



Panasonic®

Personal Computer

OPERATING INSTRUCTIONS

Model No. **CF-48 Series**

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Reference Manual

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TOUGHBOOK

2000 XP

[Additional Manual]

Reference Manual

This manual can be accessed on your computer.
Refer to page 20 on how to access the Reference Manual.

Getting Started

Operation

Troubleshooting

Appendix

Customer's Record

Model No.* _____	Dealer's Name _____
Serial No. _____	_____
or	
Code No. _____	Dealer's Address _____
Date of Purchase _____	_____

* For the Model No., insert the 12 digit number (for example, CF-48G4KFUDM) located on the bottom of the computer.

Introduction

Thank you for purchasing the Panasonic computer. Read the operating instructions thoroughly for proper operation of your new computer.

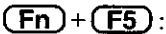
Illustrations and Terminology in this Manual

NOTE:

CAUTION:

[Start] - [Run]:

: [Enter]

: [Fn] + [F5]

: Microsoft® Windows® 2000 Professional users.

: Microsoft® Windows® XP Professional users.

: Where to go for referred information.

: Reference Manual

NOTE provides a useful fact or helpful information.

CAUTION indicates a condition that may result in minor or moderate injury.

This illustration means to click [Start]*, then to click [Run]. For some applications, you may need to double-click.

* : [start]

This illustration means to press the [Enter] key.

This illustration means to press and hold the [Fn] key, then press the [F5] key.

Information for Microsoft® Windows® 2000 Professional users.

Information for Microsoft® Windows® XP Professional users.

Where to go for referred information.

This illustration means to refer to the Reference Manual, which is available on your computer.

Refer to page 20 on how to access this manual.

- Some of the illustrations in this manual may differ slightly in shape from the actual items in order to make the explanation easier to understand.
- If the user has logged on without the administrator authority, some functions may not be executable, and some screens may not be displayed as shown in this manual. If this happens, log on with the administrator authority to enable these functions.
- Confirm the latest information on optional products in catalogs, etc.
- Circular media such as DVD-ROM and CD-ROM are described as “discs”.
- In this manual, “B’s Recorder GOLD5” is indicated as “B’s Recorder” and “WinDVD™4” is indicated as “WinDVD”.
- The “CD drive” is a description about drives, such as DVD-ROM & CD-R/RW and DVD MULTI drives.

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Read Me First

For U.S.A.

Federal Communications Commission Radio Frequency Interference Statement

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

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

Warning

To assure continued compliance, use only shielded interface cables when connecting to a computer or peripheral. Also, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

FCC RF Exposure Warning: This computer is provided with PC Card slots that could be used with wireless transmitter(s), which will be specifically recommended, when they become available. Other third-party wireless transmitter(s) have not been RF exposure evaluated for use with this computer and may not comply with FCC RF exposure requirements.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Responsible Party: Matsushita Electric Corporation of America
One Panasonic Way
Secaucus, NJ 07094
Tel No: 1-800-LAPTOP-5 (1-800-527-8675)

FCC RF Exposure Warning:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment must be installed and operated in accordance with provided instructions and minimum 1.5 cm spacing must be provided between antenna and all person's body (excluding extremities of hands, wrist and feet) during wireless modes of operation.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter. This computer is provided with a PC Card slot that could be used with wireless transmitter(s), which will be specifically recommended, when they become available. Other third-party wireless transmitter(s) have not been RF exposure evaluated for use with this computer and may not comply with FCC RF exposure requirements.

FCC Regulation Notice for modem This equipment contains a FCC approved modem.

Manufacturer of modem: PC TEL Inc.
Model No. PCT2304WT

Tested To Comply With FCC Standards FOR HOME OR OFFICE USE

1. This equipment complies with CFR47 Part 68 rules. On the computer is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If required, this information must be provided to the telephone company.
2. An FCC compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68 compliant. See Installation Instructions for details.
3. The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all area, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.
4. If your telephone equipment cause harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.
5. The telephone company may take changes in it's facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.
6. If trouble is experienced with this equipment, for repair or warranty information, please contact Matsushita Electric Corporation of America at DIAL TOLL FREE 1-800-LAP-TOP5 (1-800-527-8675). If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.
7. There are no user serviceable parts contained in this equipment.
8. This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.
9. The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone fax machine unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business or other entry, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual. In order to program this information into your fax software, you should refer to the manual of the Fax software being used.

Read Me First

10. According to the FCC's electrical safety advisory, we recommend that you may install an AC surge arrester in the AC outlet to which this equipment is connected. Telephone companies report that electrical surges, typically lightning transients, are very destructive to customer terminal equipment connected to AC power sources and that this is a major nationwide problem.

"Caution: To reduce the risk of fire, use only No.26 AWG or larger telecommunication line cord."

"ATTENTION: Pour réduire le risque d'incendie, utiliser uniquement des conducteurs de télécommunications 26 AWG ou de section supérieure."

Notice for the products using LCD

This product uses one or more fluorescent lamps containing a small amount of mercury. It also contains lead in some components. Disposal of these materials may be regulated in your community due to environmental considerations. For disposal or recycling information please contact your local authorities, or the Electronics Industries Alliance: <<http://www.eiae.org/>>

For Canada

Industry Canada (IC) Notice for modem

This equipment contains an Industry Canada approved modem unit. The Industry Canada label is affixed on the modem unit.

EQUIPMENT ATTACHMENT LIMITATIONS

"NOTICE: The Industry Canada label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas. Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate."

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

REN: See bottom of the computer

Industry Canada

This product complies with RSS210 Industry Canada.

Operation is subject to the following two conditions;

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

RESTRICTIONS CONCERNANT LE RACCORDEMENT DE MATÉRIEL

"AVIS: L'étiquette d'Industrie Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme aux normes de protection, d'exploitation et de sécurité des réseaux de télécommunications, comme le prescrivent les documents concernant les exigences techniques relatives au matériel terminal. Le Ministère n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée de raccordement. L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêche pas la dégradation du service dans certaines situations.

Les réparations de matériel homologué doivent être coordonnées par un représentant désigné par le fournisseur. L'entreprise de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'énergie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales. Avertissement: L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours à un service d'inspection des installations électriques, ou à un électricien, selon le cas."

"AVIS: L'indice d'équivalence de la sonnerie (IES) assigné à chaque dispositif terminal indique le nombre maximal de terminaux qui peuvent être raccordés à une interface. La terminaison d'une interface téléphonique peut consister en une combinaison de quelques dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5."

IES: Voir sous le fond de l'ordinateur

Important Safety Instructions / Importantes Mesures De Sécurité

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

1. Do not use this product near water, for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.

SAVE THESE INSTRUCTIONS

Certaines mesures de sécurité doivent être prises pendant l'utilisation de matériel téléphonique afin de réduire les risques d'incendie, de choc électrique et de blessures. En voici quelquesunes:

1. Ne pas utiliser l'appareil près de l'eau, p.ex., près d'une baignoire, d'un lavabo, d'un évier de cuisine, d'un bac à laver, dans un sous-sol humide ou près d'une piscine.
2. Éviter d'utiliser le téléphone (sauf s'il s'agit d'un appareil sans fil) pendant un orage électrique. Ceci peut présenter un risque de choc électrique causé par la foudre.
3. Ne pas utiliser l'appareil téléphonique pour signaler une fuite de gaz s'il est situé près de la fuite.
4. Utiliser seulement le cordon d'alimentation et le type de piles indiqués dans ce manuel. Ne pas jeter les piles dans le feu: elles peuvent exploser. Se conformer aux règlements pertinents quant à l'élimination des piles.

CONSERVER CES INSTRUCTIONS

Information to the User

This product and your Health

This product, like other radio devices, emits radio frequency electromagnetic energy. The level of energy emitted by this product however is far much less than the electromagnetic energy emitted by wireless devices like for example mobile phones.

Because this product operates within the guidelines found in radio frequency safety standards and recommendations, we believe this product is safe for use by consumers. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature.

In some situations or environments, the use of this product may be restricted by the proprietor of the building or responsible representatives of the organization. These situations may for example include:

- Using this product on board of airplanes, or
- In any other environment where the risk of interference to other devices or services is perceived or identified as harmful.

If you are uncertain of the policy that applies on the use of wireless devices in a specific organization or environment (e.g. airports), you are encouraged to ask for authorization to use this product prior to turning on the product.

Regulatory Information

We are not responsible for any radio or television interference caused by unauthorized modification of this product. The correction of interference caused by such unauthorized modification will be the responsibility of the user. We and its authorized resellers or distributors are not liable for damage or violation of government regulations that may arise from failing to comply with these guidelines.

Lithium Battery

Lithium Battery!

This computer contains a lithium battery to enable the date, time, and other data to be stored. The battery should only be exchanged by authorized service personnel.

Warning! A risk of explosion from incorrect installation or misapplication may possibly occur.

Pile au lithium!

Le micro-ordinateur renferme une pile au lithium qui permet de sauvegarder certaines données comme la date et l'heure notamment. Elle ne devra être remplacée que par un technicien qualifié.

Avertissement! Risque d'explosion en cas de non respect de cette mise en garde!

Read Me First

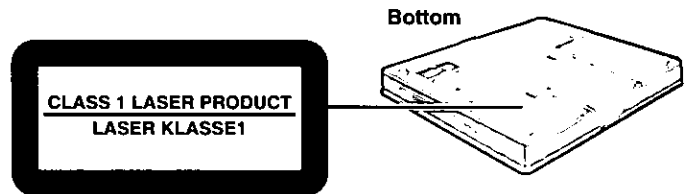
CD Drive Caution

CAUTION!

THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS, ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF.
REFER SERVICING TO QUALIFIED PERSONNEL

AVERTISSEMENT!

CET APPAREIL UTILISE UN LASER.
L'UTILISATION DE COMMANDES OU DE RÉGLAGES OU L'EXÉCUTION DE PROCÉDURES AUTRES QUE CELLES SPÉCIFIÉES ICI PEUVENT PROVOQUER UNE EXPOSITION À DES RADIATIONS DANGEREUSES.
NE PAS OUVRIR LES COUVERCLES NI ESSAYER DE RÉPARER SOI-MÊME.
CONFIER TOUT TRAVAIL D'ENTRETIEN À UN PERSONNEL QUALIFIÉ.



Precautions

● Usage

Avoid Extreme Heat and Cold

Do not store or use the computer in locations exposed to heat, direct sunlight, or extreme cold. Avoid moving the computer between locations with large temperature difference.

Operation: 5 °C to 35 °C {41 °F to 95 °F}

Storage: -20 °C to 60 °C {-4 °F to 140 °F}



Avoid Direct Sunlight on the LCD Panel

The LCD panel should not be exposed to direct sunlight or ultraviolet light.



Avoid Humidity, Liquids and Dust

Do not store or use the computer in locations exposed to high humidity, liquids (including rain) or dust.

● Handling



Avoid Magnetic Fields

Keep the computer away from magnets. Data stored on the hard disk may be lost.



Avoid Stacking

Do not place heavy objects on top of the computer.



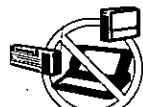
Keep Small Objects Away

Do not insert paper clips or other small objects into the computer.



Prevent Shock

Avoid subjecting the computer to severe vibrations or impact. Do not place the computer inside a car trunk.



Avoid Radio Frequency Interference

Do not place the computer near a television or radio receiver.



Avoiding low-temperature burns

Avoid more than casual contact with any heat producing area of the notebook computer, AC adaptor, and any option or accessory you use with it. Even low heat, if warmer than body temperature, can cause a burn, if the skin is exposed to the heat source for a long enough period of time.



Do Not Disassemble the Computer

Do not attempt to disassemble your computer.



Avoid Excessive Force on the Display

Do not apply excessive downward force on the display when it is completely opened, especially when plugs and/or cables are connected to the rear of the computer.

Precautions (Battery Pack)

- Care should be exercised with regard to the following in order to avoid the possibility of overheating, fire or damage.



Avoid Heat

Do not throw the battery pack into a fire or expose it to excessive heat.



Keep Articles Away

Do not place the battery pack together with articles such as necklaces or hairpins when carrying or storing.



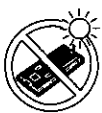
Do Not Disassemble

Do not insert sharp objects into the battery pack, expose it to bumps or shocks, deform, disassemble, or modify it.



Do Not Short

Do not short the positive (+) and negative (-) contacts.



Avoid Extreme Heat, Cold and Direct Sunlight

Do not charge, use or leave the battery pack for extended periods where it will be exposed to direct sunlight, in a hot place (in an automobile on a sunny day, for example), or in a cold place.



Do Not Use With Any Other Computer

The battery pack is rechargeable and was intended for the specified computer or charger. Do not use it with a computer other than the one for which it was designed.



Do Not Put into a Microwave

Do not put the battery pack into a microwave oven or a pressurized chamber.




Stop Using

Should the battery emit an abnormal odor, become hot to the touch, become discolored, change shape, or become in any way different from normal, remove it from the computer and stop using it.

- Do not touch the terminals on the battery pack. The battery pack may no longer function properly if the contacts are dirty or damaged.
- Do not expose the battery pack to water, or allow it to become wet.
- If the battery pack will not be used for a long period of time (a month or more), charge or discharge (use) the battery pack until the remaining battery level becomes 30% to 40% and store it in a cool, dry place.
- This computer prevents overcharging of the battery by recharging only when the remaining power is less than approx. 95% of capacity.
- The battery pack is not charged when the computer is first purchased. Be sure to charge it before using it for the first time. When the AC adaptor is connected to the computer, charging begins automatically.
- Should the battery leak and the fluid get into your eyes, do not rub your eyes. Immediately flush your eyes with clear water and see a doctor for medical treatment as soon as possible.

NOTE

- The battery pack may become warm during recharging or normal use. This is completely normal.
- Recharging will not commence outside of the allowable temperature range (0 °C to 45 °C {32°F to 113 °F})  Reference Manual "Battery Power". Once the allowable range requirement is satisfied, charging begins automatically. Note that the recharging time varies based on the usage conditions. (Recharging takes longer than usual when the temperature is 10 °C {50 °F} or less.)
- If the temperature is low, the operating time is shortened. Only use the computer within the allowable temperature range.
- The battery pack is a consumable item. If the amount of time the computer can be run off a particular battery pack becomes dramatically shorter and repeated recharging do not restore its performance, the battery pack should be replaced with a new one.
- When a spare battery pack is to be carried in a pocket or bag, it is recommended that it be placed in a plastic bag so that its contacts are protected.
- Always power off the computer when it is not in use. Leaving the computer on when the AC adaptor is not connected will exhaust the remaining battery capacity.

When Using Peripheral Devices

Pay strict attention to the following points to avoid damage to the computer, peripheral devices, cables, etc. Also, in addition to following this manual, carefully read the instruction manuals for the peripheral devices being used.

- Use only peripheral devices that conform to the computer's specifications.
- Connect the devices properly, paying close attention to the condition and position of the connectors.
- If a connection cannot be made easily, do not apply undue force; check once more to confirm the condition and position of the connector (alignment of pins, etc.) .
- If the connector has holding screws, fasten the screws firmly.
- Do not carry the computer with cables attached, and do not pull on the cables forcefully.

Read Me First

Saving Data on the Hard Disk

- **Do not expose your computer to shock.**
Use care when handling your computer, shock may damage your hard disk or make your software applications and data unusable.
- **Do not power down your computer while software applications are running or hard disk drive indicator (Ⓜ) is on.**
Properly shut Windows* down to avoid problems.
- **Save all valuable data to disks.**
Backing up data to disks will limit damage should trouble occur to your computer or should you inadvertently change or erase data.
- **Use the security function for all important data.** (📖^{Reference Manual} “Security Measures”)

* **Windows 2000** : This computer uses Microsoft® Windows® 2000 Professional.
Windows XP : This computer uses Microsoft® Windows® XP Professional.

Hard-Disk-Lock

When the Hard Disk Lock is set to [Enable], it is impossible to read/write data from/to the hard disk when the hard disk is installed in a different computer, since a password is also set for the hard disk. When the hard disk is returned to the original computer, you can read/write data as before. In this case, however, make the settings in the Setup Utility exactly the same as they were before the hard disk was removed. (Note that this Hard Disk Lock does not guarantee the complete protection of data.) (📖^{Reference Manual} “Security Measures”)

Saving Data on Floppy Disks

- **Do not power down your computer or press the floppy disk drive eject button while the floppy disk drive indicator (Ⓜ) is on.**
Doing so may damage the data on the floppy disk and render the floppy disk useless.
- **Use care when handling floppy disks.**
To protect the data on your floppy disks or to prevent a floppy disk from becoming stuck in your computer, avoid the following:
 - Sliding the shutter on the floppy disk manually.
 - Exposing the floppy disk to a magnetic field.
 - Storing the floppy disk in locations prone to high temperatures, low pitched noise, dampness, or dust.
 - Applying more than one label on the floppy disk.
- **Confirm the contents of a floppy disk before formatting it.**
Confirm that no important data is on the floppy disk, because all data on the floppy disk will be erased.
- **Use the write-protect tab.**
This is a must for preserving important data.
This prevents your data from being erased or over-written.



Write Enable



Write Disable

Computer Viruses

Users are advised to purchase the latest versions of virus protection software and use them regularly.

We recommend you run the software:

- When booting your computer.
- After receiving data.

We recommend that you check data received on disks or from external sources, such as data downloaded from the Internet, e-mail, etc. (For compressed files, uncompress them before running a check).

When Disposing of or Transferring Ownership of This Device

When disposing of or transferring ownership of this device, erase all data on the hard disk in order to prevent the theft of hard disk data. Even if you delete data or initialize the hard disk through normal Windows commands, data can still be read using special software. In order to erase all data, either have the data erased by a specialist (at a charge) or use the hard disk data erase utility (included) (📖 page 30). (Note that this hard disk data erase utility does not guarantee that data will be completely erased.)

Also, note that if you transfer ownership of this device without deleting commercial software that you have installed to the hard disk, you may be in violation of the licensing agreement for that software.

Wireless LAN

To prevent theft of data or unauthorized access to the hard disk via a wireless LAN

If you plan to use wireless LAN functions, we recommend that you do so only after making the appropriate security settings, such as for data encryption.

Usage Environment

● Environment

- Place the computer on a flat stable surface. Do not place the computer upright or allow it to tip over. When the computer receives extremely strong shock after falling, the hard disk or floppy disk drive, etc., may become inoperable.
- In use: Temperature: 5 °C to 35 °C {41 °F to 95 °F}
Humidity: 30% to 80% RH (No condensation)
- Not in use: Temperature: -20 °C to 60 °C {-4 °F to 140 °F}
Humidity: 30% to 90% RH (No condensation)

● Places not to use your computer

- Such areas may result in damage to the computer.

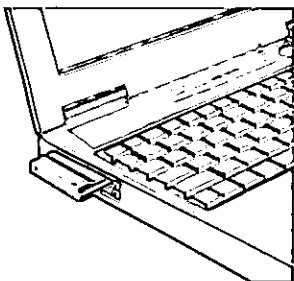
Areas with electronic equipment

These areas may interfere with your display or cause your computer to produce strange sounds.

Areas with extremely high/low temperatures

- Do not leave things near the computer that are sensitive to heat. During operation, the computer may become warm.

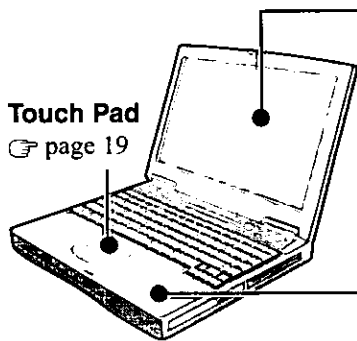
Handling



- This computer has been designed so as to minimize shock to the LCD and hard disk drive, etc., but no warranty is provided against such trouble. Therefore, as a precision instrument, be extremely careful in the handling.
- Do not drop or hit your computer against solid objects.
- Do not carry your computer when the power is on.
- Remove all external devices, cables, and PC Cards sticking out of the computer (see the figure on the left) before transporting the computer.
- We recommend preparing a fully charged battery.
When transporting a spare battery inside a package, briefcase, etc., it is recommended that it be placed in a plastic bag so that its contacts are protected.
- Do not carry the computer while the display is open, or carry it by gripping the display.
- Do not put anything (e.g., a piece of paper) between the display and keyboard.
- Always carry your computer with you. Never check it in with luggage. For use of the computer inside an aircraft, we recommend asking the airlines regarding their policy on this issue.
- It is a good idea to make backup copies on disks and carry them with you.
- Do not leave a disk in the drive while transporting your computer.

Read Me First

Maintenance



Display

Avoid using water when cleaning the panel. Ingredients included in water may leave scratches and reduce readability of the screen.

<When cleaning dust/dirt>

Avoid rubbing off dust/dirt with cloth since it may leave scratch on the screen.

Sweep dust/dirt with fine brush, then wipe it with a dry soft cloth used for cleaning glasses.

<When cleaning oily surface>

Apply camera lens cleaner on a soft gauze and clean it with gentle force. Then, wipe with dry soft cloth used for cleaning glasses.

Areas excluding the display

Wipe these areas with a soft cloth, after applying water or detergent diluted with water to the soft cloth and firmly wringing out excess water.

CAUTION

- Do not use benzene, thinner, or rubbing alcohol. Doing so may adversely affect the surface, e.g., discoloration. In addition, do not use commercially-available household cleaners and cosmetics, as they may contain components harmful to the surface.
- Do not directly add or spray water or detergent. If liquid enters the inside of the computer, it may cause it to work improperly or be damaged.

Windows Update

You can use the latest patches and service packs for Windows with the following menus.

Do not apply "Driver Update" even if a message to update a driver appears. If a driver update is required, contact Panasonic Technical Support (page 39).

Windows 2000

[Start] - [Programs] - [Windows Update]

WindowsXP




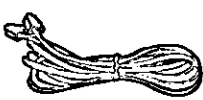

[start] - [All Programs] - [Windows Update]

First-time Operation

Read the steps below to help you learn what parts are included, and to gain an understanding of some basic computer-related operations.

1 Confirm the inclusion of all parts

Make sure the parts shown in the figure have been supplied. If any of these items are missing or is not working properly, contact Panasonic Technical Support (☎ page 39).

AC adaptor 1  Model No : CF-AA1653	AC Cord 1 	Battery Pack 1  Model No : CF-VZSU18B
Modem Telephone Cable 1 	Product Recovery DVD-ROM 1 	
Operating Instructions (This book) 1 Windows® Book 1 <Model with a DVD-ROM & CD-R/RW Drive> B's Recorder/B's CLiP CD-ROM (☎ page 31) 1 <Model with a DVD MULTI Drive> B's Recorder/B's CLiP CD-ROM (☎ B's Recorder/B's CLiP Booklet) 1		

Getting Started

2 Read the LIMITED USE LICENSE AGREEMENT (☎ page 28)

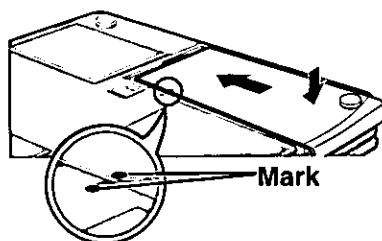
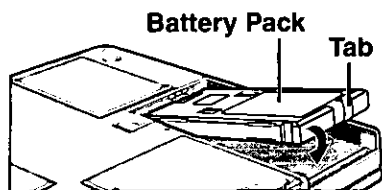
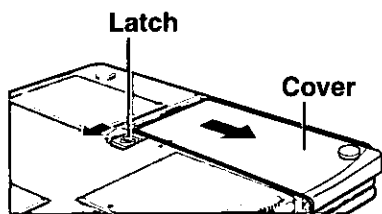
Before removing the seal covering the power switch, read the LIMITED USE LICENSE AGREEMENT.

3 Insert the battery pack

- ① Turn your computer over.
- ② Slide the latch, and then without releasing it, slide and remove the cover.

- ③ Put the battery pack into the computer and firmly attach the pack to the connector.

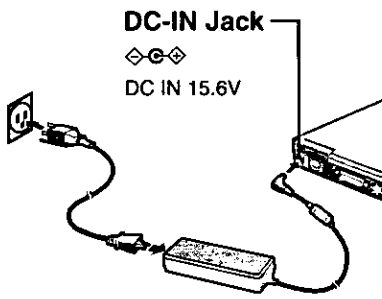
- ④ Match the mark on the cover to the body of the computer and slide the cover back into place. Be sure the tab does not get caught when closing the cover.



CAUTION

If the cover is not attached properly, the battery may fall out while the computer is being carried.

First-time Operation



4 Connect your computer to a power outlet

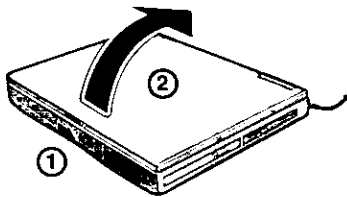
The battery pack will be charged automatically.
Charging Time: Approx. 3.8 hours
(Varies depending on the usage conditions.)

CAUTION

- Be sure the AC adaptor is connected until completing the first time use operation.
- When using the computer for the first time, do not connect any peripheral device except the battery pack and AC adaptor to the computer.

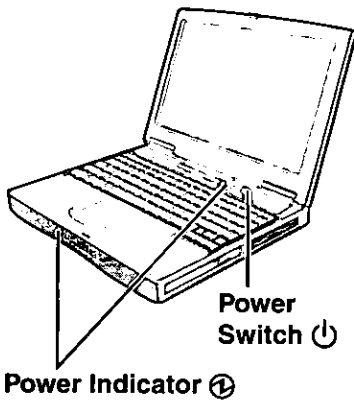
Handling the AC adaptor

- Do not twist or pull the AC power cord forcefully. Doing so may damage the connections.
- Use only the specified AC adaptor with your computer. Using an AC adaptor other than the one supplied might damage the battery and/or the computer.
- When the DC plug is not connected to the computer, disconnect the AC cord from your AC wall outlet.
- Problems such as sudden voltage drops may arise during periods of thunder and lightning. Since this could adversely affect your computer, an uninterruptible power source (UPS) is highly recommended unless running from the battery pack alone.



5 Open the display

- ① Slide the latch located at the front.
- ② Lift open the display.



6 Turn your computer on

Press the power switch and hold it for approximately one second until the power indicator turns on before releasing it.

CAUTION

- Do not press the power switch and hold it for more than four seconds; this will cause the power to be turned off forcibly.
- Do not press the power switch repeatedly.
- Once the computer is powered off, you must wait at least ten seconds before powering it on again.

7 Setup Windows

Moving the cursor () or clicking buttons can be performed with the touch pad (page 19).

Windows 2000

CAUTION

Do not press any key or touch the touch pad until [Windows 2000 Professional Setup] is displayed.

- ① At [Welcome to the Windows 2000 Setup Wizard], select [Next].
- ② After reading the agreement, select [I accept this agreement] or [I don't accept this agreement], then select [Next].

NOTE

If [I don't accept this agreement] is selected, the Windows setup will be aborted.

- ③ Select settings for your region, then select [Next].
- ④ Enter your name and organization and then select [Next].
- ⑤ Enter your computer name and administrator password and then select [Next].

CAUTION

Remember this password! If the password is forgotten, Windows cannot be operated.

- ⑥ Enter the correct date, time and time zone, then select [Next].
- ⑦ At [Networking Settings], select [Typical settings], then select [Next].
- ⑧ At [Workgroup or Computer Domain], select [No, this computer is not on a network, or is on a network without a domain], then select [Next].
The computer will restart.
- ⑨ At [Welcome to the Network Identification Wizard], select [Next].
- ⑩ At [Users of This Computer], select [Users must enter a user name and password to use this computer], then select [Next].
- ⑪ Select [Finish].
- ⑫ Enter your administrator password and select [OK].

CAUTION

After setting up Windows, a message may appear, and this computer may restart automatically. When restarting the computer, do not touch the keyboard or the touch pad.

NOTE

If you use the wireless LAN, be sure to refer to the Reference Manual's "Wireless LAN".

Windows XP

CAUTION

Do not press any key or touch the touch pad until [Windows XP Professional Setup] is displayed.

- ① At [Welcome to the Windows XP Setup Wizard], select [Next].
- ② After reading the agreement, select [I accept this agreement] or [I don't accept this agreement], then select [Next].

NOTE

If [I don't accept this agreement] is selected, the Windows setup will be aborted.

- ③ Select settings for your region, then select [Next].
- ④ Enter your name and organization and then select [Next].
- ⑤ Enter your computer name and administrator password and then select [Next].

CAUTION

Remember this password! If the password is forgotten, Windows cannot be operated.

(To next page)

First-time Operation

- Enter the correct date and time, then select [Next].


NOTE

It may take two to three minutes until the next screen is displayed. Wait, and do not press any keys, or touch the touch pad, etc.

- At [Networking Settings], select [Typical settings], then select [Next].
- At [Workgroup or Computer Domain], select [No, this computer is not on a network, or is on a network without a domain], then select [Next].
The computer will restart.

NOTE

If “Yes, make this computer a member of the following domain” is selected, the following message may be displayed: [An invalid domain was specified. Would you like to proceed for now and try joining a domain later?]. In this case, select [Yes]. After selecting [Yes], the computer will restart automatically, but sometimes the [Starting Windows] message will remain on the screen, and windows will not start up. If this happens, hold **Tab** down while pressing **Alt** until [Network Identification Wizard] is displayed on top, and follow the instructions on the screen.

- Enter your administrator password and select .
- Create an account and restart the computer.

CAUTION

- Remember this password! If the password is forgotten, Windows cannot be operated. You can create a password reset disk beforehand (☞ page 15).
- After setting up Windows, a message may appear, and this computer may restart automatically. When restarting the computer, do not touch the keyboard or the touch pad.

NOTE

- If you use the wireless LAN, be sure to refer to the Reference Manual’s “Wireless LAN”.

When creating a new user account:

- If you make mail settings, create password reset disks (☞ page 15), or conduct other related operations before creating the user account, you will be unable to use any previous mail history or settings.
- When you create the first new account, you can only select [Computer administrator].

Once a “Computer Administrator” account has been created, you can create additional limited user accounts.

Note also that only the added user account will be displayed in the Welcome screen. The account for the administrator created during Windows setup will not be displayed.

This concludes the first-time use operation guidelines.

NOTE

<Information for the drive>

Before using the drive for the first time, remove the protective sheet from the lens area. The protective sheet inside the drive delays the opening of the drive by about ten seconds. This delay is not a problem.

Information for Windows XP

- Depending on the Windows settings, installed applications, and drivers, menus and other displays may differ, or some functions (such as use of the password reset disk) may be inoperable. Check with your system administrator for details.
- You can select Classic view for the Control Panel or select the Classic Start menu. You can also change the way a user logs on or off. The procedure in this manual uses the method or view of the Windows XP default setting (not Classic view or Classic Start menu etc.).

- **Resetting the password**

Windows XP has a function to reset a forgotten password.

To use this function, you need to create a password reset disk beforehand following the steps below.

- 1 Select [start] - [Control Panel] - [User Accounts].
- 2 Select [Prevent a forgotten password] from [Related Tasks] menu of the account you have logged on and create a password reset disk following the on-screen instructions.

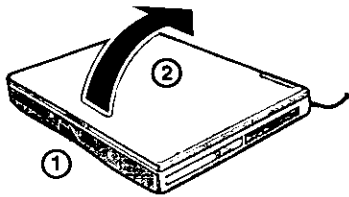
Store the password reset disk in a safe place.

· Only the logon password for each account can be reset.

The password set in the Setup Utility (📖 Reference Manual "Setup Utility") cannot be reset.

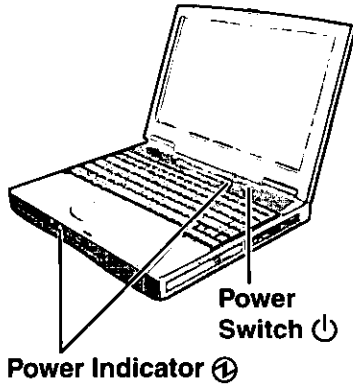
Starting Up/Shutting Down

Starting Up



1 Open the display

- ① Slide the latch located at the front.
- ② Lift open the display.



2 Turn your computer on

Press the power switch and hold it for approximately one second until the power indicator turns on before releasing it.

CAUTION

- While booting, avoid the following until the hard disk drive indicator (HDD) has turned off.
 - Connecting or disconnecting the AC adaptor.
 - Touching the power switch.
 - Performing any keyboard or touch pad or external mouse operations.
 - Closing the display.
 - Once the computer is powered off, you must wait at least ten seconds before powering it on again.
 - When the CPU temperature rises, the computer may not power on to prevent the CPU from overheating. Should this happen, allow the computer to cool down then switch the power on again.
- If the computer still does not power on, contact Panasonic Technical Support. (☎ page 39)

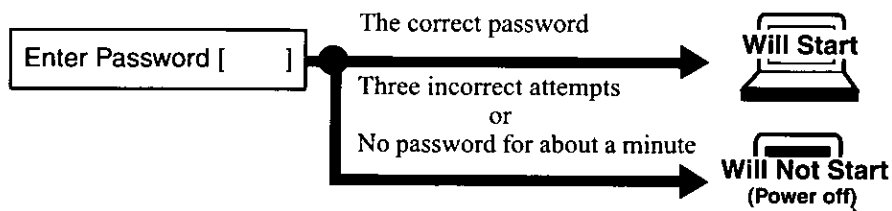
NOTE

You may encounter the following situations when the computer is turned on at very low temperatures. These functions are designed to prevent hard disk drive malfunctions that may occur at low temperatures.

Situation	Action
The computer turns on, and the message "Warming up the system (up to 20 minutes)" is displayed.	The computer is warming up before start up. Wait for the computer to start up (takes up to 20 minutes). However, the computer may fail to warm up and the message "Cannot warm up the system" will be displayed, and the computer will not start. In this case, turn off the computer, and leave it in an environment with a temperature of 5 °C {41 °F} or more for about an hour, after which try turning the power on once more.
<ul style="list-style-type: none">• The computer does not turn on.• The computer does not resume operation from standby or hibernation mode. (The power indicator blinks quickly in green.)	Leave it in an environment with a temperature of 5 °C {41 °F} or more for about an hour, then try turning the power on once more.

● If [Enter Password] is displayed

Enter your password* and press **Enter**. (Reference Manual "Security Measures")



* Supervisor Password or User Password set in the Setup Utility (not the Windows password).

● When an application or file that was previously displayed appears on your screen

The standby or hibernation mode has been set (Reference Manual "Standby/Hibernation Functions").

3 Log on to Windows

Windows 2000

After confirming that the hard disk drive indicator (HDD) has turned off, input the user name and password, then select [OK]. Until the correct user name and password are entered, the computer will not operate.

Windows XP

After confirming that the hard disk drive indicator (HDD) has turned off, select the user and input the password, then select [OK]. Until the correct password is entered, the computer will not operate.

4 Select your application

You are able to start working on your computer.

NOTE

- The power saving function is factory set, so if there is no input from a key, the touch pad or an external mouse (when one is connected) for a certain interval of time, the power to the LCD and hard disk may be turned off. The LCD will resume operation when the touch pad or an external mouse (when one is connected) is used or a key is pressed. The power to the LCD may be turned off even when an application software is being installed. In this case, because it is conceivable that a selection dialog box will be shown, do not press **Space** or **Enter** to attempt to resume from this condition as doing so may trigger a selection, but instead, press a key unrelated to the direct triggering of a selection, like **Ctrl**. In addition, when the computer is left alone, it automatically enters the standby or hibernation mode (Reference Manual "Standby/Hibernation Functions"). The computer will resume by pressing the power switch.

Windows XP

- When switching to a different user with the Fast User Switching function, it may not be possible to set the settings of the display. In this case, log off all users, and try the operation once more. If the problem persists, restart the computer.

Starting Up/Shutting Down

Shutting Down (power off your computer)

This procedure is for shutting down the computer without using the standby or hibernation function (☞ Reference Manual “Standby/Hibernation Functions”).

1 Save important data and close each application

2

Windows 2000

Select [Start] - [Shut Down]

Windows XP

Select [start] - [Turn Off Computer]

3

Windows 2000

Select [Shut down], then select [OK]

Windows XP

Select [Turn Off]

Your computer will power off automatically.

● Restarting your computer (without shutting down)

Windows 2000

Select [Restart], then select [OK].

Windows XP

Select [Restart].

CAUTION






Do not do the following during the shutdown/restart procedure.

- Connecting or disconnecting the AC adaptor.
- Touching the power switch.
- Performing any keyboard, touch pad or external mouse operations.
- Closing the display.






NOTE

- To shut down using the keyboard,

Windows 2000

Press , **U**, and select [Shut down] with    , then press **Enter**.

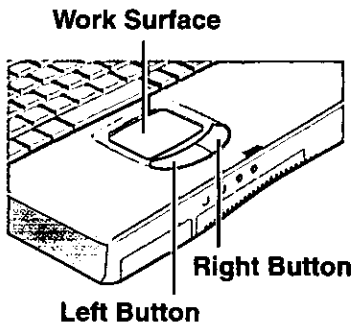
Windows XP

Press , **U**, and select [Turn Off] with    , then press **Enter**.

- To quickly resume computer operation after shutting down,

The standby or hibernation function is available (☞ Reference Manual “Standby/Hibernation Functions”).

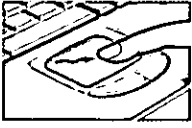
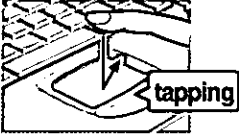
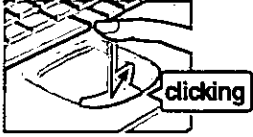
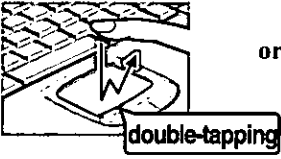
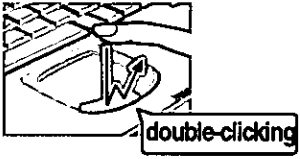
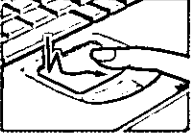


Touch Pad



Use the touch pad to move the cursor on the display and perform normal computer operations.

CAUTION

By design the touch pad is to be used with a finger tip only. Therefore, do not use any implement which causes damage on the work surface.

Function	Operation
Moving the Cursor	 <p>Move the tip of your finger lightly over the surface.</p>
Tapping/Clicking	 <p>tapping</p> <p>or</p>  <p>clicking</p>
Double-Tapping/ Double-Clicking	 <p>double-tapping</p> <p>or</p>  <p>double-clicking</p>
Dragging	 <p>or</p>  <p>Two quick taps, but on the second tap leaving your finger down (applying pressure) and moving it on the work surface.</p> <p>While holding down the button, moving your finger on the work surface.</p>
Scroll	 Reference Manual "Touch Pad")

NOTE

- Besides the above operations, operations such as Zoom and Pan are possible by allocating these functions to the buttons and/or pad. For more details, refer to [Mouse Properties]*.
- * **Windows 2000** : Select [Start] - [Settings] - [Control Panel] - [Mouse].
- * **Windows XP** : Select [start] - [Control Panel] - [Printers and Other Hardware] - [Mouse].
- The operations of Scroll, Pan or Zoom will differ depending on the application. There are cases the touch pad will not support these operations even with an application that supports the functions.

Handling the Touch Pad

- Do not place any object on the work surface or press down forcefully with sharp-pointed objects (e.g., nails) or hard objects that can leave marks (e.g., pencils and ball point pens).
- Try to avoid having any harmful substances such as oil, come in contact with the touch pad. The cursor may not work properly in such cases.
- When the touch pad becomes dirty:**
Wipe to remove dirt by using a dry soft cloth such as gauze or a soft cloth first applied with detergent diluted with water and then thoroughly wrung.
Do not use benzene or thinner, or rubbing alcohol. Doing so may adversely affect the surface, e.g., discoloration. In addition, do not use commercially-available household cleaners and cosmetics, as they may contain components harmful to the surface.

Reference Manual

The Reference Manual and the Important Tips can be accessed on your computer. When a printer is connected, these manuals can also be printed.

- The Reference Manual explains functions for you to make greater use of the computer, such as how to add peripheral devices, how the Setup Utility works, and other useful information. (Refer to the cover of this manual for a list of the main contents included.)
- Important Tips provides information on how to maximize use of the battery pack, which is necessary for computing away from your home or office.

Opening the Reference Manual or Important Tips

● Reference Manual

Windows 2000

Select [Reference Manual] in [Start] - [Programs] - [Panasonic] - [On-Line Manuals]

Windows XP

Select [Reference Manual] in [start]

● Important Tips

Select  on the desktop

Important Tips can also be accessed from the following menu.

Windows 2000

Select [Important Tips] in [Start] - [Programs] - [Panasonic] - [On-Line Manuals].

Windows XP

Select [Important Tips] in [start] - [All Programs] - [Panasonic] - [On-Line Manuals].

When the Reference Manual or Important Tips is started up for the first time, the License Agreement of the Acrobat Reader may be displayed. If it is displayed, after reading the agreement, select [Accept] to access the Reference Manual or Important Tips.

NOTE

- Illustrations may be difficult to view depending on the magnification. If the illustration is too small, magnify the display.
- When the taskbar is hidden at the bottom portion of Acrobat Reader, set the maximum display window size.
- If a printer is connected, we recommend printing pages. The illustrations and display samples may not print with a high quality.

Windows XP

- When switching to a different user with the Fast User Switching function, PDF files may not be printed properly. In this case, log off all users, and try the operation once more. If the problem persists, restart the computer.

List of Error Codes

When turning on the computer, if one of the following error codes or messages is displayed, follow the instructions shown below. If the problem persists, or if the error code or message displayed is not shown here, contact Panasonic Technical Support. (☞ page 39)

Error Code/Message	Action
Invalid system disk. Replace the disk, and then press any key	<ul style="list-style-type: none"> ● If a floppy disk is set in the floppy disk drive, remove the disk and press any key.
0211: Keyboard error	<ul style="list-style-type: none"> ● If an external keyboard or mouse is connected, disconnect these devices.
0251: System CMOS checksum bad - Default configuration used	<p>An error has occurred in the memory that stores the Setup Utility settings. This error occurs when the memory content is changed through some inadvertent operation by a program or other function.</p> <ul style="list-style-type: none"> ● Run the Setup Utility and load the default values, then change the settings to the appropriate values as needed. ● If the problem persists, the internal clock battery may need to be replaced. Contact Panasonic Technical Support.
0271: Check date and time settings	<p>The data and time setting are incorrect.</p> <ul style="list-style-type: none"> ● Run the Setup Utility and set the date and time correctly. ● If the problem persists, the internal clock battery may need to be replaced. Contact Panasonic Technical Support.
0280: Previous boot incomplete - Default configuration used	<p>Startup has failed repeatedly, so the Setup Utility settings have been returned to their default values, and the computer has been restarted.</p> <ul style="list-style-type: none"> ● Run the Setup Utility and load the default values, then change the settings to the appropriate values as needed.
Press <F1> to resume, <F2> to Setup	<ul style="list-style-type: none"> ● Write down the error details and press (F2) to run the Setup Utility. Confirm the settings, and change the settings to the appropriate values as needed.
Operating System not found	<p>The OS is not properly installed on the floppy disk or the hard disk that you are trying to boot from.</p> <ul style="list-style-type: none"> ● If the computer cannot be booted from the floppy disk, check the floppy disk drive to ensure that the disk is in fact bootable, and change it to another if not. ● If the computer cannot be booted from the hard disk, confirm whether the hard disk is properly recognized in [Information] menu of the Setup Utility. If the hard disk is recognized, perform the reinstallation procedure. If not, contact Panasonic Technical Support.

● How to run the Setup Utility

- 1 Restart the computer.
- 2 Press **(F2)** while [Panasonic] boot screen is displayed soon after the computer begins the startup procedure.

Dealing with Problems (Summary)

When a problem occurs, refer to this page. The “Reference Manual” also contains detailed information. If a problem appears to be related to a software application, read the software related manual. If you still cannot troubleshoot the problem, contact Panasonic Technical Support (☞ page 39). You can use the PC Information Viewer to check the computer’s usage status. (☞ Reference Manual “Dealing with Problems (advanced)”)

● Starting Up

<p>The power indicator or battery indicator is not lit</p>	<ul style="list-style-type: none"> ● Check the cable connection for the AC adaptor. ● Check to see if a fully charged battery is properly installed. ● Remove the battery pack and disconnect the AC adaptor, then connect them again.
<p>[Enter Password] is displayed</p>	<p>Input your Supervisor Password or User Password. If you have forgotten it, contact Panasonic Technical Support. (☞ page 39)</p>
<p>POST Startup Error(s) is displayed</p>	<p>☞ page 21</p>
<p>Windows startup, or an operation is extremely slow</p>	<p>Press (F9) in the Setup Utility (☞ page 21). This will restore the Setup Utility’s settings to their default values (except the password settings). Then, the Setup Utility must be run once again for you to input the appropriate operating environment settings. (The processing speed depends on the application software used, so this operation may not cause the processing speed to increase.)</p>
<p>The date and time are incorrect</p>	<ul style="list-style-type: none"> ● You can set the date and time using the following procedure. <ul style="list-style-type: none"> Windows 2000 : [Control Panel] - [Date/Time] Windows XP : [Control Panel] - [Date, Time, Language, and Regional Options] - [Date and Time] ● When the computer is connected to a LAN, confirm the date and time of the server. ● If you continue to experience problems, the internal battery maintaining the clock may need to be replaced. Contact Panasonic Technical Support. (☞ page 39) ● This computer will not correctly recognize the date and time starting from the year 2100 A.D.
<p>When resuming from the standby or hibernation mode, [Enter Password] does not appear even if a password has been set in the Setup Utility</p>	<p>Even when a password has been set in the Setup Utility, [Enter Password] does not appear when the computer resumes from the standby or hibernation mode.</p> <p>If you want to use the security function when using the standby or hibernation mode, use the Windows password as follows:</p> <p>Windows 2000 Set the password in [Control Panel] - [Users and Passwords], then add the check mark for [Prompt for password when computer goes off standby] in [Control Panel] - [Power Options] - [Advanced].</p> <p>Windows XP Select the account to change in [Control Panel] - [User Account] and set the password, then add the check mark for [Prompt for password when computer resumes from standby] in [Control Panel] - [Performance and Maintenance] - [Power Options].</p>
<p>When the administrator password is forgotten</p>	<p>Windows 2000 After reinstalling, setup Windows and then set the password again.</p> <p>Windows XP If you have created a password reset disk (☞ page 15), a message is displayed when you fail to correctly enter the password. Follow the message’s instructions and set the password again by using the password reset disk.</p> <p>If you have not created a password reset disk, after reinstalling, setup Windows and then set the password again.</p>

Starting Up (continued)

<p>When the previous item is not the cause</p>	<ul style="list-style-type: none"> ● Press (F9) in the Setup Utility (☞ page 21). This will restore the Setup Utility's settings to their default values (except the password settings). ● Try removing all peripheral devices. ● Check a disk error using the following procedure. <ol style="list-style-type: none"> 1 Display [Local Disk (C:) Properties]. <ul style="list-style-type: none"> ☞Windows,2000 Select [Local Disk(C:)] with the right button in [My Computer], and select [Properties]. ☞Windows,XP Select [Local Disk(C:)] with the right button in [start] - [My Computer], and select [Properties]. 2 Select [Tools] - [Check Now]. 3 Select [Start] after selecting required items in [Check disk options]. ● At startup, hold down (F8) when [Panasonic] boot screen disappears, and release your finger when the Windows Advanced Option Menu is displayed. Start the computer in Safe Mode, and confirm the details of the error.
--	--

Display

<p>No display after powering on</p>	<ul style="list-style-type: none"> ● When there is no display to an external display, <ul style="list-style-type: none"> • Check your cable connection to the external display. • Confirm your display is powered on. • Check the settings for your external display. ● Try changing the display by pressing (Fn) + (F3). ● If you want to switch the display destination repeatedly by pressing (Fn) + (F3), make sure that the display destination has switched completely each time before pressing (Fn) + (F3) again. ● When displaying only through an external display, if the computer is shut down by using the standby or hibernation function, there will be no display on the LCD unless the external display is connected when operations are resumed. In this case, connect the external display or press (Fn) + (F3).
<p>The power has not been turned off, but after a certain period of time, there is no display</p>	<ul style="list-style-type: none"> ● Has the computer been set to the power-saving mode? To resume operation of your computer from the condition the power of the display is off (for energy conservation purposes), press any key unrelated to the direct triggering of a selection, like (Ctrl). ● To save power, your computer may have automatically entered the standby or hibernation mode. (☞ <small>Reference Manual</small> "Computing On the Road") Press the power switch.
<p>When the battery pack is used, the screen is darker than when the AC adaptor is connected</p>	<p>Press (Fn) + (F2) and adjust the brightness. Note, however, that when the brightness is increased, the battery running time will become shorter. Brightness can be set to separate levels for when the AC adaptor is connected and when it is disconnected.</p>
<p>The cursor cannot be controlled properly</p>	<ul style="list-style-type: none"> ● If you are using an external mouse, ensure that the external mouse has been connected correctly. ● Restart the computer by using the keyboard (Press (B), (U), and select [Restart] with (→) (←) (↑) (↓), then press (Enter)). ● If the computer does not respond to keyboard commands, read "No response" (☞ page 25).
<p>An afterimage appears (e.g., green, red, and blue dots remain on the display) or there are dots not displaying the correct colors</p>	<ul style="list-style-type: none"> ● If an image is displayed for a prolonged period of time, an afterimage may appear. This is not a malfunction. The afterimage will disappear when a different screen is displayed. ● High-precision and advanced technologies are necessary in the production of color liquid crystal displays (color LCDs). Therefore, if 0.002% or less of the picture elements either fail to light or remain constantly lit (that is, more than 99.998% of elements are functioning properly), no defect is considered to exist.
<p>The screen becomes disordered</p>	<p>Changing the number of colors of the display may affect the screen. Restart the computer.</p> <p>☞Windows,XP</p> <ul style="list-style-type: none"> ● When using Dualview, use the same display colors for the external display as those used by the LCD. ● When using Dualview, do not press (Fn) + (F3). ● Restart your computer immediately after enabling or disabling Dualview.

Dealing with Problems (Summary)

● Display (continued)

The external display no longer displays properly	When an external display not compatible with the power saving mode is used with the computer, the display may not function correctly when the computer enters the power saving mode. In such cases, turn off the power to the external display.
When the screensaver is set, an error will occur during a resume operation	When the computer automatically enters the standby or hibernation mode while the screensaver is running, an error may occur during a resume operation. In such cases, turn off the screensaver or try changing the pattern of the screensaver.
When an MPEG file is being played with Media Player, the display destination cannot be switched using (Fn) + (F3)	The display destination cannot be switched while an MPEG file is playing. Stop playing the MPEG file before switching the display destination.
Windows XP An error occurs or the computer freezes while using Dualview	If you use a 3D screen saver while in Dualview mode at a high resolution, an error may occur or the computer may freeze. Under these conditions, do not use a 3D screen saver.

● Fast User Switching function **Windows XP**

Some applications may not work properly	<p>When switching to a different user with the Fast User Switching function, the following problems may occur.</p> <ul style="list-style-type: none"> • Some applications may not work properly (for example, PDF files may not be printed properly). • It may not be possible to set the settings of the display. • A serial mouse may not work. • (Fn) + (F3) may not work. • The wireless LAN cannot be used. • The B's CLiP icon will no longer be shown on the taskbar and a CD-RW disc cannot be written on. <p>In this case, log off all users, and try the operation once more. If the problem persists, restart the computer.</p>
---	---

● Battery Indicator

The red indicator lights	The battery level is very low (the charge is approx. 9% or less). Connect the AC adaptor. You can use the computer when the indicator light is orange. If you do not have an AC adaptor, save your data and power off your computer. After replacing the battery pack with a fully charged one, turn your computer on.
The red indicator blinks	Quickly save your data and power off your computer. Remove the battery pack and disconnect the AC adaptor, then connect them again. If the problem persists, contact Panasonic Technical Support (☎ page 39). The battery pack or recharging function may be defective.



● Reference Manual

The Reference Manual is not displayed	<p>Is Acrobat Reader installed?</p> <p>If Acrobat Reader is not installed, run [c:\util\reader\acroreader51_enu_full.exe] in [Start]* - [Run] to reinstall the program. When installing the program, do not change the installation destination folder. If the destination folder is changed, the Reference Manual cannot be opened from the [Start]* menu.</p> <p>Windows XP : [start]</p>
---------------------------------------	--

● Shutting down

Windows cannot be shut down or restarted	If a USB device is connected, try removing it.
--	--

● Others

No response	<ul style="list-style-type: none">● Press Ctrl + Shift + Esc to open Task Manager and close the software application which is not responding.● After shutting down by pressing the power switch for more than four seconds, press the power switch to power on and open the application again. If the program no longer works normally, delete the program using the following procedure. Then reinstall the program.  : [Control Panel] - [Add/Remove Programs]  : [Control Panel] - [Add or Remove Programs]
-------------	--

Reinstalling Software

When reinstallation procedure is performed, the contents of the hard disk will be erased. Be sure to back up any critical data that is on your hard disk before running the reinstallation procedure.

The reinstallation procedure will return the computer to its original condition.

- If you have created partitions for data, the data may be erased or become corrupt as a result of the reinstallation procedure.

Before Reinstallation

● Preparing

You will need the Product Recovery DVD-ROM (included).

● Important

- Before the reinstallation procedure, remove all peripherals.
- Be sure the AC adaptor is connected until the reinstallation procedure is completed.
- Even if reinstallation is executed, the number of times that the DVD video region code can be set will not be returned to the state set at the time of factory shipment. (☞ page 31)

Reinstalling

- 1 Turn on computer, and press **(F2)** while [Panasonic] boot screen is displayed.
The Setup Utility will start up.
If the password has been set, enter the Supervisor Password.
- 2 Write down all of the contents of the Setup Utility and then press **(F9)**.
At the confirmation message, select [Yes] and then press **(Enter)**.
- 3 Select [Boot] menu, then select [CD Drive] and press **(F6)** until [CD Drive] is at the top of the [Boot] menu.
- 4 Place Product Recovery DVD-ROM into the CD drive.
- 5 Press **(F10)**.
At the confirmation message, select [Yes] and press **(Enter)**. The computer will restart.
- 6 Press **(1)** to execute [1. [Recovery]].
(You can cancel this operation by pressing **(0)**.)
The License Agreement screen should appear.
- 7 Press **(1)** to select [1. Yes, I agree to the provisions above and wish to continue!].
This screen should appear.

Windows 2000

```
-----  
Select a number  
-----  
Reinstalling : Windows(R) 2000 Professional  
1. Reinstall Windows to the whole HDD to factory default.  
2. Make two partitions, for the operating system and data. And reinstall  
   Windows to the operating system partition.  
   (All existing partitions on HDD will be lost.)  
3. Reinstall Windows to the first partition.  
0. Cancel  
-----
```

Windows XP

```
-----  
Select a number  
-----  
Reinstalling : Windows(R) XP Professional  
1. Reinstall Windows to the whole HDD to factory default.  
2. Make two partitions, for the operating system and data. And reinstall  
   Windows to the operating system partition.  
   (All existing partitions on HDD will be lost.)  
3. Reinstall Windows to the first partition.  
0. Cancel  
-----
```

- 8 Make a selection from the menu.
 - When selecting [2], enter the basic partition size for the operating system installation and press **(Enter)**.
(The data partition size is the remainder after subtracting the basic partition size.)
 - To select [3], the initial partition size must be 6 GB or more of the hard disk size. Reinstallation cannot be performed with a small partition size.

- 9 At the confirmation message, press **(Y)**.
The operation of reinstallation for the hard disk starts automatically. (The operations take about 15 minutes.)

CAUTION

Do not interrupt the reinstallation procedure before completion, for example by turning off the computer or pressing **(Ctrl) + (Alt) + (Del)**, as this may prevent Windows from starting up, or may cause data to be lost so that the reinstallation procedure cannot be executed.

- 10 After the reinstallation procedure completes, the following message will appear on the display.
Remove the Product Recovery DVD-ROM.

Windows 2000

[Recovery] is complete.
Windows(R) 2000 Professional install wizard will start after reboot.
Please Remove the Product Recovery DVD-ROM, and press
Ctrl + Alt + Del(Delete) to reboot.

Windows XP

[Recovery] is complete.
Windows(R) XP Professional install wizard will start after reboot.
Please Remove the Product Recovery DVD-ROM, and press
Ctrl + Alt + Del(Delete) to reboot.

- 11 Restart the computer by pressing **(Ctrl) + (Alt) + (Del)** and press **(F2)** while [Panasonic] boot screen is displayed.

The Setup Utility will start up.

If the password has been set, enter the Supervisor Password.


- 12 Press **(F9)**.

At the confirmation message, select [Yes] and then press **(Enter)**. (The Setup Utility settings will return to their default values. Even the security settings with the exception of the password(s) will return to their default values.)

- 13 Press **(F10)**.

At the confirmation message, select [Yes] and press **(Enter)**.

- 14 Perform the setup procedure for Windows by following the instructions on the screen.

 **Windows 2000** page 12 - 13

Windows XP page 13 - 14

- 15 Run the Setup Utility and change the settings where necessary.

<Changing the drive letter>

You can change the drive letter for the CD drive or hard disk drive by the following steps.

- Drive letters can only be changed when two or more partitions have been created on the hard disk drive. The name of the C: drive cannot be changed.
- We recommend that you make these changes before installing applications.

Windows 2000

- 1 Select [Start] - [Settings] - [Control Panel] - [Administrative Tools] - [Computer Management].
- 2 Select [Disk Management] from [Storage].
- 3 Right click on the partition of the hard disk or the name of the CD drive and select [Change Drive Letter and Path...].
- 4 Select [Edit].
- 5 Select [Assign a drive letter] and select the new drive letter, and then select [OK].
- 6 At the confirmation message, select [Yes].

Windows XP

- 1 Select [start] - [Control Panel] - [Performance and Maintenance] - [Administrative Tools] - [Computer Management].
- 2 Select [Disk Management] from [Storage].
- 3 Right click on the partition of the hard disk or the name of the CD drive and select [Change Drive Letter and Paths...].
- 4 Select [Change].
- 5 Select [Assign the following drive letter] and select the new drive letter, and then select [OK].
- 6 At the confirmation message, select [Yes].

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Hard Disk Data Erase Utility

This computer is equipped with a utility for completely erasing hard disk data.

When disposing of or transferring ownership of this device, erase all data on the hard disk in order to prevent the theft of hard disk data following the steps below.

The hard disk data erase utility erases data using an “overwriting” method, but there is a possibility that due to malfunctions or other operational errors, data may not be completely erased. There are also specialized devices that may be able to read data that has been erased using this method. If you need to erase highly confidential data, we recommend that you contact a company that specializes in this process. Matsushita Electric Industrial Co., Ltd. will bear no responsibility for losses or damages suffered as a result of the use of this utility.

Preparing

You will need the Product Recovery DVD-ROM (included).

NOTE

- Be sure the AC adaptor is connected until the procedure is completed.
- This utility can only be used for internal hard disk. It cannot be used to erase data from external hard disks.
- This utility cannot erase data from damaged disk.
- This utility cannot erase data for specific partitions.
- After executing this utility, the computer cannot be booted from the hard disk.

Procedure

- 1 Turn the computer on, and press **F2** while [Panasonic] boot screen is displayed. The Setup Utility will start up.
If the password has been set, enter the Supervisor Password.
- 2 Select [Boot] menu, then select [CD Drive] and press **F6** until [CD Drive] is at the top of [Boot] menu.
- 3 Place the Product Recovery DVD-ROM into the CD drive.
- 4 Press **F10**.
At the confirmation message, select [Yes] and press **Enter**.
The computer will restart.
- 5 Press **2** to execute [2. [Erase HDD]].
(You can cancel this operation by pressing **0**.)
- 6 At the confirmation message, press **Y**.
- 7 When [<<< Start menu >>>] is displayed, press **Enter**.
- 8 The approximate time required for erasing data will be displayed.
Press **Space**.
- 9 At the confirmation message, press **Enter**. The operation of erasing the hard disk starts.
(If necessary, the “hard disk data erase” operation can be cancelled after it has begun by pressing **Ctrl** + **C**. If the operation is cancelled before being completed, a part of the data will not be erased.)
- 10 After the operation is complete:
Under normal conditions, the message [Hard disk data has been deleted.] will be displayed.
If a problem occurred during the operation, an error message will be displayed.
- 11 Remove the Product Recovery DVD-ROM, then turn off the computer by using the power switch.

WinDVD

WinDVD is a software application for DVD playback.

Here, you will find explanations and general information on the installation procedure and how to access the online manual.

Installing WinDVD

CAUTION

- Close all other software application before running the Setup program for WinDVD for added safety.
- Log on with the administrator authority.

- ① Set the Product Recovery DVD-ROM in the CD drive.
The WinDVD setup program will not run automatically, therefore input [X:\windvd\setup.exe] in [Start]* - [Run] and select [OK]. ("X" is the drive letter. You can change the letter to suit your preference.)
* (WindowsXP) :[start]
- ② Select [Next] at the Welcome Message.
- ③ After reading the "License Agreement"*, select [Yes] if you agree to the terms.
* Refer to the "LIMITED USE LICENSE AGREEMENT" (☞ page 28)
- ④ Follow the on-screen instructions and install WinDVD.


<Confirmation of the DVD-ROM drive settings>

To run WinDVD, it is necessary to make the following settings.


- ① (Windows2000) Select [Start] - [Settings] - [Control Panel] - [System] - [Hardware] - [Device Manager].
(WindowsXP) Select [start] - [Control Panel] - [Performance and Maintenance] - [System] - [Hardware] - [Device Manager].
- ② Double-click [Primary IDE Channel] for [IDE ATA/ATAPI controllers].
- ③ Select [Advanced Settings], and confirm that [Transfer Mode] is set to [DMA if available] for [Device 0].
- ④ Double-click [Secondary IDE Channel] for [IDE ATA/ATAPI controllers] and perform as the step ③.

Running WinDVD

(Windows2000)

Select [Start] - [Programs] - [InterVideo WinDVD] - [InterVideo WinDVD] or select  on the desktop.

(WindowsXP)

Select [start] - [All Programs] - [InterVideo WinDVD] - [InterVideo WinDVD] or select  on the desktop.

<How to access the online manual>

Select "?" of the WinDVD control panel.

NOTE

- Do not enter the standby or hibernation mode while WinDVD is running.
- Do not start WinDVD while the hard disk drive indicator is blinking immediately after the computer was started up.
- If you maximize the video display window, you can return to the original window size by double-clicking over the images.
- During video playback (while the access lamp is on), do not eject the disc.
- Do not use other applications or the Command Prompt, and do not change the settings of the screen properties.
- In some cases, when the number of colors for the display is increased, a message appears and the DVD cannot be played. If this happens, reduce the number of display colors.
- Immediately after resuming from a pause, frame dropping may occur depending on the operating environment or DVD video (images or sounds are disrupted).
- In the Extended Desktop (Dualview) or simultaneous (internal/external) display mode, there are times when images or video are not displayed correctly.
- During a prolonged period of rapid advance, the pause mode may be established at some point. If this happens, exit WinDVD, and restart.

About Regions Setting

The DVD-Video has a region code that is fixed according to the region where it is sold. In order to play a DVD-Video, the region code of the player software and of the drive must match that of the DVD-Video.

<Example>

For U.S.A. and Canada: "1"

For Europe: "2"

The region code is not set prior to the shipment of this drive. Therefore, operations will differ depending on the first DVD-Video played.

- In the case of a DVD-Video with a specific region code:
The drive will automatically be set with the same region code as the DVD-Video.
- In the case of any other DVD-Video:
[Confirm Region] appears. Select region code and select [OK]. Play now begins.
([Confirm Region] may not be displayed for some DVD-Videos. To confirm the current region code and the number of settings remaining, right-click on the WinDVD screen and select [Setup] - [Region].)

CAUTION

- The region code can be set a total of five times, including the initial setting. Proceed very carefully, because after the fourth change has been made, the region code set last is fixed and no further changes can be made.
- The user must take responsibility for any trouble that results from illegally changing or altering the region code.

NOTE

[Confirm Region] will also be displayed if a DVD-Video with one region code is inserted into a drive for which another region code has already been set.

About Playback of a DVD Created the DVD recorder or DVD MULTI drive

Playable DVD media: DVD-Video, DVD-RAM, DVD-R, DVD-RW

However, the following restrictions apply.

- In order to play DVD-R and DVD-RW, it must be finalized (a process that enables it to play on other DVD players etc.). For information on the finalizing method used by your DVD recorder, refer to its operating instructions.
- The following media recorded in the VR format can be played only by the user with the administrator's authority:
 - DVD-RW
 - DVD-RAM
- DVD-RAM formatted in FAT 32 cannot be played.
- Depending on the DVD recorder or the manufacturer of the media used for creation, it may not be playable.

How to access the online manual

Select "?" of the WinDVD control panel.

SUPPORT INFORMATION

If WinDVD does not operate properly, we recommend carefully reading the online help file first for problems with the operating environment or operations.

If you still cannot troubleshoot the problem, contact InterVideo, Inc.

URL: <http://www.intervideo.com/>

E-mail: support@intervideo.com

B's Recorder/B's CLiP

<Model with a DVD-ROM & CD-R/RW drive>

"B's Recorder" and "B's CLiP" are CD recording software applications developed by B.H.A Corporation.

Here, explanations are given on general information about B's Recorder and B's CLiP, the installation procedure, and how to access the online manual. Refer to the online manual concerning the detailed use of the software application (☞ page 34).

● Applicable Media

- CD-R* (one-time recordable CD media)
- CD-RW (rewritable CD media)

* Applicable only for B's Recorder. It cannot be used for B's CLiP.

About Copies

When writing to discs, make sure that you are not infringing any copyrights.

It is illegal to copy audio CDs for non-personal use.

When backing up software, make sure that you are not infringing any software copyrights for that product.

Before Installing the Software

Windows 2000

Uninstall Adaptec CD-Burning Plug-in.

- 1 Select [Start] - [Settings] - [Control Panel] - [Add/Remove Programs].
- 2 Select [Windows Media Player 7] - [Change/Remove].
- 3 Select [Remove Windows Media components] and select [Next].
- 4 Select [Adaptec CD-Burning Plug-in] from the components list, and select [Next].
- 5 If the message "Windows Media setup is now ready to uninstall" appears, select [Next].
- 6 Select [Finish] and restart the computer.

Windows XP

Select [(X:)]* in [start] - [My Computer] with the right button, select [Properties] - [Recording], then delete the check mark for [Enable CD recording on this drive].

(Delete the check mark for [Enable CD recording on this drive] every time a new user is added.)

* "X" is the drive letter. You can change the letter to suit your preference.

Installing the Software

CAUTION

- Close all other software application before running the Setup program for B's Recorder and B's CLiP for added safety.
- Log on with the administrator authority.
- Take care not to lose the serial number.

- ① Set "B's Recorder GOLD/B's CLiP" disc in the drive.
[B.H.A setup launcher] screen will appear (allow some time for disc recognition). When the setup program will not run automatically, input [X:\Setuputil.exe]*1 in [Start]**2 - [Run] and select [OK].

Windows 2000

At the message, select [OK].

- ② Select [B's Recorder GOLD5] and follow the on-screen instructions.
During the course of the installation process, you will be asked to input a serial number. Input the serial number marked on the sticker and the disc.
- ③ Upon completion of the installation, select [Yes, I want to restart my computer now], then select [Finish]. The computer will restart.
- ④ Input [X:\Setuputil.exe]*1 in [Start]**2 - [Run] and select [OK].
[B.H.A setup launcher] screen will appear.

Windows 2000

At the message, select [OK].





- ⑤ Select [B's CLiP] and follow the on-screen instructions.
During the course of the installation process, you will be asked to input a serial number. Input the serial number marked on the sticker and the disc.
- ⑥ Upon completion of the installation, select [Yes, I want to restart my computer now], then select [Finish]. The computer will restart.

*1 "X" is the drive letter. You can change the letter to suit your preference.


**2 (Windows XP): [start]

B's Recorder/B's CLiP

CAUTION

- You cannot eject the disc by using the eject button on the drive while  is displayed on the taskbar. To eject the disc in this case, select  with the right button and select [Eject].
Do not eject discs in any other way except the one described above.
- When formatting a disc with B's CLiP, select  or  with the right button and select [Format]. Do not select [Format] in [My computer].
After formatting the disc, eject it then re-insert before using it.
- When settings are changed using the following method, only a user with administrator authority can make the settings:
Select the CD drive icon or the B's CLiP icon on the taskbar with the right button, and select [Properties] - [B's CLiP Page Settings].
- Be sure to shut down B's Recorder before logging off Windows.

Windows XP

- Do not use the Fast User Switching function.
If this function is used,  will no longer be shown on the user taskbar after the switching is complete. (If this happens, return to the original user without using the Fast User Switching Function, and then log on with the user you want to use.)

NOTE

- Refer to "CD drive" in the Reference Manual for information about recommended discs.
- When B's Recorder finishes writing, the tray opens automatically. (If you close the opened tray and press [OK] after completing a copy operation, the tray will open again.)
- When creating an Audio CD using B's Recorder, taking out the CD may become impossible if the operation is canceled. If this happens, take out the CD after starting the software up again.

Windows 2000

- If CD-RW disc with B's CLiP format is removed while the content of that media is displayed in Explorer, the contents of the media may remain displayed in Explorer. This will not affect the computer's operation. When another CD-RW disc is inserted, the Explorer display will be updated.

How to access the Online Manual

● B's Recorder

Windows 2000 : Select [Start] - [Programs] - [B.H.A.] - [B's Recorder GOLD5] - [User's Manual].

Windows XP : Select [start] - [All Programs] - [B.H.A.] - [B's Recorder GOLD5] - [User's Manual].

● B's CLiP

Windows 2000 : Select [Start] - [Programs] - [B.H.A.] - [B's CLiP] - [User's Manual].

Windows XP : Select [start] - [All Programs] - [B.H.A.] - [B's CLiP] - [User's Manual].

SUPPORT INFORMATION

If B's Recorder and B's CLiP do not operate properly, we recommend carefully reading the online help file first for problems with the operating environment or operations.

If you still cannot troubleshoot the problem, contact B.H.A.

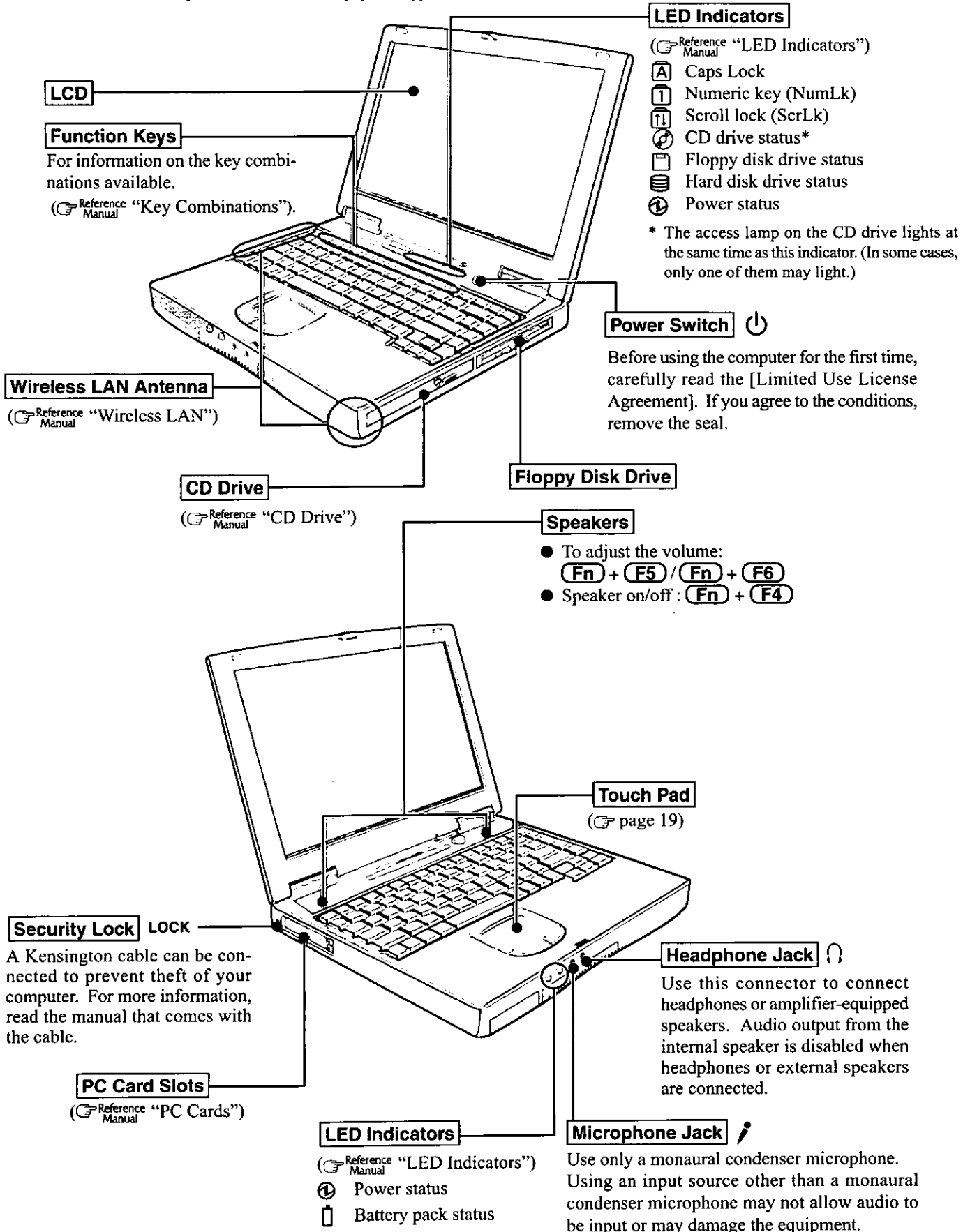
URL: <http://www.bhacorp.com/support/>

<http://www.bha.co.jp/support/> (Japanese)

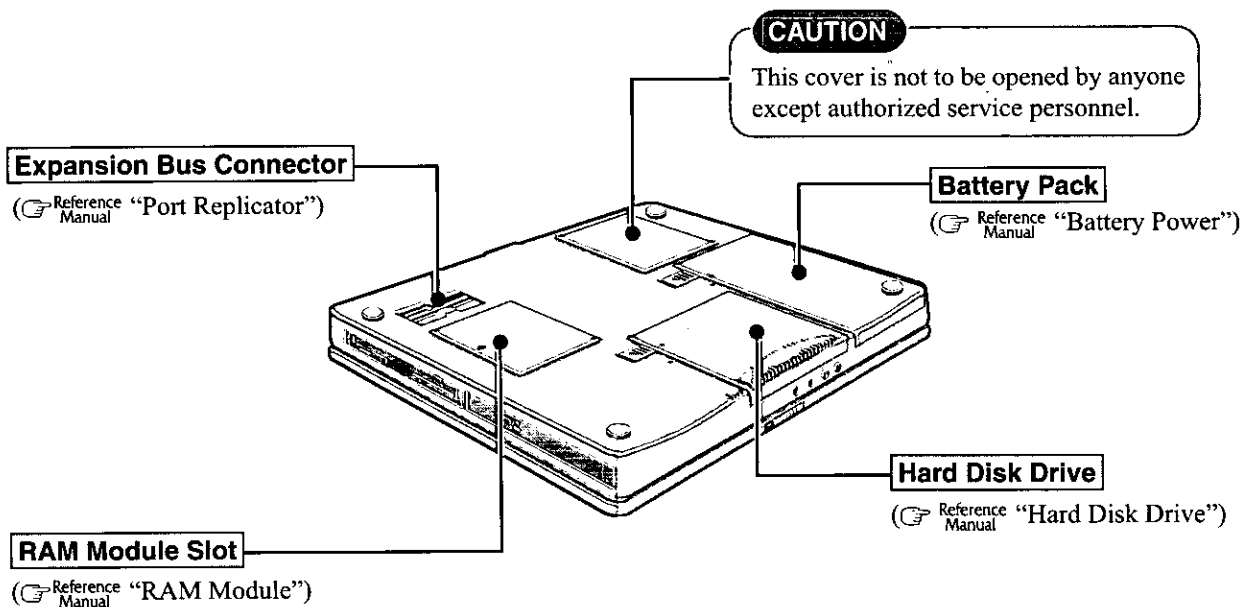
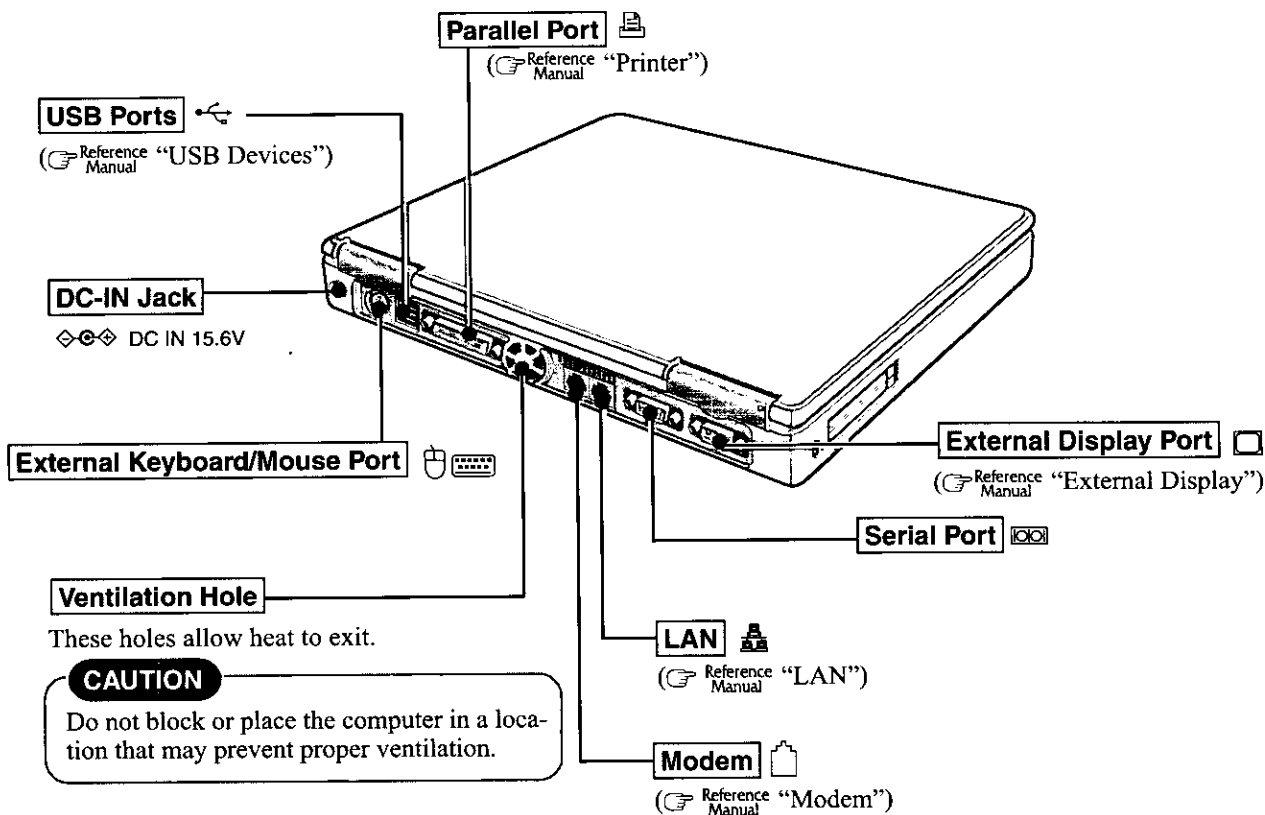
area	language	e-mail
U.S./Canada/Australia	English, French (Canada)	winntsupport@bhacorp.com
Europe	English, German, French	eurosupport@bhacorp.com
Asia	Chinese	asiastsupport@bhacorp.com

Names and Functions of Parts

The illustrations shown may differ from the actual physical appearances.



Names and Functions of Parts



A lithium ion battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

L'appareil que vous vous êtes procuré est alimenté par une batterie au lithium-ion. Pour des renseignements sur le recyclage de la batterie, veuillez composer le 1-800-8-BATTERY.

Specifications

This page provides the specifications for the basic model CF-48G4KFUDM/CF-48G4KMUDM/CF-48G4KFUKM/CF-48G4KMUKM. The model number will change depending on the configuration of the unit, such as, CPU speed, memory size, HDD size, Operating System, LCD type, and whether a DVD-ROM & CD-R/RW drive or a DVD MULTI drive is included or not.

To check the model number:

Check the bottom of the computer or the box the computer came in at the time of purchase.

To check CPU speed, memory size and the hard disk drive (HDD) size:

Run the Setup Utility (☞ Reference Manual "Setup Utility") and select [Information] menu.

Confirm the required information by checking the following items.

CPU speed: [CPU Speed]
 Memory size: [System Memory]
 Hard disk drive size: [Primary Master]

● Main Specifications

Model No.	CF-48G4KFUDM CF-48G4KMUDM	CF-48G4KFUKM CF-48G4KMUKM
CPU	Intel® Pentium®M Processor 1.5 GHz L2 (Second) Cache Memory: 1 MB	
Memory (Expandable to)	256 MB (768 MB Max.)	
Video Memory	64 MB	
LCD	Type	14.1 type (TFT)
	Displayed Colors*1	256/65536/16M colors (640 x 480 dots/800 x 600 dots/1024x768 dots)
External Display	256/65536/16M colors (640 x 480 dots/800 x 600 dots/1024x768 dots/1280 x 1024 dots/1600 x 1200 dots/2048x1536 dots)*2	
Hard Disk Drive	40 GB*3	
Keyboard	87 keys	
Battery Pack	Li-ion 11.1 V, 6.6 Ah	
Operating Time*4	Approx. 4.3 hours - 7.0 hours*6 (Approx. 6.0 hours*7)	Approx. 2.5 hours - 7.8 hours*6 (Approx. 7.3 hours*7)
Charging Time*4	Power On	Approx. 3.8 hours
	Power Off	Approx. 3.8 hours
Clock Battery	Coin type lithium battery 3.0 V	
AC adaptor*5	Input	100 V - 240 V AC, 50 Hz/60 Hz
	Output	15.6 V DC, 5.0 A
Power Consumption*8	Approx. 70 W*9 / Approx. 90 W (maximum when recharging in the ON state)	

*1 A 16 M color display is achieved by using the dithering function.

: Setting 256 color depth or the resolution of 640 x 480 is not recommended.

: 256 color depth and the resolution of 640 x 480 are not supported.

*2 Maximum resolution depends on the specifications of the external display.

: Setting 256 color depth or the resolution of 640 x 480 is not recommended.

: 256 color depth and the resolution of 640 x 480 are not supported.

*3 1 GB = 10⁹ bytes

*4 Varies depending on the usage conditions.

*5 The AC adaptor is compatible with power sources up to 240 V AC adaptor.

This computer is supplied with a 125 V AC compatible AC cord.

*6 Measured using BatteryMark™ Version 4.0.1 (LCD brightness: Maximum - Minimum)

*7 Measured using MobileMark™ 2002 (LCD brightness: 60 cd/m²)

*8 Approx. 0.9 W when the battery pack is fully charged (or not being charged) and the computer is OFF.

Approx. 1.5 W when the [Wake up from LAN] has been enabled.

*9 Rated power consumption.

Specifications

● Main Specifications

Model No.		CF-48G4KFUDM/CF-48G4KFUKM	CF-48G4KMUDM/CF-48G4KMUKM	
Slots	PC Card Slots	Two Type I or Type II, or one Type III		
	Allowable current (total for two slots)	3.3 V: 400 mA 5 V: 400 mA		
	RAM Module Slot*1	200-pin, SO-DIMM, DDR SDRAM, PC2100 Compliant		
Interface	Parallel Port	Dsub 25-pin female		
	External Display Port	Mini Dsub 15-pin female		
	Serial Port	Dsub 9-pin male		
	Microphone Jack*2	Miniature jack, 3.5 DIA		
	Headphone Jack	Miniature jack, 3.5 DIA Impedance 32 Ω, Output Power 4 mW x 2		
	External Keyboard/ Mouse Port	Mini DIN 6-pin female		
	Expansion Bus Connector	Dedicated 100-pin female		
	USB Port	4-pin x 2, USB 2.0		
	Modem	RJ-11 Data: 56 kbps (V.92 & K56flex) FAX:14.4 kbps		
	LAN	RJ-45 IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX		
	Wireless LAN	802.11b		
Pointing Device		Touch Pad		
Speaker		Stereo Speaker		
Sound		WAVE and MIDI playback		
Floppy Disk Drive		720 KB/1.44 MB (two-mode)		
Drive	Supports	DVD-ROM	DVD-5, DVD-9, DVD-10, DVD-18, DVD-R*3 (3.95 GB, 4.7 GB), DVD-RW*3 (4.7 GB), DVD-RAM*3*4 (2.6 GB, 4.7 GB)	DVD MULTI Drive DVD-5, DVD-9, DVD-10, DVD-18, DVD-R (3.95 GB*3, 4.7 GB), DVD-RW (4.7 GB), DVD-RAM*4 (2.6 GB*3, 4.7 GB)
		CD-ROM	CD-Audio, CD-ROM, CD-R, Photo CD, VideoCD, Enhanced Music CD, CD-RW, CD-TEXT	
	CD-ROM read*5	24X speed (Max.)		
	DVD-ROM read*5	8X speed (Max.)		
	CD-R write*6	4X speed, 8x speed, 16X speed (Max.), 24X speed (Max.)	4X speed, 8X speed, 16X speed (Max.)	
	CD-RW write	4X speed		
	High-Speed CD-RW write	4X speed, 8X speed, 10X speed	4X speed, 8X speed	
	Environment	In use	Temperature	5 °C to 35 °C {41 °F to 95 °F}
Humidity			30% to 80% RH (No condensation)	
Not in use		Temperature	-20 °C to 60 °C {-4 °F to 140 °F}	
		Humidity	30% to 90% RH (No condensation)	
Physical Dimensions (W X H X D)		307 mm X 45 mm X 264 mm {12.1 " X 1.8 " X 10.4 "}		
Weight		Approx. 3.4 kg {Approx. 7.5 lb.}		

*1 Only a RAM card designed for PC2100 can be added.

*2 Use only a monaural condenser microphone.

*3 Read only.

*4 In the case of DVD-RAM, only non-cartridge discs or removable cartridge discs can be used.

*5 If an unbalanced disc (e.g., a disc with which the balance has been displaced from the center) is inserted, the speed may become slower if there are large vibrations while the disc is rotating.

*6 Depending on the disc, the writing speed may become slower.

● Software

Model No.	CF-48G4KFUDM/CF-48G4KMUDM	CF-48G4KFUKM/CF-48G4KMUKM
Operating System	Microsoft® Windows® 2000 Professional with Service Pack4	Microsoft® Windows® XP Professional with Service Pack1a
Utility Programs	Setup Utility, DMI Viewer, Adobe® Acrobat® Reader, Hard Disk Data Erase Utility*5, PC Information Viewer, Intel® PROSet	

*5 The Product Recovery DVD-ROM is required.

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For U.S.A.

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This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

This Limited Warranty will be governed by the laws the State of New York, without regard to its conflict-of-laws rules.

* * *

To obtain service or technical assistance within the continental U.S.A. and Alaska.

DIAL TOLL FREE: 1-800-LAPTOP5

Correspondence requesting product information should be sent to:
Panasonic Computer Solution Company
50 Meadowlands Parkway, Panazip 2F-5, Secaucus, NJ 07094

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For Canada

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Scope of Coverage	Period of Coverage	Type of Failure Coverage
Whole Product (except Batteries), AC adaptor and CD-ROM (if factory installed)	Three (3) Years from Date of Original End User Customer Purchase	Defective Materials or Workmanship
Batteries, CD-ROM (unless factory installed), Port Replicator, Extra Memory Modules and all other Peripherals, Options and Accessories	One (1) Year from Date of Original End User Customer Purchase	Defective Materials or Workmanship

Remedy – In the event of a warranty claim, contact PCI's representatives within the applicable warranty period, identifying the nature of the defect claimed, at 1-800-668-8386 between 9:00 A.M. and 5:00 P.M., Eastern Time Zone, Mon. – Fri. (excluding holidays) for instructions on how to obtain service. A purchase receipt or other proof of date of original purchase is required before warranty service is performed. Defective parts covered by this Limited Warranty will be repaired or replaced with new or comparable rebuilt parts on an exchange basis. Warranty replacement or repair is subject to the terms of this Limited Warranty for the balance of the original period of warranty coverage.

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IF YOU SHIP THE PRODUCT FOR WARRANTY SERVICE

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SOFTWARE MEDIA LIMITED WARRANTY

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GENERAL

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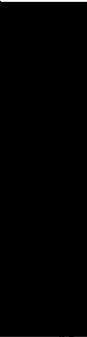
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Memo

Memo





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The international ENERGY STAR® Office Equipment Program is an international program that promotes energy saving through the use of computers and other office equipment. The program backs the development and dissemination of products with functions that effectively reduce energy consumption. It is an open system in which business proprietors can participate voluntarily. The targeted products are office equipment such as computers, displays, printers, facsimiles, and copiers. Their standards and logos are uniform among participating nations.

Panasonic Computer Solution Company

50 Meadowlands Parkway, Panazip 2F-5,
Secaucus, NJ 07094