



Panasonic

Reference Manual

Personal Computer

Model No. **CF-52 Series**

We recommend that this Reference Manual be printed.

- This manual explains using the Windows 7 default setting.
- Windows Update

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

Click  (Start) - [All Programs] - [Windows Update].

Do not apply “Driver Updates” even if a message to update a driver appears. If a driver update is required, contact your technical support office.


Sound and Video

- Sound (e.g. MP3, WMA) and video (e.g. MPG, WMV) recorded in PC Cards and SD Memory Cards may be interrupted during playback. If this happens, copy them to the hard disk drive and play back.
- Depending on the processing status on Windows, sound may be interrupted at Windows startup. You can mute the sound at startup.
 - ① Right-click the desktop and click [Personalize] - [Sounds].
 - ② Remove the check mark from [Play Windows Startup sound], and click [OK].


When high-frequency sound occurs

If high-frequency sound occurs around keyboard while using the computer, check the settings for the USB power saving function.



A standard user needs to enter an administrator password and click [OK].




- Set [USB selective suspend setting] to [Enabled].
 - ① Click  (Start) - [Control Panel] - [System and Security] - [Power Options].
 - ② Click [Change plan settings] of the current power plan.
 - ③ In [Change settings for the plan], click [Change advanced power settings].
 - ④ In [Advanced settings], double-click [USB settings].
 - ⑤ Double-click the displayed [USB selective suspend setting].
 - ⑥ Change settings of [On battery] and [Plugged in] to [Enabled].
 - ⑦ Click [OK] and exit the [Advanced settings] screen.

NOTE

- Do not repeatedly press the keys in quick succession.
- Do not use the key combinations together with touch pad (external mouse), touchscreen (only for model with touchscreen) or other key operations.
- Do not use the key combinations before you log on to Windows. Wait until the hard disk drive indicator  turns off. On the Setup Utility screen, you can use the key combinations of **Fn + F1**, **Fn + F2** and **Fn + F3**. By using the key combinations of **Fn + F3**, the display is switched between the internal LCD, simultaneous display^{*1} and the external display.
- The key combinations may not work with some applications.
- The pop-up icon appears after logging on to Windows. It may not appear in some application conditions.

^{*1} Only for model with Mobile Intel® PM45 Express Chipsets

Key	Function	Pop-up icon
Fn + F1 Fn + F2	LCD brightness (Fn + F1 = down / Fn + F2 = up)	
Fn + F3	Display mode switching (→ page 43) When an external display (a projector etc.) is connected you can change the display mode. (The change you made may not be effective until Enter is pressed.) You can also change the display mode by pressing ⌘ + P . Computer only → Duplicate → Extend → Projector only  NOTE <ul style="list-style-type: none">● When an external display is connected to an optional port replicator (CF-VEB522), the display switching may work differently from the above. For further information, refer to the instruction manual of the port replicator. CAUTION <ul style="list-style-type: none">● Do not press any keys until the display has finished switching.● Do not use this function:<ul style="list-style-type: none">• When playing motion video such as DVD or MPEG.	—

Key	Function	Pop-up icon
<u>Fn</u> + <u>F4</u>	Speaker on/off <div>NOTE</div> <ul style="list-style-type: none">Beeps do not sound if you turn off the speaker sound.	<div></div> <div>OFF (MUTE)ON</div>
<u>Fn</u> + <u>F5</u> <u>Fn</u> + <u>F6</u>	Volume (<u>Fn</u> + <u>F5</u> = down / <u>Fn</u> + <u>F6</u> = up) <div>NOTE</div> <ul style="list-style-type: none">When fine-tuning the sound volume, press and hold <u>Fn</u>, and press <u>F5</u> or <u>F6</u> intermittently.This does not work on beeps or speakers connected to the USB port.	<div></div>
<u>Fn</u> + <u>F7</u>	Activate sleep (→ page 10)	—
<u>Fn</u> + <u>F9</u>	Remaining battery charge (When the battery pack is inserted in the computer)	→ page 17
<u>Fn</u> + <u>F10</u>	Activate hibernation (→ page 10)	—
<u>Fn</u> + <u>↓</u> <u>Fn</u> + <u>↑</u>	<Only for model with touchscreen> Keyboard LED (<u>Fn</u> + <u>↓</u> = down / <u>Fn</u> + <u>↑</u> = up)	—

Hotkey Settings


You can make 2 settings:

- **Fn key lock**

When you press **Fn**, the key is locked (pressed-down) until you press another key. Use this when pressing difficult key combinations.

- **Pop-up icon on/off**

1 Start up the Hotkey Settings.

Click  (Start) - [All Programs] - [Panasonic] - [Hotkey Settings].

2 Make the settings.



[Use Fn key lock]

- When using an **Fn** key combination
 - ① Press **Fn** once. (Locked)
 - ② Press another key. (Lock released)
- When using successive **Fn** key combinations
 - ① Press **Fn** twice. (Locked)
 - ② Press another key.
Fn key remains locked until you press **Fn** again.

[Notification]

[Make sounds when Fn key is pressed]*²

[Show status on screen]: Displays the Fn key status when  on the notification area is clicked.

- : **Fn** is locked.
- : **Fn** is not locked.

[Disable popup]

The pop-up icon will not be displayed.

3 Click [OK].


NOTE

- You can have different settings for each user.

*² If the speakers are muted, beeps do not sound.

<Only for model with touchscreen>

You can use the touchscreen function to perform the same operation as the touch pad and mouse. Touch the screen surface with the stylus (included).

For further information, click  (Start) - [Control Panel] - [Hardware and Sound] - [Pen and Touch] - [Flicks] - [Practice using flicks].

● To right-click

- ① Touch and hold with the stylus, or touch and select the right button of “touch pointer”.

NOTE

- The touchscreen function does not work in the Setup Utility.

Operation of the touchscreen

■ Operate the touchscreen with your finger or with an approved stylus

When using the touchscreen function, use only your finger or an approved stylus on the surface.

Operating the touchscreen with an object other than your fingertip or the stylus (a fingernail or metal object, or other hard or sharp objects that may leave a mark) may scar or stain the surface, causing the touchscreen to malfunction.

■ Do not apply too much pressure when operating the touchscreen

Only a light touch is required to operate the touchscreen. Applying too much pressure may damage the surface.

Maintaining the performance of the touchscreen

■ When the touchscreen becomes dirty, wipe it with an approved soft cloth

The touchscreen is specially treated to prevent dirt from adhering to the surface, so dirt can be removed easily using a dry cloth (use only the approved soft cloth). If the dirt does not come off easily, breathe on the surface and try again.

Do not apply water or solvents to the soft cloth.

■ Clean the touchscreen while the computer is powered off

Cleaning the screen while the power is on may cause the computer to malfunction. Also, dirt on the touchscreen is easier to see when the computer is powered off, and so is easier to clean.

■ Wash the soft cloth when it becomes dirty

When the soft cloth becomes dirty, wash it with mild detergent. Do not use bleach or fabric conditioner (softener), or try to sterilize the cloth by boiling.

If the soft cloth is dirty, it may be ineffective in cleaning the touchscreen, and in fact may cause dirt to adhere to the touchscreen.

■ Check if the following conditions are satisfied to prevent the surface of the touchscreen from being scratched

- You are using your finger or a stylus to operate the touchscreen.
- The surface is clean.
- The soft cloth is clean.
- You are using the stylus with the tip extended.
- The tip of the stylus is clean.
- Your finger is clean.

Things to keep in mind when using the touchscreen

■ Do not touch the screen outside of the LCD display area

The touchscreen input area is defined by the LCD display screen. Touching the screen outside of the display area may result malfunctions or damage to the touchscreen.

■ Do not apply excessive force to the touchscreen

Do not lift the computer while holding the LCD screen, or allow the screen to be twisted. Do not place any objects on the LCD screen. Any of the above may cause the touchscreen glass to break, or may damage the LCD screen.

■ Operation response may be slower in low temperature environments

The touchscreen may respond to operations more slowly when using the computer in temperatures less than 5°C, but this is not a malfunction. Response time will return to normal when the computer is returned to room temperature.

■ If the cursor jumps to a location other than where the screen was touched, or if the LCD resolution changes, recalibrate the touchscreen

Perform the procedure of “Touchscreen Calibration” (→ [page 8](#))


Touchscreen Calibration

A standard user needs to perform the calibration as an administrator before performing the calibration for each user.

■ Calibration by an administrator

NOTE


- At first, log on to Windows as an administrator, and perform this calibration.

- 1 Run [Tablet PC Settings].**
Click  (Start) - [Control Panel] - [Hardware and Sound] - [Tablet PC Settings].
- 2 Click [Calibrate].**
- 3 Using the stylus, touch each of the “+” target marks one by one.**

■ Calibration by a standard user

NOTE

- Perform the following calibration for each user.




- 1 Run [Tablet PC Settings].**
Click  (Start) - [Control Panel] - [Hardware and Sound] - [Tablet PC Settings].
- 2 Click [Calibrate].**
- 3 Using the stylus, touch each of the “+” target marks one by one, and then click [OK].**
 - Perform the calibration for the orientation to be used.

Starting Up Your Computer Quickly

The sleep or hibernation functions allow you to shut off the computer without closing programs and documents. You can quickly return to the programs and documents that you were working on before sleep or hibernation.

Function	Data is saved to	Recovery time	Power supply
Sleep	Memory	Short	Required. (If power is not supplied, all data will be lost.)
Hibernation	Hard disk	Rather long	Not required. (However power is slightly consumed to keep the hibernation.)

Precautions

- Connect the AC adaptor if the computer will be in sleep for a long period of time. If you cannot use the AC adaptor, use hibernation instead.
- Using sleep or hibernation repeatedly may cause malfunction of the computer. To stabilize computer operation, restart Windows regularly (about once a week) without using sleep or hibernation.
- Save the necessary data.
- Close files you have opened from removable disks and network drives.
- The password you set in the Setup Utility is not requested at resuming. You can use the Windows password for security in sleep or hibernation. In the default setting, you are requested to enter the Windows password when the computer resumes.
- Do not enter sleep or hibernation in the conditions below, otherwise the data or file may be corrupted, sleep or hibernation may not work, or malfunction may occur in the computer or the peripheral devices.
 - When any of the multimedia pocket device indicator , the hard disk drive indicator  or the SD Memory Card indicator  is on.
 - When playing/recording audio files or displaying motion video such as MPEG files.
 - When playing a DVD-Video.
 - When writing to a disc.
 - When using communication software or network functions.
 - When using peripheral devices.
(If peripheral devices fail to work normally, restart the computer.)



Entering/Resuming from Sleep or Hibernation

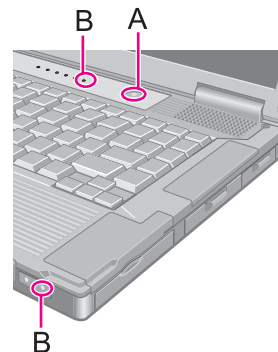
■ To enter sleep or hibernation

- 1 **Close the display, or press the power switch (A) until a beep^{*1} sounds.**

Sleep: The power indicator (B) blinks green.

Hibernation: The power indicator (B) goes off.

- You can alternatively use the Windows menu to enter sleep or hibernation.
Click  (Start) -  - [Sleep] / [Hibernate].



CAUTION

While the computer is entering sleep or hibernation

- Do not:
 - Touch the keyboard, touch pad, touchscreen (only for model with touchscreen) or power switch.
 - Use an external mouse or other peripheral devices.
 - Connect or disconnect the AC adaptor.
 - Operate the wireless switch.
 - Close or open the display.
 - Insert and remove the SD Memory Card.
- Wait until the power indicator blinks green (sleep) or goes off (hibernation).
- It may take 1 or 2 minutes to enter sleep or hibernation. Do not touch any key though the screen becomes dark.
- At the beep^{*1}, immediately release the power switch. After releasing the switch, do not operate it until the power indicator blinks or goes off. If you press and hold the power switch for longer than 4 seconds, the computer will forcibly shut down and unsaved data will be lost even if you have set [When I press the power button] to any item in [Change what the power button does].

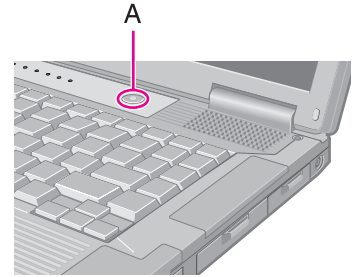
^{*1} If the speakers are muted, beeps do not sound.

In sleep or hibernation

- Do not attach or remove a multimedia pocket device and peripheral devices. Doing so may cause malfunction.
- Power is consumed in sleep. Power consumption may increase when a PC Card is inserted. When power is exhausted, the data retained in memory will be lost. Connect the AC adaptor when using the sleep function.
- Do not turn on/off the wireless switch.

■ To resume from sleep or hibernation

- 1 **Open the display, or press the power switch (A).**
 - In the default setting, the Windows password will be requested to resume.





CAUTION

- Do not perform the following operations until resuming is complete. After the display is resumed, wait approximately 30 seconds (normally) or 60 seconds (when the computer is on a network).
 - Touch the keyboard (except for password input), touch pad, touchscreen (only for model with touchscreen) or power switch.
 - Use an external mouse or other peripheral devices.
 - Connect or disconnect the AC adaptor.
 - Close or open the display.
 - Shut down or restart Windows.
 - Enter sleep or hibernation (Wait approximately 1 minute).
 - Operate the wireless switch.
 - Insert and remove the SD Memory Card.
- If the computer enters sleep while a USB keyboard or mouse is connected, touching the USB keyboard keys or mouse will resume the computer.

Changing When the Computer Sleeps or Hibernates

■ Sleep

- 1** Click  or  on the notification area, and click [More power options].
- 2** Click [Change plan settings] of the power plan you want to change.
- 3** Select the setting for [Put the computer to sleep], and then click [Save changes].
 - The setting for hibernation may change unexpectedly when you change the setting for sleep. Confirm that the time to enter hibernation is 1,080 minutes (default setting) or longer (below).

■ Hibernation

- 1** After the step **2** of “Sleep” setting (above), click [Change advanced power settings].
- 2** Double-click [Sleep], and double-click [Hibernate after].
- 3** Click the item and select the setting.
- 4** Click [OK].

Use these features to protect your data.

- Other security measure
 - Embedded Security (TPM) (→ [page 78](#)): For further information, refer to the *Installation Manual* of “Trusted Platform Module (TPM)”.

Setting the Supervisor Password/User Password

Set the Supervisor Password before setting the User Password.

- 1 Start up the Setup Utility (→ [page 72](#)).**
- 2 Select [Security].**
- 3 Select [Set Supervisor Password] or [Set User Password], and press Enter.**
- 4 Enter your password in [Create New Password] and press Enter.**
 - When the password has been set, you need to enter your password in [Enter Current Password] and press Enter.
 - To disable the password, leave the input field empty and press Enter.
- 5 Enter your password again in [Confirm New Password] and press Enter.**
- 6 Press F10, and then select [Yes] and press Enter.**

CAUTION

- Do not forget your password. If you forget your Supervisor Password, you will not be able to use your computer. Contact Panasonic Technical Support.
- When running the Setup Utility, do not leave and go away from your computer even for a short time, since other people may set or change the password.

NOTE

- The password will not be displayed on the screen.
- You can use up to 32 alphanumeric characters (including spaces).
 - The case (upper/lower) is ignored.
 - Use only the upper horizontal row of numeric keys to input your password.
 - You cannot use **Shift** and **Ctrl** to input a password.
- Disabling the Supervisor Password also disables the User Password.

Preventing Your Computer from Unauthorized Use

You can set a start-up password to protect your computer from unauthorized use.

- 1 **Set the password (→ page 13), and select [Enabled] in [Password On Boot] in the [Security] menu of the Setup Utility (→ page 77).**

NOTE

- If the Supervisor Password or User Password has been set, the password input screen will be displayed on starting-up of the Setup Utility even though [Password On Boot] is set to [Disabled].

Preventing Your Hard Disk Data from Being Read or Written

The hard disk lock function protects the hard disk data from being read or written when the hard disk is attached to another computer. The data can be read/written when the hard disk is returned to the original computer. (Note that the hard disk lock does not guarantee complete protection of the data.)

- 1 **Select [Enabled] in [Hard Disk Lock] in the [Security] menu of the Setup Utility (→ page 77).**

CAUTION

- For the data being read/written on the original computer, the Setup Utility settings must be the same as when the hard disk was removed.
- You cannot use the hard disk lock function without setting the Supervisor Password. Set the Supervisor Password beforehand (→ page 13).
- When you have your hard disk drive repaired
 - Contact Panasonic Technical Support.
 - Before sending back the hard disk drive, be sure to set the [Hard Disk Lock] to [Disabled].

NOTE

- The hard disk lock function works with the built-in hard disk. It does not work with the external hard disk.
- We recommend you to set [Password On Boot] to [Enabled] to ensure security though it is not required to enable the hard disk lock.

Disabling CD/DVD Drive

Disable CD/DVD drive operation to prevent the drive from being read/written and from being used to start the computer. You can protect your data from unauthorized access or accidental overwriting.

- 1** Select **[Disabled]** in **[Optical Drive]** in the **[Advanced]** menu of the Setup Utility (→ [page 75](#)).

NOTE

- This does not work for USB CD/DVD drive.

Battery Indicator

Battery indicator	Battery status
Not lit	The battery pack is not inserted or not being charged.
Orange	Charging is in progress.
Green	The battery is fully-charged.
Blinking green	In high temperature mode, the battery pack is discharging the power to 80% ^{*1} of normal temperature mode (→ page 18). Do not remove the battery pack in this status.
Red	The remaining battery is approximately 9% or less.
Blinking red	The battery pack or the charging circuit is not operating properly.
Blinking orange	The battery cannot be charged temporarily due to the following reasons: <ul style="list-style-type: none">• Its internal temperature is out of the acceptable range.• The power supply is not enough because software applications or peripheral devices are consuming a large amount of power.

^{*1} In high temperature mode, the 100% battery level is equivalent to 80% level of the normal temperature mode.

NOTE

- Once the battery is fully charged, the computer performs recharging only when the battery level becomes less than approximately 95%, so overcharging is avoided.

Checking the Remaining Battery Charge

You can check the remaining battery charge on the screen.

(After logging on to Windows)

1 Press **Fn** + **F9**.

- When the battery pack is inserted (example)



: Normal temperature mode (→ [page 18](#))



: High temperature mode (→ [page 18](#))

- When the battery pack is not inserted



NOTE

- The battery display may not correspond to the actual remaining battery charge in the cases as below. To correct the display, perform the Battery Recalibration (→ [page 20](#)).
 - The battery indicator remains red.
 - The indicator lights orange and the display shows 99% for a long time.
 - Low battery warning appears soon after a short time of use.

This can occur when the computer is in sleep for a long time without power supply from the AC adaptor.
- The battery display may not be the same as that of notification area. This is not a malfunction.

High temperature mode

The high temperature mode can prevent the battery from deteriorating when the computer is used in high-temperature environment or used for a long time with its battery fully charged.

Select [Auto] (default) or [High Temperature] in [Environment] of the [Main] menu of the Setup Utility (→ [page 75](#)).

NOTE

- Note that a level corresponding to a 100% charge for high temperature mode is approximately equivalent to an 80% charge level for normal temperature mode.
 - After switching from [Normal Temperature] to [High Temperature] or vice versa, the remaining battery capacity will not be displayed correctly until the battery pack is completely discharged or fully charged.
 - In the [Auto] mode:
Once the computer has automatically switched from the normal temperature mode to the high temperature mode, the computer will not switch back to the normal temperature mode until the battery has been used and recharged to a total charge level of about 5 times as much as that of the fully-charged state. This is to avoid battery deterioration.
-

Computer behavior with low battery

The default settings are as follows.

When the battery level becomes 10% [Low battery alarm]	When the battery level becomes 5% [Critical battery alarm]
<ul style="list-style-type: none">● Displays a message that the battery level is low. <div>↓</div>	<ul style="list-style-type: none">● The computer enters hibernation. <div>↓</div>
Charge the battery.	Connect the AC adaptor or replace the battery to start up the computer.
<ul style="list-style-type: none">● Connect the AC adaptor immediately. If you do not have the AC adaptor, exit the running programs and Windows, then confirm that the power indicator is off.● If you have a fully charged spare battery, turn off the computer, replace the battery and turn the computer on again.	<ul style="list-style-type: none">● Connect the AC adaptor and charge the battery.● If you have a fully charged spare battery, turn off the computer, replace the battery and turn the computer on again. <p>When the computer enters hibernation with the battery down and you resume the operation without charging the battery, the Windows Resume Loader starts up. Follow the on-screen instructions. After that, however, Windows may not start up normally, or the [Low battery level]/[Critical battery level] function may not work normally.</p>

Correcting the Battery Display (Battery Recalibration)

The “Battery Recalibration” function measures and memorizes the battery capacity. To correct the battery display, use this function to fill the battery and then discharge it completely. Perform the procedure at least once immediately after purchasing the computer. Normally the interval of battery recalibration is 3 months. The battery display may not be correct when the battery pack deteriorates after a long time use. In this case, perform the procedure again.

1 Connect the AC adaptor.

2 Close all the applications.

3 Perform “Battery Recalibration”.

① Click  (Start) - [All Programs] - [Panasonic] - [Battery] - [Battery Recalibration].

② When the confirmation message appears, click [Start].

- Frequent recalibration of the battery can degrade the battery. A caution message appears when the battery recalibration is performed at the shorter interval than approximately a month. In this case, cancel the battery recalibration.

③ When the message requests shut down of Windows, click [Yes].

The battery recalibration starts.

After the battery pack is fully charged, discharging starts. When the discharging is completed, the power goes off automatically.

After the battery recalibration is finished, normal charging starts.

NOTE

- The temperature range should be 10°C to 30°C {50°F to 86°F}.
- The battery recalibration may take a long time due to the large battery capacity. This is not a malfunction.
 - Full charge: Approximately 4 hours
 - Complete discharge: Approximately <CF-52E/F series> 3.5 hours, <CF-52G/H/J series> 4.5 hours
- If the computer is turned off during the battery recalibration (e.g., due to power failure, or accidental removal of the AC adaptor and battery pack), the battery recalibration will not be completed.
- You can also perform the battery recalibration with the following procedure.
 - ① Restart the computer.
 - ② Press and hold **F9** while the [Panasonic] boot screen is displayed just after the computer starts the startup procedure.
 - ③ When the remaining battery capacity is displayed, press **Enter**.
 - ④ Follow the on-screen instructions.

Replacing the Battery Pack

The battery pack (CF-VZSU29AU) is a consumable item so the replacement will be necessary. If the battery operation time becomes noticeably short and not recovered even after recalibrating the battery, replace with a new battery.

CAUTION

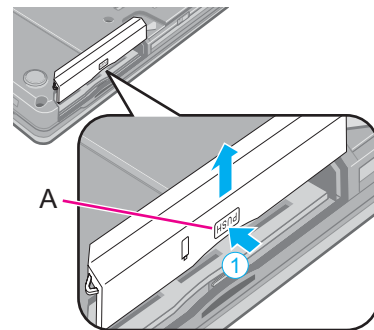
- The battery pack is not charged when you first purchase it. Be sure to charge it before using for the first time. Charging starts automatically when the AC adaptor is connected to the computer.
- Use only the specified battery pack with your computer.
- In sleep, do not remove/replace the battery pack. Otherwise your data will be lost and the computer may be damaged.

1 Turn off the computer.

- Do not use the sleep function.

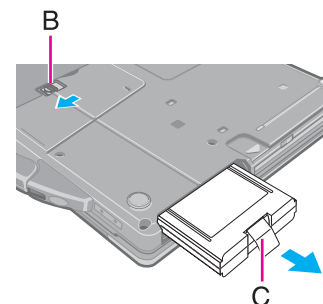
2 Reverse the computer and remove the cover.

- ① Press and hold the **PUSH** mark part (A) and slide the cover to remove.

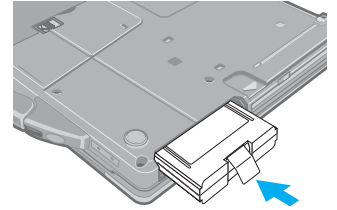


3 Remove/Insert the battery pack.

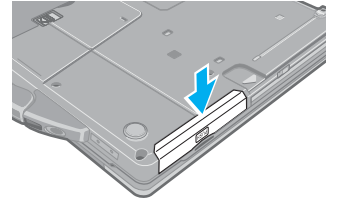
- To remove
Slide and hold the latch (B), and pull the tab (C) of the battery pack.



- To insert
Insert the battery pack until it securely fits the connector.



- 4 Slide the cover back.**
Push the cover until it clicks.





CAUTION

- Make sure the latch is securely locked, otherwise the battery pack may fall when you carry the computer.
- Do not remove the battery pack forcibly when the latch is locked. Doing so may damage the battery pack.

You can attach the following device. (refer to recent catalogs and other sources for information about the products available)

- DVD MULTI drive

CAUTION






- Do not insert/remove the multimedia pocket device in sleep or hibernation, or when the multimedia pocket device indicator  or the hard disk drive indicator  is on.

NOTE

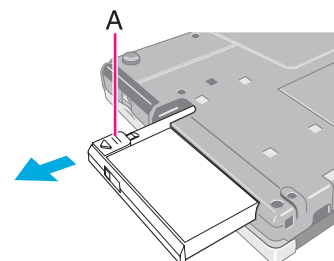
- Read the instruction manuals of the devices carefully.

Replacing the Multimedia Pocket Device

1 Disable the multimedia pocket device function.

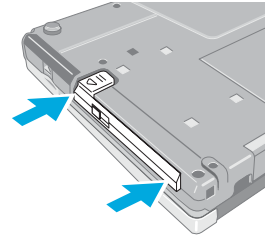
- ① Click  on the notification area and click .
- ② Select the multimedia pocket device.
- ③ Confirm that the multimedia pocket device indicator  and the hard disk drive indicator  indicators are not lit.
 - These steps are not necessary when:
 - Removing the device after turning off the computer.
 -  is not displayed.
 - The device does not appear in the list in step ②.

2 Press and hold the release button (A), and slide the device out of the multimedia pocket.



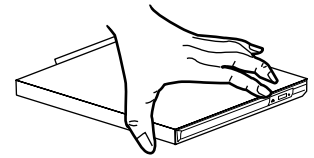
3 Carefully insert the device into the multimedia pocket by pushing both corners until it surely fits in the slot.

- The computer must be on when inserting the device.
- Insert the device with the label side up.





CAUTION

- Hold the device by its both sides. Otherwise the device may be damaged.
- When raising the slot side upward and inserting the device, be careful not to apply any impact to the device.
- When you carry the computer, confirm that the release button is surely locked so that the device does not fall.
- Be sure to insert the device into the multimedia pocket for use.



NOTE

- You can see that the device is recognized or not by clicking  and then double-clicking . If the device is not recognized (or if the media cannot be accessed), turn off the computer and reinsert the device.

NOTE


- Connect the AC adaptor if writing operation takes a long time. If the remaining battery power becomes low and the power is not supplied, writing operation may not be completed.
- Use Windows features to write to discs.
Ensure the disc is compatible with the selected writing speed.
- The quality of written data depends on the disc.

Handling Precautions

CD/DVD drive handling care

- Do not expose the CD/DVD drive to excessive smoke that may leave a residue, e.g., oil smoke, or tobacco smoke. Doing so can shorten the life of the drive lens.
- We recommend cleaning the drive lens with an air puffer used for camera lenses.
(Do not use any spray-type of lens cleaning products.)

When opening/closing the tray

- When the computer is on, use the eject button (→ [page 30](#)) or eject through Windows.
- When inserting or removing a disc, be careful not to touch the lens of the drive.
- Do not leave the tray open and do not touch the lens.
The lens and disc can become dusty in some conditions. It may cause malfunction in reading or writing.
- Do not apply excessive force to the tray in the open position.
- Never insert a foreign object such as a paper clip into the CD/DVD drive.
Doing so may cause malfunction.
- Do not place items other than discs on the tray.
- Do not access the drive until after the tray is closed and the multimedia pocket device indicator  is off.

While the CD/DVD drive is being accessed

- Do not open the CD/DVD drive or move the computer while the CD/DVD drive is being accessed.
Doing so could cause the disc to shift position and this may damage the disc, or cause the CD/DVD drive to malfunction.
In addition, after running an application involving access to a disc, close the application before opening the CD/DVD drive.

Disc handling care

- Do not use deformed, warped, or irregularly shaped discs.
Reading of disc may not be possible depending on the disc conditions (cracks, dirt, modification, data recording quality, copy protection, recording equipment/software that was used to create the disc, etc.)
- Before using a disc, carefully read the operating/handling instructions and package of the disc.
- If the discs are not handled appropriately, they may become dirty or scratched. Furthermore the writing speed may get slower and the data may not be correctly written on or read from the disc. Other damage may cause a drive failure.
- Note the following precautions.
 - Do not touch the disc surface (the side with no printing).
 - Keep the disc surface clean and free from dirt, dust, fingerprints and scratches.
 - Do not write on the surface of the disc with a ballpoint pen or other writing instrument.
 - Do not attach stickers to discs.
 - Do not drop, bend, or place heavy objects on top of discs.
 - Do not place or store discs in locations exposed to heat, direct sunlight, humidity or dust.
 - If a disc is brought from a cold to a warm location, condensation may form on the disc. For read-only discs, wipe off the condensation using a soft, dry, lint-free cloth before using the disc. For recordable/rewritable discs, wait until the condensation dries.
 - When not using discs, keep them in their protective cases or cartridges.

To clean discs

<For read-only discs>

Wipe discs with a dry, soft cloth from the center toward the edge.

If discs get very dirty, wipe with a moist, soft cloth from the center toward the edge, then wipe again with a dry cloth to take up remaining moisture.

<For recordable/rewritable discs>

Use the Panasonic disc cleaner to clean these discs.

Do not use a cloth, CD cleaners or any other such cleaners under any circumstances.















How to hold a disc



Disc Information









● You can read from/write to the following discs.

CD-R	CD-RW						
							
DVD-RAM*1	DVD-R	DVD-R DL	DVD-RW*2	+R	+R DL	+RW	
							

*1 DVD-RAM: Only non-cartridge type or removable cartridge type can be used.

*2 Does not support DVD-RW Ver.1.0.

● You can read from the following discs.

CD-ROM	CD DIGITAL AUDIO	CD TEXT	CD-EXTRA	Video CD	Photo CD
					
DVD-ROM	DVD-Video				
					

■ Recommended discs for writing

- CD-R
HITACHI MAXELL, Ltd.
MITSUBISHI KAGAKU MEDIA CO., Ltd.
TAIYO YUDEN Co., Ltd.
- CD-RW/High-Speed CD-RW
MITSUBISHI KAGAKU MEDIA CO., Ltd.
RICOH Co., Ltd.
- Ultra-Speed CD-RW
MITSUBISHI KAGAKU MEDIA CO., Ltd.
- DVD-R
Panasonic Corporation
MITSUBISHI KAGAKU MEDIA CO., Ltd.
TAIYO YUDEN Co., Ltd.
- DVD-R DL
MITSUBISHI KAGAKU MEDIA CO., Ltd.
- DVD-RW
MITSUBISHI KAGAKU MEDIA CO., Ltd.
Victor Company of Japan, Limited
- DVD-RAM
Panasonic Corporation
HITACHI MAXELL, Ltd.
- +R / +RW
MITSUBISHI KAGAKU MEDIA CO., Ltd.
RICOH Co., Ltd.
- High-Speed +RW
RICOH Co., Ltd.
- +R DL
MITSUBISHI KAGAKU MEDIA CO., Ltd.

■ DVD discs you can use for writing

- DVD-R for General
1X-SPEED (4.7 GB)
1–2X-SPEED (4.7 GB)
1–4X-SPEED (4.7 GB)
1–8X-SPEED (4.7 GB)
1–16X-SPEED (4.7 GB)
- DVD-R DL
2–4X-SPEED (8.5 GB)
2–8X-SPEED (8.5 GB)
- DVD-RW
1X-SPEED (4.7 GB/9.4 GB)
1–2X-SPEED (4.7 GB/9.4 GB)
2–4X-SPEED (4.7 GB/9.4 GB)
2–6X-SPEED (4.7 GB/9.4 GB)
- DVD-RAM
2X-SPEED (4.7 GB/9.4 GB)
2–3X-SPEED (4.7 GB/9.4 GB)
2–5X-SPEED (4.7 GB/9.4 GB)
- +R
1–2.4X-SPEED (4.7 GB)
1–4X-SPEED (4.7 GB)
1–8X-SPEED (4.7 GB)
1–16X-SPEED (4.7 GB)
- +R DL
2.4X-SPEED (8.5 GB)
2.4–8X-SPEED (8.5 GB)
- +RW
1–2.4X-SPEED (4.7 GB)
1–4X-SPEED (4.7 GB)
- High-Speed +RW
3.3–8X-SPEED (4.7 GB)

Using DVD Media

To play DVD-Video or MPEG files, you need to use DVD playback software such as WinDVD (→ [page 31](#)).

■ Region code setting

DVD-Video is allocated to region codes according to where they are sold. To play the DVD-Video, the player's software and the drive must have the corresponding region code.

e.g.,

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

For Europe: "2"

- The region code of the drive is not set at purchase. The operation depends on the DVD-Video that is first played.
 - **DVD-Video with a specific region code:**
The drive will automatically be set at the same region code as the DVD-Video.
 - **DVD-Video with multiple region codes:**
[Confirm Region] appears. Select the region code and click [OK]. Play now begins.

CAUTION

- You can change the region code setting up to 5 times including the initial setting. Be extremely careful because you cannot change the region code anymore after the fifth change, even if you reinstalled the operating system.
 - Any problem resulting from illegal changing or altering of the region code is the user's responsibility.
-

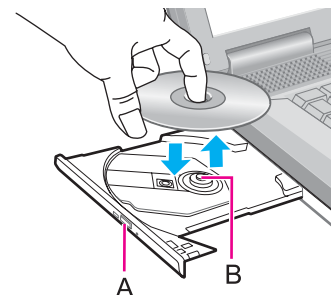
NOTE

- [Confirm Region] appears when the DVD-Video has only 1 region code and the drive is set for another region code. ([Confirm Region] may not appear with some DVD-Video discs. To check the current region code and the number of remaining times of changing the code, right-click on the WinDVD screen and click [Setup] - [Region].)
-

Inserting/Removing a Disc

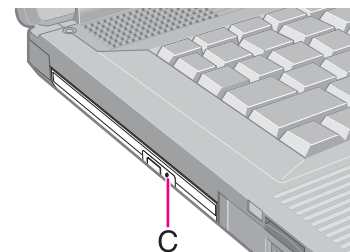
- 1 Turn on the computer.**
- 2 Press the eject button (A) and slowly pull out the tray.**
- 3 Insert/Remove a disc.**
 - To insert
Set the disc with the label side up and press the center of the disc until it clicks in place.
 - To remove
Press on the center spindle (B) and carefully lift up the edge of the disc.
- 4 Close the tray.**

Do not press the eject button.



NOTE

- To remove a disc when the computer is powered off, insert a pin of 1.3 mm {0.05"} in diameter into the emergency hole (C). (When the diameter of the pin is smaller than this, insert the pin slightly downward.) Pushing it to the end allows the tray to come out. (The position of the emergency hole depends on the drive.)
- For AutoPlay CD/DVD:
 - If an AutoPlay CD/DVD does not start after the computer resumes from sleep or hibernation, remove the disc from the drive and then reinsert it after waiting 15 seconds.
 - An AutoPlay CD/DVD may start during file access depending on the status of the disc.
- When playing back motion video from a disc, playback may not be smooth in some conditions.



Power-saving mode

If the CD/DVD drive is not accessed for 30 seconds, the drive motor will automatically be shut down to reduce the power consumption. When the CD/DVD drive is accessed again, the drive motor is turned on. In this case, reading of the disc data will take approximately 30 seconds.

WinDVD is a software application for DVD playback. For further information, refer to the software's online manual.


- DVD-Audio cannot be played back using WinDVD.


Running WinDVD


1 Double-click on the desktop.

- Alternatively click  (Start) - [All Programs] - [InterVideo WinDVD] - [InterVideo WinDVD for Panasonic].

NOTE

- When  does not appear on the desktop, or [InterVideo WinDVD] does not appear on the menu:

When WinDVD is reinstalled,  or [InterVideo WinDVD] may not appear on the screen of users other than the user who has reinstalled WinDVD.

In this case, click  (Start), input "c:\program files\intervideo\dvd8\windvd.exe" in [Search programs and files], press **Enter**, and start WinDVD.

If this file does not exist, reinstall WinDVD.

■ To access the online manual

After starting WinDVD, perform either of the following procedures.



- Click "?" on the WinDVD control panel.
- Right-click on the WinDVD screen and click [Help].


SUPPORT INFORMATION

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

If you still cannot troubleshoot the problem, enter the required information in the inquiry form on the homepage (<http://apps.corel.com/lp/ivi/>), and submit the form.

CAUTION

- Do not start WinDVD while the hard disk drive indicator  is blinking immediately after the computer is turned on.
- While WinDVD is running, do not:
 - Enter sleep or hibernation.
 - Switch the display mode by pressing  + **P** or **Fn** + **F3**.

- During motion video playback, do not:
 - Eject the disc.
 - Use other applications or the Command Prompt.
 - Change the settings of the screen properties.
 - Do not install another player software together with WinDVD.
Doing so may interfere with smooth playback. Some DVD-Video discs contain the player software and start installing. In this case, cancel the installation as soon as possible. If you accidentally installed another player software and find a problem in playback, try either of the following procedures.
 - Uninstall the player software by clicking  (Start) - [Control Panel] - [Uninstall a program].
(Refer to the instruction manual for the name of player software.)
 - Set WinDVD as the playback software if you can select the option in the player software settings.
-

DVD Discs Created Using a DVD Recorder

- Playback may not be possible depending on the DVD recorder or the discs.
- You must finalize^{*1} DVD-R, DVD-R DL, DVD-RW, +R, +R DL, and +RW before playback. For further information, refer to the instruction manual of the DVD recorder.

^{*1} A process that enables the playback of the discs on other DVD players, etc.

You can insert the following cards.

- ExpressCard/34 or ExpressCard/54 to the ExpressCard slot (A)
- (Only for model with ExpressCard slot)
- PC Card Type I (3.3 mm) or II (5.0 mm) to the PC Card slot (B)



NOTE

- The following types of card are not supported:
PC Card Type III (10.5 mm), ZV card, SRAM card, FLASH ROM card (excluding ATA interface type), and other cards that require 12 V of operating voltage.
- Do not start up Windows with a storage type of CardBus PC card attached. An error may occur.
- Dummy cards are inserted into both of the slots at the factory.
First remove the dummy cards (below).
- Be sure to insert each dummy card when the slots are not in use.
- Insert the appropriate dummy card in the correct card slot. Insert the dummy PC Card in the PC Card slot, and the dummy ExpressCard in the ExpressCard slot.
Inserting a dummy card in the wrong slot may cause malfunction of the computer.

Inserting/Removing the Card



Preparation

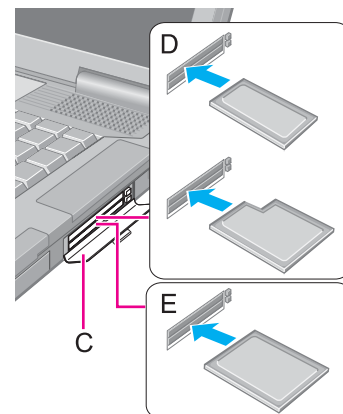
- Attach the device for the media containing the card driver (e.g., CD-ROM). Equipment connected to the multimedia pocket cannot be recognized if connected after the card driver installation screen appears.
- If the dummy card is inserted, remove it.

■ To insert the card

- 1 **Open the cover (C), and insert the ExpressCard (D) or the PC Card (E) with the label side up until it securely fits in to the slot.**
 - For further information, refer to the instruction manual of the card.

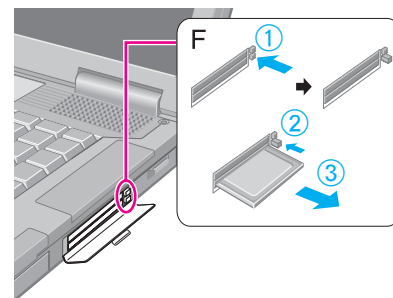
■ To remove the card

- 1 **Disable the card function.**
 - ① Click  on the notification area and click .
 - ② Select the card.
 - These steps are not necessary when removing the card after turning off the computer.



2 Open the cover and remove the card.

- ① Press the eject button (F). The eject button pops out.
- ② Press the eject button (F) again so the card comes out of the slot.
- ③ Draw the card straight out.



NOTE

- Check the card's specification to prevent the total operating current from exceeding the allowable limit. Otherwise malfunction may occur.
Allowable Current: 3.3 V: 400 mA, 5 V: 400 mA
- Some types of cards cannot be used simultaneously.
- After repeating insertion and removal, some types of card will not be recognized. In this case, restart the computer.
- If the computer freezes after resuming from sleep or hibernation, remove and reinsert the card. If the problem persists, restart the computer.
- When a card is inserted, power consumption increases. Remove the card when it is not in use, especially when operating by battery power.
- To connect peripheral devices (SCSI, IEEE1394, etc.) using a PC Card or an ExpressCard, follow the steps below (one example).
 - ① Connect the peripheral device to the card.
 - ② Turn on the power of device.
 - ③ Insert the card until it surely fits in the slot.

SD Memory Card Information

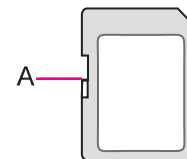
- This computer supports SDHC Memory Cards (SD Memory Cards with a capacity more than 2 GB).
- When you use a miniSD Card or a microSD Card, set the card to a miniSD Card adaptor or a microSD Card adaptor, and insert/remove the card with the adaptor. Be sure not to leave the adaptor in the card slot.
- The SD Memory Card has a copyright protection function which is compatible with content on-demand services on the Internet, etc.
- To format the SD Memory Card on this computer, do not use [Format] of Windows, but use the SD Memory Card format software.
You can download the software from the web site below.
http://panasonic.jp/support/global/cs/sd/download/sd_formatter.html
- To use the SD Memory Card on other devices, format the card on the devices. For further information, refer to the instruction manual of the devices.

Handling and storage cautions

- Store the SD Memory Card in the case after removing it from the computer.
- Do not:
 - Disassemble or modify the card.
 - Hit, bend, or drop the card.
 - Touch the terminals with fingers or metal object.
 - Remove the labels of the card / Attach other labels or stickers to the card.
- Do not place the card in the following locations.
 - In direct sunlight or in very hot location such as inside of a car.
 - In very dusty or humid location.
 - In location subject to corrosive gas, etc.


Data handling cautions

- Set the write-protect switch (A) to the LOCK position. Unlock the switch when recording (checkout), saving, or editing data.
- We recommend you to back up the important data to another storage medium.
- When disposing the card, we recommend you to physically destroy the card (using a hammer, etc.) to prevent personal or confidential data leakage.



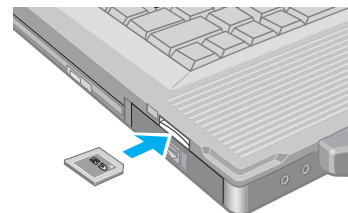
Inserting/Removing the SD Memory Card

CAUTION

- Do not remove or insert the SD Memory Card until Windows has completed loading.
- Do not remove the card or turn off the computer in the following cases, otherwise the data may be corrupted.
 - While the computer is in sleep or hibernation.
 - While the SD Memory Card indicator  is on.
 - While data is being read from or written to the card.
- Immediately after the writing operation. The computer may still continue the access to the card just after writing operation. If you remove the card before the operation is completed, the data may be damaged or the card access may no longer be performed normally.
- Note that Panasonic assumes absolutely no liability for any loss of data recorded by the user, or any other damages, direct or indirect.
- Do not forcibly draw out the card, otherwise the slot may be damaged.
- Insert the card in the correct direction, otherwise the card and the slot may be damaged.
- After resuming from sleep or hibernation, do not access the SD Memory Card for approximately 30 seconds.


■ To insert the card

- 1 Insert the SD Memory Card with the label side facing up and with the cut corner in front.**





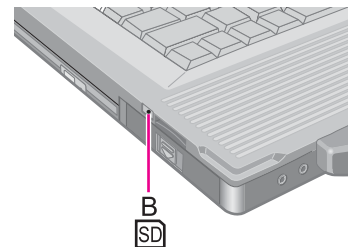
■ To remove the card

Preparation

- Save the data and close all applications.
- Confirm the SD Memory Card indicator  (B) is off.

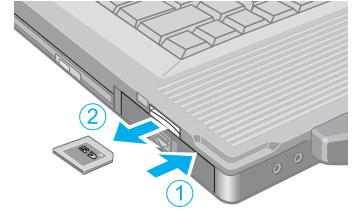
- 1 Disable the card function.**

- ① Click  on the notification area and click .
- ② Select the card.
 - These steps are not necessary when removing the card after turning off the computer.



2 Remove the card.

- ① Press the card so it comes out of the slot.
- ② Draw it straight out.



<Only for model with Smart Card slot>

You need software to use a Smart Card.

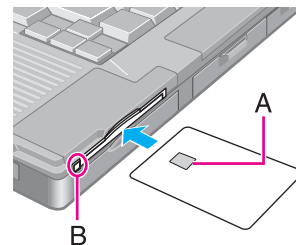
CAUTION

- Do not:
 - Hit, bend, or drop the card.
 - Touch the contact part with fingers or metal object.
 - Place the card in very hot location for a long time.
 - Remove the card immediately after inserting it.

Inserting/Removing the Smart Card

■ To insert the card

- 1 Insert the Smart Card with the contact part (A) in front.**
 - Insert the card until it surely fits in the slot.



■ To remove the card

- 1 Press the eject button (B).**

The Smart Card pops out.

CAUTION

- Use the eject button to remove the card, otherwise the reading contact may be damaged.

Use RAM modules that comply with the specifications below. Using any other module may cause malfunction or result in computer failure.

RAM module specifications:

200 pins, SO-DIMM, 1.8 V, DDR2 SDRAM, PC2-6400

(For information of RAM module compatibility, contact Panasonic Technical Support.)

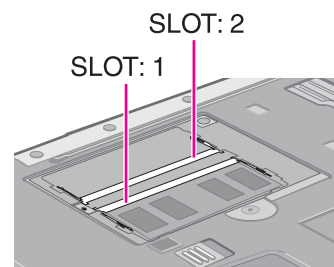
CAUTION

- RAM modules are extremely sensitive to static electricity and can be affected even by static electricity from the human body. When inserting and removing RAM modules, do not touch the terminals or internal components, and do not allow foreign particles to enter the slots. Doing so may cause damage, fire, or electric shock.

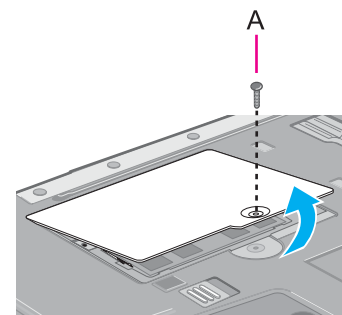
Inserting/Removing the RAM Module

This computer has 2 RAM module slots.

- At purchase, the RAM module is in SLOT: 1.
- When using an extra RAM module, insert it in SLOT: 2.

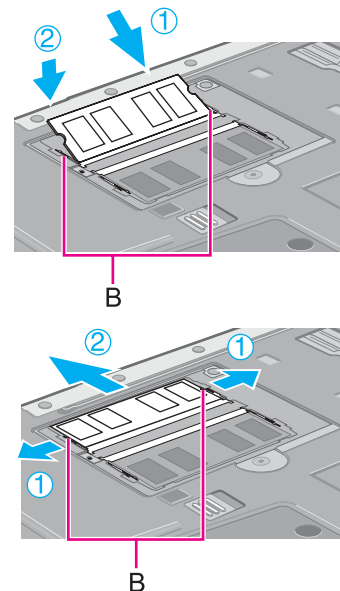


- 1 Turn off the computer.**
 - Do not use sleep or hibernation.
- 2 Disconnect the AC adaptor and remove the battery pack (→ [page 21](#)).**
- 3 Remove the screw (A) and the cover on the bottom of the computer.**



4 Insert/Remove the RAM module.

- To insert
 - ① Tilt the module slightly and insert it in the slot.
 - ② Press down the module so that the right and left hooks (B) are locked.
- To remove
 - ① Carefully open the right and left hooks (B). The module will rise.
 - ② Carefully remove the module from the slot.



5 Set the cover and battery pack.

CAUTION

- Set the cover correctly and tighten the screw firmly.

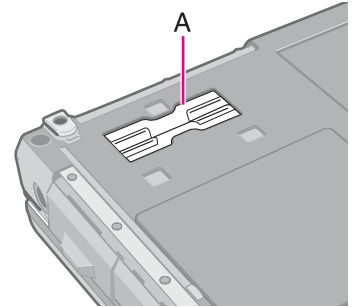
NOTE

- If it is hard to insert or to press down the RAM module, do not try forcibly but check the module's direction.
 - Use the appropriate screw driver so as not to strip the thread of screw.
 - If the RAM module is recognized correctly, the total size of the main unit memory and RAM module memory is displayed on the [Information] menu of the Setup Utility (→ [page 73](#)).
- If the RAM module is not recognized, power off the computer and insert it again.

You can use an optional port replicator (CF-VEB522). This device frees you from being bothered by a lot of cable connections when you carry the computer. It also allows you to connect various peripherals.

Connect the port replicator to the expansion bus connector (A) on the bottom of the computer.

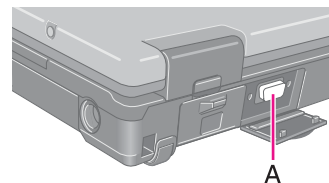
For further information, refer to the instruction manual of the port replicator.



NOTE

- Use only the specified port replicator (CF-VEB522).
- Hot or warm docking/undocking is not possible with the port replicator.
- To boot the computer from a USB floppy disk drive or a USB CD/DVD drive, be sure to connect the USB drive to the USB port on the computer, not to the USB port on the port replicator.
- If you use an external display compatible with “DISPLAY PORT”, connect it to a “DISPLAY PORT” on an optional port replicator (CF-VEB522) using a cable compatible with “DISPLAY PORT”.

You can switch the output destination to an external display (a projector etc.).
Connect the external display to the external display port (A).



NOTE

- After resuming from sleep or hibernation, or restarting the computer, the output destination may not be the same as selected in the previous status.
- When you change the display after Windows starts up, do not press any key until switching is complete.
- You cannot use the simultaneous display until Windows starts up.
- Display switching by pressing **Fn** + **P** or **Fn** + **F3** may not work when you use the Fast User Switching function to switch the user. In this case, log off all users and restart the computer.
- Do not connect or remove the external display during sleep or hibernation.
- It may take some time to switch between displays depending on the displays used.
- When you use high resolution displays, the display color, resolution or refresh rate may be changed, switching to [Notebook] in [Intel® Graphics Media Accelerator Driver for Mobile].
We recommend you to switch the output destination by pressing **Fn** + **P** or **Fn** + **F3**. (Only for model with Mobile Intel® GM45 Express Chipsets)
- When you use the external display only, set the suitable number of colors, resolution, or refresh rate separately from when you use the internal LCD only or when you use the simultaneous display.
Depending on the settings, some external displays may be distorted or may not display the mouse cursor correctly. In this case, set the settings to lower value.
- When you use the simultaneous display, DVD-Video, MPEG files and other motion image files may not be played back smoothly.
- Carefully read the instruction manual of the external display.
- When connecting an external display that does not conform to the Plug & Play standards, select the display driver accordingly in the following menu, or use the driver disc supplied with the monitor.
 - ① Click (Start) - [Control Panel] - [Adjust screen resolution] - [Advanced Settings] - [Monitor] - [Properties].
 - A standard user needs to enter an administrator password.
 - ② Click [Driver] - [Update Driver].
- If you connect an external display via the port replicator (CF-VEB522), the output switches to the port replicator from the external display port.
- If you use an external display compatible with “DISPLAY PORT”, connect it to a “DISPLAY PORT” on an optional port replicator (CF-VEB522) using a cable compatible with “DISPLAY PORT”.

CAUTION

- Before disconnecting the external display, switch to the internal LCD by pressing **⌘ + P** or **Fn + F3**. Otherwise the displayed image quality may become different after disconnection (e.g., wrong resolution). In this case, press **⌘ + P** or **Fn + F3** to reset the image quality.
- The screen may become distorted due to the following operations. In this case, restart the computer.
 - Disconnecting an external display for which you have set high resolution or high refresh rate.
 - Connecting/disconnecting an external display during computer operations.

Switching the display mode

- 1 Press **⌘ + P** or **Fn + F3**.
- 2 Click the display mode.

NOTE

- Until Windows startup is completed (during Setup Utility, etc.), the simultaneous display cannot be used and pressing **Fn + F3** switches the display between the internal LCD and the external display (the projector etc.). (Only for model with Mobile Intel® GM45 Express Chipsets)
- When an external display is connected to an optional port replicator (CF-VEB522), the display switching may work differently from the above. For further information, refer to the instruction manual of the port replicator.

■ Extended Desktop

The extended desktop function allows you to use the working area across both the internal LCD and the external display. You can drag an object from the internal LCD to the external display and vice versa.

- 1 Press **⌘ + P** or **Fn + F3**.
- 2 Select [Extend].
- 3 Press **Enter**.


- Alternatively you can use the extended desktop function in the following procedure (Only for model with Mobile Intel® GM45 Express Chipsets).
 - ① Right-click the desktop, and click [Graphics Properties].
 - ② Select [Extended Desktop] in [Operating Mode].
 - ③ Click [Apply].
 - ④ Click [OK].

NOTE

- It may not be possible to use the extended desktop with some software applications.
- When you click the maximize button, the window is displayed on one of the displays. You cannot move the maximized window to the other display.
- To switch left (primary device) and right (secondary device), once return the display to “notebook only”. Follow the steps below. (Only for model with Mobile Intel® GM45 Express Chipsets)
 - ① Right-click the desktop and click [Graphics Options].
 - ② Click [Output To] - [Notebook].
 - ③ Right-click the desktop and click [Graphics Options].
 - ④ Click [Output To] - [Extended Desktop], and click [Monitor + Notebook] (the external display will be set to primary device) or [Notebook + Monitor] (the internal LCD will be set to primary device).
- To switch to the Extended Desktop, be sure to use the [Intel® Graphics Media Accelerator Driver for Mobile] screen. If you use other methods (e.g. display setting, etc.), the screen may not be displayed correctly. (Only for model with Mobile Intel® GM45 Express Chipsets)
- The pop-up icon displayed by **F11** key combination appears only on the primary device.
- <Only for model with touchscreen>
Set the internal LCD to the primary device when using the touchscreen. The cursor will move on the primary device when you touch the internal LCD.

■ To change the display settings

<Only for model with Mobile Intel® PM45 Express Chipsets>

- 1 Click  (Start) - [Control Panel] - [Adjust screen resolution].
- 2 Set the display color and resolution etc.
- 3 Click [OK].

<Only for model with Mobile Intel® GM45 Express Chipsets>

- 1 Right-click the desktop, and click [Graphics Properties].
- 2 Select the display destination in [Operating Mode] and click [Apply].
- 3 Click [OK].
- 4 Click [Display Settings] and set the display color and resolution etc.
- 5 Click [OK].

Connecting/Removing USB Devices

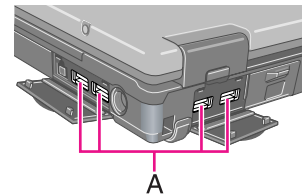
Preparation

Attach the device for the media containing the card driver (e.g., CD-ROM). Equipment connected to the multimedia pocket cannot be recognized if connected after the USB device driver installation screen appears.

■ To connect the USB device




- 1 **Open the cover and connect the USB device to one of the USB ports (A) on the computer.**

For further information, refer to the instruction manual of the USB device.



■ To remove the USB device


- 1 **Disable the USB device.**

- ① Click  on the notification area and click .
- ② Select the USB device.
 - These steps are not necessary when;
 - Removing the device after turning off the computer.
 -  is not displayed.
 - The device does not appear in the list in step ②.


- 2 **Remove the USB device.**

CAUTION

<Only for model with Smart card slot>

- If you double-click , [USB Smart Card Reader] is displayed in the list, but do not select this item. Removing this item is not possible. Restart the computer in case you select this.

NOTE

- You may need to install the driver for the USB device. Follow the on-screen instructions or refer to the instruction manual of the USB device.
- You may need to install the driver again when connecting the device to another port.
- When a USB device is connected, sleep and hibernation may not function normally. If the computer does not start up normally, remove the USB device and restart the computer.
- If the computer enters sleep while a USB keyboard or mouse is connected, touching the USB keyboard keys or mouse will resume the computer.
- When the USB device is removed and then inserted while the computer is on,  may appear in the Device Manager and the device may not be correctly recognized. In this case, remove and connect the device again, or restart the computer.
- When a USB device is connected, power consumption increases. Remove the USB device when it is not in use, especially when operating by battery power.

You can connect a digital video camcorder or other IEEE 1394 standard device to the computer.

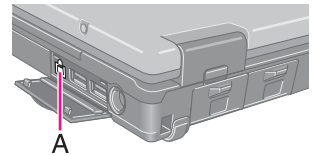
■ To connect IEEE 1394 device

Preparation

Attach the device for the media containing the driver (e.g., CD-ROM). Equipment connected to the multimedia pocket cannot be recognized if connected after the IEEE 1394 device driver installation screen appears.

- 1 Turn on the computer and the IEEE 1394 device.
- 2 Open the cover and connect the IEEE 1394 device to the IEEE 1394 interface connector (A).

For further information, refer to the instruction manual of the IEEE 1394 device.



NOTE

- You may need to install the driver for the IEEE 1394 device. Follow the on-screen instructions or refer to the instruction manual of the IEEE 1394 device.

■ To remove IEEE 1394 device

CAUTION

- Turn off the IEEE 1394 device only after turning off the computer.

- 1 Turn off the computer and disconnect the cable from the IEEE 1394 interface connector.
- 2 Turn off the IEEE 1394 device and remove the cable.

<Only for model with Fingerprint Reader>



Fingerprint Reader

NOTE

- Enrollment and authentication is unavailable to an extremely minority of people including those whose fingerprints give little data for personal identification.

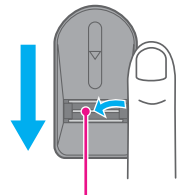
How to Use the Fingerprint Reader

This section explains how your fingerprints are enrolled and authenticated.

1 Slide your finger toward yourself.

- To prevent a reading error.
 - ① Set the first joint of your index finger on the sensor as illustrated to the right.
 - ② Slide your finger toward yourself while keeping it in contact with the fingerprint sensor.
 - ③ Slide your finger down until the sensor is visible.
- When the fingerprint sensor does not enroll or authenticate your fingerprint properly:
 - You slid your finger too fast or too slow.
 - Your finger was soiled or it has a scar on the surface.
 - Your finger was wet or extremely dry.
 - Your fingerprint does not have sufficient data for personal identification.

For further information, refer to “Fingerprint Reader” (→ [page 99](#)).



Fingerprint sensor

CAUTION

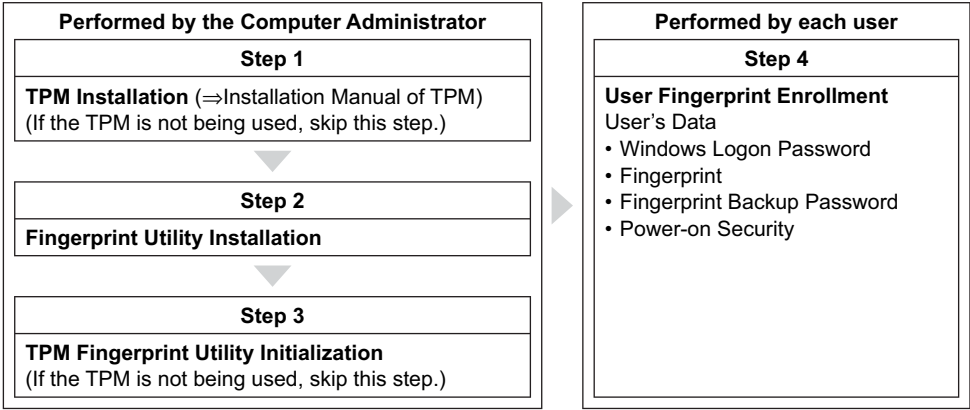
- We shall not be liable for any loss or damage whatsoever resulting from your Fingerprint device or neglect of Fingerprint device use, or any data loss resulting from such developments as Fingerprint authentication device malfunctioning.

Overview

Fingerprint’s Outline

The conventional security systems use ID/passwords and token devices such as IC cards to authenticate users. Therefore the passwords and token devices are exposed to the risk of being lost, stolen and hacking. The Fingerprint authentication method uses user’s fingerprints instead of passwords for security authentication. You can use your fingerprints to start up your computer and log on Windows. We recommend you use the Fingerprint Reader in combination with the TPM (Trusted Platform Module) to increase the security level of your computer.

Recommended Installation Procedure



■ To access the online manual

This manual describes Step 2, 3 and the initial part of Step 4.
For further steps, refer to the Protector Suite Help menu.

- Click  (Start) - [All Programs] - [Protector Suite] - [Control Center] - [Help] - [Help].

Precautions


■ Security Functions

- Fingerprint Authentication Technology does not guarantee complete authentication and individual identification. Please acknowledge we shall not be liable for any loss or damage whatsoever resulting from the use of, or inability to use your Fingerprint device.
- The Fingerprint authentication method uses multiple fingerprints, encryption keys, credentials data and passwords. You might not be able to use your data if you lose fingerprints, keys, credentials and passwords. Back up the Fingerprint authentication data in a safe place. For further information, refer to “Backup” (→ [page 54](#)).
- General interaction with third-party applications: There is no guarantee that there will not be any negative interaction with any third-party software, and will not accept any responsibility for such an interaction.

Installation




1 TPM Installation

Refer to the *Installation Manual* of “Trusted Platform Module (TPM)”.

- Click  (Start), input “c:\util\drivers\tpm\readme.pdf” in [Search programs and files], and press **Enter**.


2 Fingerprint Utility Installation


Performed by the Computer Administrator.

- ① Log on to Windows as an Administrator.
- ② Close all other programs.
- ③ Click  (Start), input “c:\util\drivers\fnprint\install\32-bit\Setup.exe” in [Search programs and files], and press **Enter**.
- ④ Click [Next].
Installation starts. Follow the on-screen instructions.
- ⑤ When the “Protector Suite *.* has been successfully installed.” message appears, click [Finish].
At the confirmation message, click [Yes].
The computer restarts.
- ⑥ Log on to Windows as an Administrator.
The “Fingerprint software Icon”  appears in the notification area.
 - If the icon does not appear, click .

3 TPM Fingerprint Utility Initialization



Performed by the Computer Administrator.

The “Invalid TPM status” message is displayed by the “Fingerprint software Icon”  in the notification area.

- If the icon does not appear, click .
 - If the TPM is not being used, skip this step.
 - ① Click on the “Invalid TPM status” message and then click [Initialize].
- Follow the on-screen instructions.


NOTE

- If the “Invalid TPM status” message is not displayed

Click  (Start) - [All Programs] - [Protector Suite] - [Control Center] - [Settings] - [Advanced Settings] - [Trusted Platform Module (TPM)] - [Initialize]. And then click  (Start) - [All Programs] - [Protector Suite] - [Control Center] - [Identity] - [Multifactor], and choose a method of authentication.

4 User Fingerprint Enrollment

Performed by each user.

- ① Double-click the “Fingerprint software Icon” .
- ② Carefully read the License Agreement, and then click [Accept].
- ③ Select an enrollment mode, and click [Apply].
 - Enrollment mode


You can make the configuration for the enrollment only once during this initialization phase.


 - Enrollment to the biometric device

All enrolled fingerprints are stored directly in the fingerprint sensor. The user data will be secured by the hardware protection keys obtained by the fingerprint sensor. This mode allows up to about 21 fingerprints to be enrolled.
 - Enrollment to the hard disk

All enrolled fingerprints are stored on the hard disk. Hardware protection of the user data is not possible, but multiple users can enroll their fingerprints.
- Follow the on-screen instructions.

NOTE

- Enroll at least two fingers. Even if one of them is injured, you can use another one to access your account and secret data. For further information about the enrollment, refer to “How to Use the Fingerprint Reader” (→ [page 48](#)) and [Tutorial].
 - Click  (Start) - [All Programs] - [Protector Suite] - [Control Center] - [Help] - [Tutorial].

- We recommend you use the Power-on Security feature. This feature prevents unauthorized access to the user's computer at the BIOS level.
 - ① Click  (Start) - [All Programs] - [Protector Suite] - [Control Center].
 - ② Click [Identity] - [Status].
 - ③ Click [Power-on security status] - [Change].
 - ④ Click [Edit], and Add the check mark to [Enable power-on security], and then click [Apply].
 - ⑤ Click [Identity] - [Power-on Password].
 - ⑥ When the "Power-on Security" screen appears, click [Manage Passwords...].
 - ⑦ Select [Power-On] in [Password Types], and click [Set password...].
 - ⑧ Enter the Power-On password, and click [OK].
 - ⑨ Click [Close].
 - ⑩ Add a check mark for [Power-On] in [Password Types].
 - ⑪ Enter the Power-On password, and click [OK].
 - ⑫ Click [Apply].

More Advanced Security

You can increase your computer's security level by setting the BIOS level described in this section. Performed by the Computer Administrator.

1 Register the Supervisor Password.

You have to register the Supervisor Password to proceed to the next step.

If you have already registered the Supervisor Password, you can skip this step, and move on to step 2.

If you have not done this, have enrolled your fingerprint using Protector Suite, and have already made Power-on Security effective, after step ②, your fingerprint authentication will be necessary.

- ① Turn on or restart the computer.
- ② Press **F2** or **Del** while [Panasonic] boot screen is displayed soon after the computer starts the startup procedure.
- ③ Select the [Security] menu.
- ④ Select [Set Supervisor Password], and press **Enter**.
- ⑤ Enter your password in the [Create New Password], and press **Enter**.
 - The password will not be displayed on the screen.
 - You can use up to 32 alphanumeric characters (including spaces).
 - The case (upper/lower) is ignored.
 - Use only the upper horizontal row of numeric keys to input your password.
 - You cannot use **Shift** and **Ctrl** to input a password.
- ⑥ Enter your password again in [Confirm New Password], and press **Enter**.

2 Set the High Security Level.

- ① Select [Fingerprint Security], and press **Enter**.
- ② Select [Security mode], and select [High].
 - Default setting: Simple
- ③ Press **Esc** to close the sub-menu.
- ④ Press **F10**, select [Yes], and press **Enter** to exit the Setup Utility.

NOTE

- In the [High] security mode, you have to enter the Supervisor or User Password even after fingerprint authentication. In the [Simple] security mode, you do not have to enter the Supervisor or User password after fingerprint authentication.
- To use the Power-on Security feature, enable it in [Control Center] (→ [page 52](#)).
Do not use the fingerprint lists in the Setup Utility to change the setting for [Power-on Security] except for the specific case such as the fingerprint reader cannot be used.

Useful Information



Backup

The file described below is necessary for recovering the Fingerprint authentication data. Back up this file periodically in a safe location such as removable disk to avoid data loss resulting from some accidents. We recommend you to store the file in a removable disk or network drive because the benefit of Fingerprint authentication security can be reduced if you keep the file in the internal hard disk drive.


The backup password described below is necessary for bypassing the Fingerprint authentication. We recommend you set the backup password using the [User Enrollment] wizard. If you do not define the backup password, you may lose your data in case of authentication hardware failure.

- File used by each user
 - Backup user passport data
(Default name: <UserAccount>.vtp)
You need this file when you replace the embedded fingerprint chip, or the hard disk drive, or when reinstalling Windows. This file contains the fingerprints, encryption keys, and logon authentication data.


NOTE

- How to Backup:
Select [Identity] in [Account Operation] to save the user data.
 - Click  (Start) - [All Programs] - [Protector Suite] - [Control Center] - [Identity] - [Account Operation].
For further information, refer to the Protector Suite Help menu.
 - Click  (Start) - [All Programs] - [Protector Suite] - [Control Center] - [Help] - [Help].
- Password used by each user
 - Backup Password for Enrollment
This backup password can be used in case of hardware failure to bypass the fingerprint authentication.

CAUTION

- The passwords other than those explained above are also used for security, so do not lose them.
For further information, refer to the Protector Suite Help menu.
 - Click  (Start) - [All Programs] - [Protector Suite] - [Control Center] - [Help] - [Help].

Limitations in Use

- Password Bank^{*1} limitations: The following web pages cannot be supported.
Web pages which are created by the following technologies:
 - Web forms created on the fly using javascript.
 - Web forms which looks as one form (e.g. login field, password field), but internally created with two independent forms.
 - There can be auto submit problems with web forms which do not have Submit button. All forms that you cannot submit with **Enter** will be entered by Password Bank, but not submitted.
 - Password Bank^{*1} limitations: The following Windows applications cannot be supported.
 - Applications which do not use standard Windows controls and draw controls by their own.
 - This includes any Java based application.
- ^{*1} For further information, refer to the Protector Suite Help menu.
- Click  (Start) - [All Programs] - [Protector Suite] - [Control Center] - [Help] - [Help].
 - “Sensor Scrolling Feature” is not supported.

Handling & Maintenance

- The enrolling and authentication sensitivity may decline under the conditions below. Wipe off stains or moisture on the sensor surface with a soft cloth.
 - The surface of the fingerprint sensor is soiled with dust, skin oil, or sweat.
 - The surface of the fingerprint sensor is wet as a result of moisture or condensation.
- Static electricity may also cause the sensor to malfunction. To make your finger static-free, touch a metal surface before placing it on the fingerprint sensor. Exercise caution against static electricity in winter and other dry conditions.
- Malfunction or damage may occur when:
 - The fingerprint sensor surface was damaged by the strong rubbing of a solid material, scratches, or being pecked with a pointed item.
 - The sensor was touched with a finger soiled with mud, damaging the sensor surface with a tiny substance, and staining the surface.
 - The sensor surface was covered with a seal, or soiled with ink.


Deleting (Initializing) Owner's Data

When you dispose of the computer or transfer the ownership, delete (initialize) the owner's data to avoid unauthorized access.

NOTE


- The data enrolled in the fingerprint sensor is not image data. You cannot restore fingerprint image data from the data enrolled in the fingerprint sensor.
-

1 Disable Power-on Security

- ① Log on to Windows as an Administrator.
- ② Click  (Start) - [All Programs] - [Protector Suite] - [Control Center].
- ③ Click [Identity] - [Status] - [Power-on security status].
- ④ Click [Edit], and remove the check mark from [Enable power-on security], and click [Apply].
- ⑤ Click [Identity] - [Power-on Password].
- ⑥ Click [Manage Passwords...].
- ⑦ Select [Power-On] in [Password Types], and click [Unset password...].
- ⑧ Enter the Power-On password, and click [OK].
- ⑨ Click [Close].
 - Confirm that fingerprint data is not registered.


2 Delete Fingerprint Data.

Performed by each user.

- ① Click  (Start) - [All Programs] - [Protector Suite] - [Control Center].
- ② Click [Identity] - [Account Operation].
- ③ Click [Delete user data].
 - At the confirmation message, click [Yes].
- ④ Enter Windows log on password then, click [Submit].
 - Confirm that there is no item in [Password Types].

3 Uninstall Protector Suite

Performed by the Computer Administrator.

- ① Log on to Windows as an Administrator.
- ② Close all programs.
- ③ Click  (Start) - [Control Panel] - [Uninstall a program].
- ④ Double-click [Protector Suite *.*], and select [Remove].
- ⑤ Select [Remove all Protector Suite *.* data], and click [Next].
 - Uninstallation starts. Follow the on-screen instructions.
- ⑥ When the "Protector Suite *.* has been successfully uninstalled." Message appears, click [Finish].
 - If the confirmation message appears, click [Yes].
 - The computer restarts.

Starting Over

If the specific solutions for your problem in Fingerprint Reader (→ [page 99](#)) do not work, you can use these instructions as the last measure and start over. However, please note that you can lose your data - passwords, secret keys and fingerprints.

- ① Log on to Windows as an Administrator.
 - You can always access the computer by using your Windows log on password.
- ② Try to export your passport to a file if you are planning to use your passwords, secret keys or enrolled fingers in the future.
 - If you exported your passport recently, this step is not required.
 - If biometrics authorization works and your finger is recognized, use [Account Operation] wizard, swipe your finger and continue according to wizard's instructions.
 - If biometrics authorization works, but your finger is not recognized, you can start the [Account Operation] wizard and export the passport even without using your fingerprint. You need to cancel fingerprint dialog, and you will be prompted for a password. If you do not use backup password, enter your Windows log on password. Otherwise, enter your backup password.


CAUTION

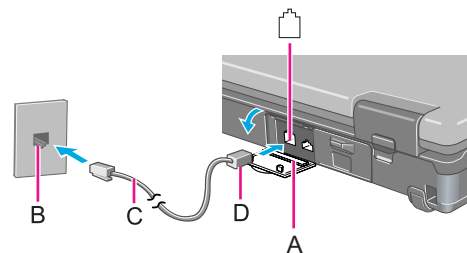
- We recommend you set the backup password.
 - If biometrics authorization does not work, there is no way to backup your data.
-
- ③ Deleting the passport.
 - Use the [Delete your data] wizard. Please note that all your stored secret data (passwords, [File Safe] encryption keys [Personal Safe] data) will be lost. If you backed up the data, you can restore it in the next step; otherwise it will be lost permanently. To perform the delete operation it is necessary to cancel the fingerprint verification operation to get to the password dialog, then enter your Windows log on password or backup password.
 - ④ Make sure your fingerprint sensor is working.
 - Use the Tutorial wizard to verify that the fingerprint sensor works. If not, reboot and try again. If it still does not work, please contact Panasonic Technical Support.
 - ⑤ Restore or create passport.
 - If you have a backup of your data, you can now use [Account Operation] wizard to restore your data. Otherwise you can create a new passport by using the [Manage Fingerprints] wizard.

Connecting the Internal Modem with a Telephone Jack

CAUTION

- Use a surge protector since the modem may be damaged by a sudden high voltage surge that may occur in the event of a lightning strike.

- 1** Open the cover (A), and connect the computer and the telephone jack (B) using the telephone cable (included) (C).
 - Hold the cable so that the shape of the connector (D) matches the port, and insert fully until it clicks.
- 2** Click  (Start) - [Control Panel] - [Connect to the Internet] - [Dial-up] and change the settings as necessary.





NOTE

- Do not enter sleep or hibernation during communications.
- To remove the cable, press and hold the lever and pull out.



Ring Resume Function

The computer automatically resumes from sleep when the telephone connected to the modem rings. You will need software to keep the computer in idle state waiting for a phone call, and if you prefer, to turn the computer to sleep again afterward. For further information, refer to the instruction manual of the software application.

- 1** Click  (Start) - [All Programs] - [Windows Fax and Scan].
- 2** Click [Tools] - [Fax Settings].
 - A standard user needs to enter an administrator password.
 - Check whether the modem you are using is displayed in Device name. If not, click [Select fax device] and select the correct modem.
- 3** Add a check mark for [Allow the device to receive fax calls] and click [OK].
- 4** Click  (Start) - [Computer] - [System properties] - [Device Manager].
 - A standard user needs to enter an administrator password.
- 5** Double-click [Modems], and then double-click the internal modem.
- 6** Click [Power Management] and add a check mark for [Allow this device to wake the computer], and then click [OK].

■ To set the time to return the computer to sleep

The computer will enter sleep after the set time even when the communication is not completed. You can avoid such uncompleted communication if you select [Never], but the computer does not return to sleep after resuming by a phone call.

- ① Click  or  on the notification area and click [More power options] - [Change when the computer sleeps].
- ② Set the expected communication time for the sleep setting.

NOTE

- This function does not work when the computer is off or in hibernation.
- Connect the AC adaptor.
- The screen remains dark after the computer resumes from sleep. The previous screen display will be restored when you touch the keyboard, touch pad or touchscreen (only for model with touchscreen).
- The computer cannot resume if the telephone is not connected to the internal modem. (e.g., you cannot use a PC Card modem.)
- The computer needs some time to respond, so set the calling time longer than normal. If this is not possible on the transmission side, reduce the number of rings before answering on the software that you are using to keep the computer in idle waiting for the call.

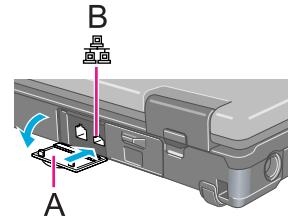
Connecting LAN

CAUTION


- Do not connect the telephone cable to the LAN port.

- 1 Turn off the computer.**
 - Do not use sleep or hibernation.
- 2 Open the cover (A) and connect the cable.**

Connect the LAN port (B) and the network system (server, HUB, etc.) using a LAN cable.
- 3 Turn on the computer.**



■ To check the Local Area Connection status

- ① Click  (Start) - [Connect To] and select [All].


Power On by LAN/Wake Up from wired LAN

NOTE


- When these functions are enabled, power is consumed even if the computer is in sleep, hibernation, or powered off. Be sure to use the AC adaptor.
- Even when a password is set in the Setup Utility and [Password On Boot] is set to [Enabled], entering the password is unnecessary for turning on or resuming the computer.
- The Power On by LAN function is off under the following conditions:
 - When you turn the computer off by pressing the power switch for 4 seconds or longer (e.g., after a hung-up).
 - When you reattach the AC adaptor and battery pack to the computer after removing them.
- The screen remains dark when the computer resumes from sleep. The previous screen display will be restored when you touch the keyboard, touch pad or touchscreen (only for model with touchscreen).

Enabling the Power On by LAN function

The computer automatically turns from off to on when the computer is accessed from the network server via the internal LAN port.

- 1 Select **[Allow]** in **[Power On by LAN]** in the **[Advanced]** menu of the **Setup Utility** (→ [page 75](#)).
- 2 In **[Caution]**, press **Enter**.
- 3 Press **F10**, and then select **[Yes]** and press **Enter**.
- 4 Log on to Windows as an administrator.
- 5 Click  (Start) - **[Computer]** - **[System properties]** - **[Device Manager]**, and double-click **[Network adapters]** - **[Intel(R) 82567LM Gigabit Network Connection]**, and then click **[Advanced]**.
- 6 Click **[Enable PME]** in **[Property]** and select **[Enabled]** in **[Value]**, and then click **[OK]**.


NOTE

- The computer may accidentally turn on if the linkage status is changed. To prevent the accidental startup, make the setting by the following steps.
 - ① Click  (Start) - **[Computer]** - **[System properties]** - **[Device Manager]**.
 - A standard user needs to enter an administrator password.
 - ② Double-click **[Network adapters]** - **[Intel(R) 82567LM Gigabit Network Connection]**, and click **[Advanced]**.
 - ③ Click **[Wake on Settings]** in **[Property]** and select **[Wake on Magic Packet]** in **[Value]**, and click **[OK]**.
- If you forcibly shut down Windows, the Power On by LAN function will not work.


Enabling/Disabling the Wake Up from wired LAN function

When the Wake Up from wired LAN function is enabled, the computer automatically resumes from sleep or hibernation when the computer is accessed from the network server via the internal LAN port. (Default setting)

The Wake Up from wired LAN function can be switched to enable/disable by performing the following procedure.

- 1** Click  (Start) - [Computer] - [System properties] - [Device Manager].
 - A standard user needs to enter an administrator password.
- 2** Double-click [Network adapters] - [Intel(R) 82567LM Gigabit Network Connection], and click [Power Management].
- 3** Select the setting for [Allow the computer to turn off this device to save power] and [Allow this device to wake the computer], and click [OK].
 - We recommend you to make the above 2 settings ON/OFF simultaneously.

NOTE

- The computer may start up if accessed by another computer on the network.
The following procedure can be used to prevent startup due to unintentional access by a computer.
 - ① Click  (Start) - [Computer] - [System properties] - [Device Manager].
 - A standard user needs to enter an administrator password.
 - ② Double-click [Network adapters], and double-click the internal network adaptor.
 - ③ Click [Power Management], add a check mark for [Only allow magic packet to wake the computer] - [Only allow management stations to wake the computer], and then click [OK].
-

<Only for model with wireless LAN, and/or wireless WAN>

There are 5 ways of disabling and enabling wireless communication.

- The wireless switch on the front of the computer (below)
- Wireless switch utility (→ [page 64](#))
- Settings in the Network and Sharing Center (→ [page 67](#))
- Settings in the [Advanced] menu of the Setup Utility (→ [page 75](#))
- Setting in the Wireless Connection Disable Utility (→ [page 65](#))

NOTE

- For further information about Wireless LAN: → [page 67](#)
- For further information about Wireless WAN: Refer to the instruction manual of the wireless device.
- The wireless communication can be enabled or disabled by connecting or disconnecting the LAN cable. → [page 65](#)

The Wireless Switch

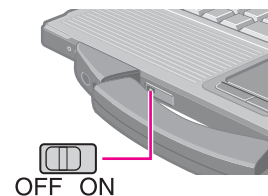
■ To disable all wireless communication

1 Switch to OFF.


■ To enable wireless communication

1 Switch to ON.

- In the default setting, the wireless switch enables all wireless devices when it is set to ON.



NOTE




- If you uninstall the Wireless Switch Utility, set the wireless switch to ON beforehand.
- Do not turn on/off the switch repeatedly at too short intervals.
- Do not restart, log off, or enter sleep or hibernation immediately after turning on/off the switch.
- Do not turn on/off the switch while Windows is starting up.
- To use wireless communication, set the wireless devices ([Wireless LAN] / [Wireless WAN]) to [Enabled] (default) in the [Advanced] menu of the Setup Utility (→ [page 75](#)).
- When you set [Wireless Switch] to [Disabled] in the [Advanced] menu of the Setup Utility (→ [page 75](#)), the Wireless Switch Utility icon will not appear if you click  on the notification area. All wireless equipment (wireless LAN, wireless WAN) will remain ready irrespective of the wireless switch setting.
- It may take some time to turn off wireless communication after switching the wireless switch off.
- If the IEEE802.11a setting is changed in [Device Manager] (→ [page 69](#)), the display will be changed accordingly.

Wireless Switch Utility

This utility allows you to control the function of the wireless switch. This utility also allows you to enable or disable wireless devices from a pop-up menu. In the default setting, all wireless devices are enabled.

■ The Wireless Switch Utility icon

The icon appears when click  on the notification area. It shows the status of wireless devices.

-  : Indicates that the wireless devices are enabled.
-  : Indicates that the wireless devices are off.
-  : Indicates that the wireless devices have been disabled in the Setup Utility.

■ To enable or disable particular wireless devices

- 1 Click the Wireless Switch Utility icon to show the pop-up menu.
- 2 Select ON or OFF for the device you want to enable or disable.

■ To change the function of the wireless switch

In the default setting, the wireless switch enables devices that you select turning the wireless switch off last time. You can change this function.

[Selects the device for which to turn the device status on each time with the dialog box.]




Display a dialog each time you set the wireless switch to ON so you can choose which wireless device to enable.

[Turns on the following device.]

Only selected devices are enabled when you set the wireless switch to ON.

[Turns on the device that was on immediately before the wireless switch was turned off the last time.] (default)


When you turn on the wireless switch, the on/off settings that were selected when you last turned off the wireless switch will be restored.

- 1 Click  on the notification area and click the Wireless Switch Utility icon ( or ).
- 2 Click [Settings].
- 3 Select the setting you want to assign to the wireless switch.
- 4 Click [OK].

Wireless Connection Disable Utility

You can automatically disable the wireless LAN/wireless WAN connection when a LAN cable is connected to your computer. You need to install the Wireless Connection Disable Utility to use this function.

Installing the utility


- 1 Log on to Windows as an administrator.
- 2 Click  (Start), input “c:\util\wdisable\setup.exe” in [Search programs and files], and press **Enter**.
- 3 Follow the on-screen instructions to install the Wireless Connection Disable Utility.

Checking the status of the wireless connection

NOTE

- The Wireless Switch Utility should also be installed so that the Wireless Connection Disable Utility works. The Wireless Switch Utility has already been installed at the factory.
- To use the utility, set [Wireless Switch] to [Enabled] in the [Advanced] menu of the Setup Utility (→ [page 75](#)).

■ Status indication

After installation, the Wireless Connection Disable Utility is automatically started after a user is logged in. An icon appears when click  on the notification area.



: Indicates that

- the utility is enabled, and
- the wireless connection is disabled since a LAN cable is connected.



: Indicates that

- the utility is enabled, and
- the wireless connection is enabled since no LAN cable is connected.



: Indicates one of the following statuses;

- the utility does not monitor the LAN port status,
- the Wireless Switch Utility has not been started, or
- LAN is disabled in the [Advanced] menu of the Setup Utility or in the device manager.

■ Menu

Right-clicking the utility icon opens a menu as follows.

Clicking the menu item causes the following utility action.

Monitoring LAN Cable: ON

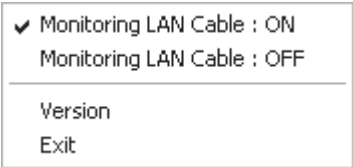
Enables the Wireless Connection Disable Utility to monitor the LAN port and disable wireless connection when a LAN cable is connected.

Monitoring LAN Cable: OFF

Disables the Wireless Connection Disable Utility, and enables wireless connection regardless of whether a LAN cable is connected or not.

Exit

Exits the Wireless Connection Disable Utility and enables wireless connection.



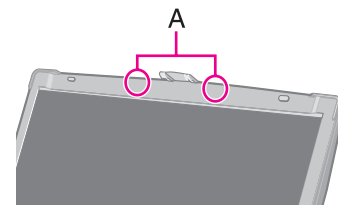
<Only for model with wireless LAN>

CAUTION

- **Do not use wireless LAN on airplanes, in hospitals, or in other locations where wireless LAN signals may affect devices.**
Follow the instructions of airline companies and hospitals. If you use the computer in these locations, turn off the wireless LAN.
- **To avoid unauthorized access to the computer through wireless LAN**
We recommend you to make security settings such as encryption before using wireless LAN. Otherwise the hard disk data such as the shared files can be exposed to the risk of unauthorized access.

NOTE

- Communication is established through the wireless LAN antenna (A). Do not block the antenna area with your hand or body.
- You cannot use the wireless LAN function together with the Fast User Switching function.
- The transmission rate will be lower when a microwave oven is used near by.
- To use wireless LAN, set [Wireless LAN] to [Enabled] (default) in the [Advanced] menu of the Setup Utility (→ [page 75](#)).
- It may take some time to turn off wireless LAN after switching the wireless switch to off.



Using the Wireless LAN Function


Before using a wireless LAN, turn the wireless LAN communication on.

Turning on/off the wireless LAN communication

1 Slide the wireless switch to turn ON / OFF wireless LAN (→ [page 63](#)).

- When turning on wireless LAN
If you cannot turn on wireless LAN using the wireless switch, confirm the Wireless Switch Utility setting (→ [page 64](#)). If you cannot turn on wireless LAN in the Wireless Switch Utility, try the following procedure.
- ① Click or on the notification area and click [Open Network and Sharing Center].
 - ② Click [Change adapter settings].
 - ③ Right-click [Wireless Network Connection] and click [Enable].
 - A standard user needs to enter an administrator password.
 - When [Disable] is displayed, [Wireless Network Connection] is already enabled.
 - ④ Turn on wireless LAN in the Wireless Switch Utility (→ [page 64](#)).



NOTE

- You can use the following procedure instead of turning on wireless LAN in the Wireless Switch Utility.
 - ① Click  (Start) - [Control Panel] - [Adjust commonly used mobility settings].
 - ② Click [Turn wireless on] in [Wireless Network].
 - When [Turn wireless off] is displayed, the wireless network is already on.
 - If you cannot select [Turn wireless on], the wireless switch is turned off.


Setting the wireless LAN access point

Preparation

Follow the instruction manual of the wireless LAN access point to make settings for the access point to recognize the computer.

- 1 Turn the wireless LAN on.**
- 2 Click  or  on the notification area.**
- 3 Select an access point, and click [Connect].**
- 4 Input the key you set for the access point to recognize the computer, and click [OK].**




Wait for the computer to connect to the wireless LAN access point.

When the icon on the notification area is changed to , the wireless LAN setting is complete.
- 5 Click [Close].**




NOTE

- The settings depend on the network environment. For further information, ask the system administrator or the person in charge of the network.
- If you use the stealth type wireless LAN access point which restricts automatic detection of the wireless LAN access point, take the following procedure.




If you do not perform the procedure below, you may not be able to access the wireless LAN access point automatically or the wireless LAN access point may not be displayed on the [Connect to a network] screen.

 - ① Click ,  or  on the notification area, click [Open Network and Sharing Center] - [Set up a connection or network] - [Manually connect to a wireless network] and click [Next].
 - ② Input necessary information and add check marks for [Start this connection automatically] and [Connect even if the network is not broadcasting] and click [Next].

Enabling/Disabling the Wireless LAN Standard IEEE802.11a (802.11a)

- 1
- Click  on the notification area and click  or .
- 2
- Click [802.11a Enabled] or [802.11a Disabled].



NOTE

- In some countries, communication using IEEE802.11a (5 GHz wireless LAN) standard is restricted by law.
- The Wireless Switch Utility icon ( or ) indicates the on/off status of wireless LAN and/or wireless WAN, not the setting of IEEE802.11a.
- If IEEE802.11a is enabled or disabled while the computer is connected to an IEEE802.11b/g access point, the connection will be temporarily interrupted.
- You can also change the IEEE802.11a setting in [Device Manager].
 - ① Click  (Start) - [Computer] - [System properties] - [Device Manager].
 - A standard user needs to enter an administrator password.
 - ② Double-click [Network adapters] and double-click [Intel(R) Wireless WiFi Link 5100].
 - ③ Click [Advanced], and then select [Wireless Mode] in [Property].
 - ④ Select the settings in [Value] (e.g., [5. 802.11a/g]).
 - ⑤ Click [OK].




If you enable or disable 802.11a using the pop-up menu of Wireless Switch Utility, the setting in [Device Manager] will be accordingly changed as below.

Settings in Device Manager	Settings in Wireless Switch Utility	
	When 802.11a is enabled	When 802.11a is disabled
[6. 802.11a/b/g] [4. 802.11b/g]	a+b+g is enabled	b+g is enabled
[3. 802.11g] [5. 802.11a/g]	a+g is enabled	g is enabled
[1. 802.11a] [2. 802.11b]	a is enabled	b is enabled

To check the Wireless LAN network status

- 1 Click  on the notification area and place the cursor over the Wireless Switch Utility icon ( or ).
A tooltip appears.

NOTE

- The Wireless Switch Utility icons ( and ) indicate the on/off status of wireless communication, not the IEEE802.11a setting.
- If the setting is changed in [Device Manager], the display will be changed accordingly.
- You can check the wireless LAN communication status in Intel® PROSet/Wireless Software. Perform the following procedure.
 - Click  (Start) - [All Programs] - [Intel PROSet Wireless] - [WiFi Advanced Statistics].

Inserting/Removing the Hard Disk Drive

To change your hard disk drive, contact Panasonic Technical Support.

CAUTION

- Back up all the important data before removing the hard disk drive.
- If you need to read the hard disk data on another computer for repair or any other purpose, set [Hard Disk Lock] to [Disabled] in the [Security] menu of the Setup Utility (→ [page 77](#)) before removing the hard disk drive.
- Carefully remove/insert the hard disk drive since the hard disk drive is extremely sensitive to shock. Note that static electricity may affect some internal components.

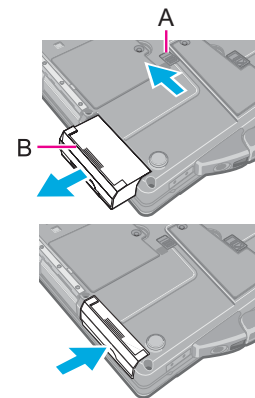
1 Turn off the computer and disconnect the AC adaptor.

- Do not use sleep or hibernation.

2 Remove the battery pack (→ [page 21](#)).

3 Insert/Remove the hard disk drive.

- To remove
Slide and hold the latch (A), and slide the cover (B) carefully.
The hard disk drive is attached behind the cover.
- To insert
Insert the hard disk drive until it clicks.



CAUTION

- Confirm that the latch is surely locked so that the hard disk drive does not fall when you carry the computer.
- Be sure to attach the hard disk drive for use.

NOTE

- You can erase the data before changing the hard disk drive (→ [page 88](#)).
- You can check that the hard disk is recognized or not in the [Information] menu of the Setup Utility (→ [page 73](#)). If the hard disk is not recognized, turn off the computer and insert it again.

You can make the settings of the computer's operating environment (password settings, startup drive selection, etc.)

Starting the Setup Utility

- 1 Turn on or restart the computer.
- 2 Press **F2** or **Del** while [Panasonic] boot screen is displayed soon after the computer starts the startup procedure.

When [Enter Password] is displayed, enter your password.

When you start the Setup Utility with Supervisor Password

- You can make the settings of all items of the Setup Utility.

When you start the Setup Utility with User Password

- Note the following:
 - In the [Advanced] and [Boot] menus, you cannot make the settings of all items.
 - In the [Security] menu, you can change only the User Password when [User Password Protection] is set to [No Protection]. You cannot delete the User Password.
 - In the [Exit] menu, you cannot make the setting of [Load Default Values] and [Boot Override].
 - **F9** (Setup Defaults) does not function.

Information Menu

Underlined items are the factory presets.

Language	<u>English</u> Japanese
----------	----------------------------

Product Information

Model No. Serial No.	Computer information (cannot be changed.)
-------------------------	--

System Information

Processor Type Processor Speed Memory Size Available Memory Video RAM • Only for model with Mobile Intel® PM45 Express Chipsets Hard Disk	Computer information (cannot be changed.)
---	--

BIOS Information

BIOS Embedded Controller Accumulative Operating Time Access Level	Computer information (cannot be changed.)
--	--

Main Menu

Underlined items are the factory presets.

System Date <ul style="list-style-type: none">Day of the Week/Month/Day/Year.You can use <u>Tab</u> to move the cursor.	[xxx xx/xx/xxxx]
System Time <ul style="list-style-type: none">24-hr. style.You can use <u>Tab</u> to move the cursor.	[xx:xx:xx]

Main Configuration

Touch Pad	Disabled <u>Enabled</u>
Touchscreen Mode <ul style="list-style-type: none">Only for model with touchscreen	Touchscreen Mode Tablet Mode <u>Auto</u>
Current Status <ul style="list-style-type: none">Only when [Touchscreen Mode] is set to [Auto].	Depending on the touchscreen mode setting, either “Touchscreen Mode” or “Tablet Mode” is displayed.
Display <ul style="list-style-type: none">The display during the Windows start-up process. When an external display is not connected, the information appears on the internal LCD even though the [External Monitor] is selected.	<Only for model with Mobile Intel® PM45 Express Chipsets> External Monitor Internal LCD <u>Simultaneous</u> <Only for model with Mobile Intel® GM45 Express Chipsets> <u>External Monitor</u> Internal LCD
LCD Brightness mode <ul style="list-style-type: none">Only for model with touchscreen.	Normal Brightness <u>High Brightness</u>

Environment	Normal Temperature High Temperature <u>Auto</u>
Current Status <ul style="list-style-type: none">Only when [Environment] is set to [Auto].	Depending on the battery status, either “Normal Temperature” or “High Temperature” is displayed.

Advanced Menu

CPU Configuration Underlined items are the factory presets.

Execute-Disable Bit Capability <ul style="list-style-type: none">[Enabled] indicates that this computer supports hardware-based Data Execution Prevention (DEP).	Disabled <u>Enabled</u>
Core Multi-Processing	Disabled <u>Enabled</u>
Intel(R) Virtualization Technology	Disabled Enabled
Intel(R) Trusted Execution Technology <ul style="list-style-type: none">Only for model that supports Intel(R) AMT	<u>Disabled</u> Enabled

Peripheral Configuration

Optical Drive	Disabled <u>Enabled</u>
Serial Port	Disabled <u>Enabled</u>
LAN	Disabled <u>Enabled</u>
Power On by LAN <ul style="list-style-type: none">Can be changed only when [LAN] is set to [Enabled].To use [Power On by LAN], make additional settings in [Device Manager] (→ page 61)	<u>Deny</u> Allow
Wireless LAN <ul style="list-style-type: none">Only for model with wireless LAN	Disabled <u>Enabled</u>
Wireless WAN <ul style="list-style-type: none">Only for model with wireless WAN	Disabled <u>Enabled</u>
Wireless Switch	Disabled <u>Enabled</u>

Modem <ul style="list-style-type: none">Only for model with Modem	Disabled Enabled
ExpressCard Slot <ul style="list-style-type: none">Only for model with ExpressCard Slot	Disabled Enabled
PC Card Slot	Disabled Enabled
SD Slot	Disabled Enabled
IEEE1394 Port	Disabled Enabled
Smart Card <ul style="list-style-type: none">Only for model with Smart Card	Disabled Enabled
USB Port	Disabled Enabled
Legacy USB Support	Disabled Enabled

Boot Menu

Boot Option Priorities

Boot Option #1	USB Floppy Disk* ¹
Boot Option #2	Hard Disk
Boot Option #3	CD/DVD Drive
Boot Option #4	LAN
Boot Option #5	USB Hard Disk
Boot Option #6	USB CD/DVD Drive

■ To change the boot order


- The default order is [USB Floppy Disk*1] -> [Hard Disk] -> [CD/DVD Drive] -> [LAN] -> [USB Hard Disk] -> [USB CD/DVD Drive].
- Press **Enter** on the boot device you want to change and select the boot device from the following menu.
 - When a selected boot device in the following menu already exists in either of the [Boot Option (#1 to #6)], the boot device appears at the newly selected position by switching the positions with the original boot device that existed before at the position.
 - When you select [Disabled] in the following menu, the disabled [Boot Option] is ignored and the boot device in the next [Boot Option] operates.

Hard Disk
CD/DVD Drive
LAN
USB Floppy Disk*1
USB Hard Disk
USB CD/DVD Drive
Disabled

*1 The operation is confirmed by Panasonic USB floppy disk drive (optional: CF-VFDU03U).

Security Menu

Boot Prompt Configuration		Underlined items are the factory presets.
Setup Utility Prompt <ul style="list-style-type: none">• When [Setup Utility Prompt] is set to [Disabled], the message “Press F2 for Setup / F12 for LAN” is not displayed on [Panasonic] boot screen. However, F2 and F12 will work even if the message is not displayed.	Disabled <u>Enabled</u>	
Password On Boot	Disabled <u>Enabled</u>	
Set Supervisor Password	Enter the sub-menu.	
Hard Disk Lock <ul style="list-style-type: none">• Can be changed only when [Set Supervisor Password] is set.	<u>Disabled</u> Enabled	
User Password Protection	<u>No Protection</u> Protected	
Set User Password	Enter the sub-menu.	

▶ Embedded Security(TPM) <ul style="list-style-type: none">Only for model that supports TPMFor information on TPM, refer to the <i>Installation Manual</i> of “Trusted Platform Module (TPM)”. Click  (Start), input “c:\util\drivers\tpm\readme.pdf” in [Search programs and files], and press Enter.	Enter the sub-menu.
▶ Fingerprint Security <ul style="list-style-type: none">Only for model with Fingerprint Reader	Enter the sub-menu.
▶ AMT Configuration <ul style="list-style-type: none">Only for model that supports Intel(R) AMT	Enter the sub-menu.

Exit Menu

Save Values and Reboot	To reboot the system after saving the changes.
Reboot Without Saving Changes	To reboot the system without saving the changes.

Save Options





Save Current Values	To save the changes for all Setup options.
Load Previous Values	To load previous values for all Setup options.
Load Default Values	To return the settings to the default values.

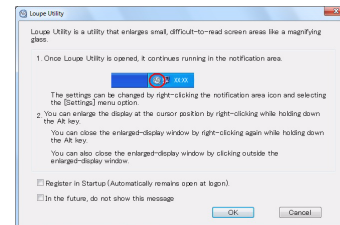
Boot Override

(Device Information)	To select a boot device which operates only in the next booting.
----------------------	--





You can magnify the specific part of the screen.

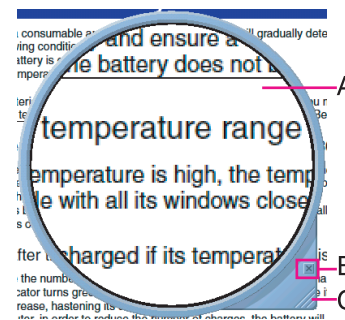
Activating the Loupe Utility

- 1 Click  (Start) - [All Programs] - [Panasonic] - [Loupe Utility].
- 2 Click [OK].
 -  appears on the notification area. If  does not appear on the area, click .



Using the Loupe Utility

- 1 Point the cursor  at the part of the screen you want to magnify.
- 2 Press and hold **Alt**, and right-click.
 - The part pointed by the cursor is magnified.
 - Alternatively you can double-click , or right-click  and click [Show Loupe].
- 3 Drag the loupe window (A) to move the magnified part.
 - To hide the loupe window, click the Hide button  (B).
 - Alternatively you can click any part out of the loupe window, or press and hold **Alt** and right-click.
 - To change the loupe window size, drag the bottom-right corner (C).
The size range you can enlarge/shrink depends on the screen's resolution.



NOTE

- The magnified text or image in the loupe window is fixed at the moment that the part is magnified (e.g., at the moment you press and hold **Alt** and right-click). To reflect the change you made on the original screen to the loupe window, click the loupe window.
- The Loupe Utility does not work with some applications.

Setting the Loupe Utility

1 Click  on the notification area and right-click .

2 Click [Settings].

[Show/hide shortcuts assignment]

- When using the external mouse/touch pad
 - ① Click [Mouse / Touch pad]
 - ② Click a combination of **Alt**, **Ctrl**, and **Shift**, and add the check mark. (Multiple keys can be combined; for example, **Ctrl** + **Alt**)
 - ③ Click either [Right click] or [Left click] to use in combination with the key(s) selected in step ② above.
- When using the keyboard
 - ① Click [Keyboard].
 - ② Click the text box and then press the key used for the shortcut.
(e.g., **Alt** + **Z**, **Ctrl** + **Alt** + **Z**, etc.)

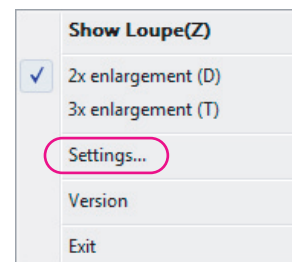
[Window shape]

Select the shape of the loupe window.

[Autorun]

You can turn on/off autorun of the Loupe Utility and the explanation window.

3 Click [OK].



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.

Software cannot be checked using this utility.

Hardware that can be checked using the PC-Diagnostic Utility

- CPU/Systems (check CPU)
- RAM XXX MB (check Memory)
- HDD XXX GB (check Hard Disk)
- DVD-ROM (check CD/DVD Drive)
- Video (check Video Controller)
- Sound^{*1}
- Modem
- LAN
- Wireless LAN^{*2}
- Wireless WAN^{*3}
- USB
- IEEE 1394
- PC Card (check PC Card Controller)
- SD (check SD Card Controller)
- Express Card
- Smart Card^{*4}
- Serial Port
- Keyboard
- Touch Pad
- Touchscreen^{*5}

^{*1} When the PC-Diagnostics Utility is running a loud beep will sound, so do not use headphones as 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 Smart Card slot

^{*5} Only for model with Touchscreen

- When the video diagnostic check is running, the display may be distorted. This is not malfunction.

Regarding the PC-Diagnostic Utility

NOTE

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

Operations	Touch pad operations	Internal keyboard operations
Select icon	Place the cursor above the icon	Press Space , and then press → ← ↑ ↓ (<input type="checkbox"/> (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 <input type="checkbox"/> (close)	Press Ctrl + Alt + Del

- If the touch pad does not operate properly, press **Ctrl** + **Alt** + **Del** to restart the computer, or press the power switch to turn the power off, and then restart the PC-Diagnostic Utility.





Running the Diagnostic Check

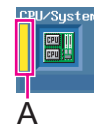
Run this utility using the default settings in the Setup Utility.
If the Setup Utility or other settings will not allow hardware to be executed, the hardware icon will be displayed in gray.

- 1 Connect the AC adaptor, and turn on the wireless switch (→ page 63).**
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** or **Del** 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 While [Panasonic] boot screen is displayed, press and hold **Ctrl + F7** until “Please Wait” appears at the bottom of the display.



When the PC-Diagnostic Utility starts up, it will automatically begin the diagnostic check for all hardware components.

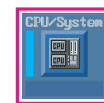
- If the password is requested, enter the password.
- The touch pad and the internal keyboard may not be used when each hardware checking is running. While checking, blue and yellow colors are displayed on the left side of the hardware icon (A).
- By clicking the icon, you can execute the following operations:
 -  : 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)
- You can check the status of the diagnostic check by the display color on the left side of the hardware icon (A).
 - 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



NOTE

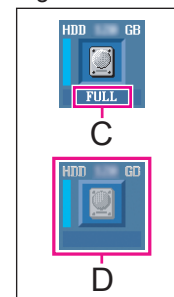
- Using the following procedure, you can run a diagnostic check on a specified hardware component, or run an extended diagnostic check on the memory or the hard disk (The extended diagnostic check is only for the memory and the hard disk). The extended diagnostic check is more detailed, and so requires a longer period of time to run.

- 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 memory or 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 (D).
- ③ Click  to start the diagnostic check.



B

e.g. hard disk



D

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 it is. If the computer still does not operate properly, reinstall the software (⇒ *OPERATING INSTRUCTIONS* “Reinstalling Software”).

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.

[Create a system image] and [System Image Recovery] in [System Recovery Options] allow you create a backup of the entire hard disk data, which can be used to recover from hardware failure.

Panasonic Corporation will bear no responsibility for any damage suffered (including loss of data) as a result of the use of this function.

Creating a Backup of the Hard Disk Data

To create a backup of the entire hard disk to another storage media (e.g., external hard disk).
Follow the steps below.

- ① Click  (Start) - [Control Panel] - [Back up your computer].
- ② Click [Create a system image].
- ③ Select a location for backup and click [next].
Follow the on-screen instructions.

NOTE


- Connect the AC adaptor and do not remove it until backup is complete.

Restoring the Hard Disk Data

To restore the image data backed up using [Create a system image], use [System Image Recovery] in [System Recovery Options].

NOTE

- This function does not work when you turn on the computer for the first time or just after you reinstall Windows. Start and shut down Windows 7, and then you can use the function.
- Connect the AC adaptor and do not remove it until restoration is complete.
- If Windows does not start up, run [System Recovery Options] and then click [System Image Recovery] (→ [page 86](#)).

- 1** Click  (Start) - [Control Panel] - [Back up your computer].
- 2** Click [Recover system settings or your computer].
- 3** Click [Advanced recovery methods].
- 4** Click [Use a system image you created earlier to recover your computer].
 - A standard user needs to enter an administrator password.
- 5** If you backup your files, click [Back up now].
 - If you do not backup your files, click [Skip].

6 Click [Restart].

- The computer will restart.
If [Enter Password] is displayed during the following procedure, input the Supervisor Password or the User Password.

7 Click [Next].

Do not specify keyboard layouts other than the one already selected.

8 If [Windows cannot find a system image on this computer] appears, connect to this unit the storage media (e.g. external hard disk) on which the system image has been backed up, and then click [Retry].

9 Click [Next].

Follow the on-screen instructions.

■ Start up System Recovery Options

- To perform from [Advanced Boot Options]
 - ① Turn on the computer, and when [Panasonic] boot screen disappears, press and hold **F8**.
 - If [Enter Password] is displayed during the following procedure, input the Supervisor Password or the User Password.
 - ② Release your finger when [Advanced Boot Options] is displayed.
 - ③ Press **↑** **↓** to select [Repair Your Computer] and press **Enter**.
[System Recovery Options] appears.
 - ④ Click [Next].
 - Do not specify keyboard layouts other than the one already selected.
 - ⑤ Select the user name registered on Windows.
 - ⑥ Input the password, then click [OK].
- To perform from the Product Recovery DVD-ROM for Windows 7.
 - ① Turn off the computer and insert the CD/DVD drive into the multimedia pocket (→ [page 23](#)).
 - ② Turn on the computer, and press **F2** or **Del** 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 Press **F10**.
 - At the confirmation message, select [Yes] and press **Enter**.
 - The computer will restart.

- ⑤ Press **F2** or **Del** while [Panasonic] boot screen is displayed.
 - The Setup Utility starts up.
 - If the password is requested, enter the Supervisor Password.
- ⑥ Set the Product Recovery DVD-ROM for Windows 7 into the CD/DVD drive.
- ⑦ Select the [Exit] menu, then select [TEAC DV-W28EC] in [Boot Override].
- ⑧ Press **Enter**.
 - The computer will restart.
- ⑨ Click [Run “System Recovery Options”] and click [Next].
- ⑩ Click [Next].
 - Do not specify keyboard layouts other than the one already selected.
- ⑪ Follow the on-screen instructions.

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. Panasonic Corporation will bear no responsibility for losses or damages suffered as a result of the use of this utility.

NOTE

- Even if hard disk data erase is performed, the number of times of DVD's region code setting will not be reset.
- This utility cannot erase data for specific partitions. However, the entire hard disk data including the data of the partition with recovery tools will be erased.

Preparation

- Prepare the following items:
 - The Product Recovery DVD-ROM for Windows 7 (included)
 - Panasonic CD/DVD drive (included)
- 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 (→ [page 23](#)).

2 Turn on the computer, and press F2 or Del while [Panasonic] boot screen is displayed.

The Setup Utility starts up.

- If the password is requested, enter the Supervisor Password.

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 F2 or Del while [Panasonic] boot screen is displayed.

The Setup Utility starts up.

- If the password is requested, enter the Supervisor Password.

- 6** Set the Product Recovery DVD-ROM for Windows 7 into the CD/DVD drive.
- 7** Select the [Exit] menu, then select [TEAC DV-W28EC] in [Boot Override].
- 8** Press Enter.
The computer restarts.
 - If [Enter Password] is displayed during the following procedures, input the Supervisor Password or the User Password.
- 9** Click [Erase the whole data on the Hard Disk for security] and click [Next].
- 10** At the confirmation message, click [YES].
- 11** Click [Continue].
- 12** Click [Continue] again.
- 13** Click [YES].
Erasing the hard disk data starts.
- 14** After erasing is completed, remove the Product Recovery DVD-ROM and click [OK].

Network Connections and Communications Software

Close the communications software before using the power saving function.

- If the power saving function (sleep or hibernation) is activated while communications software is used, the network connection may be interrupted, or the performance may be adversely affected. In this case, restart the computer.
- In a network environment, set [Never] for [Put the computer to sleep] and [Hibernate after] (→ [page 12](#)).

Computrace[®] software

Computrace[®] software tracks your stolen computer.

- Computrace[®] software is not included in this computer.
- 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>

NOTE

- Consult Absolute Software Corp. before disposal.

About Windows-related files

The Windows files included in the Windows 7 DVD-ROM are contained in the following folders:

c:\windows\support\migwiz, c:\windows\support\tools, c:\windows\support\logging

Follow the instructions below when an error message appears. If the problem persists or if the error message is not shown here, contact Panasonic Technical Support.

Error Message	Solution
Bad System CMOS	An error has occurred in the memory of system settings. This occurs when the memory content is changed by an unexpected program operation, etc. <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.
System CMOS Checksum Error	
Invalid Year. System date restored to 01/01/2009	The date and time settings are not correct. <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.
Press <F2> to enter setup	<ul style="list-style-type: none">● Write down the error details and press F2 or Del to start the Setup Utility. Change the settings if necessary.
RAM Module Failed	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. <ul style="list-style-type: none">● Press the power switch for 4 seconds or longer to turn off the computer, confirm that the RAM module conforms to the specifications, and reinsert it.



Refer to the following instructions when a problem occurs. If the remedies indicated in the chart do not solve the problem, contact Panasonic Technical Support. For a software problem, refer to the instruction manual of the software.

- To check the computer's usage status (→ [page 104](#)).

■ Shut Down

Cannot shut down or restart Windows.	<ul style="list-style-type: none"> ● Remove USB devices. ● It may take 1 or 2 minutes to shut down.
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■ 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.
Takes time to display [Power Options] screen.	<ul style="list-style-type: none"> ● With the following steps, confirm whether [Copy of Panasonic Power Management] created when the Power Saving Utility is made has become 100 and more or not. <ol style="list-style-type: none"> ① Click  or  on the notification area and click [More power options]. ② Click [Show additional plans]. When more than one [Copy of Panasonic Power Management] is displayed, click [Change plan settings] in the power plan to be deleted and click [Delete this plan] to delete.


■ Sleep or Hibernation

Cannot enter sleep or hibernation.	<ul style="list-style-type: none"> ● Remove USB devices temporarily. If the problem persists, restart the computer. ● It may take 1 or 2 minutes to enter sleep or hibernation. ● The computer may not enter sleep when the computer is communicating via modem. ● The computer does not enter sleep or hibernation immediately after resuming. Wait approximately 1 minute.
Cannot enter sleep or hibernation automatically.	<ul style="list-style-type: none"> ● Disconnect peripheral devices. ● If you connect to a network using wireless LAN function, select the profile and connect to the access point (→ page 68). ● If you do not use wireless LAN function, turn off wireless LAN function (→ page 67). ● Make sure that you are not using any software that regularly accesses the hard disk.




■ Sleep or Hibernation

The computer does not resume.	<ul style="list-style-type: none">● If you press and hold the power switch for 4 seconds or longer, the power will be turned off forcibly and the computer will not resume. In this case, all unsaved data will be lost.● You disconnected the AC adaptor and the battery pack while the computer was in sleep. If the computer's power supply is disconnected in sleep, unsaved data will be lost and the computer will not resume.● The battery is exhausted. Sleep and hibernation consume some power.
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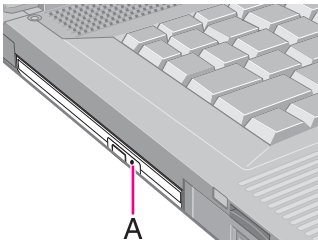
■ Sound

No sound.	<ul style="list-style-type: none">● Press Fn + F4 or Fn + F6 to cancel mute.● Restart the computer.
Distorted sound.	<ul style="list-style-type: none">● Performing Fn key combinations sometimes causes sound distortion. Stop and restart playback.
Cannot change the volume by pressing Fn + F5 or Fn + F6 .	<ul style="list-style-type: none">● Activate the Windows sound function. When it is not active, the volume does not change even if  is displayed.
When logging on (e.g., resuming the computer), audio is distorted.	<ul style="list-style-type: none">● Perform the following steps to change the audio settings to prevent audio output.<ul style="list-style-type: none">① Right-click the desktop and click [Personalize] - [Sounds].② Remove the check mark from [Play Windows Startup sound].


■ Keyboard

Only numbers can be input.	<ul style="list-style-type: none">● When the indicator  is on, the keyboard is in ten-key mode. Press NumLk to cancel.
Only capital letters can be input.	<ul style="list-style-type: none">● When the indicator  is on, the keyboard is in Caps Lock mode. Press Caps Lock to cancel.
Cannot enter special characters (ß, à, ç, etc.) and symbols.	<ul style="list-style-type: none">● Use the character map. Click  (Start) - [All Programs] - [Accessories] - [System Tools] - [Character Map].

■ Disc Operation

The CD/DVD drive does not work normally.	<ul style="list-style-type: none">● Set [Optical Drive] to [Enabled] in the [Advanced] menu of the Setup Utility (→ page 75).● Clean the lens (→ page 25).● Check the disc condition (→ page 26).
Cannot play back TV programs recorded on a commercial DVD recorder.	<ul style="list-style-type: none">● Finalize the disc on the DVD recorder when the program was recorded in video mode on DVD-R/RW or in VR mode on DVD-RW.
A blue background appears on the screen when playing an MPEG image.	<ul style="list-style-type: none">● You opened the CD/DVD drive or removed the MPEG disc while it was operating. Re-insert the MPEG disc and close the CD/DVD drive.
The CD/DVD drive vibrates excessively or makes noise.	<ul style="list-style-type: none">● Insert the disc correctly.● Check the disc condition (→ page 26).
Cannot eject a disc.	<ul style="list-style-type: none">● Turn on the computer. To remove a disc when the computer is powered off, insert a pin of 1.3 mm {0.05"} in diameter into the emergency hole (A). (When the diameter of the pin is smaller than this, insert the pin slightly downward.) Pushing it completely to the end will free the tray so that it can be pulled out. (The position of the emergency hole differs depending on the drive.) 
The disc tray does not close.	<ul style="list-style-type: none">● Do not touch the eject button when closing the tray.
Other disc operation problems.	<ul style="list-style-type: none">● Use another drive or media.

■ Network

Cannot connect to a network.	<ul style="list-style-type: none">● Set [LAN] / [Modem] to [Enabled] in the [Advanced] menu of the Setup Utility (→ page 75).
Cannot check the computer's MAC address.	<ul style="list-style-type: none">● Follow the steps below.<ol style="list-style-type: none">① Click  (Start) - [All Programs] - [Accessories] - [Command Prompt].② Input "getmac/fo list /v", and press Enter.<ul style="list-style-type: none">● Insert a space between "fo" and "list", and between "list" and "/v".③ Wireless LAN's MAC address: Make a note of the 12-digit string of alphanumeric displayed on "Physical Address" line of "Intel(R) WiFi Link 5100 AGN". Wired LAN's MAC address: Make a note of the 12-digit string of alphanumeric displayed on "Physical Address" line of "Intel(R) 82567LM Gigabit Network Connection".④ Input "exit", and press Enter.



■ Wireless Communication (only for model with wireless LAN/wireless WAN)

Cannot connect to a network.	<ul style="list-style-type: none">● Slide the wireless switch to turn on the wireless devices.● Set the device ([Wireless LAN] / [Wireless WAN]) to [Enabled] in the [Advanced] menu of the Setup Utility (→ page 75).● Disable the Wireless Connection Disable Utility (→ page 65).● Restart the computer.
Access point is not detected.	<ul style="list-style-type: none">● Shorten the distance between the computer and the access point, and try the detection again.● Confirm the following settings:<ul style="list-style-type: none">• [Wireless LAN] in the [Advanced] menu of the Setup Utility Confirm that [Wireless LAN] is set to [Enabled] (→ page 75).• Wireless Switch Slide the wireless switch to ON.• Wireless Switch Utility Confirm that Wireless LAN is ON (→ page 64).● This computer uses channels 1 through 11^{*1} when using IEEE802.11b/g. Check the channel being used by the access point. <p>^{*1} In the case of wireless communications, the frequency band being used can be divided into segments, so that different communications can be conducted on each band segment. A “Channel” refers to the individual frequency bandwidth divisions.</p>



■ Connecting Peripherals

An error occurs while installing the driver.	<ul style="list-style-type: none">● When you install a driver of card or peripheral device, make sure that the driver is compatible with the operating system. If it is not compatible, malfunction may occur. For information about the driver, contact the manufacturer of the peripheral device.● Attach the device for the media containing the driver (e.g., CD-ROM). Equipment connected to the multimedia pocket cannot be recognized if connected after the device driver installation screen appears.
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

■ Connecting Peripherals

A peripheral device does not work.	<ul style="list-style-type: none">● Install the driver.● Contact the manufacturer of the device.● When operation resumes from sleep or hibernation, devices such as a mouse, modem and cards may not function properly. In this case, restart the computer or reinitialize the device.● When  is displayed in the Device Manager, remove and insert the device. If the problem persists, restart the computer.● When you set [USB Port] to [Disabled] in the [Advanced] menu of the Setup Utility (→ page 76), USB ports of port replicator are also disabled.● The computer may not recognize the connection/removal of some devices, or may not operate normally with some devices.<ul style="list-style-type: none">① Click  (Start) - [Computer] - [System properties] - [Device Manager].② Select the device, and remove the check mark for [Allow the computer to turn off this device to save power] in [Power Management]. (This item may be unavailable for some types of devices.)● In the case that a USB device does not work, remove the USB device and connect it again or connect the USB device to another port.
The connected mouse does not work.	<ul style="list-style-type: none">● Check the mouse connection.● Install the driver compatible with the connected mouse. If the mouse does not work even after installing the driver, set [Touch Pad] to [Disabled] in the [Main] menu of the Setup Utility (→ page 74).
USB floppy disk drive does not work as a boot drive.	<ul style="list-style-type: none">● The operation is confirmed by Panasonic CF-VFDU03U USB floppy disk drive (optional).● Connect the floppy disk drive directly to a USB port of the computer. Do not connect it via a USB hub or USB connector of the port replicator. If you have connected to a USB port on the computer, try connecting it to one of the other USB ports.● Set [USB Port] and [Legacy USB Support] to [Enabled] in the [Advanced] menu of the Setup Utility (→ page 76).● Set [Boot Option #1] to [USB Floppy Disk] in the [Boot] menu of the Setup Utility (→ page 76).● Turn off the computer and connect the USB floppy disk drive, and then restart the computer.

■ Connecting Peripherals

The RAM module is not recognized.	<ul style="list-style-type: none"> ● Insert the RAM module correctly. ● Use the compatible RAM module (→ page 39). ● Check the [Information] menu in the Setup Utility (→ page 73). If the RAM module is not recognized, turn off the computer and reinsert the RAM module.
You do not know the address map for IRQ, I/O port address, etc.	<ul style="list-style-type: none"> ● You can check with the following procedure. <ol style="list-style-type: none"> ① Click  (Start) - [Computer] - [System properties] - [Device Manager]. <ul style="list-style-type: none"> ● A standard user needs to enter an administrator password. ② Click [View] - [Resources by type].
The device connected to the serial port does not work.	<ul style="list-style-type: none"> ● Check the connection. ● The device driver may not work. Refer to the instruction manual of the device. ● Do not connect 2 mouse devices simultaneously. ● Set [Touch Pad] to [Disabled] in the [Main] menu of the Setup Utility (→ page 74). ● Set [Serial Port] to [Enabled] in the [Advanced] menu of the Setup Utility (→ page 75).
Cannot print.	<ul style="list-style-type: none"> ● Check the printer connection. ● Turn on the printer. ● The printer is not online. ● No paper is in the printer tray or there is a paper jam. ● Turn on the printer and connect it to the computer, and then restart the computer. ● Check the network connection if the printer is connected via network.
<p>LAN transmission speed slows down noticeably.</p> <p>Poor performance during data transmission via a PC Card (e.g., distorted video image when writing to a DV camera using an IEEE1394 PC Card).</p> <p><Only for model with wireless LAN></p> <p>Wireless LAN connection is cut.</p>	<ul style="list-style-type: none"> ● Try the following settings. Click  (Start) - [Control Panel] - [System and Security] - [Power Options], and select [High performance], then close the window.

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

The cursor does not work.	<ul style="list-style-type: none"> ● Connect the external mouse correctly. ● Restart the computer using the keyboard. Press  and press  2 times, and press  to select [Restart] and press Enter. ● If the computer does not respond to keyboard commands, read “No response.” (→ page 103)
Cannot input using the touch pad.	<ul style="list-style-type: none"> ● Set [Touch Pad] to [Enabled] in the [Main] menu of the Setup Utility (→ page 74). ● The touch pad may be disabled by some mouse drivers. 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 8).
Cannot input using the touchscreen	<ul style="list-style-type: none"> ● Set [Touchscreen Mode] to [Auto] or [Tablet Mode] in the [Main] menu of the Setup Utility (→ page 74).
Cannot use scroll function of touch pad on Internet Explorer.	<ul style="list-style-type: none"> ● Use Touchscreen. ● Move the mouse cursor to outside of Internet Explorer, and return to Internet Explorer.

■ PC Card / ExpressCard (only for model with ExpressCard slot)

A card does not work.	<ul style="list-style-type: none"> ● Insert the card correctly. ● The card does not conform to the card standard. ● Restart the computer after installing a driver (of card or other device). ● Set [PC Card Slot] and [ExpressCard Slot] to [Enabled] in the [Advanced] menu of the Setup Utility (→ page 76). ● The port settings are not correct. ● Read the instruction manual of the card or contact the manufacturer of the card. ● Remove the card and insert it again (→ page 33). ● The driver is not compatible with the operating system.
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■ SD Memory Card

Cannot use an SD Memory Card.	<ul style="list-style-type: none"> ● Set [SD Slot] to [Enabled] in the [Advanced] menu of the Setup Utility (→ page 76). ● This computer may not support the maximum speed some types of SD/SDHC Memory Cards guarantee.
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Smart Card (only for model with Smart Card slot)

Cannot use a Smart Card.	<ul style="list-style-type: none">● Insert the Smart Card correctly.● Set [Smart Card] to [Enabled] in the [Advanced] menu of the Setup Utility (→ page 76).● To use a Smart Card, you need a specified software and driver.
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Fingerprint Reader (only for model with Fingerprint Reader)

The sensor does not enroll or authenticate my fingerprint.	<ul style="list-style-type: none">● Slide your finger correctly. For further information about enrollment and authentication, refer to “How to Use the Fingerprint Reader” (→ page 48) and [Tutorial].<ul style="list-style-type: none">• Click  (Start) - [All Programs] - [Protector Suite] - [Control Center] - [Help] - [Tutorial].● The sensor enrolls or authenticates no fingerprint, or performs authentication poorly, despite the correct way of finger sliding when your finger is in any of the conditions stated below:<ul style="list-style-type: none">• Rough skin, or injured finger (with a cut or a skin inflammation)• Extremely dry• Soiled with mud or oil• Fingerprint has been worn and has faded• Wet with water or sweat<You can improve enrolling and authentication sensitivity by taking the following steps when any of the conditions described above exists><ul style="list-style-type: none">• Wash your hands or wipe them dry.• Use a different finger for registration or authentication.• Treat your finger with a hand cream when it is rough skin or dry.● Clean the fingerprint sensor. For further information, refer to “Handling & Maintenance” (→ page 55).● The fingerprint sensor may be malfunctioning when it continues to perform poorly after the steps described above have been performed. Contact Panasonic Technical Support.
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■ Fingerprint Reader (only for model with Fingerprint Reader)

<p>Sensor does not work.</p>	<ul style="list-style-type: none">● Exported passport can help you if you need to replace the sensor.<ul style="list-style-type: none">• Log on to Windows as an Administrator. You can always access the computer by using your Windows log on password. In convenient mode, any user can access the computer by using your Windows log on password.• To access [File Safe], [Personal Safe] [File Safe] can be always accessed by using the [File Safe] backup password. [Personal Safe] can be always accessed by using the [Personal Safe] backup password.• Other functions Replace/Repair the sensor, then follow the instructions in section “Replacing sensor.” (→ page 102). Some limited functions (e.g. deleting passport) are available without a functional sensor. In case of deleted operation, it is necessary to cancel the fingerprint verification operation to get to the password dialog.
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■ Fingerprint Reader (only for model with Fingerprint Reader)

User cannot use enrolled finger. (e.g. injury)	<ul style="list-style-type: none">● It is strongly recommended to enroll at least two fingers to avoid this problem. If you enrolled multiple fingers, simply use other finger. If you only enrolled one finger that can be used, we recommend to use the [Manage Fingerprints] wizard and enroll additional fingerprints. <p>If none of your enrolled fingers can be used, follow this procedure:</p> <ol style="list-style-type: none">① Log on to Windows as an Administrator. You can always access the computer by using your Windows log on password. In convenient mode, any user can access the computer by using your Windows log on password.② Update the enrolled fingerprints. To be able to fully use Protector Suite, you need to have usable enrolled fingerprints. Enter the [Manage Fingerprints] wizard. <ul style="list-style-type: none">• If you do not use backup password, you can still enter using the Windows password.• If you use backup password, you can enter using the backup password.• If you do not use backup password, there is no other way to add a different fingerprint. In this case we recommend either to wait until your finger is usable again (e.g. the injury heals), or to delete the passport (Use [Delete user data] wizard) and then reenroll new fingerprints. Please note that in the latter case all your stored secret data (passwords, [File Safe] encryption keys [Personal Safe] data) will be lost. To perform the delete operation it is necessary to cancel the fingerprint verification operation to get to the password dialog, then enter your Windows log on password.• To access [File Safe], [Personal Safe] If you did not perform the procedure in step ② or it did not work, you can still access [File Safe] by using the [File Safe] backup password, [Personal Safe] by using the [Personal Safe] backup password.
TPM failure.	<ul style="list-style-type: none">● If you use fingerprint authentication with TPM (Trusted Platform Module) and TPM is broken, erased or disabled, the [Multifactor] will not work anymore. If you do not use the [Multifactor] backup password, refer to “Starting Over” (→ page 57). Otherwise, if you use backup password, you can follow these steps:<ol style="list-style-type: none">① Click  (Start) - [All Programs] - [Protector Suite] - [Control Center].② Click [Identity] - [Multifactor].③ Set the method of authentication except for “fingerprint + TPM **”.

■ Fingerprint Reader (only for model with Fingerprint Reader)

Replacing sensor.	<ul style="list-style-type: none"> ● If you need to replace a non-functioning fingerprint reader, follow this procedure. Enrollment to the hard disk: If enrollment to hard disk is used, "Protector Suite" has not stored any data on the device and therefore has no problem to continue after you replaced the sensor. However, in case you use the Power-on security (Preboot Authentication), you may need to use the [Manage Fingerprints] wizard to update the related data. Enrollment to the device: If the fingerprint has been enrolled to the device, a new passport will be required. Follow the procedure in the section "Starting Over" (→ page 57).
Protector Suite reinstallation.	<ul style="list-style-type: none"> ● Uninstall Protector Suite (→ page 56) before reinstalling it. After uninstallation, reinstall Protector Suite (→ page 50). ● During Protector Suite uninstallation, you can select whether to delete the Protector Suite Data - including passports. ● To use password data or "Password Bank" data after reinstalling Protector Suite, select [Leave Protector Suite *.* data for later use]. After the new installation, you will be able to use your data again. ● If you select [Remove all Protector Suite *.* data], you need to enroll fingerprint data again after reinstalling Protector Suite. In case of changing the Enrollment mode, reinstalling Protector Suite is necessary.
Lost [File Safe] backup password.	<ul style="list-style-type: none"> ● It is necessary to change the backup password for [File Safe], refer to the Protector Suite Help menu. <ul style="list-style-type: none"> • Click  (Start) - [All Programs] - [Protector Suite] - [Control Center] - [Help] - [Help].
Accessing [File Safe] after Protector Suite uninstallation.	<ul style="list-style-type: none"> ● [File Safe] data can be accessed only using Protector Suite. If you accidentally uninstalled Protector Suite, you have to reinstall it. If passport data was not removed during uninstallation, everything will work automatically including [File Safe]. If the passport data was removed during uninstallation the [File Safe] will recognize that the installation was changed and will offer to use the backup password, instead.
Accessing [File Safe] after computer crash.	<ul style="list-style-type: none"> ● If you have an exported passport, import it now so you can access [File Safe] directly using fingerprints. Otherwise you can access [File Safe] using the [File Safe] backup password: [File Safe] will recognize that the installation was changed and will offer to use the backup password, instead.
Removing data from the reader.	<ul style="list-style-type: none"> ● When enrollment to the device is used, passport data is stored to the device. To remove it, go to the [Delete user data] passport wizard and delete existing passports.


■ Fingerprint Reader (only for model with Fingerprint Reader)

<p>“Lift Finger” is displayed during operation.</p>	<ul style="list-style-type: none">● You can temporarily disable the fingerprint sensor with the following procedure.<ol style="list-style-type: none">① Click  on the notification area and then right-click the “Fingerprint software” icon .② Select [Don't Use Sensor].● The icon turns gray.● To enable the fingerprint sensor, proceed as follows.<ol style="list-style-type: none">① Right-click the “Fingerprint software” icon .② Select [Use Sensor].
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■ Fast User Switching Function

<p>Some applications do not work properly.</p>	<ul style="list-style-type: none">● When switching to a different user with the Fast User Switching function, the following problems may occur.<ul style="list-style-type: none">• Some applications may not work properly.• Key combination with Fn may not work.• The display settings may not be possible.• A serial mouse may not work.• <Only for models with TPM> Personal Secure Drive function Security Platform (TPM) may not work.• <Only for model with wireless LAN> Wireless LAN cannot be used. <p>In these cases, log off all users without using Fast User Switching function and perform the operation once more. If the problem persists, restart the computer.</p>
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■ Others


<p>No response.</p>	<ul style="list-style-type: none">● Press Ctrl + Shift + Esc to open Task Manager and close the software application.● An input screen (e.g., password input screen at startup) may be hidden behind another window. Use Alt + Tab to check.● Shut down by pressing and holding the power switch for 4 seconds or longer, and turn on the computer and open the application again. If Windows runs correctly, but the application software does not start, click  (Start) - [Control Panel] - [Uninstall a program] and remove the failing application software, then reinstall the application software.
<p>A motion image file cannot be played using Windows® Media Player and the message [Codec required] appears.</p>	<ul style="list-style-type: none">● Some motion image files require a Codec that is not installed as standard. In this case, connect to the Internet and try playback of the file again. The Codec may automatically be downloaded so you may be able to play it.

Checking the Computer's Usage Status

You can check the computer's usage status in the PC Information Viewer. You may need this information when calling Panasonic Technical Support for advice.

NOTE

- This computer periodically records the management information of the hard disk etc. The maximum data volume for each record is 1024 bytes. The information is 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].
 - A standard user needs to enter an administrator password.
- As long as it is activated, the PC Information Viewer will appear in front of all other screens.
- Depending on your network environment, it may take 1 minute to start the PC Information Viewer.
- If you use a guest account to log in, some of Information will be displayed as [Not Found].

- 1** Click  (Start) - [All Programs] - [Panasonic] - [PC Information Viewer] - [PC Information Viewer].
- 2** Select the item to display the detailed information.


■ To save the information as a text file

- 1** Display the information you want to save.
 - 2** Click [Save].
 - 3** Select the file save range option and click [OK].
 - 4** Select the folder to save the information, input the file name, and click [Save].
- If you do not add the check mark for [Disable the automatic save function for management information history], the records already recorded are also saved.


■ To save a copy of the screen as an image file

- 1 Display the screen you want to save.
- 2 Press **Ctrl + Alt + F7**.
- 3 When the screen copy message appears, click [OK].

The screen image is saved in [Documents] folder.

- Alternatively you can save a copy of the screen in the following procedure.
Click  (Start) - [All Programs] - [Panasonic] - [PC Information Viewer] - [Screen Copy].

NOTE

- The image is a bitmap file in 256 colors.
- When using the extended desktop (→ [page 43](#)), a copy of the primary device screen is saved.
- The default key combination to copy is **Ctrl + Alt + F7**. You can change it in the following procedure.
 - ① Log on to Windows as an administrator.
 - ② Click  (Start) - [All Programs] - [Panasonic] - [PC Information Viewer].
 - ③ Right-click [Screen Copy] and click [Properties] - [Shortcut].
 - ④ Move the cursor to [Shortcut key] and press the key(s) you want to use for the shortcut.
 - ⑤ Click [OK].

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