



Panasonic®

OPERATING INSTRUCTIONS

Personal Computer

Model No. **CF-30** series

Contents

Getting Started

Introduction.....	2
Read Me First.....	3
Description of Parts.....	9
First-time Operation.....	12

Getting Started

Useful Information

On-screen Manual.....	16
Handling and Maintenance.....	17
Hard Disk Backup Function (Recover Pro).....	19
Hard Disk Data Erase Utility.....	21
Reinstalling Software.....	22

Useful Information

Troubleshooting

Error Code/Message.....	24
Troubleshooting (Basic).....	25
Hardware Diagnostics.....	29

Troubleshooting

Appendix

LIMITED USE LICENSE AGREEMENT.....	32
Specifications.....	33

Appendix

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

To access the on-screen manual
→ page 16 “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”, “Windows XP” or “Windows XP Professional”
 - 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, click [start] - [Control Panel] - [Other Control Panel Options] - [Intel(R) GMA Driver for Mobile].
 - 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.

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Read Me First

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.

18-E-1

<Only for model with a “CE Ⓞ” mark on the bottom of the computer>



Declaration of Conformity (DoC)

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Contact:

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

25-E-1

Information of Countries intended for radio application:

The United Kingdom, The Federal Republic of Germany, The Kingdom of Belgium, The Swiss Confederation, The Grand Duchy of Luxembourg, The Republic of Lithuania, The Republic of Estonia, The Republic of Slovenia, The Republic of Latvia, The Republic of Hungary, The Republic of Poland, Sweden, Italy, Ireland, Romania, Czech Republic, Slovak Republic, The Netherlands, Portuguese Republic, France, Norway, Austria, Finland, Spain, Denmark, Greece

25-E-2-1

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

21-E-1

Models for UK

Warning

This apparatus must be earthed for your safety.

To ensure safe operation the three-pin plug must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring.

Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth.

Wrongly wired extension cords are a major cause of fatalities.

The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe.

For your safety, if you have any doubt about the effective earthing of the power point, consult a qualified electrician.

Read Me First

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY

This appliance is supplied with a moulded three pin mains plug for your safety and convenience. A 3 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 3 amps and that it is approved by ASTA or BSI to BS 1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

Warning: THIS APPLIANCE MUST BE EARTHED.

Important

The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow: Earth

Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows: The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  coloured GREEN or GREEN-and-YELLOW.

The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured BLACK.

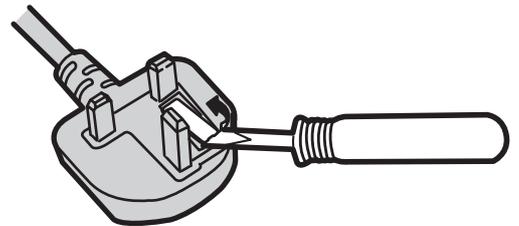
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured RED.

The mains plug on this equipment must be used to disconnect the mains power.

Please ensure that a socket outlet is available near the equipment and shall be easily accessible.

■ How to replace the fuse

Open the fuse compartment with a screwdriver and replace the fuse.



Warnings

- This equipment is not designed for connection to an IT power system. (An IT system is a system having no direct connections between live parts and Earth; the exposed-conductive-parts of the electrical installation are earthed. An IT system is not permitted where the computer is directly connected to public supply systems in the U.K.)
- Disconnect the mains plug from the supply socket when the computer is not in use.

This equipment is produced to BS800/1983.

<Only for model with Bluetooth>

Communication using Bluetooth outdoor is against the law.

Do not use Bluetooth outdoors.

8-E-1

37-M,E-1

Pour la France

Bande de fréquences restreinte: Lors de l'utilisation de cet appareil sur le territoire français, vous ne pouvez le faire qu'en utilisant les bandes de fréquences 10 et 11 (respectivement 2.457 MHz et 2.462 MHz). L'utilisation de cet appareil sur une autre bande prise en charge par celui-ci est interdite. Une utilisation à l'extérieur n'est pas autorisée.

25-F-1

<Pour modèles Bluetooth Uniquement >

L'utilisation de Bluetooth est interdite pour les communications extérieures.

N'utilisez pas la technologie Bluetooth à l'extérieur.

37-F-1

Per l'Italia

Per l'uso negli interni è necessaria una licenza. L'uso con le installazioni esterne non è permesso.

25-It-1

<Solo per modelli provvisti di Bluetooth>

Le comunicazioni tramite l'uso di Bluetooth all'esterno sono contro la legge.

Non usare il Bluetooth all'esterno.

37-It-1

Important Safety Instructions

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

19-E-1

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.

26-M-1

Read Me First

Lithium Battery

Lithium Battery!

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

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

15-E-1

802.11a Wireless LAN channel

Use the following channels for 802.11a Wireless LAN.

- **UK, Italy, Germany, Finland, Norway, Netherlands, Spain, Switzerland, Austria, Belgium**
Channels 36, 40, 44, 48, 52, 56, 60, 64 (Available indoors only)
Channels 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140
- **Sweden**
Channels 36, 40, 44, 48, 52, 56, 60, 64 (Available indoors only)
Channels 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140 (Available indoors only)
- **France**
Channels 36, 40, 44, 48, 52, 56, 60, 64 (Available indoors only)

34-E-1

For Used in Motor Vehicle

Warning: Check the following Commission Recommendation to determine proper installation and usage of this product while operating within a motor vehicle.

“Commission Recommendation on safe and efficient in-vehicle information and communication systems: A European statement of principles on human machine interface.”

Commission Recommendation is available from Official Journal of the European Communities.

35-E-1

Information on Disposal for Users of Waste Electrical & Electronic Equipment (private households)



This symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.

Please dispose of this item only in designated national waste electronic collection schemes, and not in the ordinary dust bin.

For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union.

If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

36-E-1

Precautions

THIS PRODUCT IS NOT INTENDED FOR USE AS, OR AS PART OF, NUCLEAR EQUIPMENT/SYSTEMS, AIR TRAFFIC CONTROL EQUIPMENT/SYSTEMS, OR AIRCRAFT COCKPIT EQUIPMENT/SYSTEMS¹. 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) and/or mounted on to the aircraft. Class1 EFB Systems and 2 EFB Systems are defined by FAA: AC (Advisory Circular) 120-76A or JAA: JAA TGL (Temporary Guidance Leaflets) No.36.

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. 39-E-1

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 as 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 plug, 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.

Read Me First

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 below, a fire or electric shock may result.

- Networks other than 100BASE-TX, 100BASE-TX or 10BASE-T
- Phone lines (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.

Interface Cable

Use of an interface cable longer than 3 m (9.84 feet) is not recommended.

11-E-1

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 the 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).

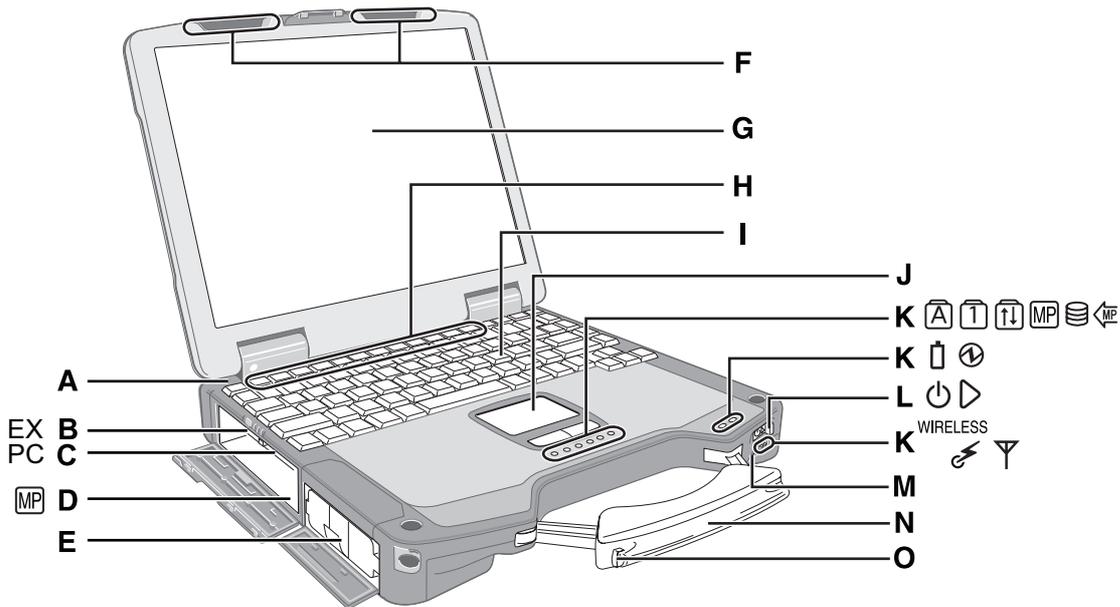
- Do not touch the terminals on the battery pack. The battery pack may no longer function properly if the contacts are dirty or damaged.
- Do not expose the battery pack to water, or allow it to become wet.
- If the battery pack will not be used for a long period of time (a month or more), charge or 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).
(→  *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 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

: 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 of the multimedia pocket

: Battery status

→ *Reference Manual* "Battery Power"

: Power status

(Off: Power off/Hibernation, Green: Power on, Blinking green: Standby)

: Wireless ready

This indicator lights when Wireless LAN, Bluetooth, 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" "Bluetooth" "Wireless Switch Utility"

: Wireless WAN status

<Only for model with wireless WAN>

→ Refer to the instruction manual of the wireless device

L: Power Switch

M: Wireless Switch

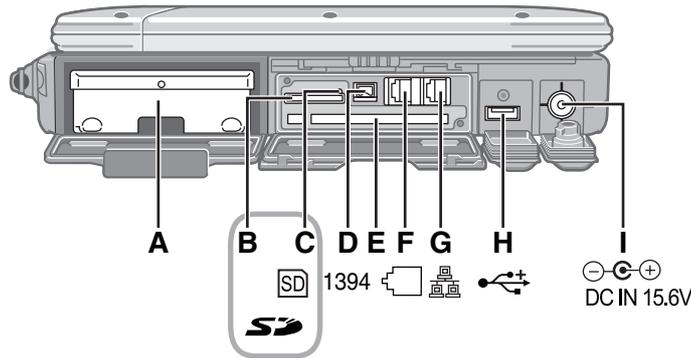
→ *Reference Manual* "Wireless Switch Utility"

N: Carrying Handle

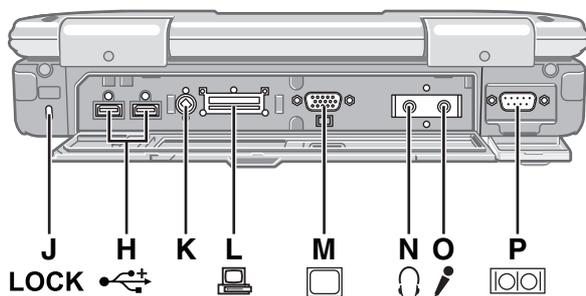
O: Stylus Holder

Description of Parts

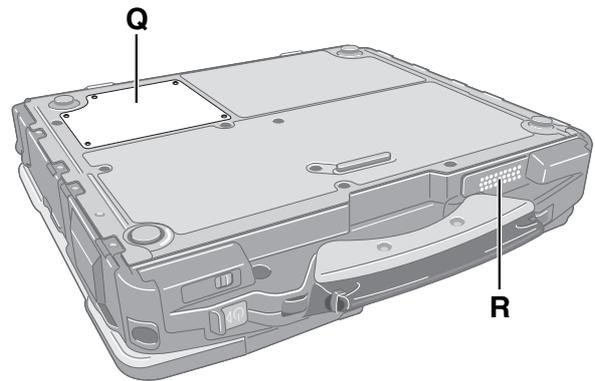
Right side



Rear side



Bottom



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: Ext Antenna Connector

L: Expansion Bus Connector

→ Reference Manual "Port Replicator"

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:

Double-click in the notification area, click [Options] - [Properties], and add a check mark for [Recording], click [OK] - [Options] - [Advanced Controls] - [Advanced], remove a check mark for [Mono Microphone], and then click [Close].

- When using a monaural microphone with a 2-terminal plug:

With the settings outlined above, only audio on the left track will be recorded.

When monitoring the microphone audio using headphones, sounds on the left track cannot be heard, regardless of the above settings. This is a result of the computer's specifications, and is not a malfunction.

P: Serial Port

Q: RAM Module Slot

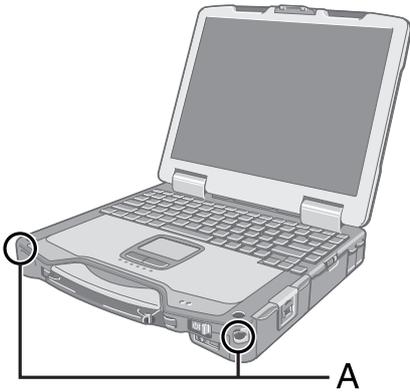
→ Reference Manual "RAM Module"

R: Speaker

→ Reference Manual "Key Combinations"

Attaching the stylus to the computer (only for model with touchscreen)

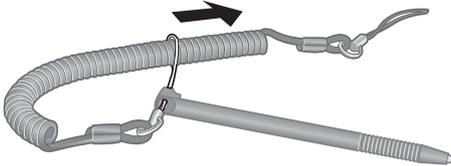
Use the tether to attach the stylus to the computer so you will not lose it. There are holes (A) to attach it.



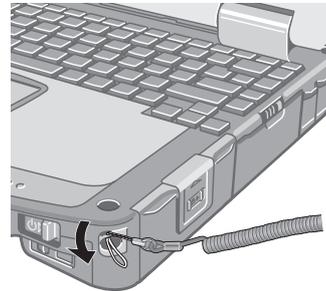
1



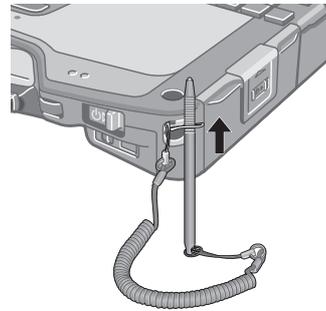
2



3



4



First-time Operation

■ Preparation

① Check and identify the supplied accessories.

If you do not find the described accessories, contact Panasonic Technical Support.

- AC Adaptor. 1
- AC Cord 1
- Battery Pack 1
- Modem Telephone Cable 1



Model No: CF-AA1653A



Model No: CF-VZSU46



- Operating Instructions (This book) . . . 1
- Product Recovery DVD-ROM 1
- Windows® Book 1

<Only for model with touchscreen>

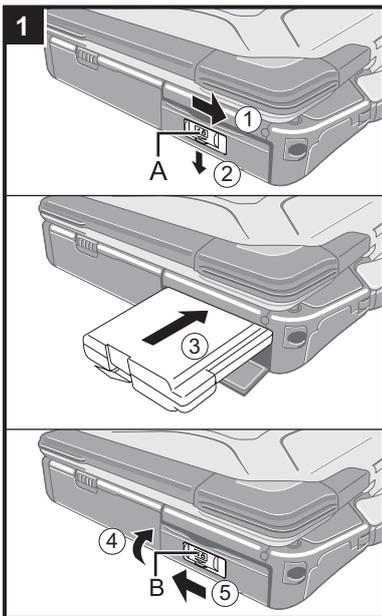
- Soft Cloth 1
- Tether 1
- Stylus 1



(→ Reference Manual "Touchscreen")

② Read the LIMITED USE LICENSE AGREEMENT before breaking the seal on the computer's packaging (→ page 32).

Getting Started

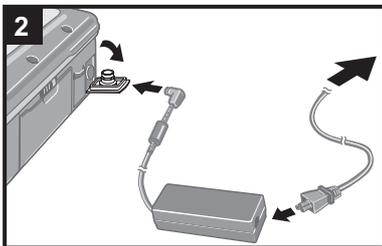


1 Insert the battery pack.

- ① Slide the latch (A) to the right to unlock the cover.
- ② Slide the latch (A) down, and open the cover.
- ③ Insert the battery pack until it securely fits the connector.
- ④ Close the cover until it clicks.
- ⑤ Slide the latch (B) to the left to lock the cover.

CAUTION

- Make sure the latch is securely locked. 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.

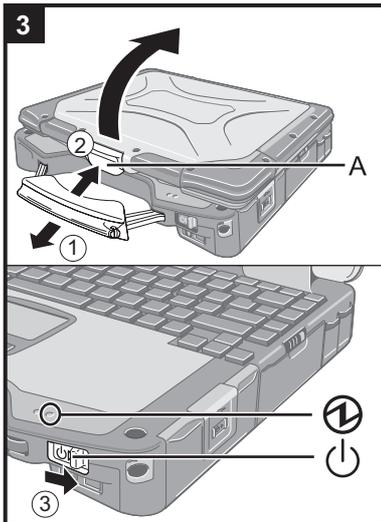


2 Connect your computer to a power outlet.

The battery charging starts automatically.

CAUTION

- Do not disconnect the AC adaptor and do not switch the wireless switch to on 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**
 - 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.



3 Turn on the computer.

- ① Pull the carrying handle forward.
- ② Push and hold the latch (A), and lift open the display.
- ③ Slide and hold the power switch  for approximately one second until the power indicator  lights.

CAUTION

- Do not slide the power switch repeatedly.
- The computer will forcibly be turned off if you slide and hold the power switch 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
 - Sliding the power switch
 - Touching the keyboard, touch pad or touchscreen (only for model with touchscreen)
 - 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.

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, click [OK]. This is not a malfunction.
- Wait until the hard disk drive indicator  has turned off.
- This computer periodically records the management information including the hard disk information such as number of hours powered-on, number of times powered-on, internal temperature, replacement sector. The maximum data volume for each record is 750 byte. These information are only used for estimating the cause when the hard disk goes down by any possibility. They are never sent to outside via network nor used for any other purpose except for the purpose described the above.
To disable the function, add the check mark for [Disable the automatic save function for management information history] in [Hard Disk Status] of PC Information Viewer, and click [OK].

<For MUI OS model>

- The keyboard will operate as the US keyboard until the keyboard setting is changed. Because of this, some alphabets shown on display may differ from inputted ones.
To avoid the accidental selections, during setting up Windows,
 - Use the touch pad to make some selections.
 - Press the NumLock key and input in the Ten-key mode to input numbers.
- To match the languages, change the language settings after setting up Windows (→ page 14). Do not change the settings in [To change system or these settings, click Customize] of [Regional and Language Options] during setting up Windows.

5 <For MUI OS model> Install Adobe Reader.

NOTE

Install Adobe Reader to read the Important Tips and the Reference Manual.

Click [start] - [Run], input the following, then click [OK].

English: [c:\util\reader\m\AdbeRdr70_enu_full.exe]

Dutch: [c:\util\reader\n\AdbeRdr70_nld_full.exe]

Finnish: [c:\util\reader\fi\AdbeRdr70_suo_full.exe]

French: [c:\util\reader\f\AdbeRdr70_fra_full.exe]

German: [c:\util\reader\g\AdbeRdr70_deu_full.exe]

Italian: [c:\util\reader\i\AdbeRdr70_ita_full.exe]

Norwegian: [c:\util\reader\no\AdbeRdr70_nor_full.exe]

Spanish: [c:\util\reader\p\AdbeRdr70_esp_full.exe]

Swedish: [c:\util\reader\s\AdbeRdr70_sve_full.exe]

6 <For MUI OS model> Change the language settings.

·English ·French ·German ·Italian ·Spanish ·Swedish
·Dutch ·Finnish ·Russian ·Turkish ·Norwegian

Change the language settings in the following menu.

[start] - [Control Panel] - [Date, Time, Language, and Regional Options] - [Regional and Language Options]

- [Regional Options] - [Standards and Formats]
- [Languages] - [Language used in menus and dialogs]
- [Languages] - [Details] - [Default input language]
- [Advanced] - [Language for non-unicode Programs]

NOTE

- When you use MUI OS and localized OS versions together on the same network, use English computer names on localized versions of Windows.
- Some UI (User Interface) strings remain in English even if the user's UI is set to another language.
- For further information, refer to "c:\windows\mui\relnotes.txt".
If you change the language in [Languages] - [Language used in menus and dialogs], the desktop color will be changed when logging on to Windows next time. The desktop color can be changed by following the procedure below.
Click [start] - [Control Panel] - [Appearance and Themes] - [Display] - [Desktop] and select color from [Color], then click [OK].

7 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.

8 <Only for model with touchscreen> Perform the touchscreen calibration.

- ① Click [start] - [All Programs] - [Fujitsu Touch Panel (USB)] - [Touch Screen Calibration Utility].
- ② Using the stylus, touch each of the 12 “+” target marks one by one until it blinks, and then click [Calibration].
- ③ Click [Save & Exit].

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.

[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.

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

Select  on the notification area 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.

- **Note that the computer consumes electricity even when the computer power is off.**

If the battery pack is fully charged, the battery will fully discharge in Approx. 8 weeks.
(when second battery pack is attached: Approx. 12 weeks)

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

- | | | |
|-------------------------------------|---------------------------|------------------------------|
| ● Key Combinations | ● Smart Card | ● Bluetooth |
| ● Touchscreen | ● RAM Module | ● Hard Disk Drive |
| ● Panasonic Hand Writing | ● Port Replicator | ● Setup Utility |
| ● Standby and Hibernation Functions | ● External Display | ● Icon Enlarger |
| ● Security Measures | ● USB Devices | ● Loupe Utility |
| ● Battery Power | ● IEEE 1394 Devices | ● DMI Viewer |
| ● Multimedia Pocket | ● Modem | ● Recover Pro |
| ● PC Card / ExpressCard | ● LAN | ● Technical Information |
| ● SD Memory Card | ● Wireless Switch Utility | ● Troubleshooting (Advanced) |
| ● SD Security | ● Wireless LAN | |

■ Important Tips

The Important Tips will provide you with the helpful information about the battery and touchscreen. Read to 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
Storage : -20°C to 60 °C
 - 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.

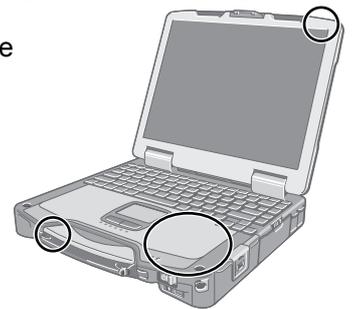
Handling cautions

This computer is designed to minimize shock to parts such as the LCD and the hard disk drive and equipped with a drip-proof keyboard, 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, cards and other protruding things.
 - 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.
- This computer contains a magnet and magnetic products at the locations circled in the illustration at right. Avoid leaving metallic object or magnetic media in contact with these areas.

<Only for model with touchscreen>

- Use only the included stylus to touch the touchscreen. 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).
- Do not use the stylus when dust or dirt (e.g., oil) is on the screen. Otherwise foreign particles on the screen/stylus can scratch the screen surface or obstruct the stylus operation.
- Use the stylus only for touching the screen. Using it for any other purpose may damage the stylus and result in scratches on the screen.



■ 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.

Handling and Maintenance

■ Computrace® Software

Computrace® software tracks your stolen computer.

Perform the following steps before installing Computrace® software.

- Computrace® software is not included or installed in this computer.

CAUTION

- You will be unable to set [Computrace (R) BIOS Module] to [Disable] once you have set to [Enable]. Do not change the setting when not used.
 - Even if you have set [Computrace (R) BIOS Module] to [Enable], this setting may return to [Disable] after repairs to the motherboard, etc. have been made.

NOTE

- Consult Absolute Software Corp. before disposal.
- Refer to the following URL for Computrace® software for installation and available service regions. Note that this service is only available in certain regions.
<http://www.absolute.com>

- 1 Turn on or restart the computer, and press F2 while [Panasonic] boot screen is displayed.**

The Setup Utility starts up.

 - If the password is requested, enter the Supervisor Password.
- 2 Select the [Security] menu, then select [Computrace (R) Sub-Menu] and press Enter.**
- 3 Select [Computrace (R) BIOS Module], and set to [Enable].**
- 4 At the confirmation message, select [Execute] and press Enter.**
- 5 At the reconfirmation message, select [Execute] and press Enter.**
- 6 Press F10.**

At the confirmation message, select [Yes] and press Enter.
The computer restarts.

Maintenance

To clean the LCD panel

<Only for model with touchscreen>

Use the soft cloth included with the computer. (For further information, refer to “Suggestions About Cleaning the LCD Surface” that comes with the soft cloth.)

<Only for model without touchscreen>

Wipe with a soft dry cloth such as gauze.

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 Backup Function (Recover Pro)

The Recover Pro creates a backup area (storage area) on the hard disk to back up (store) the hard disk data, and restores the backup data to its original location when it is lost or corrupted by operational errors or other factors. You do not need external media or peripheral devices to back up or restore hard disk data on this computer.

At purchase, the Recover Pro is not installed. Install using the instructions below.

The Recover Pro cannot back up or restore data correctly if a hard disk problem occurs during data backup or restoring. If an error occurs due to an unexpected malfunction, incorrect operation, or other reason while data is being restored, the hard disk data (data before restoration) may be lost.
Matsushita Electric Industrial Co., Ltd. will bear no responsibility for any damage suffered (including loss of data) as a result of the use of this function.

The Recover Pro provides 3 types of backup as follows:

- Quick Backup: Scheduled backup of the updated data
 - File Backup: File backup at file save and change
 - Complete Backup: Backup of the entire data on the internal hard disk
- Here, we will explain the procedures for installation, complete backup (backing up hard disk contents in case Windows cannot be booted), and complete restore (recovering the hard disk data to its condition at the time of the complete backup).

For further information, refer to the software's online manual (→ page 20).

CAUTION

- All operations should be executed with the AC adaptor connected. Do not turn the power off while operations are in progress. If the power is turned off while installation, backup, or restore operations are in progress, these operations may not function properly, and it may be impossible to start Windows. Also, do not press any keys or slide any switches, including hot keys.
- When restarting the computer, the message "Check file system on C:" may appear. Follow the on-screen instructions. Do not skip the check process.
- Make sure you allow enough space on the hard disk when choosing settings during installation. To change these settings you must reinstall Recover Pro.
To execute Complete Backup reliably, we recommend performing [Typical] installation in the following cases.
 - Hard disk with a single partition
 - Immediately after reinstalling software (when more than half of the entire space of the hard disk is available) (→ page 22)
- Be sure to use the internal hard disk drive to create the backup area. Never use disk or device other than the internal hard disk drive.
- Some software (security software, backup software, encryption software, or hard disc accessible specific software, etc.) may be incompatible with Recover Pro.
For further information, refer to:
<http://www.phoenix.com/en/Customer+Services/White+Papers-Specs/Recover+Pro/default.htm>
- When using Personal Secure Drive (→  *Installation Manual* of "Trusted Platform Module (TPM)"), do not execute File Backup for Personal Secure Drive.
- The "Create recovery CD-DVD" function in Recover Pro is designed to help you save complete backup data to CD or DVD. When using the "Create recovery CD-DVD", you can view the complete backup data on the hard disk, but take care to avoid accidentally deleting this data.
- After installing the Recover Pro, do not use the IEEE1394 network connection. If any problem occurred, stop the IEEE1394 network connection and restart the computer.

Installation

Preparation

- Connect the AC adaptor.
- 1 Log on to Windows as an administrator.**
 - 2 Close all programs.**
 - 3 Disable anti-virus software.**
 - 4 Click [start] - [Run], enter [c:\util\rcvpro\setup.exe], and click [OK].**
The InstallShield Wizard screen appears.
 - 5 Click [Next].**
Follow the on-screen instructions.
Carefully read the License Agreement, and click [I accept the agreement.]
 - The computer restarts several times to complete installation.  appears in the notification area.

Hard Disk Backup Function (Recover Pro)

CAUTION

- During the installation, the screen may become black (no display) momentarily. This is not a malfunction.
- If you select [Typical] in installation, approximately 40% (max.) of the hard disk drive space is allocated as the backup area.
- You cannot change the size of backup area after creation.

Complete Backup

Backs up all data on the hard disk.

Preparation

- Connect the AC adaptor.

- 1 Log on to Windows as an administrator.**
- 2 Close all programs.**
- 3 Click [start] - [All Programs] - [Phoenix Applications] - [Phoenix Recover Pro 6].**
"Recover Pro 6" screen appears.
- 4 Click [Complete Backup], and click [Yes].**
 - The computer restarts, and "Recover Pro 6" screen appears.
Follow the on-screen instructions.

NOTE

- You can completely backup only one set of the whole data in the hard disk to the backup area.
- Do not touch the power switch while using the Recover Pro.

Complete Restore

This function uses the data created during complete backup. It restores the hard disk data to the condition when you performed the complete backup. Files created and changes made to settings after the latest complete backup is made will be deleted.

Preparation

- Connect the AC adaptor.

- 1 Click [start] - [All Programs] - [Phoenix Applications] - [Phoenix Always Launcher], and click [Run].**
 - The computer restarts, and "Phoenix Always" screen appears.
Alternatively turn on or restart the computer, and hold down **F4** while [Panasonic] boot screen is displayed until "Phoenix Always" screen appears.
- 2 Click [Protect / Recover], and click [Phoenix Recover Pro 6].**
 - "Recover Pro 6" screen appears.
- 3 Click [Complete Restore].**
Follow the on-screen instructions.

NOTE

- Do not touch the power switch while using the Recover Pro.

■ To access the online manual

- ① Click [start] - [All Programs] - [Phoenix Applications] - [Docs], and double-click [UserGuides].
- ② Double-click the file of Recover Pro user's guide or Phoenix Always user's guide.

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

CAUTION

- When the hard disk contains the Recover Pro backup data, the Recover Pro backup area is lost as well.
<For MUI OS model>
- To input numbers, press the NumLock key and input in the Ten-key mode.
- For German keyboard, press **Z** when you need to press **Y**.

NOTE

- This utility cannot erase data for specific partitions.

Preparation

- Prepare the following items:
 - The Product Recovery DVD-ROM (included)
 - Panasonic CD/DVD drive for the multimedia pocket (optional) (refer to recent catalogs and other sources for information about the products available)
 - 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.
- 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 [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 + Break**. 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

Reinstalling software will return the computer to the default condition. When you reinstall the software, the hard disk data including the backup data of the Recover Pro will be erased.

Back up important data to other media or an external hard disk before reinstallation.

Preparation

- Prepare the following items:
 - The Product Recovery DVD-ROM (included)
 - Panasonic CD/DVD drive for the multimedia pocket (optional) (refer to recent catalogs and other sources for information about the products available)
- Remove all peripherals (except for the CD/DVD drive).
- Connect the AC adaptor and do not remove it until reinstallation is complete.

NOTE

If you have installed the Recover Pro (→ page 19),

- Select [1] or [2] in the step 10 below. If you select [3], the Recover Pro will no longer function properly.
- Only when you want to save the data which you stored in the separate partitions other than the first partition and the Recover Pro backup area, select [3] in the step 10 below and perform the following steps.
 - ① After reinstallation, backup the data to external media (e.g., removable disk).
 - ② Perform the reinstallation procedure again, and select [1] or [2] in the step 10.
 - ③ Return the data backed up in external media to the internal hard disk.

<For MUI OS model>

- To input numbers, press the NumLock key and input in the Ten-key mode.
- For German keyboard, press **Z** when you need to press **Y**.

- 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 [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 20 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.

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 switch.

- 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 12).

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.

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.
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.
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.
0613: Serial Port^{*1} configuration changed 0614: Serial Port^{*1} config. error - device disabled ^{*1} "A" or "B" appears here to indicate the name of the conflicting port.	<p>The I/O and IRQ settings of the serial ports are in conflict.</p> <ul style="list-style-type: none"> ● Run the Setup Utility and in the [Advanced] menu, change the port's settings so there is no conflict.
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 22). If not, contact Panasonic Technical Support. ● If a device is connected to the USB port, disconnect the device, or set [USB Port] or [Legacy USB Support] to [Disable] in the [Advanced] menu of the Setup Utility. ● If a device is connected to the ExpressCard slot, disconnect the device, or set [ExpressCard slot] to [Disable] in the [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, 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"> ● Slide the power switch 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.

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. 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. ● If a device is connected to the USB port, disconnect the device, or set [USB Port] or [Legacy USB Support] to [Disable] in the [Advanced] menu of the Setup Utility. ● If a device is connected to the ExpressCard slot, disconnect the device, or set [ExpressCard slot] to [Disable] in the [Advanced] menu of the Setup Utility.
<p>The power is turned on but "Warming up the system (up to 32 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 32 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 or higher temperature for about an hour, and then turn on the power again.
<p>Cannot turn on the computer. The computer does not resume from standby. (The power indicator blinks quickly in green.)</p>	<ul style="list-style-type: none"> ● Leave it in an environment of 5 °C or higher temperature for about an hour, then turn on the power again.
<p>You have forgotten the password.</p>	<ul style="list-style-type: none"> ● Supervisor Password or User Password: Contact Panasonic Technical Support. ● 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 22) 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. ● If a device is connected to the USB port, disconnect the device, or set [USB Port] or [Legacy USB Support] to [Disable] in the [Advanced] menu of the Setup Utility. ● If a device is connected to the ExpressCard slot, disconnect the device, or set [ExpressCard slot] 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.
<p>Windows startup and operation is slow.</p>	<ul style="list-style-type: none"> ● Press F9 in the Setup Utility (→ page 24 "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. ● 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 switch, and then turn on.

Troubleshooting (Basic)

■ Starting Up

[Enter Password] does not appear when resuming from standby/hibernation.	<ul style="list-style-type: none"> The password you have set in the Setup Utility is not requested at resuming. To use the password security at resuming, set the Windows password. <ol style="list-style-type: none"> Click [start] - [Control Panel] - [User Accounts] and select the account, and set the password. Click [start] - [Control Panel] - [Performance and Maintenance] - [Power Options] - [Advanced] and add a check mark for [Prompt for password when computer resumes from standby].
Cannot resume.	<ul style="list-style-type: none"> An error may occur when the computer automatically enters the standby or hibernation mode while the screensaver is active. In this case, turn off the screensaver or change the pattern of the screensaver.
Other startup problems.	<ul style="list-style-type: none"> Press F9 in the Setup Utility (→ page 24 “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"> Click [start] - [My Computer] and right-click [Local Disk(C:)], and click [Properties]. Click [Tools] - [Check Now]. 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>

■ Entering Password

On the [Enter Password] screen, a beep sounds and the password cannot be entered.	<ul style="list-style-type: none"> The computer may be in ten-key mode. If the NumLk indicator  lights, press NumLk to disable the ten-key mode, and then input. Some keyboards have unusable keys (e.g. the “M” key on French keyboards). Use the other key when you press the key and the alarm sounds.
Even after entering the password, [Type your password] is displayed again.	<ul style="list-style-type: none"> The computer may be in ten-key mode. If the NumLk indicator  lights, press NumLk to disable the ten-key mode, and then input. The computer may be in Caps Lock mode. If the Caps Lock indicator  lights, press Caps Lock to disable the Caps Lock mode, and then input.

■ Shutting down

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

No display.	<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, slide the power switch.
The screen is dark.	<ul style="list-style-type: none"> The screen is darker when the AC adaptor 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.

■ Display

The screen does not become bright even if pressing Fn + F2 .	<ul style="list-style-type: none"> ● The brightness is set low to avoid malfunction where surrounding temperature is high. Use it in an environment of between 5°C and 35°C.
The LCD brightness changes a number of times when the AC adaptor is disconnected.	<ul style="list-style-type: none"> ● Intel(R) Display Power Saving Technology is active and automatically changes the LCD brightness. This is not a malfunction.
Image colors are not reproduced as expected when displaying photographs or other images.	<ul style="list-style-type: none"> ● Remove the check mark of [Intel(R) Display Power Saving Technology]. <ol style="list-style-type: none"> ① Click [start] - [Control Panel] - [Other Control Panel Options] - [Intel(R) GMA Driver for Mobile]. ② Click [Display Settings] - [Power Settings].
The screen is disordered.	<ul style="list-style-type: none"> ● Changing the number of display colors and resolution may affect the screen. Restart the computer. ● Connecting/disconnecting an external display may affect the screen. Restart the computer.
During Simultaneous display, one of the screens becomes disordered.	<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.).
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.

■ Touch Pad / Touchscreen (only for model with touchscreen)

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 Ctrl, U, and R to select [Restart].) ● If the computer does not respond to keyboard commands, read "No response" (→ page 28).
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.
Cannot point the correct position using the included stylus.	<ul style="list-style-type: none"> ● Perform the touchscreen calibration (→ page 15).

■ Reference Manual

The Reference Manual is not displayed.	<ul style="list-style-type: none"> ● Install Adobe Reader. <ul style="list-style-type: none"> <Only for localized OS model> <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. <Only for MUI OS model> <ul style="list-style-type: none"> → page 14
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Troubleshooting (Basic)

■ Recover Pro

Cannot install Recover Pro	<ul style="list-style-type: none"> ● Recover Pro cannot be installed when four primary partitions exist. Reduce the number of primary partitions to three or less before installation. You can check the number of the primary partitions in the order of [start] - [Control Panel] - [Performance and Maintenance] - [Administrative Tools] - [Computer Management] - [Disk Management]. ● Recover Pro cannot be installed when a backup area is remaining on the hard disk. Try one of the following methods: <ul style="list-style-type: none"> • If the backup area has complete backup data and you want to restore that data: Follow the “Complete Restore” instructions in “Hard Disk Backup Function (Recover Pro)” (→ page 20) to restore the data. • To return the computer to its condition at the time of shipment: Reinstall the software (→ page 22). <ul style="list-style-type: none"> • In step 10, do not select “3. Reinstall Windows to the first partition.” • If you do not need the data in the backup area, or if it is corrupted, or if does not include complete backup data: <ol style="list-style-type: none"> ① Access [http://www.phoenix.com/en/Customer+Services/Utilities/Recover+Pro+6.htm#Where], and download/install “Cleanup Utility for Recover Pro 6”. ② Delete the backup area using “Cleanup Utility for Recover Pro 6”. ③ Reinstall Recover Pro. In this case, all data in the backup area will be lost.
An unnecessary backup area is present (is left) when Recover Pro is not installed.	<ul style="list-style-type: none"> ● Perform the following steps. <ol style="list-style-type: none"> ① Access [http://www.phoenix.com/en/Customer+Services/Utilities/Recover+Pro+6.htm#Where], and download/install “Cleanup Utility for Recover Pro 6”. ② Delete the backup region using “Cleanup Utility for Recover Pro 6”.
Some parts of the hard disk cannot be File Backed up.	<ul style="list-style-type: none"> ● The hard disk area encrypted by security software may not be backed up. Exclude the area from the File Backup object.

■ 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. ● Slide the power switch for four seconds or longer to shut down the computer, and then slide the power switch 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].
Cannot enter characters correctly.	<ul style="list-style-type: none"> ● Select the same language setting for Windows and the internal keyboard (→ page 14).

Hardware Diagnostics

If it appears that the hardware installed in this computer is not operating properly, you can use the PC-Diagnostic Utility to determine whether or not there is a problem.

If the utility discovers a problem in the hardware, contact Panasonic Technical Support.

Hardware that can be checked using the PC-Diagnostic Utility

Software cannot be checked using this utility.

- CPU
- Memory
- Hard Disk
- CD/DVD Drive
- Video Controller
- Sound^{*1}
- Modem
- LAN
- Wireless LAN^{*2}
- Wireless WAN^{*3}
- Bluetooth^{*4}
- GPS^{*5}
- USB
- IEEE 1394
- PC Card Controller
- SD Card Controller
- Smart Card^{*6}
- Serial Port
- Keyboard
- Touch Pad
- Touchscreen^{*7}

^{*1} When the diagnostic utility is running, a loud beep will sound, so do not use headphones at this time. (The beep will not sound if mute is using Windows.)

^{*2} Only for model with wireless LAN

^{*3} Only for model with wireless WAN

^{*4} Only for model with Bluetooth

^{*5} Only for model with GPS

^{*6} Only for model with Smart Card

^{*7} Only for model with Touchscreen

Regarding the PC-Diagnostic Utility

NOTE

- Run this utility using the default settings in the Setup Utility. If the Setup Utility or other settings will not allow a hardware to be executed, the hardware icon will be displayed in gray.
- For the hard disk and memory only, you can select standard diagnostic check or extended diagnostic check.
- When the PC-Diagnostic Utility starts up, it will run the standard diagnostic check. The extended diagnostic check is more detailed, and so requires a longer period of time to run.
When the video diagnostic check is running, the display may be distorted, and when the audio diagnostic check is running, sounds may be generated from the speakers. These are not malfunctions.
- You can check the status of the diagnostic check by the display color (A) on the left side of the hardware icon.
 - Aqua: Not running diagnostic check
 - Alternating blue and yellow: Currently running diagnostic check. The interval of the alternating colors differs depending on the type of diagnostic check currently running.
During memory diagnostic check, the display may freeze for a long period of time. Wait until the process is complete.
 - Green: No problems discovered
 - Red: Problems discovered



A

Hardware Diagnostics

- We recommend that you use the touch pad for operations. When not using the touch pad, you can operate using the internal keyboard instead.

Operations	Touch pad operations	Internal keyboard operations
Select icon	Place the cursor above the icon	Press Space , and then press → ← ↑ ↓ (ⓧ (close) cannot be selected)
Click the icon	Tap or click (right click cannot be used)	Press Space above the icon
Complete the PC- Diagnostics Utility and then restart the computer	Click ⓧ (close)	Press Ctrl+Alt+Del .

- By clicking the icon, you can execute the following operations:
 -  : Start the diagnostic check from the beginning
 -  : Stop the diagnostic check (You cannot restart the check partway through by clicking )
 -  : Display help (click the screen or press **Space** to return to the original diagnostic check screen)

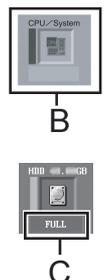
Running the Diagnostic Check

Disconnect any peripheral devices (e.g., storage device) before running the diagnostic check.

- 1 Connect the AC adaptor and turn on the wireless switch. (→ page 9)**
During the diagnostic check, do not remove the AC adaptor, or attach any peripheral devices.
- 2 Turn on or restart the computer, and press **F2** for several times while [Panasonic] boot screen is displayed.**
The Setup Utility starts up.
 - If the password is requested, enter the Supervisor Password.
 - If you are using the computer after changing the settings from the status at the time of purchase, we recommend that you make a note of the settings that are changed.
- 3 Press **F9**.**
At the confirmation message, select [Yes] and press **Enter**.
- 4 Press **F10**.**
At the confirmation message, select [Yes] and press **Enter**.
The computer will restart.
- 5 Press **Ctrl+ F7** while [Panasonic] boot screen is displayed.**
When the PC-Diagnostic Utility starts up, it will automatically begin the diagnostic check for all hardware components.
 - If the password is requested, enter the password.
 - The touch pad and the internal keyboard cannot be used until alternating blue and yellow colors are displayed on the left side of the hardware icon (→ page 29). If the touch pad does not operate properly, press **Ctrl+Alt+Del** to restart the computer, or slide the power switch to turn the power off, and then restart the PC-Diagnostic Utility.

NOTE

- Using the following procedure, you can run a diagnostic check on a specified hardware component, or run an extended diagnostic check on the hard disk.
 - ① Click  to stop the diagnostic check.
 - ② Click the icon for the hardware that is not to be checked, so that the icon is displayed in gray (B).
When running a check on the hard disk, clicking the icon once will turn on the extended diagnostic check ("FULL" (C) will be displayed below the icon); click again, and the icon will be displayed in gray.
 - ③ Click  to start the diagnostic check.



6 When all the hardware has been checked, confirm the diagnostic check results.

If the display is red and the message "Check Result TEST FAILED" is displayed, you can assume that there is a problem with the computer's hardware. Confirm which hardware component is displayed as red, and contact Panasonic Technical Support.

If the display is green and the message "Check Result TEST PASSED" is displayed, the computer's hardware is operating normally. Continue using the computer as is. If the computer still does not operate properly, reinstall the software. (→ page 22)

NOTE

- If you run a memory diagnostic check after installing a new RAM module (sold separately) and the message "Check Result TEST FAILED" is displayed:

Remove the additional RAM module and run the diagnostic check again. If the message "Check Result TEST FAILED" is still displayed, you can assume that there is a problem with the internal RAM module.

- ## 7 After the diagnostic check is complete, click (close), or press **Ctrl+Alt+Del** to restart the computer.

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Specifications

This page provides the specifications for the basic model CF-30CTQAZBE/CF-30CTQAZL2/CF-30C3UAZBE/CF-30C3UAZL2. 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-30CTQAZBE/CF-30CTQAZL2		CF-30C3UAZBE/CF-30C3UAZL2
CPU	Intel® Core™ Duo Processor L2400 (1.66 GHz, 2 MB ^{*1} L2 cache, 667 MHz FSB)		
Chipset	Intel® 945GM		
Memory ^{*12}	512 MB (4096 MB Max.)		1024 MB (4096 MB Max.)
Video Memory ^{*13}	UMA (128 MB Max.)		
Hard Disk Drive ^{*4}	80 GB		120 GB
Display Method	13.3 XGA type (TFT) with Touchscreen		
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)		
Wireless LAN ^{*7}	→ page 34		
Bluetooth™ ^{*8}	→ page 34		
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) ^{*9}		
Card Slot	PC Card	Type I or Type II x 1 (3.3 V: 400 mA, 5 V: 400 mA)	
	ExpressCard	ExpressCard/34 ^{*10} or ExpressCard/54 x 1	
	SD Memory Card ^{*11}	x 1, Data transfer rate = 8 MB per second ^{*12}	
	Smart Card ^{*13}	x 1	
RAM Module Slot	200-pin, 1.8 V, SO-DIMM, DDR2 SDRAM, PC2-4200 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 x 2)		
Keyboard / Pointing Device	88 keys / Touch Pad / Touchscreen (Anti-Reflection, Stylus (included) touch capable)		88 keys / Touch Pad
Power Supply	AC adaptor or Battery pack		
AC Adaptor ^{*14}	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 ^{*15}	Main Battery: Approx. 4 hours at set to maximum LCD brightness setting (typ: 1000 cd/m ²) Approx. 5 hours (typ: 500 cd/m ²) to Approx. 8 hours (minimum brightness) ^{*16} (Approx. 7 hours ^{*17}) Main Battery + Second Battery: Approx. 6 hours at set to maximum LCD brightness setting (typ: 1000 cd/m ²) Approx. 7.5 hours (typ: 500 cd/m ²) to Approx. 12 hours (minimum brightness) ^{*16} (Approx. 10.5 hours ^{*17})		Main Battery: Approx. 5 hours (maximum brightness) to Approx. 8 hours (minimum brightness) ^{*16} (Approx. 7 hours ^{*17}) Main Battery + Second Battery: Approx. 7.5 hours (maximum brightness) to Approx. 12 hours (minimum brightness) ^{*16} (Approx. 10.5 hours ^{*17})
	Charging Time ^{*15}	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 ^{*18}	Approx. 45 W ^{*19} / Approx. 70 W (Maximum when recharging in the ON state)		
Physical Dimensions (W × H × D) (including the carrying handle)	302 mm × 67.5 - 69.5 mm × 285 mm		

Specifications

■ Main Specifications

Weight (including the carrying handle)	Approx. 3.8 kg
Operation Environment	Temperature: 5 °C to 35 °C Humidity: 30% to 80% RH (No condensation)
Storage Environment	Temperature: -20 °C to 60 °C Humidity: 30% to 90% RH (No condensation)
Operating System	Microsoft® Windows® XP Professional Service Pack 2 with Advanced Security Technologies (NTFS File System)
Utility Programs	DMI Viewer, Microsoft® Windows® Media Player 10, Adobe Reader, PC Information Viewer, SD Utility, Icon Enlarger, Loupe Utility, Intel® Matrix Storage Manager, Intel® PROSet/Wireless Software ⁷ , Bluetooth™ Stack for Windows® by TOSHIBA ⁸ , Wireless Switch Utility, Hotkey Settings, Battery Recalibration Utility, Panasonic Hand Writing, Infineon TPM Professional Package ^{*20} , Recover Pro™ 6 ^{*20} Setup Utility, Hard Disk Data Erase Utility ^{*21} , PC-Diagnostic Utility

■ Wireless LAN <Only for model with wireless LAN>

Intel PRO / Wireless 3945 ABG (802.11 a + b + g)	
Data Transfer Rates ^{*22}	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, 100 to 140 IEEE802.11b/IEEE802.11g: Channels 1 to 13
RF Frequency Band	IEEE802.11a: 5.18-5.32 GHz, 5.50-5.70 GHz IEEE802.11b/IEEE802.11g: 2.412-2.472 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 upto 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.

*7 Only for model with wireless LAN

*8 Only for model with Bluetooth

*9 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)".

*10 When using ExpressCard/34, the card slot cover cannot be closed.

*11 Operation has been tested and confirmed using Panasonic SD Memory Cards with a capacity of up to 2 GB. The transfer rate using the SD Memory Card slot on this computer is 8 MB per second. (This is a theoretical value, and differs from actual speeds.)

The transfer rate is 8 MB per second even if you use an SD Memory Card that supports high-speed transfer rates.

Operation on other SD equipment is not guaranteed.

This computer is not compatible with MultiMediaCards or SDHC Memory Cards. Do not insert these kinds of cards.

*12 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.

*13 Only for model with Smart Card slot

*14 <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}

*15 Varies depending on the usage conditions.

*16 Measured using BatteryMark™ Version 4.0.1

*17 Measured using MobileMark™ 2005 (LCD brightness: 60 cd/m²)

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

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

*19 Rated power consumption ^{23-E-1}

*20 You need to install to use the feature.

*21 The Product Recovery DVD-ROM is required.

*22 These are speeds specified in IEEE802.11a+b+g standards. Actual speeds may differ.



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

Outline of the International ENERGY STAR® Office Equipment Program

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

22-E-1

Importer's name & address pursuant to the EU GPSD directive 2001/95/EC/Art.5
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