

SAMSUNG

User Guide



Chapter 1.

Getting Started



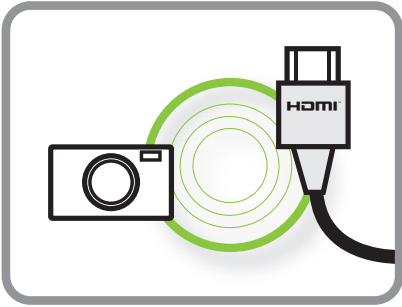
Product Features	2
Before You Start	3
Contents	7
Safety Precautions	8
Proper Posture During Computer Use	22
Important Safety Information	25
Replacement Parts and Accessories	27
Regulatory Compliance Statements	29
WEEE SYMBOL INFORMATION	41
Overview	42
Front View	42
Status Indicators	44
Right View	45
Left View	46
Back View	48
Bottom View	49
Turning the Computer On and Off	50
Turning the computer on	50
Turning the computer off	51

Product Features



High-Performance Notebook Computer

- Intel Celeron/Intel Pentium/Intel Core2 Solo/Intel Core2 Duo and DDR3 Memory (Optional)
- Wireless LAN (Optional)



Supports Multimedia Functions

- A video chatting/conference function adopting the camera module (Optional)
- An HDMI port that enables viewing a full HD picture on the TV (Optional)



Easy-to-Use and Convenient Functions

- Various Hot Key Functions
- Multi-Card Slot (Optional)
- Luxurious, Ergonomic Design



Optional items may be changed or may not be provided depending on the computer model.

Before You Start

Before reading the User Guide, first check the following information.

User Guide Information

This product is supplied with an **Installation Guide**, and a **User Guide**.

You can even more easily and conveniently use the computer by using any of the guides depending on your needs.

Installation Guide

This guide is provided so that you can conveniently refer to this guide when using the computer for the first time after purchasing it.

This document includes the computer components and the connection procedures.

User Guide

You are currently reading the User Guide. To open the file at any time, double-click the icon on the Desktop. Alternatively, select **Start > All Programs > Samsung > User Guide > User Guide**.

This document includes the computer functions, how to use the functions, and how to use the programs.



Utilizing the User Guide

- ① Be sure to read the **Safety Precautions** before using the computer.
- ② Refer to the separately supplied **Installation Guide** when installing your computer.
- ③ Refer to the **User Guide** for the procedures to use the computer.
- ④ Using the **Index** of the User Guide, you can easily find any information you are looking for.
- ⑤ Using the **Glossary** of the User Guide, you can easily find meanings for technical terms.
- ⑥ If a problem occurs, refer to the **Q & A** included in the User Guide.







- Optional items, some devices and software referred to in the User Guide may not be provided and/or changed by upgrade.
Note that the computer environment referred in the User Guide may not be the same as your own environment.
- Images used in this User Guide may differ from actual product.
- This guide describes procedures for using both the mouse and the touchpad.
- The illustrations provided in this guide assume that your operating system is Windows Vista. These illustrations are subject to change.
- The User guide supplied with this computer may vary depending on your model.

Safety Precaution Notations

Icon	Notation	Description
	Warning	Failing to follow instructions marked with this symbol, may cause personal injury and or fatality.
	Caution	Failing to follow instructions marked with this symbol, may cause slight injury to yourself or damage your property.

Text Notations

Icon	Notation	Description
	Before You Start	Content included in this section includes information required before using a function.
	Caution	Content included in this section includes information required about the function.
	Note	Content included in this section includes helpful information to use the function.
	XX	This notation represents the page number you can refer to for information about related functions or as a reference.
Start > All Programs > Samsung > User Guide > User Guide		This represents a menu path to run a program. Click the Start button and then select All Programs > Samsung > User Guide > User Guide in this order from the menu.

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The information in this document is subject to change without notice due to improving the performance of the product.

Samsung Electronics shall not be liable for any data loss. Please take care to avoid losing any important data and backup your data to prevent any such data loss.

Precautions for Operating System Support

If a problem occurs because of the reinstallation of other operating systems(OS) or a previous version of a OS pre-installed on this computer, or a software that does not support the OS, the company will not provide technical support, a replacement or refund, and if our service engineer visits you due to this problem, a service charge will be applied.

About the Product Capacity Representation Standard

About HDD Capacity Representation

The capacity of the storage device (HDD, SSD) 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 due to the difference in capacity calculation.

(E.g. For a 80GB HDD, Windows represents the capacity as 74.5GB, $80 \times 1,000 \times 1,000 \times 1,000$ byte/
($1,024 \times 1,024 \times 1,024$)byte = 74.505GB)

In addition, the capacity representation in Windows may be even smaller because some programs such as Recovery Solution may reside in a hidden area of the HDD.

About Memory Capacity Representation

The memory capacity reported in Windows is less than the actual capacity of memory.

This is because BIOS or a video adapter uses a portion of memory or claims it for further use.

(E.g. For 1GB(=1,024MB) memory installed, Windows may report the capacity as 1,022MB or less)

Recovery Solution Representation (Optional)

Q. What is a Recovery Area?

- A. – 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.

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

- A. - 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.

Contents

Chapter 1. Getting Started

Product Features	2
Before You Start	3
Contents	7
Safety Precautions	8
Proper Posture During Computer Use	22
Important Safety Information	25
Replacement Parts and Accessories	27
Regulatory Compliance Statements	29
WEEE SYMBOL INFORMATION	41
Overview	42
Front View	42
Status Indicators	44
Right View	45
Left View	46
Back View	48
Bottom View	49
Turning the Computer On and Off	50
Turning the computer on	50
Turning the computer off	51

Chapter 2. Using the Computer

Keyboard	53
Touchpad	55
Basic Touchpad Functions	56
Touchpad Gesture Function (Optional)	57
Touchpad On/Off Function	59
External-type CD drive (provided optionally or to be purchased)	60
Connecting the CD Drive	60
Inserting and Ejecting a CD	61
Multi Card Slot (Optional)	62
Connecting a monitor / TV	65
Connecting to the Monitor / TV	65
Viewing Through a Monitor / TV	67
Using Dual View	70
Adjusting the Volume	72

Chapter 3. Using the Network

Wired Network	75
Wireless Network	78
Connecting to a Wireless LAN	79

Chapter 4. Settings and Upgrade

LCD Brightness Control	81
BIOS Setup	82
Entering the BIOS Setup	82
The BIOS Setup Screen	84
Setting a Boot Password	86
Changing the Boot Priority	88
Upgrading Memory	89
Battery	91
Installing/Removing the Battery	91
Charging the Battery	92
Measuring the Remaining Battery Charge	93
Extending the Battery Usage Time	94
Using the Security Lock Port	95

Chapter 5. Appendix

Reinstalling Windows Vista (Optional)	97
Reinstalling Software (Optional)	101
Using Samsung Recovery Solution (Optional)	103
Samsung Recovery Solution Functions	103
Using Samsung Recovery Solution	105
Q & A	110
Display Related	110
Sound Related	112
Wired Network (LAN) Related	113
Wireless Network (WLAN) Related	114
Game and Program Related	118
Bluetooth	119
Other	121
Product Specifications	122
Glossary	124
Index	127

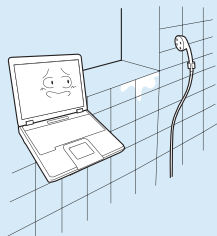
Safety Precautions

For your security and to prevent damage, please read the following safety instructions carefully.
Since this is commonly applied to Samsung Computers, some pictures may differ from actual products.

Warning

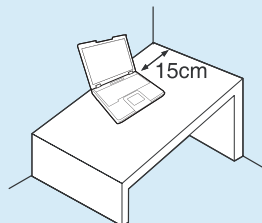
Failing to follow instructions marked with this symbol may cause personal injury and even fatality.

Installation Related



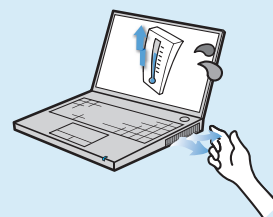
Do not install the product in places exposed to humidity such as a bathrooms.

There is a danger of electric shock. Use the product within the operating conditions specified in the Manufacturers User Guide.



Keep a distance of 15cm or more between the computer and the wall and do not place any objects between them.

This may increase the internal temperature of the computer and may cause an injury.



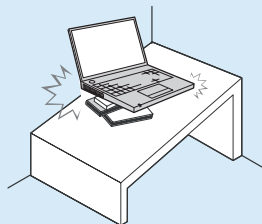
Avoid exposing any part of your body to the heat from the computer vent or AC adapter for a long time when the computer is on.

Exposing a part of your body close to the heat from the vent or AC adapter for long periods of time may cause a burn.



Keep the plastic bags out of the reach of children.

There is a danger of suffocation.



Do not install the computer on a slant or a place prone to vibrations, or avoid using the computer in that location for a long time.

This increases the risk that a malfunction or damage to the product will occur.



Avoid blocking the vent at the bottom or side of the computer when using it on a bed or cushion.

If the vent is blocked, there is a danger of damaging the computer or overheating the inside of the computer.

Warning

Failing to follow instructions marked with this symbol may cause personal injury and even fatality.

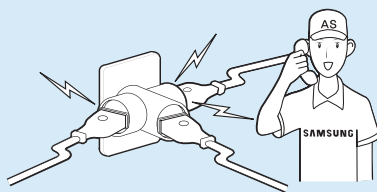
Power Related

The power plug and wall outlet figures may differ depending on the country specifications and the product model.



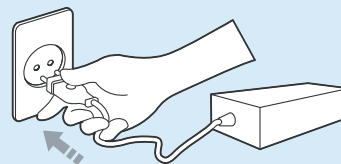
Do not touch the main plug or power cord with wet hands.

There is a danger of electric shock.



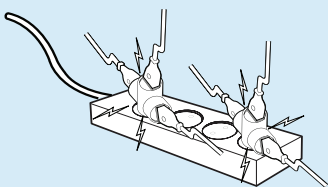
If the power cord or power outlet makes a noise, disconnect the power cord from the wall outlet and contact a service center.

There is a danger of electric shock or fire hazard.



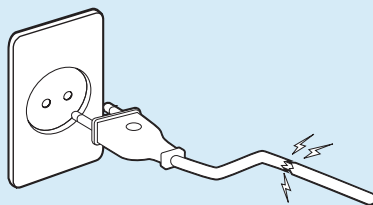
Plug the power cord firmly into the power outlet and AC adapter.

Failing to do so may cause fire hazard.



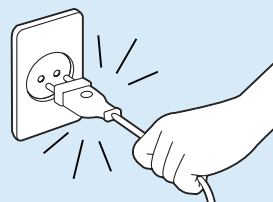
Do not exceed the standard capacity (voltage/current) of a multiplug or power outlet extension when using it for the product.

There is a danger of electric shock or fire hazard.



Do not use a damaged or loose main plug or power cord or power outlet.

There is a danger of electric shock or fire hazard.

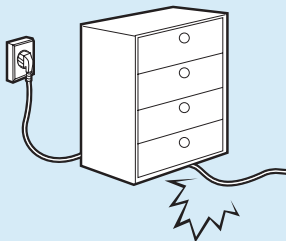


Do not unplug the power cord out by pulling the cable only.

If the cord is damaged, it may cause electric shock.

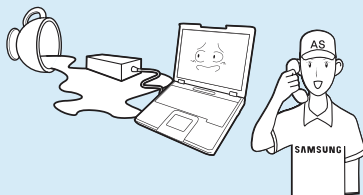
Warning

Failing to follow instructions marked with this symbol may cause personal injury and even fatality.



Do not bend the power cord excessively or do not place a heavy object over the power cord. It is especially important to keep the power cord out of reach of infants and pets.

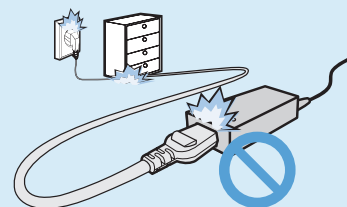
If the cord is damaged, it may cause electric shock or fire.



If water or another substance enters the power input jack, AC adapter or the computer, disconnect the power cord and contact the service center.

Damage to the device within the computer may cause electric shock or fire hazard.

AC Adapter Usage Precautions



Do not place heavy objects or step onto the power cord or AC adapter to avoid damaging the power cord or AC adapter.

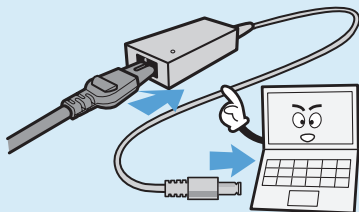
If the cord is damaged, there is a danger of electric shock or fire.

Use only the AC adapter supplied with the product.

Using another adapter may cause the screen to flicker.

Warning

Failing to follow instructions marked with this symbol may cause personal injury and even fatality.



Connect the power cord to the AC adapter firmly.

Otherwise, there is a danger of fire due to an incomplete contact.

Battery Usage Related



Keep the battery out of the reach of infants and pets, as they could put the battery into their mouths.

There is a danger of electric shock or choking.



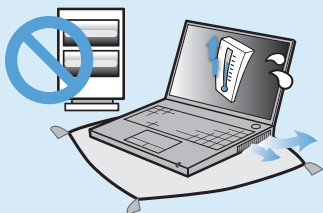
Use an authorized battery and AC adapter only.

Please use an authorized battery and adapter approved by Samsung Electronics.

Unauthorized batteries and adapters may not meet the proper safety requirements and may cause problems or malfunctions and result in an explosion or fire.

Warning

Failing to follow instructions marked with this symbol may cause personal injury and even fatality.



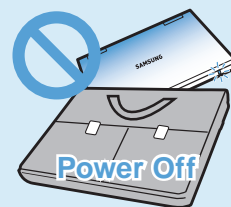
Do not use the computer in a badly ventilated location such as on bedding, on a pillow or cushion, etc, and do not use it in a location such as room with floor heating as it may cause the computer to overheat.

Take care that the computer vents (on the side or the bottom) are not blocked especially in these environments. If the vents are blocked, the computer may overheat and it may cause a computer problem, or even an explosion.



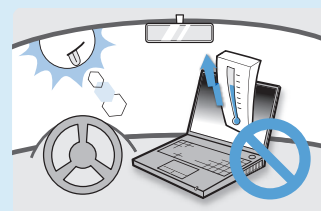
Do not use the computer in a humid location such as a bathroom or sauna.

Please use the computer within the recommended temperature and humidity range (10~35°C, 20~80% RH).



Do not close the LCD panel and put the computer into your bag to move it when it is still turned on.

If you put the computer into your bag without turning it off, the computer may overheat and there is a danger of fire. Shut the computer down properly before moving it.

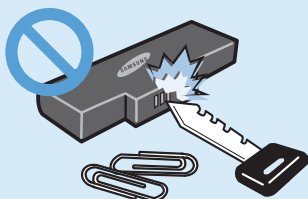


Never heat the battery or put the battery into a fire. Do not put or use the battery in a hot location such as a sauna, inside a vehicle exposed to the heat, and so on.

There is a danger of an explosion or fire.

Warning

Failing to follow instructions marked with this symbol may cause personal injury and even fatality.



Take care not to allow metal objects such as a key or clip to touch the battery terminal (metal parts).

If a metal object touches the battery terminals, it may cause excessive current flow and it may damage the battery, or result in a fire.

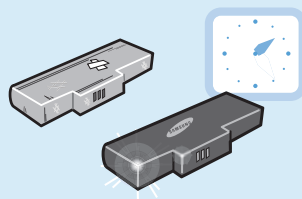


If liquid leaks out of the battery or there is a funny smell coming from the battery, remove the battery from the computer and contact a service center.

There is a danger of an explosion or fire.



Please charge the battery fully before using the computer for the first time.

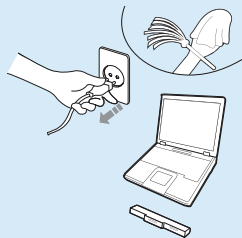


To use the computer safely, replace a dead battery with a new, authorized battery.

Warning

Failing to follow instructions marked with this symbol may cause personal injury and even fatality.

Usage Related



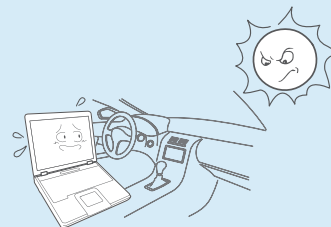
Disconnect all cables connected to the computer before cleaning it. If you are cleaning a notebook computer, remove the battery.

There is a danger of electric shock or damage to the product.



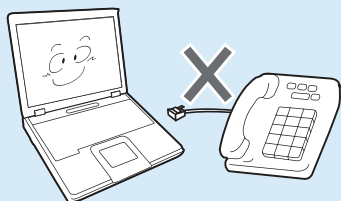
Do not place any container filled with water or chemicals over or near the computer.

If water or chemicals enter the computer, this may cause fire or electric shock.



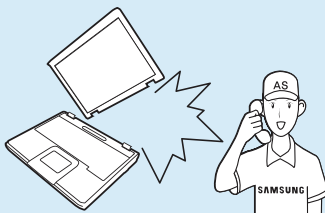
Avoid direct sunlight when the computer is in an air-tight location such as inside a vehicle.

There is a danger of a fire hazard. The computer may overheat and also present opportunity to thieves.



Do not connect a phone line connected to a digital phone to the modem.

There is a danger of a electric shock, fire or damage to the product.



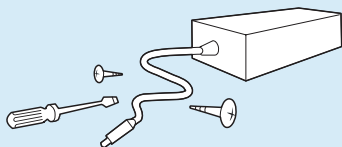
If the computer is broken or dropped, disconnect the power cord and contact a service center for a safety check.

Using a broken computer may cause electric shock or fire hazard.

Warning

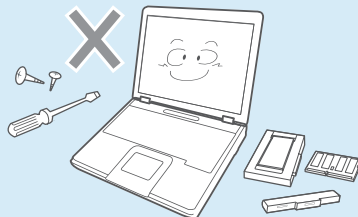
Failing to follow instructions marked with this symbol may cause personal injury and even fatality.

Upgrade Related



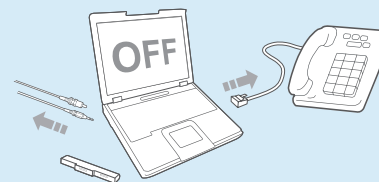
Never disassemble the power supply or AC adapter.

There is a danger of electric shock.



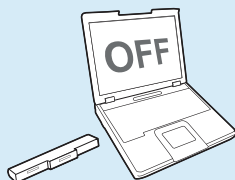
Use only authorized parts (multi-plug, battery and memory) and never disassemble parts.

There is a danger of damaging the product, electric shock or fire hazard.



Shut down the computer and disconnect all cables before disassembling the computer. If there is a modem, disconnect the phone line. If you are disassembling notebook computer, make sure to remove the battery.

Failing to do so, may cause electric shock.



When removing the RTC (Real Time Clock) battery, keep it out of the reach of children as they could touch and/or swallow it.

There is a danger of choking. If a child has swallowed it, contact a doctor immediately.

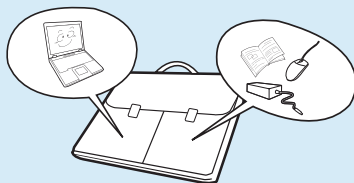
Warning

Failing to follow instructions marked with this symbol may cause personal injury and even fatality.

Custody and Movement Related



Follow the instructions for the relevant location (e.g. airplane, hospital, etc.) when using a wireless communication device (wireless LAN, Bluetooth, etc.).



When carrying the notebook computer with other items, such as the adapter, mouse, books etc, take care not to press anything against the notebook computer.

If a heavy object is pressed against the notebook computer, a white spot or stain may appear on the LCD. Therefore, take care not to apply any pressure to the notebook.

In this case, place the notebook computer in a separate compartment away from the other objects.

Caution

Failing to follow instructions marked with this symbol may cause slight injury or damage to the product.

Installation Related

Do not block the ports (holes), vents, etc. of the product and do not insert objects.

Damage to a component within the computer may cause electric shock or fire.

When using the computer with it lying on its side, place it so that the vents face upwards.

Failing to do so, may cause the internal temperature of the computer to rise and the computer to malfunction or halt.

Do not place a heavy object over the product.

This may cause a problem with the computer. In addition, the object may fall and cause injury, or damage the computer.

Battery Usage Related

Dispose of worn-out batteries properly.

- There is a danger of fire or explosion.
- The battery disposal method may differ depending on your country and region. Dispose of the used battery in an appropriate way.

Do not throw or disassemble the battery and do not put it into water.

This may cause an injury, fire or explosion.

Use only a battery authorized by Samsung Electronics.

Failing to do so may cause an explosion.

Caution

Failing to follow instructions marked with this symbol may cause slight injury or damage to the product.

Avoid contact with metal objects such as car keys or clips when keeping or carrying a battery.

Contact with a metal may cause excessive current and a high temperature and may damage the battery or cause a fire.

Charge the battery according to the instructions in the manual.

Failing to do so, may cause an explosion or fire from damage to the product.

Do not heat the battery or expose it to heat (e.g. inside a vehicle during the summer).

There is a danger of explosion or fire.

Usage Related

Do not place a candle, light cigar, etc. over or on the product.

There is a danger of fire.

Use a wall outlet or multi-plug with a grounding part.

Failing to do so may cause electric shock hazard.

Make sure to have the product tested by a safety service engineer after repairing the product.

Authorized Samsung Repair Centers will carry out safety checks after a repair. Using a repaired product without testing it for safety may cause an electric shock or fire.

In case of lightning, immediately turn the system off, disconnect the power cord from the wall outlet and phone line from modem. Do not use a modem or phone.

There is a danger of electric shock or fire.

Do not use your computer and AC-Adapter on your lap or soft surfaces.

If the computer temperature increases, there is a danger of burning yourself.

Connect only permitted devices to the connectors or ports of the computer.

Failing to do so, may cause electric shock and fire.

Close the LCD panel only after checking if the notebook computer is turned off.

The temperature may rise and it may cause overheating and deformation of the product.

Caution

Failing to follow instructions marked with this symbol may cause slight injury or damage to the product.

Do not press the Eject Button while the Floppy Disk/CD-ROM drive is in operation.

You might lose data and the disk might be suddenly ejected and could cause an injury.

Take care not to drop the product while using it.

This may cause personal injury or loss of data.

Do not touch the antenna with electricity facility such as the power outlet.

There is a danger of electric shock.

When handling computer parts, follow the instructions on the manual supplied with the parts.

Failing to do so, may cause damage to the product.

If the computer emits smoke, or there is a burning smell, disconnect the power plug from the wall outlet and contact a service center. If your computer is a notebook computer, make sure to remove the battery.

There is a danger of fire.

Do not use a damaged or modified CD/Floppy Disk.

There is a danger of damaging the product or personal injury.

Do not insert your fingers into the PC Card Slot.

There is a danger of injury or electric shock.

Use recommended computer cleansing solution when cleaning the product and only use the computer when it is completely dried.

Failing to do so may cause electric shock or fire.

Emergency disk eject method using paperclip should not be used while the disk is in motion. Make sure to use the emergency disk eject method only when the Optical Disk Drive is stopped.

There is a danger of injury.

Do not place your face close to the Optical Disk Drive tray when it is operating.

There is a danger of injury due to an abrupt ejection.

Check CDs for cracks and damage prior to use.

It may damage the disc and cause disorder of device and injury of user.

Caution

Failing to follow instructions marked with this symbol may cause slight injury or damage to the product.

Upgrade Related

Take care when touching the product or parts.

The device may be damaged or you may be injured.

Take care not to throw or drop a computer part or device.

This may cause injury or damage to the product.

Make sure to close the computer cover before connecting the power after a reassembly.

There is a danger of electric shock if your body touches an internal part.

Use parts authorized by Samsung Electronics only.

Failing to do so, may cause fire or damage the product.

Never disassemble or repair the product by yourself.

There is a danger of electric shock or fire.

To connect a device that is not manufactured or authorized by Samsung Electronics, enquire at your service center before connecting the device.

There is a danger of damaging the product.

Custody and Movement Related

When moving the product, turn the power off and separate all connected cables first.

The product might be damaged or users may trip over the cables.

For long periods of not using the notebook computer, discharge the battery and preserve as it is detached.

The battery will be preserved at its best condition.

Do not operate or watch the computer while driving a vehicle.

There is a danger of a traffic accident. Please concentrate on driving.

Caution

Failing to follow instructions marked with this symbol may cause slight injury or damage to the product.

Cautions on Preventing Data Loss (Hard Disk Management)

Take care not to damage the data on a hard disk drive.

- A hard disk drive is so sensitive to external impact that an external impact may cause loss of data on the surface of the disk.
- Take extra care, because moving the computer or an impact on the computer when it is turned on may damage the data of the hard disk drive.
- The company is not liable for any loss of any data caused by a customer's careless usage or bad environmental conditions.

Causes that may damage the data of a hard disk drive and the hard disk drive itself.

- The data may be lost when an external impact is applied to the disk while disassembling or assembling the computer.
- The data may be lost when the computer is turned off or reset by a power failure while the hard disk drive is operating.
- The data may be lost and irrecoverable due to a computer virus infection.
- The data may be lost if the power is turned off while running a program.
- Moving or causing an impact to the computer while the hard disk drive is operating, may cause files to be corrupted or bad sectors on the hard disk.

To prevent data loss due to damage to the hard disk drive, please backup your data frequently.

Proper Posture During Computer Use

Maintaining a proper posture during computer use is very important to prevent physical harm.

The following instructions are about maintaining a proper posture during computer use developed through human engineering. Please read and follow them carefully when using the computer.

Otherwise, the probability of (RSI: Repetitive Strain Injury) from repeated operations may increase and serious physical harm may be caused.



- The instructions in this manual have been prepared so that they can be applied within the coverage of general users.
- If the user is not included in the coverage, the recommendation is to be applied according to the user's needs.

Proper Posture

Adjust the heights of desks and chairs appropriate to your height.

The heights are to be adjusted so that your arm forms a right angle when you place your hand over the keyboard while sitting down on a chair.

Adjust the height of chair so that your heel is comfortably placed on the floor.

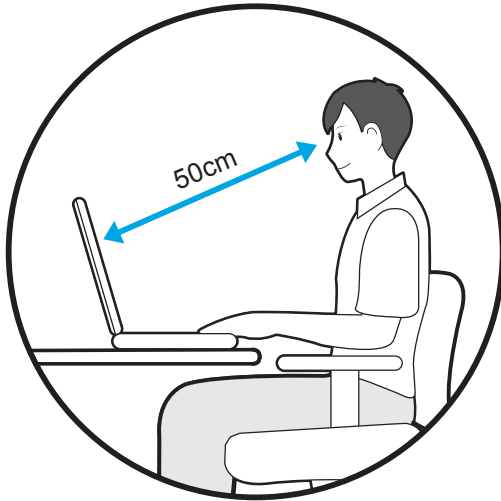
- Do not use the computer while you are lying down, but only while you are sitting down.
- Do not use the computer on your lap. If the computer temperature increases, there is a danger of burning yourself.
- Work while keeping your waist straight.
- Use a chair with a comfortable back.
- Keep the center of your leg weight not on the chair but on your feet when you are sitting on a chair.

- To use the computer while talking over the telephone, use a headset. Using the computer with the phone on your shoulder is bad for posture.
- Keep frequently used items within a comfortable work range (where you can reach them with your hands).



Eye Position

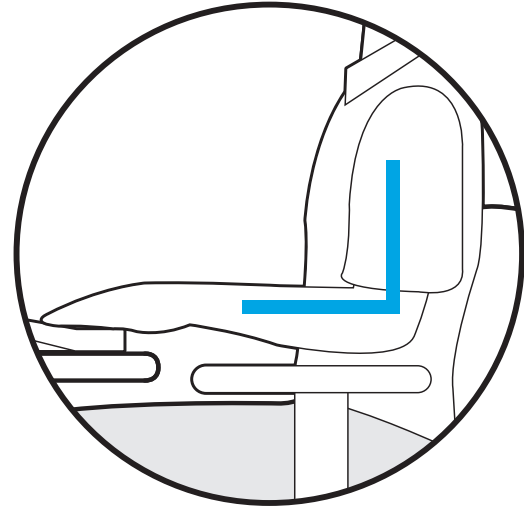
Keep the monitor or LCD away from your eyes by at least 50cm.



- Adjust the height of the monitor and the LCD screen so that its top height is equal to or lower than your eyes.
- Avoid setting the monitor and LCD excessively bright.
- Keep the monitor and LCD screen clean.
- If you wear glasses, clean them before using the computer.
- When entering contents printed on a paper into the computer, use a static paper holder so that the height of the paper is almost equal to that of the monitor.

Hand Position

Keep your arm at a right angle as shown by the figure.



- Keep the line from your elbow to your hand straight.
- Do not place your palm over the keyboard while typing.
- Do not hold the mouse with excessive force.
- Do not press the keyboard, touchpad or mouse with excessive force.
- It is recommended connecting an external keyboard and mouse when using the computer for long periods of time.

Volume Control (Headphones and Speakers)

Check your volume first to listen to music.



- Check if the volume is too loud before using headphones.
- It is not recommended using headphones for long periods of time.
- Any deviation from the equalizer default setting could cause hearing impairment.
- The default setting can be changed through software and driver updates without your intervention. Please check the equalizer default setting before first usage.

Use Time (Break Time)

- Take a break for 10 minutes or more after a 50-minute period when working for more than one hour.

Illumination

- Do not use the computer in dark locations. The illumination level for computer use must be as bright so for reading a book.
- Indirect illumination is recommended. Use a curtain to prevent reflection on the LCD screen.

Operation Condition

- Do not use the computer in hot and humid locations.
- Use the computer within the allowed temperature and humidity range specified in the User Guide.

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.

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.

Replacement Parts and Accessories

Use only replacement parts and accessories recommended by manufacturer.



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



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

Battery Disposal



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

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

Follow all local regulations when disposing of old batteries.



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.

Connect and Disconnect the AC adapter

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

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

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.
- 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.

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.



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.



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.

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.

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 colocated 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.



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 complies 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.

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 limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

Intentional Emitter per RSS 210

(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.

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.

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.

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 .

European Directives

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

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Samsung Electronics Suzhou Computer CO., LTD
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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.

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 your 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.
	Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Samsung ΔΗΛΩΝΕΙ ΟΤΙ Notebook PC ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/EK.
	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.
	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.
	Latviski [Latvian]	Ar šo Samsung deklarē, ka Notebook PC atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
	Lietuvių [Lithuanian]	Šiuo Samsung deklaruoja, kad šis Notebook PC atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
	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.
	Malti [Maltese]	Hawnhekk, Samsung, jiddikjara li dan Notebook PC jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
	Magyar [Hungarian]	Alulírott, Samsung nyilatkozom, hogy a Notebook PC megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
	Polski [Polish]	Niniejszym Samsung oświadcza, że Notebook PC jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
	Português [Portuguese]	Samsung declara que este Notebook PC está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

	Slovensko [Slovenian]	Samsung izjavlja, da je ta Notebook PC v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
	Slovensky [Slovak]	Samsung týmto vyhlasuje, že Notebook PC spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
	Suomi [Finnish]	Samsung vakuuttaa täten että Notebook PC tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
	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.
	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.

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.



Pb

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 (Manganese 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.”

Contains Mercury, Dispose According to Local, State or Federal Laws.

For details see lamprecycle.org, eise.org, or call 1-800-Samsung.

Overview



Before You Start!

- Optional items may be changed or may not be provided depending on the computer model.
- The actual color and appearance of the computer may differ from the pictures used in this guide.

Front View



[For 14 inch models]



For 14 inch models, a different keyboard type is supplied.


1	Camera Lens (Optional)	Using this lens, you can take still pictures and record video.
2	Power Button	Turns the computer on and off. 50
3	Keyboard	A device to enter data by pressing the keys. 53
4	Touchpad/ Touchpad Buttons	The touchpad and touchpad buttons provide functions similar to the mouse ball and buttons. 55
5	Status Indicators	Shows the operating status of the computer. The corresponding operating LED is lit when the corresponding function operates. 44
6	Microphone (Optional)	You can use the built-in microphone.
7	Speaker	A device used to generate sound.
8	LCD	The screen images are displayed here.

Front View

[For 11.6 inch models]

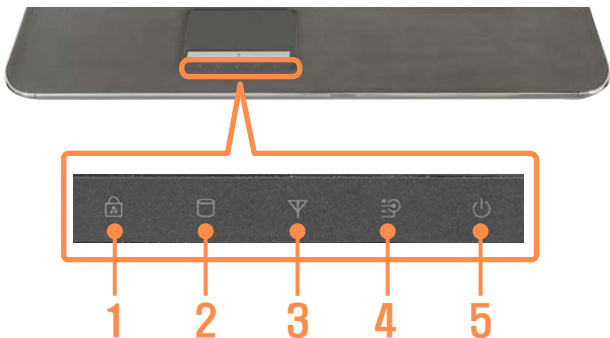


For 11.6 inch models, a different keyboard type is supplied.

1	Camera Lens (Optional)	Using this lens, you can take still pictures and record video.
2	Keyboard	A device to enter data by pressing the keys. ☰ 53
3	Touchpad/ Touchpad Buttons	The touchpad and touchpad buttons provide functions similar to the mouse ball and buttons. ☰ 55
4	Microphone (Optional)	You can use the built-in microphone.
5	Power Switch	Turns the computer on and off. ☰ 50
6	Multi Card Slot (Optional) 	A card slot that supports SD Card, SDHC, and MMC cards. ☰ 62
7	Status Indicators	Shows the operating status of the computer. The corresponding operating LED is lit when the corresponding function operates. ☰ 44
8	Speaker	A device used to generate sound.
9	LCD	The screen images are displayed here.

Status Indicators

[For 14 inch and 15.6 inch models]



[For 11.6 inch models]



1	Caps Lock	This turns on when the Caps Lock key is pressed allowing capital letters to be typed without holding the Shift button down.
2	HDD/ODD	This turns on when the hard disk is or ODD being accessed.
3	Wireless LAN	This turns on when the wireless LAN is operating.
4	Charge Status	<p>This shows the power source and the battery charge status.</p> <p>Green: When the battery is fully charged or the battery is not installed.</p> <p>Red: When the battery is being charged.</p> <p>Off: When the computer is running on battery power without being connected to AC adapter.</p>
5	Power	<p>This shows the computer operating status.</p> <p>On: When the computer is operating.</p> <p>Blinks: When the computer is in Sleep mode.</p>

Right View

► For 14 inch and 15.6 inch models



1	Multi Card Slot (Optional)	A card slot that supports SD Card, SDHC, and MMC cards. 62
2	USB port (For external ODDs)	This port is recommended when connecting an external ODD.
3	USB Port	You can connect USB devices to the USB port such as a keyboard/mouse, digital camera, etc.
4	Security Lock Port	You can connect a Kensington lock to the Security Lock Port to prevent the computer from being stolen.

► For 11.6 inch models











1	Headphone Jack	A jack used to connect the headphones.
2	Microphone Jack	A jack used to connect the microphone.
3	USB port (For external ODDs)	This port is recommended when connecting an external ODD.
4	USB Port	You can connect USB devices to the USB port such as a keyboard/mouse, digital camera, etc.
5	Security Lock Port	You can connect a Kensington lock to the Security Lock Port to prevent the computer from being stolen.

Left View

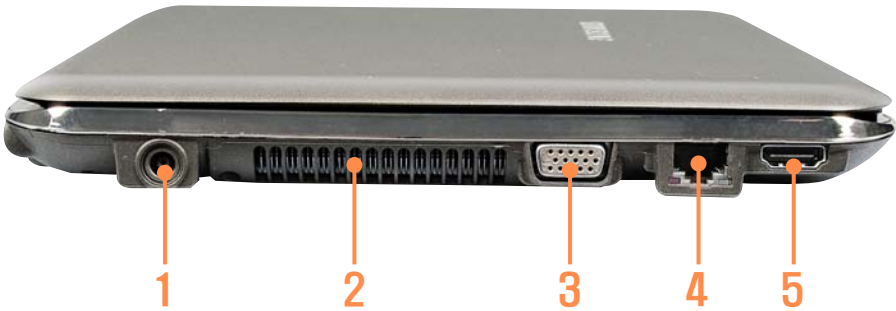
► For 14 inch and 15.6 inch models









1	DC Jack 	A jack to connect the AC adapter that supplies power to the computer.
2	Fan Vents	<p>The internal heat of the computer is emitted through these holes.</p> <div>  <p>If the vents are blocked the computer may overheat. Avoid blocking the vents as this may be dangerous.</p> </div>
3	Wired LAN Port 	Connect the Ethernet cable to this port.  75
4	Monitor Port 	A port used to connect a monitor, TV or projector supporting a 15pin D-SUB interface.  65
5	Digital Video/Audio Port (HDMI) (Optional)	<p>You can connect an HDMI cable to this port.</p> <p>Using this port, you can enjoy digital video and audio on the TV.</p>
6	Microphone Jack 	A jack used to connect the microphone.
7	Headphone Jack 	A jack used to connect the headphones.

Left View

► For 11.6 inch models



1	DC Jack 	A jack to connect the AC adapter that supplies power to the computer.
2	Fan Vents	<p>The internal heat of the computer is emitted through these holes.</p> <div>  <p>If the vents are blocked the computer may overheat. Avoid blocking the vents as this may be dangerous.</p> </div>
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4	Wired LAN Port 	Connect the Ethernet cable to this port.  75
5	Digital Video/Audio Port (HDMI) (Optional)	<p>You can connect an HDMI cable to this port.</p> <p>Using this port, you can enjoy digital video and audio on the TV.</p>

Back View

[For 14 inch and 15.6 inch models]



[For 11.6 inch models]

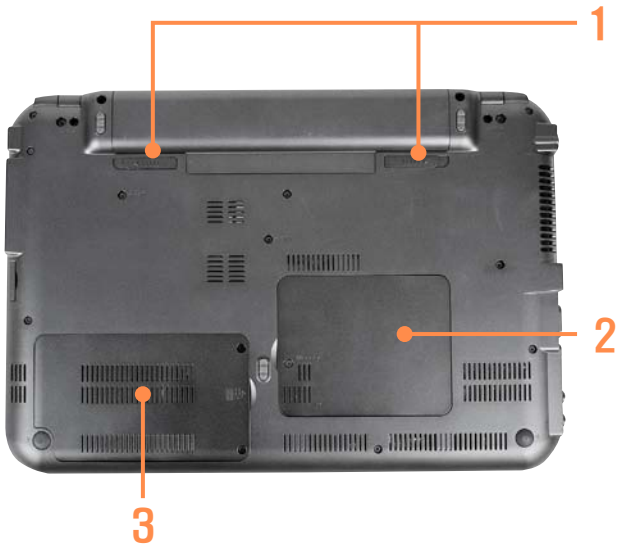


1 Battery

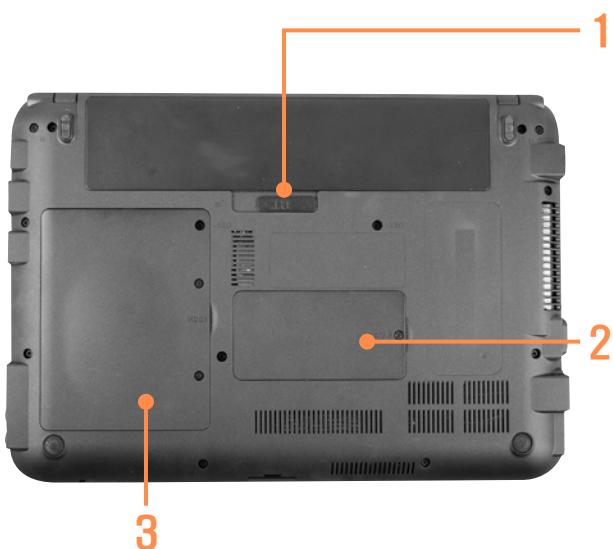
This is a Lithium-Ion rechargeable battery that supplies power to the computer. ⓘ 91

Bottom View

[For 14 inch and 15.6 inch models]



[For 11.6 inch models]



1	Battery Latches	The latch used to remove or install the battery. 91
2	Memory Compartment Cover	The main memory is installed inside the cover. 89
3	Hard Disk Drive Compartment Cover	The hard disk drive is installed inside the cover.

Turning the Computer On and Off

Turning the computer on

1 Install the **battery** and connect the **AC adapter**.
(Refer to the **Installation Guide**.)

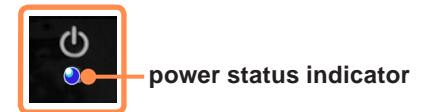
2 Lift the LCD panel up.


3 ▶ **For 14 inch and 15.6 inch models**
Press the **Power button** to turn the computer on.
Power button LED is lit while the computer is turned on.



▶ **For 11.6 inch model**

Slide the **Power Switch** to turn the computer on. The **power status indicator** is lit while the computer is turned on.




- If you press and release the Power button on the computer when it is on, the computer enters Sleep mode.
- When running the computer on battery power, the LCD brightness is dimmed automatically to save battery power.
Press the **Fn+**  key to increase the LCD brightness. 54

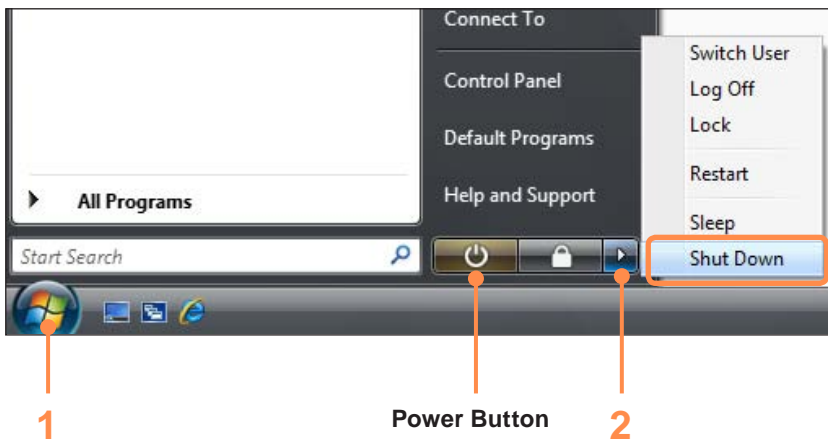
Turning the computer off




The followings are the procedures to turn off the computer in Windows Vista.
The using procedure may differ depending on your operating system.

1 Click the **Start**  button on the taskbar.

2 Click the  and click on **Shut down**.
The computer will shut down.



Before Using the Power Button

Since the Power Icon is set to power saving mode, selecting **Start > Power Button** , will cause the computer to enter **Sleep mode**.

To shut down the computer by clicking this icon, refer to the descriptions for Setting up Start menu power button of the Control Panel.



If the system cannot be shut down due to a system error, turn it off by pressing and holding the Power Button for a minimum of 4 seconds. For 11.6 inch models, slide and hold the Power Switch for 4 seconds or more to shut the computer down by force. Please note that turning the computer off by this method may cause a system problem. Thereafter, when turning the computer back on, the disk checking program may launch to check for and correct any disk errors.

Chapter 2.

Using the computer



Keyboard	53
Touchpad	55
Basic Touchpad Functions	56
Touchpad Gesture Function (Optional)	57
Touchpad On/Off Function	59
External-type CD drive (provided optionally or to be purchased)	60
Connecting the CD Drive	60
Inserting and Ejecting a CD	61
Multi Card Slot (Optional)	62
Connecting a monitor / TV	65
Connecting to the Monitor / TV	65
Viewing Through a Monitor / TV	67
Using Dual View	70
Adjusting the Volume	72

Keyboard

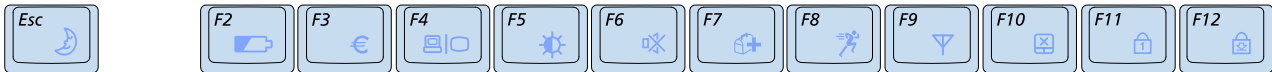
Shortcut key functions and procedures are discussed in the following sections.









- The keyboard is supplied according to the corresponding country.
- The keyboard may differ depending on your country. The following mainly describes the shortcut keys.

Shortcut Keys

You can use the following functions by pressing the keys below with the **Fn** key.



Fn+	Name	Function
	REST (Sleep Mode)	Switches to Sleep mode. To wake the computer up, press the Power button.
	Gauge	Shows the remaining battery charge. You can only use this function when the Easy Display Manager program is installed.
	Euro	Enters the Euro monetary unit symbol. This key may not be provided depending on the keyboard type.
	CRT/LCD	Switches the screen output to the LCD or external monitor when an external monitor (or TV) is connected to the computer. 67
	Backlight	Turns the LCD backlight on or off.
	Mute	Mutes or cancels mute.
	Samsung Magic Doctor	System diagnosis, recovery and Internet consultation program, Samsung Magic Doctor, will be launched. (Optional)



Fn+	Name	Function
	Easy SpeedUp Manager	<p>You can select operation mode when you need maximum system performance or low-noise/low power consumption with one-click.</p> <ul style="list-style-type: none"> ● Silent: Low-noise and low power consumption mode ● Normal: Normal Mode ● Speed: Maximum performance mode. The system operates in its maximum performance, and system resources are allocated to the currently active program with priority for maximum performance. <p> If you don't want fan noise turning ON and OFF in the Silent mode, select the Advanced menu > Fan Silent Mode > Low in the BIOS Setup. The fan keeps turning ON and works in Low noise mode.</p>
	Wireless LAN	Turns the wireless LAN function on or off in models with wireless LAN capability.
	Touchpad	<p>Turns the Touchpad function on or off.</p> <p>When using an external mouse only, you can turn the Touchpad off.</p>
	Num Lock (Optional)	<p>Turns the numeric keyboard on or off.</p> <p>(For 15.6-inch models, once the Num Lock is on, the numeric keypad in the right side of the keyboard is enabled.)</p>
	Scroll Lock	If you turn the Scroll Lock on, you can scroll the screen up or down without changing the cursor location in some applications.


Screen Brightness Control

To adjust the LCD brightness press the **Fn** +  key combination or the **Fn** +  key combination.

The changed screen brightness is displayed at the center of the screen for a moment.


Volume Control

To control the volume, press the **Fn** +  key combination or the **Fn** +  key combination.

You can mute the sound or cancel the mute function by clicking the **Fn** +  key combination.

Numeric Key (Optional)

The digits for the embedded numeric keypad are printed in blue below the corresponding keyboard keys.

If Num Lock is turned on by pressing the **Fn** +  key combination, you can use the numeric keys to enter digits.

For 15.6-inch models, an integrated numeric keypad is supplied. Once the Num Lock is on, the Num Lock light is lit and the numeric keypad is enabled.

Other Function Keys

Application Key 

Performs the right-click mouse function (touchpad).

Touchpad

The touchpad provides the same function as a mouse and the left and right buttons of the touchpad plays the role of the left and right buttons of a mouse.



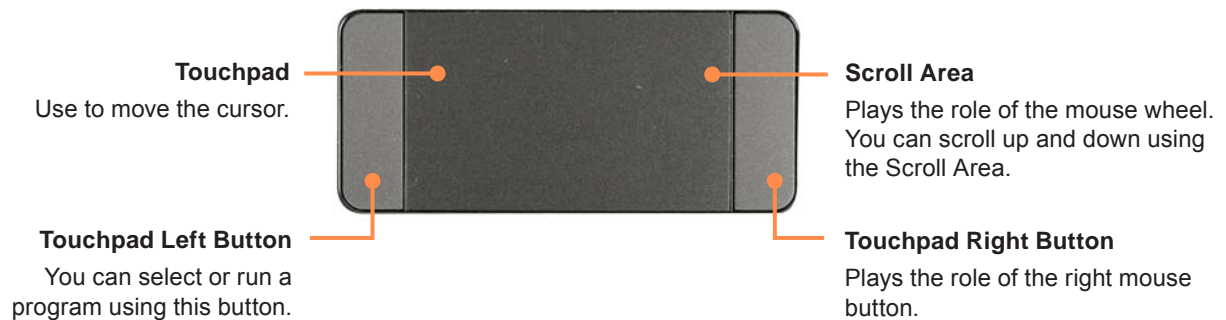
Before You Start!

- Use the Touchpad with your fingers. Using a sharp object may damage the Touchpad.
- If you touch the Touchpad or press the Touchpad buttons while booting up, the Windows boot time may be extended.

[For 14 inch and 15.6 inch models]



[For 11.6 inch models]



The touchpad image may differ from the product.

Basic Touchpad Functions



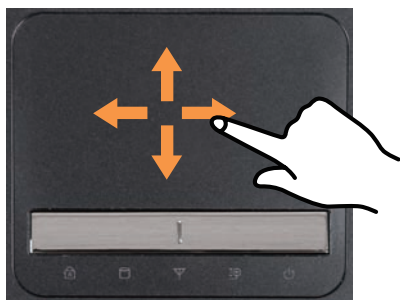
The touchpad image may differ from the product.

The figures used for the description are of a representative model. Therefore the figures may differ from the real ones.

Moving the cursor on the screen

Place your finger on the touchpad slightly and move your finger.

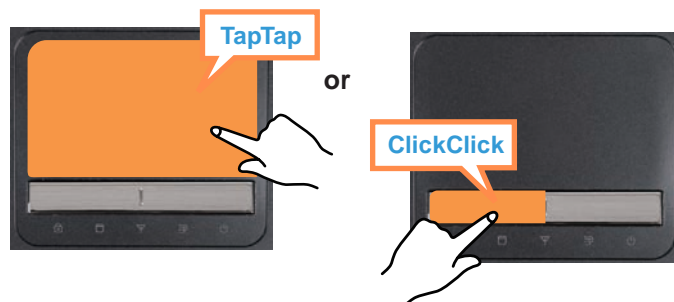
The mouse cursor will move accordingly. Move your finger in the direction you wish to move the cursor.



Double-Click Function

Put your finger on the touchpad and quickly tap twice with your finger on an item you want.

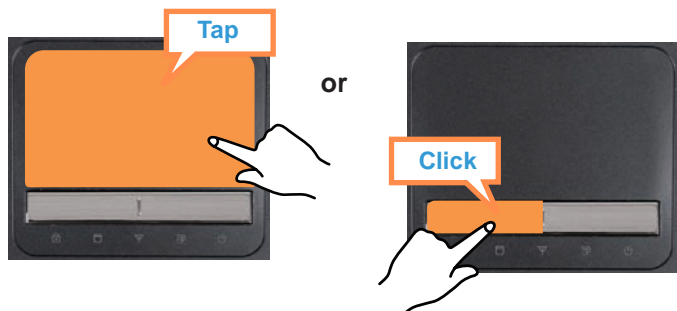
Alternatively, press the left touchpad button twice quickly.



Click Function

Place your finger on the touchpad and tap your finger once over an item you want.

Alternatively, press the left touchpad button once.



Right Button Function

This corresponds to clicking the right mouse button.

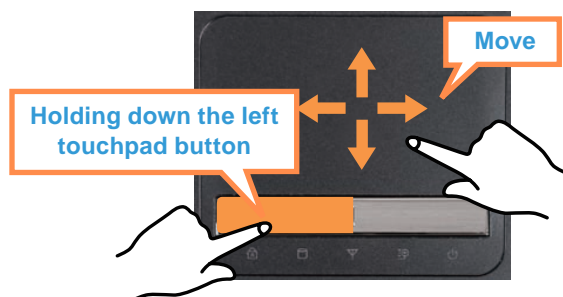
Press the right touchpad button once. The corresponding pop-up menu appears.



Drag Function

Dragging refers to moving an item to another place after selecting it.

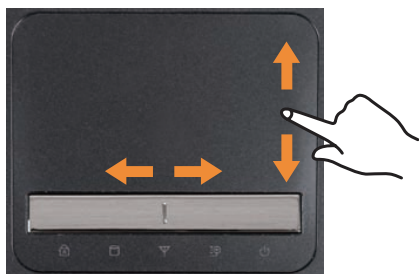
Press and hold down the left touchpad button over an item you want to drag and move the item to the new location.



Touchpad Scroll Function

The touchpad scroll area provides the mouse wheel function (scroll function).

Place your finger on the touchpad's right edge for vertical scrolling or the bottom edge for horizontal scrolling and then move your finger along the edge to scroll the screen vertically or horizontally.



Touchpad Gesture Function (Optional)



Touchpad Gesture Function may not be provided or the version may differ depending on your computer model and the usage procedures may differ depending on the version. The screen images in this document may differ from actual product.


The touchpad image may differ from the product. The figures used for the description are of a representative model. Therefore the figures may differ from the real ones.

You can use the following Gesture function with the touchpad.

- A scrolling function using the circle.
- Image and text zoom-in and zoom-out functions using two fingers
- A long distance cursor movement function

Chiral Scroll Function

The Chiral Scroll function enables users to scroll **long** horizontally and vertically.

If you place your finger over the **Scroll Area** at the bottom right of the touchpad and move your finger slightly, the mouse pointer changes to the circle icon .

At this time, circle clockwise or counterclockwise over the touchpad with your finger to scroll long.

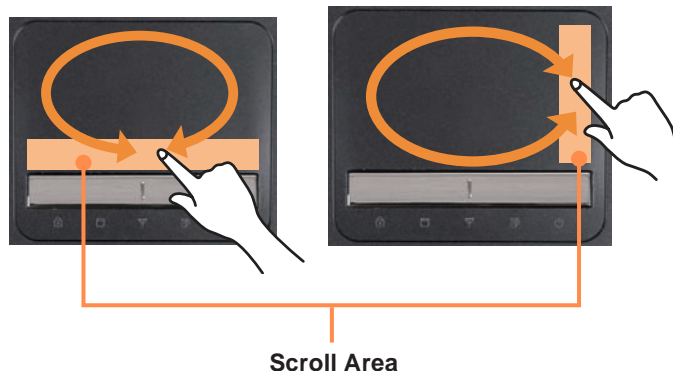
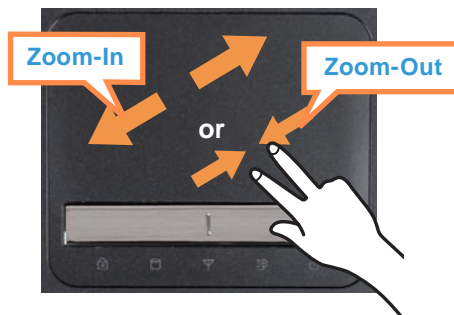


Image and Text Zoom-In and Zoom-Out (Pinch) Function

If you place two fingers over the touchpad and set them close or apart, the image or text is zoomed-in or zoomed-out.



Cursor Long-Distance Movement (Momentum/Glide) Function

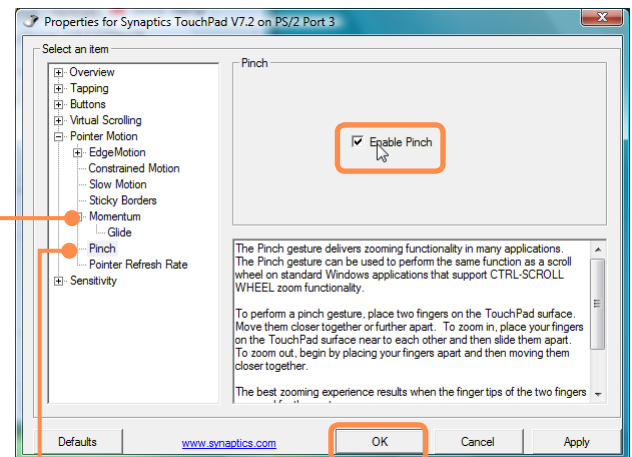
You can move the cursor quickly and smoothly a long distance with a small movement over the touchpad. To use this function, configure as follows.

Click the **Start** > **Control Panel** > **Hardware and Sound** > **Mouse** > **Device Settings** tab > **Settings** button, select the **Momentum** > **Enable Momentum** option in the Touchpad Setting window, and click the **OK** button.

Disabling the Gesture Function

- 1 Click the **Start** > **Control Panel** > **Hardware and Sound** > **Mouse** > **Device Settings** tab > **Settings** button.
- 2 If the Touchpad Settings window appears, deselect the option you want to disable in **Select an item** click the **OK** button.

E.g.) The **Image and text zoom-in and zoom-out** function is selected.



Disabling the Image and Text Zoom-in and Zoom-out Function

Disabling the Cursor Long Distance Movement Function

Touchpad On/Off Function

If you want to use the mouse only without using the touchpad, you can turn the touchpad off.

To lock the touchpad function, press the **Fn** +  keys.



You can set the touchpad and touchpad button settings in the tabs that appear when clicking **Start > Control Panel > Hardware and Sound > Mouse**.

External-type CD drive (provided optionally or to be purchased)

This computer supports an external USB CD-ROM drive (provided optionally or can be additionally purchased). Check if the interface type of the external CD-ROM drive is a USB type. For detailed specifications, refer to the catalog.



- Do not insert a cracked or scratched CD. Otherwise, the CD may break and damage the optical disk drive when the CD rotates at a high speed.
- When you clean a CD or DVD title, wipe with a soft cloth from inside to outside.
- Do not eject a CD when the CD operating LED is on.
- The figures used for the description are of a representative model. Therefore the figures may differ from the real ones.

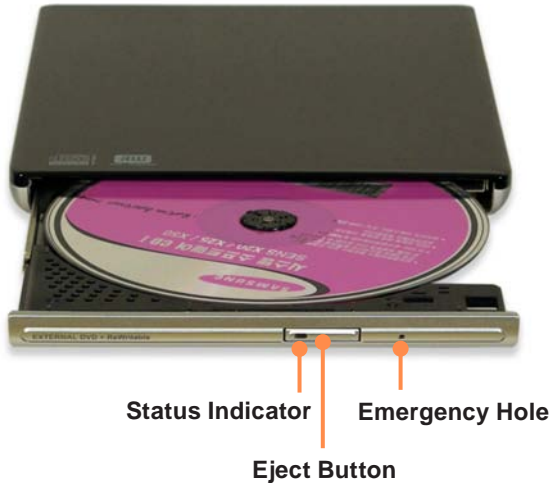
Connecting the CD Drive

Connect the CD drive to the **USB port**.



Inserting and Ejecting a CD


- 1 Press the **Eject** button of the CD drive.



- 2 When the CD tray opens, insert a CD or DVD and push the tray in until it clicks.

- 3 Push the CD tray inward until it clicks.
The CD drive status indicator is turned on.



- A CD drive's reading and writing speed may differ depending on the condition and type of the media.
- To eject a CD when the CD drive does not work or the computer is off, place the end of a paper clip () into the Emergency Hole until the CD tray is ejected.

Multi Card Slot (optional)

Using the multi card slot, you can read and write data to a SD card, SDHC card, MMC card.

You can use a card as a removable disk and conveniently exchange data with digital devices such as a digital camera, digital camcorder, MP3, etc..



Before You Start!

- You have to additionally purchase a multi card with the necessary capacity depending on your requirements.
- You can use a multi card just like any data storage device. A copyright protection function is not supported.
- Since you can lose a card when moving the computer, keep the card separately.
- Supported Cards : SD Card, SDHC card, MMC
- The figures used for the description are of a representative model. Therefore the figures may differ from the real ones.
- Before use, remove the dummy card that was inserted to protect the slot.

To Insert and Use a Memory Card

- 1 Insert a card into the slot according to the directions printed on the slot.

[For 14 inch and 15.6 inch models]

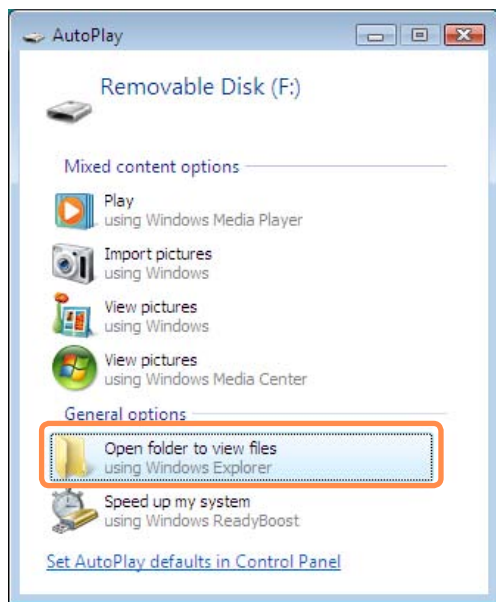


[For 11.6 inch models]



2 The card drive appears. Click **Open folder and view files**.

If the window does not appear, click **Start > Computer**.



If a window asking to scan and change appears, click **Continue Without Scanning**. This will proceed to Step 2 above.

3 You can save, move and delete data by double-clicking the corresponding drive.



The device name of the card drive may differ depending on your computer model.

You can only use the card after formatting it.



Using a Mini SD and RS-MMC

Since the above cards are too small, you cannot insert the cards into the slot directly.

Insert the card into the dedicated adapter (available from most electronic retailers) and then insert the adapter into the multi card slot.

However, depending on the adapter's body material, some RS-MMC cards may not be recognized properly. Samsung recommend that you check the card is recognized correctly prior to purchasing.

To remove a memory card

- 1 Take hold of the end of the card and remove the card.

To format a memory card

When using the memory card for the first time, you must format the card before using it.



Formatting a card deletes all data saved on the card. If the card includes data, backup the data before formatting it.

- 1 Click **Start > Computer**.
- 2 Right-click over a card drive with the touchpad and select **Format**.
- 3 Click **Start** to the formatting.



- To use a card to exchange data with a digital device such as a digital camera, formatting the data using the digital device is recommended.
- When you try to use a card, which is formatted in the computer, in another digital device, you may have to format the card again in the device.
- You cannot format, write or delete data from a SD, or SDHC card with a write protection tab when it is in the Lock position.
- Inserting and removing a memory card repeatedly may damage the memory card.

Connecting a monitor / TV

Using an external display device is useful when you are giving a presentation or watching a video or movie through your monitor.



Before You Start!

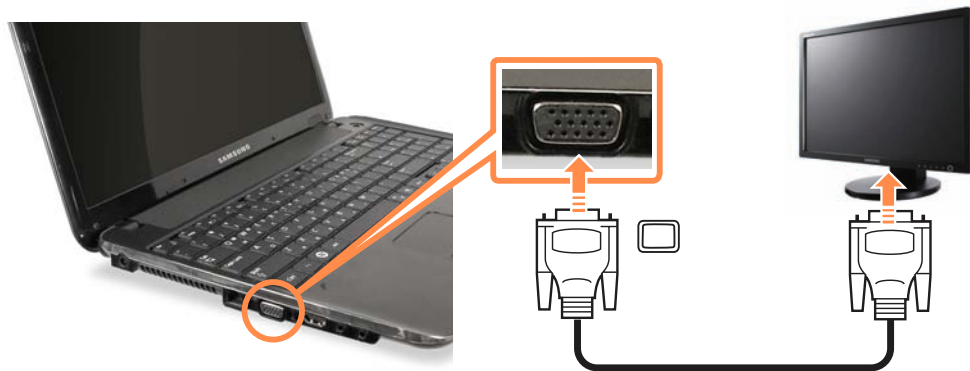
You have to buy a connection cable additionally.

The figures used for the description are of a representative model. Therefore the figures may differ from the real ones.

Connecting to the Monitor / TV

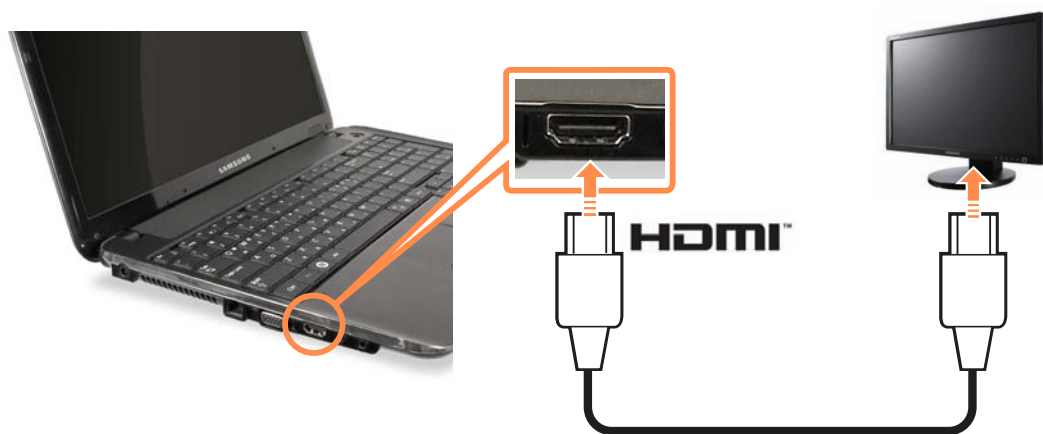
Connecting to the Monitor port (Optional)

Connect the computer to the RGB port of the monitor or TV using a monitor cable (15-pin).



Connecting to the HDMI port (Optional)

Connect the computer to the HDMI port of the monitor or TV using a HDMI cable.




- When connecting the computer to a TV, switch the external input mode of the TV to 'HDMI'.
- When a TV provides more than one HDMI port, connect the computer to the "DVI IN" port.

Viewing Through a Monitor / TV

You can switch the display device using the shortcut key.

Switching the Display Device using the Shortcut Key

Press the **Fn** +  key combination once. Then the **Easy Display Manager** screen appears in which you can select a display device.

Whenever you press the  key while holding down the **Fn** key, the selected option is changed.



Example) Selecting LCD+CRT Dual View



- **LCD:** Notebook Screen
- **CRT:** External Monitor Screen
- **HDMI :** TV Screen or Monitor (when it is connected via the HDMI port).
- **LCD+CRT Clone :** Notebook+ External Monitor Screen
- **LCD+CRT DualView:** Notebook+ External Monitor Screen in Dual View
- **LCD+HDMI Clone:** Notebook+ TV(or Monitor) Screen
- **LCD+HDMI DualView:** Notebook+ TV(or Monitor) Screen Dualview

● What is Dual View?

Dual View is a function that enables you to view a computer screen over two display devices. It is convenient when you need a wide screen.



- The TV screen is only supported for models that support the TV output port (HDMI).
- Simultaneous output to all 3 (LCD + CRT + HDMI) is not supported.
- External Monitor / TV is not supported in the DOS Command Prompt window.

Setting up HDMI TV video (Optional)

If the Desktop screen displayed on the TV does not fit to the TV screen, configure it as follows depending on the graphics card.

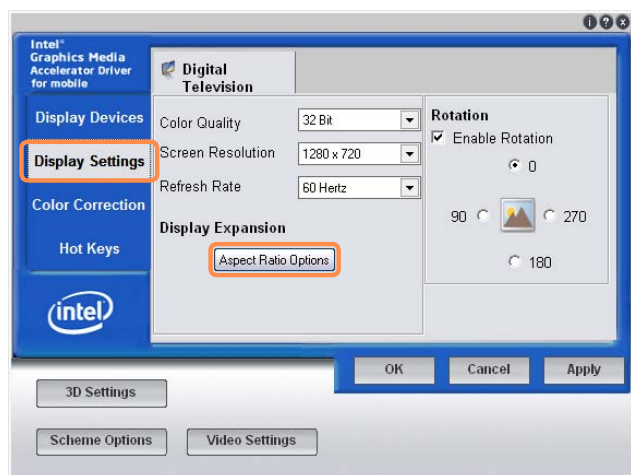


- You can view the graphics card type by selecting **Start > Control Panel > Hardware and Sound > Device Manager > Display adapters** and then clicking the **+** symbol.
- The screen images and terms may differ from actual product depending on the computer model and driver version.

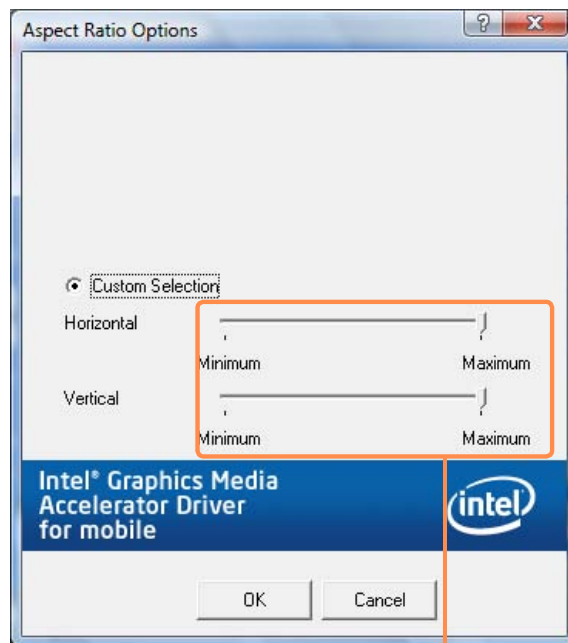
• For Intel graphics cards

1 Right-click over the Desktop and select **Graphics Properties**.

2 Click **Display Settings** and click the **Aspect Ratio Options**.



3 Fit the Desktop to the TV screen by sliding the Horizontal and Vertical Resize Bars and click **OK**.




Resize Bars

Setting up HDMI TV audio (Optional)

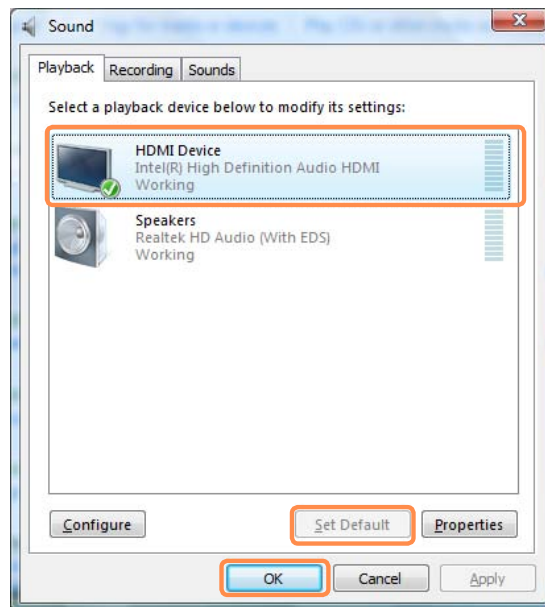
You can configure the sound of the computer to be played through the HDMI TV. You have to configure the sound device in the Control Panel whenever you connect the HDMI TV in order to hear sound from the computer on the TV.



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

- 1 Right-click over the **Volume** Control icon  in the notification area at the bottom right of the Desktop and select **Playback Devices**.
(Alternatively, click the **Control Panel > Hardware and Sound > Sound**.)

- 2 If the default Playback Device is set to **Speakers**, change it to **Digital Output Device(HDMI)** (or **HDMI Device**), click **Set Default** and then click **OK**.



HDMI Output Device may not appear on the playback device list depending on the computer model.

In this case, turn on the TV, connect the TV to the computer using a HDMI cable and then switch to HDMI or LCD+HDMI Clone or LCD+HDMI DualView mode using the Shortcut Key(Fn + F4).



To listen to sound on the computer after disconnecting the HDMI TV, you have to set the Playback Device to **Speakers**.

Using Dual View

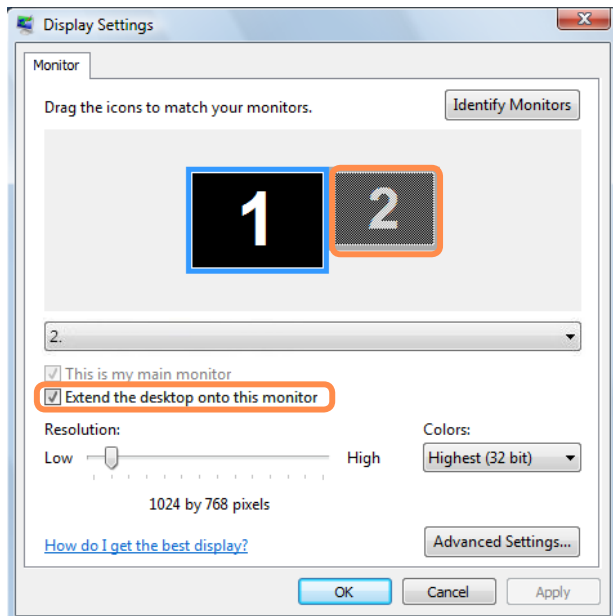
Dual View enables users to expand their computer screen over two display devices.

Dual View is convenient when a wide operating space is needed. In addition, since Dual View operates as if there are 2 graphic cards present even when there is only one, you can set the resolution and color for each display device.

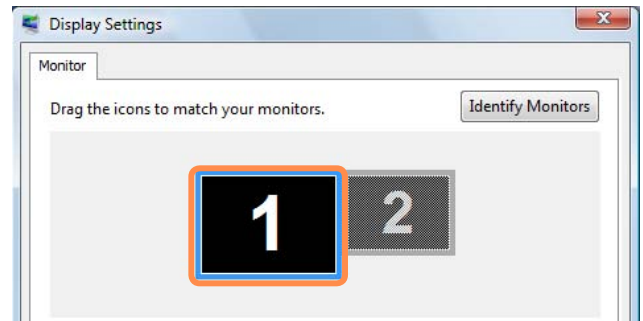
Selecting Dual View

Check if the external display device is properly connected and follow the instructions below.

- 1 Click the **Start > Control Panel > Appearance and Personalization > Adjust screen resolution**.
- 2 Click on the number 2 monitor icon and select **Extend the desktop onto this monitor**. Click **Apply** and then click the **OK** button.



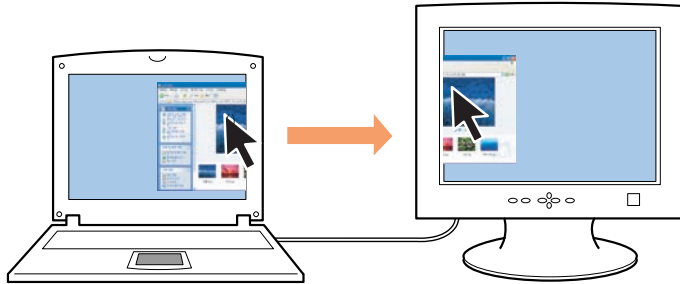
- 3 When notebook LCD is set as the main device, the 1 digit is displayed over it and the 2 digit is displayed over the auxiliary display device. Now you can expand the Desktop screen over 2 display devices. When using Dual View, it is recommended setting the LCD as the main device (number 1).



If the resolution of the auxiliary display device is 640×480 pixels with 256 colors, click the **Start > Control Panel > Appearance and Personalization > Adjust screen resolution > Monitor Number 2** and adjust the resolution and color quality.

Using Window in Dual View

Click on the window title bar of the main LCD (monitor number 1) and drag it into the auxiliary display device (monitor number 2) to move the window.





Canceling Dual View


- 1 Click the **Start > Control Panel > Appearance and Personalization > Adjust screen resolution**.
- 2 Click on the Monitor Number 2 icon, unselect **Extend the desktop onto this monitor**, and then click **Apply**.

Adjusting the Volume


You can adjust the volume using the keyboard and the volume control program.

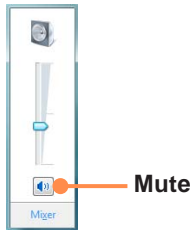
Adjusting the Volume using the Keyboard


Press the **Fn** +  key combination or **Fn** +  key combination to adjust the volume.

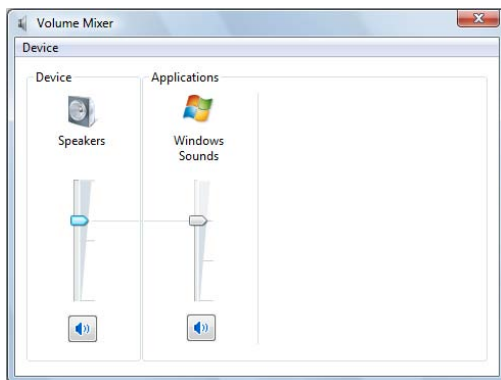
Press the **Fn** +  key combination to turn the volume on or off.

Adjusting the Volume using the Volume Adjustment Program

Click the **Volume** icon  on the taskbar and slide the volume control bar to adjust the volume.




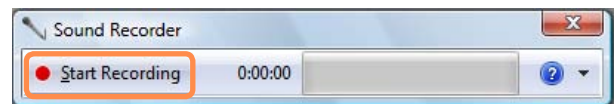
Alternatively, right-click over the **Volume** icon  and select **Open Volume Mixer** to adjust the volume.



Using the Sound Recorder


The procedures to record sound using the Windows Recorder are described below.

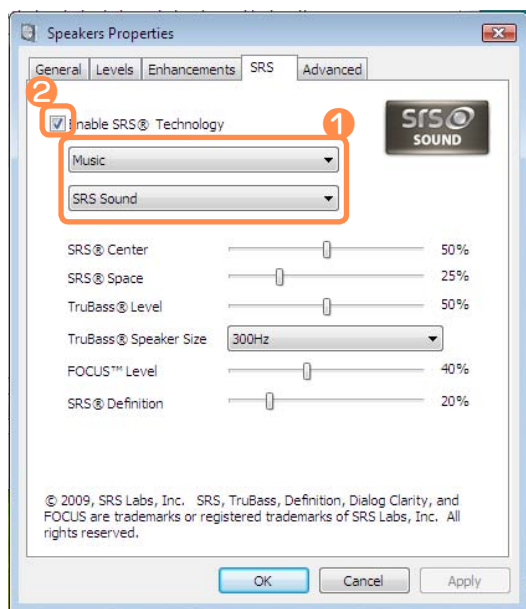
- 1 Connect a microphone to the microphone jack.
- 2 Right-click over the **Volume** icon  on the taskbar and select **Recording Device**.
- 3 Check if the microphone is set as the default recording device.
If this is the case, it is already set as the default device. If not, right-click over the microphone and select **Set default**.
- 4 Click **Start > All Programs > Accessories > Sound Recorder** and click **Start recording** to start a recording.



Using SRS

The SRS function enables you to experience more stereophonic sound using stereo speakers.

- 1 Right-click over the **Volume** icon  in the Taskbar and select **Play Device (P)**.
- 2 Select **Speaker** in the **Play** tab and click **Properties**.
- 3 Select the **SRS** tab in the **Speaker Properties** window. Select a mode and click the **Use** checkbox on the left. Click **OK**. You will be able to experience a more stereophonic sound in the selected mode.



- **Music:** Select to listen to music.
WOW HD technology has been used.
- **Movie:** Select to watch a movie.
TruSurround XT technology has been used.
- **When using a Headphone plugged in the Headphone jack:** Some of the setting details under each menu will change.
CS Headphone technology has been used.



- The SRS function is only supported for a computer's built-in speakers or headphones.
- It is recommended to unchecking the SRS option before recording, and to check it before play. It is to prevent sound distortion because of double application of SRS effect when user plays the file recorded by using stereo mix.

Chapter 3.

Using the Network

Wired Network

75

Wireless Network

78

Connecting to a Wireless LAN

79



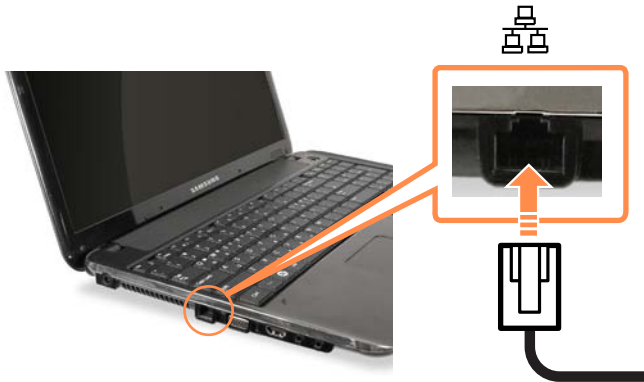
Wired Network

A wired network is a network environment used for a company network or broadband internet connection at home.



The figures used for the description are of a representative model. Therefore the figures may differ from the real ones.

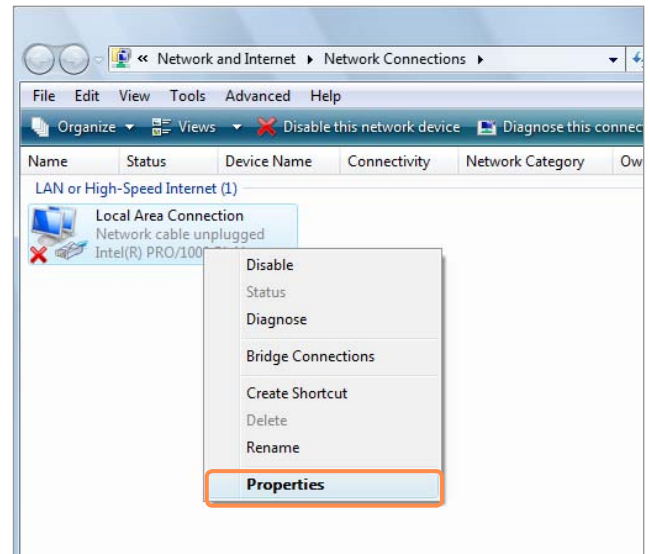
- 1 Connect a LAN cable to the computer's LAN port.



- 2 Click **Start > Control Panel > Network and Internet > Network and Sharing Center**.

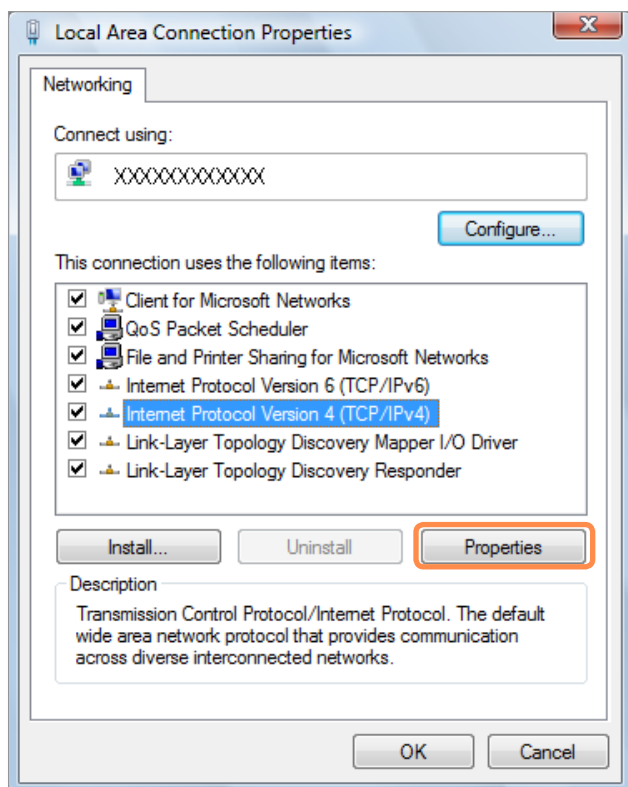
- 3 Click **Manage Network Connections** from the left pane.

- 4 Right-click over the **Local Area Connection** and select **Properties**.



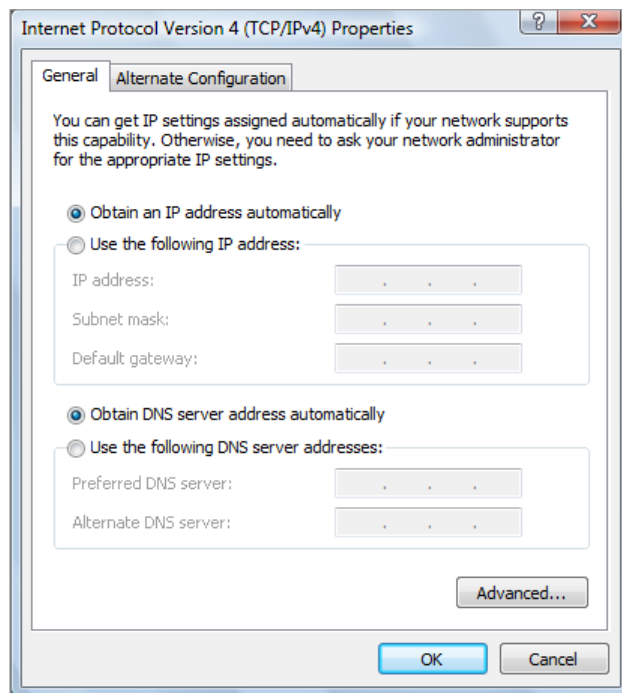
The LAN Device name may differ depending on your computer's Network Device.

- 5** Select **Internet Protocol Version 4 (TCP/IPv4)** from the **Networking** tab and click **Properties**.



- The LAN device driver may differ depending on your LAN device model.
- To add a network component, click **Install** in the screen shown in the figure above. You can add clients, services, and protocols.

- 6** Configure the IP settings.
When using DHCP, select **Obtain an IP address automatically**. To use a static IP address, select **Use the following IP address**, and set the IP address manually.



When not using DHCP, ask your network administrator for the IP address.

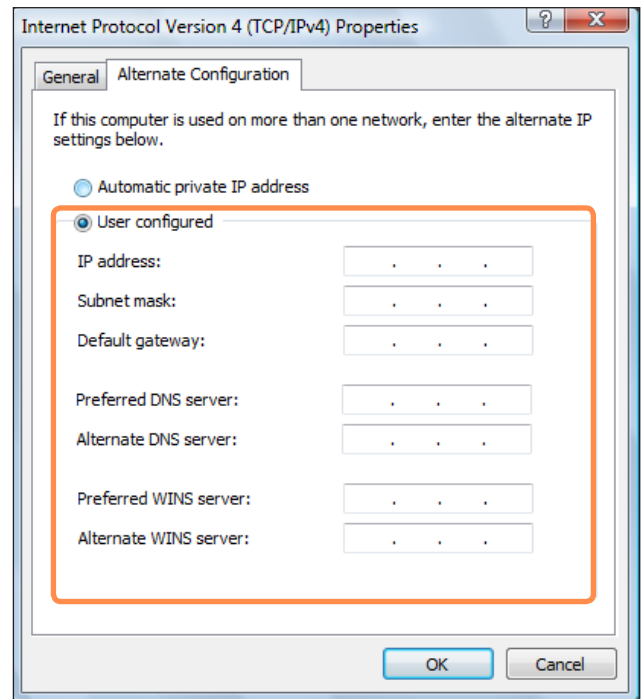
- 7** When you have completed the settings, click the **OK** button.
The network settings have been completed.

Using both DHCP and a fixed IP simultaneously

Using the **Alternate Configuration** providing by Windows Vista, you can set both automatic and fixed IP addresses and then you can select to use either of them to connect to the Internet.

- 1 Click **Start > Control Panel > Network and Internet > Network and Sharing Center** and click **Manage Network Connections** in the left pane.
- 2 Right-click over the **Local Area Connection** and select **Properties**.
- 3 Select **Internet Protocol Version 4 (TCP/IPv4)** from the **Networking** tab and select **Properties**.

- 4 Select the **Alternate Configuration** tab, select **User configured** and fill in the corresponding fields.





- 5 When you have completed the settings, click the **OK** button.

Wireless Network

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.



Before You Start!

- The descriptions below are for computer models with a Wireless LAN card or device.
A Wireless LAN device is optional. To view the installed wireless LAN card, click **Start > Control Panel > Hardware and Sound > Device Manager > Network Adapter** and click the **+** symbol.
The pictures in this manual may differ from the actual product depending on your wireless LAN device model.
- To use the wireless LAN, you have to turn the wireless LAN on first by pressing the **Fn** +  keys. If the wireless LAN is turned on, the **Wireless LAN LED**  is lit.

Wireless LAN Connections

Wireless network connections can be classified into 3 categories and this manual describes the connection procedures for connecting through an AP.

● Access Point (AP)

You can connect to the Internet or another computer on the network through an AP.



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. You can connect multiple wireless LAN installed computers to an AP.

● Wireless Ad-Hoc Network Type

This connects computers with wireless LAN communications capability.

Communication is enabled by constructing an Ad-Hoc network via one computer and connecting another computer through a wireless connection.

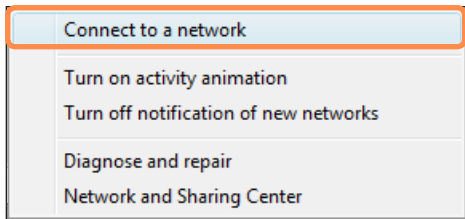
For more detailed connection procedures, refer to the descriptions that appear when selecting **Start > Help and Support > Table of Contents > Networking-connecting computers and devices > Setting up a network > Setting up a computer-to-computer (ad hoc) network**.

When you use Ad-Hoc, you have to change the McAfee Firewall settings.

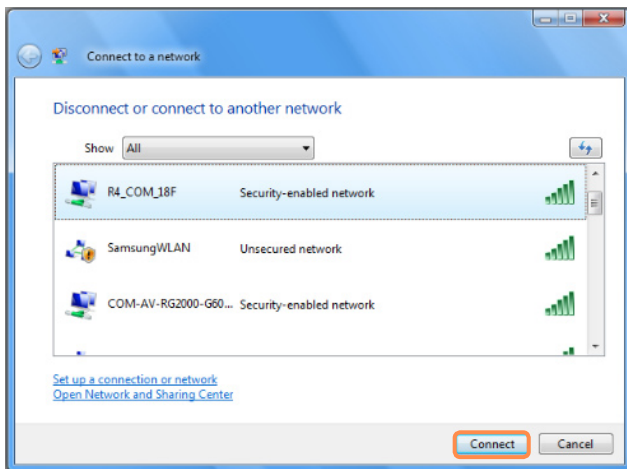
Connecting to a Wireless LAN

If there is an AP, you can connect to the Internet via the AP using the Wireless LAN connection method provided by Windows 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, the Enter Network Key window appears. Enter the network key in the window and then click the **Connect** button.

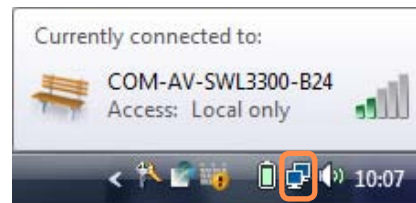


Ask your network administrator for the network key, if necessary.

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

Checking the network connection status

Move the mouse pointer over the **Wireless Network Connection**  icon on the taskbar, and the connection status is displayed.



Chapter 4.

Settings and Upgrade



LCD Brightness Control	81
BIOS Setup	82
Entering the BIOS Setup	82
The BIOS Setup Screen	84
Setting a Boot Password	86
Changing the Boot Priority	88
Upgrading Memory	89
Battery	91
Installing/Removing the Battery	91
Charging the Battery	92
Measuring the Remaining Battery Charge	93
Extending the Battery Usage Time	94
Using the Security Lock Port	95

LCD Brightness Control



You can adjust the LCD brightness in 8 levels.



Before You Start!

The LCD brightness is the brightest (Level 8) when the computer is running on AC power, and it becomes dimmer when running on battery power.

Controlling the Brightness Using the Keyboard

Adjust the LCD brightness by pressing the **Fn** +  key or the **Fn** +  key.

The LCD brightness can change up to 8 levels and the brightness increases by 1 level when pressing the **Fn** +  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.

1. Turn the computer on and press the **F2** key when the SAMSUNG logo appears on the screen to enter the BIOS Setup.
2. Select the **Boot** menu and set the **Brightness Mode Control** item to **User Control**.
3. Press the **F10** key to save the settings and exit Setup.

● Saving battery power consumption

Decreases the LCD brightness when the computer is running on battery power to save battery power consumption.

● 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.

BIOS Setup

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



Before You Start!

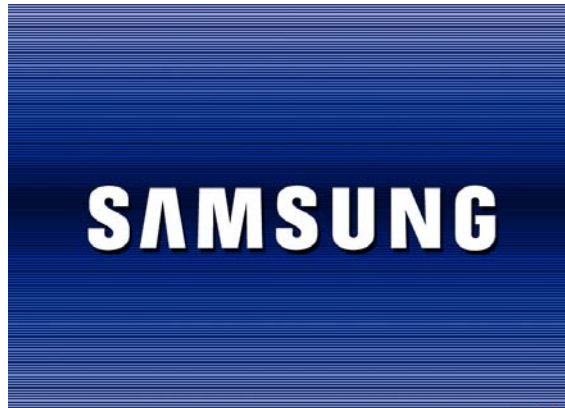
- Use the BIOS setup to define a boot password, change the booting priority, or add a new device. Since incorrect settings may cause your system to malfunction or crash, take care when configuring the BIOS.
- The functions of the BIOS setup are subject to change for product function enhancement purposes.



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.



Press the **F12** key while the booting screen(SAMSUNG logo) appears, the system will try to boot from the network.

- 3 After a moment, the BIOS setup screen appears.
The items in the BIOS setup may differ depending on the product.

Phoenix SecureCore (tm) Setup Utility

MainAdvancedSecurityBootExit

System Time[10:21:53]
System Date[07/30/200X]

SATA Port 1XXXXXXXXXX

CPU TypeXXXXXXXXXX
CPU SpeedX.XX GHz

Total MemoryXXX MB
Slot1 MemoryXXX MB
Slot2 MemoryXXX MB
Graphics Memory[Auto : Shared]

BIOS VersionXXXXXXXXXX
MICOM VersionXXXXXXXXXX

Item Specific Help

<Tab>, <Shift-Tab>, or
<Enter> selects field.

Help

Help for the selected item
appears automatically.

Setup Menu

Setup Items

F1 Help
Esc Exit

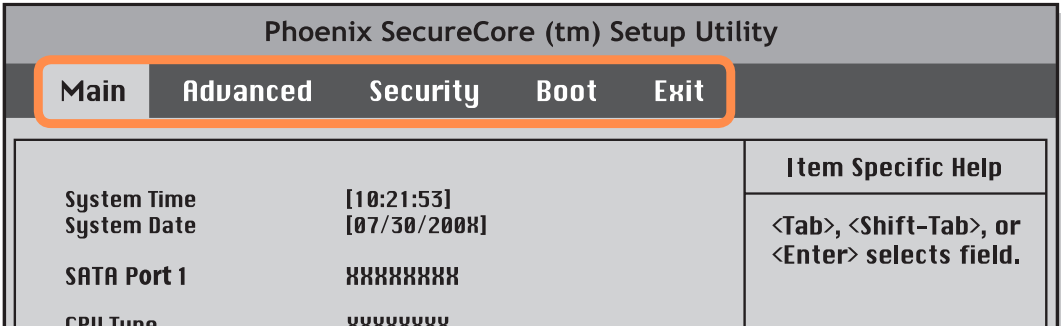
↑↓ Select Item
←→ Select Menu

F5/F6 Change Values
Enter Select ► Sub-Menu

F9 Setup Defaults
F10 Save and Exit

83










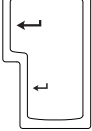

The BIOS Setup Screen



Menu	Description
Main	Used to change the basic system and environment settings.
Advanced	Used to configure advanced functions on your computer for devices and chipsets.
Security	Used to configure security functions, including passwords.
Boot	Used to set the boot priority and other boot options
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		Press to view the Setup Help.
Up & Down Keys	 	Press to move up and down.
F5/F6	 	Press to change the item value.
F9		Press to load the default Setup settings.
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		Press to save the changes and exit Setup.



The keyboard image may differ from the actual keyboard.

Setting a Boot Password

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.



Before You Start!

- 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.

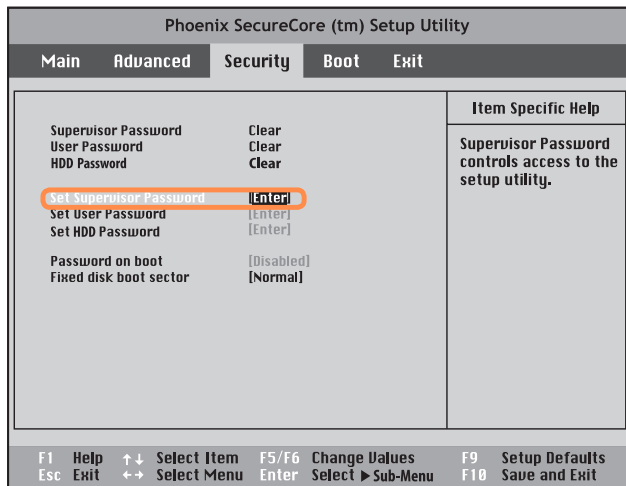
Setting a Supervisor Password

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

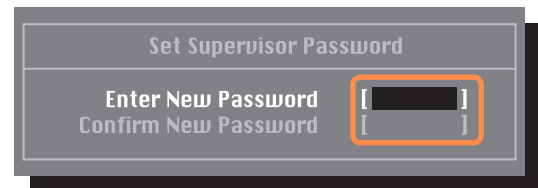
When setting a Supervisor Password, users other than a supervisor cannot use the computer.

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

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



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 When a message confirming the password configuration appears in the **Setup Notice** window, press **<Enter>**.

The supervisor password has been set.

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

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)

A supervisor password must be set using the Set Supervisor Password menu.

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.



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.

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>.
- 5 In the **Setup Notice** window, press <Enter>. The password is deactivated.

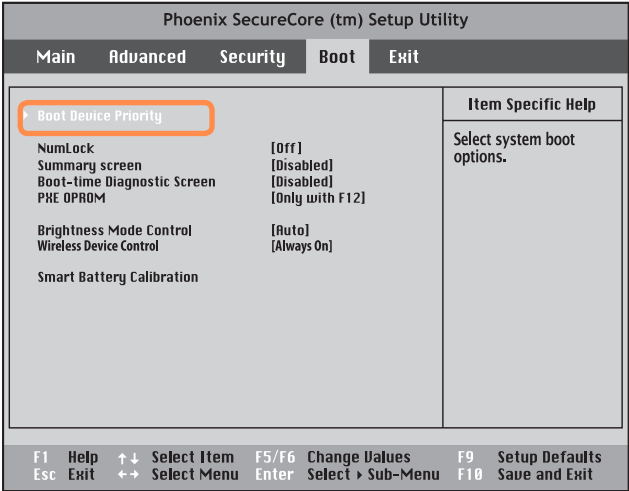


The hard disk drive password setting function is not provided for some models.

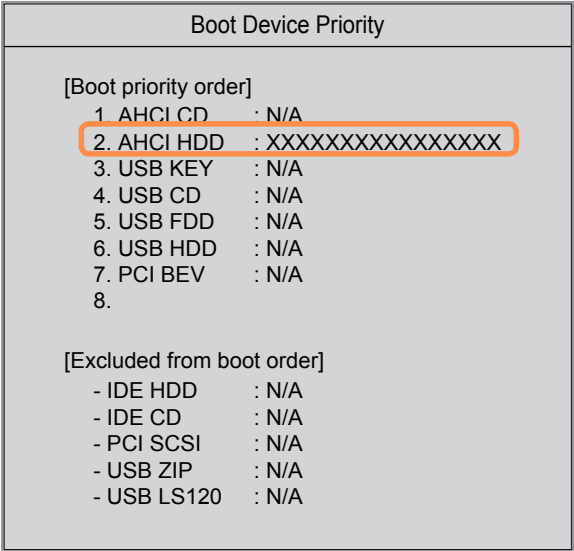
Changing the Boot Priority

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.

- 1
- Select the **Boot** menu in the BIOS Setup.
- 2
- Press <Enter> on the **Boot Device Priority** item.



- 3
- Press the down key (↓) to move to the **AHCI HDD** item and press the **F6** key to move up to the top item.



- 4
- Press the **F10** key to save the settings and exit Setup.
The highest boot priority device is now set to the Hard Drive.

Upgrading Memory

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.



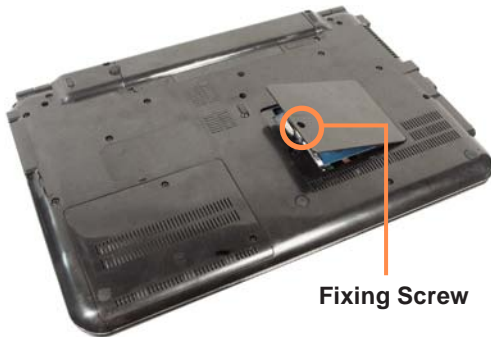
Before You Start!

- 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.
- Only use the same type of memory as specified in the Product Specification.
- The figures used for the description are of a representative model. Therefore the figures may differ from the real ones.

Adding a Memory Module

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

[For 14 inch and 15.6 inch models]

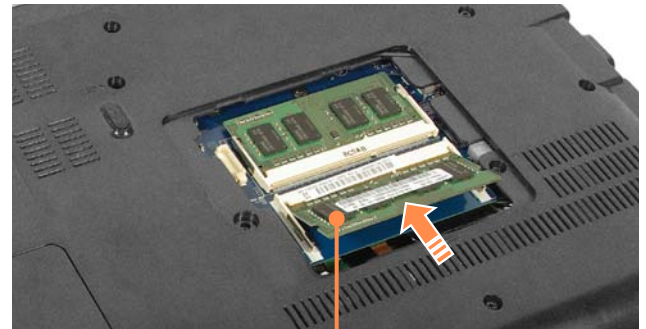


[For 11.6 inch models]



- 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 14 inch and 15.6 inch models]

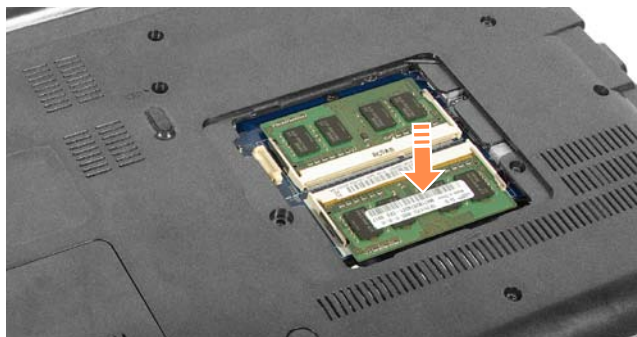


[For 11.6 inch models]



- 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 14 inch and 15.6 inch models]



[For 11.6 inch models]



- 4** Close the memory compartment cover and fasten the screw.

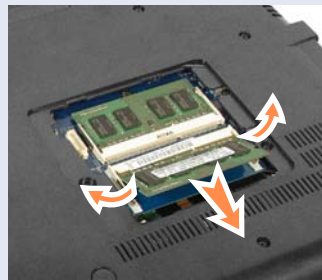


Removing a memory module

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

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

[For 14 inch and 15.6 inch models]



[For 11.6 inch models]



Battery

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.



Before You Start!

Carefully read and follow the precautions printed on the battery before using the battery.



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.

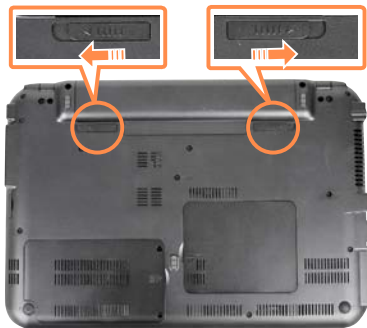
Please refer to the system operation environment (☞ 122) of this manual and operate and store the battery at room temperature.

Installing/Removing the Battery

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

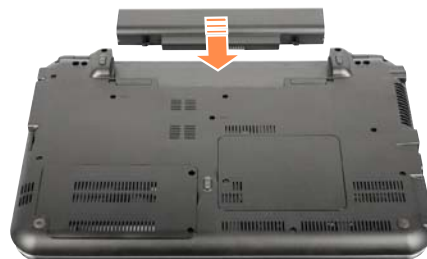
2 ► For 14 inch and 15.6 inch models

1. Pull the two battery latches **outwards** , then remove the battery.




2. To install the battery again, slide the battery into the system.

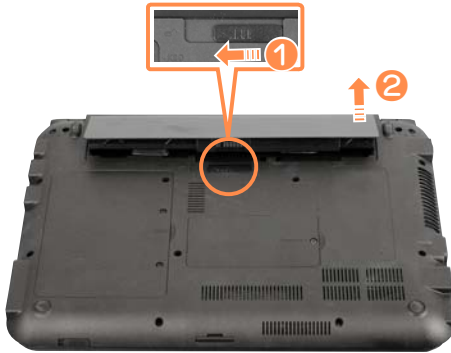
The battery latches move inwards and fix the battery automatically.



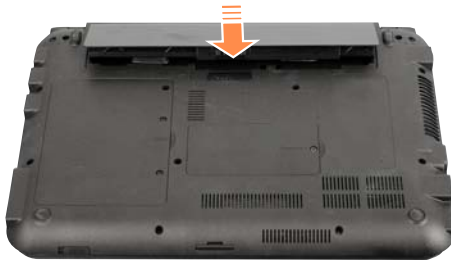
Check if the battery latch has been moved inwards.

► For 11.6 inch models

1. Slide the center battery latch into the outwards , and then remove the battery.



2. To install the battery again, slide the battery into the system.



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
Charging complete	Green
AC adapter not connected	Off

Measuring the Remaining Battery Charge

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

To use the shortcut key to view

Press the **Fn** +  keys on the keyboard. The remaining battery charge (%) will displayed for a moment.

You can only view the charge status in this way when Easy Display Manager is installed on your computer.

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.




Battery Warning

If the battery residual amount is 3~5%, the computer automatically shuts down after saving the data. The battery residual amount may vary depending on the computer model.

Extending the Battery Usage Time

Decreasing the LCD Brightness

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

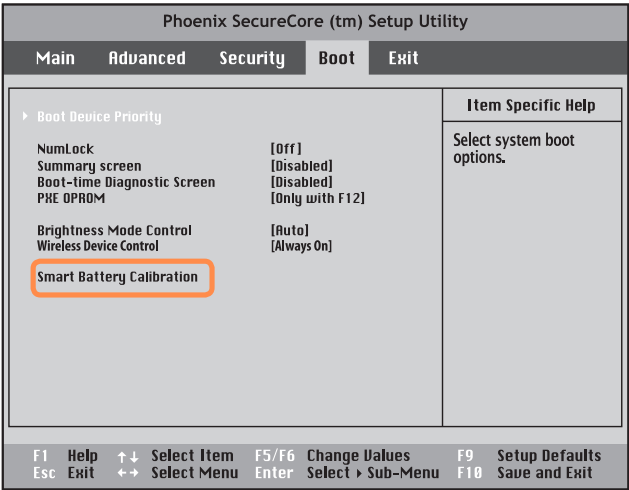
Using the Battery Calibration Function

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.

- 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>**.



- 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.

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.

[For 14 inch and 15.6 inch models]



[For 11.6 inch models]



Chapter 5.

Appendix



Reinstalling Windows Vista (Optional)	97
Reinstalling Software (Optional)	101
Using Samsung Recovery Solution (Optional)	103
Samsung Recovery Solution Functions	103
Using Samsung Recovery Solution	105
Q & A	110
Display Related	110
Sound Related	112
Wired Network (LAN) Related	113
Wireless Network (WLAN) Related	114
Game and Program Related	118
Bluetooth	119
Other	121
Product Specifications	122
Glossary	124
Index	127

Reinstalling Windows Vista (Optional)

You can reinstall Windows using the **System Recovery Media** for Windows Vista when Windows is no longer working properly. (For models supplied with a System Recovery Media.)

For models supplied with the Samsung Recovery Solution, you can reinstall Windows using the Samsung Recovery Solution.



Before You Start!

- A **System Recovery Media** may not be supplied depending on your computer model.
- If you cannot start Windows, or if you want to delete all existing data and reinstall Windows, install Windows according to the descriptions in **[Reinstalling when Windows does not start]** (see page 100).
- The manual describes procedures on the basis of Windows Vista Home Premium. Some pictures may differ from actual product.
- Since Windows Vista may be upgraded to increase performance, some of the installation procedures may differ depending on the Windows Vista version. This guide describes how to reinstall Windows on the basis of the latest version, Windows Vista SP1.

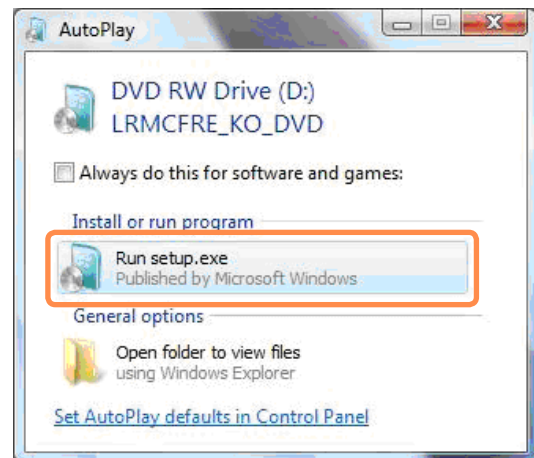


Reinstalling Windows may delete data (files and programs) saved on the hard disk drive. Make sure to backup all important data. Samsung Electronics shall not be held liable for any loss of data.

Reinstalling in Windows

- 1 Insert the **System Recovery Media** into the DVD drive.

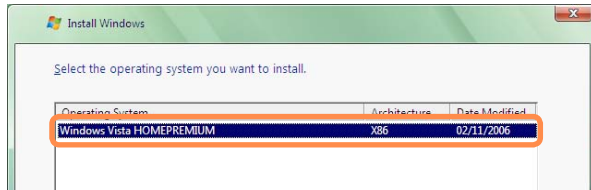
- 2 When the **AutoPlay** window appears, select **Run setup.exe** and click **Allow**.



3 Since the installation step may differ depending on the Windows Vista version, continue the installation according to the following descriptions.

- **3-1 If a window appears which allows you to select the operating system to install,**

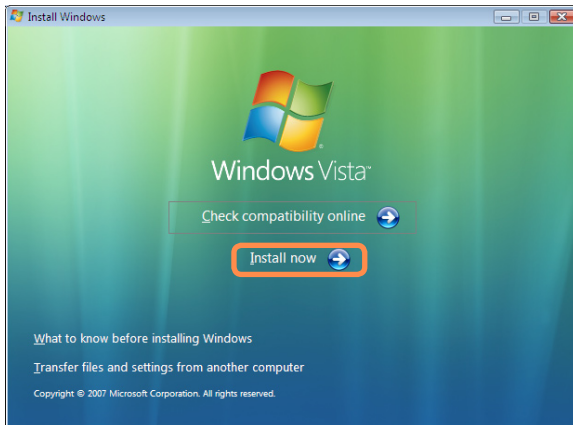
click **Next**. Step 4 follows.



The operating system name may differ depending on the Windows version.

- **3-2 If the Select Windows Installation window appears (for Windows Vista SP1),**

click **Install Now**. When the Select Update window appears, click on the relevant item.



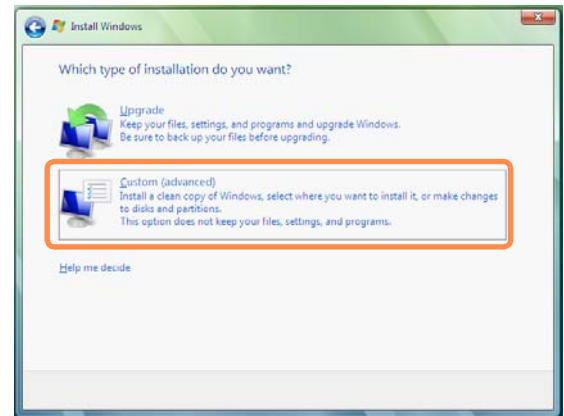
If you select **Go online to get the latest updates for installation** in the Select Update window, the latest updates are installed and Step 4 follows. At this time, the computer must be connected to the Internet.

4 If the User Agreement screen appears, select **I accept the license terms** and then click **Next**.

- **For Windows Vista SP1, the following window appears. In this case, select an installation option.**

If you click **Custom**, Steps 5 to 12 are continued sequentially.

If you click **Upgrade**, Step 6 begins. After that, proceed to Step 11.





Custom

Select this option to **Reinstall Windows**. You have to reinstall all necessary device drivers and programs after the Custom installation. In addition, unnecessary folders and files may remain on the hard disk drives after the installation (e.g. C:\Windows.old, etc.).

Upgrade

Select this option to **Upgrade Windows** while maintaining current files, configurations and programs. Although you therefore do not need to reinstall the device drivers and programs, some programs may not work properly after the upgrade.

- 5** When a window appears asking for the location to install the operating system to, select a disk drive partition and click the **Next** button.



Drive D includes an area to save the backup image used by Samsung Recovery Solution. Installing Windows to drive C is recommended.



When previous Windows installation files are in the selected partition, a message appears informing you that the files and folders will be moved to the Windows.old folder. Click the **OK** button.

- 6** The Windows installation continues.
The computer will restart 3 times during the installation. If the **Press any key to boot from CD or DVD...** message appears after a restart, do not press any button.

- 7** The **Windows user registration** screen appears. Select the username and photo and click the **Next** button.

- 8** Enter the **computer name**. The window in which you can select the Desktop background appears. Enter the contents and click the **Next** button.

- 9** The **Windows automatic protection settings** window appears.
Configure the setting according to your requirements.

- 10** The **time and date settings** window appears. Click the **Next** button.

- 11** The **Registration Complete** window appears. If you click the **Start** button, a computer specifications check begins.

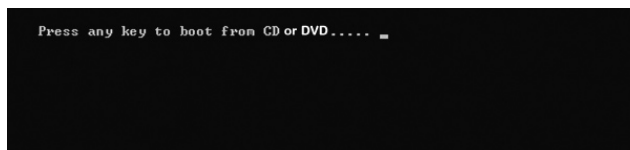
- 12** After a while, the Windows Desktop appears.

Reinstalling when Windows does not start

When Windows does not start, boot up with the System Recovery Media and from there you can reinstall Windows.

1 Insert the **System Recovery Media** into the DVD drive and restart the computer.

2 If the **Press any key to boot from CD or DVD...** message appears while booting, press any key on the keyboard.



3 After a while, the Options windows such as Language, Time, Keyboard, etc. appear. Confirm the settings and click the **Next** button.

4 Since the installation step may differ depending on the Windows Vista version, continue the installation according to the following descriptions.

- **4-1 If a window appears which allows you to select the operating system to install,**
click **Next**. Step 5 appears.

- **4-2 If the Select Windows Installation window appears (for Windows Vista SP1).**

Click **Install Now**.

5 If the User Agreement screen appears, select **I accept the license terms and** then click **Next**.

- **For Windows Vista SP1, a window where you can select an installation option appears.**
In this case, click **Custom**.

6 When a window appears asking for the location to install the operating system to, select the partition of the disk drive and then click the **Next** button.



Drive D includes an area to save the backup image used by Samsung Recovery Solution. Installing Windows to drive C is recommended.



- A If you click **Drive Options (Advanced)**, you can delete, format, create or expand a partition. Click on a function and proceed according to the instructions on the screen.
- When previous Windows installation files are in the selected partition, a message appears informing you that the files and folders will be moved to the Windows.old folder. Click the **OK** button.

7 The subsequent steps are the same as those for **Reinstalling in Windows**. 99



The operating system name may differ depending on the Windows version.

Reinstalling Software (Optional)

You can reinstall software using the System Software Media, when a device driver or computer application is not working properly.



Before You Start!

- When software is not working properly, it is recommended removing the software using the Add or Remove Programs of the Control Panel and reinstalling the software using the System Software Media.
- The System Software Media is not supplied in the form of a CD or DVD depending on your computer model. If you run the **SoftwareMedia40.exe** file in the **C:\SoftwareMedia** folder, the **system recovery media** is executed. If you backup the **C:\SoftwareMedia** folder to an additional HDD, you can easily install the necessary software later.
- Some model is not supplied System Software Media depending on your computer model.

Running the System Software Media

The System Diagnosis function enables users to diagnose the system connectivity, any system problems and resolve these problems.

- 1 Launch Windows Explorer and double-click **C:\SoftwareMedia\SoftwareMedia40.exe**.
If the Auto Play window appears, select **Run SoftwareMedia.....** in the **Install or Run Program** field.



If the **System Software Media** is supplied as a CD or DVD, insert the **System Software Media** into an external ODD driver.

- 2 In the **User Account Control** window, click **Allow**.




If you are not logged in with an administrator account, you have to enter an administrator password in the User Account Control window.

- 3 The **System Software Media** will launch.
Select an installation option to start the installation.



Standard Installation	If you select this option, programs not currently installed on the computer are listed.
Minimum Installation	If you select this option, programs are listed that need to be installed on the computer (drivers, Windows updates, etc.). You can conveniently use this option, when you need to install essential programs only.
Custom Installation	If you select this option, you can select the programs to be installed. You can conveniently use this option, when you need to install an individual driver or program that is causing a problem.

Installing Software



As an example, the installation procedures for the **Standard Installation** options are described below.

1 Select **Standard Installation** in the **System Software Media** main screen.



2 If the **Start Standard Installation** window appears, click the **Yes** button.
The drivers and programs, which were installed in the computer when you purchased the computer, are installed again.

3 The **Software installations was completed** window appears.
If you click **Yes**, the computer is restarted.

Using Samsung Recovery Solution (optional)

Samsung Recovery Solution provides a **Restore Function** that enables you to easily restore your computer to a previous, normal state when a problem occurs with your computer, as well as a **Backup Function** that enables you to easily save your computer's current status and your data.

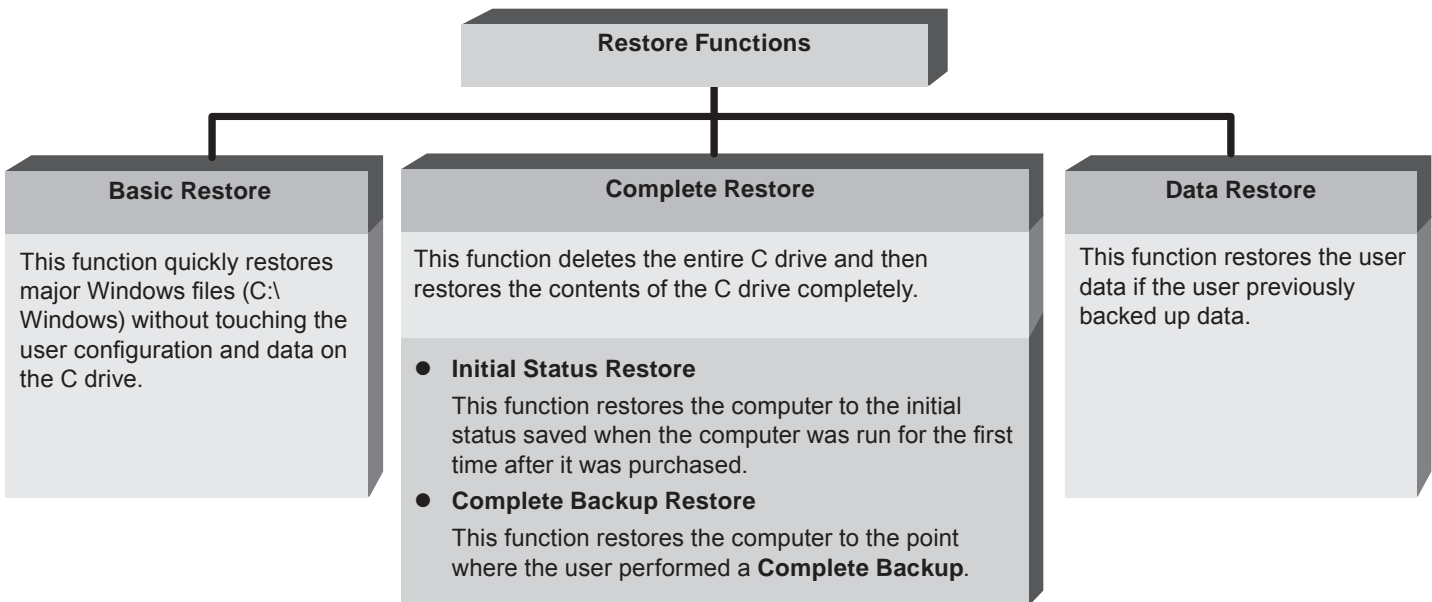


- Samsung Recovery Solution may not be provided or the version may differ depending on your computer model and the usage procedures may differ depending on the version. The screen images in this document may differ from actual product.
- For models with an SSD (Solid State Disk), Samsung Recovery Solution is not provided.

Samsung Recovery Solution Functions

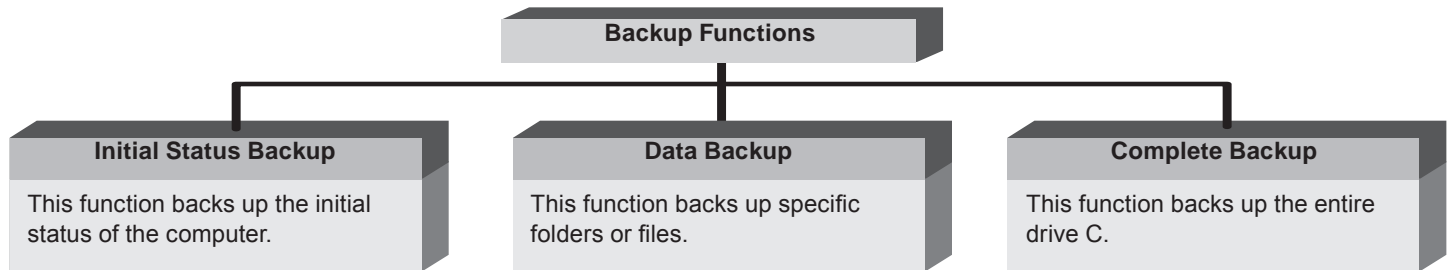
● Restore Function

Using this function, you can easily restore your computer to a previous, normal state without using the System Recovery Media or the Windows Installation CD, when your computer is no longer working properly or fails to boot up due to a problem. If you have backed up data, you can restore the backup data.



● Backup Function

You can backup the entire C drive or all your data to **another hard disk drive** or **DVD**. You can restore the backed up drive or data using the Restore function.



Using Samsung Recovery Solution

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.

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 When the computer has been restarted, the User Registration Complete message appears. Click **OK**. The computer will restart.

- 3 The **Initial Status Backup** screen appears.
To resize the C and D drives, click **Advanced** and partition the disk accordingly. Adjust the partition size using the slide bar and then click **Next**.



The partition disk 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 partitions, you cannot resize the partitions. Therefore partition the disk carefully.

- 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 when the computer is not working properly.
- 5 When the Initial Status Backup is complete, restart Windows.

Quick Restore

Quick Restore enables you to easily restore your computer to a previous, normal state when a problem occurs with your computer. Quick Restore provides Basic Restore and Complete Restore (Computer Initial Status Restore) options.

1 – When Windows is running:

Click **Start > All Programs > Samsung > Samsung Recovery Solution > 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.



The touch screen function is not supported in this mode even if your model supports a touch screen. In this mode, please use the touchpad or mouse instead of the touch screen.

2 If the Samsung Recovery Solution program is launched for the first time after purchasing the computer, the license agreement screen appears before the restoration is started. Read the agreement and click **Agree** to continue.

3 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.

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

- A **Basic Restore** restores the major Windows files only while maintaining the user configuration and data on the C drive in a short time.
- A **Complete Restore** deletes the entire C drive and then restores the contents of the C drive.



Run **Complete Restore** if the computer does not work even after **Basic Restore** has been completed.

4-1 If you have selected **Basic Restore**:

In the Basic Restore screen, click the **Next** button. The system will be restarted.

4-2 If you have selected **Complete Restore**:

In the restoration point selection screen, select the restoration point described as 'Computer Initial Status' and click the **Next** button. The system will be restarted.



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.

5 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.

6 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.

User 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. This guide describes the Complete Backup and Complete Restore procedures on the basis of backing up and restoring by using DVD.

● 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 **Start > All Programs > Samsung > Samsung Recovery Solution > Samsung Recovery Solution**.
- 2 When the initial menu screen appears, click **Backup**.
- 3 Click **Complete Backup** in the backup menu.

- 4 Enter a description for the backup regarding the current computer status 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.

- 5 If you click the **Next** button, the system restarts in restoration mode and the **Complete Backup** begins. If you have selected the DVD drive as the Save Path, the “Enter a blank DVD” message appears. Insert a blank DVD and click the **OK** button.



Samsung Recovery Solution supports DVD+R, DVD-R, DVD+RW, and DVD-RW, but does not support CD-R, CD-RW, DVD-RAM, DVD-DL (Dual Layer), HD-DVD, and Blu-Ray.

- 6 The Complete Backup begins. If multiple DVDs are required, the expected number of DVDs is displayed in the progress screen. Whenever burning a DVD is completed, the “Insert the next DVD” message will appear. Continue the backup according to the instructions.
- 7 When the ‘Restart the System’ message appears after the backup is complete, click **OK** to restart the system.

● 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 Click **Start > All Programs > Samsung > Samsung Recovery Solution > Samsung Recovery Solution**.



When you cannot start Windows, turn the computer on and press the F4 key in the boot screen to enter restoration mode.

3 When the initial menu screen appears, click **Restore** and then click **Complete Restore**.

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

5 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.

6 When the ‘Restart the System’ message appears after the restoration is complete, click **OK** to restart the system. The Complete Restore has been completed.

User 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 Click **Start > All Programs > Samsung > Samsung Recovery Solution > Samsung Recovery Solution**.



When you cannot start Windows, turn the computer on and press the F4 key in the boot screen to enter restoration mode.

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

3 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.

4 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.



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.

5 If you click the **Next** button, the Data Backup begins. If you have selected the DVD drive as the Save Path, the “Enter a blank DVD” message appears. Insert a blank DVD and click the **OK** button.

6 The “Backup is completed” message appears.

● 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 Click **Start > All Programs > Samsung > Samsung Recovery Solution > Samsung Recovery Solution**.



When you cannot start Windows, turn the computer on and press the F4 key in the boot screen to enter restoration mode.

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

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

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

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




Q & A

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

Display Related

Q The LCD screen is too dark or too bright.

A Turn the LCD backlight on or adjust the LCD brightness.

Press **Fn** +  to turn the LCD backlight on or press **Fn** +  or **Fn** +  to adjust the LCD brightness.


Q The screensaver is activated while Media Player is playing a movie or video clip.


A Unselect **Library > More Options > Player > Allow screen saver during playback** in the Media Player.

Q In the following cases, the screen blinks or there is noise for a short time.

● Click the **Graphics Related** tab, **Change Resolution**, **Change Display Device**, **Remove the AC Adapter**, **Restart the System**, **Change Power Scheme**.

A This may happen while the video driver is examining the connected device. While the detection process is busy, any connected display devices may blink or some noise may occur.

Q When I connect a projector, and change the settings to display the screen image on both the LCD and the projector by pressing the **Fn** + , the screen is not displayed properly.

A Press the **Fn** +  keys again.

If the problem continues even after pressing the key combination, this is because the current resolution is too high and is not supported by the projector. In this case, change the resolution to 1024x768 pixels.

Q When I connect a projector, the taskbar at the bottom of the screen is not displayed on the projector.

A This occurs because a WXGA LCD supports a resolution of 1280x800 pixels but the resolution is not supported by the projector. In this case, change the resolution to 1024x768 pixels (recommended).

Q The shortcut icons are not displayed on the screen even if I press the shortcut key.

A The shortcut icons only appear when the Easy Display Manager program is installed.

Q I have connected a monitor (or projector) to the computer, but the colors on the monitor are abnormally displayed.

A Check if the monitor and computer are properly connected with the signal cable and reconnect the cable if necessary.

Q I am trying to view the screen through a TV by connecting it through the HDMI port, but the edge of the screen is not displayed.

A It is recommended using a notebook computer screen or monitor for documents and Internet pages. Although connecting via the HDMI port is recommended when watching video, it may be inappropriate for displaying documents and Internet pages because most TVs that support HDMI fail to display the edge of the screen or the characters on the screen properly.

Sound Related

Q How can I configure the sound for video or audio chatting?

A Configuring the Realtek HD Audio Manager

① Select **Control Panel -> Realtek HD Audio Manager**.

② Select the Mic tab.

③ Select the Suppress noise and the Remove sound echo items and click the **OK** button.

When using the Remove sound echo option, select the **Play Device-> Speaker -> Level** tab and set the Microphone to Mute.

Q I cannot hear my voice with the internal microphone.

A This is because the sound from the internal microphone is removed so that the sound is not delivered to the speaker and causes feedback from the internal microphone. However, you can record the sound from the microphone normally.

When using an external microphone, select the **Play Device-> Speaker -> Level** tab and deselect Mute for the Microphone. Then you can listen to the sound from the external microphone through the speakers.

Q Sound is recorded abnormally when I select the Remove sound echo option, connect an external microphone, select the Play Device-> Speaker -> Level tab and then deselect Mute for the Microphone.

A This occurs because the algorithm used to remove the echo sound regards some of the sound as an echo and removes this, as the recording is done by playing the sound from the external microphone. After selecting the Remove sound echo option, please select the **Play Device-> Speaker -> Level** tab and select Mute for the Microphone for a normal recording.

Wired Network (LAN) Related

The <Wake On LAN> function

A1 <Wake On LAN> is a function that activates the system from Sleep mode when a signal (such as a ping or magic packet command) arrives over the network (wired LAN).

● Using the <Wake On LAN> Function

① Click **Start > Control Panel > Network and Internet > Network and Sharing Center > Manage Network Connections**.

② Right-click on the Local Area Connection and select Properties.

③ Click **Configure > Power Management** tab. Select **Allow this device to bring the computer out of standby**, then click **OK**. Restart the system.

- If the system wake up from Sleep mode even though there is no received signal, use the system after disabling the <Wake On LAN> function.
- The LAN LED may not be turned off if System is shutdown without disabling the WOL (Wake on LAN) option.
- Connecting a wired LAN while using a wireless LAN may not activate the <Wake On LAN> function. Set the Wireless LAN to **Disable** to use the <Wake On LAN> function.

① Click **Start > Control Panel > Network and Internet > Network and Sharing Center > Manage Network Connections**.

② Right-click on the Wireless Network Connections and select **Disable**.


Q When I am connected to a 100Mbps/1Gbps wired LAN and the computer exits Sleep/hibernation mode, a message appears informing you of a connection to a 10Mbps/100Mbps wired LAN.

A When the computer exits standby/hibernate mode, restoring the network takes about 3 seconds.

When the network is restored, it operates at 100Mbps/1Gbps.

Wireless Network (WLAN) Related

Q I cannot find an AP.

- A** Verify whether the Wireless LAN LED is on.
If it is turned off, turn it on by pressing the Wireless LAN On/Off button (Fn + ).

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

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


- A1** When connecting to a wireless Ad-Hoc network, check if the network name (SSID) is the same.
- A2** If a network key (encryption key) is used, the AP (Access Point) and wireless Ad-Hoc network keys must be the same.

The AP network key can be configured using an AP management program. For more detailed information, ask your network administrator or product provider.

- A3** Check that the device driver is installed properly. If the driver is not properly installed, you will find a yellow exclamation mark on the network icon by clicking **Start > Control Panel > System and Maintenance > Device Manager > Network Adapter**.

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

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

- A** Check that the TCP/IP properties are configured properly. When connecting to an AP, right-click the **Network Connections**  icon on the taskbar and select **Network and Sharing Center**. If you click the **View Status** next to a connected wireless network device and then click the **Detail** button, you can view the IP information. If the IP is not allocated properly, the IP address will be displayed as follows (e.g. 169.254.xxx.xxx).

If the network does not provide DHCP, you have to specify the correct IP address by asking your network administrator.

Even if the network provides DHCP, the server may not allocate an IP address to the client properly, and the client station cannot connect to the network.



I cannot connect to the AP.

- **Check the Computer Settings**

A1 Select **Start > All Programs > Accessories > Windows Mobile Center** and check the wireless device status.

- **When it is represented as Disconnected**

This means the computer is not connected to the AP. Check the status of the AP, referring to the descriptions of the **Checking the SP Settings** section below. Check the encryption key configured in the AP and retry to the connection.

- **When it is represented as Connected, but you cannot connect to the Internet**

This means the computer is connected to the AP, but the AP or external network connected with the AP may have a problem.

- **When the 'There is no wireless LAN adapter' message appears or there is no wireless LAN icon**

This means the wireless LAN device is set to **Do Not Use** or the device is not recognized.

Check if the wireless device is properly recognized in the Device Manager window. If the device is set to **Do Not Use**, right-click and select **Use** from the pop-up menu.

A2 Verify whether the same network key (encryption key) has been entered for both the AP and the computer. The network key is an encryption key for encrypting the data transmitted between the AP and the computer. It is recommended setting the network key manually.

- **Check the AP Settings**

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

A3 Verify whether the environment is suitable for using a wireless LAN. The use of a wireless LAN may be restricted according to the environment and distance. Obstacles such as walls or doors affect the use of a wireless LAN. Install the AP in a high and open space, 50cm from the wall and far removed from any other radio signal sources.

A4 Verify whether the AP is operating properly.

- When the AP is not operating normally, turn off the AP, wait a short while, and turn it on again.
- Verify whether the AP's firmware is the most recent version. (Contact the AP manufacturer or the place where you purchased the AP for details of the AP firmware.)

A5 Verify whether the AP has been properly connected to the network. Verify whether the network is operating normally by connecting the wired network cable, which has been connected to the AP, to your computer.

A6 Check the network key settings (encryption key) again. When automatic code conversion (a passphrase function) has been selected and data communication is not functioning even with a normal wireless connection, it is recommended entering the network key (encryption key) manually.

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

- When several APs are present simultaneously, check the channel settings for each AP. When different APs are using nearby channels, interference may occur between the electronic waves. Set the AP channels further apart from each other. (Ex: Ch1, Ch5, Ch9, Ch13)
- When an AP's SSID (Service Set ID) option is set to "Hide", you cannot search for that AP on the computer. We recommend unselecting the "Hide" option for the AP. The SSID is a name used for distinguishing one wireless LAN from another wireless LAN.
- It is recommended using Long Preamble. Preamble is a signal for data transmission synchronization. Short Preamble may be supported by some types of APs but may cause compatibility problems.
- It is recommended using a static IP.
- Since static channel selection is more reliable than auto channel selection, it is recommended using a static channel.

I cannot connect to a computer connected to the Ad-Hoc network.

- A1** Check the security settings and network name of the wireless Ad-Hoc network.
- A2** Check the TCP/IP settings of the computers connected to the wireless Ad-Hoc network. The IP addresses of the computers to be connected to a wireless Ad-Hoc network must be set to the same sub-network address.
 - For example, if the TCP/IP setting is configured to a fixed IP address, select Use the following IP address in the TCP/IP Properties of the wireless adapter, configure the items as follows and try again.
IP: 10.0.0.1~10.0.0.254, Subnet Mask: 255.255.255.0.
It is recommended using a fixed IP address for wireless Ad-Hoc network connections.
- A3** You have to register the IP address allocated for the wireless adapter as a 'Trusted IP' in McAfee SecurityCenter.
 - Click **McAfee SecurityCenter > Advanced menu > Configure > Internet and Network > Advanced > Trusted and Banned IPs**, and register the IP address or IP address range as a Trusted IP address.

Q During the wireless Ad-Hoc network operation, the AP (Access Point) is intermittently not found.

A This problem occurs intermittently during the wireless Ad-Hoc network operation. Even if this problem occurs, the wireless Ad-Hoc network operation is working properly and is not affected. Click Refresh to update the AP list.

Q I have set the same IP address for both the wireless and wired connections, but they do not work properly.

A You cannot use wireless and wired connections using the same IP address. To sequentially use both the wired and wireless connections with the same IP address, you need to set the currently not needed connection to Do Not Use in the Network Connections of the Control Panel.

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

- A1** Channel interference may occur when a wireless video transceiver or a microwave oven is being used. If you experience channel interference from other equipment, we recommended changing the channel for connecting to the AP. For more information about AP settings, refer to the User Manual supplied by the AP manufacturer.
- A2** Since IEEE802.11g equipment operates in hybrid mode when there is active IEEE802.11b equipment, the data rate may be degraded.

Game and Program Related

Windows Vista may not provide some functions properly when performing some applications especially games, or may cause a problem due to a device driver compatibility issue. For the latest device drivers and bug fixes, please refer to the respective company's website.

Q A 3D game does not work, or some functions are not working.

- A** Change the graphics settings of the game to '2D' or 'Software Renderer', then run the program again.

Q The game is not displayed smoothly on the screen.

- A** For 3D games, the texture data for the 3D screen display is saved to the system memory.
If there is insufficient system memory, the data is saved to the hard disk drive and loaded to memory when required. This operation may temporarily stop displaying the picture on the screen.
In this case, lower the game resolution or the screen settings.

Q The picture on the screen is displayed as a broken image for some games.

- A** A part of the picture on the screen may be broken when playing some games that require a high-specification graphics card.
In this case, set the 3D function setting for the game to a lower value or set the game resolution to a lower value.

Bluetooth

Q How to view the Bluetooth help information.

- A** Press the Windows + F1 key combination to launch Windows Help and search for Bluetooth related items in the Help section.

Q When no headset is found or cannot be connected

- A1** If the headset is already connected to another device, you will not be able to find the headset and cannot connect to the headset even if the headset is found. Disconnect the connection to the other device and then start the search again.
- A2** If the headset is connected to a power adapter, you cannot make a Bluetooth connection.
Disconnect the power adapter and then retry.
- A3** In general, a Bluetooth headset has 2 operating modes, On/Off mode and Pairing mode.
To connect the headset to another Bluetooth device such as a PC or cell phone, the headset must be in Pairing mode.
Switch the headset to Pairing mode and then retry the search operation.
In general, the headset in Pairing mode automatically returns to On/Off mode after a certain period of time.

Usage Instructions

- Generally, Bluetooth devices deliver stable performance while connected within a 3m(10 ft.) distance.
- For Bluetooth to operate smoothly, use the computer in an open environment with no walls or obstacles in the way.
- You can connect to only one Bluetooth device at a time for a phone connection, data syncing, electronic business card exchange, FAX transmission/reception, sound related functions, and serial port functions.
- It is recommended using only one Bluetooth device at a time as connecting multiple Bluetooth or other wireless devices at the same time may slow or destabilize the Bluetooth connection.
- Data communications via Bluetooth may be poor when the CPU load is at full capacity or there are insufficient system resources.
- The Bluetooth function of a Bluetooth PDA, mobile phone, mouse or keyboard may be turned off. To use them in connection with a Samsung computer supporting Bluetooth, you must check if the Bluetooth function of the device to connect to is turned on.
For the procedures on turning on the Bluetooth function of a device, refer to the relevant device manual.
- The services provided by Bluetooth devices may vary depending on their capabilities. For the services provided by the Bluetooth device, refer to the device manual.

Other

Q The User Controls window appears when installing or running a program in Windows Vista.

A In this case, click **Allow** (or **OK**) to install or run the program. However, if you do not have an administrator account, you have to enter the administrator password in the User Controls window and then click **Allow** (or **OK**). If no administrator password is set you can click **Allow** (or **OK**) without entering a password.

Product Specifications

The system specifications may differ depending on the derived models. For detailed system specifications, refer to the product catalogue.

CPU (Optional)	Intel Celeron / Pentium / Core2 Solo / Core2 Duo (Optional)
Main Memory (Optional)	Memory type: DDR3 SODIMM
Main Chipset (Optional)	Intel GS40 / GS45 (Optional)
Hard Disk Drive (Optional)	9.5mmH SATA HDD
Graphics (Optional)	Mobile Intel Graphics Media Accelerator 4500M
Operating Environment	Temperature : -5~40°C for storage, 10~35°C when operating Humidity : 5~90% for storage, 20~80% when operating
Operating Voltage	100 - 240VAC
Frequency	50/60Hz
Output Power (Optional)	40W
Output Voltage (Optional)	19VDC 2.1A(40W)



- 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.

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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.

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.

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.

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.

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.

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.

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.

Power Schemes

This refers to a pre-determined power management option group. For example, you can set the time the computer waits before entering Standby Mode, or before the monitor or hard drive turns off. The settings are saved as a power scheme.

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.

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.

USB (Universal Serial Bus)

This refers to a serial interface standard developed to replace the conventional interface standards such as Serial and PS/2. While USB 1.1 supports 12Mbps (12 million bits per second), USB 2.0 supports a data rate that is 40 times (480Mbps) faster than that of USB 1.1. The data rate of USB 2.0 is equivalent to that of IEEE1394. Therefore USB 2.0 is used for A/V devices supported by IEEE 1394 and a 2nd HDD and CDRW that require a high data rate.

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.

Index

B

Battery	91
Battery Calibration	94
BIOS Setup	82
Booting Priority	88

C

CD Drive / Recording	60
Charge	92
Click	56
Connect / Output Monitor	65
Connecting AP / AP	78

D

Dual View	70
-----------	----

L

LCD Brightness	81
----------------	----

M

Memory	89
Multi Card Slot	62

P

Password	86
Product Name	42
Product Specifications	122

R

Recorder	72
Remaining Battery Charge	93

S

Safety Precautions	8
Security Lock Port	95
Shortcut Keys	53
Status Indicators	44

T

Touchpad	55
----------	----

V

Volume Control	72
----------------	----

W

Wired Network	75
Wireless Network	78