Working with PC Cards

By installing PC Cards, you can add functions to your notebook computer similar to those found on add-in boards for desktop computers. Available PC Cards include:

- Input/output, such as modem, network, video capture, and SCSI cards.
- Storage, such as hard drive and flash memory cards.

Your computer includes the following PC Card support:

- One PC-Card slot: You can install Type I or II cards in the slot.
- CardBus hardware and software: CardBus enables the computer to use 32-bit PCMCIA Cards. Windows supports 32-bit and 16-bit PC Cards.

Maintaining PC Cards

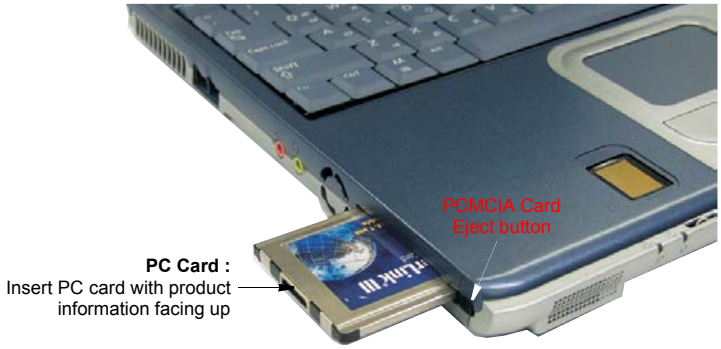
To maintain your PC Cards, follow these guidelines:

- Keep cards away from excessive heat, direct sunlight, and liquids.
- Do not drop, bend, flex, or crush cards when handling.
- Keep dust, magnets, and static electricity away from PC Cards.
- When a card is not in use, carry it in its protective carrying case.
- Some PC Cards include cables that extend from the back of the cards. Be careful not to bend or put excessive strain on these cables.

Using PC Cards

To insert a PC Card into a slot:

1. Push the slot door in with the PC Card.
2. Align the card with a slot and insert the card into the slot until it locks in place.



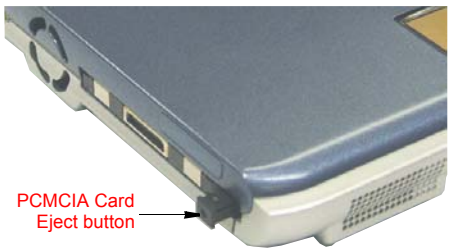
Windows automatically assigns computer resources (such as communication ports and memory addresses) to a PC Card installed in your computer.

To remove a PC Card from your computer:

Use the following procedures to remove PC Cards, or you may lose data that is being stored to a card.

1. Click icon on the taskbar.
2. Select the card currently in use, and click the Stop button.

The eject button for the card slot operates in two steps, therefore to remove a PC Card:



3. Push the eject button once to pop it outward then push the eject button again to eject the card.
4. Pull the card out of the PC Card slot.

Multi Media Functions/Equipment

Media Player

The Windows Media player is used to play audio files while the computer is on. You can play audio/video CD files using the Windows Media Player, as well as watching TV, video and listening to the radio through internet. The instructions to play a video CD-ROM are the same as the instructions for the audio CD below.

Playing a Audio/Multimedia CD

To play an CD follow the instructions below:

1. Insert a compact disc into your CD-ROM drive.
2. Press the eject button on the CD-ROM drive to open the CD-ROM device.
3. Insert a CD, label side up.
4. Carefully push the tray in to close the drive tray. The Windows Media Player button appears on the taskbar if not already there, and the music begins to play. If the disk does not play click **Start > All Programs > Accessories > Entertainment > Windows Media Player**.

CD LED On:
A LED on the drive tray is on when the computer is reading from a CD. Do not remove a disc when this LED is on.

Removing the Audio/Multimedia CD

To remove the CD follow the instructions below:

1. Click **Start > All Programs > Accessories > Entertainment > Windows Media Player** to open the Windows Media Player window, if not already open.
2. Click **Stop** in the Windows Media Player window or simply close the Windows media player.
3. Press the button on your CD-ROM drive. The drive tray opens and you can remove the CD from the CD-ROM drive.
4. For more information on playing compact discs, see the Help menu in the Windows Media Player window.

Audio DJ

The Audio DJ can play music CDs and MP3 files while the computer is off. It will not, however play video CDs.

Button Operation

The buttons & display for the Audio DJ operate as follows:

Button	Name	Function
	Volume Down	Decreases speaker volume when Audio DJ is on.
	Volume Up	Increases speaker volume when Audio DJ is on.
+	**MUTE**	Press the **<Volume Down + Volume Up>** buttons simultaneously for ~ 1 sec. to mute the sound.
DIGITAL AUDIO	**Track Display**	Indicates power on => ■ and total tracks available on CD and track playing => ▶. The ▶ blinks when the music file is paused.
	Stop/Eject	Stops & Ejects the Audio CD. Press the button ~ 3 seconds to turn off power.
	Audio DJ Power CD Play/Pause	Starts/Pauses the Audio CD and MP3 Files.
	Previous Track/Song Fast Search Reverse	Changes the Audio CD to the previous track/song.
	Next Track/Song Fast Search Forward	Changes the Audio CD to the next track/song.
+	**Lock**	Press the **<Stop/Eject + Volume Down>** buttons simultaneously for ~ 3 sec. to lock the Audio DJ buttons. This prevent changing settings while transporting the computer.
+	**Unlock**	Press the **<Audio DJ Power CD Play/Pauset + Volume Down>** buttons simultaneously for ~ 3 sec. to unlock the Audio DJ buttons.

Using the Audio DJ

Play an Audio CD

1. Verify the computer is off and that a CD-ROM device is in the flex-bay.

Audio DJ Power Buttons:
If a CD-ROM device is not in the flex-bay, the Audio DJ power button will not energize the Audio DJ player.

Computer Button Operation:
All computer and SENS keyboard buttons are non functional while Audio DJ is operating except the **Computer Power Button**.

2. Press the **Audio DJ** power button until the icon ■ is displayed in the track display window [Labeled: DIGITAL AUDIO].
3. Press the eject button on the CD-ROM drive or the button on the Audio DJ button bar.
4. Insert a Audio CD into your CD-ROM drive label side up.
5. Press the button on the Audio DJ.

Pause/Resume an Audio CD

1. Press the CD button to pause the CD.
2. Press the button again to restart the CD.

Stop an Audio CD

1. Press the button to stop and eject the CD.
2. Remove the Audio CD, then close the tray.
3. Press the Audio DJ power button for ~ 1 second to turn off the Audio DJ player.

Fast Search an Audio CD

1. Press the or buttons for ~1 second while the music is playing to start Fast Search .
2. Press the button and or buttons to stop the Fast Search.

Dolby Digital & Dolby Theater System

Your computer supports Dolby Digital & Dolby Theater System through a shared Headphone-S/PDIF jack, located on the left side of the computer. You must use a 3.5 mm (mono)- to RCA cable to use the S/PDIF function as shown in the figure below.

Volume Control

The instructions below are for controlling speaker volume when the computer is on. To control speaker volume when the Audio DJ only is on see “Audio DJ” on page 37.

Using the Keyboard

Changing the volume with your keyboard.

Use Fn + PgDn to decrease the volume or Fn + PgUp to increase the volume.

Using the Volume Control Icon

Double-Click icon in the active program tray. The **Volume Control** window pops up. Use this window to adjust the volume. You can pop up a simple volume slider by a single click icon.

Movie Maker

You can edit audio and video data using this Movie Maker included with Windows XP. It is also possible to make a slide show with each frame or picture.

To start the program:

Click **Start** > **All Programs** > **Accessories** > **Windows Movie Maker**.

Please refer to the on-line help manual to operate the Windows Movie Maker.

Using the Battery

Your computer uses a smart rechargeable Lithium-ion (Li-ion) battery pack for power when the AC adapter is not attached to an electrical outlet. The smart battery gives a accurate measurement of the current battery capacity which helps extend operating time by enabling effective power management in operating systems that take advantage of the accurate information supplied by the battery.

Charging the Battery

Your computer's battery starts charging automatically when you connect the power to the computer and to an electrical outlet. If the computer is off, the battery charges faster than if the computer's power is on.

Approximate charging times for the Li-Ion battery are

- 3 hours with the computer off.
- 6 hours with the computer on.

While the battery is charging normally, the battery charge light on the computer is red. When the battery is fully charged, the light changes to green.

When you use a new battery pack for the first time or use a battery after a long period of storage, the initial battery life is shorter than normal. Normal battery life resumes after a few discharge-recharge cycles.

Follow these rules for charging your battery:

- A battery normally discharges power when not used for long periods of time. Be sure to recharge the battery every two months when it is not in use.
- Make it a practice to discharge your battery fully before recharging the battery. This can help extend the life of the battery.
- Do not attempt to charge the battery in temperatures of under 5°C or over 45°C

All batteries eventually wear out and lose the ability to hold a charge. You may need to replace your battery pack after a year of average usage.

Safely Using the Battery

Follow these guidelines to safely use the battery:

- Turn off your computer and unplug it if you accidentally:
  - Expose the equipment to liquid.
  - Drop, jar, or damage the computer.
- Use only approved battery chargers.
- Do not disassemble the battery, heat it above 100°C, or burn it. The battery used in this computer may cause a fire or chemical burn if mistreated.
- Your computer's rechargeable battery may be considered hazardous waste. If you replace your battery with a new one:
  - Keep the old battery out of the reach of children.
  - Dispose of the old battery promptly.
  - Make sure that you follow all local requirements when you dispose of the old battery.

Removing the Battery

Your computer comes with the battery pack inserted in the computer.

To remove the battery from the computer:

1. Turn the computer's power off.
2. Close the LCD panel, and turn the computer over so that the bottom of the unit faces up.
3. Slide the battery compartment latch toward the left side of the computer and hold, this raises the battery slightly.
4. Slip your fingernail under the edge of the battery and pull it up and then grab the battery and remove it from the compartment.

Installing the Battery

To install the battery pack:

1. With the computer's power off, close the LCD panel and turn the computer over so the bottom of the unit faces up.

Insert the battery into the battery compartment, ensuring the correct orientation so that the battery fits in its slot properly.

2. Place the battery inside and against right side of the computer battery compartment at an angle of approximately 30 degrees.
3. Push the battery down until the latch snaps into place, securing the battery.

Monitoring the Battery Charge

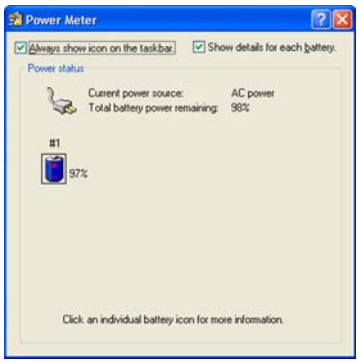
Battery life is affected by factors such as the power-management settings in System Setup, the applications you use, and the brightness settings of the LCD. Under normal usage, the battery charge lasts approximately 2.5 hours.

Battery life estimates are subject to variation. The actual life of your battery may be less than the estimates given in the manual.

You can monitor the charge of the battery pack installed in your computer by using the Power Meter or Battery Gauge.

Power Meter

The Power Meter displays the charge of the batteries and the current source of computer power, AC or batteries. You may monitor the battery charge or usage by using the "Power Meter". To access the power meter click icon on the task bar or click **Start** > **Control Panel** > **Performance and Maintenance** > **Power Options** > **Power Meter** Tab.



The Power Status icons shown below are displayed during Battery Charging Operations

At ~15% and 10% remaining battery power the current power source and the battery Icons respectively change to the icon shown below and you should follow the instructions in "Battery Warnings" section below

You may also check battery charge by moving the cursor to the icon, a small dialog box will display the % of charge.

Battery Gauge

You may display the battery gauge while you are in any program by pressing Fn + F2 Gauge. While the battery gauge is being displayed, all keys except Esc are disabled. The battery gauge is only displayed for a few seconds.

Power Source: (Top Right)

Indicates that the computer is powered by the AC adapter.

Indicates that the computer is powered by the battery.

Battery Level: (Lower Right)

Indicates the approximate amount of the primary battery charge remaining.

Indicates the computer is on AC power only (No Battery Present).

Radio Frequency: (Top Left)

Wireless LAN On

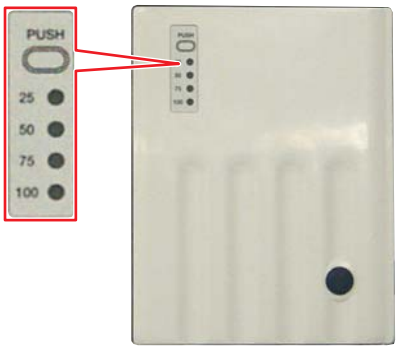
Wireless LAN Off

Digital/Analog Audio: (Lower Left)

Digital Audio On: Indicates the S/PDIF / Headphone jack is set for digital output.

Digital Audio Off: Indicates the S/PDIF / Headphone jack is set for analog output.

You may also determine the charge of your battery by simply pushing the symbol below the word **PUSH** located on the bottom of the battery. The green LEDs will illuminate to show you the percentage of charge remaining in the battery.



Battery Warnings

If the battery charge is low (about 10%) you have ~ 5–10 minutes of battery life left. **You should:**

- Save your work and,
- Connect the power cord to the computer or turn off the computer and install a fully charged battery.

You can adjust the battery alarm features by using the operating systems power management program (**Start** > **Control Panel** > **Power Options** in Windows).

If you cannot run your computer from the battery and the battery will not charge when you attach the power cord, **the problem may be that:**

- The battery temperature is below 0°C or over 45°C. If you think the battery temperature is too hot or too cold, turn off the computer, remove the battery, and let the battery reach room temperature. Then try charging the battery again.
- The battery is defective. Replace the battery with a new battery.

Battery Calibration

Calibrating your battery once a month is one of the recommended methods of increasing your computer's battery life. To calibrate the battery complete the following steps:

Calibration Notes:
You should start the battery calibration process with a fully charged battery, battery status LED is green. The power meter may not show 100%.

Before you commence the battery calibration process you should fully charge, then fully discharge and finally fully recharge the battery again.

1. Disconnect the AC power adapter after turning off the system.
2. Restart your computer and press **<F2>** to enter BIOS setup.
3. Using the arrow keys, highlight **Smart Battery Calibration** in the **Power** menu.
4. Press **Enter** to start calibration process. The calibration usually takes 2 to 3 hours depending on the current battery charge.
5. When the calibration process is complete, recharge the battery fully.

Using System Setup

The System Setup (BIOS) program enables you to configure your computer hardware and set security and power-savings options. The settings you choose are stored in battery-maintained CMOS memory that saves the information even when the computer's power is turned off. When your computer is turned back on, it is configured with the values found in this memory.

Run System Setup if you get a message prompting you to run the program. You may also want to run System Setup, particularly the first time you use your computer, to set the time and date, use security or power-management features, or alter the settings of other features.

BIOS Caution:
If you are not familiar with BIOS setup and what the parameters mean, seek help from a person who is knowledgeable. Incorrect settings may cause your system to "Crash".

Your computer's version of System Setup may not include all the fields listed here or may include additional fields. Field names and order of appearance can vary according to the version of the BIOS (basic input/output system) on your computer.

Starting System Setup

To start System Setup, turn on your computer and then press F2 Gauge and hold until the System Setup screen appears.

Table 4. System Setup Menus

Menu	Function
Main	Changes the basic system.
Advanced	Configures advanced features on your computer.
Security	Enables security features, including passwords and backup and virus-check reminders.
Power	Configures power-management features.
Boot	Specifies the order of boot devices and configures boot features.
Exit	Specifies how to exit System Setup.

To open the menu you need to use, use the left or right arrow keys to select the menu name.

Table 5. System Setup Navigation Keys

Navigation Key	Function
F1 Help	Displays the General Help window.
Esc	Exits the current menu.
↑ or ↓	Moves the cursor up and down between fields.
← or →	Selects different menus. Pressing the **ESC** key at the Main menu brings you to the Exit menu.
– -	Scrolls backwards through the options for the highlighted field.
+ =	Scrolls forward through the options for the highlighted field.
F9 Num Lock	Sets the parameters for the current menu to their default values.
F10 Scroll	Sets the parameters for the current menu to their previous values.
↵	Executes commands or opens a submenu.

Changing Booting Priority

The Boot menu in System Setup enables you to select the booting device and to set booting options.

Boot Device Priority field enables:
You to select the order in which the computer attempts to boot from different devices. The field has four (4) options: **CD-ROM Drive, Removable Devices, Hard Drive and Network Boot**.

To change the booting device priority, choose the device positions by completing the following:

1. At startup, press F2 Gauge to open **System Setup**.
2. Use → to select the **Advanced CMOS Setup** menu.
3. Highlight the 1st Boot Device option with ↑ or ↓ keys.
4. Press **<Shift+Plus>** keys until the option moves up in the list to the desired position **or** press **<Minus>** key until the option moves down in the list to the desired position.
5. Press **<Esc>** to return to the Exit menu.
6. Press **<Enter>** or **<F10>** to exit and save your changes.
7. Press **<Enter>** again to restart the computer.

If you want to start the system using a bootable CD, change the CD-ROM Drive to be the 1st Boot Device.

Using System Security

This section describes your computer security programs. The first is the standard BIOS security which is standard on almost all computers. The second is a advanced factory option *Biometric* security system that uses your fingerprint(s) to control access to your computer and individual files if necessary. You no longer have to worry about passwords being lost, stolen or forgotten.

BIOS Security

The BIOS security operations are explained below:

System Passwords

The computer provides (4) levels of password security: administrative-level (supervisor), user-level (user), HDD access and Password on Boot. These passwords prevent unauthorized access to the computer. The supervisor password enables full access to all System Setup fields. The user password enables full access to only the **Set User Password** and **Password on boot** security fields and read access to all other System Setup fields. The HDD Password controls access to the hard drive.

You may also enable the biometric security at boot.

The (3) security boot time options are:

The Biometric Security software MUST be installed prior to setting the security options to any of the fingerprint options.

- Disabled
- Text password
- Finger Print

If multiple users have access to the computer (such as in a network environment), a supervisor password can prevent unauthorized access to certain security options.

Choose the type of password security that is appropriate for your work.

If You Forget Your Password

It is very important that you do not forget your password. If you do, you cannot access your system. Write your password down and keep it in a safe place. If you do forget and cannot find the written note, please contact the Samsung Helpline. Please have your receipts available to verify the type and model of your computer. You may be charged for password removal.

Creating a Password

To create a password follow the instructions below:

1. At startup, press F2 Gauge to open **System Setup**.
2. Use → to select the **Security** menu.

Precautions for Password Entry:
You can enter letters or numbers, but you cannot use the function keys, such as the Shift key. Your computer does not distinguish between capitalized and lowercase letters in your password. As you type the password, the cursor moves but your password does not appear on the screen. Choose the type of password security that is appropriate for your work. If you want to set a user password, you must set a supervisor password first.

3. Use ↓ to select **Set Supervisor Password** or **Set User Password**.
4. Press <**Enter**>. The **Set Password** dialog box appears.
5. Press <**Enter**> after you have typed your password. The computer prompts you to reenter your password for verification.
6. Type your password again and press <**Enter**>. A message appears telling you that the changes have been saved.

The “Password on boot” password MUST also be set in order for your machine to boot properly.

7. Use ↓ to select **Password on boot.**
8. Press <**Enter**>. The **Set Password** dialog box appears.
9. Select the “Text Password” option.
10. Press <**Enter**> again to return to the **Security** menu.
11. Press Esc to go to the Exit menu.
12. Press <**Enter**> or <**F10**> to exit and save your changes.
13. Press <**Enter**> again to restart the computer.

If password use is not desired:
Follow the creating a password procedure above except leave the password field empty in step 5.

Biometric Security (Factory Option)

The factory optional fingerprint sensor provides unique security access to your computer. You will no longer have to worry about losing or forgetting your password. Since every person has a unique set of fingerprints, only a biometrically enrolled person may have access to your computer.

Advantages of Biometric Security are:

- Very high level of security
- No password to remember, lose or have stolen.
- Streamlined logon process.
- Single fingerprint will access many programs, eliminating passwords.

If you purchased the Biometric Security option, please refer to the manual provided for installation and use.

Using Power Management Options

Your computer includes **Power Management** options that can help the battery charge last longer and extend the life of the battery. Power-management options will slow down or shut off system components when the components are not being used.

Power management may slow down system performance. Your computer runs fastest with the power cord attached, when power management is disabled.

In the next sections, basic and advanced methods of power management will be discussed.

Basic Power Management Schemes

This section discusses the basic schemes of power management when the computer is operating on battery power or using AC power.

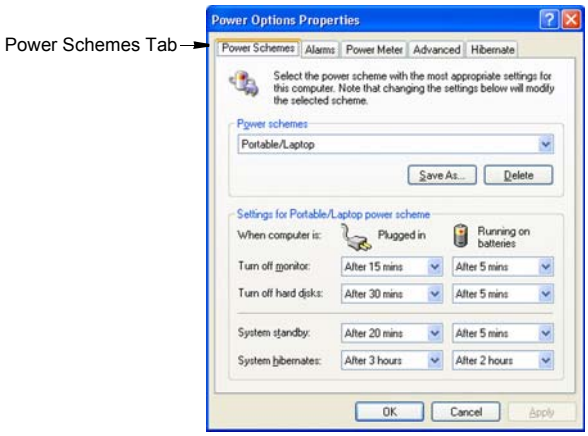
Standby vs. Hibernation
Standby unlike hibernation mode does not store unsaved information on your hard disk; it's stored only in the computer memory. If there is an interruption in power, the information is lost. So before putting your computer on standby, you should save your files.

Changing Devices:
Do not change PC Cards while in standby or hibernate modes.

To enter the power management window complete the following:

1. Click **Start** > **Control Panel** > **Performance and Maintenance**.
2. Click icon to display the **Power Options Properties** window.

3. Click the **Power Schemes** tab to display the basic power management options.



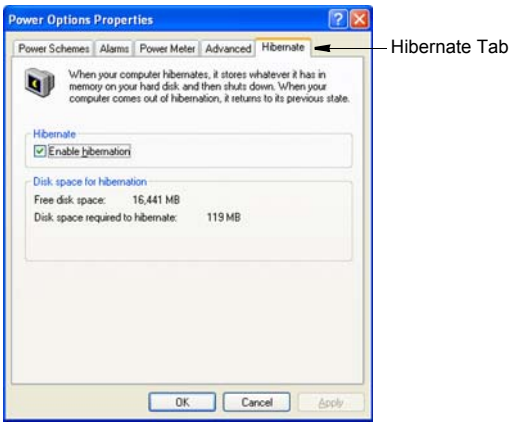
4. Select the time that you wish each of the following actions to occur in **Battery** and **AC power** mode.
   - Turn off monitor:
   - Turn off hard disks:
   - System standby:
   - System hibernates:

Turning off the monitor and HDDs will save a substantial battery power, therefore when in battery only mode select the shortest time practical.

❁ **Hibernate Mode** (*Power Management or Manual Method*)

When hibernation is used, your computer turns off and when you power up again, everything is restored exactly as you left it—including programs and documents you may not have saved or closed. Everything in memory gets saved to the HDD, and the monitor and hard disk get turned off.

If You Reinstall Windows:
You should re-establish hibernate in power options by opening **Power Options Properties** window and click on the **Hibernate** tab then click "Enable Hibernation".



Frequent Interruptions:
If you experience frequent interruptions, you might also consider putting your computer into automatic hibernation after a specified number of minutes using the power management options.

❁ **Standby Mode** (*Power Management or Manual Method*)

Standby is used mainly for conserving battery power in your notebook computer. It also gives you the benefit of getting right back to your work without waiting for the computer to restart. Standby turns off your monitor and hard disks, placing your entire system in a low-power state. When you return to your computer, restores your desktop exactly as you left it. It is recommended that you do not enter standby mode with less than 20% battery power.

5. Click **OK** to set your power management options and close the window.

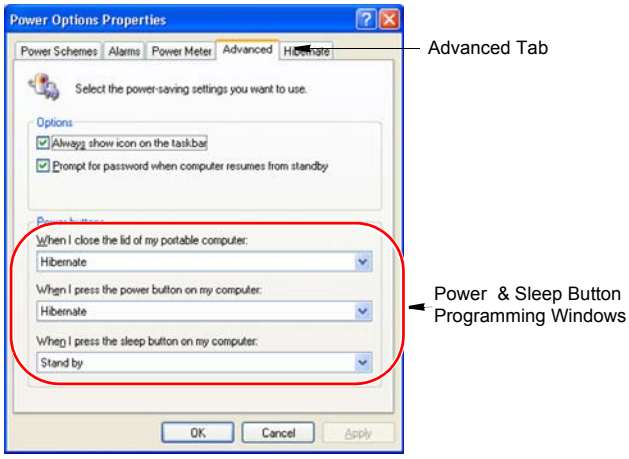
Rest Key:
The manual Fn + F5 Rest **<Fn+F5>** key combination will not activate Standby or Hibernate modes whilst you are playing a multimedia program or have an active USB device connected.

Advanced Power Management Schemes

This section discusses the advanced power management schemes. There are two buttons that you can use to manually conserve power.

To enter the power management window complete the following:

1. Click **Start** > **Control Panel** > **Performance and Maintenance**.
2. Click icon to display the **Power Options Properties** window.
3. Click the **Advanced** tab to display the advanced power management options.



4. Select the mode (**Do nothing/Ask me what to do/Standby/Hibernate/Shut down**) assigned to the Power button and/or Rest **<F5>** key. Also select the action (**Do nothing/Standby/Hibernate**) associated with closing the computer lid.

The "Rest" key is assigned to the + **<Fn+F5>** key combination. See "Basic Power Management Schemes" on page 53 for a better understanding of Standby and Hibernate modes.

5. Click **OK** to set your power management options and close the window.

You can return to normal operation after you have used one of the "Power Management" buttons by quickly pushing and releasing the **Power** button.

Using the Hard Drive

Your computer includes a removable IDE (integrated drive electronics) hard drive. The IDE hard drive can store the data and programs your computer uses. The drive plugs into a connector on the system board.

The hard drive that comes with your computer has already been formatted. Do not format the hard drive. Doing so destroys all data contained on the drive. If you need to format a new drive, or want to erase all data on your existing hard drive, refer to the manual for your operating system.

Installing/Reinstalling a HDD

To install a new HDD you must contact your local service representative. He will do the physical change of the drive. You should complete the instructions below before you go to the service center.

See the information below before you install your HDD:

- Back up data files of your old hard drive.
- For system boot with CD-ROM, under the Boot menu in System setup, set Bootable CD Check to Enabled and set Boot Device Priority is ordered starting from the [DVD/CD-ROM].

When you are ready to install the new HDD use the Recovery CD-ROM to install the device driver.

(Re)Installing Windows and Device Drivers

Use System Recovery CD to (re)install OS and System Software CD to (re)install device' drivers.

The System Recovery CD is used to (re)install the OS and System Software to a new HDD or recover from a system crash.

Notebook computers that ship from the factory include System Recover CD-ROM and System Software CD-ROM, which contains a copy of the applications and drivers needed for computer's operating system.

In the unlikely event that programs on the computer hard drive become corrupted or are erased, you can use the System Recovery CD-ROM to reinstall your operating system and then System Software CD-ROM to reinstall your original applications and drivers.

Video Features and Configuration

All these video modes can be displayed on an external monitor. However, if you disconnect an external monitor that was attached to your computer and then start the computer, the LCD may revert to a different resolution than the one you chose for the external monitor.

Resolution and Colour Depth

The resolution of the LCD is the sharpness of the image it can display. Resolution is measured by the number of pixels (individual dots) displayed on the entire screen. In general, the more pixels the LCD can display, the better the image.

The number of colours the LCD can display is measured by how many bits the LCD uses to represent each pixel:

- 16-bit colour can support 64 K (65,536) colours.
- 32-bit colour can support 16 M (16.8 million) colours.

All these video modes can be displayed on an external monitor. However, if you disconnect an external monitor that was attached to your computer and then start the computer, the LCD may revert to a different resolution than the one you chose for the external monitor.

Adjusting the LCD Display

You may wish to adjust the LCD (Liquid-Crystal Display) when you begin using your computer. A TFT (Thin-Film Transistor) LCD does not require adjustment for contrast because the contrast is set to remain at maximum.

To adjust the LCD:

- Press Fn + ↑ **<Fn+Up Arrow>** to increase the display brightness.
- Press Fn + ↓ **<Fn+Down Arrow>** to decrease the display brightness.

Configuring Display Features

The following sections describe how to configure the display settings on your computer.

Display Resolution Notes:
When Windows XP is initially installed it will automatically adjust the resolution to maximum available.

Changing Colour Depth and Resolution

To change the colour depth and resolution of your LCD:

1. Click **Start** > **Control Panel** > **Appearance and Themes**.
2. Click icon. The Display Properties window appears.
3. Click the **Settings** tab. The Settings screen appears.
4. To change the colour depth, click the arrow next to the **Colour quality** palette and select the available colour depth you want.
5. To change the resolution, click and drag the slider under the **Screen resolution** until you select the available resolution you want.
6. Click **OK**.
7. Follow the prompts that appear on the screen.

Using Dual View Mode

Single View mode is the basic display mode which displays same view on all the display devices connected to a system.

Dual View mode is the "Extended screen mode" supported in Windows, which displays separate views on each display devices connected to a system.

The default setting on your system is Single View mode.

Setting Dual View Mode

To set Dual View mode on your system:

1. Connect peripheral display device such as monitor or TV to your system and start the system.
2. Select **Start** > **Control Panel** > **Appearance and Themes**.
3. Click icon. The Display Properties window appears.
4. Click the **Settings** tab. The Settings window appears.
5. Check **Extend my Windows desktop onto this monitor**.
6. You can drag the second monitor image to position where you want your extended screen space with respect to the primary monitor (usually the LCD).

To confirm whether the system is set properly with Dual View mode:

1. Open **Display properties** and click **Settings** tab.
2. Place the cursor on the first monitor picture and click and hold over a second, a number **1** will be shown on the first actual monitor screen. And place the cursor on the second monitor picture and click and hold over a second, then digit number **2** will be shown on the second actual monitor screen.
3. The monitor displays digit number 1 is the primary monitor and number 2 is the secondary monitor.
   In **Windows explorer**, the program is displayed on the primary monitor, if you can drag it to the secondary monitor, then Duo View mode is now working properly.

The secondary monitor has a display of 256 colours (colour depth) and 640x480 pixels (resolution) at first. The colour depth and resolution of primary/secondary monitors are separately changeable.

To reset the system to Single View mode:

1. Start **Display properties**.
2. Click **Settings** tab.
3. Click the second monitor among two monitor pictures.
4. Uncheck **Extend my Windows desktop onto this monitor**.
5. Click **OK**.

Using Multimonitor Mode

You may duplicate your LCD screen on an external monitor, television or digital flat panel (DFP).

TV Connection Restrictions:
You should only connect/disconnect cables and wires to your computer and TV when the power is off.

TV/DFP Support Limitations:
The computer will only support televisions with S-VHS input capability. The standard composite video in port is not supported.

You can not use TV-out port to connect to your television or digital flat panel in DOS mode.

When TV-Out is activated, your computer screen will not be active.

To start using multimonitor mode proceed as follows:

1. Connect the external monitor to the connection on the back of your computer.
2. Press the **<Fn>** + **<F4>** key combination, the LCD will be duplicated on the monitor, television or digital flat panel.

<Fn> + <F4> key combinations
Each time you use the Fn + F5 Rest key combination the LCD/Monitor combination changes as follows:

- Both displays are displaying the computer output (LCD & Monitor).
- Monitor, television or digital flat panel only is displayed the computer output.
- LCD only is displaying the computer output.

To stop using multimonitor mode proceed as follows:

1. Press the **<Fn>** + **<F4>** key combination until only the LCD is displaying the computer output.
2. Disconnect the external monitor or television from the connection on the back of your computer.

Using Powerplay

Powerplay is a program supplied with your graphics adapter to extend battery life while on battery power only.

To activate Powerplay proceedas follows:

1. Click **Start** > **Control Panel** > **Appearance and Themes**.
2. Click icon. The Display Properties window appears.
3. Click the **Settings** tab. The Settings screen appears.
4. Click the **Advanced** button. The (Multiple Monitors) and M7 Properties window appears.
5. Click the **POWERPLAY** tab
6. Click the **POWERPLAY** button in the POWERPLAY Settings section. The button will change to a button and activate the other options available.

Using Options

You can order the following options for your Notebook computer from your authorised reseller:

- An extra AC adapter.
- An auto adapter that enables you to charge the computer's battery and operate the computer while in an automobile.
- An extra battery pack.
- 128, 256 and 512 MB DDR SDRAM memory modules that enable you to upgrade your computer's memory to a maximum of 1 GB.
- A CD-ROM drive module (CD Only or CD R/W).
- DVD/CD-RW Combo drive:
- A DVD-ROM drive module.
- Bluetooth/Wireless
- FIR (Fast Infrared) Connection
- 2nd HDD
- Port Replicator
- Biometric Security
- Memory Stick

The options that are available may change periodically. Contact your reseller for updated information on current and new options.

Memory Modules

You can increase system memory by installing optional memory modules. You can install a 128 256 or 512 MB modules.

To avoid possible system problems, use only approved memory modules in your computer.

Before You Install Memory

To prevent personal injury and damage to the equipment, follow the precautions listed here before installing a memory module.

Take the following precautions when installing a memory module:

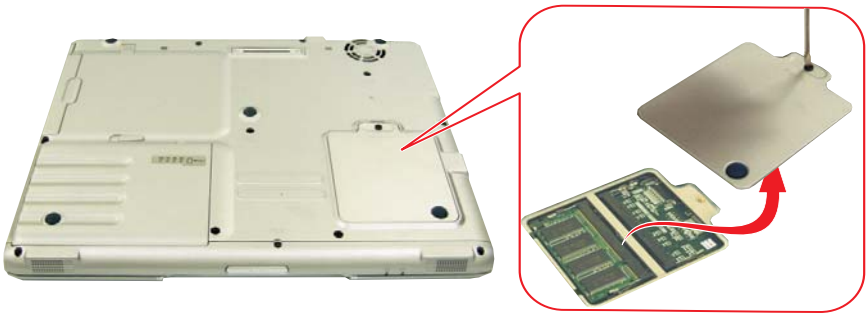
- Before you remove the memory module compartment door, turn off the computer, unplug the power cord, and remove the battery. Also, disconnect any peripheral devices.
- Before handling a memory module, discharge any static electricity by touching a grounded surface or using a grounding wrist strap.
- Do not insert objects with conductive material, such as metal screwdrivers or graphite pencils, into the memory-module compartment.
- Be careful in handling the metal plate of the memory door.

Installing a Memory Module

Handle a memory module carefully. Hold them only by the edges.

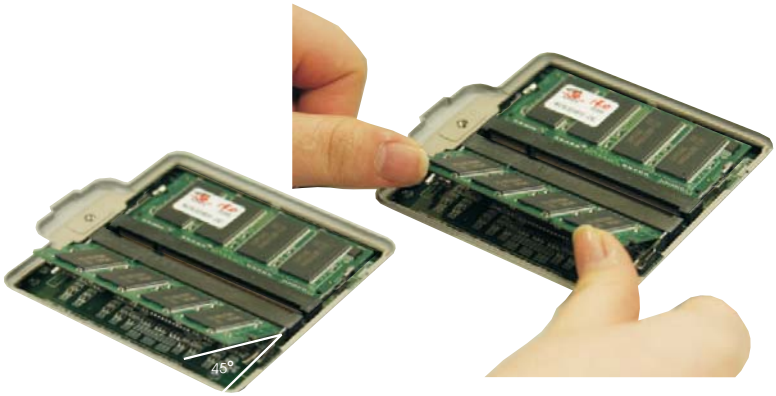
To install a memory module:

1. Turn the computer over so that the bottom faces up.
2. Using a screwdriver, remove the screw that holds the memory-module compartment door in place.



3. Grasp the edge of the door and pull the door off the chassis.
4. Remove installed modules if necessary:

5. Align the connector on the memory module with the connector of the slot.
6. Push the memory module into the slot at a slight angle (~45°) until the connectors are fully engaged.



7. Push down on the edge of the memory module until the module snaps into place.
8. Align the memory module compartment door with the compartment and push the door down until it snaps into place.
9. Reinstall the screw you removed in step 2.
10. Turn on the computer and perform a complete POST to check the memory integrity.

Port Replicator

Contact your reseller for a list of port replicator options available for your Notebook computer. User's manuals are included with the port replicator options.

Wireless LAN

The wireless LAN option allows easy connection to large or small office networks while also providing freedom from the constraints of cables and sockets.

To setup and use the Wireless LAN, Please refer to the user manual provided with the option at the time of purchase.

Bluetooth/Wireless

Bluetooth/Wireless technology allows wireless communication between bluetooth communication devices, such as cellular phones, desktop and other notebook computers.

To setup and use the Wireless LAN, Please refer to the user manual provided with the option at the time of purchase.

FIR (Fast Infrared) Connection

BIOS Setup

The BIOS setup must be completed first in order for the option to operate properly.

1. At startup, press F2 Gauge to open **System Setup**.
2. Use → to select the **Advanced CMOS Setup** menu.
3. Highlight the I/O Device Configuration option with ↑ or ↓ keys and press **<Enter>.**
4. Highlight the FIR port with ↑ or ↓
5. Press **<Shift+Plus>** keys until the option changes to **Enabled**.
6. Press **<Esc>** to return to the Exit menu.
7. Press **<Enter>** or **<F10>** to exit and save your changes.

Windows Setup

1. Right click **My Computer.**
2. Click **Properties,** the System properties window pops up.
3. Click the hardware tab then click the device manager button in the device manager section.
4. Double click the Infrared devices then double click the IrDA Fast Infrared Port, the IrDA Fast Infrared Port properties window pops up.
5. Click on the Advanced tab and set the device as follows.
   - Select the “Infrared Transceiver A” in the *properties* section.
   - Select the “Vishay TFDS-6500” in the *value* section.
6. Click **OK**

Troubleshooting

Complete the following in the order presented until your system is functioning properly. If all of the steps below fail then contact your local reseller for assistance.

Questions and Answers

Please see "Questions and Answers" on page 69 for assistance in correcting any computer operational problems.

Check the Connections

Verify all of the power and peripheral cables are securely plugged into their sockets and that your system and power supply is on.

Norton AntiVirus

Run Norton AntiVirus to insure a virus is not affecting your computer.

To run Norton AntiVirus proceed as follows:

Click **Start > Programs > Norton AntiVirus > Norton AntiVirus 2002**

Windows Help and Support

Run Windows Help and Support to find problem that may be affecting your computer.

To run Windows Help and Support proceed as follows:

Click **Start > Help**

Reinstalling Software

If for some reason your system crashes you may corrupt your HDD, Windows Operating system and/or some of your device drivers. If this is the case, use **System Recovery CD** to reinstall **OS** and **System Software CD** to reinstall the corrupt device drivers.

System Recovery Precaution:
Before you start restoring your windows operating system insure you backup all data on your hard drive.
Samsung is NOT responsible for any data loss.

Questions and Answers

Operating System Problems

Problem	Action
The computer does nothing when you turn it on.	Has the battery run down? Connect the power cord to the computer and recharge the battery. Try turning on the computer again.
Some of the letter keys type numbers instead of the indicated letters.	Is the Num Lock light on? If so, the numeric keypad on the keyboard is active. To return the keypad keys to typing letters, press <Num Lock>.
Battery power seems to run out faster than expected.	If you are running the computer from the battery rather than the power cord, make sure that you set the Idle Mode field in System Setup to On. This setting enables the microprocessor and the hard drive to slow down when the computer is not busy.
Certain software programs "hang" during operations when there is no interaction with the keyboard or peripheral devices.	Your computer may be in Suspend or Rest mode. Tap the touchpad to resume from Suspend or press the power button to resume from rest.
PC Card does not work correctly.	Make sure that the PC Card is inserted left side up in the PC Card slot. Check that the card is inserted fully into the slot. If you are using a PC Card modem, check the modem cable connections.
Your ATA or Compact Flashcard do not work.	A patch is provided for these cards on the Recovery CD
The System Setup settings are not retained when you turn off the computer.	The CMOS battery inside the computer may need to be replaced. The CMOS battery provides power to save the system BIOS information when the computer is turned off. Normally, the CMOS battery lasts for several years. Do not attempt to open the chassis and replace this battery yourself or your warranty is void. Have an authorized the manufacturer's service center replace the CMOS battery.

Problem	Action
No sound.	Verify if the mute check box is checked or the volume is not turned down in the pop up menu by clicking the speaker icon of the task bar.
System/BIOS behaves erratically	If you caused an abnormal power interruption (i.e.. removing battery while on battery power), you may cause BIOS data corruption.

Video Problems

Problem	Action
Nothing appears on the LCD panel when you turn on the computer.	Adjust the brightness on a TFT LCD. Are you using an external monitor? If so, press <Fn+F4> to return to the LCD panel.
Error Message when entering Power Management while in Multimonitor mode.	If the secondary monitor is set to 256 colours, this error message could appear. Change the colour of the secondary monitor to 'high colour (16 bit)'.
Nothing appears on the external monitor when you switch the display to it.	Is the monitor properly connected to the computer? Is the monitor's power cord connected to an AC wall outlet? Check the brightness and contrast controls on the monitor. Does the program appear on the LCD panel instead of the external monitor? If so, press <Fn+F4> to switch to the monitor. Try turning the monitor off and on again.
Only the LCD Display works when system returns from Power management mode while in Multimonitor mode.	The system resets to the original BIOS setup when the system returns from the power management mode. If the Display mode, in the Advanced menu of BIOS setup is set to LCD, then only the LCD will be turned on when the system wakes up. Set the Display mode in the BIOS to Both to turn on the LCD & CRT on wakeup.
The external monitor displays flashes or waves.	Check the cables between the monitor and the computer. Are they properly installed?
Cannot toggle between CRT and LCD while playing the 3D game.	If you are using the Multimonitor mode, you can not use the <Fn+F4> key combination and also you cannot use this function in 3D games using Direct-X.
There is LCD or CRT has noise (speckles, lines or raged edges) on the picture when playing a MPEG file with the Media player/ DVD software or using the USB camera.	Adjust the resolution and the colour to 1400 x 1050 and 32 bit to display clearly, or avoid playing two programs at the same time.
In DOS mode the CRT/LCD button does not work.	The LCD only mode is not supported using this Key combination.

Problem	Action
If the connected CRT monitor display is not steady.	If the refresh rate is not optimal for the connected CRT, then this problem may occur. **To correct this problem do the following:** **1.** Click **Start** > **Settings** > **Control Panel.** **2.** Double Click the **Display** icon to open the **Display properties**. **3.** Select **Settings** **4.** Click the **Advanced** button. **5.** Click the Adapter tab **6.** Adjust the Refresh rate to optimal or other selections until you see the CRT clearly.

Modem Problems

Problem	Action
My modem doesn't connect to services or disconnects during communication	If your modem has difficulty in connecting to on-line services and sustaining communications, first check if other devices are connected and remove them. Also remove any extension leads. Interference from certain devices or poor line power conditions may degrade the quality of your connection. Under these conditions gradually reduce the communication speed of your modem until a reliable connection is achieved. Check with your on-line service provider.
When using a PBX phone system I can't dial on my modem.	If you use a PBX phone system you may need to press a number i.e. '9' to connect to an external line, you should enter the following command before trying the connection and check modem initialization. (***ATX3&W***) And add "9," as the external line prefix (example) of the phone number when using the dial command "***ATDT9, 123-4567***".
Screen displays random or garbage characters during communications.	After your modem has connected to the on-line service, your screen may display garbage characters or after-images in screen transitions. This problem is caused by a mismatch of the terminal modes between communications service and communications programs. You need to match the terminal modes to each other. Refer to the user's guide of the communications program you're using.
Reports error message that insufficient Hard Disk space is available.	Delete the unnecessary messages or data you received by Modem or Fax every one to three months as required. If you're using the internet, many picture and data files can get downloaded to your HARD DISK every time you visit a home page, which will consume a lot of your HARD DISK space. For more detailed information about the method of deleting, refer to the help of the Web browser you've been using or your user's guide.

FAX Problems:
Depending on telephone line status, or types of Fax machines/programs that send/receive the Fax, Fax transmission/reception may not work correctly. In that case, please try other Fax programs. (e.g. Win Fax)

Reinstalling Software

Windows Application/Driver (Re)Installation

If you wish to reinstall drivers or applications, please use the **Software CD.**

If you wish to reinstall the Windows operating system, please use the **Recovery CD.**

Application/Driver (Re)Installation

Simply install the driver(s) according to the instructions below:

1. Insert the **System Software** CD-ROM.
2. Follow the directions provided in the opening window.

Windows (Re)Installation

To reinstall the your Microsoft Windows XP Operating System:

1. Start your computer.
2. Open the CD Drawer and insert the Recovery CD. Close the drawer.
3. When the Recovery Menu appears, select the option as required to restore your system. You have two options for system recovery. The **Standard** Installation and the **User** Installation.
   - The **Standard Installation** Option will SAVE all user data files on your hard disk and restore your operating system to normal.
   - The **User Installation** Option will DESTROY all data on your hard disk. If you have any data files or other software you do not wish to lose, make a backup of these files to a diskette or other medium using a backup utility before proceeding.
     Samsung is NOT responsible for any data loss.

You MUST, however reinstall all of your applications and drivers using the Software CD and other application software as required.

If the Recovery Menu does not appear, proceed as follows:

1. Restart your computer
2. Open the CD Drawer and insert the Recovery CD. Close the drawer.
3. You will see a message “Press any key to boot from the CD”, press any key.
4. You will be presented with the User Installation Option.

If your computer cannot boot from the CD, change the boot priority to the CD-ROM device as described in this manual.

Specifications

Dimension	
LCD viewing area (14.1” TFT)	285.6 x 214.3 mm
Width	32.0 cm
Depth	26.5 cm
Height	2.95 cm
Weight (CD Drive, Li-Ion battery & 14.1” TFT LCD)	2400 g
Environment	
Ambient temperature, operating	5°–35°C
Ambient temperature, storage	-32°–60° C
Relative humidity (noncondensing), operating	30–80%
Relative humidity (noncondensing), storage	95%
Altitude, operating	0 to 4,572 m
Altitude, storage	0 to 13,716 m
Shock, operating	122 G for 2 ms half sine
Shock, nonoperating	163 G for 2 ms half sine
Lithium-Ion Smart Battery	
Normal Weight	435g
Nominal open circuit voltage	14.8 VDC
Capacity, typical	4400 mAhr, 65.0whr
Charging time, approximate, with computer turned off, typical	3.0 hr
Charging time, approximate, with computer turned on , typical	6.0 hr
External AC Adapter	
Operating voltage	100-240 VAC
Line frequency	50-60 Hz
Input current	1.5 A 100 V ~ 0.8 A 240 V
Output current	4.2 A
Output voltage	19.0 VDC

Abbreviations

A . . . . . Amperes
AC . . . . . Alternating current
ACPI . . . . . Advanced Configuration and Power management Interface
APM . . . . . Advanced Power Management
ATA. . . . . AT attachment (refers to the hard-drive interface in an AT-compatible computer)
ATAPI. . . . . AT attachment packet interface
BBS . . . . . Bulletin board system
BIOS . . . . . Basic input/output system
C . . . . . Centigrade
CD . . . . . Compact disc
CD-ROM . . Compact disc read-only memory
cm . . . . . Centimeters
COM . . . . . Communication (as in communication port)
CMOS . . . . . Complementary metal-oxide semiconductor
DC . . . . . Direct current
DMA . . . . . Direct memory access
DPMS . . . . . Display power-management signaling
DRAM. . . . . Dynamic random access memory
DSTN . . . . . Double layer super twist nematic
ECP . . . . . Extended capabilities port
EPP . . . . . Enhanced parallel port
g . . . . . gram
G . . . . . Gravity
GB . . . . . Gigabytes
hr . . . . . hour
Hz . . . . . Hertz
IDE . . . . . Integrated drive electronics
I/O . . . . . Input/output
IRQ . . . . . Interrupt request line

ISA . . . . . Industry Standard Architecture
KB . . . . . Kilobytes
kg. . . . . Kilograms
LAN. . . . . Local-area network
lb.. . . . . Pounds
LBA. . . . . Logical block addressing
LCD. . . . . Liquid-crystal display
m . . . . . Meters
mA. . . . . Milliampere
mAhr. . . . . Milliampere hour
MB. . . . . Megabyte
mm . . . . . millimeter
MPEG . . . . . Motion Picture Experts Group
MPU . . . . . Microprocessor unit
ms . . . . . Millisecond
PDF . . . . . Portable document format
PC . . . . . Personal computer
PCI . . . . . Peripheral component interconnect
PCMCIA. . . Personal Computer Memory Card International Association
POST. . . . . Power-on self-test
PNP . . . . . Plug and play
PS/2 . . . . . Personal System/2
RAM . . . . . Random-access memory
ROM . . . . . Read-only memory
SVGA . . . . . Super video graphics array
TFT . . . . . Thin-film transistor
USB . . . . . Universal serial bus
V . . . . . Volt
VAC . . . . . Voltage alternating current
VCC . . . . . Voltage collector current
VDC . . . . . Voltage direct current
whr . . . . . Watt hour

Glossary

AC adapter

The AC (or alternating current) adapter regulates current coming into your computer from the wall outlet. The current at the wall outlet is alternating current and needs to be changed by the adapter to DC (direct current) before your computer can use it for power.

ACPI

ACPI (Advanced Configuration and Power Interface)- a method for describing hardware interfaces in terms abstract enough to allow flexible and innovative hardware implementations and concrete enough to allow shrink-wrap OS code to use such hardware interfaces.

BIOS

BIOS stands for basic input/output system. The BIOS is software (often called firmware) that is independent of any operating system. It enables the computer to communicate with the screen, keyboard, and other peripheral devices without using programs on the hard disk.

The BIOS on your computer is flash BIOS, which means that it has been recorded on a flash memory chip that can be updated if needed.

Boot

To start your computer. A cold boot resets the entire computer and runs through all computer self-tests. A warm boot clears out computer memory only.

Boot disk

A disk containing operating system programs required to start your computer. A boot disk can be a floppy disk, hard drive, or compact disc.

Byte

The basic unit of measure for computer memory. A character—such as a letter of the alphabet—uses one byte of memory. Computer memory is often measured in kilobytes (1,024 bytes) or megabytes (1,048,576 bytes).

Each byte is made up of eight bits. For more information on bytes and bits, see an introductory book on computers.

Cache memory

Cache is very fast, zero-wait-state memory located between the microprocessor and main memory. Cache reduces the average time required by the microprocessor to get the data it needs from the main memory by storing recently accessed data in the cache.

CardBus
CardBus technology enables the computer to use 32-bit PC Cards. Hardware in the computer and the Windows operating system provide support for the 32-bit cards. The voltage of 32-bit cards (3.3 volts) is lower than that of 16-bit cards (5 volts). The 32-bit cards can transmit more data at a time than the 16-bit cards, thus increasing their speed.

CMOS memory
CMOS (complementary metal oxide semiconductor) memory is powered by the CMOS battery. The System Setup settings and other parameters are maintained in CMOS memory. Even when you turn your computer off, the information in CMOS memory is saved.

COM port
COM stands for communication. COM ports are the serial ports in your computer.

Compact Disc
A compact disc (CD).

Conventional memory
The first 640 KB of system memory. Operating systems and application programs can directly access this memory without using memory-management software.

Disk
The device used by the computer to store and retrieve information. *Disk* can refer to a floppy disk, hard disk, or RAM disk.

Disk cache
A software device that accumulates copies of recently used disk sectors in RAM. The application program can then read these copies without accessing the disk. This, in turn, speeds up the performance of the application.
A cache is a buffer for transferring disk sectors in and out of RAM. Data stored in a disk cache is a copy of data already stored on the physical disk.

DMA (direct memory access)
A method of transferring data from a device to memory without having the data pass through the microprocessor. Using DMA can speed up system performance.

DPMS
Display Power Management Signalling. Displays or monitors that comply with this can be managed by the Power Management features found in the system setup.

Floppy disk
A removable disk, also called *floppy* or *diskette*.

Hard drive

Also called *fixed* disk. A hard drive is connected to the computer and can be installed or removed. Data written to a hard drive remains until it is overwritten or corrupted.

The 2.5-inch hard drive in your computer was designed for use in a notebook computer. Because hard drives in notebook computers are smaller than those in desktop computers, their maximum storage capacity may be less than that of desktop hard drives. However, because of their smaller size, the drives handle shock and vibration better than larger drives, which is important for a notebook computer.

I/O

Input/output. Refers to peripheral devices, such as printers, that are addressed through an I/O address.

I/O address

I/O stands for input/output. Peripheral devices, such as printers, are addressed through the I/O port address.

IRQ (interrupt request line)

The IRQ is a hardware line that a device uses to signal the microprocessor when the device needs the microprocessor's services. The number of IRQs is limited by industry standards.

LCD (liquid-crystal display)

The LCD screen on your computer differs from the display screen of a desktop monitor. Most desktop monitors use CRT (cathode-ray tube) displays, which work by moving an electron beam across phosphor dots on the back of the screen. The phosphor dots light up to show the image. LCDs use a liquid-crystal solution between two sheets of polarizing material. Electric current passing through the liquid aligns the crystals so that light can or cannot pass through them, creating an image.

MB (megabyte)

1,024 kilobytes.

Megabit

1,048,576 bits or about 128 kilobytes.

Operating system

A program that supervises the computer's operation, including handling I/O. Application programs and users can request operating-system services. A user might request operation-system services to copy files or format a disk. An application program might use the operating system to obtain keyboard input, write data to a file, or write data to a screen.

PC Card

PC Card stands for personal computer card. The Personal Computer Memory Card International Association (PCMCIA) defines the standards used to develop all PC Cards. PC Card types include: modems, Ethernet adapters, SCSI adapters, ATA cards, and memory cards.

PC slot

The PC slot is the hardware slot in the computer where the PC Card is placed.

Pixel

A pixel is an individual dot in a graphic displayed on your computer. The pixels are so close together that they look as though they are connected. An LCD screen displays thousands or millions of pixels.

Plug and Play

A plug and play operating system automatically configures computer components to work with your system. With this type of operating system, you normally do not need to set jumpers on devices or set memory addresses or IRQs.

RAM (random access memory)

The computer's system memory, including conventional and extended memory. You can write to and read from RAM. Information stored in RAM is temporary, and is erased when the system is turned off.

Refresh rate

The refresh rate is the rate at which the image on the LCD screen is rewritten to the screen. A fast refresh rate helps keep the image from flickering.

Resolution

The resolution is the sharpness or clarity of the image on your LCD screen. Resolution is measured by the number of pixels the computer’s screen can display. For example, a resolution of 800 x 600 means that the screen can display 800 pixels in row and can display 600 rows. The more pixels displayed, the higher the resolution and the better the image.

ROM (read-only memory)

Permanent computer memory dedicated to a particular function. For example, the instructions for starting the computer when you first turn on power are contained in ROM. You cannot write to ROM. (ROM is not the same as RAM).

Sector

Also known as *disk sector*. The portion of a track that is numbered and can hold a specified number of characters (usually 512 KB).

Shadow RAM

A write-protected area of RAM that contains a copy of the BIOS. As the computer boots, the BIOS is copied from its permanent location in ROM to RAM. The BIOS can be executed much faster in RAM than in ROM. The BIOS remains in shadow RAM until you turn off the computer.

TFT (thin film transistor) LCD

A TFT LCD uses a separate transistor circuit to control each pixel. This technology provides the best resolution for an LCD screen. A TFT LCD is also sometimes called an active matrix LCD.

Zoomed video

Zoomed video technology enables zoom video PC Card to transfer data directly from the card to video and audio systems without going through the microprocessor. This process improves video performance. Video conferencing and real-time multimedia devices, such as video cameras, are supported by zoom video.