



SV7220-2A

BIOS User Manual

Version 1.0

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Revision History

No.	Author	Version	Date	Changes
1	Beth	1.0	11/12/2014	First release
2	Beth	1.1	11/26/2014	Added Preface
3				
4				

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Preface

Basic Input/Output System (also known as BIOS) is a firmware program stored on a chip in the system mainboard.

Introduction

BIOS includes system BIOS, ME firmware and PCI Express devices option ROMs. System BIOS is EFI BIOS structure while ME firmware is Intel Node Management firmware. SV7220-2A BIOS is compliant with PCI Express Base Specification 2.1 and 3.0. PCI Express devices are scanned by BIOS in low to high order of PCI BUS. PCI Express device are connected to PCI Express root ports from Intel Northbridge, each root port can provide up to 40 PCI lanes of GEN3 PCI Express links.

About this Manual

This manual contains information about the system BIOS and discusses how to configure the system by changing the settings of the BIOS parameters.

Chapter 1 contains information regarding the BIOS setup, hotkeys, menu bar and navigation keys.

Chapters 2 to 7 contain detailed description of the BIOS menus, submenus and functions.

1. BIOS Setup

1.1 Entering BIOS Setup

Press <F2> or during the Power-On-Self-Test (POST) to enter the BIOS Setup menu, otherwise, POST will continue with its test routines.

Note that the BIOS Setup options may vary depending on your hardware configuration.

1.2 BIOS Hotkeys

The following hotkeys work during POST:

Key	Function
Delete key or F2	Enter BIOS setup utility
Esc	Exit
F1	General Help
F8	Load previous values
F9	Load Optimized Defaults
F10	Save & Exit

1.3 Menu Bar

There are six tabs on the BIOS Menu bar on the top of the screen:

- **Main:** Shows the BIOS version, Processor and System Memory information. You can set the System Time and System Date here.
- **Advanced:** Sets the Advanced settings for CPU, Memory, SATA, USB, and Super IO.
- **Boot:** Sets the Boot Settings Configuration, Boot Device Priority and Hard Disk Drive.

- **Security:** Sets the system security features.
- **Runtime Error Logging:** Sets the Runtime Error Logging features.
- **Save & Exit:** Exit BIOS Setup Menu or save modified settings.

Use < Enter >, <Tab > or < Shift-Tab > key or to select a field on the menu bar.

1.4 Navigation Keys

Use the following navigation keys to set the BIOS parameters:

Navigation Key(s)	Function
> <	Select screen
^ v	Select item
Enter	Select
+/-	Change option
F1	General Help
F8	Previous values
F9	Optimized defaults
F10	Save and Exit
ESC	Exit

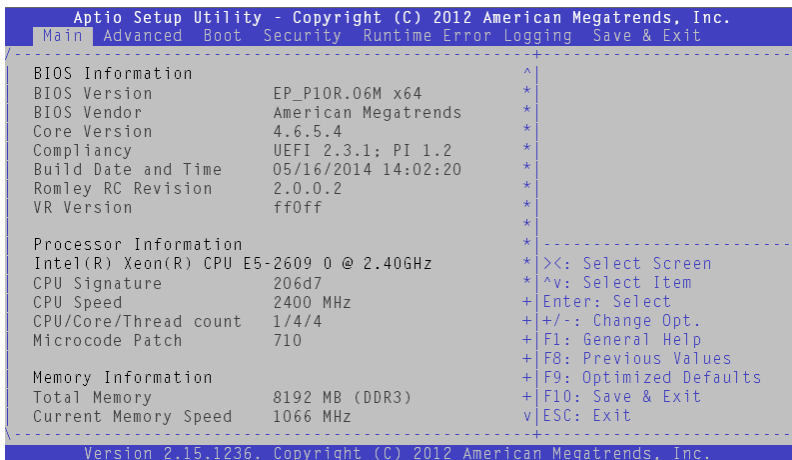
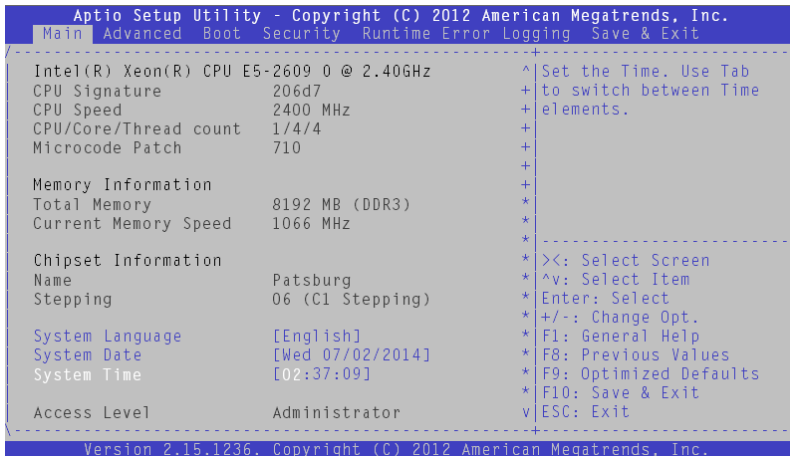
Notes: Setup options may vary depending on your hardware configuration.

Grayed-out fields are not user-configurable.

In the descriptive table following each of the menu screenshots, settings in **boldface** are the default and suggested settings.

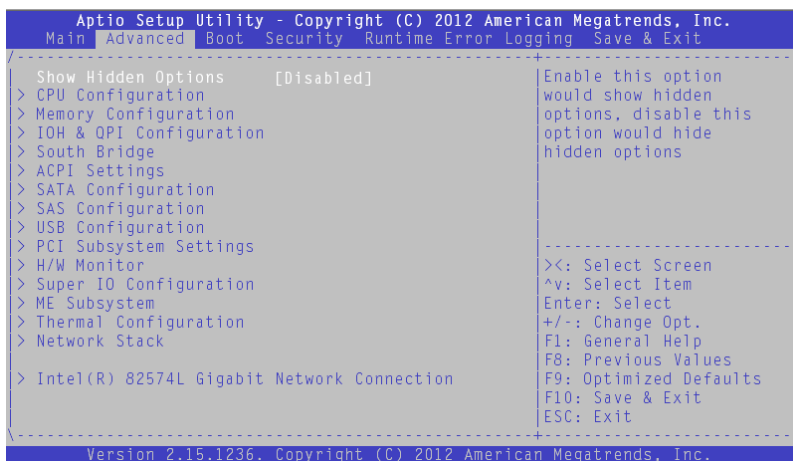
2. Main Menu

After entering the BIOS Setup Utility, you will see the Main menu screen. The Main menu displays the BIOS, processor, memory and chipset information. You can also choose the system language, set the system date and time.



3. Advanced Menu

The Advanced menu allows you to set up CPU Configuration, Memory Configuration, IOH & QPI Configuration, South Bridge, ACPI Settings, SATA Configuration, SAS Configuration, USB Configuration, PCI Subsystem Settings, H/W Monitor, Super IO Configuration, ME Subsystem, Thermal Configuration and Network Stack.



Warning: Setting the wrong values in the Advanced menu may cause the system to malfunction.

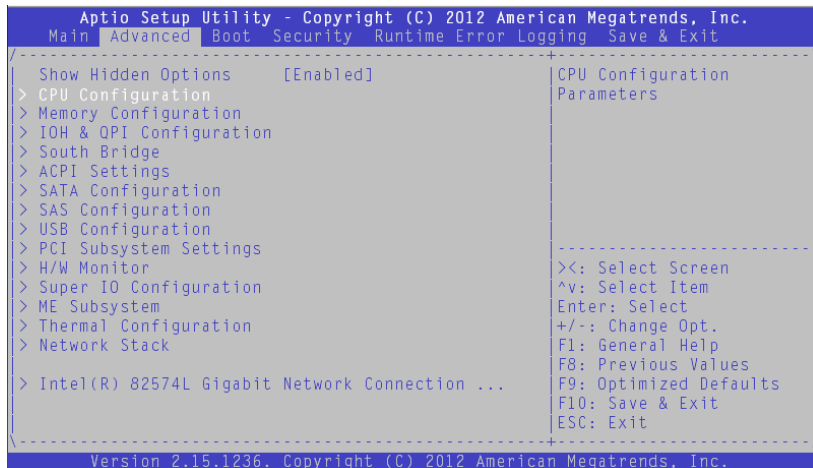
Select a submenu item and then press **Enter** to access the related submenu screen.

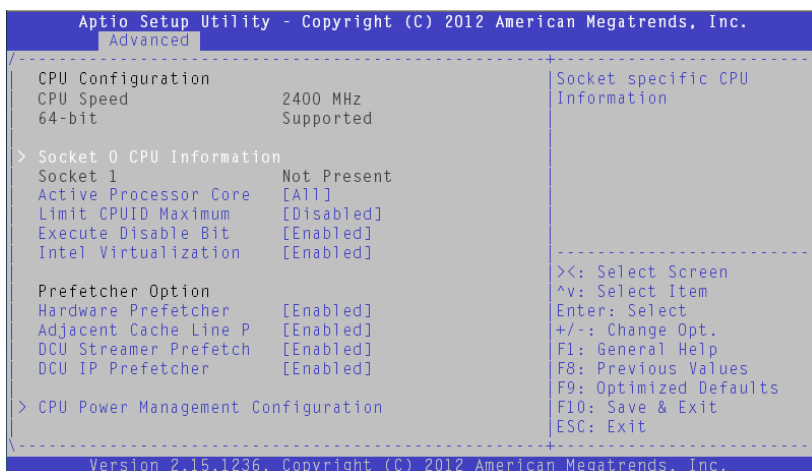
3.1 Show Hidden Options

Enable or disable the hidden BIOS options. It is not recommended to enable this option as some items may be at risk when this option is enabled. Default is **Enabled**.

3.2 CPU Configuration

CPU Configuration displays the CPU information and allows you to set the CPU configuration parameters.





Parameter	Description	Option
CPU Speed	Detects the CPU speed	
64-bit	Detects whether or not 64-bit is supported.	
Socket 0/1 CPU Information	Shows the socket specific CPU Information	
Active Processor Core	Use this item to select the number of cores to enable in each processor package.	1 2
Limit CPUID Maximum	Disabled for Windows XP.	Enabled Disabled
Execute Disable Bit	XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, RedHat Enterprise 3 Update 3.)	Enabled Disabled
Intel Virtualization	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.	Enabled Disabled

Prefetcher Option		
Hardware Prefetcher	Enable or disable the Mid Level Cache (L2) prefetching of adjacent cache lines.	Enabled Disabled
Adjacent Cache Line P	Enable or disable the Mid Level Cache (L2) prefetching of adjacent cache lines	Enabled Disabled
DCU Streamer Prefetch	Enable or disable prefetch of next L1 Data line based upon multiple loads in same cache	Enabled Disabled
DCU IP Prefetcher	Enables or disables prefetch of next L1 line based upon sequential load history.	Enabled Disabled

3.2.1 CPU Power Management Configuration

Use this feature to enable or disable the power management features.



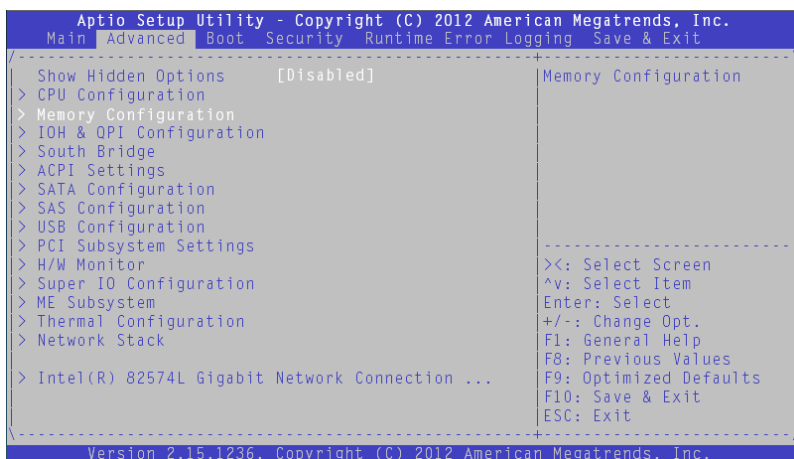
Parameter	Description	Option
Max Freq Ratio	Non Turbo Range: 12-24. This sets the maximum ratio. If this ratio is out of range, the nearest ratio in range will be used. The ranges change with different CPUs.	255

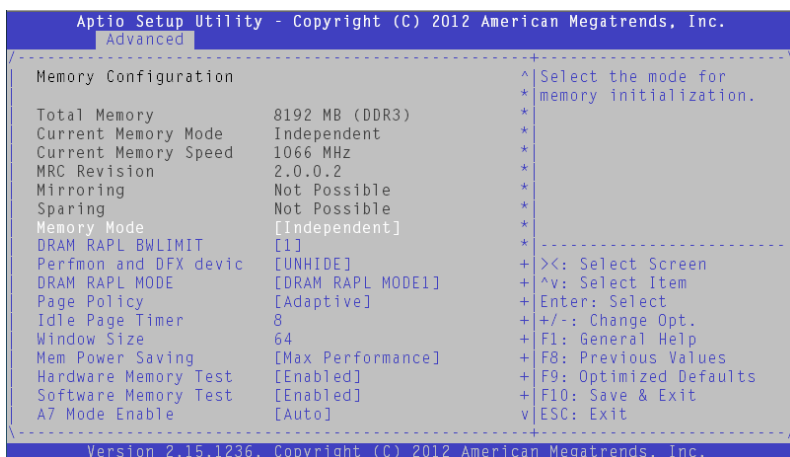
Power Technology	Enable the power management features.	Custom Energy Efficient Disable
EIST	Enable or disable Intel SpeedStep.	Enabled Disabled
Energy Perf Access	Set POWER_CTRL[18].	BIOS Control OS Control
P-STATE Coordination	Change the P-STATE Coordination type.	HW_ALL, SW_ALL, SW_ANY
CPU C3 Report	Enable or disable CPU core C3 report to OS	Enabled, Disabled
CPU C6 Report	Enable or disable CPU core C6 report to OS	Enabled, Disabled
Package C State Limit	Set the Package C State Limit.	C6 with retention, C6 without retention, No Limit
Energy Performance	Optimize between performance and power savings. Windows 2008 and later OSes override this value according to its power plan.	Performance, Balanced Performance, Balanced Energy, Energy Efficient
C-State Hint	Set the C-State Hint.	MWAIT IO
Factory long duration	Detect Factory long duration in watts.	
Long duration power 1	Long duration power limit in watts.	0

Factory long duration	Detect Factory long duration in watts.	
Long duration maintain	Time window which the long duration power is maintained.	0
PL1 Clamp Bit	Enable or disable PL1 Clamp Bit.	Enabled Disabled
Short duration power	Short duration power limit in watts.	0
Short duration maintain	Time window which the short duration power is maintained. Minimum = 3 ms, maximum = 10ms.	0
PL2 Clamp Bit	Enable or disable PL2 Clamp Bit.	Enabled Disabled

3.3 Memory Configuration

Memory Configuration shows the system memory configuration such as total memory, current memory mode and speed, MRC Revision, Mirroring and Sparing support. This menu also allows you to set other memory functions.



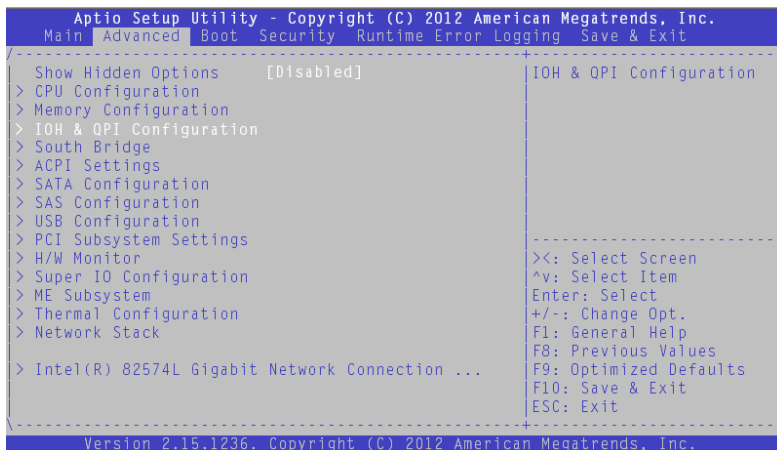


Parameter	Description	Option
Memory Mode	Select the mode for memory initialization.	Independent Mirroring Lock Step Sparing
DRAM RAPL BWLIMIT	DRAM RAPL BWLIMIT: Intel recommended values.	1/0/8/16
Perfmon and DFX device	Hide or unhide Perfmon and DFX devices	UNHIDE HIDE
DRAM RAPL Mode	Select the DRAM RAPL Mode.	DRAM RAPL MODE1, Disabled, DRAM RAPL MODE0
Page Policy	Select page policy.	Adaptive, Closed, Static,
Idle Page Timer	Set the idle page reset timer * 4.	8 0 to 63

Window Size	This is the number of requests that we track before making a decision to adapt the RV.	64
Mem Power Saving	Select the memory power saving mode. Options are Default (slow), Max Performance (Disable) and Power Save (MEM_PWR_SAV_USR/CKE_PPDS)	Max Performance , Default Power Save
Hardware Memory Test	Disable this option to let the MRC bypass the hardware memory test.	Enabled Disabled
Software Memory Test	Enable or disable the software memory test feature in MRC.	Enabled Disabled
A7 Mode Enable	Enable or disable A7 mode feature.	Auto Enabled, Disabled
DDR Speed	Force DDR speed.	Auto / Force DDR3 800/ Force DDR3 1066/ Force DDR3 1333/ Force DDR3 1600/ Force DDR3 1866
Channel Interleaving	Select different Channel Interleaving settings.	Auto /1 Way/ 2 Way/3 Way /4Way
Rank Interleaving	Select different rank Interleaving settings.	Auto /1 Way/ 2 Way/3 Way/ 4 Way/8 Way
Patrol Scrub	Enable or disable the Patrol Scrub.	Enabled Disabled
Demand Scrub	Enable or disable the Demand Scrubbing feature,	Disabled Enabled
Data Scrambling	Enable or disable data scrambling.	Disabled Enabled

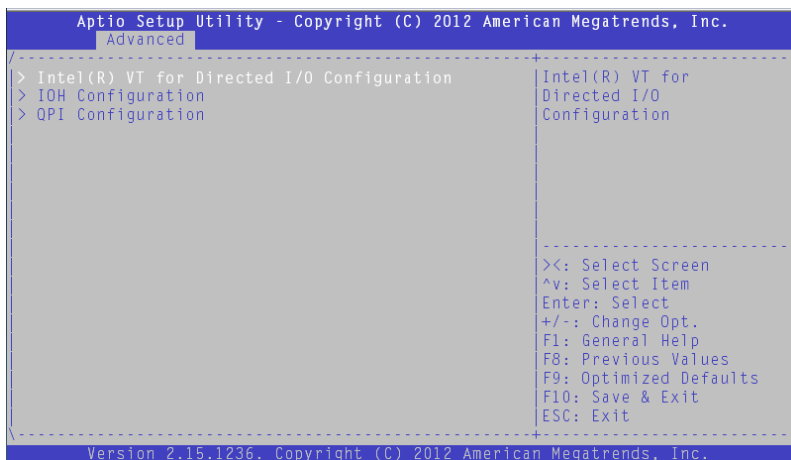
Device Tagging	Enable or disable device tagging.	Disabled Enabled
Rank Margin	Enable or disable rank margin.	Disabled Enabled
Enforce POR	Select the POR table.	Winterfell POR/ Intel POR/ Disabled
MDLL Shutdown		Enabled Disabled
Thermal Throttling	Select Closed Loop Thermal Throttling (CLTT), Open Loop Thermal Throttling (OLTT) or Disabled	CLTT Disabled OLTT
Altitude	The system's altitude above sea level in meters.	300 M , Auto, 900 M, 1500 M 3000 M
Serial Message Debug Level		Minimum , Maximum, Trace, Memory Training
DIMM Voltage Select	Select the DIMM voltage. Auto is MRC while Custom is set VDDQ.	Auto Custom
DIMM Information	Display DIMM presence and size information.	

3.4 IOH & QPI Configuration



3.4.1 Intel® VT for Directed I/O Configuration

This submenu allows you to enable or disable the Intel® Virtualization Technology for Directed I/O. Default is **Disabled**.

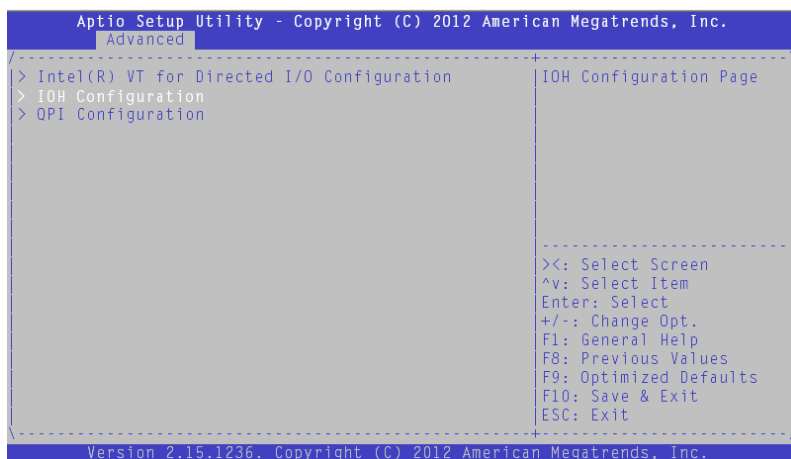


If enabled, you can enable or disable the Coherency Support and ATS Support.

Parameter	Description	Option
Intel ® VT-d	Enable or disable Intel ® Virtualization Technology for directed I/O.	Enabled Disabled
Coherence Support	Enable or disable VT-d Engine Coherency support.	Enabled Disabled
ATS Support	Enable or disable VT-d Engine Address Translation Services (ATS) support.	Enabled Disabled

3.4.2 IOH Configuration

This submenu allows you to set the IOH Configuration settings.

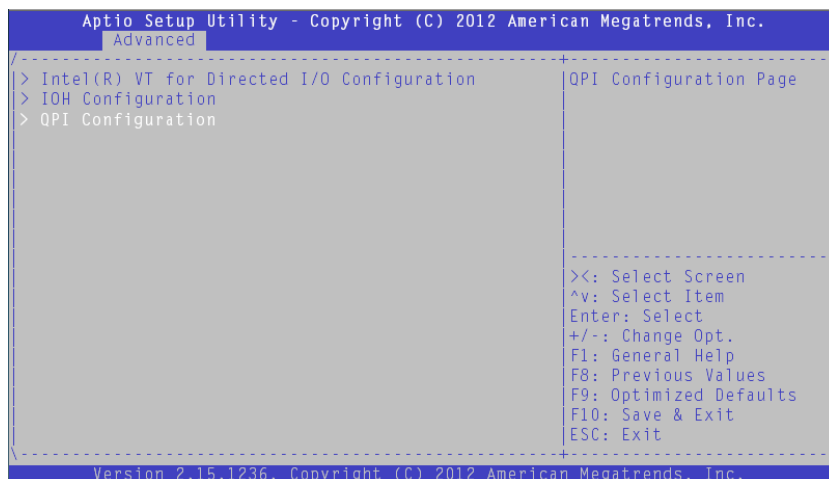


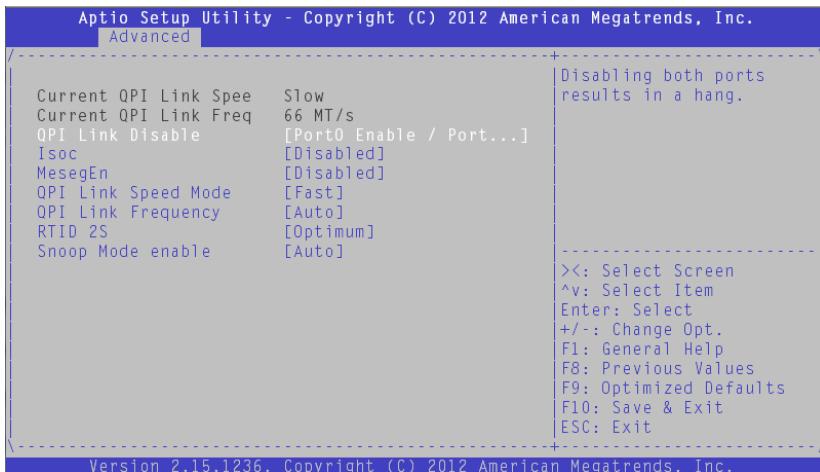
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

IOU0-x16 PCIe slot	The setting determines the visible function as follows: x4x4x4x4 – Fun 0/1/2/3; x4x4x8 – Fun 0/2/3; x8x4x4 - Fun 0/1/2; x8x8 – Fun 0/2; x16 – Fun 0	x8x8 , x4x4x4x4, x4x4x8, x8x4x4, x16
PORT 2A/2C3A/3B/3C Link Speed	Select the Target Link Speed.	GEN3 , GEN1, GEN2

3.4.3 QPI Configuration

QPI Configuration shows and allows you to set the QPI parameters.

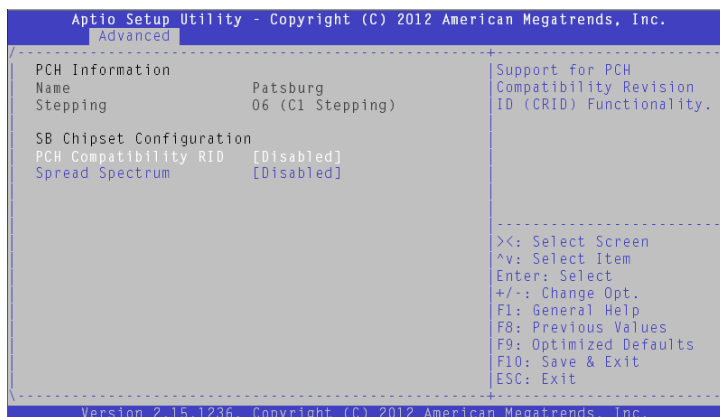
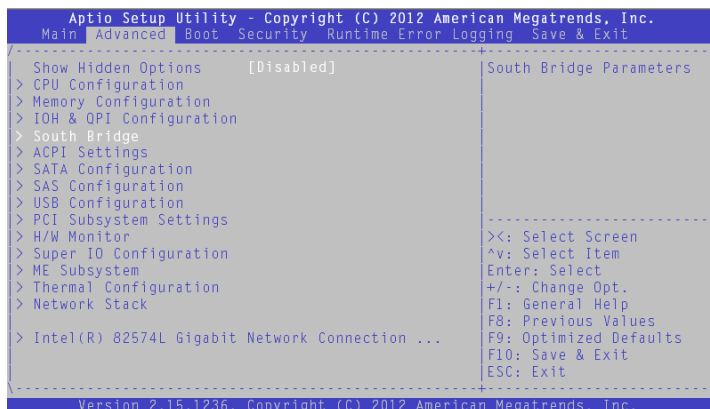




Parameter	Description	Option
QPI Link Disable	Enable or disable ports. Disabling both ports will cause the system to hang.	Port0 Enable/Port1 Enable Auto
Isoc	Enable or disable Isoc.	Disabled Enabled
MesegEn	Enable/Disable Meseg	Disabled Enabled
QPI Link Speed Mode	Fast is Normal mode.	Fast
QPI Link Frequency	Select the QPI Link Frequency.	Auto , 6.4 GT/s, 7.2 GT/s, 8.0 GT/s
RTID 2S	Normal is Optimum. Alternate can boost performance in some 2S environments.	Optimum , Alternate
Snoop Mode Enable	Select appropriate snoop mode. Auto will let the BIOS decide based on system configuration. HS/w DIR&OSB will enable OSB.	Auto HS/w DIR&OSB

3.5 South Bridge

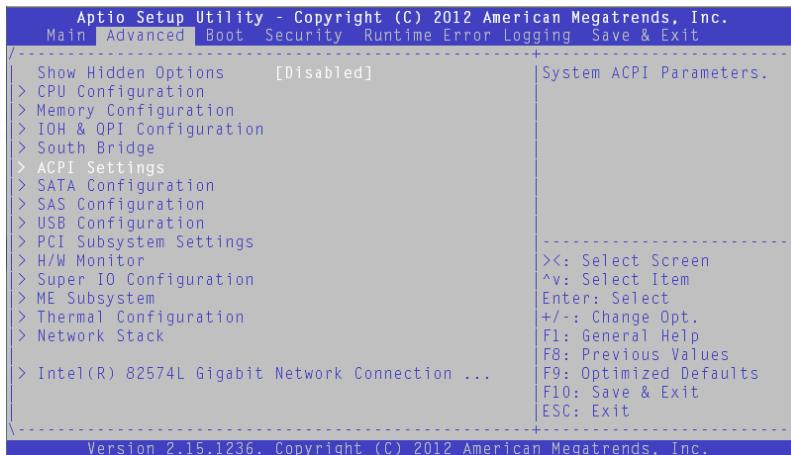
South Bridge shows and allows you to set the South Bridge parameters.



Parameter	Description	Option
PCH Compatibility RID	Support for PCH Compatibility Revision ID (CRID) Functionality	Disabled Enabled
Spread Spectrum	Enable or disable spread spectrum.	Disabled Enabled

3.6 ACPI Settings

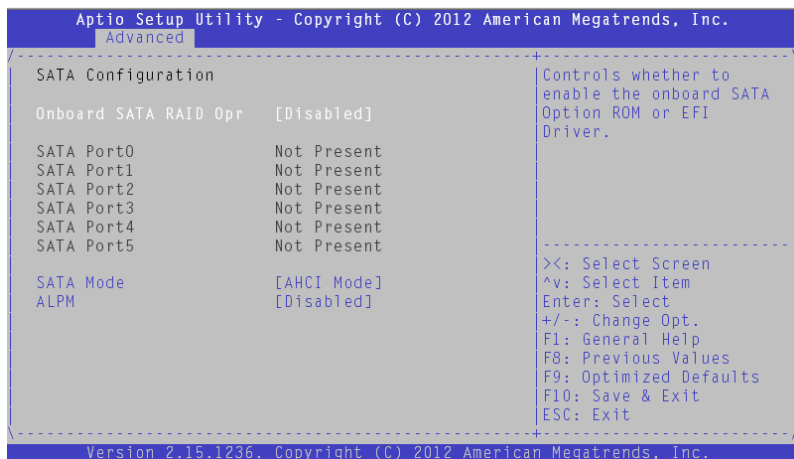
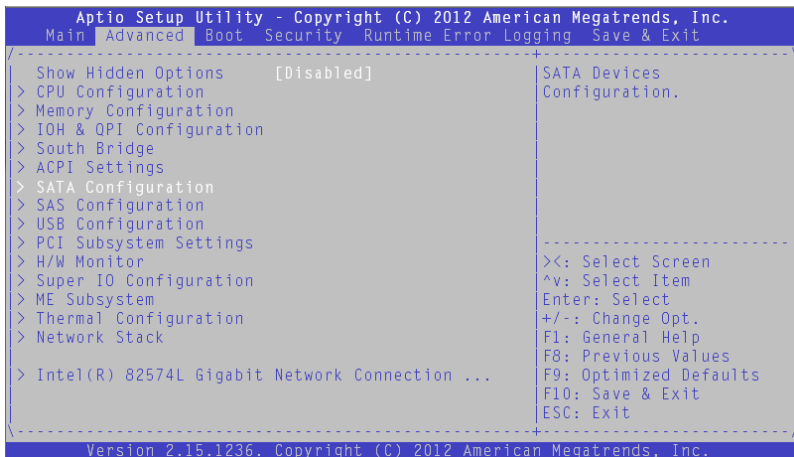
This submenu allows you to set the system ACPI parameters.



Parameter	Description	Option
Enable ACPI Auto Conf	Enable or disable BIOS ACPI Auto Configuration.	Disabled Enabled
ACPI Sleep State	Select the ACPI sleep state the system will enter into when you press the Suspend button.	Suspend Disabled, S1 only(CPU Stop Clock), S3 only(Suspend to RAM), Both S1 and S3 available for OS to choose from
Lock Legacy Resources	Enable or disable lock for Legacy Resources.	Disabled Enabled
High Precision Timer	Enable or disable the High Precision Event Timer.	Enabled Disabled
Runtime Memory Hole Setting	Enable or disable the memory hole setting.	Enabled Disabled

3.7 SATA Configuration

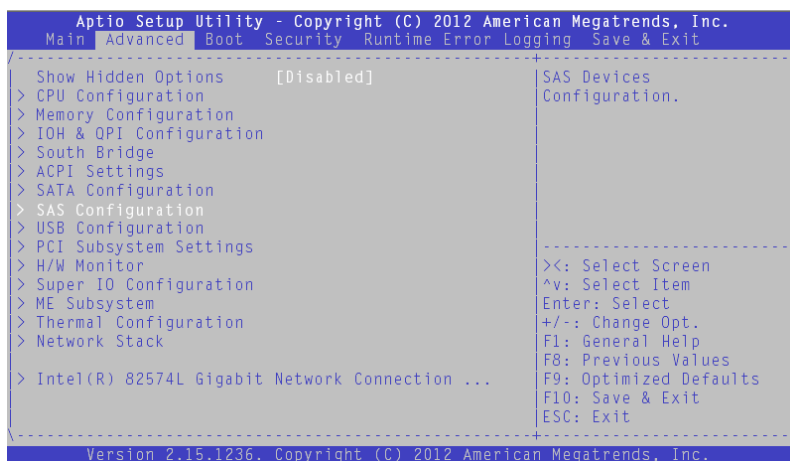
This submenu allows you to configure the SATA devices.

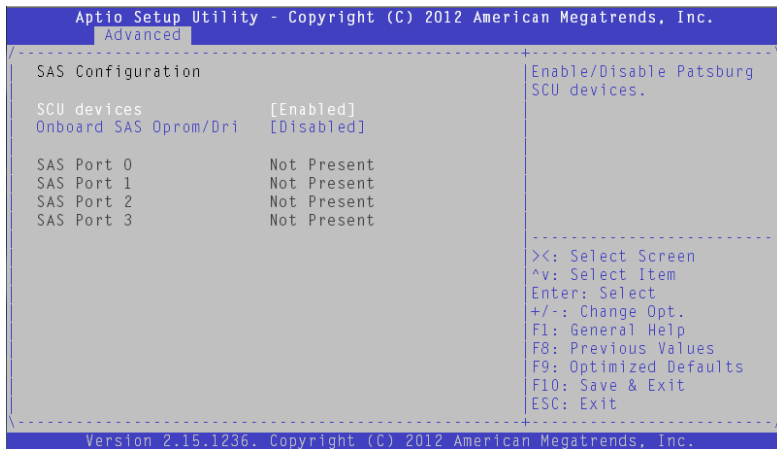


Parameter	Description	Option
Onboard SATA RAID Opr	Enable onboard SATA RAID option ROM or EFI Driver.	Disabled Enabled
SATA Mode	Select the SATA mode.	AHCI Mode, IDE Mode, RAID Mode
ALPM	ALPM support.	Disabled Enabled

3.8 SAS Configuration

This submenu allows you to configure the SAS devices.

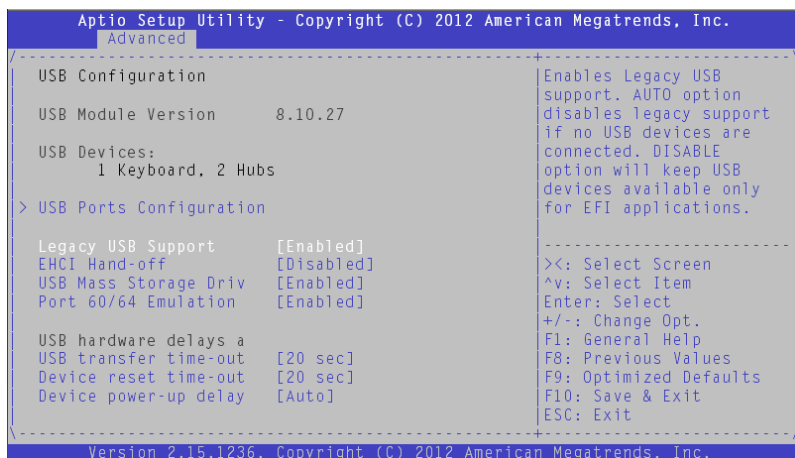
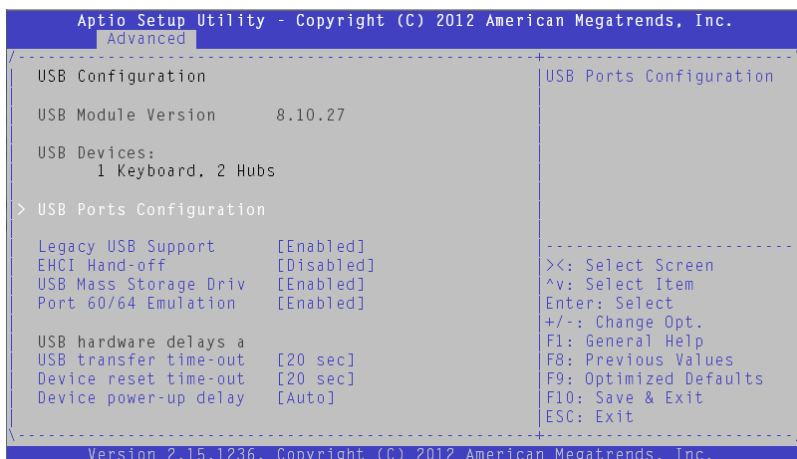




Parameter	Description	Option
SCU devices	Enable or disable Patsburg SCU devices.	Enabled Disabled
Onboard SAS OproM/Dri	Controls whether to enable the onboard SAS Option ROM or EFI Driver.	Disabled Enabled

3.9 USB Configuration

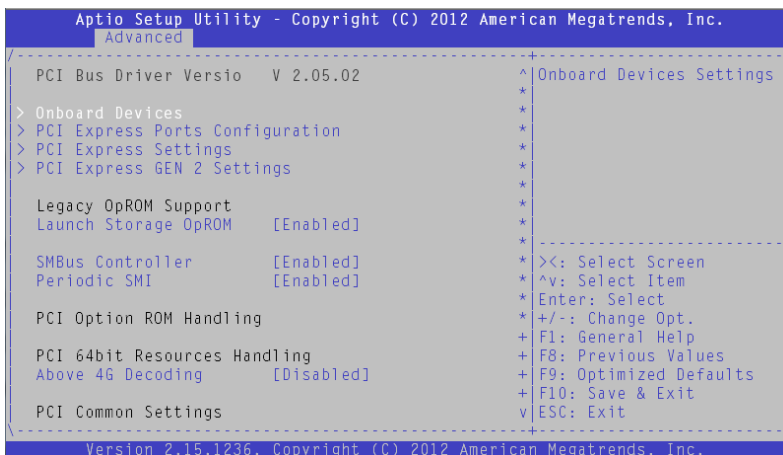
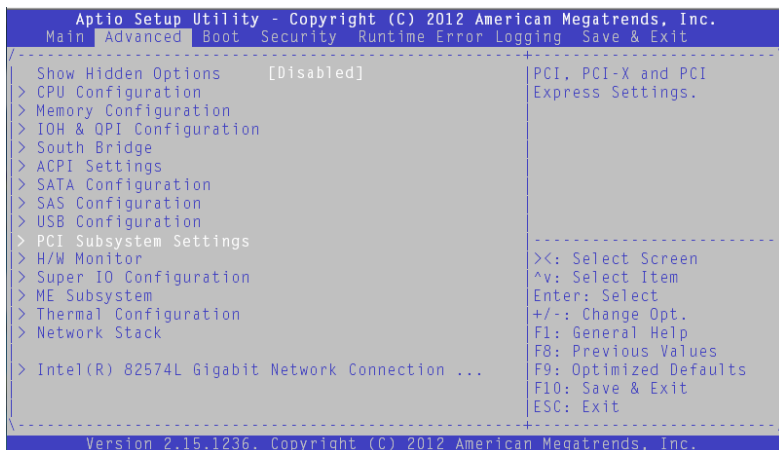
This submenu allows you to configure the USB parameters.



Parameter	Description	Option
Legacy USB Support	Enable Legacy USB support. Auto option disables legacy support if no USB devices are connected. Disabled option will keep USB devices available only for EFI applications.	Enabled Disabled Auto
EHCI Hand-off	This is a workaround for OSES without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.	Disabled Enabled
USB Mass Storage Driver	Enable or disable USB mass storage driver support.	Enabled Disabled
Port 60/64 Emulation	Enable I/O port 60h/64h emulation support. This option should be enabled for the complete USB keyboard legacy support for non-USB aware OSES.	Enabled Disabled
USB transfer time-out	The time-out value for Control, Bulk and Interrupt transfers.	20 sec , 1 sec, 5 sec, 10 sec,
Device reset time-out	USB mass storage device Start Unit command time-out.	20 sec , 10 sec, 30 sec, 40 sec
Device power-up delay	Maximum time the device will take before it properly reports itself to the Host Controller. Auto option uses the default value. For a Root port, it is 100 ms. For a Hub port, the delay is taken from the Hub descriptor.	Auto , Manual

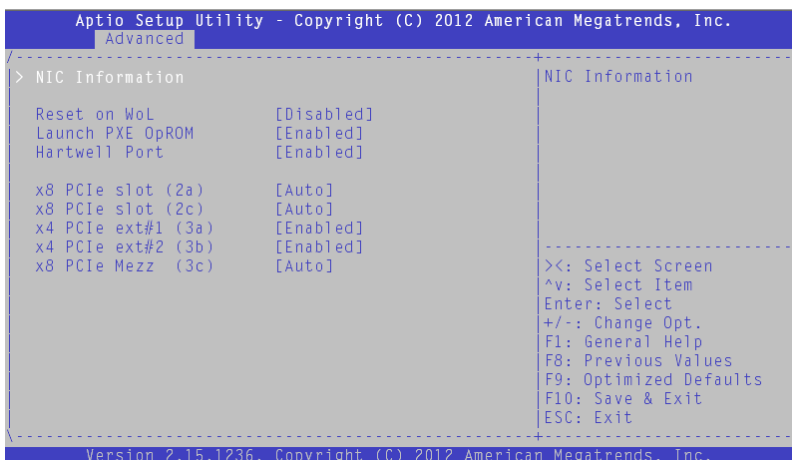
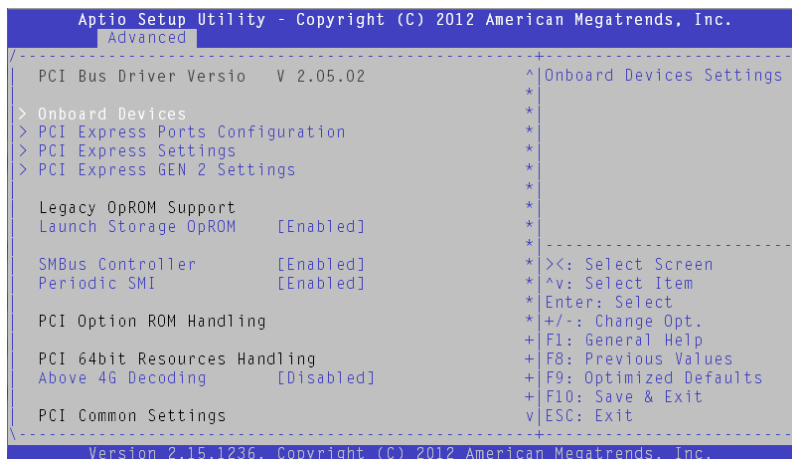
3.10 PCI Subsystem Settings

This submenu allows you to configure the PCI, PCI-X and PCI Express settings.



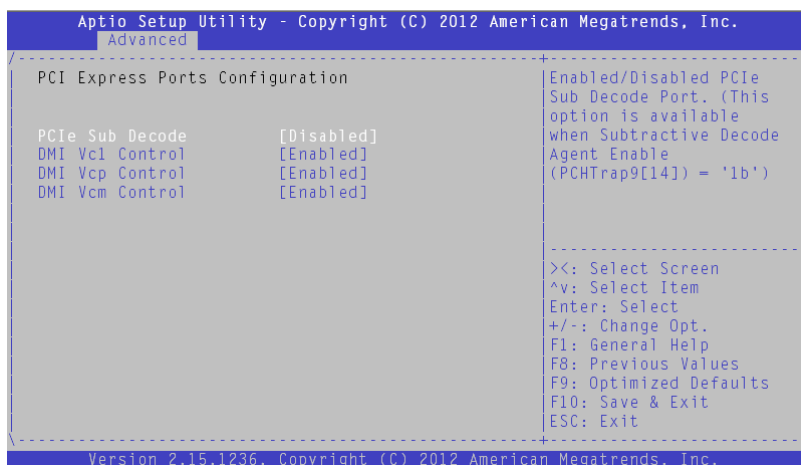
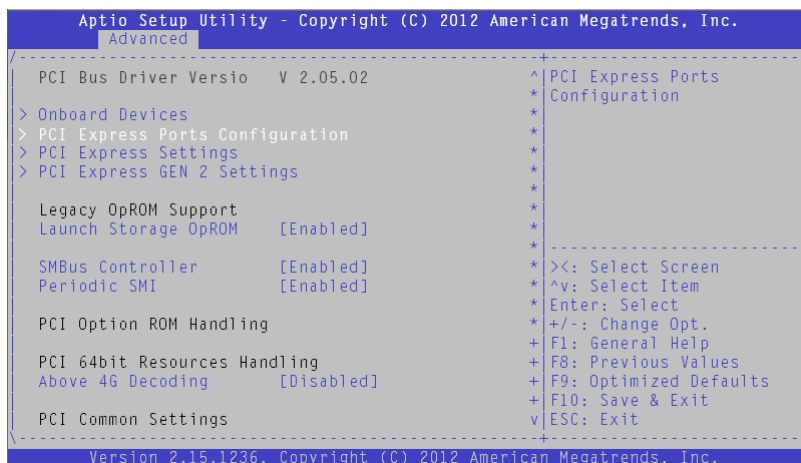
Parameter	Description	Option
Launch Storage OpROM	Enable or disable the boot option for legacy mass storage devices with option ROM.	Enabled Disabled
SMBus Controller	Enable or disable SMBus controller.	Enabled Disabled
Periodic SMI	Enable or disable Periodic SMI.	Enabled Disabled
Above 4G Decoding	Enable or disable 64-bit capable devices to be decoded in above 4G address space (only if system supports 64-bit PCI decoding)	Disabled Enabled
PCI Latency Timer	This is the value to be programmed into the PCI Latency Timer register.	32 PCI Bus Clocks
VGA Palette Snoop	Enable or disable VGA Palette registers snooping.	Disabled Enabled
PERR# Generation	Enable or disable PCI device to generate PERR#	Enabled Disabled
SERR# Generation	Enable or disable PCI device to generate SERR#	Enabled Disabled

3.10.1 Onboard Devices



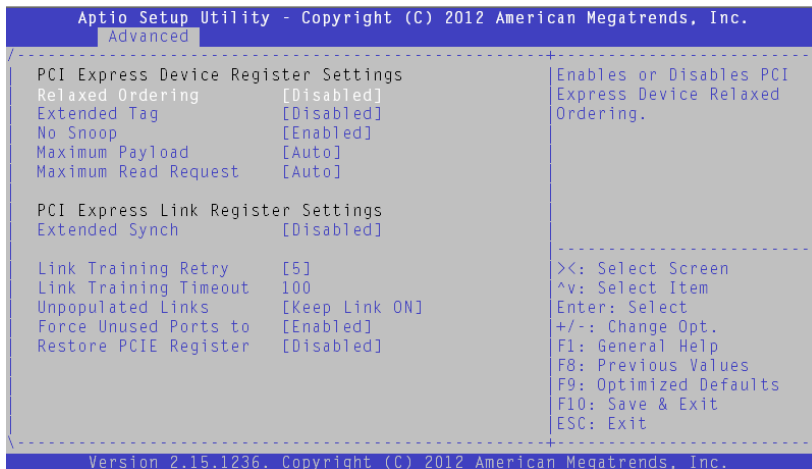
Parameter	Description	Option
Reset on WOL	System resets when it receives a Wakeup event	Disabled Enabled
Launch PXE OpROM	Enable or disable Boot Option for Legacy network devices	Enabled Disabled
Hartwell Port	Hartwell (82574L) Port Setting	Enabled Disabled
X8 PCIe Slot (2a)	Control PCIe slot port 2a/IUO0.	Auto Enabled Disabled
x4 PCIe ext#1 (3a)	Control x4 PCIe external connector #1 (miniSAS) (port 3a/IUO1).	Enabled Auto Disabled
x4 PCIe ext#2 (3b)	Control x4 PCIe external connector #2 (miniSAS) (port 3b/IUO1).	Enabled Auto Disabled
X8 PCIe Mezz (3c)	Control x8 PCIe mezzanine card (port 3c/IUO1)	Auto Enabled Disabled

3.10.2 PCI Express Ports Configuration



Parameter	Description	Option
PCIe Sub Recode	Enable/disable PICe Sub Decode Port.	Disabled Enabled
DMI Vc1 Control	Enable/disable DMI Vc1.	Enabled Disabled
DMI Vcp Control	Enable/disable DMI Vcp.	Enabled Disabled
DMI Vcm Control	Enable/disable DMI Vcm.	Enabled Disabled

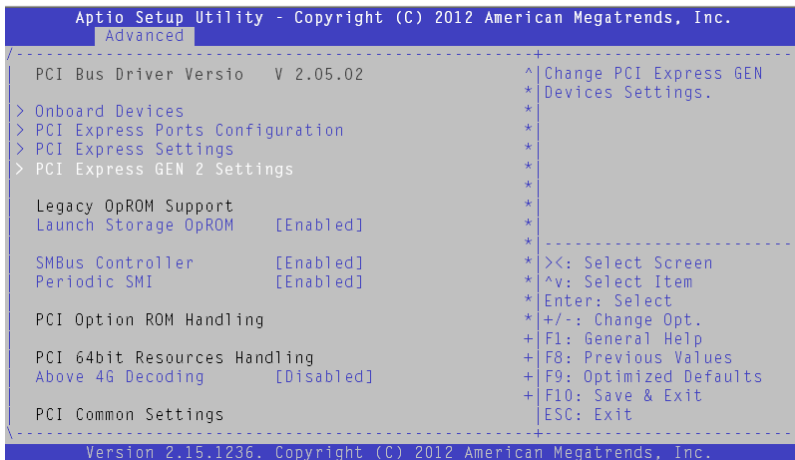
3.10.3 PCI Express Settings



Parameter	Description	Option
Relaxed Ordering	Enable/disable PIC Express Device Relaxed Ordering.	Disabled Enabled
Extended Tag	If Enabled , allows Device to use 8-bit Tag field as a requester.	Disabled Enabled
No Snoop	Enable/disable PIC Express Device No Snoop option.	Enabled Disabled

Maximum Payload	Set Maximum Payload of PCI Express Device or allow system BIOS to select the value.	Auto, 128 Bytes, 256 Bytes, 512 Bytes, 1024 Bytes, 2048 Bytes, 4096 Bytes
Maximum Read Request	Set Maximum Read Request Size of PCI Express Device or allow system BIOS to select the value.	Auto, 128 Bytes, 256 Bytes, 512 Bytes, 1024 Bytes, 2048 Bytes, 4096 Bytes
Extended Synch	If Enabled, allows generation of Extended Synchronization patterns.	Disabled Enabled
Link Training Retry	Defines the number of retry attempts the software will take to retrain the link if previous training attempt was unsuccessful.	5, Disabled 2, 3
Link Training Timeout	Defines number of microseconds the software will wait before polling "Link Training" bit in Link Status register. Value range is 10 to 10000 uS.	100
Unpopulated Links		Keep Link ON,
Force Unused Ports to		Enabled Disabled
Restore PCIe Register	On Non-PCI Express aware OS's (Pre Windows Vista), some devices may not be correctly reinitialized after S3.	Disabled Enabled

3.10.4 PCI Express Gen 2 Settings



Parameter	Description	Option
Completion Timeout	In device with functions that support completion timeout programmability, this parameter allows system software to modify the completion timeout value. Default is 50us to 50ms.	Default Shorter, Longer, Disabled
ARI Forwarding		Disabled Enabled
AtomicOp Requester	If supported by hardware and set to "Enabled", this function initiates AtomicOp Requests only if BUS Master Enable bit is in the Command Register set.	Disabled Enabled
Block AtomicOp Egress	If supported by hardware and set to "Enabled", outbound AtomicOp Requests via Egress Ports will be blocked.	Disabled Enabled
IDO Request Enable	If supported by hardware and set to "Enabled", this permits setting the number if ID-Based Ordering (IDO) bit (Attribute[2]) requests to be initiated.	Disabled Enabled
IDO Completion Enable	If supported by hardware and set to "Enabled", this permits setting the number if ID-Based Ordering (IDO) bit (Attribute[2]) requests to be initiated.	Disabled Enabled
LTR Mechanism Enable	If supported by hardware and set to "Enabled", this enables the Latency Tolerance Reporting (LTR) Mechanism.	Disabled Enabled
End-End TLP Prefix B1	If supported by hardware and set to "Enabled", this function will block forwarding of TLPs containing End-End TLP Prefixes.	Disabled Enabled
Clock Power Management	If supported by hardware and set to "Enabled", the device is permitted to use CLKREQ# signal for power management of Link clock.	Disabled Enabled

Compliance SOS	If supported by hardware and set to "Enabled", this will force LTSSM to send SKP Ordered Sets between sequences when sending Compliance Pattern or Modified Compliance pattern.	Disabled Enabled
H/W Autonomous Width	If supported by hardware and set to "Disabled", this will disable the hardware's ability to change link width except width size reduction for the purpose of correcting unstable link operation.	Enabled Disabled
H/W Autonomous Speed	If supported by hardware and set to "Disabled", this will disable the hardware's ability to change link speed except speed rate reduction for the purpose of correcting unstable link operation.	Enabled Disabled

3.11 H/W Monitor

This function allows you to monitor the hardware status.

```

Apdio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
Main  Advanced  Boot  Security  Runtime Error Logging  Save & Exit

-----
Show Hidden Options      [Disabled]      Monitor hardware status
> CPU Configuration
> Memory Configuration
> IOH & QPI Configuration
> South Bridge
> ACPI Settings
> SATA Configuration
> SAS Configuration
> USB Configuration
> PCI Subsystem Settings
> H/W Monitor
> Super IO Configuration
> ME Subsystem
> Thermal Configuration
> Network Stack

> Intel(R) 82574L Gigabit Network Connect

-----
><: Select Screen
^v: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F8: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit

-----
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

```

```

Apdio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
Main  Advanced  Boot  Security  Runtime Error Logging  Save & Exit

-----
Health Status
-----
Battery Vref      [2.50V]
CPU0VCORE        : +1.052 V
CPU1VCORE        : +0.204 V
PV_VDDQ_AB       : +1.354 V
PV_VDDQ_CD       : +1.354 V
PV_VDDQ_EF       : +0.10
PV_VDDQ_GH       : N/A
P12V             : +13.244 V
P5V              : +5.406 V
AVSB             : +3.360 V
3VCC             : +3.392 V
3VSB             : +3.392 V
VBAT             : +3.136 V

-----
When battery voltage is
lower than the value,
PCH ME records a
warning log.

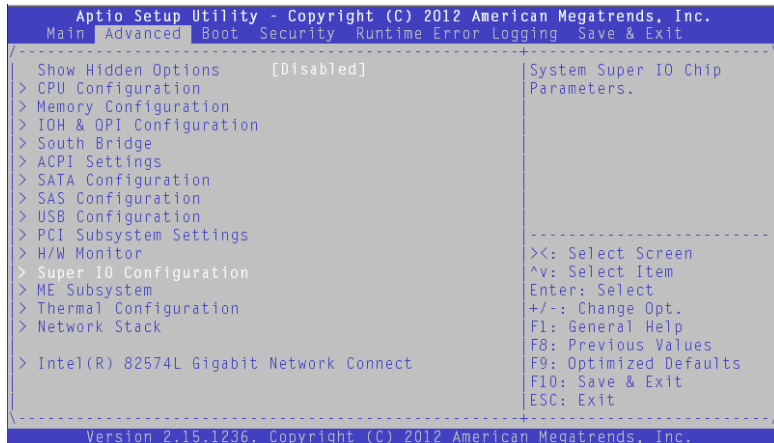
-----
><: Select Screen
^v: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F8: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit

-----
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

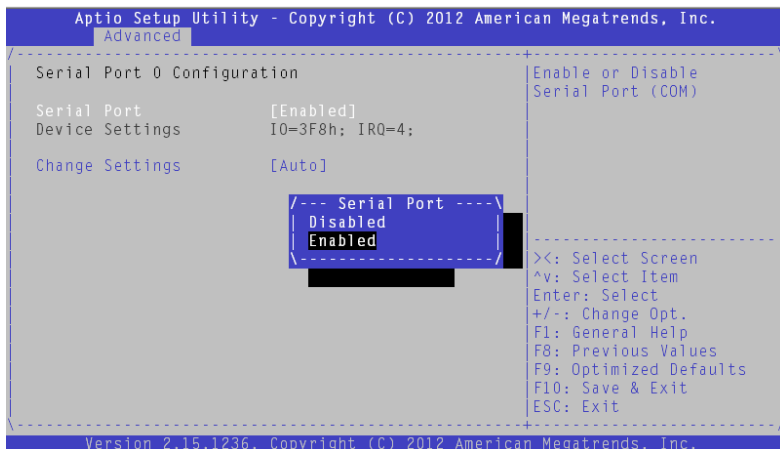
```

3.12 Super IO Configuration

This function allows you to view the super I/O chip and configure Serial Port setting.

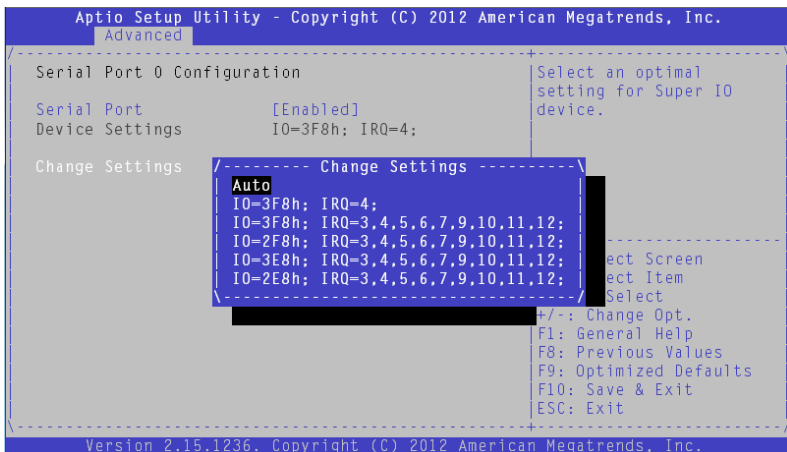


3.12.1 Serial Port 0 Configuration

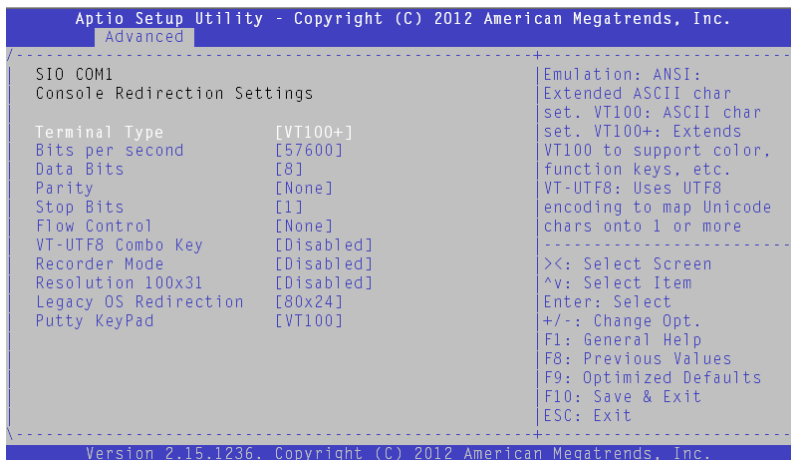


Select **Serial Port 0 Configuration** to enable or disable the serial port (COM). The default value is **Enabled**.

If you install a new component that must use a specific IRQ (Interrupt Request to the CPU), the new component will not work until the IRQ is assigned. To assign a specific IRQ to a new component, click on **Change Settings** to select an optimal setting.



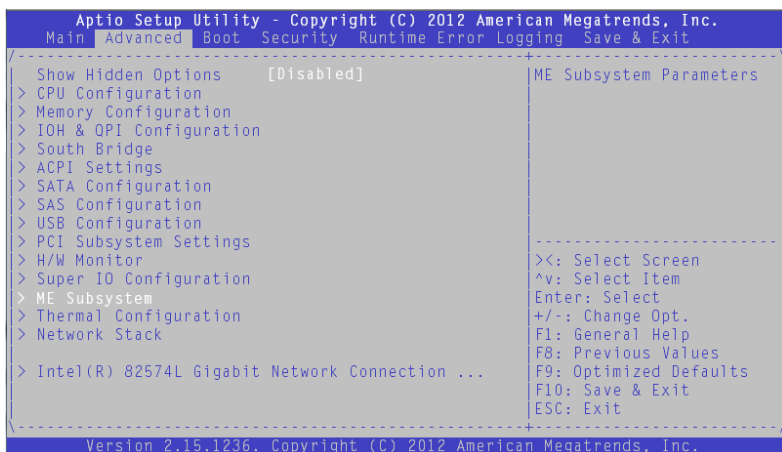
Console Redirection Settings



Parameter	Description	Option
Terminal Type	Emulation: ANSI (extended ASCII character set), VT100 (ASCII character set), VT100+ (extends VT100 to support color, function keys, etc.).	VT100 , VT100+, ANSI
Bits per second	Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speed.	57600 , 9600, 19200, 38400
Data Bits		8 , 7
Parity	A parity bit can be sent with the data bits to detect some transmission errors. Even: parity bit is 0 if the number of 1's in the data bits is even. Odd: parity bit is 0 if the number of 1's in the data bits is odd.	None , Even, Odd, Mark, Space

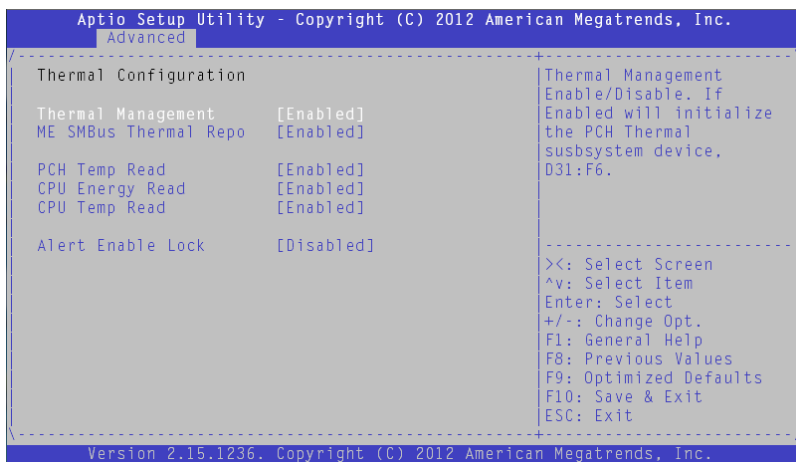
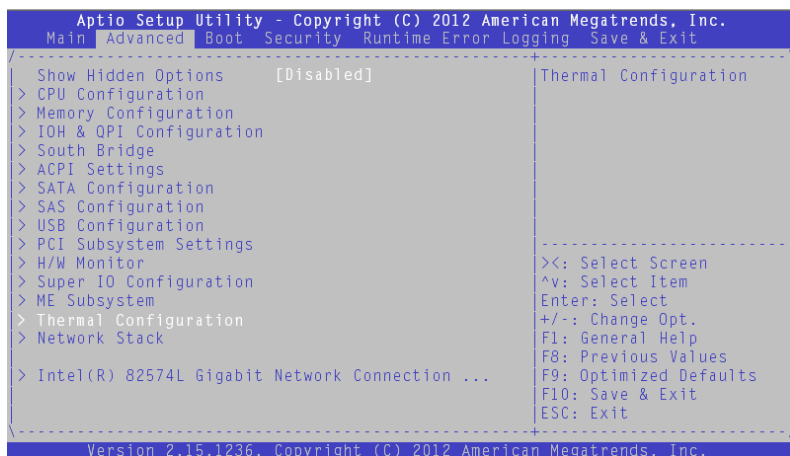
Stop Bits	Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.	1 0
Flow Control	Flow control can prevent data loss from buffer overflow when sending data. If the receiving buffers are full, a "Stop" signal can be sent to stop the data flow.	None, Hardware RTS/CTS
VT-UTF8 Combo Key	Enable VT-UTF8 Combination Key support for ANSI/VT100 terminals	Disabled, Enabled
Recorder Mode	If enabled, only text will be sent. This is to capture terminal data.	Disabled, Enabled
Legacy OS Redirection		80x24, 80x25
Putty KeyPad	Select Function Key and KeyPad on Putty.	VT100, LINUX, XTERMR6, SCO, ESCN, VT400

3.13 ME Subsystem



Parameter	Description	Option
DCMI Support		
DCMI Support	Enable or disable DCMI server management support.	Enabled Disabled
Power Restore policy	Power Restore Policy setting allows you to set how the system behaves when AC Power is restored.	Power always On, Power always off, Restore Power State, Power always on, No change
Serial Over LAN	Enable or disable Serial Over LAN (SOL) support.	Enabled Disabled
View FRU information	Display the FRU information.	
FRB Settings		
FRB-2 Timer	Enable or disable FRB2 timer (POST timer). If disabled, the next two items are unavailable.	Disabled Enabled
FRB-2 Timer timeout	Set the FRB-2 timeout period.	15 minutes, 3 minutes, 4 minutes, 5 minutes, 6 minutes
FRB-2 Timer Policy	Configure how the system should respond if the FRB2 Timer expires.	Reset, Do Nothing, Power Down
ME Subsystem	Enable or disable the ME subsystem.	Enabled Disabled
ME Auto-Recover	ME FW will auto-recover if it is in recovery mode.	Every Reset, Next Reset, Disabled

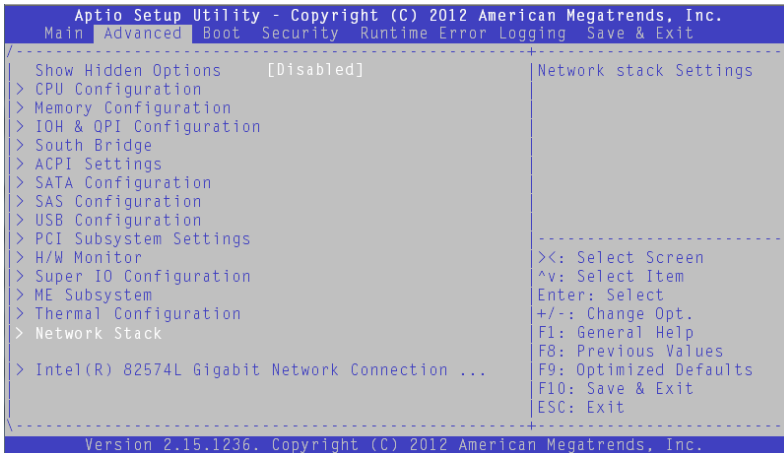
3.14 Thermal Configuration



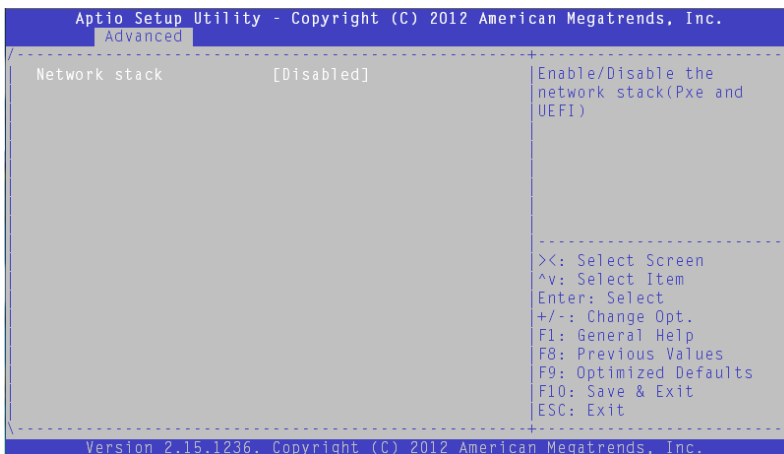
Parameter	Description	Option
Thermal Management	Enable or disable thermal management. Enable this function to initialize the PCH Thermal subsystem device, D31:F6.	Enabled Disabled
ME SMBus Thermal Repo	Enable or disable ME SMBus Thermal Reporting Configuration. If disabled, the next four items are unavailable.	Enabled Disabled
PCH Temp Read	Enable or disable PCH temperature read.	Enabled Disabled
CPU Energy Read	Enable or disable CPU energy read.	Enabled Disabled
CPU Temp Read	Enable or disable CPU temperature read.	Enabled Disabled
Alert Enable Lock	Enable or disable lock all Alert Enable settings.	Disabled Enabled

3.15 Network Stack

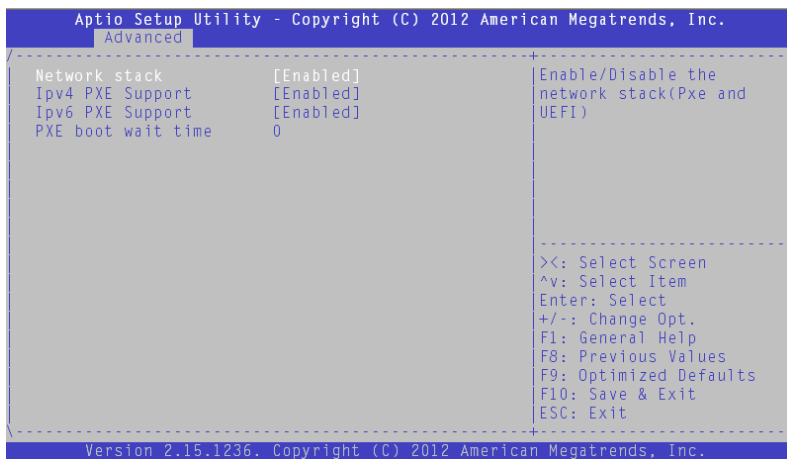
The network stack is a mostly single-threaded cross-platform library primarily for resource fetching. Default setting is **Disabled**.



By default Network stack is set to Disabled.



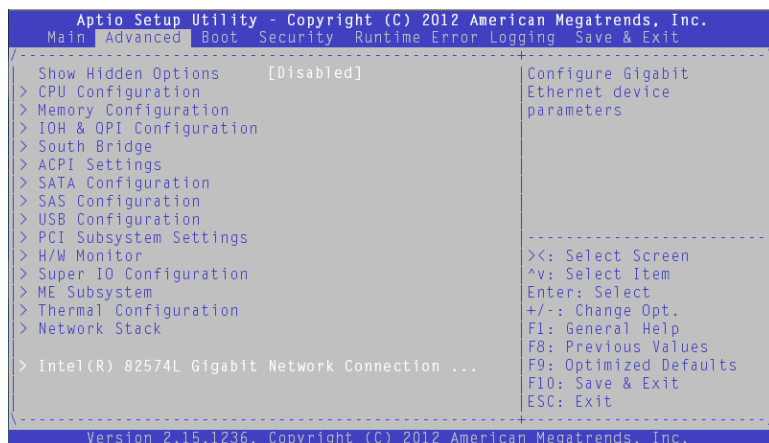
If Enabled, you can enable or disable the Ipv4 and Ipv6 PXE supports.



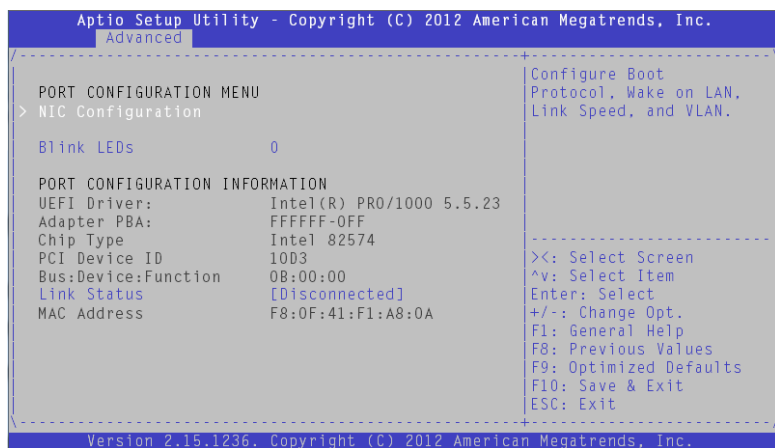
Parameter	Description	Option
Network Stack	Enable or disable the network stack (for PXE and UEFI only).	Enabled Disabled
Ipv4 PXE Support	Enable or disable Ipv4 PXE Boot Support. If disabled, Ipv4 PXE boot option will not be created.	Enabled Disabled
Ipv6 PXE Support	Enable or disable Ipv6 PXE Boot Support. If disabled, Ipv6 PXE boot option will not be created.	Enabled Disabled

3.16 Intel (R) 82574L Gigabit Network Connection

This submenu allows you to configure the Gigabit Ethernet device parameters.

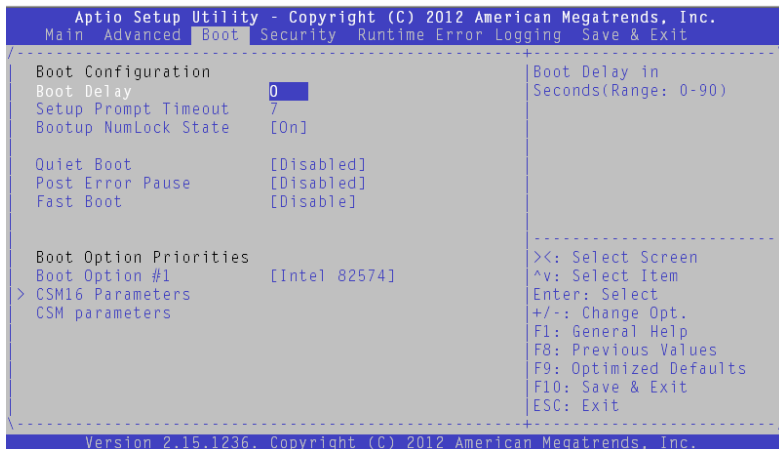


3.16.1 NIC Configuration



Parameter	Description	Option
Link Speed	Specifies the port speed used for the selected boot protocol.	Auto Negotiated , 10 mbps Half, 10 mbps Full, 100 mbps Half, 100 mbps Full
Wake On LAN	Enables the server to be powered on using an in-band magic packet.	Enabled Disabled

4. Boot Menu



Parameter	Description	Option
Boot Delay	Boot Delay in seconds (range is 0 to 90)	
Setup Prompt Timeout	Define the number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.	7
Bootup Numlock State	Select the keyboard NumLock state.	On Off
Quiet Boot	Enable or disable the quiet boot option. If enabled, the BIOS will display the full screen logo during the boot-up sequence, hiding normal POST messages. If disabled, the BIOS will	Disabled, Enabled
Fast Boot	Enable or disable boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options. If enabled, you will see the next four parameters.	Disable, Enable

VGA Support	If Auto, only install Legacy OpRom with Legacy OS and logo would NOT be shown during POST. EFI driver will still be installed with ESI OS.	EFI Driver, Auto
USB Support		Partial Initial, Disable, Full Initial
PS2 Devices Support	If disabled, PS2 devices will be skipped.	Enable, Disable
Network Stack Driver	If disabled, Network Stack Driver will be skipped.	Disable, Enable
Boot Option Priorities	Set the booting priority of the 1 st , 2 nd , 3 rd and 4 th Device.	
CSM16 Parameters		
GateA20 Active	Upon Request – GA20 can be disabled using BIOS services. Always – do not allow disabling of GA20. This option is useful when any RT code is executed above 1 MB.	Upon Request, Always
Option ROM Messages	Set display mode for Option ROM	Force BIOS, Keep Current
NT19 Trap Response	BIOS reaction on INT19 trapping by Option ROM. Immediate – execute the trap right away. Postponed – execute the trap during legacy boot.	Immediate, Postponed
CSM parameters		
Launch CSM	Enable or disable launching of CSM.	Enabled, Disabled
Boot option filter	Control what devices system can boot to.	Legacy only, UEFI only
Launch PXE OpROM poli	Control the execution of UEFI and Legacy PXE OpROM.	Legacy only, Do not launch, UEFI only

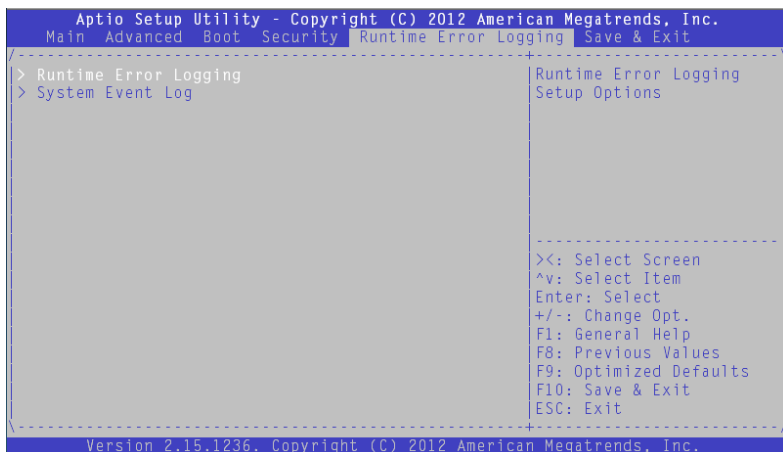
Launch Storage OpROM	Control the execution of UEFI and Legacy Storage OpROM.	Legacy only, Legacy first, UEFI first, Do not launch, UEFI only
Launch Video OpROM poli	Control the execution of UEFI and Legacy Video OpROM.	Legacy only, Legacy first, UEFI first, Do not launch, UEFI only
Other PCI Device ROM	For {CI devices other than Network, Mass storage or Video defines which OpROM to launch.	Legacy OpROM, UEFI OpROM

5. Security Menu

This function allows you to set or change the Administrator or User password for the system.



6. Runtime Error Logging



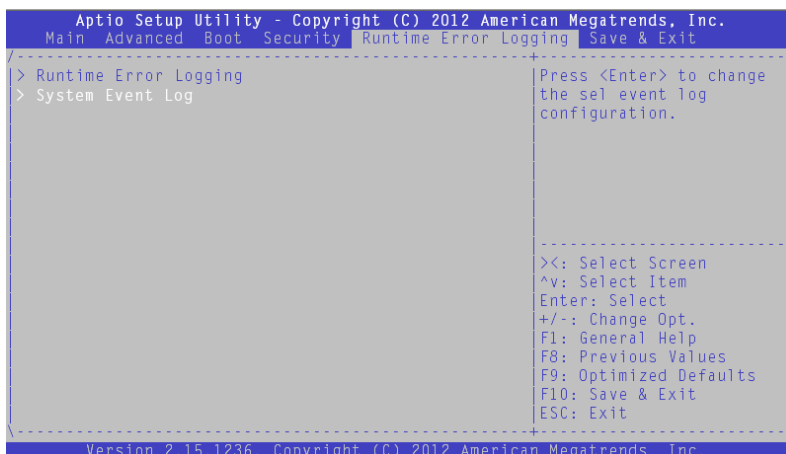
6.1 Runtime Error Logging

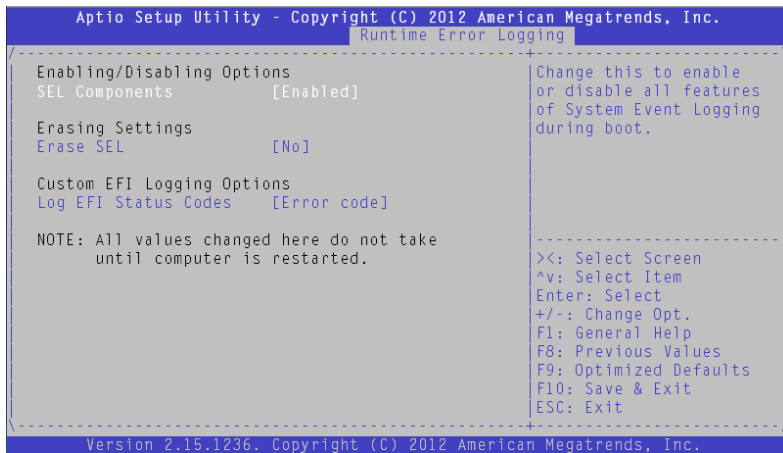


Parameter	Description	Option
Runtime Error Logging	Enable or disable Runtime Error Logging.	Enabled Disabled
ECC Log Enable	Enable or disable ECC error log.	Enabled Disabled
ECC Threshold	Enter the ECC Threshold value.	
ECC Log Threshold	Upper limit of logged ECC correctable errors.	10/50/100/ Disabled
PCI Error Logging	Enable or disable PCI error logging.	Enabled Disabled
IIO Error Logging	Enable or disable IIO error logging.	Enabled Disabled
Poison Support	Enable or disable Poison Support. When poisoning is enabled, CPU does not signal the uncorrectable error via MCERR but may signal CMCI if CMCI is enabled.	Disabled Enabled
QPI Error Logging	Enable or disable QPI error logging.	Enabled Disabled
MEMHOT Error Logging	Enable or disable Memory Hot error logging.	Enabled Disabled
PROCHOT Error Logging	Enable or disable Processor Hot error logging.	Enabled Disabled
PROCHOT Timer	PROCHOT error log timer.	10 sec/10 min/ 15 min/20 min
Correctable Error Log	Enable or disable correctable error logging.	Enabled Disabled
QPI Correctable Log	Enable or disable QPI correctable event log.	Enabled Disabled
IIO Correctable Log	Enable or disable IIO correctable event log.	Enabled Disabled

PCIe Correctable Log	Enable or disable PCIe correctable event log.	Disabled Enabled
Non-fatal Error Mask	Enable or disable Advisory Non-fatal Error Mask.	Enabled Disabled

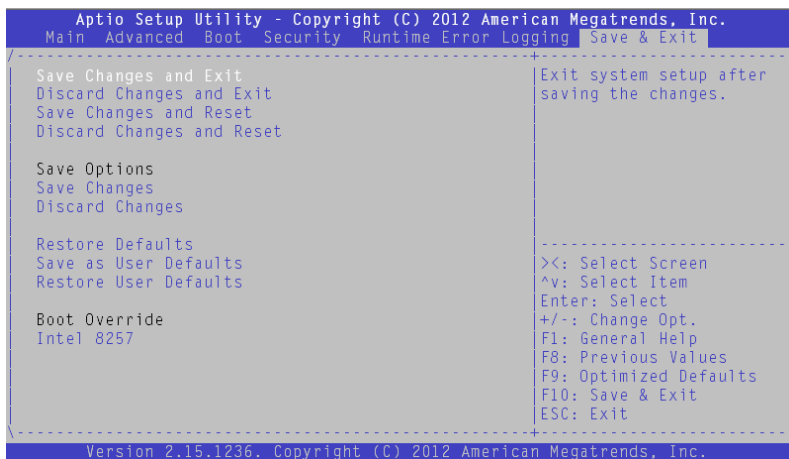
6.2 System Event Log





Parameter	Description	Option
SEL Components	Enable or disable all features of System Event Logging during boot.	Enabled Disabled
Erase SEL	Change options for erasing SEL.	No , Yes, On next reset, On every reset
Log EFI Status Codes	Disable the logging of EFI Status Codes or log only error code or only progress code or both	Error code , Progress code, Disabled, Both

7. Save & Exit



Parameter	Description
Save Changes and Exit	Exit setup after saving the changes.
Discard Changes and Exit	Exit setup without saving any changes.
Save Changes and Reset	Reset the system after saving the changes.
Discard Changes and Reset	Reset system setup without saving any changes
Save Changes	Save changes done so far to any of the setup options.
Discard Changes	Discard changes done so far to any of the setup options.

Restore Defaults	Restore/load default values for all the setup options.
Save as User Defaults	Save changes done so far as User Defaults.
Restore User Defaults	Restore the User Defaults to all the setup options.
Boot Override	Select boot device that will override the original boot order.
