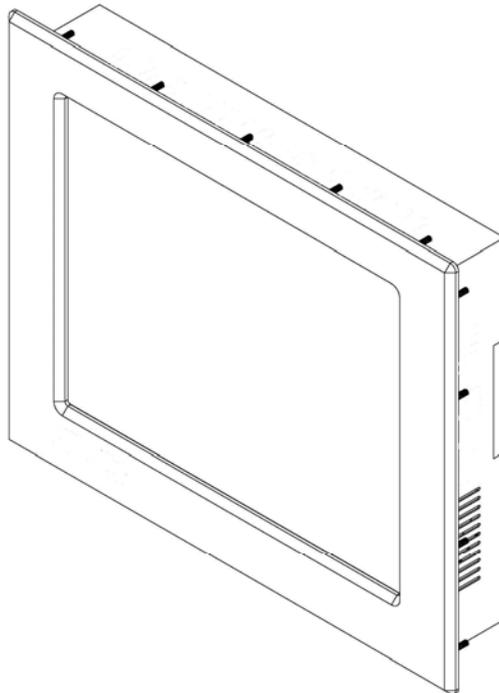




*Solutions for Demanding Applications*

**VARTECH**  
**SYSTEMS INC.**



## **10.4" Panel Mount PC**

**Model VTPC104P / PS**

## **User's Guide**

Read these instructions completely before attempting to operate your new Panel Mount PC

## Revision History

<b>Date</b>	<b>Rev No</b>	<b>Summary</b>	<b>Page</b>
10/16/08	00	First Issue	
03/30/09	01	Corrected connections illustration	7
07/16/10	02	Changed specifications to reflect hardware change	

## Safety Instructions

- Read the Safety Instructions carefully and keep it for use later.
- The chassis metalwork of the module must be installed properly to the main earthing termination for Class 1 equipment.
- Care must be exercised in the application of the system to prevent overheating. Ensure that the ambient temperature around the system does not exceed 50°C and provide adequate means of ventilation to achieve this.
- When cleaning cut off the electrical supply at all times. Never use liquid or aerosol detergent, use a soft damp cloth instead.
- Never insert anything metallic into the chassis openings. This may create an electric shock hazard or hazard from rotating fan blades.
- To avoid electric shock, never touch the inside of the system. There are no user adjustable components inside, only a qualified technician should open the system's case.
- Openings in the system enclosure are to allow for ventilation. To prevent overheating, these openings should not be blocked or covered.
- If the system does not operate normally – in particular, if there are any unusual sounds or smells coming from it – disconnect it immediately.
- Do not put pressure on the LCD panel screen because it is very fragile.
- Always handle the system with care when moving it.
- Take care that the system is disposed of correctly at the end of its life. If in doubt refer to your local ordinances or regulations for proper disposal.
- A socket-outlet shall be installed near the equipment and shall be easily accessible.

## Cleaning the LCD monitor

To clean the LCD panel:

- Wipe the screen gently with a clean lens brush made of camel hair, or a soft, clean, lint free cloth. This is to remove dust and other particles without scratching the LCD panel.
- If it is still not clean, then wipe with a damp lint free cloth and blow on it to dry.

Do not clean the panel with a keton-type material (e.g. acetone), or ethyl toluene, ethyl acid, methyl or chloride. These may damage the LCD panel.

Do not apply pressure to the LCD panel.

## Standard Technical Specifications:

### LCD Monitor:

<b>Size / Type</b>	10.4" SVGA TFT LCD
<b>Native Resolution</b>	800 x 600
<b>Contrast Ratio</b>	600:1
<b>Viewing Angles</b>	Horizontal: 80° Vertical: 80°
<b>Pixel Pitch</b>	0.264mm
<b>Brightness (typical)</b>	400 cd/m <sup>2</sup>
<b>Response Time (typical)</b>	25ms
<b>Colors Supported</b>	16.8 million

### Computer System:

<b>CPU</b>	Intel Pentium Dual Core Processor T4500 2.30 GHz 800MHz FSB
<b>System Chipset</b>	Intel Cantiga GM/GL45 and ICH9M
<b>Front-Side Bus</b>	677/800/1066 MHz
<b>BIOS</b>	AMI 8Mbit SPI Flash, DMI, Plug and Play
<b>System Memory</b>	One 204-pin unbuffered 2GB DDR3 PC3-8500 SO-DIMM
<b>Onboard Multi I/O</b>	Serial Ports: Two ports for RS-232 Two SATA-150 connectors
<b>CompactFlash Socket</b>	One CompactFlash Type II Socket
<b>Display</b>	CRT Connector capable of supporting up to 1600x1200 dpi
<b>Watchdog Timer</b>	1~255 seconds; up to 255 levels
<b>Ethernet</b>	Dual port with RTL8111B for Gigabit/Fast Ethernet
<b>Audio</b>	AC'97 Audio compliant via ALC203(requires optional connector)
<b>Power Management</b>	ACPI (Advanced Configuration and Power Interface)

<b>Power Input</b>	90 - 220VAC 1.5A 50/60 Hz		
<b>Power Consumption</b>	48W		
<b>Temperature</b>	Operational:	32°F to 122°F	0°C to 60°C
	Storage:	-4°F to 149°F	-20°C to 75°C
<b>Humidity</b>	Operational:	20 to 40°C, 90% RH NC	
	Storage:	5 to 65°C, 28% RH NC	

### Installation of Your Panel PC

Packaged with each carton will be:

- 1 - VTPC104P / PS
- 1 - AC Power Cable
- 1 - #10-32 Mounting Hardware
- 1 - Users Guide (Printed or on CD)

**BEFORE MAKING ANY CONNECTIONS OR APPLYING POWER,  
FIRST READ THROUGH THE ENTIRE MANUAL**

**Panel Mount Procedure**

**Panel Mounting Procedure:**

- 1- Cut and drill the panel (refer to the panel mount drawing, Figure A). Measurements are provided in inches and millimeters.

**Panel Mounting Cutout:**

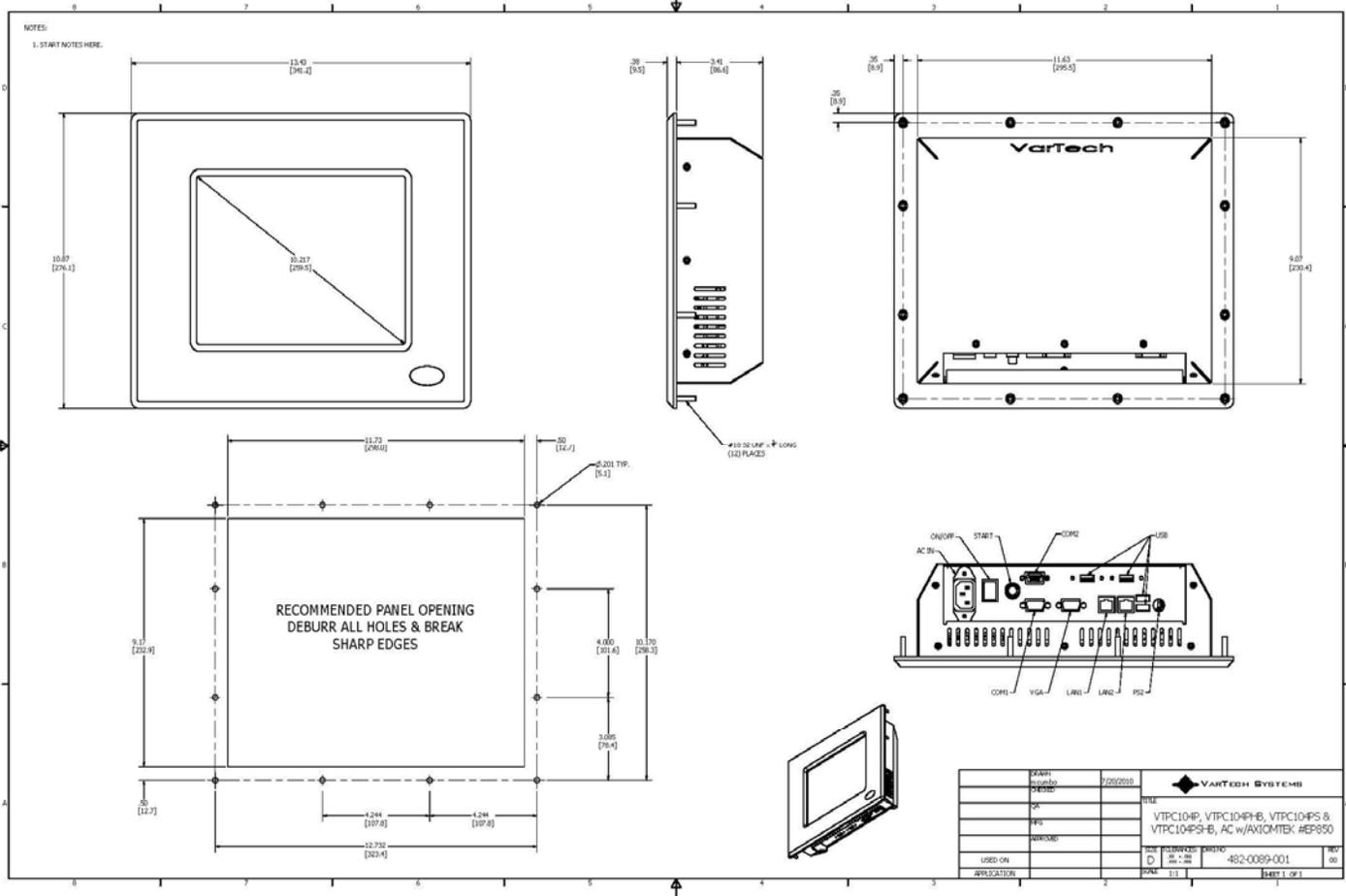
- 1- If access to the bottom of the enclosure is not available following installation, attach the power and all necessary cables to the bottom side of the enclosure at this time.
- 2- Install the enclosure in the prepared cutout.
- 3- Secure the enclosure using the lock nuts and washers, supplied with the unit, behind the holes running along the sides and the top and bottom of the cutout in the panel. Extra lock nuts and washers are provided.

**NOTE:** Use #10-32 nuts for mounting.

- 4- Tighten all mounting hardware to a torque of 24 inch-pounds.

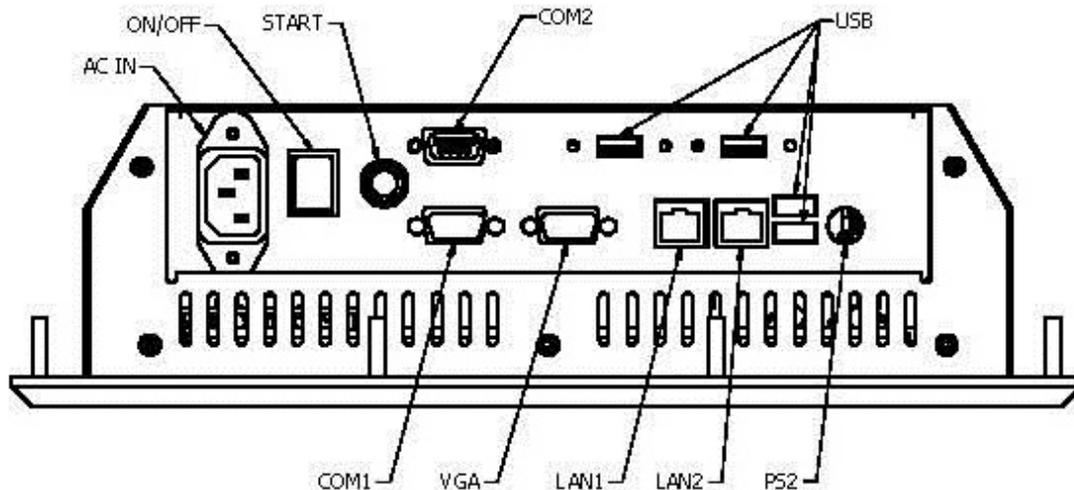
**ATTENTION:** Mounting nuts must be tightened to a torque of 24 inch-pounds to provide a proper panel seal and avoid potential damage. Vartech Systems assumes no responsibility for water or chemical damage to the monitor or other equipment within the enclosure due to improper installation.

- 5- Attach the power, video and system cables to the bottom side of the enclosure if you have not already done so.



Panel Mount Drawing: Detail -A-

## Connections to the Panel Mount PC



**Bottom Rear View  
- Connector Panel -**

### **Power Connection (Power In)**

The Panel Mount PC includes an AC line cord which is 6ft long. The power input receptacle is located on the bottom rear panel of the system.

### **Serial Connections (COM1, 2,)**

The Panel Mount PC is supplied with three serial connectors. COM1-COM3 are configured for RS-232. The connectors are 9 pin female connectors and can be set up for any baud rate from 300 to 19.2 baud. The connector is located on the bottom panel of the system.

### **Ethernet Connections (LAN 1 &2)**

The Panel Mount PC is supplied with two integrated Ethernet connectors. The interface will support 10/100/1000 BaseT connection to a local area network (LAN). The Panel Mount PC is supplied with two RJ-45 female connectors located on the bottom panel of the system.

### **USB Connections (USB1-4)**

The Panel Mount PC is supplied with four USB 2.0 connectors located on the bottom front panel of the system.

### **VGA Port**

The 15-pin female VGA connector can be used to connect to any analog VGA monitor.

## Turning the system On and Off

Before connecting the Panel Mount PC to power, connect any peripheral devices. As a general rule, any peripheral device should only be connected or disconnected when the Panel Mount PC is off with the exception of any USB or 1394 peripheral.

The Panel Mount PC is turned on using the main On-Off rocket switch located on the bottom rear panel. Once the Panel Mount PC main switch is turned on the computer power pushbutton switch must be depressed for Windows to start. Windows must be properly shut down before the main power switch is turned off to prevent the chance of corrupting files in the operating system.

The Panel Mount PC is rated for continuous duty. However, to extend the life of the various components and conserve power, it is highly recommended that the system be properly shut down and power turned off when the Panel Mount PC is not in use.

## LCD Monitor Warm-up Time

All LCD monitors need time to become thermally stable the first time you turn them on. Therefore, to achieve more accurate adjustments for parameters, allow the LCD monitor to warm (be on) for at least 20 minutes before making any screen adjustments.

## Maintenance

The Panel Mount PC is designed to provide optimum service and performance with minimal maintenance including the occasional external cleaning. For cleaning the Panel Mount PC enclosure follow the suggested guidelines.

**General** – NEVER use abrasive cleaners or solvent-based cleaners!! Use a clean soft cloth. The Panel Mount PC should only be opened and serviced by a qualified technician. Keep the area around the Panel Mount PC clear and free of excessive dirt or other contaminants. Do not use water or any liquids on the Panel Mount PC.

**Disposal** – Once this product has reached the end of its lifecycle, check state and local ordinances for proper disposal or contact manufacturer.

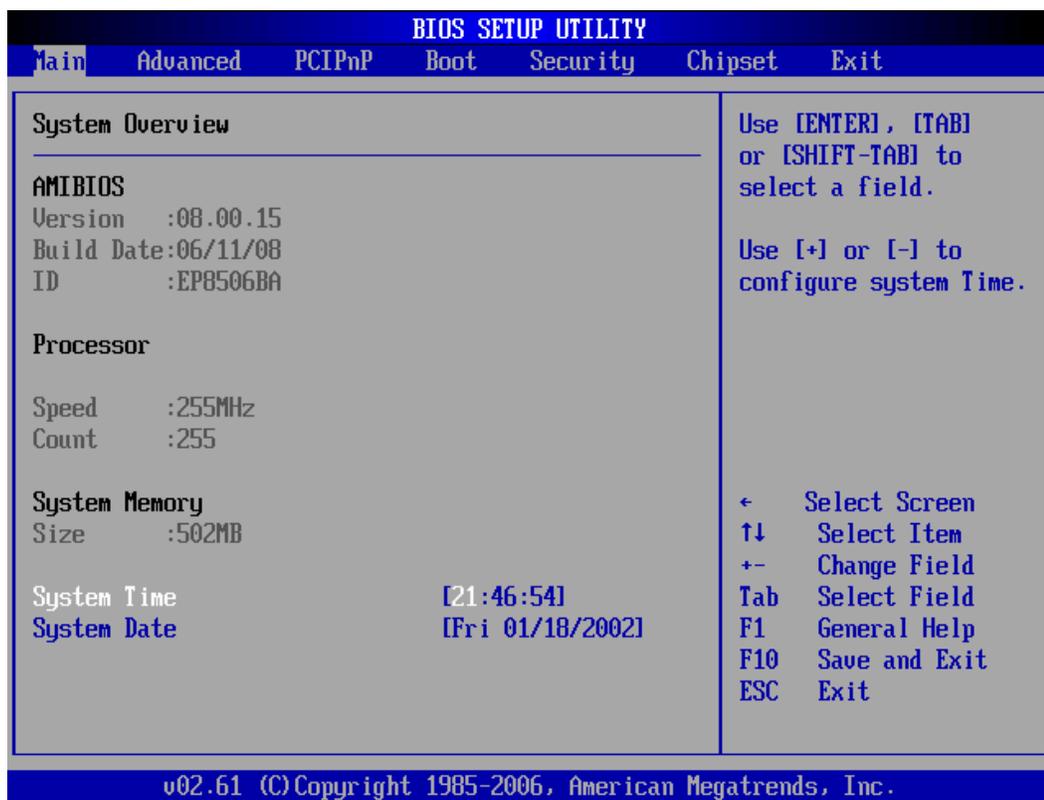
# AMI BIOS SETUP UTILITY

This chapter provides users with detailed description how to set up basic system configuration through the AMIBIOS8 BIOS setup utility.

## 1.1 Starting

To enter the setup screens, follow the steps below:

1. Turn on the computer and press the <Del> key immediately.
2. After you press the <Delete> key, the main BIOS setup menu displays. You can access the other setup screens from the main BIOS setup menu, such as the Chipset and Power menus.



## 1.2 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. These keys include <F1>, <F10>, <Enter>, <ESC>, <Arrow> keys, and so on.



**Note** Some of navigation keys differ from one screen to another.

## 1.3 Main Menu

When you first enter the Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup screen is shown below.

BIOS SETUP UTILITY						
Main	Advanced	PCIPnP	Boot	Security	Chipset	Exit
<b>System Overview</b>		Use [ENTER], [TAB] or [SHIFT-TAB] to select a field.				
<b>AMIBIOS</b>		Use [+] or [-] to configure system Time.				
Version	:08.00.15					
Build Date	:06/11/08					
ID	:EP8506BA					
<b>Processor</b>						
Speed	:255MHz					
Count	:255					
<b>System Memory</b>		← Select Screen				
Size	:502MB	↑↓ Select Item				
<b>System Time</b>		+− Change Field				
[21:46:54]		Tab Select Field				
<b>System Date</b>		F1 General Help				
[Fri 01/18/2002]		F10 Save and Exit				
		ESC Exit				
v02.61 (C) Copyright 1985-2006, American Megatrends, Inc.						

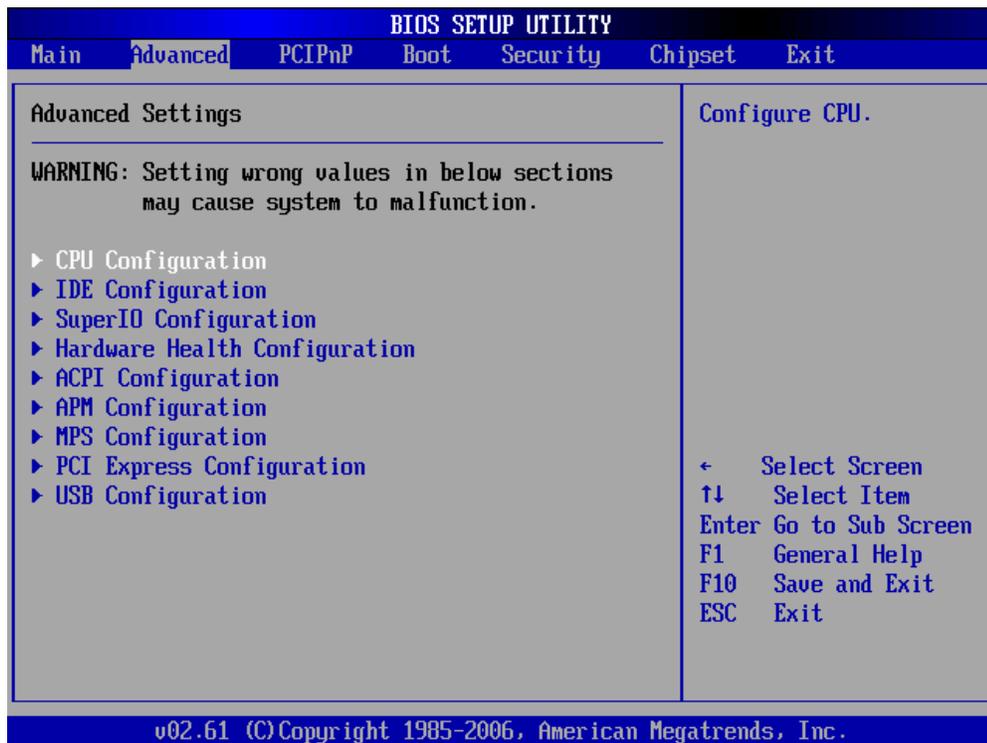
### System Time/Date

Use this option to change the system time and date. Highlight *System Time* or *System Date* using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time is entered in HH:MM:SS format.

## 1.4 Advanced Menu

The Advanced menu allows users to set configuration of the CPU and other system devices. You can select any of the items in the left frame of the screen to go to the sub menus:

- CPU Configuration
- IDE Configuration
- SuperIO Configuration
- Hardware Health Configuration
- ACPI Configuration
- APM Configuration
- MPS Configuration
- PCI Express Configuration
- USB Configuration



## CPU Configuration

This screen shows the CPU Configuration, and you can change the value of the selected option.



### Max CPUID Value Limit

You can enable this item to let legacy operating systems boot even without support for CPUs with extended CPU ID functions.

### Execute-Disable Bit Capability

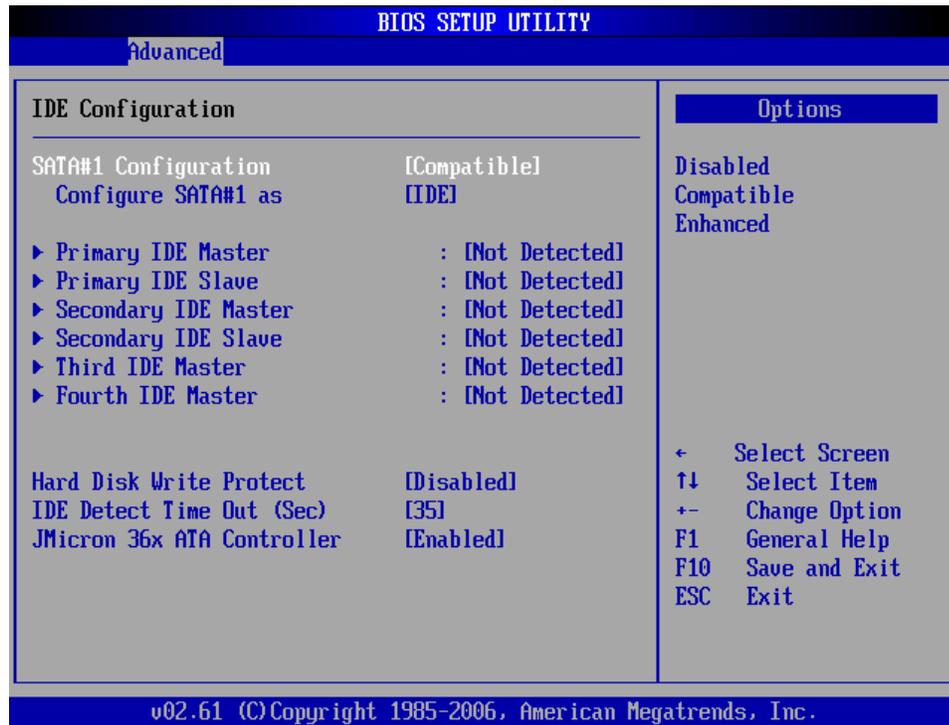
This item helps you enable or disable the No-Execution Page Protection Technology.

### Intel (R) SpeedStep (tm) tech

This item helps you enable or disable the Intel SpeedStep Technology.

## IDE Configuration

You can use this screen to select options for the IDE Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.



### Primary/Secondary/Third IDE Master/Slave

Select one of the hard disk drives to configure IDE devices installed in the system by pressing <Enter> for more options.

### Hard Disk Write Protect

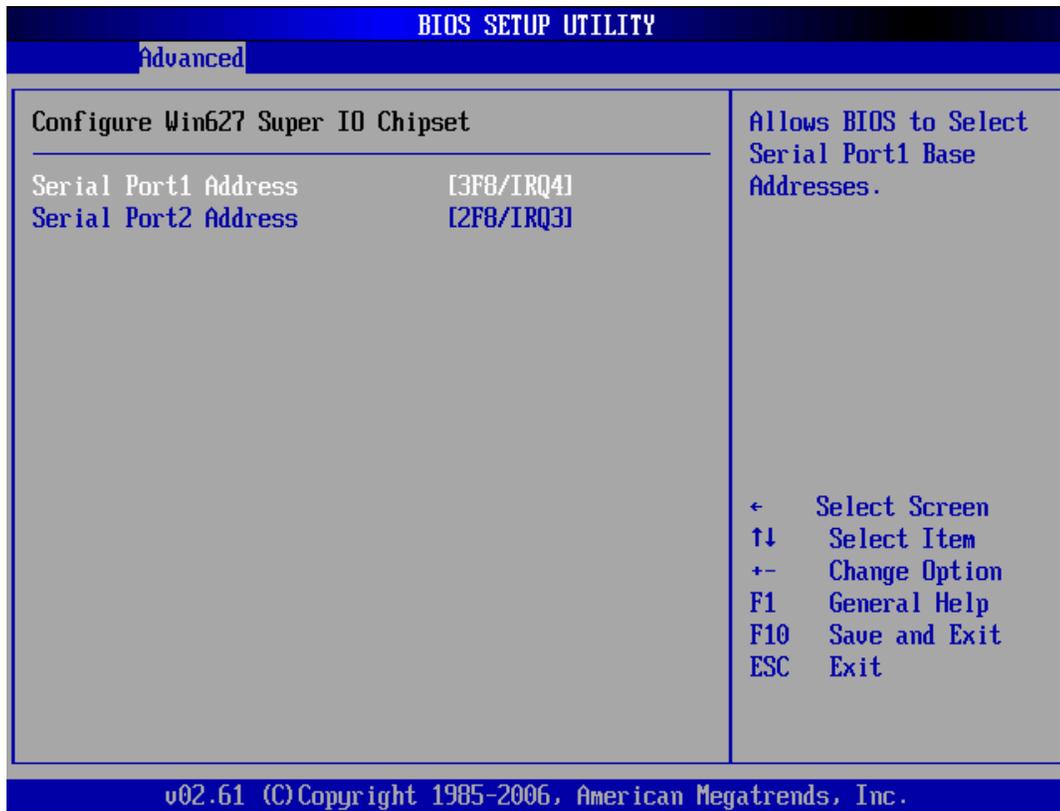
Set this option to protect the hard disk drive from being overwritten. The default setting is *Disabled*.

### IDE Detect Time Out (Sec)

Set this option to stop the AMIBIOS from searching for IDE devices within the specified number of seconds. Basically, this allows you to fine-tune the settings to allow for faster boot times. Adjust this setting until a suitable timing that can detect all IDE disk drives attached is found.

## SuperIO Configuration

You can use this screen to select options for the SuperIO Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.



### Serial Port1 Address

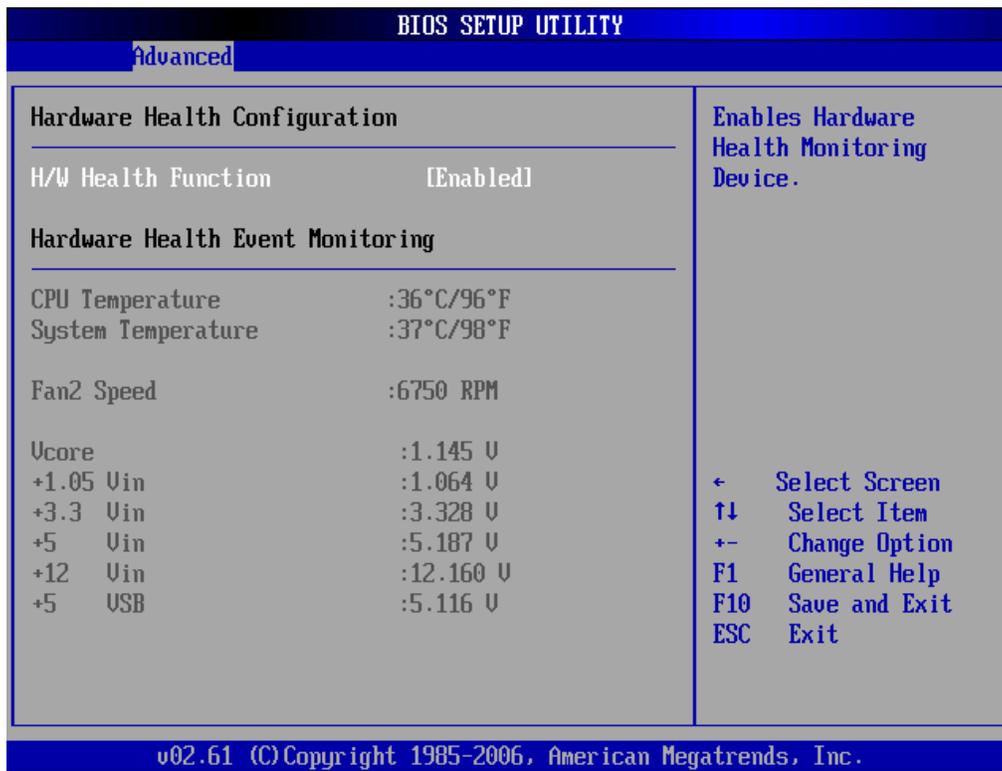
This option specifies the base I/O port address and Interrupt Request address of serial port 1. The Optimal setting is *3F8/IRQ4*. The Fail-Safe default setting is *Disabled*.

### Serial Port2 Address

This option specifies the base I/O port address and Interrupt Request address of serial port 2. The Optimal setting is *2F8/IRQ3*. The Fail-Safe setting is *Disabled*.

## Hardware Health Configuration

This screen shows the Hardware Health Configuration, and a description of the selected item appears on the right side of the screen.

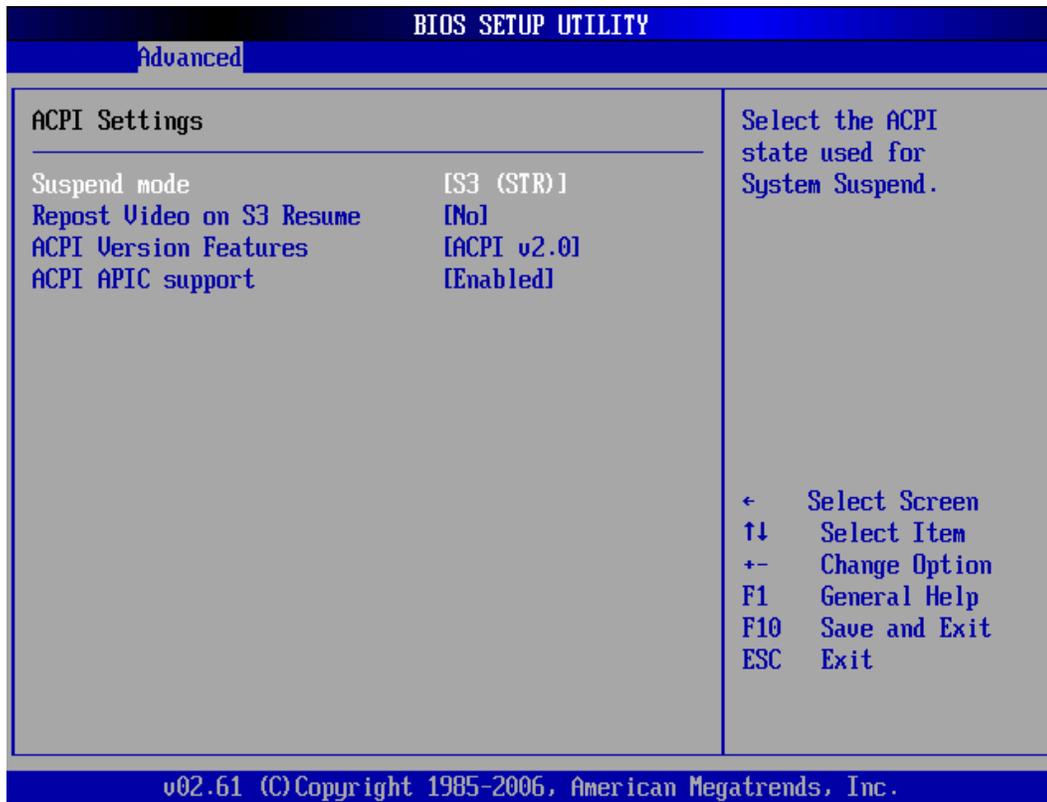


### H/W Health Function

You can select this item *Enabled* for the Hardware Health Monitoring Device. The Hardware Health Event Monitoring displays the temperature of CPU and System, Fan Speed, Vcore, etc.

## ACPI Configuration

You can use this screen to select options for the ACPI Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.



### Suspend Mode

This item selects the Advanced Configuration and Power Interface (ACPI) state for system suspend.

### Repost Video on S3 Resume

Set this value to allow video repost support. The default setting is Yes.

### ACPI Version Features

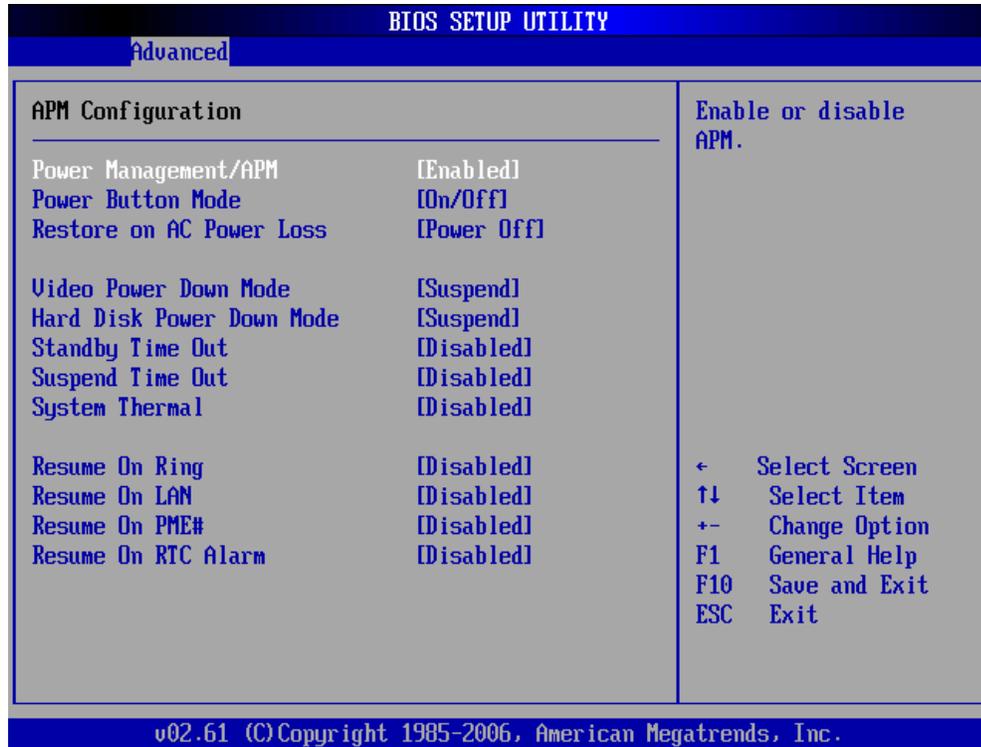
Use this item to set the system to be compliant with the ACPI 2.0 specification.

### ACPI APIC support

This item allows you to enable or disable the Advanced Configuration and Power Interface (ACPI) support in the Application-Specific Integrated Circuit (APIC). Enabling this item makes the RSDT pointer list include the ACPI APIC table pointer.

## APM Configuration

You can use this screen to select options for the APM Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.



### Power Management/APM

Set this value to allow Power Management/APM support. The default setting is *Enabled*.

<b>Disabled</b>	Set this value to prevent the chipset power management and APM (Advanced Power Management) features.
<b>Enabled</b>	Set this value to allow the chipset power management and APM (Advanced Power Management) features. This is the default setting.

### Power Button Mode

This option specifies how the externally mounted power button on the front of the computer chassis is used. The default setting is *On/Off*.

<b>On/Off</b>	Pushing the power button turns the computer on or off. This is the default setting. This is the default setting.
<b>Standby</b>	Pushing the power button places the computer in Standby mode.
<b>Suspend</b>	Pushing the power button places the computer in Suspend mode or Full On power mode.

### Restore on AC Power Loss

There are three selections available: *Power Off*, *Power On* and *Last State*. When the setting is *Power Off*, the system goes into off state after an AC power loss; when *Power On*, the system goes on after an AC power loss. When the setting is *Last State*, the system goes into either off or on state, whatever the system state was before the AC power loss.

### Video Power Down Mode

This option specifies the Power State that the video subsystem enters when the BIOS places it in a power saving state after the specified period of display inactivity has expired. The default setting is *Suspend*.

<b>Disabled</b>	This setting prevents the BIOS from initiating any power saving modes concerned with the video display or monitor.
<b>Standby</b>	This option places the monitor into standby mode after the specified period of display inactivity has expired. This means the monitor is not off. The screen will appear blacked out. The standards do not cite specific power ratings because they vary from monitor to monitor.
<b>Suspend</b>	This option places the monitor into suspend mode after the specified period of display inactivity has expired. This means the monitor is not off. The screen will appear blacked out. The standards do not cite specific power ratings because they vary from monitor to monitor, but this setting use less power than Standby mode. This is the default setting.

### Hard Disk Drive Power Down Mode

This option specifies the power conserving state that the hard disk drive enters after the specified period of hard drive inactivity has expired. The default setting is *Suspend*.

<b>Disabled</b>	This setting prevents hard disk drive power down mode.
<b>Standby</b>	This option stops the hard disk drives from spinning during a system standby.
<b>Suspend</b>	This option cuts the power to the hard disk drives during a system suspend. This is the default setting.

### Standby Time Out

This option specifies the length of time the system waits before it enters standby mode. The default setting is *Disabled*.

<b>Disabled</b>	Set this value to prevent the computer system from entering standby mode. This is the default setting.
<b>1 Min</b>	Set this value to allow the computer system to enter standby mode after being inactive for 1 minute.
<b>5 Min</b>	Set this value to allow the computer system to enter standby mode after being inactive for 5 minutes.
<b>10 Min</b>	Set this value to allow the computer system to enter standby mode after being inactive for 10 minutes.

### Suspend Time Out (Minute)

This option specifies the length of time the system waits before it enters suspend mode. The default setting is *Disabled*.

<b>Disabled</b>	This setting prevents the system from entering suspend mode. This is the default setting.
<b>1 Min</b>	Set this value to allow the computer system to enter suspend mode after being inactive for 1 minute.
<b>5 Min</b>	Set this value to allow the computer system to enter suspend mode after being inactive for 5 minutes.
<b>10 Min</b>	Set this value to allow the computer system to enter suspend mode after being inactive for 10 minutes.

### Resume On Ring

This item enables or disables the function of Resume On Ring, this resumes the system through incoming calls.

### Resume On LAN

This item enables or disables the function of Resume On LAN, this resumes the system through the network.

### Resume On PME#

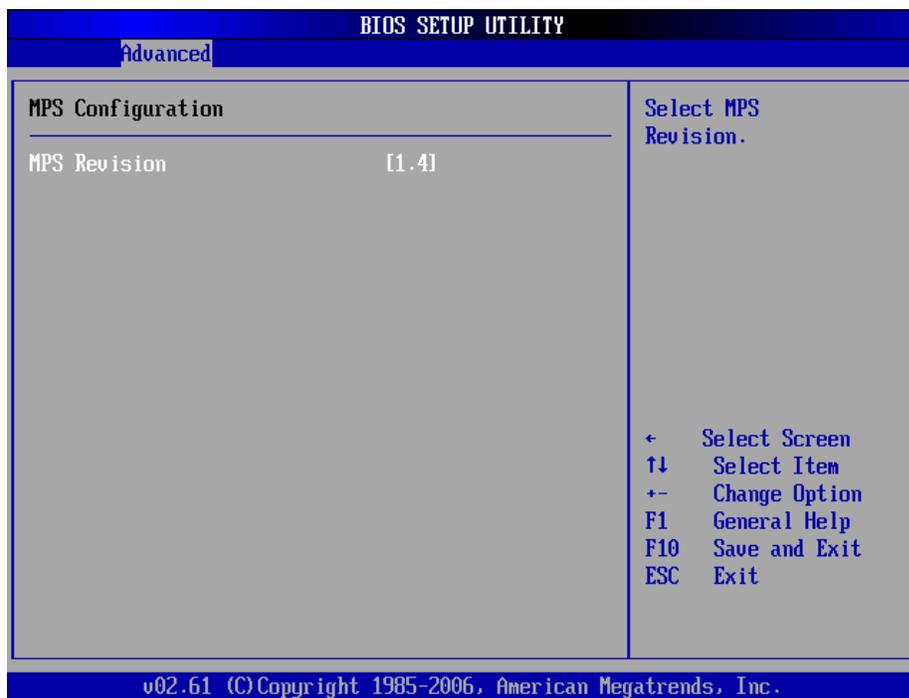
This item enables or disables the function of Resume On PME# (Power Management Event). Enabling this item allows the system to resume from standby mode.

### Resume On RTC Alarm

You can set "Resume On RTC Alarm" item to enabled and key in Data/time to power on system.

## MPS Configuration

This screen shows the MPS (Multi Processor Specification) Configuration, and you can change its value. A description of the selected item appears on the right side of the screen.

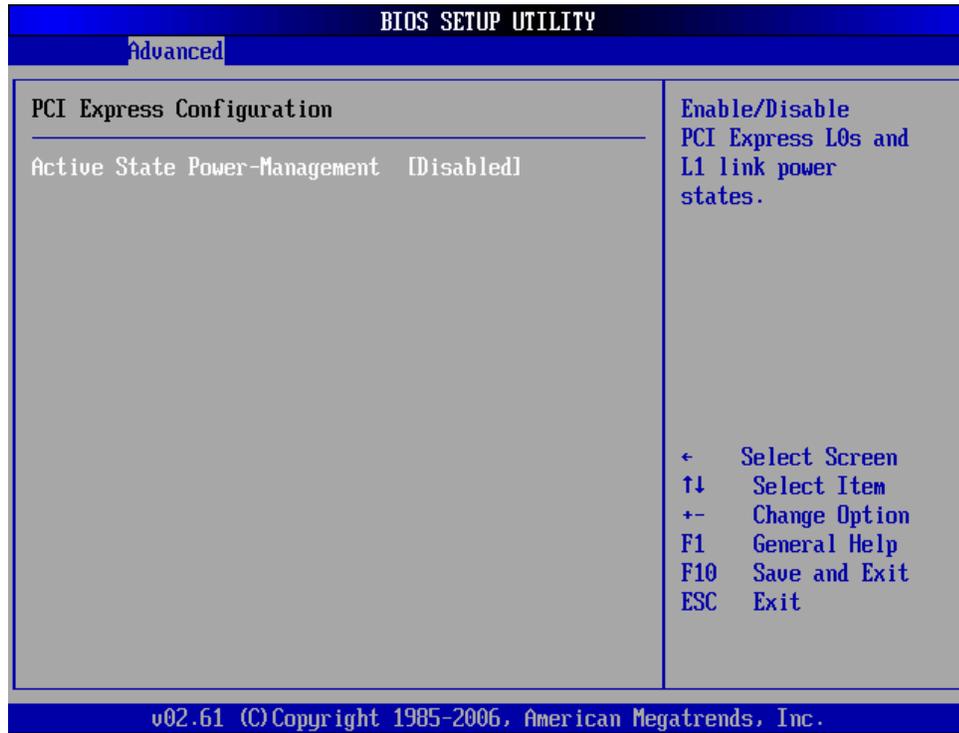


### MPS Revision

Use this item to select MPS (Multi Processor Specification) Revision 1.1 or 1.4. The default setting is 1.4.

### PCI Express Configuration

This screen shows the PCI Express Configuration, and you can change its value. A description of the selected item appears on the right side of the screen.

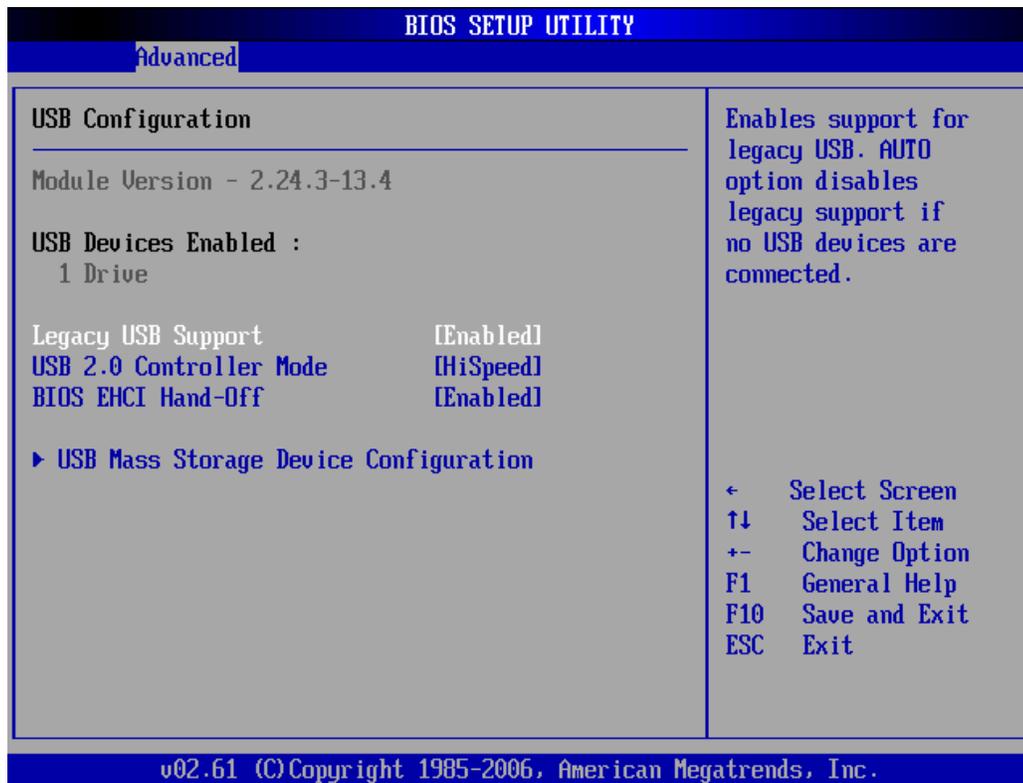


### Active State Power-Management

Use this item to enable or disable the function of Active State Power-Management to provide you with lower power consumption. The default setting is *Disabled*.

## USB Configuration

You can use this screen to select options for the USB Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.



### Legacy USB Support

Use this item to enable or disable support for USB device on legacy operating system. The default setting is *Enabled*.

### USB 2.0 Controller Mode

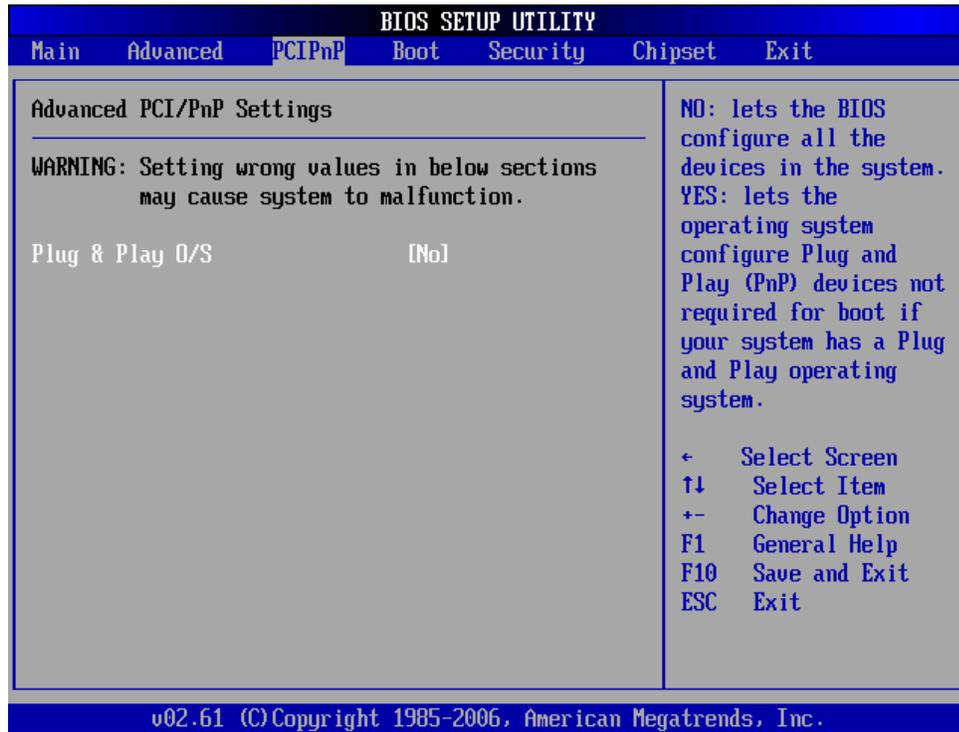
Use this item to configure the USB 2.0 controller. The default setting is *HiSpeed*.

### BIOS EHCI Hand-Off

Enabling this item provide the support for operating systems without an EHCI hand-off feature. The default setting is *Enabled*.

## 1.5 PCI PnP Menu

The PCI PnP menu allows users to change the advanced settings for PCI/PnP devices



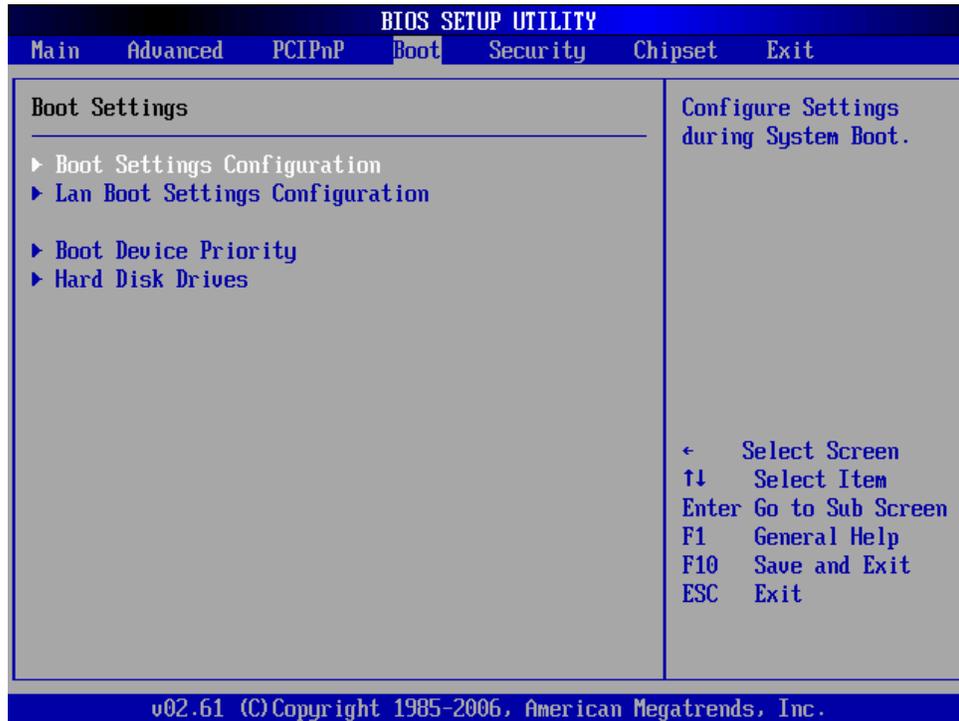
### Plug & Play O/S

When the setting is No, Use this item to configure all the devices in the system. When the setting is Yes and if you install a Plug and Play operating system, the operating system configures the Plug and Play devices not required for boot. The default setting is *No*.

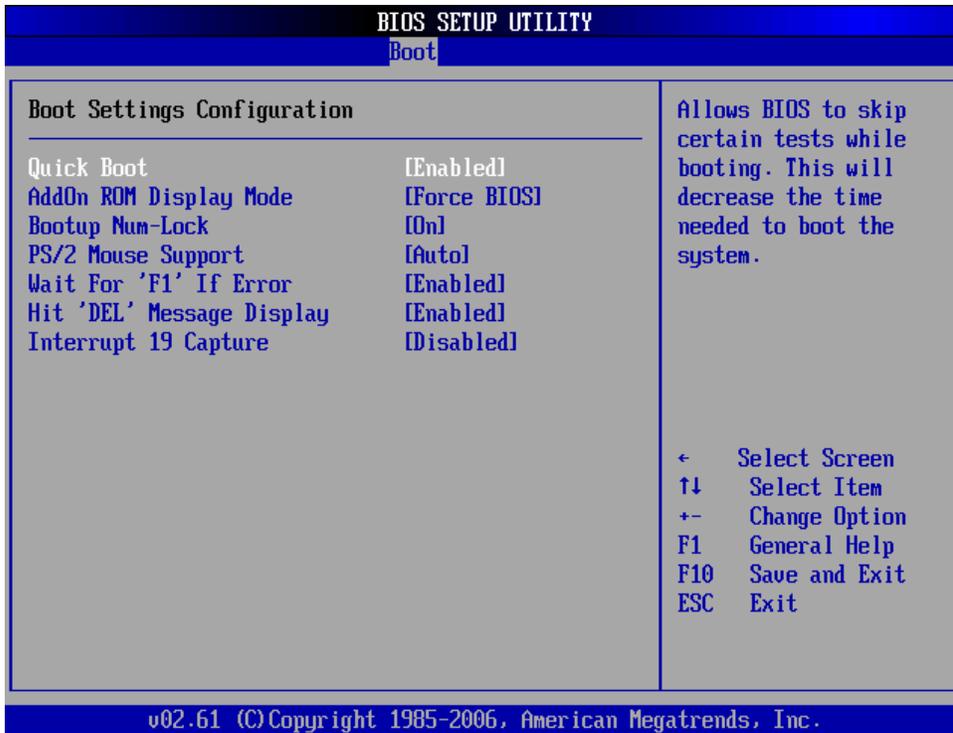
## 1.6 Boot Menu

The Boot menu allows users to change boot options of the system. You can select any of the items in the left frame of the screen to go to the sub menus:

- Boot Settings Configuration
- LAN Boot Settings Configuration
- Boot Device Priority
- Hard Disk Drives



## Boot Settings Configuration



### Quick Boot

Enabling this item lets the BIOS skip some power on self tests (POST). The default setting is *Enabled*.

### AddOn ROM Display Mode

This item selects the display mode for option ROM. The default setting is *Force BIOS*.

### Boot Num-Lock

Use this item to select the power-on state for the NumLock. The default setting is *On*.

### Wait For 'F1' Of Error

If this item is enabled, the system waits for the F1 key to be pressed when error occurs. The default setting is *Enabled*.

### Hit 'DEL' Message Display

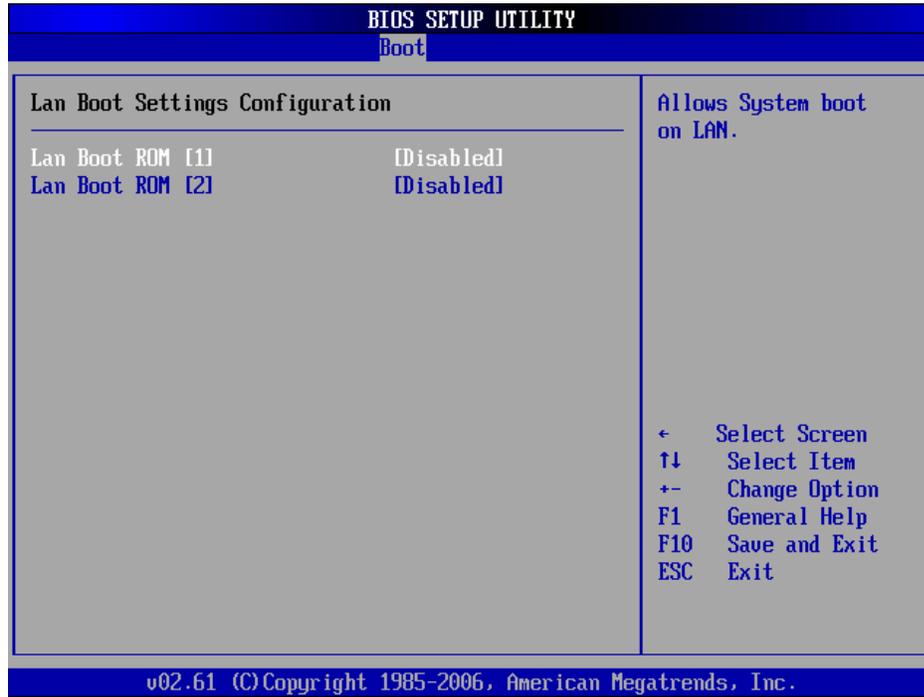
If this item is enabled, the system displays the message "Press DEL to run Setup" during POST. The default setting is *Enabled*.

### Interrupt 19 Capture

If this item is enabled, this function makes the option ROMs to trap Interrupt 19. The default setting is *Disabled*.

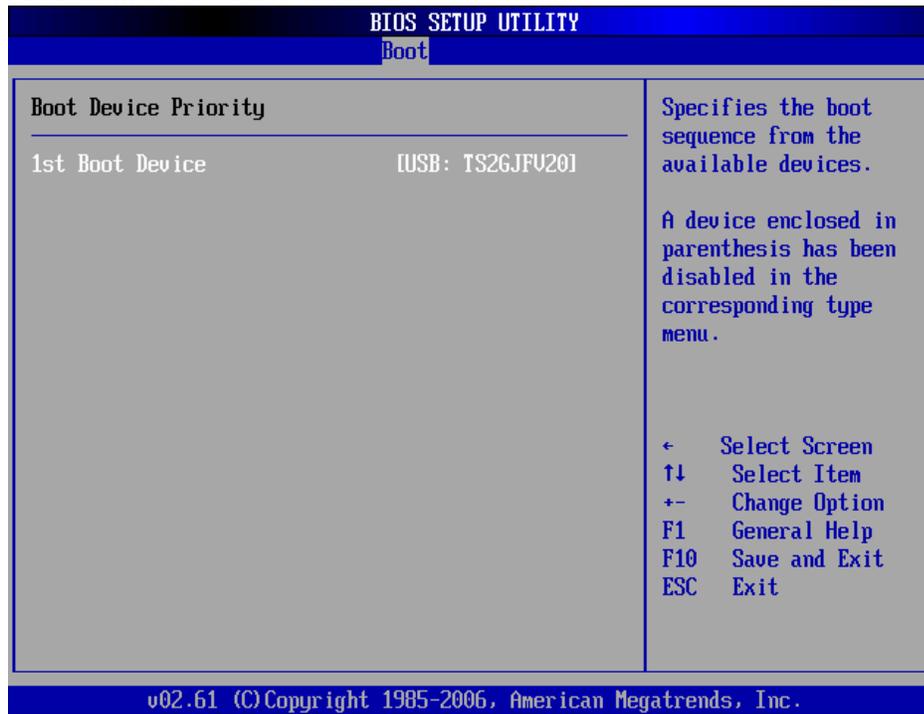
### LAN Boot Settings Configuration

The LAN Boot Settings Configuration can enable or disable LAN Boot ROM [1] or ROM [2] to allow the system boot on LAN.



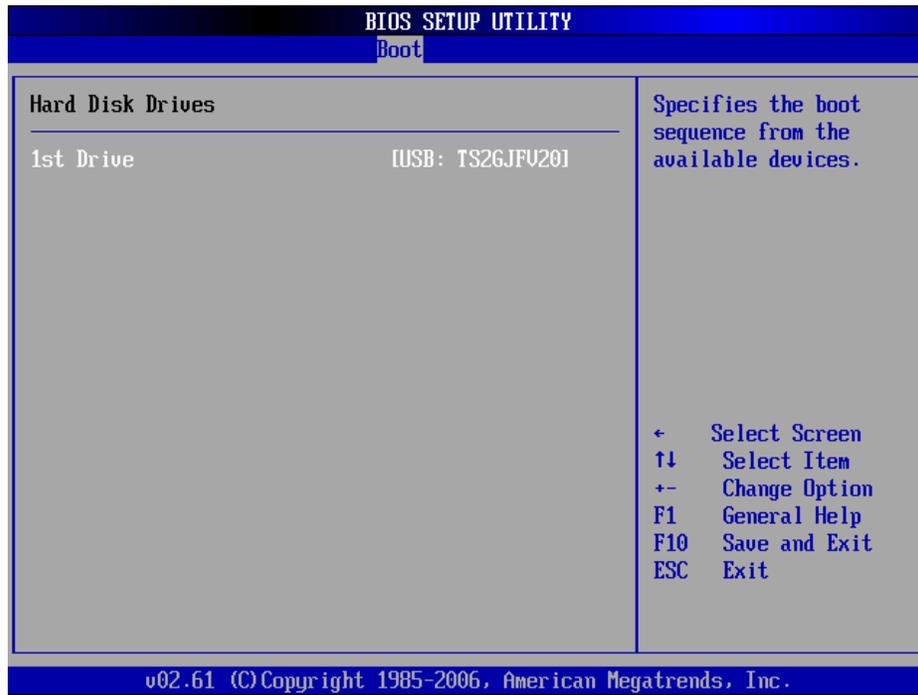
### Boot Device Priority

The Boot Device Priority screen specifies the order in which the system checks for the device to boot from the available devices.



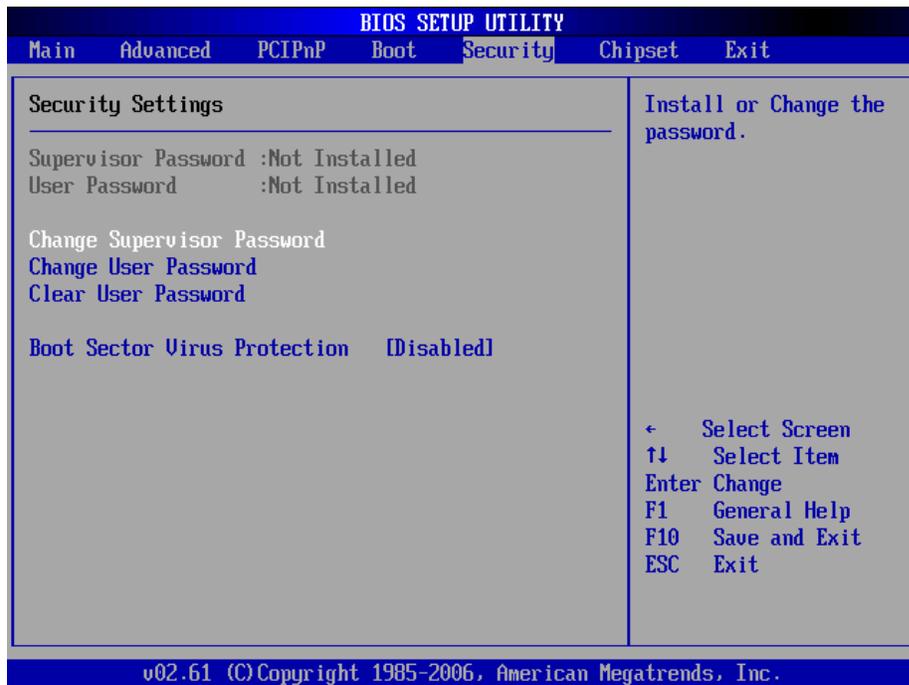
## Hard Disk Drives

Use this screen to view the hard disk drives in the system.



## 1.7 Security Menu

The Security menu allows users to change the security settings for the system.



### Supervisor Password

This item indicates whether a supervisor password has been set. If the password has been installed, Installed displays. If not, Not Installed displays.

### User Password

This item indicates whether a user password has been set. If the password has been installed, Installed displays. If not, Not Installed displays.

### Change Supervisor Password

Select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

### Change User Password

Select this option and press <Enter> to access the sub menu. You can use the sub menu to change the user password.

**Clear User Password**

Select this option and press <Enter> to access the sub menu. You can use the sub menu to clear the user password.

**Boot Sector Virus Protection**

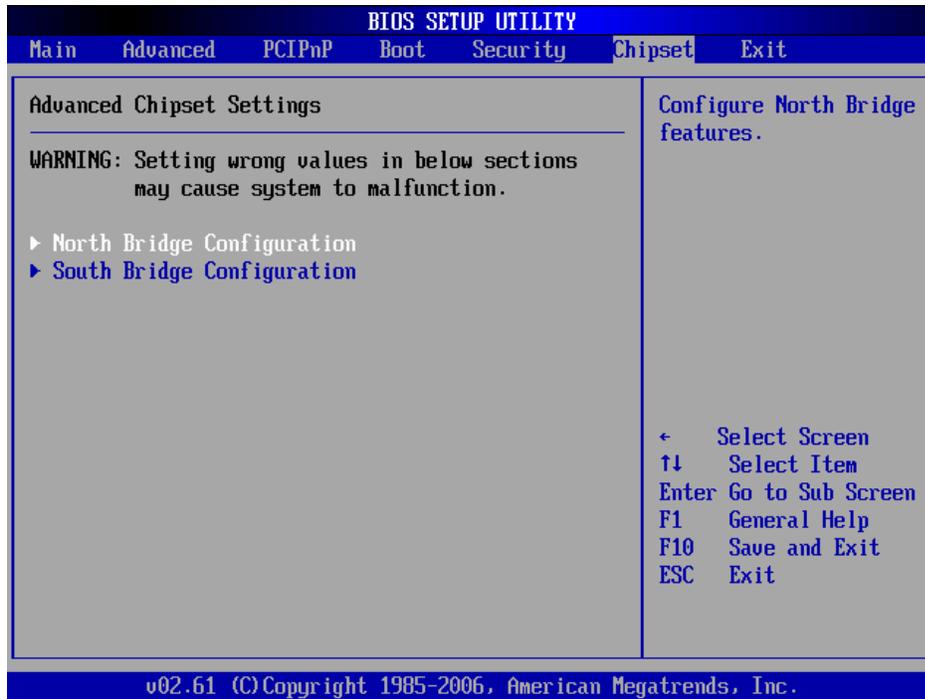
This option is near the bottom of the Security Setup screen. The default setting is *Disabled*

<b>Disabled</b>	Set this value to prevent the Boot Sector Virus Protection. This is the default setting.
<b>Enabled</b>	Select Enabled to enable boot sector protection. It displays a warning when any program (or virus) issues a Disk Format command or attempts to write to the boot sector of the hard disk drive. If enabled, the following appears when a write is attempted to the boot sector. You may have to type N several times to prevent the boot sector write. Boot Sector Write! Possible VIRUS: Continue (Y/N)? _ The following appears after any attempt to format any cylinder, head, or sector of any hard disk drive via the BIOS INT 13 Hard disk drive Service: Format!!! Possible VIRUS: Continue (Y/N)?

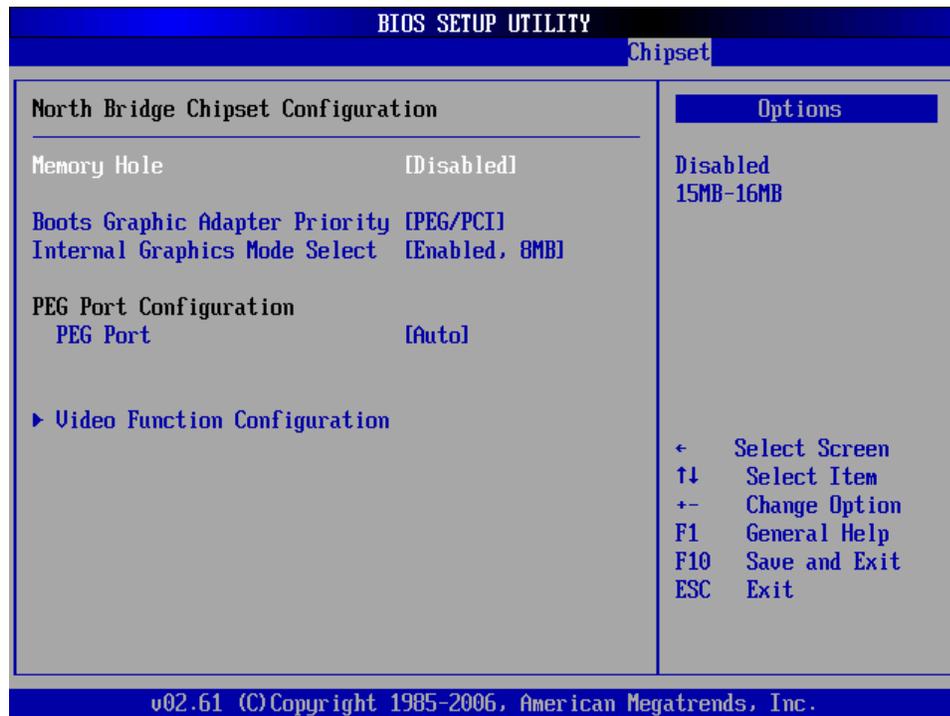
## 1.8 Chipset Menu

The Chipset menu allows users to change the advanced chipset settings. You can select any of the items in the left frame of the screen to go to the sub menus:

- North Bridge Configuration
- South Bridge Configuration



## North Bridge Configuration



### **Boot Graphic Adapter Priority**

This item allows you to select the graphics controller as the primary boot device.

### **Internal Graphics Mode Select**

This item allows you to select the amount of system memory used by the internal graphics device.

### **PEG Port**

This item allows you to disable or enable PEG port control.

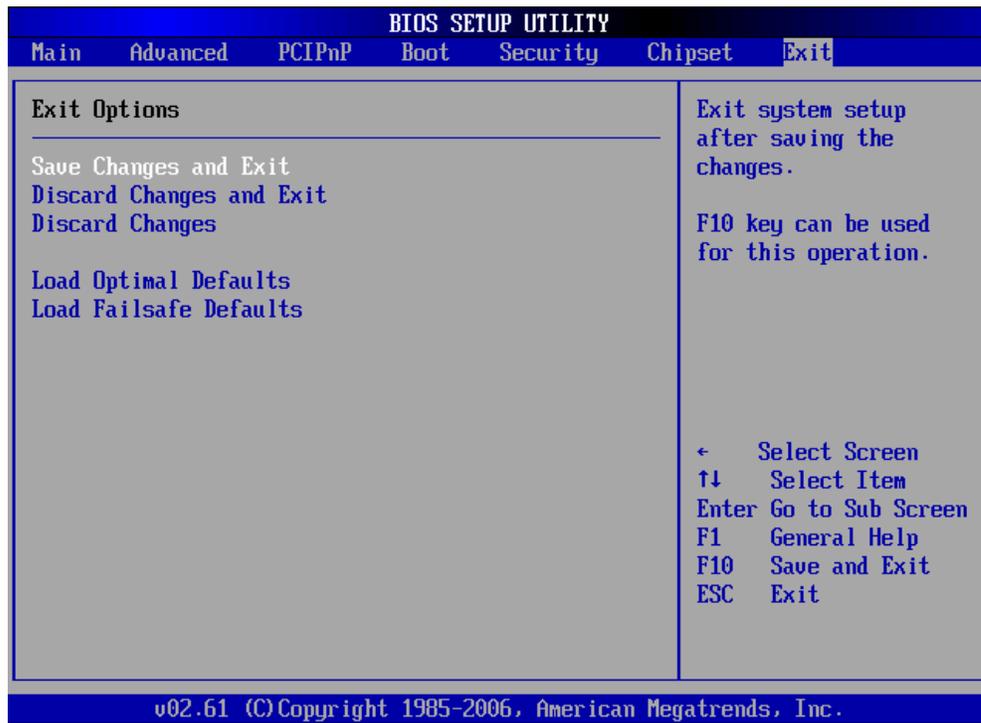
## South Bridge Configuration



**USB Function/USB 2.0 Controller/HAD Controller** These items, respectively, allow you to enable or disable USB/USB 2.0/HAD function/controller.

## 1.9 Exit Menu

The Exit menu allows users to load your system configuration with optimal or failsafe default values.



### Exit Saving Changes

When you have completed the system configuration changes, select this option to leave Setup and reboot the computer so the new system configuration parameters can take effect. Select Exit Saving Changes from the Exit menu and press <Enter>. Select Ok to save changes and exit.

### Exit Discarding Changes

Select this option to quit Setup without making any permanent changes to the system configuration. Select Exit Discarding Changes from the Exit menu and press <Enter>. Select Ok to discard changes and exit.

### Load Optimal Defaults

It automatically sets all Setup options to a complete set of default settings when you select this option. The Optimal settings are designed for maximum system performance, but may not work best for all computer applications. In particular, do not use the Optimal Setup options if your computer is experiencing system configuration problems. Select Load Optimal Defaults from the Exit menu and press <Enter>. Select Ok to load Optimal Settings.

### Load Fail-Safe Defaults

It automatically sets all Setup options to a complete set of default settings when you select this option. The Fail-Safe settings are designed for maximum system stability, but not maximum performance. Select the Fail-Safe Setup options if your computer is experiencing system configuration problems. Select Load Fail-Safe Defaults from the Exit menu and press <Enter>. Select Ok to load Fail-Safe defaults.

## Watchdog Timer Setting

After the system stops working for a while, it can be auto-reset by the Watchdog Timer. The integrated Watchdog Timer can be set up in the system reset mode by program.

Timeout Value Range

1 to 255

Minute / Second

Program Sample

Watchdog Timer can be set to system reset after 5-second timeout.

2E, 87	
2E, 87	
2E, 07	
2F, 00	Logical Device 0
2E, 2B	Set WDT Function Enable
2F, 00	
2E, 07	
2F, 08	Logical Device 8
2E, 30	Activate
2F, 01	
2E, F3	Set Second
2F, N	N = 0 or 4
2E, F4	Set Value
2F, M	M = 00 ~ FF

## Using the Watchdog Function

Start

↓

Un-Lock WDT:           O 2E 87 ; Un-lock super I/O  
                              O 2E 87 ; Un-lock super I/O

↓

Select Logic device:   O 2E 07  
                              O 2F 00

↓

Set WDT Function:     O 2E 2B  
                              O 2F C0

↓

Select Logic device:   O 2E 07  
                              O 2F 08

↓

Activate WDT:         O 2E 30  
                              O 2F 01

↓

Set Second or Minute: O 2E F5  
                              O 2F N        N=00 or 08(See below table)

↓

Set base timer:        O 2E F6  
                              O 2F M=00 01,02,...FF(Hex) ,Value=0 to 255

↓

WDT counting

↓

Reset timer:           O 2E F4  
                              O 2F M ; M=00,01,02,...FF(See below table)

↓

IF No reset timer: WDT time-out, generate RESET

IF to disable WDT:    O 2E 30  
                              O 2F 00 ; Can be disable at any time

M	N=0	M	N=0	M	N=0	M	N=8
02	1sec	33	50sec	B5	180sec	11	992sec
03	2sec	38	55sec	BF	190sec	22	2012sec
04	3sec	3D	60sec	C9	200sec	33	3032sec
05	4sec	42	65sec	D3	210sec	43	3992sec
06	5sec	47	70sec	DD	220sec	54	5012sec
07	6sec	4C	75sec	E7	230sec	65	6032sec
08	7sec	51	80sec	F1	240sec	75	6992sec
09	8sec	56	85sec	FB	250sec	86	8012sec
M	N=0	M	N=0	M	N=8	M	N=8
0B	10sec	65	100sec	05	272sec	97	9032sec
10	15sec	6F	110sec	06	332sec	A7	9992sec
15	20sec	79	120sec	07	392sec	B8	11012sec
1A	25sec	83	130sec	08	452sec	C9	12032sec
1F	30sec	8D	140sec	09	512sec	D9	12992sec
24	35sec	97	150sec	0A	572sec	EA	14012sec
29	40sec	A1	160sec	0B	632sec	FB	15032sec
2E	45sec	AB	170sec	0C	692sec		

For Additional Assistance  
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