

Personal Computer Reference Manual



Model No. **CF-48 Series**

TOUGHBOOK

2000 XP




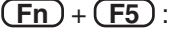





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When the cursor is moved to an item under [Contents] or to  page (green display), the shape of the cursor will change to . Under this condition, if characters are tapped (or a click is made), the corresponding page in the Reference Manual will be displayed.

- If the user has logged on without the administrator authority, some functions may not be executable, and some screens may not be displayed as shown in this manual. If this happens, log on with the administrator authority to enable these functions.
- Confirm the latest information on optional products in catalogs, etc.

Illustrations and Terminology in this Reference Manual


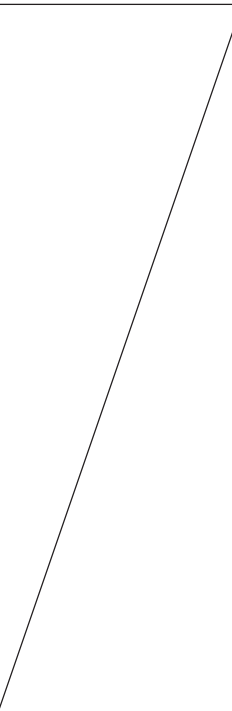



NOTE:	NOTE provides a useful fact or helpful information.
CAUTION:	CAUTION indicates a condition that may result in minor or moderate injury.
 :	Information for Microsoft Windows® 2000 Professional users.
 :	Information for Microsoft Windows® XP Professional users.
 :	This illustration means to press the [Enter] key.
 :	This illustration means to press and hold the [Fn] key, then press the [F5] key.
[Start]* - [Run]:	This illustration means to click [Start]*, then to click [Run]. For some applications, you may need to double-click. *  : [start]
 page:	When the cursor is moved to an item under [Contents] or to  page (green display), the shape of the cursor will change to  . Under this condition, if characters are tapped (or a click is made), the corresponding page in the Reference Manual will be displayed.
 :	This illustration means to refer to the Operating Instructions.
<ul style="list-style-type: none">● Windows 2000 screens are used in this manual when no specific OS notes are required.● Some of the illustrations in this manual may differ slightly in shape from the actual items in order to make the explanation easier to understand.● Circular media such as CD-ROM and DVD-ROM are described as “discs”.● In this manual, “WinDVD™4” is indicated as “WinDVD”.● The following drives may be described as “CD drive”. DVD-ROM & CD-R/RW drive, DVD MULTI drive.	






CAUTION

- Do not press the following key combinations repeatedly in (quick) succession. Also, do not press different key combinations quickly one after another.
- Do not press the following key combinations while using the touch pad (mouse) or other keys.

NOTE

- Do not press the following key combinations until you log on to Windows and the hard disk drive indicator turns off. Note, however, that the key combinations **Fn** + **F1**, **Fn** + **F2** and **Fn** + **F3** are operable in the Setup Utility.
- The key combinations below may not work while some applications are running. Besides, the popup window may not be displayed depending on the state of the application you are using (e.g., when [Command Prompt] screen is set to "Full Screen").

Key	Functions	Function Descriptions	Popup Window (Displayed after logging on to Windows)
Fn + F1 Fn + F2	LCD brightness control (▼down) LCD brightness control (▲up)	Pressing this key combination adjusts the brightness of LCD. The brightness setting is stored in memory separately under the condition the AC adaptor is connected and under the condition the AC adaptor is not connected.	
Fn + F3	Display change	By pressing this key combination, you can select either an external display, internal LCD or simultaneous. (👉 page 35) This combination does not work when [Command Prompt] screen is set to "Full Screen". <div> CAUTION <ul style="list-style-type: none"> Do not press another key until the display destination has been completely switched. Do not press this key combination in the following conditions. <ul style="list-style-type: none"> While MPEG files are playing. </div> <div> NOTE <p>Windows XP</p> When switching to a different user with the Fast User Switching function, this key combination may not work. In this case, log off all users, and try the operation once more. If the problem persists, restart the computer. The combination does not work when the computer is in the Dualview mode. </div>	
Fn + F4	Speaker on/off switch	Pressing this key combination turns on/off audio from the internal speakers and headphone jack. <div> NOTE <ul style="list-style-type: none"> Disabling the speakers will also disable the warning beep. Speakers connected to the USB port cannot be muted. </div>	<div>  OFF (MUTE) </div> <div>  ON </div>
Fn + F5 Fn + F6	Volume control (▼down) Volume control (▲up)	Pressing this key combination adjusts the volume of the internal speakers and headphone jack. <div> NOTE This key combination cannot be used to adjust the volume of the warning beep or speakers connected to the USB port. </div>	

Key	Functions	Function Descriptions	Popup Window (Displayed after logging on to Windows)
Fn + F7	Power off using the standby function	Pressing this key combination causes the current status of the computer to be saved to memory, and powers off the computer. ( page 9)	
Fn + F9	Remaining capacity of the battery pack	Pressing this key combination displays the remaining battery capacity on the screen. ( page 21)	<div>  When the battery pack is inserted in the computer </div> <div> (example) </div> <div>  When the battery pack is not inserted in the computer </div>
Fn + F10	Power off using the hibernation function	Pressing this key combination causes the current status of the computer to be saved to the hard disk, and powers off the computer. ( page 9)	

Hotkey Settings

There are two Fn key functions as follows:

- Fn key lock function
After **(Fn)** is pressed once, it stays in the “pressed” position until another key is pressed. This is convenient when it is difficult to press two buttons simultaneously.
- Popup windows display ON/OFF

● Settings

1 Run the Hotkey Settings

Windows 2000 Select [Start] - [Programs] - [Panasonic] - [Hotkey Settings].

Windows XP Select [start] - [All Programs] - [Panasonic] - [Hotkey Settings].

2 Set the parameters

Use Fn key lock

Add the check mark if you want to enable the Fn key lock function.

The following Fn key lock function will then be enabled.

To use **(Fn)** only once : 1 Press **(Fn)** once. (Locked)

2 Press another key for combination. (Lock released)

To use **(Fn)** successively : 1 Press **(Fn)** twice. (Locked)

2 Press another key for combination.

Fn key remains locked until **(Fn)** is pressed once more.

Notification

This setting is only available when [Use Fn key lock] is checked.


- [Make sounds when Fn key is pressed]*1:

Notifies the user with a sound when **(Fn)** is pressed, locked, or released.
(If MUTE is set, you will not hear a beep.)

- [Show status on screen]:

Displays the Fn key status on the taskbar.

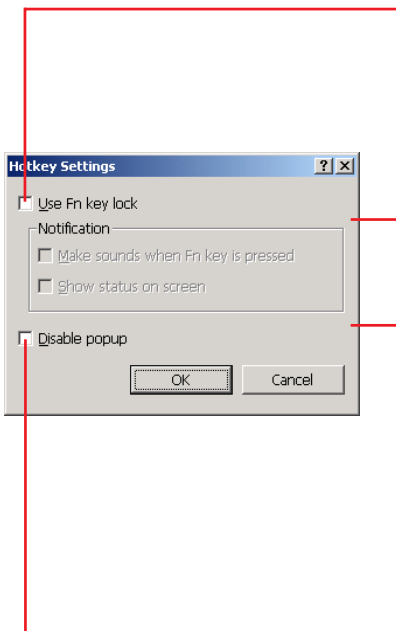
: **(Fn)** is locked

: **(Fn)** is not locked

Disable popup

Add the check mark if you want to turn the popup window display function OFF.

The full-screen display of [Command Prompt] screen or MPEG files may change to a window display if **(Fn)** + **(Fx)***2 are pressed. To prevent this, turn the popup window display function OFF.









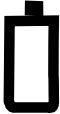

3 Select [OK]

NOTE

- The Fn key lock function also works with **(Fn)** and other keys (e.g., keys for which characters are printed in blue) aside from **(Fx)***2.
- Each user can select separate settings for whether or not to use the Hotkey settings.

*1 If MUTE is set, you will not hear a sound.

*2 “**(Fx)**” indicates any function key from **(F1)** to **(F10)**.

	Caps Lock	This indicator lights green when (Caps Lock) is pressed. Subsequent non-shifted input is capitalized.
	NumLk (Numeric key)	This indicator lights green when (NumLk) is pressed. This causes a portion of the keyboard to function as a numeric keypad. The [Enter] key functions differently depending on the application. (If an external keyboard or ten-keyboard is connected to the external keyboard/mouse port, the numeric keypad of the internal keyboard will not operate.)
	ScrLk (Scroll lock)	This indicator lights green when (ScrLk) is pressed. Scroll lock functions differently depending on the application.
	CD drive status	This indicator lights when the CD drive is accessed. The access lamp on the CD drive lights at the same time as this indicator. (In some cases, only one of them may light.)
	Floppy disk drive status	This indicator lights when the floppy disk drive is accessed.
	Hard disk drive status	This indicator lights when the hard disk drive is accessed.
	Battery pack status	<p>Not lit : Battery pack is not connected or charging not being performed.</p> <p>Orange* : Charging in progress.</p> <p>Green* : Fully-charged.</p> <p>Red : The battery level is very low (the charge is approx. 9% or less). Connect the AC adaptor. You can use the computer when the indicator light is orange. If you do not have an AC adaptor, save your data and power off your computer. After replacing the battery pack with a fully charged one, turn your computer on.</p> <p>Blinking red* : Battery pack or charging may not be working properly. Quickly save your data and power off your computer. Remove the battery pack and disconnect the AC adaptor, then connect them again. If the problem persists, contact Panasonic Technical Support.</p>
	Power status	<p>Not lit : Power off / Hibernation mode</p> <p>Green : Power on</p> <p>Blinking green : Standby mode</p> <p>Blinking green rapidly : Due to extremely low temperatures, power cannot be turned on, or computer cannot resume from standby mode.</p>

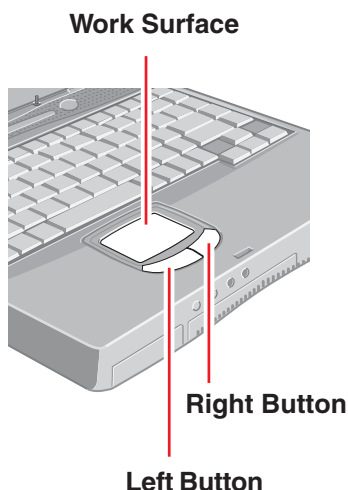
* When the AC adaptor is connected.


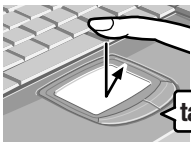
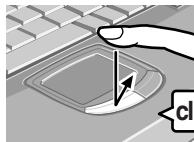





Use the touch pad to move the cursor on the display and perform normal computer operations.

NOTE

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

Basic Operation



Function	Operation
Moving the Cursor	 <p>Move the tip of your finger lightly over the surface.</p>
Tapping/Clicking	 <p>tapping</p> <p>or</p>  <p>clicking</p>
Double-Tapping/ Double-Clicking	 <p>double-tapping</p> <p>or</p>  <p>double-clicking</p>
Dragging	 <p>or</p>  <p>Two quick taps, but on the second tap leaving your finger down (applying pressure) and moving it on the work surface.</p> <p>While holding down the button, moving your finger on the work surface.</p>
Scroll Scroll a document (The movements will differ depending on the application.)	

NOTE

- Besides the above operations, operations such as Zoom and Pan are possible by allocating these functions to the buttons and/or pad. For more details, refer to [Mouse Properties]*.

* **Windows 2000** : In [Control Panel] - [Mouse]

Windows XP : In [Control Panel] - [Printers and Other Hardware] - [Mouse]

- The operations of Scroll, Pan or Zoom will differ depending on the application. There are cases the touch pad will not support these operations even with an application that supports the functions.

(To next page)

Handling the Touch Pad

- The touch pad is designed to be used with a fingertip only. Therefore, avoid the following actions, which may cause damage to the work surface.
 - Placing any object on the work surface
 - Pressing down forcefully with sharp-pointed objects (e.g., nails) or hard objects that can leave marks (e.g., pencils and ball point pens)
- Try to avoid having any harmful substances such as oil, come in contact with the touch pad. The cursor may not work properly in such cases.
- **When the touch pad becomes dirty:**

Wipe to remove dirt by using a dry soft cloth such as gauze or a soft cloth first applied with detergent diluted with water and then thoroughly wrung. Do not use benzene or thinner, or rubbing alcohol. Doing so may adversely affect the surface, e.g., discoloration. In addition, do not use commercially-available household cleaners and cosmetics, as they may contain components harmful to the surface.

Starting Up Your Computer Quickly

If you want to immediately start up and continue an application after shutting down your computer, you can do so by using either the standby or hibernation function.

● Differences between the standby and hibernation functions

Function	Where data is saved to	Time until recovery	Requires power supply
Standby function	Memory	Short	Yes (if power is cut, all data is lost)
Hibernation function	Hard disk	Rather long	Power is not required to maintain data

NOTE

- We recommend plugging in the AC adaptor if the standby function is to be used for a long period of time. If the AC adaptor cannot be connected, we recommend that hibernation mode be used instead of the standby mode.
- If the standby or hibernation function is used repeatedly, the computer may not work properly. To stabilize computer operations, we recommend shutting down Windows on a regular basis (about once a week) without using the standby or hibernation function.

Entering the Standby or Hibernation mode

Use any of the following methods to enter the standby or hibernation mode. To use the hibernation mode, make the setting below in advance. (Enabled in factory preset.)

- Fn key combinations (☞ page 4)
- Using the power switch (☞ page 11)
- From the shut down screen:
 - Standby
 - Windows 2000** : In [Start] - [Shut Down], select [Stand by].
 - Windows XP** : In [start] - [Turn Off Computer], select [Stand By].
 - Hibernation
 - Windows 2000** : In [Start] - [Shut Down], select [Hibernate].
 - Windows XP** : In [start] - [Turn Off Computer], press and hold **(Shift)** , then select [Hibernate].

Setting for using the hibernation mode

Windows 2000

- 1 Select [Start] - [Settings] - [Control Panel] - [Power Options].
- 2 In [Hibernate], add the check mark for [Enable hibernate support] and select [OK].

Windows XP

- 1 Select [start] - [Control Panel] - [Performance and Maintenance] - [Power Options].
- 2 In [Hibernate], add the check mark for [Enable hibernation] and select [OK].

(To next page)

Precautions

● Before entering the standby or hibernation mode

- Be sure to save all data.
- When a file in an external device such as a CD drive, external hard disk, or ATA card is opened, close the file.
- Even when a password has been set in the Setup Utility, [Enter Password] does not appear when the computer resumes from the standby or hibernation mode. If you want to use the security function when using the standby or hibernation mode, use the Windows password as follows:

Windows 2000

- 1 Set the password in [Control Panel] - [Users and Passwords].
- 2 Add the check mark for [Prompt for password when computer goes off standby] in [Control Panel] - [Power Options] - [Advanced].

Windows XP

- 1 Select the account to change in [Control Panel] - [User Accounts].
 - 2 Set the password.
 - 3 Add the check mark for [Prompt for password when computer resumes from standby] in [Control Panel] - [Performance and Maintenance] - [Power Options] - [Advanced].
- Do not enter either the standby or hibernation mode under the following conditions. You may corrupt your data or file, the standby or hibernation function may not work, or the computer (or peripherals) may fail to work properly.
 - When the floppy disk drive indicator (⏏), hard disk drive indicator (⏏), CD drive indicator (⏏) or access lamp on the CD drive is on (👉 [page 6](#)).
 - When playing/recording audio files and displaying images (such as MPEG files).
 - When using the communications software and the network function.
 - When using LAN port (cards), SCSI cards and modem port (cards) etc. (If these cards fail to work properly, restart the computer.)

● When entering the standby or hibernation mode

Standby mode: until the power indicator blinks green

Hibernation mode: until the power indicator goes off

- Avoid the following:
 - Using the keyboard, touch pad, or power switch.
 - Using external mouse or other peripheral devices.
 - Connecting or disconnecting the AC adaptor.
 - Closing or opening the display.

● In standby or hibernation mode

- Do not insert or remove peripherals; abnormal operation may result.
- In standby mode, power is consumed. If PC Cards are inserted, more of that power is consumed. When all power has been consumed, all data saved at standby is lost since it is retained in memory. We therefore recommend plugging in the AC adaptor when using the standby function.

Using the Power Switch

● Setting

Windows 2000

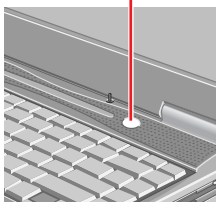
- 1 Select [Start] - [Settings] - [Control Panel] - [Power Options] - [Advanced].
- 2 Select [Standby] or [Hibernate] for [When I press the power button on my computer] and then select [OK].

Windows XP

- 1 Select [start] - [Control Panel] - [Performance and Maintenance] - [Power Options] - [Advanced].
- 2 Select [Stand by] or [Hibernate] for [When I press the power button on my computer] and then select [OK].

● Shutting down

Press the power switch; at the “beep*” sound, release your finger



The computer will enter either the standby or hibernation mode, depending on the setting.

CAUTION

- After releasing your finger from the power switch, do not touch the power switch until the power indicator goes off or blinks.
- At the “beep*” sound, release your finger from the power switch. If you continue to press down on the switch and hold it for more than four seconds, the unit will emit a second “beep*” then power off. Data not previously saved will be lost.

● Windows 2000

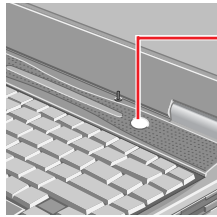
Even when [When I press the power button on my computer] is set to [Power Off] with [Start] - [Settings] - [Control Panel] - [Power Options] - [Advanced], if you press the power switch for more than four seconds and do not release it, a second “beep*” will sound and the computer will be turned off forcibly. Data not previously saved will be lost.

Windows XP

Even when [When I press the power button on my computer] is set to [Shut down] with [start] - [Control Panel] - [Performance and Maintenance] - [Power Options] - [Advanced], if you press the power switch for more than four seconds and do not release it, a second “beep” will sound and the computer will be turned off forcibly. Data not previously saved will be lost.

* When the speaker function is disabled, e.g., by the key combination **(Fn) + (F4)**, there will be no beep sound.

Resuming Operation



Press the power switch

When [Standby]^{*1} or [Hibernate] is selected as the setting for [When I close the lid of my portable computer] in [Control Panel]^{*2} - [Power Options] - [Advanced], the computer will enter either the standby or hibernation mode when the LCD panel is closed. Operation will resume when the LCD panel is opened. Even if the display is closed after the computer has entered either the standby or hibernation mode, operation will resume when the display is opened. If the computer does not resume when the LCD panel is opened, press the power switch.

^{*1} Windows XP : [Stand by]






^{*2} Windows XP : [Control Panel] - [Performance and Maintenance]

CAUTION


Until resuming is complete (requires about 15 seconds, or 60 seconds if connected to a network, after the display returns), avoid the following:

- Touching the keyboard (except for password input), touch pad or power switch.
- Using external mouse or other peripheral devices
- Connecting or disconnecting the AC adaptor.
- Closing or opening the display.
- Shutting down or restarting Windows.
- Entering either the standby or hibernation mode again.

To prevent unauthorized access of your computer, the various security measures are provided below.

Situation	Function to use	Reference
You do not want your computer to be used without permission	Supervisor Password User Password	 below
You do not want the data on the hard disk to be read, or data to be written to the hard disk, in cases including theft.	Hard Disk Lock	 page 16
You want to prevent theft or damage to data by using a floppy disk	Prevent operation by using a floppy disk	 page 17
You want to prevent theft of your computer	Security lock	  "Names and Functions of Parts"

NOTE

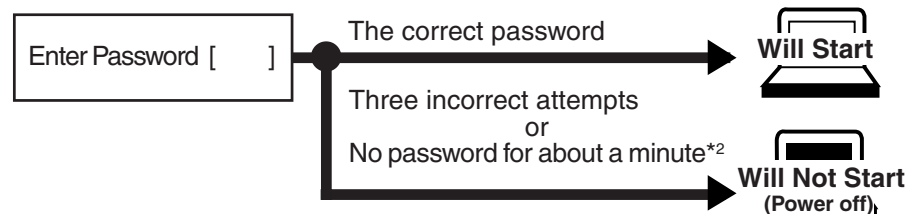
- Windows has a security function that differs from the above security measures. For detailed information, refer to the Windows help.
- For security functions for the wireless LAN :  [page 46](#)

When you do not want your computer to be used without permission

You should set your "Supervisor Password" and "User Password" (The User Password can only be set when the Supervisor Password has been set). Without the password, access to your computer is impossible.

Starting up when the password is set

When [Password on boot] of [Security] menu is set to [Enable], enter your password*¹ and press **(Enter)**.



*¹ Supervisor Password or User Password set in the Setup Utility (not the Windows password).

*² Even if no password is entered for about a minute when starting up the Setup Utility, the power will not be turned off.

When the Setup Utility is started with the Supervisor Password

You can register all items of the Setup Utility ( [page 48](#)).

When the Setup Utility is started with the User Password

- You can not register [Advanced] menu and [Boot] menu.
- [Set Supervisor Password] and [Hard Disk Lock] will not be displayed on [Security] menu. The User Password can be changed only when [User Password Protection] has been set to [No Protection]. The User Password cannot be deleted.
- (F9)** does not work.

NOTE

When [Password on boot] in the Setup Utility is set to [Disable], the password is not necessary when the computer is started up, but the password becomes necessary when the Setup Utility is started up. This alternative makes it possible to prevent the contents of the Setup Utility from being changed.

Setting the Supervisor Password (enabling, changing, disabling)

- 1** Run the Setup Utility (👉 page 48)
- 2** Using either **→** or **←**, select [Security]
- 3** Using either **↑** or **↓**, select [Set Supervisor Password] and press **Enter**
- 4** <Only when the Supervisor Password has been set>
Enter your password at [Enter Current Password] and press **Enter**
- 5** Enter your password at [Enter New Password] and press **Enter**
 - **To disable the Supervisor Password**
Press only **Enter**
- 6** Re-enter your password at [Confirm New Password] and press **Enter**
 - **To disable the Supervisor Password**
Press only **Enter**
- 7** At [Setup Notice], press **Enter**
- 8** Press **F10** and select [Yes], then press **Enter**

CAUTION

- Do not forget your password. If your Supervisor Password is forgotten you will be unable to use your computer. Contact Panasonic Technical Support.
- When running the Setup Utility, do not leave your computer even for a short time, as the possibility exists for the password to be set/changed by another person.

NOTE

- Your password will not be displayed on the screen.
- Only up to seven alphanumeric characters can be used.
 - There is no distinction between upper and lower case letters.
 - Use only the upper horizontal row of numeric keys to input your password.
 - Do not input your password while holding down **Shift** or **Ctrl**.
- Disabling the Supervisor Password also disables the User Password.

Setting the User Password (enabling, changing, disabling)

NOTE

When the Supervisor Password has not been set, the User Password can not be set. Set the Supervisor Password if you have not done so. (👉 page 14)

- 1** Run the Setup Utility (👉 page 48)
- 2** Using either **→** or **←**, select [Security]
- 3** Using either **↑** or **↓**, select [Set User Password] and press **Enter**
- 4** <Only when the User Password has been set>
Enter your password at [Enter Current Password] and press **Enter**
- 5** Enter your password at [Enter New Password] and press **Enter**
<When the Setup Utility is started up with the Supervisor Password>
 - To disable the User Password
Press only **Enter**
- 6** Re-enter your password at [Confirm New Password] and press **Enter**
<When the Setup Utility is started up with the Supervisor Password>
 - To disable the User Password
Press only **Enter**
- 7** At [Setup Notice], press **Enter**
- 8** Press **F10** and select [Yes], then press **Enter**

CAUTION

- Do not forget your password. If a password is forgotten, you will be unable to use your computer. If this happens, ask a person who knows the Supervisor Password.
- When running the Setup Utility, do not leave your computer even for a short time, as the possibility exists for the password to be set/changed by another person.

NOTE

- Your password will not be displayed on the screen.
- Only up to seven alphanumeric characters can be used.
 - There is no distinction between upper and lower case letters.
 - Use only the upper horizontal row of numeric keys to input your password.
 - Do not input your password while holding down **Shift** or **Ctrl**.

When you do not want the User Password enabled or changed without permission:

- 1** Run the Setup Utility and enter the Supervisor Password.
- 2** Using **↑** and **↓**, select [User Password Protection] in [Security] menu and press **Enter**.
- 3** Using **↑** and **↓**, select [Protected] and press **Enter**.





When you do not want the data on the hard disk to be read/written

When the Hard Disk Lock is set to [Enable], it is impossible to read/write data from/to the hard disk when the hard disk is inserted in a different computer, since a password is also set for the hard disk. When the hard disk is returned to the original computer, you can read and write data as before. In this case, however, make the settings in the Setup Utility exactly the same as they were before the hard disk was removed. It is possible to set the Hard Disk Lock even if [Password on boot] is set to [Disable], but we recommend that [Password on boot] be set to [Enable] for security reasons. (Note that this Hard Disk Lock does not guarantee complete protection of data.)

NOTE

- In the default setting, [Hard Disk Lock] is set to [Disable].
- You cannot set [Hard Disk Lock] without setting the Supervisor Password. Set the Supervisor Password if you have not done so. (👉 page 14)
- The hard disk protection function only works with the internal hard disk. This function does not work with the external hard disk.

Setting the Hard Disk Lock (enabling, disabling)

- 1** Run the Setup Utility (👉 page 48)
- 2** Using either  or , select [Security]
- 3** Using either  or , select [Hard Disk Lock] and press **Enter**
- 4** ● To enable the Hard Disk Lock
Select [Enable] and press **Enter**
At [Caution], press **Enter** .

● To disable the Hard Disk Lock
Select [Disable] and press **Enter**
- 5** Press **F10** and select [Yes], then press **Enter**

CAUTION







If your computer requires repair

- Contact Panasonic Technical Support.
- Be sure to set [Hard Disk Lock] to [Disable].

Preventing theft or damage to data using a floppy disk

Disabling the floppy disk operation makes it impossible to read and write a floppy disk and to start the computer from a floppy disk. This can prevent data from being accessed illegally or overwritten accidentally using a floppy disk.

Setting the Floppy Operation (enabling, disabling)

- 1** Run the Setup Utility (👉 page 48)
- 2** Using either  or , select [Security]
- 3** Using either  or , select [Floppy Operation] and press **Enter**
- 4** Using  and , select [Disable] and press **Enter**
 - To enable the floppy operation
Select [Enable].
- 5** Press **F10** and select [Yes], then press **Enter**

Saving Power


One of the main features of notebook-type computers is that you have the power of computing away from your home or office. In the following, information is provided on how to maximize use of the battery pack which is necessary for such computing.

● Four Important Points


- POINT 1** Be sure to charge your battery before and after use.
- POINT 2** To get the maximum use of your battery, set the power management mode.
- POINT 3** Check to see that you have your AC adaptor with you before leaving your home or office.
Purchasing a spare battery (CF-VZSU18/CF-VZSU18A/CF-VZSU18B) is highly recommended.
- POINT 4** Always watch your battery level!

Power Saving Methods

● Leave your computer off when it is not in use

 "Starting Up/Shutting Down"

● Adjust the brightness (darker) with **(Fn) + (F1)**

By holding down on the keys ( will be displayed), the degree of brightness will be lowered, thereby lowering the power consumption.

● Before stepping away from your computer, press **(Fn) + (F7)** or **(Fn) + (F10)** to put your computer in the standby or hibernation mode (page 4)

● Remove peripheral devices (USB devices, PC Cards, external mouse, etc.) when not in use

● **Windows 2000**

In [Control Panel] - [Power Options], make settings in detail

By making settings in detail for the timeout, alarm, etc., it is possible to control the consumption of power.

Windows XP

In [Control Panel] - [Performance and Maintenance] - [Power Options], make settings in detail

By making settings in detail for the timeout, alarm, etc., it is possible to control the consumption of power.

● **Windows 2000**

Setting the Intel® SpeedStep™ technology (page 19)


CAUTION

When installed in a network environment (except when the Wake up from LAN function is in use).

Do not use the standby or hibernation mode.

After resuming operation from the standby or hibernation mode, the network connection may be severed or the computer may not work properly.

NOTE

Select  to view important tips for using the battery pack. You can also view important tips using the following procedure.

Windows 2000

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

Windows XP

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





Setting the Intel(R) SpeedStep (TM) technology Windows 2000

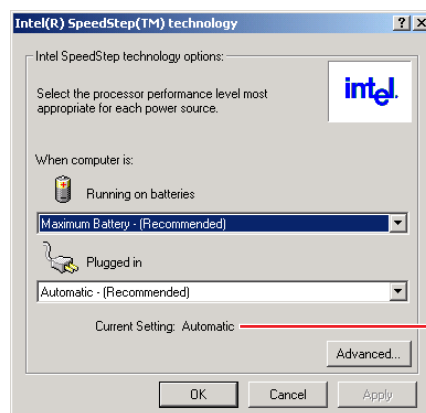
By using the Intel(R) SpeedStep(TM) technology applet, you can set the computer's performance to optimize power consumption.

Starting up the Intel(R) SpeedStep(TM) technology

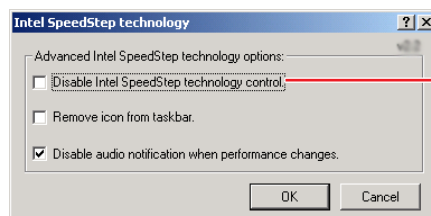
Select  on the taskbar

NOTE

- The icon differs depending on the current setting.
 -  Maximum Performance (The CPU performance is maximized at all times.)
 -  Automatic (The CPU performance is automatically maximized only when necessary.)
 -  Battery Optimized Performance
 -  Maximum Battery (Maximum battery life)
- You can also start using [Start] - [Settings] - [Control Panel] - [Power Options] - [Intel(R) SpeedStep(TM) technology].



Displays settings currently in effect.



Do not add the check mark.

Use the Battery Indicator to Check the Battery Status

Battery Indicator	Battery Status
Orange*	Charging in progress
Green*	Fully-charged
Red	The battery level is very low (the charge is approx. 9% or less). Connect the AC adaptor. You can use the computer when the indicator light is orange. If you do not have an AC adaptor, save your data and power off your computer. After replacing the battery pack with a fully charged one, turn your computer on.
Blinking red*	Battery pack or charging may not be working properly. Quickly save your data and power off your computer. Remove the battery pack and disconnect the AC adaptor, then connect them again. If the problem persists, contact Panasonic Technical Support.
Not lit	Battery pack is not connected or charging not being performed.

* When the AC adaptor is connected.

NOTE

This computer prevents overcharging of the battery by recharging only when the remaining power is less than approx. 95% of capacity after the battery is fully charged.

Check the Remaining Battery Power

Press **Fn** + **F9** to Check the Remaining Battery Power on the Screen
(After logging on to Windows)

Fn + **F9**



When the battery pack is inserted in the computer (example)



When the battery pack is not inserted in the computer

NOTE

- In the following cases, there may be a difference between the remaining battery capacity displayed on the indicator and the actual remaining battery capacity. To correct this, execute the “Refresh Battery” utility. (➡ [page 23](#))
 - The battery indicator light remains red.
 - The battery remaining displays 99% and the indicator light is orange for a long period of time.
 - Low battery warning appears after a short period of time. This may be caused by the use of standby mode for long periods of time. The battery is discharging while the computer is in standby mode when the AC adaptor is not connected.
- There may be a discrepancy with the % value that is displayed on the taskbar of Windows, but this is not a malfunction.

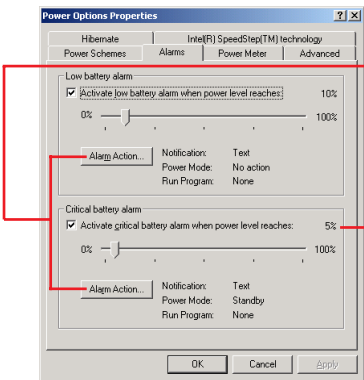
When the Remaining Battery Charge Becomes Low

The following is factory default setting.

When remaining battery capacity falls to 10% [Low battery alarm]	When remaining battery capacity falls to 5% [Critical battery alarm]
<ul style="list-style-type: none">● Displays a message indicating the low battery level. <p style="text-align: center;">↓</p> <p>Charge your battery.</p> <ul style="list-style-type: none">● Connect the AC adaptor immediately. If you do not have the AC adaptor with you, exit any programs currently running, then shut down Windows, and confirm that the power indicator is off.● Use a spare battery if you have one. (☞ page 24)	<ul style="list-style-type: none">● Displays a message indicating the low battery level. Windows 2000● The computer will enter standby mode. Windows XP● The computer will enter hibernation mode. <p style="text-align: center;">↓</p> <p>Connect the AC adaptor before starting up the computer next time.</p> <ul style="list-style-type: none">● If the computer starts up or resumes while the AC adaptor is not connected, Windows may not operate properly or alarm operations may not work properly.

Above settings can be changed.

- 1 Windows 2000
- Select [Start] - [Settings] - [Control Panel] - [Power Options] - [Alarms].
- Windows XP
- Select [Start] - [Control Panel] - [Performance and Maintenance] - [Power Options] - [Alarms].
- 2 Set alarm operations and remaining battery level for operating alarm functions.
- When disabling the speaker by pressing (Fn) + (F4) , the sound alarm is also disabled.



- When making a setting for [When the alarm goes off, the computer will] in [Alarms] - [Alarm Action], add a check mark for [Force stand by or shutdown even if a program stops responding].
- Set the value for [Critical battery alarm] to 5% or more. This is necessary for the standby or hibernation function to be completed (assuring data is saved) when the battery level is low.

About High Temperature Mode

This computer has a high temperature mode function that prevents the degradation of the battery in high temperature environments. We recommend setting the high temperature mode function when installing the computer in a car, etc. To do this, set [Environment] in [Main] menu of the Setup Utility to [High Temperature]. Note that a 100% remaining battery reading in [High Temperature] mode is about an 80% reading in [Normal Temperature] mode. After switching from [Normal Temperature] to [High Temperature], or vice versa, the remaining battery will not be displayed properly until the battery pack is completely discharged or fully charged.

Accurately Displaying Battery Capacity

The battery pack has a function for measuring, storing and learning about battery capacity. Using this function properly to accurately display remaining battery capacity requires that the battery pack be fully charged (charged to 100%), then fully discharged, and then fully charged again.

This procedure should be performed once after you purchase the computer. As you use the battery pack over a long period of time, the remaining capacity display may become inaccurate due to aging of the battery pack and other factors. The procedure described below should be performed again.

NOTE

If the computer is turned off while refreshing the battery (electrical power outage, accidental removal of the AC adaptor or battery pack, etc.), the battery will not be refreshed correctly.

- 1 Attach the battery pack and connect the AC adaptor**
Remove all peripherals (except for the battery pack and AC adaptor).
- 2 Use the “Refresh Battery” utility to fully discharge the battery pack**
 - 1 Run the Setup Utility. (👉 [page 48](#))
 - 2 Select [Refresh Battery] from [Exit] menu and press **Enter**.
 - 3 At the confirmation message, select [Yes] and press **Enter**.
Once the battery indicator turns green, the battery pack will be completely discharged. It takes approximately 4.5 hours until the power automatically goes off through the complete discharge of the battery from the fully charged state.
- 3 Allow the battery pack to charge until the battery indicator turns green**
Charging Time: Approximately 3.8 hours.

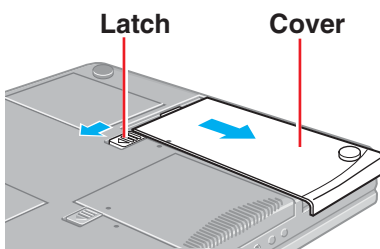
Replacing the Battery Pack

When the charge provided by your battery pack is supplied for only a short period of time, even after fully charging according to the instructions, it may be time to replace your battery pack. The battery pack is a consumable item and therefore will require replacement (CF-VZSU18/CF-VZSU18A/CF-VZSU18B).

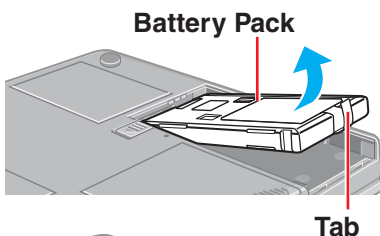
CAUTION

- Do not touch the terminals on the battery pack. The battery pack may no longer function properly if the contacts are dirty or damaged.
- The battery pack is not charged when the computer is first purchased. Be sure to charge it before using it for the first time. When the AC adaptor is connected to the computer, charging begins automatically.
- In the standby mode, do not remove/change the battery pack. Removing the pack in the standby mode will erase your data and may damage the computer.

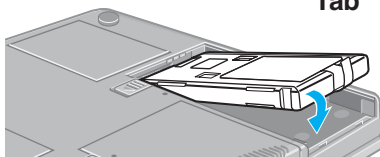
- 1 Power off your computer** (👉📖 “Starting Up/Shutting Down”)
Do not shut down using the standby function.



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



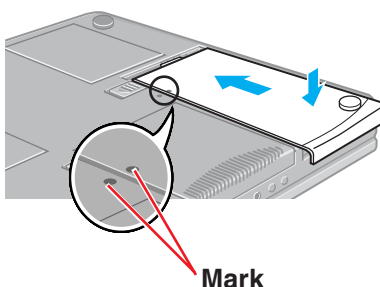
- 3 Taking out the battery pack**
Pull the tab on the battery pack and remove it from the computer.



- **Inserting a battery pack**
Firmly attach the battery pack to the connector.

CAUTION

Be sure the battery pack is properly connected to the connector.



- 4 Reattach the cover**
Match the mark on the cover to the body of the computer and slide the cover back into place.

CAUTION

- For an improperly attached cover, your battery pack may fall out while you are carrying around your computer.
- Be sure the tab does not get caught when closing the cover.

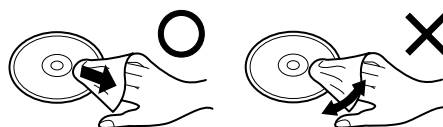
Usage Precautions

- Do not place items other than discs on the tray.
- Do not leave the tray in the open position or touch the lens.
Under some conditions, dust may build up on the lens, or on a disc. This may result in a read or write malfunction.
- Do not apply excessive force to the tray in the open position, doing so could damage the tray.
- Do not open the drive or move the computer while the drive is being accessed.
Doing so could cause it to malfunction.
In addition, after running an application involving access to a disc, do not open the drive or remove the disc until after the application has been closed.
- Do not access the drive until after the tray is closed and the CD drive indicator and access lamp on the CD drive are off. (➡ [page 6](#))
- Do not expose the drive to excessive smoke that may leave a residue, e.g., oil smoke, or tobacco smoke. Doing so could 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.)
- Never insert foreign objects such as paper clips into the drive. Doing so could cause it to malfunction.
- Do not use any discs that have become deformed, warped, or are not completely round.

To avoid damaging discs:

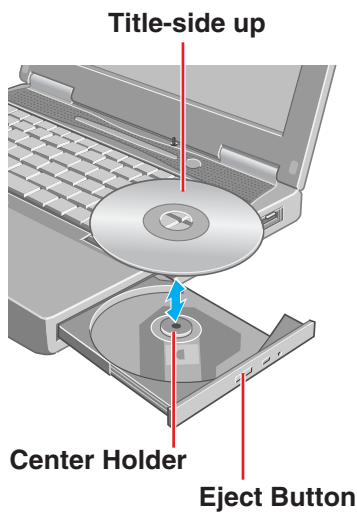
- Do not touch the data surface (the side opposite the side with the title printed on it) as it can cause the disc to become dirty or scratched.
- Do not allow discs to become dirty or scratched.
- Do not place or store discs in locations exposed to heat, direct sunlight, humidity or dust.
- Do not write on the surface of the disc with a ballpoint pen or other writing instrument nor paste any paper to it.
- Do not drop, bend, or place heavy objects on top of discs.
- If the disc is brought from a cold into a warm environment, moisture may form on the disc. Wipe this moisture off with a soft, dry, lint-free cloth before using the disc.
- Cleaning the disc using a disc cleaner is recommended once every 2 or 3 months.

If the disc gets dirty



After wiping the disc with a moist, soft cloth, wipe it with a dry cloth. Always wipe from the center toward the edge.

Setting a Disc



- 1 Turn your computer on
- 2 Press the disc eject button and slowly pull out the tray

NOTE

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

- 3 Place the disc securely on the center holder
- 4 Close the tray

CAUTION

Do not apply excessive force to the tray in the open position, doing so could damage the tray.

Power-saving Mode

If the CD drive has not been accessed within 90 seconds, the drive motor will automatically shut down to reduce the power consumption. When the CD drive is accessed once again, the power of the drive motor is turned on. However, approximately 30 seconds are required until data is actually read from the disc.

NOTE

- If the vibration of the CD drive is excessive, set [CD Drive Speed] to [Low] in the Setup Utility.
- For AutoPlay CDs:
 - If an AutoPlay CD does not start after the computer resumes from the standby or hibernation modes, remove the disc from the drive, then reinsert the disc again after a 15 second wait.
 - An AutoPlay CD may start during file access, depending on the status of the disc.
- When playing back movies from a disc, note that smooth playback may not be possible in some cases.

When using DVD Media

- To play DVD-Video or MPEG2 files, install the DVD playback software (included). For information on how to install the software, refer to the instructions of the software (👉📖 “WinDVD”).

● About Regions Setting

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

<Example>

For U.S.A. and Canada: “1”

For Europe: “2”

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

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

CAUTION

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

NOTE

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

Information for the DVD-ROM & CD-R/RW Drive (Model with a DVD-ROM & CD-R/RW Drive)

<When writing to CD-R/RW discs>

- Using the CD-ROM of the CD-R/RW writer software (included), install the application software on your computer. For information on how to install the software, refer to the instructions of the CD-R/RW writer software.
- Be sure to use discs conforming to the proper write speeds.

CD-R write speed*	600 KB/s (4X speed) 1200 KB/s (8X speed) 2400 KB/s (16X speed Max.) 3600 KB/s (24X speed Max.)
CD-RW write speed	600 KB/s (4X speed)
High-Speed CD-RW write speed	600 KB/s (4X speed) 1200 KB/s (8X speed) 1500 KB/s (10X speed)

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

- If the write operation is to involve a long period of time, be sure to connect the AC adaptor. If the battery power runs low and the power of the computer is cut, the write operation may end in failure.
- Depending on the disc, the quality of the write operation may not be so good. We recommend using any of the following discs.

Recommended Discs:

<CD-R>

- HITACHI MAXELL, Ltd.
- MITSUBISHI CHEMICAL Co., Ltd.
- MITSUI CHEMICALS, Inc.
- RICOH Co., Ltd.
- TAIYO YUDEN Co., Ltd.

<CD-RW/High-Speed CD-RW>

- MITSUBISHI CHEMICAL Co., Ltd.
- RICOH Co., Ltd.

Information for the DVD MULTI Drive (Model with a DVD MULTI Drive)

<When writing to CD-R/RW discs and DVD-R/RW discs>

- Using the CD-ROM of the writer software (included), install the application software on your computer. For information on how to install the software, refer to the instructions of the writer software.
- Be sure to use discs conforming to the proper write speeds.

CD-R write speed*	600 KB/s (4X speed) 1200 KB/s (8X speed) 2400 KB/s (16X speed Max.)
CD-RW write speed	600 KB/s (4X speed)
High-Speed CD-RW write speed	600 KB/s (4X speed) 1200 KB/s (8X speed)
DVD-R write speed	1,350 KB/s (1X speed)
DVD-RW write speed	1,350 KB/s (1X speed)
DVD-RAM write speed	2,700 KB/s (2X speed)

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

- If the write operation is to involve a long period of time, be sure to connect the AC adaptor. If the battery power runs low and the power of the computer is cut, the write operation may end in failure.
- Be sure to use discs that meet the following specifications.
 - DVD-R for General Ver.2.0 (4.7 GB)
 - DVD-R for General Ver.2.0/4X-SPEED DVD-R REVISION 1.0 (4.7 GB)
 - DVD-RW Ver.1.1 (4.7 GB)
 - DVD-RW Ver.1.1/2X-SPEED DVD-RW REVISION 1.0 (4.7 GB)
 - DVD-RAM Ver.2.0 or Ver.2.1 (4.7 GB/9.4 GB)
- In the case of DVD-RAM, only non-cartridge discs or removable cartridge discs can be used.
- Depending on the disc, the quality of the write operation may not be so good. We recommend using any of the following discs.

Recommended Discs:

<CD-R>

- HITACHI MAXELL, Ltd.
- MITSUBISHI CHEMICAL Co., Ltd.
- MITSUI CHEMICALS, Inc.
- RICOH Co., Ltd.
- TAIYO YUDEN Co., Ltd.

<CD-RW/High-Speed CD-RW>

- MITSUBISHI CHEMICAL Co., Ltd.
- RICOH Co., Ltd.

<DVD-R>

- Matsushita Electric Industrial Co., Ltd.
- PIONEER VIDEO CORPORATION
- TAIYO YUDEN Co., Ltd.

<DVD-RW>

- TDK Corporation
- Victor Company of Japan, Limited

<DVD-RAM>

- Matsushita Electric Industrial Co., Ltd.

Your computer has two PC Card slots. These slots conform to the PC Card Standard; therefore, communications or SCSI devices, etc., may be utilized. The slots allow you to use two Type I or Type II cards (or one Type I and one Type II), or one Type III card.

● Type I or II

Two cards can be used simultaneously.



● Type III

One card can be used only in the slot 1.



CAUTION

- Check the PC Cards' specifications. Be sure the total operating current does not exceed the specified limit. Damage may result otherwise.
Allowable Current (total for two slots) : 3.3 V: 400 mA, 5 V: 400 mA
- There are times when both a Type I card and a Type II card will not work at the same time.
- ZV card, SRAM card, FLASH ROM card (except for an ATA interface) and card requiring 12V are not supported.
- With the repeated insertion/removal of a PC Card, the computer may no longer recognize the PC Card (depending on the type of card).
In such cases, restart the computer.
- When inserting one more CardBus type card with one already inserted, after entering the standby or hibernation mode, the computer may not function properly.
- If the computer freezes after resuming from the standby or hibernation mode, try removing and then reinserting the PC Card. If this does not correct the problem, restart the computer.

Inserting/Removing the PC Card

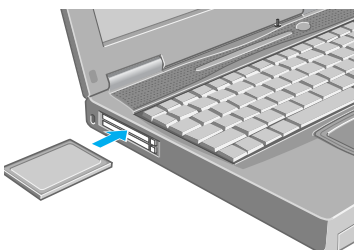
Inserting a PC Card

Simply slide the PC Card right-side-up until it snaps into place

Refer to the operation manual of each card on how to insert the card.

CAUTION

- When using a PC Card to connect a peripheral device (SCSI, IEEE 1394, etc.):
 - 1 Connect the peripheral device to the card.
 - 2 Turn the device on.
 - 3 Slide the card in until it snaps into place.
- When inserting a card, do not force the card in if difficulty is encountered. Depending on the shape of the card, a segment may remain protruding from the slot after insertion. Do not try to force the card all the way in. You may damage the slot, making it impossible to remove the card.



Removing a PC Card


CAUTION

- Do not remove a PC Card while your computer is in the standby or hibernation mode.
- When two PC Cards are inserted, perform the following procedure (from Step 1 to Step 3 for each of the two cards.
- Note that the operation of removing the PC Card may not be complete, depending on the status of the PC Card or device connected to the PC Card, such as when a SCSI card is used to connect an external hard disk to the computer. In such cases, turn off the power from [Start]* menu, then remove the card.


* Windows XP : [start]

1 Disable the card function

Windows 2000

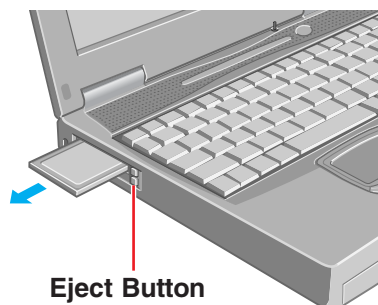
- 1 Select  on the taskbar, select the PC Card, then select [Stop].
- 2 Follow the on-screen instructions.
(When the PC Card has been removed after the computer is turned off, this step is not necessary.)

Windows XP

- 1 Select  on the taskbar, select the PC Card, then select [Stop].
- 2 Follow the on-screen instructions.
(When the PC Card has been removed after the computer is turned off, this step is not necessary.)

2 Press the button out, then press the button again

3 Slide the PC Card out



Use a RAM module meeting the RAM module specifications below. If a module is used that does not meet the specifications, there are cases in which data may become unusable or the computer may not operate properly.

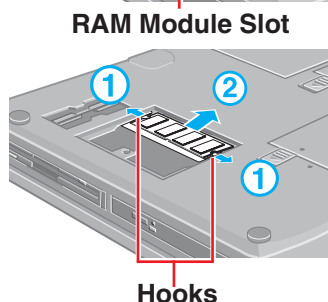
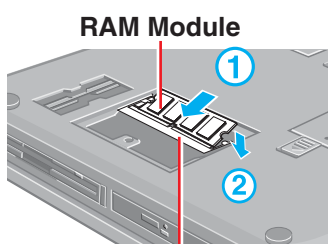
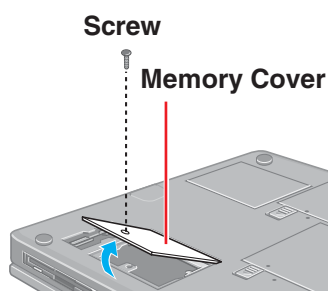
RAM module specifications
200 pins, SO-DIMM, DDR SDRAM, PC2100 Compliant

Only a RAM module designed for PC2100 can be added.

CAUTION

RAM modules are extremely sensitive to static electricity. There are cases where static electricity generated by the human body has adversely affected such modules. When inserting or removing a RAM module, do not touch the terminals or internal components, insert objects other than the module, or allow foreign particles to enter. Doing so has been known to cause damage, fire or electric shock.

Inserting/Removing RAM Module



CAUTION

If the RAM module is difficult to insert or difficult to press down, do not force it. Check once more to ensure that the module is positioned correctly.

1 Power off your computer (👉📖 “Starting Up/Shutting Down”)

Do not shut down using the standby or hibernation function.
Disconnect the AC adaptor and remove the battery pack.

2 Turn the computer over and remove the screw, then remove the cover

3 ● Inserting the RAM module

- ① Slide in the module at an angle and firmly attach it to the connector.
- ② Snap the module into place by pushing down on it.

● Removing the RAM module

- ① Open the left and right hooks.
- ② Gently remove the RAM module from the slot.

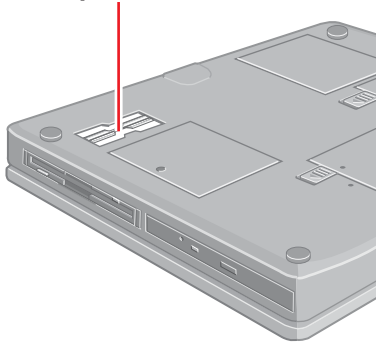
4 Put the cover back into place

- ① Insert the cover diagonally, then fit it in place.
- ② Fasten the screw.

NOTE

Whether the RAM module is properly recognized or not can be confirmed in [Information] menu of the Setup Utility (👉 page 49). If the RAM module is not recognized, power off the computer and insert it again.

Expansion Bus Connector



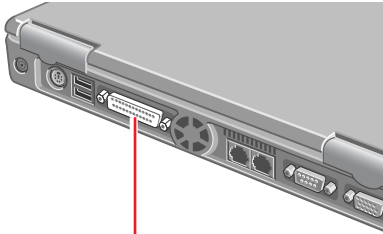
A port replicator is available as an option (CF-VEB481). This device eliminates the hassles of having you connect/disconnect the various cables when carrying your computer around and allows a variety of peripherals to be connected including a headphone or microphone, etc.

The port replicator connects to the expansion bus connector on the bottom of your computer.

For more detailed information, refer to the operation manual of the port replicator.

NOTE

- When connecting the external display to the display port on the port replicator, the characters on the external display may be blurred if 1280 x 1024 (or a higher resolution) is set.
In this case, select a resolution that is lower than 1280 x 1024.
- Although the computer's USB connector operates as USB 2.0, the port replicator's USB connector operates as USB 1.1.



Parallel Port

- 1 Power off your computer** (👉📖 “Starting Up/Shutting Down”)
Do not shut down using the standby or hibernation function.

- 2 Connect the printer to your computer**

- 3 Turn on the printer, then turn on your computer**

- 4 Setting your printer**

Windows 2000

Select [Start] - [Settings] - [Printers].

Find your printer's icon, click on it, then select [File] - [Set as Default Printer]. If no icon is available, select [Add Printer] icon and follow the on-screen instructions.

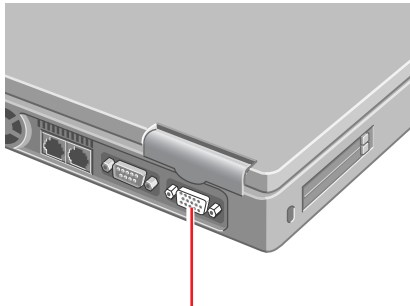
Windows XP

Select [start] - [Printers and Faxes].

Find your printer's icon, double-click on it, then select [Printer] - [Set as Default Printer]. If no icon is available, select [Add a printer] and follow the on-screen instructions.

NOTE

- You may need to install a driver for your printer. Follow the on-screen instructions and refer to the operation manual of the printer on how to install the driver.
- Confirm whether or not the setting for [Parallel Port] in the Setup Utility is optimal. (👉 page 50)



External Display Port

1 Power off your computer (👉 📖 "Starting Up/Shutting Down")
Do not shut down using the standby or hibernation function.

2 Connect the external display to the external display port on your computer

3 Turn on the external display, then turn on your computer
When an external display is connected, the computer displays on both the internal LCD and the external display after Windows starts up regardless of [Display] setting in the Setup Utility.

It is possible to change the setting to display only on the external display or only on the internal LCD with **(Fn) + (F3)**.

4 Set your external display

Windows 2000

Select [Start] - [Settings] - [Control Panel] - [Display] - [Settings] - [Advanced] - [Monitor] and make the monitor settings.

When a monitor that does not conform to the Plug & Play standards is connected, select [Properties] - [Driver] - [Update Driver] in [Monitor] and make the monitor settings.

Windows XP

Select [start] - [Control Panel] - [Appearance and Themes] - [Display] - [Settings] - [Advanced] - [Monitor] and make the monitor settings.

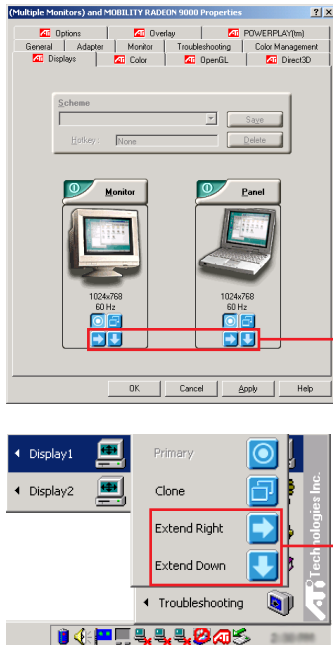
When a monitor that does not conform to the Plug & Play standards is connected, select [Properties] - [Driver] - [Update Driver] in [Monitor] and make the monitor settings.

NOTE

- For more detailed information, refer to the operation manual of the external display.
- Set number of colors, screen resolution, or refresh rate correctly to suit the monitor.
- When the display destination of the screen is switched using **(Fn) + (F3)** after [Command Prompt] screen is set to "Full Screen", the display destination returns to the destination before switching if an "EXIT" is input and [Command Prompt] screen is closed. This can also happen if the "Full Screen" is canceled via an **(Alt) + (Enter)** command. Press **(Fn) + (F3)** again.

Extended Desktop

Windows 2000



Do not use the Extended Desktop

If you use the Extended Desktop, the screen may not be displayed properly.

Do not select these buttons to extend your desktop.

If you should select these buttons, restore them to the original settings soon.

Dualview

Windows XP

With Dualview, you can use both the internal LCD and the external display as an extended display domain. You can also drag a window from the internal LCD to the external display. To use the Dualview;

- 1 Select [Settings] in [Control Panel] - [Appearance and Themes] - [Display].
- 2 Select display [2] and add a check mark for [Extend my Windows desktop onto this monitor], then select [Apply].
- 3 Make the settings for each display (screen area, colors, etc.).

NOTE

- When using Dualview, the display destination of the screen cannot be changed with **(Fn) + (F3)**.
- If you change the resolution and/or color setting, be sure to restart the computer.
- There are some applications that cannot be used in the Dualview.
- When the button to maximize a window is pressed, one of the displays will show the maximized display.
- A window that has been maximized cannot be moved to the other display.
- When the Dualview is being utilized, the pop-up icon window is displayed only on the display [1].

Precautions

- When the application running is not shown on the display, refer to the following items.

(Under the condition the application is in the external display (external display [2]), or after the application is closed in the external display, there are cases the application will not be shown in the display when executed the next time if the position of the extended display is changed or the Dualview is closed.)

When there is no display after the position of the extended display is changed:

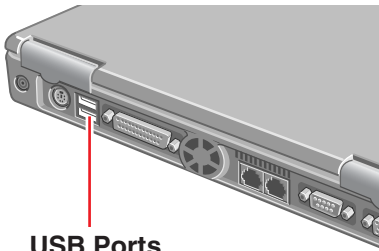
The application running is being displayed at the position of the extended display before the change. Return the position of the extended display to the condition before the change. Move the application to the internal LCD (internal LCD [1]), and then correct the position of the extended display.

When there is no display when the Dualview is disabled:

The application running is being displayed in the extended display (external display [2]). Set the Dualview again, move the application from the external display (external display [2]) to the internal LCD (internal LCD [1]) and then disable the Dualview.

- When the Dualview is used, set [Never] for [Plugged in] and [Running on batteries] for [Turn off monitor] in [Control Panel] - [Performance and Maintenance] - [Power Options] - [Power Schemes].
If this setting is not made, there are cases the display will not be shown properly.
- To prevent images from being burned onto the external display, manually shut off the power to the external display when the display does not have to be used.
- When the display domain for the Dualview is changed, there are cases the wallpaper and icons become displaced.
Wallpaper: Change the setting for the wallpaper.
Icons: Run the command to automatically realign the icons. (Auto Arrange)
- When an animated pointer is used for the mouse pointer (e.g., when changing the theme in [Appearance and Themes] of [Control Panel]), an error may occur when resuming from the standby or hibernation mode. In such cases, change the mouse pointer to the standard pointer with the following procedure.
 - 1 In [Control Panel], select [Printers and Other Hardware] - [Mouse].
 - 2 Select [Pointers].
 - 3 Select [Windows Default (system scheme)] in [Scheme], then select [OK].
- When an external display not compatible with VESA DPMS is used, there are cases the display of the external display will be adversely affected when the LCD panel is closed. In such cases, turn the power of the external display OFF.


Connecting USB devices



Connect the USB device to the USB port of your computer

For information on how to connect to the USB device or install the driver, refer to the operation manual of the USB device.

NOTE

- USB devices may be connected or removed without turning off the computer's power.
- When a USB device is connected, there are cases the standby or hibernation function will not operate in a normal manner due to the USB device. In addition, a USB device may have to be removed temporarily and the computer restarted in cases where the computer is unable to start up properly.
- Some devices will not operate when connected to a USB HUB; these devices must be connected directly to the USB port on your computer.
- When a USB device is removed and then inserted,  may appear in the Device Manager and the device may not be correctly recognized. If this happens, try removing and connect the device once more.
- When USB devices are connected, power consumption increases. Remove USB devices when not in use, especially when operating on battery power.
- Although the computer's USB connector operates as USB 2.0, the port replicator's USB connector operates as USB 1.1.

Windows 2000

- When the computer enters standby or hibernation mode and then resumes while a USB 1.1 device is connected, a device disconnection warning message may appear on the screen, but this will not impede the computer's operation.



Removing USB devices

CAUTION



- Do not remove a USB device while your computer is in the standby or hibernation mode.
- Save important data and close each application.

1 Disable the device functions

Windows 2000

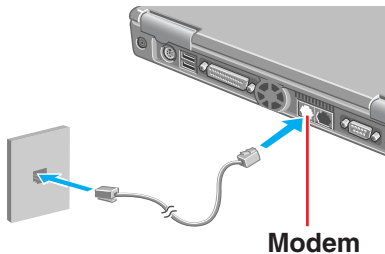
- 1 Select  on the taskbar and select the USB device, then select [Stop].
- 2 Follow the on-screen instructions.
(When  is not displayed or when the USB device has been removed after the computer is turned off, this step is not necessary.)

Windows XP

- 1 Select  on the taskbar and select the USB device, then select [Stop].
- 2 Follow the on-screen instructions.
(When  is not displayed or when the USB device has been removed after the computer is turned off, this step is not necessary.)

2 Remove the USB device


Connecting the Internal Modem with a Telephone Jack



CAUTION

- Do not use the PBX internal phone lines inserted in company offices. Doing so may lead to a fire or electric shock.
- It is not possible to connect the modem to any of the following lines.
 - Internal home phones
 - Intercoms
- Be sure to connect the modem telephone cable into the modem port, not into the LAN port.

1 Connect the computer and the telephone jack using a modem telephone cable

Open the modem cover, position the cable so that the tab matches the port (), and insert the cable.

2 Set the modem

Windows 2000

- 1 Select [Edit] in [Start] - [Settings] - [Control Panel] - [Phone and Modem Options] - [Dialing Rules], then select the location from which you will be dialing in [Country/region].
- 2 Input the necessary information (items such as area code, dialing rules, etc.), select [OK], then select [OK].

Windows XP

- 1 Select [Edit] in [start] - [Control Panel] - [Printers and Other Hardware] - [Phone and Modem Options] - [Dialing Rules], then select the location from which you will be dialing in [Country/region].
- 2 Input the necessary information (items such as area code, dialing rules, etc.), select [OK], then select [OK].

NOTE

Do not enter either the standby or hibernation mode during communications.

Ring Resume Function

With this function, if the telephone that is connected to the modem rings in the standby mode, the power of the computer automatically switches ON.

This function is convenient when using automatic information receiving applications such as a FAX application.

When using this function, it is necessary to run a software application able to maintain the condition to receive telephone calls and to return the computer to the original condition after a call. For further details, refer to the operation manuals provided with software applications.

Enabling the Ring Resume Function

1 Windows 2000

Select [Device Manager] in [Start] - [Settings] - [Control Panel] - [System] - [Hardware].

Windows XP

Select [Device Manager] in [start] - [Control Panel] - [Performance and Maintenance] - [System] - [Hardware].

2 Select the modem you are using from [Modems].

3 Select [Power Management], add the check mark for [Allow this device to bring the computer out of standby], then select [OK].

NOTE

- This function does not work when the computer is off or is in hibernation mode.
- After operations are resumed from standby status, the screen remains dark. The former screen display will be restored when the keyboard or touch pad is touched.
- The computer cannot resume if a telephone is connected to the line of a modem (e.g., a PC Card modem) other than the internal modem.

CAUTION

- When using this function, it is recommended that the AC adaptor be connected to the computer.
- Concerning the setting for [System standby]*
 - Roughly consider the communication time and then set [System standby]. There may be cases where the computer enters the standby mode after the time set for [System standby] elapses even during communications, and cuts off the communications.
 - If [Never] is set, the computer will not enter the standby mode during communications, but once the computer resumes, the power of the computer will remain on while the user is absent.

* **Windows 2000** : Select [Start] - [Settings] - [Control Panel] - [Power Options] - [Power Schemes]

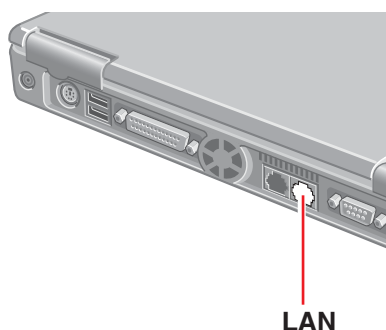
Windows XP : Select [start] - [Control Panel] - [Performance and Maintenance] - [Power Options] - [Power Schemes]

- When the Ring Resume function is being used, some time elapses before a connection is established (equal to the time for the computer to resume). To allow the computer to resume, set the "Call" to a larger value than a typical telephone call.

If it is not possible for the sending side to set a long "Call", set the "Number of rings until answer" (with the software application that is able to maintain the condition to receive telephone calls) to a small value.

When using the computer as a network computer, some additional settings may have to be made depending on the usage conditions. We recommend asking your system administrator or the person in charge of the network.

Connecting LAN



1 Power off your computer (☞📖 “Starting Up/Shutting Down”)

Do not shut down using the standby or hibernation function.

2 Connect the cable

Connect the LAN port and the network system (server, HUB, etc.) using a LAN cable.

CAUTION

- Do not connect the modem telephone cable into the LAN port.
- Do not use the standby or hibernation functions during communications (except when the Wake up from LAN function is in use), as this may cause an error in data transmission or reception. The timeout function may engage even during data transmissions, causing the computer to automatically go into standby or hibernation mode. When not using the Wake up from LAN function, we recommend disabling the timeout function using the following procedure.

Windows 2000 : [Control Panel] - [Power Options] - [Power Schemes]

Windows XP : [Control Panel] - [Performance and Maintenance] - [Power Options] - [Power Schemes]

NOTE

If you are unable to connect to the network (when the indicator of your HUB unit does not light):

1 **Windows 2000**

Select [Device Manager] in [Start] - [Settings] - [Control Panel] - [System] - [Hardware].

Windows XP

Select [Device Manager] in [start] - [Control Panel] - [Performance and Maintenance] - [System] - [Hardware].

2 Select the network adaptor name you are using from [Network adapters].

3 Select [Advanced].

4 Confirm the settings of each item.

Wake up from LAN

This is a function of the internal LAN to automatically power the computer on from a network server when the computer is in the standby or hibernation mode. To use this function, it is necessary to have a network environment that accommodates Wake up from LAN.

Enabling the Wake up from LAN Function

Windows 2000

- 1 Select [Device Manager] in [Start] - [Settings] - [Control Panel] - [System] - [Hardware].
- 2 Select the network adaptor name you are using from [Network adapters].
- 3 Select [Power Management], add the check mark for [Allow this device to bring the computer out of standby] and [Allow the computer to turn off this device to save power], then select [OK].

Windows XP

- 1 Select [Device Manager] in [start] - [Control Panel] - [Performance and Maintenance] - [System] - [Hardware].
- 2 Select the network adaptor name you are using from [Network adapters].
- 3 Select [Power Management], add the check mark for [Allow this device to bring the computer out of standby] and [Allow the computer to turn off this device to save power], then select [OK].

NOTE

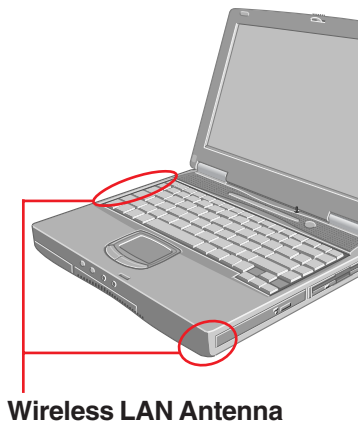
- Be sure to connect the AC adaptor, and enable the supply of power.
- Make settings to allow the use of a Local Area Network.
- The computer will not “wake up” if the LAN cable is disconnected and reconnected.
- The Wake up from LAN function will not operate under the following conditions:
 - When the computer has been shut down
 - When the power switch is pressed over for four seconds or longer to turn off the power (e.g., when the computer hangs)
 - When the AC adaptor and battery pack are removed from the computer or reattached to the computer
- After operations are resumed from standby status, the screen remains dark. The former screen display will be restored when the keyboard or touch pad is touched.
- The computer may start up if accessed by another computer on the network.

Windows XP

The following procedure can be used to prevent startup due to unintentional access by a computer.

- 1 Select [start] - [Control Panel] - [Performance and Maintenance] - [System] - [Hardware] - [Device Manager] - [Network adapters], then select the network adaptor name you are using, and then select [Power Management].
- 2 Add the check mark for [Only allow management stations to bring the computer out of standby], then select [OK].

If you use a wireless LAN, you can use a network without cable connections.



CAUTION

Communication is performed through the wireless LAN antenna. Do not block the antenna area with your hand or otherwise interfere with the passage of the radio signals.

NOTE

- The communication speeds and distances differ depending on the devices that support the wireless LAN, the installation environment and other ambient conditions.
- One characteristic of radio waves is that their transmission rate tends to drop as the communication distance increases. It is recommended that the devices supporting the wireless LAN be used in close vicinity to each other.
- The rate may drop while a microwave oven is being used.

Windows XP




- Do not use the Fast User Switching function.



Precautions

- **Do not use wireless LAN on airplanes, in hospitals, or in other locations where wireless LAN signals may affect the operation of devices in the vicinity**

If you intend to use the computer in the environments described above, turn the wireless LAN off using the following method:

- To turn off the wireless LAN

- 1 Double-click  or  on the taskbar.
- 2 Select your wireless LAN adaptor and select [General].
- 3 Select [Off] for [Switch radio].
- 4 Select [OK]. The icon will turn to .

- **To prevent theft of data or unauthorized access to the hard disk via a wireless LAN** ( page 45) ( page 46)

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

- **We recommend turning the wireless LAN off when it is not in use or out of range**

If you leave the wireless LAN on, the battery's operating time is shortened.

The Settings

To use the wireless LAN, set the profile by following the procedure below. The settings will vary for different network environments depending on the network system being used. For more details, ask your system administrator or the person in charge of the network.

CAUTION

Set profiles for each user by following the procedure shown below.


NOTE

Windows 2000

After setting the profile, delete the profile displayed at the time of purchase (profile name: Default).



Windows XP

If [Windows XP is currently configured to manage the Intel(R) PRO/Wireless LAN adaptor.] is displayed, select [Yes].

- 1** Double-click  on the taskbar
- 2** Select your wireless LAN adapter and select [General]
- 3** Select [On] for [Switch radio]
- 4** Select [Networks] and select [Add]
- 5** Enter the profile name and network name, and then make other necessary changes, then select [Next]
- 6** Make necessary changes and select [Finish]
 - For security reasons, we recommend that you enable the encryption (WEP). If you enable WEP, enable encryption on the access point side as well.
 - 1** Select [64-bit] or [128-bit] from [Data Encryption].
 - 2** Select [Use pass phrase] or [Use hex key], and enter the pass phrase or key.
 - In the case of ASCII character: [64-bit (5 characters)] [128-bit (13 characters)]
 - In the case of hexadecimal: [64-bit (10 digits)] [128-bit (26 digits)]
 - Set the same value on the computer side and the access point side.
 - When using an access point that enables 128-bit settings (some access points display 104 bits), we recommend setting data encryption at 128 bits to prevent unauthorized decryption.
 - When changing the profile settings while connected, first select the profile, then select [Connect] to enable the new settings.
- 7** Select the set profile and select [Connect]
- 8** Select [OK]

NOTE**About WLAN Security Client**

WLAN Security Client is an implementation of the client side of the IEEE 802.1X-Port Based Network Access Control protocol. 802.1X access control provides improved security for both wired and wireless networks.

- Since the WLAN Security Client has already started when  is displayed on the taskbar, do not double-start it. If  is not displayed, start up the WLAN Security Client in the following menu.

Windows 2000

Select [Start] - [Programs] - [Intel] - [WLAN Security Client Manager].

Windows XP

Select [start] - [All Programs] - [Intel] - [WLAN Security Client Manager].

- For more information about how to use the WLAN Security Client, refer to the [Help] in the menu bar or;



Windows 2000

Select [Getting Started Guide] or [User's Guide] in [Start] - [Programs] - [Intel].

Windows XP

Select [Getting Started Guide] or [User's Guide] in [start] - [All Programs] - [Intel].

Check the Communication Status

Double-click  or  on the taskbar to check the communication status.

For more information about how to use the Intel PROSet, refer to the [Help] in the menu bar.

If the function fails to operate correctly

Read the operating instructions for the access point carefully and check the settings.

● The access point fails to be displayed in [Available Networks]

- Select the profile you are using, and select [Advanced] in [Networks]. [Connect to ad hoc networks only] may have been selected in [Connection preference]. In this case, select [Connect to infrastructure and ad hoc networks].
- This computer uses channels 1 through 11*. Check the channel being used.
 - * 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.

● The access point cannot be accessed


- The network key setting may not conform to the access point. Check the network key setting of the access point and, if necessary, set it again correctly.
- Depending on the access point and settings, access may not be accepted unless the computer's MAC address is registered beforehand. In this case, check the computer's MAC address and register it according to the operating instructions of the access point using the following procedure.
 - 1 Display [Command Prompt].
 - Windows 2000**
Select [Start] - [Programs] - [Accessories] - [Command Prompt].
 - Windows XP**
Select [start] - [All Programs] - [Accessories] - [Command Prompt].
 - 2 Input [ipconfig/all], and press **Enter**.
 - 3 Make a note of the 12-digit string of alphanumeric displayed on the "Physical Address" line on the Wireless Network Connection side. Then input [exit], and press **Enter**.

● The IP address of the access point is wrong

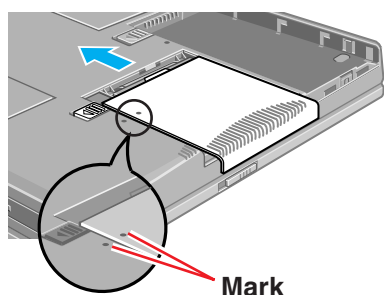
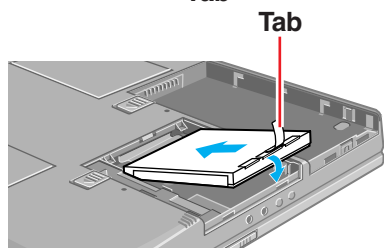
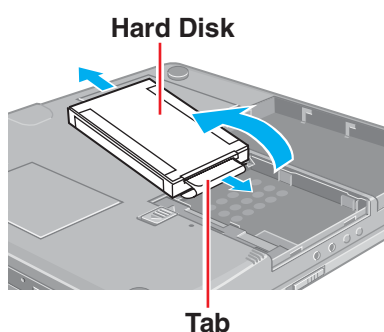
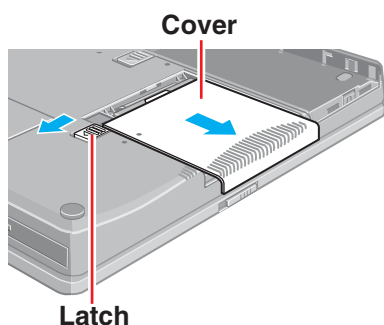
Following the operating instructions of the access point, set the IP address of the access point again correctly.

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

CAUTION

- To change your hard disk drive, contact Panasonic Technical Support.
- Be sure to back up all important data before the change.
- You can erase the data before changing the hard disk drive.
(☞  “Hard Disk Data Erase Utility”)
- If [Hard Disk Lock] is set to [Enable] in the Setup Utility, change this to [Disable] before the change.
- Be careful when replacing the hard disk drive. The hard disk drive is extremely sensitive to shock. In addition, static electricity could later affect some internal components.

Installing/Removing the hard disk drive



1 Power off your computer (☞ “Starting Up/Shutting Down”)

Do not shut down using the standby or hibernation function.
Disconnect the AC adaptor and remove the battery pack.

2 Turn your computer over and remove the cover

Slide the latch, and then without releasing it, slide and remove the cover.

3 Removing the hard disk

Carefully lift the hard disk and remove it from the connector by pulling the tab.

4 Inserting the hard disk

Connect the hard disk to the connector and carefully insert the hard disk.

CAUTION

- The hard disk may be damaged if its top and bottom are confused.
- In this computer, connect the strand on the opposite edge of the flat cable to the red strand to the No.1 pin of the connector.

5 Close the cover

Match the mark on the cover to the body of the computer, then slide the cover back into place and put the battery pack in place.

CAUTION

Be sure the tab does not get caught when closing the cover.

NOTE

Whether the hard disk is properly recognized or not can be confirmed in [Information] menu of the Setup Utility (☞ [page 49](#)). If the hard disk is not recognized, power off the computer and insert it again.

Running the Setup Utility

- 1 Turn on or restart the computer
- 2 Press **(F2)** while [Panasonic] boot screen is displayed soon after the computer begins the startup procedure
If [Enter Password] is displayed, enter your password.
When a User Password is entered, some contents cannot be changed (👉 page 13).

NOTE

- If you fail to press **(F2)** at the right moment, the Setup Utility will not start up. In this case, power off the computer and try again.
- To close the Setup Utility, press **(Esc)**, select the exiting method in [Exit] menu, then press **(Enter)**.

Key Operations

- | | |
|------------------|--|
| (F1) | :To display the corresponding “help” file. |
| (Esc) | :To display [Exit] menu. |
| (↑) (↓) | :To move among the items. |
| (←) (→) | :To move among the menus. |
| (F5) (F6) | :To move among the values. |
| (Enter) | :To display sub-menu of each item selected by (↑) (↓) . |
| (F9) | :To set default settings (except the password).
(When starting up the Setup Utility with the User Password, this key is not available.) |
| (F10) | :To save the settings and exit. |

NOTE

When setting date and time, **(Tab)** can be used to move the cursor.

Information Menu

Language:	[English]
Model No.:	xxxx
Serial No.:	xxxx
CPU Type:	xxxx
CPU Speed	x.x GHz
BIOS:	Vx.xxLxx
Embedded Controller:	Vx.xxLxx
System Memory:	xxx MB
Video RAM:	xxx MB
Primary Master:	xx GB
Secondary Master:	CD Drive

Parameters (_ : Default)

Language* ¹	<u>English</u> Japanese
------------------------	----------------------------

*¹ Select the language for displaying the Setup Utility.

Main Menu

System Date:	[xx/xx/xxxx]* ²
System Time:	[xx:xx:xx]* ³
Touch Pad:	[Enable]
Display:	[Simultaneous]
Display Expansion:	[Enable]
CD Drive Speed:	[High]
Environment:	[Normal Temperature]

*² Date is shown in order of Month / Day / Year.

*³ Time is shown in 24-hr. style.

Parameters (_ : Default)

Touch Pad	<u>Disable</u> Enable
Display* ⁴	External Monitor Internal LCD <u>Simultaneous</u>
Display Expansion	<u>Disable</u> Enable
CD Drive Speed* ⁵	<u>High</u> Low
Environment	<u>Normal Temperature</u> High Temperature

*⁴ The display destination in cases where Windows is not running is set here. When an external display is connected, the computer displays on both the internal LCD and the external display after Windows starts up regardless of [Display] setting.

*⁵ For a DVD-ROM & CD-R/RW drive and a DVD MULTI drive, the description for "CD Drive Speed" applies to read only.

Advanced Menu

Serial Port :	[Enable]
Parallel Port:	[Enable]
Mode:	[ECP]
Modem :	[Enable]
LAN:	[Enable]
Boot up from LAN:	[Enable]
Wireless LAN:	[Enable]

(Display may differ depending on computer model.)

Parameters (_ : Default)

Serial Port	Disable <u>Enable</u>
Parallel Port	Disable <u>Enable</u>
Mode* ¹	Uni-directional Bi-directional EPP <u>ECP</u>
Modem	Disable <u>Enable</u>
LAN	Disable <u>Enable</u>
Boot up from LAN* ²	Disable <u>Enable</u>
Wireless LAN	Disable <u>Enable</u>

*¹ This item is displayed only when [Parallel Port] is set to [Enable].

*² [Disable] is automatically set when [LAN] is set to [Disable].

Security Menu

Password on boot:	[Enable]
►Set Supervisor Password:	[Enter]
Setup Utility Prompt:	[Enable]
Boot First Menu:	[Enable]
Hard Disk Lock:	[Disable]
User Password Protection:	[No Protection]
►Set User Password:	[Enter]
Floppy Operation:	[Enable]

NOTE

When the Setup Utility is started up with the User Password;

- [Set Supervisor Password] and [Hard Disk Lock] will not be displayed.
- The User Password can be changed only when [User Password Protection] has been set to [No Protection]. The User Password cannot be deleted.





Parameters (_ : Default)

Password on boot	Disable <u>Enable</u>
Set Supervisor Password	To the sub-menu
Setup Utility Prompt	Disable <u>Enable</u>
Boot First Menu	Disable <u>Enable</u>
Hard Disk Lock*	<u>Disable</u> Enable
User Password Protection	<u>No Protection</u> Protected
Set User Password*	To the sub-menu
Floppy Operation	Disable <u>Enable</u>

* Setting impossible when the Supervisor Password is not set.

Boot Menu

Floppy Drive
Hard Disk Drive
CD Drive
LAN

The default order is as follows:
[Floppy Drive] → [Hard Disk Drive] → [CD Drive] → [LAN].
To move a device up by one in the order, select the device with  and , and then press **F6** .
To move a device down by one in the order, select the device with  and , and then press **F5** .


NOTE
Boot Menu
The device for starting up the operating system can also be selected during computer start-up. After the computer is turned on and **Esc** is pressed at “Panasonic” boot screen, [Boot Menu] (the device selection display) will appear. When the setting of [Boot] menu is changed, the selection screen display will also change. [Boot Menu] is displayed only when [Boot First Menu] in [Security] menu is set to [Enable].

Exit Menu

Save Values & Exit
Exit Without Saving Changes
Get Default Values
Load Previous Values
Save Current Values

Refresh Battery

Parameters

Save Values & Exit	Exit the Setup Utility and save your changes to CMOS.
Exit Without Saving Changes	Exit the Setup Utility without saving your changes to CMOS.
Get Default Values*	Set the default settings.
Load Previous Values	Load previous values from CMOS for all Setup items.
Save Current Values	Save your changes to CMOS.
Refresh Battery	Refreshing the Battery ( page 23)

* This item may not be displayed when starting up the Setup Utility with the User Password.

Network Connections and Communications Software

If the power saving function (standby or hibernation mode) activates while communications software is being used, the network connection may be interrupted, or performance may be adversely affected. If this happens, restart the computer.

Be sure to close the communications software before using the power saving function. When using the computer in a network environment, we recommend that you set [System standby] and [System hibernates] to [Never], using the following procedure:

Windows 2000

[Start] - [Settings] - [Control Panel] - [Power Options]

Windows XP

[start] - [Control Panel] - [Performance and Maintenance] - [Power Options] - [Power Schemes]

When using the Files on the Retail Version of the Windows CD-ROM

The Windows files included in the Retail Version of the Windows CD-ROM for each OS are contained in the following folders:

Windows 2000

c:\winnt\cdimage

Windows XP

c:\windows\docs, c:\windows\dotnetfx, c:\windows\i386, c:\windows\support, c:\windows\valueadd

This computer conforms to the specifications of the Desktop Management Interface (DMI). The DMI Viewer can be used when you want to know information on the internal systems this computer supports, starting with the CPU and memory.

Running DMI Viewer

Windows 2000

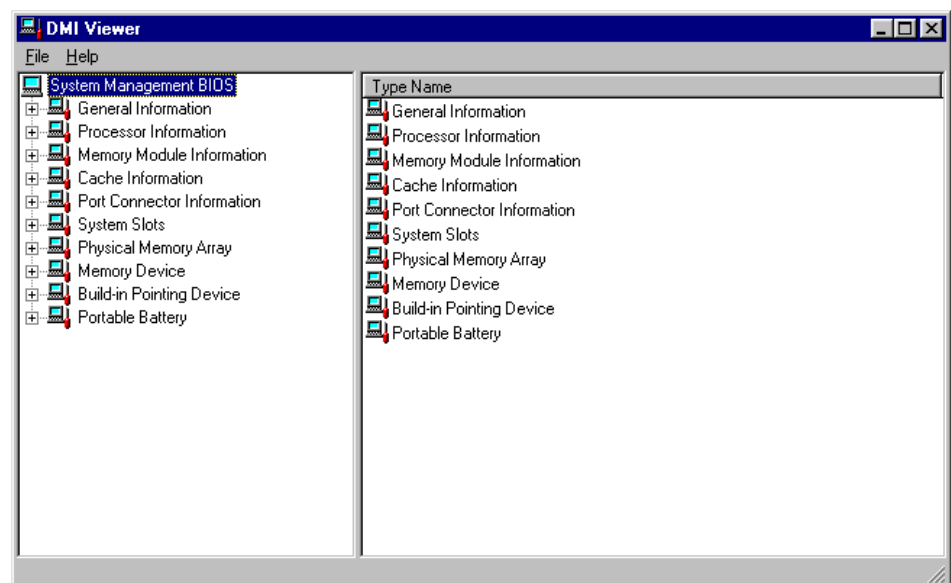
Select [DMI Viewer] from [Start] - [Programs] - [Panasonic]

Windows XP

Select [DMI Viewer] from [start] - [All Programs] - [Panasonic]

The screen shown below is displayed.

When you click on an item, detailed information on that item will be displayed.



Saving Information to a File

Displayed information can be saved to a text file (.txt). Run the DMI Viewer and display the information you wish to save.

1

- To save the item that is displayed

Select [Save Selected Data] from [File] menu.

- To save all items

Select [Save All Data] from [File] menu.


2

Select the folder, input the file name, and select [Save]





When turning on the computer, if one of the following error codes or messages is displayed, follow the instructions shown below.

If the problem persists, or if the error code or message displayed is not shown here, contact Panasonic Technical Support.


Error Code/Message	Action
Invalid system disk. Replace the disk, and then press any key	<ul style="list-style-type: none"> ● If a floppy disk is set in the floppy disk drive, remove the disk and press any key.
0211: Keyboard error	<ul style="list-style-type: none"> ● If an external keyboard or mouse is connected, disconnect these devices.
0251: System CMOS checksum bad - Default con- figuration used	<p>An error has occurred in the memory that stores the Setup Utility settings. This error occurs when the memory content is changed through some inadvertent operation by a program or other function.</p> <ul style="list-style-type: none"> ● Run the Setup Utility and load the default values, then change the settings to the appropriate values as needed. ● If the problem persists, the internal clock battery may need to be replaced. Contact Panasonic Technical Support.
0271: Check date and time settings	<p>The data and time setting are incorrect.</p> <ul style="list-style-type: none"> ● Run the Setup Utility and set the date and time correctly. ● If the problem persists, the internal clock battery may need to be replaced. Contact Panasonic Technical Support.
0280: Previous boot incom- plete - Default configuration used	<p>Startup has failed repeatedly, so the Setup Utility settings have been returned to their default values, and the computer has been restarted.</p> <ul style="list-style-type: none"> ● Run the Setup Utility and load the default values, then change the settings to the appropriate values as needed.
Press <F1> to resume, <F2> to Setup	<ul style="list-style-type: none"> ● Write down the error details and press (F2) to run the Setup Utility. Confirm the settings, and change the settings to the appropriate values as needed.
Operating System not found	<p>The OS is not properly installed on the floppy disk or the hard disk that you are trying to boot from.</p> <ul style="list-style-type: none"> ● If the computer cannot be booted from the floppy disk, check the floppy disk drive to ensure that the disk is in fact bootable, and change it to another if not. ● If the computer cannot be booted from the hard disk, confirm whether the hard disk is properly recognized in [Information] menu of the Setup Utility. (→ page 49) If the hard disk is recognized, perform the reinstallation procedure. If not, contact Panasonic Technical Support. ● If the problem persists, perform the reinstallation procedure.

When a problem occurs, refer to this page. If a problem appears to be related to a software application, read the software related manual. If you still cannot troubleshoot the problem, contact Panasonic Technical Support. You can use the PC Information Viewer to check the computer's usage status ( page 63).


● Starting Up

The power indicator or battery indicator is not lit	<ul style="list-style-type: none"> ● Check the cable connection for the AC adaptor. ● Check to see if a fully charged battery is properly inserted. ● Remove the battery pack and disconnect the AC adaptor, then connect them again.
[Enter Password] is displayed	Input your password. If you have forgotten it, contact Panasonic Technical Support.
POST Startup Error(s) is displayed	 page 55
Windows startup, or an operation is extremely slow	Press (F9) in the Setup Utility ( page 48). This will restore the Setup Utility's settings to their default values (except the password settings). Then, the Setup Utility must be run once again for you to input the appropriate operating environment settings. (The processing speed depends on the application software used, so this operation may not cause the processing speed to increase.)
The date and time are incorrect	<ul style="list-style-type: none"> ● You can set the date and time using the following procedure. <div>Windows 2000 : [Control Panel] - [Date/Time]</div> <div>Windows XP : [Control Panel] - [Date, Time, Language, and Regional Options] - [Date and Time]</div> ● When the computer is connected to a LAN, confirm the date and time of the server. ● If you continue to experience problems, the internal battery maintaining the clock may need to be replaced. Contact Panasonic Technical Support. ● This computer will not correctly recognize the date and time starting from the year 2100 A.D.
When resuming from the standby or hibernation mode, [Enter Password] does not appear even if a password has been set in the Setup Utility	<p>Even when a password has been set in the Setup Utility, [Enter Password] does not appear when the computer resumes from the standby or hibernation mode. If you want to use the security function when using the standby or hibernation mode, use the Windows password as follows:</p> <div>Windows 2000</div> <p>Set the password in [Control Panel] - [Users and Passwords], then add the check mark for [Prompt for password when computer goes off standby] in [Control Panel] - [Power Options] - [Advanced].</p> <div>Windows XP</div> <p>Select the account to change in [Control Panel] - [User Accounts] and set the password, then add the check mark for [Prompt for password when computer resumes from standby] in [Control Panel] - [Performance and Maintenance] - [Power Options] - [Advanced].</p>
When the administrator password is forgotten	<p>Set the password again in the following procedure.</p> <div>Windows 2000</div> <p>After reinstalling, setup Windows and then set the password again.</p> <div>Windows XP</div> <p>If you have created a password reset disk (  "First-time Operation"), a message is displayed when you fail to correctly enter the password. Follow the message's instructions and set the password again by using the password reset disk. If you have not created a password reset disk, after reinstalling, setup Windows and then set the password again.</p>

Starting Up (continued)

When the previous item is not the cause	<ul style="list-style-type: none"> Press (F9) in the Setup Utility ( page 48). This will restore the Setup Utility's settings to their default values (except the password settings). Try removing all peripheral devices. Check a disk error using the following procedure. <ol style="list-style-type: none"> Display [Local Disk (C:) Properties]. <div>Windows 2000</div> Select [Local Disk(C:)] with the right button in [My Computer], and select [Properties]. <div>Windows XP</div> Select [Local Disk(C:)] with the right button in [start] - [My Computer], and select [Properties]. Select [Tools] - [Check Now]. Select [Start] after selecting required items in [Check disk options]. At startup, hold down (F8) when [Panasonic] boot screen disappears, and release your finger when the Windows Advanced Option Menu is displayed. Start the computer in Safe Mode, and confirm the details of the error.
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Display

No display after powering on	<ul style="list-style-type: none"> When there is no display to an external display, <ul style="list-style-type: none"> Check your cable connection to the external display. Confirm your display is powered on. Check the settings for your external display. Try switching the display by pressing (Fn) + (F3). If you want to switch the display destination repeatedly by pressing (Fn) + (F3), make sure that the display destination has switched completely each time before pressing (Fn) + (F3) again. When displaying only through an external display, if the computer is shut down by using the standby or hibernation function, there will be no display on the LCD unless the external display is connected when operations are resumed. In this case, connect the external display or press (Fn) + (F3).
The power has not been turned off, but after a certain period of time, there is no display	<ul style="list-style-type: none"> Has the computer been set to the power-saving mode? To resume operation of your computer from the condition the power of the display is off (for energy conservation purposes), press any key unrelated to the direct triggering of a selection, like (Ctrl). To save power, your computer may have automatically entered the standby mode (power indicator blinks green) or hibernation mode (power indicator turns off). In such cases, press the power switch.
When the battery pack is used, the screen is darker than when the AC adaptor is connected	<p>Press (Fn) + (F2) and adjust the brightness. Note, however, that when the brightness is increased, the battery running time will become shorter.</p> <p>Brightness can be set to separate levels for when the AC adaptor is connected and when it is disconnected.</p>
The cursor cannot be controlled properly	<ul style="list-style-type: none"> If you are using an external mouse, ensure that the external mouse has been connected correctly. Restart the computer by using the keyboard (Press (Win), (U), and select [Restart] with (→), (←), (↑), (↓), then press (Enter)). If the computer does not respond to keyboard commands, read "No response" ( page 62).
An afterimage appears (e.g., green, red, and blue dots remain on the display) or there are dots not displaying the correct colors	<ul style="list-style-type: none"> If an image is displayed for a prolonged period of time, an afterimage may appear. This is not a malfunction. The afterimage will disappear when a different screen is displayed. High-precision and advanced technologies are necessary in the production of color liquid crystal displays (color LCDs). Therefore, if 0.002% or less of the picture elements either fail to light or remain constantly lit (that is, more than 99.998% of elements are functioning properly), no defect is considered to exist.

● Display (continued)

The screen becomes disordered	<ul style="list-style-type: none"> Changing the number of colors of the display may affect the screen. Restart the computer. <p>Windows XP</p> <ul style="list-style-type: none"> When using Dualview, use the same display colors for the external display as those used by the LCD. When using Dualview, do not press (Fn) + (F3). Restart your computer immediately after enabling or disabling Dualview.
The external display no longer displays properly	When an external display not compatible with the power saving mode is used with the computer, the external display may no longer display properly when the computer enters the condition the power of the display is OFF (for energy conservation purposes). In such cases, turn off the power to the external display.
When the screensaver is set, an error will occur during a resume operation	When the computer automatically enters the standby or hibernation mode while the screensaver is running, an error may occur during a resume operation. In such cases, turn off the screensaver or try changing the pattern of the screensaver.
When an MPEG file is being played with Media Player, the display destination cannot be switched using (Fn) + (F3)	The display destination cannot be switched while an MPEG file is playing. Stop playing the MPEG file before switching the display destination.
<p>Windows XP</p> An error occurs or the computer freezes while using Dualview	If you use a 3D screen saver while in Dualview mode at a high resolution, an error may occur or the computer may freeze. Under these conditions, do not use a 3D screen saver.

● Battery Indicator

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

● Shutting Down

Windows cannot be shut down or restarted	If a USB device is connected, try removing it.
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● Standby/Hibernation Function

Unable to enter standby or hibernation mode	If a USB device is connected to the computer (note: only for some USB devices), remove the USB device temporarily. If the problem persists, restart the computer.
The computer does not resume	Did you press the power switch and hold it for four seconds or more? If you press the power switch and hold it for four seconds or more, the power will be turned off forcibly. In this case, all unsaved data will be lost.

● Touch Pad

Unable to input using the touch pad	<ul style="list-style-type: none"> Has the Setup Utility been used to set [Touch Pad] to [Enable]? (👉 page 49) When mouse drivers are installed (e.g., IntelliMouse), the touch pad is unable to be used. Has the touch pad driver been properly installed?
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● Keyboard

Only numbers can be inputted	Check whether the indicator  is on. If it is on, the computer is in ten-key keyboard mode. To disable the ten-key mode, press (NumLk) .
Only capital letters are being inputted	Check whether the indicator  is on. If it is on, the computer is in Caps Lock mode. To disable the Caps Lock mode, press (Caps Lock) .
How to input European characters (ß, à, ç), symbols or Euro Currency Symbol is unclear	<p>Windows 2000</p> <p>Select [Start] - [Programs] - [Accessories] - [System Tools] - [Character Map].</p> <p>Windows XP</p> <p>Select [start] - [All Programs] - [Accessories] - [System Tools] - [Character Map]. The Character Map will be displayed. Point to the desired font name and select it.</p>
Windows 2000 After resuming, input keys do not work properly	When the computer enters standby or hibernation mode while (Alt) , (Ctrl) or (Shift) are held down, these keys may remain in "pressed" mode when the computer resumes operation. Pressing these keys once will return the keys to normal.

● Setup Utility

[Enter Password] is displayed	Enter the User Password or Supervisor Password. If you have forgotten it, contact Panasonic Technical Support.
[Advanced] or [Boot] menu can not be registered	Restart the Setup Utility with the Supervisor Password.
Some items in [Security] menu can not be registered	Restart the Setup Utility with the Supervisor Password.
(F9) does not work	Restart the Setup Utility with the Supervisor Password.

● Network

Unable to connect to a network	<ul style="list-style-type: none"> Confirm that either [LAN] or [Wireless LAN] is set to [Enable] in the Setup Utility. When using the computer as a network computer, some additional settings may have to be made depending on the usage conditions. We recommend asking your system administrator or the person in charge of the network. If the standby or hibernation mode is entered, the computer may have to be restarted. If the link lamp on the HUB unit is not on and the network cannot be accessed, set the speed to match the HUB unit. (👉 page 42)
Unable to use wireless LAN	<ul style="list-style-type: none"> Confirm that [Wireless LAN] is set to [Enable] in the Setup Utility. Confirm that  is displayed on the taskbar. If  is not displayed on the taskbar, confirm that [ON] is selected for [Switch radio] in [Intel(R) PROSet] - [General]. Confirm the setting of the IP address for the access point, following the operating instructions for that access point. Confirm whether the Intel(R) PROSet is installed using the following menu. <p>Windows 2000</p> <p>[Start] - [Settings] - [Control Panel] - [Add/Remove Programs].</p> <p>Windows XP</p> <p>[start] - [Control Panel] - [Add or Remove Programs].</p> <p>If it has not been installed, input [c:\util\drivers\wlan\proset\proset.exe] in [Start]* - [Run] to install.</p> <p>* Windows XP : [start]</p>

● Sound

The sound is not heard	Try changing the mute by pressing (Fn) + (F4) or (Fn) + (F6) .
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● Fast User Switching function Windows XP

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

An error occurs while installing the driver	When you install the driver for a PC Card or peripheral device, be sure to use a driver that is compatible with the operating system. If you use an incompatible driver, malfunction may occur. For information on drivers, contact the manufacturer of the peripheral device you purchased.
Your peripheral does not work	When operation resumes from the standby or hibernation mode, serial devices such as a mouse, modem or PC Cards may not function properly. In such cases, you will need to restart your computer or reinitialize the individual devices.
Unable to print	<ul style="list-style-type: none"> ● Check the computer-printer connection. ● Make sure the printer is on. ● Make sure the printer is in the online state. ● Make sure paper is in the printer tray and there is no paper jam. ● Has the Setup Utility been used to set [Parallel Port] to [Enable]? ● Depending on the printer, EPP or ECP may not work at times.
The cursor does not move from mouse operations	<ul style="list-style-type: none"> ● Check your mouse connection, then restart the computer by using the keyboard (Press (Fn), (U), and select [Restart] with (→) (←) (↑) (↓), then press (Enter)). ● A driver which is compatible with the connected mouse must be installed. ● If the device does not operate when the driver is installed: In the Setup Utility, set [Touch Pad] to [Disable].
The device connected to the serial port does not work	<ul style="list-style-type: none"> ● Check the connection. ● Confirm that the device driver for the serial port works. Refer to the reference manual of the device. ● Confirm that two mouse devices are not connected, one through the external keyboard/mouse port and the other through the serial port. ● Try setting [Touch Pad] to [Disable] in the Setup Utility. ● Confirm that [Serial Port] has not been set to [Disable] in the Setup Utility.
External mouse or trackball connected to the external keyboard/mouse port does not work	<ul style="list-style-type: none"> ● Try setting [Touch Pad] to [Disable] in the Setup Utility. ● In some circumstances, if a PS/2 external mouse with a serial interface conversion function is connected to the port, it may not operate normally. Try connecting it to the serial port.

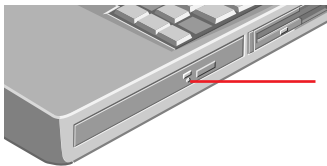
● Connecting Peripherals (continued)

A PC Card does not work	<ul style="list-style-type: none"> ● Make sure the card is properly inserted. ● Confirm that the card conforms to the PC Card Standard. ● Note that after a driver (PC card driver or other) is installed, the computer must be restarted. ● Check that the proper port settings have been made. ● Read the PC Card's manual. Or, you may need to call the manufacturer of the PC Card. ● Try removing/reinserting the PC Card by following the proper procedure. (👉 page 30) ● Confirm that a driver for your operating system has been installed. ● There may be no interrupt request (IRQ) line available. Deactivate unnecessary equipment using in the Setup Utility.
You do not know the available RAM module	👉 page 32
Cannot tell whether the RAM module has been correctly installed	You can check whether the RAM module is recognized using [Information] menu in the Setup Utility. If the RAM module is not recognized, turn the computer off and reinsert the RAM module.
The RAM module has not been recognized	<ul style="list-style-type: none"> ● Make sure the RAM module has been properly inserted. ● Use the RAM module that supports the recommended specifications.
The address map for IRQ, I/O port address, etc. is unclear	<p>Windows 2000</p> <p>Check the address map by going to [View] - [Resources by type] in [Control Panel] - [System] - [Hardware] - [Device Manager].</p> <p>Windows XP</p> <p>Check the address map by going to [View] - [Resources by type] in [Control Panel] - [Performance and Maintenance] - [System] - [Hardware] - [Device Manager].</p>
A USB device does not work	<ul style="list-style-type: none"> ● Make sure a driver is installed. ● Contact the manufacturer of the product. ● When ⚠ is displayed in the Device Manager, try removing and inserting the device once more. If the problem persists, restart the computer.

● Disk Operations

Cannot read/write to a floppy disk	<ul style="list-style-type: none"> ● Has the floppy disk been correctly inserted? ● Has the floppy disk been correctly formatted? ● Has the Setup Utility been used to set [Floppy Operation] to [Enable]? (👉 page 51) ● Your floppy disk content may be corrupted.
Unable to write to a floppy disk	Is the floppy disk write-protected?
How to format a floppy disk is unclear	<p>Windows 2000</p> <p>Double-click [My Computer] and select [3 1/2 Floppy (A:)], then select [File] from the menu and select [Format]. After confirming the disk volume and format type, start formatting.</p> <p>Windows XP</p> <p>Select [My Computer] in [start] and select [3 1/2 Floppy (A:)], then select [File] from the menu and select [Format]. After confirming the disk volume and format type, start formatting.</p>
Unable to read/write to the hard disk	<ul style="list-style-type: none"> ● Your drive or file may not have been properly set. ● Check to see if the hard disk is full. If it is full, delete unnecessary files. ● Your hard disk content may be corrupted. Contact Panasonic Technical Support.
When the previous item is not the cause	Try testing another drive or media.
Trouble has occurred with the disc	You may need to clean the lens or disc.
The access lamp (💡) does not light	Is the disc loaded on the tray correctly?

● Disk Operations (continued)

Cannot play disc or read data from it	Is the disc bent, scratched, or dirty?
Cannot eject disc	<p>Is the computer powered on? To remove a disc when the computer is powered off, insert a pointed object (e.g., the bent-out tip of a paper clip, or the tip of a pencil or ballpoint pen) into the emergency hole. Pushing it completely to the end will free the tray so that it can be pulled out.</p>  <p>Emergency Hole (The position of the emergency hole differs depending on the drive.)</p>
A blue background appears on the screen with the MPEG image	<p>Did you open the CD drive or remove the MPEG disc while it was operating? Re-insert the MPEG disc and close the CD drive. Press (Enter).</p>
The CD drive vibrates a lot	<ul style="list-style-type: none"> ● Is the disc bent or labeled? ● Set [CD Drive Speed] to [Low] in the Setup Utility. (👉 page 49)
The disc tray does not close	Did you touch the eject button when you close the tray?

● Others

No response	<ul style="list-style-type: none"> ● Press (Ctrl) + (Shift) + (Esc) to open Task Manager and close the software application which is not responding. ● After shutting down by pressing the power switch for more than four seconds, press the power switch to power on and open the application again. If the program no longer works normally, delete the program using the following procedure. Then reinstall the program. <div>Windows 2000 : [Start] - [Settings] - [Control Panel] - [Add/Remove Programs]</div> <div>Windows XP : [start] - [Control Panel] - [Add or Remove Programs]</div>
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Check the Computer's Usage Status

You can use the PC Information Viewer to check the computer's usage status, and use this information when calling technical support office for advice. (If you have not logged on with administrator authority, some information will be displayed as [Not Found].)

● Running PC Information Viewer

Windows 2000

- 1 Select [Start] - [Programs] - [Panasonic] - [PC Information Viewer] - [PC Information Viewer].

Windows XP

- 1 Select [start] - [All Programs] - [Panasonic] - [PC Information Viewer] - [PC Information Viewer].

Click on the items to display detailed information for each item.

● Save information to a file

Displayed information can be saved to a text file(.txt).

- 1 Run the PC Information Viewer and display the information you wish to save.
- 2 Select [Save].
 - To save the item that is displayed.
Select [Save only the information displayed] and [OK].

NOTE

Some of the hidden information on the screen, which cannot be shown without scrolling the screen, will be saved, too.

- To save all items.
Select [Save all the information] and [OK].
- 3 Select the folder, input the file name, then select [Save].

● Save a copy of the screen to a file

You can save a copy of the screen currently being displayed to a file in bitmap format (.bmp).

- 1 Display the screen you want to save.
- 2 Press **(Ctrl) + (Alt) + (F8)**.
[pcinfo.bmp] will be saved in [My Documents] folder. If [pcinfo.bmp] file already exists, it will be overwritten. (If [pcinfo.bmp] file is set as a "Read only" or "Hidden" file, the new file cannot be saved).

NOTE

- You can also save a copy of the screen to a file using the following procedure.

Windows 2000

Select [Start] - [Programs] - [Panasonic] - [PC Information Viewer] - [Screen Copy].

Windows XP

Select [start] - [All Programs] - [Panasonic] - [PC Information Viewer] - [Screen Copy].

- At the time of purchase, the computer is set so that a copy of the screen can be saved to a file by pressing **(Ctrl) + (Alt) + (F8)**. This setting can be changed using the following procedure.

- 1 Select [PC Information Viewer].

Windows 2000

Select [Start] - [Programs] - [Panasonic] - [PC Information Viewer].

Windows XP

Select [start] - [All Programs] - [Panasonic] - [PC Information Viewer].

- 2 Select [Screen Copy] with the right button, and select [Properties] - [Shortcut].
- 3 Move the cursor to [Shortcut key], and press the key to be used for the shortcut.

- Colors are saved in 256 colors.
- When using Dualview.

A copy of the screen displayed on the primary device will be saved.

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