Working with PC Cards

When you install PC Cards, you can add a multitude of functions to your notebook computer similar to those found on add-in boards for desktop computers. There are many PC Cards on the market, the supported PC Cards are listed below:

- 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:

- Two PC-Card slots: You can install Type I, II, or III cards in the slots.

TYPE III Cards:
Type III cards are thicker than Types I and II. If you install a Type III card in the bottom slot, you cannot install a card in the top slot.

- CardBus hardware and software: CardBus enables the computer to use 32-bit PC Cards. Windows 2000 supports 32-bit and 16-bit PC Cards.
- Zoomed video: Both PC Card slots and the video chip on your computer support zoomed video. When you install a zoom video PC Card in the upper or lower slot, data can be transferred directly from the PC Card to video and audio systems without going through the microprocessor. Video conferencing and real-time multimedia devices, such as video cameras, are supported by zoomed video.

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.

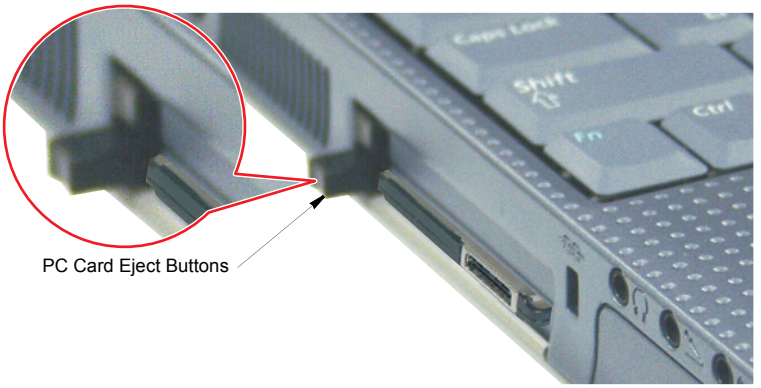
Windows automatically assigns computer resources (such as communication ports and memory addresses) to a PC Card installed in your computer.

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

You can play video and audio CD files with the Windows Media Player, as well as watching TV, video and listening to the radio through internet. The on-board audio hardware and software of your computer enable the computer to play audio/video compact discs. The instructions to play a video CD-ROM are the same as the instructions for the audio CD below. If you wish to do so, you can attach external speakers to the Headphone jack.

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 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 > 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 > 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.

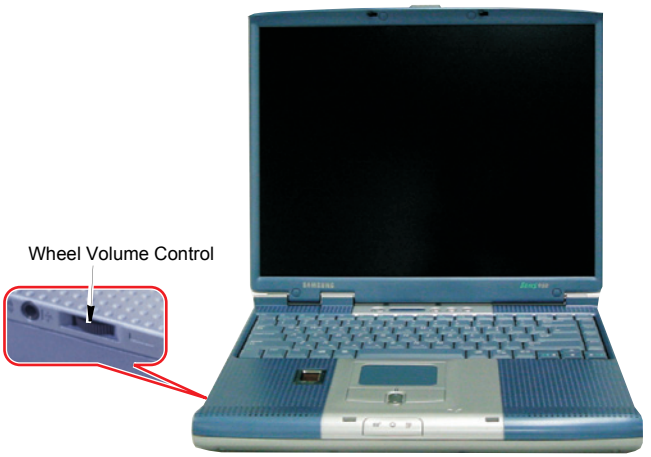
Dolby Digital & Dolby Theater System

Your computer supports Dolby Digital & Dolby Theater System through a SPDIF connector, located next to the volume control wheel on the left side of the computer. You must have a 3.5 mm (mono)- to RCA cable to use this port.

Volume Control

Using the Wheel Volume Control

Simply turn the wheel located on the left side of the computer.



Using the Keyboard

Changing the volume with your keyboard.

Use Fn + F9 to decrease the volume or Fn + F10 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.

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.
- 7 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 35°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 cover straight up and off the computer.

4. Grasp the tab on the battery and pull the battery out of the compartment.

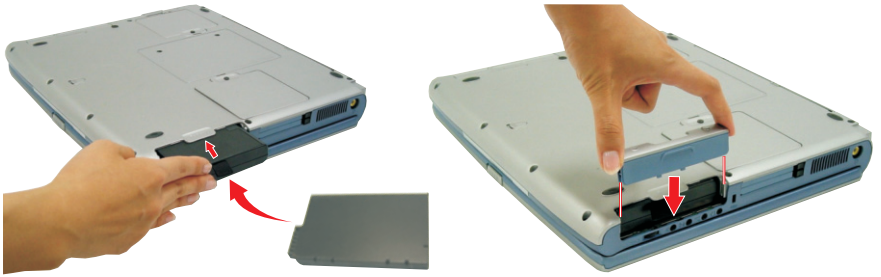
Installing the Battery

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.
2. Slide the battery compartment cover straight up and off the computer.

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

3. Slide the battery pack into the compartment. Make sure the battery is fully inserted into the compartment.
4. Align the tabs on the battery compartment cover with the slots on the battery compartment.
5. Push the cover straight down until it snaps into place.



Monitoring the Battery Charge

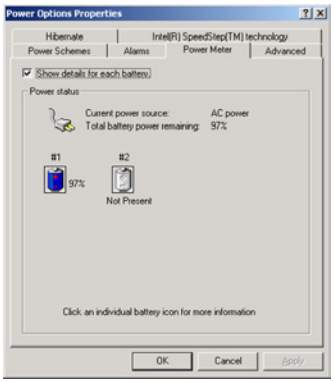
Battery life is affected by factors such as the power-management settings in System Setup, the applications you use, and the brightness settings of the LCD. Under normal usage, the battery charge lasts approximately 3 hours.

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** > **Settings > Control Panel > 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+F6>**. 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:

- Indicates that the computer is powered by the AC adapter.

- Indicates that the computer is powered by the battery.

Battery Level:

- The top/right section indicates the approximate amount of the primary battery charge remaining.

Battery Warnings

If the battery charge is low (about 10%) you have approximately 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 > Settings > 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 10°C or over 32°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 **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>** and hold until the System Setup screen appears.

Table 5. 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 and then press **<Enter>**.

Table 6. System Setup Navigation Keys

Navigation Key	Function
F1 Prt Sc	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 🔈▼	Sets the parameters for the current menu to their default values.
F10 🔈▲	Sets the parameters for the current menu to their previous values.
Enter ↵	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 three (3) options: **CD-ROM Drive, Removable Devices and Hard Drive**.

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

1. At startup, press **<F2>** 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 Sys Rq] 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.
7. Press <**Enter>** again to return to the **Security** menu.
8. Press [Esc] to go to the Exit menu.
9. Press <**Enter>** or **<F10>** to exit and save your changes.
10. 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

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.

Intel® SpeedStep™

Intel SpeedStep will control the CPU speed on your system according to the kind of power supply as part of power saving management.

To use this function, your system must meet the conditions below:

- Intel SpeedStep supporting CPU
- BIOS and OS Support

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.

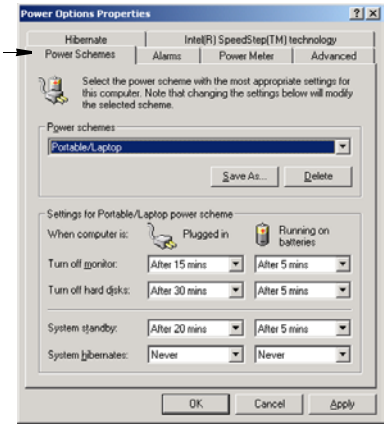
Standby vs. Hibernation
Standby unlike hibernation mode does not store unsaved information on your hard disk; it's stored only in the computer memory. If there is an interruption in power, the information is lost. So before putting your computer on standby, you should save your files.

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** > **Settings > Control Panel**.
2. Click **Power Options** icon to display the **Power Options Properties** window.
3. Click the **Power Schemes** tab to display the basic power management options.

Power Schemes Tab



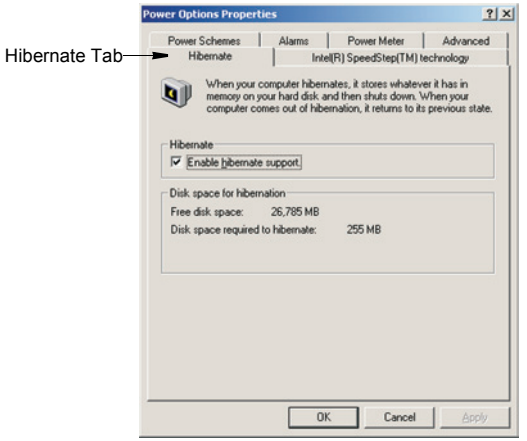
4. Select the time that you wish each of the following actions to occur in **Battery** and **AC power** mode.
   - Turn off monitor:
   - Turn off hard disks:
   - System standby:
   - System hibernates:

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.

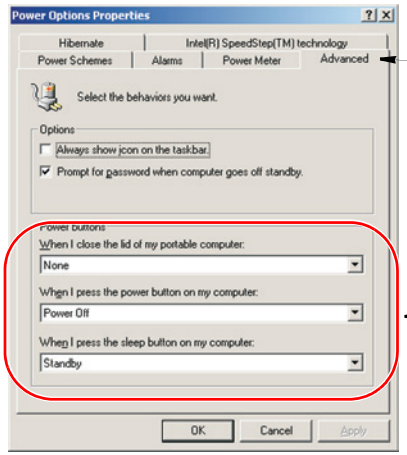
Rest Key:
The manual Fn + F11 Rest **<Fn+F11>** key combination will not activate Standby or Hibernate modes whilst you are playing a multimedia program or have an active USB device connected.

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** > **Settings > Control Panel**.
2. Click **Power Options** icon to display the **Power Options Properties** window.
3. Click the **Advanced** tab to display the advanced power management options.



Advanced Tab

Power & Sleep Button Programming Windows

4. Select the mode (**Do nothing/Ask me what to do/Standby/Hibernate/Shut down**) assigned to the Power button and/or Rest F11 Rest **<F11>** key. Also select the action (**Do nothing/Standby/Hibernate**) associated with closing the computer lid.

The "Rest" key is assigned to the Fn + F11 Rest **<Fn+F11>** 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.

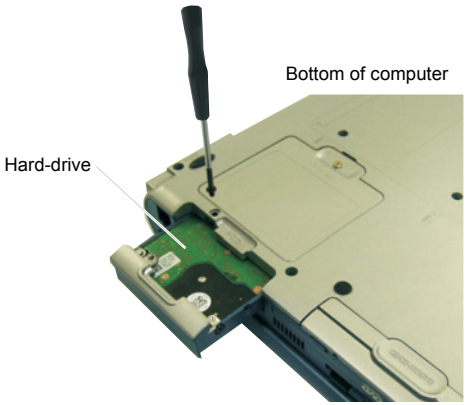
The hard drive that comes with your computer has already been formatted. Do not format the hard drive. Doing so destroys all data contained on the drive. If you need to format a new drive, or want to erase all data on your existing hard drive, refer to the manual for your operating system.

Removing the Hard Drive

To prevent loss of data and damage to the disk, do not remove the hard drive while the computer's power is on and do not drop or jar the hard drive.

To remove the hard drive from the computer:

1. If you are installing a new hard drive, backup the application and data files on the old hard drive before removing it from the computer.
2. Turn the computer's power off.
3. Close the LCD panel, and turn the computer over so that the bottom of the unit faces up.
4. Remove the screw that holds the hard drive in place.



5. Pull the hard drive out of the computer.

Installing a Hard Drive

To install a hard drive:

1. Remove the old hard drive from the computer as described in the previous section.
2. Slide the new drive into the hard drive compartment. Make sure the drive is pushed back as far as it will go.
3. Install the screw that holds the hard drive in place.
4. If required install windows and appropriate device drivers according to the instructions below.

(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 a System Recovery CD-ROM and a 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.

Configuring Display Features

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

Display Resolution Notes:
When Windows 2000 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 or external monitor:

1. Click **Start > Settings > Control Panel**.
2. Click **Display** 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.