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Product names mentioned herein are for identification purposes only, and may be trademarks and/or registered trademarks of their respective companies.

Macrovision Statement

If your computer has a DVD drive and an analog TV Out port, the following paragraph applies:

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

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Important Safety Information

Safety Instructions

Your system is designed and tested to meet the latest standards for safety of information technology equipment. However, to ensure safe use of this product, it is important that the safety instructions marked on the product and in the documentation are followed.

Always follow these instructions to help guard against personal injury and damage to your system.

Setting Up your System

- Read and follow all instructions marked on the product and in the documentation before you operate your system. Retain all safety and operating instructions for future use.
- Do not use this product near water or a heat source such as a radiator.
- Set up the system on a stable work surface.
- The product should be operated only with the type of power source indicated on the rating label.
- Ensure that the electrical outlet you are using to power your equipment is easily accessible in case of fire or short circuit.
- If your computer has a voltage selector switch, make sure that the switch is in the proper position for your area.
- Openings in the computer case are provided for ventilation. Do not block or cover these openings. Make sure you provide adequate space, at least 6 inches (15 cm), around the system for ventilation when you set up your work area. Never insert objects of any kind into the computer ventilation openings.
- Ensure that the fan vents on the bottom of the casing are clear at all times. Do not place the computer on a soft surface, doing so will block the bottom vents.
- If you use an extension cord with this system, make sure that the total ampere rating on the products plugged into the extension cord does not exceed the extension cord ampere rating.

Care During Use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill anything on the system. The best way to avoid spills is to not eat or drink near your system.
- Some products have a replaceable CMOS battery on the system board. There is a danger of explosion if the CMOS battery is replaced incorrectly. Replace the battery with the same or equivalent type recommended by the manufacturer. Dispose of batteries according to the manufacturer's instructions. If the CMOS battery requires replacement insure that a qualified technician performs the task
- When the computer is turned off, a small amount of electrical current still flows through the computer. To avoid electrical shock, always unplug all power cables, remove the battery and modem cables from the wall outlets before cleaning the system.
- Unplug the system from the wall outlet and refer servicing to qualified personnel if:
  - The power cord or plug is damaged.
  - Liquid has been spilled into the system.
  - The system does not operate properly when the operating instructions are followed.
  - The system was dropped or the casing is damaged.
  - The system performance changes.

Replacement Parts and Accessories

Use only replacement parts and accessories recommended by manufacturer.

To reduce the risk of fire, use only No. 26 AWG or larger telecommunications line cord.

Do not use this product in areas classified as hazardous. Such areas include patient care areas of medical and dental facilities, oxygen rich environments, or industrial areas.

Battery Disposal

Do not put rechargeable batteries or products powered by non-removable rechargeable batteries in the garbage.

Contact the Samsung Helpline for information on how to dispose of batteries that you cannot use or recharge any longer.

Follow all local regulations when disposing of old batteries.

Laser Safety

All systems equipped with CD or DVD drives comply with the appropriate safety standards, including IEC 825. The laser devices in these components are classified as "Class 1 Laser Products" under a US Department of Health and Human Services (DHHS) Radiation Performance Standard. Should the unit ever need servicing, contact an authorized service location.

Laser Safety Note:
Use of controls or adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. To prevent exposure to laser beams, do not try to open the enclosure of a CD or DVD drive.

Power Cord Requirements

The power cord set (wall plug, cable and AC adapter plug) you received with your computer meets the requirements for use in the country where you purchased your equipment.

Power cord sets for use in other countries must meet the requirements of the country where you use the computer. For more information on power cord set requirements, contact your authorized dealer, reseller, or service provider.

General Requirements

The requirements listed below are applicable to all countries:

- The length of the power cord set must be at least 6.00 feet (1.8m) and a maximum of 9.75 feet (3.0m).
- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.
- The power cord set must have a minimum current capacity of 7 A and a nominal voltage rating of 125 or 250 volts AC, as required by each country's power system.
- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector, for mating with appliance inlet on the computer.

Regulatory Compliance Statements

Wireless Guidance

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4 GHz Band, may be present (embedded) in your notebook system. The following section is a general overview of considerations while operating a wireless device.

Additional limitations, cautions, and concerns for specific countries are listed in the specific country sections (or country group sections). The wireless devices in your system are only qualified for use in the countries identified by the Radio Approval Marks on the system rating label. If the country you will be using the wireless device in, is not listed, please contact your local Radio Approval agency for requirements. Wireless devices are closely regulated and use may not be allowed.

The power output of the wireless device or devices that may be embedded in your notebook is well below the RF exposure limits as known at this time. Because the wireless devices (which may be embedded into your notebook) emit less energy than is allowed in radio frequency safety standards and recommendations, manufacturer believes these devices are safe for use. Regardless of the power levels, care should be taken to minimize human contact during normal operation.

As a general guideline, a separation of 20 cm (8 inches) between the wireless device and the body, for use of a wireless device near the body (this does not include extremities) is typical. This device should be used more than 20 cm (8 inches) from the body when wireless devices are on and transmitting.

This transmitter must not be collocated or operate in conjunction with any other antenna or transmitter.

Some circumstances require restrictions on wireless devices. Examples of common restrictions are listed below:

Radio frequency wireless communication can interfere with equipment on commercial aircraft. Current aviation regulations require wireless devices to be turned off while traveling in an airplane. 802.11B (also known as wireless Ethernet or Wifi) and Bluetooth communication devices are examples of devices that provide wireless communication.

In environments where the risk of interference to other devices or services is harmful or perceived as harmful, the option to use a wireless device may be restricted or eliminated. Airports, Hospitals, and Oxygen or flammable gas laden atmospheres are limited examples where use of wireless devices may be restricted or eliminated. When in environments where you are uncertain of the sanction to use wireless devices, ask the applicable authority for authorization prior to use or turning on the wireless device.

Every country has different restrictions on the use of wireless devices. Since your system is equipped with a wireless device, when traveling between countries with your system, check with the local Radio Approval authorities prior to any move or trip for any restrictions on the use of a wireless device in the destination country.

If your system came equipped with an internal embedded wireless device, do not operate the wireless device unless all covers and shields are in place and the system is fully assembled.

Wireless devices are not user serviceable. Do not modify them in any way. Modification to a wireless device will void the authorization to use it. Please contact manufacturer for service.

Only use drivers approved for the country in which the device will be used. See the manufacturer System Restoration Kit, or contact manufacturer Technical Support for additional information.

European Union

The following information is only applicable to systems labeled with the CE mark CE.

European Directives

This Information Technology Equipment has been tested and found to comply with the following European directives:

- EMC Directive 89/336/EEC with amending directives 92/31/EEC & 93/68/EEC as per
  - EN 55022 Class B
  - EN 61000-3-2
  - EN 61000-3-3
  - EN 55024
- Low Voltage Directive (Safety) 73/23/EEC as per EN 60950(A1/A2/A3/A4/A11)
- Radio and Telecom Terminal Equipment Directive 199/5/EC as per
  - CTR21 (if fitted with a modem device)
  - ETS 300 328 (if fitted with a 2.4 GHz band embedded wireless device)
  - ETS 301 489-1 (if fitted with a 2.4 GHz band embedded wireless device)
  - ETS 301 489-17 (if fitted with a 2.4 GHz band embedded wireless device)

European Radio Approval Information (for products fitted with EU-approved radio devices)

This Product is a Notebook computer; low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4 GHz band, may be present (embedded) in your notebook system which is intended for home or office use. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.

Wireless devices that may be in your system are only qualified for use in the European Union or associated areas if a CE mark CE with a Notified Body Registration Number and the Alert Symbol is on the system label.

The power output of the wireless device or devices that may be embedded in you notebook is well below the RF exposure limits as set by the European Commission through the R&TTE directive.

European States qualified under wireless approvals:

EU	Austria, Belgium, Denmark, Finland, France (with frequency restrictions), Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, Sweden and the United Kingdom.
Accept EU	Iceland, Liechtenstein, Norway and Switzerland

European States with restrictions on use:

EU	In France, the frequency range is restricted to 2446.5-2483.5 MHz for devices above 10 mW transmitting power such as wireless LAN.
Accept EU	No limitations at this time.

European Telecommunication Information (for products fitted with EU-approved modems)

Marking by the symbol CE indicates compliance of this equipment to the Radio and Telecom Terminal Equipment Directive 1999/5/EC. Such marking is indicative that this equipment meets or exceeds the following technical standards:

CTR 21 – Attachment requirements for pan-European approval for connection to the analogue Public Switched Telephone Networks (PSTNs) of TE (excluding TE supporting voice telephony services) in which network addressing, if provided, is by means of Dual Tone Multi-Frequency (DTMF) signaling.

Although this equipment can use either loop disconnect (pulse) or DTMF (tone) signaling, only the performance of the DTMF signaling is subject to regulatory requirements for correct operation. It is therefore strongly recommended that the equipment is set to use DTMF signaling for access to public or private emergency services. DTMF signaling also provides faster call setup.

This equipment has been approved to Council Decision 98/482/EEC—"CTR 21" for Pan-European single terminal connection to the Public Switched Telephone Network (PSTN).

However, due to differences between the individual PSTNs provided in different countries, the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN termination point. In the event of problems, you should contact manufacturer Technical Support.

Japan

VCCI Statement

This equipment is in the Class B category (Information Technology Equipment to be used in a residential area or an adjacent area thereto) and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment aimed at preventing radio interference in such residential areas. When used near a radio or TV receiver, it may become the cause of radio interference. Read instructions for correct handling.

電波障害について

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

Wireless Devices

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4 GHz Band, may be present (embedded) in your notebook system. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.

Wireless devices that may be in your system are only qualified for use in Japan if a TELEC ID is on the system label.

Operational guidelines for 2.4 GHz band wireless equipment (if equipped)

This equipment uses the 2.4 GHz ISM frequency band. The ISM band is the industrial, scientific, and medical device band. Devices that might also use this band are microwave ovens, other LAN devices, amateur radio stations, licensed premises radio stations, and non-licensed specified low-power radio stations.

Prior to setting up your device:

1. Make sure that there are no other devices in your area using the same frequency band.
2. Change the channel, location, or discontinue device use if you are interfering with any other radio station.
3. Contact manufacturer if you have any problems with this device.

この機器の使用上の注意

この機器の使用周波数は2.4GHz帯です。この周波数では電子レンジ等の産業・科学・医療用機器のほか、他の同種無線局、工場の製造ライン等で使用されている免許を要する移動体識別用の構内無線局、免許を要しない特定小電力無線局、アマチュア無線局（以下「他の無線局」と略す）が運用されています。

1. この機器を使用する前に、近くで「他の無線局」が運用されていないことを確認して下さい。
2. 万一、この機器と「他の無線局」との間に電波干渉が発生した場合には、速やかにこの機器の運用を停止（電波の発射の停止）をして下さい。
3. 不明な点、その他お困りのことがおきたときは、この機器をお求めになった販売代理店までお問い合わせください。

この無線機器は2.4GHz帯周波数、DSSS変調方式を採用しており、与干渉距離は約40mです。

Using Your Documentation

Congratulations on your purchase of a notebook computer with the Windows® XP operating system. Whether you are new to using a portable computer or are an experienced user, this user's manual can help you get the most from your computer.

Manual Documentation Conventions

Information Icons

Three icons and their associated messages appear in this manual. The information icons are placed before the step/information they apply to:

Warning:
Indicates the possibility of personal injury.

Caution:
Warns you of possible damage to equipment or data.

Note:
Informs you of special circumstances.

Technical Information:
Informs you of special requirements or limitations for use of item(s).

Keyboard Conventions

Keys that you need to press to perform certain functions are displayed in the manual using a small graphic of the button. For example: **<Ctrl>**

or **<Ctrl>** indicates the control key (**Ctrl** on the keyboard).

If you need to press two keys at the same time, the key names are shown joined by a plus sign. For example:

+

or **<Fn+F8>**

means that you should press the **Fn** key and hold it and then press the **F8** key.

CD-ROM Device Naming Convention

In many installation programs you will have to get a program from the CD-ROM device. The program installation sequence assumes that the CD is drive d:\, however this is not always the case. The name of the CD-ROM drive is the letter following the letter assigned to your last HDD. For instance, if you have one HDD with two partitions, the HDD is drives C: and D: and the CD-ROM drive is then drive E.

Touchpad Conventions

You may be asked to click or double-click on items on the display screen. As a general note the touchpad actions act much in the same way as a wheel mouse, any differences are explained fully.

The object that needs to be clicked upon will be displayed in **Bold** text or shown in a small figure such as the **"Start Button"** shown on the right =>.

Table 1. Touchpad Click Conventions

Action	Process
Click	Depress the touchpad left button and release
Double-click	Quickly click the left touchpad button two times

Windows Conventions:
Almost all "Windows" programs will display the name/function of a button or icon if you place the touchpad pointer on the item you want information about.

Software User Documentation

Your computer is shipped from the factory with several software programs installed. The software may include its own online or printed documentation. Refer to the documentation or the Help options in the software for more information.

The figures and illustrations in this manual may not be identical to those on your system.

General Icon Note:
Some of the Icons used in Windows XP may be placed on the taskbar by selecting **(ex: Place the volume icon in the taskbar)** in the properties dialog box.

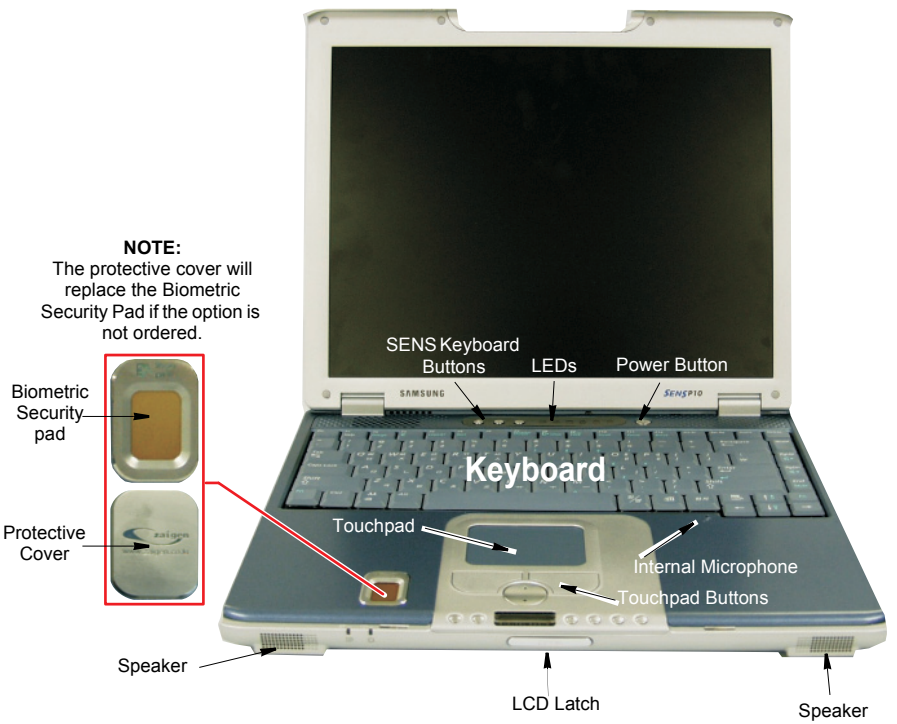
Introducing Your Computer

Your computer is a lightweight portable computer that includes features such as Dolby Digital & Dolby Home Theater System support, DVD-ROM/floppy drives, Biometric (fingerprint) security system (factory option), Memory Stick (factory option), wireless LAN capability (factory option), Bluetooth Wireless (factory option), CD/MP3 player (factory option) to meet your computing needs at home or on the road.
(Figures may be different depending on options).

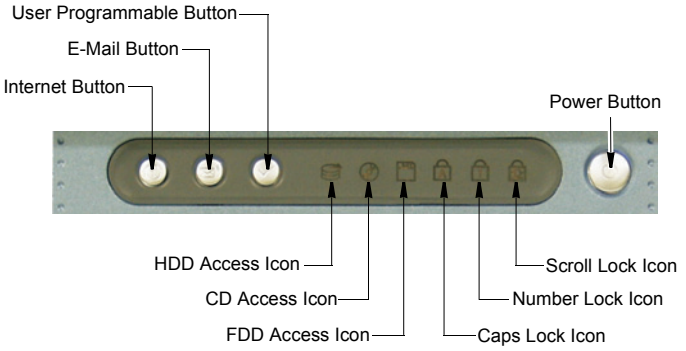
Where Everything Is

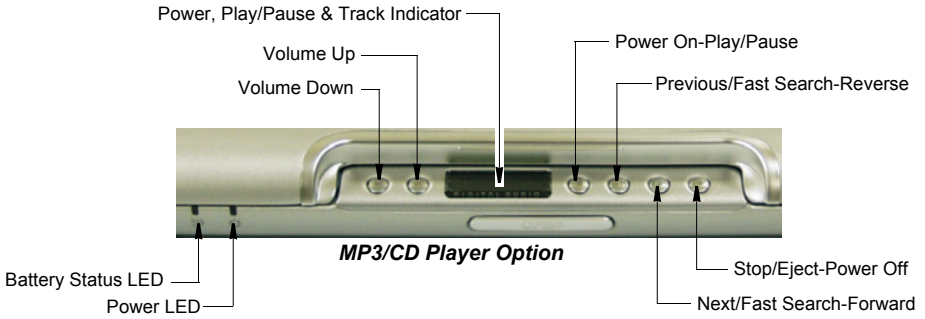
The next 8 figures will explain the location of all of the buttons, LEDs and equipment needed to operate your notebook computer.

Front



Buttons and LEDs

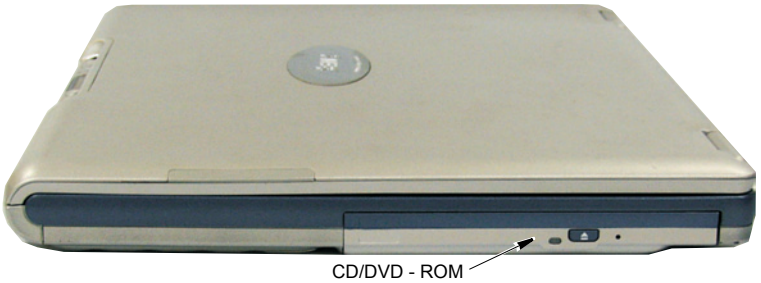




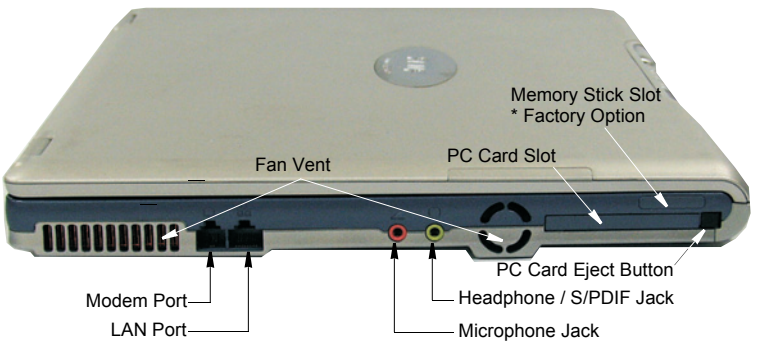
MP3/CD Player Option

No MP3/CD Player Option

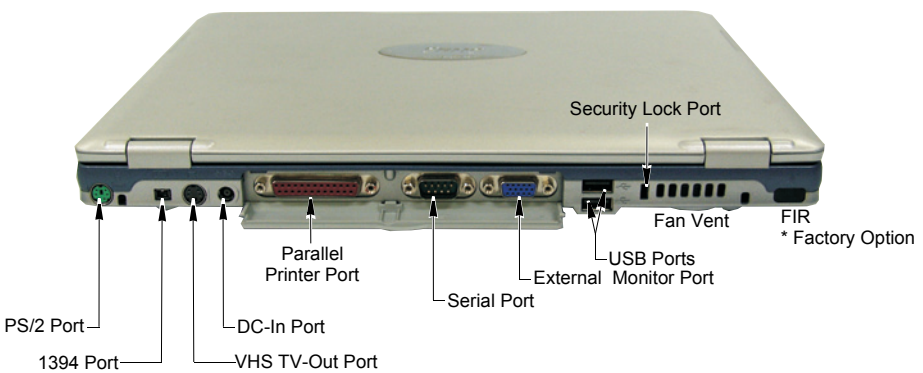
Right Side



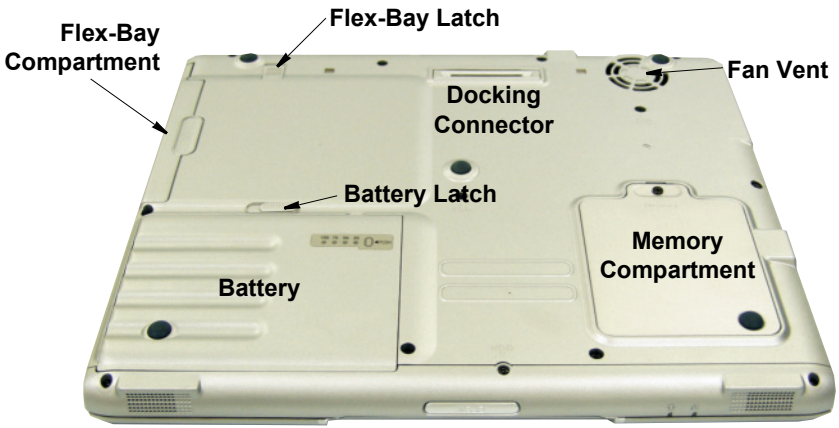
Left Side



Back Side



Bottom


Flex-Bay Compartment
Flex-Bay Latch
Fan Vent
Docking Connector
Battery Latch
Memory Compartment
Battery

Using Your Computer for the First Time

This section gives you detailed information on using your computer for the first time.

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 front 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.

Attaching the AC Adapter

Your computer runs on power from the battery in the computer or from an electrical outlet. The first time that you use your computer, fully charge the battery by attaching the power cord to the computer and to an electrical outlet.

All batteries lose their charge if they sit unused for an extended time period. When not used, battery can discharge fully in 2 to 3 months. The battery may have discharged in the time it took for the computer to go from the factory to you.

To attach the power cord:

1. Plug the AC adapter into the power connector on the back side of the computer.
2. Connect the power cord to the AC adapter and then to an electrical outlet.

The battery starts charging as soon as you plug the power cord into an electrical outlet. The battery charges faster if the computer is turned off during charging.

If the battery is fully depleted and the computer is turned off, the battery charges in about 3 hours. If the computer is turned on, the battery charges in about 6 hours. When the battery is charging, the battery charge light is red. When the battery is fully charged, the light turns green.

See ”Using Power Management Options” on page 57 for more information on using your computer’s battery.

Turning On the Computer

To turn on the computer's power for the first time:

1. Push the LCD cover button, located on the front of the computer below the MP3/ CD Player.
2. Lift up the cover.
3. Press and then release the power button.

   The power light is on when the computer's power is on.

Initial Computer Startup:
The first time you start your computer you will see the operating system registration screens. Simply read each screen and follow the simple directions. You must complete this process in order to use your computer. A tutorial is provided if you require it.

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

Turning Off Your Computer

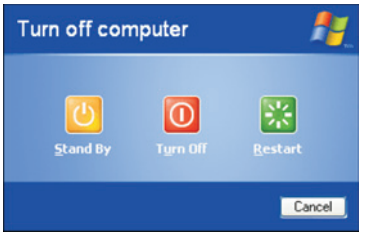
Prior to shutting down your computer ensure all of your data and current work are saved. The system will ask if you wish to save any unsaved work, saving your work first will speed the shutdown process.

To turn off the computer, complete the following steps:

1. Click start on the taskbar.

If you need to restart your computer after software (re)installation or because it is not responding select the **Restart** option in step 3 below.

2. Click **Shut Down Computer** to display the shutdown popup window shown below.



3. Click **Turn Off** to complete the shutdown sequence.

Power Off:
If the system does not power off, then press and hold the power button for over 5 seconds. See ”Using Power Management Options” on page 57.

Power Button Functions:
The power button has several functions other than just turning on and off your computer, see “Using Power Management Options” on page 57.

You can also perform a soft boot by saving your files and pressing **<Ctrl+Alt+Del>** to pop-up the “Windows Task Manager” window.
Click **Shut Down** > **Restart**.

You can perform a cold boot by pressing the power button for more than 4 seconds to turn the computer off, waiting more than five seconds, and then pressing the power button to turn the computer on. The system may perform some extra checks during the restart.

Tips for Using Your Computer

The following information helps you avoid potential problems as you use your computer:

Do not try to disassemble your computer. Opening the system chassis voids your warranty. Only an authorised manufacturer service center can replace or add any parts inside the chassis.

- Follow all the instructions and cautions in your computer user documentation.
- The LCD has a polarized surface and can be damaged easily. To prevent damage, avoid touching the screen.
- Use only approved AC adapters, auto adapters, memory modules and other options.
- Because a notebook computer is small and has restricted air flow around components, it is more likely to overheat than a desktop computer. A fan inside your computer runs when needed to help eliminate heat. Make sure the fan vent on the left side of your computer is not blocked when you use the computer. Occasionally check the vents and remove any accumulated dust on the outside.
- Avoid using or storing the computer in extremely hot or cold areas, such as a car on a hot day. Keep the computer away from heaters and out of direct sunlight. Exposure to excessive heat may damage computer components. If you have left your computer in a hot place, let it cool down slowly to room temperature (with the LCD panel open) before using it.
- Do not remove the memory-module compartment door, or try to install a memory module when the computer is on. (For information on installing memory modules, see “Installing a Memory Module” on page 70.)
- Set up your computer work area to avoid physical strain. Sit with your back straight and supported by your chair. Adjust your chair or work table so that your arms and wrists can remain in a relaxed position, parallel with the floor. Avoid bending or twisting your wrists as you work. Your hands should “float” slightly above the keyboard. Refer to a book on office ergonomics for more information on setting up your work area.
- Take frequent breaks from working at the computer to rest your eyes and stretch your muscles.
- Remember to save your data files frequently and to make backup copies of your files.

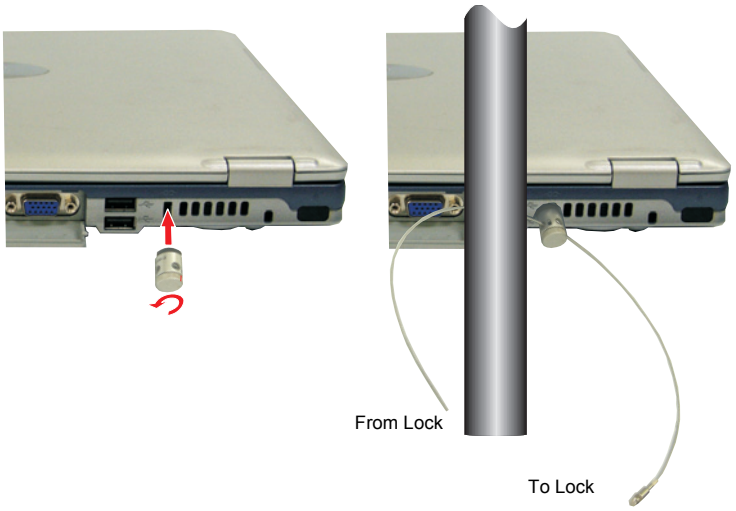
Air Travel

If you are travelling by air, follow these tips:

- Take the computer with you as carry-on luggage. Do not check the computer with your baggage.
- Allow the computer and disks to go through the X-ray security devices. Do not hand-carry disks through the walk-through metal detectors, which can cause loss of data.
- Make sure that the battery is charged or the power cord is easily accessible. You may be required to turn on the computer for airport security personnel.
- Be prepared to turn off the computer during take off and landing.

Locking your Computer

As a precaution when you are travelling or using your computer in an unsecured area, you should keep your computer as safe as possible. An option to do this is the *Security Lock System*. Follow the *Security Lock System* manufacturers instructions for specific installation and use. The following figure shows generally how to use the lock.



Handling Spills

Do not spill anything on your computer. The best way to avoid spills is to avoid eating and drinking around your computer. If you do spill something on your computer, turn off your computer, unplug it immediately, and do the following:

- If you spill liquid on the keyboard, drain as much of the liquid from the keyboard as possible. Be careful not to let the liquid drip onto the LCD panel. Allow the system to dry for several days before trying to use it.
- If you spill liquid on an external keyboard or keypad, unplug it and drain as much of the liquid as possible. Allow the keyboard to sit at room temperature for a full day before trying to use it.

Sweet liquids leave a sticky residue that may jam the keyboard despite your efforts to dry it.

- If you spill liquid on the LCD panel, clean it immediately with a soft cloth and denatured alcohol or a proprietary LCD screen cleaner. Do not use water, window cleaner, acetone, aromatic solvent, or dry, rough towels to clean it.

Some liquids damage the polarized LCD screen. If your screen is damaged, contact your authorized manufacturer's service center for a replacement.

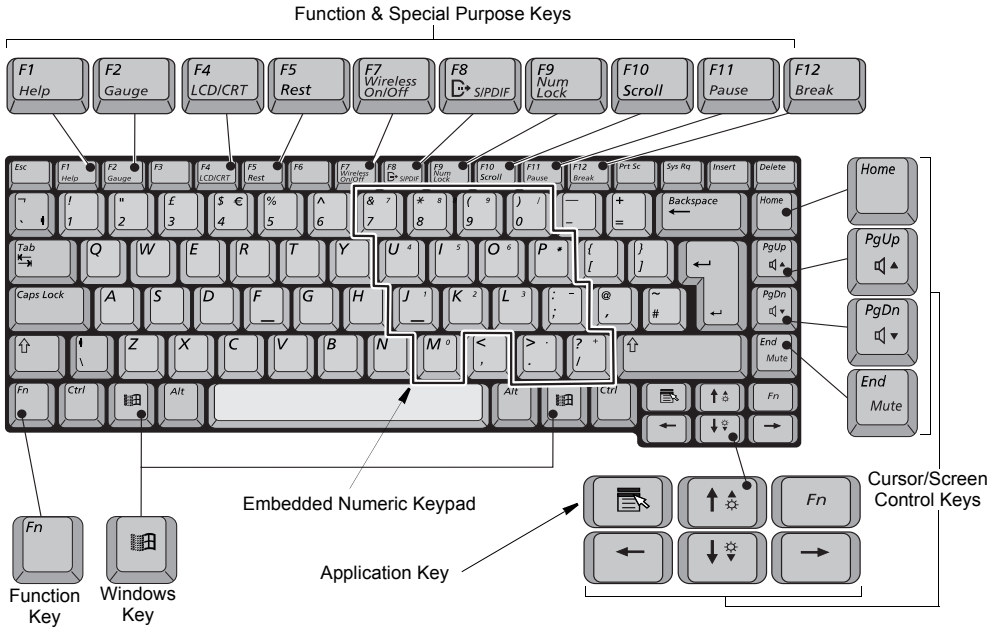
Storing the Computer for Long Periods

If possible, leave the power cord connected to the computer and an electrical outlet when the computer is not in use. This extends the life of the battery and keeps the battery fully charged.

If you will not be using the computer for a long period of time (a month or more), you should charge the battery until it is completely full. After you have done so, remove the battery from the unit.

Using the Keyboard

Your computer has an 87/88-key keyboard. By pressing designated key combinations, you can have access to all the key functions of a full-sized keyboard.



Although the layout of the keys on your computer's keyboard is different from that on a desktop computer's keyboard, the keyboard feels like a full-sized keyboard when you use it.

The keys on the keyboard can be grouped into the following categories:

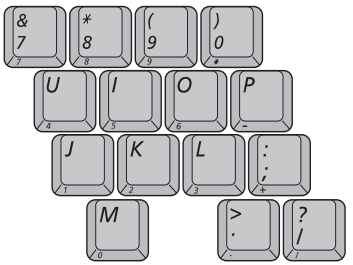
- Full-sized Alphanumeric typewriter keys are arranged like a standard typewriter keyboard and are used for text entry. The Windows keys on either side of the spacebar open Windows menus and perform other special functions.
- Function keys, when pressed together with the **<Fn>** key, enable special functions.
- Cursor and Screen control keys move the cursor. They may perform other functions, depending on your software.

To clean the computer keyboard, use slightly damp cotton swabs. Scrub the keys and the surface around the keys.

Do not allow liquid to drip into the keyboard or you may damage the keyboard.

Using the Numeric Keypad

Your keyboard includes a numeric keypad, which is a group of keys that you can set to type numbers and mathematical symbols, such as the plus sign. A number or symbol on the right corner of each keypad key shows its numeric function.



Press **<Fn+F9>** to turn on the embedded numeric keypad. The numeric functions of the keypad are enabled and the Num Lock LED turns on. (See ”Reading the System Status Lights” on page 22 for the location of the Num Lock LED.)

While the numeric functions are enabled, you can temporarily return a key to its normal function by pressing and the **<Fn>** key. For example to type the letter *m,* press **<Fn+M>**, this operation displays the letter **m**.

To turn the numeric keypad off, press **<Fn+F9>** again. The Num Lock LED turns off.

Using Special Function Keys

The function key activates special functions when it is pressed in combination with another keys. Table 2 shows the special key combinations.

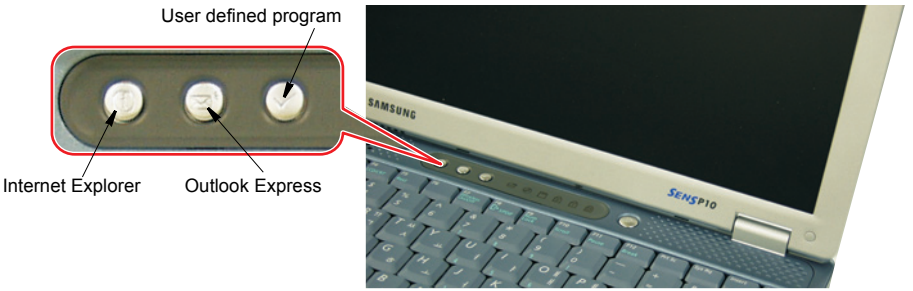
Table 2. Description of Special Function Key Combinations

<Fn> Key Combinations	Key Name	Key Function	
<Fn+F2>	**F2 Gauge**	*Gauge*	Displays the battery gauge in the upper-right corner of your screen. The gauge closes in a few seconds, or you can press **<Esc>** to close the gauge. (See "Monitoring the Battery Charge" on page 48 for more information on the battery gauge.) This function will also display status of Wireless LAN and S/PDIF functions.
<Fn+F4>	**F4 CRT/LCD**	*CRT/LCD:*	Switches the display between the LCD, the external monitor, and simultaneous display on both the LCD and the external monitor.
<Fn+F5>	**F5 Rest:**	*Rest:*	Puts the computer into Suspend mode. To resume normal operation from rest, press the power button. (See "Using Power Management Options" on page 57 for more information about the rest mode.)
<Fn+F7>	**F7 WLAN**	*WLAN:*	Toggles the Wireless LAN function On/Off
<Fn+F8>	**F8 S/PDIF**	*S/PDIF:*	Toggles the S/PDIF function On/Off
<Fn+F9>	**F9 Numlock**	*Numlock:*	Activates the numeric keypad
<Fn+F10>	**F10 Scroll**	*Scroll:*	In some applications, sets the cursor-control keys to scroll the page up or down while the cursor position does not change. Pressing key combination again turns off the scrolling function.
<Fn+PgUp>	**PgUp:**	*Volume up:*	Increases the audio volume.
<Fn+PgDn>	**PgDn**	*Volume down:*	Decreases the audio volume.
<Fn+End>	**End Mute:**	*Mute:*	Mutes the audio.
<Fn+Up Arrow>	↑☼	*Brightness Up:*	Increases the LCD brightness.
<Fn+Down Arrow>	↓☼	*Brightness Down:*	Decreases the LCD brightness.

When you press a function key combination, the system sound may be temporarily muted.

User Defined Buttons (SENS Keyboard)

You may program the three buttons to the left of the power button to start any program you have installed on your computer.

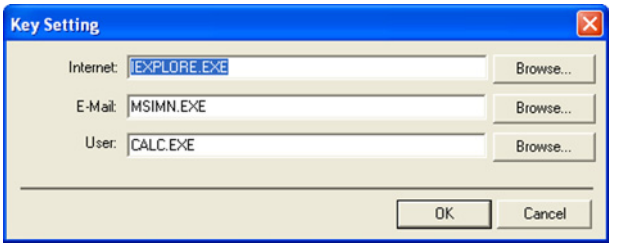


The default settings for these buttons are:

Internet E-Mail - Outlook Windows Calculator

To reprogram the Sens Keyboard, follow the steps below:

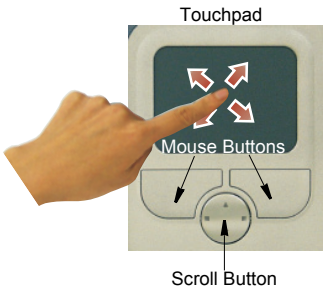
1. Double-click icon on the Windows taskbar, the **Key Setting** window is displayed.



2. Select **Button** you wish to reprogram from the drop down menus in the **Key Setting** window.
3. Use the **Browse** button to locate the program you wish to assign to the **SENS Keyboard** button selected.
4. Click on your program choice to select it.
5. Click **Open**.
6. Click **OK** to close window and complete programming the **Sens Keyboard**.

Using the Touchpad

Your computer is equipped with a touchpad, which is an integrated-pointing device that is used to perform standard mouse functions. The touchpad is an advanced and reliable pointing device that works with a touch of your finger.



Four (4) Direction Scroll Button (Default is a 2 Direction Button)
If you have purchased your computer without the CD/MP3 player option your computer will have a four (4) direction scroll button. The operation of the scroll button is explained below.

Scroll Button Use
The scroll button driver is not installed as part of the original program/driver installation. If you wish to use the scroll button you must install the scroll button driver located on the **Software CD** that comes with your computer.

Press on the touchpad gently. The touchpad responds to light pressure.

Action	Process and Comment
Click/Tap 	**Process** Depress the touchpad left button and release or position the pointer over the object and Quickly tap the touchpad once with your finger. This action is called *clicking*. **Comment** This will cause a process to begin or select an object on the screen.
Double-click/Tap 	**Process** Quickly click the left touchpad button two times or position the pointer over the object and Quickly tap the touchpad twice with your finger. This action is called *Double-clicking*. **Comment** This will cause a process to begin or open a file folder.
Click-Hold 	**Process** Depress the left touchpad button and do not release. **Comment** This is used to move/drag objects to new locations. See ”Drag (Move)” on page 21.
Right-click 	**Process** Position the pointer over the object. Quickly press and release the right button once. This action is called *Right-clicking*. **Comment** **This is usually used to obtain information about an object or access a short cut menu.**

Action	Process and Comment
Scroll Up 	**Process** Place your finger on the top half of the button to scroll up the current window. **Comment** Moves the current window down**.**
Scroll Down 	**Process** Place your finger on the bottom half of the button to scroll up the current window. **Comment** Moves the current window up.
Scroll Left 	**Process** Place your finger on the left half of the button to scroll left in the current window. **Comment** Moves the current window right.
Scroll Right 	**Process** Place your finger on the right half of the button to scroll right in the current window. **Comment** Moves the current window left.

PS/2 Mouse Menu:
You may change the setup in **Setup** > **Advanced Menu**

Disabled : Prevents any installed PS/2 mouse from functioning, but frees up IRQ12.

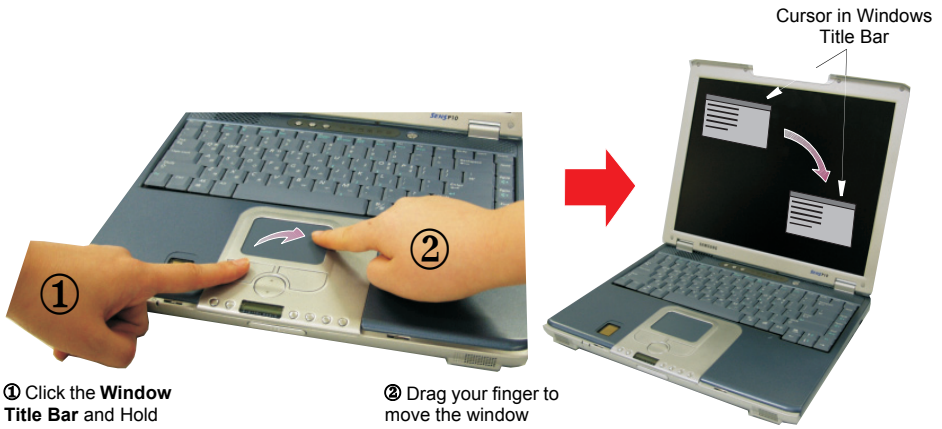
Enabled : Forces the PS/2 mouse port to be enabled regardless if there is a mouse present.

Auto Detect : Enables the PS/2 mouse only if present.

Drag (Move)

To move a window on the desktop, complete the following:

1. Click the **window title bar** or **icon** in the bottom of the window which you want to drag using the touchpad.
2. Press the left touchpad button and hold it.
3. Drag the window using the touchpad.



① Click the **Window Title Bar** and Hold

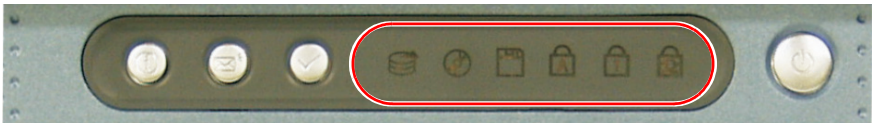
② Drag your finger to move the window

Area or Multiple item selection:
The drag function may be used to select an area or multiple items in an area by clicking in one area and then dragging to create a selection window. The items inside the window will be selected.

Reading the System Status Lights

System Top

System Status lights show the status of computer functions.



LED	Name	Function
	HDD Access	Blinking Green - HDD is being accessed.
	CD Access	Blinking Green - CD is being accessed.
	FDD Access	Blinking Green - FDD is being accessed.
1	**Num Lock**	Changes a portion of the keyboard to a numeric keypad. See "Using the Numeric Keypad" on page 15.
A	**Caps Lock**	Changes all alpha or letter input into capital letters. No changes occur to numeric and special keys.
	Scroll Lock	Scroll lock in certain software.

System Bottom

LED	Name	Function
	Power	Green - System power on. Blinking - Standby mode.
	Battery Status	Green - No battery pack installed/battery fully charged. Amber - Charging. Blinking - Bad Battery

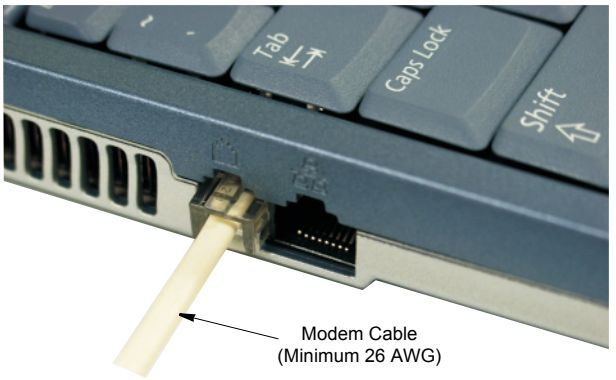
Connecting to the Internet

This section explains how to connect you to the internet. For details on how to establish the connection contact the Internet Service Provider [**ISP**] or system administrator [**SysAdmin**].

Using the Modem

Install the Modem cable by simply plugging the cable into the modem slot as shown in the figure below.

Your Notebook computer will have a Modem/LAN installed.



1. Contact your Internet Service Provider to obtain information or CD required to make the connection in your area.
2. After the cable is connected create a “Dialup” connection by clicking **Start** > **Control Panel** > **Network and Internet Connections**.
3. Click **Set up or change your Internet connection** > **Setup** to start the connection wizard.
4. Follow the instructions in provided in the **Make New Connection** wizard.

Precautions Before Use

Country Selection

Country Selection:
Because your computer is very mobile you must ensure you select the *country you are calling from* is selected correctly, otherwise you may experience connection problems.

To change the country selection proceed as follows:

1. Click **Start** > **Control Panel** > **Network and Internet Connections**.
2. Click Phone and Modem Options.
3. Click on the connection you wish to edit in the **Locations:** box.
4. Click **Edit** in the **Dialing Rules** Tab
5. Select the **Country/region** you are calling from in the **General** tab.
6. Click **OK** to close the "Edit Locations" box.
7. Click **OK** to close "Phone and Modem Options" box.

Digital Phone Lines:
If you connect the modem to a digital phone line (such as a company 4-wire system), the modem may be damaged.

DOS support

- **Windows XP:** Does not support pure DOS mode and the modem does not support a DOS box in Windows. So you cannot use a communication application which runs under DOS.

Using the Modem on a PBX system

If you use a Windows Communication Program:

1. Click **Start** > **Control Panel** > **Network and Internet Connections**.
2. Click Phone and Modem Options.
3. Click **Properties** in the **Modems tab** section.
4. Check off "Wait for dial tone before dialing" check box in the **Modem tab** section.
5. Click **OK** to close the dialog box.
6. Click **OK** to close "Modem Properties" dialog box.

If you use a simple terminal program (i.e. hyper terminal):

Type the “ATX3&W” or “ATX3” command as an initialization command.

MODEM Notes:

1. In order to use the 56K feature, be sure to check if the standards supported by the on-line service provider and the modem are identical.
2. If you use a PBX phone system, you can not connect using the 56K mode.
3. Internationally connected calls will be limited to 33.6K (Max.)

Using the LAN

You may connect to the network using either a LAN cable or by establishing a wireless connection if factory option is installed.

Cable Connection

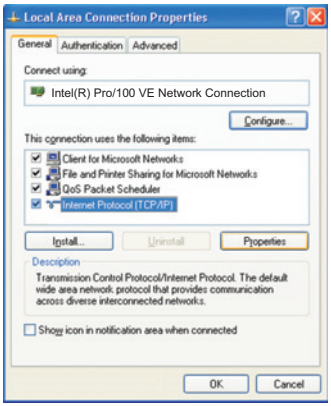
Install the LAN cable by simply plugging the cable into the slot in the left side of the computer.

Your computer’s LAN adapter is ready to use for most situations, however if your system does not have a DHCP server or you wish to personally configure your LAN connection, proceed as outlined in “Configuring Network Environment” below.

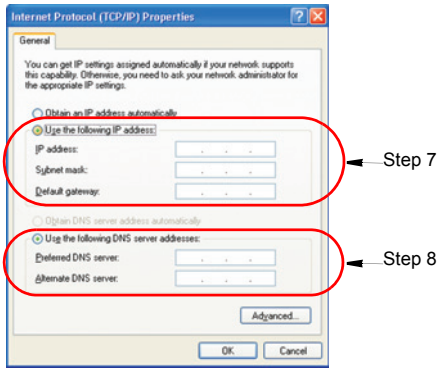
Network Protocols:
You may need to consult your SysAdmin if their network protocols and settings are required for your LAN environment.

Configure the Network Adapter as follows:

1. Click **Start** > **Control Panel** > **Network and Internet Connections**
2. Click icon (Network Connections).
3. Right-click the icon (Labeled Local Area Network) then click **Properties** button.
4. Select **Internet Protocol (TCP/IP)** in the "This connection uses the following items:" box.



5. Click **Properties**. The TCP/IP Properties window opens.



6. Click "Use the following IP address" in the **General** tab
7. In the "Use the following IP address" box, enter your **IP address:, subnet mask:** and **Default Gateway:**.
8. In the "Use the following DNS server addresses" box, Enter your **Preferred DNS server:** and **Alternate DNS server:**.
9. Click **OK** when you finish the TCP/IP set-up.

Wireless Connection (Factory Option)

Your computer's wireless LAN adapter is ready to use for most situations, however if your system does not have a DHCP server or you wish to personally configure your wireless LAN connection, proceed as outlined in "Configuring Network Environment" below.

Regulatory Notice for Channel Use in France

The number of channels that can be used for wireless LAN differs from country to country.

In France however, use only 4 channels (2446.5~2483.5MHz) when using wireless networks.

- Channel Allocation: Channel 10, 11, 12, 13.

The table below shows the Windows taskbar icons for the wireless LAN.

Icon	Name	Description
	Connection Established	Displays if connection is available.
	Connection Unavailable	Displays if connection is unavailable.

To display relative Signal Strength:

1. Double-click the icon in the taskbar to display the Wireless Network Connection Status window. This window also displays connection *Status, Speed, Duration and Activity.*

Network Protocols:

You may need to consult your System Administrator if their network protocols and settings are required for your wireless LAN environment.

Configuring Network Environment

Configure the Wireless Network Adapter as follows:

1. Click **Start** > **Control Panel** > **Network and Internet Connections**
2. Click icon (Network Connections)
3. Double-click the Wireless Network Connection icon. The *Connect to Wireless Network* window pops up.

4. Select one of the available networks in the *Available networks* section, if displayed.

No networks are displayed

Office - Consult your system administrator.

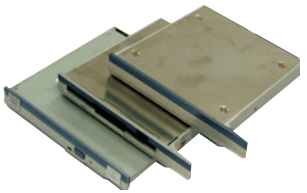
Home - Verify your access point is working properly.

5. Click the **Connect** button. The Wireless Network Connection icon in the control panel will show your connection is *Enabled*. You may proceed using the network as normal wired LAN connections.

Change Wireless Network Access Point as follows:

1. Right-click the **Wireless Network Connection** icon.
2. Click *View Available Wireless Networks*. The *Connect to Wireless Network* window pops up.
3. Select the new network from the available networks in the *Available networks* section, if displayed.
4. Click **Connect** button. The Wireless Network Connection icon in the control panel will show your connection is *Enabled*. You may proceed using the network as normal wired LAN connections

Using the Flex-Bay



The Flex-Bay provides an impressive array of secondary storage devices listed below:

CD-ROM drive:
Available as an option for your computer.

CD-ROM R/W drive:
Available as an option for your computer.

DVD-ROM drive:
Available as an option for your computer.

DVD/CD-RW Combo drive:
Available as an option for your computer.

Optional secondary hard drive:
Available as an option for your computer.

If your operating system is Windows, you must install the *Softex Bay Manager* software on the software CD in order to use the Bay Manager Utility to hot-swap the devices.

If you do not use Windows, make sure that the computer's power is off before you remove or install any devices.

Swap a Flex-Bay Device - Power On

You can use the Softex Bay Manager utility to hot-swap your devices in the flex-bay.

To start the Softex Bay Manager utility:

1. Click **Start** > **Control Panel > Other Control Panel Options > Softex Bay Manager**.

   - or -

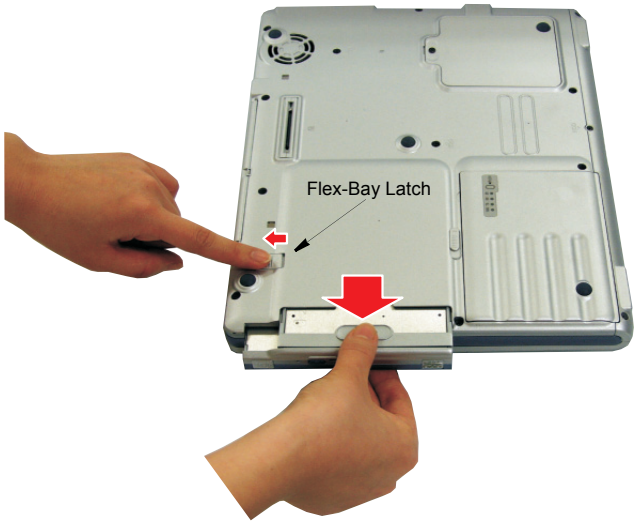
2. Double-click the SwapBay icon in the Windows taskbar.

Device Swap

To swap a device with the power on proceed as follows:

1. Start the *Softex Bay Manager Utility*.

You do not have to turn the computer over or tip it on its side to change devices. Simply tilt the computer up about 10 cm at the back and locate the Flex-Bay latch. See Figure below for the location of the Flex-Bay latch. The computer in the figure is turned over for clarity.



2. Click *Remove / Swap*. A Device Change popup window stating, “Please wait until the system processes the device change” appears then another popup window appears and says, “Please remove or swap your bay device(s) now and press OK.”
3. Tilt the computer up & locate the smart bay latch.
4. Slide and hold the device latch toward the rear of the computer.

5. Slide the device out.
6. Slide the new device in
7. Click **OK**. The message “Please wait until the system processes the device change” appears again.
8. Click **OK** to close the *Softex Bay Manager Utility*.

Swap a Flex-Bay Device - Power Off

Device Swap

To remove a device with the power off proceed as follows:

1. Turn the computer’s power off.
2. Tilt the computer up & locate the smart bay latch.
3. Slide and hold the device latch toward the rear of the computer.
4. Slide the device out.
5. Carefully slide the new device into the bay.
6. Push the device in until it is flush with the chassis and the Flex-Bay latch snaps into place. Your computer’s operating system automatically recognizes the device in the Flex-Bay and configures your computer accordingly when power is restored.

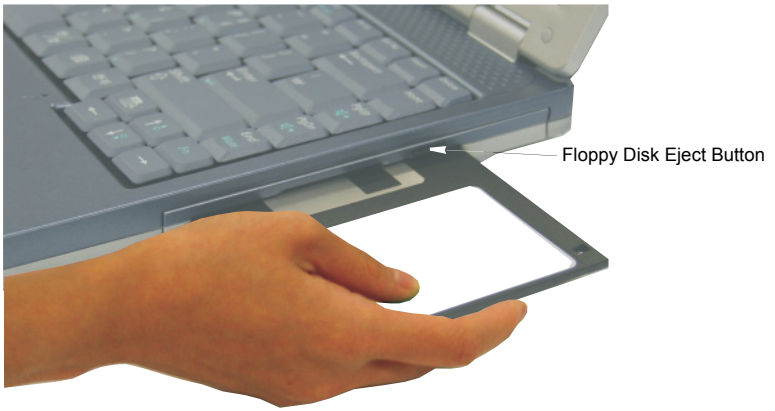
Using the Disk Drives

To use the Floppy drive or the CD-ROM drive you must verify it is installed in the flexbay slot. To swap devices see “Using the Flex-Bay” on page 29.

Using the Floppy Disk Drive

Your computer comes with a 1.44 MB, 3.5-inch, floppy drive.

To use a floppy disk in your computer, insert it into the floppy drive.



To remove a floppy disk, press the floppy disk eject button on the front of the floppy drive.

To protect the data on your floppy disks, follow the manufacturers guidelines.

Using the CD/DVD-ROM Drive

Compact discs are designed so that you can easily insert one into the computer when you need it, and then remove it. See ”Using the Flex-Bay” on page 29 for information on installing the DVD-ROM drive into the computer.

DVD Notes:
A DVD player is a factory option and if you ordered this option you will have to install the provided DVD software to view the DVD Title.

1. Press the button on the CD-ROM or DVD-ROM drive, and the tray slides out. (Do not lean on the tray; because it will not support much weight.)

CD/DVD Drive Warnings:
Do not place reflective objects other than the CD/DVD disks in the disk slot because of possible hazardous laser emissions. The laser beam used in this CD/DVD-ROM drive is harmful to the eyes. Do not attempt to disassemble the CD/DVD-ROM drive. Refer servicing to your authorized service center.

Do not touch the CD/DVD lens, doing so may damage the device.

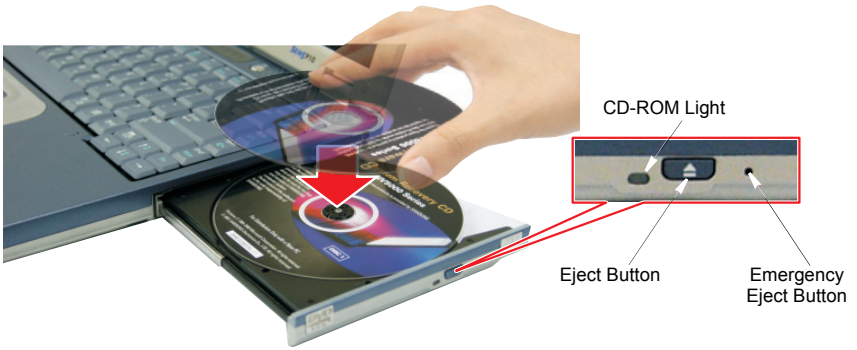
CD/DVD Precautions:
The tray may be stuck, in which case straighten out a paper clip, insert it into the Emergency Eject hole in the front of the CD/DVD-ROM and push it until the tray ejects.

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.

To clean a CD/DVD, wipe from the center outwards with clean and dry cloth.

Remove the CD/DVD when the drive activity LED is off.

2. Insert a CD/DVD, label side up (or remove a disc, if you have finished using it).
3. Push the tray in gently to close the drive tray.



Install and/or start a CD-based program as you would run a program on a floppy disk.

Using the Memory Stick (Factory Option)

The Memory Stick is a factory option that will increase your computer storage capacity as well as increase data portability. The Memory Stick may used in many types of equipment such as digital cameras and PDAs for example.
Memory Stick and MEMORY STICK TM are a trademarks of the Sony Corporation.

Memory Stick Support
The Magic Gate model is not currently supported.

Inserting the Memory Stick

To insert the memory stick proceed as follows:

Ensure you Insert the Memory Stick into the slot with the correct orientation (Name Up) so that the Memory Stick will operate properly and be recognized by the computer.

1. Slide the Memory stick into the slot until you feel the first latch catch.

2. Then push the Memory stick in until it clicks into place.

Using the Memory Stick

The Memory Stick is used the same as the FDD drive on your computer but with much larger capacity, currently up to 128MB.

Formatting the Memory Stick
The Memory Stick may need to be formatted before use, if so insert it into the slot and format it the same as the FDD Drive.

Protecting Data on the Memory Stick
To prevent overwriting/deleting your data in the Memory Stick, move the slide lock to the "Lock" position.

to see the contents of the Memory Stick:

1. Double-click "My Computer" on the desktop, the My Computer window opens.
2. Double-click the icon in the *Devices with Removable Storage* section of the window.

Removing the Memory Stick

To use the Memory Stick proceed as follows:

Ensure any operations using the Memory stick have completed before you remove it. Otherwise you will corrupt your data.

1. Push the Memory Stick in until it clicks and release.

2. The Memory Stick will pop out ~ 1 cm and then you can slide it out.

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

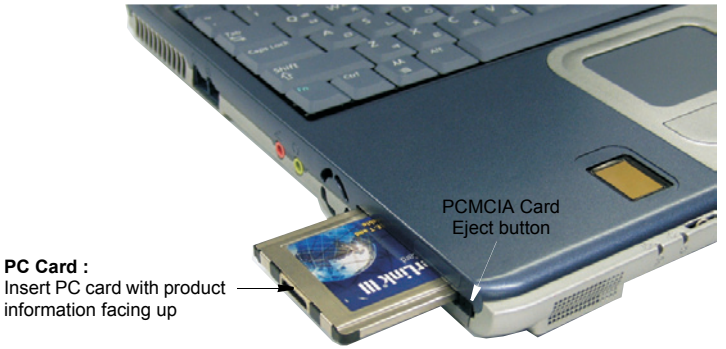
To maintain your PC Cards, follow these guidelines:

- 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.



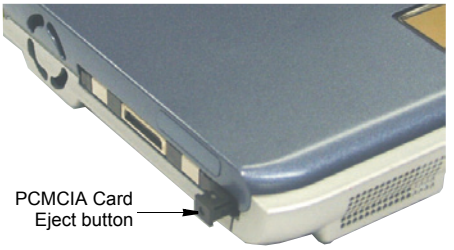
Windows automatically assigns computer resources (such as communication ports and memory addresses) to a PC Card installed in your computer.

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.

MP3/CD Player (Factory Option)

The MP3/CD Player 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 MP3/CD Player operate as follows:

Button	Name	Function
	Volume Down	Decreases speaker volume when MP3/CD Player is on.
	Volume Up	Increases speaker volume when MP3/CD Player is on.
	MUTE	Press the **<Volume Down+Volume Up>** buttons simultaneously for ~ 1 sec. to mute the sound.
	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.
	MP3/CD Player 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 MP3/CD Player buttons.
	Unlock	Press the **<MP3/CD Player Power CD Play/Pause+Volume Down>** buttons simultaneously for ~ 3 sec. to unlock the MP3/CD Player buttons and energize the MP3/CD Player.

Using the MP3/CD Player

Play an Audio CD

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

MP3/CD Player Power Buttons:
If a CD-ROM device is not in the flex-bay, the MP3/CD Player power button will not energize the MP3/CD Player player.

Computer Button Operation:
All computer and SENS keyboard buttons are non functional while MP3/CD Player is operating except the **Computer Power Button**. To use the MP3/CD Player buttons while the system is on, you must start the Windows media player.

2. Press the **MP3/CD Player** 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 MP3/CD Player button bar.
4. Insert a Audio CD into your CD-ROM drive label side up.
5. Press the button on the MP3/CD Player.

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 MP3/CD Player power button for ~ 3 seconds to turn off the MP3/CD Player 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 & Home Theater System (S/PDIF Port)

This product supports 5.1 channel output, which is a basic function for home theater systems and DVD drives. It provides 3D surround sound and a vivid screen.

Home theater system usually consists of a TV, DVD, 5.1 channel speakers, and a digital amplifier to provide a high-resolution vivid (MPEG2) picture and 3D surround sound (Dolby 5.1 or DTS). With a home theater system, you can enjoy the same vivid picture and sound in your home that you would in a movie theater.

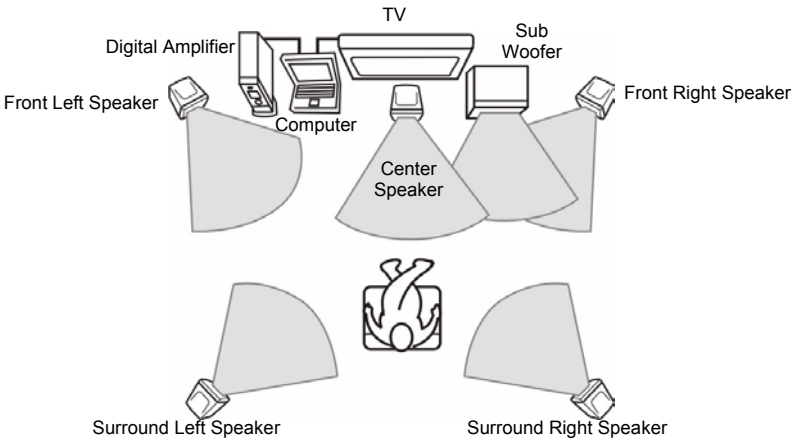
You will need the following to enjoy a home theater system:

- 5.1 channel speaker system / Digital amplifier (Purchased separately).
- DVD drive and DVD Program (Option).
- S/PDIF cable (Option)

Setting Up Your Home Theater

1. Connect the digital amplifier to the S/PDIF port of your computer.

2. Connect the speakers to the digital amplifier.



If your computer supports a TV-Out port, you can connect and enjoy a large screen.

After connecting the TV, you will need to select the TV as the display device using the Windows Display Properties window.

After making all connections, ensure you enable S/PDIF:

1. Enable S/PDIF in Windows.
2. Enable S/PDIF in the DVD program.

When purchasing a 5.1 channel speaker system, make sure it supports a S/PDIF (coaxial) port.

To use the headphones, change the setting to[Analog Audio] as described in the next “Using the S/PDIF Connection” section below.

Using the S/PDIF Connection

1. Use **<Fn+F8>** keys to set the S/PDIF port to digital.
2. Verify the S/PDIF port is set to digital by pressing the **<Fn+F2>** keys to see if the [**Digital Audio] is displayed. If not, repeat the <Fn+F2>** key combination again.

To use the headphones, change the setting to[Analog Audio] as described in the next “Using the S/PDIF Connection” section below.

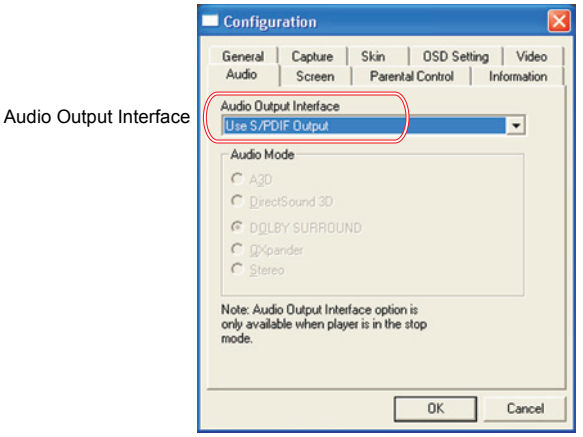
When purchasing a 5.1 channel speaker system, make sure it supports a S/PDIF (coaxial) port.

Enabling S/PDIF on the DVD Program

When using 5.1 channel speakers, you will need to install the “Power DVD” program on the DVD Installation CD (supplied Separately) and then set it up as described below:

1. Run the “Power DVD” program and click the settings button., the configurations window pops up.

2. On the “Audio tab”, change the *Audio Output Interface* setting to “Use S/PDIF Output”.



3. You are ready to enjoy your home theater system with your own DVD’s.

- If you have enabled S/PDIF in the DVD program, the computer speakers and headphone are not functional.
- To control the sound volume on your 5.1 channel speaker system, use the control on the digital amplifier. (Please refer to the speaker manual.)

Volume Control

The instructions below are for controlling speaker volume when the computer is on. To control speaker volume when the MP3/CD Player only is on see “MP3/CD Player (Factory Option)” on page 39.

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^{o}C or over 45^{o}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

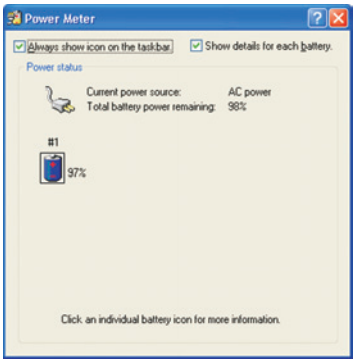
Battery life is affected by factors such as the power-management settings in System Setup, the applications you use, and the brightness settings of the LCD. Under normal usage, the battery charge lasts approximately 2.5 hours.

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>**. 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

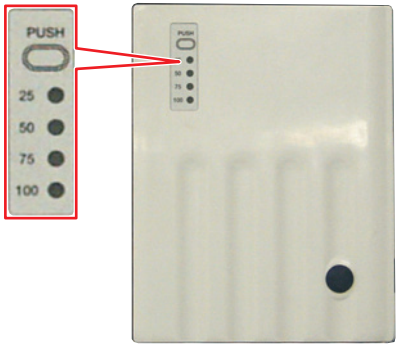
Wireless LAN Off

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>** and hold until the System Setup screen appears.

Table 3. 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 4. System Setup Navigation Keys

Navigation Key	Function
<F1>	Displays the General Help window.
<Esc>	Exits the current menu.
<Up Arrow> or <Down Arrow>	Moves the cursor up and down between fields.
<Left Arrow> or <Right Arrow>	Selects different menus. Pressing the **ESC** key at the Main menu brings you to the Exit menu.
<Plus>	Scrolls backwards through the options for the highlighted field.
<Minus>	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 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>** to open **System Setup**.
2. Use **<Right Arrow>** to select the **Advanced CMOS Setup** menu.
3. Highlight the 1st Boot Device option with **<Up Arrow> or <Down Arrow>** 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.

If you enter your HDD password wrong two times, the correct password will not be recognized on the third attempt. Restart your computer and enter the correct password.

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>** to open **System Setup**.
2. Use **<Right Arrow>** 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 **<Down Arrow>** 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 **<Down Arrow>** 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.

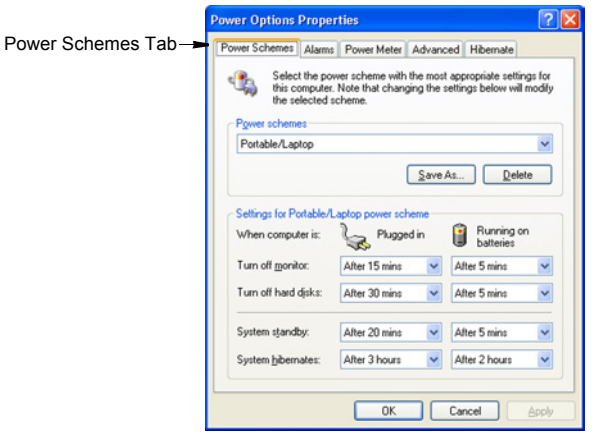
Standby vs. Hibernation
Standby unlike hibernation mode does not store unsaved information on your hard disk; it's stored only in the computer memory. If there is an interruption in power, the information is lost. So before putting your computer on standby, you should save your files.

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.



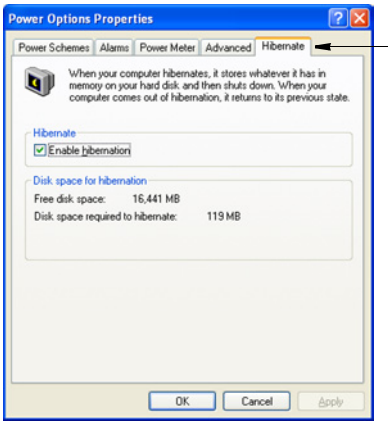
4. Select the time that you wish each of the following actions to occur in **Battery** and **AC power** mode.
   - Turn off monitor:
   - Turn off hard disks:
   - System standby:
   - System hibernates:

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.

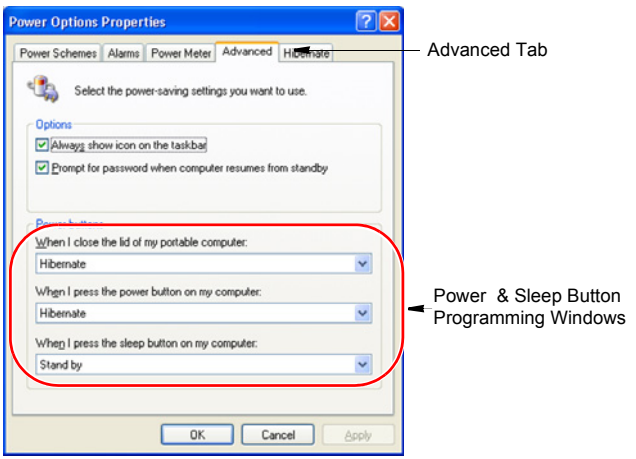
Rest Key:
The manual **<Fn+F5>** key combination will not activate Standby or Hibernate modes whilst you are playing a multimedia program or have an active USB device connected.

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 57 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+Up Arrow>** to increase the display brightness.
- Press **<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.

<Fn+F4 LCD/CRT> Key Combination
The **<Fn+F4>** Key Combination will not operate while you are playing a MPEG file or a Video CD.

Occasionally the video output in dual view mode becomes erratic.

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 television 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.

Changing Colour Depth and Resolution of 2nd Monitor

To change the colour depth and resolution of 2nd Monitor or TV:

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 on the display number of the monitor you wish to change.

TV Display Resolution Limitations
You can change the Colour Depth and Resolution within the limitations of the TV. Adjust as necessary to get a good display.

5. To change the colour depth, click the arrow next to the **Colour quality** palette and select the available colour depth you want.
6. To change the resolution, click and drag the slider under the **Screen resolution** until you select the available resolution you want.
7. Click **OK**.
8. Follow the prompts that appear on the screen.

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.

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

TV 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 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+F4>** 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

The Powerplay technology supplied with your graphics adapter to extend battery life.

POWERPLAY Use Limitations
Activating POWERPLAY will reduce your graphic card performance.

To activate POWERPLAY proceed as 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.
- MP3/CD Player
- 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:

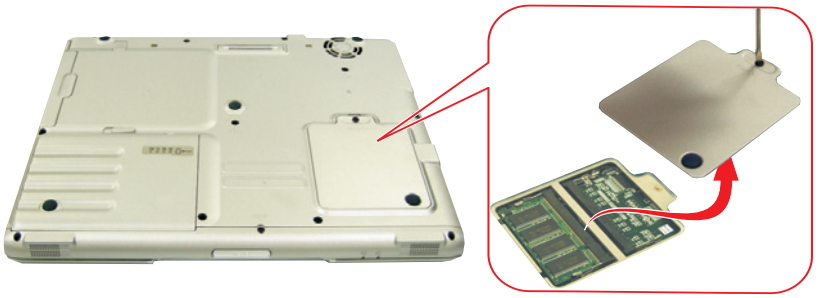
- Before you remove the memory module compartment door, turn off the computer, unplug the power cord, and remove the battery. Also, disconnect any peripheral devices.
- Before handling a memory module, discharge any static electricity by touching a grounded surface or using a grounding wrist strap.
- 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:

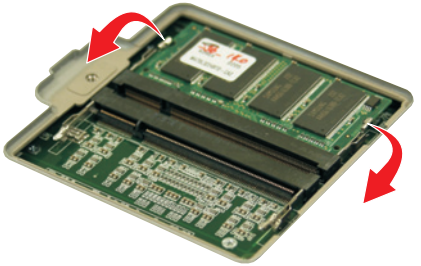
1. Turn the computer over so that the bottom faces up.
2. Using a screwdriver, remove the screw that holds the memory-module compartment door in place.



3. Grasp the edge of the door and pull the door off the chassis.

Memory Module Precautions:
When removing the module, pull on the plastic portion of the connector slots tabs only. Do not pull on the metal part of the tabs, this may damage the tabs.

4. Remove the installed module if necessary.
   a. Pull the tabs on the connector slot outward slightly, until the edge of the memory module pops up.



   b. Hold the memory module by the edges and pull it forward out of the compartment.

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^{0}) 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.

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.

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.

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.

FIR (Fast Infrared) Connection

FIR Technology Limitation
The transmitter and the receiver should be no more than 50cm apart.

BIOS Setup

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

1. At startup, press **<F2>** to open **System Setup**.
2. Use **<Right Arrow>** to select the **Advanced CMOS Setup** menu.
3. Highlight the I/O Device Configuration option with **<Up Arrow> or <Down Arrow>** keys and press **<Enter>.**
4. Highlight the FIR port with the **<Up Arrow> or <Down Arrow>** keys**.**
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
5. Double-click the IrDA Fast Infrared Port, the IrDA Fast Infrared Port properties window pops up.
6. 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.
7. 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 74 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.

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.

Problem	Action
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.
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.

Problem	Action
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)

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^{o}–35^{o}C
Ambient temperature, storage	-32^{o}–60^{o} 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.