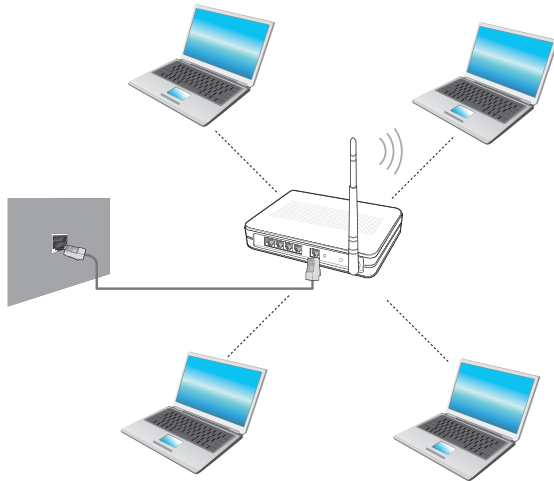A wireless network (Wireless LAN) environment is a network environment that enables communicating between multiple computers at home or a small-size office through wireless LAN devices.

> - The descriptions below are for computer models with a Wireless LAN card or device. A Wireless LAN device is optional.
>   The pictures in this manual may differ from the actual product depending on your wireless LAN device model.
>
> - If the wireless LAN is turned off , press the **Fn** + **F12** key combination to turn it **on**.

> **What is an Access Point (AP)?**
>
> An AP is a network device that bridges wired and wireless LANs, and corresponds to a wireless hub in a wired network. Connect the computer with the wireless LAN function to the AP to use to the network connection.

Connecting to a Wireless LAN

If there is an AP, you can connect to the Internet via the AP using the Wireless LAN connection method provided by Windows.

▶ **For Windows 7**

1 If you click the **Network Connections** icon in the system tray, a list of available APs appears. If you select an AP to connect to, the **Connect** button appears.
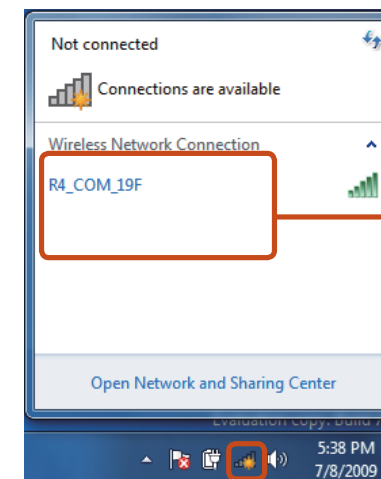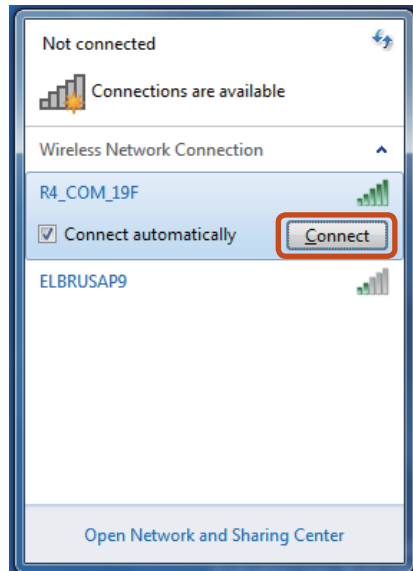

AP List

2 Click **Connect**.

If a network key is set for the AP, enter the network key and then click **Connect**.

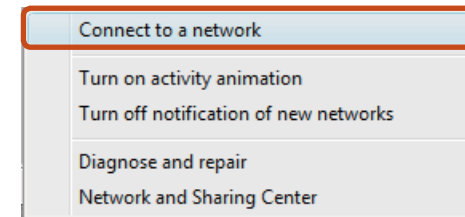> ✎ For the network key, please ask your network administrator.

3 When **Connected** to the AP is displayed, click the **Close** button.
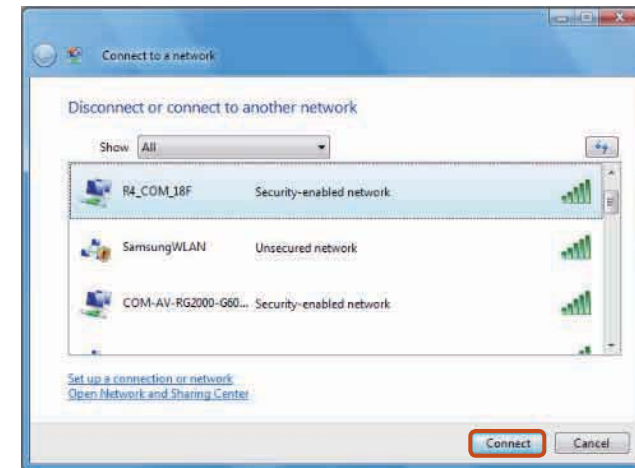
You can access the network.

► **For Windows Vista**

1 Right-click over the **Network Connections** icon on the taskbar and click **Connect to the Network**.

2 Select an AP to connect to and click **Connect**. If there is a configured network key for the AP to connect to, enter the network key and then click the **Connect** button.


3 When **Connected** to the AP is displayed, click the **Close** button. You can access the network.

Wireless Network (Optional)

► For Windows XP

1 Click the **Wireless Network Connection** icon 📶 from the Taskbar using the right button of the touch pad. Then, click **View Available Wireless Networks**.

2 Select an AP to be connected and click **Connect**.

If a network key is set in the AP, the network key input window will appear. Enter the network key in the input window and click **OK**.
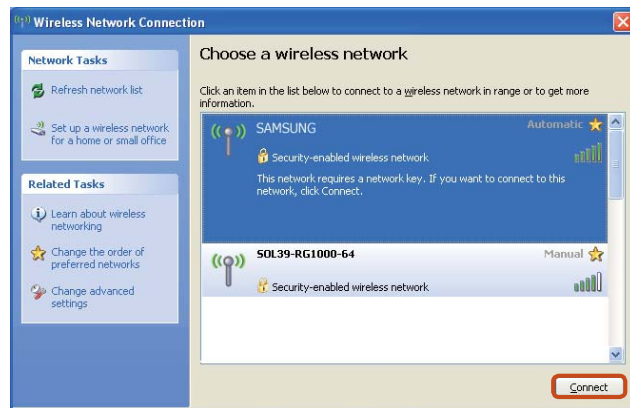
3 Once **Connected to AP** is displayed, you can use a wireless network.

💡 For a network key, contact the network administrator.

Connecting to a wireless network through Wi-Fi Manager (Optional)

📝 These descriptions are for Windows 7 and for supported models only.

You can access a wireless network using **Wi-Fi Manager**.

1 Press the Fn + F12 key combination. Then the Wi-Fi Manager window appears.

2 Select **Wi-Fi** and check if it is set to **ON**.
If this option is set to **ON**, the **Wi-Fi** function will run.

You can set this to ON or OFF.

AP List

Normal Wireless Network Status

If the wireless LAN icon is displayed in the system tray of the Taskbar, it indicates that the computer is connected to the Internet properly (see below).

[Windows 7]   [Windows Vista]   [Windows XP]

Abnormal Wireless Network Status

When the wireless LAN is not connected

If the wireless LAN icon is displayed with an "X" in the system tray of the Taskbar, it indicates that the wireless LAN device is turned off or that there are no available APs. Or the wireless LAN is disconnected.

[Windows 7]   [Windows Vista]   [Windows XP]

If the wireless LAN is turned off, press the Fn + F12 key combination to turn it on.

When you are not connected to the Internet

This is indicated by the wireless LAN icon ⚠ in the system tray of the Taskbar. In this case, you have to check the IP address settings.

Please contact your network administrator and reconfigure the IP address.
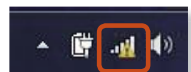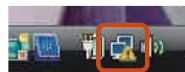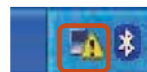
[Windows 7]   [Vista]   [Windows XP]

When APs are found but your computer is not connected to the Internet

This is the case when an AP with a weak signal has been set to a high priority. Connect to an AP with a strong signal by clicking it.

The currently connected AP. The signal strength is low.

An AP with a strong signal strength

Click

[Windows 7]

The currently connected AP. The signal strength is low.
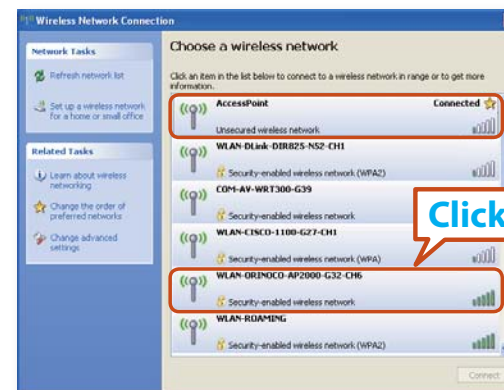
An AP with a strong signal strength

Click

[Windows XP]

Easy Content Share is a DLNA application that allows you to play photos, videos and music files on your TV.

> • These descriptions are for Windows 7 and for supported models only.
>
> • The Digital Living Network Alliance (DLNA) aligns industry leaders in the CE, mobile, and PC industries through digital interoperability, and DLNA-certified devices allow users to play videos, photos and music files stored on a computer on a TV.
>
> • To play content using DLNA technology, both your computer and TV must be DLNA certified.
> For information on whether a product supports DLNA, refer to the respective user manuals.

To play videos, photos and music files stored on a computer, configure the settings in the order as shown below.

1. **Configuring the network settings for your computer and TV**
2. **Adding shared content on your computer**
3. **Playing content on your TV using your computer**

Configuring the network settings for your computer and TV

To share content, all shared devices must be connected to the same access point.

Configure the network settings by following the steps below.

1   Connect your computer and TV to an access point through a wired or wireless LAN connection, as shown in the figure below.

[Network connection diagram]

2   Configure the IP address settings for your computer and TV.

You must check the **Obtain an IP address automatically** (DHCP) checkbox.

> - For more information on how to configure the IP address for your computer, refer to **Chapter 2. Using the Computer > Network**.
> - For more information on how to configure the IP address for your TV, refer to the user manual of your TV.

3 To check if the network environment has been configured, run **Easy Content Share**.

If the connected computer and TV are shown in the program window, the network settings have been configured successfully.
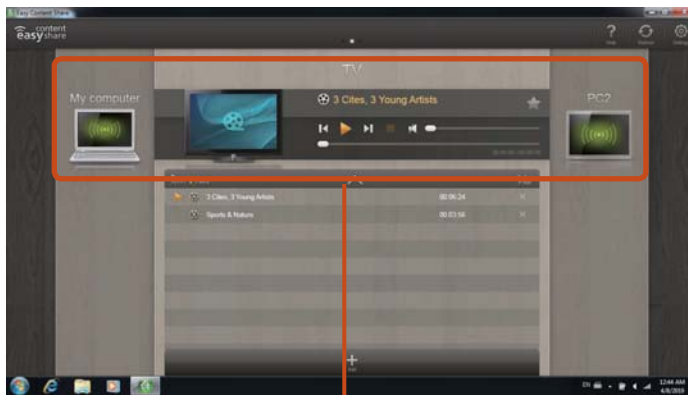
Devices that can share content

> If connected devices are not displayed, refer to the **Easy Content Share** item in the **Troubleshooting Guide**.

Adding shared content on your computer

Add the videos, photos and music files that you want to play on your TV as shared items.

You can only play shared items on your TV.

1 Click **Settings** ⚙ at the top right of **Easy Content Share**.

2 Click **My computer > Add Folder** ➕ . The **Browse For Folder** window appears. Select a folder to share and click **OK**.
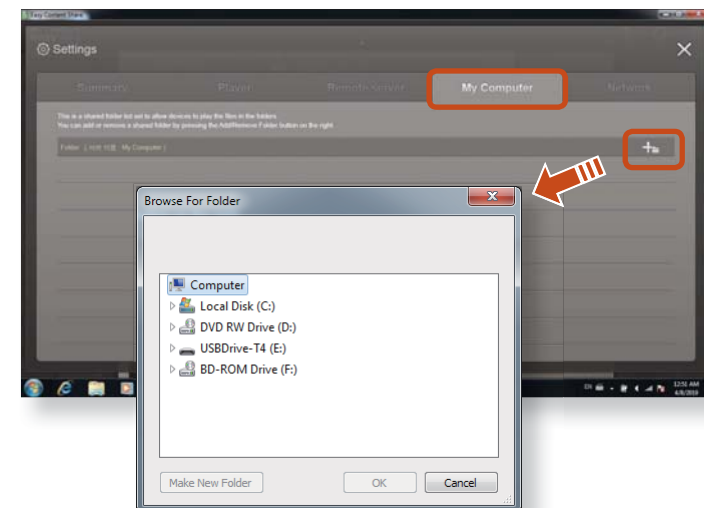
3 The selected folder is added to the shared list.

Playing content on your TV using your computer

After you have set photos, videos and music files as shared items, you can play them on your TV using your computer.

1 In **Easy Content Share**, select the TV you want to use to play content.
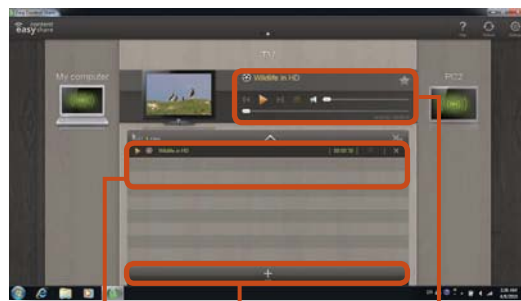
Playlist   Play control panel

Add content to play

2 Select the item you want to play in the playlist, and then click **Play** .

3 The selected file is played on the TV.

Using the Play Control panel, you can control the item being played on the TV.

4 To stop playing, click **Stop** .

Easy Content Share does not support subtitles due to DLNA constraints.

To use the caption function, refer to the **Easy Content Share** item in the **Troubleshooting Guide**.

Adding a video, photo or music file to the playlist

1 Click **Add Content** ✚ in the Playlist screen. The shared content list is displayed.

2 In the shared content list, check the checkbox in front of the item you want to add to the playlist, and then click **Add to playlist** ➕ .
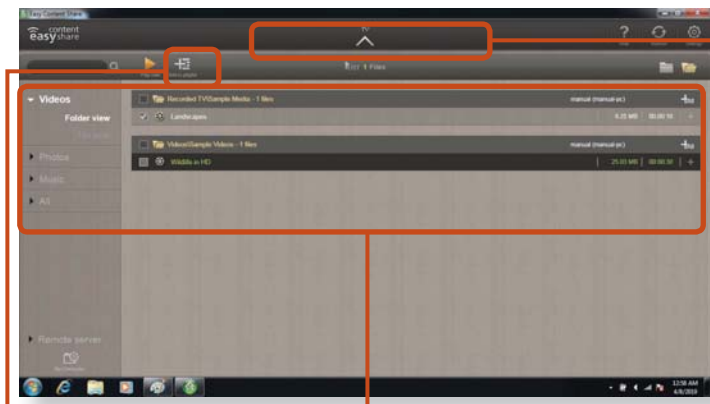
Add the selected item to the playlist

Return to the playlist screen

Shared content list

3 Click **Return to playlist screen** ⋀ .

In the playlist screen, you can find that the selected item has been added to the playlist.

Playing the content stored on a computer when Easy Content Share is not installed

You can also play the videos, photos and music files stored on a computer when **Easy Content Share** is not installed on your TV by using **Windows Media Player**.

As described in the steps below, configure the content sharing settings to play content on your TV.

> The computer containing the shared content (when Easy Content Share is not installed) must be connected to the same access point to which the computer where **Easy Content Share** is installed and the TV is connected to.

► **For Windows Media Player 12**

1 Run **Windows Media Player**.

2 Click **Stream** and check the **Automatically allow devices to play my media...** menu item.
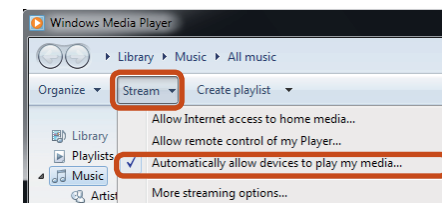
3 Run **Windows Explorer**.

4 Right-click the folder to share. From the menu displayed, point to Include in library.

Click **Videos, Photos** or **Music** in the displayed sub menu, according to the type of content contained in the selected folder.

If the selected folder contains two or more types of content, you must click each corresponding menu item (**Videos, Photos** or **Music**) to register each type of content.
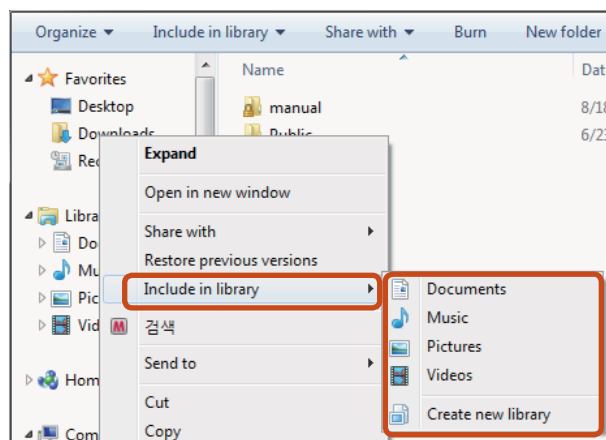
► **For Windows Media Player 11**

1 Run **Windows Media Player**.

2 Click **Library > Media Sharing**.

The **Media Sharing** window is displayed. Check the **Share my media** checkbox and then click **OK**.
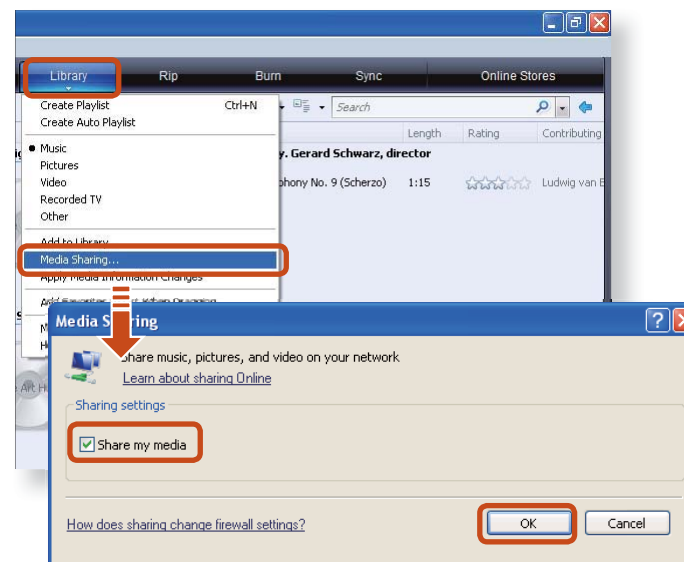
3 In the **Media Sharing** window, click **Settings...**. The **Media Sharing - Default Settings** window is displayed. Check the **Allow new devices and computers automatically (not recommended)** checkbox.

A popup window is displayed. Click **Yes**. Then click **OK** in the **Media Sharing- Default Settings** window and in the **Media Sharing** window.

After the registration has been finished, you can find the added folder is listed in the shared content list of **Easy Content Share**.
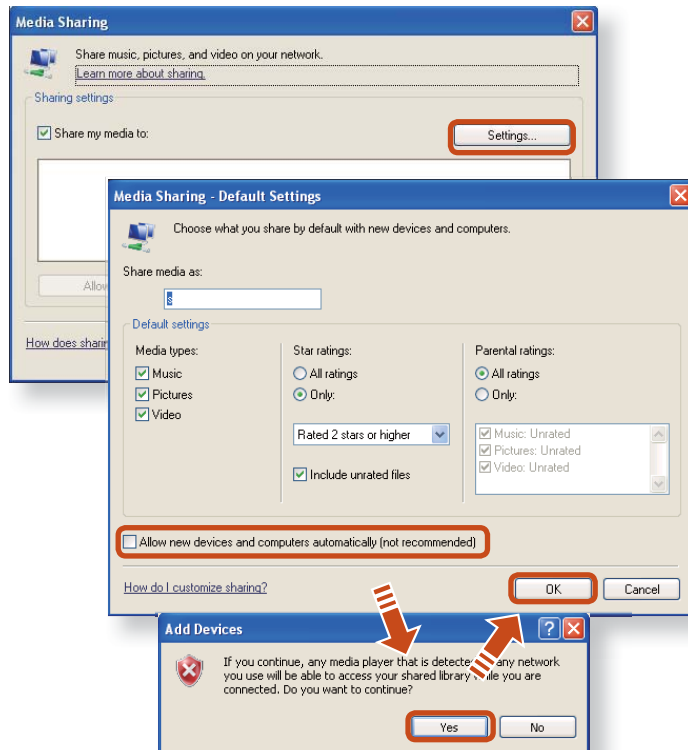
For a shared content item, the name of the computer where the item is stored is displayed next to it, allowing you to identify the computer. This is useful when multiple computers are providing content.
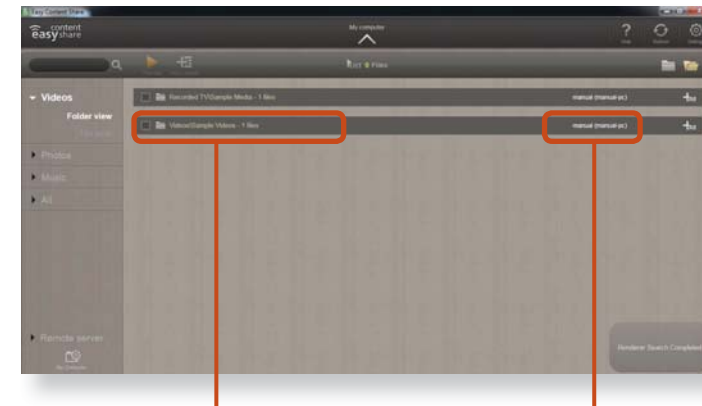
A folder added as a   The name of the PC where
shared item   the content is stored

> Content sharing is only available with **Windows Media Player 11** or later.
>
> If your **Windows Media Player** is earlier than **Windows Media Player 11**, download and install **Windows Media Player 11** or later from the Microsoft website.

This function protects the HDD from external impacts while operating by using the 3-axis sensor that detects inclinations, movement and vibrations.

Through the icon colors, the HDD protection status can be identified. You can activate or deactivate the function by right-clicking over the icon ⬜ in the taskbar.

Icon Color	Operating Status
	The HDD protection function is activated.
	The HDD protection function is deactivated.
	The HDD has received an impact and the HDD protection function is currently running.

To set the sensitivity of the protection function, right-click the icon ⬜ , and select **Open Control Panel**.

Sensitivity	Operating Status
High	Select this option for operating environments with no possibility of shocks (default).
Medium	Select this option for operating environments with the possibility of slight shocks (e.g. in a vehicle or on a lap).
Low	Select this option for operating environments with a possibility of severe shocks (not recommended).

- If external movement (e.g. if a user moves or the vehicle carrying the computer moves) is detected while the HDD is in operation such as watching a video or copying data, the current operation and the HDD are stopped accordingly.
- If the external movement stops, the paused operation resumes after approximately 3 seconds.
- Can't be guaranteed the prevention of damage to hard disk and protection data under all circumstances.

You can protect your computer using the security device and program installed on the computer.

The **OmniPass** security program is installed on this computer.

This is a powerful security program that enables you to set a password for the Windows user's account information and provides TPM, Smart Card and fingerprint recognition functions.

To use the OmniPass program, you have to complete the following procedures.

Step 1 : Registering a User

Step 2 : Registering Authentication Device

Step 3 : Using the Security Device

- This function is only supported for models with Smart Card reader, TPM chip and fingerprint recognition devices. The type of authentication device may differ depending on the model.
- The Omnipass security program may not be provided or a different version may be provided depending on the model.
- The screen image, terms and usage are subject to change depending on the version.
- For more information, refer to the help of the program.

Step 1 : Registering a User

You have to register a user after logging in with a registered Windows user account.

1 Click **Start > All Programs > Omnipass > OmniPass Enrollment Wizard** and then **Start**.

2 Enter the Windows user account and password and click **Next**.

3 Select an authentication device to be registered for the entered user account. You cannot register more than one authentication device.

The type of device may differ depending on the model.
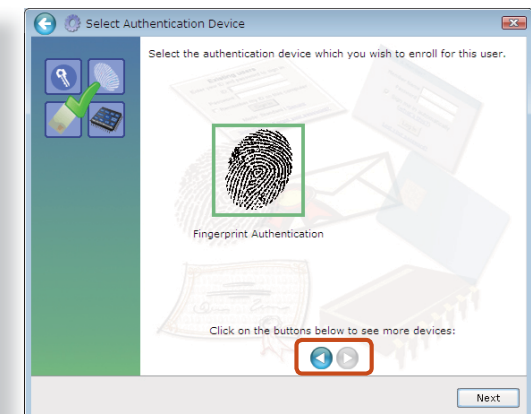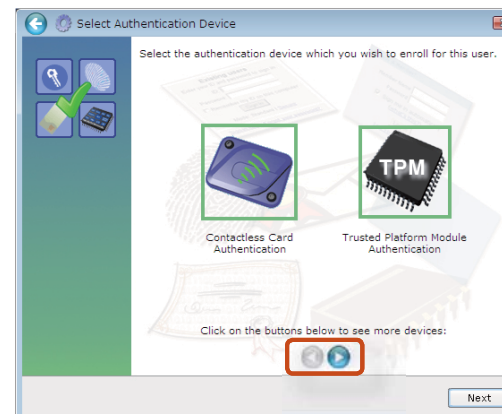
Step 2 : Registering Authentication Device

Registering as a TPM Device (Optional)

The TPM (Trusted Platform Module) saves the user authentication information on the TPM chip installed on the computer.

Before registering a device as a TPM device, check if the TPM program has been installed, initialize the TPM chip and register the user.

1. Initializing the Chip

When you use the TPM function for the first time or you want to delete the user information saved on the TPM chip, complete the following.

> - If the TPM chip is initialized, all the authentication information saved on the TPM chip is deleted. Therefore, please be careful.
> - After initializing the TPM chip, you cannot use the files and folders encrypted by the TPM function. Therefore, decrypt them before initializing the chip.
> - Either type A or B is provided depending on the model.

1 Turn the computer on, and if the booting screen (SAMSUNG logo) appears, press the **F2** key.

2 ► **Type A Model**
If the BIOS screen appears, select **Security > TPM Configuration**, set the **TPM Support** item to **Enabled** and set the **Change TPM State** item to **Clear**.

► **Type B Model**
If the BIOS screen appears, select **Advanced > Trusted Computing**, and set the **TPM Support** item to **Enable**, the **TPM State** to **Enabled** and the **Pending TPM operation** to **TPM Clear**.

3 Press the **F10** key to save the settings.

4 When the booting screen (SAMSUNG logo) appears, press the **F2** key.

> If the message window appears, press the **F12** key.
> When the computer restarts automatically, press the **F2** key.

Using the Security Device (Optional)

5 ► **Type A Model**
When the BIOS screen appears, select **Security > TPM Configuration** and set the **Change TPM State** item to **Enable & Activate**.

► **Type B Model**
If the BIOS screen appears, select **Advanced > Trusted Computing**, and set the **TPM Support** item to **Enable**, the **TPM State** to **Enabled** and the **Pending TPM operation** to **Enable Take Ownership**.

6 Press the **F10** key to save the settings.

If the message window appears, press the **F10** key.

7 Now that the TPM chip initialization has been completed, you can register a user.

2. Registering a User

Complete the following only when you want to register a user to the TPM chip.

1 Click **Start > All Programs > Infineon Security Platform Solution > Manage Security Platform** and select the **User Settings** tab.

2 The security authentication configuration begins with the instructions of the **Initialization Wizard**. Select a drive to save the authentication information to and click **Next**.

3 Select a Security Platform function to use and set the password. If you click **Next**, the Security Platform configuration begins.

4 When the Initialization Wizard completion window appears, click **Finish** to finish the user registration. You can now use the TPM device of the OmniPass program.

3. Registering the TPM

1 In the OmniPass program screen, select **Trusted Platform Module Chip** and click **Next**.

2 Enter the password for the user who is registered to the TPM chip and click **OK**.

3 The TPM chip registration has been completed.
Check whether to finish the registration or register more security authentication devices and click **Next.**
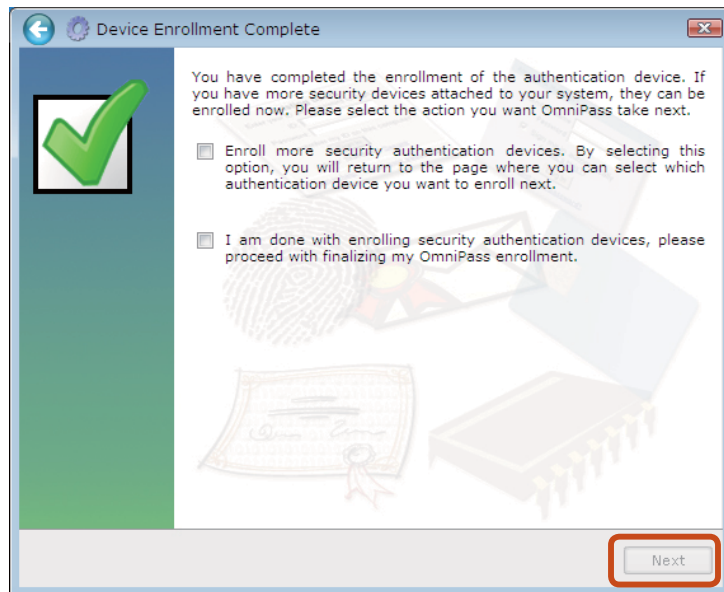
Registering the Smart Card (Optional)

Read the Smart Card information and register it to the Windows user account.

> A smart card is a type of RFID device. This product only supports smart cards from among RFID devices.

1 In the OmniPass program screen, select **Contactless Card Authentication** and click **Next**.

2 If you place the smart card to be registered in the reader (the right space of the touchpad), the smart card information is automatically read.

Place smartcard here.
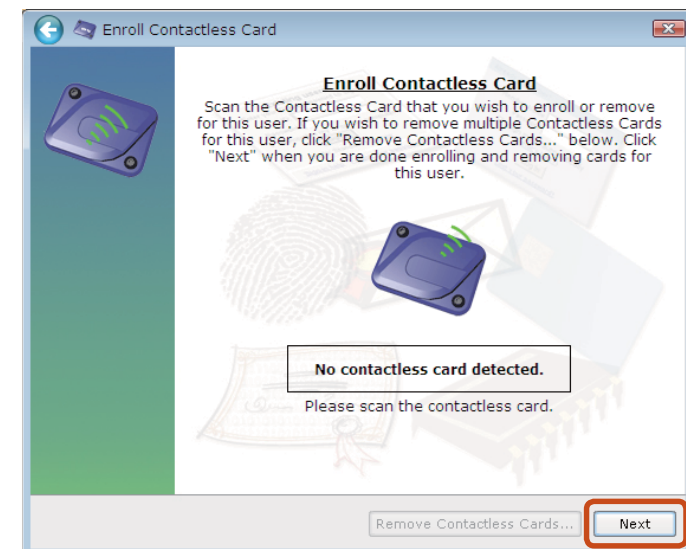
3 The authentication device has been registered. Check whether to finish the registration or register more security authentication devices and click **Next**.

📝 **Supported cards:**

- ISO14443-4 Type A / Type B

- Innovision Jewel

- Mifare Family

Registering Fingerprints (Optional)

You can register fingerprints and register them to a Windows user account. You can register the fingerprint of a particular finger and register up to 10 fingerprints.

1 In the OmniPass program screen, select **Fingerprint Authentication** and click **Next**.

2 Select the fingers to be registered and click **Next**.

3 Move your fingers on the fingerprint recognition device according to the instructions displayed on the screen. At least 3 finger prints are captured.
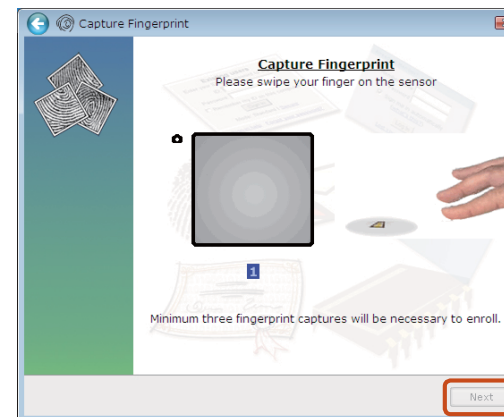
Fingerprint Sensor

4 Finally, confirm that the captured fingerprints are your fingers. If a green fingerprint is displayed on the screen, it indicates that the selected finger has been properly registered. Click **Next**. (If a red fingerprint is displayed on the screen, register the finger again.)
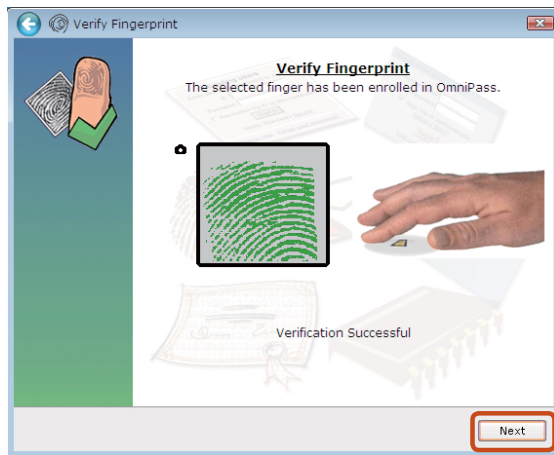
5 If the message window appears, determine whether to register more fingers.

6 The fingerprint registration has been completed. Check whether to finish the registration or register more security authentication devices and click **Next**.

Step 3 : Using the Security Device

Logging into Windows

1 If you turn the computer on, the authentication window appears in the login screen. If there is more than one authentication device, you can select one of them by pressing the right arrow.

2 If the authentication process is complete, you will be logged into Windows.

Encrypting Folder

> You cannot encrypt a file or folder that is stored directly under the C drive. ex) C:\Samsung

1 Place the pointer over a folder to be encrypted and select **OmniPass Encrypt File(s)**.

2 Encrypt the folder through the authentication device registered to the Windows account that is logged in.
If there is more than one authentication device registered to the user account, you can select one of them by pressing the right arrow.
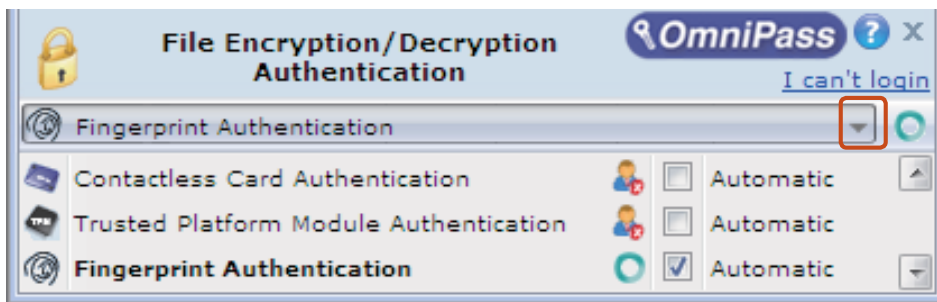
3 When the folder is encrypted, you will be able to view the lock icon in the folder icon.

Opening an Encrypted Folder

1 Double-click an encrypted folder.

2 If the authentication screen appears, select an authentication device and enter the registered password.

3 The folder opens.

Decrypting an Encrypted Folder

1 Place the pointer over an encrypted folder and select **OmniPass Decrypt File(s)**.

2 If the authentication screen appears, select an authentication device and enter the registered password.

3 The folder is decrypted.

Chapter 3.
Settings and Upgrade

You can adjust the LCD brightness in 8 levels.

> The screen brightness is automatically set to the brightest level (brightness level 8) when AC power is connected and the brightness is automatically set dimmer when the computer runs on battery power to extend the battery use time.

Controlling the Brightness Using the Keyboard

Adjust the LCD brightness by pressing the `Fn` + `F2 ☼−` key or the `Fn` + `F3 ☼+` key.

The LCD brightness can change up to 8 levels and the brightness increases by 1 level when pressing the `Fn` + `F3 ☼+` key once.

> • **Maintaining the changed LCD brightness even after turning the computer on again**
>
>   To maintain the LCD brightness set by using the brightness control keys or through the Power Options, follow the procedures below.
>
>   ► **For Windows 7/Vista**
>   1. Click **Control Panel** > **Hardware and Sound** > **Power Options**.
>   2. Click **Change the settings** of the currently configured mode.
>   3. Adjust the display brightness adjustment menu bar and click the **Save the changes** button.
>
>   **Saving battery power consumption**
>
>   Decreases the LCD brightness when the computer is running on battery power to save battery power consumption.

LCD Brightness Control

- **LCD bad pixels principle of laptop computer**

  Samsung observes the specifications regarding strict quality and reliability of LCD. But in spite of that, it is inevitable that there might be a small number of bad pixels. A large number of bad pixels can cause problems in appearance, but a small number of pixels doesn't affect the computer performance.

  Therefore Samsung observes and manages the following dot principles:

  - Bright dot : 2 or less
  - Black dot : 4 or less
  - Combination of Bright and Dark : 4 or less

Instructions for Cleaning the LCD

Clean the LCD panel with a soft cloth lightly moistened with computer cleansing detergent moving in one direction.

Cleaning the LCD panel with excessive force can damage the LCD.

The BIOS Setup enables you to configure your computer hardware according to your needs.

- Use the BIOS setup to define a boot password, change the booting priority, or add a new device.
- Since incorrect settings may cause your system to malfunction or crash, take care when configuring the BIOS.
- The functions of the BIOS setup are subject to change for product function enhancement purposes.
- The BIOS Setup menus and items may differ depending on your computer model.

Entering the BIOS Setup

1 Turn the computer on.

2 When the booting screen (SAMSUNG logo) appears, press the **F2** key to enter the BIOS Setup.
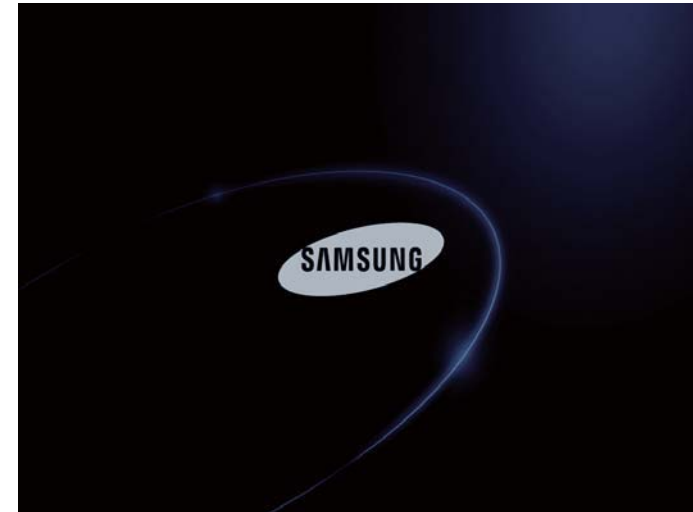
The screen images in this document may differ from actual product.

3 After a moment, the BIOS setup screen appears.

The items in the BIOS setup may differ depending on the product.

The BIOS Setup Screen

The BIOS Setup menus and items may differ depending on your computer model.

```
        XXXXXXXX SecureCore (tm) Setup Utility
 SysInfo   Advanced     Security     Boot      Exit
 
   System Time          [10:21:53]           Item Specific Help
   System Date          [07/30/20XX]
                                          <Tab>, <Shift-Tab>,
   SATA Port 1          XXXXXXXX          or <Enter> selects
   SATA Port 2          XXXXXXXX          field.
 
   CPU Vender            XXXXXXXX
   CPU Type             XXXXXXXX
   CPU Speed            X.XX GHz
   CPU VT(VT-x)         XXXXXXXX
 
   Total Memory         XXX MB
     Slot 1 Memory      XXX MB
     Slot 2 Memory      XXX MB
 
   BIOS Version         XXXXXXXX
   MICOM Version        XXXXXXXX
```
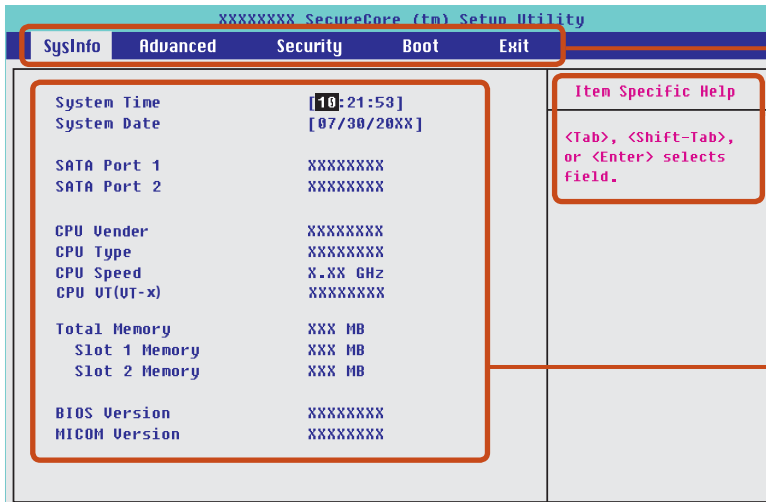
Setup Menu

Help

Help for the selected item appears automatically.

Setup Items

Setup Menu	Description
SysInfo	This is a description about the basic specifications of the computer.
Advanced	Using this menu, you can configure the major chipsets and additional functions.
Security	Used to configure security functions, including passwords.
Boot	This menu enables you to configure peripherals and booting related settings such as the boot priority.
Exit	Used to exit the Setup either saving the changes or not.

System Setup Keys

In the Setup, you have to use the keyboard.

F1	F1	Press to view the Setup Help.
Up & Down Keys	▲ ▼	Press to move up and down.
F5/F6	F5 F6	Press to change the item value.
F9	F9	Press to load the default Setup settings.
F3	F3	Press to restore the previous value.
ESC	Esc	Press to return to a higher level menu or to move to the **Exit** menu.
Left & Right Keys	◄ ►	Press to move to another menu.
Enter	↵	Press to select an item or to enter a sub menu.
F10	F10	Press to save the changes and exit Setup.

The keyboard image may differ from the actual keyboard.

When setting a password, you have to enter a password to use the computer or enter the BIOS Setup.

By configuring a password, you can restrict system access to authorized users only and protect data and files saved on the computer.

> - Do not lose or forget your password.
> - If you have forgotten your password, contact a Samsung service center. In this case, a service fee will be charged.
> - The screen images and terms may differ from actual product depending on the computer model and driver version.

Setting a Supervisor Password

A Supervisor Password is required to turn the computer on or to start the System Setup.

When setting a Supervisor Password, users other than a supervisor cannot use the computer.

1 Select the **Security** menu in the BIOS Setup.

2 In the **Set Supervisor Password** item, press <**Enter**>.

Supervisor Password	Clear
User Password	Clear
HDD Password	Clear
Set Supervisor Password	[Enter]
Set User Password	[Enter]
Set HDD Password	[Enter]
Password on boot	[Disabled]
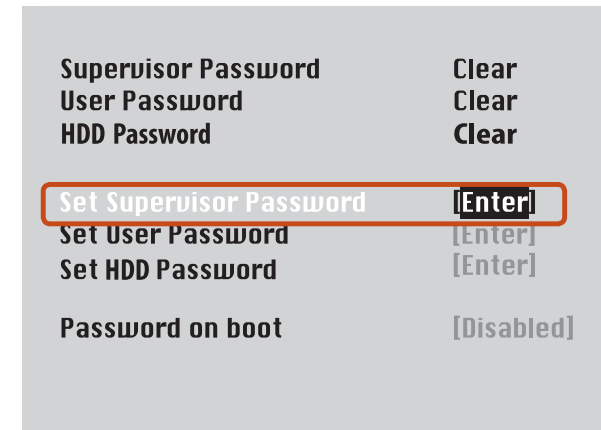
3 Enter a password, press <**Enter**>, re-enter the password for confirmation, and press <**Enter**> again.

The password can be up to 8 alphanumeric characters. Special characters are not allowed.

4 The supervisor password has been set.

The supervisor password is required to turn the computer on or to enter the BIOS Setup.

> For some models, if the password entered message appears in the **Setup Notice** window, the settings are not complete until the <**Enter**> key is pressed.

Setting a User Password

Users can start the system with a user password, but cannot enter the System Setup. By doing this, you can prevent other users from entering Setup.

Before configuring a user password, a **supervisor password** must have been configured. Deactivating the supervisor password also deactivates the user password.

In the **Set User Password** item, press <**Enter**> and complete the procedures from Step 3 of Setting a Supervisor Password.

Setting Up a Boot Password

To setup a boot password, the administrator password (**Set Supervisor Password**) should be set in advance.

Set the **Password on boot** item to **Enabled**.

Once a boot password is set, you have to enter a password to boot up the computer.

Setting up a Hard Disk Drive Password (Optional)

If you set a password for a hard disk drive, it cannot be accessed from another computer.

Press <**Enter**> in the **Set HDD Password** item and define a password as described in Step 3 of the Setting up the Supervisor Password.

- The hard disk drive password setting function is not provided for some models.

- **Changing the hard disk drive password**

  For security purposes, you can only change a hard disk drive password after restarting the computer by pressing the computer **Power** button.

  If you cannot change the hard disk drive password or the **HDD Password Frozen** message appears when entering the BIOS Setup and then selecting **Security > HDD Password**, press the **Power** button to turn the computer on again.

Setting a Boot Password

Deactivating the Password

1 Press <**Enter**> on the password to be deactivated. For example, to deactivate a supervisor password in the **Set Supervisor Password** item, press <**Enter**>.

2 In the **Enter Current Password** item, enter the currently configured password and press <**Enter**>.

3 Leave the **Enter New Password** item field empty, and press <**Enter**>.

4 Leave the **Confirm New Password** field empty, and press <**Enter**>.

The password is deactivated.

For some models the password is only canceled if the <**Enter**> key is pressed in the **Setup Notice** window.

By default, the highest boot priority device is set to the CD-ROM/ DVD drive. As an example, the procedures to change the highest boot priority device to the hard disk drive are described below.

> The screen images and terms may differ from actual product depending on the computer model and driver version.

1 Select the **Boot** menu in the BIOS Setup.

2 Press <**Enter**> on the **Boot Device Priority** item.

```
▶ Boot Device Priority

  NumLock                    [Off]
  Touch Pad Mouse            [Enabled]

  InternalLAN                [Enabled]
  PXE OPROM                  [Disabled]

  Smart Battery Calibration
```
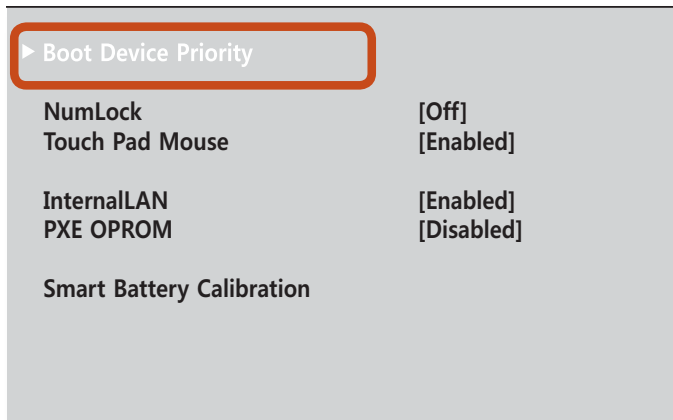
3 Press the down key (↓) to move to the **SATA HDD** item and press the **F6** key to move up to the top item.

```
                Boot Device Priority

  [Set Boot Priority]
     1. SATA CD     :   XXXXXXXXXXXX
     2. SATA HDD   :   XXXXXXXXXXXX
     3. USB CD      :   N/A
     4. USB KEY     :   N/A
     5. USB FDD     :   N/A
     6. USB HDD     :   N/A
     7. NETWORK    :   N/A
```
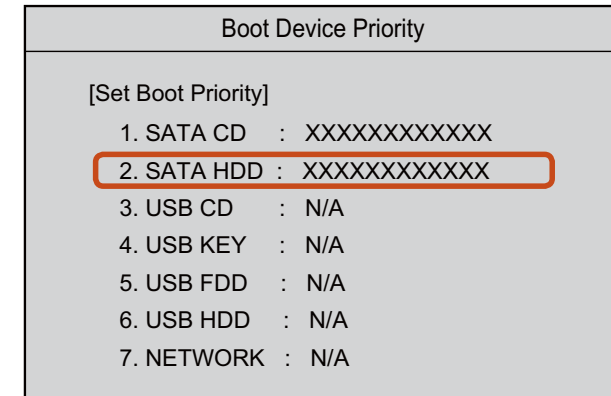
4 Press the **F10** key to save the settings and exit Setup.

The highest boot priority device is now set to the Hard Drive.

One or more memory modules are installed on the computer.

There are 2 memory slots and users can replace the installed memory or add new memory.

> • Replace or install new memory only after shutting the computer down completely. Do not replace or install memory when the computer is in Sleep mode.
>
>   Disconnect main power plug and remove the battery before continuing.
>
> • To utilize the dual channel feature, using memory modules with the same specifications (of the same capacity and from the same manufacturer) is recommended.
>
> • The images used for the illustration are of a representative model, therefore the images may differ from the the actual product.

Adding or Replacing Memory Modules

1 Remove the screw on the memory compartment cover at the bottom of the computer using a screw driver.

▶ **For 12.5 inch models**

Fixing Screw

▶ **For 14, 15.6 inch models**

Fixing Screw

Upgrading Memory

2 Insert a new memory module into the memory slot at an angle of approximately 30 degrees aligning it to the angle of the memory slot.

► **For 12.5 inch models**

Memory Slot

► **For 14, 15.6 inch models**

Memory Slot

3 Push the memory module down so that it is completely fixed. If the memory does not fit easily, push the memory module down while pulling the memory module latches outward.

► **For 12.5 inch models**
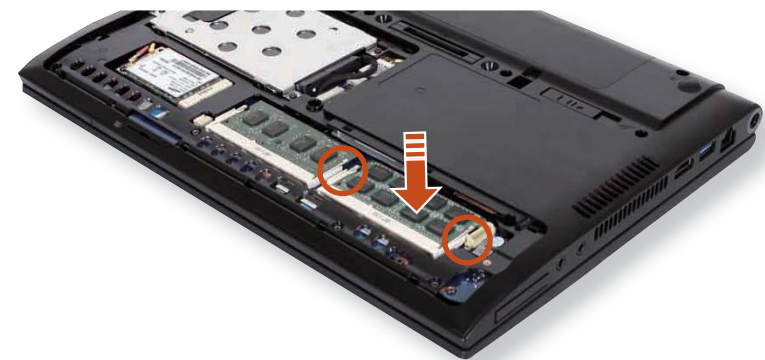
► **For 14, 15.6 inch models**
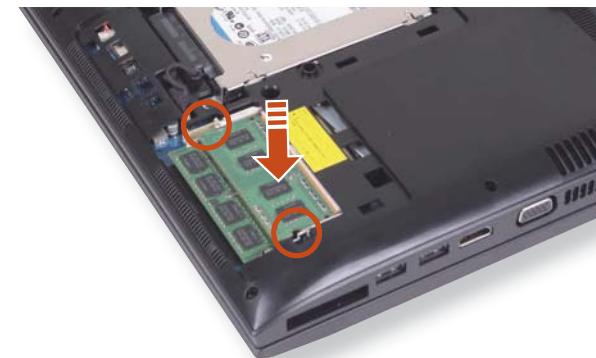
4 Close the memory compartment cover and fasten the screw.

Removing a memory module

Pull the memory module latches outward.
The memory module will pop up.

Remove the memory module out at an angle of 30 degrees.

► **For 12.5 inch models**
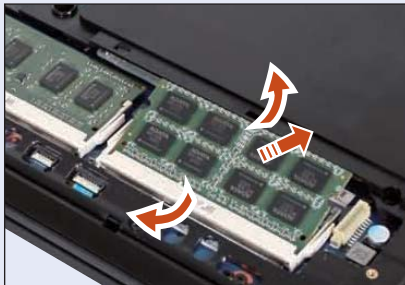
► **For 14, 15.6 inch models**
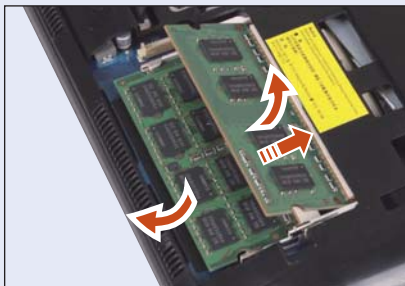
Please refer to the following instructions when running the computer on battery power without connecting the AC power.

A Lithium-Ion smart battery is supplied with this computer.

> • Carefully read and follow the precautions printed on the battery before using the battery.
>
> • Before using your computer for the first time after purchasing it, charge the battery completely.
>
> • The images used for the illustration are of a representative model, therefore the images may differ from the the actual product.

! Precautions

• Use only chargers specified in the User Manual.

• Never heat the battery pack, put it near or in a fire or use at a temperature higher than 60°C, as this may cause fire.

• Never cause a short circuit between the battery pack terminals or disassemble the battery pack.

• Carefully read and follow the precautions printed on the battery and the safety instructions in the User Manual before using the battery.

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

Charging the Battery

1 Attach the battery and connect the AC adapter to the DC-in jack of the computer.

The battery will then start charging.
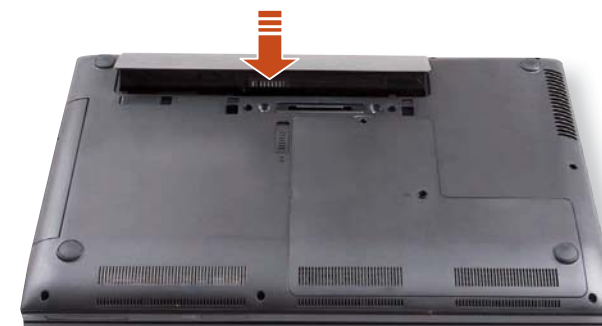
2 When charging is complete, the Charge LED turns green.

Status		Charge LED
Charging	🔴 🟠	**Red** or **Orange**
Charging complete	🟢 🔵	**Green** or **Blue**
AC adapter not connected	⚪	**Off**

Measuring the Remaining Battery Charge

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

Confirming the battery charge in the Taskbar

Disconnect the AC adapter and move the mouse cursor over the battery icon in the system tray of the Taskbar to confirm the remaining battery charge.
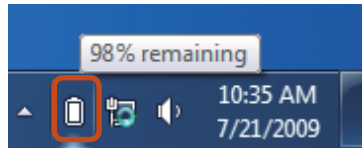
Battery Usage Time Information

A battery is an expendable supply, so when using it over a long time, the capacity/battery life is shortened. If the battery life is reduced to under half of its initial time, we recommend purchasing a new battery.

When not using the battery for a long time, store the battery after charging it to 30-40% of its capacity. This extends the battery life time.

Extending the Battery Usage Time

Decreasing the LCD Brightness

Press the Fn + F2 keys on the keyboard to decrease the LCD brightness to extend the battery usage time.

Using the battery mode (Optional)

Press the **Fn + F8** key combination. The battery mode window will appear that helps you to use the battery efficiently. The battery modes optimized for the operating environment are supported.

> These descriptions are for Windows 7 and for supported models only.

> **Using the battery modes**
>
> To use the power options of the Easy Display Manager program after reinstalling Windows, you can install the Easy Display Manager program using the system software media.
>
> Since the battery mode is optimized to extend the battery use time, programs that require high performance may slow down when the computer is running on battery power.
>
> In this case, it is recommended connecting the AC adapter or selecting high-performance mode.

▶ **For Windows 7/Vista**

1 Click **Start** > **Control Panel** > **Hardware and Sound** > **Power Options**.

    Alternatively, right-click the power measuring device icon in the notification area of the taskbar and select **Power Options**.

2 If the following screen appears, select one of the modes.
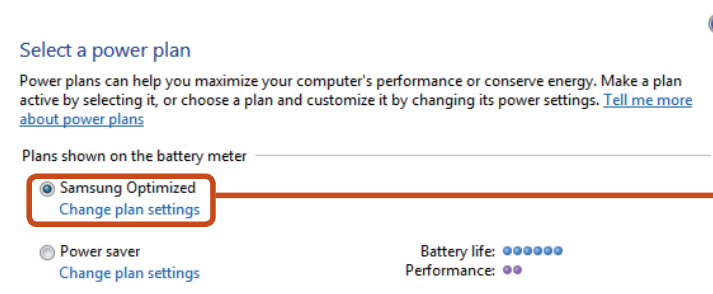
Samsung Optimized

Samsung Optimized	This mode is appropriate for normal conditions. It maximizes the system performance when the computer is running on AC power while maximizing the battery usage time when the computer is running on battery power.

► **For Windows XP**

Click **Samsung Battery Manager**.
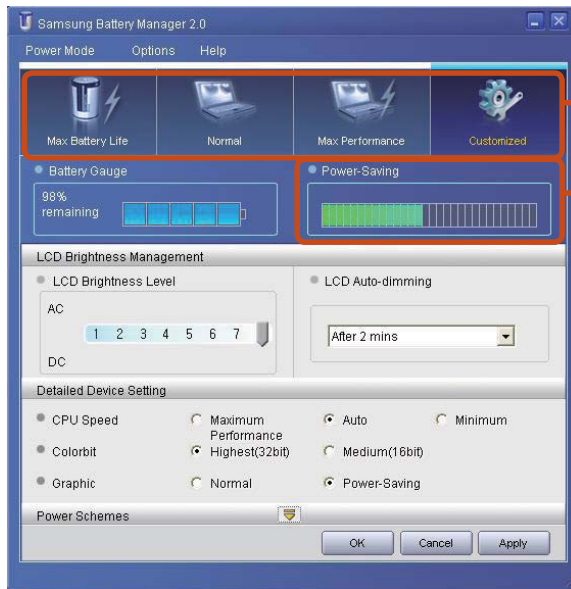
Select Power Mode

Power-saving Effect

Maximum Battery Mode	This mode is appropriate for the environment that requires maximum battery lifetime. The system performance may be degraded in this mode.

📝 • **What is the Power-saving Effect?**

This product displays the battery life in each power mode. The higher the power saving effect increases, the longer the graph bar is displayed.

• **When Using Games or Multimedia**

The system may not operate properly in maximum battery mode. It is recommended to connect the AC adapter to the system or to use the system in general mode.

• **Usage Mode of Samsung Battery Manager**

- The maximum battery mode optimizes the system operation speed to increase the battery run time, so the program execution time may get longer.

- If you change the power settings, the properties in **Power Options** window will also be changed.

Extending the Battery Life (Optional)

The Battery Life Extender is a battery power management program that enables extending the battery life. Users can change the settings depending on their requirements.

> • The Battery Life Extender is optional and may not be supplied depending on the model.
>
> • The screen images and terms may differ from actual product depending on the computer model.

1 Run **Battery Life Extender**.

2 When the following screen appears, select a mode and click the **OK** button. You can use the battery in the selected mode.
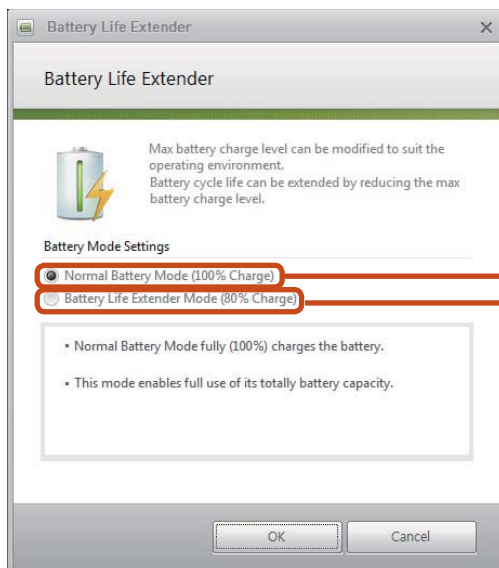
Battery Normal Mode
Battery Life
Extension Mode

Battery Normal Mode	This mode maintains 100% of the battery charge when using the computer on AC power. In this case, although the battery use time increases, the battery life is reduced.
Battery Life Extension Mode	This mode maintains 80% of the battery charge when using the computer on AC power. In this case, although the battery use time decreases, the battery life is extended.

> Press the **F2** key when the Samsung logo appears in the booting sequence to enter the BIOS Setup, select **Advanced > Battery Life Cycle Extension**, and set it to **Enable**. Then you can use the battery life cycle extension mode.

Using the Battery Calibration Function

When charging/discharging the battery repeatedly for a short time only, the battery usage time may be reduced by the difference between the actual battery charge and the remaining charge display.

In this case, the actual battery charge and the remaining charge display will be the same by discharging the battery completely using the Battery Calibration function, and then recharging it again.

> The screen images and terms may differ from actual product depending on the computer model and driver version.

1 Disconnect the AC power adapter after turning off the computer.

2 Restart your computer and press the **F2** button when the Samsung logo appears, to start the BIOS Setup.

3 Move to the **Boot > Smart Battery Calibration** item using the direction keys and press <**Enter**>.

```
▶ Boot Device Priority

NumLock                        [Off]
Touch Pad Mouse                [Enabled]

InternalLAN                    [Enabled]
PXE OPROM                      [Disabled]

Smart Battery Calibration
```
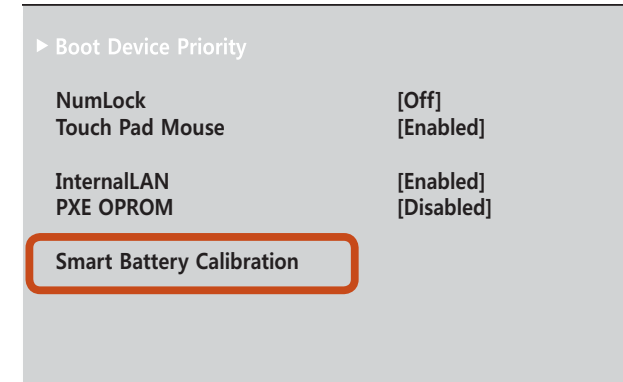
4 Highlight **Yes** in the **Battery Calibration Confirmation** window and press <**Enter**>.

The Battery Calibration function is activated and the battery is forcefully discharged. To stop the operation, press the <**Esc**> button.

This operation requires 3~5 hours depending on the battery capacity and the remaining battery charge.

Battery

Installing/Removing the Battery

1 Shutdown the system, close the LCD panel and place the computer upside down on a flat surface.

2 ► **For 12.5 inch models**
Pull the battery latch ⌐⌐ outward, then remove the battery.

► **For 14, 15.6 inch models**
Lift the battery latch ⌐⌐ forward to remove the battery.
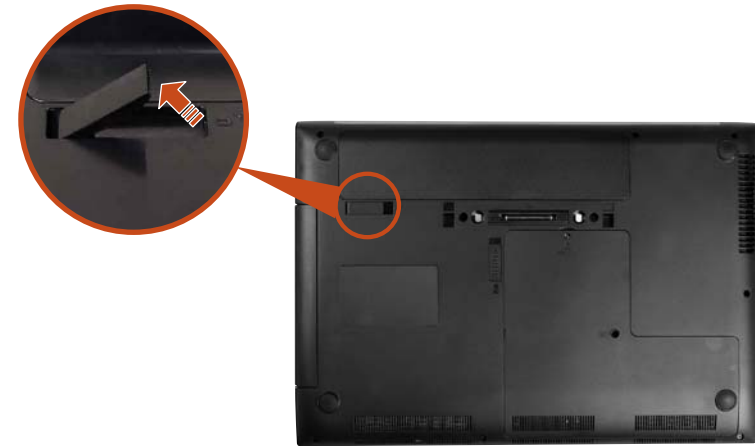
3 To install the battery again, slide the battery into the system.

The battery latches move inwards and fix the battery automatically.

Using the Security Lock Port

You can connect a Kensington lock to the Security Lock port to prevent your computer from being stolen when you have to use the computer in a public place.

To use this feature, you have to purchase the Kensington lock additionally. To use the Kensington lock, refer to the product manual.

Tie the Kensington lock cable to a fixed object and install the other end of the cable to the Security Lock port.

Chapter 4.
Backup / Restore

Samsung Recovery Solution is a program that enables restoring or backing up the hard disk drive for when a problem occurs with the computer.

If the computer fails to boot up, you can restore the computer by pressing the **F4** key in the booting screen.

> • Samsung Recovery Solution may not be provided or the version may differ depending on the model. In addition, some functions may not be provided or may differ depending on the version.
> For more information on using Samsung Recovery Solution, please refer to the online help of the program.
>
> • The screen images in this document may differ from actual product.
>
> • If your computer does not have an internal ODD, you need an external ODD connected to your computer to use the Backup Function or Restore Function using DVDs.
>
> • The System Software function may not be provided depending on the program version.

Samsung Recovery Solution Functions

Backup/Restore Functions

Backup Function Backs up drive C or required folders and files.	
• **Complete Backup** Backs up drive C.	• **Data Backup** Backs up important folders and files.

A problem occurs	Restore Function Restores major Windows files, drive C, or folders and files to the previous state.
	• **Basic Restore** Restores only major Windows files in a short time.
	• **Complete Restore** Restores drive C to the previous, normal state.
	• **Data Restore** Restores important files or folders to the previously backed up state.

System Software Functions

Samsung Recovery Solution provides system software so that you can reinstall or copy the device drivers and system software necessary for normal operations onto a separate storage device.

Restore Function

Not only can you use Samsung Recovery Solution when Windows is running, but also when you are unable to boot up into Windows. Let's learn how to use Samsung Recovery Solution.

Optional functions such as Initial State Image, Initial Status Backup, and Partitioning are only available in some models.

Partition Setup & Initial Status Backup

If you turn your computer on for the first time, the Initial Status Backup function is performed after registering Windows. This function saves an image of the Initial Status of the C drive to a secure location so that users can restore the computer to the Initial Status using the Complete Restore function. An Initial Status Backup is only performed once immediately after the computer is purchased.

1 If you turn the power on for the first time, the Register Windows screen appears. If you register Windows according to the instructions on the screen, the computer will be restarted.

2 After the computer has been restarted, the **Partition Setup** screen appears.

To resize the C and D drives, adjust the partition size using the slide bar and the click **Next**.

> The Partition Setup function is only available when the computer is turned on for the first time and will not be available afterwards. Once you have completed the partitioning, it cannot be resized. Partition the disk carefully.

3 The **Initial Status Backup** screen appears.

To continue the Initial Status Backup, click **Restart Now**. The computer will restart.

4 The Initial Status Backup is performed to backup the initial status of the C drive to a secure location. This backup image is used for the Complete Restore function that restores your computer to the initial status.

5 When the Initial Status Backup is complete, restart Windows.

Restoring the computer

Restore is a function that enables restoring the computer to a saved point when the computer was purchased or a user-saved point.

The Restore function provides the Basic Restore and Complete Restore options.

1 **– When Windows is running:**

Click **Samsung Recovery Solution**.

– When Windows does not start:

Turn the computer on and press the **F4** key when the boot screen (SAMSUNG logo) appears. After a moment, the computer boots up in Restoration mode and the Samsung Recovery Solution screen appears.

For computers supporting the touch screen function, the touch screen function does not work during Restore Mode. In this case, please use the touchpad or mouse.

2 If the initial menu screen appears, click **Restore**.

If you click **Select by Symptom**, the Select by Symptom menu appears. If you select a symptom, a recommended restoration option will blink. Click the restoration option to continue.

3 Select either **Basic Restore** or **Complete Restore** from the Restore menu.

To restore the computer to the initial state, click **Computer Initial State** and perform the restoration process according to the instructions that appear on the screen.
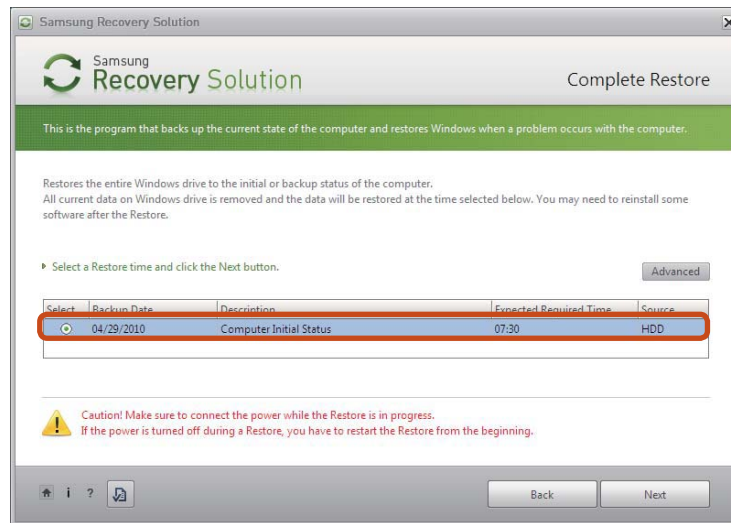
> Run **Complete Restore** if the computer does not work even after **Basic Restore** has been completed.

> In the **Advanced** menu, you can change the size of the hard drive partitions (e.g. C: and D:).
>
> - Make sure to backup your data in advance, as all data will be deleted after the partition size is changed.
> - The **Advanced** menu is only activated when the computer boots up in the restoration area. (by pressing the **F4** key during the booting sequence.)

> Since a Complete Restore deletes all user data as well as additionally installed programs, please backup your important data first using the Data Backup function, before running Complete Restore.

4 The computer boots up into restoration mode and the restoration progress message appears. If you click **OK**, the restoration begins. The restoration may take some time, please wait for a moment.

5 When the 'Restart the System' message appears after the restoration is complete, click **OK** to restart the system.

> Make sure that the power cord is connected while the restoration is in process. The first time the computer boots up after a Complete Restore has been performed, the speed of the boot process may be slowed down due to the system optimization process. At this time, do not shut the computer down by force.

Complete Backup/Restore

A **Complete Backup** saves the complete image of the C drive
onto another drive or DVD. A **Complete Restore** restores the
image file saved by the Complete Backup onto the C drive.

Complete Backup

> If you run Complete Backup using a DVD, you can restore the
> computer even when a problem occurs with the hard disk or
> when the restoration area is removed.

1 Click **Backup** in the start screen of the Samsung Recovery
Solution.

2 Enter a description of the current status of the computer and
click **Next**.
If a writable DVD drive is installed, you can specify the DVD as
the Save Path.
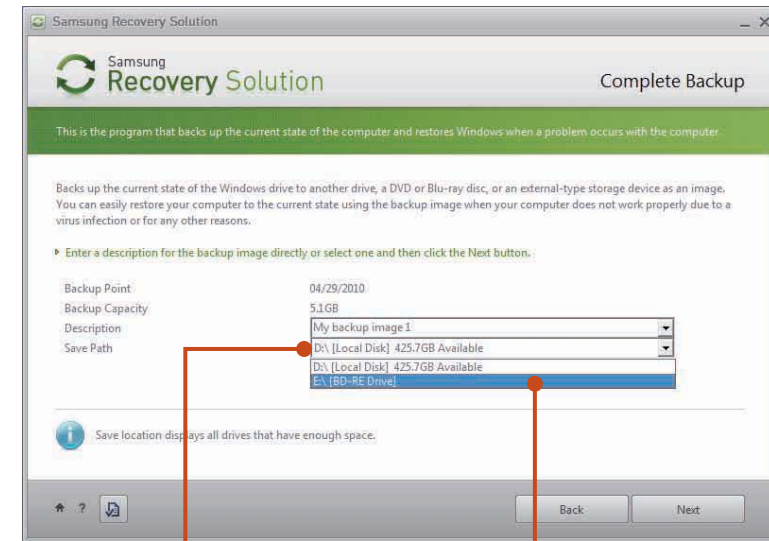
Select Drive D.   Select the DVD drive.

3 When the option selection item appears, select an option
and click **Next**.

> The LiveImaging and System Software Backup functions are
> supported as options for the Complete Backup operation.
>
> • **LiveImaging:** Performs the Complete Backup operation
>   while Windows is running. The backup operation using
>   LiveImaging may slow down if the hard disk drive is
>   accessed frequently by other applications.
>
> • **System Software Backup:** This function backs up the
>   system software on to the DVD after the completion of the
>   Complete Backup operation.

4 When the system restarts in Restoration Mode, the **Complete Backup** operation begins. Continue with the backup by following the instructions.

> • Samsung Recovery Solution supports the DVD+R, DVD-R, DVD+RW and DVD-RW formats.
>
> • If the LiveImaging option has been selected, the Complete Backup operation begins without the computer being restarted.

5 Continue with the Complete Backup operation by following the instructions.

6 When the 'Restart the System' message appears after the backup is complete, click **OK** to restart the system.

> If the LiveImaging option has been selected, the computer is not restarted.

Samsung Recovery Solution (Optional)
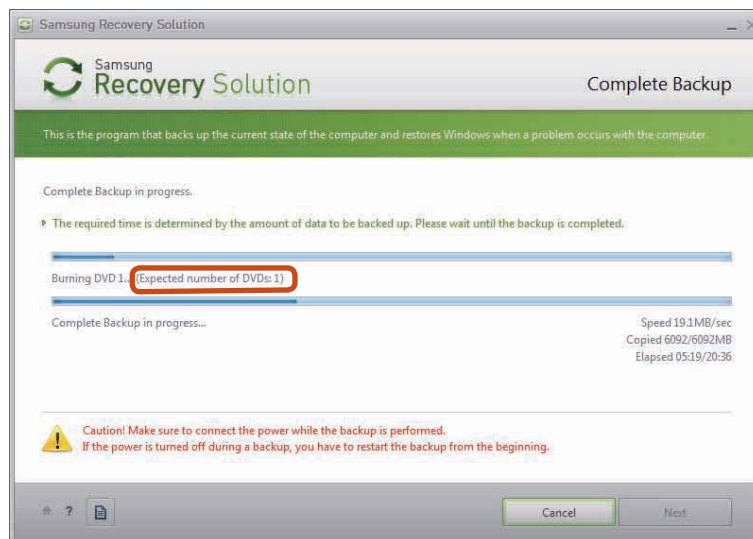
Complete Restore

1 – **When backing up onto DVD**

Turn the computer on and insert the backup DVD into the DVD drive.
If there are multiple backup DVDs, insert the first DVD.

– **When backing up to another drive**

Proceed to Step 2.

2 When the Samsung Recovery Solution start screen appears, click **Restore** and then click **Complete Restore**.

3 Select a **Complete Backup** restoration point in the restoration point selection screen and click the **Next** button. The system is restarted.

4 The restoration progress message appears after the computer boots up in restoration mode. If you click **OK**, the restoration begins.

> If multiple DVDs have been used for a Complete Backup, whenever burning a DVD is completed, the "Insert the next DVD" message will appear.

5 When the 'Restart the System' message appears after the restoration is complete, click **OK** to restart the system. The Complete Restore has been completed.
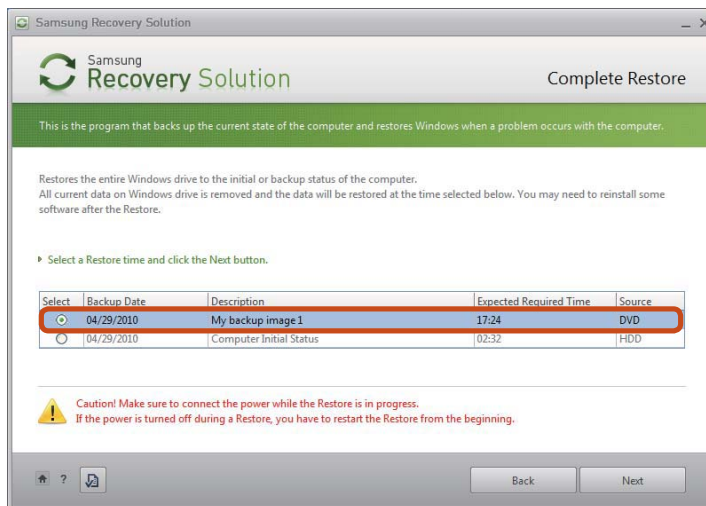
Data Backup/Restore

Data Backup enables you to save specific files or folders onto another drive or DVD. **Data Restore** enables you to restore data using the data saved by a Data Backup when data is lost. This guide describes the Backup and Restore procedures on the basis of backing up and restoring by using DVD.

Data Backup

1 When the Samsung Recovery Solution start screen appears, click **Backup** and then click **Data Backup**.

2 In the data selection screen, select either **Basic Selection** or **Select from all**, select a folder or file to be backed up, and then click the **Next** button.

3 Enter a description for the backup in the **Description** field so that you can easily recognize it later and specify the **Save Path**. If your computer has a DVD-Writer, you can specify the DVD drive as the Save Path.
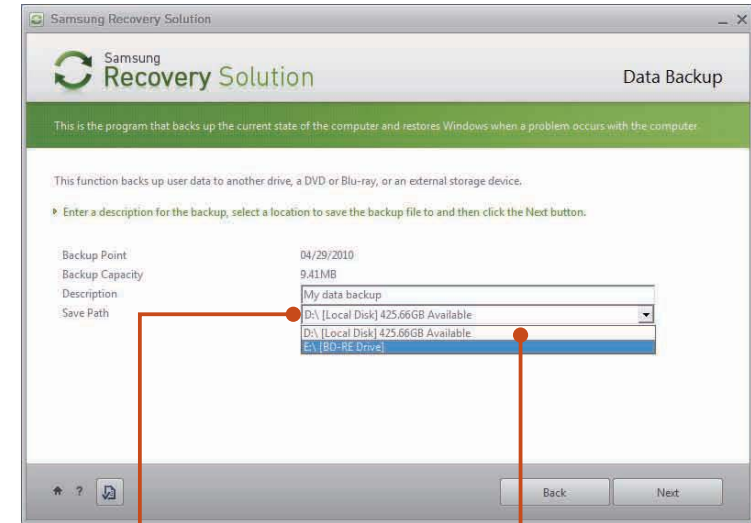
Select Drive D.   Select the DVD drive.

> ⚠ If you have specified a hard disk drive or a removable disk as the Save Path, the **SamsungRecovery\SamsungData** folder is created on the corresponding drive (e.g. D:\) and the data is saved to the folder. Take care to not delete the folder by mistake or on purpose.

4 If you click the Next button, the Data Backup begins. If you have selected the DVD drive as the Save Path, the "Insert a blank DVD" message appears. Insert a blank DVD and click the OK button.

5 The "Backup is completed" message appears.

Samsung Recovery Solution (Optional)

Data Restore

1   **– When backing up onto DVD**

Turn the computer on and insert the backup DVD into the DVD drive.

– When backing up to another drive

Proceed to Step 2.

2   When the initial menu screen appears, click **Restore** and then click **Data Restore**.

3   Select a backup item to be restored in the backup list and click the **Next** button.

4   Select a folder for the restoration and click the **Next** button. Data Restore begins.

5   When Data Restore is completed, check if the data has been restored to the specified folder.

System Software Function

The System Software function is a function that enables you to reinstall device drivers and System Software Programs or back up those programs.

> The system software function is supported by **Samsung Recovery Solution version 4** or **later**. Therefore, the function may not be supported depending on the version.

> ! The System Software Installation Function only works in Microsoft Windows.

Installing System Software

1 When the initial menu screen appears, click **System Software** > **System Software Installation**.

2 When the **Samsung System Software** screen appears, check all the device drivers and application programs you want to install and then click **Install Now**.

3 After the installation is complete, the computer will restart.

System Software Backup

1 When the initial menu screen appears, click **System Software > System Software Backup**.

2 Specify the Save Path. If your computer has a DVD-Writer, you can specify the DVD drive as the Save Path.
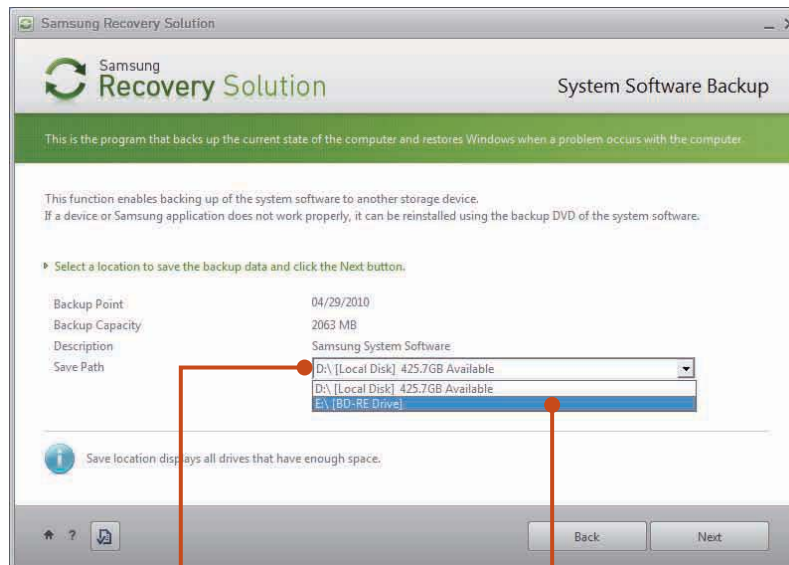
Select Drive D.   Select the DVD drive.

> If you have specified a hard disk drive or a removable disk as the Save Path, the **SamsungSoftware** folder is created on the corresponding drive (e.g. D:\) and the system software programs are saved to that folder. Take care to not delete the folder.

3 If you click the **Next** button, the Software Backup begins. If you have selected the DVD drive as the Save Path, the "Insert a blank DVD" message appears. Insert a blank DVD and click the **OK** button.

4 After the backup, the **System Software Backup is completed** message appears.

> - If you want to install the System Software Programs backed up on the drive, run the **SoftwareMediaXX.exe** file in the **SystemSoftware** folder.
> - When installing System Software Programs from the backed-up DVD, insert the DVD and follow the System Software Installation directions.
> - To delete Samsung Recovery Solution, refer to the Help section of the program.

Recovery Solution Representation (Optional)

What is a Recovery Area?

- Samsung computers have an additional partition to recover computers or save backup files.
  (Only for models with the Samsung Recovery Solution.)

  This partition is called a Recovery Area and it includes a recovery image that comprises of the OS and application programs.

- You can either double-click the Samsung Recovery Solution icon on the desktop or press **F4** while booting the computer to enter the Recovery Area. Then you can back up the present computer state or recover the computer from backed up images.

- For deleting the Recovery Area, you need to use an additional Recovery Area Removal Tool. After deleting the recovery area, you can use the newly created partition for other uses, such as for saving personal data. Be careful that once the recovery area is deleted, the Samsung Recovery Solutions will not work anymore.

The capacity representation of the hard disk drive(HDD) in Windows is different from the product specifications.

- The capacity of the storage device (HDD) of the manufacturer is calculated assuming that 1KB=1,000 Bytes. However, the operating system (Windows) calculates the storage device capacity assuming that 1KB=1,024 Bytes, and therefore the capacity representation of the HDD in Windows is smaller than the actual capacity.

  This is due to the difference in capacity calculation and does not mean the installed HDD is different from the product specifications.

- The capacity representation in Windows may be smaller than the actual capacity because some programs occupy a certain area of the HDD outside of Windows.

- For models with Samsung Recovery Solution, the HDD capacity representation in Windows may be smaller than the actual capacity because Samsung Recovery Solution uses a hidden area of about 5~20GB of the HDD to save the recovery image, and that hidden area is not counted towards the total size available to Windows.

  The size of Samsung Recovery Solution varies by models because of the different size of applied programs.

Chapter 5.
Appendix

Important Safety Information

Safety Instructions

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

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

Setting Up your System

- Read and follow all instructions marked on the product and in the documentation before you operate your system. Retain all safety and operating instructions for future use.

- Do not use this product near water or a heat source such as a radiator.

- Set up the system on a stable work surface.

- The product should be operated only with the type of power source indicated on the rating label.

- Ensure that the electrical outlet you are using to power your equipment is easily accessible in case of fire or short circuit.

- If your computer has a voltage selector switch, make sure that the switch is in the proper position for your area.

- Openings in the computer case are provided for ventilation. Do not block or cover these openings. Make sure you provide adequate space, at least 6 inches (15 cm), around the system for ventilation when you set up your work area. Never insert objects of any kind into the computer ventilation openings.

- Ensure that the fan vents on the bottom of the casing are clear at all times. Do not place the computer on a soft surface, doing so will block the bottom vents.

- If you use an extension cord with this system, make sure that the total power rating on the products plugged into the extension cord does not exceed the extension cord power rating.

- For Notebooks with glossy display bezels the user should consider the placement of the Notebook as the bezel may cause disturbing reflections from surrounding light and bright surfaces.

Care During Use

- Do not walk on the power cord or allow anything to rest on it.

- Do not spill anything on the system. The best way to avoid spills is to not eat or drink near your system.

- Some products have a replaceable CMOS battery on the system board. There is a danger of explosion if the CMOS battery is replaced incorrectly. Replace the battery with the same or equivalent type recommended by the manufacturer.

  Dispose of batteries according to the manufacturers instructions. If the CMOS battery requires replacement insure that a qualified technician performs the task.

- When the computer is turned off, a small amount of electrical current still flows through the computer.
  To avoid electrical shock, always unplug all power cables, remove the battery and modem cables from the wall outlets before cleaning the system.

- Unplug the system from the wall outlet and refer servicing to qualified personnel if:

  – The power cord or plug is damaged.

  – Liquid has been spilled into the system.

  – The system does not operate properly when the operating instructions are followed.

  – The system was dropped or the casing is damaged.

  – The system performance changes.

The Instruction On Safety Operation of NotePC

1. When installing and operating devices please refer to safety requirements in the user guide.

2. Devices can be used only with the equipment specified in the technical specifications of the devices.

3. If any smell of burning or smoke is detected from the computer the unit should be switched off and battery removed. The unit should be checked by a qualified technician before reuse.

4. Service and repair of devices should be carried out by authorized service centers.

5. Do not allow your portable computer to operate with the base resting directly on exposed skin for extended periods of time. The surface temperature of the base will rise during normal operation (particularly when AC Power is present). Allowing sustained contact with exposed skin can cause discomfort or eventually a burn.

Use only replacement parts and accessories recommended by manufacturer.

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

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

Battery Disposal

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

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

Follow all local regulations when disposing of old batteries.

> ⚠ THERE IS A RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
>
> DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

Laser Safety

All systems equipped with CD or DVD drives comply with the appropriate safety standards, including IEC 60825-1. The laser devices in these components are classified as "Class 1 Laser Products" under a US Department of Health and Human Services (DHHS) Radiation Performance Standard. Should the unit ever need servicing, contact an authorized service location.

> ⚠ • **Laser Safety Note:**
>
> Use of controls or adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. To prevent exposure to laser beams, do not try to open the enclosure of a CD or DVD drive.
>
> • Class 1M laser radiation when operating part is open.
>
> Do not view directly with optical instruments.
>
> • Class 3B invisible laser radiation when open.
>
> Avoid exposure to the beam.

Replacement Parts and Accessories

Connecting and Disconnecting the AC adapter

The socket-outlet should be installed near the equipment and should be easily accessible.

Do not unplug the power cord by only pulling the cable.

Power Cord Requirements

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

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

General Requirements

The requirements listed below are applicable to all countries:

- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.

- The power cord set must have a minimum current capacity of 7 A and a nominal voltage rating of 125 or 250 volts AC, as required by each country's power system. (USA ONLY)

- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C7 (or C5) connector, for mating with appliance inlet on the computer.

Regulatory Compliance Statements

Wireless Guidance

(If fitted with 2.4G band or 5G band)

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4GHz/5GHz Band, may be present (embedded) in your notebook system. The following section is a general overview of considerations while operating a wireless device.

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

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

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

Some circumstances require restrictions on wireless devices. Examples of common restrictions are listed on the next page:

> • Radio frequency wireless communication can interfere with equipment on commercial aircraft. Current aviation regulations require wireless devices to be turned off while traveling in an airplane.
> 802.11ABGN (also known as wireless Ethernet or Wifi) and Bluetooth communication devices are examples of devices that provide wireless communication.
>
> • In environments where the risk of interference to other devices or services is harmful or perceived as harmful, the option to use a wireless device may be restricted or eliminated. Airports, Hospitals, and Oxygen or flammable gas laden atmospheres are limited examples where use of wireless devices may be restricted or eliminated. When in environments where you are uncertain of the sanction to use wireless devices, ask the applicable authority for authorization prior to use or turning on the wireless device.

Regulatory Compliance Statements

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

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

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

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

United States of America

USA and Canada Safety Requirements and Notices

Do not touch or move antenna while the unit is transmitting or receiving.

Do not hold any component containing the radio such that the antenna is very close or touching any exposed parts of the body, especially the face or eyes, while transmitting.

Do not operate the radio or attempt to transmit data unless the antenna is connected; if not, the radio may be damaged.

Use in specific environments:

The use of wireless devices in hazardous locations is limited by the constraints posed by the safety directors of such environments.

The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).

The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.

Explosive Device Proximity Warning

Do not operate a portable transmitter (such as a wireless network device) near unshielded blasting caps or in an explosive environment unless the device has been modified to be qualified for such use.

Regulatory Compliance Statements

> **Use On Aircraft Caution**
>
> Regulations of the FCC and FAA prohibit airborne operation of radio-frequency wireless devices because their signals could interfere with critical aircraft instruments.

Other Wireless Devices

Safety Notices for Other Devices in the Wireless Network: Refer to the documentation supplied with wireless Ethernet adapters or other devices in the wireless network.

> The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency. Any changes or modification to said product not expressly approved by Intel could void the user's authority to operate this device.

Unintentional Emitter per FCC Part 15

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

> This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
>
> - Reorient or relocate the receiving antenna.
> - Increase the separation between the equipment and receiver.
> - Connect the equipment 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.

Regulatory Compliance Statements

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet helpful: "Something About Interference."

This is available at FCC local regional offices. Our company is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by our company. The correction will be the responsibility of the user. Use only shielded data cables with this system.

Intentional emitter per FCC Part 15

(If fitted with 2.4G band or 5G band)

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4GHz/5GHz Band, may be present (embedded) in your notebook system. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.

Wireless devices that may be in your system are only qualified for use in the United States of America if an FCC ID number is on the system label.

This device is restricted to indoor use due to its operation in the 5.15 to 5.25 GHz frequency range. FCC requires this product to be used indoors for the frequency range 5.15 to 5.25 GHz to reduce the potential for harmful interference to co-channel Mobile Satellite systems. High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and /or damage this device.

The FCC has set a general guideline of 20 cm (8 inches) separation between the device and the body, for use of a wireless device near the body (this does not include extremities). This device should be used more than 20 cm (8 inches) from the body when wireless devices are on. The power output of the wireless device (or devices), which may be embedded in your notebook, is well below the RF exposure limits as set by the FCC.

This transmitter must not be collocated or operate in conjunction with any other antenna or transmitter except the installed Bluetooth transmitter.

Operation of this device is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

Regulatory Compliance Statements

⚠️ Wireless devices are not user serviceable. Do not modify them in any way.

Modification to a wireless device will void the authorization to use it. Contact manufacturer for service.

⚠️ **FCC Statement for Wireless LAN use:**

While installing and operating this transmitter and antenna combination the radio frequency exposure limit of 1mW/cm2 may be exceeded at distances close to the antenna installed. Therefore, the user must maintain a minimum distance of 20cm from the antenna at all times.
This device can not be colocated with another transmitter and transmitting antenna.

FCC Part 68 (If fitted with a modem device.)

This equipment compiles with part of the FCC rules. On the back of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

This equipment uses the following USOC jacks : RJ11C

An FCC compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or promises wiring using a compatible modular jack which is Part 68 compliant. See Installation Instructions for details.

The REN is used to determine the quantity of devices which may be connected to telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by total RENs, contact the local telephone company to determine the maximum REN for the calling area.

If the terminal equipment causes harm to the telephone network, the Telephone Company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advanced notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment (Modem) for repair or warranty information, please contact your local distributor. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

The user must use the accessories and cables supplied by the manufacturer to get optimum performance from the product.

No repairs may be done by the customer.

This equipment cannot be used on public coin phone service provided by the telephone company. Connection to party line service is subject to state tariffs.

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device, including fax machines, to send any message unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual. (The telephone number provided may not be any number for which charges exceed local or long-distance transmission charges.)

In order to program this information into your fax machine, refer to your communications software user manual.

Regulatory Compliance Statements

Canada

Unintentional Emitter per ICES-003

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limitesapplicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

Intentional Emitter per RSS 210

This device complies with RSS 210 of Industry Canada. Operation is subject to the following two onditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of this device."

L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes : (1) il ne doit pas produire de brouillage et (2) l'utilisateur du dispositif doit étre prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

The term "IC" before the equipment certification number only signifies that the Industry Canada technical specifications were met. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication. To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

Pour empecher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit etre utilize a l'interieur et devrait etre place loin des fenetres afin de Fournier un ecram de blindage maximal. Si le matriel (ou son antenne d'emission) est installe a l'exterieur, il doit faire l'objet d'une licence.

(If fitted with 2.4G band or 5G band)

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4GHz/5GHz Band, may be present (embedded) in your notebook system. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.

Wireless devices that may be in your system are only qualified for use in Canada if an Industry Canada ID number is on the system label.

Regulatory Compliance Statements

When using IEEE 802.11a wireless LAN, this product is restricted to indoor use due to its operation in the 5.15- to 5.25-GHz frequency range. Industry Canada requires this product to be used indoors for the frequency range of 5.15 GHz to 5.25 GHz to reduce the potential for harmful interference to co-channel mobile satellite systems. High power radar is allocated as the primary user of the 5.25- to 5.35-GHz and 5.65 to 5.85-GHz bands. These radar stations can cause interference with and/or damage to this device.

The maximum allowed antenna gain for use with this device is 6dBi in order to comply with the E.I.R.P limit for the 5.25- to 5.35 and 5.725 to 5.85 GHz frequency range in point-to-point operation.

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

The power output of the wireless device (or devices), which may be embedded in your notebook, is well below the RF exposure limits as set by Industry Canada.

This transmitter must not be collocated or operate in conjunction with any other antenna or transmitter except the installed Bluetooth transmitter.

Operation of this device is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

> ⚠ To prevent radio interference to licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

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

Regulatory Compliance Statements

Telecommunications per DOC notice
(for products fitted with an IC-compliant modem)

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operation, and safety requirements. The Department does not guarantee the equipment will operate to the users' satisfaction.

Before installing this equipment, users should make sure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the inside wiring associated with a single-line individual service may be extended by means of a certified connector assembly. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should make sure, for their own protection, that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

> ⚠ To avoid electrical shock or equipment malfunction do not attempt to make electrical ground connections by yourself. Contact the appropriate inspection authority or an electrician, as appropriate.

The **Ringer Equivalence Number** (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

Regulatory Compliance Statements

Brazil

Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.

European Union

European Union CE Marking and Compliance Notices

Products intended for sale within the European Union are marked with the Conformité Européene (CE) Marking, which indicates compliance with the applicable Directives and European standards and amendments identified below. This equipment also carries the Class 2 identifier.

The following information is only applicable to systems labeled with the CE mark $C \epsilon$.

European Directives $C \epsilon$

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

- EMC Directive 2004/108/EC
- Low Voltage Directive 2006/95/EC
- R&TTE Directive 1999/5/EC

Manufacturer Information

Samsung Electronics Co., Ltd.

416, Maetan-3Dong, Yeongtong-Gu, Suwon-City, Gyeonggi-Do, 443-742, Korea

Samsung Electronics Suzhou Computer Co., Ltd.

No. 198, Fangzhou Road, Suzhou Industrial Park, Jiangsu Province, 215021, China

Tel: +86-512-6253-8988

For the web or the phone number of Samsung Service Centre, see the Warranty or contact the retailer where you purchased your product.

Regulatory Compliance Statements

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

This Product is a Notebook computer; low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4GHz/5GHz band, may be present (embedded) in your notebook system which is intended for home or office use. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.

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

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

The low band 5.15 - 5.35 GHz is for indoor use only.

> See 802.11b and 802.11g restrictions for specific countries or regions within countries under the heading "European Economic Area Restrictions" below.

EU R&TTE Compliance Statements

	Česky [Czech]	Samsung tímto prohlašuje, že tento Notebook PC je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
	Dansk [Danish]	Undertegnede Samsung erklærer herved, at følgende udstyr Notebook PC overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
	Deutsch [German]	Hiermit erklärt Samsung, dass sich das Gerät Notebook PC in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
	Eesti [Estonian]	Käesolevaga kinnitab Samsung seadme Notebook PC vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
	English	Hereby, Samsung, declares that this Notebook PC is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
	Español [Spanish]	Por medio de la presente Samsung declara que el Notebook PC cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.

Regulatory Compliance Statements

el	**Ελληνική [Greek]**	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Samsung ΔΗΛΩΝΕΙ ΟΤΙ Notebook PC ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
fr	**Français [French]**	Par la présente Samsung déclare que l'appareil Notebook PC est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
it	**Italiano [Italian]**	Con la presente Samsung dichiara che questo Notebook PC è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
lv	**Latviski [Latvian]**	Ar šo Samsung deklarē, ka Notebook PC atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
lt	**Lietuvių [Lithuanian]**	Šiuo Samsung deklaruoja, kad šis Notebook PC atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
nl	**Nederlands [Dutch]**	Hierbij verklaart Samsung dat het toestel Notebook PC in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
mt	**Malti [Maltese]**	Hawnhekk, Samsung, jiddikjara li dan Notebook PC jikkonforma mal-ħtiāijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.

hu	**Magyar [Hungarian]**	Alulírott, Samsung nyilatkozom, hogy a Notebook PC megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
pl	**Polski [Polish]**	Niniejszym Samsung oświadcza, Ŝe Notebook PC jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
pt	**Português [Portuguese]**	Samsung declara que este Notebook PC está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
sl	**Slovensko [Slovenian]**	Samsung izjavlja, da je ta Notebook PC v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
sk	**Slovensky [Slovak]**	Samsung týmto vyhlasuje, že Notebook PC spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
fi	**Suomi [Finnish]**	Samsung vakuuttaa täten että Notebook PC tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
sv	**Svenska [Swedish]**	Härmed intygar Samsung att denna Notebook PC står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

Regulatory Compliance Statements

Íslenska [Icelandic]	Hér með lýsir Samsung yfir því að Notebook PC er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.
Norsk [Norwegian]	Samsung erklærer herved at utstyret Notebook PC er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.
Türkiye [Türkçe]	Bu belge ile, Samsung bu Notebook PC'nin 1999/5/EC Yönetmeliğinin temel gerekliliklerine ve ilgili hükümlerine uygun olduğunu beyan eder.

To view the EU Declaration of Conformity for this product (in English only), go to: http://www.samsung.com/uk/support/download/supportDownMain.do then search the model number of the product.

If the Declaration of Conformity for the model you are interested in is not available on our web-site, please contact your distributor.

European Economic Area Restrictions

Local Restriction of 802.11b/802.11g Radio Usage

[Note to integrator: The following statements on local restrictions must be published in all end-user documentation provided with the system or product incorporating the wireless product.]

Due to the fact that the frequencies used by 802.11b/802.11g wireless LAN devices may not yet be harmonized in all countries, 802.11b/802.11g products are designed for use only in specific countries or regions, and are not allowed to be operated in countries or regions other than those of designated use.

As a user of these products, you are responsible for ensuring that the products are used only in the countries or regions for which they were intended and for verifying that they are configured with the correct selection of frequency and channel for the country or region of use. Any deviation from permissible settings and restrictions in the country or region of use could be an infringement of local law and may be punished as such.

The European variant is intended for use throughout the European Economic Area. However, authorization for use is further restricted in particular countries or regions within countries, as follows:

General

European standards dictate maximum radiated transmit power of 100 mW effective isotropic radiated power (EIRP) and the frequency range 2400 – 2483.5 MHz.

The low band 5.15 - 5.35 GHz is for indoor use only.

Belgium

The product may be used outdoors, but for outdoor transmissions over a distance of 300m or more, a license from the BIPT is required.

This restriction should be indicated in the manual as follows:

Dans le cas d'une utilisation privée, à l'extérieur d'un bâtiment, au-dessus d'un espace public, aucun enregistrement n'est nécessaire pour une distance de moins de 300m. Pour une distance supérieure à 300m un enregistrement auprès de l'IBPT est requise. Pour une utilisation publique à l'extérieur de bâtiments, une licence de l'IBPT est requise. Pour les enregistrements et licences, veuillez contacter l'IBPT.

France

For Metropolitan departments:

2.400 - 2.4835 GHz for indoor use.

2.400 - 2.454 GHz (channels 1 to 7) for outdoor use.

For Guadeloupe, Martinique, St Pierre et Miquelon, Mayotte:

2.400 - 2.4835 GHz for indoor and outdoor use.

For Reunion, Guyane:

2.400 - 2.4835 GHz for indoor use.

2.420 - 2.4835 GHz for outdoor use (channels 5 to 13)

The low band 5.15 - 5.35 GHz is for indoor use only.

Regulatory Compliance Statements

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

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

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

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

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

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

WEEE Symbol Information

Correct disposal of this product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life.

To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

Correct disposal of batteries in this product

(Applicable in the European Union and other European countries with separate battery return systems.)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.

To protect natural resources and to promote material re-use, please separate batteries from other types of waste and recycle them through your local, free battery return system.

USA ONLY

This Perchlorate warning applies only to primary CR (Maganese Dioxide) Lithium coin cells in the product sold or distributed ONLY in California USA.
"Perchlorate Material- special handling may apply, See www.dtsc. ca.gov/hazardouswaste/perchlorate."

Dispose unwanted electronics through an approved recycler.

To find the nearest recycling location, go to our website:

www.samsung.com/recyclingdirect Or call, (877) 278-0799

Product Specifications

The system specifications may differ depending on the derived models.

For detailed system specifications, refer to the product catalogue.

NP-200B4A/200B4B/200B5A/200B5B/400B2B/400B4A/ 400B4B/400B5A/400B5B/600B4B/600B5B

CPU (Optional)	Intel Celeron Processor Intel Pentium Processor Intel Core™ i7/i5/i3 Processor
Main Memory	Memory type: DDR3 SODIMM
Main Chipset (Optional)	Intel HM55/HM65/QM67
Hard Disk Drive (Optional)	9.5mmH SATA HDD 7.0mmH SATA SSD
Graphics (Optional)	Intel HD Graphics (Internal) NVIDIA GeForce 315M (External) NVIDIA GeForce 315M (Optimus) NVIDIA NVS 4200M (External) NVIDIA NVS 4200M (Optimus)

Operating Environment	Temperature: -5~40℃ for storage,
	           10~32℃ when operating
	Humidity: 5~90% for storage,
	           20~80% when operating

Operating Voltage	100 - 240VAC
Frequency	50 / 60Hz
Output Power (Optional)	60W/90W
Output Voltage (Optional)	19VDC 3.16A (60W) / 19VDC 4.74A (90W)

> • Optional components may not be provided or different components may be provided depending on the computer model.
>
> • The system specifications are subject to change without notice.
>
> • The hard disk drive capacity of a computer in which Samsung Recovery Solution is installed, is represented as smaller than the product specification.
>
> • The amount of memory that Windows can use may be smaller than the actual amount of memory available.

Registered Trademarks

Samsung is a registered trademark of Samsung Co., Ltd.

Intel, Core™ i7/i5/i3, Celeron are registered trademarks of the Intel Corporation.

Microsoft, MS-DOS, and Windows are registered trademarks of the Microsoft Corporation.

All other product or company names mentioned herein are registered trademarks of their respective companies.

ENERGY STAR® Partner

As an ENERGY STAR® Partner, SAMSUNG has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

Glossary

The Glossary lists the terminologies used in this User Guide. For terminologies other than these, look in Windows Help.

Backup

A way to save the current data to restore it later if necessary. A backup is a way to restore computer data when the data or computer is damaged.

Chargeable USB

This program enables supplying power to a specific USB port when the system is in power saving mode, hibernation mode or off.

Client

This refers to a computer that uses a shared network resource provided by a server.

DDR SDRAM
(Double Data Rate Synchronous Dynamic Random Access Memory)

DRAM is a memory type whose cells consist of a capacitor and transistor manufactured at a low price. SDRAM is a memory type whose performance has been improved by synchronizing the clock with the external CPU clock. DDR SDRAM is a memory type whose performance has been improved by doubling the operating speed of the SDRAM and is widely used nowadays. This computer uses DDR SDRAM.

Device Manager

An administrative tool used to manage computer devices. You can add or remove hardware or update a device driver using the Device Manager.

DHCP (Dynamic Host Configuration Protocol)

This refers to automatically allocating IP addresses to the users on the network by the network administrators.

Direct X

An application interface developed to enable Windows application programs to access hardware devices at a very high speed. Since the operating speed of graphics, memory and sound cards must be very fast to provide high quality video and sound for games, Direct X enables faster control and interaction between applications and hardware devices. By using Direct X, the multimedia performance of Windows has been hugely improved.

Driver

Software that interacts between the hardware and the operating system. An operating system knows the hardware information and controls the hardware. In general, a driver is supplied with the corresponding hardware device.

D-sub (D-subminiature)

This is the cable connecting a general CRT monitor and the computer. Analog video is output through this cable.

DVD (Digital Versatile Disk)

DVD was developed to replace CD (compact disk). Although the shape and size of the disc are the same as that of a CD, the capacity of a DVD is at least 4.7GB while the capacity of a CD is 600MB. DVD video is digital unlike VHS (analog) video and supports MPEG2 compression and digital audio. To play a DVD, a DVD drive is required.

Firewall

A security system used to protect an internal network or intranet from external networks through an authentication procedure.

HDMI

This is a digital video / audio interface specification that transmits video and audio signals over a single cable.

Hibernation Mode

A power mode that saves all data in memory to the hard disk and turns the CPU and hard disk off. When canceling Hibernation Mode, all application programs that were running are restored to their last state.

Icon

This refers to a small image that represents a file that users can use.

IEEE802.XX

This is a set fo specifications developed by the 802 committee of IEEE for the LAN connection method called XX.

LAN (Local Area Network)

A communications network connecting computers, printers and other devices within a local area such as within a building. A LAN enables all connected devices to interact with other devices on the network. The current LAN uses the Ethernet media access control method developed in the early 1980s. To connect to an Ethernet, a network card called a LAN card, Ethernet card or network interface card is required. To exchange data between computers, a protocol is required besides the hardware equipment. Windows Vista uses TCP/IP as the default protocol.

LCD (Liquid Crystal Display)

There are Passive Matrix and Active Matrix LCD types. This computer uses the Active Matrix type LCD called a TFT LCD. Since an LCD is implemented by transistors instead of a cathode-ray tube unlike a CRT, its size can be slim. And because it does not blink, it reduces eye strain.

Glossary

MMC (MultiMedia Card) **card**

This is an external-type flash memory used for mobile devices such as mobile phones or digital cameras.

Network

A group of computers and devices, such as printers and scanners, connected by a communications link. A network can be either small or large and can be connected permanently through cables or temporarily through telephone lines or wireless links. The biggest network is the Internet, a worldwide network.

Network Administrator

A user who plans, configures and manages network operations. Sometimes, a network administrator is called a system administrator.

Notification Area

This refers to the right area of the Taskbar including program icons such as the volume control, the power options and the time.

Partition

This refers to the act or practice of dividing the storage space of a hard disk drive into separate data areas known as partitions. If a 100GB hard disk drive is partitioned into 2 x 50GB partitions, the hard disk drive can be used as if there are 2 hard disk drives.

PCMCIA(Personal Computer Memory Card International Association) **card**

This is an extended card slot specification for mobile computers such as a notebook computer. Not only a memory, device but also most peripherals such as hard disk drives, LAN cards, etc. can be connected to this card slot.

Protocol

A protocol is a set of rules used by computers to communicate with each other across a network. A protocol is a convention or standard that controls or enables the connection, communication, and data transfer between computing endpoints. It defines the data transmission procedures and the transmission medium for more efficient network functions.

Quick Launch

This refers to a toolbar that can be configured so that you can launch a program such as Internet Explorer or display the Windows Desktop with one click. You can add any icon to the quick launch area of the Taskbar and launch frequently used program by clicking that icon.

SD (Secure Digital) **card**

An SD card is a flash (non-volatile) memory card developed for mobile devices by improving on the MMC card. Although an MMC card can be used in an SD card slot, an SD card is not recognized when inserted into an MMC card.

Glossary

SDHC (Secure Digital High Capacity) **card**

This is the extension of the SD card that supports over 2GB bytes.

Server

In general, a server refers to a computer that provides shared resources for network users.

Share

This refers to setting a resource of a computer such as a folder or printer so that other users can also use it.

Shared Folder

A folder that can be used by other users on the network.

Sleep Mode

A power mode that enables computers to save power consumption when they are not being used. When a computer is in Sleep Mode, the data on the computer memory is not saved to the hard disk. If the power is turned off, the data in memory will be lost.

System File

System Files refer to files that are read and used by the Windows operating system. In general, system files must not be deleted or moved.

TCP/IPv4

This is a 4 byte (32 bit) address system separated into each byte (8 bits) by a dot and each byte is represented as a decimal number.

USB (Universal Serial Bus)

This refers to a serial interface standard developed to replace the conventional interface standards such as Serial and PS/2.

The data transmission specifications are one of the interface standards used to connect a computer to peripheral devices. These specifications include USB 1.0, 1.1, 2.0 and 3.0.

It is appropriate to support peripheral devices that require high data rates such as an AV device, secondary HDD or CD-RW. The higher the version (e.g. USB 3.0), the higher the data rate provided.

Virtual XP Mode

This is a virtual operating system that enables running Windows XP programs on the Windows 7 operating system. Using this mode, you can run programs that do not run on Windows 7.

Windows Media Player

A multimedia program included with Windows. Using this program, you can play a media file, create an audio CD, listen to a radio broadcast, search and manage media files, and copy files to a portable device, etc.

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