

This chapter tells how to change the system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

BIOS setup



Chapter summary

4.1	Managing and updating your BIOS	4-1
4.2	BIOS setup program	4-11
4.3	Main menu	4-15
4.4	Advanced menu	4-18
4.5	Power menu	4-33
4.6	Boot menu	4-37
4.7	Exit menu	4-44

4.1 Managing and updating your BIOS

The following utilities allow you to manage and update the motherboard Basic Input/Output System (BIOS) setup.

1. **AwardBIOS Flash Utility** (Updates the BIOS in DOS mode using a bootable floppy disk.)
2. **ASUS CrashFree BIOS 2** (Updates the BIOS using a bootable floppy disk or the motherboard support CD when the BIOS file fails or gets corrupted.)
3. **ASUS EZ Flash** (Updates the BIOS in DOS using a floppy disk or the motherboard support CD.)
4. **ASUS Update** (Updates the BIOS in Windows® environment.)

Refer to the corresponding sections for details on these utilities.



Save a copy of the original motherboard BIOS file to a bootable floppy disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update or AwardBIOS Flash utilities.

4.1.1 Creating a bootable floppy disk

1. Do either one of the following to create a bootable floppy disk.

DOS environment

- a. Insert a 1.44MB floppy disk into the drive.
- b. At the DOS prompt, type `format A:/S` then press <Enter>.

Windows® XP environment

- a. Insert a 1.44 MB floppy disk to the floppy disk drive.
- b. Click **Start** from the Windows® desktop, then select **My Computer**.
- c. Select the 3 1/2 Floppy Drive icon.
- d. Click **File** from the menu, then select **Format**. A **Format 3 1/2 Floppy Disk** window appears.
- e. Select **Create an MS-DOS startup disk** from the format options field, then click **Start**.

Windows® 2000 environment

To create a set of boot disks for Windows® 2000:

- a. Insert a formatted, high density 1.44 MB floppy disk into the drive.
- b. Insert the Windows® 2000 CD to the optical drive.

- c. Click **Start**, then select **Run**.
 - d. From the Open field, type
`D:\bootdisk\makeboot a:`
assuming that D: is your optical drive.
 - e. Press <Enter>, then follow screen instructions to continue.
2. Copy the original or the latest motherboard BIOS file to the bootable floppy disk.

4.1.2 Updating the BIOS

The Basic Input/Output System (BIOS) can be updated using the AwardBIOS Flash Utility. Follow these instructions to update the BIOS using this utility.

1. Download the latest BIOS file from the ASUS web site. Rename the file to **A8V-E.BIN** and save it to a floppy disk.



Save only the updated BIOS file in the floppy disk to avoid loading the wrong BIOS file.

2. Copy the AwardBIOS Flash Utility (awdflash.exe) from the Software folder of the support CD to the floppy disk with the latest BIOS file.
3. Boot the system in DOS mode using the bootable floppy disk you created earlier.
4. When the **A:>** appears, replace the bootable floppy disk with the floppy disk containing the new BIOS file and the Award BIOS Flash Utility.
5. At the prompt, type **awdflash** then press <Enter>. The Award BIOS Flash Utility screen appears.

```
AwardBIOS Flash Utility for ASUS V1.01
(C) Phoenix Technologies Ltd. All Rights Reserved

For K8T890-8237-A8V-E-00      DATE: 09/10/2004
Flash Type - PMC Pm49FL004T LPC/FWH

File Name to Program: 

Message: Please input File Name!
```

6. Type the BIOS file name in the **File Name to Program** field, then press <Enter>.

```
AwardBIOS Flash Utility for ASUS V1.01
(C) Phoenix Technologies Ltd. All Rights Reserved

For K8T890-8237-A8V-E-00      DATE: 09/10/2004
Flash Type - PMC Pm49FL004T LPC/FWH

File Name to Program: A8V-E.BIN

Message: Do You Want To Save Bios (Y/N)
```

7. Press <N> when the utility prompts you to save the current BIOS file. The following screen appears.
8. The utility verifies the BIOS file in the floppy disk and starts flashing the BIOS file.

```
AwardBIOS Flash Utility for ASUS V1.01
(C) Phoenix Technologies Ltd. All Rights Reserved

For K8T890-8237-A8V-E-00      DATE: 09/10/2004
Flash Type - PMC Pm49FL004T LPC/FWH

File Name to Program: A8V-E.BIN

Program Flashing Memory - OFE00 OK

Write OK   No Update   Write Fail

Warning: Don't Turn Off Power Or Reset System!
```



Do not turn off or reset the system during the flashing process!

9. The utility displays a **Flashing Complete** message indicating that you have successfully flashed the BIOS file. Press <F1> to restart the system.

```
AwardBIOS Flash Utility for ASUS V1.01
(C) Phoenix Technologies Ltd. All Rights Reserved

For K8T890-8237-A8V-E-00      DATE: 09/10/2004
Flash Type - PMC Pm49FL004T LPC/FWH

File Name to Program: A8V-E.BIN

Flashing Complete
Press <F1> to Continue

Write OK   No Update   Write Fail

F1 Reset
```

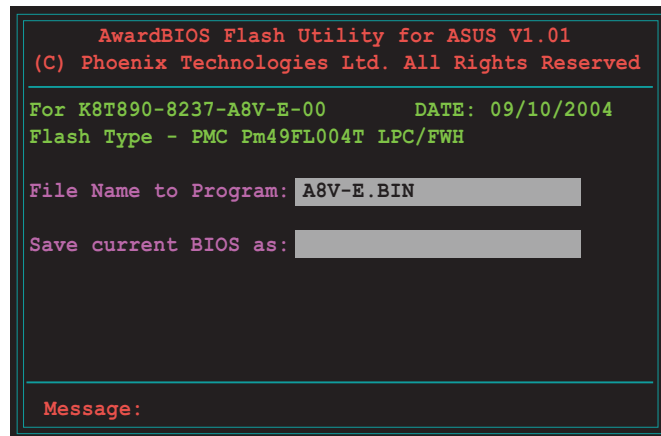
4.1.3 Saving the current BIOS file

You can use the AwardBIOS Flash Utility to save the current BIOS file. You can load the current BIOS file when the BIOS file gets corrupted during the flashing process.

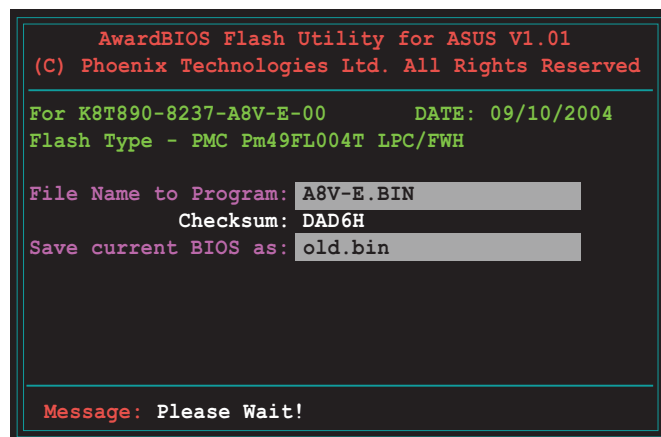
To save the current BIOS file using the AwardBIOS Flash Utility:

1. Follow steps 1 to 6 of the previous section.

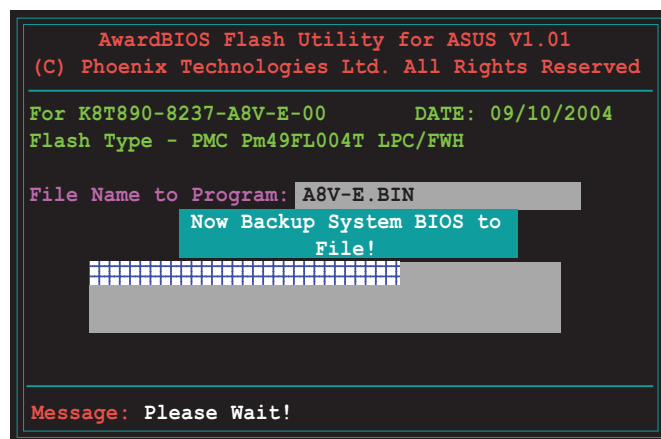
2. Press <Y> when the utility prompts you to save the current BIOS file. The following screen appears.



3. Type a filename for the current BIOS file in the **Save current BIOS as** field, then press <Enter>.



4. The utility saves the current BIOS file to the floppy disk, then returns to the BIOS flashing process.



4.1.4 ASUS CrashFree BIOS 2 utility

The ASUS CrashFree BIOS 2 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can update a corrupted BIOS file using the motherboard support CD or the floppy disk that contains the updated BIOS file.



Prepare the motherboard support CD or the floppy disk containing the updated motherboard BIOS before using this utility.

Recovering the BIOS from the support CD

To recover the BIOS from the support CD:

1. Turn on the system.
2. Insert the motherboard support CD to the optical drive.
3. The utility displays the following message and automatically checks the CD for the BIOS file.

```
Award BootBlock BIOS v1.0
Copyright (c) 2000, Award Software, Inc.

BIOS ROM checksum error
Detecting IDE ATAPI device...
```

When found, the utility reads the BIOS file and starts flashing the corrupted BIOS file.

```
Award BootBlock BIOS v1.0
Copyright (c) 2000, Award Software, Inc.

BIOS ROM checksum error
Detecting IDE ATAPI device...
Found CDRom, try to Boot from it... Pass
```



DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

4. Restart the system after the utility completes the updating process.

Recovering the BIOS from a floppy disk

To recover the BIOS from the support CD:

1. Remove any CD from the optical drive, then turn on the system.
2. Insert the floppy disk with the original or updated BIOS file to the floppy disk drive.
3. The utility displays the following message and automatically checks the floppy disk for the original or updated BIOS file.

```
Award BootBlock BIOS v1.0
Copyright (c) 2000, Award Software, Inc.

BIOS ROM checksum error
Detecting IDE ATAPI device...
```

When no CD is found, the utility automatically checks the floppy drive for the original or updated BIOS file. The utility then updates the corrupted BIOS file.

```
Award BootBlock BIOS v1.0
Copyright (c) 2000, Award Software, Inc.

BIOS ROM checksum error
Detecting IDE ATAPI device...
  Found CDROM, try to Boot from it... Fail

Detecting floppy drive A media...
```



DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

4. Restart the system after the utility completes the updating process.



The recovered BIOS may not be the latest BIOS version for this motherboard. Visit the ASUS website (www.asus.com) to download the latest BIOS file.

4.1.5 ASUS EZ Flash utility

The ASUS EZ Flash feature allows you to update the BIOS without having to go through the long process of booting from a floppy disk and using a DOS-based utility. The EZ Flash utility is built-in the BIOS chip so it is accessible by pressing <Alt> + <F2> during the Power-On Self Tests (POST).

To update the BIOS using EZ Flash:

1. Visit the ASUS website (www.asus.com) to download the latest BIOS file for the motherboard.
2. Save the BIOS file to a floppy disk, then restart the system.
3. Press <Alt> + <F2> during POST to display the following.

Insert Disk then press Enter or ESC to continue POST

4. Insert the floppy disk that contains the BIOS file to the floppy disk drive then press <Enter>. The following screen appears.

```
AwardBIOS Flash Utility for ASUS V1.01
(C) Phoenix Technologies Ltd. All Rights Reserved

For NF-KC804-A8N-SLI-00      DATE: 11/18/2004
Flash Type - SST 49LF004A/B /3.3V

File Name to Program: 

Message: Please wait...
```

5. When the correct BIOS file is found, EZ Flash performs the BIOS update process and automatically reboots the system when done.



Do not shutdown or reset the system while updating the BIOS to prevent system boot failure!

4.1.6 ASUS Update utility

The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows® environment. The ASUS Update utility allows you to:

- Save the current BIOS file
- Download the latest BIOS file from the Internet
- Update the BIOS from an updated BIOS file
- Update the BIOS directly from the Internet, and
- View the BIOS version information.

This utility is available in the support CD that comes with the motherboard package.



ASUS Update requires an Internet connection either through a network or an Internet Service Provider (ISP).

Installing ASUS Update

To install ASUS Update:

1. Place the support CD in the optical drive. The **Drivers** menu appears.
2. Click the **Utilities** tab, then click **Install ASUS Update VX.XX.XX**. See page 5-3 for the **Utilities** screen menu.
3. The ASUS Update utility is copied to your system.

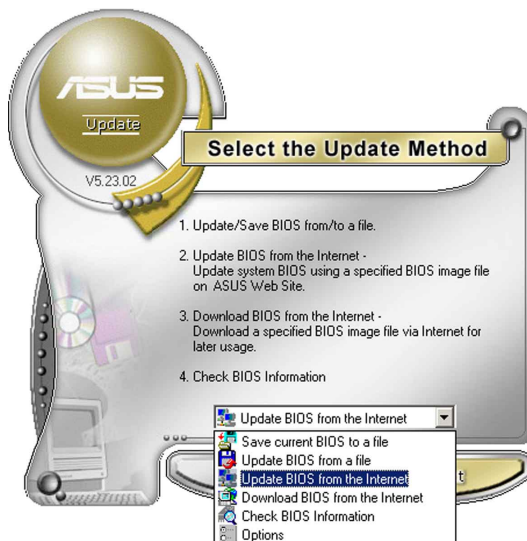
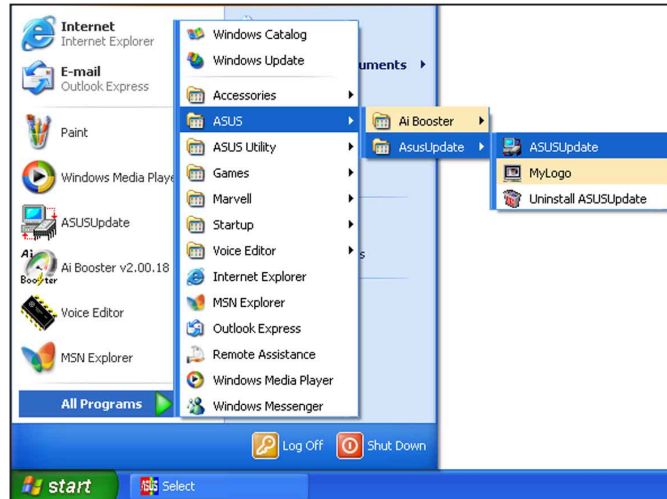


Quit all Windows® applications before you update the BIOS using this utility.

Updating the BIOS through the Internet

To update the BIOS through the Internet:

1. Launch the ASUS Update utility from the Windows® desktop by clicking **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate**. The ASUS Update main window appears.



2. Select **Update BIOS from the Internet** option from the drop-down menu, then click **Next**.

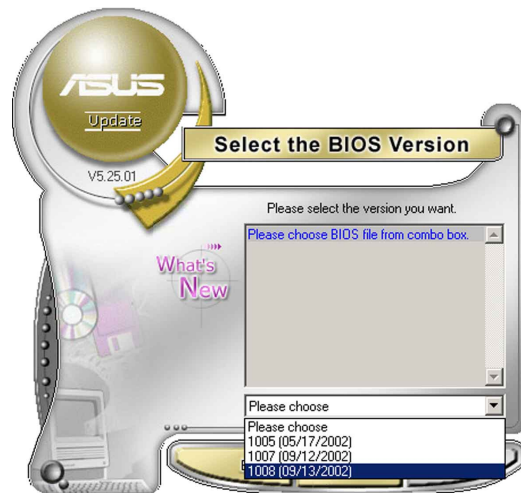


3. Select the ASUS FTP site nearest you to avoid network traffic, or click **Auto Select**. Click **Next**.

4. From the FTP site, select the BIOS version that you wish to download. Click Next.
5. Follow the screen instructions to complete the update process.



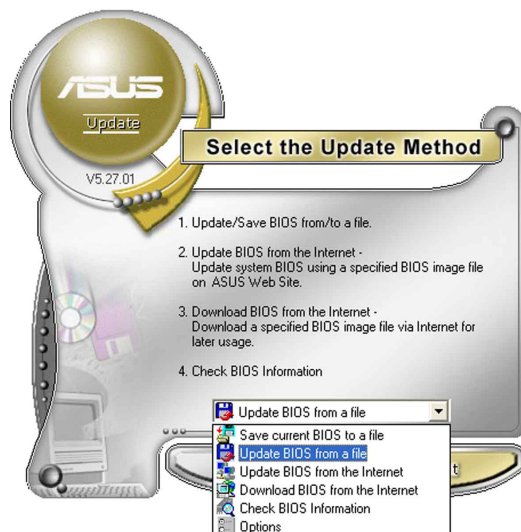
The ASUS Update utility is capable of updating itself through the Internet. Always update the utility to avail all its features.



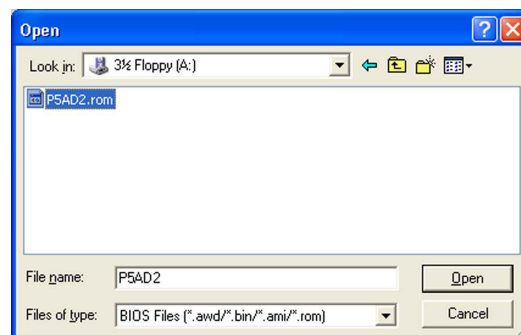
Updating the BIOS through a BIOS file

To update the BIOS through a BIOS file:

1. Launch the ASUS Update utility from the Windows® desktop by clicking **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate**. The ASUS Update main window appears.
2. Select **Update BIOS from a file** option from the drop-down menu, then click **Next**.



3. Locate the BIOS file from the **Open** window, then click **Save**.
4. Follow the screen instructions to complete the update process.



4.2 BIOS setup program

This motherboard supports a programmable Low-Pin Count (LPC) chip that you can update using the provided utility described in section “4.1 Managing and updating your BIOS.”

Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to “Run Setup”. This section explains how to configure your system using this utility.

Even if you are not prompted to use the Setup program, you can change the configuration of your computer in the future. For example, you can enable the security password feature or change the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the LPC chip.

The LPC chip on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press during the Power-On Self-Test (POST) to enter the Setup utility; otherwise, POST continues with its test routines.

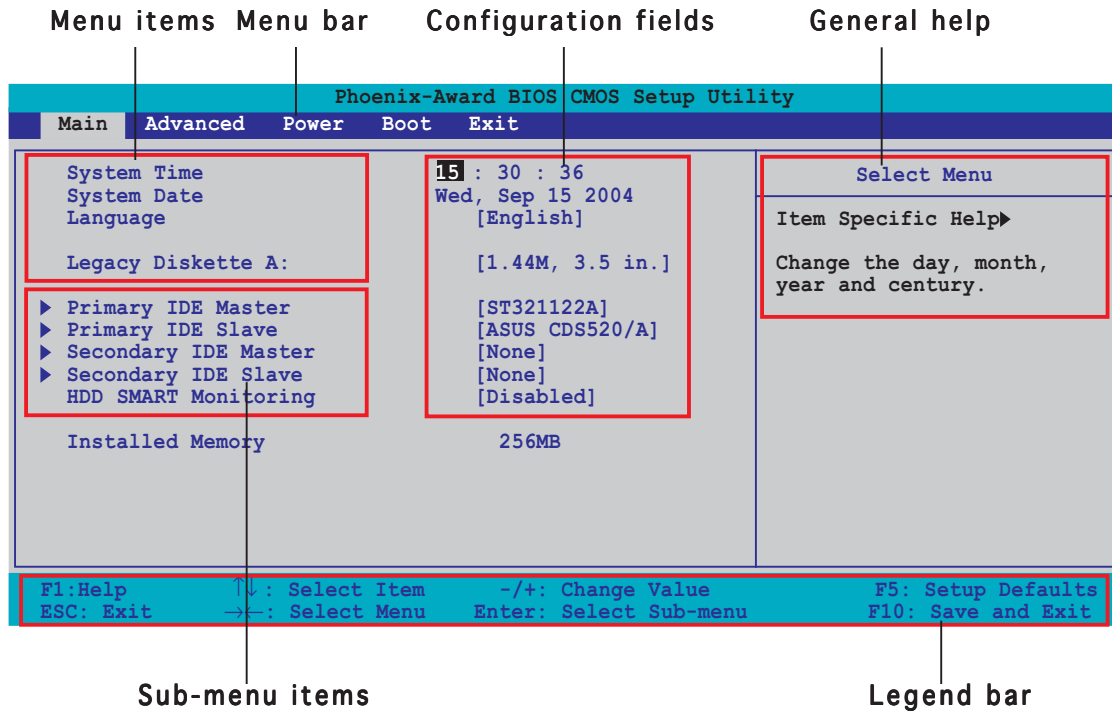
If you wish to enter Setup after POST, restart the system by pressing <Ctrl+Alt+Delete>, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on. Do this last option only if the first two failed.

The Setup program is designed to make it as easy to use as possible. Being a menu-driven program, it lets you scroll through the various sub-menus and make your selections from the available options using the navigation keys.



- The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the **Load Default Settings** item under the Exit Menu. See section “4.7 Exit Menu.”
- The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
- Visit the ASUS website (www.asus.com) to download the latest BIOS file for this motherboard and .

4.2.1 BIOS menu screen



4.2.2 Menu bar

The menu bar on top of the screen has the following main items:

- | | |
|-----------------|--|
| Main | For changing the basic system configuration |
| Advanced | For changing the advanced system settings |
| Power | For changing the advanced power management (APM) configuration |
| Boot | For changing the system boot configuration |
| Exit | For selecting the exit options and loading default settings |

To select an item on the menu bar, press the right or left arrow key on the keyboard until the desired item is highlighted.



- The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.
- Visit the ASUS website (www.asus.com) to download the latest BIOS information.

4.2.3 Legend bar

At the bottom of the Setup screen is a legend bar. The keys in the legend bar allow you to navigate through the various setup menus. The following table lists the keys found in the legend bar with their corresponding functions.

Navigation Key	Function
<F1>	Displays the General Help screen
<F5>	Loads setup default values
<Esc>	Exits the BIOS setup or returns to the main menu from a sub-menu
Left or Right arrow	Selects the menu item to the left or right
Up or Down arrow	Moves the highlight up or down between fields
Page Down or - (minus)	Scrolls backward through the values for the highlighted field
Page Up or + (plus)	Scrolls forward through the values for the highlighted field
<Enter>	Brings up a selection menu for the highlighted field
<F10>	Saves changes and exit

4.2.4 Menu items

The highlighted item on the menu bar displays the specific items for that menu. For example, selecting **Main** shows the Main menu items.

The other items (Advanced, Power, Boot, and Exit) on the menu bar have their respective menu items.

4.2.5 Sub-menu items

A solid triangle before each item on any menu screen means that the item has a sub-menu. To display the sub-menu, select the item and press <Enter>.

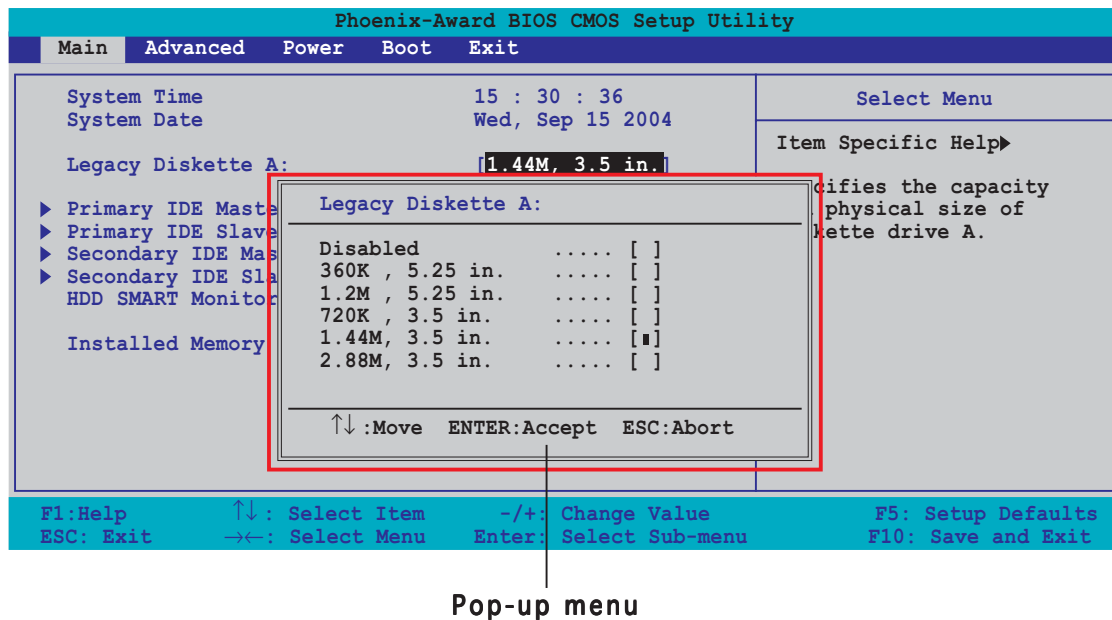
4.2.6 Configuration fields

These fields show the values for the menu items. If an item is user-configurable, you can change the value of the field opposite the item. You cannot select an item that is not user-configurable.

A configurable field is enclosed in brackets, and is highlighted when selected. To change the value of a field, select it then press <Enter> to display a list of options. Refer to “4.2.7 Pop-up window.”

4.2.7 Pop-up window

Select a menu item then press <Enter> to display a pop-up window with the configuration options for that item.



4.2.8 General help

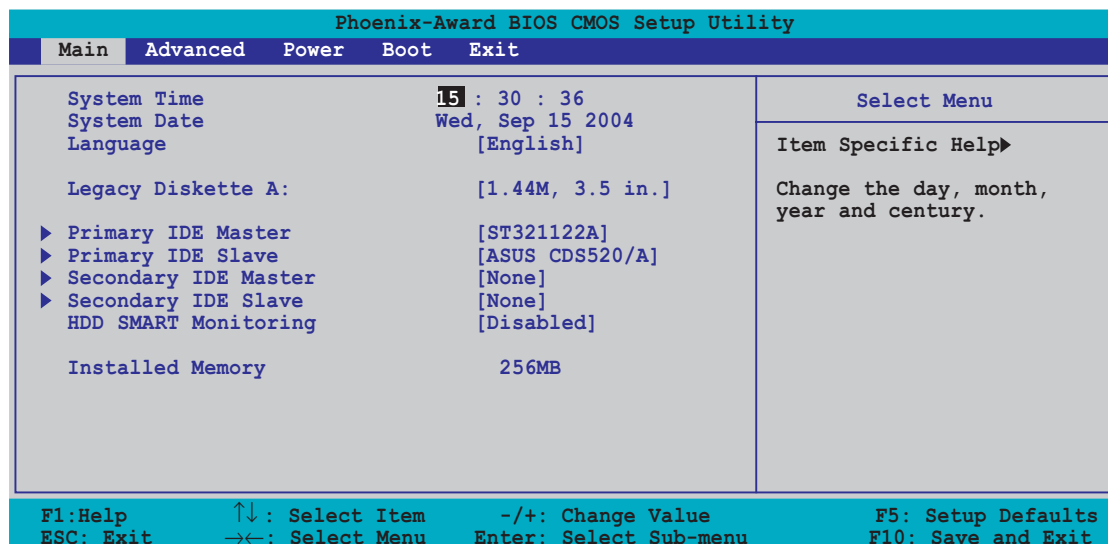
At the top right corner of the menu screen is a brief description of the selected item.

4.3 Main menu

When you enter the BIOS Setup program, the Main menu screen appears, giving you an overview of the basic system information.



Refer to section “4.2.1 BIOS menu screen” for information on the menu screen items and how to navigate through them.



4.3.1 System Time [xx:xx:xxxx]

Allows you to set the system time.

4.3.2 System Date [Day xx/xx/xxxx]

Allows you to set the system date.

4.3.3 Language [English]

Allows you to choose the BIOS language version from the options.
Configuration options: [English] [French] [German]

4.3.4 Legacy Diskette A [1.44M, 3.5 in.]

Sets the type of floppy drive installed. Configuration options: [Disabled]
[360K, 5.25 in.] [1.2M, 5.25 in.] [720K, 3.5 in.] [1.44M, 3.5 in.]
[2.88M, 3.5 in.]

4.3.5 Primary and Secondary IDE Master/Slave

While entering Setup, the BIOS automatically detects the presence of IDE devices. There is a separate sub-menu for each IDE device. Select a device item then press <Enter> to display the IDE device information.

Phoenix-Award BIOS CMOS Setup Utility			
Main			
Primary IDE Master		Select Menu	
Primary IDE Master	[Auto]	Item Specific Help▶▶ Press [Enter] to select	
Access Mode	[Auto]		
Capacity	13579 MB		
Cylinder	26310		
Head	16		
Sector	63		
PIO Mode	[Auto]		
UDMA Mode	[Auto]		
Transfer Mode	UDMA 4		
F1:Help	↑↓: Select Item	-/+ : Change Value	F5: Setup Defaults
ESC: Exit	→←: Select Menu	Enter: Select Sub-menu	F10: Save and Exit

The BIOS automatically detects the values opposite the dimmed items (Capacity, Cylinder, Head, Sector and Transfer Mode). These values are not user-configurable. These items show N/A if no IDE device is installed in the system.

Primary/Secondary IDE Master/Slave [Auto]

Select [Auto] to automatically detect an IDE hard disk drive. If automatic detection is successful, the BIOS automatically fills in the correct values for the remaining fields on this sub-menu. If the hard disk was already formatted on a previous system, the setup BIOS may detect incorrect parameters. Select [Manual] to manually enter the IDE hard disk drive parameters. If no drive is installed select [None].

Configuration options: [None] [Auto] [Manual]

Access Mode [Auto]

The default [Auto] allows automatic detection of an IDE hard disk drive. Select [CHS] for this item if you set the IDE Primary Master/Slave to [Manual]. Configuration options: [CHS] [LBA] [Large] [Auto]



Before attempting to configure a hard disk drive, make sure you have the correct configuration information supplied by the drive manufacturer. Incorrect settings may cause the system to fail to recognize the installed hard disk.

Capacity

Displays the auto-detected hard disk capacity. This item is not configurable.

Cylinder

Shows the number of the hard disk cylinders. This item is not configurable.

Head

Shows the number of the hard disk read/write heads. This item is not configurable.

Sector

Shows the number of sectors per track. This item is not configurable.

PIO Mode

Sets the PIO mode for the IDE device.

Configuration options: [Auto] [Mode 0] [Mode 1] [Mode 2] [Mode 3] [Mode 4]

UDMA Mode

Disables or sets the UDMA mode. Configuration options: [Disabled] [Auto]

Transfer Mode

Shows the Transfer mode. This item is not configurable.



After entering the IDE hard disk drive information into BIOS, use a disk utility, such as FDISK, to partition and format new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Make sure to set the partition of the Primary IDE hard disk drives to active.

4.3.6 HDD SMART Monitoring

Enables or disables the hard disk Self-Monitoring Analysis & Reporting Technology (SMART) feature. Configuration options: [Disabled] [Enabled]

4.3.7 Installed Memory

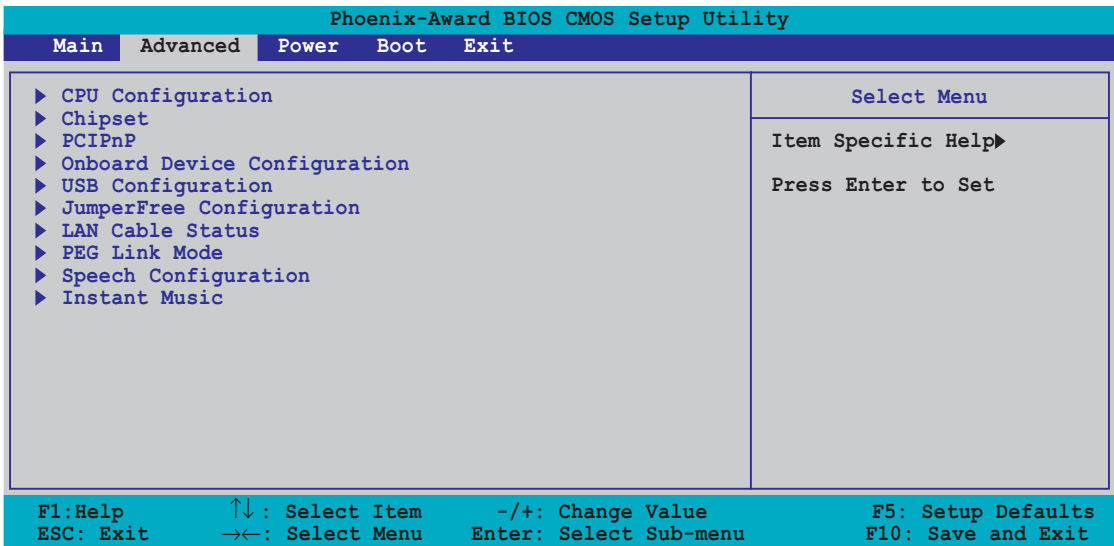
Shows the size of installed memory.

4.4 Advanced menu

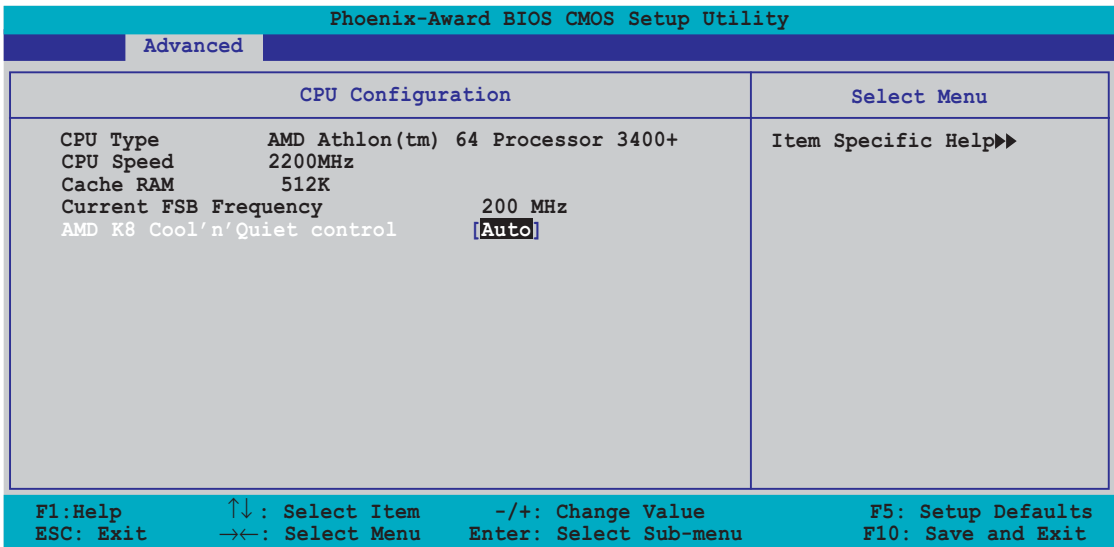
The Advanced menu items allow you to change the settings for the CPU and other system devices.



Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.



4.4.1 CPU Configuration



Cool N' Quiet [Auto]

Allows you to disable or set the AMD Cool 'n' Quiet!™ Technology feature. Configuration options: [Auto] [Disabled]



- Make sure that the above item is set to **Auto** if you want to use the AMD CPU Cool 'n' Quiet!™ Technology feature.
- This feature requires the AMD CPU heatsink and fan assembly with monitor chip. If you purchased a separate heatsink and fan package, use the ASUS Q-Fan Technology feature to automatically adjust the CPU fan speed according to your system loading.

4.4.2 Chipset

Phoenix-Award BIOS CMOS Setup Utility			
Advanced			
Chipset		Select Menu	
▶ DRAM Configuration		Item Specific Help▶▶▶	
Upstream LDT Bus Width	[16 bit]	DRAM timing and control	
Downstream LDT Bus Width	[16 bit]		
LDT Bus Frequency	[Auto]		
VLink Mode Selection	[By Auto]		
PEG Data Scrambling	[Auto]		
PE0-PE3 Data Scrambling	[Enable]		
Init Display First	[PCI Slot]		
Chipset Vcore Adjustment	[+1.6 V]		
F1:Help ↑↓ : Select Item -/+ : Change Value F5: Setup Defaults		ESC: Exit →← : Select Menu Enter: Select Sub-menu F10: Save and Exit	

DRAM Configuration

The items in this sub-menu show the DRAM-related information auto-detected by the BIOS.

Phoenix-Award BIOS CMOS Setup Utility			
Advanced			
DRAM Configuration		Select Menu	
Current DRAM Frequency		Item Specific Help▶▶▶	
Max Memclock (MHz)	[Auto]	Place an artificial memory clock limit on the system. Memory is prevented from running faster than this frequency.	
CAS# latency (Tcl)	[Auto]		
RAS# to CAS# delay (Trcd)	[Auto]		
Min RAS# active time(Tras)	[Auto]		
Row precharge Time (Trp)	[Auto]		
Master ECC Enable	[Enabled]		
F1:Help ↑↓ : Select Item -/+ : Change Value F5: Setup Defaults		ESC: Exit →← : Select Menu Enter: Select Sub-menu F10: Save and Exit	

Current DRAM Frequency

Shows the Transfer mode. This item is not configurable.

Max Memclock (MHz) [Auto]

Sets the maximum operating memory clock.
Configuration options: [Auto] [DDR200] [DDR266] [DDR333] [DDR400]

CAS# latency (Tcl) [Auto]

Controls the latency between the SDRAM read command and the time the data actually becomes available. Configuration options: [Auto] [2.0] [2.5] [3.0]

RAS# to CAS# delay (Trcd) [Auto]

Controls the latency between the DDR SDRAM active command and the read/write command. Configuration options: [Auto] [2] [3] [4] [5] [6] [7]

Min RAS# active time (Tras) [Auto]

Sets the minimum RAS# active time. Configuration options: [Auto] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15]

Row precharge Time (Trp) [Auto]

Sets the Row precharge time. Configuration options: [Auto] [2] [3] [4] [5] [6]

Master ECC Enable [Enabled]

Enables or disables the Master ECC feature.
Configuration options: [Disabled] [Enabled]

Upstream LDT Bus Width [16 bit]

Sets the upstream Lightning Data Transport (LDT) Bus Width.
Configuration options: [8 bit] [16 bit]

Downstream LDT Bus Width [16 bit]

Sets the downstream Lightning Data Transport (LDT) Bus Width.
Configuration options: [8 bit] [16 bit]

LDT Bus Frequency [Auto]

Sets the Lightning Data Transport (LDT) Bus frequency.
Configuration options: [Auto] [1 GHz] [800 MHz] [600 MHz] [400 MHz] [200 MHz]

VLink Mode Selection [By Auto]

Sets the VLink mode. Configuration options: [By Auto] [Mode 0] [Mode 1] [Mode 2] [Mode 3] [Mode 4]

PEG Data Scrambling [Auto]

Disables or enables the PCI Express™ graphics data scrambling.
Configuration options: [Auto] [Disable] [Enable]

PE0-PE3 Data Scrambling [Enable]

Disables or enables the PCI Express™ 0 to PCI Express™ 3 data scrambling.
Configuration options: [Disable] [Enable]

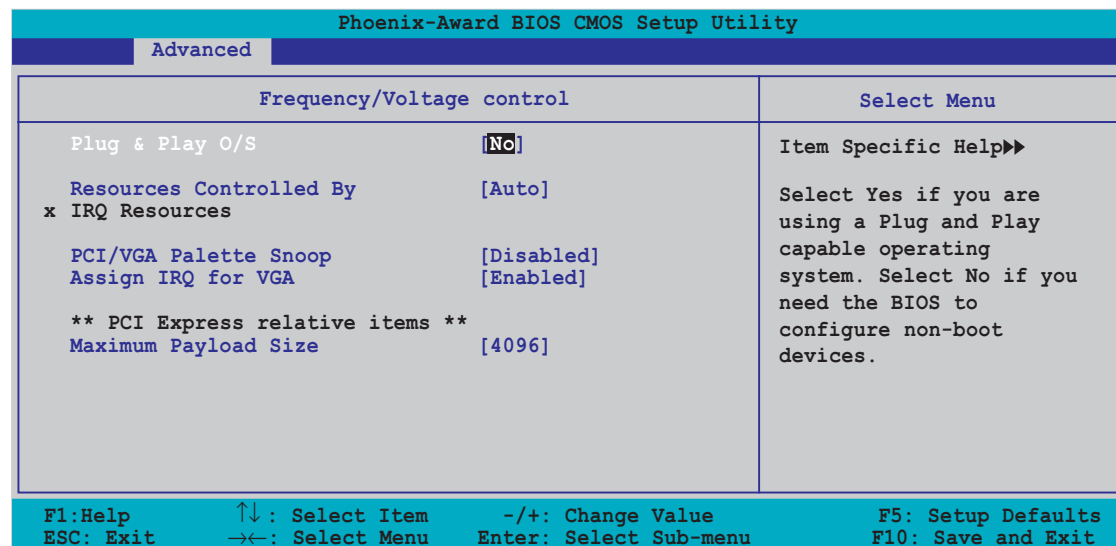
Init Display First [PCI Slot]

Allows you to select the graphics controller to use as the primary boot device. Configuration options: [PCI Slot] [PCIEx]

Chipset Vcore Adjustment [+1.5 V]

Sets the chipset vcore adjustment voltage.
Configuration options: [+1.5 V] [+1.6 V]

4.4.3 PCI PnP



Plug & Play O/S [No]

When set to [No], the BIOS configures all the devices in the system. When set to [Yes] and if you install a Plug and Play operating system, the operating system configures the Plug and Play devices not required for boot. Configuration options: [No] [Yes]

Resources Controlled By [Auto]

When set to [Auto], the BIOS automatically configures all the boot and Plug and Play compatible devices. Set to [Manual] if you want to assign the IRQ DMA and memory base address fields.
Configuration options: [Auto] [Manual]



When the item Resources Controlled By is set to [Auto], the item IRQ Resources is grayed out and not user-configurable. Refer to the section “IRQ Resources” for information on how to enable this item.

IRQ Resources

This sub-menu is activated only when the **Resources Controlled By** item is set to Manual.

Phoenix-Award BIOS CMOS Setup Utility			
Advanced			
IRQ Resources		Select Menu	
IRQ-3 assigned to	[PCI Device]	Item Specific Help▶▶▶	
IRQ-4 assigned to	[PCI Device]	Legacy ISA for devices	
IRQ-5 assigned to	[PCI Device]	compliant with the	
IRQ-7 assigned to	[PCI Device]	original PC AT bus	
IRQ-9 assigned to	[PCI Device]	specification, PCI/ISA	
IRQ-10 assigned to	[PCI Device]	PnP for devices	
IRQ-11 assigned to	[PCI Device]	compliant with the	
IRQ-12 assigned to	[PCI Device]	Plug and Play standard	
IRQ-14 assigned to	[PCI Device]	whether designed for	
IRQ-15 assigned to	[PCI Device]	PCI or ISA bus	
		architecture	
F1:Help	↑↓: Select Item	-/+ : Change Value	F5: Setup Defaults
ESC: Exit	→←: Select Menu	Enter: Select Sub-menu	F10: Save and Exit

IRQ-xx assigned to

When set to [PCI Device], the specific IRQ is free for use of PCI/PnP devices. When set to [Reserved], the IRQ is reserved for legacy ISA devices. Configuration options: [PCI Device] [Reserved]

PCI/VGA Palette Snoop [Disabled]

When set to [Enabled], the palette snooping feature informs the PCI devices that an ISA graphics device is installed in the system so that the latter can function correctly. Configuration options: [Disabled] [Enabled]

Assign IRQ for VGA [Enabled]

When set to [Enabled], the BIOS assigns an IRQ to PCI VGA card if the card requests for an IRQ. When set to [Disabled], the BIOS does not assign an IRQ to the PCI VGA card even if requested.
Configuration options: [Disabled] [Enabled]

Maximum Payload Size [4096]

Sets the maximum payload size in bytes for PCI Express devices.
Configuration options: [128] [256] [512] [1024] [2048] [4096]

4.4.4 Onboard Devices Configuration

Phoenix-Award BIOS CMOS Setup Utility		
Advanced		
Onboard Device Configuration		Select Menu
Onboard 1394 Controller	[Enabled]	Item Specific Help▶▶ Enable/Disable Onboard 1394 device support.
Onboard PCIE GbE LAN	[Enabled]	
Onboard LAN Boot ROM	[Disabled]	
Onboard Wireless LAN	[Enabled]	
OnChip SATA	[Enabled]	
SATA Mode	[RAID]	
Onboard AC97 Audio	[Auto]	
Serial Port1 Address	[3F8/IRQ4]	
Parallel Port Address	[378/IRQ7]	
Parallel Port Mode	[ECP+EPP]	
EPP Mode Select	[EPP1.7]	
ECP Mode Use DMA	[3]	
Game Port Address	[201]	
Midi Port Address	[330]	
Midi Port IRQ	[10]	
F1:Help ↑↓: Select Item -/+ : Change Value F5: Setup Defaults		
ESC: Exit →←: Select Menu Enter: Select Sub-menu F10: Save and Exit		

Onboard 1394 Controller [Enabled]

Enables or disables the onboard 1394 controller.
Configuration options: [Enabled] [Disabled]

OnBoard PCIEX GbE LAN [Enabled]

Allows you to enable or disable the onboard PCI Express Gigabit LAN controller. Configuration options: [Disabled] [Enabled]

OnBoard LAN Boot ROM [Disabled]

Allows you to enable or disable the onboard LAN boot ROM.
Configuration options: [Disabled] [Enabled]

OnBoard Wireless LAN [Enabled]

Allows you to enable or disable the onboard Wi-Fi controller.
Configuration options: [Disabled] [Enabled]

OnChip SATA [Enabled]

Allows you to enable or disable the onboard VIA Serial ATA controller.
Configuration options: [Disabled] [Enabled]

SATA Mode [RAID]

Allows you to set the onboard VIA SATA RAID controller mode.
Configuration options: [IDE] [RAID]

Onboard AC97 Audio [Auto]

Allows you to disable or set the onboard AC97 audio controller.

Configuration options: [Disabled] [Auto]

Serial Port1 Address [3F8/IRQ4]

Allows you to select the Serial Port1 base address.

Configuration options: [Disabled] [3F8/IRQ4] [2F8/IRQ3] [3E8/IRQ4]
[2E8/IRQ3] [Auto]

Parallel Port Address [378/IRQ7]

Allows you to select the Parallel Port base addresses.

Configuration options: [Disabled] [378/IRQ7] [278/IRQ5] [3BC/IRQ7]

Parallel Port Mode [ECP+EPP]

Allows you to select the Parallel Port mode.

Configuration options: [Normal] [SPP] [EPP] [ECP] [ECP+EPP] [Normal]

EPP Mode Select [EPP1.7]

Allows selection of the Parallel Port EPP version.

Configuration options: [EPP1.9] [EPP1.7]

ECP Mode Use DMA [3]

Allows selection of ECP Mode. Configuration options: [1] [3]

Game Port Address [201]

Allows you to select the Game Port address or to disable the port.

Configuration options: [Disabled] [201] [209]

Midi Port Address [330]

Allows you to select the Game Port address or to disable the port.

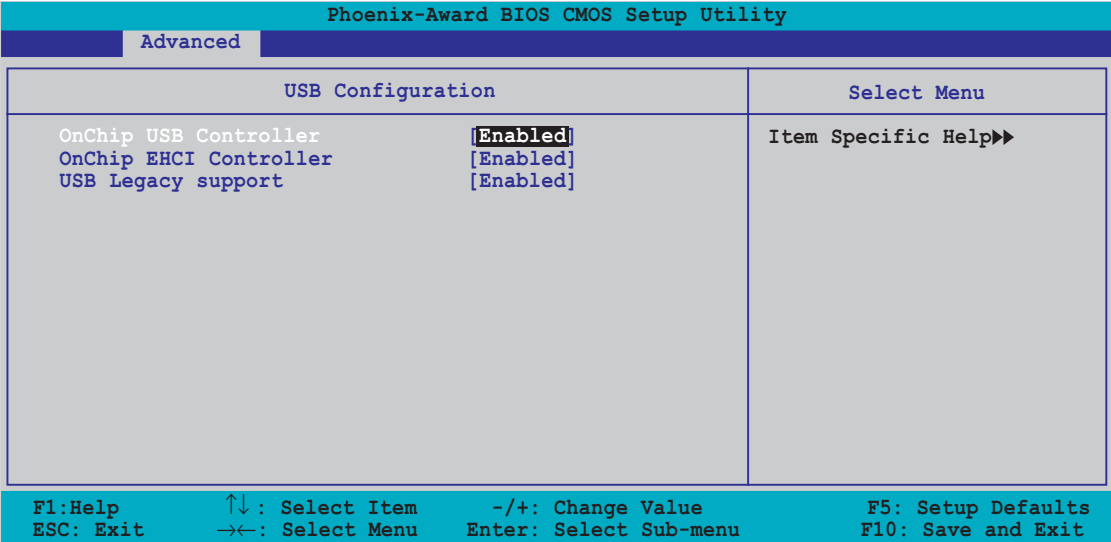
Configuration options: [Disabled] [330] [300] [290]

Midi Port IRQ [10]

Allows you to set the Midi port IRQ address. Configuration options: [5] [10]

4.4.5 USB Configuration

The items in this menu allows you to change the USB-related features. Select an item then press <Enter> to display the configuration options.



OnChip USB Controller [Enabled]

Allows you to enable or disable the onchip USB controller. Configuration options: [Disabled] [Enabled]

OnChip EHCI Controller [Enabled]

Allows you to enable or disable the onchip Enhanced Host Controller Interface (EHCI) controller. Configuration options: [Disabled] [Enabled]

USB Legacy Support [Enabled]

Allows you to enable or disable support for USB devices on legacy operating systems (OS). Configuration options: [Disabled] [Enabled]

4.4.6 JumperFree Configuration

Phoenix-Award BIOS CMOS Setup Utility		
Advanced		
JumperFree Configuration		Select Menu
Overclock Profile	Auto	Item Specific Help▶▶
x Overclock Options	Overclock 3%	
x N.O.S. Option	Overclock 3%	
x Frequency Configuration		
x CPU Multiplier	Auto	
x Hammer Vid control	Startup	
x Memory Voltage Adjustment	2.70 V	
x CPU Vcore Adjustment	+100 mv	
F1:Help ↑↓: Select Item -/+ : Change Value F5: Setup Defaults		
ESC: Exit →←: Select Menu Enter: Select Sub-menu F10: Save and Exit		

Overclock Profile [Auto]

Allows selection of CPU overclocking options to achieve desired CPU internal frequency. Select either one of the preset overclocking configuration options:

Manual	Allows you to individually set overclocking parameters.
Auto	Loads the optimal settings for the system.
Standard	Loads the standard settings for the system.
Overclock Profile	Loads overclocking profiles with optimal parameters for stability when overclocking.
AI N.O.S.	The ASUS AI Non-delay Overclocking System feature intelligently determines the system load and automatically boost the performance for the most demanding tasks.



The following items are user-configurable only when the AI Overclocking item is set to [Manual].

Phoenix-Award BIOS CMOS Setup Utility		
Advanced		
JumperFree Configuration		Select Menu
Overclock Profile [Auto]		Item Specific Help▶▶
x Overclock Options Disabled		
x N.O.S. Option Disabled		
▶ Frequency Configuration		
CPU Multiplier [Auto]		
Hammer Vid control [Startup]		
Memory Voltage Adjustment [2.75 V]		
CPU Vcore Adjustment [+100 mv]		
F1:Help ↑↓ : Select Item -/+ : Change Value F5: Setup Defaults		
ESC: Exit →← : Select Menu Enter: Select Sub-menu F10: Save and Exit		

Frequency Configuration

The items in this sub-menu show the frequency information auto-detected by the BIOS.

Phoenix-Award BIOS CMOS Setup Utility		
Advanced		
Frequency Configuration		Select Menu
Spread Spectrum		Item Specific Help▶▶
PCIEx clock Sync. to CPU		
x	PCIEx Clock	
PCI clock Sync. to CPU		
x	PCI Clock	
CPU Clock		
F1:Help ↑↓ : Select Item -/+ : Change Value F5: Setup Defaults		
ESC: Exit →← : Select Menu Enter: Select Sub-menu F10: Save and Exit		

Spread Spectrum [Auto]

Enables or disables the clock generator spread spectrum.
Configuration options: [Disabled] [Enabled] [Auto]

PCIEx clock Sync. to CPU [Enable]

Enables or disables the PCI Express™ synchronous clock to the CPU.
Configuration options: [Disabled] [Enabled]

PCIEx Clock [XXX] (value is auto-detected)

Allows you to set the PCI Express clock frequency. This item is user-configurable only when the **PCIEx clock Sync. to CPU** item is set to Disabled. The BIOS detects the default value of this item. Press <Enter> then key-in desired PCI Express clock frequency within range.

PCI clock Sync. to CPU [Enable]

Enables or disables the PCI synchronous clock to the CPU.
Configuration options: [Disabled] [Enabled]

PCI Clock [XXX] (value is auto-detected)

Allows you to set the PCI clock frequency. This item is user-configurable only when the **PCI clock Sync. to CPU** item is set to Disabled. The BIOS detects the default value of this item. Press <Enter> then key-in desired PCI clock frequency within range.

CPU Clock [XXX] (value is auto-detected)

Displays the frequency sent by the clock generator to the system bus and PCI bus. The default value of this item is auto-detected by the BIOS. Use the <+> and <-> keys to adjust the CPU frequency. Refer to the following table for the correct Front Side Bus and CPU External Frequency settings.



Selecting a very high CPU frequency may cause the system to become unstable! If this happens, revert to the default setting.

CPU Multiplier [Auto]

Sets the CPU multiplier. Configuration options: [Auto] [x4] [x4.5] [x5] [x5.5] [x6] [x6.5] [x7] [x7.5] [x8] [x8.5] [x9] [x9.5] [x10] [x10.5] [x11] [x11.5] [x12] [x12.5] [x13] [x13.5] [x14] [x14.5] [x15] [x15.5] [x16] [x16.5] [x17] [x17.5] [x18] [x18.5] [x19] [x19.5] [x20]

Hammer Vid control [Startup]

Sets the Hammer Voltage ID control. Configuration options: [Startup]
[1.5625v] [1.550 v] [1.5375v] [1.525 v] [1.5125v] [1.500 v] [1.4875v]
[1.475 v] [1.4625v] [1.450 v] [1.4375v] [1.425 v] [1.4125v] [1.400 v]
[1.3875v] [1.375 v] [1.3625v] [1.350 v] [1.3375v] [1.325 v] [1.3125v]
[1.300 v] [1.2875v] [1.275 v] [1.2625v] [1.250 v] [1.2375v] [1.225 v]
[1.2125v] [1.200 v] [1.1875v] [1.175 v] [1.1625v] [1.150 v] [1.1375v]
[1.125 v] [1.1125v] [1.100 v] [1.0875v] [1.075 v] [1.0625v] [1.050 v]
[1.0375v] [1.025 v] [1.0125v] [1.000 v] [0.9875v] [0.975 v] [0.9625v]
[0.950 v] [0.9375v] [0.925 v] [0.9125v] [0.900 v] [0.8875v] [0.875 v]
[0.8625v] [0.850 v] [0.8375v] [0.825 v] [0.8125v] [0.800 v]

Memory Voltage Adjustment [2.75 V]

Sets the memory adjustment voltage. Configuration options: [2.60 V]
[2.65 V] [2.70 V] [2.75 V] [2.80 V] [2.85 V] [2.90 V] [2.95 V] [3.00 V]

CPU VCore Offset [+100 mv]

Sets the CPU Vcore offset voltage.
Configuration options: [+100 mv] [+200 mv]



The following item is user-configurable only when the AI Overclocking item is set to [AI Overclock].

Overclock Options [Overclock 3%]

Allows you to set the overlocking options.
Configuration options: [Overclock 3%] [Overclock 5%] [Overclock 8%]
[Overclock 10%]



The following item is user-configurable only when the AI Overclocking item is set to [AI N.O.S.].

N.O.S. Option [Disable]

Allows you to disable or set the Non-Delay Overclocking System mode.
Configuration options: [Disable] [Overclock 3%] [Overclock 5%]
[Overclock 8%] [Overclock 10%]

4.4.7 LAN Cable Status

The items in this menu displays the status of the Local Area Network (LAN) cable.

Phoenix-Award BIOS CMOS Setup Utility			
Advanced			
JumperFree Configuration		Select Menu	
POST Check LAN Cable		[Disabled]	
Pair	Status	Length	
1-2	Open	N/A	
3-6	Open	N/A	
4-5	Open	N/A	
7-8	Open	N/A	
		Item Specific Help▶▶	
		Enable/Disable Speech	
		IC Controller	

POST Check LAN cable [Disabled]

Enables or disables checking of the LAN cable during the Power-On Self-Test (POST). Configuration options: [Disabled] [Enabled]

4.4.8 PEG Link Mode

Phoenix-Award BIOS CMOS Setup Utility			
Advanced			
JumperFree Configuration		Select Menu	
PEG Link Mode		[Auto]	
		Item Specific Help▶▶	
		Enhance performance on	
		NVidia 6x00 PCIE	
		serial graphic card.	

PEG Link Mode [Auto]

Allows you to enhance the performance of your PCI Express graphics card. Configuration options: [Auto] [Slow] [Normal] [Fast] [Faster]

4.4.9 Speech Configuration

Phoenix-Award BIOS CMOS Setup Utility			
Advanced			
JumperFree Configuration		Select Menu	
Speech IC Reporter	[Enabled]	Item Specific Help▶▶	
Report IDE Error	[Disabled]		
Report System Booting	[Disabled]	Enable/Disable Speech IC Controller	
F1:Help	↑↓ : Select Item	-/+ : Change Value	F5: Setup Defaults
ESC: Exit	→←: Select Menu	Enter: Select Sub-menu	F10: Save and Exit

Speech IC Reporter [Enabled]

Allows you to enable or disable the ASUS Speech POST Reporter™ feature.
Configuration options: [Disabled] [Enabled]



The following items appear only when Speech POST Reporter is set to Enabled.

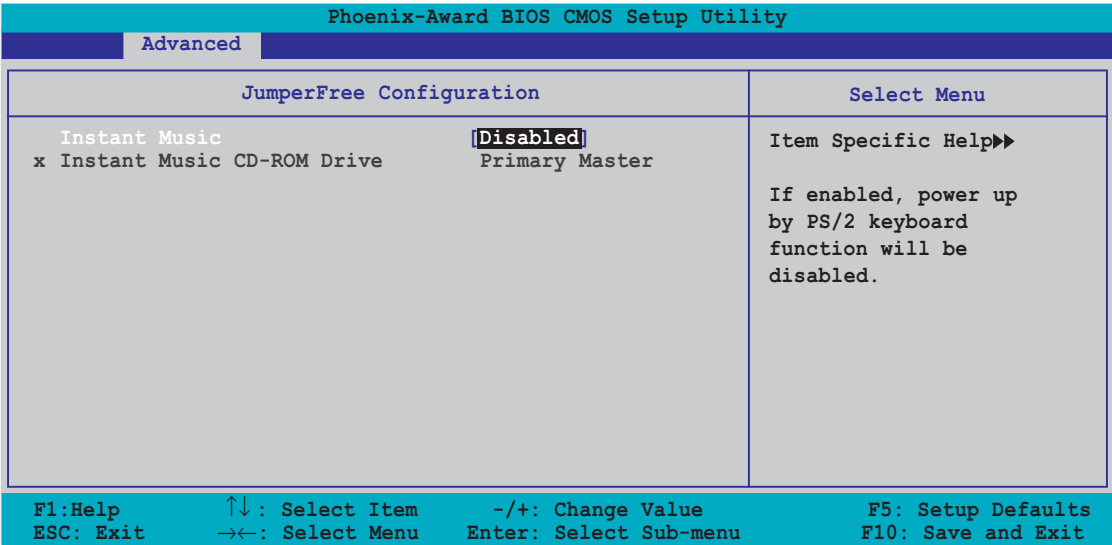
Report IDE Error [Disabled]

Enables or disables the report feature in the event of an IDE error.
Configuration options: [Disabled] [Enabled]

Report System Booting [Disabled]

Enables or disables the report after booting the system.
Configuration options: [Disabled] [Enabled]

4.4.10 Instant Music



Instant Music [Disabled]

Allows you to enable or disable the ASUS Instant Music feature.
Configuration options: [Disabled] [Enabled]



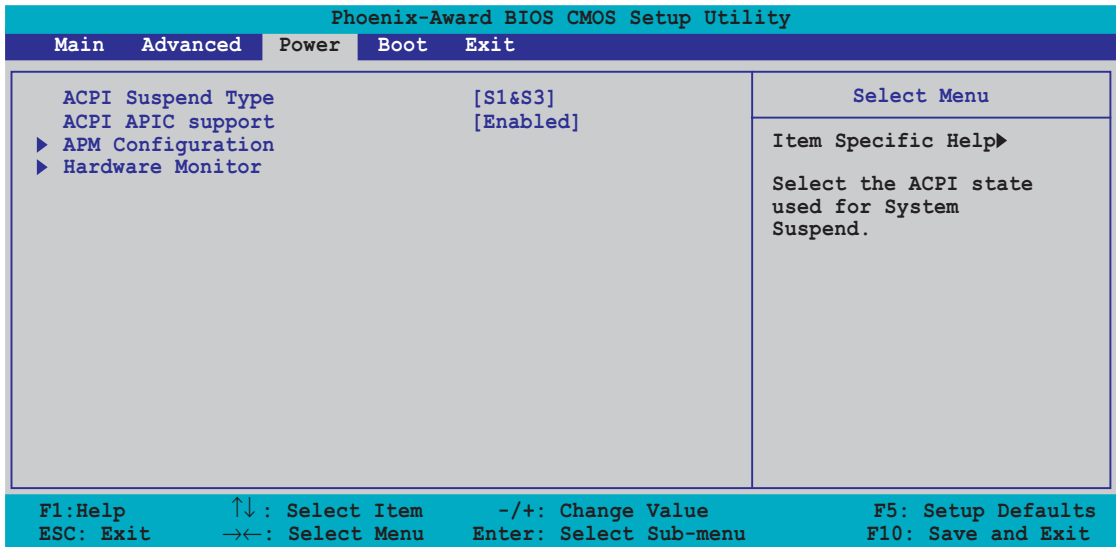
Enabling Instant Music automatically disables the PS/2 keyboard power up feature.

Instant Music CD-ROM Drive [Primary Master]

Allows you to select the CD-ROM drive that you wish to use for the Instant Music CD playback. Configuration options: [Primary Master] [Primary Slave] [Secondary Master] [Secondary Slave]

4.5 Power menu

The Power menu items allow you to change the settings for the Advanced Configuration and Power Interface (ACPI) and the Advanced Power Management (APM). Select an item then press <Enter> to display the configuration options.



4.5.1 ACPI Suspend Type [S1&S3]

Allows you to select the Advanced Configuration and Power Interface (ACPI) state to be used for system suspend.

Configuration options: [S1 (POS)] [S3(STR)] [S1&S3]

4.5.2 ACPI APIC Support [Enabled]

Allows you to enable or disable the Advanced Configuration and Power Interface (ACPI) support in the Application-Specific Integrated Circuit (ASIC). When set to Enabled, the ACPI APIC table pointer is included in the RSDT pointer list. Configuration options: [Disabled] [Enabled]

4.5.3 APM Configuration

Phoenix-Award BIOS CMOS Setup Utility				
		Power		
APM Configuration		Select Menu		
PS2KB Wakeup from S5	[Disabled]	Item Specific Help▶▶ When Select Password, Please press ENTER key to change Password Max 8 numbers.		
PS2MS Wakeup from S5	[Disabled]			
USB Resume from S3	[Disabled]			
Power Up On PCI Devices	[Disabled]			
Modem Ring Resume	[Disabled]			
Power On By RTC Alarm	[Disabled]			
x Date (of Month)	0			
x Resume Time (hh:mm:ss)	0 : 0 : 0			
Restore on AC Power Loss	[Power Off]			
PWR Button < 4 secs	[Instant Off]			
F1:Help		↑↓: Select Item	-/+ : Change Value	F5: Setup Defaults
ESC: Exit		→←: Select Menu	Enter: Select Sub-menu	F10: Save and Exit

PS2KB Wakeup from S5 [Disabled]

Allows you to disable the Power On by PS/2 keyboard function or set specific keys on the PS/2 keyboard to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Configuration options: [Disabled] [Space Bar] [Ctrl+ESC] [Power Key]

PS2MS Wakeup from S5 [Disabled]

When set to [Enabled], this parameter allows you to use the PS/2 mouse to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Configuration options: [Disabled] [Enabled]

Power Up On PCI Devices [Disabled]

When set to [Enabled], this parameter allows you to turn on the system through a PCI LAN or modem card. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Configuration options: [Disabled] [Enabled]

Modem Ring Resume [Disabled]

This allows either settings of [Enabled] or [Disabled] for powering up the computer when the external modem receives a call while the computer is in Soft-off mode. Configuration options: [Disabled] [Enabled]

Power On By RTC Alarm [Disabled]

Allows you to enable or disable RTC to generate a wake event. When this item is set to Enabled, the items Date (of Month) and Resume Time (hh:mm:ss) become configurable with set values.

Configuration options: [Disabled] [Enabled]

Date (of Month) [0]

To set the date of alarm, highlight this item and press <Enter> to display the Day of Month Alarm pop-up menu. Key-in a value within the specified range then press <Enter>. Configuration options: [Min=0] [Max=31]

Resume Time (hh:mm:ss) 0 : 0 : 0

To set the time of alarm:

1. Highlight this item and press <Enter> to display a pop-up menu for the hour field.
2. Key-in a value (Min=0, Max=23), then press <Enter>.
3. Press <TAB> to move to the minutes field then press <Enter>.
4. Key-in a minute value (Min=0, Max=59), then press <Enter>.
5. Press <TAB> to move to the seconds field then press <Enter>.
6. Key-in a value (Min=0, Max=59), then press <Enter>.

Restore on AC Power Loss [Power Off]

When set to Power Off, the system goes into off state after an AC power loss. When set to Power On, the system goes on after an AC power loss.

When set to Last State, the system goes into either off or on state, whatever the system state was before the AC power loss.

Configuration options: [Power Off] [Power On] [Last State]

PWR Button < 4 secs [Instant-Off]

Allows you to set the event after the power button is pressed for more than 4 seconds. Configuration options: [Suspend] [Instant-Off]

4.5.4 Hardware Monitor

The items in this sub-menu displays the hardware monitor values automatically detected by the BIOS. It also allows you to change CPU Q-Fan feature-related parameters. Select an item then press <Enter> to display the configuration options.

Phoenix-Award BIOS CMOS Setup Utility			
Power			
Hardware Monitor		Select Menu	
M/B Temperature	34°C/ 93°F	Item Specific Help▶▶	
Current CPU1 Temperature	47°C/118°F		
Chassis Fan speed	0 RPM		
CPU Fan speed	4265 RPM		
Chipset Fan speed	7500 RPM		
Chassis Fan2 speed	6367 RPM		
VCORE Voltage	1.64V		
+12V Voltage	11.35V		
+3.3V Voltage	3.36V		
+5VCC Voltage	5.22V		
Q-FAN Function	[Disabled]		
x CPU Target Temperature	45°C/113°F		
x Temperature Tolerance	3°C		
x Minimum FAN Duty Cycle	11/16		
x FAN Step Time	0.1 sec		
F1:Help ↑↓: Select Item -/+ : Change Value F5: Setup Defaults		ESC: Exit →←: Select Menu Enter: Select Sub-menu F10: Save and Exit	

M/B Temperature

Current CPU1 Temperature

The onboard hardware monitor automatically detects and displays the motherboard and CPU temperatures. These items are not user-configurable.

Chassis Fan Speed

CPU Fan Speed

Chipset Fan Speed

Chassis Fan2 Speed

The onboard hardware monitor automatically detects and displays the Chassis, CPU, and Power fan speeds in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows 0. These items are not user-configurable.

VCORE Voltage, +12V Voltage, 3.3V Voltage, 5VCC Voltage

The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators. These items are not user-configurable.

Q-FAN Function [Disabled]

Allows you to disable or enable the ASUS Q-Fan function.
Configuration options: [Disabled] [Enabled]

CPU Target Temperature [xxx°C/xxx°F]

Allows you to set the CPU Q-Fan temperature threshold when the CPU fan speed is increased to lower the CPU temperature.

Configuration options: [10°C/50°F] [15°C/59°F] [20°C/68°F] [25°C/77°F] [30°C/86°F] [35°C/95°F] [40°C/104°F] [45°C/113°F] [50°C/122°F] [55°C/131°F] [60°C/140°F] [65°C/149°F] [70°C/158°F] [75°C/167°F] [80°C/176°F] [85°C/185°F]

Temperature Tolerance [3°C]

Allows you to set the CPU temperature tolerance value.

Configuration options: [0°C] [1°C] [2°C] [3°C] [4°C] [5°C] [6°C] [7°C]

Minimum FAN Duty Cycle [11/16]

Allows you to set the minimum fan duty cycle.

Configuration options: [11/16] [12/16] [13/16] [14/16] [15/16]

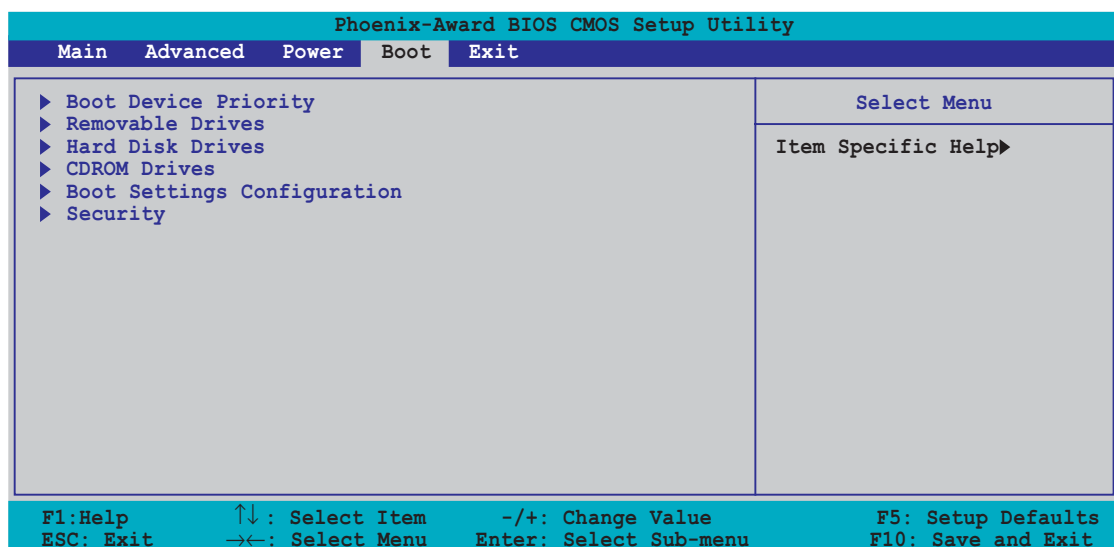
FAN Step Time [0.1 sec]

Allows you to select the fan speed time interval. Configuration options:

[0.1 sec] [0.2 sec] [0.3 sec] [0.4 sec] [0.5 sec] [0.6 sec] [0.7 sec] [0.8 sec] [0.9 sec] [1.0 sec] [1.1 sec] [1.2 sec] [1.3 sec] [1.4 sec] [1.5 sec] [1.6 sec]

4.6 Boot menu

The Boot menu items allow you to change the system boot options. Select an item then press <Enter> to display the sub-menu.



4.6.1 Boot Device Priority

Phoenix-Award BIOS CMOS Setup Utility			
Power			
Boot Device Priority		Select Menu	
1st Boot Device	[Removable]	Item Specific Help▶▶ Select your boot device priority	
2nd Boot Device	[Hard Disk]		
3rd Boot Device	[CDROM]		
4th Boot Device	[Disabled]		
F1:Help	↑↓ : Select Item	-/+ : Change Value	F5: Setup Defaults
ESC: Exit	→← : Select Menu	Enter: Select Sub-menu	F10: Save and Exit

1st ~ xxth Boot Device [Removable]

These items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.
Configuration options: [xxxxx Drive] [Disabled]

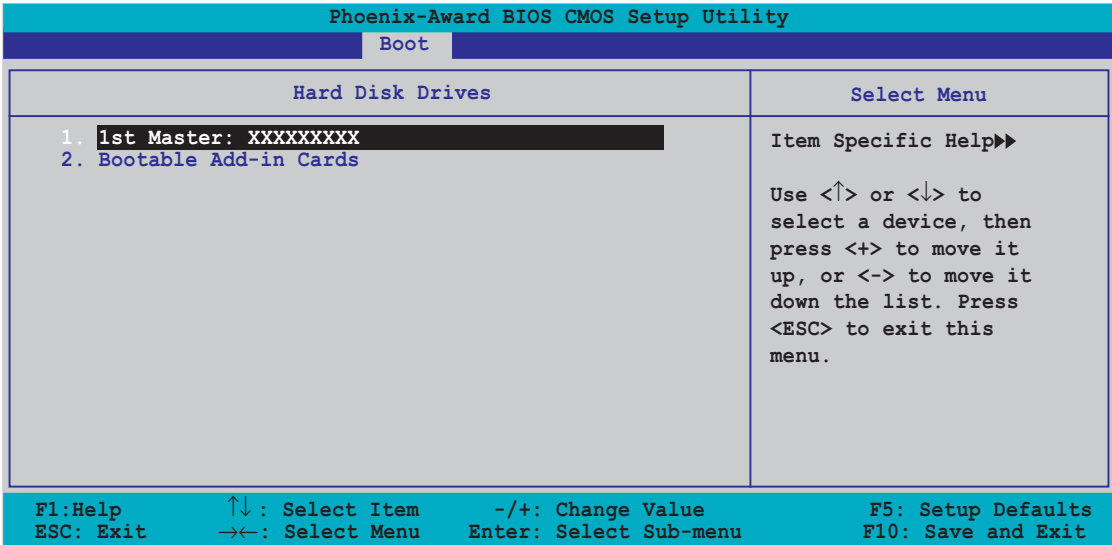
4.6.2 Removable Drives

Phoenix-Award BIOS CMOS Setup Utility			
Boot			
Removable Drives		Select Menu	
1. Floppy Disks		Item Specific Help▶▶ Use <↑> or <↓> to select a device, then press <+> to move it up, or <-> to move it down the list. Press <ESC> to exit this menu.	
F1:Help	↑↓ : Select Item	-/+ : Change Value	F5: Setup Defaults
ESC: Exit	→← : Select Menu	Enter: Select Sub-menu	F10: Save and Exit

1. Floppy Disks

Allows you to assign a removable drive attached to the system.

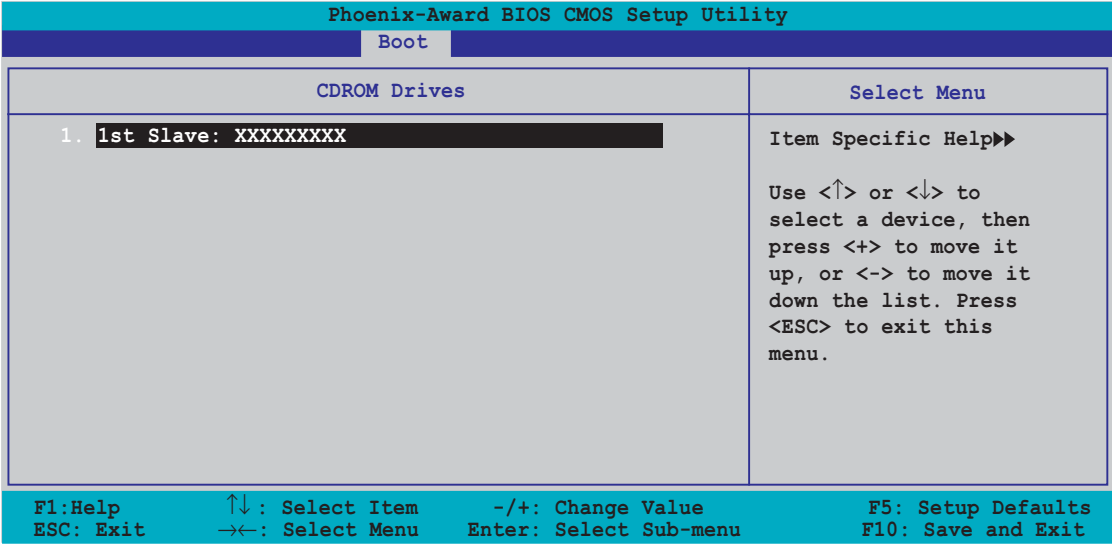
4.6.3 Hard Disk Drives



1. 1st Master: XXXXXXXXX

Allows you to assign hard disk drives attached to the system.

4.6.4 CDROM Drives



1. 1st Slave: XXXXXXXXX

Allows you to assign optical drives attached to the system.

4.6.5 Boot Settings Configuration

Phoenix-Award BIOS CMOS Setup Utility		
Boot		
Boot Settings Configuration		Select Menu
Case Open Warning	[Enabled]	Item Specific Help▶▶ Press [Enter] to enable or disable.
Quick Boot	[Enabled]	
Boot Up Floppy Seek	[Enabled]	
Bootup Num-Lock	[On]	
Typematic Rate Setting	[Disabled]	
x Typematic Rate (Chars/Sec)	6	
x Typematic Delay (Msec)	250	
OS Select For DRAM > 64MB	[Non-OS2]	
Full Screen LOGO	[Enabled]	
Halt On	[All, But Keyboard]	
F1:Help ↑↓: Select Item -/+ : Change Value F5: Setup Defaults		F10: Save and Exit
ESC: Exit →←: Select Menu Enter: Select Sub-menu		

Case Open Warning [Enabled]

Enables or disables the chassis open status feature. Setting to Enabled, clears the chassis open status. Configuration options: [Disabled] [Enabled]

Quick Boot [Enabled]

Enables or disables the quick boot feature. When Enabled, the system skips certain tests while booting. Configuration options: [Disabled] [Enabled]

Boot Up Floppy Seek [Enabled]

Enables or disables the chassis open status feature. Setting to Enabled, clears the chassis open status. Configuration options: [Disabled] [Enabled]

Bootup Num-Lock [On]

Allows you to select the power-on state for the NumLock. Configuration options: [Off] [On]

Typematic Rate Setting [Disabled]

Allows you to set the keystroke rate. Enable this item to configure the **Typematic Rate (Chars/Sec)** and the **Typematic Delay (Msec)**. Configuration options: [Disabled] [Enabled]



The items **Typematic Rate (Chars/Sec)** and **Typematic Delay (Msec)** becomes user-configurable only when the item Typematic Rate Setting is enabled.

Typematic Rate (Chars/Sec) [6]

Allows you to select the rate at which a character repeats when you hold a key. Configuration options: [6] [8] [10] [12] [15] [20] [24] [30]

Typematic Delay (Msec) [250]

Allows you to set the delay before keystrokes begin to repeat.
Configuration options: [250] [500] [750] [1000]

OS Select for DRAM > 64MB [Non-OS2]

Set this item to OS2 only when you are running on an OS/2 operating system with an installed RAM of greater than 64 KB.
Configuration options: [Non-OS2] [OS2]

Full Screen LOGO [Enabled]

Allows you to enable or disable the full screen logo display feature.
Configuration options: [Disabled] [Enabled]

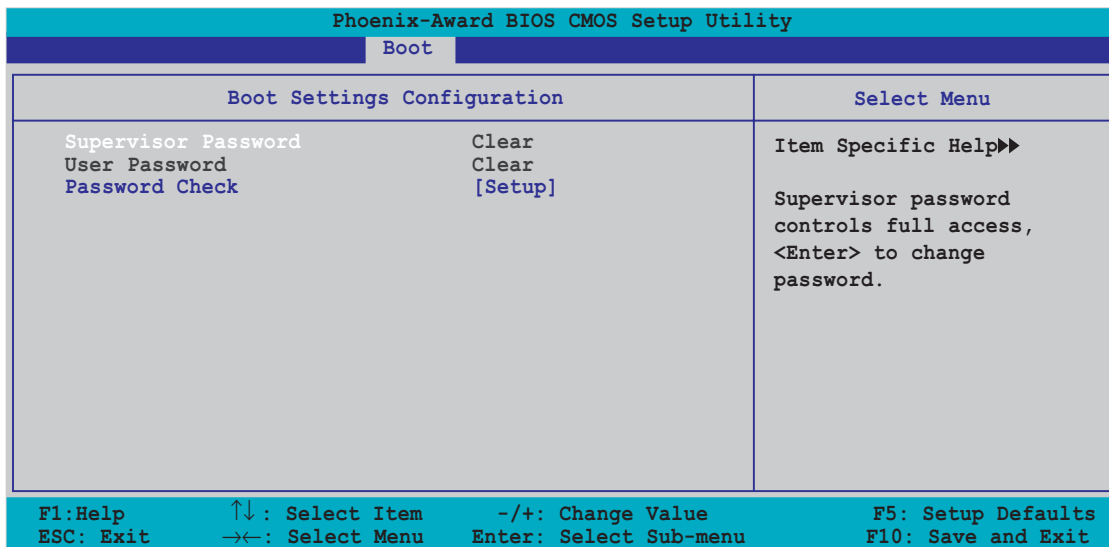


Make sure that the above item is set to [Enabled] if you want to use the ASUS MyLogo2™ feature.

Halt On [All, But Keyboard]

Allows you to error report type.
Configuration options: [All Errors] [No Errors] [All, But Keyboard]
[All, But Diskette] [All, But Disk/Key]

4.6.6 Security



Supervisor Password User Password

These fields allow you to set passwords:

To set a password:

1. Select an item then press <Enter>.
2. Type in a password using a combination of a maximum of eight (8) alpha-numeric characters, then press <Enter>.
3. When prompted, confirm the password by typing the exact characters again, then press <Enter>. The password field setting is changed to Set.

To clear the password:

1. Select the password field and press <Enter> twice. The following message appears:



2. Press any key to continue. The password field setting is changed to Clear.

A note about passwords

The Supervisor password is required to enter the BIOS Setup program preventing unauthorized access. The User password is required to boot the system preventing unauthorized use.

Forgot your password?

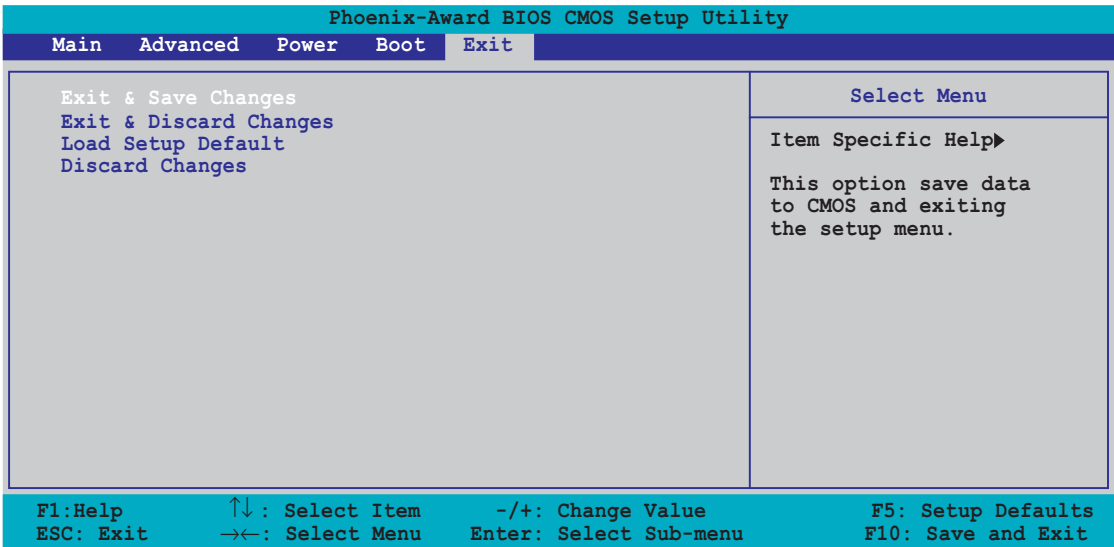
If you forget your password, you can clear it by erasing the CMOS Real Time Clock (RTC) RAM. The RAM data containing the password information is powered by the onboard button cell battery. If you need to erase the CMOS RAM, refer to section “2.6 Jumpers” for instructions.

Password Check

This field requires you to enter the password before entering the BIOS setup or the system. Select [Setup] to require the password before entering the BIOS Setup. Select [System] to require the password before entering the system. Configuration options: [Setup] [System]

4.7 Exit menu

The Exit menu items allow you to load the optimal or failsafe default values for the BIOS items, and save or discard your changes to the BIOS items.



Pressing <Esc> does not immediately exit this menu. Select one of the options from this menu or <F10> from the legend bar to exit.

Exit & Save Changes

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. An onboard backup battery sustains the CMOS RAM so it stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select **Yes** to save changes and exit.



If you attempt to exit the Setup program without saving your changes, the program prompts you with a message asking if you want to save your changes before exiting. Press <Enter> to save the changes while exiting.

Exit & Discard Changes

Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than System Date, System Time, and Password, the BIOS asks for a confirmation before exiting.

Load Setup Defaults

This option allows you to load the default values for each of the parameters on the Setup menus. When you select this option or if you press <F5>, a confirmation window appears. Select **Yes** to load default values. Select **Exit & Save Changes** or make other changes before saving the values to the non-volatile RAM.

Discard Changes

This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select **Yes** to discard any changes and load the previously saved values.

This chapter describes the contents of the support CD that comes with the motherboard package.

5 Software support

Chapter summary

5.1	Installing an operating system	5-1
5.2	Support CD information	5-1
5.3	Software information	5-9
5.4	RAID configurations	5-18
5.5	Creating a RAID driver disk	5-26
5.6	Cool 'n' Quiet!™ Technology	5-27

5.1 Installing an operating system

This motherboard supports Windows® 2000/2003 Server/XP operating systems (OS). Always install the latest OS version and corresponding updates to maximize the features of your hardware.



- Motherboard settings and hardware options vary. Use the setup procedures presented in this chapter for reference only. Refer to your OS documentation for detailed information.
- Make sure that you install Windows® 2000 Service Pack 4 or the Windows® XP Service Pack 1 or later versions before installing the drivers for better compatibility and system stability.

5.2 Support CD information

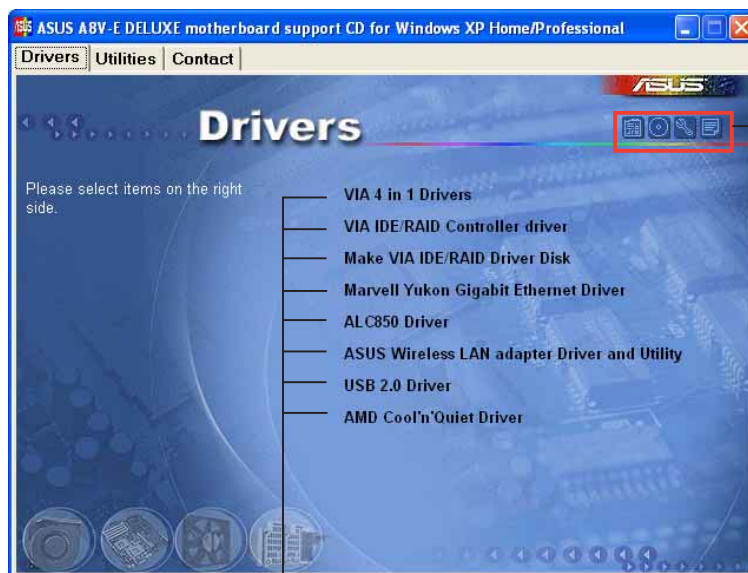
The support CD that came with the motherboard package contains the drivers, software applications, and utilities that you can install to avail all motherboard features.



The contents of the support CD are subject to change at any time without notice. Visit the ASUS website(www.asus.com) for updates.

5.2.1 Running the support CD

Place the support CD to the optical drive. The CD automatically displays the **Drivers** menu if Autorun is enabled in your computer.



Click an icon to display support CD/motherboard information

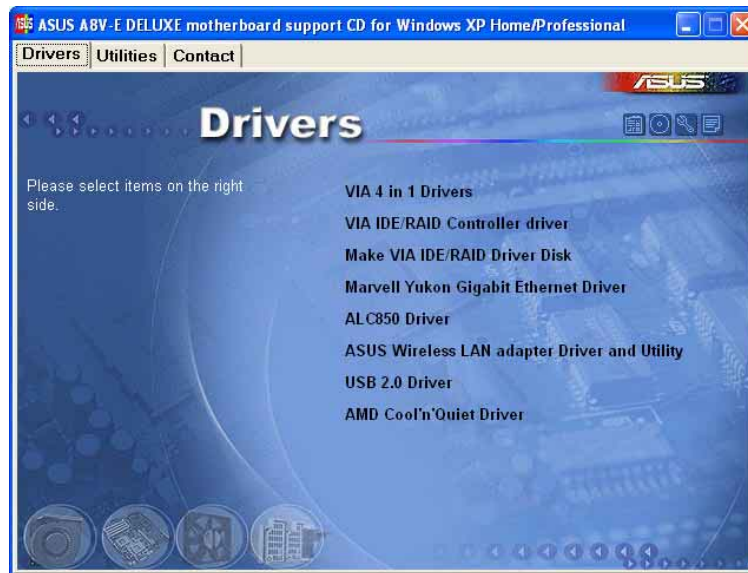
Click an item to install



If **Autorun** is NOT enabled in your computer, browse the contents of the support CD to locate the file **ASSETUP.EXE** from the BIN folder. Double-click the **ASSETUP.EXE** to run the CD.

5.2.2 Drivers menu

The drivers menu shows the available device drivers if the system detects installed devices. Install the necessary drivers to activate the devices.



VIA 4 in 1 drivers

This item installs the following drivers:

- VIA Registry (INF) driver
- VIA ATAPI vendor support driver
- VIA PCI IRQ Miniport driver.

VIA IDE RAID Controller driver

Installs the VIA 6420 RAID controller driver and application.

Make VIA 6420 Driver Disk

Allows you to create a RAID driver disk for the VIA 6420 RAID configuration.

PCI Marvell Yukon Gigabit Ethernet Driver

Installs the Marvell® Yukon 88E8053 PCI Express™ Gigabit LAN driver that provides up to 1000 Mbps data transfer rates.

ALC850 Audio Driver

Installs the Realtek® ALC850 audio controller and application.

ASUS Wireless LAN adapter Drivers and Utility

Installs the driver, utilities, and setup wizard for the ASUS WiFi-g™ wireless solution. Refer to the WiFi-g™ documentation for details.

USB 2.0 Driver

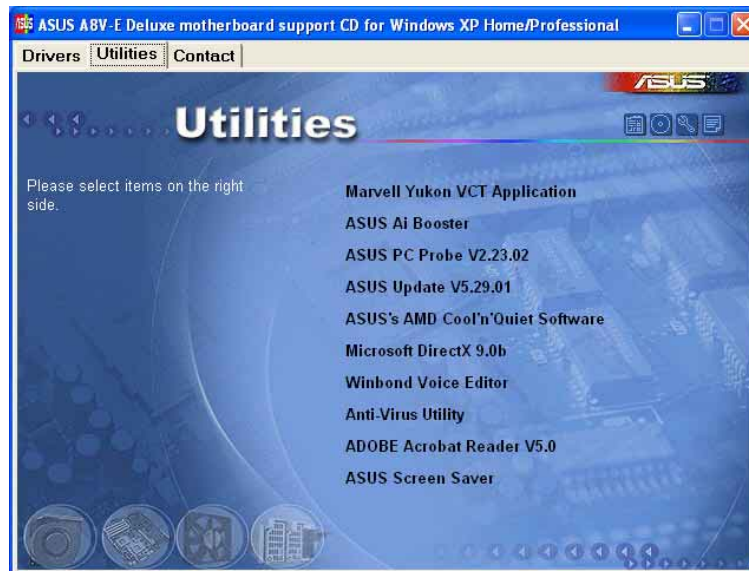
Installs the USB 2.0 driver.

AMD Cool ‘n’ Quiet Driver

Launches the AMD Cool ‘n’ Quiet!™ Technology driver installation wizard.

5.2.3 Utilities menu

The Utilities menu shows the applications and other software that the motherboard supports.



Marvell Yukon VCT Application

Installs the Marvell® Yukon Virtual Cable Tester (VCT) application. The VCT is a cable diagnostic application that analyzes and reports LAN cable faults and shorts. See page 5-11 for details.

AI Booster

The ASUS AI Booster application allows you to overclock the CPU speed in a Windows® environment.

ASUS PC Probe

This smart utility monitors the fan speed, CPU temperature, and system voltages, and alerts you of any detected problems. This utility helps you keep your computer in healthy operating condition.

ASUS Update

Allows you to download the latest version of the BIOS from the ASUS website.



Before using the ASUS Update, make sure that you have an Internet connection so you can connect to the ASUS website.

Microsoft DirectX

Installs the Microsoft® DirectX 9.0 driver. The Microsoft DirectX® 9.0 is a multimedia technology that enhances computer graphics and sound. DirectX® improves the multimedia features of your computer so you can enjoy watching TV and movies, capturing videos, or playing games in your computer. Visit the Microsoft website (www.microsoft.com) for updates.

Winbond Voice Editor

This program is for recording and customizing wave files for the ASUS POST Reporter™. Use this program to change the default vocal POST messages. See section “3.3 Vocal POST Messages” for a list of the default messages.

Anti-virus Utility

The anti-virus application detects and protects your computer from viruses that destroy data.

ADOBE Acrobat Reader

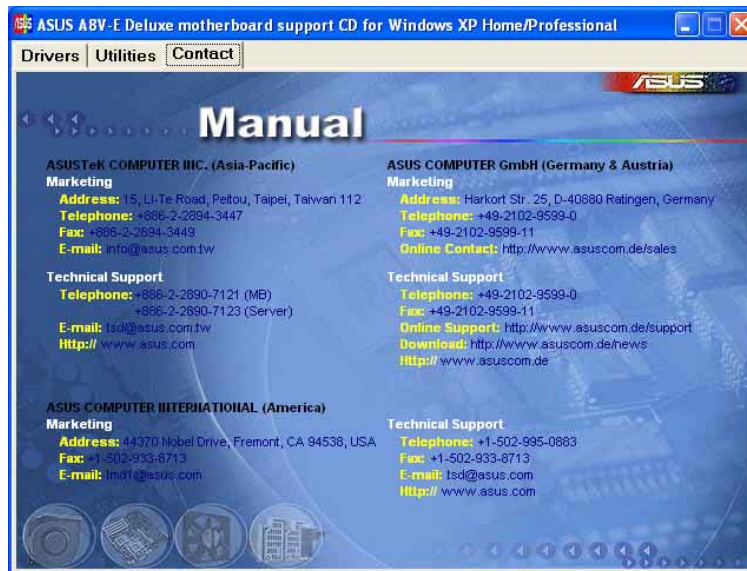
Installs the Adobe® Acrobat® Reader that allows you to open, view, and print documents in Portable Document Format (PDF).

ASUS Screen Saver

Bring life to your computer screen by installing the ASUS screen saver.

5.2.4 ASUS Contact information

Click the **Contact** tab to display the ASUS contact information. You can also find this information on the inside front cover of this user guide.

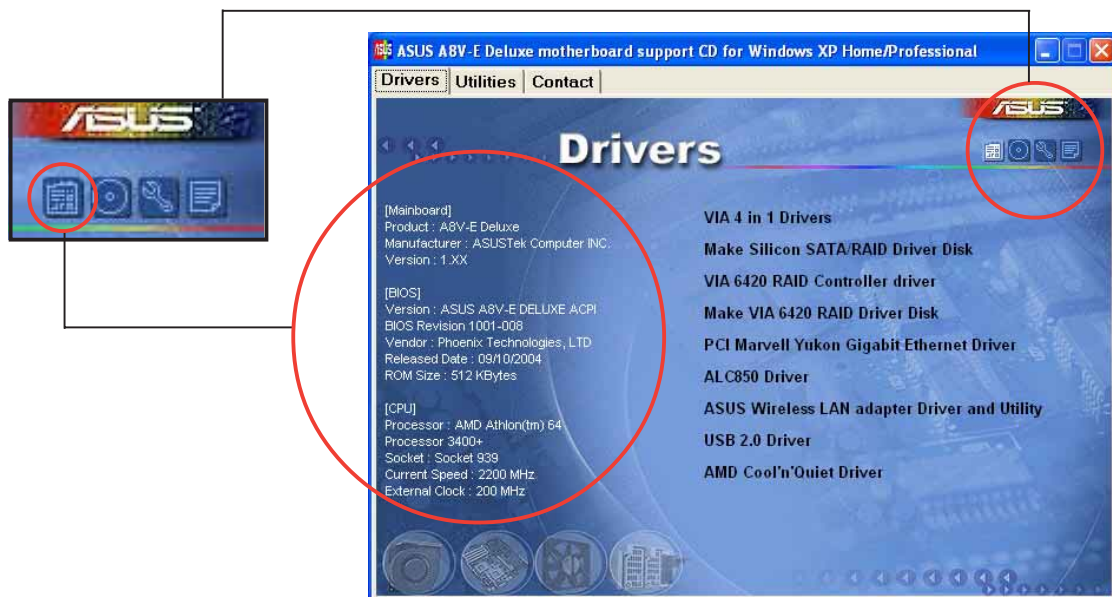


5.2.5 Other information

The icons on the top right corner of the screen give additional information on the motherboard and the contents of the support CD. Click an icon to display the specified information.

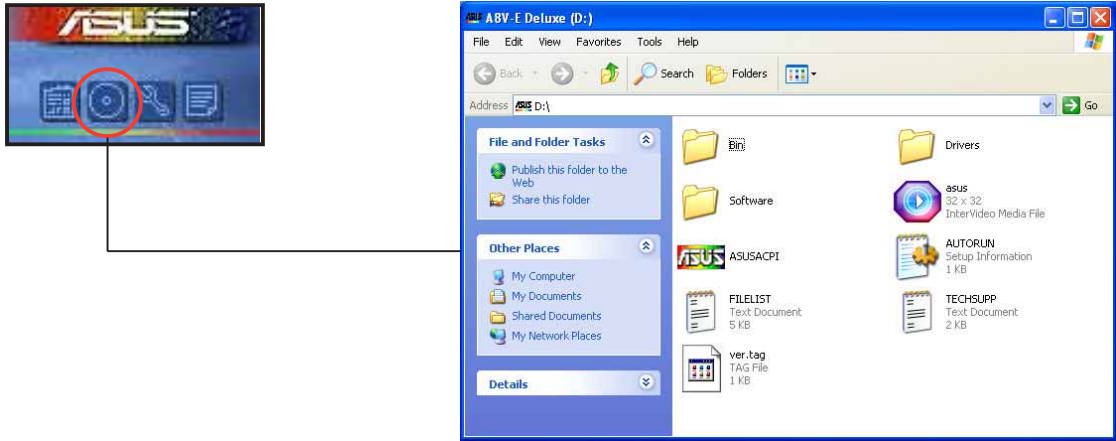
Motherboard Info

Displays the general specifications of the motherboard.



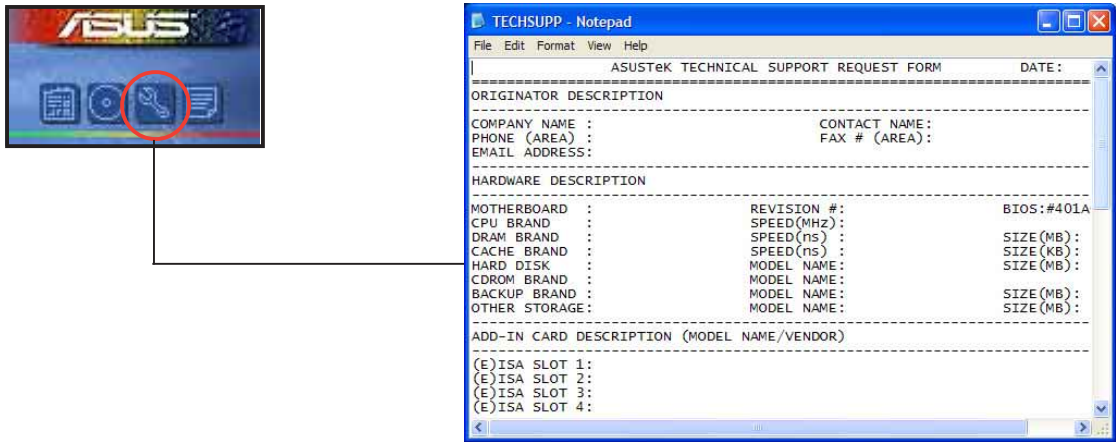
Browse this CD

Displays the support CD contents in graphical format.



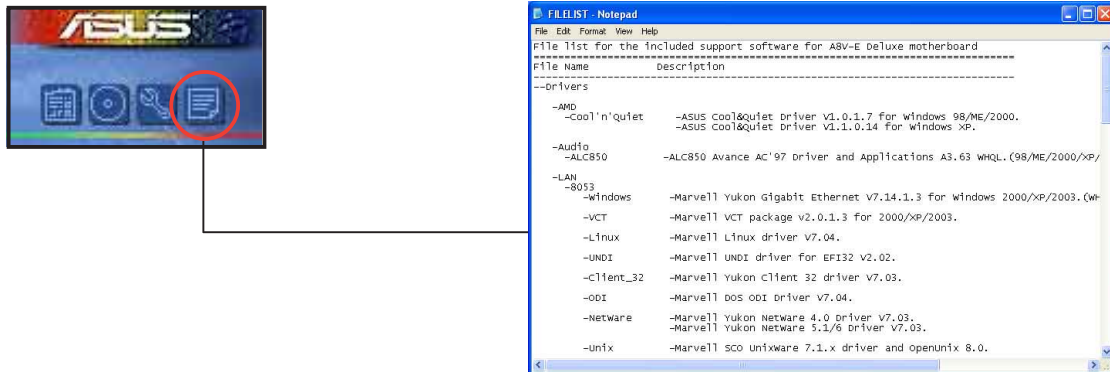
Technical support Form

Displays the ASUS Technical Support Request Form that you have to fill out when requesting technical support.



Filelist

Displays the contents of the support CD and a brief description of each in text format.



5.3 Software information

Most of the applications in the support CD have wizards that will conveniently guide you through the installation. View the online help or readme file that came with the software application for more information.

5.3.1 ASUS MyLogo2™

The ASUS MyLogo2™ utility lets you customize the boot logo. The boot logo is the image that appears on screen during the Power-On Self-Tests (POST). The ASUS MyLogo2™ is automatically installed when you install the **ASUS Update** utility from the support CD. See section “5.2.3 Utilities menu” for details.



- Before using the ASUS MyLogo2™, use the AWDFLASH utility to make a copy of your original BIOS file, or obtain the latest BIOS version from the ASUS website. See section “4.1.2 Updating the BIOS”.
- Make sure that the BIOS item **Full Screen Logo** is set to [Enabled] if you wish to use ASUS MyLogo2. See section “4.6.5 Boot Settings Configuration”.
- You can create your own boot logo image in GIF, JPG, or BMP file formats.

To launch the ASUS MyLogo2™:

1. Launch the ASUS Update utility. Refer to section “4.1.5 ASUS Update utility” for details.
2. Select **Options** from the drop down menu, then click **Next**.
3. Check the option **Launch MyLogo to replace system boot logo before flashing BIOS**, then click **Next**.
4. Select **Update BIOS from a file** from the drop down menu, then click **Next**.
5. When prompted, locate the new BIOS file, then click **Next**. The ASUS MyLogo2 window appears.
6. From the left window pane, select the folder that contains the image you intend to use as your boot logo.



7. When the logo images appear on the right window pane, select an image to enlarge by clicking on it.



8. Adjust the boot image to your desired size by selecting a value on the **Ratio** box.



9. When the screen returns to the ASUS Update utility, flash the original BIOS to load the new boot logo.
10. After flashing the BIOS, restart the computer to display the new boot logo during POST.

5.3.2 AI NET 2

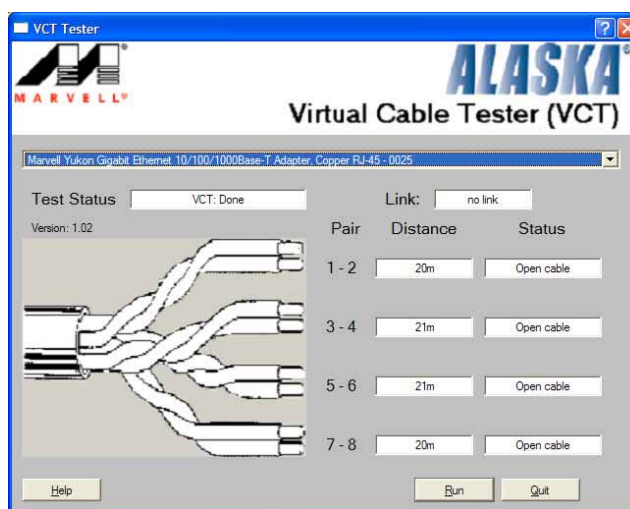
The Marvell® Virtual Cable Tester™ (VCT) is a cable diagnostic utility that reports LAN cable faults and shorts using the Time Domain Reflectometry (TDR) technology. The VCT detects and reports open and shorted cables, impedance mismatches, pair swaps, pair polarity problems, and pair skew problems of up to 100 meters at one meter accuracy.

The VCT feature reduces networking and support costs through a highly manageable and controlled network system. This utility can be incorporated in the network systems software for ideal field support as well as development diagnostics.

Using the Virtual Cable Tester™

To use the the Marvell® Virtual Cable Tester™ utility:

1. Launch the VCT utility from the Windows® desktop by clicking **Start > All Programs > Marvell > Virtual Cable Tester**.
2. Click **Virtual Cable Tester** from the menu to display the screen below.



3. Click the **Run** button to perform a cable test.



- The VCT only runs on systems with Windows® XP or Windows® 2000 operating systems.
- The **Run** button on the Virtual Cable Tester™ main window is disabled if no problem is detected on the LAN cable(s) connected to the LAN port(s).
- If you want the system to check the LAN cable before entering the OS, enable the **POST Check LAN cable** item in the BIOS. See section “4.4.7 LAN Cable Status” for details.

5.3.3 Audio configurations

The Realtek® ALC850 AC '97 audio CODEC provides 8-channel audio capability to deliver the ultimate audio experience on your PC. The software provides Jack-Sensing function (Line-In, Line-Out, Mic-In), S/PDIF out support and interrupt capability. The ALC850 also includes the Realtek® proprietary UAJ® (Universal Audio Jack) technology for three ports (Line-In, Line-Out and Mic-In), eliminating cable connection errors and giving users plug and play convenience.

Follow the installation wizard to install the **Realtek ALC850 Audio Driver and Application** from the support CD that came with the motherboard package.

If the Realtek audio software is correctly installed, you will find the SoundEffect icon on the taskbar.

From the taskbar, double-click on the **SoundEffect** icon to display the **Realtek Audio Control Panel**.



Realtek SoundEffect icon



The Jack-sensing and UAJ® technology features are supported on the Line-In, Line-Out, and Mic jacks only.

Sound Effect options

The Realtek® ALC850 Audio CODEC allows you to set your listening environment, adjust the equalizer, set the karaoke, or select pre-programmed equalizer settings for your listening pleasure.

To set the sound effect options:

1. From the Realtek Audio Control Panel, click the **Sound Effect** button.
2. Click the shortcut buttons to change the acoustic environment, adjust the equalizer, or set the karaoke to your desired settings.
3. The audio settings take effect immediately after you click on the buttons.
4. Click the Exit (X) button on the upper-right hand corner of the window to exit.



S/PDIF option

The Sony/Philips Digital Interface (S/PDIF) options allows you to change your S/PDIF output settings.

To set the S/PDIF options:

1. From the Realtek Audio Control Panel, click the **SPDIF** button.
2. Click the option buttons to change your S/PDIF out settings.
3. Click the Exit (X) button on the upper-right hand corner of the window to exit.



Speaker Configuration

This option allows you to set your speaker configuration.

To set the speaker configuration:

1. From the Realtek Audio Control Panel, click the **Speaker Configuration** button.
2. Select from the combo list box your current speaker setup, then click **Auto Test** to test your settings.
3. Click the **UAI Automatic** button to enable or disable the Universal Audio Jack(UAJ®) technology feature.
4. Click the Exit (X) button on the upper-right hand corner of the window to exit.



AI Audio feature

The AI Audio feature works through the connector sensing option that allows you to check if your audio devices are connected properly.

To start the connector sensing:

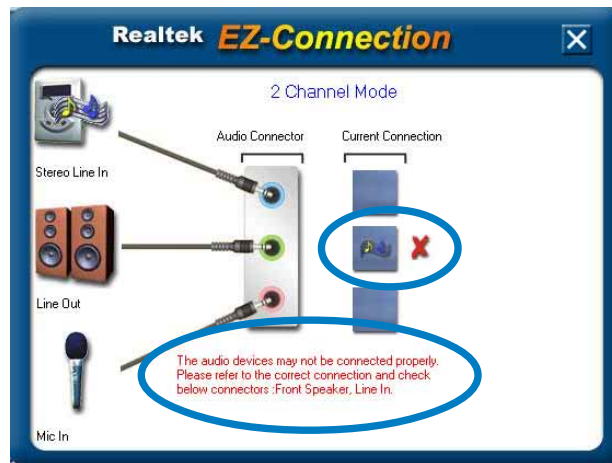
1. From the Realtek Audio Control Panel, click the **Connector Sensing** button.
2. Click the **Bracket** button to display connected audio devices.
3. Click the **Option** button to change sensing options.
4. Click the **Start** button to start connection sensing. A progress bar displays current connector sensing status.



Make sure to exit all audio applications before starting this function.



5. When finished, the utility prompts the Realtek® EZ-connection dialog box showing your current audio connections. The text at the bottom of the box explains your audio connection status. An *X* mark denotes an incorrect connection.



6. If there are detected problems, make sure that your audio cables are connected to the proper audio jack and repeat connector sensing.
7. Click the **X** button to exit EZ-connection dialog box.
8. Click the Exit (**X**) button on the upper-right hand corner of the window to exit audio control panel.

HRTF Demo

This option shows a demo of the Head-Related Transfer Functions (HRTF).

To start the HRTF demo:

1. From the Realtek Audio Control Panel, click the **HRTF Demo** button.
2. Click the option buttons to change the sound, moving path or EAX settings.
3. Click the **Play** button to start or the **Stop** button to stop.
4. Click the Exit (**X**) button on the upper-right hand corner of the window to exit.



General settings

This option shows the audio settings and allows you to change the language setting or toggle the SoundEffect icon display on the Windows taskbar.

To display the general settings:

1. From the Realtek Audio Control Panel, click the **General** button.
2. Click the option button to enable or disable the icon display on the Windows taskbar.
3. Click the **Language** combo list box to change language display.
4. Click the Exit (X) button on the upper-right hand corner of the window to exit.



Rear panel audio ports function variation

The functions of the Line Out (lime), Line In (blue), Mic (pink), Rear Speaker Out (gray), Side Speaker Out (black), and Center/Subwoofer (yellow orange) ports on the rear panel change when you select the 4-channel, 6-channel or 8-channel audio configurations. See the 8, 6, 4 or 2-channel speaker configuration on page 2-23.

5.4 RAID configurations

The motherboard comes with the VIA VT8237R Southbridge RAID controller that allows you to configure Serial ATA hard disk drives as RAID sets. The motherboard supports the following RAID configurations.

RAID 0 (*Data striping*) optimizes two identical hard disk drives to read and write data in parallel, interleaved stacks. Two hard disks perform the same work as a single drive but at a sustained data transfer rate, double that of a single disk alone, thus improving data access and storage. Use of two new identical hard disk drives is required for this setup.

RAID 1 (*Data mirroring*) copies and maintains an identical image of data from one drive to a second drive. If one drive fails, the disk array management software directs all applications to the surviving drive as it contains a complete copy of the data in the other drive. This RAID configuration provides data protection and increases fault tolerance to the entire system. Use two new drives or use an existing drive and a new drive for this setup. The new drive must be of the same size or larger than the existing drive.



If you want to boot the system from a hard disk drive included in a RAID set, copy first the RAID driver from the support CD to a floppy disk before you install an operating system to a selected hard disk drive. Refer to section “5.5 Creating a RAID driver disk” for details.

5.4.1 Installing hard disks

The motherboard supports Serial ATA hard disk drives. For optimal performance, install identical drives of the same model and capacity when creating a disk array.

Installing Serial ATA (SATA) hard disks

To install the SATA hard disks for a RAID configuration:

1. Install the SATA hard disks into the drive bays.
2. Connect the SATA signal cables.
3. Connect a SATA power cable to the power connector on each drive.

5.4.2 VIA RAID configurations

The motherboard includes a high performance IDE RAID controller integrated in the VIA VT8237R southbridge chipset. It supports RAID 0 and RAID 1 with two independent Serial ATA channels.

Entering VIA Tech RAID BIOS Utility

1. Boot-up your computer.
2. During POST, press <Tab> to enter VIA RAID configuration utility. The following menu options will appear.



The RAID BIOS information on the setup screen shown below is for reference only. What you see on your screen may not exactly match what is shown here.

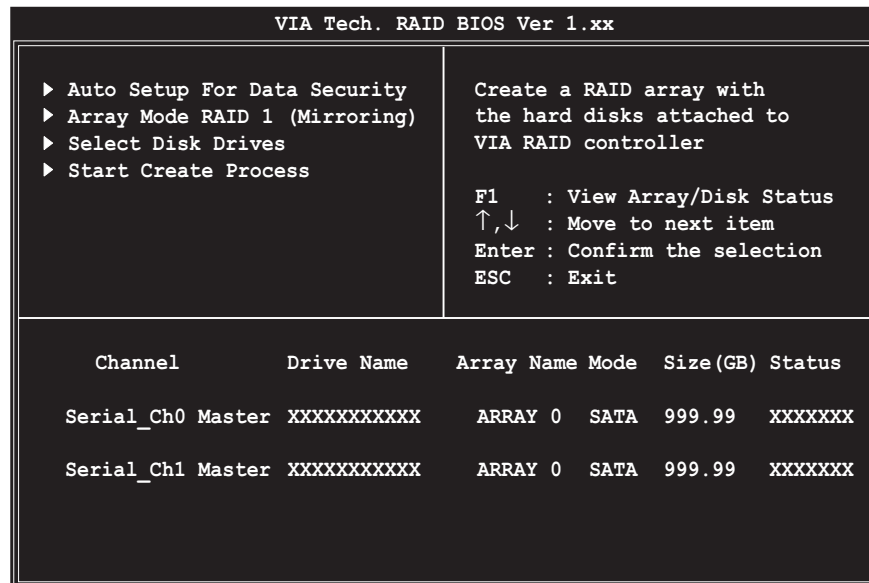
VIA Tech. RAID BIOS Ver 1.xx						
▶ Create Array ▶ Delete Array ▶ Create/Delete Spare ▶ Select Boot Array ▶ Serial Number View			Create a RAID array with the hard disks attached to VIA RAID controller F1 : View Array/Disk Status ↑,↓ : Move to next item Enter : Confirm the selection ESC : Exit			
Channel	Drive Name	Array Name	Mode	Size(GB)	Status	
Serial_Ch0	Master XXXXXXXXXXXX	ARRAY 0	SATA	999.99	XXXXXXX	
Serial_Ch1	Master XXXXXXXXXXXX	ARRAY 0	SATA	999.99	XXXXXXX	

On the upper-right side of the screen is the message and legend box. The keys on the legend box allows you to navigate through the setup menu options. The message describes the function of each menu item. The following lists the keys found in the legend box with their corresponding functions.

<F1>	:	View Array/Disk Status
↑, ↓	:	Move to the next item
<Enter>	:	Confirm the selection
<ESC>	:	Exit

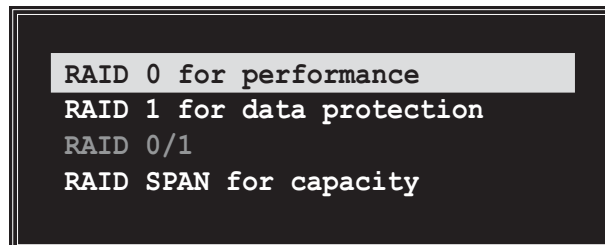
Create Array

1. From the VIA RAID BIOS utility main menu, select **Create Array** then press **<Enter>**. The main menu items on the upper-left corner of the screen are replaced with create array menu options.



RAID 0 for performance

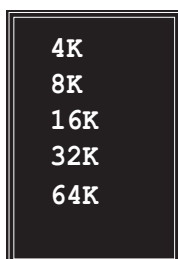
1. From the create array menu, select **Array Mode**, then press **<Enter>**. The supported RAID configurations appear on a pop-up menu.



2. Select **RAID 0 for performance** then press **<Enter>**.
From this point, you may choose to auto-configure the RAID array by selecting **Auto Setup for Performance** or manually configure the RAID array for striped sets. If you want to auto-configure, proceed to the next step, otherwise, skip to step 5.
3. Select **Auto Setup for Performance** and press **<Enter>**. The following confirmation message appears.

```
Auto create array will destroy all
data on disks, Continue? (Y/N)
```

4. Press <Y> to confirm or <N> to return to the configuration options. If you selected <Y>, proceed to step 9.
5. Select **Select Disk Drives**, then press <Enter>. Use arrow keys to select disk drive, then press <Enter> to mark selected drive. An asterisk appears before a selected drive.
6. Select **Block Size**, then press <Enter> to set array block size. A list of valid array block sizes are displayed on a pop-up menu.



TIP: For server systems, use of a lower array block size is recommended. For multimedia computer systems used mainly for audio and video editing, a higher array block size is recommended for optimum performance.

Use arrow keys to move selection bar on items and press <Enter> to select.

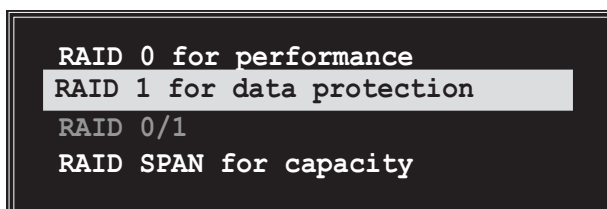
7. Select **Start Create Process** and press <Enter> to set up hard disk for RAID system. The following confirmation message appears:

The data on the selected disks will be destroyed. Continue? (Y/N)

8. Press <Y> to confirm or <N> to return to the configuration options.
9. Press <Esc> to go back to main menu.

RAID 1 for data protection

1. From the create array menu, select **Array Mode**, then press <Enter>. The supported RAID configurations appear on a pop-up menu.



2. Select **RAID 1 for data protection** then press <Enter>.

3. From this point, you can auto-configure the RAID array by selecting **Auto Setup for Data Security** or manually configure the RAID array for mirrored sets. If you want to auto-configure, proceed to the next step, otherwise, skip to step 6.
4. Select **Auto Setup for Data Security** and press <Enter>. The following confirmation message appears.

```
Auto create array will destroy all
data on disks, Continue? (Y/N)
```

5. Press <Y> to confirm or <N> to return to the configuration options. If you selected <Y>, proceed to step 11.
6. Select **Select Disk Drives**, then press <Enter>. Use arrow keys to select disk drive/s, then press <Enter>. An asterisk appears before a selected drive.
7. Select **Start Create Process** and press <Enter> to setup hard disk for RAID system. The following inquiry appears:

```
Save the data on source disk to
mirror after creation? (Y/N)
```

8. If you select <Y> the utility will duplicate your data. Press <Y> anytime if you want to exit the duplication process.

```
Duplicating...
Press Yes(Y) to Escape
```

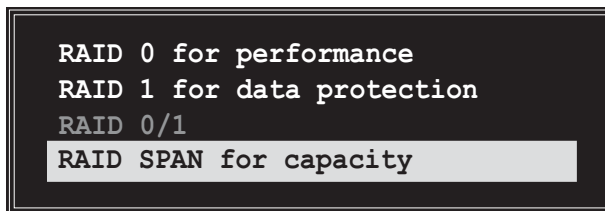
9. If you select <N>, the following confirmation message appears.

```
The data on the selected disks will
be destroyed. Continue? (Y/N)
```

10. Press <Y> to confirm or <N> to return to the configuration options.
11. Press <Esc> to go back to main menu.

RAID Span for capacity

1. From the create array menu, select **Array Mode**, then press <Enter>. The supported RAID configurations appear on a pop-up menu.



2. Select **RAID SPAN for capacity** then press <Enter>.
3. From this point, you can auto-configure the RAID array by selecting **Auto Setup for Capacity** or manually configure the RAID array for spanned sets. If you want to auto-configure, continue with next step; otherwise, proceed to step 6.
4. Select **Auto Setup for Capacity** and press <Enter>. The following confirmation message appears.

Auto create array will destroy all
data on disks, Continue? (Y/N)

5. Press <Y> to confirm or <N> to return to the configuration options. If you selected <Y>, proceed to step 11.
6. Select **Select Disk Drives**, then press <Enter>. Use arrow keys to select disk drive/s, then press <Enter>. An asterisk appears before a selected drive.
7. Select **Start Create Process** and press <Enter> to start RAID system setup. The following inquiry appears:

Save the data on Span 0 disk
after creation? (Y/N)

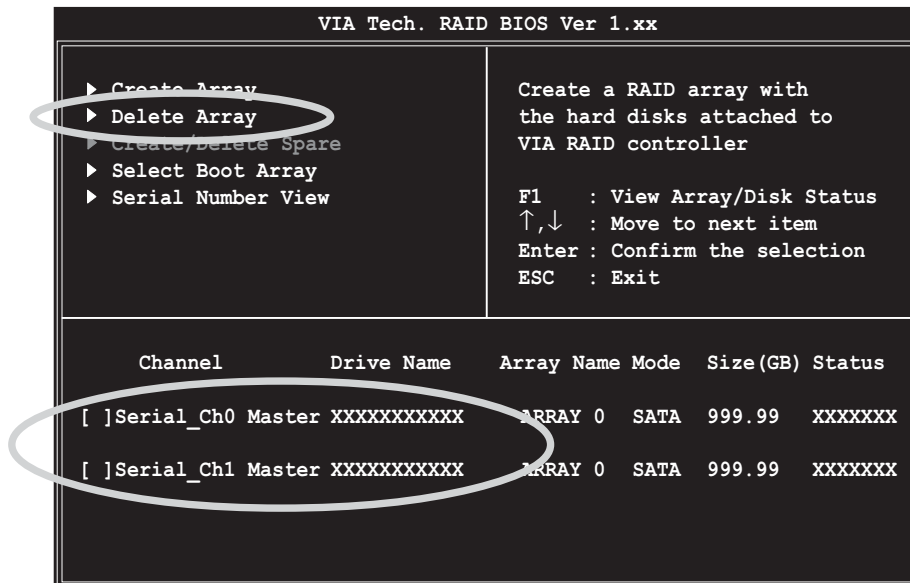
8. If you select <Y>, the utility will save your disk data on Span 0 disk then configure the RAID set. Proceed to step 11.
9. If you select <N>, the following confirmation message appears.

The data on the selected disks will
be destroyed. Continue? (Y/N)

10. Press <Y> to confirm or <N> to return to the configuration options.
11. Press <Esc> to go back to main menu.

Delete Array

1. From the VIA RAID BIOS utility main menu, select **Delete Array** then press <Enter>.



2. From the list of channel used for IDE RAID arrays, press <Enter> to select a RAID array to delete. The following confirmation message appears.

The selected array will be destroyed.
Are you sure? Continue? Press Y/N

3. Press <Y> to confirm or <N> to return to the configuration options.

Select Boot Array

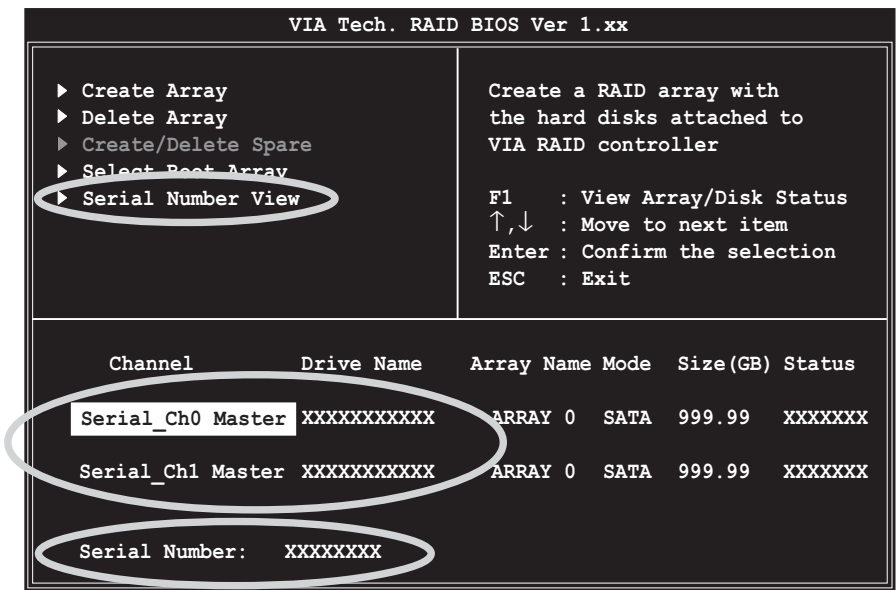
1. From the VIA RAID BIOS utility main menu, select **Select Boot Array** then press <Enter>.
2. From the list of channel used for IDE RAID arrays, press <Enter> to select a RAID array for boot. After selection, the **Status** of the selected array will change to Boot.
3. Press <ESC> to return to the menu items. Follow the same procedure to deselect the the boot array.

Serial Number View

- 1. From the VIA RAID BIOS utility main menu, select **Serial Number View** then press <Enter>.
- 2. From the list of channel used for IDE RAID arrays, use the arrow keys to move the selection bar on each item. The serial number for the selected drive is displayed at the bottom of the screen.



This option is useful for identifying same model disks.



5.5 Creating a RAID driver disk

A floppy disk with the RAID driver is required when installing Windows® 2000/XP operating system on a hard disk drive that is included in a RAID set.

To create a RAID driver disk:

1. Place the motherboard support CD into the CD-ROM drive.
2. When the **Drivers** menu appears, click **Make VIA 6420 RAID Driver Disk** to create a VIA RAID driver disk

Or

Browse the contents of the support CD to locate the driver disk utility and go to **\Drivers\VIARAID\6420RAID** for the VIA RAID driver disk utility



Refer to section “5.2.2 Drivers menu” for details.

3. Insert floppy disk to floppy disk drive.
5. Follow succeeding screen information to complete process.
6. Write-protect the floppy disk to avoid computer virus infection.

To install the RAID driver:

1. During the OS installation, the system prompts you to press the F6 key to install third-party SCSI or RAID driver.
2. Press <F6> then insert the floppy disk with RAID driver into the floppy disk drive.
3. Follow the succeeding screen instructions to complete the installation.

5.6 Cool 'n' Quiet!™ Technology

The motherboard supports the AMD Cool 'n' Quiet!™ Technology that dynamically and automatically change the CPU speed, voltage, and amount of power depending on the task the CPU performs.

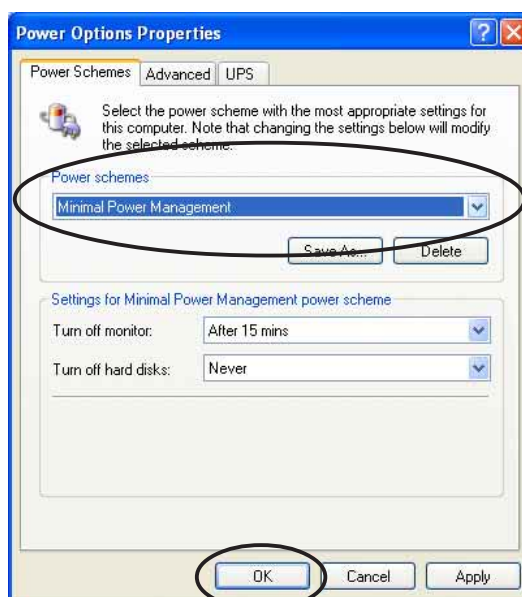
5.6.1 Enabling Cool 'n' Quiet!™ Technology

To enable Cool 'n' Quiet!™ Technology:

1. Turn on the system and enter BIOS by pressing the key during the Power On Self-Tests (POST).
2. In the **Advanced > CPU Configuration > AMD CPU Cool & Quiet Configuration** menu, select the item **Cool N'Quiet** and set it to **Enabled**. See section "4.4 Advanced Menu" in the user guide.
3. In the **Power** menu, select the item **ACPI 2.0 Support** and set it to **Yes**. See section "4.5 Power Menu" in the user guide.
4. Save your changes and exit BIOS Setup.
5. Reboot your computer and set your Power Option Properties depending on your operating system.

Windows® 2000/XP

1. From the Windows® 2000/XP operating system, click the **Start** button. Select **Settings**, then **Control Panel**.
2. Make sure the Control Panel is set to Classic View.
3. Double-click the **Display** icon in the Control Panel then select the **Screen Saver** tab.
4. Click the **Power...** button. The following dialog box appears.
5. From the **Power schemes** combo list box, select **Minimal Power Management**.
6. Click **OK** to effect settings.



Make sure to install the Cool 'n' Quiet!™ driver and application before using this feature.

5.6.2 Launching the Cool 'n' Quiet!™ software

The motherboard support CD includes the Cool 'n' Quiet!™ software that enables you to view your system's real-time CPU Frequency and voltage.



Make sure to install the Cool 'n' Quiet!™ software from the motherboard support CD. Refer to section “5.2.3 Utilities menu”, for details.

To launch the Cool 'n' Quiet!™ program:

1. If you are using Windows® 2000, click the **Start** button. Select **Programs > ASUS > Cool & Quiet > Cool & Quiet**.
2. If you are using Windows® XP, click the **Start** button. Select **All Programs > ASUS > Cool & Quiet > Cool & Quiet**.
3. The Cool 'n' Quiet!™ technology screen appears and displays the current CPU Frequency and CPU Voltage.

