Panasonic®

OPERATING INSTRUCTIONS

Personal Computer

Model No. **CF-30** series

Contents

Getting Started

Getting Started

Appendix

Appendix

Please read these instructions carefully before using this product and save this manual for future use.

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) - [All Programs] :	Click (Start), and then click [All Programs].
:	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.
  - "Windows Vista® Business" as "Windows" or "Windows Vista"
  - DVD-ROM & CD-R/RW drive and DVD MULTI drive as "CD/DVD drive"
  - Circular media including DVD-ROM and CD-ROM as "discs"
- The display modes are referred as follows. ( ) indicates the terms in [Intel® Graphics Media Accelerator Driver for Mobile] screen. To display the screen, right-click the desktop and click [Graphics Properties].
  - Internal LCD (Notebook): The computer's display
  - External display (Monitor): External display
  - Simultaneous display (Intel® Dual Display Clone): The same screen is displayed on the internal LCD and the external display.
  - Extended desktop: The extended working area across the internal LCD and the external display.

■ **Disclaimer**

Computer specifications and manuals are subject to change without notice. Panasonic Corporation assumes no liability for damage incurred directly or indirectly from errors, omissions or discrepancies between the computer and the manuals.

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2

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.

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

<Only for model with wireless LAN/wireless WAN/Bluetooth>
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
- This equipment has been approved for mobile operation, and unless otherwise advised in separate supplemental instructions for individual wireless transmitter(s), requires minimum 20 cm spacing be provided between antenna(s) and all person's body (excluding extremities of hands, wrist and feet) during wireless modes of operation.
- This equipment may use multiple installed transmitters, which may be capable of simultaneous transmission.
- This equipment is provided with external antenna connector(s) for connection to optional Car Mounter or Port Replicator for mobile external mounted antenna(s). External antenna(s) must be professionally installed and cannot exceed recommended maximum antenna gain as described in individual provided supplement instructions for wireless transmitters. Also, user must maintain minimum 20 cm spacing between external antenna(s) and all person's body (excluding extremities of hands, wrist and feet) during wireless modes of operation.

25-M-3-3

<Only for model with wireless LAN>
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.

25-M-W-1

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)

6-M-1

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.

3

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."

16-M-1

NOTICE for the products using LCD

This product has a fluorescent lamp that contains mercury. Disposal may be regulated in your community due to environmental considerations.
For disposal or recycling information, please contact your local authorities, or the Electronic Industries Alliance: <http://www.eiae.org/>

24-M-2

Models 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 ATTACHEMENT 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

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 touts les dispositifs n'excède pas 5."

IES: Voir sous le fond de l'ordinateur

17-Ca-1

Canadian ICES-003

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

<div align="right">7-M-2</div>

<Only for model with wireless LAN/Bluetooth>
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 in-terference that may cause undesired operation of the device.

<div align="right">30-Ca-1-1</div>

<Only for model with wireless LAN>

This product (local network devices) for the band 5150-5250 MHz is only indoor usage to reduce potential for harmful interference to co-channel Mobile Satellite systems.

High power radars are allocated as primary users (mean-ing they have priority) of 5250-5350 MHz and 5650-5850 MHz and these radars could cause interference and/or damage to LELAN devices.

<div align="right">30-Ca-2-1</div>

This device has been designed to operate with an anten-na having a maximum gain of 2.15 dB. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The Required antenna impedance is 50 ohms.
To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication.

<div align="right">25-Ca-1-1</div>

<Only for model with wireless LAN>
RF Exposure Warning

This equipment has been approved for mobile operation, and unless otherwise advised in separate supplemental instructions for individual wireless transmitter(s), requires minimum 20 cm spacing be proved between antenna(s) and all person's body (excluding extremities of hands, wrist and feet) during wireless modes of operation.

<Pour modèles LAN sans fil uniquement>
Mise en garde concernant l'exposition à l'énergie radiofréquence

Cet équipement a été homologué pour un fonctionnement sans fil et, sauf avis contraire inclus dans la notice d'utili-sation d'un autre émetteur sans fil, une distance minimale de 20 cm doit être assurée entre l'antenne et le corps de toute personne (à l'exclusion des mains, poignets et pieds) pendant le fonctionnement sans fil.

<div align="right">25-M-5-1</div>

Models for Europe

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

Declaration of Conformity (DoC)

$C\epsilon$

"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 con-tact our web address: http://www.doc.panasonic.de

Contact and Pursuant to at the directive 2004/108/EC, article 9(2)
Panasonic Testing Centre
Panasonic Service Europe, a division of
Panasonic Marketing Europe GmbH
Winsbergring 15, 22525 Hamburg, F.R. Germany

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, Nether-lands, Sweden, Denmark, Finland, Switzerland, Luxembourg, Belgium, France, Germany, Spain, Portugal, Iceland, Greece, Italy, Norway and Austria.

<div align="right">18-E-2</div>

Read Me First

Important Safety Instructions / Importantes Mesures De Sécurité

Information to the User

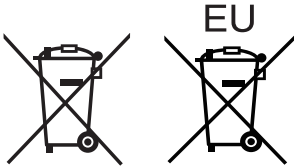## Lithium Battery / Pile au lithium

Getting Started

For Used in Motor Vehicle /Pour L'utilisation Dans Un Véhicule Motorisé

Warning: Notebook Computer may be installed in a motor vehicle and visible to the driver only if used to support vehicle related functions such as vehicle information, system control, rear or side observation and navigation. If used for entertainment purpose, such as television reception or video play, it must be installed to the rear of the driver's seat where it will not be visible, directly or indirectly, to the operator of the motor vehicle. Check with individual state/provincial laws to determine lawful use of this product while operating within a motor vehicle.

Avertissement : L'ordinateur bloc-notes peut être installé dans un véhicule motorisé et dans le champ de vision du conducteur uniquement en tant que dispositif d'aide aux fonctions du véhicule, comme par exemple pour fournir des informations sur le véhicule, comme dispositif de contrôle de système, pour l'observation à l'arrière ou sur les côtés du véhicule, ainsi que pour fournir de l'information routière. Pour toute utilisation à fin de divertissement, comme par exemple pour regarder la télévision ou jouer à des jeux vidéo, il doit être installé à l'arrière du siège du conducteur, en un emplacement où il ne sera pas visible, ni directement ni indirectement, pour le conducteur du véhicule motorisé. Vérifiez les lois fédérales et nationales qui régissent l'utilisation légale de cet appareil à l'intérieur d'un véhicule motorisé.

35-M-1

Information on Disposal in other Countries outside the European Union

EU

These symbols are only valid in the European Union.
If you wish to discard this product, please contact your local authorities or dealer and ask for the correc method of disposal.

36-M-1

Read Me First

Precautions

This computer is not intended for use in medical equipment including life-support systems, air traffic control systems, or other equipment, devices or systems that are involved with ensuring human life or safety. Panasonic cannot be held responsible in any way for any damages or loss resulting from the use of this unit in these types of equipment, devices or systems, etc.

The CF-30 was developed based on thorough research into the real-world portable computing environments. Exhaustive pursuit of usability and reliability under harsh conditions led to innovations such has the magnesium alloy exterior, vibration damped hard disk drive and floppy disk drive, flexible internal connections. The CF-30's outstanding engineering has been tested using the strict MIL-STD- 810F (for vibration and shock) and IP (for dust and water) based procedures.

As with any portable computer device precautions should be taken to avoid any damage. The following usage and handling procedures are recommended.

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

If a Malfunction Occurs, Immediately Unplug the AC Plug and the Battery Pack
• This product is damaged
• Foreign object inside this product
• Smoke emitted
• Unusual smell emitted
• Unusually hot

Continuing to use this product while any of the above conditions are present may result in fire or electric shock.
• If a malfunction occurs, immediately turn the power off and unplug the AC plug, and then remove the battery pack. Then, contact your technical support office.

Do Not Touch This Product and Cable When It Starts Thundering
Electric shock may result.

Do Not Connect the AC Adaptor to a Power Source Other Than a Standard Household AC Outlet
Otherwise, a fire due to overheating may result. 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.

Do Not Do Anything That May Damage the AC Cord, the AC Plug, or the AC Adaptor
Do not damage or modify the cord, place it near hot tools, bend, twist, or pull it forcefully, place heavy objects on it, or bundle it tightly.
Continuing to use a damaged cord may result in fire, short circuit, or electric shock.

Do Not Pull or Insert the AC Plug If Your Hands Are Wet
Electric shock may result.

Clean Dust and Other Debris of the AC Plug Regularly
If dust or other debris accumulates on the plug, humidity, etc. may cause a defect in the insulation, which may result in a fire.
• Pull the plug, and wipe it with a dry cloth.
  Pull the plug if the computer is not being used for a long period of time.

Insert the AC Plug Completely
If the plug is not inserted completely, fire due to overheating or electric shock may result.
• Do not use a damaged plug or loose AC outlet.

Close the Connector Cover Tightly When Using This Product Where Is a Lot of Water, Moisture, Steam, Dust, Oily Vapors, etc.
The entry of foreign matter may cause a fire or electric shocks.
• If foreign matter has found its way inside, immediately turn the power off and unplug the AC cord, and then remove the battery pack. Then contact your technical support office.

Do Not Disassemble This Product
There are high-voltage areas inside which may give you an electric shock if you should touch them. Do not touch the pins and circuit boards inside, and do not allow foreign matter to enter inside.
Also, remodeling or disassembly may cause a fire.

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.

Do Not Place This Product on Unstable Surface
If balance is lost, this product may fall over or drop, resulting in an injury.

Avoid Stacking
If balance is lost, this product may fall over or drop, resulting in an injury.

Do Not Leave This Product in High Temperature Environment Such as in a Sun-Heated Car, for a Long Period of Time
Leaving this product where it will be exposed to extremely high temperatures such as in a sun-heated car or in direct sunlight may deform the cabinet and/or cause trouble in the internal parts. Continued use in such a resulting condition may lead to short-circuiting or insulation defects, etc. which may in turn lead to a fire or electric shocks.

Hold the Plug When Unplugging the AC Plug
Pulling on the cord may damage the cord, resulting in a fire or electric shock.

Do Not Move This Product While the AC Plug Is Connected
The AC cord may be damaged, resulting in fire or electric shock.
• If the AC cord is damaged, unplug the AC plug immediately.

Use Only the Specified AC Adaptor With This Product
Using an AC adaptor other than the one supplied (attached to your product or supplied by Panasonic) may result in a fire.

Do Not Subject the AC Adaptor to Any Strong Impact
Using the AC adaptor after a strong impact such as being dropped may result in electric shock, short circuit, or fire.

Take a Break of 10-15 Minutes Every Hour
Using this product for long periods of time may have detrimental health effects on the eyes or hands.

8

Do Not Turn the Volume Up To Loud When Using Headphones
Listening at high volumes that overstimulate the ear for long periods of time may result in loss of hearing.

Use the Modem with a Regular Telephone Line
Connection to an internal phone line (on-premise switches) of a company or business office, etc. or to a digital public phone or use in a country or area not supported by the computer may result in a fire or electric shocks.

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 right, a fire or electric shock may result.

- Networks other than 1000BASE-T, 100BASE-TX, or 10BASE-T
- Phone lines (IP Phone, Telephone lines, internal phone lines (on-premise switches), digital public phones, etc.)

Do Not Use With Exposing the Skin To This Product For a Long Period of Time
Using this product with exposing the skin to the heat source of this product or AC adaptor for a long period of time can cause a low-temperature burn.
- Do not place the computer near a television or radio receiver.
- Keep the computer away from magnets. Data stored on the hard disk may be lost.

Precautions (Battery Pack)

Do Not Use With Any Other Product
The battery pack is rechargeable and was intended for the specified product. If it is used with a product other than the one for which it was designed, electrolyte leakage, generation of heat, ignition or rupture may result.

Do Not Charge the Battery Using Methods Other Than Those Specified
If the battery is not charged using one of the specified methods, electrolyte leakage, generation of heat, ignition or rupture may result.

Do Not Throw the Battery Pack Into a Fire or Expose It to Excessive Heat
Generation of heat, ignition or rupture may result.

Avoid Extreme Heat (Near the Fire, In Direct Sunlight, for Example)
Electrolyte leakage, generation of heat, ignition or rupture may result.

Do Not Insert Sharp Objects Into the Battery Pack, Expose It to Bumps or Shocks, Disassemble, or Modify It
Electrolyte leakage, generation of heat, ignition or rupture may result.

Do Not Short the Positive (+) and Negative (-) Contacts
Generation of heat, ignition or rupture may result. Do not place the battery pack together with articles such as necklaces or hairpins when carrying or storing.

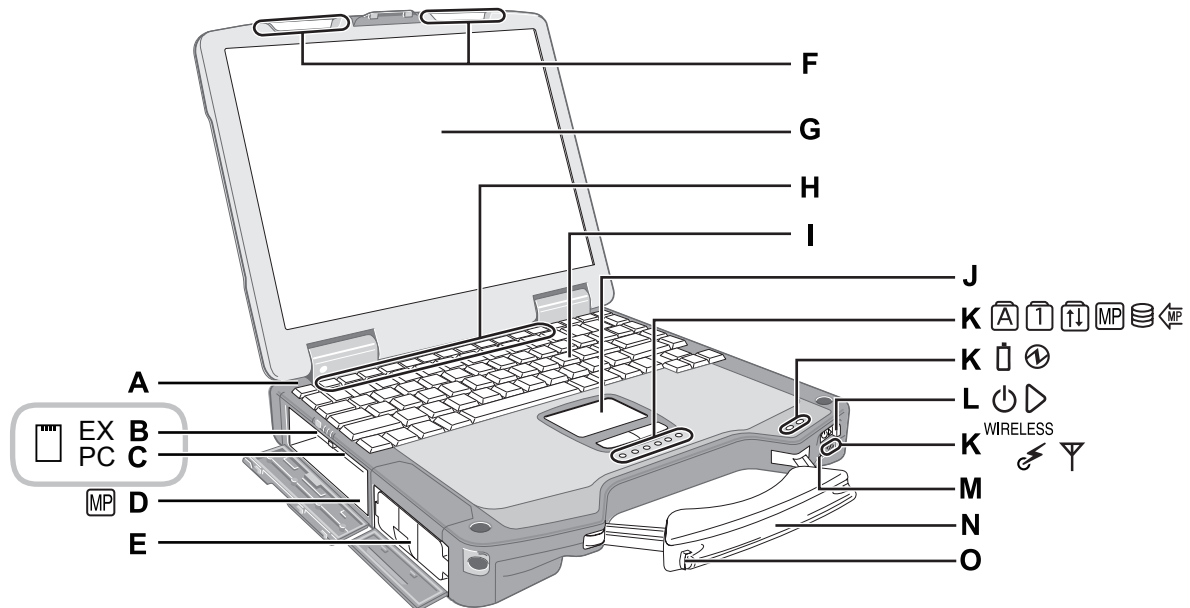**Do Not Use This Product with a Battery Pack Other Than the One Specified**
Use only the specified battery pack (CF-VZSU46U) with your product. Use of battery packs other than those manufactured and supplied by Panasonic may present a safety hazard (generation of heat, ignition or rupture).
- Do not 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: Bluetooth Antenna
    <Only for model with Bluetooth>
    ➜ 📖 *Reference Manual* "Bluetooth"

B: ExpressCard Slot
    ➜ 📖 *Reference Manual* "PC Card / ExpressCard"

C: PC Card Slot
    ➜ 📖 *Reference Manual* "PC Card / ExpressCard"

D: Multimedia Pocket
    ➜ 📖 *Reference Manual* "Multimedia Pocket"

E: Battery Pack
F: Wireless LAN Antenna
    <Only for model with wireless LAN>
    ➜ 📖 *Reference Manual* "Wireless LAN"

G: LCD
    <Only for model with touchscreen>
    ➜ 📖 *Reference Manual* "Touchscreen"

H: Function Key
    ➜ 📖 *Reference Manual* "Key Combinations"

I: Keyboard
J: Touch Pad
K: LED Indicator
    Ⓐ : Caps lock
    ① : Numeric key (NumLk)
    ⇕ : Scroll lock (ScrLk)
    MP : Multimedia pocket device status or the second
       battery status
       ➜ 📖 *Reference Manual* "Multimedia Pocket"
         "Battery Power"

    🖴 : Hard disk drive status
    ◀MP : Power status of the multimedia pocket
    🔋 : Battery status
       ➜ 📖 *Reference Manual* "Battery Power"

    ④ : Power status
       (Off: Power off/Hibernation, Green: Power on,
       Blinking green: Sleep)

    WIRELESS⚡ : Wireless ready
       This indicator lights when Wireless LAN, Blue-
       tooth, and/or Wireless WAN are connected and
       ready. It does not necessarily indicate the On/Off
       condition of the wireless connection.
       ➜ 📖 *Reference Manual* "Wireless LAN" "Blue-
         tooth" "Disabling/Enabling Wireless Communi-
         cation"

    📶 : Wireless WAN status
       <Only for model with wireless WAN>
       ➜ Refer to the instruction manual of the wireless device

L: Power Switch
M: Wireless Switch
    ➜ 📖 *Reference Manual* "Disabling/Enabling Wireless
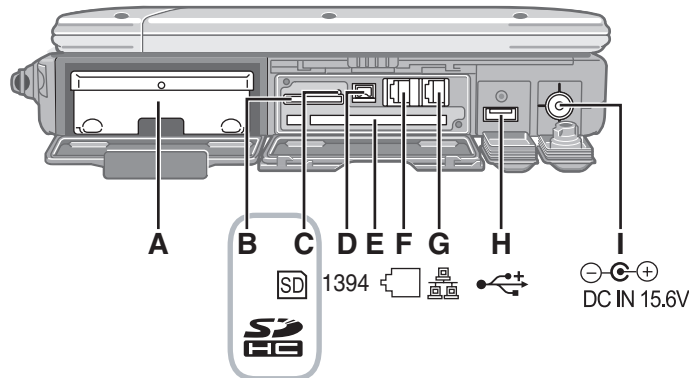   Communication"
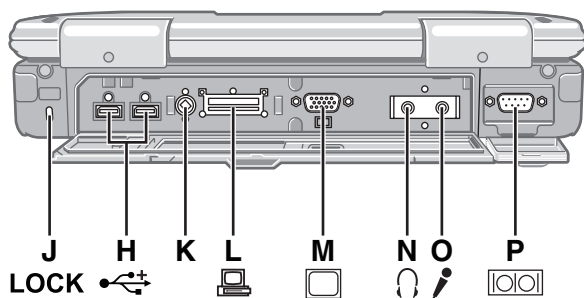
N: Carrying Handle
O: Stylus Holder

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.
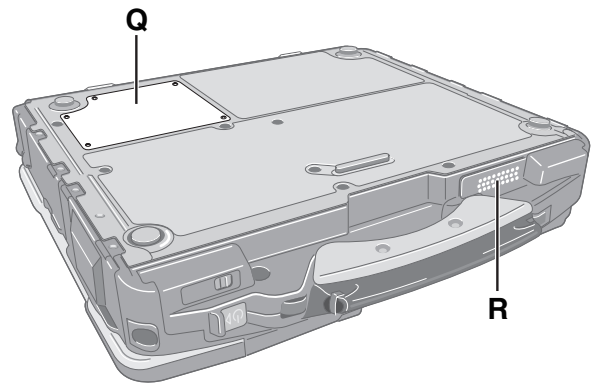Pour des renseignements sur le recyclage de la batterie, veuillez composer le
1-800-8-BATTERY.

48-M-1

Right side

A   B C   D E F G   H   I

SD 1394 ⬚ 🔌 ⚡ ⊖─ⓒ─⊕
SDHC   DC IN 15.6V

Rear side   **Bottom**

J   H   K   L   M   N O   P
LOCK ⚡ 🖥 ⬚ 🎧🎤 |O|

Q

R

A: Hard Disk Drive
➔ 📖 *Reference Manual* "Hard Disk Drive"

B: SD Memory Card Slot
➔ 📖 *Reference Manual* "SD Memory Card"

C: SD Memory Card Indicator
(Blinking: During access)
➔ 📖 *Reference Manual* "SD Memory Card"

D: IEEE 1394 Interface Connector
➔ 📖 *Reference Manual* "IEEE 1394 Devices"

E: Smart Card Slot
<Only for model with Smart Card slot>
➔ 📖 *Reference Manual* "Smart Card"

F: Modem Port
➔ 📖 *Reference Manual* "Modem"

G: LAN Port
➔ 📖 *Reference Manual* "LAN"

H: USB Port
➔ 📖 *Reference Manual* "USB Devices"

I: DC-IN Jack

J: Security Lock
A Kensington cable can be connected.
For further information, read the manual that comes with the cable.

K: External Antenna Connector

L: Expansion Bus Connector
➔ 📖 *Reference Manual* "Port Replicator / Car Mounter"

M: External Display Port
➔ 📖 *Reference Manual* "External Display"

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

O: Microphone Jack
A condenser microphone can be used. If other types of microphones are used, audio input may not be possible, or malfunctions may occur as a result.
• When recording in stereo using a stereo microphone:
Click 🪟 (Start) - [Control Panel] - [Hardware and Sound] - [Sound] - [Recording] - [Microphone] - [Properties], and then add a check mark for [No Audio enhancements] in [Microphone Enhancements].
• When using a monaural microphone with a 2-terminal plug:
Click 🪟 (Start) - [Control Panel] - [Hardware and Sound] - [Sound] - [Recording] - [Microphone] - [Properties], and then add a check mark for [Voice enhancements] in [Microphone Enhancements]. Otherwise, only audio on the left track will be recorded.
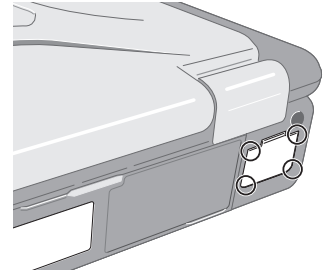
P: Serial Port

Q: RAM Module Slot
➔ 📖 *Reference Manual* "RAM Module"

R: Speaker
➔ 📖 *Reference Manual* "Key Combinations"
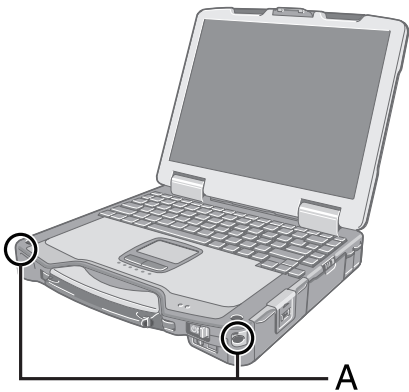
Description of Parts

To ensure waterproof integrity, close the connector covers completely. When closing the covers, push the 4 corners and make sure that the cover fits in completely. (The illustration is an example.)
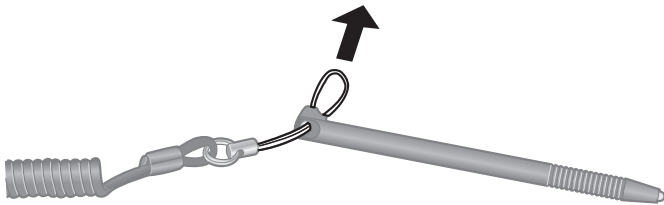
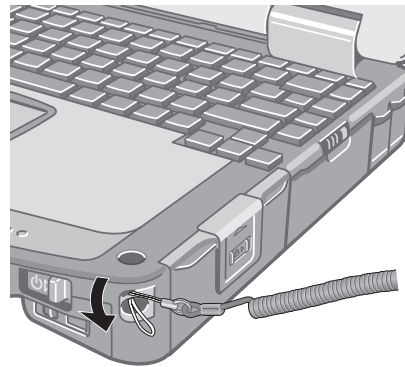## Attaching the stylus to the computer (only for model with touchscreen)

Use the tether to attach the stylus to the computer so you will not lose it.
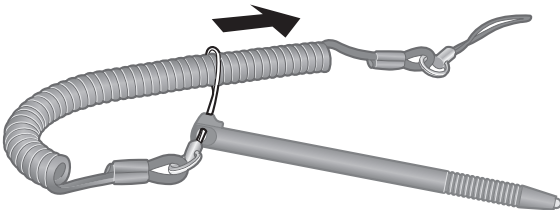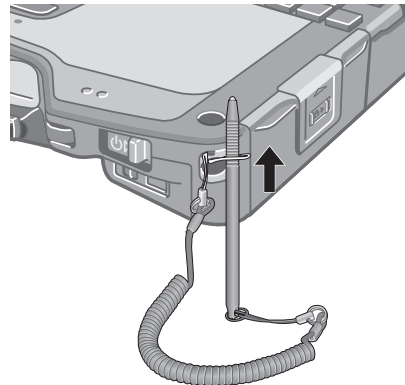There are holes (A) to attach it.

A

1

3

2

4

12

Specifications

This page provides the specifications for the basic model.
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, [Hard Disk]: Hard disk drive size

■ Main Specifications

Model No.	CF-30KTMAXJM		CF-30K3MAXJM
CPU	Intel® Core™ 2 Duo Processor SL9300 (1.6 GHz, 6 MB[*1] L2 cache, 1066 MHz FSB)		
Chipset	Mobile Intel® GS45 Express Chipset		
Memory[*1*2]	2 GB (4 GB Max.)		
Video Memory[*1*3]	UMA 285 MB Max. (When Memory is 1024 MB)/1423 MB Max. (When Memory is 4048 MB)		
Hard Disk Drive[*4]	160 GB Approx. 2 GB is used as a partition with recovery tools. (Users cannot use this partition.)		
Display Method	13.3 XGA type (TFT) with Touchscreen		13.3 XGA type (TFT)
Internal LCD[*5]	65,536/16,777,216 colors (800 × 600 dots/1024 × 768 dots)		
External Display[*6]	65,536/16,777,216 colors (800 × 600 dots/1024 × 768 dots/1280 × 768 dots/1280 × 1024 dots/1440 × 900 dots)		
Wireless LAN	➔ page 35		
Bluetooth™[*7]	➔ page 35		
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, Intel® High Definition Audio subsystem support, Monaural speaker		
Security Chip	TPM (TCG V1.2 compliant)[*8]		
Card Slot	PC Card	Type I or Type II x 1 (3.3 V: 400 mA, 5 V: 400 mA)	
	ExpressCard	ExpressCard/34 or ExpressCard/54 x 1	
	SD Memory Card[*9]	x 1, Data transfer rate = 8 MB per second[*10]	
	Smart Card[*11]	ISO7816 x 1	
RAM Module Slot	200-pin, 1.8 V, SO-DIMM, DDR2 SDRAM, PC2-5300 Compliant		
Interface	USB port (4-pin, USB 2.0) x 3, Serial port (Dsub 9-pin male), Modem port (RJ-11), LAN port (RJ-45), External display port (Mini Dsub 15-pin female), Expansion Bus Connector (Dedicated 80-pin female), External Antenna Connector (Dedicated 50 Ω coaxial connector), 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 × 2)		
Keyboard / Pointing Device	87 keys / Touch Pad / Touchscreen (Anti-Reflection, Stylus (included) touch capable)		87 keys / Touch Pad
Power Supply	AC adaptor or Battery pack		
AC Adaptor[*12]	Input: 100 V to 240 V AC, 50 Hz/60 Hz, Output: 15.6 V DC, 5.0 A		
Battery Pack	Li-ion 10.65 V, 8.55 Ah		
Operating Time[*13]	Main Battery: Approx. 7 hours[*14] Main Battery + Second Battery: Approx. 10.5 hours[*14]		
Charging Time[*13]	Power on	Main Battery: Approx. 8.5 hours Main Battery + Second Battery: Approx. 12.5 hours	
	Power off	Main Battery: Approx. 5 hours Main Battery + Second Battery: Approx. 8 hours	
Clock Battery	Coin type lithium battery 3.0 V		
Power Consumption[*15]	Approx. 50 W[*16] / Approx. 70 W (Maximum when recharging in the ON state)		
Physical Dimensions (W × H × D)	302 mm × 67.5 - 69.5 mm × 292 mm {11.9" × 2.7 - 2.8" × 11.5"}		
Weight	Approx. 3.8 kg {Approx. 8.4 lb.}, excluding the dummy pack and dummy cards (Approx. 50g {Approx. 1.8 oz.})		
Operation Environment	Temperature: 5 °C to 35 °C {41 °F to 95 °F} Humidity: 30% to 80% RH (No condensation)		

■ Main Specifications

Storage Environment	Temperature: -20 °C to 60 °C {-4 °F to 140 °F} Humidity: 30% to 90% RH (No condensation)
Operating System	Windows Vista® Business
Utility Programs	DMI Viewer, Adobe Reader, PC Information Viewer, Loupe Utility, Bluetooth™ Stack for Windows® by TOSHIBA[7], Wireless Switch Utility, Hotkey Settings, Battery Recalibration Utility, Panasonic Hand Writing, Infineon TPM Professional Package V3.0[17], Power Saving Utility, Wireless Connection Disable Utility[17]
	Setup Utility, Hard Disk Data Erase Utility[18], PC-Diagnostic Utility

■ Wireless LAN <Only for model with wireless LAN>

Data Transfer Rates	IEEE802.11a : 54/48/36/24/18/12/9/6 Mbps (automatically switched)[19] IEEE802.11b : 11/5.5/2/1 Mbps (automatically switched)[19] IEEE802.11g : 54/48/36/24/18/12/9/6 Mbps (automatically switched)[19] IEEE802.11n : (HT20) 144.4/130/117/115.6/104/86.7/78/65/58.5/57.8/52/43.3/39/28.926/19.5/ 14.4/13/6.5 Mbps (automatically switched)[19] (HT40) 300/270/243/240/216/180/162/130/120/117/108/104/90/81/78/60/54/52/ 39/30/27/26/13 Mbps (automatically switched)[19]
Standards Supported	IEEE802.11a / IEEE802.11b / IEEE802.11g / IEEE802.11n(Draft 2.0)
Transmission method	OFDM system, DSSS system
Wireless Channels Used	IEEE802.11a : Channels 36/40/44/48/52/56/60/64/100/104/108/112/116/132/136/140/149/153/ 157/161/165 IEEE802.11b/IEEE802.11g : Channels 1 to 11 IEEE802.11n : Channels 1-11/36/40/44/48/52/56/60/64/100/104/108/112/116/132/136/140/149/ 153/157/161/165
RF Frequency Band	IEEE802.11a : 5.18 GHz - 5.32 GHz, 5.5 GHz - 5.58 GHz, 5.66 GHz - 5.7 GHz, 5.745 GHz - 5.825 GHz IEEE802.11b/IEEE802.11g : 2.412 GHz - 2.462 GHz IEEE802.11n : 2.412 GHz - 2.462 GHz, 5.15 GHz - 5.35 GHz, 5.5 GHz - 5.58 GHz, 5.66 GHz - 5.7 GHz, 5.745 GHz - 5.85 GHz

■ Bluetooth™ <Only for model with Bluetooth>

Bluetooth Version	2.0 + EDR
Transmission method	FHSS system
Wireless Channels Used	Channels 1 to 79
RF Frequency Band	2.402-2.48 GHz

[1] 1 MB = 1,048,576 bytes

[2] You can physically expand the memory up to 4096 MB, but the total amount of usable memory available will be less depending on the actual system configuration.

[3] 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.

[4] 1 GB = 1,000,000,000 bytes. Your operating system or some application software will report as fewer GB.

[5] A 16,777,216 color display is achieved by using the dithering function.

[6] Maximum resolution depends on the specifications of the external display. Display may be impossible using some connected external displays.

[7] Only for model with Bluetooth

[8] For information on TPM, click 🔵 (Start) and input "c:\util\drivers\tpm\README.pdf" in [Start Search] and press **Enter**, and refer to the Installation Manual of "Trusted Platform Module (TPM)".

[9] SD Memory Cards that support high-speed transfer rates can be used. Windows ReadyBoost function is also supported. Operation has been tested and confirmed using Panasonic SD Memory Cards and SDHC Memory Cards with a capacity of up to 8 GB. Operation on other SD equipment is not guaranteed. This computer is not compatible with MultiMediaCards. Do not insert these kinds of cards.

[10] The theoretical value is not the actual speed. The transfer rate does not become higher even if you use a card that supports the higher transfer rate.

[11] Only for model with Smart Card slot

[12] <Only for North America> 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. 20-M-2-1

[13] Varies depending on the usage conditions.

[14] Measured at LCD brightness: 60 cd/m² Varies depending on the usage conditions, or when an external device is attached.

[15] Approx. 0.9 W when the battery pack is fully charged (or not being charged) and the computer is OFF.

[16] Rated power consumption 23-E-1

[17] You need to install to use the feature.

[18] The Product Recovery DVD-ROM is required.
[19] These are speeds specified in IEEE802.11a+b+g+n standards.
Actual speeds may differ.

Appendix