Chapter 3

This chapter helps you power up your system and install drivers and utilities that came with the support CD.

AS_VERA

Starting up

3.1 Installing an operating system

This motherboard supports Windows® 2000/XP operating system (OS). Always install the latest OS version and corresponding updates so you can maximize the features of your hardware.

Because motherboard settings and hardware options vary, use the setup procedures presented in this chapter for general reference only. Refer to your OS documentation for more information.

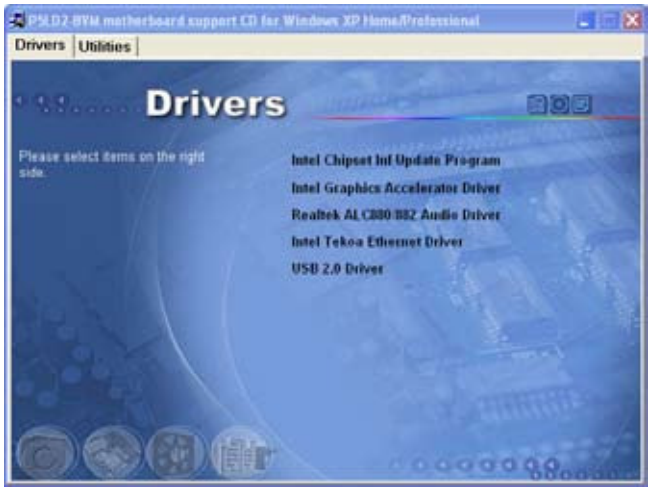
3.2 Support CD information

The support CD that came with the motherboard contains useful software and several utility drivers that enhance the motherboard features.

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

3.2.1 Running the support CD

To begin using the support CD, simply insert the CD into your CD-ROM drive. The CD automatically displays the Drivers menu if Autorun is enabled in your computer. Click on 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.

3.2.2 Drivers menu

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

Intel Chipset Inf Update Program

This item installs the Intel® Chipset INF Update Program. This driver enables Plug-n-Play INF support for the Intel® chipset components on the motherboard. When installed to the target system, this driver provides the method for configuring the chipset components.

You can install this utility using three different modes: interactive, silent, or unattended preload. Installing the driver in interactive mode requires user input during installation. User input is not required when installing the driver in silent or unattended preload modes. Refer to the online help or readme file that came with the utility for details.

Realtek AL C880/882 Audio Driver

Executes the wizard to install the Realtek® ALC882 audio driver and application. When the phone jacks of the High Definition Audio panel are configured as output, use the master volume to adjust the sound.

Intel Graphics Acclerator driver

Installs the Intel® Tekoa Ethernet driver.

Intel Tekoa Ethernet Driver

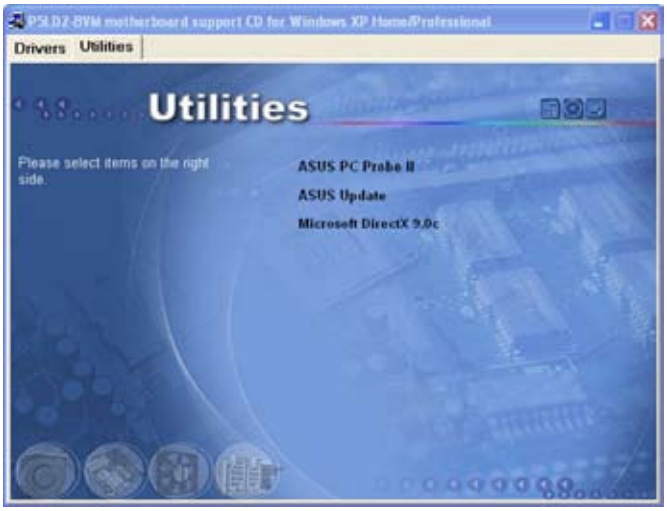
Installs the Intel® Tekoa Ethernet driver.

USB 2.0 Driver

Installs the USB 2.0 driver.

3.2.3 Utilities menu

The utilities menu shows the available software utilities.



ASUS PC Probe II

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

The ASUS Update utility allows you to update the motherboard BIOS in a Windows® environment. This utility requires an Internet connection either through a network or an Internet Service Provider (ISP).

Microsoft DirectX 9.0c

Click this item to install Microsoft DirectX 9.0c.

3.2.4 Other information

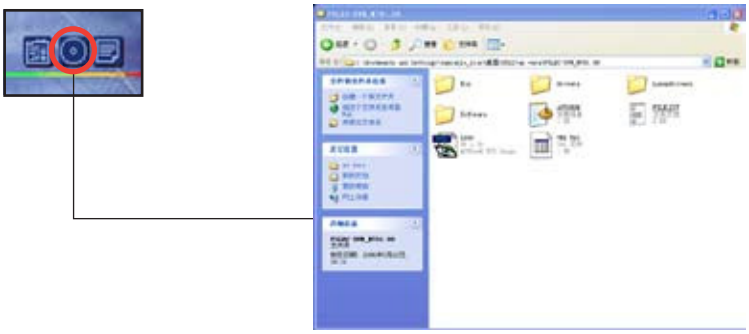
The icons on the top right corner of the screen provide additional information on the motherboard and the contents of the support CD. Click an icon to display the specified information.

Motherboard Info

Displays the general specifications of the motherboard.

Browse this CD

Displays the contents of the support CD in graphical format.



Filelist

Displays the contents of the support CD in text format.

3.3 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 for more information.

3.3.1 ASUS PC Probe II

PC Probe II is a utility that monitors the computer's vital components and alerts you of any problem with these components. PC Probe II senses fan rotations, CPU temperature, and system voltages, among others. PC Probe II is software-based, allowing you to start monitoring your computer the moment you turn it on. With this utility, you are assured that your computer is always at a healthy operating condition.

Installing PC Probe II

To install PC Probe II on your computer:

1. Place the support CD to the optical drive. The **Drivers** installation tab appears if your computer has an enabled Autorun feature.

If Autorun is not enabled in your computer, browse the contents of the support CD to locate the setup.exe file from the ASUS PC Probe II folder. Double-click the setup.exe file to start installation.

2. Click the **Utilities** tab, then click **ASUS PC Probe II**.
3. Follow the screen instructions to complete installation.

Launching PC Probe II

You can launch the PC Probe II right after installation or anytime from the Windows® desktop.

To launch the PC Probe II from the Windows® desktop, click **Start > All Programs > ASUS > PC Probe II**. The PC Probe II main window appears.

After launching the application, the PC Probe II icon appears in the Windows® taskbar. Click this icon to close or restore the application.

Using PC Probe II

Main window

The PC Probe II main window allows you to view the current status of your system and change the utility configuration. By default, the main window displays the **Preference** section. You can close or restore the **Preference** section by clicking on the triangle on the main window right handle.

Click to close the Preference panel

Button	Function
CONFIG	Opens the **Configuration** window
	Opens the **Report** window
DMI	Opens the **Desktop Management Interface** window
PCI	Opens the **Peripheral Component Interconnect** window
WMI	Opens the **Windows Management Instrumentation** window
USAGE	Opens the hard disk drive, memory, CPU usage window
	Shows/Hides the **Preference** section
	Minimizes the application
	Closes the application

Sensor alert
When a system sensor detects a problem, the main window right handle turns red, as the illustrations below show.

When displayed, the monitor panel for that sensor also turns red. Refer to the **Monitor panels** section for details.

Preferences

You can customize the application using the Preference section in the main window. Click the box before each preference to activate or deactivate.

Hardware monitor panels

The hardware monitor panels display the current value of a system sensor such as fan rotation, CPU temperature, and voltages.

The hardware monitor panels come in two display modes: hexagonal (large) and rectangular (small). When you check the **Enable Monitoring Panel** option from the **Preference** section, the monitor panels appear on your computer's desktop.

Large display

Small display

Changing the monitor panels position

To change the position of the monitor panels on the desktop, click the arrow down button of the **Scheme** options, then select another position from the list box. Click **OK** when finished.

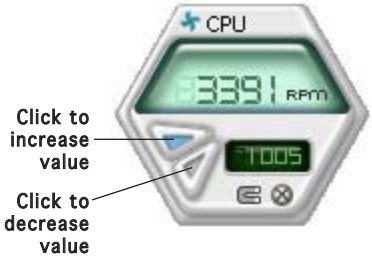
Moving the monitor panels

All monitor panels move together using a magnetic effect. If you want to detach a monitor panel from the group, click the horseshoe magnet icon. You can now move or reposition the panel independently.

Adjusting the sensor threshold value

You can adjust the sensor threshold value in the monitor panel by clicking the arrow buttons. You can also adjust the threshold values using the **Config** window.

You cannot adjust the sensor threshold values in a small monitoring panel.



Monitoring sensor alert
The monitor panel turns red when a component value exceeds or is lower than the threshold value. Refer to the illustrations below.

Large display

Small display

WMI browser

Click WMI to display the WMI (Windows Management Instrumentation) browser. This browser displays various Windows® management information. Click an item from the left panel to display on the right panel. Click the plus sign (+) before **WMI Information** to display the available information.

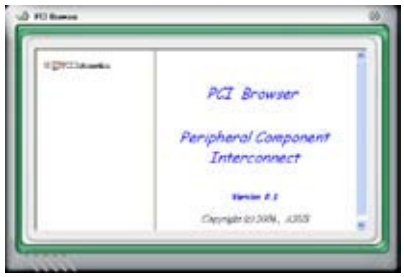
You can enlarge or reduce the browser size by dragging the bottom right corner of the browser.

DMI browser

Click DMI to display the DMI (Desktop Management Interface) browser. This browser displays various desktop and system information. Click the plus sign (+) before **DMI Information** to display the available information.

PCI browser

Click PCI to display the PCI (Peripheral Component Interconnect) browser. This browser provides information on the PCI devices installed on your system. Click the plus sign (+) before the **PCI Information** item to display available information.

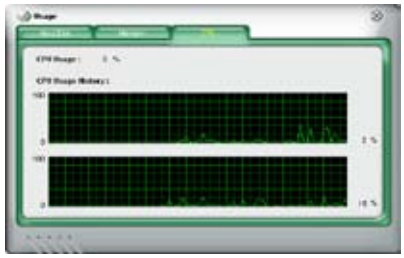


Usage

The **Usage** browser displays real-time information on the CPU, hard disk drive space, and memory usage. Click USAGE to display the Usage browser.

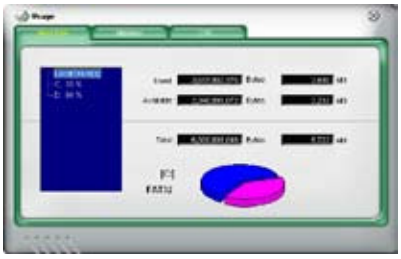
CPU usage

The **CPU** tab displays real-time CPU usage in line graph representation. If the CPU has an enabled Hyper-Threading, two separate line graphs display the operation of the two logical processors.



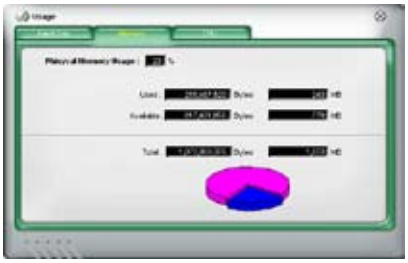
Hard disk drive space usage

The **Hard Disk** tab displays the used and available hard disk drive space. The left panel of the tab lists all logical drives. Click a hard disk drive to display the information on the right panel. The pie chart at the bottom of the window represents the used (blue) and the available HDD space.



Memory usage

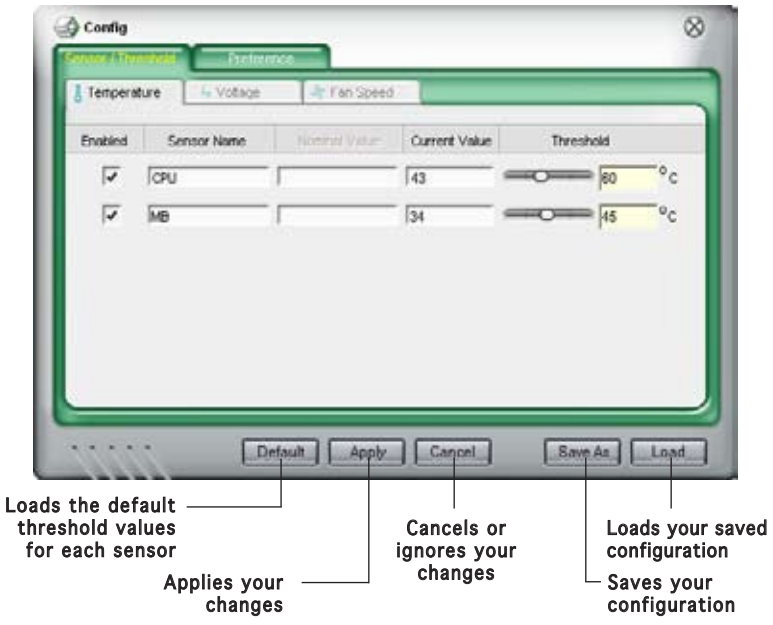
The **Memory** tab shows both used and available physical memory. The pie chart at the bottom of the window represents the used (blue) and the available physical memory.



Configuring PC Probe II

Click CONFIG to view and adjust the sensor threshold values.

The **Config** window has two tabs: **Sensor/Threshold** and **Preference**. The **Sensor/Threshold** tab enables you to activate the sensors or to adjust the sensor threshold values. The **Preference** tab allows you to customize sensor alerts, change temperature scale, or enable the Q-Fan feature.*



***Available on some motherboards only.**

3.3.2 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:

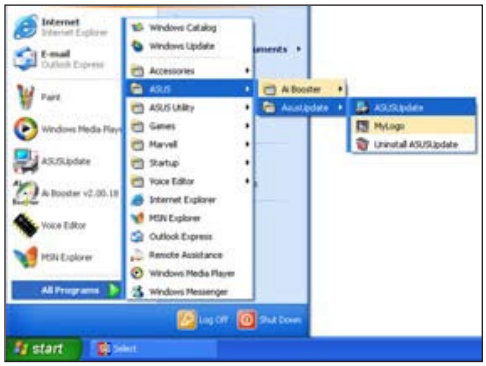
1. Place the support CD in the optical drive. The Drivers menu appears.
2. Click the Utilities tab, then click Install ASUS Update VX.XX.XX.
3. The ASUS Update utility is copied to your system.

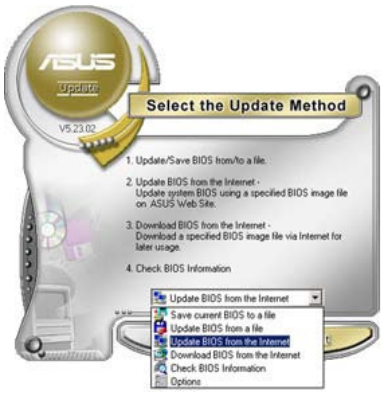
Quit all Windows® applications before you update the BIOS using this utility.

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.

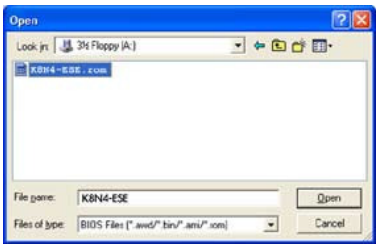
The ASUS Update utility is capable of updating itself through the Internet. Always update the utility to avail all its features.

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 Open.
4. Follow the screen instructions to complete the update process.



Chapter 4

Motherboard info

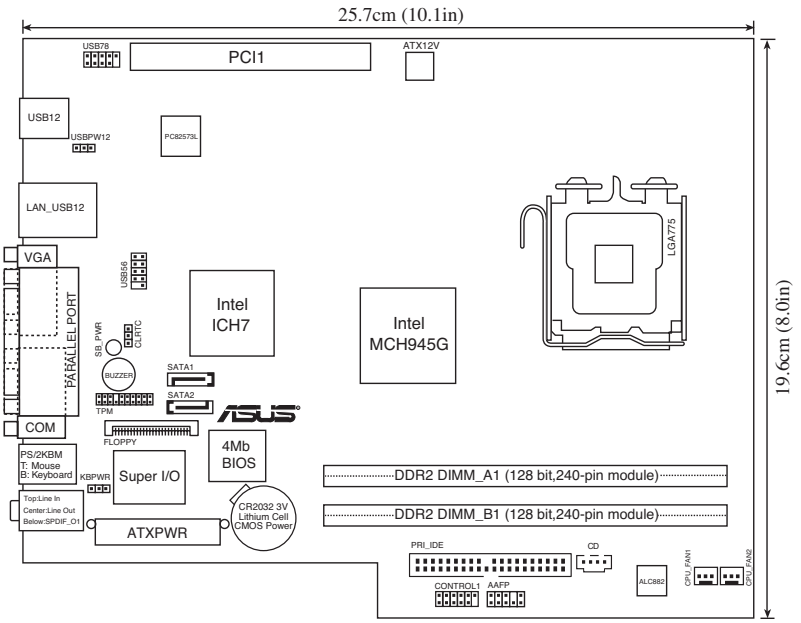
This chapter gives information about the motherboard that came with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.

AS_VERA

4.1 Introduction

A motherboard comes already installed in the AS_VERA system. This chapter provides technical information about the motherboard for future upgrades or system reconfiguration.

4.2 Motherboard layout



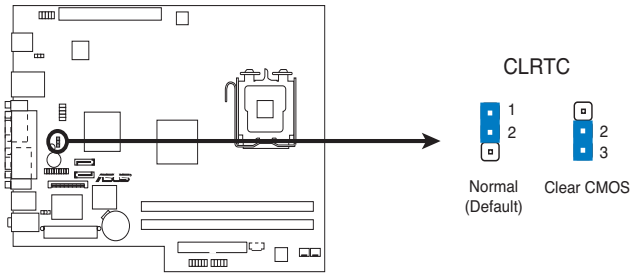
4.3 Jumpers

1. Clear RTC RAM (CLRTC)

   This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The RAM data in CMOS, that include system setup information such as system passwords, is powered by the onboard button cell battery.

   To erase the RTC RAM:

   1. Turn OFF the computer and unplug the power cord.
   2. Remove the battery.
   3. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5-10 seconds, then move the cap back to pins 1-2.
   4. Re-install the battery.
   5. Plug the power cord and turn ON the computer.
   6. Hold down the <Del> key during the boot process and enter BIOS setup to re-enter data.

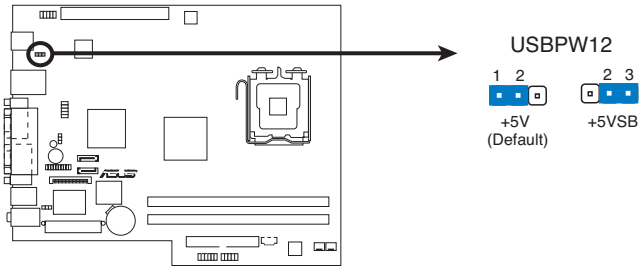


Clear RTC RAM

Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure.

2. USB device wake-up (3-pin USBPW12)

Set these jumpers to +5V to wake up the computer from S1 sleep mode (CPU stopped, DRAM refreshed, system running in low power mode) using the connected USB devices. Set to +5VSB to wake up from S3 and S4 sleep modes (no power to CPU, DRAM in slow refresh, power supply in reduced power mode).

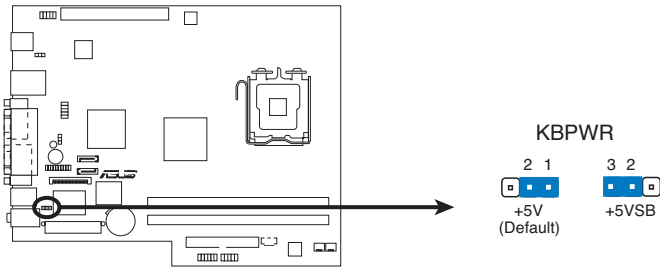


USB device Wake up

- The USB device wake-up feature requires a power supply that can provide 500mA on the +5VSB lead for each USB port; otherwise, the system will not power up.
- The total current consumed must NOT exceed the power supply capability (+5VSB) whether under normal condition or in sleep mode.

3. Keyboard power (3-pin KBPWR)

This jumper allows you to enable or disable the keyboard wake-up feature. Default setting is 2-3. Set this jumper to pins 1-2 (+5V) if you do not want to wake up the computer when you press a key on the keyboard. This feature requires an ATX power supply that can supply at least 1A on the +5VSB lead, and a corresponding setting in the BIOS.

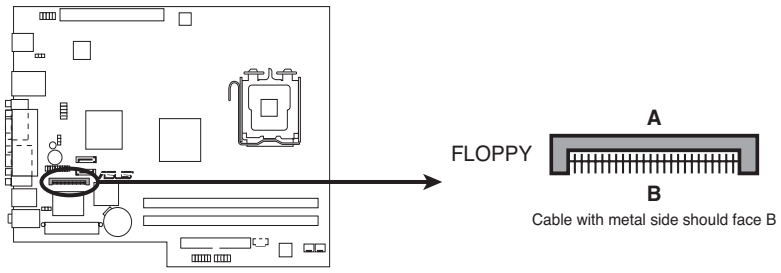


Keyboard Power Setting

4.4 Connectors

1. Floppy disk drive connector (26-pin FLOPPY)

   This connector is for the provided floppy disk drive (FDD) signal cable. Insert one end of the cable to this connector, then connect the other end to the signal connector at the back of the floppy disk drive.

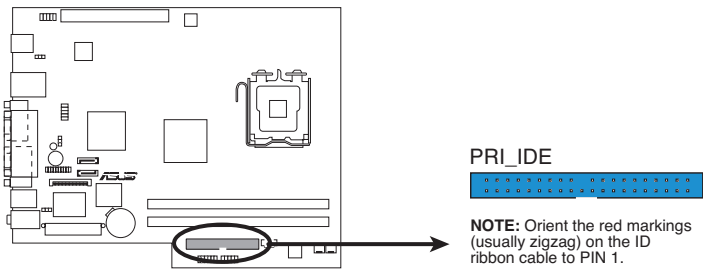


Floppy disk drive connector

2. Primary IDE connector (40-1 pin PRI_IDE)

   This connector is for an Ultra DMA 100/66 signal cable. The Ultra DMA 100/66 signal cable has two connectors: a blue connector for the primary IDE connector on the motherboard and a black connector for an Ultra DMA 100/66 IDE slave device (optical drive/hard disk drive).

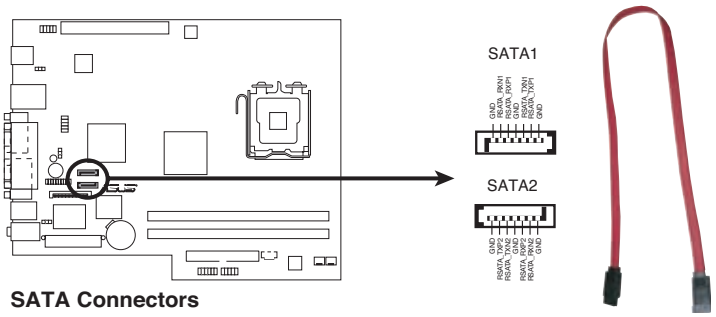
- Pin 20 on the IDE connector is removed to match the covered hole on the Ultra DMA cable connector. This prevents incorrect insertion when you connect the IDE cable.
- Use the 80-conductor IDE cable for Ultra DMA 100/66 IDE devices.



IDE Connector

3. Serial ATA connector (7-pin SATA)

This connector is for the Serial ATA signal cable for a Serial ATA hard disk drive.



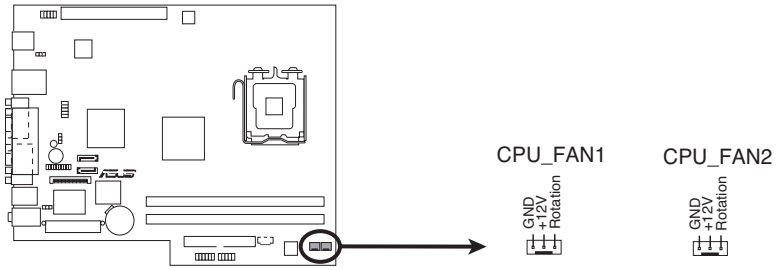
SATA Connectors

You must install Windows® 2000 Service Pack 4 or the Windows® XP Service Pack1 before using Serial ATA hard disk drives.

4. CPU Fan connectors (3-pin CPU_FAN1, 3-pin CPU_FAN2)

The fan connectors support cooling fans of 350 mA~740 mA (8.88 W max.) or a total of 1 A~2.22 A (26.64 W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.

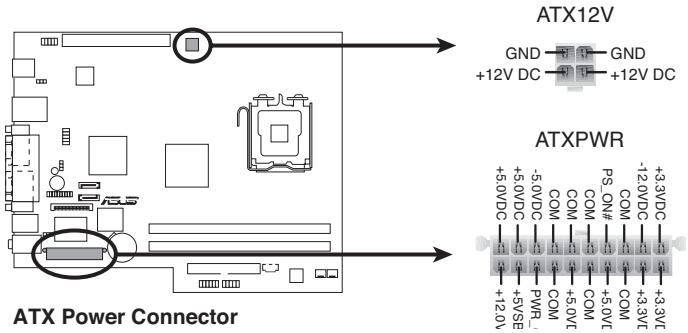
Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! Do not place jumper caps on the fan connectors!



CPU Fan Connectors

5. ATX power connectors (20-pin ATXPWR, 4-pin ATX12V)

These connectors are for ATX power supply plugs. The plugs from the power supply are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.

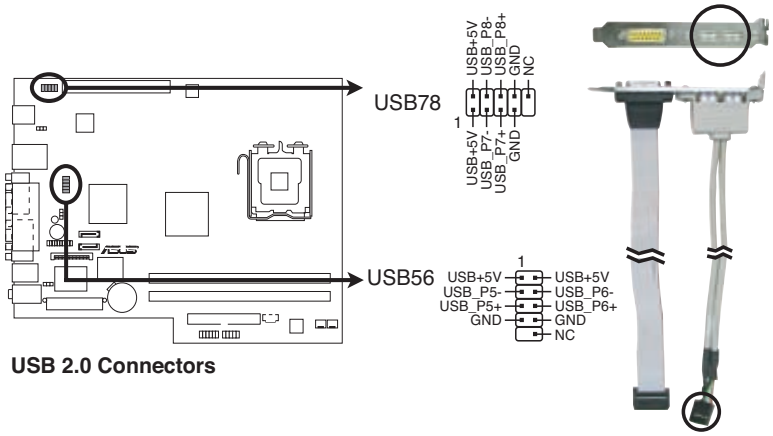


ATX Power Connector

Important notes on the motherboard power requirements

- Do not forget to connect the 4-pin ATX +12 V power plug; otherwise, the system will not boot up.
- To power the motherboard, it is recommended that you use an ATX 12 V Specification 2.0 power supply unit (PSU) with a minimum 230 W power rating. This PSU type has a 20-pin and 4-pin ATX power plugs.
- Make sure that the 20-pin power plug can provide at least 16 A on +12 V and that the PSU has a minimum power rating of 230 W. The system may become unstable or may not boot up if the power is inadequate.
- You must install a PSU with a higher power rating if you intend to install additional devices.

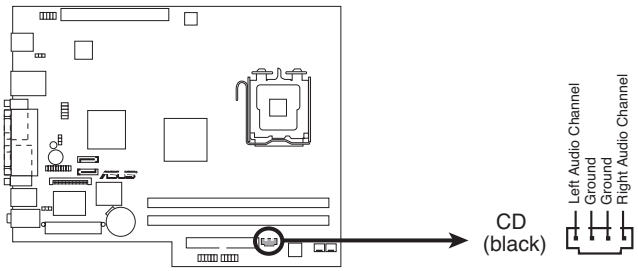
6. USB connectors (10-1 pin USB56, USB78)
These connectors are for the USB device module.



USB 2.0 Connectors

Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!

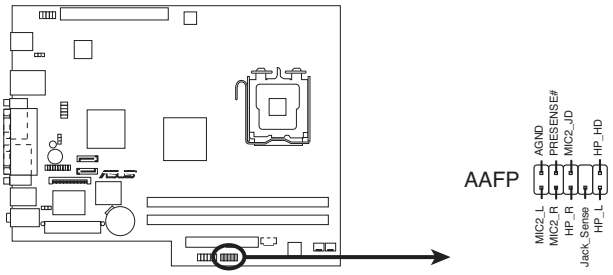
7. Optical drive audio connector (4-pin CD)
This connector is for the 4-pin audio cable that connects to the audio connector at the back of the optical drive.



Internal Audio Connector

Use this connector only if the optical drive has analog audio output.

8. Front panel audio connector (10-1 pin AAFP)
   This connector is for a chassis-mounted front panel audio I/O module.

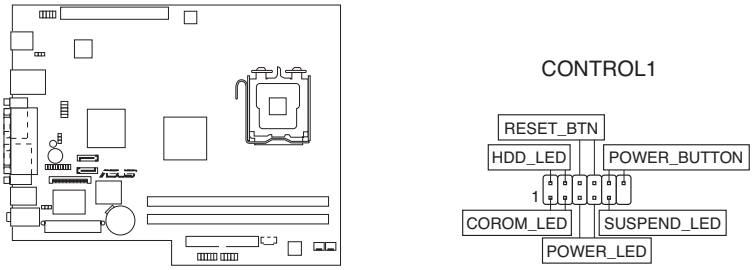


Azalia Analog Front Panel Connector

9. TPM 1.2 (ST) connector (20-1 pin TPM)

10. System panel connector (12-1 pin CONTROL)

This connector supports several chassis-mounted functions.



System Panel Connector

- Hard disk drive activity LED (2-pin HDD_LED)
  This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE LED lights up or flashes when data is read from or written to the HDD.
- ATX power button/soft-off button
  (2-pin POWER_BUTTON)
  This connector is for the system power button. Pressing the power button turns the system on or puts the system in sleep or soft-off mode depending on the BIOS settings. Pressing the power switch for more than four seconds while the system is ON turns the system OFF.
- Reset button (2-pin RESET)
  This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.
- CD-ROM LED (2-pin CDROM_LED)
  This 2-pin connector is for the optical drive activity LED. The LED lights up or flashes when the optical drive is in use.
- Power LED (2-pin POWER_LED)
  This 2-pin connector is for the power LED. The LED lights up when system power is on.
- Suspend LED (2-pin SUSPEND_LED)
  This 2-pin connector is for the suspend LED. The LED lights up when the system is in suspend mode.

Chapter 5

This chapter tells how to change system settings through the BIOS Setup menus and describes the BIOS parameters.

AS_VERA

BIOS setup

5.1 BIOS setup program

Use the BIOS Setup program when you are installing a motherboard or 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 firmware hub.

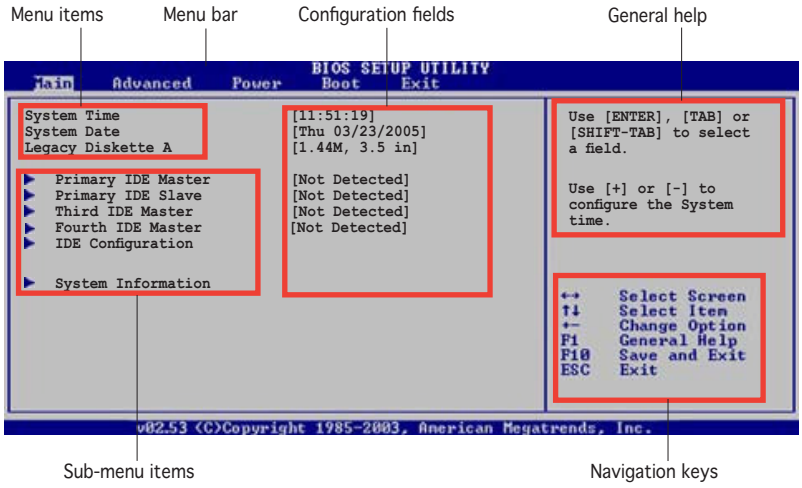
The firmware hub on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press <Del> during the Power-On-Self-Test (POST) to enter the Setup utility; otherwise, POST continues with its test routines.

If you wish to enter Setup after POST, restart the system by pressing <Ctrl+Alt+Del>, 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.
- The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.

5.1.1 BIOS menu screen



5.1.2 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.

5.1.3 Navigation keys

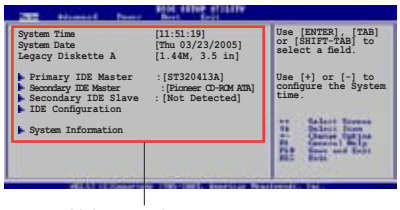
At the bottom right corner of a menu screen are the navigation keys for that particular menu. Use the navigation keys to select items in the menu and change the settings.

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

5.1.4 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.



Main menu items

5.1.5 Sub-menu items

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

5.1.6 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.

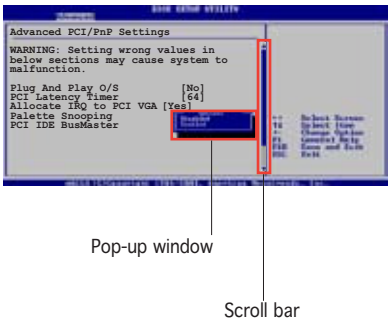
A configurable field is enclosed in brackets, and is highlighted when selected. To change the value of a field, select it then press <Enter> to display a list of options. Refer to "5.1.7 Pop-up window."

5.1.7 Pop-up window

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

5.1.8 Scroll bar

A scroll bar appears on the right side of a menu screen when there are items that do not fit on the screen. Press the Up/Down arrow keys or <Page Up> /<Page Down> keys to display the other items on the screen.



Pop-up window

Scroll bar

5.1.9 General help

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

5.2 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 "5.1.1 BIOS menu screen" for information on the menu screen items and how to navigate through them.

5.2.1 System Time [xx:xx:xx]

Allows you to set the system time.

5.2.2 System Date [Day xx/xx/xxxx]

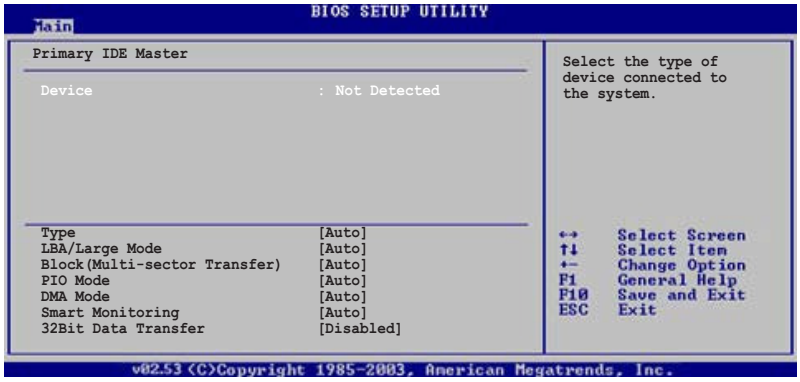
Allows you to set the system date.

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

Sets the type of floppy drive installed.
Configuration options: [Disabled] [1.44M, 3.5 in.]

5.2.4 Primary/Third/Fourth 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.



The BIOS automatically detects the values opposite the dimmed items (Device, Vendor, Size, LBA Mode, Block Mode, PIO Mode, Async DMA, Ultra DMA, and SMART monitoring). These values are not user-configurable. These items show N/A if no IDE device is installed in the system.

Type [Auto]

Selects the type of IDE drive. Setting to Auto allows automatic selection of the appropriate IDE device type. Select CDROM if you are specifically configuring a CD-ROM drive. Select ARMD (ATAPI Removable Media Device) if your device is either a ZIP, LS-120, or MO drive. Configuration options: [Not Installed] [Auto] [CDROM] [ARMD]

LBA/Large Mode [Auto]

Enables or disables the LBA mode. Setting to Auto enables the LBA mode if the device supports this mode, and if the device was not previously formatted with LBA mode disabled. Configuration options: [Disabled] [Auto]

Block (Multi-sector Transfer) [Auto]

Enables or disables data multi-sectors transfers. When set to Auto, the data transfer from and to the device occurs multiple sectors at a time if the device supports multi-sector transfer feature. When set to [Disabled], the data transfer from and to the device occurs one sector at a time. Configuration options: [Disabled] [Auto]

PIO Mode [Auto]

Selects the PIO mode.
Configuration options: [Auto] [0] [1] [2] [3] [4]

DMA Mode [Auto]

Selects DMA mode.
(auto: auto detected. SWDMAn: singlewordDMAn. MWDMAn: MultiWordMAn. UDMAn: UltraDMAn. Configuration options: [Auto]

SMART Monitoring [Auto]

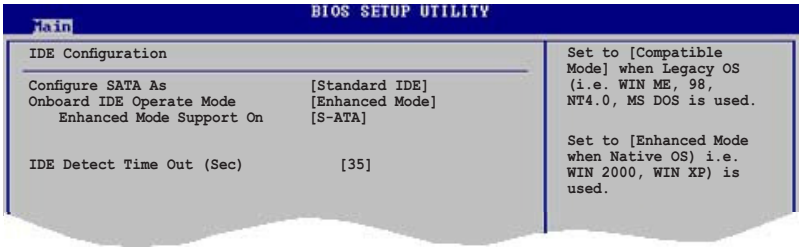
Sets the Smart Monitoring, Analysis, and Reporting Technology.
Configuration options: [Auto] [Disabled] [Enabled]

32Bit Data Transfer [Disabled]

Enables or disables 32-bit data transfer.
Configuration options: [Disabled] [Enabled]

5.2.5 IDE Configuration

The items in this menu allow you to set or change the configurations for the IDE devices installed in the system. Select an item then press <Enter> if you want to configure the item.



Configure SATA As [Standard IDE]

Set SATA controller to IDE mode. Configuration options: [Standard IDE]

Onboard IDE Operate Mode [Enhanced Mode]

Allows selection of the IDE operation mode depending on the operating system (OS) that you installed. Set to Enhanced Mode if you are using native OS, such as Windows® 2000/XP. Configuration options: [Disabled] [Compatible Mode] [Enhanced Mode]

Enhanced Mode Support On [SATA]
Allows you to use native OS on Serial ATA and Parallel ATA ports. In this setting, you may use legacy OS on the Parallel ATA ports only if you did not install any Serial ATA device.

The following item appears only when you set the Onboard IDE Operate Mode to [Compatible Mode].

Combined Mode Option [Secondary P-ATA+S-ATA]
Allows you to use choose the IDE ports to be used. If you select Primary P-ATA+S-ATA, the system will only support SATA2 and SATA4 in Combined mode.

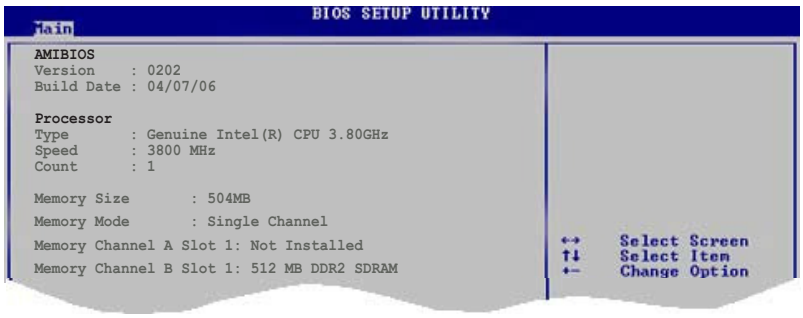
The S-ATA only and P-ATA only options are for advanced users only. If you set to any of these options and encounter problems, revert to the default setting [Secondary P-ATA+S-ATA]. Configuration options: [Secondary P-ATA+S-ATA] [S-ATA only] [P-ATA only]

IDE Detect Time Out (Sec) [35]

Select the time out value for detecting ATA/ATAPI device(s). Configuration options: [0] [5] [10] [15]...[35]

5.2.6 System Information

This menu gives you an overview of the general system specifications. The BIOS automatically detects the items in this menu.



AMI BIOS

Displays the auto-detected BIOS information.

Processor

Displays the auto-detected CPU specification.

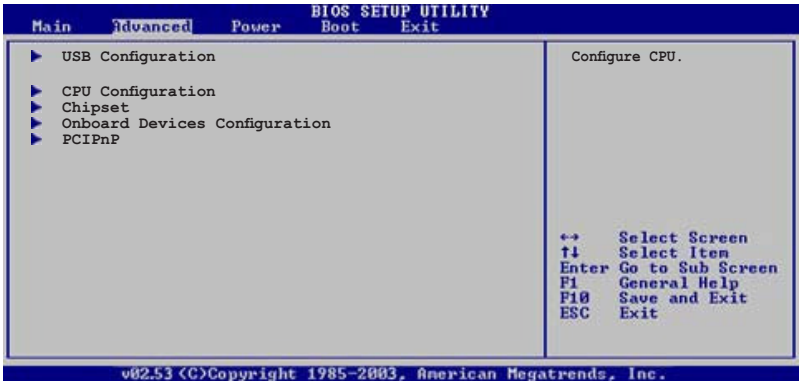
Memory Size/Mode/Channel

Displays the auto-detected system memory information.

5.3 Advanced menu

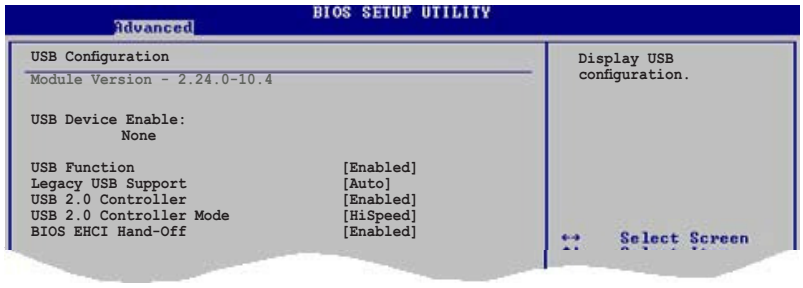
The Advanced menu items allow you to change the settings for the CPU and other system devices.

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



5.3.1 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.



The Module Version and USB Devices Enabled items show the auto-detected values. If no USB device is detected, the item shows None.

USB Function [Enabled]

Enables USB host controllers.
Configuration options: [Disabled] [Enabled]

Legacy USB Support [Auto]

Enables support for legacy USB. AUTO option disables legacy support if no USB devices are connected. Configuration options: [Disabled] [Enabled] [Auto]

USB 2.0 Controller [Enabled]

Allows you to enable or disable the USB 2.0 controller.
Configuration options: [Disabled] [Enabled]

USB 2.0 Controller Mode [HiSpeed]

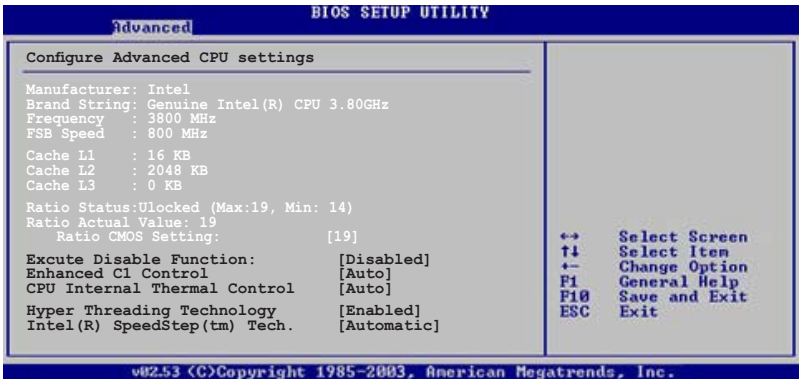
Configures the USB 2.0 controller in HiSpeed (480Mbps) or FullSpeed (12Mbps). Configuration options: [HiSpeed] [FullSpeed]

BIOS EHCI Hand-Off [Enabled]

Configuration options: [Disabled] [Enabled]

5.3.2 CPU Configuration

The items in this menu show the CPU-related information that the BIOS automatically detects.



Execute Disable Function [Disabled]

Configuration options: [Disabled] [Enabled]

Enhanced C1 Control [Auto]

When set to [Auto], the BIOS will automatically check the CPU's capability to enable the C1E support. In C1E mode, the CPU power consumption is lower when idle. Configuration options: [Auto] [Disabled]

CPU Internal Thermal Control [Auto]

Disables or sets the CPU internal thermal control.
Configuration options: [Auto] [Disabled]

Hyper Threading Technology [Enabled]

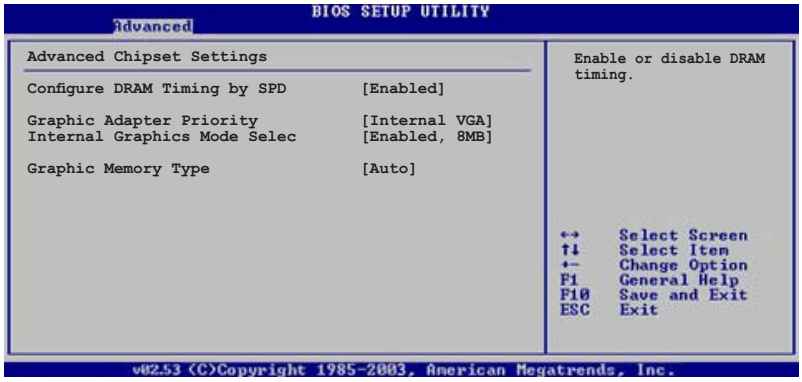
Enables or disables the processor Hyper-Threading technology.
Configuration options: [Disabled] [Enabled]

Intel(R) SpeedStep(tm) Tech. [Automatic]

Enable/Disable Intel Speed Step Support in BIOS.
Configuration options: [Automatic] [Disabled]

5.3.3 Chipset

The Chipset menu allows you to change the advanced chipset settings. Select an item then press <Enter> to display the sub-menu.



Advanced Chipset Settings

Configure DRAM Timing by SPD [Enabled]
When this item is enabled, the DRAM timing parameters are set according to the DRAM SPD (Serial Presence Detect). When disabled, you can manually set the DRAM timing parameters through the DRAM sub-items. Configuration options: [Disabled] [Enabled]

The following sub-items appear when Configure DRAM Timing by SPD item is Disabled.

DRAM CAS# Latency [5 Clocks]

Controls the latency between the SDRAM read command and the time the data actually becomes available. Configuration options: [6 Clocks] [5 Clocks] [4 Clocks] [3 Clocks]

DRAM RAS# Precharge [4 Clocks]

Controls the idle clocks after issuing a precharge command to the DDR SDRAM. Configuration options: [2 Clocks] [3 Clocks] [4 Clocks] [5 Clocks] [6 Clocks]

DRAM RAS# to CAS# Delay [4 Clocks]

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

DRAM RAS# Activate to Prec [15 Clocks]

Configuration options: [4 Clocks] ~ [18 Clocks]

DRAM Write Recovery Time [4 Clocks]

Sets the DRAM Burst Length. Configuration options: [2 Clocks]...[8 Clocks]

Graphic Adapter Priority [Internal VGA]

Select which graphics controller to use as the primary boot device. Configuration options: [Internal VGA] [PCI/Int-VGA]

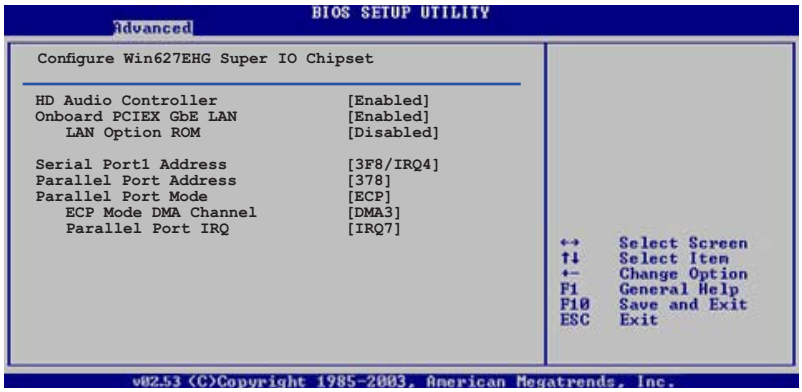
Internal Graphics Mode Selec [Enabled, 8MB]

Select the anount of system memory preallocated by the Internal graphics device. Configuration options: [Disabled] [Enabled, 1MB] [Enabled, 8MB]

Graphic Memory Type [Auto]

Select which graphics memory type support.
Configuration options: [Auto] [DUMT] [FIX] [DUMT+FIX]

5.3.4 Onboard Devices Configuration



HD Audio Controller [Enabled]

Enables or disables the HD Audio controller.
Configuration options: [Enabled] [Disabled]

OnBoard PCIEX GbE LAN [Enabled]

Enables or disables the onboard PCIE GbE LAN controller.
Configuration options: [Enabled] [Disabled]

LAN Option ROM [Disabled]

Onboard PCIEX GbE LAN boot ROM configuration. Configuration options: [Disabled] [Enabled]

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]

Parallel Port Address [378]

Allows you to select the Parallel Port base addresses.
Configuration options: [Disabled] [378] [278] [3BC]

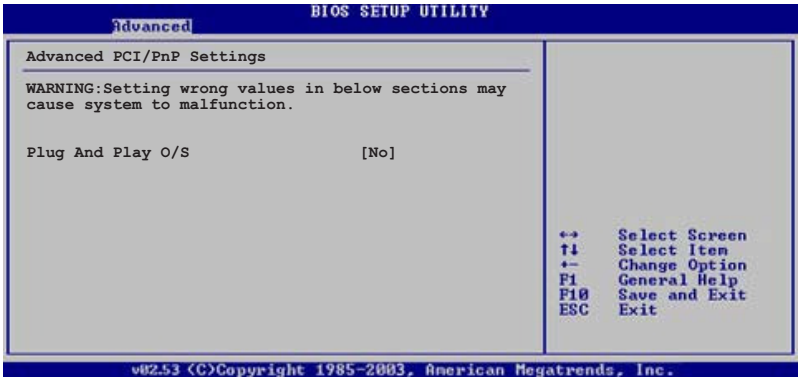
Parallel Port Mode [ECP]

Allows you to select the Parallel Port mode.
Configuration options: [Normal] [Bi-directional] [EPP] [ECP]

ECP Mode DMA Channel [DMA3]
Appears only when the Parallel Port Mode is set to [ECP]. This item allows you to set the Parallel Port ECP DMA.
Configuration options: [DMA0] [DMA1] [DMA3]

Parallel Port IRQ [IRQ7]
Allows selection of the Parallel Port IRQ.
Configuration options: [IRQ5] [IRQ7]

5.3.5 PCIPnP



Plug And Play O/S [No]

Configuration options: [NO] [YES]

5.4 Power menu

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

5.4.1 Suspend Mode [Auto]

Allows you to select the Advanced Configuration and Power Interface (ACPI) state to be used for system suspend.
Configuration options: [S1 (POS) Only] [S3 Only] [Auto]

5.4.2 Repost Video on S3 Resume [No]

Determines whether to invoke VGA BIOS post on S3/STR resume.
Configuration options: [No] [Yes]

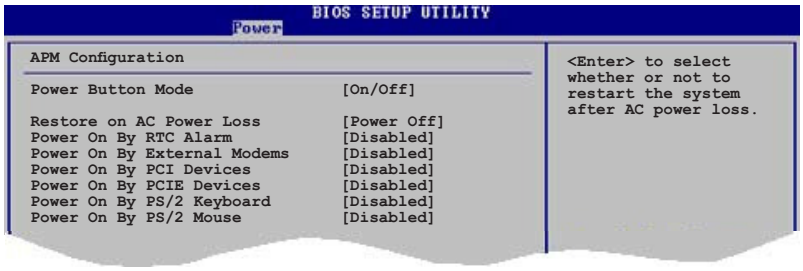
5.4.3 ACPI 2.0 support [No]

Configuration options: [No] [Yes]

5.4.4 ACPI APIC Support [Enabled]

Allows you to enable or disable the Advanced Configuration and Power Interface (ACPI) support in the Advanced Programmable Interrupt Controller (APIC). When set to Enabled, the ACPI APIC table pointer is included in the RSDT pointer list. Configuration options: [Disabled] [Enabled]

5.4.5 APM Configuration



Power button Mode [On/Off]

Selects going into On/Off or suspend when power button is pressed. Configuration options: [On/Off] [Suspend]

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]

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 RTC Alarm Date, RTC Alarm Hour, RTC Alarm Minute, and RTC Alarm Second appear with set values. Configuration options: [Disabled] [Enabled]

Power On By External Modems [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]

The computer cannot receive or transmit data until the computer and applications are fully running. Thus, connection cannot be made on the first try. Turning an external modem off and then back on while the computer is off causes an initialization string that turns the system power on.

Power On By 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]

Power On By PCIE Devices [Disabled]

Disable/Enable PCIE to generate a wake event.
Configuration options: [Disabled] [Enabled]

Power On By PS/2 Keyboard [Disabled]

Allows you to use specific keys on the 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] [Enabled]

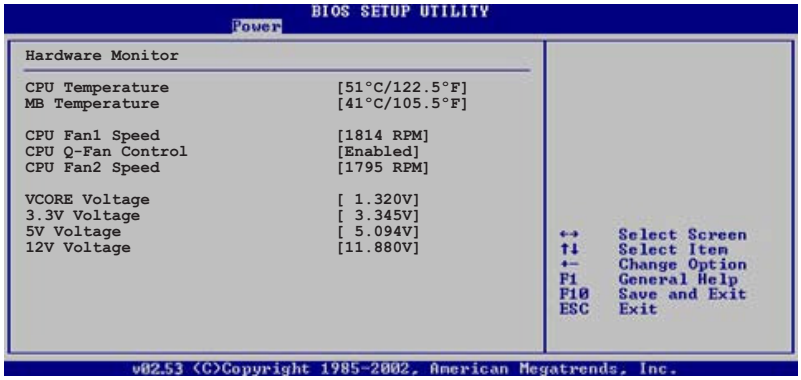
Keyboard Wakeup Password

This item appears only when the Power On By PS/2 Keyboard is set to Enabled. Select this item to set or change the keyboard wakeup password. The Keyboard Wakeup Password item that appears below shows the default Not Installed. After you have set a password, this item shows Installed.

Power On By PS/2 Mouse [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]

5.4.6 Hardware Monitor



CPU Temperature [xxx°C/xxx°F]
MB Temperature [xxx°C/xxx°F]

The onboard hardware monitor automatically detects and displays the motherboard and CPU temperatures. Select Disabled if you do not wish to display the detected temperatures.

CPU Fan1 Speed [xxxxRPM], [N/A], or [Ignored]

The onboard hardware monitor automatically detects and displays the CPU fan speed in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows N/A.

CPU Q-Fan Control [Enabled]

Allows you to enable or disable the ASUS Q-Fan feature that smartly adjusts the fan speeds for more efficient system operation. When this field is set to [Enabled], the CPU Fan Ratio item appears to allow selection of the appropriate fan speed ratio. Configuration options: [Disabled] [Enabled]

CPU Fan2 Speed [xxxxRPM], [N/A], or [Ignored]

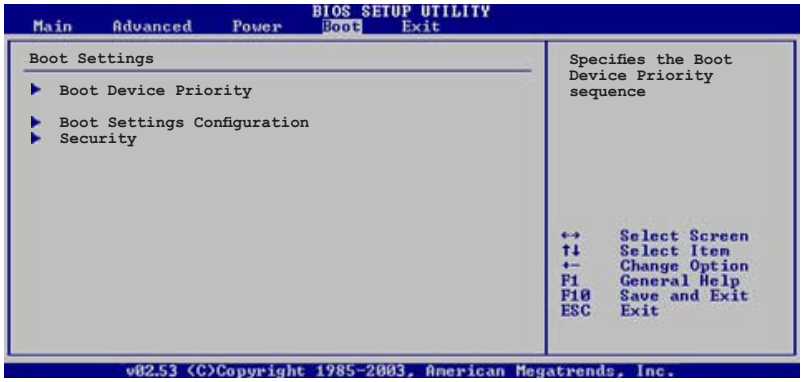
The onboard hardware monitor automatically detects and displays the CPU fan speed in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows N/A.

VCORE Voltage, 3.3V Voltage, 5V Voltage, 12V Voltage

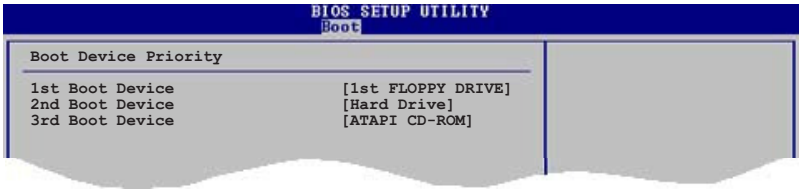
The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators.

5.5 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.



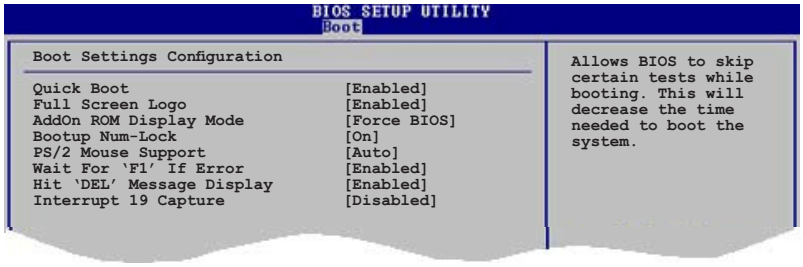
5.5.1 Boot Device Priority



1st ~ xxth Boot Device [1st Floppy Drive]

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]

5.5.2 Boot Settings Configuration



Quick Boot [Enabled]

Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system. Configuration options: [Disabled] [Enabled]

Full Screen Logo [Enabled]

Disabled: Displays normal POST messages. Enabled: Displays OEM Logo instead of POST messages.Configuration options: [Disabled] [Enabled]

AddOn ROM Display Mode [Force BIOS]

Set display mode for Option ROM. Configuration options: [Force BIOS] [Keep Current]

Bootup Num-Lock [On]

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

Wait For 'F1' If Error [Enabled]

Wait for F1 key to be pressed if error occurs. Configuration options: [Disabled] [Enabled]

Hit 'DEL' Message Display [Enabled]

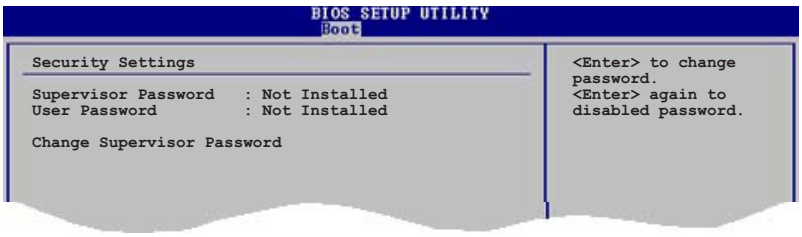
Displays "Press DEL to run Setup" in POST. Configuration options: [Disabled] [Enabled]

Interrupt 19 Capture [Disabled]

Enabled: Allows option ROMsto trap interrupt 19. This is required by some PCI cards that provide a ROM based setup utility. Configuration options: [Disabled] [Enabled]

5.5.3 Security

The Security menu items allow you to change the system security settings. Select an item then press <Enter> to display the configuration options.



Change Supervisor Password

Select this item to set or change the supervisor password. The Supervisor Password item on top of the screen shows the default Not Installed. After you set a password, this item shows Installed.

To set a Supervisor Password:

1. Select the Change Supervisor Password item and press <Enter>.
2. From the password box, type a password composed of at least six letters and/or numbers, then press <Enter>.
3. Confirm the password when prompted.

The message “Password Installed” appears after you successfully set your password.

To change the supervisor password, follow the same steps as in setting a user password.

To clear the supervisor password, select the Change Supervisor Password then press <Enter>. The message “Password Uninstalled” appears.

If you forget your BIOS password, you clear it by erasing the CMOS Real Time Clock (RTC) RAM. See section “4.3 Jumpers” for information on how to erase the RTC RAM.

After you have set a supervisor password, the other items appear to allow you to change other security settings.

Password Check [Setup]

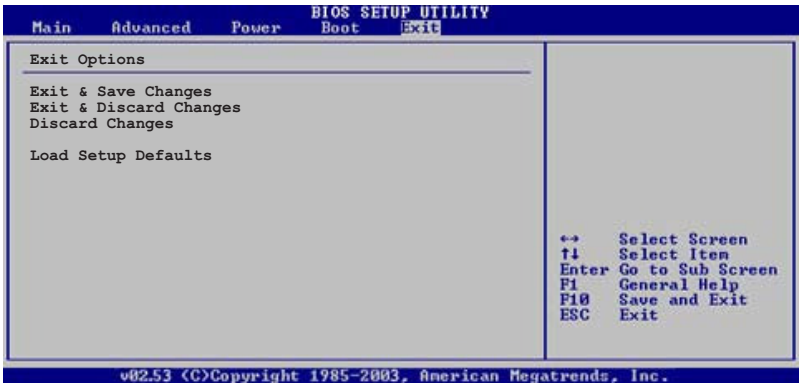
When set to [Setup], BIOS checks for user password when accessing the Setup utility. When set to [Always], BIOS checks for user password both when accessing Setup and booting the system.
Configuration options: [Setup] [Always]

Boot Sector Virus Protection [Disabled]

Allows you to enable or disable the boot sector virus protection.
Configuration options: [Disabled] [Enabled]

5.6 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.

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.

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.