



Panasonic®

OPERATING INSTRUCTIONS

Personal Computer

Model No. **CF-51** series

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Getting Started

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Troubleshooting

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Appendix

For more information about the computer, you can refer to the on-screen manual.

To access the on-screen manual.

→ page 13 "On-screen Manual"

Introduction

Thank you for purchasing this Panasonic computer. For optimum performance and safety, please read these instructions carefully.

■ Terms and illustrations in these instructions

CAUTION	:	Conditions that may result in minor or moderate injury.
NOTE	:	Useful and helpful information.
Enter	:	Press [Enter] key.
Fn + F5	:	Press and hold [Fn] key, and then press [F5] key.
[start] - [Run]	:	Click [start], and then click [Run]. You may need to double-click in some cases.
→	:	Page in these Operating Instructions or in the Reference Manual.
	:	Reference to the on-screen manuals.

- Some illustrations are simplified to help your understanding and may look different from the actual unit.
- If you do not log on as an administrator, you cannot use some functions or cannot display some screens.
- Refer for the latest information about optional products to the catalogs, etc.
- In these instructions, the names and terms are referred as follows.
 - “Microsoft® Windows® XP Professional Service Pack 2 with Advanced Security Technologies” as “Windows” or “Windows XP”
 - “WinDVD™ 5 (OEM Version)” as “WinDVD”
 - “B’s Recorder GOLD8 BASIC” as “B’s Recorder”
 - “B’s CLiP 6” as “B’s CLiP”
 - DVD-ROM & CD-R/RW drive and DVD MULTI drive as “CD/DVD drive”
 - Circular media including DVD-ROM and CD-ROM as “discs”

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Read Me First

Models 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.

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:

Panasonic Corporation of North America
One Panasonic Way
Secaucus, NJ 07094
Tel No:1-800-LAPTOP5 (1-800-527-8675)

<Only for model with wireless LAN>

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.

This product is restricted to indoor use due to its operation in the 5.15 to 5.25 GHz frequency range. FCC requires this product to be used indoors for the frequency range 5.15 to 5.25 GHz to reduce the potential for

harmful interference to co-channel Mobile Satellite systems.

High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and/or damage this product.

FCC Regulation Notice for modem

This equipment contains a FCC approved modem.

FC 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 advice that temporary discontinuance of service may be required. But if advice 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 its 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 Panasonic Corporation of North America at DIAL TOLL FREE 1-800-LAPTOP5 (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.

10. According to the FCC's electrical safety advisory, we recommend that you may install an AC surge arrestor 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.”

Note D5mpes copdi-

com

<Only for model with wireless LAN>

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.

Models for Europe

<Only for model with a "CE" mark on the bottom of the computer>



Declaration of Conformity (DoC)

"Hereby, we declare that this Personal Computer is in compliance with the essential requirements and other relevant provisions of the Directive 1999/5/EC."

Hint:

If you want to get a copy of the original DoC of our products which relates to the R&TTE, please contact our web address: <http://www.doc.panasonic.de>

Contact:

Panasonic Services Europe
A Division of Panasonic Marketing Europe GmbH
Panasonic Testing Centre

Network connection.

The terminal equipment is intended for connection to the following public network;

In all the countries of European Economical Area;

- Public Switched Telephony Networks

Technical Features.

The terminal equipment includes the following features;

- DTMF dialing
- Maximum bitrate receiving mode: 56 kbit/s
- Maximum bitrate sending mode: 33.6 kbit/s

This product is designed to interwork with the Public Switched Telecommunication Networks in UK, Ireland, Netherlands, Sweden, Denmark, Finland, Switzerland, Luxembourg, Belgium, France, Germany, Spain, Portugal, Iceland, Greece, Italy, Norway and Austria.

Compliance Notice - CE Mark

This equipment is in conformance with the requirements of the European Council Directive listed below:

73/23/EEC Low Voltage Directive with amendment 93/68/EEC

89/336/EEC EMC Directive with amendments 92/31/EEC and 93/68/EEC

1999/5/EC R&TTE

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 manual. 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

<Only for model with wireless LAN and/or Bluetooth>

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 / Pile au lithium

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, notamment la date et l'heure. La pile ne doit être remplacée que par un technicien qualifié.

Danger !

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

CD/DVD Drive Caution

CAUTION!

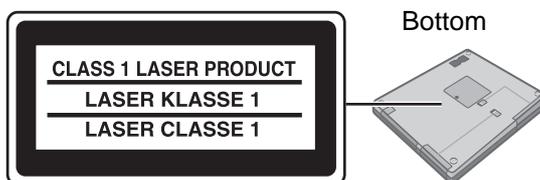
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS, ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF.
REFER SERVICING TO QUALIFIED PERSONNEL.

Laser safety information is appropriate only when drive with laser is installed.

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 SOIMÊME.
CONFIER TOUT TRAVAIL D'ENTRETIEN À UN PERSONNEL QUALIFIÉ.

Les mesures de sécurité relatives au laser ne s'appliquent que lors de l'installation d'une unité avec laser.



Precautions

This computer has been designed so as to minimize shock to the LCD and hard disk drive, the leakage of liquid (e.g., water) on to the keyboard, etc., but no warranty is provided against such trouble. Therefore, as a precision instrument, be extremely careful in the handling

THIS PRODUCT IS NOT INTENDED FOR USE AS, OR AS PART OF, NUCLEAR EQUIPMENT/SYSTEMS, AIR TRAFFIC CONTROL EQUIPMENT/SYSTEMS, OR AIRCRAFT COCKPIT EQUIPMENT/SYSTEMS^{*1}. PANASONIC WILL NOT BE RESPONSIBLE FOR ANY LIABILITY RESULTING FROM THE USE OF THIS PRODUCT ARISING OUT OF THE FOREGOING USES.

^{*1} AIRCRAFT COCKPIT EQUIPMENT/SYSTEMS include Class2 Electrical Flight Bag(EFB) Systems and Class1 EFB Systems when used during critical phases of flight (e.g., during take-off and landing). Class1 EFB Systems and 2 EFB Systems are defined by FAA: AC (Advisory Circular) 120-76A.

Panasonic cannot guarantee any specifications, technologies, reliability, safety (e.g. Flammability/Smoke/Toxicity/Radio Frequency Emission, etc) requirements related to aviation standards that exceed the specifications of our COTS (Commercial-Off-The-Shelf) products.

Before putting the computer away, be sure to wipe off any moisture.

■ 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.



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 Connect a Telephone Line, or a Network Cable Other Than the One Specified, into the LAN Port

If the LAN port is connected to a network such as the ones listed below, a fire or electric shock may result.

- Networks other than 100BASE-T, 100BASE-TX or 10BASE-T.
- Phone lines [Telephone lines, internal phone lines (on-premise switches), digital public phones, etc.]



Do Not Touch the Computer and Cable When it Starts Thundering



Do Not Connect the AC Adaptor to a Power Source Other Than a Standard Household AC Outlet.

Connecting to a DC/AC converter (inverter) may damage the AC adaptor.

On an airplane, only connect the AC adaptor/charger to an AC outlet specifically approved for such use.



Keep SD Memory Cards Away From Infants and Small Children.

Accidental swallowing will result in bodily injury. In the event of accidental swallowing, see a doctor immediately.

■ 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.



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 a car 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 Use This Computer with a Battery Pack Other Than the One Specified

Use only the specified Panasonic battery pack (CF-VZSU29) with your CF-51. Use of batteries other than those manufactured and supplied by Panasonic may present a safety hazard.



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.

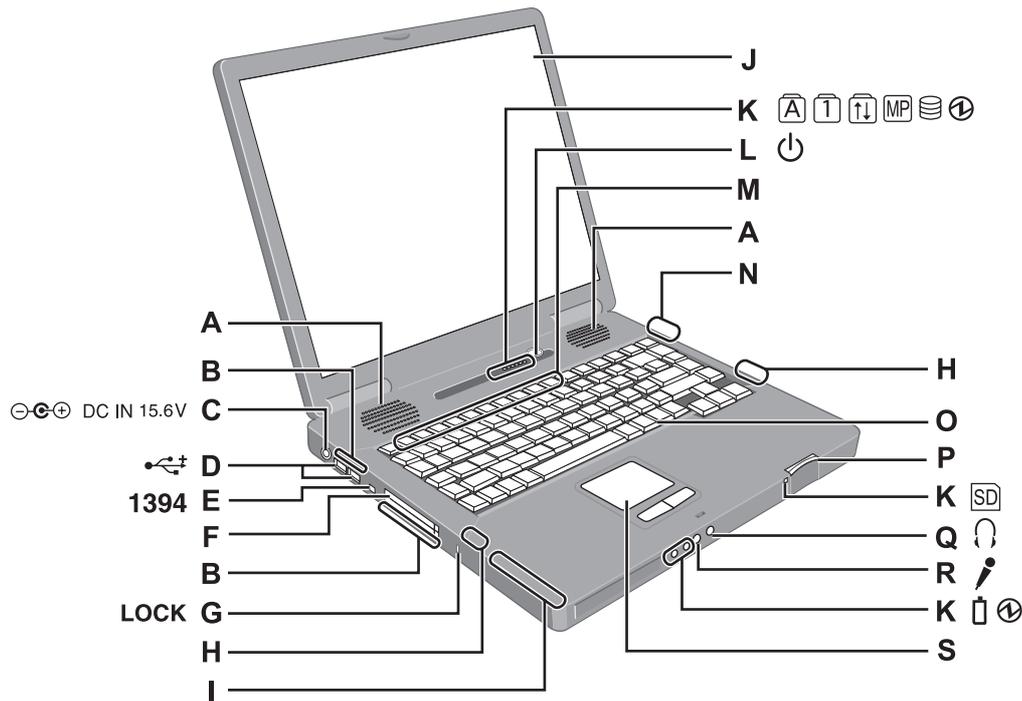
- Do not touch the terminals on the battery pack. The battery pack may no longer function properly if the contacts are dirty or damaged.
- Do not expose the battery pack to water, or allow it to become wet.

- 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 if internal temperature of the battery pack is outside of the allowable temperature range (0 °C to 50 °C {32°F to 122°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 below.)
- If the temperature is low, the operating time is shortened. Only use the computer within the allowable temperature range.
- This computer has a high temperature mode function that prevents the degradation of the battery in high temperature environments. (→ Reference Manual "Battery Power") A level corresponding to a 100% charge for high temperature mode is approximately equivalent to an 80% charge level for normal temperature mode.
- The battery pack is a consumable item. If the amount of time the computer can be run by using a particular battery pack becomes dramatically shorter and repeated recharging does not restore its performance, the battery pack should be replaced with a new one.
- 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.
- 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.

Description of Parts



A : Speaker

→ Reference Manual "Key Combinations"

B : Ventilation hole

C : DC-IN jack

D : USB port

→ Reference Manual "USB Devices"

E : IEEE 1394 interface connector

→ Reference Manual "IEEE 1394 Devices"

F : PC Card slot

→ Reference Manual "PC Cards"

G : Security lock

You can connect a Kensington cable. Refer to the instruction manual of the cable.

H : Wireless LAN antenna

<Only for model with wireless LAN>

→ Reference Manual "Wireless LAN"

I : Smart Card slot

<Only for model with Smart Card slot>

→ Reference Manual "Smart Card"

J : LCD

K : LED indicator

Caps lock

Numeric key (NumLk)

Scroll lock (ScrLk)

Multimedia pocket device status or the second battery status

→ Reference Manual "Multimedia Pocket" "Battery Power"

Hard disk drive status

Power status

(Off: Power off/Hibernation, Green: Power on, Blinking green: Standby, Blinking green rapidly: Cannot power on or resume due to low temperature.)

Battery status

→ Reference Manual "Battery Power"

SD Memory Card status

(Blinking: During access or a password is requested)

→ Reference Manual "SD Memory Card"

L : Power button

M : Function key

→ Reference Manual "Key Combinations"

N : Bluetooth antenna

<Only for model with Bluetooth>

→ Reference Manual "Bluetooth"

O : Keyboard

P : SD Memory Card slot

→ Reference Manual "SD Memory Card"

Q : Headphone jack

You can connect headphones or amplified speakers. When they are connected, audio from the internal speakers is not heard.

R : Microphone jack

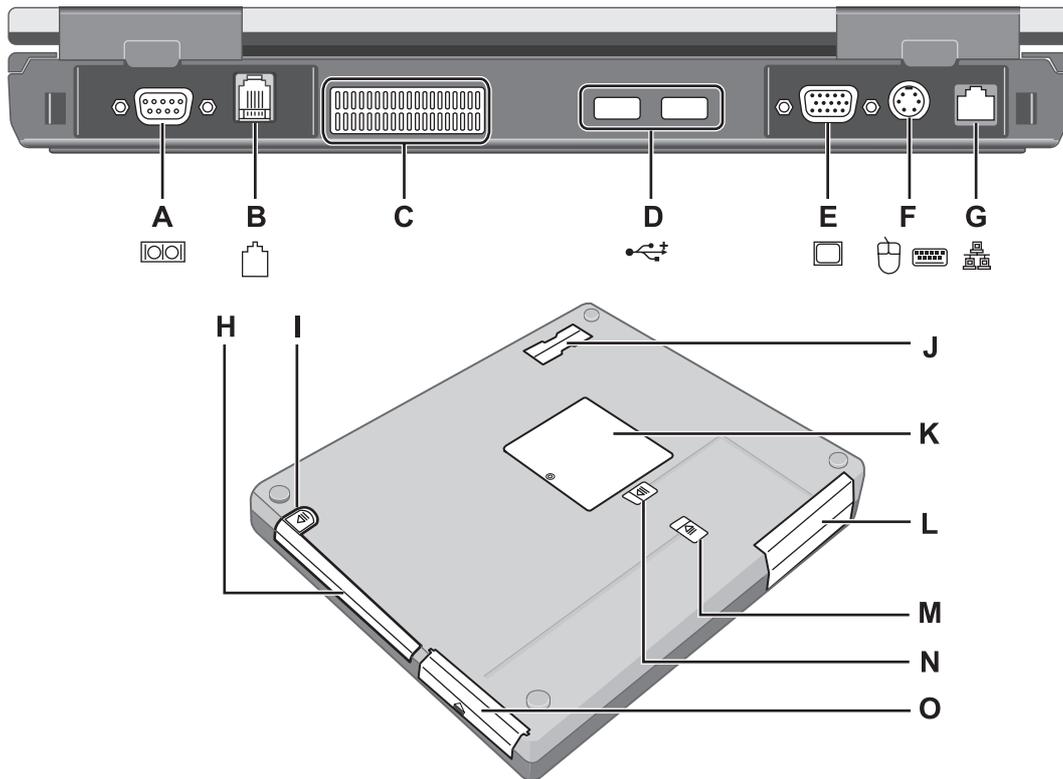
You can use a stereo condenser microphone. Connecting other type of microphone may interrupt audio input or may cause a malfunction.

S : Touch pad

CAUTION

- Do not put a metallic object or magnetic media close to the speakers.

Description of Parts



- | | |
|--|---|
| <p>A : Serial port</p> <p>B : Modem port
→</p> <p>C : Ventilation hole</p> <p>D : USB
→ <i>Reference Manual "USB Devices"</i></p> <p>E : External display port
→ <i>Reference Manual "External Display"</i></p> <p>F : External keyboard/Mouse port</p> <p>G : LAN port
→ <i>Reference Manual "LAN"</i></p> <p>H : Multimedia pocket
→ <i>Reference Manual "Multimedia Pocket"</i></p> | <p>I : Multimedia pocket release button
→ <i>Reference Manual "Multimedia Pocket"</i></p> <p>J : Expansion bus connector
→ <i>Reference Manual "Port Replicator"</i></p> <p>K : RAM module
→ <i>Reference Manual "RAM Module"</i></p> <p>L : Hard disk drive
→ <i>Reference Manual "Hard Disk Drive"</i></p> <p>M : Battery latch</p> <p>N : Hard disk drive latch
→ <i>Reference Manual "Hard Disk Drive"</i></p> <p>O : Battery pack</p> |
|--|---|

CAUTION

- Do not block the ventilation hole with a thick cloth etc. Select a position with good ventilation.

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 à ions de lithium qui est recyclable. Pour des renseignements sur le recyclage de la batterie, veuillez appeler 1-800-8-BATTERY.

First-time Operation

■ Preparation

① Check and identify the supplied accessories.

If you do not find the described accessories, contact Panasonic Technical Support (→ page 29).

• AC Adaptor 1



Model No: CF-AA1683A (Models for U.S.A)
CF-AA1653A (Models for Canada)

• AC Cord 1



• Battery Pack 1



Model No: CF-VZSU29A

• Modem Telephone

Cable 1



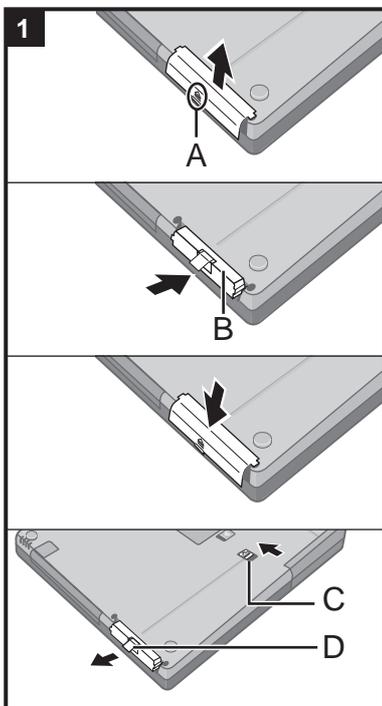
• Product Recovery DVD-ROM 1

• Operating Instructions (This book) 1

• Windows® Book 1

• You will need the serial number when you reinstall B's Recorder/B's CLiP using Product Recovery DVD-ROM (→ page 22).

② Read the LIMITED USE LICENSE AGREEMENT before breaking the seal on the computer's packaging (→ page 23).



1 Insert the battery pack.

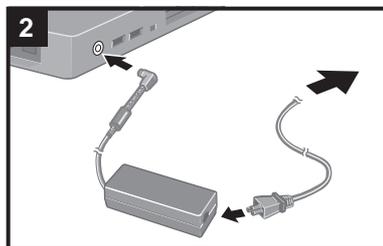
- ① Press and hold the mark part (A), and slide and remove the cover.
- ② Insert the battery pack (B) until it securely fits the connector.
- ③ Slide the cover back.

■ To remove the battery pack

In step ② above, slide and hold the latch (C), and pull the tab (D) of the battery pack.

CAUTION

- Be careful not to catch the tab when you close the cover.
- Make sure the cover is securely attached. Otherwise the battery pack may fall when you carry the computer.
- Do not touch the terminals of the battery pack and the computer. Doing so can make the terminals dirty or damaged, and may cause malfunction of the battery pack and the computer.
- Use only the specified battery pack (CF-VZSU29A) with your computer. If you use the former type of battery (CF-VZSU29), the computer's processing speed will become slower.
- The computer's processing speed will become slower when the computer operates by the second battery pack.



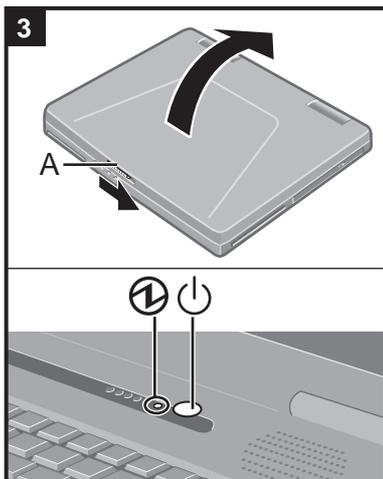
2 Connect your computer to a power outlet.

The battery charging starts automatically.

CAUTION

- Do not disconnect the AC adaptor until the first-time operation procedure is completed.
- When using the computer for the first time, do not connect any peripheral device except the battery pack and AC adaptor.
- **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.

First-time Operation



3 Turn on the computer.

- ① Slide the latch (A), and open the display.
- ② Press and hold the power button  for approximately one second until the power indicator  lights.

CAUTION

- Do not press the power button repeatedly.
- The computer will be forcibly turned off if you press and hold the power button for four seconds or longer.
- Once you turn off the computer, wait for ten seconds or more before you turn on the computer again.
- Do not perform the following operation until the hard disk drive indicator  turns off.
 - Connecting or disconnecting the AC adaptor
 - Pressing the power button
 - Touching the keyboard, touch pad or external mouse
 - Closing the display
- When the CPU temperature is high, the computer may not start up to prevent overheating of the CPU. Wait until the computer cools down, and then turn the power on again. If the computer does not power on even after cooling down, contact Panasonic Technical Support (→ page 29).

4 Setup Windows.

- ① Follow the on-screen instructions.

CAUTION

- When you set date/time/time zone and click [Next], the screen may not go to the next step for a few minutes. Do not touch the keyboard or touch pad, and wait until the screen changes.
- If “An unexpected error has occurred ...” (or a similar message) is displayed, select [OK]. This is not a malfunction.
- Wait until the hard disk drive indicator  has turned off.

5 Create a new account.

- ① Click [start] - [Control Panel] - [User Accounts] - [Create a new account].

CAUTION

- Remember your password. If you forget the password, you cannot use the Windows operation system. Creating a password reset disk beforehand is recommended.

NOTE

● Regarding Windows XP

You can select the Classic view of Control Panel or the Classic Start menu. You can also change the way a user logs on or off. This manual explains using the Windows XP default setting (not Classic view or Classic Start menu etc.).

● Windows Update

You can update to the latest patches and service packs for Windows with the following menus.
Click [start] - [All Programs] - [Windows Update].

Do not apply “Driver Updates” even if a message to update a driver appears. If a driver update is required, contact Panasonic Technical Support (→ page 29).

● If the message “Your computer might be at risk” is displayed

Select  on the taskbar and make the appropriate settings. The Windows Security Center regularly gives you notice so that you can make the optimum settings.

This is not an error message and you can use the computer. However, making appropriate measures is recommended to reduce the risk of virus and other attacks.

On-screen Manual

You can access the Reference Manual and the Important Tips on the computer screen.

When you access the Reference Manual and the Important Tips for the first time, the License Agreement of the Adobe Reader may be displayed. Read it carefully and select [Accept] to proceed.

■ Reference Manual

The Reference Manual contains the practical information to help you fully enjoy the computer's performance.

To access the Reference Manual:

- ① Click [start] - [Reference Manual].

Contents

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|---------------------------------|---------------------|------------------------------|
| ● Key Combinations | ● SD Security | ● Bluetooth |
| ● Standby/Hibernation Functions | ● Smart Card | ● Wireless Switch Utility |
| ● Security Measures | ● RAM Module | ● Hard Disk Drive |
| ● Battery Power | ● Port Replicator | ● Setup Utility |
| ● Multimedia Pocket | ● External Display | ● Icon Enlarger |
| ● CD/DVD Drive | ● USB Devices | ● Loupe Utility |
| ● WinDVD | ● IEEE 1394 Devices | ● DMI Viewer |
| ● B's Recorder/B's CLiP | ● Modem | ● Technical Information |
| ● PC Cards | ● LAN | ● Troubleshooting (Advanced) |
| ● SD Memory Card | ● Wireless LAN | |

■ Important Tips

The Important Tips will provide you with the battery information so that you can use the battery pack in the optimum condition to obtain longer operation time.

To access the Important Tips:

- ① Double-click  on the desktop.
Important Tips

- Alternatively click [start] - [All Programs] - [Panasonic] - [On-Line Manuals] - [Important Tips].

Handling and Maintenance

Operation Environment

- Place the computer on a flat stable surface. Do not place the computer upright or turn it over. If the computer is exposed to an extremely strong impact, it may become inoperable.
- Temperature: Operation : 5 °C to 35 °C {41 °F to 95 °F}
 Storage : -20 °C to 60 °C {- 4 °F to 140 °F}
- Humidity: Operation : 30% to 80% RH (No condensation)
 Storage : 30% to 90% RH (No condensation)

Even within the above temperature/humidity ranges, using for a long time in an extreme environment will result in the product deterioration and will shorten the product life.

- Do not place the computer in the following areas, otherwise the computer may be damaged.
 - Near electronic equipment. Image distortion or noise may occur.
 - In extremely high or low temperature.
- As the computer can become hot during operation, keep it away from items that are sensitive to heat.

Handling Cautions

This computer is designed to minimize shock to parts such as the LCD and the hard disk drive, but no warranty is provided against any trouble caused by shock. Be extremely careful when handling the computer.

- When carrying the computer:
 - Turn off the computer.
 - Remove all external devices, cables, PC Cards and other protruding things.
 - Remove a disc in the CD/DVD drive.
 - Do not drop or hit the computer against solid objects.
 - Do not leave the display open.
 - Do not grip the display part.
- Do not put anything (e.g., a piece of paper) between the display and keyboard.
- When you board an airplane, take the computer with you and never put it in your checked luggage. When using the computer on airplane, follow the airline's instructions.
- When carrying a spare battery, put it in a plastic bag to protect its terminals.
- The touch pad is designed to be used with a finger tip. Do not place any object on its surface and do not press down strongly with sharp-pointed or hard objects that may leave marks (e.g., nails, pencils and ball point pens).
- Avoid any harmful substances such as oil from getting into the touch pad. The cursor may not work correctly.

■ When using peripheral devices

Follow these instructions and the Reference Manual to avoid any damage to the devices. Carefully read the instruction manuals of the peripheral devices.

- Use the peripheral devices conforming to the computer's specifications.
- Connect to the connectors in the correct direction.
- If it is hard to insert, do not try forcibly but check the connector's shape, direction, alignment of pins, etc.
- If screws are included, fasten them securely.
- Remove the cables when you carry the computer. Do not pull the cables forcibly.

■ Preventing your computer from unauthorized use via wireless LAN

<Only for model with wireless LAN>

- Before using wireless LAN, make the appropriate security settings such as data encryption.

Maintenance

To clean the LCD panel

- Do not use water to clean the panel. Ingredients included in water may leave scratches and reduce readability of the screen.
- To remove dust or dirt, do not use a cloth to rub it off since it may leave scratch on the screen. Use a fine brush to sweep dust or dirt, then wipe with a dry soft glass-cleaning cloth.
- To clean the oily surface, use a soft gauze dipped in camera lens cleaner, and then wipe with a dry soft glass-cleaning cloth.

To clean areas other than the LCD panel

Wipe with a soft dry cloth such as gauze. When using detergent, dip a soft cloth in water-diluted detergent and wring it thoroughly.

CAUTION

- Do not use benzene, thinner, or rubbing alcohol since it may adversely affect the surface causing discoloration, etc. Do not use commercially-available household cleaners and cosmetics, as they may contain components harmful to the surface.
- Do not apply water or detergent directly to the computer, since liquid may enter inside of the computer and cause malfunction or damage.

Hard Disk Data Erase Utility

When disposing the computer or transferring the ownership, erase all hard disk data in order to avoid data leakage. Even if you erase the data or initialize the hard disk using normal Windows commands, the data can be read with some special software. Use the hard disk data erase utility to erase the data completely.

Note that transferring of the ownership without uninstalling the commercial software will be a violation of the software's license agreement.

The hard disk data erase utility erases the data using overwriting method. If a malfunction or other operational error occurs during the erasing process, the data may not be completely erased. Also there may be special devices to read the erased data. To erase highly confidential data, ask a specialized company. Matsushita Electric Industrial Co., Ltd. will bear no responsibility for losses or damages suffered as a result of the use of this utility.

Preparation

- Prepare the following items:
 - The Product Recovery DVD-ROM (included)
 - Panasonic CD/DVD drive
- Remove all peripherals (except for the CD/DVD drive).
- Connect the AC adaptor and do not remove it until hard disk data erase is complete.

NOTE

- Even if hard disk data erase is performed, the number of times of DVD's region code setting will not be reset.

- 1 Turn off the computer and insert the CD/DVD drive into the multimedia pocket (→  Reference Manual "Multimedia Pocket").**
- 2 Turn on the computer, and press F2 several times while [Panasonic] boot screen is displayed.**

The Setup Utility starts up.

 - If the password is requested, enter the Supervisor Password.
- 3 Select the [Boot] menu, then select [IDE MP] and press F6 until [IDE MP] is at the top of the boot priority order.**
- 4 Select the [Security] menu and set [MP CD/DVD Operation] to [Enable].**
- 5 Set the Product Recovery DVD-ROM into the CD/DVD drive.**
- 6 Press F10.**

At the confirmation message, select [Yes] and press Enter.
The computer restarts.
- 7 Press 2 to execute [2. [Erase HDD]].**
 - To cancel this operation, press 0.
- 8 At the confirmation message, press Y.**
- 9 When [<<< Start menu >>>] is displayed, press Enter.**

The approximate time required for erasing data will be displayed.
- 10 Press Space.**

At the confirmation message, press Enter.
The hard disk erase process starts. When the operation is completed, the [Hard disk data has been deleted.] message will appear. If a problem has occurred during the operation, an error message will appear.

 - To cancel partway, press Ctrl + C. The data erasure will be up to that point.
- 11 Remove the Product Recovery DVD-ROM, and then press any key to turn off the computer.**

Reinstalling Software

When you reinstall the software, the hard disk data will be erased. Back up important data before reinstallation. Reinstalling software will return the computer to the default condition. Even if the data is stored in partitions on the hard disk, it may be erased or corrupted.

Preparation

- Prepare the following items:
 - The Product Recovery DVD-ROM (included)
 - Panasonic CD/DVD drive
- Remove all peripherals (except for the CD/DVD drive).
- Connect the AC adaptor and do not remove it until reinstallation is complete.

NOTE

- Even if reinstallation is performed, the number of times of DVD's region code setting will not be reset.

- 1 Turn off the computer and insert the CD/DVD drive into the multimedia pocket (→  Reference Manual "Multimedia Pocket").**
- 2 Turn on the computer, and press F2 several times while [Panasonic] boot screen is displayed.**

The Setup Utility starts up.

 - If the password is requested, enter the Supervisor Password.
- 3 Write down all of the contents of the Setup Utility and press F9.**

At the confirmation message, select [Yes] and press Enter.
- 4 Select the [Boot] menu, then select [IDE MP] and press F6 until [IDE MP] is at the top of the boot priority order.**
- 5 Select the [Security] menu and set [MP CD/DVD Operation] to [Enable].**
- 6 Set the Product Recovery DVD-ROM into the CD/DVD drive.**
- 7 Press F10.**

At the confirmation message, select [Yes] and press Enter.
The computer will restart.
- 8 Press 1 to execute [1. [Recovery]].**

The License Agreement screen appears.

 - To cancel partway, press 0.
- 9 Press 1 to select [1. Yes, I agree to the provisions above and wish to continue!].**
- 10 Select the settings.**
 - [2]: Enter the size of operating system partition and press Enter.
(The size of data partition will be determined by subtracting the operating system partition size from the maximum size.)
 - [3]: Windows will be installed in the first partition.
(The size of the first partition must be 20 GB or more. If smaller, installation will not be possible.)

At the confirmation message, press Y.
Reinstallation starts automatically. (It will take approximately 25 - 50 minutes.)

 - Do not interrupt reinstallation, for example by turning off the computer or pressing Ctrl + Alt + Del. Otherwise reinstallation may become unavailable as Windows may not start up or the data may be corrupted.
- 11 Remove the Product Recovery DVD-ROM, and then press any key to turn off the computer.**
- 12 Turn on the computer, and press F2 several times while [Panasonic] boot screen is displayed.**

The Setup Utility starts up.

 - If the password is requested, enter the Supervisor Password.
- 13 Press F9.**

At the confirmation message, select [Yes] and then press Enter.
The Setup Utility settings excluding the password(s) will return to the default values.

Reinstalling Software

14 Select the [Exit] menu and then select [Save Current Values], then press Enter.

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

15 Turn the computer off by using the power button.

- If additional instructions are included with the computer, be sure to read them. It may be necessary to perform additional operations during the following procedure.

16 Perform the First-time Operation (→ page 11).

17 Start the Setup Utility and change the settings as necessary.

■ To change the drive letter of hard disk or CD/DVD drive

NOTE

- Drive letters can be changed only when two or more partitions have been created on the hard disk drive.
- The name of the C: drive cannot be changed.
- Change the drive letters before installing applications.

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

Error Code/Message

Follow the instructions below when an error message or code appears. If the problem persists or if the error code/message is not shown here, contact Panasonic Technical Support (→ page 29).

Error Code/Message	Solution
0211 Keyboard error	<ul style="list-style-type: none"> ● Disconnect external keyboard or mouse.
0251 System CMOS checksum bad - Default configuration used	<p>An error has occurred in the memory of Setup Utility settings. This occurs when the memory content is changed by an unexpected program operation, etc.</p> <ul style="list-style-type: none"> ● Start the Setup Utility and return the settings to the default values, and then change the settings as necessary. ● If the problem persists, the internal clock battery may need to be replaced. Contact Panasonic Technical Support (→ page 29).
0271 Check date and time settings	<p>The date and time settings are not correct.</p> <ul style="list-style-type: none"> ● Start the Setup Utility and set the correct date and time. ● If the problem persists, the internal clock battery may need to be replaced. Contact Panasonic Technical Support (→ page 29).
0280 Previous boot incomplete - Default configuration used	<p>Startup has failed repeatedly, so the Setup Utility settings have been returned to the default values to startup the computer.</p> <ul style="list-style-type: none"> ● Start the Setup Utility and return the settings to the default values, and then change the settings as necessary.
Press <F2> to Setup	<ul style="list-style-type: none"> ● Write down the error details and press F2 to start the Setup Utility. Change the settings if necessary.
Operating System not found	<p>The operating system is not installed in the floppy disk or the hard disk that you are going to boot from.</p> <ul style="list-style-type: none"> ● If using a floppy disk, change the disk to the one you can use for boot. ● If using the hard disk, check if the hard disk is recognized in [Information] menu of the Setup Utility. If the hard disk is recognized, perform the reinstallation (→ page 17). If not, contact Panasonic Technical Support (→ page 29). ● If a device is connected to the USB port, disconnect the device, or set [USB Port] or [Legacy USB Support] to [Disable] in [Advanced] menu of the Setup Utility.
RAM Module Failed	<p>When the RAM module is not inserted correctly or the RAM module is not conforming to the computer's specifications, so a beep will sound and the "RAM Module Failed" message will be displayed when you turn the power on.</p> <ul style="list-style-type: none"> ● Press the power button for four seconds or longer to turn off the computer, confirm that the RAM module conforms to the specifications, and reinsert it.

■ To start the Setup Utility

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

Troubleshooting (Basic)

Follow the instructions below when a problem has occurred. There is also an advanced troubleshooting guide in the "Reference Manual". For a software problem, refer to the software's instruction manual. If the problem persists, contact Panasonic Technical Support (→ page 29). You can also check the computer's status in the PC Information Viewer (→  Reference Manual "Troubleshooting (Advanced)").

■ Starting Up

<p>Cannot start up. The power indicator or battery indicator is not lit.</p>	<ul style="list-style-type: none"> ● Connect the AC adaptor. ● Insert a fully charged battery. ● Remove the battery pack and the AC adaptor, then connect them again. ● Remove the USB device, or set [USB Port] or [Legacy USB Support] to [Disable] in [Advanced] menu of the Setup Utility. The computer may not start up when certain USB devices are connected.
<p>The power is turned on but "Warming up the system (up to 30 minutes)" appears.</p>	<ul style="list-style-type: none"> ● The computer is warming up before start up. Wait for the computer to start up (takes up to 30 minutes). If, "Cannot warm up the system" is displayed, the computer failed to warm up and does not start. In this case, turn off the computer, leave it in an environment of 5 °C {41 °F} or higher temperature for about an hour, and then turn on the power once more.
<p>Cannot turn on the computer. The computer does not resume from standby mode. (The power indicator blinks quickly in green.)</p>	<ul style="list-style-type: none"> ● Leave it in an environment of 5 °C {41 °F} or higher temperature for about an hour, then turn on the power once more.
<p>You have forgotten the password.</p>	<ul style="list-style-type: none"> ● Supervisor Password or User Password: Contact Panasonic Technical Support (→ page 29). ● Administrator password: <ul style="list-style-type: none"> • If you have a password reset disk, you can reset the administrator password. Set the disk and enter any wrong password, then follow the on-screen instructions and set a new password. • If you do not have a password reset disk, reinstall (→ page 17) and set up Windows, and then set a new password.
<p>"Remove disks or other media. Press any key to restart" or a similar message appears.</p>	<ul style="list-style-type: none"> ● A floppy disk is in the drive and it does not contain system startup information. Remove the floppy disk and press any key. ● This message may appear with some USB devices. Remove the USB device, or set [USB Port] or [Legacy USB Support] to [Disable] in the [Advanced] menu of the Setup Utility. ● If the problem persists after removing the disk, it may be a hard disk failure. Contact Panasonic Technical Support (→ page 29).
<p>Windows startup and operation is slow.</p>	<ul style="list-style-type: none"> ● Press F9 in the Setup Utility (→ page 19 "To start the Setup Utility") to return the Setup Utility settings (excluding the passwords) to the default values. Start the Setup Utility and make the settings again. (Note that the processing speed depends on the application software, so this procedure may not make Windows faster.) ● If you installed a resident software after purchase, turn off the residence. ● Disable Indexing Service in the following menu. Click [start] - [Search] - [Change preferences] - [Without Indexing Service].
<p>The date and time are incorrect.</p>	<ul style="list-style-type: none"> ● Make the correct settings. Click [start] - [Control Panel] - [Date, Time, Language, and Regional Options] - [Date and Time]. ● If the problem persists, the internal clock battery may need to be replaced. Contact Panasonic Technical Support (→ page 29). ● When the computer is connected to LAN, check the date and time of the server. ● The 2100 A.D. or later year will not be correctly recognized on this computer.
<p>[Executing Battery Recalibration] screen appears.</p>	<ul style="list-style-type: none"> ● The Battery Recalibration was canceled before Windows was shut down last time. To start up Windows, turn off the computer by the power button, and then turn on.

■ Starting Up

<p>[Enter Password] does not appear when resuming from standby/hibernation.</p>	<ul style="list-style-type: none"> ● To display [Enter Password] at resuming, set the Windows password. The password you have set in the Setup Utility is not requested at resuming. <ol style="list-style-type: none"> ① Click [start] - [Control Panel] - [User Accounts] and select the account, and set the password. ② Click [start] - [Control Panel] - [Performance and Maintenance] - [Power Options] - [Advanced] and add a check mark for [Prompt for password when computer resumes from standby].
<p>Other startup problems.</p>	<ul style="list-style-type: none"> ● Press F9 in the Setup Utility (→ page 19 “To start the Setup Utility”) to return the Setup Utility settings (excluding the passwords) to the default values. Start the Setup Utility and make the settings again. ● Remove all peripheral devices. ● Check to see if there was a disk error. <ol style="list-style-type: none"> ① Click [start] - [My Computer] and right-click [Local Disk(C:)], and click [Properties]. ② Click [Tools] - [Check Now]. ③ Select the option in [Check disk options] and click [Start]. ● Start the computer in Safe Mode and check the error details. When the [Panasonic] boot screen disappears^{*1} at startup, press and hold F8 until the Windows Advanced Options Menu is displayed. <p>^{*1} When [Password on boot] is set to [Enable] in the [Security] menu of the Setup Utility, [Enter Password] appears after the [Panasonic] boot screen disappears. As soon as you enter the password and press Enter, press and hold F8.</p>

■ Display

<p>No display.</p>	<ul style="list-style-type: none"> ● The external display is selected. Press Fn + F3 to switch the display. Wait until the display has been switched completely before pressing Fn + F3 again. ● When using an external display, <ul style="list-style-type: none"> • Check the cable connection. • Turn on the display. • Check the settings of external display. ● The display is turned off by the power-saving function. To resume, do not press the direct selection keys, but press any other key like Ctrl. ● The computer entered standby or hibernation by the power-saving function. To resume, press the power button.
<p>The screen is dark.</p>	<ul style="list-style-type: none"> ● The screen is darker when the AC adapter is not connected. Press Fn + F2 and adjust the brightness. As you increase the brightness, battery consumption increases. You can separately set the brightness for when the AC adaptor is connected and when not connected.
<p>The screen is disordered. <Only for model with Intel® 945GM chipset></p>	<ul style="list-style-type: none"> ● Changing the number of display colors and resolution may affect the screen. Restart the computer. ● When using Simultaneous display, set the same display colors for the external display as those for the LCD. ● When using Simultaneous display, do not press Fn + F3. ● Enable or disable Simultaneous display, and soon restart the computer.
<p>During Simultaneous display, one of the screens becomes disordered. <Only for model with Intel® 945GM chipset></p>	<ul style="list-style-type: none"> ● When using the Extended Desktop, use the same display colors for the external display as those used by the LCD. ● If you continue to experience problems, try changing the display by clicking [start] - [Control Panel] - [Other Control Panel Options] - [Intel(R) GMA Driver for Mobile] - [Display Devices]. ● When the [Command Prompt] is set to “Full Screen” by pressing Alt + Enter, the picture is displayed on one of the screens only. When the window display is restored by pressing Alt + Enter, the picture is displayed on both screens. ● Simultaneous display cannot be used until Windows startup is complete (during Setup Utility, etc.).

Troubleshooting (Basic)

■ Display

The external display does not work normally.	<ul style="list-style-type: none">● If the external display does not support the power saving function, it may not work normally when the computer enters the power saving mode. Turn off the external display.
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■ Shutting down

Windows does not shut down.	<ul style="list-style-type: none">● Remove the USB device.● Wait one or two minutes. It is not a malfunction.
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■ Touch Pad

The cursor does not work.	<ul style="list-style-type: none">● When using the external mouse, connect it correctly.● Restart the computer using the keyboard. (Press F₂, U, and R to select [Restart].)● If the computer does not respond to keyboard commands, read “No response” (→ below).
Cannot input using the touch pad.	<ul style="list-style-type: none">● Set [Touch Pad] to [Enable] in the [Main] menu of the Setup Utility.● The drivers for some mice may disable the touch pad. Check your mouse’s operating instructions.

■ Reference Manual

The Reference Manual is not displayed.	<ul style="list-style-type: none">● Install Adobe Reader.<ol style="list-style-type: none">① Log on to Windows as an administrator.② Click [start] - [Run], input [c:\util\reader\AdbeRdr70_enu_full.exe], then click [OK].③ Follow the on-screen instructions.
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■ Reinstalling B’s Recorder/B’s CLiP

A serial number is requested when reinstalling.	<ul style="list-style-type: none">● Input the following serial number B’s Recorder: B’s CLiP:
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■ Others

No response.	<ul style="list-style-type: none">● Press Ctrl+Shift+Esc to open Task Manager and close the software application that is not responding.● An input screen (e.g., password input screen at startup) may be hidden behind another window. Press Alt+Tab to check.● Press the power button for four seconds or longer to shut down the computer, and then press the power button to turn it on. If the application program does not work normally, uninstall and reinstall the program. To uninstall, click [start] - [Control Panel] - [Add or Remove Programs].
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Specifications

This page provides the specifications for the basic model CF-51PFVDEBM/CF-51PF2DEBM/CF-51PFVEEBM/CF-51PF2EEBM/CF-51PFVGEBM/CF-51QFVDEBM/CF-51QF2DEBM/CF-51QFVEEBM/CF-51QF2EEBM/CF-51RCLDFBM/CF-51RCBDFBM/CF-51RCLEFBM/CF-51RCBEFBM/CF-51RCLGFBM/CF-51RCBJFBM/CF-51RCBKFBM/CF-51RCLJFBM/CF-51RCLLFBM/CF-51RCBMFBM/CF-51SCLDFBM/CF-51SCBDFBM/CF-51SCBEFBM/CF-51SCBJFBM/CF-51SCLJFBM/CF-51RCVDNBM. The model number is different according to the unit configuration.

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

■ Main Specifications

Model No.	CF-51PFVDEBM / CF-51PF2DEBM / CF-51PFVGEBM / CF-51QFVDEBM / CF-51QF2DEBM / CF-51PFVEEBM / CF-51PF2EEBM / CF-51QFVEEBM / CF-51QF2EEBM	CF-51RCLDFBM / CF-51RCBDFBM / CF-51RCLEFBM / CF-51RCBEFBM / CF-51RCLGFBM / CF-51RCBJFBM / CF-51RCBKFBM / CF-51RCLJFBM / CF-51RCLLFBM / CF-51RCBMFBM / CF-51SCLDFBM / CF-51SCBDFBM / CF-51SCBEFBM / CF-51SCBJFBM / CF-51SCLJFBM	CF-51RCVDNBM
CPU	Intel® Core™ Duo Processor T2500 (2 GHz, 2 MB L2 cache, 667 MHz FSB)	Intel® Core™ Duo Processor T2300E (1.66 GHz, 2 MB L2 cache, 667 MHz FSB)	
Chipset	Intel® 945PM	Intel® 945GM	
Memory ^{*1*2}	512 MB (4096 MB ^{*3} Max.)		
Video Memory ^{*1}	128 MB	UMA (128 MB) ^{*4}	
Hard Disk Drive ^{*5}	80 GB	60 GB	80 GB
Floppy Disk Drive ^{*6}	720 KB/1.44 MB (two-mode)		
CD/DVD Drive	→ page 27		
Display Method	15.0 UXGA type (TFT)	15.0 XGA type (TFT)	
Internal LCD ^{*7}	65,536/16,777,216 colors (800 × 600 dots/1024 × 768 dots/1600 × 1200 dots)	65,536/16,777,216 colors (800 × 600 dots/1024 × 768 dots)	
External Display ^{*8}	65,536/16,777,216 colors (800 × 600 dots/1024 × 768 dots/1280 × 1024 dots/1600 × 1200 dots/2048 × 1536 dots)		
Wireless LAN ^{*9}	→ page 28		
Bluetooth ^{*10}	Version 2.0+EDR	-	
LAN	IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3ab 1000Base-T		
Modem	Data: 56 kbps (V.92) FAX: 14.4 kbps		
Sound	WAVE and MIDI playback, Stereo speaker, Intel® High Definition Audio subsystem support		
Security Chip	TPM (TCG V1.2 compliant) ^{*11}		
Card Slot	PC Card	Type I or Type II x 2, or Type III x 1 (3.3 V: 400 mA, 5 V: 400 mA)	
	SD Memory Card ^{*12}	x 1 (Data transfer rate = 8 MB per second ^{*13})	
	Smart Card ^{*14}	x 1	-
RAM Module Slot	200-pin, SO-DIMM, PC2-4200 DDR2 SDRAM		
Interface	USB port (4-pin, USB 2.0) x 4, Serial Port (Dsub 9-pin male), Modem port (RJ-11), LAN port (RJ-45), External display port (Mini Dsub 15-pin female), External keyboard/ Mouse port (Mini DIN 6-pin female), Expansion Bus Connector (Dedicated 100-pin female), IEEE 1394a Interface Connector (4-pin x 1), Microphone Jack (Miniature jack, 3.5 DIA, Stereo), Headphone Jack (Miniature jack, 3.5 DIA, Impedance 32 Ω, Output Power 4 mW x 2, Stereo)		
Keyboard / Pointing Device	87 keys / Touch Pad		

Specifications

■ Main Specifications

Model No.	CF-51PFVDEBM / CF-51PF2DEBM / CF-51PFVGEBM / CF-51QFVDEBM / CF-51QF2DEBM / CF-51PFVEEBM / CF-51PF2EEBM / CF-51QFVEEBM / CF-51QF2EEBM	CF-51RCLDFBM / CF-51RCBDFBM / CF-51RCLEFBM / CF-51RCBEFBM / CF-51RCLGFBM / CF-51RCBJFBM / CF-51RCBKFBM / CF-51RCLJFBM / CF-51RCLLFBM / CF-51RCBMFBM / CF-51SCLDFBM / CF-51SCBDFBM / CF-51SCBEFBM / CF-51SCBJFBM / CF-51SCLJFBM	CF-51RCVDNBM
Power Supply	AC adaptor or Battery pack		
AC Adaptor ^{*15}	Input: 100 V to 240 V AC, 50 Hz/60 Hz, Output: 15.6 V DC, 8.0 A		Input: 100 V to 240 V AC, 50 Hz/60 Hz, Output: 15.6 V DC, 5.0 A
Battery Pack	Li-ion 11.1 V, 7.65 Ah		
Operating Time ^{*16}	Main Battery: Approx. 2 hours to 4 hours ^{*17} (Approx. 4 hours ^{*18}) Main Battery + Second Battery: Approx. 3.5 hours to 6.5 hours (Approx. 6 hours)	Main Battery: Approx. 2.5 hours to 5.5 hours ^{*17} (Approx. 5.5 hours ^{*18}) Main Battery + Second Battery: Approx. 4 hours to 9 hours (Approx. 8.5 hours)	
Charging Time ^{*16}	Power on	Main Battery: Approx. 4.5 hours Main Battery + Second Battery: Approx. 7 hours	
	Power off	Main Battery: Approx. 4.5 hours Main Battery + Second Battery: Approx. 7 hours	
Clock Battery	Coin type lithium battery 3.0 V		
Power Consumption ^{*19}	Approx. 60 W ^{*20} / Approx. 90 W (Maximum when recharging in the ON state)	Approx. 60 W ^{*20} / Approx. 80 W (Maximum when recharging in the ON state)	
Physical Dimensions (W × H × D)	325 mm × 47 mm × 278 mm {12.8" × 1.9" × 10.9" }		
Weight	Approx. 2.9 kg {Approx. 6.4 lb.} (excluding multimedia pocket device) Approx. 3.1 kg {Approx. 6.8 lb.} (including CD/DVD drive in the multimedia pocket)		
Operation Environment	Temperature: 5 °C to 35 °C {41 °F to 95 °F} Humidity: 30% to 80% RH (No condensation)		
Storage Environment	Temperature: -20 °C to 60 °C {-4 °F to 140 °F} Humidity: 30% to 90% RH (No condensation)		
Operating System	Microsoft® Windows® XP Professional Service Pack 2 with Advanced Security Technologies		
Utility Programs	DMI Viewer, Adobe Reader, PC Information Viewer, SD Utility, Icon Enlarger, Loupe Utility, WinDVD™ 5 (OEM Version), B's Recorder GOLD8 BASIC, B's CLiP 6, Intel® PROSet/Wireless Software ^{*9} , Wireless LAN Switch ^{*9} , Bluetooth™ Stack for Windows® by TOSHIBA ^{*10} , Bluetooth Switch ^{*10} , Wireless Switch Utility, Hotkey Settings, Battery Recalibration, Infineon TPM Professional Package ^{*21}		
	Setup Utility, Hard Disk Data Erase Utility ^{*22}		

^{*1} 1MB = 1,048,576 bytes

^{*2} When expanding memory, remove the RAM module that was inserted at the time of factory shipment, and insert two 2048 MB-RAM modules.

^{*3} You can physically expand the memory up to 4 GB, but the total amount of usable memory available will be less depending on the actual system configuration.

^{*4} A segment of the main memory is allotted automatically depending on the computer's operating status. The size of the Video Memory cannot be set by the user.

^{*5} 1GB = 1,000,000,000 bytes. Your operating system or some application software will report as fewer GB.

^{*6} The drives included in the computer cannot be inserted into the multimedia pocket simultaneously.

1KB = 1,024 bytes

1MB = 1,024,000 bytes. Your operating system or some application software will report as fewer MB.

^{*7} A 16,777,216 color display is achieved by using the dithering function.

^{*8} Maximum resolution depends on the specifications of the external display.

^{*9} Only for model with wireless LAN

^{*10} Only for model with Bluetooth

- *11 For information on TPM, click [start] - [Run] and input "c:\util\drivers\tpm\README.pdf", and refer to the Installation Manual of "Trusted Platform Module (TPM)".
- *12 This slot does not support the MultiMedia card.
Operation has been confirmed for Panasonic SD Memory Cards with up to 2 GB capacity.
- *13 Theoretical value and not the actual speed. The transfer rate does not become higher even if you use a card that supports the higher transfer rate.
- *14 Only for model with Smart Card slot
- *15 The AC adaptor is compatible with power sources up to 240 V AC adaptor. The computer is supplied with a 125 V AC compatible AC cord.
- *16 Varies depending on the usage conditions.
- *17 Measured using BatteryMark™ Version 4.0.1 (LCD brightness: Maximum - Minimum)
- *18 Measured using MobileMark™ 2002 (LCD brightness: 60 cd/m²)
- *19 Approx. 0.9 W when the battery pack is fully charged (or not being charged) and 9 468.6 (ng tte (is)7OF/)-4F.
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Specifications

■ Wireless LAN

<Only for model with wireless LAN>

Intel® PRO / wireless 3945 ABG (802.11 a + b + g) PCI Ex. 1/4	
Data Transfer Rates	IEEE802.11a: 54/48/36/24/18/12/9/6 Mbps (automatically switched) IEEE802.11b: 11/5.5/2/1 Mbps (automatically switched) IEEE802.11g: 54/48/36/24/18/12/9/6 Mbps (automatically switched)
Standards Supported	IEEE802.11a/IEEE802.11b/IEEE802.11g
Transmission method	OFDM system, DSSS system
Wireless Channels Used	IEEE802.11a: Channels 36 to 64, 149 to 165 IEEE802.11b/IEEE802.11g: Channels 1 to 11
RF Frequency Band	IEEE802.11a: 5.18-5.32 GHz, 5.745-5.825 GHz IEEE802.11b/IEEE802.11g: 2.412-2.462 GHz

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For U.S.A.

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THIS PRODUCT IS NOT INTENDED FOR USE AS, OR AS PART OF, NUCLEAR EQUIPMENT/SYSTEMS, AIR TRAFFIC CONTROL EQUIPMENT/SYSTEMS, OR AIRCRAFT COCKPIT EQUIPMENT/SYSTEMS*¹. PANASONIC WILL NOT BE RESPONSIBLE FOR ANY LIABILITY RESULTING FROM THE USE OF THIS PRODUCT ARISING OUT OF THE FOREGOING USES.

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DIAL TOLL FREE: 1-800-LAPTOP5

Correspondence requesting product information should be sent to:
Panasonic Computer Solutions 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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^{*2} AIRCRAFT COCKPIT EQUIPMENT/SYSTEMS include Class2 Electrical Flight Bag(EFB) Systems and Class1 EFB Systems when used during critical phases of flight (e.g., during take-off and landing). Class1 EFB Systems and 2 EFB Systems are defined by FAA: AC (Advisory Circular) 120-76A.

IF YOU SHIP THE PRODUCT FOR WARRANTY SERVICE

Carefully pack the product, preferably in the original carton. Include details of defect claimed and proof of date of original purchase. No liability is assumed for loss or damage to the product while in transit, if you chose your own transportation carrier.

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As an ENERGY STAR® Partner, Matsushita Electric Industrial Co., Ltd. has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

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