Copyright

FC

DECLARATION OF CONFORMITY
according to FCC Part 15

This device complies with Part 15 of the FCC rules. Operations are subject to the following two conditions: (1) This device must not be allowed to cause harmful interference, (2) This device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions carefully. Save these instructions for future reference.

2. Follow all warnings and instructions marked on the product.

3. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

4. Do not use this product near water.

5. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.

6. Slots and openings in the cabinet and the back or bottom are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.

7. This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.

8. This product is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This will only plug into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.

9. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

10. If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed 15 amperes.

11. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points that could result in a fire or electric shock. Never spill liquid of any kind on the product.

12. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to qualified service personnel.

13. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    a. When the power cord or plug is damaged or frayed.
    b. If liquid has been spilled into the product.
    c. If the product has been exposed to rain or water.
    d. If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition.
    e. If the product has been dropped or the cabinet has been damaged.
    f. If the product exhibits a distinct change in performance, indicating a need for service.

14. **CAUTION. When replacing the battery, be sure to install it with the polarities in the correct position. There is a danger of explosion if the battery is replaced with an incorrect type or is mistreated. Do not recharge, disassemble or dispose of in fire. Replace only with the same or equivalent type recommeded by the manufacturer. Dispose of the used battery according to the manufacturer's instructions.**

15. Use only the proper type of power supply cord set (provided in your accessories box) for this unit. It should be a detachable type: UL listed/CSA certified, BS1363, ASTA,SS145 certified, rated 10A 250V minimum, VDE approved or its equivalent. Maximum length is 15 feet (4.6 meters).

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High Safety Required Use

This Product is designed, developed and manufactured as contemplated for general use, including without limitation, general office use, personal use, household use and ordinary industrial use, but is not designed,developed and manufactured as contemplated for use accompanying fatal risks or dangers that, unless extremely high safety is secured, could lead directly to death, personal injury,severe physical damage or other loss (hereinafter 'High Safety Required Use'), including without limitation, nuclear power reactioncore control in nuclear atomic facility, airplane automatic aircraft flight control, air traffic control, operation control in mass transport control system,medical instrument for life support system, missile launching control in weapon system. You shall not use this Product without securing the sufficient safety required for the High Safety Required Use.

Installation of Ferrite Core

Precaution:

Ferrite core is required to install onto the Audio and Microphone cable to reduce EMI interference.

Before connecting the Audio cable and the Microphone cable to your LifeBook, you are require to install the ferrite core to the Audio and Microphone cable. The ferrite core is provided together with your LifeBook.

Please follow the procedure as describe below for the installation of the ferrite core.

STEP 1: Installing Ferrite Core

Ferrite Core

Audio Cable
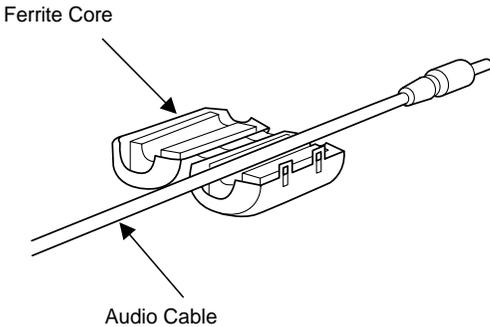
STEP 2: Closing Ferrite Core

Be careful not to pinch the cable when closing the ferrite core cover, as it will damage your cable.

DATA STORAGE MEDIA
AND CUSTOMER RESPONSIBILITIES

The only effective protection for the data stored in a computer, such as on a hard disk, is for you, Purchaser to regularly back up the data. Fujitsu and its affiliates, suppliers, service providers and resellers shall not be responsible for any software programs, data or o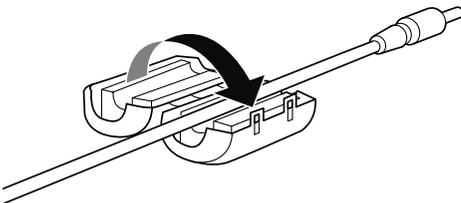ther information stored or used on any media or part of any Product returned to Fujitsu or its service providers for Warranty Service or other repair, including but not limited to the costs of recovering such programs, data or other information. It is solely your responsibility as the Purchaser to back up any software programs, data, or information stored on any storage media or any part of a Product returned for Warranty Service or repair to the designated service centers.

AUSTRALIAN WARNINGS

WARNING
FOR SAFETY REASONS, ONLY CONNECT EQUIPMENT WITH A TELECOMMUNICATIONS COMPLIANCE LABEL. THIS INCLUDES CUSTOMER EQUIPMENT PREVIOUSLY LABELLED PERMITTED OR CERTIFIED.

Connection of Non Certified/Approved peripherals may result in the equipment operating outside the Australian EMI Standards.

Modems connected to the Australian telecommunications network must be operated in accordance with the Labelling Notice. This modem has been specifically configured to ensure compliance with the ACA Standards. Do not adjust your modem or software outside the values indicated below. To do so would result in your modem being operated in a non-compliant manner.

Call Attempts/Retries:

Applications software shall be configured so that no more than 3 attempts are made to establish a connection to a given number (Note: if the modem can detect service tones, up to 10 attempts can be made). If the call sequence is unsuccessful, there shall be a delay of at least 30 minutes before attempting to call the number again.

Failure to set the modem, and any application software used with the modem, to the values shown above will result in the modem being operated in a non-compliant manner. Consequently, this would be in violation of the Labelling Notice for this equipment, and the Telecommunications Act 1997 prescribes penalties for the connection of non-compliant equipment.

NEW ZEALAND WARNINGS

The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services.

This equipment is not capable under all operating conditions of correct operation at the higher speeds for which it is designed. 56 KBPS connections are likely to be restricted to lower bit rates when connected to some PSTN implementations. Telecom will accept no responsibility should difficulties arise in such circumstances.

Immediately disconnect this equipment should it become physically damaged, and arrange for its disposal or repair.

This equipment shall not be used in any manner, which could constitute a nuisance to other Telecom customers.

This equipment shall not be set to make automatic calls to the Telecom "111" Emergency Service. This device is equipped with pulse dialling while the New Zealand standard is DTMF tone dialling. There is no guarantee that Telecom lines will always continue to support pulse dialling. It is strongly recommended that pulse dialling is not used.

Some parameters required for compliance with Telecom's Telepermit requirements are dependent on the equipment (PC) associated with this device. The associated equipment shall be set to operate within the following limits for compliance with Telecom's Specifications:

For repeat calls to the same number.
There shall be no more than 10 call attempts to the same number within any 30 minute period for any single manual call initiation, and
The equipment shall go on-hook for a period of not less than 30 seconds between the end of one attempt and the beginning of the next attempt.

For Automatic calls to different numbers.
The equipment shall go on-hook for a period of not less than 5 seconds between the end of one attempt and the beginning of the next attempt.

For Automatically answered Incoming Calls
Incoming calls shall be answered between 3 and 30 seconds from the start of the ringing.

For correct operation, the total of the RNs of all devices connected to a single line at anytime should not exceed 5. The RN of this Equipment is 0.5.

WARNING
Connection of Non Certified/Approved peripherals may result in the equipment operating outside the New Zealand EMI Standards.

Note: Modem setting in Windows XP

A. If you are located in Australia

1. Click Start select Control panel select "Phone and Modem Options".
2. Double click New Location.
3. Choose "Australia" in Country/region pull down menu bar.
4. Select Phone system as "Tone Dialing".
5. Click OK and Apply.
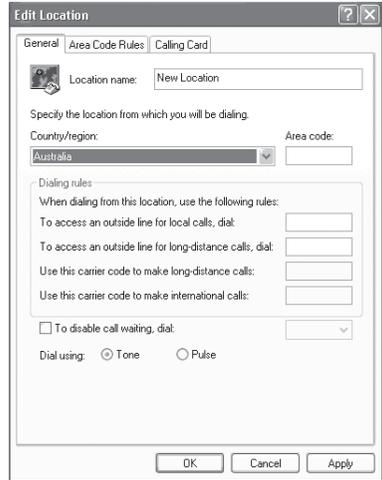
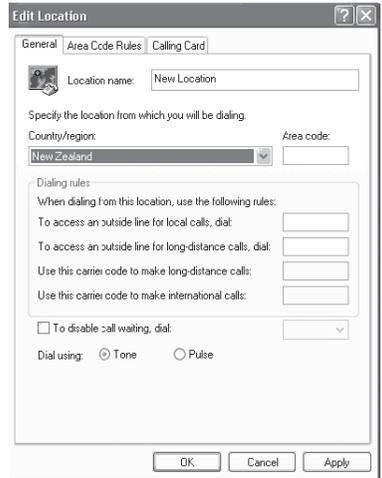**B. If you are located in New Zealand**

1. Click start select Control panel select "Phone and Modem Options".
2. Double click New Location.
3. Choose "New Zealand" in Country/region pull down menu bar.
4. Select Phone system as "Tone Dialing".
5. Click OK and Apply.

Note:
The screens and illustrations shown in this examples may slightly vary depending on the operating environment that you have installed.

NOTATION IN THIS DOCUMENT

● **Warnings**

This manual uses a variety of icons as visual marks so that you can use this computer safely and correctly and avoid damage and danger to yourself and to others. These icons and their meanings are as follows. Please learn these icons before reading this manual. Learning these icons will be useful for understanding this manual.

Icon	Meaning
⚠ WARNING	Incorrect handling ignoring this warning can cause a dangerous situation that could result in death or severe injury.
⚠ CAUTION	Incorrect handling ignoring this warning can cause a dangerous situation that could result in moderate or minor injury or could result in equipment damage.

The symbols below are used together with the icons above to indicate what type of danger or damage is involved.

symbols	Meaning
⚠	The symbol △ indicates warning or caution. The symbol △ indicates the concrete nature of the warning. (The example on the left is a caution for electric shock.)
🚫	The circle and slash indicates prohibited behavior. The symbol inside the circle indicates the concrete nature of the prohibition. (The example on the left indicates that disassembly is prohibited.)
●	The ● indicates instructions that must be followed. The symbol inside indicates the concrete nature of those instructions. (The example on the left tells you to unplug the power plug from the socket.)

● **Key notation and operation methods**

Explanations of key operations do not show all the characters on the keyboard. Instead they indicate just the keys necessary to the explanation as follows.
Examples: **[Ctrl]** key, **[Enter]** key, **[→]** key
When multiple keys are to be pressed at the same time, this is indicated by connecting them with **[+]**.
Examples: **[Ctrl] + [F3]** keys; **[Shift] + [↑]** key

● **Screen examples**

The screens shown in this manual are examples. Please understand that the file names and screens you use may be different.

● **Notation in text**

Here is what symbols in text mean.

Symbol	Meaning
Critical Points	Critical Point Indicates a point necessary for correctly operating the hardware or software.
Column	Column Gives the meaning and brief explanation of a term.
→	Indicates the page to see elsewhere in this manual.

● **Command input (key input)**

Within the text of this manual, command input (giving commands to the computer by pressing keys) is indicated as follows.

Example: dir   c:
                      ↑

In the position indicated in the example above by the ↑, the space left between the characters indicates that a space needs to be left in the entry by pressing the space bar (the long key with nothing written on it at the center of the front of the keyboard). Commands are written in this manual as lowercase latin letters, but uppercase letters may be used.

● **Product names**

The following product names are abbreviated as follows in this manual.

"Microsoft® Windows XP® operating system" is written as "Windows XP".

"LifeBook" is written as "this computer" or "the computer main unit".

x

Configuration of this Manual

SECTION 1

This section explains basic operations and basic items for using this computer, including the names of the parts and their functions and battery operation.

SECTION 2

This section explains installation of options for this computer.

SECTION 3

This section explains what to do when trouble occurs with this computer and when messages are displayed. Read this section as the necessity arises.

CONTENTS

1

This section explains basic operations and basic items for using this computer, including the names of the parts and their functions and battery operation.

1 Names of the Parts and their Functions

Exterior features: Front panel
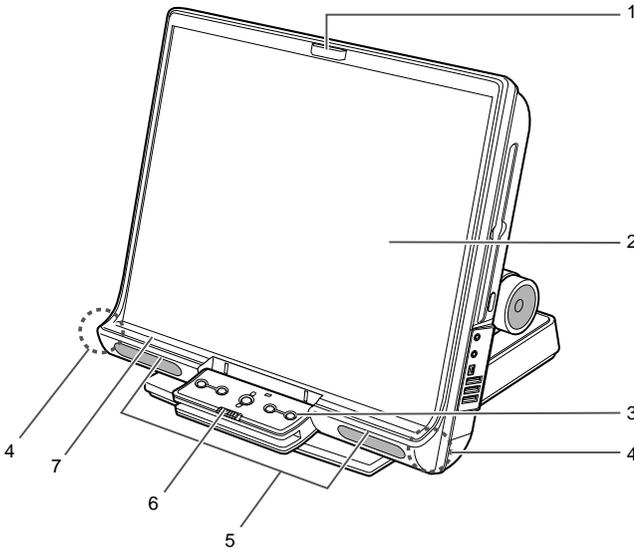
1. Infrared/remote-control detector

Detects infrared rays from the wireless keyboard and wireless mouse.
Do not touch this window when wireless communications are held. Doing so could cause degradation in communication performance.

2. LCD (Liquid Crystal Display)

Information display device of your computer.

Critical Points

◆ The phenomena described below are due to the characteristics of LCD panels and do not indicate that LCD panels are defective.

About the characteristics of LCD panels

• Your computer's LCD was manufactured through the use of high technologies. For technical reasons, your LCD might have picture elements or dots that do not light up or those that always stay on.

• Colors reproduced by LCD panels vary to some extent from product to product for reasons of manufacturing processes. Also, a slight unevenness of density may show up as a result of changes in temperature.

Using the LCD dimmed for a long period of time could shorten the life of its backlight.

3. One-touch buttons

Used to start applications or play music CDs.

4. Infrared remote-control detector

Detects infrared rays from the wireless keyboard and wireless mouse.
Do not touch this window when wireless communications are held. Doing so could result in degradation in communication performance.

5. Speakers

Sound output devices of your computer.

6. Keyboard lock

Allows you to lock and unlock the connection between the computer and the wireless keyboard.

7. Status indicating LEDs

Indicate the operating status of your computer.

❏ **Left panel of the computer**
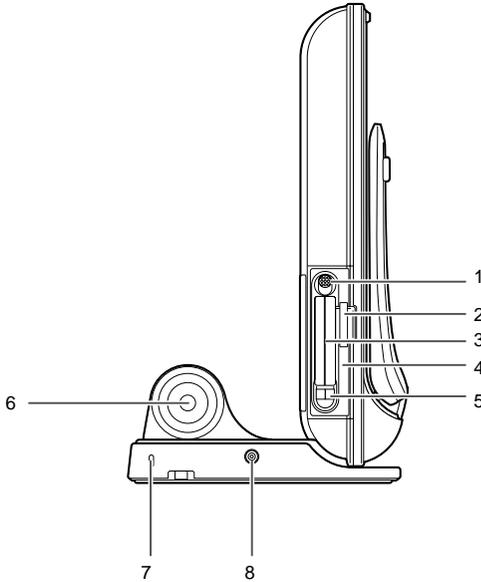
1. Power switch

Used to turn on the computer, to place it into standby (hibernation) mode, and to resume system operation. Slide the switch to the O position to turn Off the computer, or to the position to 1 turn it On.

2. SD card/memory card slot

Allows you to insert an optional memory card.

3. PC card slots

Allows you to insert optional PC cards. The slot on the right side and the slot on the left side are called slot 1 and slot 2, respectively.

4. Wireless Switch

Used to turn On and Off the Wireless LAN device.

5. PC card eject buttons

Used to eject the PC card.

6. Woofer

A Hi-Fidelity speaker that provides superb audio performance.

7. Antitheft lock

Allows you to connect a commercially available antitheft cable to your computer.

Critical Points

◆ The antitheft lock is designed for Kensington Microsaver Security System.

8. DC-IN jack

Used to connect the supplied AC adapter.

❑ Right panel of the computer
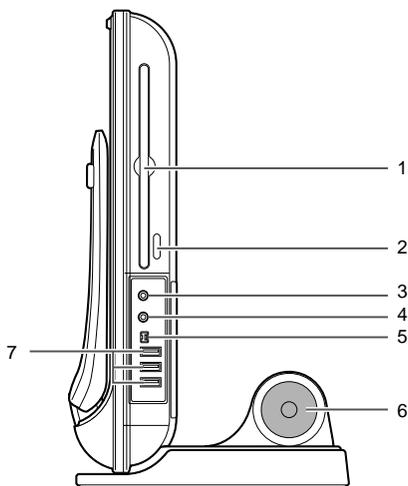
⚠ CAUTION

HEARING LOSS

• Before connecting headphones or a microphone to your computer, always turn down your computer's master volume to a minimum.

Failure to do so could result in damage to the audio unit connected or could adversely affect your hearing.

1. **CD/DVD drive**
   Your computer comes standard with a CD-RW/DVD-ROM drive. The CD/DVD drive allows you to read information from CD/DVDs and play music CDs and DVD-Videos.

2. **CD eject button**
   Press this button to insert a disk in the CD/DVD drive or to eject it. This button is operative only when the computer is turned on.

3. **Mic (microphone) jack**
   Allows you to connect a commercially available monaural microphone with a Ø3.5 mini-plug. This jack does not support some types of microphones (e.g., dynamic microphone), so you should consult a salesperson before purchasing a microphone.

4. **Headphone jack**
   Allows you to connect commercially available headphones with a Ø3.5 mini-plug. This jack is not compatible with some types of cable connectors, so you should consult a salesperson before purchasing headphones.

⚠ **CAUTION**

HEARING LOSS

- When you are listening to music with headphones, be careful not to turn up the volume excessively. Listening to very loud sounds for a long time could adversely affect your hearing.

- When you are wearing headphones connected to the computer, do not turn or off the computer, or very loud sounds could adversely affect your hearing.

5. **IEEE* 1394 (DV) port (*: pronounced "ai-triple-ee")**
   Allows you to connect a peripheral device, such as a digital video camera (DVC), to the computer through a DV cable.

6. **Woofer**
   A Hi-Fidelity speaker that provides superb audio performance.

7. **USB port**
   Allows you to connect a peripheral device compliant with USB standard.

Exterior features: Bottom panel
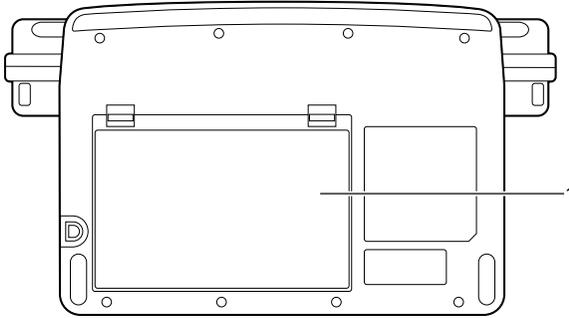
(Your computer or situation may not look exactly like this illustration.)

1. Internal battery pack
An internal battery pack is installed here.
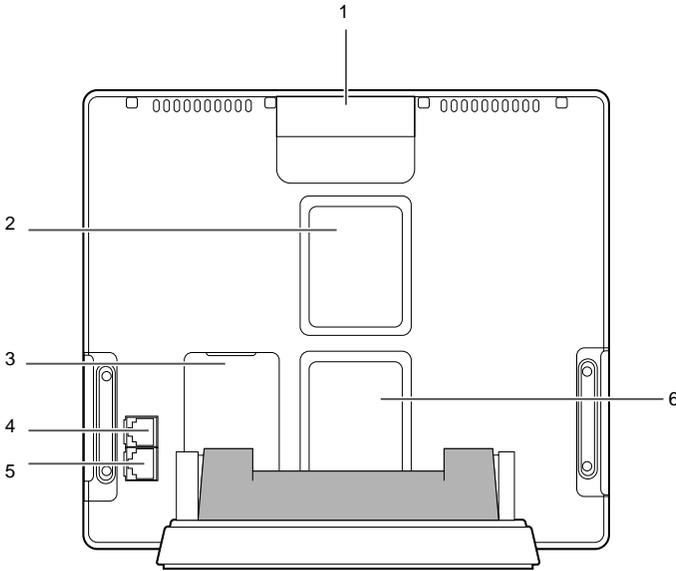
1. Handle

Used when carrying your computer.

2. Air outlet

Opening through which heat is forcibly discharged from the computer. When you turn on the computer, the cooling fan rotates for a few seconds. When the temperature in the computer rises high, the cooling fan automatically starts to rotate to discharge heat from the computer.

⚠ WARNING

ELECTRIC SHOCK

- Do not obstruct the air outlet. Doing so prevents heat from being discharged from the computer and could result in damage to your computer.

IMPORTANT

● Do not put anything around the air outlet. Objects placed around it, if any, may be heated by heat discharged through the air outlet.

3. Expansion RAM module slot

Used to install additional memory.

4. **Modem port**

Allows you to connect your computer to a phone line through the supplied modular cable for using an online service or browsing the Internet.

5. **LAN port**

Allows you to connect your computer to a LAN (local area network), using an optional LAN cable.

6. **Air inlet**

Opening through which the cooling fan takes outside air into the computer.

⚠ **CAUTION**

FAILURE

🚫 • Be careful not to obstruct the air inlet.

Doing so prevents heat from being discharged from the computer and could result in damage to your computer.
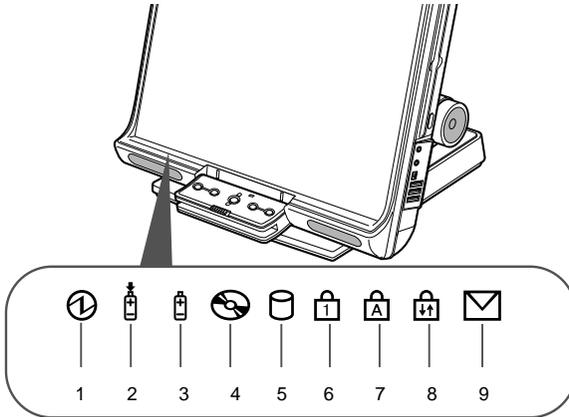
(Your computer or situation may not look exactly like this illustration.)

Critical Points

◆ When your computer is turned off, no indicators are displayed on the status indicating LCD, except when the battery pack is being charged.

1. Power indicator

Indicates the operating status of the computer.
• Lit green: The computer is turned on.
• Blinks green: The computer is on standby.
• Not lit: The computer is turned off.

2. Charging status indicator

When the AC adapter is connected to your computer, this indicator lets you know whether the battery pack is being charged.
• Lit green
  Fully charged or not charged because no battery pack is installed
• Lit orange
  Being charged
• Blinks orange
  Charging suspended (because a battery temperature alarm was set off *)
• Not lit
  Not charged because no AC adapter is connected

※ : If the internal battery becomes very hot or cold for some reason, the battery protection feature will be activated and set off a battery temperature alarm to stop charging the battery.

3. **Power level indicator**

   Indicates the state of charge or remaining life of the internal battery pack.
   - Lit green
     Between 51% and 100% charged*
   - Lit orange
     Between 50% and 13% charged*
   - Lit red
     Between 0% and 12% charged*
   - Blinks orange
     Measuring the remaining life of the internal battery pack (4 seconds after being installed)
   - Blinks red
     Something is wrong with the battery.
   - Not lit
     No battery installed

Critical Points

◆ If you install the internal battery pack when the computer is off, the power level indicator will blink for a while, then indicate the power level of the battery pack for 5 seconds. Or it will turns off if the battery pack is not charged.

◆ If the AC adapter is not connected when the internal battery pack is installed, the power level indicator will not stay on but blink at intervals of 6 seconds: ON for 1 second and OFF for 5 seconds.

4. **CD access indicator**

   Lit when access is being made to the CD.

5. **Hard disk access indicator**

   Lit when access is being made to the hard disk.

Critical Points

◆ Never press the power button when the hard disk access indicator is lit. Doing so could result in the corruption of data on the hard disk.

6. **Num Lock (Numerical Lock) indicator**

   Lit when the keyboard is placed in [Num Lock] mode.
   To enter or exit [Num Lock] mode, press the [Num Lock] key.

7. **Caps Lock key**

   Lit when the keyboard is placed in [Caps Lock] mode.
   To enter or exit [Caps Lock] mode, press the [Caps Lock] key while holding down the [Shift] key.

8. **Scroll Lock indicator**

   Lit when the window is locked so that it cannot be scrolled up or down.
   To enter or exit [Scroll Lock] mode, press the [Num Lock] key while holding down the [Fn] key.
   The reaction of the window depends on the application used.

9. **Incoming mail indicator**

   Blinks each time you get incoming e-mail if a one-touch button is so set up.

Exterior features: Keyboard

You can jump to the information you want by clicking the corresponding alphabetic character.

❑ Main keys and their functions
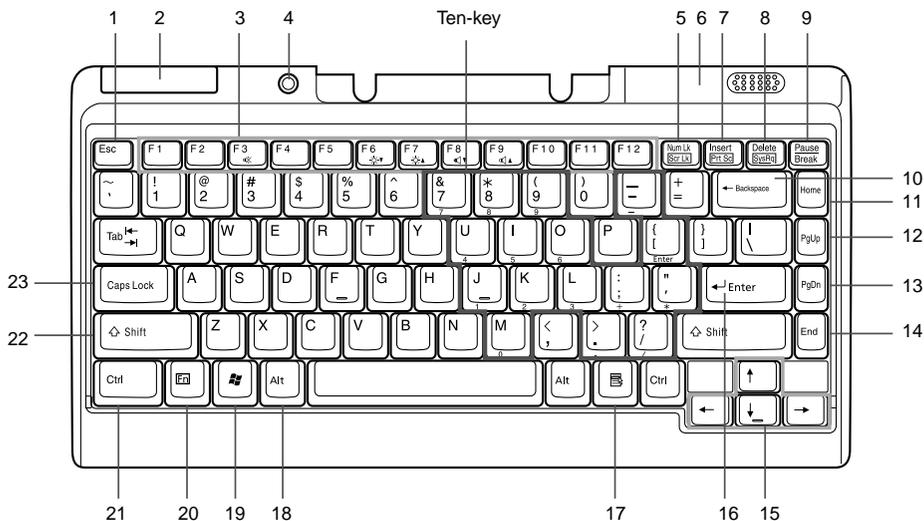
1. [Esc] (Escape) key
Used to cancel the task currently performed to return to the previous task.

2. Infrared remote-control emitter
Sends commands from the keyboard to the computer. Do not put anything between the keyboard and the computer when communications are held. Doing so could result in degradation in communication performance.

3. Function keys
Functions assigned to these keys vary from application to application.

4. Power button
Used to turn on the computer, to place it into standby (hibernation) mode, and to resume system operation.

5. Num Lock (Numerical Lock) indicator
Press the [Num Lock] key to enter the ten-key mode. Press the key again to exit the ten-key mode.

6. Battery case
To use the keyboard, you need to insert two AAA batteries in this case.

7. **[Insert] key / [Prt Sc] key**
    - [Insert] key
      Used to switch between insertion and overtype modes.
    - [Prt Sc] (print screen) key
      Used to convert the information displayed in windows into pictorial data. To do so, press this key while holding down [Fn] key.
      To convert the information in the only active window, press the [Insert] key while holding down the [Alt] and [Fn] keys.
      To edit, save or print the pictorial data, start an paint program, such as Paint, after pressing these keys, and select "Paste" from the "Edit" menu.

8. **[Delete] key**
    Used to delete characters on the left side of the cursor or to delete the file or icon selected.
    You can also use this key to exit an application that does not respond to any command or to forcibly shut down your computer. To do so, press the [Delete] key while holding down the [Ctrl] and [Alt] keys.

9. **Pause / Break key**
    Pause key
    Press this key to pause the scree display.
    • Break
    Its function depend on the application software.

10. **[Back Space] key**
    Used to delete characters on the left side of the cursor.

11. **[Home] key**
    Used to return the cursor to the beginning of the line on which the cursor is currently placed. To do so, press the key.
    To return the cursor to the beginning of the document, press the key.

12. **Pg Up] (page up) key**
    Used to return to the previous window. To do so, press this key while holding down the [Fn] key.

13. **[Pg Dn] (page down) key**
    Used to move to the next window. To do so, press the key.

14. **[End] key**
    Used to move the cursor to the end of the line on which the cursor is currently placed. To do so, press the key.
    To return the cursor to the end of the document, press the key.

15. **Cursor (arrow) keys**
    Used to move the cursor on the screen.

16. **[Enter] key**
    Used to confirm the word your entered or the selection you made.
    This key is also called the return key, because pressing it starts a new paragraph in word processing.

17. [Application] key

Used to display the pop-up menu of the item selected. This button can be used in place of the right button on the flat point.

18. [Alt] key

Used in combination with other keys.

19. [Windows] key

Used to open the "Start" menu.

20. [Fn] key

This key, unique to your computer, is used in combination with other keys.

- **[Fn] + [F3]**
  Turns on and off the speakers and headphones.
- **[Fn] + [F6]**
  Dims the backlight of the LCD panel.
- **[Fn] + [F7]**
  Brightens the backlight of the LCD panel.
- **[Fn] + [F8]**
  Turns down the volume.
- **[Fn] + [F9]**
  Turns up the volume.
  - ※ ： The plus sign [+] coupling two keys means that the second key must be pressed with the first key held down. For example, [Fn] + [F3] means that you must press the [F3] key while holding down the [Fn] key.

21. [Ctrl] key

Used in combination with other keys.

22. [Shift] key

Used in combination with other keys. To type an alphabetic character in uppercase or the symbol printed in the upper area of a key, press the appropriate key while holding down the [Shift] key.

23. [Caps Lock] key

Used to switch between uppercase and lowercase modes. To do so, press this key.

IMPORTANT

● Some keys may not function as described above, depending on the system configuration.

Critical Points

◆ The keyboard indicator is displayed on the status indicating LED.

Keyboard indicator
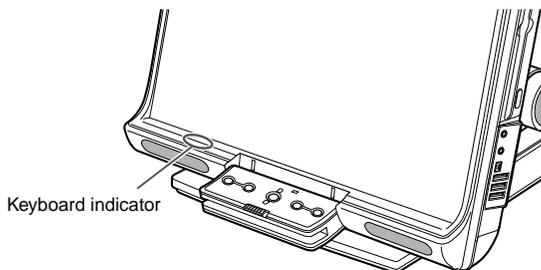
To switch to one of the following modes, press the appropriate key or combination of keys.
Then the indicator for the mode you selected appears on status indicating LED panel. To cancel the mode selected, press the key or combination of keys again.

- Num Lock : [Num Lock] key
- Caps Lock : [Caps Lock] key
- Scroll Lock : [Fn] key + [Scroll LK] key

◆ The tilt feet on the bottom of the keyboard allow you to tilt the keyboard so that you can type more efficiently.

Tilt foot
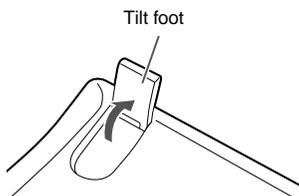
About the ten-key mode

The ten-key mode refers to the mode in which you can use part of the keyboard as a ten-key numerical pad (that allows you to type in numeric characters more easily). Press the [Num Lk] key to place your keyboard into ten-key mode. When the keyboard is in ten-key mode, the Num Lock indicator is displayed on the status indicating LED. In ten-key mode, you can enter the numeric character printed on the front face of each numeric key.

2 Changing the Brightness of the LCD

The brightness of your computer's LCD (Liquid Crystal Display) can be adjusted in 8 steps. Your computer is factory-configured so that the brightness of the LCD will increase when the computer runs on AC power, while it will decrease a little when the computer runs on its battery.

You can adjust the brightness individually for each power supply mode: power supply from AC outlet or power supply from battery.

1. **Place your computer into the power supply mode for which you want to adjust the brightness.**
   - Power supply from AC outlet: Connect the AC adapter to your computer.
   - Power supply from battery: Disconnect the AC adapter from your computer.

2. **Adjust the brightness.**
   - To turn up the brightness: Press the [F7] key while holding down the [Fn] key.
   - To turn down the brightness: Press the [F6] key while holding down the [Fn] key.

   An indicator showing the brightness of the LCD appears at the bottom of your desktop.

Dim ◄──────────────► Bright
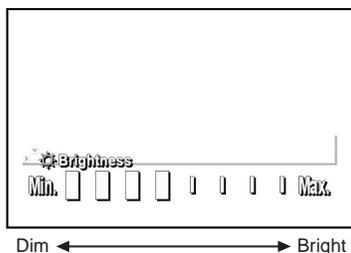
Critical Points

◆ If you change the brightness with the keyboard immediately after restarting your computer, resuming system operation, or connecting or disconnecting the AC adapter, the change you made may not take effect. In such a case, change the brightness again a few moments later.

◆ If you connect or disconnect the AC adapter while Windows is running, the message "Fujitsu Hotkey Utility has changed the brightness" will appear on your desktop. Then follow the on-screen instructions to perform necessary steps.
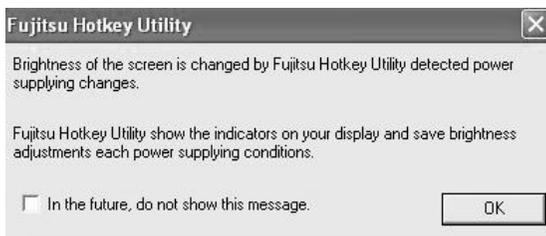
3 Before Connecting a Peripheral Device

This section explains what your should keep in mind when connecting a peripheral device to your computer.

- **Some peripheral devices need to be set up before use.**
  You cannot make all peripheral devices ready to use by simply connecting them to a computer. Depending on the peripheral device you use, you might need to set it up after connecting to your computer. For example, to use a printer or PC card along with your computer, you need to "install its driver." On the other hand, there are also peripherals such as memory that require no setup. So before connecting a peripheral device, read this manual carefully and connect it correctly.

- **Read this manual carefully.**
  Follow the instructions in this manual to connect a cable correctly. Connecting a cable incorrectly could result in damage to your computer or peripheral device.

  The ways to connect cables shown in this manual are just a few examples. So for the way to connect your peripheral device, refer also to its user guide.

- **Use Fujitsu genuine devices.**
  For optionally available Fujitsu genuine devices, contact your authorized distributor or use the fax information service.

  Fujitsu can provide no guarantee that devices manufactured by other makers operate normally on your computer. If you want to use a device other than Fujitsu genuine devices, contact the maker.

- **Use ACPI-compatible peripheral devices.**
  Your computer is factory-configured so as to meet ACPI (Advanced Configuration and Power Interface: A battery power management scheme).

  The use of a peripheral device that does not support ACPI could cause the power saving features of your computer to malfunction.

  Your computer does not support the low-level standby mode (ACPI S1).

  If your peripheral device supports only the low-level standby mode, do not place your computer into standby or hibernation mode.

- **Turn on peripheral devices before turning on your computer.**
  When a peripheral device that needs to be switched on for use is connected to your computer, turn it on before turning on the computer, and turn it off after turning off the computer.

  ### IMPORTANT

  - When connecting a peripheral device to a port on your computer, make sure the plug is oriented correctly and insert it straight into the port.
  - When connecting two or more peripheral devices to your computer, connect and set up them one by one.

4 Changing the Internal Battery Pack

⚠ WARNING

ELECTRIC SHOCK

⚠ • Be sure to turn off your computer before changing the internal battery pack. To avoid shock hazards and fire, be careful not to touch internal components of the computer, including the battery connector.

Changing the internal battery pack

1. **Turn off your computer.**

2. **Tip your computer with LCD facing upward.**
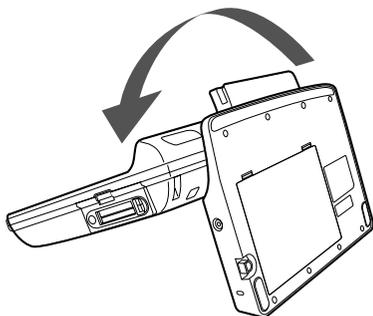
IMPORTANT

● Tip your computer toward you carefully so that it will not hit against anything.

3. **Remove the internal battery pack while pressing the tabs in the direction of the arrow.**
   The internal battery pack is detached from the connector.

Tab

Internal battery pack

Tab
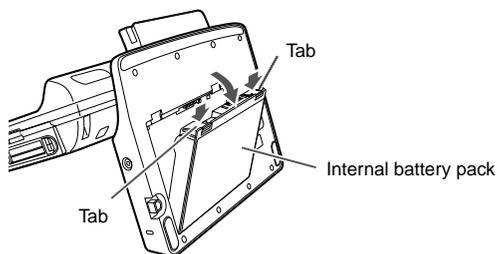
4. **Install a new battery pack**
   Insert the new battery pack into the battery housing with the slit in the battery pack aligned with the projection on the computer, and push in the battery pack until it clicks into place.

Tab

Internal battery pack

Tab
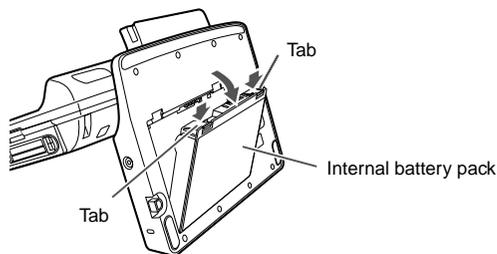
IMPORTANT

● After removing the internal battery pack, take necessary measures to prevent a short circuit, for example, sealing its connector with an insulating tape. After removing the battery pack, do not mix it with other types of battery.

The internal battery pack (lithium-ion battery) contains precious resources. Therefore, you should dispose of the disused battery pack as a recyclable material if possible.

5 Running the Computer on its Battery

Charging the battery

1. **Connect the AC adapter to your computer.**

2. **The charging status indicator lights up.**
   It indicates whether the battery pack is being charged.

3. **When the charging status indicator turns green, disconnect the AC adapter from your computer.**

Critical Points

◆ Charge the supplied battery pack before using it for the first time after purchase or if it is not recharged for more than one month.

◆ To fully charge the battery pack, continue charging until the charging status indicator turns green.

◆ When the battery pack is 90% or more charged, it cannot be recharged even when the AC adapter is connected. The battery pack can be recharged when its power level (or remaining battery life) is 89% or less.

◆ The chargeability of the battery pack decreases when it is charged in an very hot or cold place.

◆ When the battery pack is very hot, for example, immediately after the use of the computer, the battery protection feature may be activated to prevent the battery from being recharged. (If this happens, the charging status indicator blinks orange.) When the battery temperature comes down, your computer automatically restarts to charge the battery pack.

Running the computer on its battery

This section explains how to run your computer on its battery pack.

1. Disconnect the AC adapter from your computer and press the power button to start the computer.

Power button
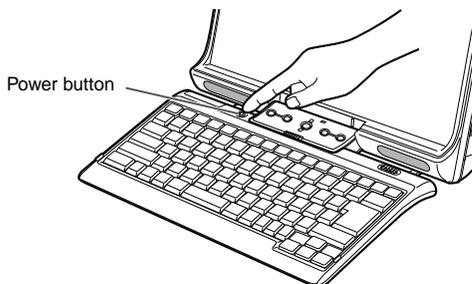
Critical Points

◆ Turn on the main power switch if it is in the OFF position.

◆ The operating time of the battery pack shortens when it is used in a cold place.

◆ The chargeability of the battery pack decreases after it has been used over a long period of time, and its operating time shortens accordingly. If the battery runs down soon, replace it with a new battery.

◆ A rise in the battery temperature may slow down your computer. If this happens, connect the AC adapter to your computer.

Checking the power level of the battery

When the computer is turned on or the battery is being charged, the power level indicator lights up or blinks to let you know the state of charge of the internal battery pack.

❑ The way the power level indicator shows the power level

Lit when the computer is running or blinks when the computer is on standby.

Lit/blinks green: Battery is between about 51% and 100% charged.
↓
Lit/blinks orange: Battery is between about 13% and 50% charged.
↓
Lit/blinks red: Low battery condition (about 12% or less charged) or dead battery condition (0% charged). When the battery starts to run low (low battery condition), your computer sounds a low battery alarm through the speakers.

◆ For reasons of the characteristics of lithium-ion batteries, the power level indictor may not correctly indicate the state of charge of the battery under certain conditions (temperature conditions, number of times the battery has been discharged and recharged, and so on).

◆ When the battery is 90% or more charged, it cannot be recharged even when the AC adapter is connected to your computer. The battery can be recharged when its power level is 89% or less.

❑ Battery temperature alarm (charging status indicator)

If the battery pack becomes very hot or cold, the charging status indicator will blink orange to tell that the battery protection feature has been activated and stopped charging the battery. When the battery pack temperature returns to normal, the charging status indicator stops blinking and turns orange, and your computer automatically restarts to charge the battery pack.

❑ Battery failure alarm (power level indicator)

If the battery pack cannot be charged normally, the power level indicator will blink red.

◆ If the power level indicator blinks red, turn off the computer and remove and reinstall the battery pack correctly. If the power level indicator blinks red even though the battery pack is installed correctly, it is in a defective condition or at the end of its useful life. So replace it with a new one.

❑ Low battery condition

When the battery is discharged to a very low level, the power level indicator lights or blinks red. If this happens, connect the AC adapter to your computer immediately to recharge the battery.

Critical Points

◆ The use of a weak battery may result in the lost of the data you are currently creating or saving. When the battery starts to run low, connect the AC adapter to your computer as soon as possible, or if no AC adapter is available, immediately save the data you are creating, exit all programs and turn off your computer.

◆ Reading or writing data on the hard disk requires a large amount of electric power. Therefore, when the battery is weak, connect the AC adapter to your computer before reading or writing data on the hard disk.

◆ Leaving the battery weak for a specific period of time causes the computer to automatically go into standby mode. When data is being read or written on the hard disk, however, the computer does not go into standby mode before the reading or writing of data is complete.

◆ Your computer is configured by default so that it will go into standby mode when the power level reaches about 3%.

Precautions in using the battery pack

⚠ WARNING

ELECTRIC SHOCK

• The battery pack is shock-sensitive. To avoid damage due to shock, be careful not to drop the battery pack when installing or removing it. For safety's sake, do not use any battery that has been given a strong impact. The use of a damaged battery could results in an electric shock or explosion.

• **Do not take the battery apart**
Taking the battery apart or touching its internal components could result in an electric shock or fire.

• **About electrical discharge**
- It is good practice to always recharge the battery before use since it is discharged spontaneously.
- When you know you will not use the computer for an extended period of time (for one month or more), remove the battery pack from your computer and store it in a cool place. Leaving the battery in the computer without recharging for a long period of time exhausts it and shortens its useful life.

- **About the battery life**
  - Batteries are consumable and gradually deteriorate with the passage of time even when they are not used. Therefore, to check the condition of your battery pack, you should run your computer on the battery pack at least once a month.
  - Leaving the battery pack in a hot place for a long time accelerates the deterioration of the battery.
  - The battery pack is consumable and its chargeability decreases gradually as it is used. When the battery reaches the end of its useful life, replace it with a new one.
  - The battery becomes exhausted in a very short time when its useful life is ending.
  - When the battery reaches the end of its useful life, remove it from the computer. Leaving a dead battery in the computer could cause shock hazards or fire.

- **About the disposal of the battery pack**
  - Before disposing of the battery pack, take necessary measures to prevent it from shorting, for example, sealing its connector with an insulating tape. After removing the internal battery pack, do not mix it with other types of battery.
    The internal battery pack (lithium-ion battery) contains precious resources. Therefore, you should dispose of the disused battery pack as a recyclable material if possible.

- **About the operating time**
  - The energy saving features of your computer helps you conserve battery power.
  - Battery life greatly varies depending on the ambient temperature. The life of a battery may shorten when it is used in a cold place.

- **You should power your computer from the AC adapter when:**
  - Using an online service or navigating the Internet
  - Using the hard disk or DVD/CD drive frequently
  - Connecting to a LAN
  - Resetting the computer to the factory defaults
  - Connecting two or more external devices, such as PC cards and USB devices, to your computer at the same time.

6 Adjusting the Volume

You can use either keys on the keyboard or the volume control to adjust the volume of the speakers or headphones.

Adjusting the volume, using keys on the keyboard

❏ Adjusting the volume of the speakers or headphones

1. **Press the [F8] or [F9] key while holding down the [Fn] key.**

   To turn down the volume:

   Press the [F8] key while holding down the [Fn] key.

   To turn up the volume:

   Press the [F9] key while holding down the [Fn] key.

   During volume adjustment, a volume level indicator is displayed at the bottom of your desktop.

Min. volume ◄────────► Max. volume
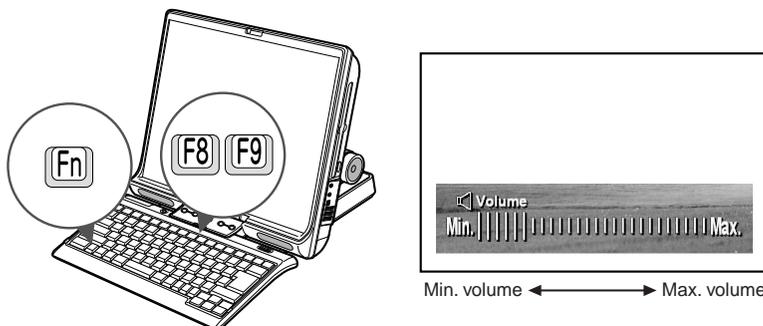
(Your computer or situation may not look exactly like this illustration.)

❏ Turning on or off the speakers or headphones

1. **Press the [F3] key while holding down the [Fn] key.**

   If the speakers or headphone connected are ON:

   An indicator showing the current volume level appears on the screen.

   If the speakers or headphone connected are OFF:

   The message "Mute" appears and the icon is displayed.

7 Using a Memory Card

Supported memory cards

The SD card/memory stick slot allows you to insert a memory card for digital cameras and to copy pictures directly from it.
The SD card/memory stick slot supports two different types of memory cards (though you can insert only one card at a time), so that, if you have digital cameras that use different types of memory cards, you will not need to prepare an adapter for each of them.

Here are the memory cards that the SD card/memory stick slot supports.

Memory card	Storage capacity
SD memory card	8 MB to 256 MB
Memory stick	4 MB to 128 MB

Critical Points

◆ The SD card/memory stick slot does not support any copy protection technologies, such as Magic Gate.

Inserting a memory card

IMPORTANT

● For the handling of data recorded in your memory card, refer to the instruction manuals for you memory card and device with which the memory card is used.

● If you are using memory cards for your digital camera, do not format them with Windows XP. Doing so makes it impossible to use the memory cards with your digital camera.
 If you have memory cards formatted with Windows, reformat them with your digital camera. For the way to format memory cards with your camera, refer to your camera's instruction manual.

1. Inert the memory card in the SD card/memory stick slot.
 Make sure the memory card is oriented correctly and push it into the slot until it clicks into place.

Memory stick

SD card/memory stick slot
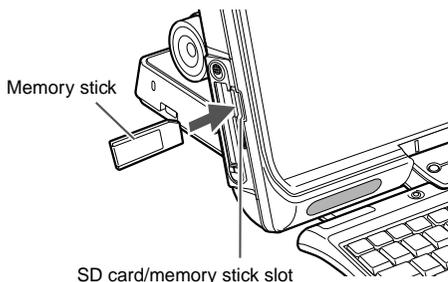
(This illustration shows how to insert a memory stick.)

IMPORTANT

● When removing a memory card from the SD card/memory stick slot, do not push the memory card strongly. Doing so could cause the memory card to jump out and disappear or be broken when you take your hand off the card.

  When pulling out a memory card, be careful not to distort the card by pulling it out diagonally or applying excessive force.

● When removing a memory card from the SD card/memory stick slot, keep you face away from the slot and do not direct the memory card toward anyone. A memory card could cause injury if it jumps out.

8 Using the Mouse

Exterior features: Mouse

❏ Top view
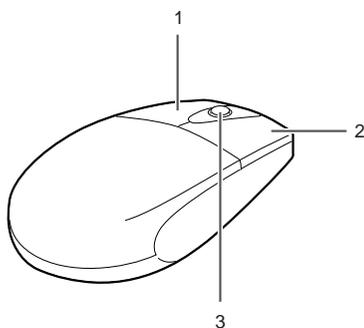
❏ Bottom view
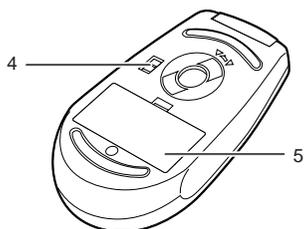
1. **Left button**
   Used for clicking.

2. **Right button**
   Used for right-clicking.

3. **Scroll wheel**
   Used to scroll up and down though a document. You can either press or turn this wheel.

4. **IR (infrared) switch**
   Used to switch the intensity of infrared between high and low.

5. **Battery case**
   To use the mouse, you need to insert two AAA batteries in this case.

Critical Points

◆ The wireless mouse might not operate normally, depending on the environment in which it is used.

◆ If needed, you can change the functions assigned to the left and right mouse buttons.

◆ If the ball on the back of the mouse is dirty, the mouse will not operate normally. You can remove and clean the ball. For the cleaning of the ball, see "Care and cleaning of hardware."

Scrolling by turning the scroll wheel

1. **Click the area where the document you want to scroll is displayed.**
   The area where you want to scroll is confirmed.

2. **Turn the scroll wheel backward.**
   The document you selected is scrolled up.
   To scroll down the document, turn the scroll wheel forward.
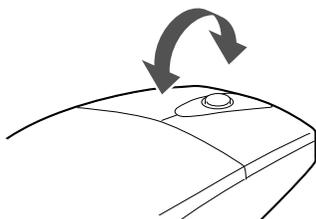
Scrolling by pressing the scroll wheel

1. Click the area where the document you want to scroll is displayed.

2. Press the scroll wheel.
The mouse pointer symbol changes.
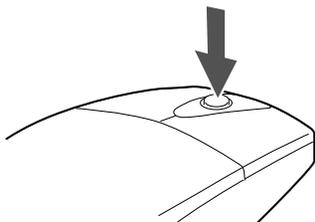
3. Move the mouse in the direction in which you want to scroll the document.
The document is scrolled in the direction you specified.
To return the pointer symbol to the original one, press the scroll wheel again or click the mouse left button.

Critical Points

◆ You can adjust the scrolling speed.
The scrolling speed changes according to the distance between the point where you pressed the scroll wheel and the point to which you moved the mouse.

◆ The scroll wheel does not always function in the same way.
The function of the scroll wheel varies depending on the application used, or the scroll wheel cannot be used for some applications.

9 Using the One-touch Buttons

About the one-touch buttons

The one-touch-buttons allow you to call up various features of your computer. By simply pressing one of them, you can start an application, check for incoming e-mail, or play a music CD.

(1) A
(2) B
Mode button
(3) Internet
(4) E-mail
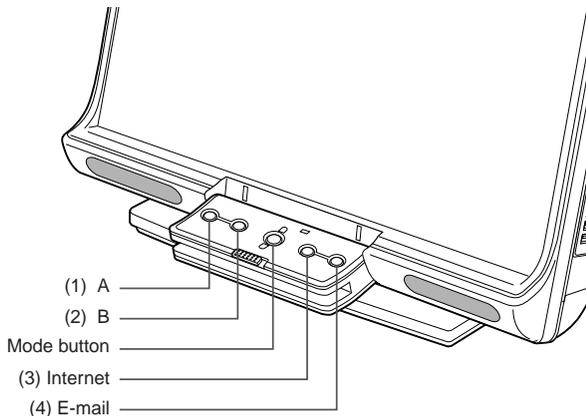
(Your computer or situation may not look exactly like this illustration.)

Each time you press the mode button, the one-touch buttons switch between Application mode and Player mode and the indicator for the mode selected lights up. Pressing and holding down the mode button for about 2 to 3 seconds locks and disables the one-touch buttons.

Mode		Function of one-touch button
Application (The upper indicator is lit.)		Starts applications.
Player (The lower indictor is lit.)		Operates Music Player.
Lock (Both the upper and lower indicators are off.)		The one-touch buttons are locked and cannot be used.

Critical Points

◆ To exit the Lock mode, press and hold down the mode button for about 2 to 3 seconds.
◆ The mode indicator stays on, even when the computer is in standby mode or turned off. To turn off the mode indicator, press and hold down the mode button for 2 to 3 seconds, or change one-touch button settings so that the one-touch buttons will be disabled when the computer is in standby mode or turned off.

Starting an application

When the mode selector is in the Application position (Up), you can start one of the applications below, simply by pressing the one-touch button assigned to it.

Buttons	Application Started (Factory default setting)
(1) A-button	Notepad
(2) B-button	Calculator
(3) Internet button ※1	Internet Explorer
(4) E-mail button ※2	Outlook Express

 ※ *1: If you are subscribe to your local Internet service provider(ISP)*
 ※ *2: You need to set up @Mail before using this button.*

Operating music player

When the one-touch buttons are in player mode, you can use them to operate Music Player.

Buttons			
(1) Stop/Eject	(2) Play/Pause	(3) Previous	(4) Next track
□⏏	▷❚❚	❙◁◁	▷▷❙

 3※ *By pressing the Previous or Next track button, you can skip to the previous or next song when you are using Music Player.*

If you insert a music CD in the CD/DVD drive when Windows is running, Music Player will automatically start and play the CD. To control the playback of the CD, you can use either the one-touch buttons Music Player.

IMPORTANT

- Do not use the one-touch buttons for any type of CD/DVD except music CDs. Doing so could cause your computer to malfunction.

Critical Points

◆ Copy control CDs are not compliant with the current music CD standard. Therefore, there is no guarantee that they can be played normally with your CD-RW/DVD-ROM drive. If any problem arises during the playback of a copy control CD, contact its distributor. Every CD

10 Wireless LAN Function

Preface

Thank you for purchasing the Fujitsu LifeBook.

This document describes the setup of this personal computer for using the Wireless LAN compliant with IEEE802.11b.

Before starting up this personal computer, read this document and operate the computer properly.

Notice to the user

❑ **Wireless interoperability**

This personal computer is designed so that it achieves the collaboration of an intercommunications system with Wireless LAN products based on the wireless LAN technology of the Direct Sequence Spread Spectrum (DD-SS) scheme. This personal computer also complies with the Wireless LAN Standard "Wi-Fi" defined by the "Wi-Fi Alliance" which verifies interconnectability between Wireless LAN products.

❑ **Effects of radio-wave radiation on environments**

• As with other high-frequency units, this personal computer emits high-frequency energy. The level of the energy emitted from this personal computer is controlled well below the electromagnetic energy emitted from, for example, a cellular phone or other wireless devices or units.

• Since it operates within high-frequency safety standards and officially recommended guidelines, this personal computer ensures safety for the user. These standards and recommendations incorporate the unified view of the scientific world and are based on the deliberations of research teams and on the rules and conventions established at the commissions consisting of scientists who scan and interpret the contents of extensive research bibliography on a continual basis.

• Under specific circumstances and environments, the use of this personal computer may be limited by the owners of buildings and the responsible representative persons of organizations. An example of the specific circumstances and environments referred to here is shown below.

– Use under the environment where there is the danger of interference with other units, devices, or services

• If you are not sure about the guidelines applied to the use of wireless units or devices in a specific organization or environment (such as an airport), before turning on the power of this personal computer, please contact the corresponding organization or building owner and confirm whether it is necessary to obtain permission for the use of the computer.

❑ **Effects of radio-wave radiation on the human body**

The output power radiated from this personal computer is suppressed well below the radio-wave radiation limit specified by FCC. Nevertheless, this personal computer must be used so that the voltage applied will be minimized with respect to human contact under normal operating conditions. During the use of the computer, touching its antenna must be avoided as far as possible.

❑ Precautions on interference

- This personal computer generates, uses, and radiates high-frequency energy.
- If this personal computer is not set up or used in accordance with this document, harmful interference may be caused to wireless communications.
- If this personal computer causes harmful interference to radio or television receivers (whether this is actually happening can be identified by powering on and off the computer), use either of the following methods to remove the cause of the interference:
  - Extend the distance between the main unit of the computer and the radio or television receiver.
  - Connect the main unit of the computer to either outlet of a power circuit separate from that of the outlet to which the receiver is connected.
  - Consult with a qualified and experienced radio/television electrical engineer.
- Do not modify this personal computer improperly.
- The manufacturer does not bear responsibility for interference with the radio or the television due to improper modification of this personal computer.
- Other wireless equipment may be using the same frequency as that of this personal computer. Strictly observe the following precautions as well in order to avoid electromagnetic interference with other wireless equipment:

Operating precautions on this product

```
2.4DS4
■ ■ ■
```

- The wireless equipment bearing the label shown above operates at 2.4 GHz. This type of equipment employs the modulation scheme called "DS-SS".
- Not only microwave ovens and other industrial, scientific, and/or medical equipment, but also the local wireless stations used in plants, manufacturing lines, etc. to identify mobile bodies (the use of these wireless stations requires a license) and specified low-power wireless stations (the use of these wireless stations does not require a license) are placed in operation in the operating frequency band of this product.
  1. Before using this product, make sure that local wireless stations for the identification of mobile bodies or specified low-power wireless stations are not in operation nearby.
  2. If electromagnetic interference with any local wireless stations for the identification of mobile bodies is caused by the use of this product, immediately stop the emission of the radio waves first.

Representation of symbols and others in this document

❏ **About examples of display**

Screens appearing in this manual are just examples. Depending on the model, disk and kind of data used actually, screens shown in this manual may differ in part or in file name, etc. from those appearing in your LifeBook.

❏ **Symbols and others used in text**

The meanings of the symbols used in text are listed below.

Symbol with/without word	Meaning
IMPORTANT	Denotes operating precautions or the acts that must not be performed. Be absolutely certain to read this section.
Critical Points	Denotes items related to operations. Read this section as required.
→	Reference page

❏ **Product names**

The product names appearing in this document are represented in abbreviated form as follows:

Product name	Representation in text
Microsoft® Windows® XP Home Edition	Windows or Windows XP
Microsoft® Windows® XP Professional	

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The use of display windows is licensed by the US Microsoft Corporation.

Outline

This section explains features of the wireless LAN function and what you can do using this LAN function.

Features of the wireless LAN function

Some of major features are listed below.
• The Wireless LAN function uses a 2.4-GHz low-power communications system.
• The Direct Sequence Spread Spectrum (DD-SS) scheme is employed that is highly resistant to noise.
• This LAN function complies with "Wi-Fi" and allows wireless communications at a maximum communications speed of 11 Mbps.
• The use of the required network name (SSID) and network key allows accessing by unauthorized persons to be prevented.

Network configuration of the wireless LAN

The use of the wireless LAN function allows connection to any of the following two types of networks:

❏ Ad hoc connection

The network constructed by the personal computers containing the wireless LAN function is referred to as the "ad hoc wireless LAN", and the connection method used in this case is referred as "ad hoc connection."
The use of this function allows you to exchange files and share a printer, by selecting the functions, such as "Network Connection", that the Microsoft network supports.
To use ad hoc connection, it is necessary to enter the same network name (SSID) and the same network key for all the personal computers that are to be connected. If there are any channels to be used for wireless LAN connection, it is also necessary to assign the same data to the channels. Communication is possible, provided that the personal computers to communicate with each other are located within the respective intercommunication service areas. Network connection can be implemented easily and at low costs by using ad hoc connection.

The following illustration shows an example of ad hoc connection:
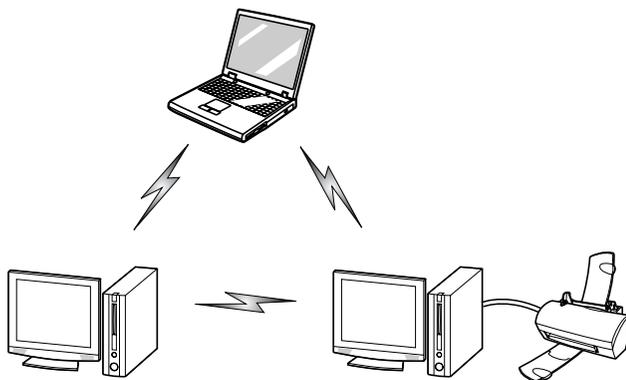
❑ Infrastructure connection

The network that uses one type of hub called the station, such as an optional wireless broadband router, is referred to as the "infrastructure wireless LAN", and the connection method used in this case is referred as "infrastructure connection."
The use of this function allows connection to a wired LAN via a station, and connection to the Broadband Internet.
For details of the station, refer to the manuals accompanying the station.
The following illustration shows an example of infrastructure connection:
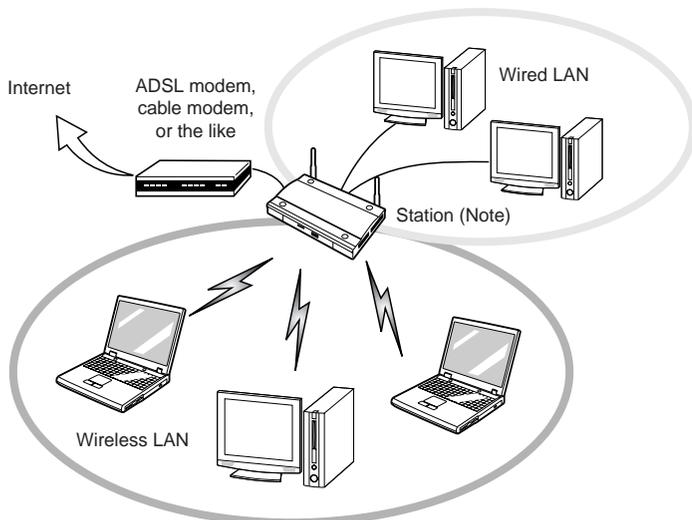
Note:
An optional hub for a wired LAN may be required according to the type of station to be used.

For better communications

This personal computer may not operate properly according to the particular operating environment. Strictly observe the following precautions when installing the main unit of the computer:

- Since this personal computer and equipment compliant with IEEE802.11a differ in operation frequency, it is not possible to communicate between both. Be careful of this.

- The recommended wireless communications distance is within a line-of-sight radius of 25 meters. For reasons related to the characteristics of the wireless LAN, however, the actual communications distance depends on the structure or materials type of building in which the wireless LAN function is to be used, the presence/absence of obstructions, the types of software to be used, installation status, radio-wave status, or other operating conditions. Decreases in communications speed or a communications failure may also occur.

- Distance the main unit of this personal computer from other electric appliances. If the main unit of the person computer is installed near a powered-on electric appliance, the computer may not be able to communicate properly or trouble may occur in the electric appliance.

  If the computer is unable to communicate properly, change the channel to be used or the installation location. During the use of a microwave oven or other equipment generating strong high-frequency energy, in particular, the personal computer may be highly susceptible to the energy and unable to communicate properly.

- If a broadcasting station or wireless communications equipment is present nearby and this prevents the computer from communicating properly, moving the main unit of the computer is suggested. Radio interference may also occur if the intensity of ambient radio waves is too high.

- About radio interference with the Bluetooth™

  Since the Bluetooth™ and the wireless LAN operate at the same frequency (2.4 GHz), if the Bluetooth™ is used near the main unit of this personal computer, radio interference may occur, leading to decreases in communications speed or to a connection failure. If these events actually occur, undertake the following countermeasures:

  – Space the Bluetooth™ and the main unit of the personal computer by a distance of at least 10 meters.

  – Within a distance of 10 meters, turn off the power of either the Bluetooth™ or the main unit of the personal computer.

When communication cannot be done normally

If multiple personal computers are connected with a wireless LAN and files of volume data are copied through the LAN at the same time, failure in normal communication may occur because of poor radio waves. In such a case, wait for end of communication and try to connect with the network once more.

Stopping the transmission of radio waves

To use this product inside hospitals, clinics, or airplanes, or in other places where the use of electronic equipment is regulated, stop the transmission of radio waves from the wireless LAN beforehand.

❑ To turn off radio wave by the wireless switch

Switch off the wireless switch of the LifeBook, radio wave of the wireless LAN is turned off.

❑ To turn off radio wave by Windows

1. **Click the** 🖳 **icon (Utility) in the notification area appearing in the lower right side of the screen with the right button of the mouse.**

2. **Click "Disable Radio".**
   Radio wave of the wireless LAN is turned off.

   Critical Points

   ◆ If "Enable Radio" is clicked when radio wave is off, radio wave transmission is resumed.

Starting the transmission of radio waves

To communicate using the wireless LAN function, set the personal computer to a status in which it can transmit radio waves.

1. **Switch on the wireless switch.**

2. **Click the ![icon] icon (Utility) in the notification area appearing in the lower right side of the screen with the right button of the mouse.**

3. **Click "Enable Radio".**
    In case of the infrastructure connection, the wireless LAN starts radio wave transmission. In case of the "ad hoc" connection, proceed to the step 4.

4. **Restart the personal computer.**

Flow of operations

The wireless LAN connection procedure is outlined below.

1. **Make sure that the personal computer is ready for the transmission of radio waves from the wireless LAN.**

2. **Assign the parameters required for wireless LAN connection.**
   1. Enter the network name (SSID) and other data.
   2. Enter the network key (the key to be used to encode communications data).

3. **Perform setting operations relating to network connection.**
   1. Specify TCP/IP as the protocol, and confirm the name of the work group and other settings.
   2. Enter the data required for file/printer sharing on the network. Perform this operation as required.
   3. For infrastructure connection, enter data for the station.
   4. Verify that you have been able to connect your computer to the network.

Preparation for using the wireless LAN

Preparation necessary for using the wireless LAN (parameter setting) is explained below.

IMPORTANT

● When connecting with the existing network, confirm details of the setting to the network administrator.

● The wireless LAN (Compliant with IEEE802.11b) used for the LifeBook uses channel-1 to channel-11 as radio channels.

   If it is intended to use the wireless LAN by the infrastructure connection (network through the station), check the radio channel to use, there is a case that the radio channel of the station has been set at a channel higher than channel-11 by initial setting or automatic setting.

   If so, reset the radio channel of the station at a channel from channel-1 to channel-11. For details of channel setting, refer to the manual of the station currently in use.

Critical Points

◆ When using the wireless LAN by the infrastructure connection (network through the station), refer to the manual of the station for setting of the station.

◆ When setting up a new wireless LAN to connect with other personal computers having the wireless LAN function by the ad hoc connection, there is no need to set a radio channel (frequency band), because this PC automatically detects the channel used in the wireless LAN to connect and performs communication on the detected channel. The initial setting of the channel is 11.

   When you need to change the channel setting, refer to "Setting of channels during ad hoc connection"

◆ For connecting with the Internet using ADSL (PPPoE) through the infrastructure connection, it is required to change the MTU size of the personal computer. For details, refer to the manual of the station.

   1. **Click the "Start" button and then "Control panel".**

   2. **Click the "Network Connection".**

   3. **Click the "Wireless network connection" in the table with the right button of the mouse, and click the "Properties" in the menu that appears on the following table.**

4. **Click the "Wireless Networks" tab.**
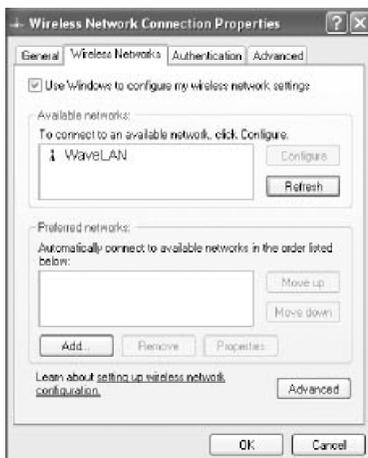
(The contents of the screen differ depending
on the model and situation.)

5. **Make sure that the "Use Windows to configure my wireless network settings" has
    been checked as ☑ .**

6. **Click the "Add" of the "Preferred networks".**
    The "Wireless Network Properties" window is shown on the screen.

7. **Click the "Association" tab.**
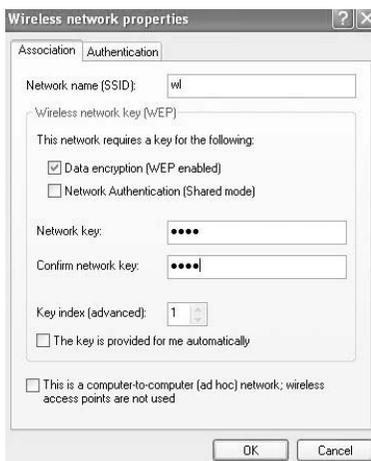
8. **Enter the data for encoding communications data.**
   - **In case of the ad hoc connection**
     1. Input a "Network name (SSID)".

        Input the same network name within 32 letters in condensed type (half-size character) for all personal computers to be connected.
     2. Click the check box of the "This is a computer-to-computer (ad hoc) network; wireless access points are not used" so that it turns into ☑ .

   - **In case of the infrastructure connection (network through station)**
     1. Input a "Network name (SSID)".

        Input a name properly to the station to connect. For setting the station, refer to the manual of the station.
     2. Click the check box of the "This is a computer-to computer (ad hoc) network; wireless access points are not used" so that it turns into ☐.

Next, proceed to setting to encode communication data.

IMPORTANT

● It is strongly recommended to set a network key to encode communication data. If no network key is set, there is a fear that data may be stolen by other users because the network can be accessed by all personal computers having the wireless LAN function.

9. **Click the check box (☐) of the "Data encryption (WEP enabled)" to turn it into ☑ .**
   - **In case of the ad hoc connection**
   Click the check box (☑) of the "Network Authentication (Shared mode)" to turn it into ☐.

   - **In case of the infrastructure connection**
   If the connecting station is set for the common key (shared key) authentication, click the check box (☐) of the "Network Authentication (Shared mode)" to turn it into ☑ .

   In case of the open system authentication, click the check box (☑) to turn it into ☐.

   For setting of the station, refer to the manual of the station.

10. **Click the check box (✓) of the "The key is provided for me automatically" to turn it into ☐.**
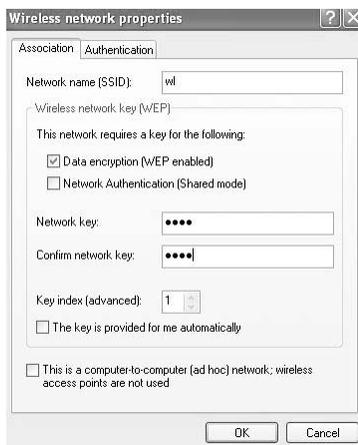
11. **Input a "Network key" properly to the connection system to use.**
    Key input can be done in two key systems of "ASCII character" and "Hexadecimal character code", but it is advised to do it in the "ASCII character" in general.
    ■ **In case of the ad hoc connection**
    Set the same value for all personal computers to connect.
    ■ **In case of the infrastructure connection**
    Set the key properly to the station to connect.
    For setting of the station, refer to the manual of the station.

Critical Points

◆ If there is any wireless LAN equipment whose network key is set in a hexadecimal character code in the network, input the hexadecimal character code.
◆ The key system is automatically discriminated by number of characters of the input network key.
◆ Characters (letters and numbers) usable for the "Network key" are as follows.
  • In case of the ASCII character key system:
    0-9, A-Z, a-z, _ (underscore)
  • In case of the hexadecimal character code key system:
    0-9, A-F, a-f
◆ Number of characters that can be input as a "Network key" differs depending on the network key system, specifications of the wireless LAN equipment to connect.
  • In case of the ASCII character key system:
    5 characters for 64-bit WEP, or,
    13 characters for 128-bit WEP
  • In case of the hexadecimal character code key system:
    10 digits for 64-bit WEP, or,
    26 digits for 128-bit WEP

12. Input a value for the "Network key".
Input the same value as the "Network key" input in the preceding step 11. If a different value is input, setting results in failure.

13. Confirm that the "Key index (Advanced)" is set as "1".
The "Key index (Advanced)" can be set in maximum four from "1" to "4". Set "1" generally.

14. Click the "Authentication" tab and then click the check box ☑ of the "Enable network access control using IEEE802.1X" so that it becomes ☐.

Critical Points

◆ In case of restricting the access of wireless LAN clients using IEEE802.1X authentication, put a check mark on ☐ "Enable network access control using IEEE802.1X". In case of home use, remove a check mark on ☑ "Enable network access control using IEEE802.1X".
For the method of setting related with IEEE802.1X authentication, refer to the station manual.

15. Click the "OK".

16. Confirm that the network name input as the "Network name (SSID)" by the step 8 is added to the "Preferred networks".

(The contents of the screen differ depending on the model and situation.)

Critical Points

◆ If there are multiple settings in the "Preferred network", another setting may have priority over the desired network because of communication condition. It is recommended to register only one setting of the desired network to avoid confusion.

17. Click the "OK".

18. Click the "Start" button and click "Turn off computer". Then, click the "Restart" in the ""Turn off computer" menu.

The personal computer restarts.

19. Click the "Power options" in the "Control panel".

20. Set the following items and click "OK".

• Click the "Power Schemes" tab to turn the "System standby" and " System hibernates into.

• Click the "Hibernate" tab and make sure that the "Hibernate mode" is not checked (☐).

If the check box is not ☐, click the box (☑) to turn it into ☐.

Then, the personal computer is set not to enter standby mode or hibernate mode automatically.

Next, proceed to setting up the network.

Connection to the Network

This section explains connection to the network.

Setting the network

IMPORTANT

- If a cable LAN has been set up, be careful not to compete with the cable LAN setting. If wireless LAN setting compete against the existing cable LAN setting, the network fails in normal communication.
- During connection with a network (Internet, etc.) using the LAN function, it is advised not to enter the personal computer into the standby or hibernate mode, because the personal computer fails in normal connection with a network (Internet, etc.) depending on the use environment.

  When the personal computer is not used, be sure to shut down the system.
- When connecting with an existing network, consult with the administrator of the network about setting in detail.
- For connecting with the Internet by ADSL through a station such as an optional wireless broad-band rooter, etc., refer to the manual of the station and other manuals provided by the provider and line enterprise for setting.

❏ TCP/IP setting

1. **Click the "Start" button and "Control panel".**
2. **Click the "Network connection".**

   The table of network connections appears on the display.
3. **Click the "Wireless Network Connection" appearing in the table by the right button of the mouse, and click the "Properties" in the menu.**
4. **Click the "Internet protocol (TCP/IP)" in the table of the "This connection uses the following item", and then click the "Properties".**
5. **Set an IP address.**

■ **In the case there is a DHCP server such as the broad-band rooter, etc. in the station or network in the infrastructure connection.**

1. Make sure that both the "Obtain IP address automatically" and "Obtain address of DNS server automatically" are marked with ⦿.

   If those are marked with ◯, click ◯ to turn the both into ⦿.

■ **In the case there is no DHCP server in the station or network in the ad hoc or infrastructure connection.**

1. Click ◯ of the "Use the following IP address" so that it turns into ⦿.

2. Input an IP address in the "IP address" box.

   Example: 192.168.0.1

3. Input a value in the "Subnet mask" box.

   Example: 255.255.255.0

6. Click "OK".

Next, confirm the full computer name and work group name.

❏ **Confirmation of computer name, work group name**

Critical Points

◆ For changing the computer name and/or work group name, log in the Windows as the account of "Administrator of computer" or a member of the "Administrators" group.
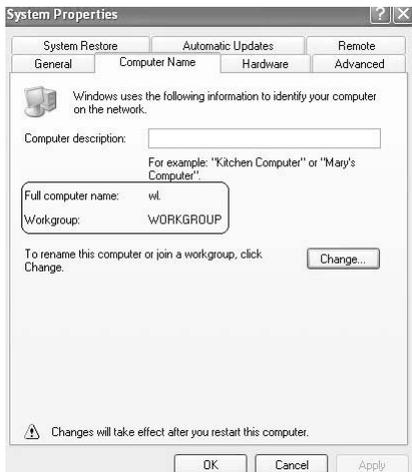
1. Click the "Start" button and "Control panel".

2. Click the "Performance and maintenance".

3. Click the "System".
   The "System Properties" window appears.

4. Click the "Computer name" tab.

5. Confirm the "Computer name" and "Work group name". For changing the name, click the "Change" and input a new name.

- Computer name

  The computer name is used to identify the computer in the network. Each personal computer can be named optionally. When naming a computer, input the name within 15 characters (including numeric) of condensed type (half-sized character). It is recommended to input a name including the model name or user name for easy discrimination.

- Work group

  The name of the network group should be inputted within 15 characters (including numeric) of condensed type (half-sized character). Generally set personal computers connected with the same network as those of the same work group.

6. Click "OK".

If a message to confirm restart of the computer, restart it following instructions on the screen.

Setting the sharing function

Set the sharing function to make file and/or printer sharing with other network-connected personal computers valid.

The setting operation is not required unless the sharing function is to be used.

The folder and printer for which the sharing function has been set will be usable from any personal computer present on the network.

❏ Setting of Microsoft network service for common use

1. **Click the "Start" button and "Control panel" in this order.**

2. **Click the "Network and Internet connection".**
   The table of network connection is shown on the screen.

3. **Click the "Wireless network connection" in the table by the right button of the mouse, and then click the "Properties" in the menu shown next.**

4. **Make sure that there is a check mark (☑) in the check box of the file and printer sharing for Microsoft network" in the table of "This connection uses the following item", and then click the "OK".**
   If the check box is ☐, click ☐ to turn it into ☑ and click the "OK".

Critical Points

◆ If the "File and printer sharing for Microsoft network" is not shown on the screen, install it following the procedure mentioned below.
  1. Click the "Install".
     The "Select type of network component" window appears on the screen.
  2. Click the "Service" in the table and then click the "Add".
     The "Select network service" window appears.
  3. Click the "Common use of file and printer for Microsoft network" in the table, and then click the "OK".
  4. The "File and printer sharing for Microsoft network" is shown in the table of "This connection uses the following item". After confirming the check mark ☑ for the "File and printer sharing for Microsoft network", click the "Close".

❑ Setting for sharing a file

The following explains setting sharing of a "work" folder in the C drive.

1. **Click the ▢ icon (My computer) on the desktop.**
2. **Click the "Local disk (C:)".**
3. **Click the "work" folder by the right button of the mouse, and click the "sharing and security" in the menu shown following.**
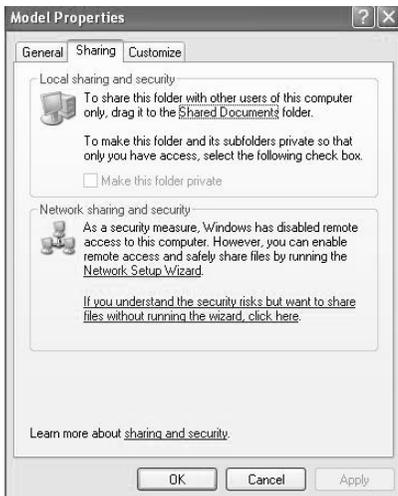   **The "Work Properties" window appears.**
4. **Click the ""Sharing" tab.**
   The "Effectuate common use of file" window appears.

Critical Points

◆ If the "Click here for using file in common without use of wizard with recognition of risk" is already clicked, this page is not shown. Proceed to the step 6.

The contents of the "Common use and security in network" are changed.

5. **Click the "Sharing this folder on the network" and then "OK".**
6. **Click the check box (☐) of the "Sharing this folder on the network" to turn it into ☑ .**


Critical Points

◆ For setting the share folder for read only, click the check box (☑) of the "Allow network users to change my files" to turn it into ☐.

7. **Click the "OK".**
    The folder is set for sharing, and the icon of the "work" folder turns into 🖐 .

❏ Setting for sharing a printer

1. **Click the "Start" button and "Printer and other Hardware".**
   The "Printer and other Hardware" window appears.

2. **Click the printer to set it for sharing by the right button of the mouse, and click the "Sharing" in the menu shown following.**

3. **Click ◯ of the "Share this printer" to turn it into ◉.**

4. **For changing the printer name shown in the "Share name", input a new printer name.**

5. **Click the "OK".**
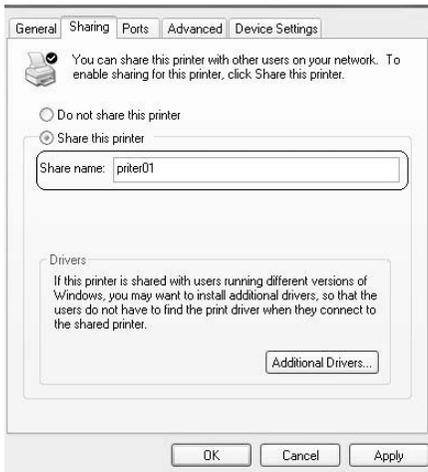
The printer is set for sharing use and the icon of the printer changes so that it indicates common use.

Confirming connection

After you have finished the network setup operations, access the folder whose sharing has been set for other personal computers. Also, confirm the status of the radio waves in case of trouble such as a network connection failure.

Critical Points

◆ In the case of infrastructure connection, enter the necessary data for the station before confirming connection. Refer to the manual of the station for the station setup procedure.

❑ Connecting your personal computer to another personal computer

1. **Click the** 🖥 **icon (My computer) on the desktop.**

2. **Click the "My Networks Places" in the list of others.**
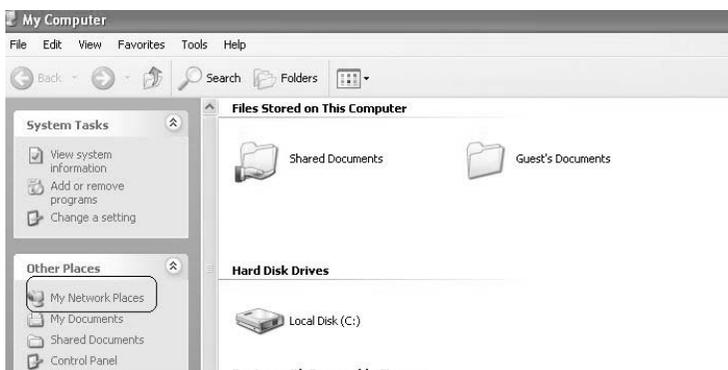
3. **Click the ""View workgroup computers" in the list of the Network task.**

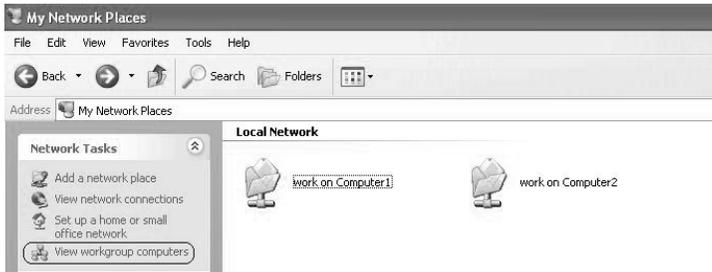The table of computers of the work group in which you are joining in is shown.

4. **Click the personal computer that is desired to connect.**
The folder set in the "Setting of sharing use of personal computers" is shown.

5. **Click the folder that is desired to connect.**

The contents of the folder are shown and the folder becomes usable.

❑ Check radio wave condition

1. **Click the 🖥️ icon (Utility) in the notification area in the lower right of the screen by the right button of the mouse.**
The "Broadcom Wireless Configuration Utility" window appears.

2. **Click the "Open Utility".**
The "Broadcom Wireless Configuration Utility" window appears.

3. Check the radio wave condition on the "Link Status" tab page.
The present connection condition is shown.
When radio wave is turned off or the computer is not yet connected, connection condition is not shown for some items.

Item	Comment
Status (connected • not yet connected • Disable Radio, etc.)	Connection condition, radio wave transmission condition, etc. are shown.
Network name (SSID)	Inputted network name (SSID) is shown.
BSSID	In the infrastructure connection, the MAC address of the station currently in connection is shown. In the ad hoc connection, the value is shown also but it is not the MAC address of the client in the ad hoc connection.
Data encryption (WEP)	When the network key is used, "Enabled" appears in this line. When the network key is not use, "Disabled" appears.
Speed (transmission)	The present transmission rate is shown in Mbps. No reception rate is shown.
Channel	The channel currently in use for communication is shown.
Client IP Address	The IP address is shown.
Network Connection Type	"Infrastructure" or "ad hoc" is shown.
Radio state	When radio wave is outputted, "Enable Radio" appears.
Signal	The longer the indication of the bar graph is, the better the radio wave condition is.
Noise	The shorter the indication of the bar graph is, the better the radio wave condition is under a little influence of noise.

When you fail in connection with the network or want to confirm the connection, refer to the "Troubleshooting".

Appendix

Other settings

Other wireless LAN settings are described.

Setting of channels during ad hoc connection

IMPORTANT

- You can set channels during ad hoc connection.
- Channel 11 is set by default.
- When connecting a personal computer with the existing ad hoc connection, it is required to change the channel setting to meet the channel in use.
- This setting is effective in the ad hoc connection only. In the infrastructure connection, the channel is automatically set to match to the station.

1. **Log on the computer by the account of the computer administrator or as an administrator or a member of administrators group.**

2. **Click the ⬜ icon (My computer) on the desktop and right click on "My computer" and select properties.**
   The "System properties" window appears.

3. **Click the "Device manager" of the "Hardware" tab.**
   The "Device manager" window appears.

4. **Double click the "Broadcom BCM4306 Wireless LAN Adapter" in the "Network controller".**
   The "Broadcom BCM4306 Wireless LAN Adapter properties" window appears.

5. **Change the channel by the "IBSS Channel Number" of the "Advanced" tab.**

6. **Click the "OK".**

7. **Click ❌ and all the windows are closed.**

Troubleshooting

Causes and countermeasures for troubles you may encounter while using wireless LAN are described. Refer to the relevant item.

Unavailable connection to the network

- Even if you double-click "Network computer" icon, no other computer will be displayed or no connection can be established if it is displayed.
- During infrastructure connection, you cannot connect to the station.
    - → "Incorrect network name (SSID) or network key"
    - → "Unmatched "Network authentication (shared mode) settings"
    - → "Incorrect setting of IP address"
    - → "Incorrectly-performed network setting"
    - → "Under the condition of stopped electric wave transmission"
    - → "In case of the LifeBook, the channel set for the station is out of the usable channels for this PC."
    - → "Unreachable electric wave due to poor condition of electric wave"
    - → "Active channel duplication due to multiple wireless LAN networks on the same floor, etc."
    - → "The computer to be connected with is turned OFF."
    - → "No right of access to the network to be connected with"
    - → "It takes too long to retrieve the network and display the connected computers."
    - → "The connection is cut off several minutes after the personal computer is connected with the station."

❑ Incorrect network name (SSID) or network key

❍ Countermeasure

In case of ad hoc connection, set the network names (SSIDs) and network keys of all computers to be connected to the same values. In case of infrastructure connection, set the network name (SSID) and network key to the same values as those of station. Also, set the network authentication according to the station.

In case of the Windows XP, setting of the "Network authentication (shared mode)" is different from others concerned.

❍ Countermeasure

When the setting of the "Network authentication (shared mode)" does not correspond to the station and personal computer, no communication is performed in the network.
Check the setting referring to the "Preparation for using the wireless LAN".

❑ Setting of IP address is not correct.

❍ Countermeasure

Check the setting of the network.

If the protocol in use is TCP/IP, the IP address can be checked by the following procedure.

1. **Operate as follows.**
   * In case of the Windows XP
     Click the "Start" button, "All programs", "Accessory" and "Command prompt".

2. **Input the "IPCONFIG" command on the "Command prompt" page, and press the [Enter] key.**
   Example: In the case the C drive is the hard disk drive,
         C: >ipconfig [Enter]
   Check to see if the IP address is normally shown on the screen.

   ```
   IP Address..........: 10.0.1.3
   Subnet Mask..........: 255.255.255.0
   Default Gateway..........: 10.0.1.1
   ```

   When IP address is displayed as "169.254.XXX.YYY" or "0.0.0.0", IP address is not correctly fetched from the station. In that case, restart the computer itself. If the display is still unchanged, check the setting of TCP/IP. If "Cable Disconnected" or "Media Disconnected" is displayed without showing IP address, check the setting of network name (SSID) and network key. Also, set the network authentication according to the station.

❑ Incorrectly-performed network setting

❍ Countermeasure

Check the protocol, work group name or shared setting.

❑ Under the condition of stopped electric wave transmission

❍ Countermeasure

Check if the wireless switch is turned ON. Also make sure of "Disable Radio" (condition of sending

❑ **The set channel for the station is different from those which can be used by this computer.**

○ **Countermeasure**

Set the channel of station within the range of 1~11. For the method of setting, refer to the station manual.

❑ **Unreachable electric wave due to poor condition of electric wave**

○ **Countermeasure**

In case of ad hoc connection, retry connection after shortening the distance to the destination computer or removing any obstacle for better sight. In case of infrastructure connection, retry connection after shortening the distance to the station or removing any obstacle for better sight.

❑ **Active channel duplication due to multiple wireless LAN networks on the same floor, etc.**

○ **Countermeasure**

If there is any other wireless LAN network nearby, change channels to avoid active channel duplication.

❑ **The computer to be connected with is turned OFF**

○ **Countermeasure**

Check if the computer to be connected is turned ON.

❑ **No right of access to the network to be connected with**

○ **Countermeasure**

Check if you have a right of access to the network to be connected with.

❑ **It takes too long to retrieve the network and display the connected computers**

❍ **Countermeasure**

Retrieve computers in the following procedure:

- In case of the Windows XP
    1. Click "Start" button, then click "search".
    2. Click "Computer or people".
    3. Click "Computers on the network".
    4. Input the name of computer to be connected with in "Computer name" and click "search".
    5. Click the icon of connected computer.

❑ **Disconnected communication a few minutes after every connection to the station**

❍ **Countermeasure**

Check the setting of the "Enable network access control using IEEE802.1X".

Critical Points

◆ In case of restricting the access of wireless LAN clients using IEEE802.1X authentication, put a check mark on "Enable network access control using IEEE802.1X". In case of home use, remove a check mark on "Enable network access control using IEEE802.1X". For the method of setting related with IEEE802.1X authentication, refer to the station manual.

❑ **Connection check with executed PING command**

Check if IP packet has correctly reached the destination by executing PING command in the following procedure:

Critical Points

◆ In order to execute PING command, it is necessary to install TCP/IP protocol in advance.

1. **Operate as follows.**
   • In case of the Windows XP
   Click the "Start" button, "All programs", "Accessory" and "Command prompt".

2. **At command prompt, input ping command as follows:**

   Example: In case of C drive being a hard disk and IP address being 10.0.1.3
   C: >ipconfig [Enter]
   If properly connected, the following screen will be displayed:

   Pinging 10.0.1.3 with 32 bytes of data:

   ```
   Reply from 10.0.1.3: bytes=32 time=1ms TTL=32
   Reply from 10.0.1.3: bytes=32 time<10ms TTL=32
   Reply from 10.0.1.3: bytes=32 time=4ms TTL=32
   Reply from 10.0.1.3: bytes=32 time<10ms TTL=32
   ```

   In case of no connection, "Request timed out" or "Destination host unreachable" will be displayed. In that case, refer to "Unavailable connection to the network".
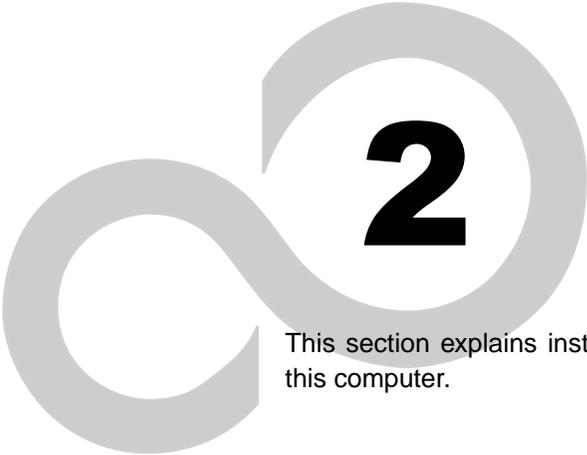
2

This section explains installation of options for this computer.
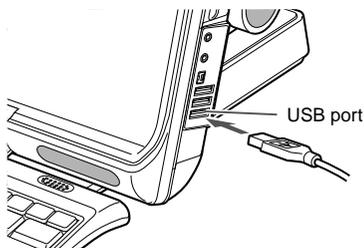
1 Connecting a Printer

Preparing what are needed

- **Printer**
  Prepare a printer designed for Windows.

- **Printer driver**
  A driver should be included with your printer.
  If several CDs are included with your printer, refer to your printer's instruction manual and select the CD designed for the version of Windows you are using. In some cases, you may download the latest version of driver from the Web site of your printer manufacturer.

- **Printer cable**
  Used to connect your printer to the computer. Prepare a USB cable that can be plugged into a USB port of your computer.

- **Instruction manual for your printer**
  Ways to connect and set up printers vary from printer to printer. So be sure to read your printer's instruction manual, too.

Connecting a printer

This section explains how to plug a printer cable into a USB port on your computer.

1. **Insert one plug of the printer cable into a USB port on the right side of your computer.**
   Insert the plug with the face marked with facing to the top.

USB port

2. **If this is for the first time your have connected your printer, install the driver.**

2 Connecting a USB Device

Preparing what are needed

- **USB devices**
  Devices that can be plugged in the USB ports on your computer.
  Prepare USB devices that suit your needs.
  - **Digital camera**
  - **Mouse**
  - **Terminal adapter**
  - **Printer**
  - **Scanner**
  - **Keyboard**

- **USB cables**
  Used to connect a USB device to your computer. Some USB devices come standard with a separate cable, and others, such as mice, come with a cable already connected.
  For more information, refer to the documentation included with your USB device.

- **USB device drivers**
  Some USB devices come with CDs or floppy disks containing their respective drivers. If necessary, install the driver designed for Windows according to the instructions in your USB device manual.

- **Instruction manuals for your USB devices**
  Ways to connect cables vary from device to device.
  Before first connecting a USB device to you computer, read its manual carefully.

IMPORTANT

- Your computer can be used with USB1.1- and USB2.0-compliant devices.

Critical Points

- ◆ Each USB port on your computer is capable of supplying electric power of up to 500 mA to the USB device connected. For more information, refer to the documentation included with your USB device.

- ◆ When connecting two or more PC cards and USB devices at the same time, you should power your computer from the AC adapter to prevent the deterioration of the internal battery pack.

- ◆ The performance of a USB device connected to your computer varies depending on the performance of the USB hub and cable used.

Connecting a USB device

1. **Connect a USB cable to your USB device.**

2. **Plug the cable from the USB device in a USB port on the right side of your computer.**
    Insert the cable connector with the face marked with facing to the top.

USB port
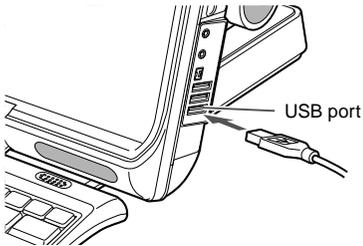
(Your computer or situation may not look exactly like this illustration.)

3. **Install the driver.**
    Some USB devices can be used simply by connecting to a computer without installing their drivers. For more information, refer to the documentation included with your USB device.

3 Installing Memory

Critical Points

◆ Here are the initial and maximum memory capacities of your computer.

Initial memory capacity   Maximum memory capacity

256 MB   768 MB

Preparing what are needed

• **Memory (expansion RAM module)**
  - 1 memory module can be installed.

Installing memory

⚠️ **WARNING**   ELECTRIC SHOCK ⚡   • When installing or removing memory, be sure to turn off your computer and disconnect the AC adapter to avoid shock hazards.

FAILURE ❗   • Keep small objects, such as covers, caps and screws, out of the reach of babies and children to avoid the danger of suffocation.
In the event a baby or child has swallowed such an object, consult the doctor immediately.

⚠️ **CAUTION**   HIGH TEMPERATURE   • Certain components around the memory slots become very hot.
To avoid possible burns, do not install or remove memory immediately after turning off the computer but wait for its internal components to cool down.

FAILURE ❗   • When installing or removing a memory module, hold it by the edge so as not to touch any contacts or IC. Also, be careful not to touch internal components or terminals of the computer. Touching these parts with oily fingers could result in a poor connection.

FAILURE 🚫   • Memory is composed of static-sensitive parts and it is easily broken by static electricity built up in a human body. Before handling memory, always touch an appropriate metal object to discharge static electricity from your body.

FAILURE ❗   • When installing or removing memory, be sure to turn off your computer in advance. If you install or remove memory with the computer placed in standby or hibernation mode, data could become lost or the computer or memory could be damaged.
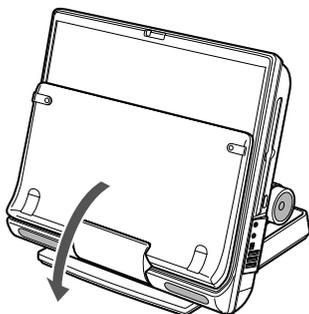
Critical Points

◆ To avoid damage, do not to touch internal components unnecessarily.

◆ To avoid damage, be careful not to drop small parts into your computer.

1. **Turn off the computer by sliding the main power switch to the O position, and disconnect the AC adaptor.**

2. **If the keyboard is detached, attach it.**
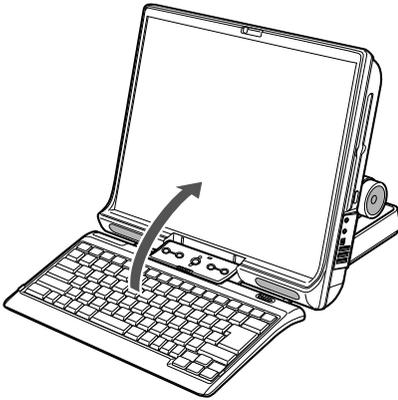
3. **Close the keyboard.**
   Fold the tilt feet flat.

4. **Raise the LCD panel.**

5. Tip your computer carefully toward you and place it on its LCD panel, as shown in the figure below.
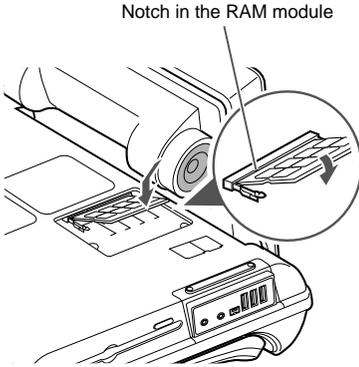
IMPORTANT

● When tipping your computer toward you, do it on a flat desk or the like covered with a soft cloth. Be careful that the LCD, in particular, does not touch any object with sharp edges or projections.

● When tipping your computer toward you, be especially careful not to give an impact to it nor drop it.

6. Remove the screws (2) shown in the figure below, and detach the expansion RAM module slot cover.
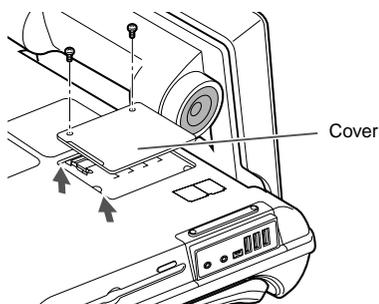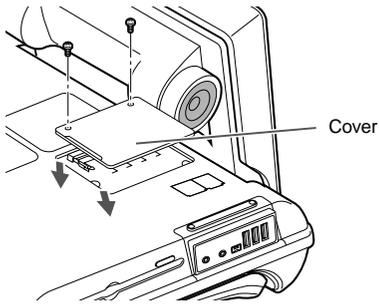

Cover

7. Install memory.
Insert the memory diagonally into the slot with the notch in the memory module aligned with the projection on the connector, and push the memory down until it clicks into place.

Notch in the RAM module

8. Attach the expansion RAM module slot cover and secure it with screws.
Attach the cover removed in step 6.

Cover

❏ Checking the memory capacity

IMPORTANT

● If the memory is not installed correctly, the error message "Expansion memory error" or another message in English may appear or nothing may be displayed on your desktop when you turn on the computer for the first time after installing the memory. If such a case, press and hold down the power button for 4 seconds or more to turn off your computer, and remove and reinstall the memory.

1. **Turn on the computer.**

2. **Click the "Start" button and select "Control Panel".**
   The "Control Panel" window appears.

3. **Click "Performance and Maintenance" and click "System".**
   The "System Properties" dialog box appears.

4. **Check if the circled numerical value in the figure below has increased by the size of memory you added.**

Memory capacity ——

In this example, 256 MB of memory has been installed a computer.

Your system uses 128 MB of memory as graphic memory (can be adjusted from 16,32,64 and 128MB from BIOS), so that a memory capacity 128MB smaller than the actual memory capacity is displayed in this window.

The memory capacity displayed may be further 1 MB less than the actual memory capacity, depending on the system configuration.

◆ You can change the graphic memory (VRAM) size, using "UMA Video Memory Size" in the "Advanced menu of BIOS Setup".

5. Click "OK".
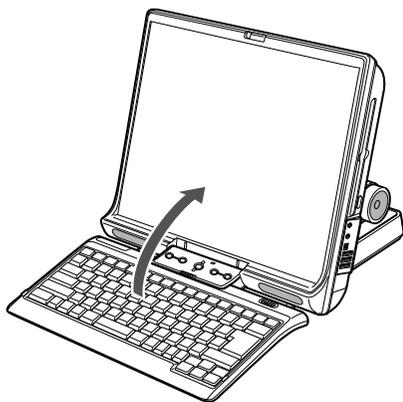The "Performance and Maintenance" dialog box appears again.

◆ If the memory capacity displayed is not correct, check if the memory is installed properly.
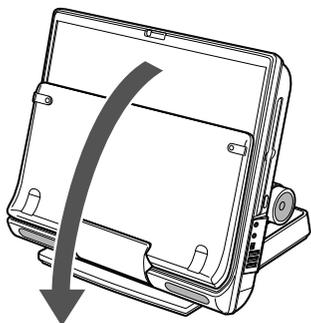
Changing the memory

1. Turn off the computer by sliding the main power switch to the O position, and disconnect the AC adopter.

2. If the keyboard is detached, attach it.

3. Close the keyboard.
Fold the tilt feet flat.

4. Raise the LCD panel.

5. Tip your computer carefully toward you and place it on its LCD panel, as shown in the figure below.

IMPORTANT

● When tipping your computer toward you, do it on a flat desk or the like covered with a soft cloth. Be careful that the LCD, in particular, does not touch any object with sharp edges or projections.

● When tipping your computer toward you, be especially careful not to give an impact to it nor drop it.

6. Remove the screws (2) shown in the figure below, and detach the expansion RAM module slot cover.

Cover

7. Remove the memory.
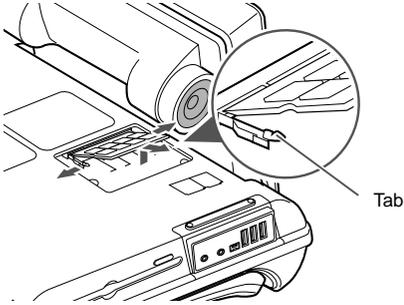Undo the hooks on both sides that secure the memory module. The memory raises itself slightly. Then pull the memory diagonally upward to remove it from the slot.

Tab

8. Install a new memory module.
Insert the memory diagonally into the slot with the notch in the memory module aligned with the projection on the connector, and push the memory down until it clicks into place.

Notch in the RAM module
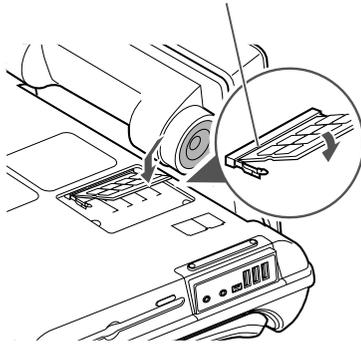
9. Attach the expansion RAM module slot cover and secure it with screws.
Attach the cover removed in step 6.

Cover
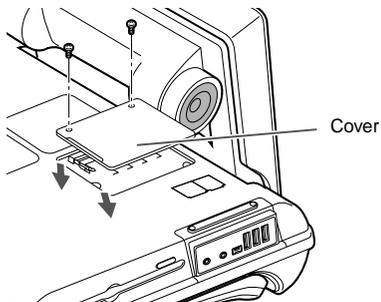
Critical Points

◆ After changing memory, check the memory capacity of your computer to be sure that the memory is installed correctly.

3

This section explains what to do when trouble occurs with this computer and when messages are displayed. Read this section as the necessity arises.

1 When This Happens

When you are having trouble with this computer, there is something you think is strange, or there is something you want to do, but do not know how. This section is divided into related items.

❏ **The power does not come on.**

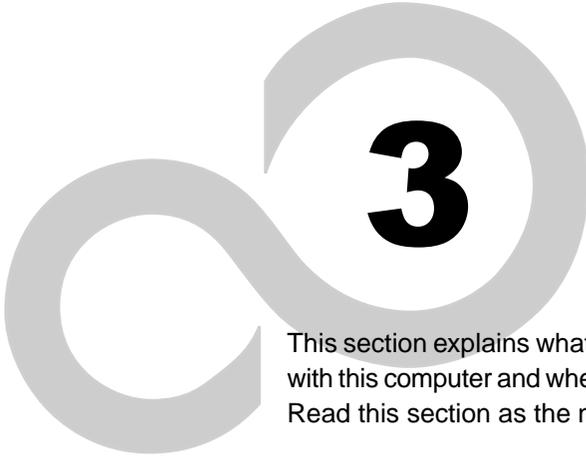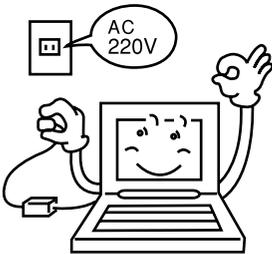| Checkpoint	Cause and Solution
Is the AC adaptor connected?	When using this computer for the first time after purchase, the battery is not yet charged, so you must connect the AC adaptor and switch on the main switch.
Is the main switch switched on?	If the main switch is not switched on, the power will not come on even if the SUS/RES switch is pressed.
Is the battery charged?	If a beep is heard when the main switch is turned on, then the battery is running low (LOW BATTERY). Connect the AC adaptor.
Has the computer been left unused for a long time?	When using the computer for the first time after leaving it unused for a long time, connect the AC adaptor and switch on the main switch to switch on the power.

❏ **Nothing displayed on the LCD panel**

Checkpoint	Cause and Solution
Is anything displayed on the status indicator LCD?	Connect the AC adaptor and switch on the main switch.
Is ⏻ displayed on the LCD panel?	• **Displayed** Adjust the brightness and darkness with the brightness and contrast controls. • **Flashing** Press the SUS/RES switch to put the computer into operating mode. • **When the icon is off on the status indicator LCD.** When the computer runs by the battery power, check the battery status if it is sufficiently charged for operation or not. If it is not charged, connect the AC adaptor and charge it. If you are already using this computer with the AC adaptor connected, check that it is correctly plugged into the power socket and into the computer.

Checkpoint	Cause and Solution
Have you been pressing any of the keys?	On this computer, if the power management functions are set and no key is pressed for a certain period of time, the CPU stops and the LCD panel backlight goes out. (In this state, pressing any key lights up the backlight again.) If the computer stops too frequently, change the BIOS setup settings.
Is it set to output to the CRT?	Switch over to the LCD display with the **[Fn]** + **[F10]** keys.

❑ LCD panel hard to read.

Checkpoint	Cause and Solution
Did you adjust the brightness?	Adjust the luminance of the LCD's backlight with the **[Fn]** + **[F6]** keys or **[Fn]** + **[F7]** keys on the keyboard.

❑ Battery is not charged.

Checkpoint	Cause and Solution
Is the AC adaptor connected?	Check that the AC adaptor is correctly plugged into the power socket and into the computer.
Is the battery overheated (The ➡ on the LCD display flashes.)?	If the ambient temperature is high and the battery temperature becomes too high during use, the battery protection function may be triggered to stop the charging.
Is the computer too cold (The ➡ on the LCD display flashes.)?	If the battery temperature falls too low, the battery protection function may be triggered to stop the charging.
Was the charging stopped midway?	If you use the computer and disconnect the AC adaptor between the start of charging and the time the ➡ LCD turns off, the battery will not become fully charged, Once you start charging do not remove the AC adapter until the ➡ LCD turns off.

❑ The remaining battery charge indicator does not stop flashing.

Checkpoint	Cause and Solution
Is the battery connected correctly?	Check that the battery is connected correctly. If it is connected correctly, there is an abnormality in the battery pack, so replace the battery pack.
Is the battery low?	Attach the AC adaptor and charge the battery.

SECTION 3

❏ **No sound or minimal sound from speaker.**

Checkpoint	Cause and Solution
Is the volume control correctly adjusted?	Turn the volume control to adjust the volume to a proper level. If volume adjustment with the volume control results in failure, check to see if the sound driver is correctly installed.

❏ **Can not record from Mic or Line In jack.**

Checkpoint	Cause and Solution
Is the volume adjusted properly?	Turn the volume control to obtain the correct volume. If the line jack is connected to the sound source, then check that connection. If recording still results in failure after the above-mentioned operation and check, activate the item "Recording" of the "Volume Control" and again adjust the volume with it.

❏ **LCD panel does not close.**

Checkpoint	Cause and Solution
Is something caught in the LCD panel?	Forcing the LCD panel closed can damage it. Check for something caught in the LCD panel. Also, a metal object such as a paper clip can cause a breakdown if it gets caught in between the keys.

❏ **The power management function is not executed.**

Checkpoint	Cause and Solution
Is Power Savings set to off in the BIOS setup?	Reset the BIOS setup.

❏ **Data cannot be read from the CD-ROM drive.**

Checkpoint	Cause and Solution
Is the CD-ROM correctly set?	Set the CD-ROM correctly with its label facing upwards.
Is there any dirt, condensation or water on the CD-ROM?	Wipe it from the center outwards with a dry, soft cloth.
Is the CD-ROM scratched or extremely warped?	Replace the CD-ROM.
Are you using a non-standard CD-ROM?	Use a CD-ROM which conforms to the standards.
Is the CD-ROM drive unit securely installed?	Securely install the CD-ROM drive unit.

❏ **The CD cannot be ejected from the CD-ROM.**

Checkpoint	Cause and Solution
Is it in operating mode?	The CD can only be ejected when the personal computer main unit is in operating mode because its CD- ROM drive has an electronic lock. Check that the personal computer main unit is in operating mode and press the EJECT button. If for some reason the CD tray does not come out even when you press the EJECT button, insert a clip or something into the hole to the right of the EJECT button and pull the tray out. If the tray doesn't still come out, click the CD-ROM icon in the "My Computer" window with the right button of the mouse and then click "EJECT".

❏ **Super disk cannot be ejected.**

Checkpoint	Cause and Solution
Is the computer in operation?	Since the super disk drive secures the super disk by the electronic lock, the disk can be ejected only when the computer is in the operation status. If the super disk cannot be ejected for some reason, insert a thin linear wire such as a straightened paper clip or the like into the emergency disk ejecting hole and push it into the depth. The disk will be resultingly ejected from the drive.

SECTION 3

2 Maintenance of your Computer

⚠ **WARNING**

ELECTRIC SHOCK

- To avoid electric shock and injury, always perform these steps before proceeding to maintenance.
  - Turn off the computer, disconnect the AC adapter and remove the battery from it.
  - Turn off all peripherals connected, including the printer, and disconnect them from the computer.

If the computer is soiled, wipe it gently with a soft dry cloth.

If the computer is badly soiled, wipe it with a cloth slightly dampened with water or detergent diluted with water. After using detergent, wipe remaining detergent off with a cloth slightly dampened with water. When wiping the computer, be extremely careful to prevent water from getting in it. Never use any volatile chemical such as thinner or benzene, nor any cloth containing chemicals.

If you use your Fujitsu LifeBook notebook carefully, you will increase its life and reliability. This section

provides some tips for looking after the notebook and its devices.

Caution:

Electrical equipment may be hazardous if misused. Operations of this product or similar products, must always be supervised by an adult. Do not allow children access to the interior of any electrical products and do not permit them to handle any cables.

❏ LIFEBOOK NOTEBOOK

Caring for your LifeBook Notebook

- Your LifeBook notebook is a durable but sensitive electronic device. Treat it with care.

- Make a habit of transporting it in a suitable carrying case.

- Do not attempt to service the computer yourself. Always follow installation instructions closely.

- Keep it away from food and beverages.

- If you accidentally spill liquid on your notebook:

  1. Turn it off.

  2. Position it so that the liquid can run out.

  3. Let it dry out for 24 hours, or longer if needed.

  4. If your notebook will not boot after it has dried out, call your support representative.

- Do not use your LifeBook notebook in a wet environment (near a bathtub, swimming pool).

- Always use the AC adapter and batteries that are approved for your notebook.

- Avoid exposure to sand, dust and other environmental hazards.

- Do not expose your LifeBook notebook to direct sunlight for long periods of time as temperatures above 140°F (60°C) may damage your notebook.

- Keep the covers closed on the connectors and slots when they are not in use.

- Do not put heavy or sharp objects on the computer.

- If you are carrying your LifeBook notebook in a briefcase, or any other carrying case, make sure that there are no objects in the case pressing on the lid.

- Do not drop your LifeBook notebook.

- Do not touch the screen with any sharp objects.
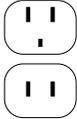
Cleaning your LifeBook Notebook
- Always disconnect the power plug. (Pull the plug, not the cord.)

- Clean your LifeBook notebook with a damp, lint-free cloth. Do not use abrasives or solvents.

- Use a soft cloth to remove dust from the screen.Never use glass cleaners.

Storing your LifeBook Notebook
- If storing your notebook for a month or longer, turn your LifeBook notebook off and remove all Lithium Ion batteries.

- Store your LifeBook notebook and batteries separately. If you store your notebook with a battery installed, the battery will discharge, and battery life will be reduced. In addition, a faulty battery might damage your notebook.

- Store your LifeBook notebook in a cool, dry location. Temperatures should remain between -25°C (13°F) and 60°C (140°F).

Travelling with your LifeBook Notebook
- Do not transport your LifeBook notebook while it is turned on.

- Do not check your LifeBook notebook as baggage. Carry it with you.

- Always bring your System Recovery CD that came with your LifeBook notebook when you travel. If you experience system software problems while travelling you may need it to correct any problems.

- Never put your LifeBook notebook through a metal detector. Have your notebook hand-inspected by security personnel. You can, however, put your LifeBook notebook through a properly tuned X-ray machine. To avoid problems, place your notebook close to the entrance of the machine and remove it as soon as possible or have your notebook hand-inspected by security personnel. Security officials may require you to turn your notebook On. Make sure you have a charged battery on hand.

- When travelling with the hard drive removed, wrap the drive in a non-conducting materials (cloth or paper). If you have the drive checked by hand, be ready to install the drive if needed. Never put your hard drive through a metal detector. Have your hard drive hand-inspected by security personnel. You can however, put your hard drive through a properly tuned X-ray machine.

- Take the necessary plug adapters if you're travelling overseas. Check the following diagram to determine which plug adapter you'll need or ask your travel agent.

Outlet type	Location
	United States, Canada, parts of Latin America, Japan, Korea, the Philippines, Taiwan
	Russia and the Commonwealth of Independent States (CIS), most of Europe, parts of Latin America, the Middle East, parts of Africa, Hong Kong, India, most of South Asia
	Mexico, United Kingdom, Ireland, Malaysia, Singapore, parts of Africa
	China, Australia, New Zealand

❏ BATTERIES

Caring for your Batteries

- Always handle batteries carefully.

- Do not short-circuit the battery terminals (that is, do not touch both terminals with a metal object). Do not carry lose batteries in a pocket or purse where they may mix with coins, keys, or other metal objects. Doing so may cause an explosion or fire.

- Do not drop, puncture, disassemble, mutilate or incinerate the battery.

- Recharge batteries only as described in this manual and only in ventilated areas.

- Do not leave batteries in hot locations for more than a day or two. Intense heat can shorten battery life.

- Do not leave a battery in storage for longer than 6 months without recharging it.

Increasing Battery Life

- Power your LifeBook notebook through the AC or optional auto/airline adapater whenever possible.

- If your LifeBook notebook is running on battery power all day, connect it to the AC adapater overnight to recharge the battery.

- Keep brightness to the lowest level comfortable.

- Set the power management for maximum battery life.

- Put your LifeBook notebook in Suspend mode when it is turned on and you are not actually using it.

- Limit your DVD/CD-RW/CD-ROM access.
- Disable the Windows CD automatic insertion function.
- Always use fully charged batteries.
- Eject PCMCIA cards when not in use.

❑ DVD/CD-RW/CDs

Caring for your DVD/CD-RW/CDs

- DVD/CD-RW/CDs are precision devices and will function reliably if given reasonable care.
- Always store your DVD/CD-RW/CDs in its case when it is not in use.
- Always handle DVD/CD-RW/CDs by the edges and avoid touching the surface.
- Avoid storing any DVD/CD-RW/CDs in extreme temperatures.
- Do not bend DVD/CD-RW/CDs or set heavy objects on them.
- Do not spill liquids on DVD/CD-RW/CDs.
- Do not scratch DVD/CD-RW/CDs.
- Do not put a label on DVD/CD-RW/CDs.
- Do not get dust on DVD/CD-RW/CDs.
- Never write on the label surface with a ballpoint pen or pencil. Always use a felt pen.
- If a DVD/CD-RW/CD is subjected to a sudden change in temperature, cold to warm condensation may form on the surface. Wipe the moisture off with a clean, soft, lint free cloth and let it dry at room temperature, DO NOT use a hair dryer or heater to dry DVD/CD-RW/CDs.
- If a DVD/CD-RW/CD is dirty, use only a DVD/CD-RW/CD cleaner or wipe it with a clean, soft, lint free cloth starting from the inner edge and wiping to the outer edge.

Caring for your DVD/CD-RW/CD-ROM Drive

Your DVD/CD-RW/CD-ROM drive is durable but you must treat it with care. Please pay attention to the following points:

- The drive rotates the compact disk at a very high speed. Do not carry it around or subject it to shock or vibration with the power on.

- Avoid using or storing the drive where it will be exposed to extreme temperatures.

- Avoid using or storing the drive where it is damp or dusty.

- Avoid using or storing the drive near magnets or devices that generate strong magnetic fields.

- Avoid using or storing the drive where it will be subjected to shock or vibration.

- Do not disassemble or dismantle the DVD/CD-RW/D-ROM drive.

❑ PC CARDS

Caring for your PC Cards

PC Cards are durable, but you must treat them with care. The documentation supplied with your PC Card will provide specific information, but you should pay attention to the following points:

- To keep out dust and dirt, store PC Cards in their protective sleeves when they are not installed in your notebook.

- Avoid prolonged exposure to direct sunlight or excessive heat.

- Keep the cards dry.

- Do not flex or bend the cards, and do not place heavy objects on top of them.

- Do not force cards into the slot.

- Avoid dropping cards, or subjecting them to excessive vibration.