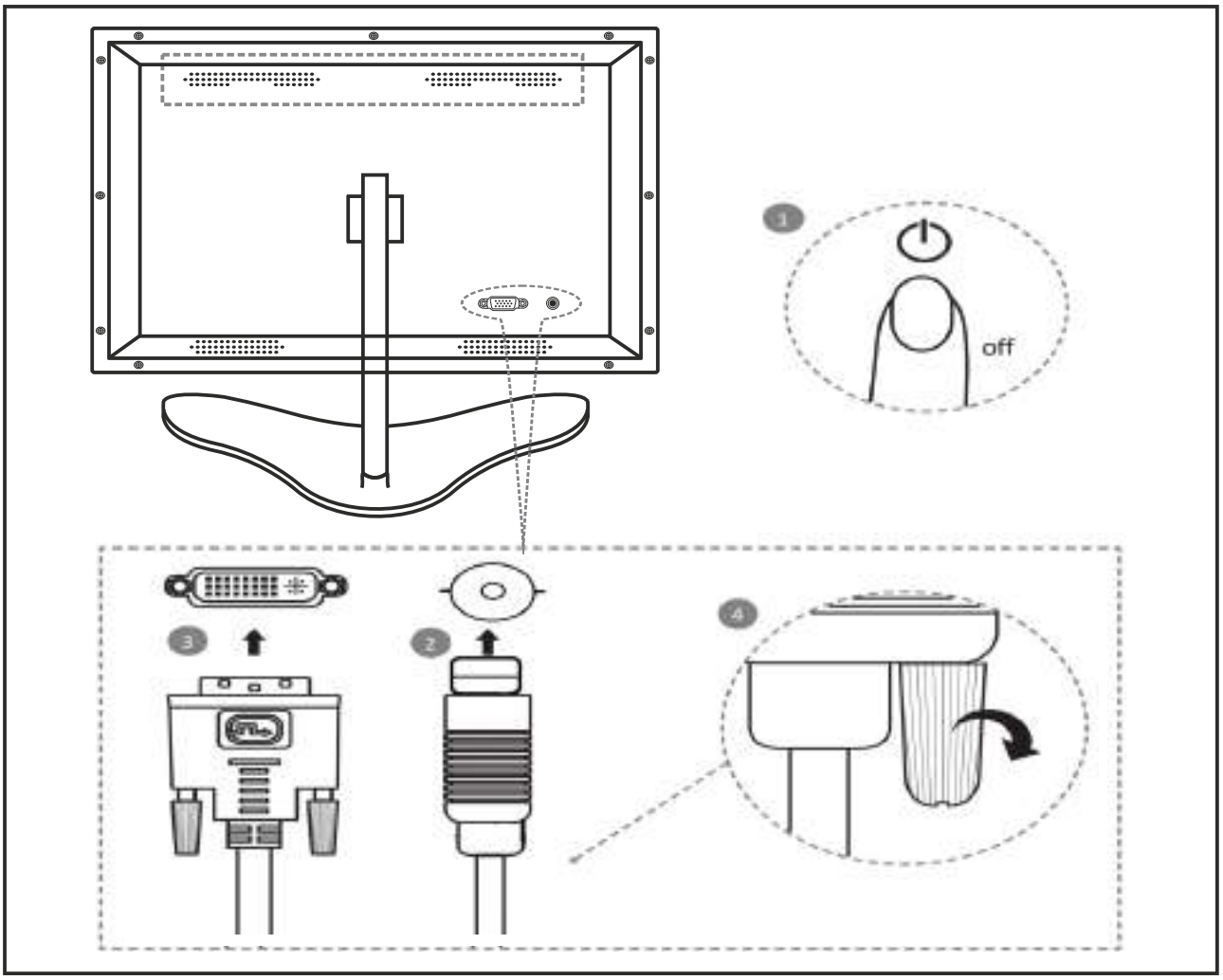


3. Connection Status checkup :

If the LED lamp frequently blinks, and a “No Signal (as shown below)” appears on the screen, check out the connection status of the Display in Signal.



4. Display Signal :



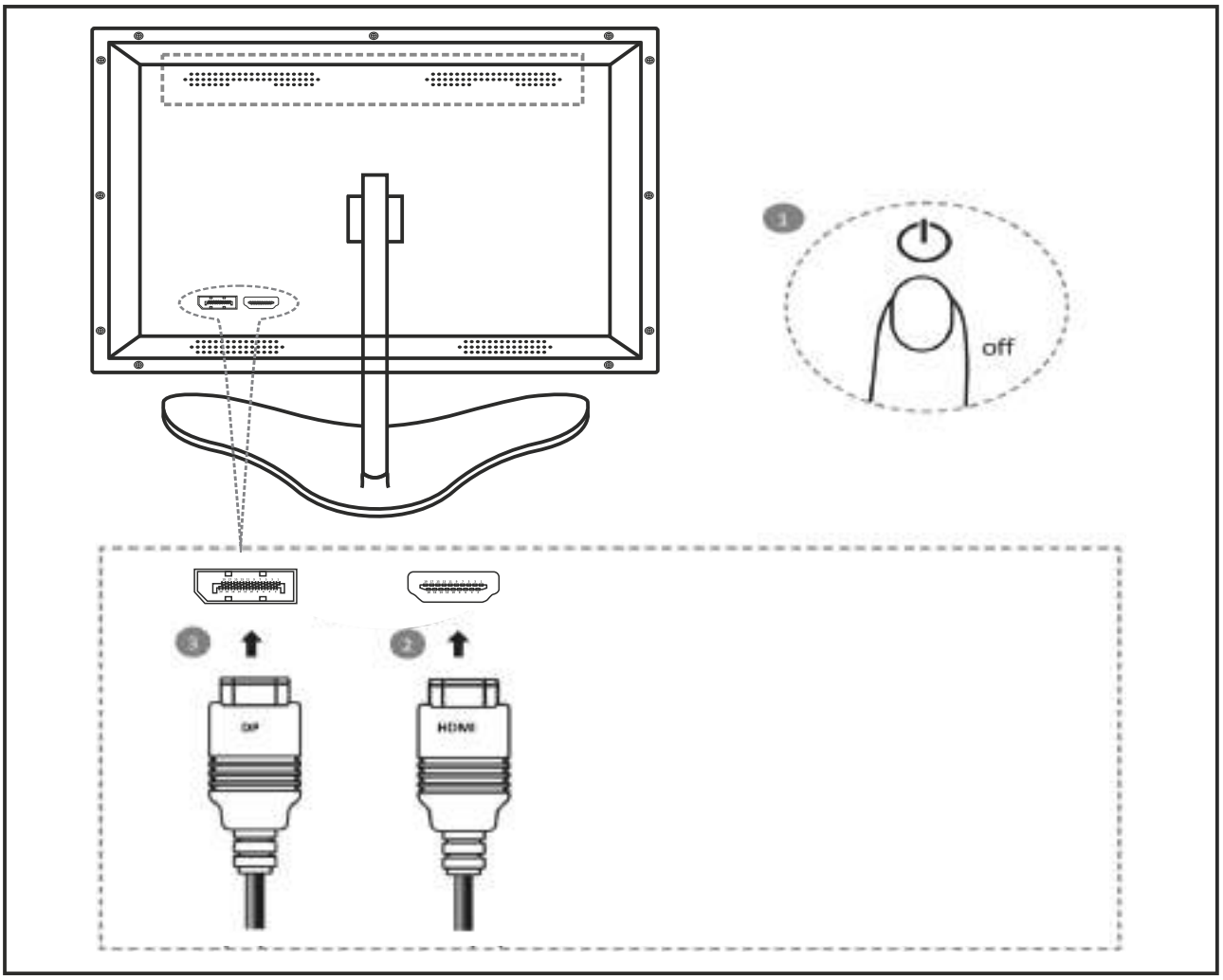
1. First turn off the power of the computer and peripheral devices.

2. **Connection on with the 3G-SDI cable :** Connect the 3G-SDI input terminal at the bottom of the monitor.

3. **Connection on with the DVI cable :** In order to use the monitor by receiving the signal from the DVI terminal.

4. After the connecting, tighten both the screws at each end of cable to be fixed.

5. Display Out Signal :



1. First turn off the power of the computer and peripheral devices.

2. **Connection on with the HDMI cable :** Connect the HDMI Output terminal at the bottom of the monitor.

3. **Connection on with the DP cable :** In order to use the monitor by receiving the signal from the HDMI terminal.

4. After the connecting, tighten both the end of cable to be fixed.

3. BIOS Setup / System Settings

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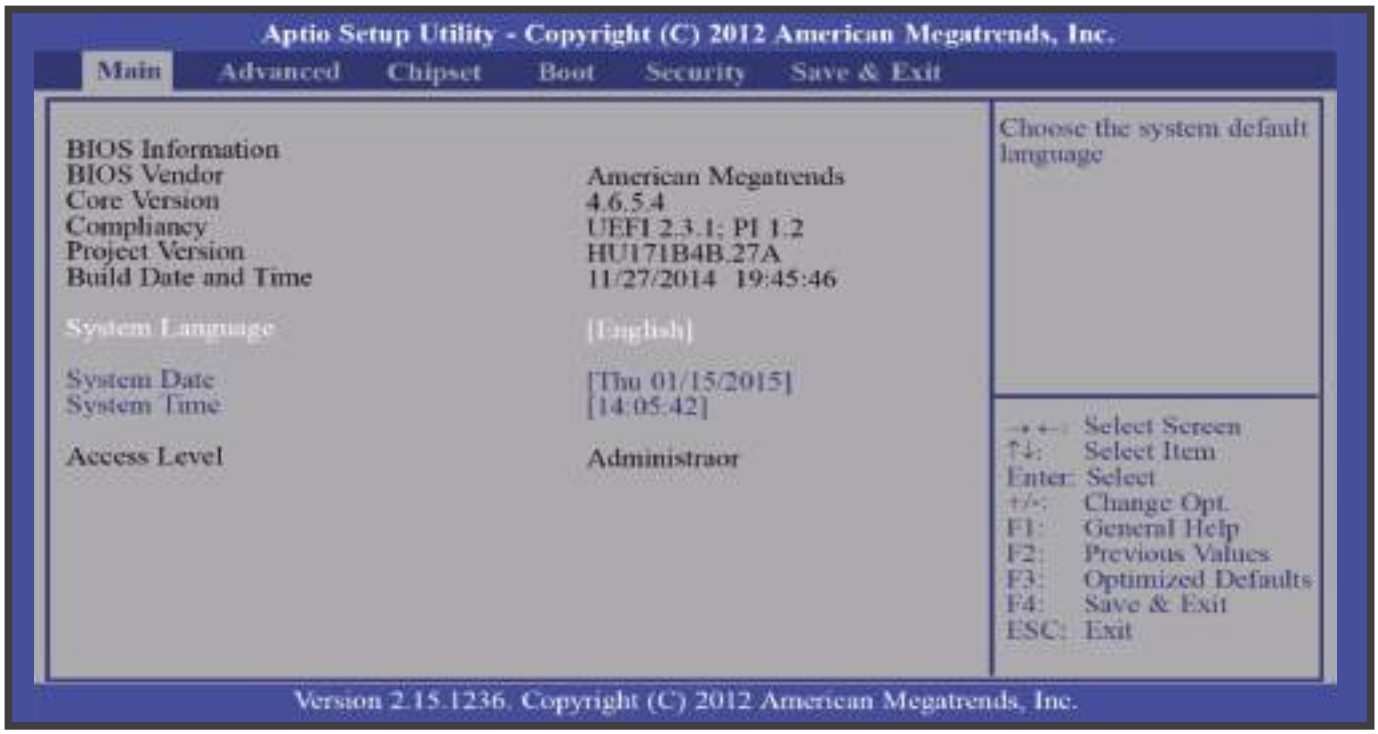
1. Main :

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



System Date

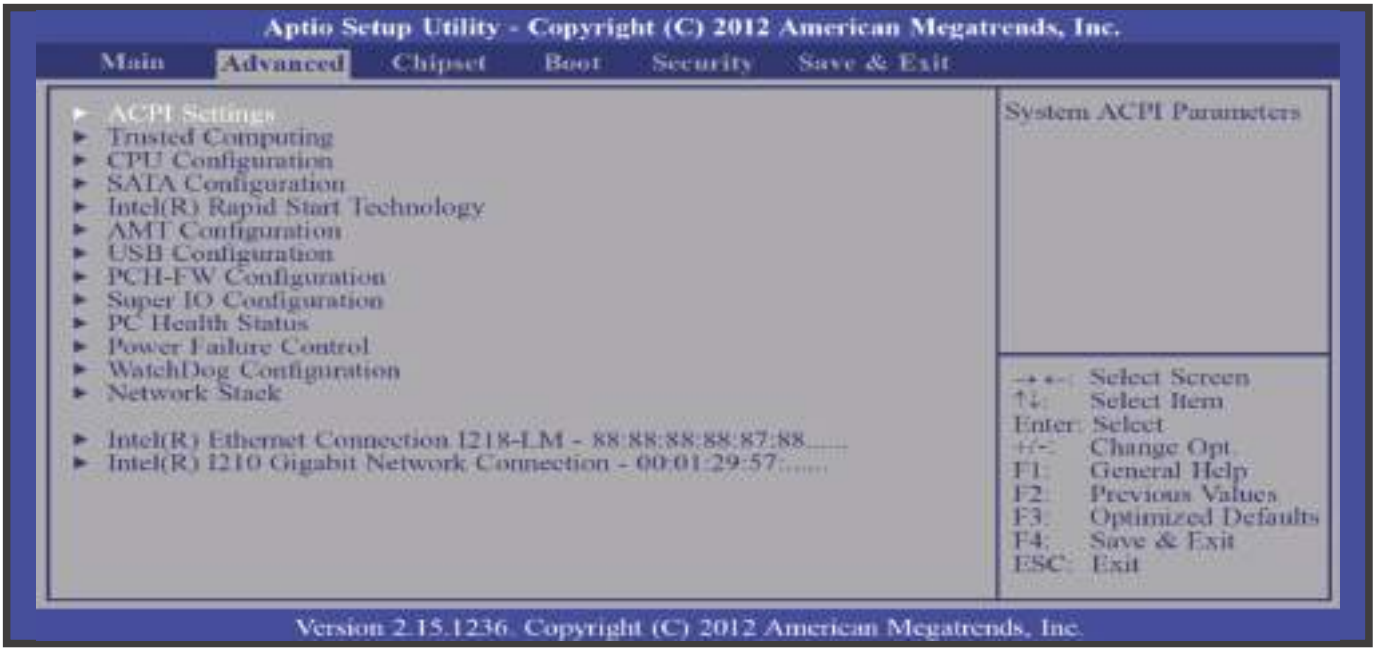
The date format is <day>, <month>, <date>, <year>. Day displays a day, from Sunday to Saturday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1980 to 2099.

System Time

The time format is <hour>, <minute>, <second>. The time is based on the 24-hourmilitary-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

2. 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.

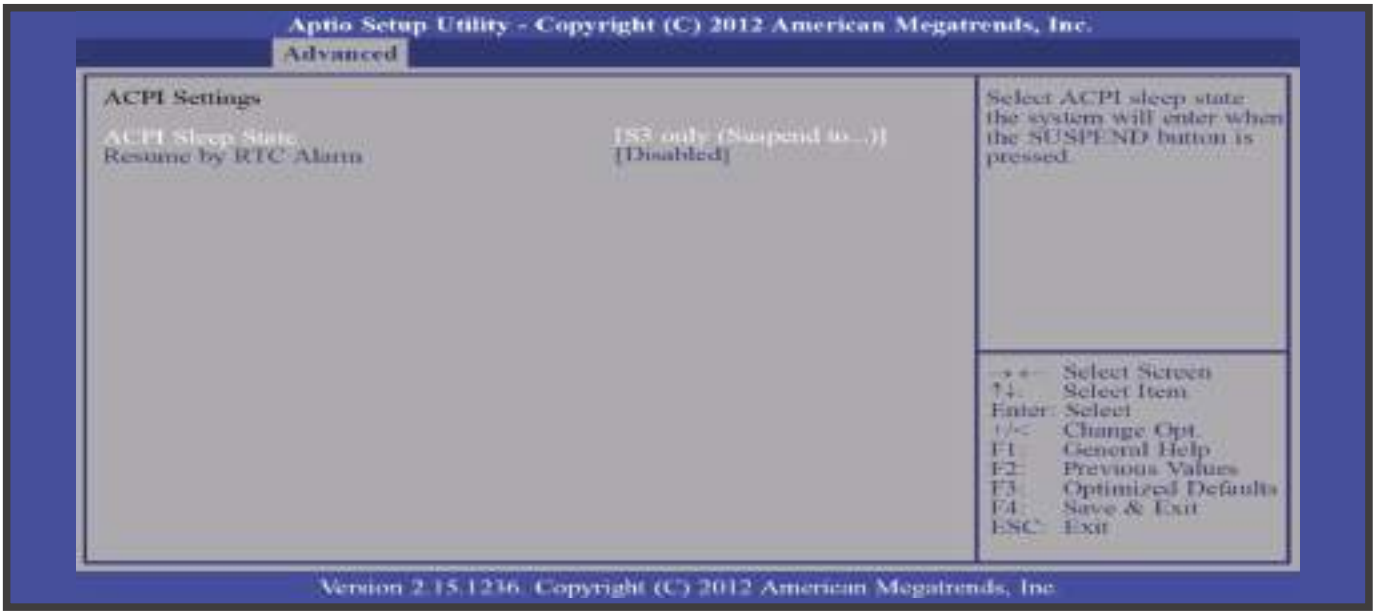


Important

Setting incorrect field values may cause the system to malfunction.

1. ACPI Settings :

This section is used to configure the system ACPI parameters.



Select ACPI sleep state

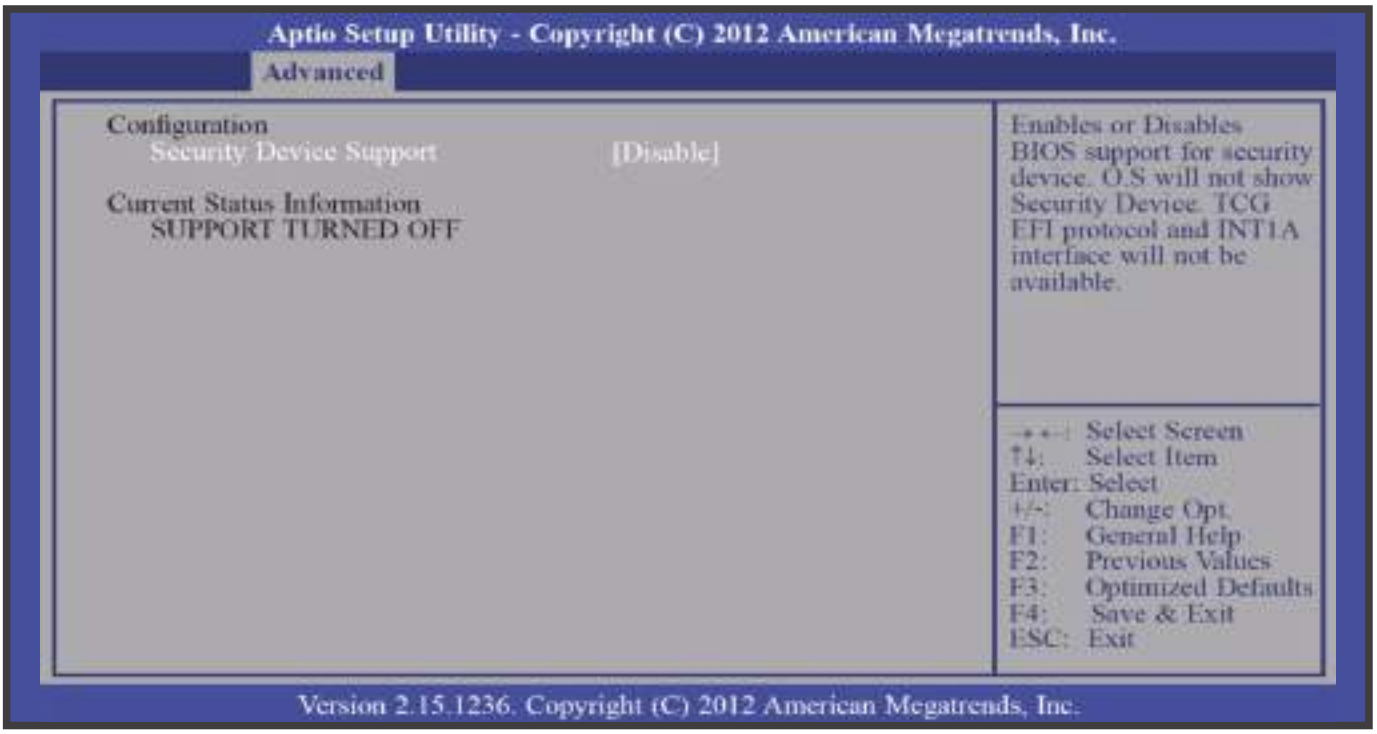
Selects the highest ACPI sleep state the system will enter when the Suspend button is pressed. S3 only (STR) Enables the Suspend to RAM. Pressed

Resume by RTC Alarm

When enabled, the system uses the RTC to generate a wake-up event.

2. Trusted Computing :

This section configures settings relevant to Trusted Computing innovations.

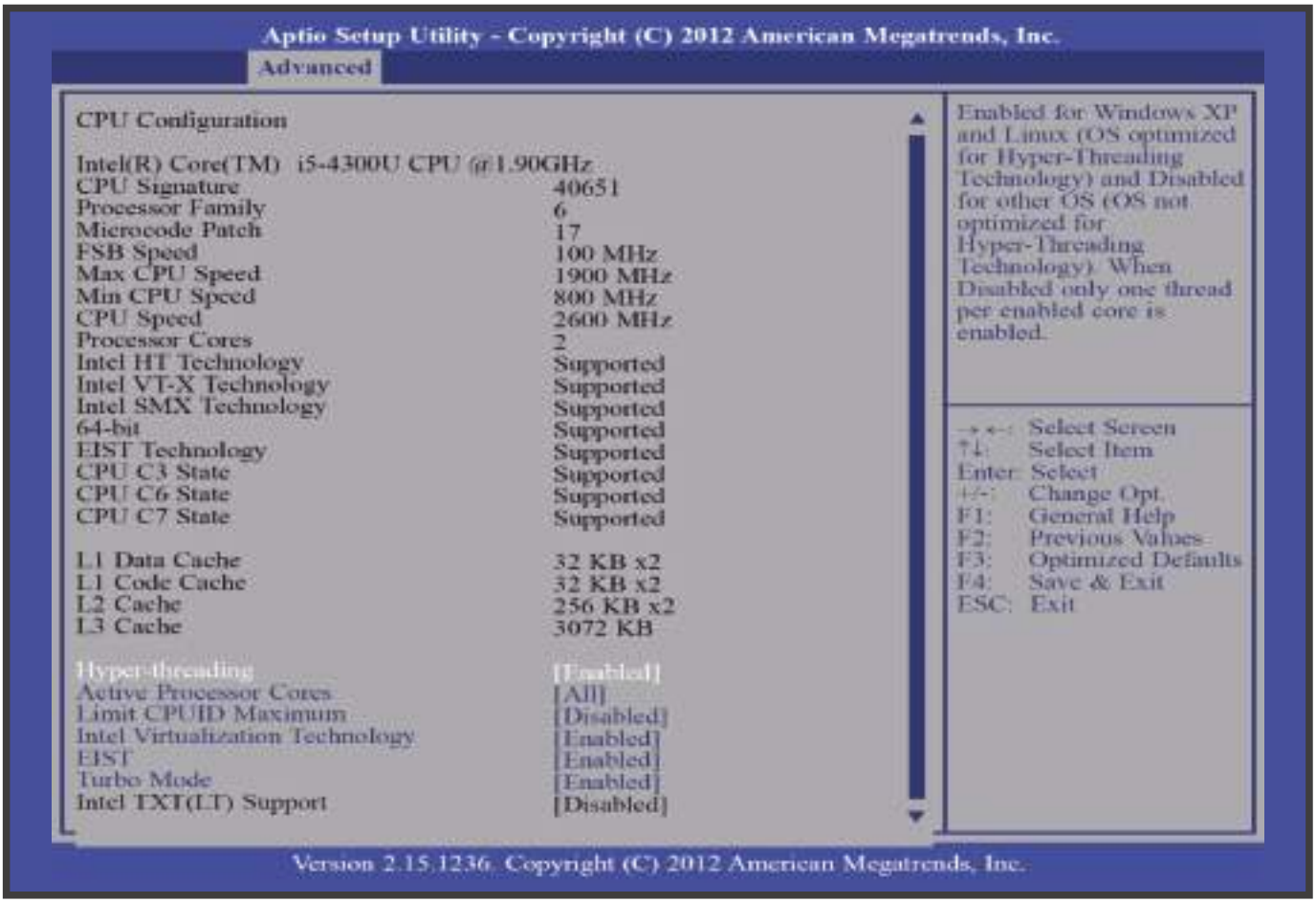


Security Device Support

This field is used to enable or disable BIOS supporting for the security device. O.S will not show the security device. TCG EFI protocol and INT1A interface will not be available.

3. CPU Configuration :

This section is used to configure the CPU. It will also display the detected CPU information.



Hyper-threading
Enable this field for Windows XP and Linux which are optimized for Hyper-Threading technology. Select disabled for other OS's not optimized for Hyper-Threading technology. When disabled, only one thread per enabled core is enabled.

Active Processor Cores
Number of cores to enable in each processor's package.

Limit CPUID Maximum
Disabled for Windows XP!

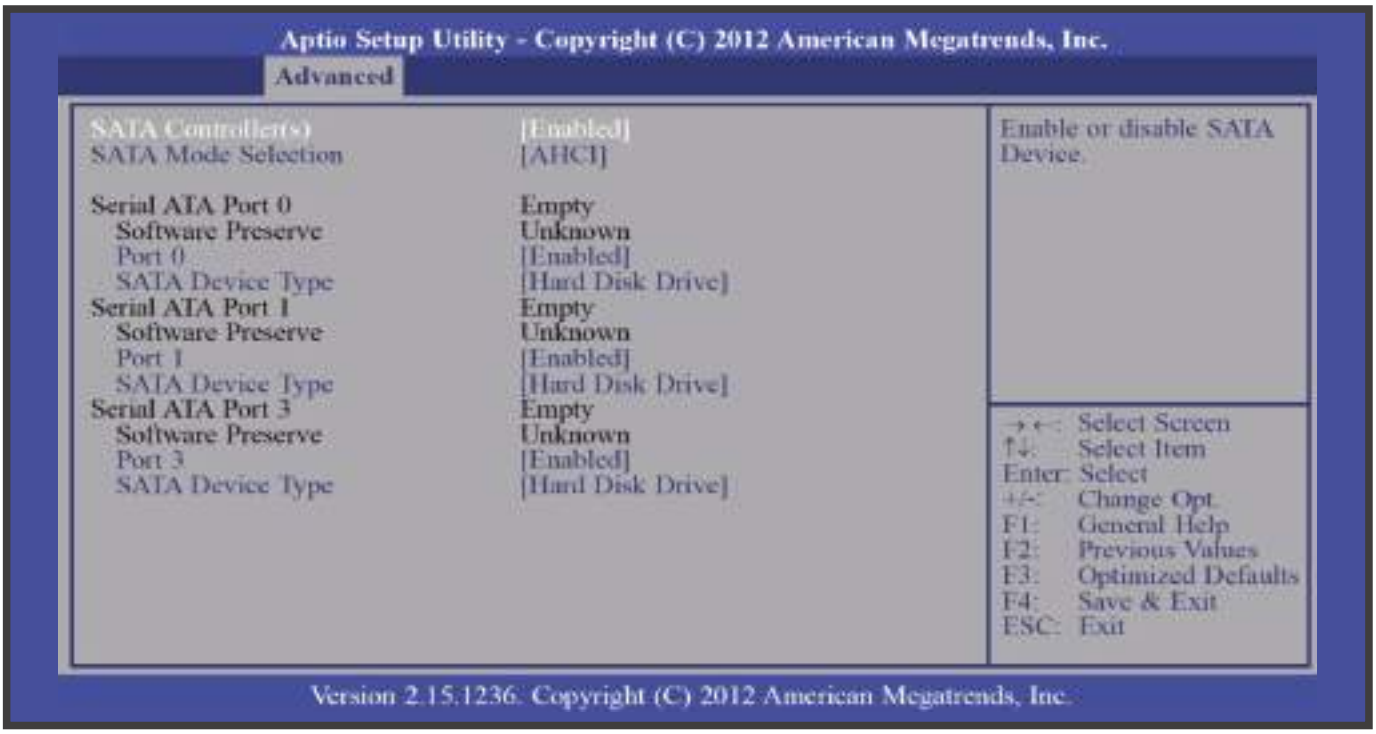
Intel Virtualization Technology
When this field is set to Enabled, the VMM can utilize the additional hardware capabilities provided by Vanderpool Technology

EIST
This field is used to enable or disable the Intel Enhanced Speed Step Technology.

Turbo Mode
Enable or disable the turbo mode.

4. SATA Configuration :

This section is used to configure the settings of SATA device.



SATA Controller(s)
This field is used to enable or disable Serial ATA devices.

SATA Mode Selection
The mode selection determines how the SATA controller(s) operates.

AHCI Mode
This option allows the Serial ATA devices to use AHCI (Advanced Host Controller Interface).

RAID Mode
This option allows

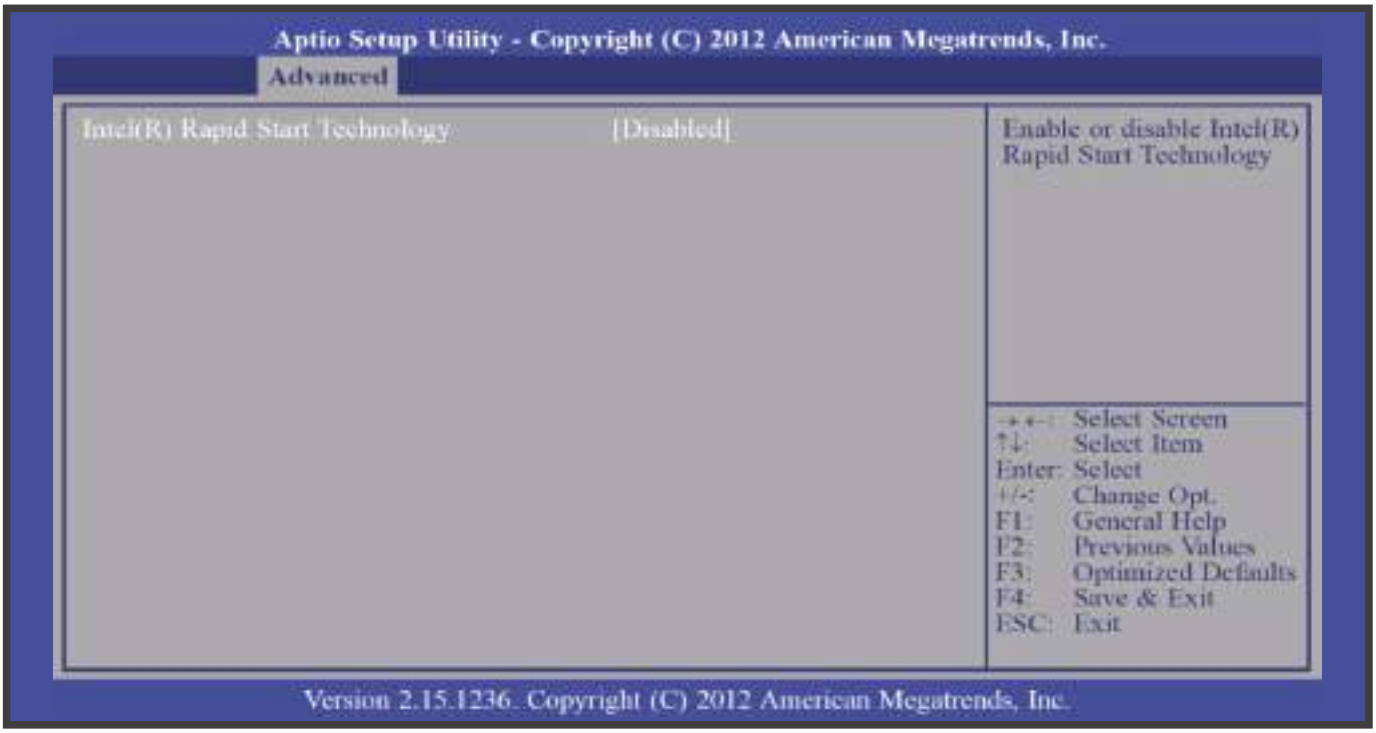
Port 0, 1 and 3

This field is used to enable or disable the serial ATA port.

SATA Device Type
Identify the serial ATA port which is connected to the Solid State Drive or the Hard Disk Drive.

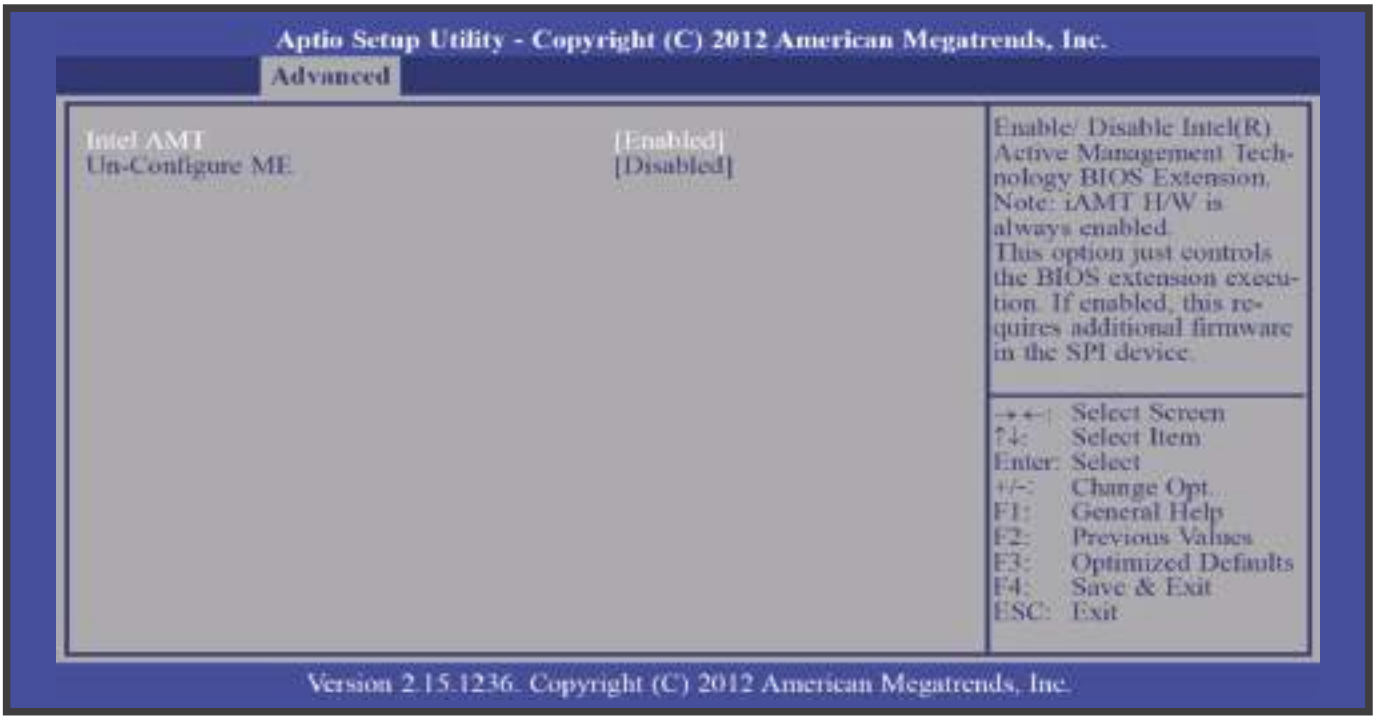
5. Intel(R) Rapid Start Technology :

This section is used to enable or disable the Intel Rapid Start Technology.



6. AMT Configuration :

This section is used to enable or disable the Intel Rapid Start Technology.



Intel AMT

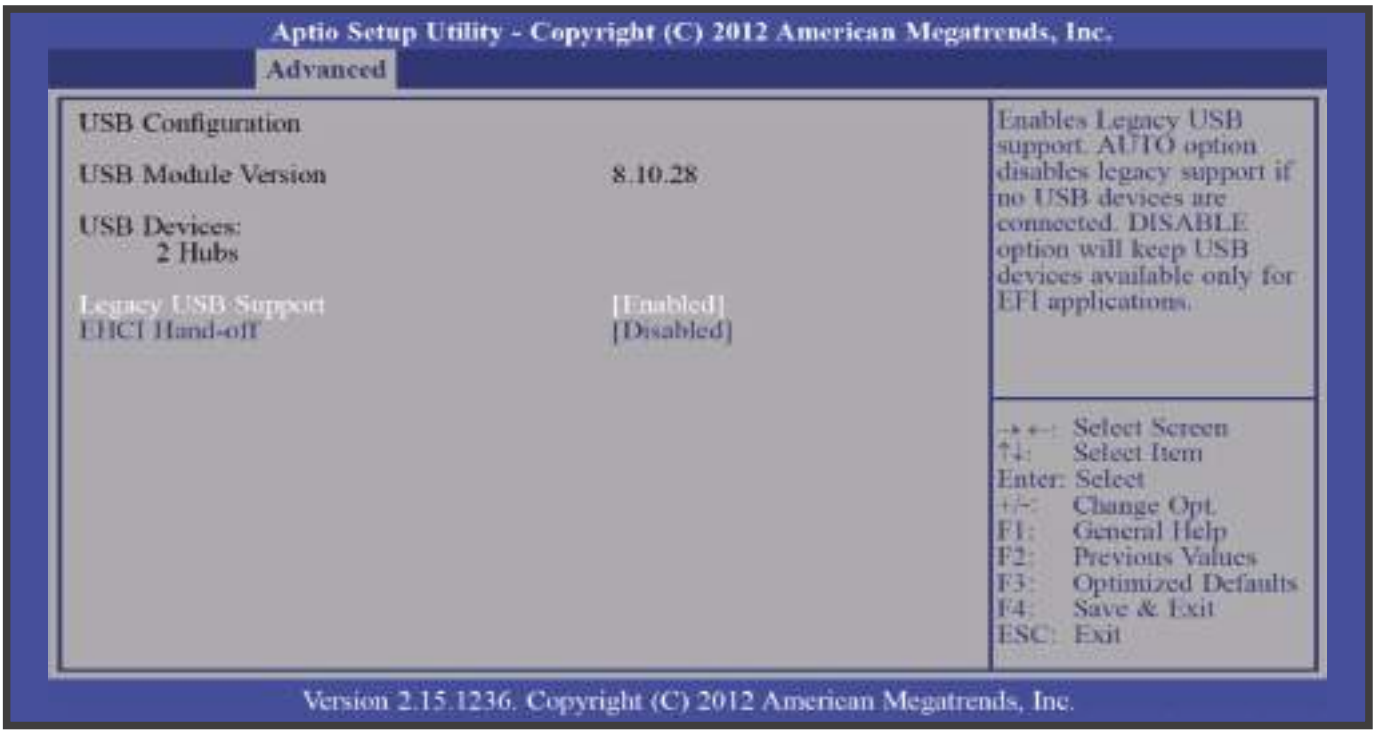
Enables or disables the AMT function.

Un-Configure ME

OEM Flag Bit 15 : Un-configure ME without the password confirmation prompt.

7. USB Configuration :

This section is used to configure the parameters of the USB device.



Legacy USB Support

Enabled
Enables legacy USB.

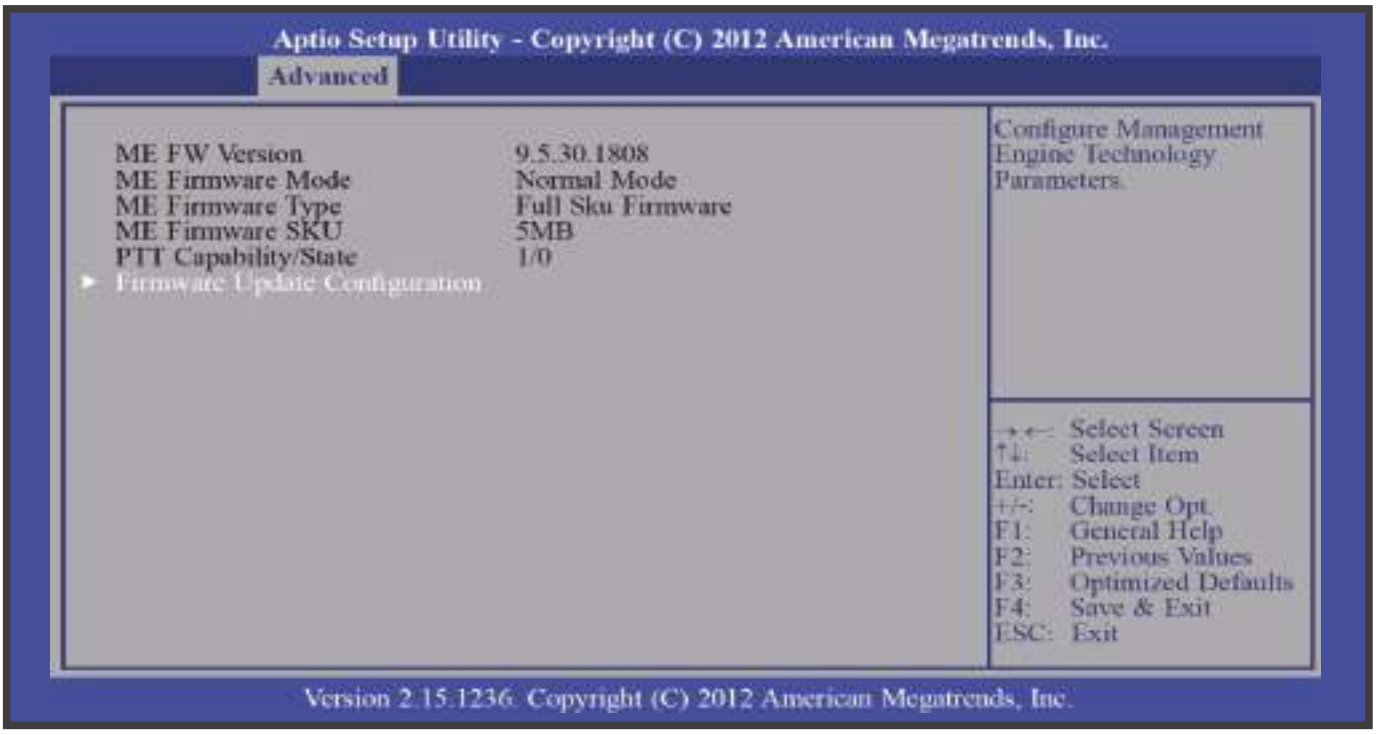
Disable
Keeps USB devices available only for EFI applications.

Auto
Disables support for legacy when no USB devices are connected.

EHCI Hand-off
This is a workaround for OS's without the EHCI hand-off support. The EHCI ownership change should be claimed by the EHCI driver.

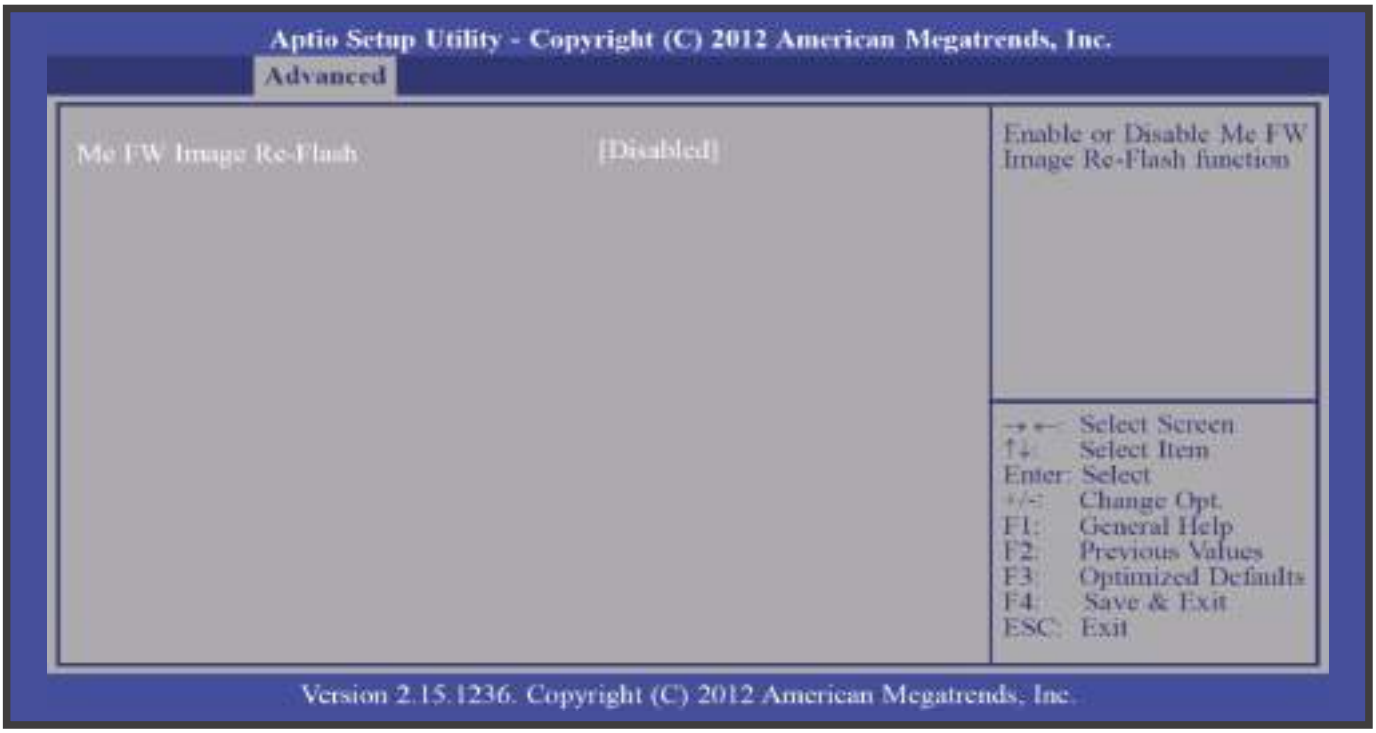
8. PCH-FW Configuration :

This section only displays the parameters of Management Engine Technology.



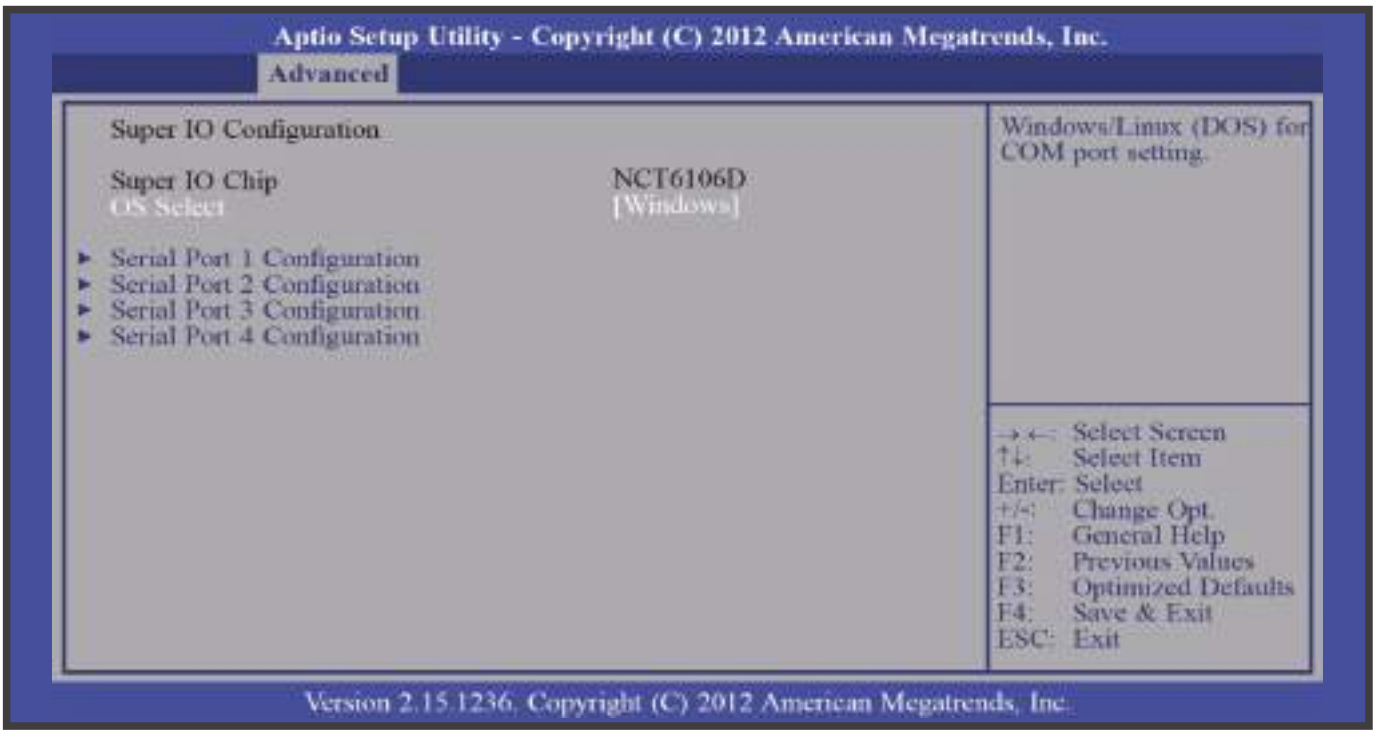
Firmware Update Configuration

This field is used to configure the parameters of Management Engine Technology.



9. Super IO Configuration :

This section is used to configure the I/O functions supported by the onboard Super I/O chip.

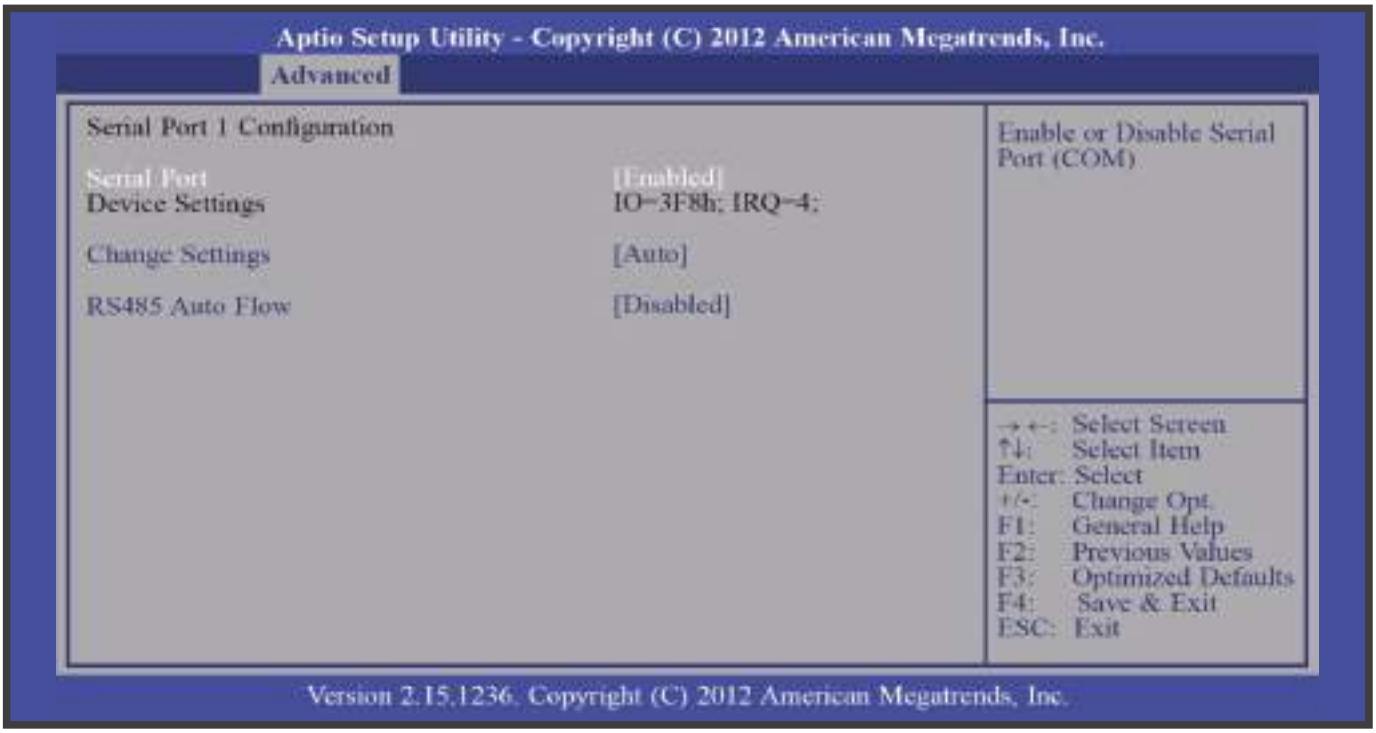


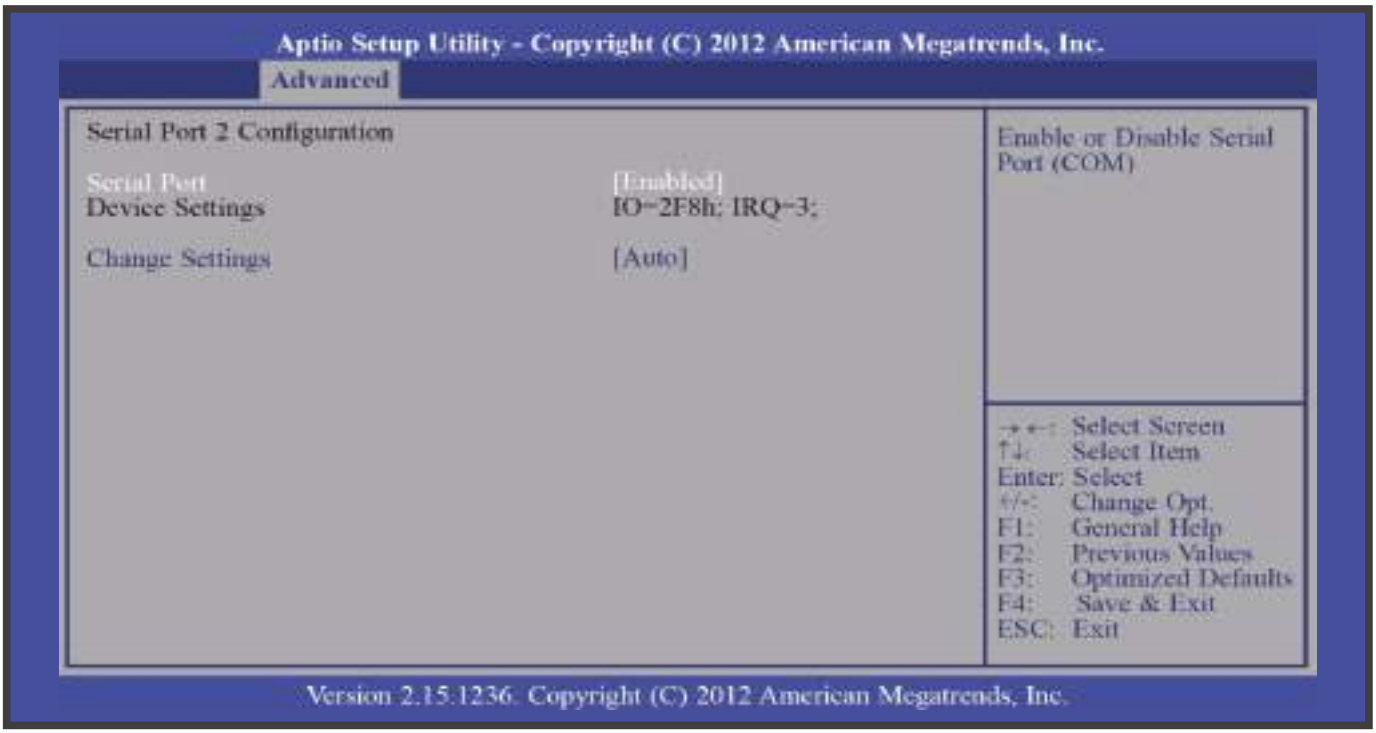
OS Select

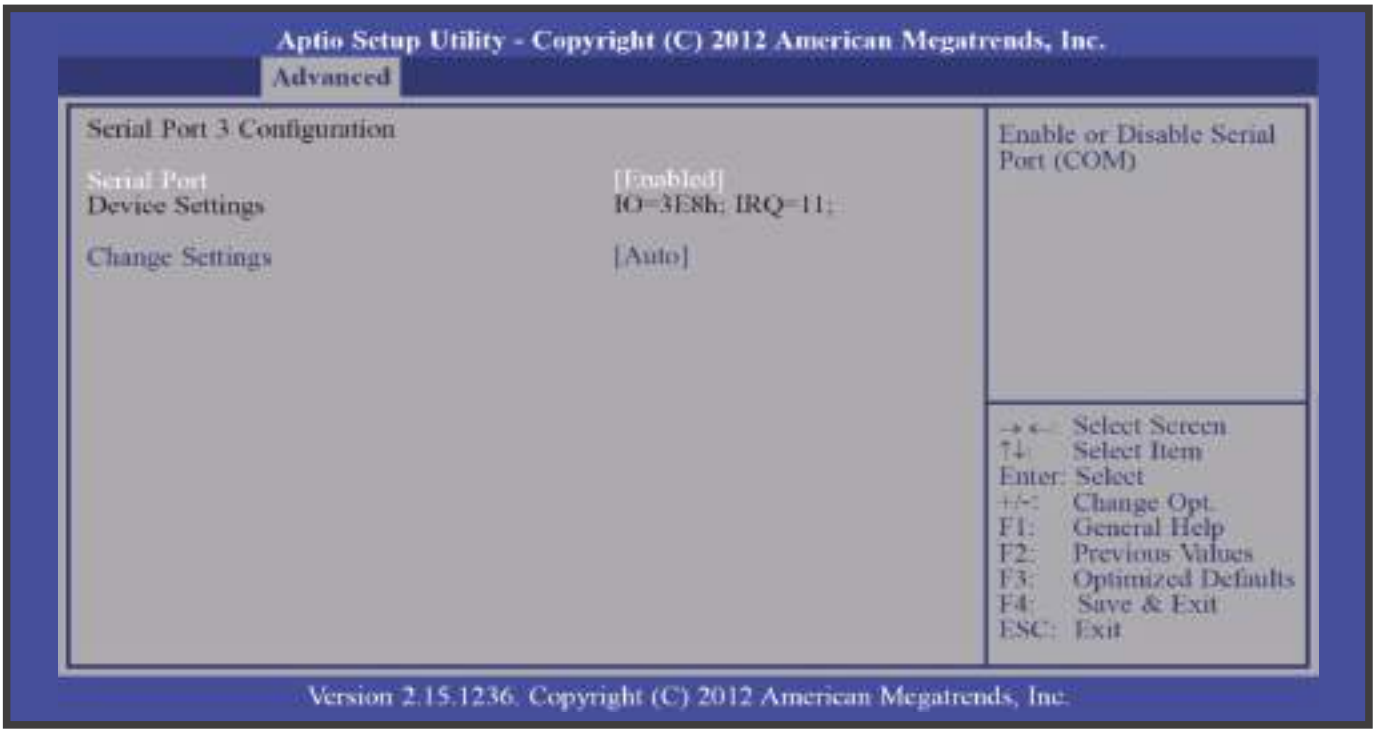
Select the OS support, Windows or Linux/DOS, for COM ports settings.

Serial Port 1 Configuration to Serial Port 4 Configuration

Sets the parameters of serial port 1 (COM A) and serial port 4 (COM D).



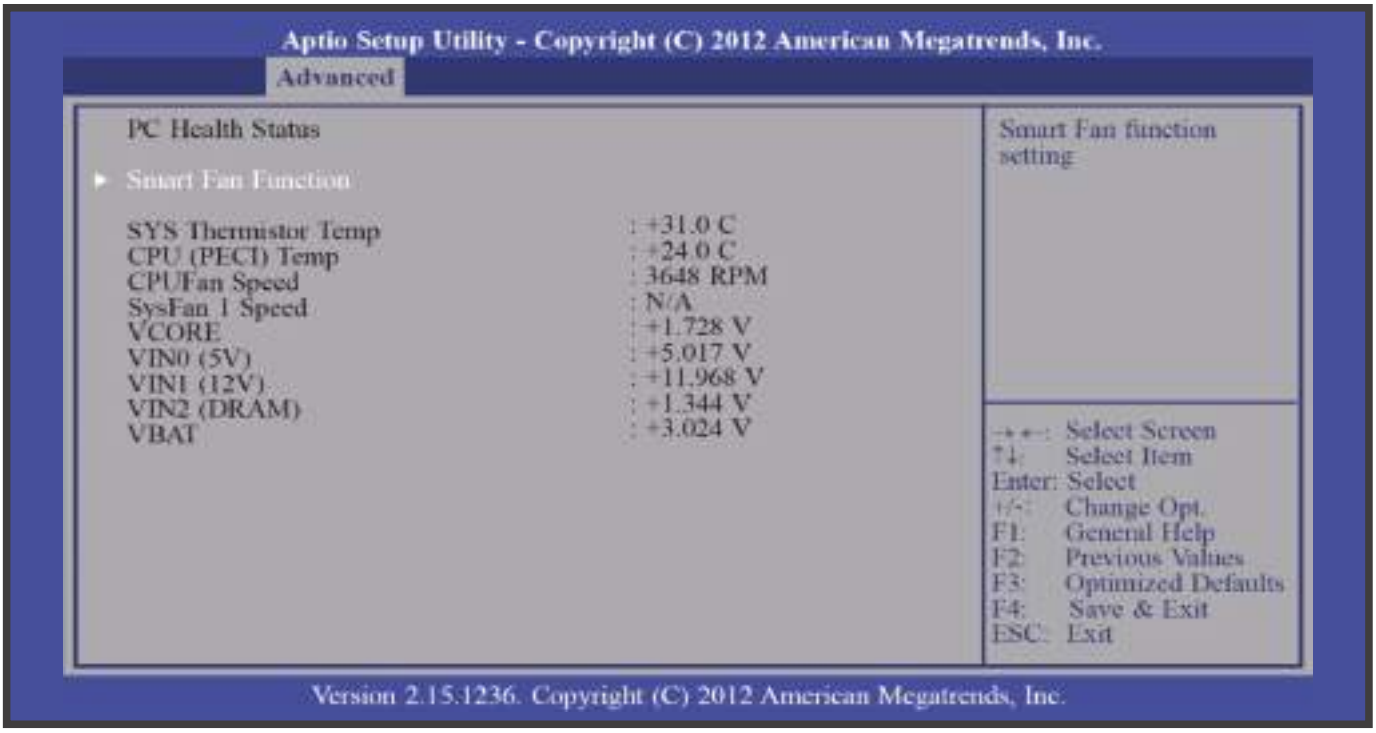




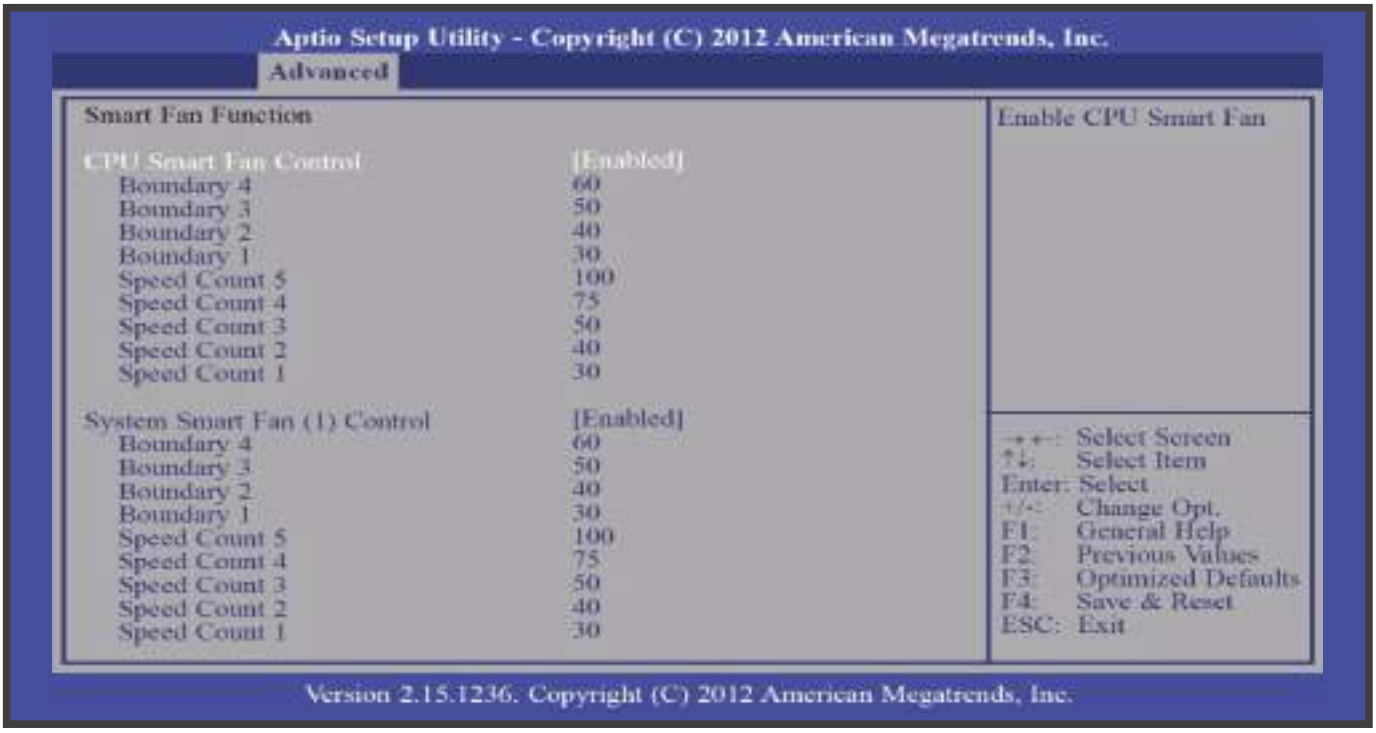
Serial Port
Enables or disables the serial COM port.
Change Settings
Select the IO/IRQ settings for the super I/O device.
RS485 Auto Flow
Sets the RS485 auto flow of the serial COM port!

10. PC Health Status :

This section displays the hardware health monitor.



Smart Fan Function



CPU Smart Fan Control

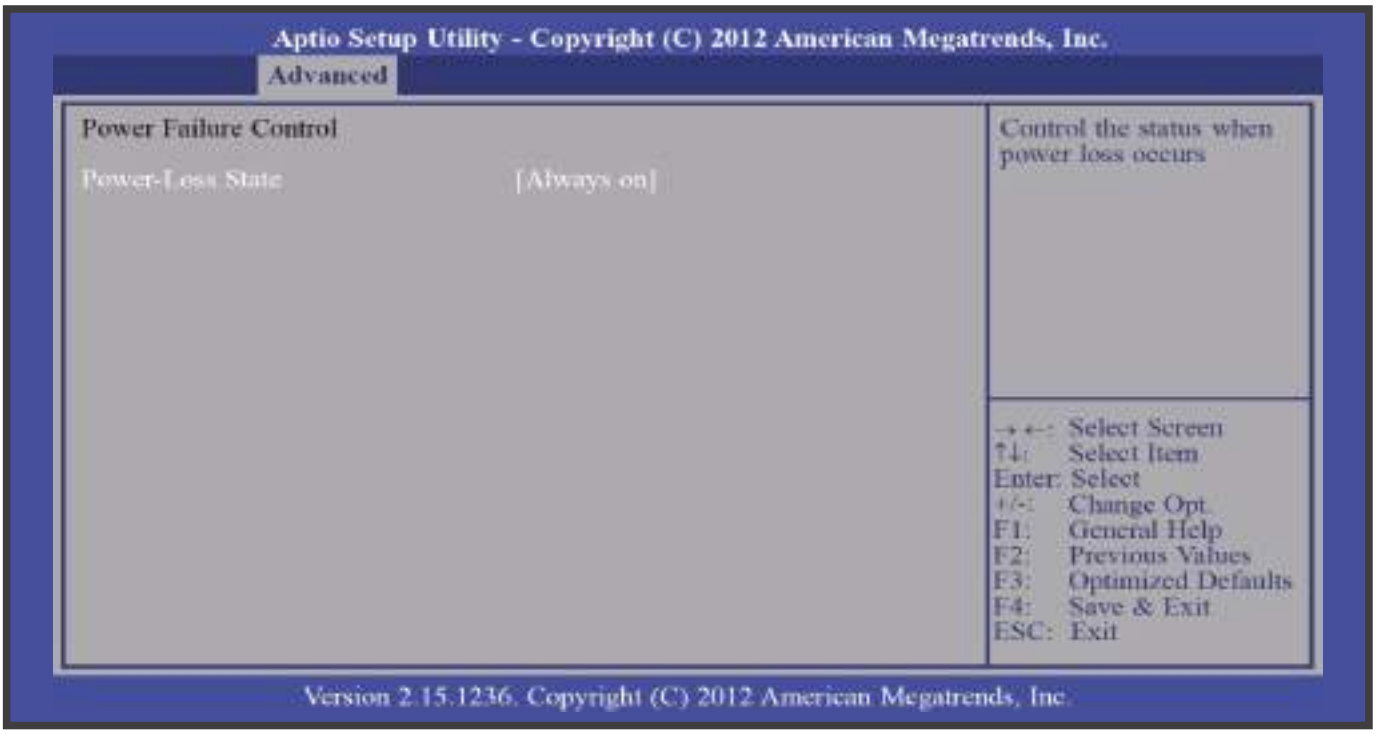
When this feature is set to Automatic, the CPU's fan speed will rotate according to the CPU's temperature. The higher the temperature, faster is the speed of rotation.

System Smart Fan Control

When this feature is set to Automatic, the System's fan speed will rotate according to the System's temperature. The higher the temperature, faster is the speed of rotation.

11. Power Failure Control :

This section configures the status when the power failure occurs.



Power-Loss State
Control the status, when a power loss occurs.

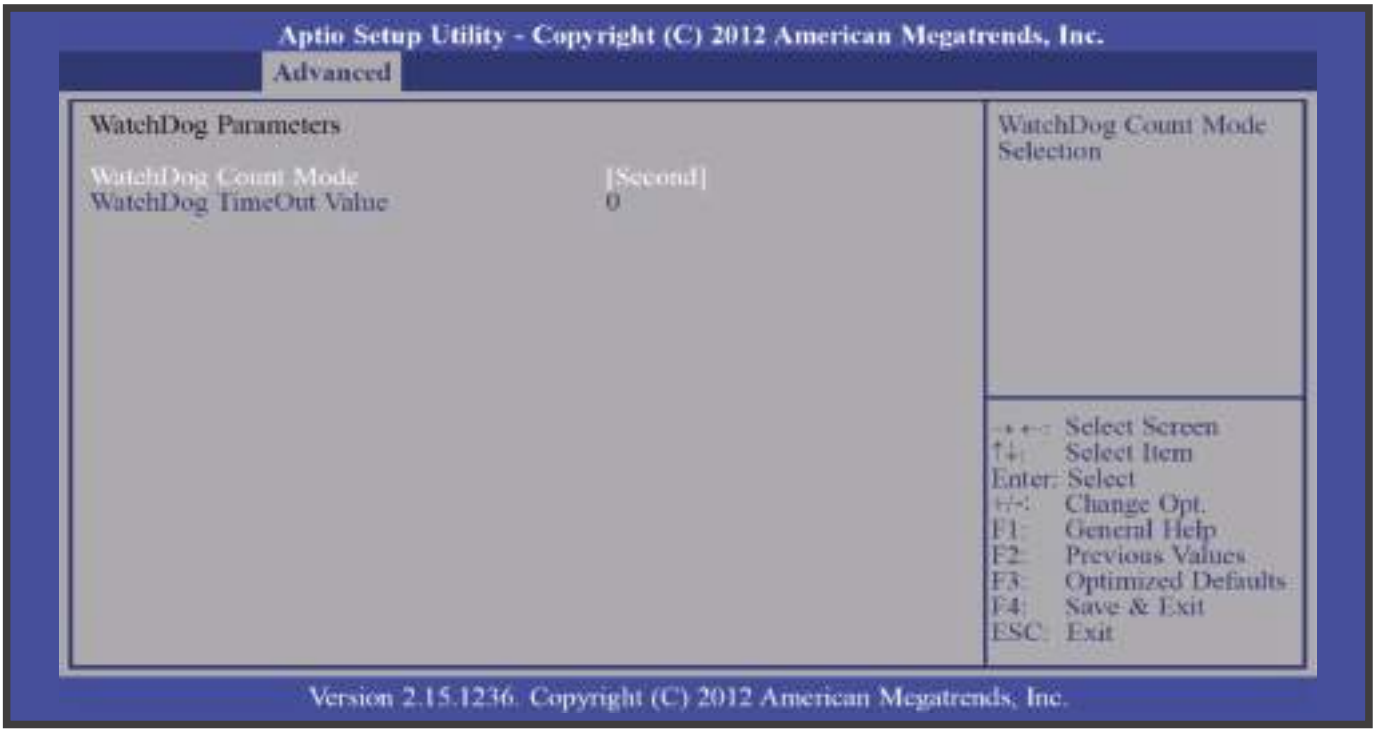
Always Off
When power returns after an AC power failure, the system's power is off. You must press the Power button to power-on the system.

Always On
When power returns after an AC power failure, the system will automatically power-on.

Keep Last State
When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system's power is off when AC power failure occurs, it will remain off when power returns. If the system's power is on and the AC power failure occurs, the system will power-on when power returns.

12. WatchDog Configuration :

This section sets the system watchdog parameters.



WatchDog Configuration

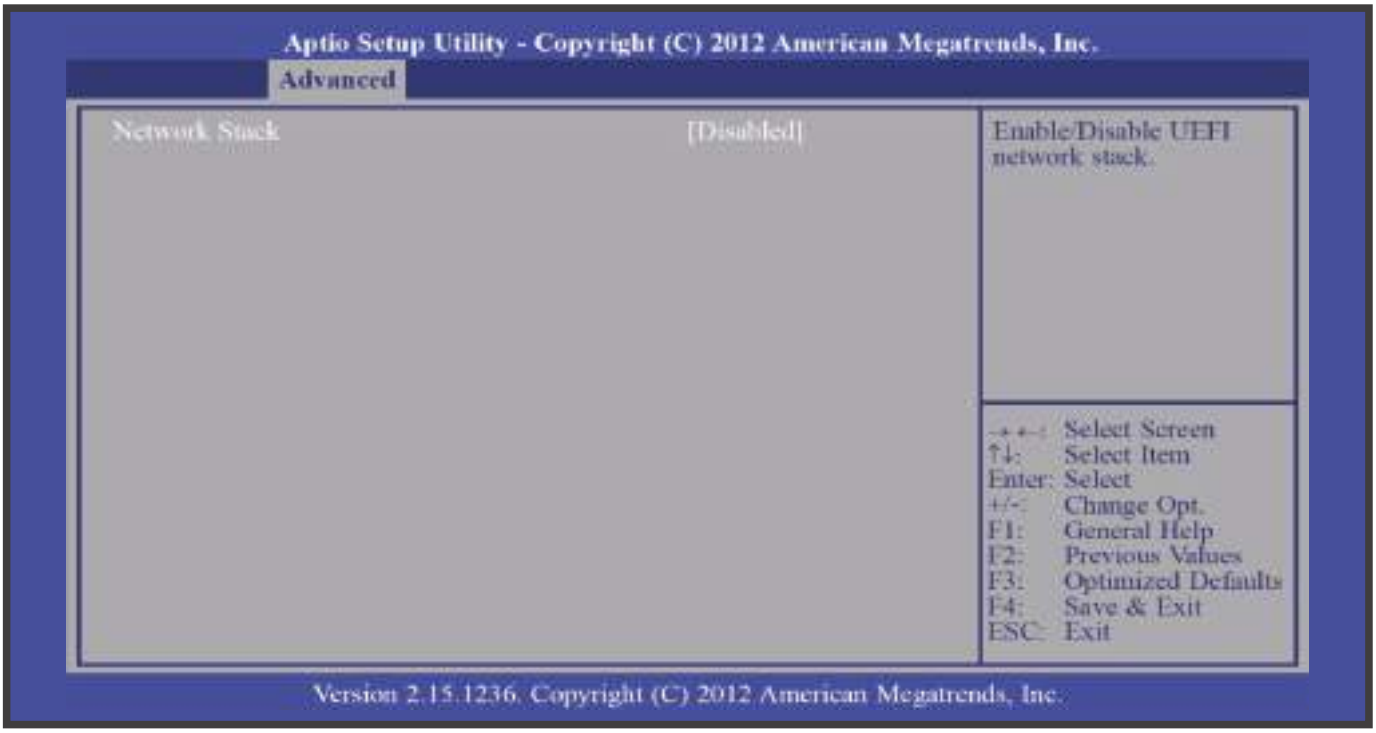
Select the watchdog count mode : second or minute.

WatchDog Time out Value

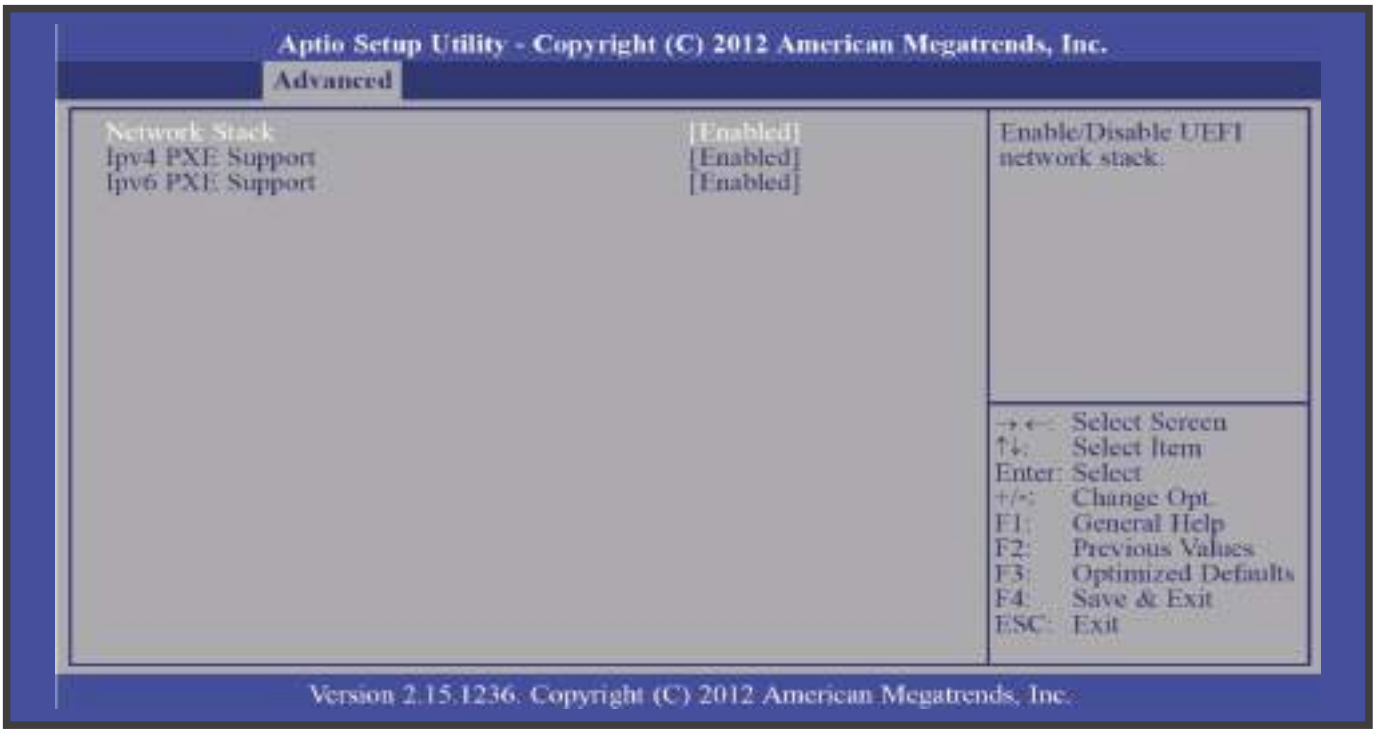
Enter the WatchDog timeout value. 0 means disabled.

13. Network Stack :

This section is used to enable or disable UEFI network stack.



When enabled, it will display the following information :



Ipv4 PXE Support

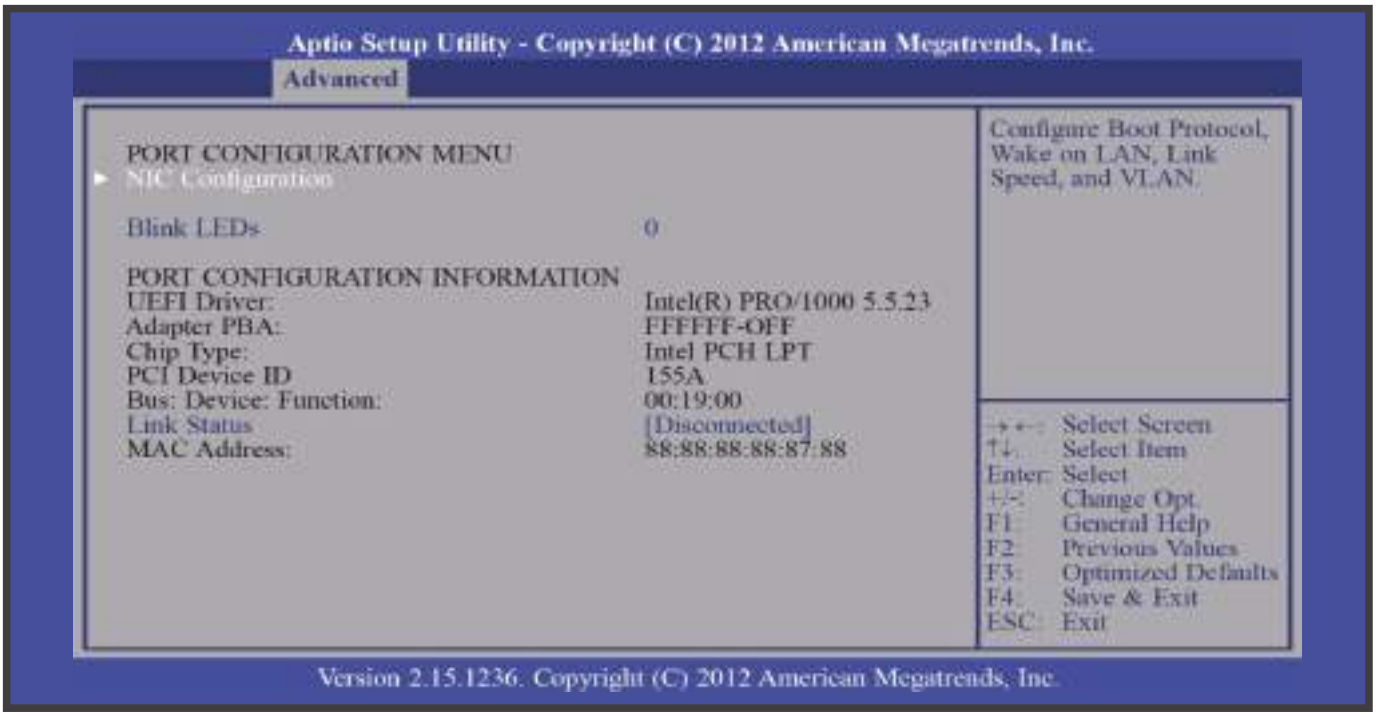
When enabled, Ipv4 PXE boot supports. When disabled, Ipv4 PXE boot option will not be created.

Ipv6 PXE Support

When enabled, Ipv6 PXE boot supports. When disabled, Ipv6 PXE boot option will not be created.

14. Intel(R) Ethernet Connection I218 - LM - 88:88:88:88:87:88... (Only for reference) :

This section is used to configure the parameters of the Gigabit Ethernet device.

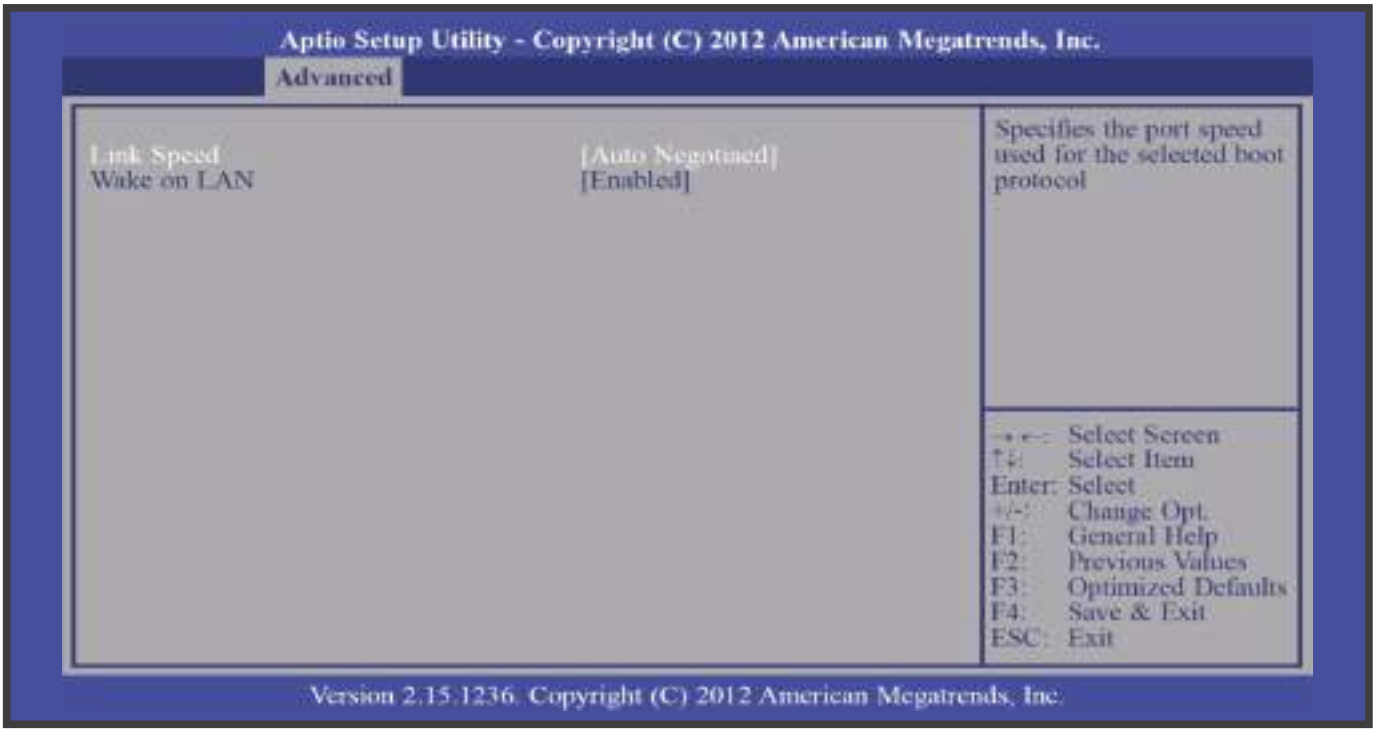


Blink LEDs
Identifies the physical network port by blinking the associated LED.

Link Status
This field indicates the link status of the network device.

15. NIC Configuration :

This field is used to configure the Boot Protocol, Wake on LAN, Link Speed and VLAN.

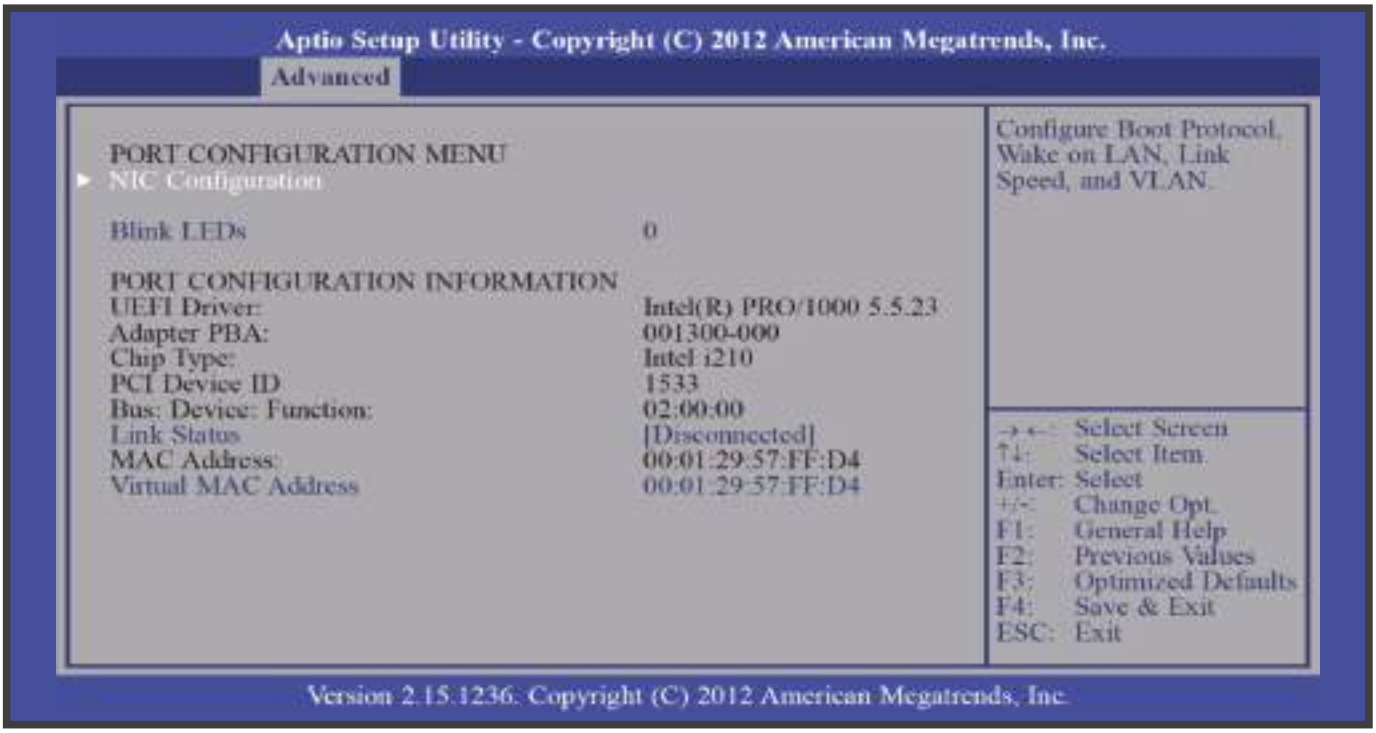


Link Speed
This field is used to specify the port speed used for the selected boot protocol.

Wake on LAN
Enables the server to be powered on using an in-band magic packet.

16. Intel(R) I210 Gigabit Network Connection - 00:01:29:57... (Only for reference) :

This section is used to configure the parameters of the Gigabit Ethernet device.



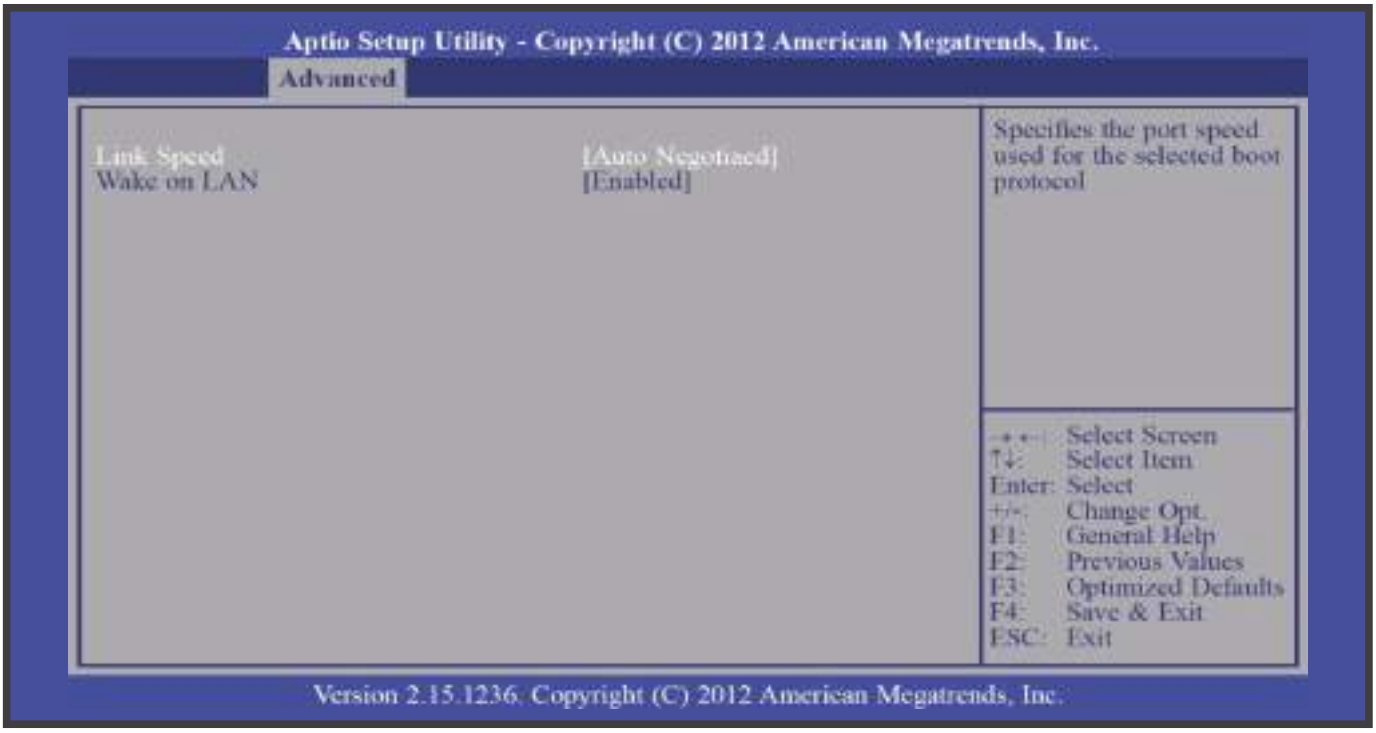
Blink LEDs
Identifies the physical network port by blinking the associated LED.

Link Status
This field indicates the link status of the network device.

Virtual MAC Address
Programmatically assignable MAC address of the Ethernet port.

17. NIC Configuration :

This field is used to configure the Boot Protocol, Wake on LAN, Link Speed and VLAN.



Link Speed

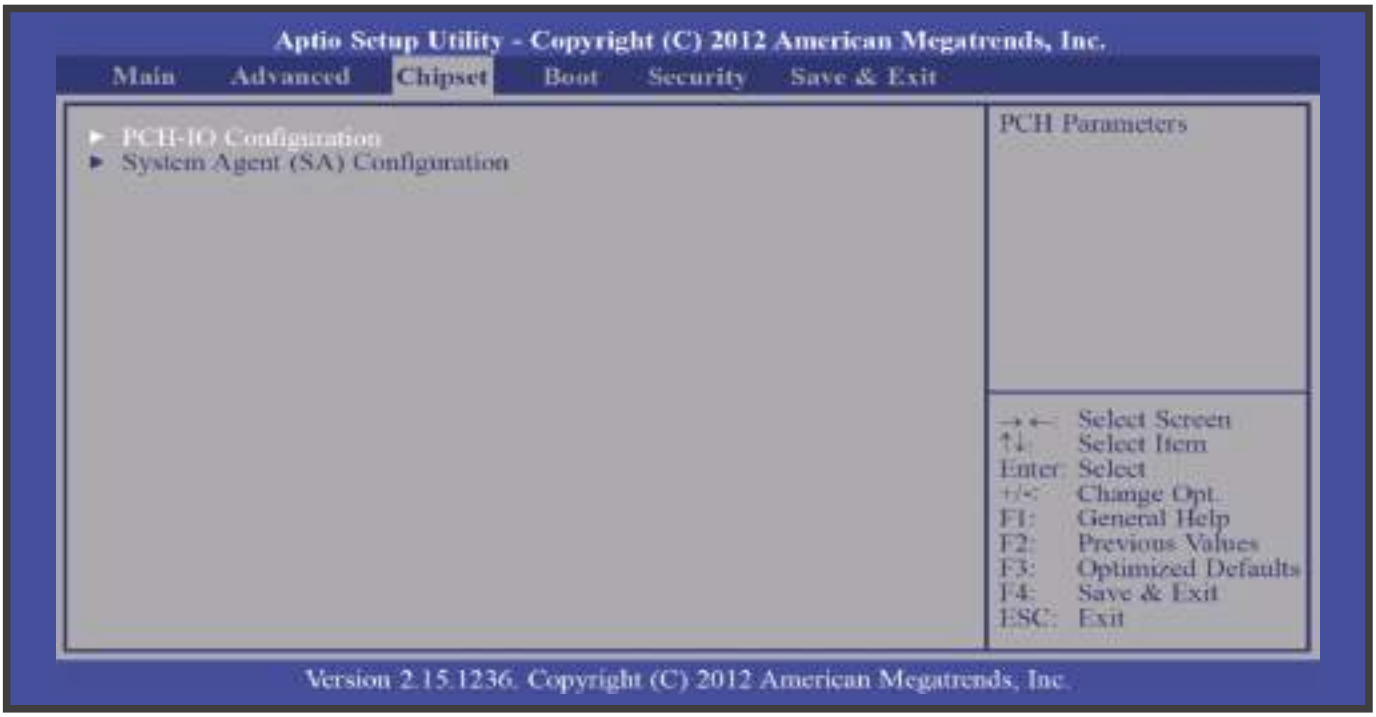
This field is used to specify the port speed used for the selected boot protocol.

Wake on LAN

Enables the server to be powered on using an in-band magic packet.

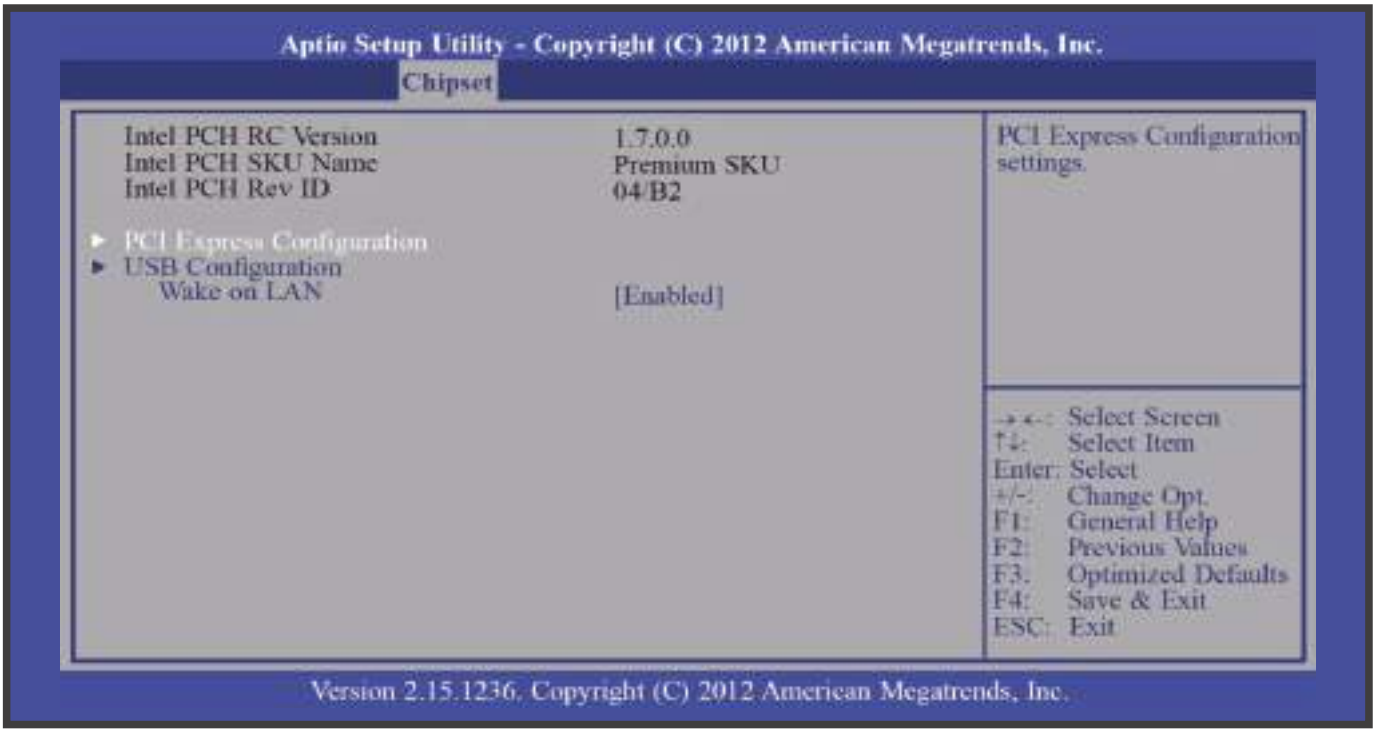
3. Chipset :

This section configures relevant chipset functions.



1. PCH-IO Configuration :

This section illustrates the PCH parameters.

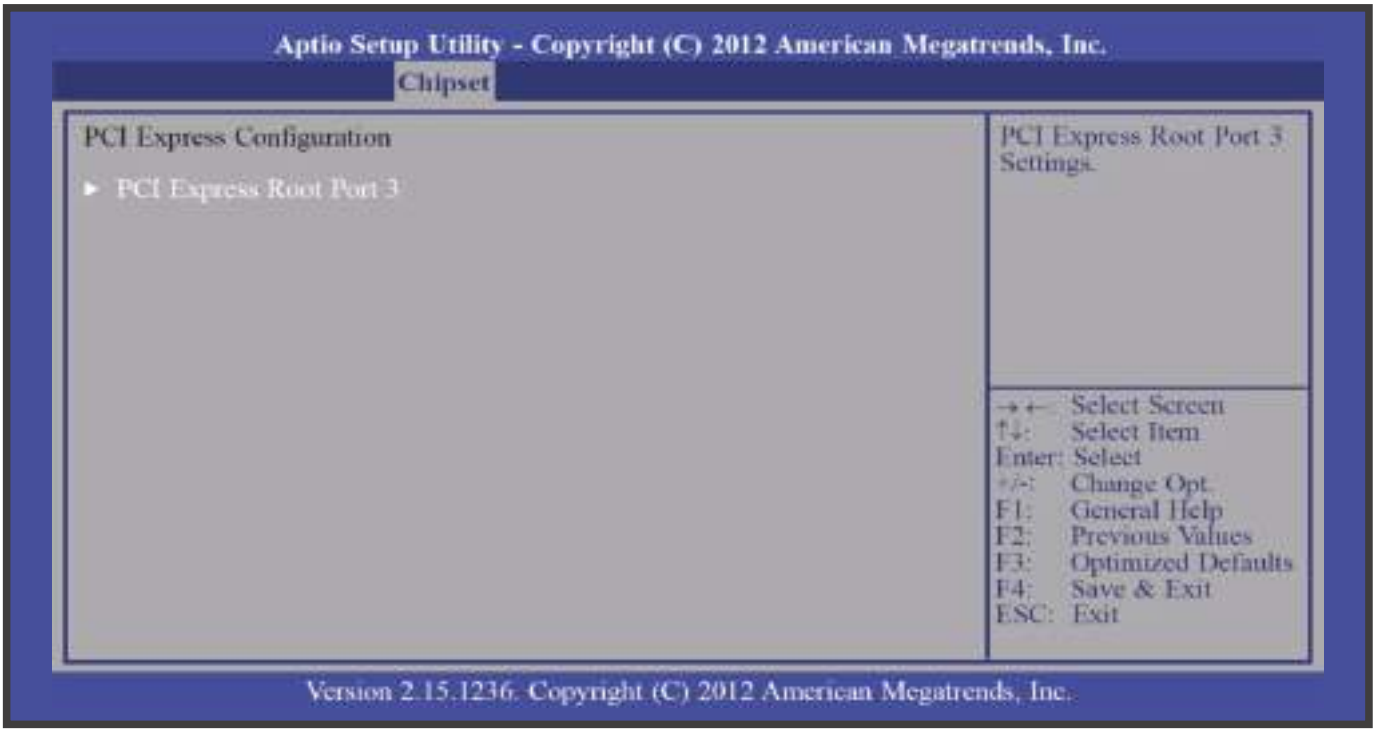


Wake on LAN

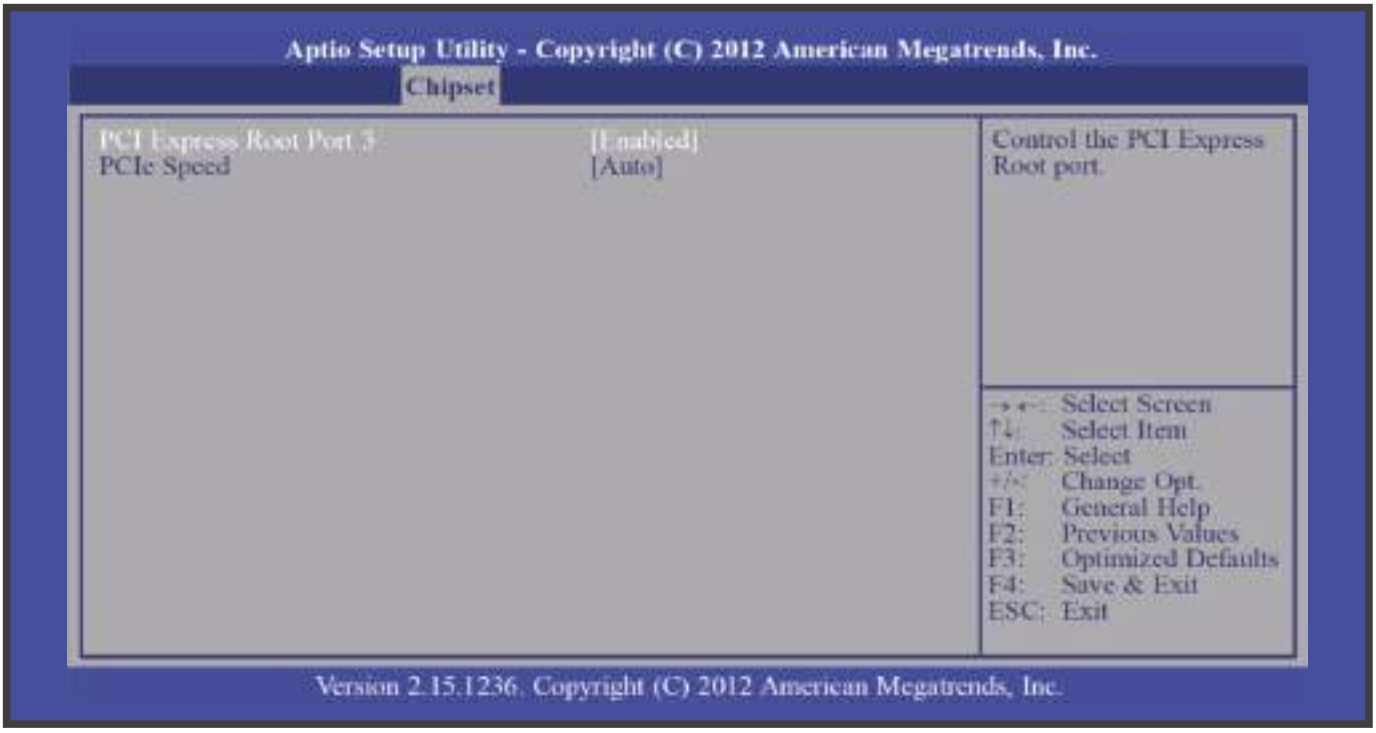
Enables or disables the integrated LAN controller to wake the system. (The Wake on LAN cannot be disabled if ME is set to ON at the Sx state.)

2. PCI Express Configuration :

This field is used to configure the PCI Express settings.

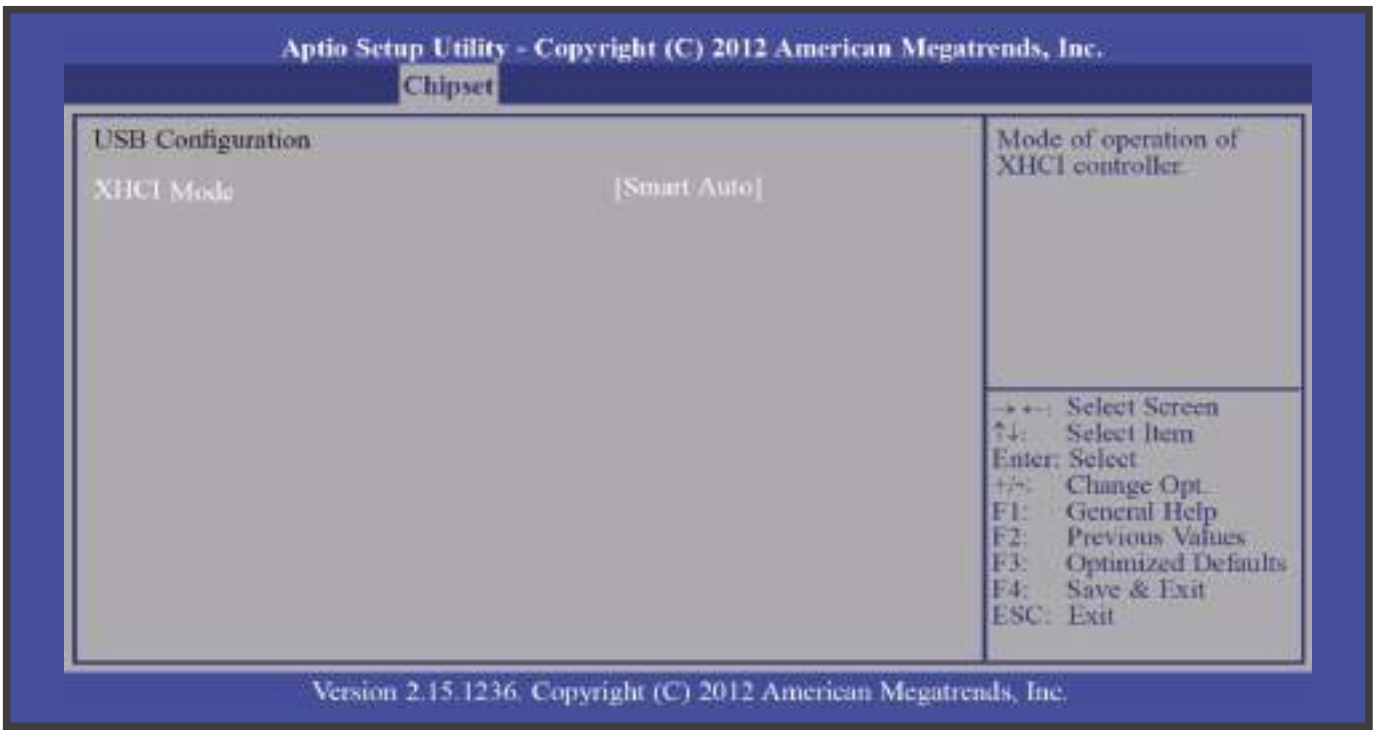


PCI Express Root Port 3



3. USB Configuration :

This field is used to configure the USB settings.

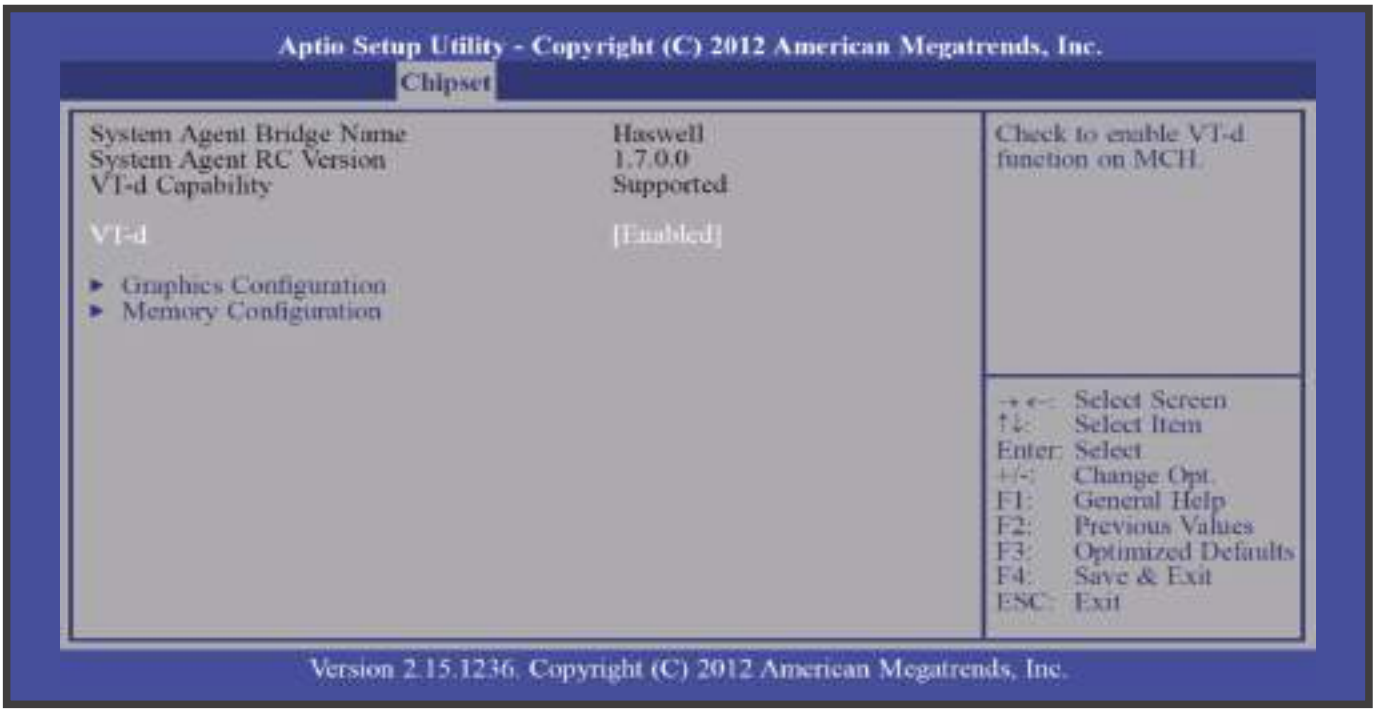


XHCI Mode

Selects the operation mode of the XHCI controller! The options are Smart Auto, Auto, Enabled, Disabled and Manual.

4. System Agent (SA) Configuration :

This section is used to configure the parameters of System Agent.

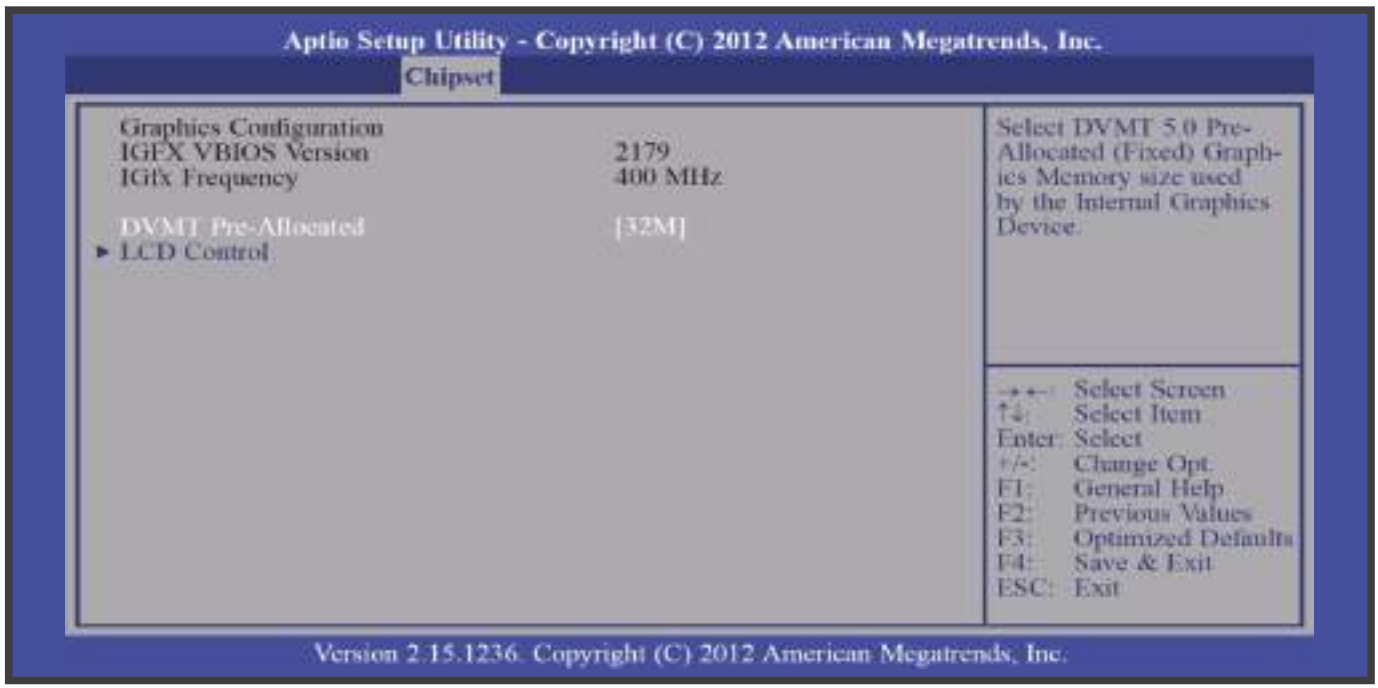


VT-d

Enable the VT-d function on MCH.

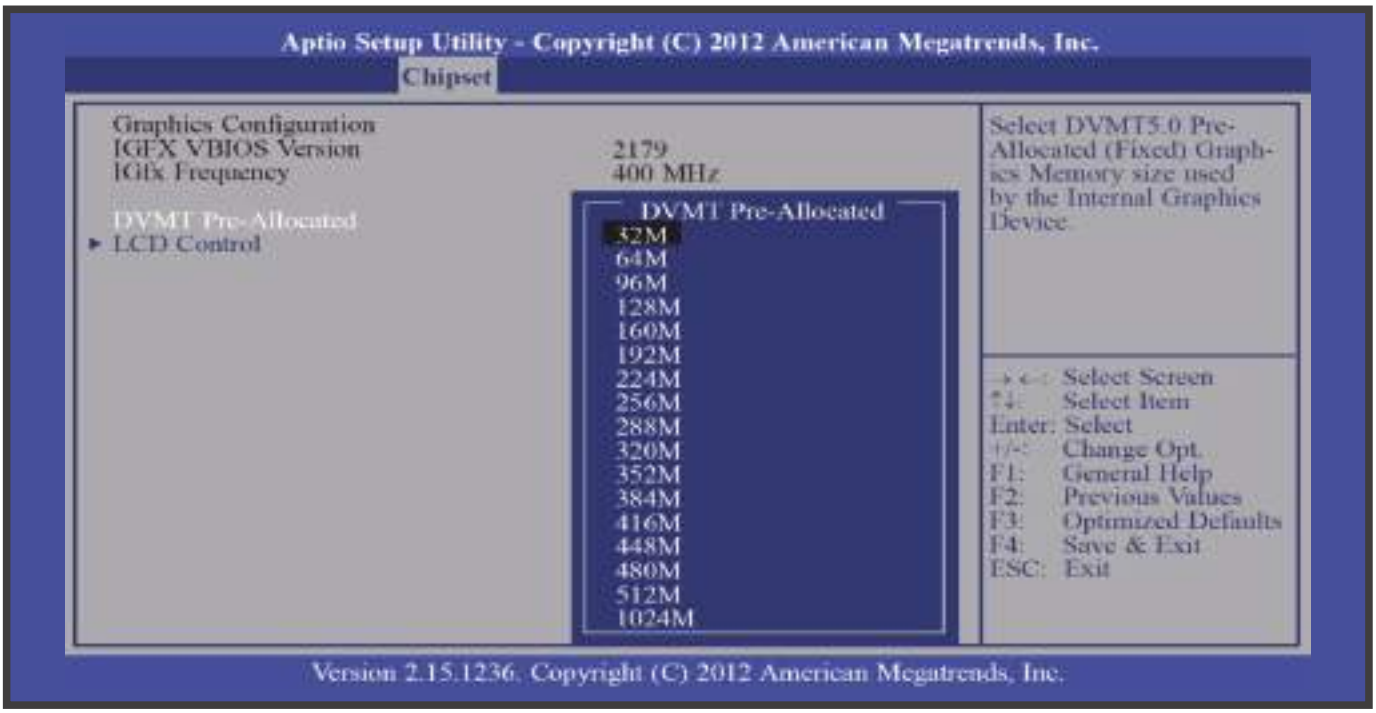
5. Graphics Configuration :

This field configures the graphics settings.



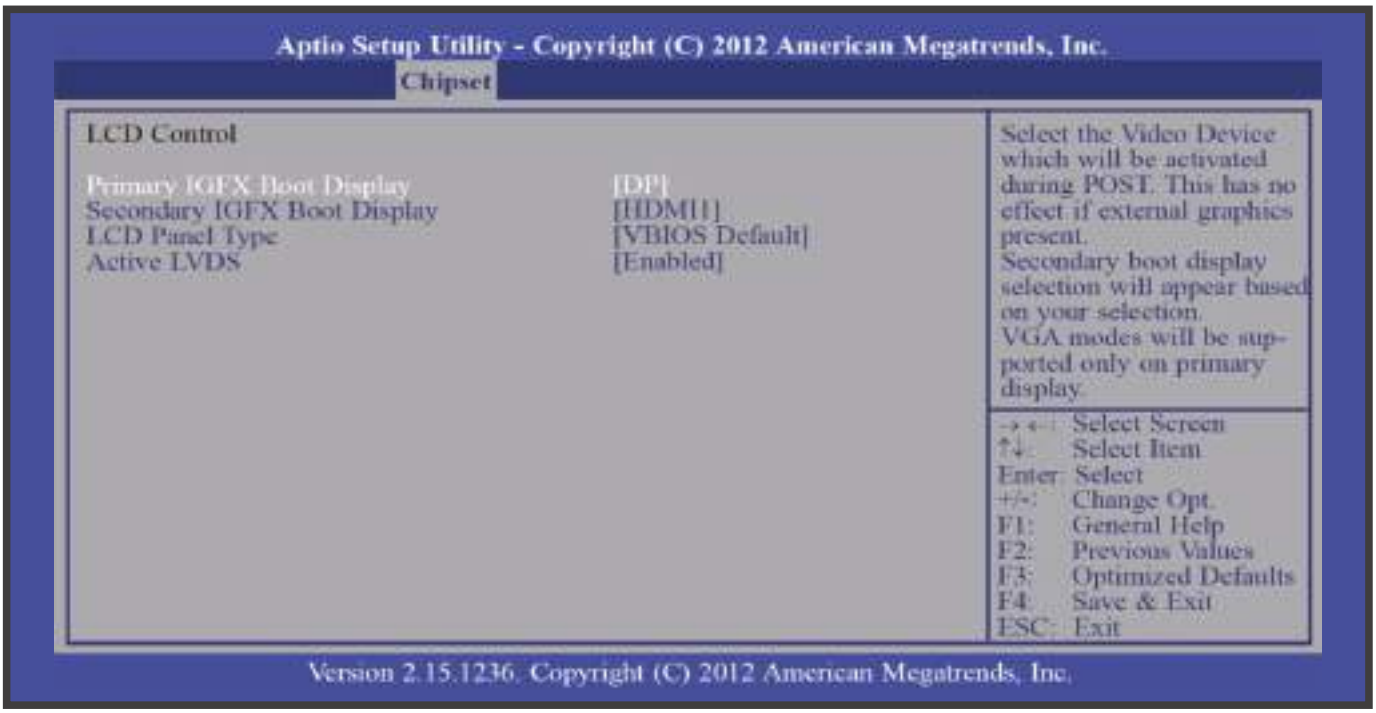
DVMT Pre-Allocated

Selects DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device. Please refer to the information below.



6. LCD Control :

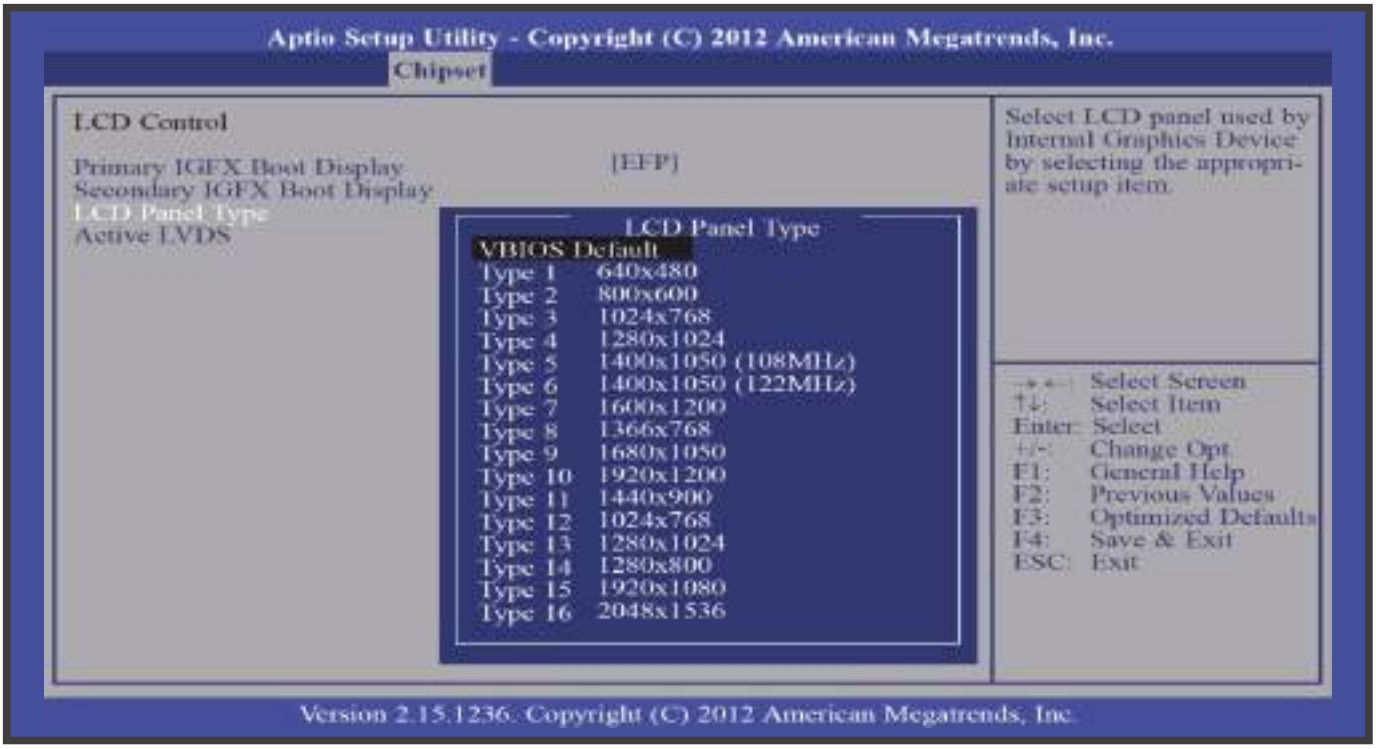
This field configures the LCD control.



Secondary IGFX Boot Display
Select the secondary display device : DP, LVDS, eDP or HDMI1.

LCD Panel Type

Select the LCD panel used by the Internal Graphics Device via selecting the appropriate setup item.

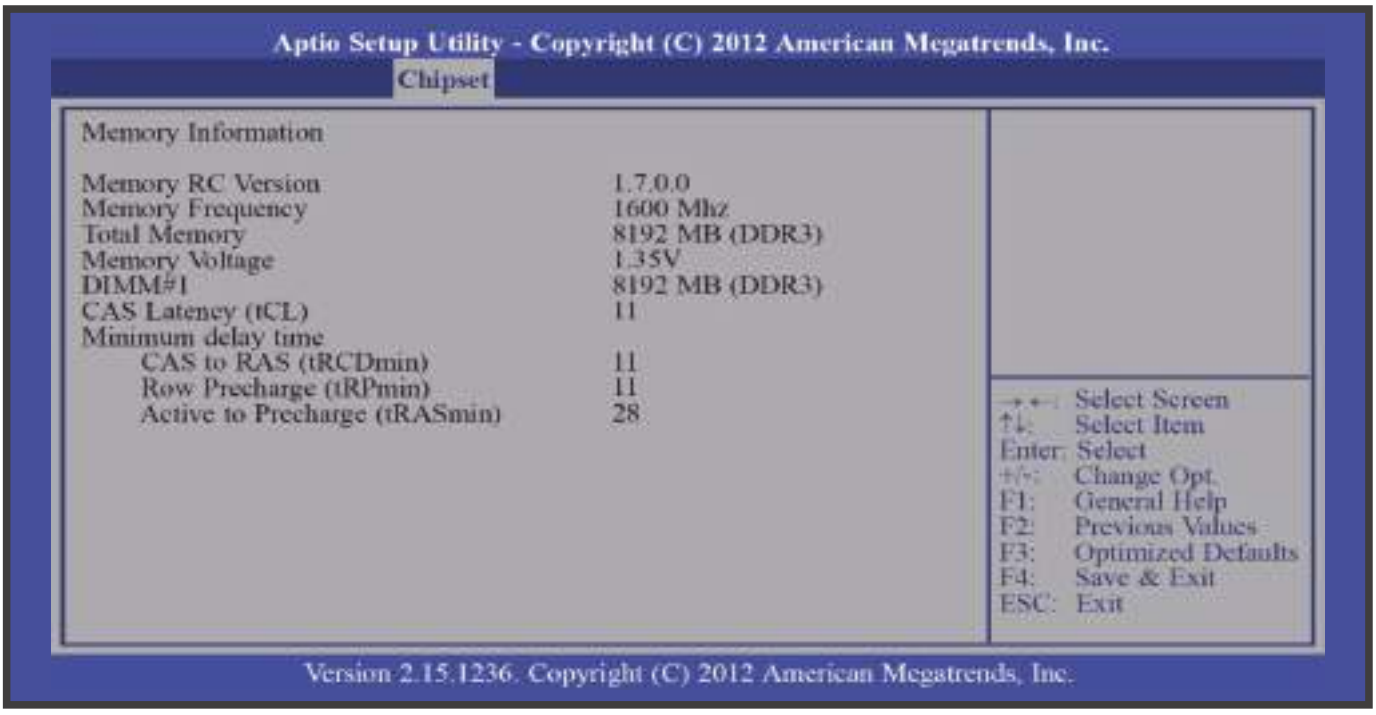


Active LVDS

Enable or disable the LVDS function.

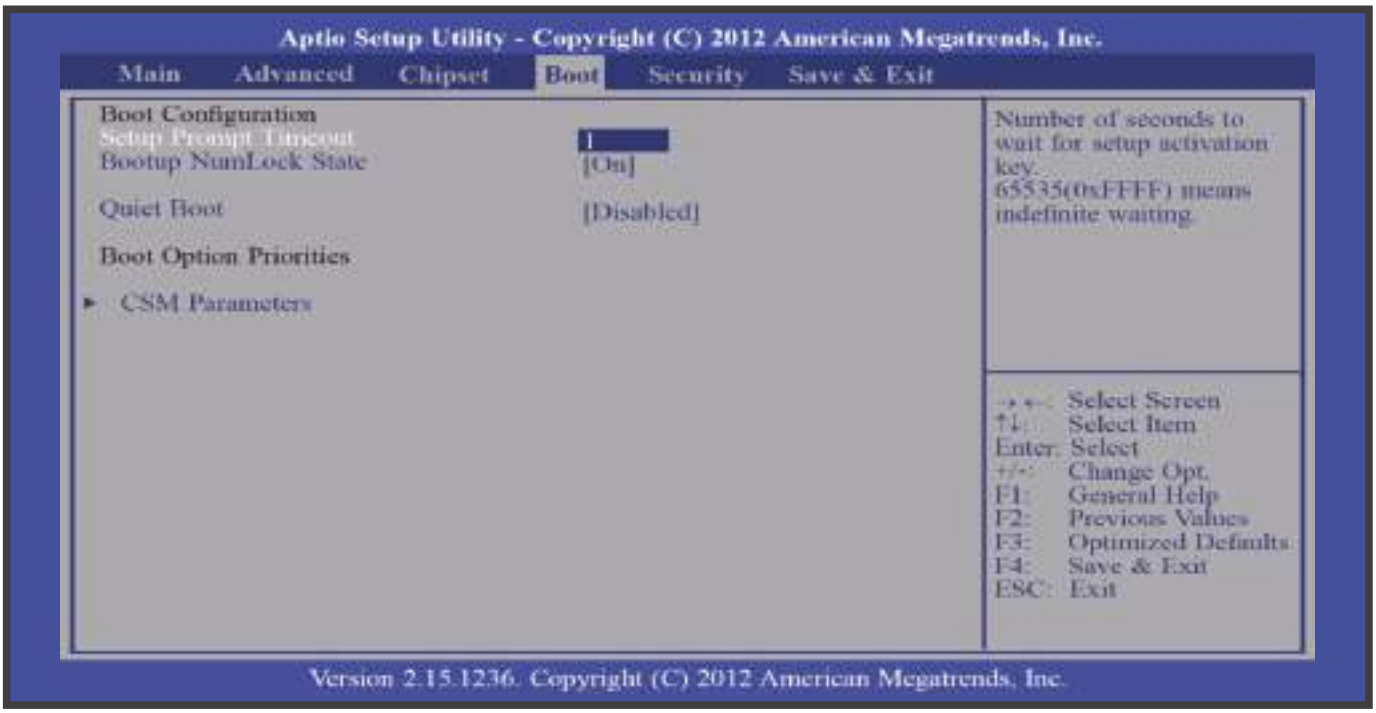
7. Memory Configuration :

This field only displays the memory configuration.



4. Boot :

This section configures relevant chipset functions.



Setup Prompt Timeout

Select the number of seconds to wait for the setup activation key. 65535(0xFFFF) denotes indefinite waiting.

Boot up Num Lock State

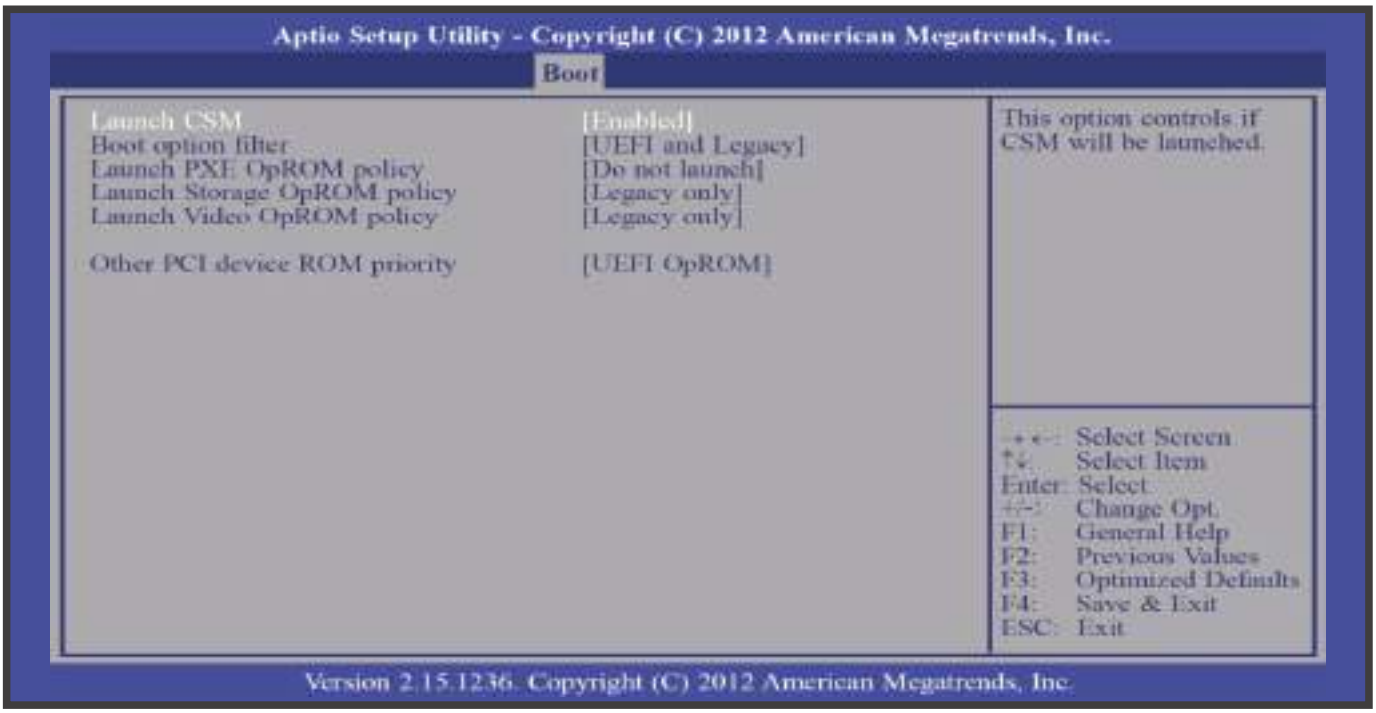
This allows you to determine the default state of the numeric keypad. By default, the system boots up with Num Lock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

Quiet Boot

Enable or disable the quiet boot function.

1. CSM Parameters :

This section configures relevant chipset functions.



Launch CSM
This option controls if CSM will be launched.

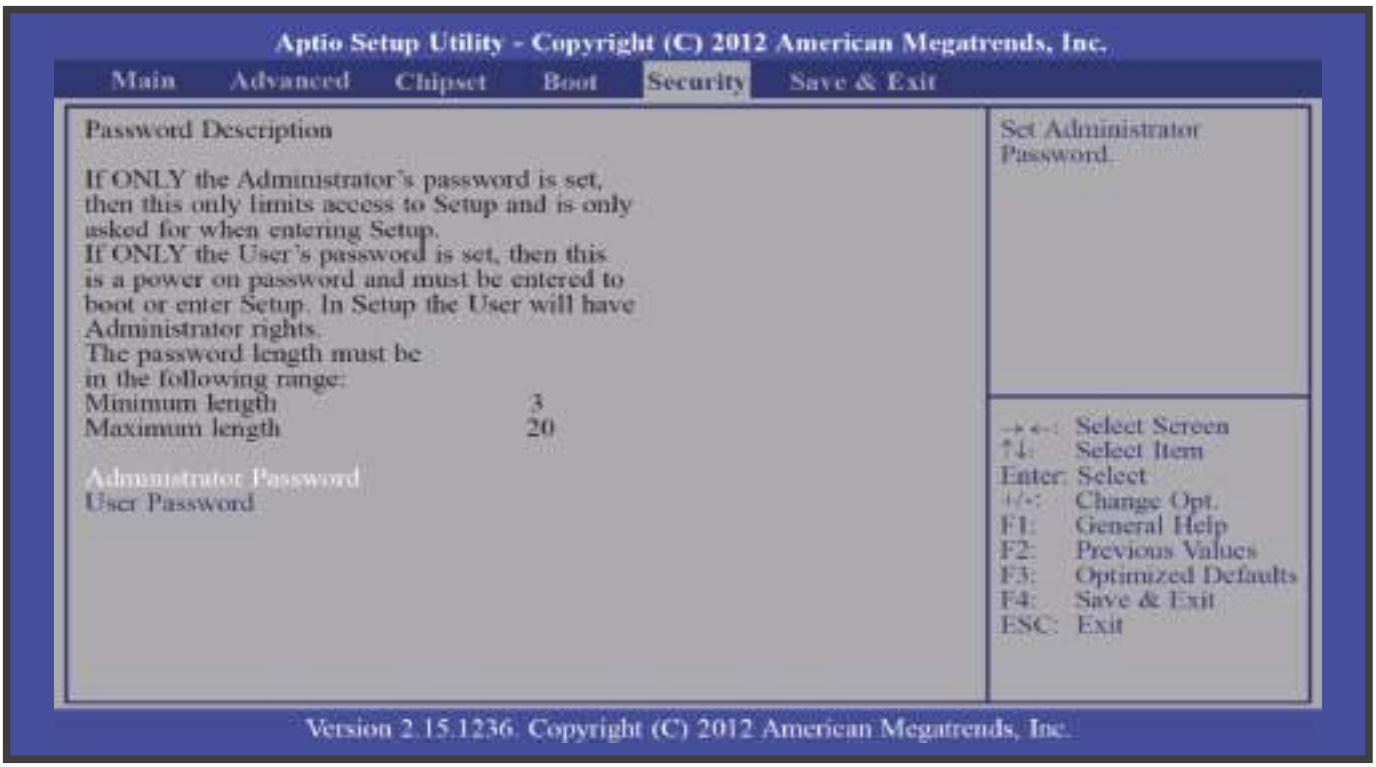
Boot option filter
This option controls what devices system can boot to.

Launch PXE OpROM policy
Controls the execution of UEFI and legacy PXE OpROM!

Launch Storage OpROM policy
Controls the execution of UEFI and legacy storage OpROM!

Launch Video OpROM policy
Controls the execution of UEFI and legacy video OpROM! Other PCI device ROM priority For PCI devices other than Network. Mass storage or Video defines which OpROM to launch.

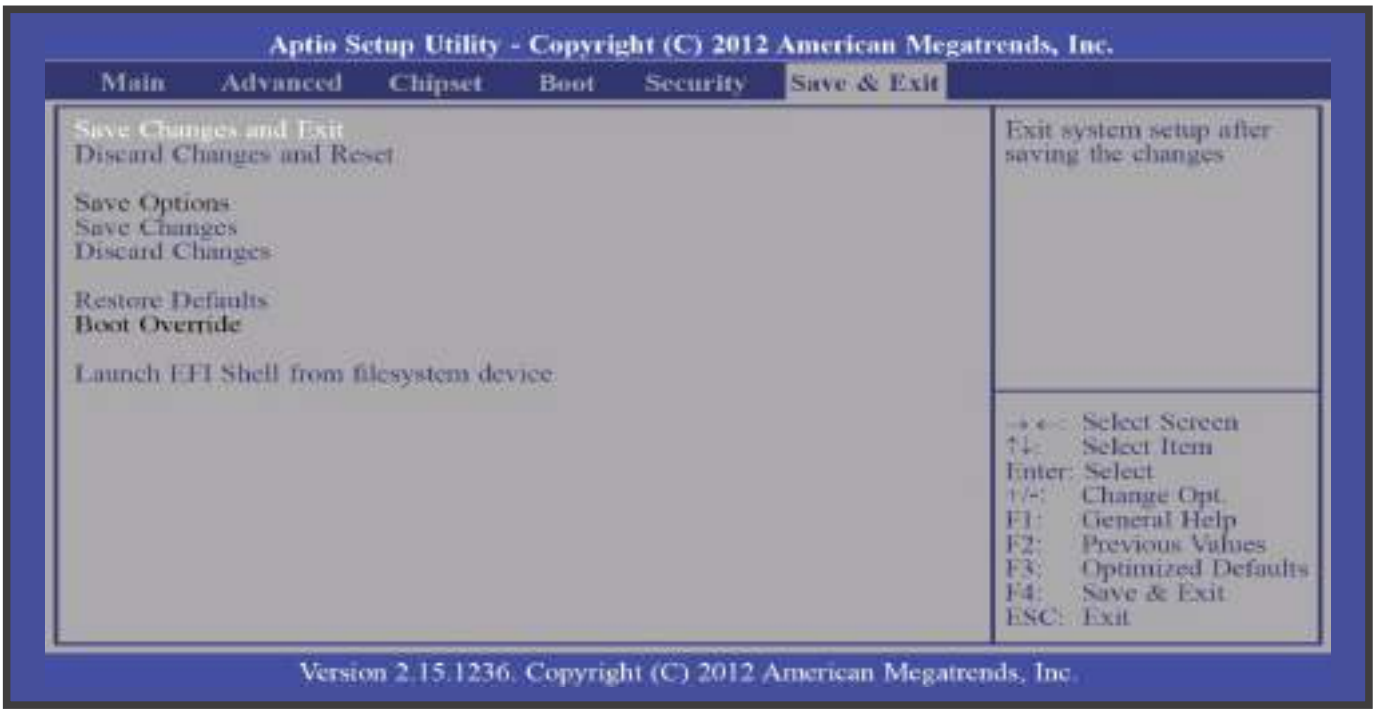
5. Security :



Administrator Password
Sets the administrator password!

User Password
Sets the user password!

6. Save & Exit :



Save Changes and Exit
Exits the system setup after saving the changes!

Discard Changes and Reset
To discard the changes, select this field and then press <Enter>. A dialog box will appear. Select Yes to reset the system setup without saving any changes.

Save Changes
Saves changes done so far to any of the setup options.

Discard Changes
Discards changes done so far to any of the setup options.

Restore Defaults
To restore and load the optimized default values, select this field and then press <Enter>. A dialog box will appear. Select Yes to restore the default values of all the setup options.

Launch EFI Shell from file system device
Attempts to Launch EFI Shell application (Shellx64.efi) from one of the available file system devices.

4. Checkpoints

Problem : System not on or No Display?

Answer : Please check the power Cable

Problem : Camera image not shown

Answer : Please enable attached camera from Capture Studio

Problem : Camera image not shown

Answer : Please check the cable connected with Camera & Monitor

Problem : Camera image not shown

Answer : Please select interface of camera from Capture Studio

5. Service Information

6. Inquiry & A/S Request

If the manual does not prove the information you wanted, or any other help is needed about this product, Please contact Highness Microelectronics Pvt. Ltd., Technical Support Team.

URL : www.highnessmicro.com

Manufacturer : Highness Microelectronics Pvt. Ltd. (022 - 2850 7123)

Collect the information from the Internet

From the internet, download the manual from our website.

www.highnessmicro.com

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