Using Network Services

While the computer is connected to the network, you can use network services to share files, folders, and printers.

Network services are provided for the computers that are connected to the network through wired or wireless network connections. For details, see “Connecting Through a Wired LAN” on page 41 and see “Connecting Through a Wireless LAN (Option)” on page 48.

Sharing files or folders

This section describes how to share files and folders between computers connected to the network.

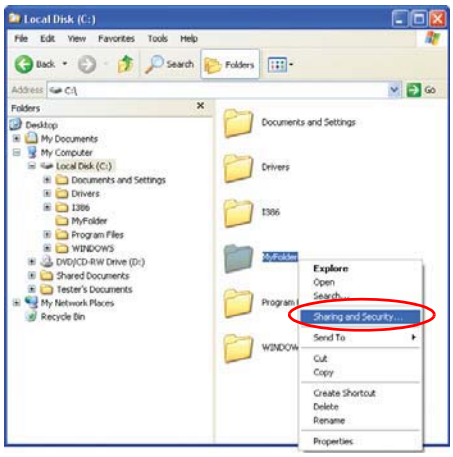
To share files, complete the following procedures:

- Step 1. Configuring the sharing of files and folders on a computer.
- Step 2. Accessing shared files and folders from another computer.

When a file or folder is shared, anyone connected to the network can open and delete the shared file or folder.
Configure a file sharing network only when the network is secure, and do not share important data.

Step 1. Configuring Sharing

1. Right-click the target file or folder to share in My Computer, and select **Sharing and Security**.



2. Click 'IF you understand the security risks but want to share files without running the wizard, click here'.

It has the same security effect as that of the 'Network Setup Wizard'.
This screen does not appear if Internet Sharing Network Wizard has been installed in the computer-to-computer wireless network environment.

3. Select 'Just enable file sharing', and click **OK**.
4. In the 'Network sharing and security' field, select 'Share this folder on the network', enter the share name, and click **OK**.

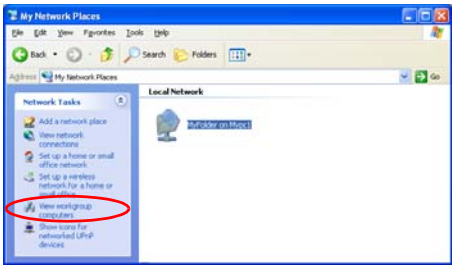
Be cautious when selecting 'Allow network users to change my files' since other network users can change the files in the shared folder.

The file and folder sharing configuration has been completed.

Step 2. Using Shared Files or Folders

This section describes how to access shared files or folders if your computer is a member of the same workgroup.

1. Double-Click **My Network Places** of desktop under Other Places.
2. Click '**View workgroup computers**', and click the desired computer to access the shared file.



If your computer is a member of another workgroup:

1. Click Other Places > Microsoft Windows Network.
2. Click the desired workgroup.
3. Click the desired computer to display the shared files or folders.

Sharing Printers

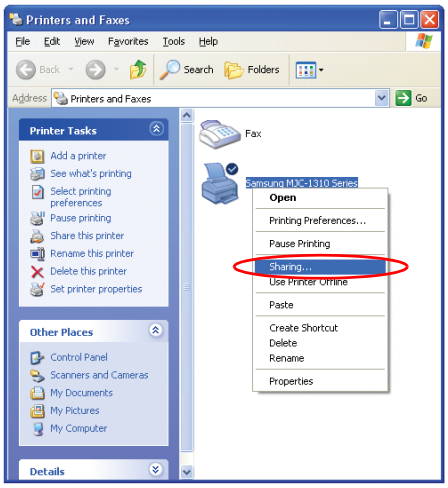
This section describes how to share a printer between computers connected to a network.

To share a printer, complete the following procedures:

- Step 1. Configure printer sharing in the computer connected to the printer.
- Step 2. Add and use the shared printer in other computers on the network.

Step 1. Configuring Printer Sharing

1. From the computer connected to the printer, click **Start > Printers and Faxes**.
2. Right-click the printer you want to share, and click **Sharing**.

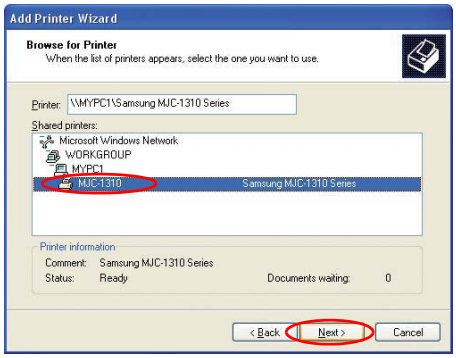


3. Select 'Share this printer', enter a share name for the shared printer, and click **OK**.
4. In the Printers and Faxes window, you will find the printer icon has been changed to another icon on a hand.

Step 2. Adding and Using a Shared Printer.

1. From a different computer that wants to use the shared printer, click **Start > Printers and Faxes**.
2. Click **Add a printer**.
3. In the Add Printer Wizard, click **Next**.
4. Select 'A network printer, or a printer attached to another computer', and click **Next**.

5. Select 'Browse for a printer', and click **Next**.
6. Select the workgroup or computer, select the desired printer, and click **Next**.



If you cannot find the desired printer, try again after a while.

7. Read the warning about a shared printer, and click **Yes** to install the shared printer.
8. Select **Yes** for 'Do you want to use this printer as a default printer?', and click **Next**.
9. Click **Finish**.
10. When the printer sharing configuration has been completed, the shared printer appears in the Printers and Faxes window.

Now you can print using the shared printer even if your computer is not directly connected to a printer.

Using Bluetooth Devices (Optional)

You can transfer files between Bluetooth devices, use the Internet, and construct a Personal Area Network. In addition, you can use a wireless keyboard, wireless mouse, and a wireless printer that have the Bluetooth function.

You can only use the Bluetooth communication function between devices (computers, mobile phones, PDAs, printers, etc.) which support Bluetooth.

The Bluetooth function is provided through the Bluetooth software included in Microsoft Windows XP SP2.

Bluetooth Device Help

For more detailed procedures on using the Bluetooth function, click **Start > Help and Support > Network and the Web > Networking > Wireless networking > Bluetooth devices**, and view the descriptions.

The following functions are provided by the Bluetooth software.

- **Transferring files**

  You can transfer files between Bluetooth devices such as computers, mobile phones, PDAs (Personal Digital Assistant), etc.

  For more detailed procedures on transferring files, refer to "**Send and Receive files to/from a Bluetooth device**" of the Bluetooth On-line help.

- **Using the Internet via a mobile phone**

  You can connect to the Internet through your mobile phone after connecting it to a computer which is connected to the Internet.

  For more detailed procedures on using the Internet, refer to "**Install a Bluetooth mobile phone**" and "**Create a Bluetooth connection to the Internet using a Bluetooth mobile phone**" of the Bluetooth On-line help.

- **Using a wireless keyboard and mouse**

  You can use a wireless keyboard and mouse which have the Bluetooth function.

  For more detailed procedures on using a wireless keyboard and mouse, refer to "**Install a Bluetooth keyboard**" and "**Install a Bluetooth mouse**" of the Bluetooth On-line help.

- **Using a wireless printer**

  You can use a wireless printer if the printer supports Bluetooth HCRP (Hardcopy Cable Replacement Profile).

  For more detailed procedures on using a wireless printer, refer to “Install a Bluetooth printer” of the Bluetooth On-line help.

- **Using a Personal Area Network**

  You can exchange files between computers by connecting to the shared folder of another computer via a Personal Area Network.

  For more detailed procedures on using the Personal Area Network, refer to “Join a personal area network”, “Provide a name for your computer on a personal area network” and “Bluetooth personal area networking overview” of the Bluetooth On-line help.

- **Sharing data with a Palm Hand-held PC or a Pocket PC**

  You can transfer data to and from a Palm Hand-held PC or Pocket PC.

  For more detailed procedures on sharing data, refer to “Installing a Palm handheld computer using Bluetooth technology” and “Installing a Pocket PC using Bluetooth technology” of the Bluetooth On-line help.

Precautions

- Please do not send files larger than 60MB when transferring files through a File Transfer Function or Personal Area Network. Sending a file larger than 60MB may fail due to an unstable Bluetooth connection.
- When using the Personal Area Network function, other computers may not appear in My Network Places. If you cannot see other computers after 5 minutes, click “Start > Search > Computers or people” and enter the name of a computer and search for it.
  For procedures to view the name of your computer, refer to “Provide a name for your computer on a personal area network” of the Bluetooth On-line help.

Infrared Communication

Your computer may have infrared port. Using the infrared port, you can transfer data to computer, printer, camera and other devices through infrared communication.

Restrictions in Use
For infrared communication, the devices should have infrared communication capability, and should be located within 1 m of each other. In addition, there should be no obstacle between the infrared ports of the target devices.

To establish infrared connection

The procedures to communicate with another computer through infrared port are described below.

1. Locate the target computers so that the infrared ports face each other.
2. When infrared communication is available, a beep sounds and **Send files to another computer** icon ( ) appears on the desktop.

You can now transfer data through infrared communication.

To transmit data through infrared communication

The procedures to transmit files to another computer are described below.

1. Connect the target computers through infrared communication.
2. Drag a file over the **Send files to another computer** icon( ) in one of the computer.
3. [Wireless Link] dialog box appears on the other computer screen. Click **Yes**.
4. When the file transmission is completed, click **Close** to close the [Receiving Files] dialog box.

To change infrared communication configuration
To change the folder to save the received files, or to receive images from a digital camera, click **Start > Control Panel > Printers and Other Hardware > Wireless Link** and change the configuration.

If you cannot use infrared communication

1. Check BIOS setup.

a. Start the computer, and press **<F2>** to enter System Setup.
b. Select **I/O Device Configuration** in the **Advanced** menu, and press **<Enter>**.
c. Select **Infrared Port**, and set the item to **Enabled** by pressing **<F5>** or **<F6>**.
d. Save the configuration, and exit the Setup.

2. Check Windows configuration.

a. Click **Start > Control Panel > Performance and Management > System > Hardware** tab **> Device Manager**.
b. Double-click the “Infrared device”, and then double-click “IrDA Fast Infrared Port” item.
c. On the **Advanced** tab, select “Infrared Transceiver A” in the Properties field, then select “HP HSDL-2300/3600” in the Value field.
d. Click **OK**.

Customizing Your Computer

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 malfunction or "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 2. System Setup Menus

Menu	Function
Main	Changes the basic system.
Advanced	Configures advanced features on your computer.
Security	Enables security features, including passwords.
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 3. System Setup Navigation Keys

Navigation Key	Function
<F1>	Displays the General Help window.
<Esc>	Exits the current menu.
< ↑ > or < ↓ >	Moves the cursor up and down between fields.
< ← > or < → >	Selects different menus. Pressing the <**Esc>**key at the Main menu brings you to the Exit menu.
<F5>	Scrolls backwards through the options for the highlighted field.
<F6>	Scrolls forward through the options for the highlighted field.
<F9>	Sets the parameters for the current menu to their default values.
<F10>	Save changes and exit system setup.
<Enter>	Executes commands or opens a submenu.

Changing Booting Priority

You can select the booting priority among the devices such as the hard drive, CD-ROM drive, etc. The following example describes how to configure the hard drive as the first booting device when the CD-ROM drive is configured as the first booting device by default.

1. Select the **Boot** menu in System Setup.
2. Press **<Enter>** on **Boot Device Priority** item.
3. Use < ↓ > key to move to the **Hard Drive** item, and press **<F6>** until it is at the very top.
4. Press **<F10>** to save the changed configuration, and exit System Setup.
   Now you can boot the system with the hard disk drive as the first booting device.

Configuring the Password

Setting the Supervisor Password

By configuring a supervisor password, you can restrict system access to authorized users only.

Do not lose or forget your password. If you have forgotten your password, contact the Samsung service center.

1. Select the Security menu in the System Setup. To enter System Setup, see “Starting System Setup” on page 71.
2. On the **Set Supervisor Password** item, press **<Enter>**.
3. Enter a password, press **<Enter>**, re-enter the password for confirmation, and press **<Enter>** again.
4. When a message confirming the password configuration appears in the [Setup Notice] window, press **<Enter>**.

Setting the User Password

You can configure user passwords so that other users can use the system.

Before configuring a user password, a supervisor password must have been configured.
Users can start the system with their user password, but cannot enter into the System Setup.
Deactivating the supervisor password also deactivates the user password.

On the **Set User Password** item, press **<Enter>**, and complete step 3-4 of "Setting the Supervisor Password".

Activating the Booting Password

Before activating the booting password, the supervisor password must have been configured.

Set the **Password on boot** option to [Enabled].

From now on, system booting will not proceed without the password.

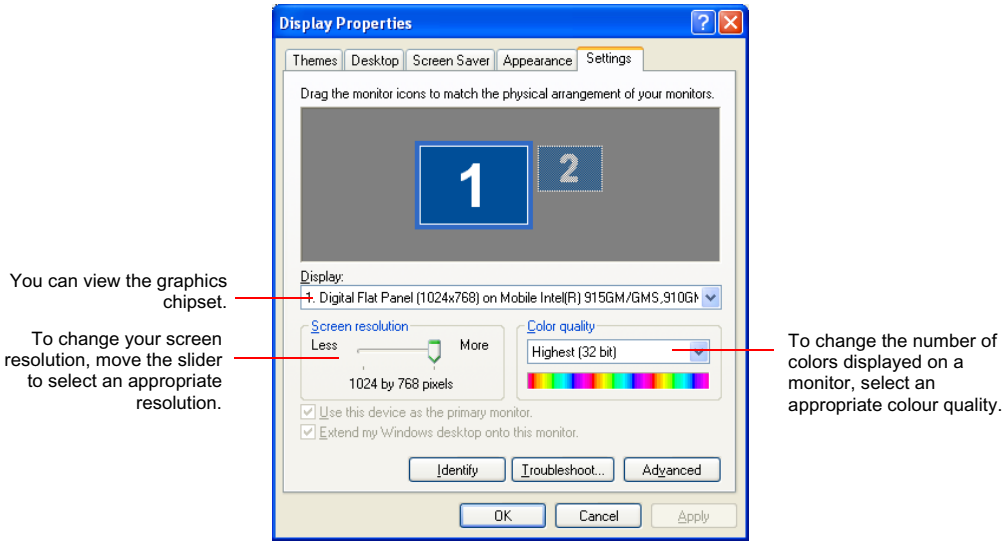
Deactivating the Password

1. On the password to delete, press **<Enter>**. (e.g. supervisor password)
2. Enter the current configured password, and press **<Enter>**.
3. Leave the 'Enter New Password' and 'Confirm New Password' field empty, and press **<Enter>** to deactivate the password.

Configuring Resolution and Color Depth

Screen resolution is the number of pixels displayed on the screen. High resolution makes the overall screen area large, although individual items appear small. Color quality is determined by the number of bits used to represent a pixel on the screen. High color quality displays more number of colours on your screen.

1. Select **Start > Control Panel > Appearance and Themes > Change the screen resolution**.
2. Make changes on the **Settings** tab of the [Display Properties] dialog box.



The Graphics Chipset

- For **P40 model**, either an ATI or Intel Graphics Chipset is installed. You can view the installed graphics chipset in the Display Properties window.

. **ATI Graphics Chipset** : ATI MOBILITY RADEON X300/X600 Chipset or ATI MOBILITY RADEON Graphic Chipset

. **Intel Graphics Chipset** : Mobile Intel(R) 915GM Express Chipset

3. When you have completed configuration, click **Apply**.

For XGA models, configuring the screen resolution to 1024x768, and the colour quality to Highest (32 bit) is recommended.

For SXGA+ models, configuring the screen resolution to 1400x1050, and the colour quality to Highest (32 bit) is recommended.

Using External Display Devices(ATI Chipset model, (p 75))

Using external display devices such as monitors, projectors, TVs, etc allows you to view screen images alternatively or simultaneously on each device. Additionally, you can extend the screen onto two display devices to use a larger workspace. Using external display devices is especially useful when you are giving a presentation or watching a movie through your TV.

Switching Display Devices Using the Shortcut Key

You can watch the screen through either the LCD or an external display device, or you can even watch the screen through both the LCD and an external display device simultaneously.

1. Connect the external display device (e.g. a monitor or a projector) to the corresponding port of the system. To connect a TV, connect the TV to the TV output port of the system.

Connecting to a TV

To connect to a TV, connect the TV-Out port of the system and the S-Video port of the TV with the S-Video cable. (The cable is not included and needs to be purchased additionally.)

Connect to a DTV

To connect to a DTV, connect the TV-Out port of the system and the Component port of the TV output using the Dongle cable and the Component cable (the Dongle cable is not included and needs to be purchased additionally).

Connect the Dongle cable to the TV-Out port of the system and the Component cable.

Dongle cable - The Dongle cable is not included and needs to be purchased additionally.

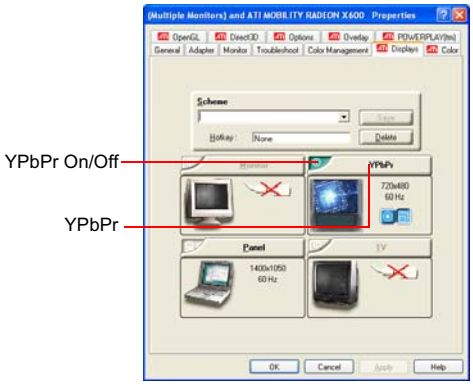
For ATI chipset models, you have to change the configuration as follows after connecting the cable.

1. Click **Start > Control Panel > Appearance and Themes > Display**

2. Click the **Settings** tab **> Advanced**

3. Click the **Display** tab.

4. Select **YPbPr On/Off**.



5. Click **Apply**.

6. Click **YPbPr**.

7. Select the appropriate TV type in the YPbPr Properties window and Click **Apply.**

2. Press the **<Fn>+<F4/ 🖥|▢>** keys. Provided that an external display device is connected, the display option changes in LCD > CRT > LCD+CRT order whenever the **<Fn>+<F4/ 🖥|▢>** keys are pressed.

Provided that multiple external display devices are connected, the display order is LCD > CRT > TV > LCD+CRT > LCD+TV > LCD whenever the **<Fn>+<F4 / 🖥|▢>** keys are pressed.

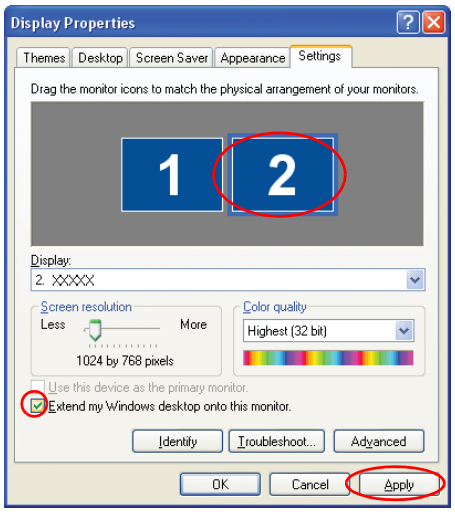
In the DOS environment, the screen is output to LCD and CRT in this sequence. The TV function is not supported. In full screen DOS mode of Windows, you cannot use the hot keys.

Using Dual View to View Extended Screen

You can expand the screen into two display devices and work conveniently in separate workspaces.

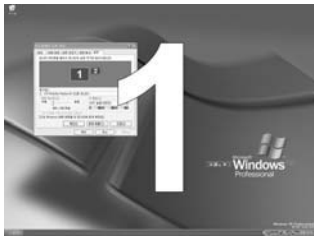
In Dual View mode, you can select the screen resolution and colour quality for each display device, as if there were two separate graphics cards.

1. Connect the external display device (e.g. a monitor or a projector) to the corresponding port of the system. To connect a TV, connect the TV to the TV output port of the system.(”Connecting to a TV” (p77))
2. Press touchpad right button on the desktop, click **Properties**, and then click the **Settings** tab.
3. Click the monitor '**2**' icon, select the 'Extend my Windows desktop onto this monitor' check box, and then click **Apply**.



4. When the configuration is complete, click **Identify** on the left side of Troubleshoot. The primary display device(the LCD) is indicated as '**1**', and the

secondary display device is indicated as '**2**'. Now you can view the screen through two monitors.



1 : Primary

2 : Secondary

When you use Dual View, configuring the LCD as the 'Primary' monitor is recommended.

If the screen of the secondary display device is displayed at 640x480 pixels, with 256 colours, change the settings to the desired screen resolution and colour quality in the [Display Properties] dialog box.

Deactivating Dual View Mode

Click the monitor '**2**' icon, clear the 'Extend my Windows desktop onto this monitor' check box, and then click **Apply**.

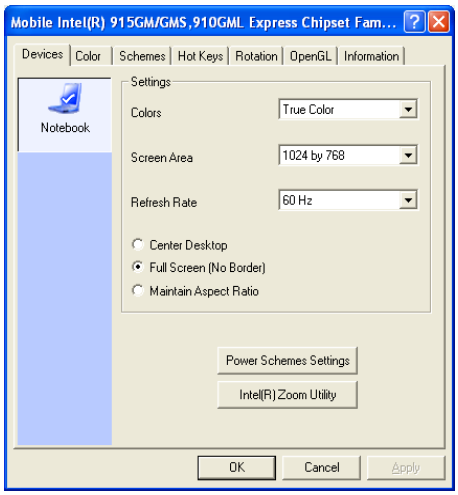
To move a window between display devices in Dual View mode
Click the title bar of the window in the primary display device (1, the LCD), and drag it to the secondary display device (2). The window is moved to the secondary display device.

Using External Display Devices(Intel Chipset mode, (p 75))

Using external display devices such as monitor or projector, you can view the screen images alternatively or simultaneously. You can extend the screen into two display devices to use larger workspace.

Using external display devices would be especially useful when you are giving presentations or watching a video file.

1. Connect the external display device (e.g. a monitor or a projector) to the corresponding port of the system. To connect a TV, connect the TV to the TV output port of the system.("Connecting to a TV" (p77))
2. Right-click on the desktop, and select **Graphics Options > Graphics Properties**.
3. On the **Devices** tab, select your desired display device, and click **OK**. (The displayed device list is determined by the currently connected devices.)



Monitor	Displays on an external device such as monitor or a projector.
TV	You can only view the screen on the TV.
Notebook	Displays on the notebook LCD only.
Intel(R) Dual Display Clone	Displays the same screen on the notebook LCD, and an external device such as monitor or projector.
Extended Desktop	Extends the screen into the notebook LCD and an external device such as monitor or projector to use a 2 times larger workerspace.

To switch display devices using shortcut key

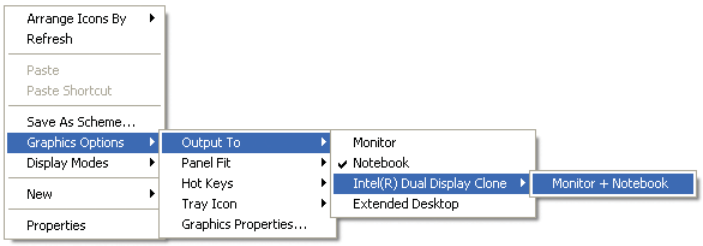
You can switch display devices easily by pressing <Fn>+<F4/> shortcut key.

Provided that multiple external display devices are connected, the display order is LCD > CRT > TV > LCD+CRT > LCD+TV > LCD whenever the **<Fn>+<F4 />** keys are pressed.

You cannot use the <Fn>+<F4/> shortcut key in the full screen mode DOS prompt.

To change display devices easily

Right-click on the desktop, and select Graphics Options > Output To to change the current display device easily.



To change the screen resolution and color quality

If the screen does not appear clearly, please try to change the screen resolution and colour quality. In the figure of step 3, select a device, and configure the color, screen area, and refresh rate.

When using an LCD and a wide monitor, the LCD and monitor screen sizes may differ. To make them the same size, select ‘Apply the same settings to the 2 monitors’.

System Management

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, whereby 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.

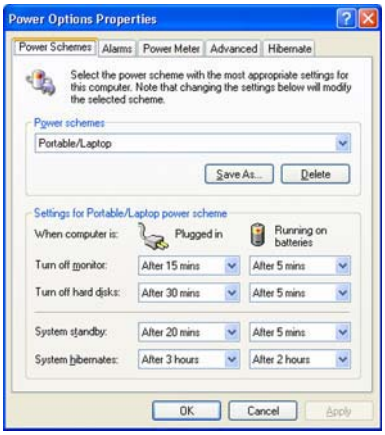
Standby vs. Hibernation
Hibernation is a state where the contents of memory are stored in a special file on the hard disk, and Standby simply keeps a small holding current through the memory to keep the data. You are more likely to sustain loss of data in Standby mode so it is recommended to save all open files before entering Standby.

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.



By default, the power scheme is configured to SAMSUNG mode. SAMSUNG mode extends the battery life and optimizes the Intel Speedstep function. Since the CPU power consumption is automatically optimized to conserve power when the computer is operating on battery power, an application may be executed slower than when it is operating on AC power.To use SAMSUNG mode after reinstalling Windows, install the PowerCFG program using the system software CD.

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

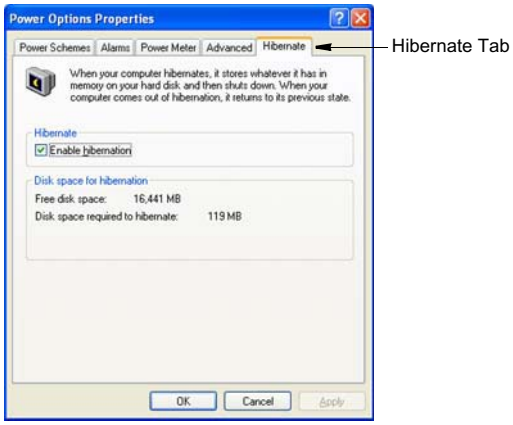
Turning off the monitor and HDDs will save a substantial amount of battery power, therefore when in battery only mode select the shortest time practical.

You can schedule your system for shutdown, hibernation or standby modes by clicking System > Computer Scheduling of the EasyBox program (p32).

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.

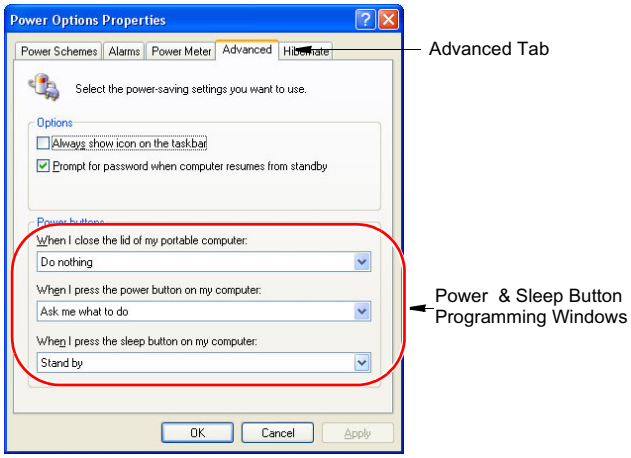
Rest Key:
The manual **<Fn+**Esc/ **>** key combination will not activate Standby or Hibernate modes while you are playing a multimedia program or have an active USB device connected.

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 <Esc/ > key. Also select the action (**Do nothing/Standby/Hibernate**) associated with closing the computer lid.

The "Rest" key is assigned to the <Fn+Esc/ > key combination. See "Basic Power Management Schemes" on page 83 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 Battery

Please refer to the following instructions when running the computer on battery power without connecting the AC power.

Please read the instructions on the battery before use.

Please refer to the system operation environment (p131) of this manual and operate and store the battery at room temperature.

Ejecting and Attaching Battery

1. Shutdown the system and close LCD.
2. Put the computer upside down on a flat surface.
3. While holding the battery latch to the Unlock position( ), remove the battery.

4. To attach the battery, place the battery into the system. Check that the battery latch is in the Lock position( ).

Monitoring the Battery Charge

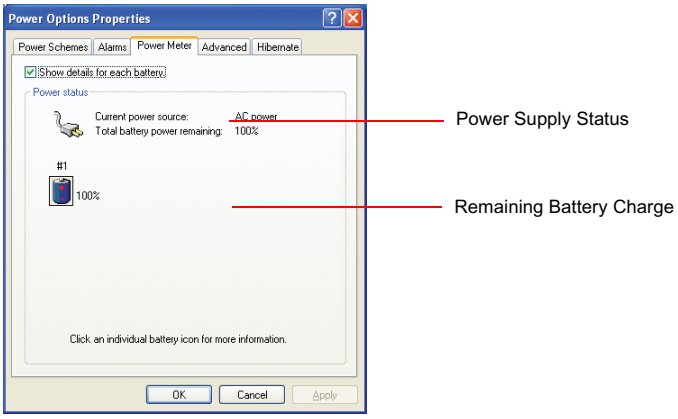
You can view the battery charge status by completing the following procedures.

To use the shortcut key to view

Press the <Fn>+<F2/ ▭> key combination on the keyboard and then the current power source and the current remaining battery charge are displayed at the top left of the screen.

To view through the Control Panel

Select **Start > Control Panel > Performance and Maintenance > Power Option > Power Measure** tab.Then you can view the current power source and the current remaining battery charge.



Using the battery
Battery is an expendable supply, so when you use it for a long time, the capacity/battery life is shortened. If the battery life is reduced to under half of the initial time, we recommend that you purchase a new battery to use.

Battery Warning
You will hear an alarm when the remaining battery charge is under 10%. Connect the power cable or turn off the computer and install a fully charged battery.

When the remaining battery charge is under 3%, the computer automatically saves current work and turns off. This may be different according to the settings in **Control Panel > Performance and Maintenance > Power Options > Alarms** tab.

When turning on the When turning on the system when the remaining battery level is below 5%

turned on the system

The system will shut down during the start up process to prevent any loss of data. Connect the AC adapter, and then turn the system on.

Using the Battery Manager

Using the Battery Manager program, you can change the configuration of the LCD brightness, the sleep timer and system devices, and can extend the battery usage time to maximum.

Click on **Start > All Programs > Samsung > Samsung Battery Manager > Samsung Battery Manager.**

- **Maximum Battery Saving Mode** : This mode extends the battery usage time to maximum. This may degrade the performance of the system.
- **Normal Mode** : This mode extends the battery usage time to normal.
- **Maximum Performance Mode** : This mode provides maximum system performance at the cost of the battery. Therefore, the battery usage time may be reduced in this mode.

- **Custom Mode** : In this mode, a user can configure a detailed configuration to save the battery usage time. A user can adjust the LCD brightness, select the time before the system sleeps, select the screen color quality and select the graphics mode. A user can also turn the wireless LAN function on and off.

The Screen Color Quality, Graphics Mode and Wireless LAN in the Detailed Configuration represent the current configuration. Selecting the Set button applies the configuration even without pressing the 'OK' or 'Apply' button.

Controlling the LCD Brightness

If you restart the system after changing the LCD Brightness in Custom Mode, the LCD brightness is changed to its default value. To keep the brightness value configured in Custom Mode, configure the [Brightness Control Mode] item to 'User Control' in the [Boot] menu of the System Setup. (See P. 6-2.)

If it is configured to [Auto], the LCD brightness is changed to level 8 when the power is supplied by the AC adapter, or to level 1 when the power is supplied by the battery according to the default brightness values.

Power Saving Effect

This shows the battery usage time after changing the system configuration in 10 levels for Maximum Battery Saving Mode and in 5 levels for Maximum Performance Mode.

When Running a Game or Multimedia Application

A game or multimedia application may not work smoothly in Maximum Battery Saving Mode. It is recommended selecting at least Normal Mode in this case.

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 **Boot** menu.
4. Press **<Enter>** to start calibration process. The calibration usually takes 3 to 5 hours depending on the current battery charge.
5. When the calibration process is complete, recharge the battery fully.

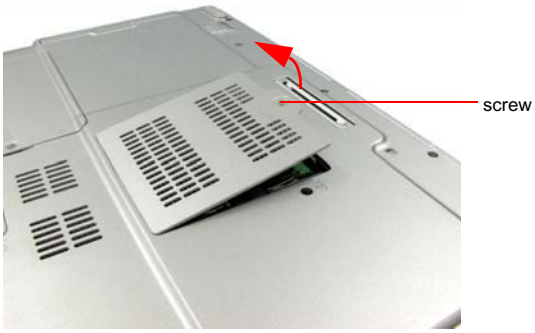
Upgrading Memory

This computer has one or more 128 MB or 256 MB memory module(s). Two memory module sockets are provided so that you can replace memory or install an additional memory module.

Removing the memory module

Before removing/replacing the memory module, turn the system off completely. Do not replace the memory module when the system is in Standby/Hibernate mode.

1. Using a screwdriver, open the memory module compartment cover on the bottom of the computer.



2. Push the memory module tabs outward to pop the memory module upwards. Carefully pull the module out at an angle of about 30°.

Adding a memory module

1. Align the new memory module connectors accordingly and slide it into the slot at a 30° angle.

Ensure the notch on the memory module corresponds with the notch on the socket.

2. Push the memory module in until the module clicks into place. If the memory module is not fixed completely, gently push the memory down while pressing the memory module tabs outward.

3. Close and fix the memory module compartment cover using a screwdriver.

Using the Security Lock Port

The security lock is a device used to physically 'fix' the system when using it in a public place. The locking device needs to be purchased separately. The shape and methods of use may differ depending on the manufacturer. Please refer to the manual provided with the security lock for proper use.

1. Connect a security lock cable to a fixed object.
2. While holding the security lock port lever to the left, connect the cable to the security lock port.

Any damage to the machine caused by using a locking / security device is not covered under warranty.

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.
- 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.

- To reduce the risk of ignition cause by small metallic object, such as paper clip or staples, moving around opening above keyboard, please lock the panel side with main enclosure during transportation.
- The Docking Station Device is not transportable device.

Travelling with Your Computer

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.
- Be prepared to turn off the computer during take off and landing.

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 you will not be using the computer for a long period of time (a month or more), you should discharge the battery completely then remove the battery from the computer. This extends the life of the battery.

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 99 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 ensure a virus is not affecting your computer.

To run Norton AntiVirus proceed as follows:

Click **Start > All Programs > Norton AntiVirus > Norton AntiVirus 2005**.

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 and Support.**

Frequently Asked Questions

To view FAQ's on your computer, please visit www.samsungpc.com.

Reinstalling Software

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

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

Questions and Answers

This section provides information on possible problems, solutions and other references for system use.

Windows Related

Q1 The system does not shutdown properly.

A When the system does not shutdown normally, press and hold the Power button until the system manually shuts off. If the Power-Saving Mode is configured into the Power button, press and hold for more than 4 seconds to shut the system off. When the system is turned on after such manual shutdown, Scandisk will run to check errors in the system.

Q2 The system freezes during program operation

A1 There is an error with the program currently being used. Press the <Ctrl>, <Alt>, and <Delete> keys simultaneously and click and Task in the [Windows Task Manager] window.

A2 There is an error with the Windows OS. Reboot the system by using the Power button.

Q3 The system enters rest mode when operating on battery power if the battery charge is too low.

A Connect the AC power immediately. Operating in rest mode for a long period of time may cause loss of data.

Display Related

Q1 The LCD screen is too dark or too bright

A Adjust the LCD screen brightness. Use the **<Fn>+<☼▼>**, **<Fn>+<☼▲>** keys.

Q2 The screen saver disturbs screen viewing during Media Player or video file operation.

A Unselect Tools > Options > Player > Allow screen saver during playback in the Media Player.

Q3 In DOS mode, changing the full screen DOS mode by pressing <ALT>+<Enter> key displays a broken image for a short period.

A The DOS mode which supports 2 Byte characters such as Korean and Japanese runs in graphic not in text mode. In this case, a broken image may be displayed while changing the video mode settings.

Q4 In the following cases, the screen blinks or displays noise for a short time: (Click on the Graphics related tab, change the Resolution, change the Display Device, remove the AC Adapter, restart the system and change the PowerPlay level.)

A In the above cases, the display devices may flicker for a moment or show some interference.

Q5 When I connect a projector, and change the setting to display screen image on both the LCD and the projector by pressing <Fn>+<F4 / ▣|▢> keys, screen is not displayed properly.

A Press <Fn>+<F4 / ▣|▢> keys once again.

Q6 The desktop momentarily appears as a broken image when zooming in or out of the Media Player screen when Media Player is running.

A Since zooming in or out of the Media Player screen changes the screen resolution, the desktop may momentarily appear as a 'broken image' during this operation.

Q7 A DVD or an MPEG file is only played on the LCD (ATI chipset model)

A When both the LCD and the CRT are being used simultaneously, video plays on one of them by default.

1. Right-click over the Desktop and select Properties.
2. In the [Display Properties] window, click the Settings tab > Advanced > ATI Overlay tab.
3. Select the Theater Mode option, and then configure the Overlay Display Mode to 'Theater Mode' or 'All The Same' and then click on Apply. Then you can view the video on both the LCD and CRT screens.

Q8 When I change the power source to the battery by removing the AC adapter or change the display device to CRT from LCD, I sometimes see a POWERPLAY warning message (ATI chipset models)

A The PowerPlay function is a new technology that extends the battery usage time. PowerPlay works only when the system is operating on battery power and using an LCD. When the PowerPlay function is disabled due to a changed operating environment, the PowerPlay function warning message may be displayed.

Q9 I cannot see the Taskbar on the Desktop when I use a projector (ATI chipset models)

A This happens because the project does not support 1400x1050 pixels. However the 15.0" SXGA+ LCD supports 1400x1050 pixels. In this case, change the system screen resolution to 1024 x 768 pixels (recommended).

Q10 The "Video mode not supported" or "Input signal exceeded" message appears for some older model TVs or monitors.

A This problem may occur when the TV or monitor does not support the current system resolution. Change the resolution of the external display device to 800x600 pixels or lower, or do not use Full screen DOS mode.

Q11 When I used an external display device with the SXGA+ system and disconnected the device from the system, the original screen resolution is not restored.

A In general, when using an external display device with low resolution, the LCD resolution is degraded while using the device and the original resolution is restored automatically after disconnecting the external display device. If the

original resolution is not restored when disconnecting the external display device, complete the following procedures.

Press <Fn>+<F4 / > keys to change the display device.

Otherwise, click the Ati icon on the taskbar, and change the screen resolution to the correct setting.

Q12 Pressing a function key in DOS mode does not display the OSD (status display icon) on the screen.

A The system does not support OSD display when in DOS mode.

Modem Related

Q1 I cannot hear the modem sound.

A1 Check that the telephone line is properly connected to the modem.

A2 Check that the modem driver is installed properly.

1. Click Start > Control Panel > Performance and Maintenance > System.
2. Select Hardware tab > Device Manager > Modems in the System Properties window, and check if there is a yellow exclamation mark on the installed modem icon. If there is, delete the modem device driver and reinstall the driver, because the yellow exclamation mark represents a not properly installed driver.
3. If there is no yellow exclamation mark, double-click the installed modem, and click Diagnostics tab > Query Modem in the Modem Properties window to diagnose the modem.

   No message in either of Command and Response in the Diagnostics tab means that the modem is not operating properly.

   Diagnose the modem again after restarting the system or reinstalling the driver.

   (You have to exit all programs using modem in the advance of diagnostics of the modem).

Q2 I cannot make a call using an extension line.

A In general, the dial tone of a PBX or a digital phone switching system is not a continuous one, unlike that of a trunk line.

Therefore, the modem may not make a call because the modem mistakes the dial tone from a PBX or a digital phone switching system as a busy tone.

In this case, complete the following procedures.

- Using an AT command

As an initialization command, use the command, ATX3.

Otherwise, enter the ATX3 command manually before making a call.

It can correct this problem by skipping the dial tone check step.

- Configuring the Modem through the Control Panel

1. Click Start > Control Panel > Network and Internet Connections.
2. Under See Also, click Phone and Modem Options.
3. In the Modems tab, select the installed modem, and click Properties.

4. In the Modem tab of the Modem Properties window, clear the 'Wait for dial tone before dialing' check box.
5. When the configuration is completed, click OK.

Q3 How do I use my modem when dialing from overseas?

A1 Check that the modem is correctly configured according to the current country. Because the values for communication may differ according to the country, you may not be able to connect via the modem due to an incorrect modem configuration.

1. Click Start > Control Panel > Network and Internet Connections.
2. Under See Also, click Phone and Modem Options.
3. In the Dialing Rules tab, click Edit.
4. In the General tab in the Edit Location window, select the current country from the Country/region radio box, specify the Area code, and click OK.

A2 Because the shape of the telephone plug may differ according to the country, you have to purchase and use the appropriate telephone plug for that particular country.

Q4 How do I receive a fax while the system is in power saving mode (Rest mode) (For Windows XP and 2000)?

A To receive a fax when the system is in power saving mode, and the operating system is Windows XP or 2000, configure the system as follows:

1. The automatic fax reception function of the fax program needs to be activated. (For more information, refer to the corresponding fax program manual.)
2. Click Start > Control Panel > Network and Internet Connections.
3. Under See Also, click Phone and Modem Options.
4. In the Modems tab, select the installed modem, and click Properties.
5. In the Power Management tab of the Modem Properties window, select the “With this device, exit the computer from stand-by mode” item and then click OK.

   The above setting enables the modem to turn on the system and receive a fax when in power saving mode.

Wired LAN Related

Q1 <Wake On LAN> function

A <Wake On LAN> is a function that activates the system in rest mode when a signal (such as ping or magic packet commands) arrives from network (wired LAN).

To use <Wake On LAN> function:

1. Select My Network Places > View network connections from the Desktop.
2. Click the right button on the touchpad over Local Area Connection, and select Properties.
3. Click Configure, and select Power Management tab. Select 'Allow this device to bring the computer out of standby', then click OK. Restart the system.
   - If the system in rest mode is activated when there is no received signal, use the system after disabling <Wake On LAN> function.
   - Connecting wired LAN while using wireless LAN may not execute <Wake On LAN> function. Configure wireless LAN to 'Disable' to use <Wake On LAN> function.

1. Click on **My Network Place> View network connections** on the Desktop.
2. Right-click over **Wireless Network Connection** and select **Disable.**

Q2 When I connected 100Mbps wired LAN and the computer exits standby/ hibernate mode, a message informing 10Mbps wired LAN connection appears.

A When the computer exits standby/hibernate mode, restoring the network takes about 3 seconds. When the network is restored, it operates in 100Mbps.

Wireless LAN Related

Refer to ”Connecting Through a Wireless LAN (Option)” (p48) for the basic uses of a wireless LAN.

Q1 The Wireless LAN device is operating properly, but I cannot connect to the Internet or to another computer.

This is due to an incorrect configuration, or a configuration error. Check the following check lists:

A1 If you are using a computer-to-computer (Ad Hoc) network connection, check that the name of the configured network (SSID) is correct. The network name (SSID) is case sensitive.

A2 If you are using a network key (encryption key), you have to use the same network keys for an AP (Access Point) or a computer-to-computer network (Ad Hoc). The network key of the AP is configured in the AP management program. Ask your network administrator or AP manager for more detailed information.

A3 Check that the device driver is properly installed. If the driver is not properly installed, you will find a yellow exclamation mark on the network icon by clicking Start > Control Panel > Performance and Maintenance > System > Hardware tab > Device Manager > Network adapters > Wireless LAN adapter. If there is a yellow exclamation mark, please reinstall the device driver with the system software CD.

A4 Referring to A2 of Q3, Check that the network bridge configuration is correct.

Q2 The signal strength is excellent, but I cannot connect to the network.

Even if the signal strength is excellent, the network connection may not operate properly if the TCP/IP properties are not properly configured, or the network key (encryption key) is incorrect.

A1 Check that the TCP/IP properties are configured properly. When you connect to an AP, click the Wireless Network Connection icon on the taskbar and select the Support tab. If the IP is not allocated properly, the IP address will be displayed as follows (e.g. 169.254.xxx.xxx).
If the network does not provide DHCP, you have to specify the correct IP address by asking your network administrator.
Even if the network provides DHCP, the server may not allocate an IP address to the client properly, and the client station cannot connect to the network.

A2 Referring to A2 of Q1, check that the network key is correct.

A3 Referring to Q4, check that AP is operating properly.

Q3 I cannot share an Internet connection.

A1 It may require some time to synchronize the computers to share an Internet connection after the Internet connection sharing configuration is completed. If you cannot share Internet connection even after a longer period, restart the computer.

A2 Check if the connection between the network adapters is configured to bridge. If there is a configured bridge connection between the network adapters through the network configuration wizard, remove the network bridge, and reconfigure the Internet connection sharing.

A bridge connection is created when you ran Network Setup Wizard from the [Network Connections] window, and selected both the internal connection adapter and another adapter in the wizard.

Q4 I cannot connect to the AP.

Check the Computer Settings

A1 Verify whether the wireless LAN function of the computer is on by doing the following. If the wireless LAN function is off, turn it on.

- For Windows XP, verify that the wireless network connection has been set to "Enable" in Start > Control Panel > Network Connections.

- If there is a Wireless LAN On/Off button, check if the wireless LAN button is pressed.

A2 Verify whether the same network key (encryption key) has been entered in both the AP and the computer.

The network key is an encryption key for encrypting data transmitted between the AP and the computer. It is recommended setting the network key manually.

Check the AP Settings

For the AP settings, refer to the User's Guide provided by the AP manufacturer.

A3 Verify whether the environment is suitable for using a wireless LAN.

The use of a wireless LAN may be restricted according to the environment and distance. Obstacles such as walls or doors affect the use of a wireless LAN. Install the AP in a high and open space 50cm from the wall and far removed from any other radio signal sources.

A4 Verify whether the AP is operating properly.

- When the AP is not operating normally, turn off the AP and after a short while turn it on again.

- Verify whether the AP's firmware is the most recent version. (Contact the AP manufacturer or the place where you purchased the AP for details of the AP firmware.)

A5 Verify whether the AP has been properly connected to the network.

Verify whether the network is operating normally by connecting the wired network cable, which has been connected to the AP, to your computer.

A6 Check the network key settings (encryption key).

When automatic code conversion (a passphrase function) has been selected and data communication is not functioning even with a normal wireless connection, it is recommended entering the network key (encryption key) manually.

A7 Check the AP settings as follows. (The following is recommended for a standard environment and thus may differ according to the specific wireless network environment.)

- When several APs are present simultaneously, check the channel setting for each AP. When different APs are using nearby channels, interference may occur between electronic waves. Set the APs' channels further apart from each other. (Ex: Ch1, Ch5, Ch9, Ch13)

- When an AP's SSID (Service Set ID) option is set to "Hide", you cannot search for that AP on the computer. We recommend canceling the "Hide" option for an AP. The SSID is a name for distinguishing one wireless LAN from another wireless LAN.

- It is recommended using Long Preamble. Preamble is a signal for data transmission synchronization. Short Preamble may be supported by some types of APs but may cause compatibility problems.

- It is recommended using a static IP.

- Since static channel selection is more reliable than auto channel selection, it is recommended setting a static channel.

Q5 In the Windows XP 'Available wireless networks' window, the Wireless Network Connection is displayed as 'Not Available'.

A1 When there is a Wireless LAN button, ensure that the Wireless LAN button is turned on.

A2 Check if there is additional program for a wireless LAN connection installed. Windows XP supports wireless LAN connections through the Wireless Zero Configuration (WZC) service. Therefore, an additional program for wireless LAN connection is not required, unless the network requires a specific program. However, installation of some wireless LAN related programs may sometimes

disable the [View Available Wireless Networks] window supported by WZC service. Exit the wireless LAN related program then check whether the window is enabled.

A3 Initialize the device driver.
Click Start > Control Panel > Performance and Maintenance > System > Hardware tab > Device Manager > Network adapters, and select the wireless LAN adapter. Right-click the network adaptor and select 'Disable'. Then right-click over the network adaptor and select 'Enable' after a short wait to check that the device is operating properly.

A4 Right-click the My computer icon, and select Manage. When the Computer Management window appears, double-click Services and Applications on the left, and then click Services from the sub menu tree. Select the Standard tab in the right pane, double-click Wireless Zero Configuration and check that Startup Type is configured to Automatic, and the Service status is Started.

A5 In the case of Windows XP, click Advanced in the [Wireless Network Connection] dialog box (see ”Connecting to an Access Point (AP)” (p49)) and make sure that 'Use Windows to configure my wireless network settings' is selected.

This may happen when a third-party wireless network setup program (e.g. PROSet) other than Windows XP default program is installed. For setting up a wireless network using the Windows XP program, this option should be selected.

Q6 When connecting to a computer-to-computer (Ad Hoc) network, I cannot connect to another computer connected to the same computer-to-computer network.

A1 Make sure that the security settings and network name of the computer-to-computer (Ad Hoc) network is correct.

A2 Check the TCP/IP properties of the computers to be connected through the computer-to-computer (Ad Hoc) network. All of the computers to be connected through a computer-to-computer (Ad Hoc) network should be configured so that their IP addresses are within the same subnet range.
- If the TCP/IP Settings are configured to DHCP, the address is automatically configured to an address within the subnet IP range. This will take about 2~3 minutes.

- If the IP address is configured to static IP in TCP/IP properties, select Use the following IP address in the TCP/IP properties of the wireless adapter, configure IP address:10.0.0.1~10.0.0.254, and Subnet mask: 255.255.0.0, and then try again.

- A fixed IP is recommended for a small-size network.

Q7 When using a computer-to-computer (Ad Hoc) network, sometimes I cannot search the access point.

A It may happen occasionally when you are using a computer-to-computer (Ad Hoc) network connection. Even if you cannot find some access points, the computer-to-computer (Ad Hoc) network is operating properly. Click Refresh to view the latest search result.

Q8 Running Help file while running Profile Wizard in the wireless LAN program (PROSet) makes the PROSet window white.

A It will be displayed properly when you finish the profile wizard. It dose not affect the program operation.

Q9 The network does not operate properly when both the wireless and the wired network connections are simultaneously configured with the same IP address.

A You cannot use the wireless and the wired network connections using the same IP address simultaneously. To use either the wireless or the wired network in turn with the same IP address, you have to Disable whichever network device will not be using in the network connection of the Control Panel.

Q10 The wireless LAN does not work properly when there is a device operating on an adjacent frequency in the vicinity of the product.

A1 Channel interference may occur when a wireless video transceiver or a microwave oven is being used.If you experience channel interference from other equipment, it is recommended changing the channel to connect to the AP. For more information about AP settings, refer to the User Manual supplied by the AP manufacturer.

A2 IEEE802.11g equipment operates in hybrid mode when there is active IEEE802.11b equipment. This may result in data rate degradation.

Q11 An established wireless LAN connection is disconnected after 2~3 minutes, and the connection is not recovered.

A1 This may be caused by channel interference. Change the channel of the AP, and reconnect.

A2 This may be caused by selecting the ’Use IEEE 802.1x network authentication’ option when IEEE 802.1x authentication is not available.

Check the properties of the AP in the wireless network settings. If the ’Use IEEE 802.1x authentication in this network’ option is selected, deselect the option on the Authentication tab.

For more detailed information about authentication server, ask your network administrator.

A3 If the AP is configured to ’Use network authentication (Shared Key)’

If the AP is configured to authentication shared mode, all computers to be connected should be configured as follows:

- If you are using Windows XP, select network authentication(shared mode) in the wireless network settings.

Click Start > Control Panel > Network and Internet Connections > Network Connections. Right-click the Wireless Network Connection icon, and click View Available Wireless Networks > Advanced. In the Wireless Networks tab, select an AP in the Available Networks field and click Configure and select ’Network Authentication (Shared Mode).

- If you are using Windows 2000, check that the network authentication mode is configured to Share in the security settings of the wireless LAN program (PROSet).

For more network authentication procedures, ask your AP (Access Point) administrator.

Q12 After PROSet is installed, The “AEGIS Protocol (IEEE 802.1x) v2.2.1.0” appears in the [Local Area Connection Properties] window.

A The AEGIS Protocol is a security authentication protocol that is automatically installed when PROSet is installed and does not affect the operation of other programs.

Q13 Although I have turned the wireless LAN off using the Off Button on the PROSet, the wireless LAN operating light is still on.

A This is normal. The Off Button for the Wireless LAN on the PROSet only turns off the S/W and not the H/W for the Wireless LAN.

Q14 After installing the PROSet, I cannot manage the wireless network under Windows.

A Click on "Use Microsoft Client" in the Tools menu of the PROSet program to manage a wireless network in Windows.
To manage a wireless network in the PROSet program, click on "Use Inter PROSet/Wireless" in the Tools menu of the PROSet program.

Games and Programs Related

Q1 3D game is not executed, or some functions are not working.

A Change the graphic setting of the game to '2D' or 'Software Renderer', then execute the program again.

Q2 I launched a game right after installing it, and the game is not executed.

A This problem may occur when the game is not compatible with Windows XP. Launch the game again, and it will be executed properly.

Q3 A game runs only in small screen format.

(ATI chipset models)

A This may happen when the display settings are configured to reduced mode ('Use Centered Output'). To view the game in full screen mode, complete the following procedures.

1. Right-click on the desktop using the touchpad, and then select Properties.
2. In the [Display Properties] window, click the Settings tab > Advanced > ATI Display tab.
3. Select the Panel item, and select ‘Extend the image to the screen size’ in the Display Properties.

(Intel chipset models)

A1 Before launching a game, right-click over the Desktop, and select Graphics Option >Fit to Monitor > Available.

A2 Before launching a game, configure to the Full Screen mode as follows.

1. Right-click in the video screen,
2. Click Graphics Options > Graphics Properties > Devices tab.
3. Click the corresponding device and then select 'Full Screen'.
4. Click OK.

Q4 While playing a 3D game, I tried to change display devices using <Fn> + <F4/> keys, then the system does not operate.

A When you use <Fn> + <F4 / > keys while playing a 3D game, a system error may occur.
Do not use <Fn> + <F4 / > keys while playing a 3D game.

Q5 <Fn+F4/ > Key combination does not work.

A While displaying video of VCD or MPEG, or the display setting is Dual View, you cannot toggle display devices. Also the installation of NetWare Client 32 program disables the function of <Fn+F4/ >.

Q6 While playing a game, pressing the <Fn>+<F4 />keys does not work or the screen is not properly displayed.

A Some games and 3D application programs may change the display device control. Therefore, pressing the <Fn>+<F4 /> keys may terminate the running program or may display an abnormal screen.

Press the <Fn>+<F4 /> keys before launching a program and do not press them while running the program.

Q7 Running speed of a game is too slow or fast.

A Change the setting of Power Schemes to 'Always On'.
(Click Start > Control Panel > Performance and Maintenance > Power Options > Power Schemes tab, then configure the Power schemes field to 'Always On'.)

Q8 Pressing <Fn>+<F2/ > keys while running a game may cause abnormal operation of the system.

A Do not press <Fn>+<F2/ > keys while a game is running, because it may cause a system error.

Q9 Some part of a game image is not displayed or is displayed in black.

A This may happen when running a game designed for DirectX 8.1, such as NHL 2003, MVP Baseball 2003, etc.

Q10 When playing a game, the image display temporarily freezes a number of times.

(ATI chipset models)

A This may happen when the PowerPlay setting is configured to ‘Optimal Battery usage time’ or ‘Balance’.

1. Right-click over the Desktop and then select Properties.
2. In the [Display Properties] window, select the Settings tab > Advanced > ATI POWERPLAY tab.

3. Click the PowerPlay Settings button, and set the Plug-In, High Battery and Low Battery sliders to ‘Optimal Performance’ and then click Apply.

(Intel chipset models)

A This may happen when using the DFGT function.

1. Right-click over the Desktop and select Graphics Option > Graphics Properties > Device tab.
2. Click Notebook and click ‘Power Schemes Settings'.
3. Unselect 'Intel® Dual-Frequency Graphics Technology'.
4. Click OK.

Q11 The screen is severely interrupted in some games.(ATI chipset models)

A In 3D games, the texture data needed in 3D screen presentation are stored in the system memory. When the system memory is not enough, the data is stored in the hard disk and transferred to system memory when the data is needed. In some games, the screen may be interrupted during this process.

Lower the game resolution or texture image quality.(Linage 2, Terminator 3, Delta Force : Black Hawk Down, Medal of Honor, Battlefield 1942, etc.)

Q12 When I run 'The Sims Fun Party' game in Dual Display Clone mode, a mouse cursor afterimage appears (Intel chipset models)

A Change the display device to LCD only, by pressing the <Fn>+<F4 / > keys and launch the game again.

Q13 When I play multiple avi and mpg files with Mplayer2, a different screen plays (Intel chipset models)

A This may happen when you play more than 3 video files simultaneously. Please play only up to 2 video files at a time.

Security Center

Q1 To change the popup window display settings when connected to the Internet.

In the Windows XP SP2 environment, you can decide whether to display a popup window when connected to the Internet, for user convenience and security.

A1 To display most of the popup windows when connected to the Internet:

1. Click on Internet Options in Start > Control Panel > Security Center > Manage security settings for.
2. In the Privacy tab of Internet Properties, clear Block pop-ups.

A2 To display popup windows only from the current site when connected to the Internet:

Place the cursor on the notification area at the bottom of the Internet address bar and right-click to display a menu, from which you can select Temporarily Allow Pop-ups or Always Allow Pop-ups from This Site.

A3 To display popup windows from a particular site:

1. Click on Internet Options in Start > Control Panel > Security Center > Manage security settings for.
2. In the Privacy tab of Internet Properties, click on Settings from Block pop-ups.
3. Enter a URL to want to allow pop-ups into Address of Web site to allow and click on Add.
4. You will find that the entered address is added to the allowed sites list. The next time you connect to the Web site, you will see pop-ups appearing.

   When you need to re-block a permitted site, select the Web site address that you want to block from the Allowed Sites and click on Remove.

Q2 When you connect to a Web site, you see the message, "To help protect your security, Internet Explorer stopped this site from installing an ActiveX control on your computer" or "This site might require the following ActiveX control" below the address bar.

A Windows XP SP2 blocks unsigned ActiveX controls from being installed when connected to certain Web sites for security reasons. On some Web sites that have no ActiveX controls installed, applications are not started or do not display properly.

In this case, to install ActiveX controls, right-click the notification area to display a menu from which you can select Install ActiveX control.

Q3 When you see a Windows Security Alert icon ( ) appear on the right part of the task bar.

With the Security Center feature added, Windows XP SP2 checks the Firewall, the automatic updates configuration and installation of virus-checking programs to display a Windows Security Alert icon on the right part of the task bar when it judges that the computer is vulnerable to attacks from the Internet. In this case, check the following to install the necessary components.

A1 Set up the Windows Firewall.
When you set up the Windows Firewall, you will be protected from unauthorized access through the Internet or the network.

1. Click on Windows Firewall in Start > Control Panel > Security Center > Manage security settings for.
2. From the General tab of Windows Firewall, select ON (recommended).
3. If you want to allow a certain program or service to gain access to your computer using the Firewall, select and check the program or service that you want to allow access from, in the Exceptions tab of the Windows Firewall. If you want to add a program to Programs and Services, click on Add Program and select it.

A2 Set up Windows Automatic Updates.
This automatically downloads and installs critical updates via the Internet to keep your computer up to date.

1. Click on Automatic Updates in Start > Control Panel > Security Center > Manage security settings for.
2. From general tab of Automatic Updates window, select Automatic (recommended).

A3 Keep your computer current with the latest virus updates. (ex: Norton Antivirus)
Even when you have installed Norton AntiVirus on your computer, Windows cannot recognize the program until you configure the settings, displaying a Security Alert icon.
When you first use or install Norton AntiVirus for the first time, follow the Registration Wizard steps to configure the registration settings.
To protect your computer from virus attacks with the latest updates, click on Options to display the Norton AntiVirus Options window. From the left menu of the window, check Run Automatic Protection to select Automatic Protection and check Run LiveUpdate to select LiveUpdate.

A4 Two virus scanning programs on one computer may cause system conflicts. Remove one of the programs from the system.

A5 If Windows does not recognize the existence of an anti-virus program even when it has been installed, your computer could be vulnerable to attacks from the Internet. You should install an anti-virus program that your computer is able to identify.

Check the following programs which Windows can detect and select one from the list.

A list of anti-virus programs that Windows can detect:

-Symantec Norton Anti-Virus

-NetworkAssociates (McAfee)

-TrendMicro

-ComputerAssociates

-Panda

-Kaspersky

-Ahnlabs (AhnLab)

The list is subject to change. Visit the Web site (www.microsoft.com) regularly to check the latest list

HD TV Related

Q1 On a component TV, the Full Screen DOS Mode screen does not display.

A A component TV does not support the Full Screen DOS Mode screen due to an output power problem of the TV. Please use DOS mode in a window when using a component TV.

Q2 The colors are too blurred.

A Depending on the model of the TV or the color settings, a specific color may dominate. Adjust the color settings of the TV.

Q3 When I watch a DVD and the resolution is higher than 540, the screen is not displayed or an error message appears.

A The DVD international standard does not support resolutions higher than 480P. Configure the resolution of the component output mode to lower than 480P.

Q4 How can I configure a component TV device?

(ATI chipset models)

A 1. Right-click over the Desktop and then select Properties.

2. In the [Display Properties] window, select the Settings tab > Advanced > ATI Display tab.

3. Select the YPbPr item and click the Apply button.

4. Click the YPbPr button and select the appropriate TV type and then click the Apply button.

(Intel chipset models)

A Open the Graphics Properties window according to the following procedures.

1. Right-click over the Desktop and then select Graphics Option >Graphics Properties.

2. Select TV from the Device tab.

3. Select a resolution or type and click the Apply button.

Q5 The screen does not display on the component TV.

(ATI chipset models)

A This happens when the TV does not support the component TV mode configured in the video driver.

1. Click Display Properties > Settings > Advanced > Display tab > YPbPr button.

2. Select the relevant modes (480i, 480p, 540p, 720p,1080i,16:9) and click the Apply button. (At this time, the mode changes to the highest of the selected modes depending on the supported modes of the TV.)

3. Double-click the On/Off button of the YPbPr to change to the configured mode.

4. Click the Apply button.

(Intel chipset models)

A This happens when the TV does not support the component TV mode configured in the video driver.

1. Launch the Intel Graphics Properties.

2. Select TV from the Device tab, select a mode (720p,1080i) and click the Apply button

Q6 When I am watching the screen on a TV using YPbPr, the edges of the screen are trimmed.

(ATI chipset models)

A Due to the hardware limit of the current ATI video chipset, a HDTV Underscanning function is not supported so that edges of the screen are trimmed. The amount of edges trimmed is determined by the YPbPr mode and the TV type.

(Intel chipset models)

A Check that 'Full Screen' is selected in the Intel graphics properties. This happens because the current Intel chipset does not support the HDTV Underscanning function. The amount of edges trimmed is determined by the YPbPr mode and the TV type.

Q7 I cannot change the display device to the component TV by pressing the <Fn>+<F4 / ▣|▢> keys. (ATI chipset models)

A Pressing the <Fn>+<F4 / ▣|▢> keys does not change the display device to a component TV because of an output power problem.

Restoring the System

This description is only for models running Window XP.

The System Restore function allows you to restore your computer to an earlier copy (called restore point), and restores the settings if a problem occurs.The System Restore function is provided by Windows XP to enable the resolution of various problems without reinstalling Windows XP completely.

You can use System Restore in the following cases.

- The system files are deleted or damaged by mistake.
- The system is unstable or a problem occurs in a device driver.
- A problem occurs after changing system files such as the registry.
- A problem occurs after installing a new program.

Creating a Restore Point

Restore points are created at predetermined times and at times of significant system events such as when a program or a driver is installed. You can also decide when to create your own restore points.

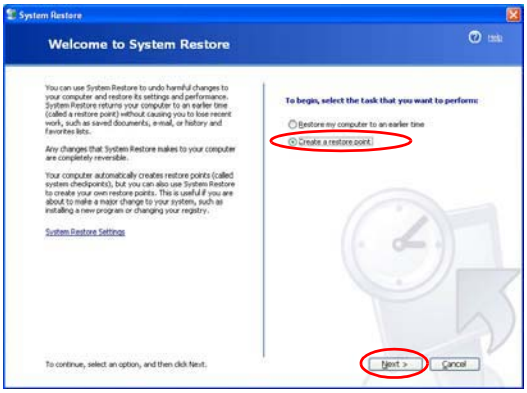
There has to more than 200MB of free space on the hard disk drive. If the disk space is insufficient, a saved restore point might be deleted.

You are recommended to create a restore point when you have purchased a new computer and before installing new programs or device drivers. Before creating a restore point, check that the computer is operating properly.

The procedures to create your own restore point are described below.

1. Click **Start > All Programs > Accessories > System Tools > System Restore**.

2. Select "Create a restore point", and click **Next**.



Since changes made after the Recovery Point may not be maintained, please back-up all necessary files to another location before performing system recovery.

3. In the Restore point description box, type a name to identify the restore point, and than click **Create**. A restore point has been created.

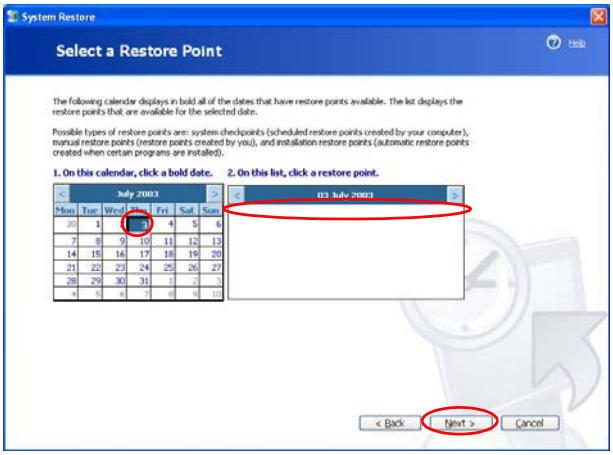
Returning your computer to an earlier restore point

The procedures to return your computer to an earlier restore point when a problem has occurred are described below.

1. Click **Start > All Programs > Accessories > System Tools > System Restore**.

2. Select "Restore my computer to an earlier time", and then click **Next**.

3. Select the desired restore date from the calendar restoration and select the desired restore point from the list, and then click **Next**.



The date of the restore point is displayed in bold font.

4. Confirm the selected restore point and click **Next**. System Restore shuts down Windows, and starts the restoration processes.

5. After the restoration is complete, Windows restarts. In the [System Restore completed] dialog, click **OK**.Your computer has been restored to the selected restore point.

Undoing the last restoration

The procedures to undo a restoration are described below.

1. Click **Start > All Programs > Accessories > System Tools > System Restore**.
2. Select "Undo my last restoration", and then click **Next**.
3. Confirm the restoration information to undo, and than click **Next**. System Restore shuts down Windows and starts undoing the restoration.
4. After the undo restoration is complete, Windows restarts. In the [Undo the last restoration completed] dialog, click **OK**.Your computer has been restored to the point prior to the last restoration.

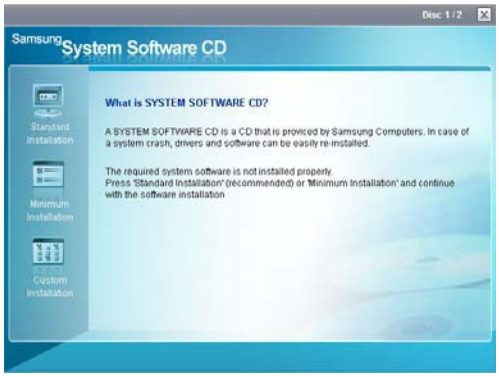
Reinstalling Software

If you have reinstalled the Windows operating system, or the system and program do not operate properly, you can re-install the driver and program using the system software CD.

This computer is optimized for Microsoft Windows XP, therefore driver other than the ones included in the System Software CD are not provided.

Running the system software CD

Insert the system software CD into the CD-ROM drive. The initial screen appears automatically.



- **Standard Installation**: This displays a list of drivers or programs that are not currently installed on your computer from the system software CD provided. All necessary components are installed using the factory defaults.
- **Minimum Installation**: This displays the components (driver, Windows programs, etc) that, if not installed, may cause problems with the system performance. You can install only required components.
- **Custom Installation**: You can customize the installation of drivers and programs.

Installing drivers and programs

1. Click **Standard Installation** in the main window of the System Software CD. (Standard Installation is recommended)
2. The system is scanned to display the drivers and programs that need to be installed.
3. Click **OK**. The drivers and programs are automatically installed as factory defaults.

4. When done, restart the system.

Reinstalling Windows XP

If the Windows XP does not operate properly due to an error in the system, or if you have replaced the hard disk drive, you can reinstall Windows XP using the system recovery CD.

With the system recovery CD, you can reinstall Windows XP only. To return the system to the state of shipment, reinstall the device drivers and programs with the system software CD after reinstalling Windows XP with the system recovery CD.

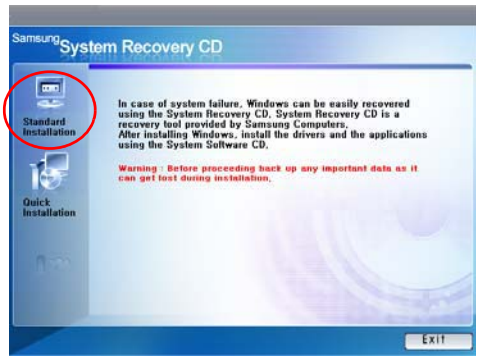
Reinstalling Window may delete the data on the hard disk drive such as files, programs, etc. In order to minimize damage from data loss, please remember to always back up data. Samsung Electronics is not liable in the case of data loss, please consult your warranty statement for clarification.

When you have set a booting password
You are asked to enter your booting password after restarting the system during the Windows installation. Enter the password to continue to the next steps.

Reinstalling Windows

Explain Standard installation option as a standard.

1. Insert the system recovery CD into the CD-ROM drive.
2. In the initial screen, click **Standard Installation**.



- **Standard installation**: You can change the settings for partitioning, the installation folder, etc. during the Windows installation. However, reinstalling Windows may delete the data on the hard disk drive such as files, programs, etc. In order to minimize damage from data loss, please remember to always back up data.
- **Quick Installation**: This re-installs Windows with the user data and the system configuration intact. The user data in the already existing Windows folders may be preserved as the existing Windows folders are overwritten.

3. The description for the standard installation appears. Click **Yes**.
   The installation starts, and the system will be restarted after a while.

When Quick Installation is selected,
Setup proceeds with Step 3 before automatically installing Windows. Quick Installation overwrites the existing Windows version, so that drivers or applications do not need to be reinstalled.

4. After the system has restarted, the message 'Press any key to boot from CD' appears. Do not press any key at this time. After a while the partition configuration screen appears.
   To not change the partition, press **<Enter>**.

   What is partition configuration?
   Partition configuration is a function that devides the hard disk drive into one or several partitions. Note that changing the partition deletes all of the data on the hard disk drive.

5. Select the folder to install the Windows operating system.
   To delete the previous version of Windows and install in the current folder, press **<L>** on the keyboard.

If you press ESC to select another folder for the installation, new Windows folders are created causing a risk of dual booting.

6. After the installation process copies the necessary folders for the Windows installation, restart the system, and the message "Press any key to boot from CD" is displayed. You do not need to enter anything. In a moment, the Windows XP installation screen will appear to proceed with the installation.
7. When **the Regional and Language Options** window appears, click **Next**.

8. When a window that requires your name and organization pops up, enter your name and the organization and click **Next**.
   In the Windows XP Professional edition, an additional window that requires the computer name and the administrator password appears.
   Enter **the computer name and the administrator password** and click **Next**.
9. When **the Date and Time Settings** window appears, click **Next**.
   Setup will continue.
10. When the system restarts to display Press any key to boot from CD, do not press any key.

When you see the Windows desktop, this means that the installation process is completed. Remove the system recovery CD and install **the device drivers and applications** from **the system software CD**.

If You Cannot Run Windows

If you cannot run Windows, you have to boot the system with the system recovery CD, and reinstall Windows. If you boot the system from the system recovery CD, you can install Windows only with the user installation option. You cannot install with the standard installation option.

1. Insert the system recovery CD into the CD-ROM drive and start the computer.
2. If the following message appears on the screen, press any key from the keyboard.

Press any key to boot from CD.....

This message appears only when the CD drive has booting priority. If the message does not appear, configure the CD drive as the first booting device referring to ”Changing Booting Priority” on page 72.

3. Do not press any key at this time. After a while the partition configuration screen appears.
   To not change the partition, press **<Enter>**.
4. Select the desired file system (format).
   To maintain the current file system, press **<Enter>**.
5. Select the folder to install the Windows operating system.
   To delete the previous version of Windows and install in the current folder, press **<L>** on the keyboard.
6. After the installation process copies the necessary folders for the Windows installation, restart the system, and the message “Press any key to boot from CD” is displayed. You do not need to enter anything. In a moment, the Windows XP installation screen will appear to proceed with the installation.
7. Follow the instructions of the Windows XP installation wizard to continue with the installation.
8. When the installation is complete, the computer will restart.
   When the system has restarted, the Press any key to boot from CD message appears. Ignore the message.

The system boots and the Windows and Windows Registration screen appears. Register Windows, following the instructions to finish the Windows installation. Remove the System Recovery CD and install the **device drivers** and **application programs** using **Standard Installation** from the **System Software CD**.

Specifications

System Specification

The system specifications will be described below. The system specifications may differ depending on the derived models.

With an Intel Graphics Chipset

Item	Specification	Remarks
CPU	Intel Pentium M 1.6GHz~ / Dothan (FSB533) / Celeron M	Optional
Cache memory	2MB (Dothan) / Celeron 1MB	
Main memory	256/512/1024 MB DDR2 SDRM, 2 DDR2 socket	Max 2GB
Main Chipset	Intel 915GM (Alviso GM) / 82801FBM (ICH6-M)	
Hard disk drive (HDD)	2.5", UltraDMA100, S.M.A.R.T 9.5mmH	
CD drive	DVD-ROM, CD-RW / DVD-Rom Combo, DVD-Super Multi	Optional
Graphics	Intel 915GM	
Sound	SigmaTel C-Major Audio (AC97 CODEC)	
Network Interface	Modem: SENS LT56ADW (V.92 Modem) Wired LAN: Broadcom 440x 10/100 Intergated Controller Wireless LAN: 802.11g or 802.11a/g Bluetooth : Bluetooth 1.1	 Optional Optional
Memory Card Slot	Memory Stick, Memory Stick Pro, SD(Secure Digital) Memory Card Supported	Optional
PCMCIA Slot	Type I and II Compatible	
TPM	Trusted Platform Module	Optional
Ports	IEEE 1394 (6 Pin), USB2.0 x 4, Microphone, Headphone, Modem(RJ-11), LAN(RJ-45), Monitor, TV Out(S-Video) , Serial and Parallel	
Options	Port Replicator, 2nd HDD Pack	
Dimensions (mm)	327.5 x 275.5 x 32.2(15.1")	W x D x H
LCD Panel Size	14.1" XGA, 15.0" XGA, 15.0" SXGA+	Optional
Weight	2.7 Kg	
Battery	Lithium-Ion smart battery	
Operation Environment	Temperature (storage) : -5 ~ 40°C (operation) : 10 ~ 32° C Humidity (storage) : 5% ~ 90% (operation) : 20% ~ 80%	
Operation Voltage	100 - 240 VAC	
Frequency	50 - 60 Hz	
Output Power	60W*	
Output Voltage	19.0VDC	

The system specifications are subject to change without notice. For detailed system specifications, refer to the product catalog.

*) Using the AC adapter (60W) in other models may cause a system malfunction. Please use only an AC adapter specified in the system specification.

With an ATI Graphics Chipset

Item	Specification	Remarks
CPU	Intel Pentium M 1.6GHz~ / Dothan (FSB533) / Celeron M	Optional
Cache memory	2MB (Dothan) / Celeron 1MB	
Main memory	256/512/1024 MB DDR2 SDRM, 2 DDR2 socket	Max 2GB
Main Chipset	Intel 915PM (Alviso PM) / 82801FBM (ICH6-M)	
Hard disk drive (HDD)	2.5", UltraDMA100, S.M.A.R.T 9.5mmH	
CD drive	DVD-ROM, CD-RW / DVD-Rom Combo, DVD-Super Multi	Optional
Graphics	ATI Mobility Radeon X300/X600, Memory : 64/128MB	
Sound	SigmaTel C-Major Audio (AC97 CODEC)	
Network Interface	Modem: SENS LT56ADW (V.92 Modem) Wired LAN: Broadcom NetLink Gigabit Ethernet Wireless LAN: 802.11g or 802.11a/g Bluetooth : Bluetooth 1.1	 Optional Optional
Memory Card Slot	Memory Stick, Memory Stick Pro, SD(Secure Digital) Memory Card Supported	Optional
PCMCIA Slot	Type I and II Compatible	
TPM	Trusted Platform Module	Optional
Ports	IEEE 1394 (6 Pin), USB2.0 x 4, Microphone, Headphone, Modem(RJ-11), LAN(RJ-45), Monitor, TV Out(S-Video) , Serial and Parallel	
Options	Port Replicator, 2nd HDD Pack	
Dimensions (mm)	327.5 x 275.5 x 32.2(15.1")	W x D x H
LCD Panel Size	14.1" XGA, 15.0" XGA, 15.0" SXGA+	Optional
Weight	2.7 Kg	
Battery	Lithium-Ion smart battery	
Operation Environment	Temperature (storage) : -5 ~ 40°C (operation) : 10 ~ 32° C Humidity (storage) : 5% ~ 90% (operation) : 20% ~ 80%	
Operation Voltage	100 - 240 VAC	
Frequency	50 - 60 Hz	
Output Power	90W	
Output Voltage	19.0VDC	

The system specifications are subject to change without notice. For detailed system specifications, refer to the product catalog.

Wireless LAN Specification (Optional)

Intel(R) PRO/Wireless 2200BG Network Connection

Product Specification

Item		Detailed Specifications
Physical Specifications	Dimensions	(Width X Height) 59.75 X 44.45 mm
	operation temperature and humidity	Same as system operation
		Temperature: 0°C ~ 70°C Humidity: less than 85%
Power Specification	Power Saving Mode	135 mW
	Receiving Mode	0.85W
	Transmission Mode	1.45W
	Power	3.3V
Network Specifications	Compatibility	IEEE 802.11b, IEEE 802.11g
	Operating System	Microsoft Windows XP, 2000 - NDIS5 Miniport Driver
	Media Access Protocol	CSMA/CA (Collision Avoidance) with Acknowledgement(ACK)
	Security	Wired Equivalent Privacy support (WEP) 64bit/128bit WPA*, CCX*

* This piece of equipment supports the Wi-Fi wireless LAN security standard, WPA (Wi-Fi Protected Access) and CCX (Cisco Compatible eXtensions). To connect to a wireless network consisting of the WPA and CCX certificates or PROSet may be required depending on the network settings. For information on the PROSet installation, refer to ”Wireless Network Setup Using the Wireless LAN Setup Program” (p57). For more information, ask your network administrator.

Radio Specifications

RF Band	2.4GHz
Support Channels	Channels allowed per country.
Device	Transceiver
Standard Output Power	5 mW
Transmission Method	11b mode: DSSS 11g mode: OFDM
Transmission Rate (Mbps) *	11b mode: 11, 5.5, 2, and 1 11g mode** : 54, 48, 36, 24, 18, 12, 9, and 6
Antenna Type	Internal Antenna 2 EA (Main/Aux)

* The transmission rate may differ from the actual transmission rate.
** 11g mode is supported only when the device is connected with an IEEE802.11g device (e.g. IEEE802.11g compatible Access Point).

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 (channel 10, 11, 12, 13) when using wireless networks.

- Standard: IEEE 802.11g
- Regulation: ETSI 300 328, CE Marked
- Channel Allocation:
  - Channel 10 (2457 MHz)
  - Channel 11 (2462 MHz)
  - Channel 12 (2467 MHz)
  - Channel 13 (2472 MHz)

Intel(R) PRO/Wireless 2915ABG Network Connection

Product Specification

Item		Detailed Specifications
Physical Specifications	Dimensions	(Width X Height) 59.75 X 44.45 mm
	operation temperature and humidity	Same as system operation
		Temperature: 0°C ~ 70°C Humidity: less than 85%
Power Specification	Power Saving Mode	135 mW
	Receiving Mode	0.85 W
	Transmission Mode	1.45 W
	Power	3.3V
Network Specifications	Compatibility	IEEE802.11a, IEEE802.11b, IEEE802.11g
	Operating System	Microsoft Windows XP, 2000 - NDIS5 Miniport Driver
	Media Access Protocol	CSMA/CA (Collision Avoidance) with Acknowledgement(ACK)
	Security	Wired Equivalent Privacy support (WEP) 64bit / 128bit WPA*, CCX*

* This piece of equipment supports the Wi-Fi wireless LAN security standard, WPA (Wi-Fi Protected Access) and CCX (Cisco Compatible eXtensions). To connect to a wireless network consisting of the WPA and CCX, certificates or PROSet may be required depending on the network settings. For driver update, visit www.samsung.com and for information on the PROSet installation, refer to ”Wireless Network Setup Using the Wireless LAN Setup Program” (p57). For more information, ask your network administrator.

Radio Specifications

RF Band	2.4GHz, 5GHz
Support Channels	Channels allowed per country.
Device	Transceiver
Standard Output Power	5 mW
Transmission Method	11a mode: OFDM 11b mode: DSSS 11g mode: OFDM
Transmission Rate (Mbps) *	11a mode** 11b mode: 11, 5.5, 2, and 1 11g mode*** : 54, 48, 36, 24, 18, 12, 9, and 6
Antenna Type	Internal Antenna 2 EA (Main/Aux)

* The transmission rate may differ from the actual transmission rate.
** 11a mode is supported only when the device is connected with an IEEE802.11a device (e.g. IEEE802.11a compatible Access Point).
***11g mode is supported only when you are connected to an IEEE 802.11g device (e.g. An Access Point supporting IEEE 802.11g).

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 (channel 10, 11, 12, 13) when using wireless networks.

- Standard: IEEE 802.11a/g
- Regulation: ETSI 300 328, CE Marked
- Channel Allocation:
  - Channel 10 (2457 MHz)
  - Channel 11 (2462 MHz)
  - Channel 12 (2467 MHz)
  - Channel 13 (2472 MHz)

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.

FCC Warning

Class B Computing Device

Information to the User

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

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

The user may find the following booklet prepared by the Federal Communications Commission helpful: “How to Identify and Resolve Radio-TV Interference Problems.” This Booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

FCC Warning

The user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user’s authority to operate the equipment.