BP5265

ASUS PC

User Manual

E4600

First Edition V1
March 2009

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Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

Safety information

Electrical safety

- To prevent electric shock hazard, disconnect the power cable from the electric outlet before relocating the system.
- When adding or removing any devices to or from the system, contact a qualified service technician or your retailer. Ensure that all the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all the power cables from the existing system before you add or remove a device to or from the system.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing devices into the system, carefully read all the documentation that comes with the package.
- Before using the product, ensure that all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets, and circuitry.
- Avoid dust, humidity, and extreme temperatures. Do not place this product in a location where it may get wet. Place this product on a flat and stable surface.
- When using this product, do not block any air inlet/outlet on the chassis.
- We recommend that you use this product in environments with an ambient temperature below 35ºC.
- If you encounter technical problems with this product, contact a qualified service technician or your retailer.

Lithium-Ion Battery Warning

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

VORSICHT: Explosionsgetahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnljchen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

LASER PRODUCT WARNING

CLASS 1 LASER PRODUCT

General precautions

Before using the ASUS BP5265 Desktop PC, carefully read the general precautions below. Improper operation could lead to personal injury or damage to the product.

- Before using this product, ensure that all components are correctly installed and all cables are correctly connected. If you detect any damage, contact your dealer immediately.
- Avoid dust and extreme temperatures. Do not place this product in a location where it may receive direct sunlight.
- Do not place this product in a location where it may get wet.
- Do not block the air vents on the chassis. Always provide proper ventilation for this product.
- Before turning on the system, check if all the peripherals are correctly connected.
- To avoid short circuits, keep scraps, screws, and threads away from connectors, slots, sockets, and circuitry.
- Do not insert any object or spill liquid into the air vents on the chassis.
- If this product has been used for a long time, avoid direct contact with the heatsinks and the surfaces of IC as they may become very warm and hot. Check if the system receives proper ventilation.
- Before you add or remove a peripheral device to or from the system, ensure that you unplugged the system from the power source.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.
- Do not service this product yourself.
- Though the system casing is elaborately designed to protect users from scratches, be careful with those sharp tips and edges. Put on a pair of gloves before you remove or replace the system cover.
- Unplug this product from the power source when it is left unused for a long period of time.
- We recommend that you use this product in environments with an ambient temperature below 35ºC.
- Use this product only with the correct voltage as instructed by the manufacturer.
- To prevent fire or electric shock, do not overload power outlets and extension cords.
- Warning: Ensure that you replace the battery with a correct type; otherwise, it may cause an explosion hazard.

About this guide

Audience

This guide provides general information about ASUS BP5265/AS-D596 Desktop PC and instructions on how to use the Support DVD that comes with the system package.

How this guide is organized

This guide contains the following parts:

1. **Chapter 1: System introduction**

   This chapter gives a general description of ASUS BP5265/AS-D596 Desktop PC. The chapter lists the system features, including introduction on the front and rear panels.

2. **Chapter 2: Getting started**

   This chapter helps you power up the system and install drivers and utilities from the Support DVD.

Conventions used in this guide

To ensure that you perform certain tasks properly, take note of the following symbols used throughout this guide.

WARNING: Information to prevent injury to yourself when trying to complete a task.

CAUTION: Information to prevent damage to the components when trying to complete a task.

IMPORTANT: Instructions that you MUST follow to complete a task.

NOTE: Tips and additional information to aid in completing a task.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS Websites**

   The ASUS websites worldwide provide updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. **Optional Documentation**

   Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

System package contents

Check your BP5265/AS-D596 system package for the following items.

Standard items		
1.	ASUS BP5265 Desktop PC with	
	•	ASUS Desktop x1
	•	Mouse x1
	•	Keyboard x1
2.	Cables	
	•	Power cord x1
3.	Accessories	
	•	Mouse pad x1
4.	DVD	
	•	Support DVD x1
5.	Documentation	
	•	User Manual x1
	•	Warranty card x1

If any of the above items is damaged or missing, contact your retailer immediately.

Optional items	
1.	Optical disk drive (ODD)
2.	Storage card reader / Floppy disk drive
3.	LAN cable
4.	Power strip

- Optional items are not included in the system package. They are purchased separately.
- Specifications depend on the desktop PC you purchased. Check with your supplier for the exact specifications.

Chapter 1

This chapter gives a general description of the desktop PC. The chapter lists the system features including introduction on the front and rear panels.

System introduction

1.1 Front panel

The ASUS BP5265/AS-D596 Desktop PC includes an ASUS motherboard, a power supply unit, a front panel, and a rear panel. All of these components are integrated in a system casing elaborately designed by ASUS.

The illustration below shows the front panel and the components on it.

- The storage card reader, optical disk drive, and floppy disk drive are optional items which are not included in the system package. They are purchased separately.
- The 5.25 inch optical disk drive bay is for a 5.25 inch DVD-ROM / CD-RW / DVD-RW device.
- The 3.5 inch drive bay is for a 3.5 inch hard disk drive / floppy disk drive / USB storage card reader.
- The storage card reader is for Secure Digital™ / MultimediaCard / Memory Stick® / CompactFlash® / Microdrive™ / SmartMedia® storage cards.

1.2 Rear panel

The system rear panel includes the power connector and several I/O ports that allow you to conveniently connect devices.

Debug LED indications

Debug LED			Description
Left	Middle	Right	
ON	OFF	OFF	Detecting system memory
OFF	ON	OFF	Initializing VGA
ON	ON	OFF	Initializing CPU
OFF	OFF	ON	Detecting Hard Disk Drive
ON	OFF	ON	BIOS error message
OFF	ON	ON	Initializing ROM

Voltage selector

The system's power supply unit has a 115V / 230V voltage selector located below the power connector. Use this switch to select the appropriate system input voltage according to the voltage supply in your area.

If the voltage supply in your area is 100-127V, set the switch to 115V.

If the voltage supply in your area is 200-240V, set the switch to 230V.

Setting the switch to 115V in a 230V environment or 230V in a 115V environment will seriously damage the system!

1.3 Connecting to the keyboard and the mouse

Your ASUS BP5265/AS-D596 Desktop PC package includes a PS/2 keyboard or a USB keyboard and a USB mouse. Connect the PS/2 keyboard to the PS/2 keyboard port at the rear panel or the USB keyboard to a USB port either at the rear panel or front panel. Connect the USB mouse to a USB port either at the rear panel or front panel.

1.4 Connecting to other peripheral devices

The ASUS BP5265/AS-D596 Desktop PC is equipped with a number of ports at the rear and front panels where you can connect peripheral devices to the system.

Refer to the illustration below for details.

About the installation of the peripherals, refer to the respective manuals for details.

- Due to the chipset limitation, we recommend that you install the graphics card onto PCIEX16_1 slot when using one graphics card.
  When two graphics cards are installed, the PCIEX16_2 slot runs at the frequency equal to PCI Express x4.
- If you need to use dual-display function, contact your retailer for details.

Chapter 2

This chapter helps you to power up the system and install drivers and utilities from the Support DVD.

Getting started

2.1 Installing an operating system

This motherboard supports Windows® XP / Vista operating systems (OS). Always install the latest OS version and the corresponding updates to maximize the features of your hardware. When you start the system for the first time, the system automatically detects the built-in audio and graphics chips and attempts to install the drivers that come with the OS. Select **NO** when a window appears asking if you want to restart the system. Install drivers according to the instructions in the following sections.

- To ensure that the OS works properly, install the drivers included in the Support DVD.
- 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.

2.2 Powering your system

Press the Power button ⏻ to power up the system.

Press the Power button to turn ON the system

2.3 Support DVD information

The Support DVD that comes with the system package contains the drivers, software applications, and utilities that you can install to get all system features.

The contents of the Support DVD are subject to change at any time without notice. Visit the ASUS website at www.asus.com for updates.

2.3.1 Running the Support DVD

Place the Support DVD into the optical drive. The DVD automatically displays the Drivers menu if Autorun is enabled on your computer.

Click an icon to display Support DVD/motherboard information

Click an item to install

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

2.3.2 Drivers menu

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

ASUS InstAll-Installation Wizard for Anti-Virus and Drivers Utility

Installs the ASUS InstAll installation wizard.

Intel Chipset Inf Update Program

Installs the Intel® chipset inf update program.

Realtek Audio Driver

Installs the Realtek Audio driver.

Intel Graphics Accelerator Driver

Instals the Intel® Graphics Accelerator Driver.

Intel(R) LAN Driver

Installs the Intel® LAN driver.

Management Engine Inerface

Installs the Management Engine Interface

Intel TPM Driver

Installs the Intel TPM driver.

USB 2.0 Driver

Installs the USB 2.0 driver.

2.3.3 Utilities menu

The Utilities menu shows the applications that the system supports. Tap an item from the screen to install.

ASUS InstAll - Installation Wizard for Utilities

Installs utilities for this desktop PC using the installation wizard.

ASUS AI Manager

Installs the ASUS AI Manager utility.

ASUS Update

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).

Intel IT Director

Intel® IT Director is a software that monitors security, data protection, and network concerns. It includes a centrally monitored dashboard for overseeing a network of wired or wireless clients within a Local Area Network (LAN).

Intel System Defense Utility

Intel® System Defense Utility enables you to remotely control and manage Intel® Active Management Technology (Intel® AMT) processor-based PCs in your corporate network environment.

Refer to Intel® website for the latest update information.

Adobe Reader 8

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

Microsoft DirectX 9.0c

Installs the Microsoft® DirectX 9.0c driver. The Microsoft® DirectX 9.0c 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.

ASUS Screen Saver

Installs ASUS screen saver.

2.3.4 Make Disk menu

The Make Disk menu allows you to make a RAID driver disk.

Intel ICH10R 32 bit RAID/AHCI Driver

Allows you to create an Intel ICH10R 32 bit RAID/AHCI driver.

Intel ICH10R 64 bit RAID/AHCI Driver

Allows you to create an Intel ICH10R 64 bit RAID/AHCI driver.

2.3.5 Manual menu

The Manual menu contains a list of supplementary user manuals. Click an item to open the folder of the user manual.

Most user manual files are in Portable Document Format (PDF). Install the Adobe® Reader from the Utilities menu before opening a user manual file.

2.3.6 ASUS contact information

Click the **Contact** tab to display the ASUS contact information.

2.3.5 Other information

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

Motherboard Info

Displays the general specifications of the motherboard.

Browse this DVD

Displays the Support DVD 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 DVD and a brief description of each in text format.

2.4 ASUS AI Manager

ASUS AI Manager allows you to launch AI Disk, AI Security, AI Gear, and AI Probe easily.

2.4.1 Installing AI Manager

To install AI Manager on your computer:

1. Place the Support DVD into the optical drive. The DVD automatically displays the **Drivers** menu if Autorun is enabled on your computer.

> If Autorun is NOT enabled on your computer, browse the contents of the Support DVD to locate the file ASSETUP.EXE from the BIN folder. Double-click ASSETUP.EXE to run the DVD.

2. Click the **Utilities** tab, then click **ASUS AI Manager**.
3. Follow the onscreen instructions to complete the installation.

2.4.2 Launching AI Manager

You can launch AI Manager right after installation or anytime from the Windows® desktop.

To launch AI Manager from the Windows® desktop, click **Start > All Programs > ASUS > AI Manager > AI Manager v1.xx.xx**. The AI Manager Quick Bar appears.

After launching the application, the AI Manager icon appears in the Windows® taskbar. Right-click this icon for more options.

2.4.3 AI Manager Quick Bar

Click the Main, My favorites, Support, and Information icon from the Quick Bar to show the corresponding menu.

Click to switch between a full-screen AI Manager window and the Quick bar.

Click to keep AI Manager in the taskbar.

Click to close AI Manager.

2.4.4 Main

Launch AI Disk, AI Security, AI Gear, and AI Probe from the Main menu. Click the small triangle to open or close the Main menu.

AI Disk

AI Disk allows you to easily clear the temporary IE files, IE URLs, IE cookies, IE history list, Recycle Bin, and recently opened files list. Select the item that you want to clear, then click **Apply**.

AI Security

AI Security allows you to set passwords to lock your removable storage devices such as a USB flash disk and a CD/DVD disk, which ensures more security for your data.

To lock a device:

1. If you are using AI Security for the first time, key in a password consisting of up to 20 alphanumeric characters.
2 Confirm your password.
3. Key in your password hint (optional).
4. Click **OK**.

5. Select the device you want to lock, then click **Apply**.

6. Key in your password, then click **OK**. The device you selected cannot be accessed without the password.

To unlock a device:

1. Deselect the device you locked, then click **Apply**.
2. Key in your password, then click **OK**.

To change your password, click **Change Password** and follow the onscreen instructions.

AI Gear

AI Gear provides three system performance profiles that adjust the processor frequency and vCore voltage to minimize the system noise and power consumption. Select your preferred system performance profile.

AI Probe

AI Probe automatically detects the motherboard and CPU temperatures, CPU fan speed, and CPU voltage. It also allows you to adjust these values manually.

2.4.5 My favorites

Add your favorite applications to the **My Favorites** menu.

To add an application:

1. Click **Add** and then from the succeeding screen select the application you want to add to the **My Favorites** menu.
2. Click **Open**. The application you selected is added and its icon appears.

Right-click an icon in the **My Favorites** menu to open, delete, or rename the corresponding application.

Double-click an icon to open the corresponding application.

2.4.6 Support

The **Support** menu displays links to the ASUS international website, online technical support website, online download support website, and contact information website.

2.4.7 Information

The **Information** menu displays the general information of your system, motherboard, CPU, BIOS, memory, and other devices installed.

2.5 Loading the initial OS default settings

If you want to load the initial default settings for your system, press **<F3>** during the Power-On Self-Test (POST).

2.6 Recovery DVD

The ASUS PC Recovery DVD assists you in reinstalling the OS and restoring it to its original working state. Before using the Recovery DVD, copy your data files to a USB flash disk or to a network drive and make note of any customized configuration settings such as network settings.

2.6.1 Recovering a Windows® XP OS:

1. Turn on your system. Insert the Recovery DVD into the optical disk drive.
2. Restart the system and press **<F8>** when the ASUS logo appears. Select the optical drive as the boot device.
3. Select where to install a new system. Options are:

   Recover system to a partition

   This option deletes only the partition you selected, allows you to keep other partitions, and creates a new system partition as drive “C”.

   Recovery system to entire HD

   This option deletes all partitions from your hard disk and creates a new system partition as drive “C”.

4. A confirmation screen pops up. Click **Next** to confirm.
5. Check **I accept** from the succeeding screen and click **Next**.
6. A list displays the contents you are going to recover. Click **Yes** to confirm. The recovery process starts.
7. Insert the Support DVD when prompted, then click **OK**. The system restarts.
8 . After the system reboots, Windows® XP begins its system configurations. Follow the onscreen instructions to complete the process, then the system restarts. Adjust the screen to a suitable display resolution.

The ASUS PC Recovery DVD is for ASUS Desktop PC only. **DO NOT** use it on other systems. Visit the ASUS website at www.asus.com for updates.

2.6.2 Recovering a Windows® Vista OS:

1. Turn on your system and press **<F8>** when the ASUS logo appears.
2. Insert the Recovery DVD into the optical drive when a **Please select boot device** menu appears. Select the optical drive as the boot device then press **Enter**. The system restarts.

If you want to recover the system from the hidden partition, press **<F9>** when the ASUS logo appears. Then follow steps 3-6 below.

3. After the system reboots, an **ASUS Preload** window appears. Press **Next** to continue.
4. Select where to install a new system. Options are:

   Recover Windows to first partition only:

   This option deletes only the first partition, allows you to keep other partitions, and creates a new system partition as drive “C”.

   Recover Windows to entire HD:

   This option deletes all partitions from your hard disk and creates a new system partition as drive “C”.

   Recover Windows to entire HD with 2 partitions:

   This option deletes all partitions from your hard disk and creates two new system partitions. The first partition takes up 60% of the whole hard disk size and the second partition takes up 40%. The new system is installed in the first partition. You can back up your data in the second partition.

5. When a window appears querying **Are you sure you want to recover now**, click **Finish**. The process percentage is displayed on the screen.
6. When a **Recovery finish** message appears, click **OK** and the system restarts. After it restarts, follow the onscreen instructions to complete the system configurations.

The ASUS PC Recovery DVD is for ASUS Desktop PC only. **DO NOT** use it on other systems. Visit the ASUS website at www.asus.com for updates.

Chapter 3

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

3.1 Managing and updating your BIOS

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

1. **ASUS EZ Flash 2** (Updates the BIOS using a floppy disk or USB flash disk.)
2. **ASUS AFUDOS** (Updates the BIOS in DOS mode using a bootable floppy disk.)
3. **ASUS CrashFree BIOS 3** (Updates the BIOS using a floppy, USB Flash disk, or the motherboard support DVD when the BIOS file fails or gets corrupted.)
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 or a USB flash disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update or AFUDOS utilities.

3.1.1 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® Vista environment

   a. Insert a formatted, high density 1.44 MB floppy disk to the floppy disk drive.

   b. Click from the Windows® desktop, then select **Computer**.

   c. Right-click **Floppy Disk Drive** then click **Format** to display the **Format 3 1/2 Floppy** dialog box.

   d. Select the **Create an MS-DOS startup disk** check box.

   e. Click **Start**.

2. Copy the original or the latest motherboard BIOS file to the bootable floppy disk.

3.1.2 ASUS EZ Flash 2 utility

The ASUS EZ Flash 2 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 2 utility is built-in the BIOS chip so it is accessible by pressing <Alt> + <F2> during the Power-On Self-Test (POST).

To update the BIOS using EZ Flash 2:

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 or a USB flash disk, then restart the system.
3. You can launch the EZ Flash 2 by two methods.
   (1) Insert the floppy disk / USB flash disk that contains the BIOS file to the floppy disk drive or the USB port.

   Press <Alt> + <F2> during POST to display the following.

   (2) Enter BIOS setup program. Go to the **Tools** menu to select **EZ Flash2** and press <Enter> to enable it.

   You can switch between drives by pressing <Tab> before the correct file is found. Then press <Enter>.

4. When the correct BIOS file is found, EZ Flash 2 performs the BIOS update process and automatically reboots the system when done.

- This function can support devices such as USB flash disk, or floppy disk with **FAT 32/16** format only.
- Do not shut down or reset the system while updating the BIOS to prevent system boot failure!

3.1.3 AFUDOS utility

The AFUDOS utility allows you to update the BIOS file in DOS environment using a bootable floppy disk with the updated BIOS file. This utility also allows you to copy the current BIOS file that you can use as backup when the BIOS fails or gets corrupted during the updating process.

Copying the current BIOS

To copy the current BIOS file using the AFUDOS utility:

- Make sure that the floppy disk is not write-protected and has at least 1024KB free space to save the file.
- The succeeding BIOS screens are for reference only. The actual BIOS screen displays may not be same as shown.

1. Copy the AFUDOS utility (afudos.exe) from the motherboard support DVD to the bootable floppy disk you created earlier.
2. Boot the system in DOS mode, then at the prompt type:

   afudos /o[filename]

   where the [filename] is any user-assigned filename not more than eight alphanumeric characters for the main filename and three alphanumeric characters for the extension name.

```
A:\>afudos /oOLDBIOS1.rom
```

Main filename Extension name

3. Press <Enter>. The utility copies the current BIOS file to the floppy disk.

```
A:\>afudos /oOLDBIOS1.rom
AMI Firmware Update Utility - Version 1.19(ASUS V2.26(06.08.28BB))
Copyright (C) 2003 American Megatrends, Inc. All rights reserved.
    Reading flash ..... done
    Write to file...... ok
A:\>
```

The utility returns to the DOS prompt after copying the current BIOS file.

Updating the BIOS file

To update the BIOS file using the AFUDOS utility:

1. Visit the ASUS website (www.asus.com) and download the latest BIOS file for the motherboard. Save the BIOS file to a bootable floppy disk.

Write the BIOS filename on a piece of paper. You need to type the exact BIOS filename at the DOS prompt.

2. Copy the AFUDOS utility (afudos.exe) from the motherboard support DVD to the bootable floppy disk you created earlier.
3. Boot the system in DOS mode, then at the prompt type:

   afudos /i[filename]

   where [filename] is the latest or the original BIOS file on the bootable floppy disk.

```
A:\>afudos /iP5QEMDO.ROM
```

4. The utility verifies the file and starts updating the BIOS.

```
A:\>afudos /iP5QEMDO.ROM
AMI Firmware Update Utility - Version 1.19(ASUS V2.26(06.08.28BB))
Copyright (C) 2003 American Megatrends, Inc. All rights reserved.

    WARNING!! Do not turn off power during flash BIOS
    Reading file ....... done
    Reading flash ...... done

    Advance Check ......
    Erasing flash ...... done
    Writing flash ...... 0x0008CC00 (9%)
```

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

5. The utility returns to the DOS prompt after the BIOS update process is completed. Reboot the system from the hard disk drive.

```
A:\>afudos /iP5QEMDO.ROM
AMI Firmware Update Utility - Version 1.19(ASUS V2.26(06.08.28BB))
Copyright (C) 2003 American Megatrends, Inc. All rights reserved.

    WARNING!! Do not turn off power during flash BIOS
    Reading file ....... done
    Reading flash ...... done

    Advance Check ......
    Erasing flash ...... done
    Writing flash ...... done
    Verifying flash .... done

    Please restart your computer

A:\>
```

3.1.4 ASUS CrashFree BIOS 3 utility

The ASUS CrashFree BIOS 3 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 DVD, the USB flash disk, or the floppy disk that contains the updated BIOS file.

- Prepare the motherboard support DVD, the USB flash disk, or the floppy disk containing the updated motherboard BIOS before using this utility.
- Make sure that you rename the original or updated BIOS file in the floppy disk or the USB flash disk to **P5QEMDO.ROM.**

  If your display monitor is connected to the onboard VGA connector, the display monitor will turn-off and the system will beep once while CrashFree BIOS 3 starts updating your system. The system will beep once again while the process is finished, and the display will return after the system restarts.

Recovering the BIOS from a floppy disk

To recover the BIOS from a floppy disk:

1. 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.

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
```

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

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
Floppy found!
Reading file "P5QEMDO.ROM". Completed.
Start flashing...
```

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

Recovering the BIOS from the support DVD

To recover the BIOS from the support DVD:

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

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
```

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

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
Floppy not found!
Checking for CD-ROM...
CD-ROM found!
Reading file "P5QEMDO.ROM". Completed.
Start flashing...
```

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

Recovering the BIOS from the USB flash disk

To recover the BIOS from the USB flash disk:

1. Insert the USB flash disk that contains BIOS file to the USB port.
2. Turn on the system.
3. The utility will automatically checks the devices for the BIOS file when found, the utility reads the BIOS file and starts flashing the corrupted BIOS file.
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.

- Only the USB flash disk with FAT 32/16 format and single partition can support ASUS CrashFree BIOS 3. The device size should be smaller than 8GB.
- DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

3.1.5 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 DVD 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 DVD in the optical drive. The **Drivers** menu appears.
2. Click the **Utilities** tab, then click **Install ASUS Update**. See page 3-4 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 **Open**.
4. Follow the screen instructions to complete the update process.

3.2 BIOS setup program

This motherboard supports a programmable Serial Peripheral Interface (SPI) chip that you can update using the provided utility described in section “2.1 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 SPI chip.

The SPI 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 <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, reboot the system by doing any of the following procedures:

- Restart using the OS standard shut-down procedure.
- Press <Ctrl>+<Alt>+<Del> simultaneously.
- Press the reset button on the system chassis.
- Press the power button to turn the system off then back on.

Using the **power button**, **reset button**, or the **<Ctrl>+<Alt>+<Del>** keys to force reset from a running operating system can cause damage to your data or system. We recommend to always shut-down the system properly from the operating system.

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 Setup Defaults** item under the Exit Menu. See section “3.8 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.

3.2.1 BIOS menu screen

3.2.2 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
Tools	For configuring options for special functions
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.

3.2.3 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.

3.2.4 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, Tool, and Exit) on the menu bar have their respective menu items.

Main menu items

3.2.5 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>.

3.2.6 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.”

3.2.7 Pop-up window

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

3.2.8 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

3.2.9 General help

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

3.3 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 “3.2.1 BIOS menu screen” for information on the menu screen items and how to navigate through them.

3.3.1 System Time [xx:xx:xx]

Allows you to set the system time.

3.3.2 System Date [Day xx/xx/xxxx]

Allows you to set the system date.

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

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

3.3.4 SATA1-4

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

```
                              BIOS SETUP UTILITY
Main
SATA 1                                                  Select the type of
Device            : N/A                                 device connected to
                                                        the system.
Type                                        [Auto]
LBA/Large Mode                              [Auto]
Block(Multi-Sector Transfer)M               [Auto]
PIO Mode                                    [Auto]
DMA Mode                                    [Auto]
SMART Monitoring                            [Auto]
32Bit Data Transfer                         [Enabled]

                                                        ←→   Select Screen
                                                        ↑↓   Select Item
                                                        +-   Change Option
                                                        F1   General Help
                                                        F10  Save and Exit
                                                        ESC  Exit
              v02.61 (C)Copyright 1985-2008, American Megatrends, Inc.
```

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 SATA device is installed in the system.

Type [Auto]

Selects the type of SATA drive. Setting to Auto allows automatic selection of the appropriate SATA 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 the DMA mode. Configuration options: [Auto] [SWDMA0] [SWDMA1] [SWDMA2] [MWDMA0] [MWDMA1] [MWDMA2] [UDMA0] [UDMA1] [UDMA2] [UDMA3] [UDMA4] [UDMA5]. Only [Auto] is showed if no SATA device is installed in the system.

SMART Monitoring [Auto]

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

32Bit Data Transfer [Enabled]

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

3.3.5 Storage Configuration

SATA Configuration [Enhanced]

Allows you to disable or enable SATA Configuration function.
Configuration options: [Disabled] [Compatible] [Enhanced]

Configure SATA as [IDE]

Sets the configuration for the Serial ATA connectors supported by the Southbridge chip.

The AHCI allows the onboard storage driver to enable advanced Serial ATA features that increases storage performance on random workloads by allowing the drive to internally optimize the order of commands.

If you want to create a RAID 0, RAID 1, RAID 5, RAID 10, or the Intel® Matrix Storage Technology configuration from the Serial ATA hard disk drives, set this item to [RAID].

Hard Disk Write Protect [Disabled]

Allows you to enable or disable the hard disk write protect.
Configuration options: [Disabled] [Enabled]

SATA Detect Time Out (Sec) [35]

Sets SATA detect time out.
Configuration options: [0] [5] [10] [15] [20] [25] [30] [35]

3.3.6 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

System Memory

Displays the auto-detected system memory

3.4 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.

```
                    BIOS SETUP UTILITY
 Main    Advanced    Power    Boot    Tools    Exit

 ▶ CPU Configuration                    Configure CPU.
 ▶ Chipset
 ▶ Onboard Devices Configuration
 ▶ USB Configuration
 ▶ PCIPnP
 ▶ TPM Configuration
 ▶ Intel VT-d Configuration
 ▶ Intel TXT(LT) Configuration

                                        ←→   Select Screen
                                        ↑↓   Select Item
                                        Enter Go to Sub Screen
                                        F1   General Help
                                        F10  Save and Exit
                                        ESC  Exit

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```

3.4.1 CPU Configuration

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

The items shown in this screen may be different due to the CPU you installed.

```
                    BIOS SETUP UTILITY
                    Advanced

 Configure advanced CPU settings                Sets the ratio between
                                                CPU Core Clock and the
 Manufacturer:Intel                             FSB Frequency.
 Brand String:Intel(R) Core(TM)2 Duo CPU @ 3.00GHz  NOTE: If an invalid
 Frequency    :3.01GHz                          ratio is set in CMOS
 FSB Speed    :1340 MHz                         then actual and
 Cache L1     :64 KB                            setpoint values may
 Cache L2     :4096 KB                          differ.
 Ratio Status: Unlocked (Min:06, Max:09)
 Ratio Actual Value:9
 CPUID        :6F9

 C1E Support                    [Enabled]       ←→   Select Screen
 Intel(R) Virtualization Tech   [Enabled]       ↑↓   Select Item
 CPU TM function                [Enabled]       +-    Change Option
 Execute Disable Bit            [Enabled]       F1   General Help
 Intel(R) SpeedStep(TM) Tech    [Enabled]       F10  Save and Exit
 Intel(R) C-STATE Tech          [Enabled]       ESC  Exit

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```

C1E Support [Enabled]

Allows you to enable or disable Enhanced Halt State support.
Configuration options: [Disabled] [Enabled]

Intel(R) Virtualization Tech [Enabled]

The Intel® Virtualization Technology allows a hardware platform to run multiple operating systems separately and simultaneously, enabling one system to virtually function as several systems.
Configuration options: [Disabled] [Enabled]

CPU TM function [Enabled]

This function enables the overheated CPU to throttle the clock speed to cool down.
Configuration options: [Disabled] [Enabled]

Execute Disable Bit [Enabled]

Allows you to enable or disable the No-Execution Page Protection Technology. Setting this item to [Disabled] forces the XD feature flag to always return to zero (0).
Configuration options: [Disabled] [Enabled]

The following items appear only when you set the **CPU Ratio Control** item to [Auto].

Intel(R) SpeedStep (TM) Tech [Enabled]

When set to [Disabled], the CPU runs at its default speed. When set to [Enabled], the CPU speed is controlled by the operating system.
Configuration options: [Disabled] [Enabled]

Intel(R) C-STATE Tech [Enabled]

Allows you enable or disable the Intel® C-STATE Technology. When enabled, the CPU idle is set to C2/C3/C4. Configuration options: [Disabled] [Enabled]

3.4.2 Chipset

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

```
BIOS SETUP UTILITY
Advanced

Advanced Chipset Settings                    Configure North Bridge
                                             features.
WARNING: Setting wrong values in below sections
         may cause system to malfunction.

▶ North Bridge Configuration
▶ ME Subsystem Configuration
▶ VE Subsystem Configuration
```

North Bridge Chipset Configuration

```
BIOS SETUP UTILITY
Advanced

North Bridge Chipset Configuration           ENABLE: Allow
                                             remapping of
Memory Remap Feature        [Enabled]        overlapped PCI memory
                                             above the total
                                             physical memory.
Initiate Graphic Adapter    [PEG/PCI/PCIE/IGD]
IGD Graphics Mode Select    [Enabled, 32GB]  DISABLE: Do not allow
GTT Graphics Memory Size    [No VT mode, 2MB] remapping of memory.
PAVP Function               [LiteMode]
DVMT Memory                 [256MB]
```

Memory Remap Feature [Enabled]

Allows you to enable or disable the remapping of the overlapped PCI memory above the total physical memory. Enable this option only when you install 64-bit operating system.

Configuration options: [Disabled] [Enabled]

Initiate Graphic Adapter [PEG/PCI/PCIE/IGD]

Allows you to decide which graphics controller to use as the primary boot device.

Configuration options: [IGD] [PCI/PCIE/IGD] [PCI/PCIE/PEG/IGD] [PEG/IGD] [PEG/PCI/PCIE/IGD]

IGD Graphics Mode Select [Enabled, XXMB]

Allows you to select the size of system memory used by the internal graphics device.

Configuration options: [Enabled, 32MB] [Enabled, 64MB] [Enabled, 128MB]

GTT Graphics Memory Size [No VT mode, 2MB]

This item is not available.

PAVP Function [LiteMode]

Allows you to set the GMCH Protected Audio Video Path (PAVP) BIOS support. Configuration options: [Disabled] [LiteMode] [Paranoid]

DVMT Memory [256MB]

Configuration options: [128MB] [256MB] [Maximum DVMT]

The [Maximum DVMT] option appears only when you install DIMM modules more than 1 GB.

This motherboard supports Intel® DVMT 5.0 Technology whose maximum graphics memory size in total varies with the system memory size in total and the operating system. Refer to the following table for details.

System Memory	Maximum Total Graphics Memory	
	Windows® XP	Windows® Vista™
1GB to < 1.5GB	512MB	552MB
1GB to < 2GB	768MB	808MB
2GB to < 3GB	1024MB	1320MB
3GB to < 4GB	—	1832MB
4GB and above	—	1849MB

ME Subsystem Configuration

ASF Support [Disabled]

Allows you to enable or disable the Alert Standard Format (ASF). Configuration options: [Disabled] [Enabled].

ME HECI Configuration

ME-Device [Enabled]

This item is not configurable.

ME-IDER [Disabled]

This item is not configurable.

ME-KT [Disabled]

This item is not configurable.

Configure Intel AMT Parameters

ME BIOS Extension [Enabled]

Allows you to enable or disable ME BIOS Extension.
Configuration options: [Enabled] [Disabled].

The Intel® Active Management Technology requires the Intel® AMT-enabled software. Also, the platform must be connected to a power source and an active LAN port.

VE Subsystem Configuration

VE-VECI [Disabled]

Allows you to enable or disable the Virtualization Embedded Controller Interface (VECI).
Configuration options: [Disabled] [Enabled]

Unhide All Physical HC [Enabled]

Allows you to choose hide or not hide all physical Host Controllers.
Configuration options: [Disabled] [Enabled]

3.4.3 Onboard Device Configuration

```
                    BIOS SETUP UTILITY
                    Advanced

Onboard Device Configuration                  Enable or Disable
                                              High Definition Audio
High Definition Audio          [Enabled]      Controller
  Front Panel Type             [HD Audio]
Intel Onboard LAN Controller   [Enabled]
   Intel LAN Boot ROM          [Disabled]

Serial Port1 Address           [3F8/IRQ4]
Serial Port2 Address           [2F8/IRQ3]

                                              ←→   Select Screen
                                              ↑↓   Select Item
                                              +-   Change Option
                                              F1   General Help
                                              F10  Save and Exit
                                              ESC  Exit

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```

High Definition Audio [Enabled]

Allows you to enable or disable the High Definition Audio Controller.
Configuration options: [Enabled] [Disabled]

The following item appears only when you set the High Definition Audio item to [Enabled].

Front Panel Type [HD Audio]
Allows you to set the front panel audio connector (AAFP) mode to legacy AC'97 or high-definition audio depending on the audio standard that the front panel audio module supports. Configuration options: [AC97] [HD Audio]

Intel Onboard LAN Controller [Enabled]

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

Intel LAN Boot ROM [Disabled]
This item appears only when the Intel Onboard LAN Controller is enabled.
Configuration options: [Enabled] [Disabled]

Serial Port1 Address [3F8/IRQ4]

Allows you to select the Serial Port1 base address.
Configuration options: [Disabled] [3F8/IRQ4] [3E8/IRQ4] [2E8/IRQ3]

Serial Port2 Address [2F8/IRQ3]

Allows you to select the Serial Port2 base address.
Configuration options: [Disabled] [2F8/IRQ3] [3E8/IRQ4] [2E8/IRQ3]

3.4.4 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 **USB Devices Enabled** item shows the auto-detected values. If no USB device is detected, the item shows **None**.

USB Functions [Enabled]

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

The following items appear only when you set **USB Functions** to [Enabled].

USB 2.0 Controller [Enabled]

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

The following item appears only when you enable the **USB 2.0 Controller**.

USB 2.0 Controller Mode [HiSpeed]

Allows you to set the USB 2.0 controller mode to HiSpeed (480 Mbps) or FullSpeed (12 Mbps). Configuration options: [FullSpeed] [HiSpeed]

BIOS EHCI Hand-off [Enabled]

Allows you to enable the support for operating systems without an EHCI hand-off feature.
Configuration options: [Disabled] [Enabled]

Legacy USB Support [Auto]

Allows you to enable or disable the support for legacy USB devices. Setting to [Auto] allows the system to detect the presence of USB devices at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled.
Configuration options: [Disabled] [Enabled] [Auto]

3.4.5 PCIPnP

The PCIPnP menu items allow you to change the advanced settings for PCI/PnP devices.

Plug And Play O/S [No]

When set to [NO], 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]

3.4.6 TPM Configuration

The items in this menu allow you to set the TPM (Trusted Platform Module) features. Select an item then press <Enter> to display the configuration options.

The **TPM Configuration** item appears only when a TPM module is installed in this motherboard.

TCG/TPM SUPPORT [YES]

Allows you to enable or disable TCG/TPM setting.
Configuration options: [YES] [NO]

The following items appear only when you set the **TCG/TPM SUPPORT** item to [YES].

Execute TPM Command [Last Setting]

Allows you to set execute TPM command.
Configuration options: [Last Setting] [Disabled] [Enabled]

TPM Enable / Disable Status [Disabled]

The item is not configurable.

TPM Owner Status [Unowned]

The item is not configurable

3.4.7 Intel® VT-d Configuration

The items in this menu allow you to enable or disable the Intel® Virtualization Technology for Directed I/O (Intel® VT-d) feature. Select an item then press <Enter> to display the configuration options.

Intel VT-d [Disabled]

Allows you to enable or disable the Intel® VT-d function.
Configuration options: [Disabled] [Enabled]

3.4.8 Intel® TXT(LT) Configuration

The items in this menu allow you to enable or disable the Intel® Trust Execution Technology (Intel® TXT) feature. Select an item then press <Enter> to display the configuration options.

Intel TXT Initialization [Disabled]

Allows you to enable or disable the Intel® TXT Initialization.
Configuration options: [Disabled] [Enabled].

The following items show when you set Intel TXT Initialization option to [Enabled].

When you set Intel TXT Initialization option to [Enabled], all of these items are set to [Enabled] automatically.

3.5 Power menu

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

3.5.1 Repost Video on S3 Resume [No]

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

3.5.2 ACPI 2.0 Support [Disabled]

Add additional tables as per ACPI 2.0 specifications.
Configuration options: [Disabled] [Enabled]

3.5.3 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]

3.5.4 APM Configuration

```
BIOS SETUP UTILITY
Power

APM Configuration                                  <Enter> to select
                                                   whether or not to
Restore on AC Power Loss        [Power Off]        restart the system
                                                   after AC power loss.
Power On By RTC Alarm           [Disabled]
Power On By External Modems     [Disabled]
Power On By PCI Devices         [Disabled]
Power On By PCIE Devices        [Disabled]
Power On By PS/2 Keyboard       [Disabled]
Power On By PS/2 Mouse          [Disabled]
GbE LAN Power                   [Enabled]
```

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 / RTC Alarm Second will become user-configurable 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]

Allows you to enable or disable the PME to wake up from S5 by PCI devices.
Configuration options: [Disabled] [Enabled].

Power On By PCIe Devices [Disabled]

Allows you to enable or disable the PCIe devices 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] [Space Bar] [Ctrl-Esc] [Power Key].

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].

GbE LAN Power [Enabled]

Allows you to enable or disable the Gigabit LAN Power.
Configuration options: [Enabled] [Disabled]

3.5.5 Hardware Monitor

CPU Temperature [xxxºC/xxxºF]
MB Temperature [xxxºC/xxxºF]

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

CPU Fan Speed [xxxxRPM] or [Ignored] / [N/A]

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 [Disabled]

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

Chassis Fan 1 Speed [xxxxRPM] or [Ignored] / [N/A]

The onboard hardware monitor automatically detects and displays the chassis 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. Select [Ignored] if you do not wish to display these items.

3.6 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.

```
                    BIOS SETUP UTILITY
Main   Advanced   Power   Boot   Tools   Exit

Boot Settings                          Specifies the Boot
                                       Device Priority
 ▶ Boot Device Priority                sequence.

                                       A virtual floppy disk
 ▶ Boot Settings Configuration         drive (Floppy Drive B:)
 ▶ Security                            may appear when you set
                                       the CD-ROM drive as the
                                       first boot device.

                                       ←→   Select Screen
                                       ↑↓   Select Item
                                       Enter Go to Sub Screen
                                       F1    General Help
                                       F10   Save and Exit
                                       ESC   Exit

v02.61 (C)Copyright 1985-2008, American Megatrends, Inc.
```

3.6.1 Boot Device Priority

```
                    BIOS SETUP UTILITY
                         Boot

Boot Device Priority                   Specifies the boot
                                       sequence from the
1st Boot Device        [1st FLOPPY DRIVE]  availabe devices.
2nd Boot Device        [Hard Drive]
3rd Boot Device        [ATAPI CD-ROM]

                                       A device enclosed
                                       in parenthesis has
                                       been disabled in the
                                       corresponding menu.
```

1st ~ xxth Boot Device [xxx 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: [xxx Drive] [Disabled]

3.6.2 Boot Settings Configuration

```
BIOS SETUP UTILITY
Boot

Boot Settings Configuration

Quick Boot                  [Enabled]
Full Screen Logo            [Enabled]
AddOn ROM Display Mode      [Force BIOS]
Bootup Num-Lock             [On]
Wait For 'F1' If Error      [Enabled]
Hit 'DEL' Message Display   [Enabled]

Allows BIOS to skip
certain tests while
booting. This will
decrease the time
needed to boot the
system.
```

Quick Boot [Enabled]

Enabling this item allows the BIOS to skip some power on self tests (POST) while booting to decrease the time needed to boot the system. When set to [Disabled], BIOS performs all the POST items. Configuration options: [Disabled] [Enabled]

Full Screen Logo [Enabled]

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

Set this item to [Enabled] to use the ASUS MyLogo2™ feature.

Add On ROM Display Mode [Force BIOS]

Sets the 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]

When set to Enabled, the system waits for the F1 key to be pressed when error occurs. Configuration options: [Disabled] [Enabled].

Hit 'DEL' Message Display [Enabled]

When set to Enabled, the system displays the message "Press DEL to run Setup" during POST. Configuration options: [Disabled] [Enabled].

3.6.3 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 can clear clear it by erasing the CMOS Real Time Clock (RTC) RAM. See section “1.9 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.

```
                    BIOS SETUP UTILITY
                         Boot
Security Settings                          <Enter> to change
                                           password.
Supervisor Password    : Not Installed     <Enter> again to
User Password          : Not Installed     disabled password.

Change Supervisor Password
User Access Level          [Full Access]
Change User Password
Clear User Password
Password Check             [Setup]
```

User Access Level [Full Access]

This item allows you to select the access restriction to the Setup items. Configuration options: [No Access] [View Only] [Limited] [Full Access]

No Access prevents user access to the Setup utility.

View Only allows access but does not allow change to any field.

Limited allows changes only to selected fields, such as Date and Time.

Full Access allows viewing and changing all the fields in the Setup utility.

Change User Password

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

To set a User Password:

1. Select the Change User Password item and press <Enter>.
2. On the password box that appears, 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 set your password successfully.

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

Clear User Password

Select this item to clear the user password.

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]

SPI Lock Support [Disabled]

Allows you to enable or disable the SPI Lock function.
Configuration options: [Enabled] [Disabled]

3.7 Tools menu

The Tools menu items allow you to configure options for special functions. Select an item then press <Enter> to display the sub-menu.

ASUS EZ Flash 2

Allows you to run ASUS EZ Flash 2. When you press <Enter>, a confirmation message appears. Use the left/right arrow key to select between [Yes] or [No], then press <Enter> to confirm your choice. Please see page 4-2, section 4.1.2 for details.

3.8 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 **OK** 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 **OK** 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 **OK** to load default values. Select **Exit & Save Changes** or make other changes before saving the values to the non-volatile RAM.

3.9 Intel® ME configuration

This function allows you to configure the Intel® Management Engine (ME) settings.

Ensure that the ME function is enabled before configuring the settings. To enable the ME function, refer to pages 4-24 and 4-24 for details.

To launch the Intel® ME Setup

The following screen appears after the Power-On-Self-Test (POST). Press **<Ctrl> + P** to launch the Intel® ME Setup screen.

```
Intel(R) Management Engine BIOS Extension v5.0.5.0001
Copyright(C) 2003-08 Intel Coporation. All Rights Reserved.

Intel(R) ME Firmware version 5.0.0.1098
Press <CTRL-P> to enter Intel(R) ME Setup.
```

3.9.1 Change Intel® ME password

You are required to change the password when entering the setup for the first time. By default , the password is **admin**.

To change the password:

1. Key in **admin** in the **Intel(R) ME Password** area, then press <Enter>.
2. Key in a new password in the **Intel(R) ME New Password** area and press <Enter>.
3. Key in the password again in the **Verify Password** area and press <Enter>.

A valid password must include uppercase and lowercase letters, special characters (such as ~,%,*,#), and numbers.

3.9.2 Intel® ME Configuration

Select **Intel(R) ME Configuration** and press <Enter>. The following message appears to remind you that the system resets after the configuration changes. Press <Y> to continue or <N> to cancel.

Intel® ME State Control

Allows you to enable or disable the Intel® ME State Control function. Select **Intel(R) ME State Control** and press <Enter> to display the configuration options. Press < ↓ > or < ↑ > to select and press <Enter> to confirm the selection.

The following items appear only when the Intel® ME State Control item is set to [ENABLED]. When the setting is changed from [DISABLED] to [ENABLED], your computer resets automatically to apply the change.

Intel® ME Firmware Local Update

Allows you to enable or disable the Intel® ME Firmware Local Update function. Configuration options: [DISABLED] [ENABLED]

Intel® ME Features Control

Allows you to configure the Intel® ME Features Control function. Select **Intel® ME Features Control** and press <Enter> to display the submenu.

Manageability Feature Select [NONE]

Allows you to select the Intel® Manageability feature. Configuration options: [NONE] [Intel(R) Standard Manageability] [ASF]

Intel® Quiety System Technology

Allows you to enable or disable the Intel® Quiet System Technology. Configuration options: [DISABLED] [ENABLED]

Intel® ME Power Control

Allows you to configure the Intel® ME Power Control function. Select **Intel® ME Power Control** and press <Enter> to display the submenu.

Intel® ME ON in Host Sleep States

Allows you to select the sleep modes for Intel® ME function to turn on/off or wake up.

Return to the previous menu

Allows you to return to the previous screen. Select **Return to the previous menu** and press <Enter>. You can also press <Esc> to return to the previous screen.

3.9.3 Exit menu

To exit the Intel® ME setup, select **Exit** from the Main menu and press <Enter>. When the confirmation message appears, press <Y> to exit or press <N> to cancel.