

# Panasonic®

## Personal Computer

## Reference Manual

Model No. **CF-72 Series**

### TOUGHBOOK

98 NT 2000

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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.

We recommend that this Reference Manual be printed.

## Terminology used in this Reference Manual

The following terminology is used in this Reference Manual particularly when notes are not used.

- The following items are described as "disks".  
SuperDisk (120 MB), Floppy disk (720 KB, 1.44 MB)
- Circular media such as CD-ROM and DVD-ROM are described as "discs".  
(With the Setup Utility, CD-ROM and DVD-ROM are described as "CD").
- If you use a DVD-ROM drive or a CD-R/RW drive, change "CD-ROM drive" to read "DVD-ROM drive" or "CD-R/RW drive", respectively.

## Illustrations used 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.

**WARNING:** **WARNING** indicates a hazard that may result in moderate or serious injury.

[Start] - [Shut Down]: This illustration means to click [Start], then to click [Shut Down].  
(For some applications, you may need to double-click.)

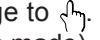
 **Enter** : This illustration means to press the [Enter] key.

 **Fn** + **F5** : This illustration means to press and hold the [Fn] key, then press the [F5] key.

 **Windows 98** : Information for Microsoft Windows® 98 users.

 **Windows NT** : Information for Microsoft Windows NT® Workstation Version 4.0 users.

 **Windows 2000** : Information for Microsoft Windows® 2000 Professional users.

 **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.

- 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.

# Key Combinations

## CAUTION

- Do not press the following key combinations repeatedly in (quick) succession.
- Do not press the following key combinations while using the touch pad (mouse) or other keys.

Key	Functions	Popup Window	
[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, LCD or simultaneous, even if an external display is not connected. ( <a href="#">page 45</a> ) The combination does not work in the following cases: <ul style="list-style-type: none"> <li>• When either the internal LCD or external display is set to [Secondary] in [Displays] of Display Properties.</li> <li>• <b>Windows 98</b> When the computer is in the Dual-Display mode.</li> </ul>	
[Fn] + [F4]	Speakers on/off switch	Pressing this key combination turns on/off audio from the internal speakers and headphone jack. Rebooting the computer, or powering off then on, restores the speaker setting of the Setup Utility.	  OFF ON
[Fn] + [F5] [Fn] + [F6]	Volume control (▼down) Volume control (▲up)	Pressing this key combination adjusts the volume of the internal speakers and headphone jack.  <b>NOTE</b> This key combination cannot be used to adjust the volume of the warning beep.	  Down Up
[Fn] + [F7]*	Power off using the standby function	Pressing this key combination causes the current screen on the display to be saved to memory, and powers off the computer. ( <a href="#">page 12</a> )	
[Fn] + [F9]	Remaining capacity of the battery pack	Pressing this key combination displays the remaining battery capacity on the screen. ( <a href="#">page 26</a> )	  Remaining capacity (%)    Battery pack is not installed.
[Fn] + [F10]*	Power off using the hibernation function	Pressing this key combination causes the current screen on the display to be saved to the hard disk, and powers off the computer. ( <a href="#">page 12</a> )	

\* When [Disable] is set for [Fn+F7/Fn+F10 Key] with the Setup Utility, these key combinations become inoperable.

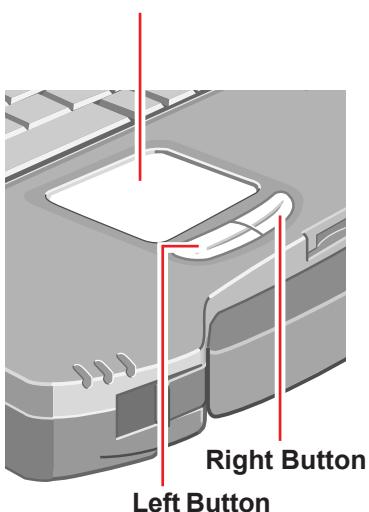
# LED Indicators

	<b>Caps Lock</b>	This indicator lights green when <b>Caps Lock</b> is pressed. Subsequent non-shifted input is capitalized.
	<b>NumLk (Numeric key)</b>	This indicator lights green when <b>NumLk</b> 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.)
	<b>ScrLk (Scroll lock)</b>	This indicator lights green when <b>ScrLk</b> is pressed. Scroll lock functions differently depending on the application.
 *	<b>Multimedia pocket device status</b>	<ul style="list-style-type: none"> <li>This indicator lights when the multimedia pocket device (SuperDisk drive, CD-ROM, DVD-ROM drive etc.) is accessed.</li> <li>This indicator shows the status of a second battery pack when a second battery pack is installed in the multimedia pocket. The details of the status display are the same as for the main battery pack status (see below □).</li> </ul>
	<b>Hard disk status</b>	This indicator lights when the hard disk drive is accessed.
 *	<b>Power status of the multimedia pocket</b>	<p>This indicator lights when power is supplied to a device in the multimedia pocket. It is not lit when a second battery pack is installed in the multimedia pocket. You can confirm the status of the second battery pack with <b>MP</b> (multimedia pocket device status).</p>
	<b>Main battery pack status</b>	<p><b>Not lit:</b> AC adaptor not connected or charging not being performed.</p> <p><b>Orange</b> : Charging in progress.</p> <p><b>Green</b> : Charging finished.</p> <p><b>Red</b> : Battery is low (remaining battery capacity is approx. 9% or less).</p> <p><b>Blinking red</b> : Battery pack or charging malfunction.</p> <p><b>Blinking orange</b> : Charging on standby. (The ambient temperature is outside the allowable range. Once the allowable range requirement is satisfied, charging begins automatically.)</p>
	<b>Power status</b>	<p><b>Not lit:</b> Power off / Hibernation mode</p> <p><b>Green</b> : Power on</p> <p><b>Blinking green</b> : Standby mode</p>

\* MP is the abbreviation for Multimedia Pocket.

# Touch Pad (Advanced)

## Work Surface



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

The touch pad has the following two modes of operation.

Microsoft® IntelliMouse™ Wheel Mode (Setting at the time of purchase)	Original Mode
<p>Wheel mode operations (almost identical to the case of using the Microsoft® IntelliMouse™ for scroll, zoom, etc., operations) are possible for Microsoft® wheel function-compatible applications.</p> <p>Microsoft® IntelliMouse™ is a mouse-type device that, in addition to the two conventional buttons, incorporates a wheel able to rotate forwards/backwards.</p>	<p>Only scroll operation is possible for applications not compatible with the Microsoft® wheel function.</p> <p>Even for applications compatible with the Microsoft® wheel function, there are cases where only vertical scrolling or only horizontal scrolling is possible in this mode.</p>
<p><b>Scrolling Area</b></p> <p>For the Pan and Auto Scroll functions, the entire work surface of the touch pad can be used for scrolling.</p>	<p><b>Scrolling Area</b></p> <p><b>Scrolling up/down</b> Possible when a check mark ✓ is added for [Vertical].</p> <p><b>Scrolling side-to-side</b> Possible when a check mark ✓ is added for [Horizontal].</p>

: Typical mouse operations use this area.

When no check mark is added for [IntelliMouse Wheel mode], [Horizontal] and [Vertical] of [Scroll Configuration], the entire surface can be used for typical mouse operations.

## NOTE

When you are not sure whether an application is compatible with the Microsoft® wheel function or not, try using both modes. Furthermore, depending on the application, there are cases where scrolling may not be possible with either mode.

## ● Changing the mode of the touch pad

- 1 Select from the taskbar or select [Mouse] in [Start] - [Settings] - [Control Panel], and then select [TouchPad].
- 2 ● To set the Microsoft® IntelliMouse™ Wheel mode  
Add the check mark ✓ for [IntelliMouse Wheel mode] of [Scroll Configuration].
- To set the original mode  
Delete the check mark for [IntelliMouse Wheel mode] of [Scroll Configuration] and add the check mark ✓ for [Horizontal] and/or [Vertical].
- 3 Press [OK].

## Handling the Touch Pad

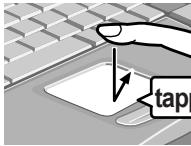
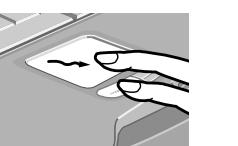
- Do not place any object on the work surface or press down forcefully with sharp-pointed objects (e.g., nails), hard objects that can leave marks (e.g., pencils and ball point pen).
- Do not allow things that could dirty the touch pad, such as oil. The cursor may not work properly in such cases.
- When the touch pad becomes dirty:  
Wipe to remove dirty areas 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 disinfectant-type alcohol.

# Touch Pad (Advanced)

## Basic Operation

**(Wheel)** Indicates an operation applicable to the Microsoft® IntelliMouse™ Wheel mode.

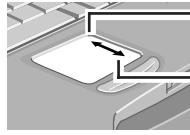
**(Original)** Indicates an operation applicable to the original mode.

Function	Touch Pad Operation	
<b>Moving the Cursor</b> <small>(Wheel) Original</small>		Move the tip of your finger lightly over the surface.
<b>Tapping/Clicking</b> <small>(Wheel) Original</small>	 or 	tapping clicking
<b>Double-Tapping/ Double-Clicking</b> <small>(Wheel) Original</small>	 or 	double-tapping double-clicking
<b>Dragging</b> <small>(Wheel) Original</small>	 or 	Two quick taps, but on the second tap leaving your finger down (applying pressure) and moving it on the work surface. While holding down the button, moving your finger on the work surface.
<b>Scroll*</b> <small>(Wheel) Original</small> Scroll a document (rotate the wheel)		
<b>Auto Scroll*</b> <small>(Wheel)</small> Automatically scroll a document (move the mouse after clicking the wheel)	 ①  ②	Operate after pressing the two buttons simultaneously. ● When releasing the auto scroll function: One tap on the work surface.
<b>Pan*</b> <small>(Wheel)</small> Scroll in various directions of a document (move the mouse slightly while holding down the wheel)		Operate while holding down the two buttons.

Within the parentheses () are operations to follow when using an external Microsoft® IntelliMouse™.

\* Indicates that the movements will differ depending on the application.

# Touch Pad (Advanced)

Function	Touch Pad Operation
<b>Zoom*</b> <small>(Wheel)</small>  Magnify/reduce the display of a document. (rotate the wheel while holding down <b>Ctrl</b> )	<b>Ctrl</b> + 
<b>Data Zoom*</b> <small>(Wheel)</small>  Display or hide a document, or perform operations to return to or proceed with Internet Explorer. (rotate the wheel while holding down <b>Shift</b> )	<b>Shift</b> + 

Within the parentheses () are operations to follow when using an external Microsoft® IntelliMouse™.

\* Indicates that the movements will differ depending on the application.

## CAUTION

Do not enter the standby or hibernation mode when an external mouse is connected to the serial port.

## NOTE

- The double-tapping speed of the touch pad cannot be changed, even if the setting for [Double - click Speed] in [Start] - [Settings] - [Control Panel] - [Mouse] - [Tap and Buttons] is changed.
- Windows 98**  
When a mouse is connected to the serial port, touch pad settings can no longer be changed in the [Mouse Properties] screen. This is because the [Mouse Properties] screen is overwritten by the driver of the connected mouse. To return to the original screen, reinstall the driver with the following procedure.
  - In [Control Panel] - [System] - [Device Manager], select [touchpad] in [Mouse] and press [Remove] to delete it, then press [OK] to confirm the deletion.
  - Restart the computer.
  - At the [Insert Disk], press [OK].
  - Input [c:\util\drivers\mouse] and then press [OK].
  - The display will ask you to restart Windows, press [Yes].

## ● When you want to use an external mouse

When an external mouse or trackball with additional functions (e.g., wheel function) is connected, a part or all of the additional functions may fail to operate. To use these additional functions, install the driver or application software of the external device by following the procedure below. However, once the driver or application software is installed, touch pad functions (e.g., auto scroll) may not operate even if the touch pad is enabled (see the procedure for "When you want to re-enable the touch pad").

### Windows 98

- 1 In [Control Panel] - [Add/Remove Programs], select [touchpad] from the list, select [Add/Remove] to delete it, then select [Yes] to confirm the deletion.
- 2 The display will ask you to restart Windows, select [No].
- 3 Power off your computer (☞  "Starting Up/Shutting down") and connect the external mouse or trackball device to the computer.
- 4 Turn the power on and run the Setup Utility (☞ [page 59](#)). In [Main] menu, set [Touch Pad] to [Disable] and close the Setup Utility.
- 5 Following the operating instructions for the connected external mouse, install the necessary driver.

### Windows NT

- 1 In [Control Panel] - [Add/Remove Programs], select [touchpad] from the list, select [Add/Remove...] to delete it, then select [Yes].
- 2 Select [OK].  
If the message appears to reboot your computer, select [No].
- 3 Power off your computer (☞  "Starting Up/Shutting down") and connect the external mouse or trackball device to the computer.
- 4 Turn the power on and run the Setup Utility (☞ [page 59](#)). In [Main] menu, set [Touch Pad] to [Disable] and close the Setup Utility.
- 5 Following the operating instructions for the connected external mouse, install the necessary driver.

### Windows 2000

- 1 In [Control Panel] - [Add/Remove Programs], select [touchpad] from the list, select [Change/Remove] to delete it, then select [Yes] to confirm the deletion.
- 2 The display will ask you to restart Windows, select [No].
- 3 Power off your computer (☞  "Starting Up/Shutting down") and connect the external mouse or trackball device to the computer.
- 4 Turn the power on and run the Setup Utility (☞ [page 59](#)). In [Main] menu, set [Touch Pad] to [Disable] and close the Setup Utility.  
Log on to Windows by using the keyboard. (Up to step 5, use the keyboard for all operations. The mouse will not function until the computer restarts. Applications can be changed with **Alt** + **Tab**.)
- 5 Restart your computer by using the keyboard (☞  "Starting Up/Shutting down").
- 6 Following the operating instructions for the connected external mouse, install the necessary driver.

## ● When you want to re-enable the touch pad

### Windows 98

- 1 In [Control Panel] - [Power Management] - [Advanced], select [Shutdown] for [When I press the power button on my computer].
- 2 In [Control Panel] - [System] - [Device Manager], when an external mouse or trackball device is displayed in [Mouse], select [Remove] to delete it, and then select [OK] to confirm the deletion.
- 3 Power off your computer by the power switch and remove the external mouse or trackball device.
- 4 Turn the power on and run the Setup Utility ( page 59). In [Main] menu, set [Touch Pad] to [Enable] and close the Setup Utility.
- 5 At the [Add New Hardware Wizard], select [Next].
  - When the [Add New Hardware Wizard] screen is not displayed:
    - 1 In [Control Panel] - [System] - [Device Manager], select [touchpad] in [Mouse] and select [Remove] to delete it, then select [OK] to confirm the deletion.
    - 2 Restart the computer.
    - 3 At the [Add New Hardware Wizard], select [Next].
  - 6 Select [Search for the best...], then select [Next].
  - 7 Input [c:\util\drivers\mouse] and then select [Next].
  - 8 Select [Next] and then select [Next].
  - 9 Select [Finish].
- 10 The display will ask you to restart Windows, select [Yes].

### Windows NT

- 1 Uninstall the driver or application software of an external mouse or trackball device. (Refer to the operating instructions for the external device.)
- 2 Power off your computer ( "Starting Up/Shutting down") and remove the external mouse or trackball device.
- 3 Turn the power on and run the Setup Utility ( page 59). In [Main] menu, set [Touch Pad] to [Enable] and close the Setup Utility.
- 4 Select [Mouse] in [Control Panel].
- 5 Select [General] and then select [Change].
- 6 Select [Have Disk].
- 7 Input [c:\util\drivers\mouse] and then select [OK].
- 8 Select [OK], then select [Yes] to confirm the installation.
- 9 Select [Close].
- 10 The display will ask you to restart Windows, select [Yes].

### Windows 2000

- 1 Uninstall the driver or application software of an external mouse or trackball device. (Refer to the operating instructions for the external device.)  
If the explanation of uninstalling the driver or application software can not be found in the operating instructions for the external device, execute the following steps.  
In [Control Panel] - [System] - [Hardware] - [Device Manager], when an external mouse or trackball device is displayed in [Mice and other pointing devices], select **[Del]** to delete it, and then select [OK] to confirm the deletion.
- 2 The display will ask you to restart Windows, select [No].
- 3 Power off your computer ( "Starting Up/Shutting down") and remove the external mouse or trackball device.
- 4 Turn the power on and run the Setup Utility ( page 59). In [Main] menu, set [Touch Pad] to [Enable] and close the Setup Utility.  
Log on to Windows by using the keyboard. (Up to step 7, use the keyboard for all operations. The touch pad will not function until the computer restarts. Applications can be changed with **[Alt] + [Tab]**.)
- 5 At [Digital Signature Not Found] screen\*, press **[Enter]**.
- 6 Press **[Enter]** to close the wizard screen\*.
- 7 The display will ask you to restart Windows\*, press **[Enter]**.

\* When the [Getting Started with Windows 2000] screen is displayed, these screens will be displayed behind it. Press **[Enter]** one after another.

The [Digital Signature Not Found] screen in step 5 might not be displayed.

**NOTE**

Windows NT Windows 2000

Panasonic Hand Writing function is not supported.

## Drawing Characters or Figures

Simple characters and figures like signatures and arrows can be made by using the work surface of the touch pad, and can be saved to a file as a bitmap (.bmp) format.

**CAUTION**

- To draw, an object with a rounded tip (e.g., a pen for tablets) can be used. Do not use any of the following objects, as they may damage the work surface.
  - Objects with an extremely sharp tip, like screwdrivers and nails.
  - Objects that leave marks, like ball-point pens.
- In the Touch Pad mode, an external mouse or trackball connected to the external keyboard/mouse port will not operate.
- If a commercially-available pointing device (e.g., mouse) driver is installed and overwrites the driver of the touch pad, Panasonic Hand Writing will no longer work.

- 1 Select  from the taskbar or select [Panasonic Hand Writing] from [Start] - [Programs] - [Panasonic]
- 2 Select  or select [Touch Pad mode] in [Option]
- 3 Draw a character or figure using the work surface of the touch pad

Positions on the work surface of the touch pad have corresponding positions in the Panasonic Hand Writing window. For example, a character or figure made in the top-left part of the work surface of the touch pad will be displayed in the top-left part of the Panasonic Hand Writing window.

**NOTE****● Determine the position to begin drawing:**

Determine the position to begin drawing while pressing down on the right button of the touch pad. After determining this position, release your finger from the button and draw. Drawing is not possible while the right button of the touch pad is being pressed.

The above function will not work even when the right-side button of a USB mouse is pressed.

- Data can be copied to the clipboard with [Edit] - [Copy]. Copied data can be added to other applications that support the bitmap format by using the paste function. Pasting is not possible to applications that do not support the bitmap format.

## 4 Cancel the Touch Pad mode

Confirm that the [Panasonic Hand Writing] window is active, and then press the left button of the touch pad.

### NOTE

In the following cases, the Touch Pad mode is automatically cancelled.

- When a switch is made to another application
- When the computer resumes operation from the standby or hibernation mode
- When the settings window for [Panasonic Hand Writing] is shown.
- When selecting a menu after pressing **Alt**.

## 5 Select [Save As] or [Save] from [File]

### NOTE

- The file size of a bitmap image to be saved or pasted to another application can be changed with [Option] - [Window size].
- The Touch Pad mode does not work properly when the computer is in the Dual-Display Mode.
- Changing the number of colors of the display may affect the Panasonic Hand Writing screen. If the screen is affected, click  on the taskbar with the right mouse button, close the application by selecting [Exit Panasonic Hand Writing], and then run Panasonic Hand Writing again.
- Drawing accuracy may be degraded if another application, such as disk accessing, is being executed simultaneously. Begin drawing only after other applications have been closed.

# Standby/Hibernation Functions

12

## 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 the standby or hibernation function.

### ● Differences between the standby and hibernation functions

Function	Standby function	Hibernation function
Where data is saved to	Memory	Hard disk
Speed	Fast	Somewhat slow
Requires power supply	Yes (if power is cut, all data is lost)	Power is not required to maintain data

#### NOTE

If the computer will not be operated for an extended period of time, it is recommended that hibernation mode be used instead of the standby mode.

## Setting the Standby or Hibernation Function

Windows 98   Windows 2000

- 1 Select [Start] - [Settings] - [Control Panel] - [Power Management]\*, in [Hibernate] add the check mark for [Enable hibernate support] and select [Apply]

\* Windows 2000 : [Power Options]

- 2 In [Advanced], select [Standby] or [Hibernate] for [When I press the power button on my computer], then select [OK]

#### NOTE

The operation of the computer when the LCD is closed can also be set in [Advanced].

Windows NT

- 1 Run the Setup Utility ( page 59)
- 2 Using  and , select [Power]
- 3 Using  and , select [Power Switch] and press 
- 4 Using  and , select [Standby] or [Hibernation] and press 
- 5 Press  and select [Yes], then press 

#### CAUTION

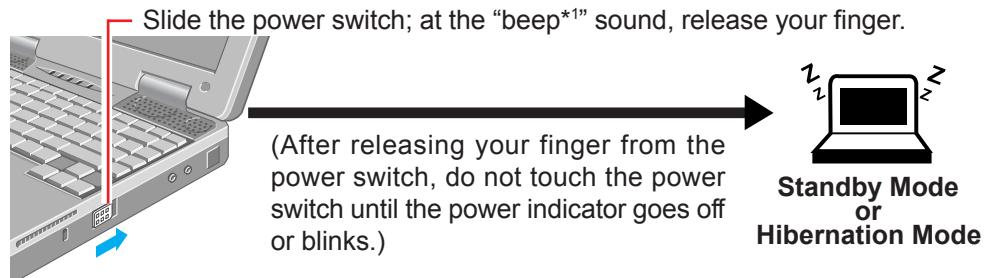
When [Power Switch] is set to [Off] in the Setup Utility, if you slide the power switch, the computer will turn off and all unsaved data will be lost.

# Standby/Hibernation Functions

13

## Shutting Down Using the Standby or Hibernation Function

The computer should be set for standby or hibernation ([page 12](#)).



### CAUTION

At the “beep\*<sup>1</sup>” sound, release your finger from the power switch. If you continue to slide the switch and hold it for more than four seconds, the “beep\*<sup>1</sup>” sound will come out again and the power will go off. Data not previously saved will be lost.

**Windows 98   Windows 2000**

Even when [When I press the power button on my computer] is set to [Shutdown]\*<sup>2</sup> with [Control Panel] - [Power Management]\*<sup>3</sup>, if you slide the power switch for more than four seconds and do not release it, a beep will sound and the power will go off, although the computer will not completely shut down.

\*<sup>1</sup> When the speaker function is disabled, e.g., by setting [Disable] for [Speaker] with the Setup Utility ([page 60](#)) or by the key combination **Fn** + **F4**, there will be no beep sound.

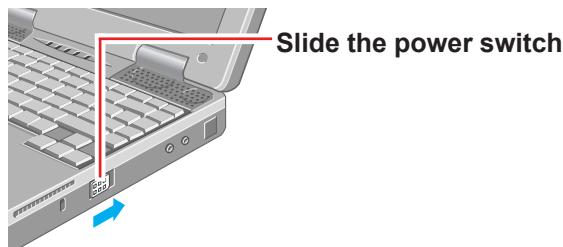
\*<sup>2</sup> Windows 2000 : [Power Off]

\*<sup>3</sup> Windows 2000 : [Power Options]

### NOTE

- With the method below, you can shut down the computer by using the standby function.
  - **Fn** + **F7** ([page 3](#))
  - **Windows 98   Windows 2000**  
In [Start] - [Shut Down], select [Stand by].
  - **Windows NT**  
In [Control Panel] - [APM 2.0 for NT] - [Power Control], select [Click Here to Suspend]. ([page 24](#))
- With the method below, you can shut down the computer by using the hibernation function.
  - **Fn** + **F10** ([page 3](#))
  - **Windows 2000**  
In [Start] - [Shut Down], select [Hibernate].

## Resuming Operation



### Windows NT

If the security indicator ( ) is displayed, your password has been set. This password has been set in the Setup Utility and is not a Windows NT password.

### Windows 98

### Windows 2000

When the computer enters the standby or hibernation mode by the closing of the LCD panel, it will resume when the LCD panel is opened. If the computer does not resume when the LCD panel is opened, slide the power switch.

### CAUTION

- After the display returns, the computer needs a short period of time to reinitialize. This takes about 30 seconds. Do not shut down or restart Windows, or use the standby or hibernation functions again during this time, as this may subsequently cause Windows to operate abnormally.
- Do not install or remove peripherals while your computer is in the standby or hibernation mode; abnormal operation may result.
- When operation resumes, 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.
- Avoid the following until the power is completely turned off when turning off the computer by using the standby or hibernation functions, or resuming operation from the standby or hibernation.
  - Touch the keyboard (excluding password input), touch pad or power switch.
  - Connect the AC adaptor.
  - Close the display.

### Windows 98

### Windows 2000

- Even when a password has been set in the Setup Utility, 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 the following. Select [Start] - [Settings] - [Control Panel] - [Power Management]\* - [Advanced], then add the check mark for [Prompt for password when computer goes off standby].)

\* Windows 2000 : [Power Options]

## Precautions for Using the Standby or Hibernation Function

- Do not use the standby or hibernation function when using the network function.
- Save all data before powering off your computer.
- When restarting from or shutting down to the standby or hibernation mode, do not touch the touch pad (or move the mouse if one is connected). These devices may fail to operate, you will then need to restart your computer using the keyboard.

### Windows 98

In addition, when restarting from the hibernation mode, do not use the touch pad or keyboard, or slide the power switch, until Windows completely resumes.

(After the resume processing screen is displayed, nothing will appear on the display for 5 - 35 seconds, but the Windows display will appear soon after that.)

- Do not use the standby or hibernation function during the following periods (you may corrupt your data or file):
  - While the MP indicator (MP)\* or HDD indicator (HDD) is on.  
\* Except when using a second battery pack
  - While playing/recording audio files.
  - While communications software is being used.
- Do not use the standby or hibernation function during the following periods. The standby or hibernation function may not work, or the computer (or peripherals) may fail to work properly.
  - When a file in an external device such as a CD-ROM drive, external hard disk, or ATA card is opened, the standby or hibernation function may not work. In such cases, close the file.
  - LAN cards, SCSI cards and modem cards (port) etc. may not recover after entering the standby or hibernation mode. If this occurs, restart the computer.

### Windows 98

### Windows 2000

- When a USB device is in use or is connected to the computer (note: only for some USB devices). A USB device may have to be removed temporarily and the computer restarted in cases where the computer is unable to start up properly.
- Do not use the standby or hibernation function when using an operating system other than the one that comes with your computer, the Setup Utility, or when experiencing static electricity or noise.
- If you hold down on the **Alt**, **Ctrl** or **Shift** key to enter the standby or hibernation mode, after resuming operation, you must press the same key. For example, if you hold down on the **Shift** key while sliding the power switch, upon resuming, if you do not press the **Shift** key again, only capital letters will result from typing.
- Slide the power switch and hold it for more than four seconds to power off the computer only when the computer locks up. Data not previously saved will be lost.
- In the 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.
- If the standby or hibernation function is used repeatedly, the computer may not work properly. To stabilize computer operations, we recommend shutting down Windows ([Start] - [Shut Down]) on a regular basis (about once a week) without using the standby or hibernation function.

# Standby/Hibernation Functions

## Windows 98

- When both [Turn off monitor] (in [Control Panel] - [Power Management] - [Power Schemes]) and [Screen Saver] (in [Control Panel] - [Display] - [Screen Saver]) are set, there are cases operations cannot resume in a normal manner from the standby or hibernation mode.
- When the screensaver setting is active, do not enter the standby or hibernation mode while the [MS-DOS Prompt] is being displayed. There are cases operations cannot resume in a normal manner.
- When the computer resumes from the standby or hibernation mode when MS-DOS is running, the screen may become completely black. In such cases, press **[Alt] + [Tab]**.
- 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 you are using a PC Card, note that some cards may cease to function if the standby or hibernation function is used several times. When this occurs, immediately shut down Windows without using the standby or hibernation function.
- When [Hibernation] is not displayed in [Power Switch] of the [Power] menu in the Setup Utility, the hibernation specific partition is not available. Reinstall the OS to create a partition by using the Product Recovery CD-ROM.

## Windows NT

- Confirm that Phoenix APM 2.0 for Windows NT® is installed, in order for the date and time to be normally displayed with the standby or hibernation function. (If [APM 2.0 for NT] is displayed in [Control Panel], this means that the program is installed.)
- Do not enter the standby or hibernation mode before logging on. The computer will no longer generate a sound and will not function properly.
- Manually set the computer in the standby or hibernation mode when not using the computer, since there are cases the standby/hibernation timeout may not work properly.
- When [Hibernation] is not displayed in [Power Switch] of the [Power] menu in the Setup Utility, the hibernation specific partition is not available. Reinstall the OS to create a partition by using the Product Recovery CD-ROM.

# Security Measures

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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 20
You want to prevent theft or damage to data by using a disk	Prevent operation by using a disk	 page 21
You want to prevent theft of your computer	Use security locks	  "Names and Functions of Parts"

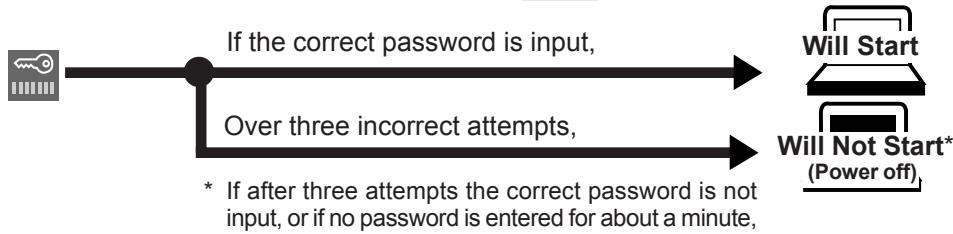
## When you do not want your computer to be used without permission

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 the [Security] menu is set to [Enable].)

Upon entering your password and pressing **Enter**.



### ● If entering the Setup Utility with Supervisor Password

You can register all items of the Setup Utility ( page 59).

### ● If entering the Setup Utility with User Password

- You can not register [Advanced] menu and some items in [Security] menu.
- When [User Password Protection] has been set to [Protected], you can not register the User Password.
- **(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 59)
- 2** Using  and  , select [Security]
- 3** Using  and  , select [Set Supervisor Password] and press 
- 4** <Only when the Supervisor Password has been set>  
Enter your password at the [Enter Current Password] and press 
- 5** Enter your password at the [Enter New Password] and press   
● To disable the Supervisor Password  
Press only 

### NOTE

- Your password will not be displayed on the screen.
- Limit your password to seven characters. Note that there is no distinction between upper and lower case letters.
- Only the alphabet keys or number keys can be used. Note that the space bar and function keys cannot be used.

- 6** Re-enter your password at the [Confirm New Password] , then press   
● To disable the Supervisor Password  
Press only 
- 7** At the [Setup Notice], press 
- 8** Press  and select [Yes], then press 

### CAUTION

- Do not input your password while holding down on  or .
- Use only the upper horizontal row of numeric keys to input your password.
- 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.

# Security Measures

## Setting the User Password (enabling, changing, disabling)

### 1 Run the Setup Utility (☞ page 59)

#### 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 18)

### 2 Using **→** and **←**, select [Security]

### 3 Using **↑** and **↓**, select [Set User Password] and press **Enter**

### 4 <Only when the User Password has been set> Enter your password at the [Enter Current Password] and press **Enter**

### 5 Enter your password at the [Enter New Password] and press **Enter**

#### ● To disable the User Password

Press only **Enter**

#### NOTE

- Your password will not be displayed on the screen.
- Limit your password to seven characters. Note that there is no distinction between upper and lower case letters.
- Only the alphabet keys or number keys can be used. Note that the space bar and function keys cannot be used.

### 6 Re-enter your password at the [Confirm New Password] and press **Enter**

#### ● To disable the User Password

Press only **Enter**

### 7 At the [Setup Notice], press **Enter**

### 8 Press **F10** and select [Yes], then press **Enter**

#### CAUTION

- Do not input your password while holding down on **Shift** or **Ctrl**.
- Use only the upper horizontal row of numeric keys to input your password.
- Do not forget your password. If a 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.

#### NOTE

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

- 1 Using **↑** and **↓**, select [User Password Protection] and press **Enter**.
- 2 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 installed 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] is set to [Enable] for security reasons.  
(Note that this Hard Disk Lock does not guarantee complete protection of data.)

In the default setting, [Hard Disk Lock] is set to [Disable].

### NOTE

You cannot set the [Hard Disk Lock] without setting the Supervisor Password. Set the Supervisor Password if you have not done so. ( [page 18](#))

### Procedure

- 1** Run the Setup Utility ( [page 59](#))
- 2** Using  and , select [Security]
- 3** Using  and , select [Hard Disk Lock] and press 
- 4** ● To enable the Hard Disk Lock  
Select [Enable] and press   
At the [Caution], press   
● To disable the Hard Disk Lock  
Select [Disable] and press 
- 5** Press  and select [Yes], then press 

### CAUTION

Before changing the hard disk, be sure to set the [Hard Disk Lock] to [Disable].

## Preventing theft or damage to data using a disk

You may choose to protect the data on your computer from being accessed illegally or overwritten accidentally by using a disk. You can also set your computer to be unbootable from a disk.

### Procedure

- 1 Run the Setup Utility** ( page 59)
- 2 Using  $\rightarrow$  and  $\leftarrow$ , select [Security]**
- 3 Using  $\uparrow$  and  $\downarrow$ , select [SuperDisk Operation] and press **Enter****
- 4 Using  $\uparrow$  and  $\downarrow$ , select [Disable] and press **Enter****
  - To enable the SuperDisk operation  
Select [Enable].
- 5 Press **F10** and select [Yes], then press **Enter****

#### NOTE

Do not set [SuperDisk Operation] to [Disable] with the Setup Utility while a disk is in the SuperDisk drive. The disk will not be able to be removed by pressing the eject button. ( page 62)

## Conserving 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-VZSU14) and the optional second battery pack adaptor (CF-VAB721) is highly recommended.

**POINT 4** Always watch your battery level!

## Things to Remember

### ● 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 3)

### ● Setting the Intel® SpeedStep™ technology ( page 25)

You can control power consumption by setting CPU performance separately for "AC adaptor connected" and "AC adaptor disconnected (i.e., running on batteries)".

**Windows 98      Windows 2000**

### ● In [Control Panel] - [Power Management]\*, make settings in detail

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

When Windows 98 or Windows 2000 is running, the individual timeout functions of the Setup Utility will not work.

\* Windows 2000 : [Power Options]

**Windows NT**

### ● Setting the power management mode ( page 23)

The ECO mode timeout function will always work if [Enable (Always)] is selected for [Power Management Mode]. If [Enable (Battery)] is selected for [Power Management Mode], it will work only during operation by the battery.

## CAUTION

### When installed in a network environment.

Do not use the standby or hibernation function.

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

### When a device like a high-speed modem or ISDN terminal adaptor is connected to the serial port, etc.

There are times when high-speed communication is adversely affected if the power management function is enabled.

### Key operation and music playback.

When the power management function is running, you may feel that key or touch pad (or mouse) operations are sluggish. Furthermore, music may not be played back correctly when the power of the display is cut (for energy conservation purposes) during playback.

## Setting the Power Management

Windows NT

- 1 Run the Setup Utility ([page 59](#))
- 2 Using **→** and **←**, select [Power]
- 3 Using **↑** and **↓**, select [Power Management Mode] and press **Enter**
- 4 Using **↑** and **↓**, select either [Enable (Battery)] or [Enable (Always)] and press **Enter**
- 5 Press **F10** and select [Yes], then press **Enter**

### ● Power Management Mode settings

Windows NT

Power Management Mode Functions automatically set	Enable (Always) (Setting at the time of purchase)	Enable (Battery)*	Disable
HDD Motor Timeout	2 min	2 min	Never
ECO Mode Timeout	2 min	2 min	Never
Power Conservation (AC Adaptor Connected)	Enable	Disable	Disable

\* Enabled only when the battery itself is being used.

### ● HDD Motor Timeout/ECO Mode Timeout

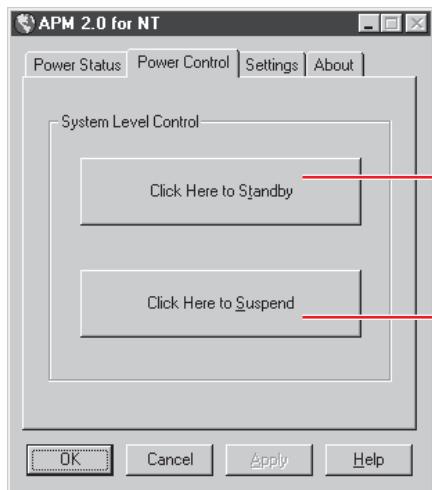
If there is no input from a key, the touch pad, or a mouse for more than two minutes, the power to the LCD is cut and the hard disk motor is turned off. Even when an application software is being installed or a disc is being accessed, the computer may enter the ECO mode (except when the [Power Management Mode] is set to [Disable]).

## Enabling Power Conservation Windows NT

Confirm that Phoenix APM 2.0 for Windows NT® is installed. (If [APM 2.0 for NT] is displayed in [Control Panel], this means that the program is installed.) If the program is not installed, be sure to install it.

(To install the Phoenix APM 2.0 for Windows NT®, execute the following procedure. In [Start] - [Run], input [c:\util\drivers\apm\setup.exe], then press [OK]. Follow the on-screen instructions.)

### NOTE



The LCD will be powered off.  
To resume, press any key.  
(On this screen, the condition the power of the display is off is called "standby".)

The computer will enter the standby mode.  
To resume, press the power switch.  
(On this screen, "standby" is called "suspend".)

## Setting the Intel(R) SpeedStep (TM) Technology

You can control power consumption by setting CPU performance separately for “AC adaptor connected” and “AC adaptor disconnected” (i.e., running on batteries). For performance settings, select either [Battery Optimized Performance] or [Maximum Performance].

### Start-up Methods

Double-click  or  on the taskbar

#### NOTE

Other start-up methods:

- Right-click on either  or 

**Windows 98**

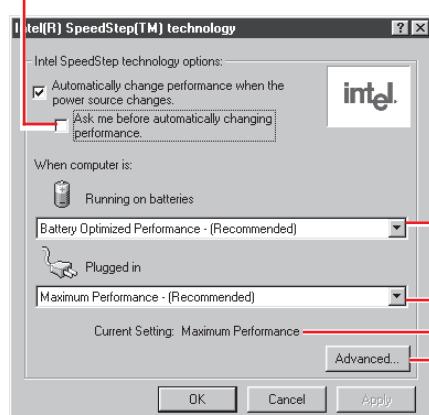
**Windows 2000**

- Choose [Start] - [Settings] - [Control Panel] - [Power Management]\*, and select [Intel(R) SpeedStep(TM) technology].

\* Windows 2000 : [Power Options]

When this checkmark is on, a confirmation screen is displayed when switching from [Maximum Performance] to [Battery Optimized Performance].

(This screen appears only when a switch is made between AC adaptor operation and battery operation.)



Select performance.

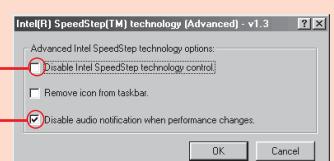
Even if [Running on batteries] is set to [Maximum Performance] and [Plugged in] is set to [Battery Optimized Performance], settings will return to their original performances after the computer is rebooted.

Displays settings currently in effect.

Display detailed settings (☞ screen in the “CAUTION” shown below)

#### CAUTION

- Do not add the check mark for [Disable Intel SpeedStep technology control].
- Do not delete the check mark for [Disable audio notification when performance changes].



## Battery Status

### Use the Battery Indicator to Check the Battery Status

 :Status of main battery pack

 MP :Status of second battery pack

Battery Indicator	Battery Status
Orange*	Charging
Green*	Fully-charged
Red	Battery charge is low (the charge is less than approx. 9% capacity)
Blinking red*	Battery pack or charger may not be working properly. Quickly remove the battery pack and disconnect the AC adaptor, then connect them again. If the problem persists, contact Panasonic Technical Support.
Blinking orange*	Unable to recharge due to violation of temperature limits. (The ambient temperature is outside the allowable range. Once the allowable range requirement is satisfied, charging begins automatically.)
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.

### ● Getting a detailed reading

**Fn** + **F9** →  78% :The remaining power of the main battery  
 --% :The remaining power of the second battery

#### NOTE

- The actual remaining battery capacity and the displayed indication may differ.

- 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.

→ Perform the "Refresh Battery" utility.  
( page 60)

- When the battery pack is not in the computer,  --% is displayed.
  - There may be a discrepancy with the % value that is displayed on the taskbar of Windows, but this is not a malfunction.
- Windows 2000**
- When the second battery is installed in addition to the main battery, the Power Meter display ([Control Panel] - [Power Options]) of Windows shows the average value of the two batteries.

## When the Remaining Battery Charge Becomes Low

save your data and power off your computer

Following that:

- Plug in the AC adaptor, and fully charge your battery.
- Use a spare battery if you have one.
- If you have neither the AC adaptor nor an extra battery, power the computer off.

### Windows NT



\*<sup>1</sup> When disabling the speakers with the Setup Utility (or pressing **(Fn) + (F4)**), the warning beep is also disabled.

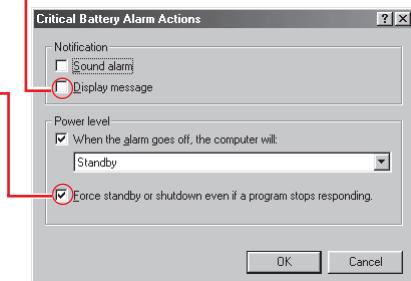
### Windows 98   Windows 2000

- Power settings, e.g., warning\*<sup>2</sup> for a low battery level, can be made in [Control Panel] - [Power Management]\*<sup>3</sup>

#### NOTE

##### Alarm Settings (in [Control Panel] - [Power Management]\*<sup>3</sup> - [Alarms])

- Set the value for the [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.
- **Windows 98** Do not add a check mark for [Display message] for [Notification] in [Alarms] - [Alarm Action]. This may prevent the computer from resuming.
- When making a setting for [When the alarm goes off, the computer will:] in [Alarms] - [Alarm Action], add a check mark for [Force standby or shutdown even if a program stops responding].
- If the computer shuts down or enters the standby or hibernation mode by the Alarm settings function, start up the computer or resume operations after connecting the AC adaptor. If the computer starts up or resumes while the AC adaptor is not connected, Windows may not operate properly or alarm operations may stop working.



(This is the Windows 98 screen. The Windows 2000 screen slightly differs.)

\*<sup>2</sup> When disabling the speakers with the Setup Utility (or pressing **(Fn) + (F4)**), the alarm is also disabled.

\*<sup>3</sup> Windows 2000 : [Power Options]

## 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 repeated.

### 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 59)

2 Select [Refresh Battery] from the [Main] 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 3 hours\* until the power automatically goes off through the complete discharge of the battery from the fully charged state.

\* When the second battery has been installed in addition to the main battery: approximately 6 hours

#### NOTE

The battery will not be refreshed correctly in the following cases.

- When the power of the computer is cut.
- When the electric power becomes disconnected (e.g., electrical outage, accidental removal of the AC adaptor, etc.).

### 3 Allow the battery pack to charge until the battery indicator turns green

## Replacing the Main 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-VZSU14).

### 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.
- Use only the specified battery pack (CF-VZSU14) with your computer.

### 1 Power off your computer

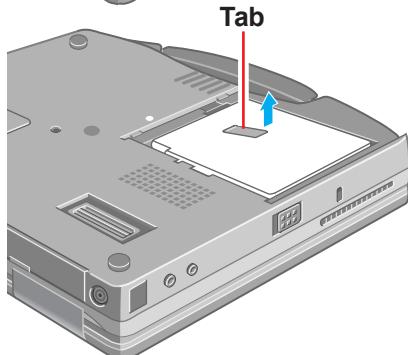
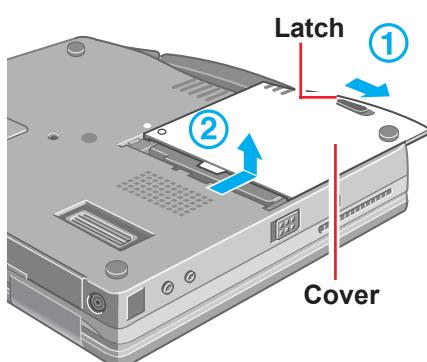
( "Starting Up/Shutting Down")  
Do not shut down using the standby mode.

### CAUTION

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.

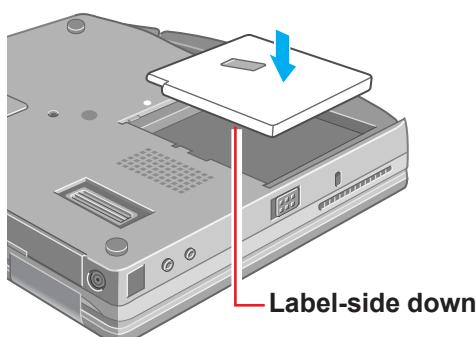
### 2 Turn your computer over and remove the cover

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



### 3 Remove the battery pack

- ① Lift the battery pack slightly by pulling the tab.
- ② Hold the battery pack and remove it from the computer.

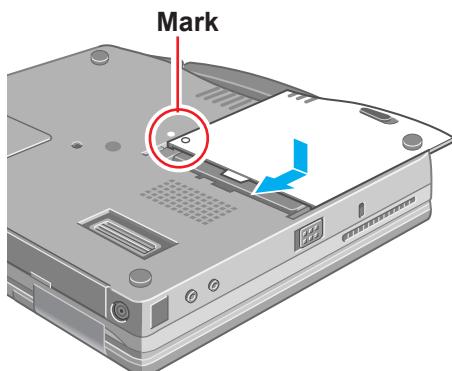


### 4 Insert the new battery pack

Insert the battery pack into the computer with the label-side down. If the battery pack is difficult to insert, confirm that the hard disk drive has been properly inserted ( page 58).

### CAUTION

- Be sure the battery pack is properly connected to the connector.
- Do not allow the battery connector to touch any portion of the computer. The computer may not operate properly.



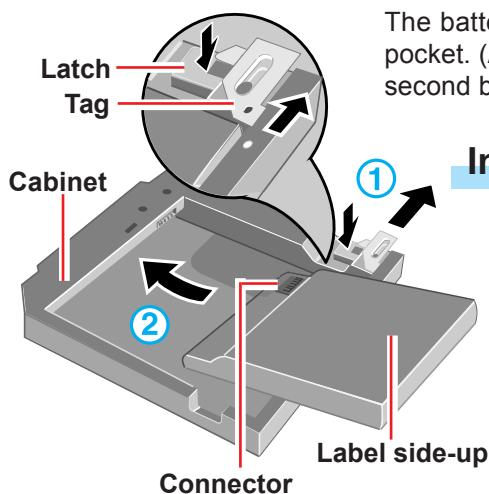
## 5 Put the cover back into place

Match the mark on the battery pack cover to the mark on the computer and slide the cover back into place.

### CAUTION

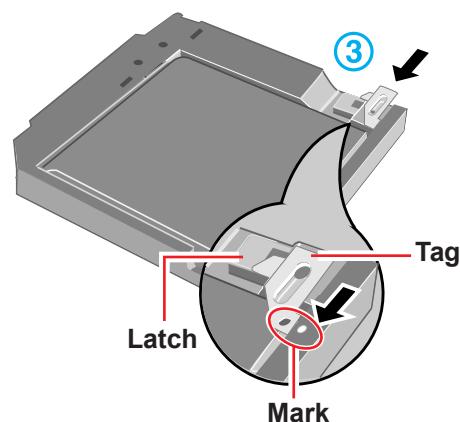
If the cover is not attached properly, the battery may fall out while the computer is being carried.

## Using the Battery Pack as a Second Battery



The battery pack can be used as a second battery by installing into the multimedia pocket. (An optional second battery pack adaptor (CF-VAB721) is required to use the second battery).

### Installing the Battery Pack into the Adaptor



- ① Slide the tag while pressing the latch.

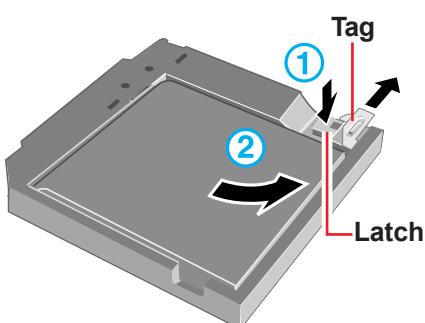
- ② Face the connector of the battery pack in the direction shown in the illustration, and then slide the battery pack (with the label-side up) under the cabinet.

- ③ Slide the tag.

Confirm that the tag is locked with the latch, and that the mark on the cabinet and the mark on the tag are aligned.

#### CAUTION

Fix the battery pack with the tag. Unless the battery pack is fixed, there is a danger of the battery pack falling from the adaptor.



### Removing the Battery Pack from the Adaptor

- ① Slide the tag while pressing the latch.

- ② Remove the battery pack.

#### NOTE

Refer to "Multimedia Pocket" when inserting/removing into/from the computer ( page 32).

You may use any of the following devices.

- SuperDisk drive
- CD-ROM drive
- DVD-ROM drive
- CD-R/RW drive
- Second battery pack

Attach the battery pack (CF-VZSU14) to a second battery pack adaptor (CF-VAB721).

- Second hard disk drive

Confirm the latest information on optional products in catalogs, etc.

### NOTE

- Be sure to read the Operating Instructions of the devices.
- Before connecting a peripheral such as a USB device or a PC Card, change the multimedia pocket device in accordance with the media in which the driver of the peripheral exists. Once a screen to install a driver is displayed, the multimedia pocket device cannot be recognized even if it is properly installed.

## Preparation for Installing/Removing

### CAUTION

In the standby or hibernation mode, do not install/remove the multimedia pocket device.

#### Windows 98

When the BaySwap function is being utilized, a device can be installed/removed into/from the multimedia pocket without turning off the computer.

- ① With the left button of the touch pad or mouse, select  on the taskbar and then select [Change device in SwappableBay].  
The screen at left is displayed, and the device can be removed/replaced safely. Do not select [OK] until the completion of the removal/replacement of the device.



### NOTE

When the [BaySwap] screen is being displayed, it is not possible to enter the standby or hibernation mode.

- ② Confirm that the MP indicator on the side of the multimedia pocket is not lit.
- ③ Perform the step 1 and 2 of "Installing/Removing". ( page 33)
  - When removing a multimedia pocket device after turning off the computer, these steps are not need.
  - When  is accidentally clicked and [BaySwap] screen is displayed, click [OK].

#### Windows NT

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

#### Windows 2000

Follow the procedure below only in the case of removal.

- ① Select  on the taskbar.
- ② Select the multimedia device and press [Stop].  
Follow the on-screen instructions.
- ③ Confirm that the MP indicator on the side of the multimedia pocket is not lit.
  - When removing a multimedia pocket device after turning off the computer, these steps are not need.
  - Insertion is carried out with the power on.

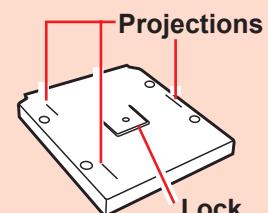
## Installing/Removing

### 1 ● Removing the device

- ① Slide the MP release latch. The device will eject slightly.
- ② Remove the device by holding both sides of the device.

#### CAUTION

- Handle the device as shown (holding both sides). Otherwise, the device may be damaged. Also, do not apply excessive downward force on the device. The projections at the bottom of a device become deformed.
- Be sure the shape of the lock at the bottom of a device does not become deformed. Do not insert a device that has become deformed into the multimedia pocket. The device may become impossible to remove later.

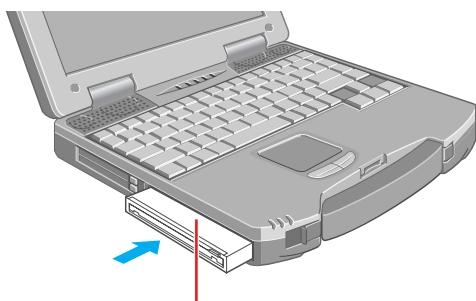


### ● Installing the device

Gently insert the device into the multimedia pocket by pushing on both corners until it clicks into place.

#### CAUTION

- Do not install the device upside-down.**  
The bottom of the drive may become disfigured.



Insert the device with the label side facing up.

### 2

#### Windows 98

#### Select [OK] on the [BaySwap] screen



#### NOTE

- Whether the device is properly recognized or not can be confirmed in [Main] of the Setup Utility. If the device is not recognized (or if a CD/DVD cannot be read or an FD/HDD/CD-R/CD-RW cannot be read or written to), power off the computer and reinstall the device.

#### Windows 98

- If is clicked with the right button, although [Change Drive Password] is displayed it cannot be selected.

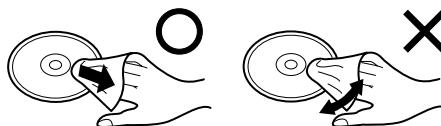
## Usage Precautions

- **Do not leave the tray in the open position or touch the lens area.** Should the lens become soiled by dust or dirt, the unit may not read discs properly.
- Do not apply excessive force to the tray in the open position, doing so could damage the tray.
- Do not place items other than discs on the tray.
- Under some conditions, dust may build up on the optical lens or disc, possibly resulting in malfunction.
- Do not expose the CD-ROM drive to oily or tobacco smoke. Doing so could shorten the service life of the lens.
- Do not use discs that have become deformed (warped, not completely round, etc.).
- Never insert foreign objects such as paper clips into the slot in the CD-ROM drive.
- Do not open the CD-ROM drive or move the computer while the CD-ROM 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 CD-ROM drive or remove the disc until after the application has been closed.
- After closing the tray, do not attempt to access a disc until the MP indicator (MP) goes off.
- Cleaning the CD-ROM drive using a disc lens cleaner (except a liquid type cleaner) is recommended if it malfunctions.
- When using Panasonic's CF-VDD712 DVD-ROM drive, set [CD Drive Speed] in the Setup Utility to [Low]. If [Low] is not set, the computer may malfunction.

### To avoid damaging discs:

- 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.
- 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.
- 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 write on the surface of the disc with a ball-point pen or other writing instrument.
- Do not drop, bend, or place heavy objects on top of discs.
- Cleaning the disc using a disc cleaner is recommended once every 2 or 3 months.

### If the disc gets dirty

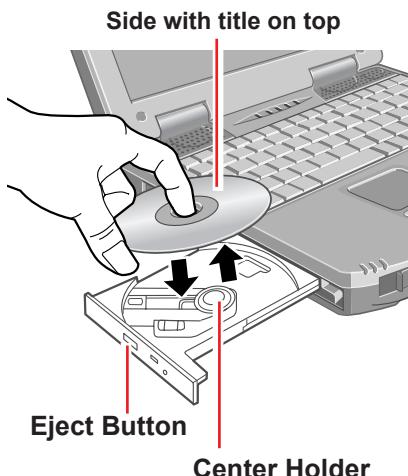


After wiping the disc with a moist, soft cloth, wipe it with a dry cloth. Always wipe from the center toward the edge.

## Installing/Removing a CD-ROM Drive

page 32

## Setting a Disc



- 1 Turn your computer on
- 2 Press the disc eject button and slowly pull out the tray
- 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-ROM drive has not been accessed within 30 seconds, the drive motor will automatically shut down to reduce the power consumption. When the CD-ROM 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-ROM drive is excessive, set the [CD Drive Speed] to [Low] in the Setup Utility.

## Software Preparation (first time only)

### Windows 98

Confirm the following contents in [Start] - [Settings] - [Control Panel] - [System] - [Device Manager] - [CDROM] - [TEAC \*\*\*\*] or [MATSHITA \*\*\*\*] - [Settings]. Make the settings if they have not yet been made.

- Add a check mark for [DMA].
- Set both [Start drive letter] and [End drive letter] in [Reserved drive letters] to [L:].

### Windows 2000

Confirm that [Transfer Mode] is set to [DMA if available] in [Control Panel] - [System] - [Hardware] - [Device Manager] - [IDE ATA/ATAPI controllers] - [Secondary IDE Channel] - [Advanced Settings] - [Device 0]. Perform this setting if it has not yet been made.

## Using the CD-ROM Drive in the MS-DOS Mode

### Windows 98

To use the CD-ROM drive in the MS-DOS mode, configure the drive following the steps below after confirming that the above contents have been set. If the steps listed below are performed although the above settings have not been made, the drive will not operate properly.

- 1 Select the [Start], then select [Shut Down].
- 2 Select [Restart in MS-DOS mode] and select [OK].
- 3 Open the "CONFIG.SYS" file for editing by issuing the following commands:  
cd \ **Enter**  
edit config.sys **Enter**
- 4 Move the cursor to the line containing "OAKCDROM.SYS" and delete the characters "rem" at the beginning of the line. (Deleting "rem" causes the item to become valid.)  
DEVICEHIGH=C:\WINDOWS\COMMAND\OAKCDROM.SYS /D:MSCD000  
(If this line is missing, add it.)
- 5 Press **Alt** + **F**, then **S** to save the file. Then press **Alt** + **F**, then **X** to exit the Edit program.
- 6 Follow the same steps to edit the "AUTOEXEC.BAT" file.  
edit autoexec.bat **Enter**
- 7 Move the cursor to the line containing "MSCDEX.EXE" and delete the characters "rem" at the beginning of the line. (Deleting "rem" causes the item to become valid.)  
LOADHIGH C:\WINDOWS\COMMAND\MSCDEX.EXE /D:MSCD000 /L:L  
(If this line is missing, add it.)
- 8 Press **Alt** + **F**, then **S** to save the file. Then press **Alt** + **F**, then **X** to exit the Edit program.
- 9 Restart the computer.

The SuperDisk drive can be used to access both SuperDisks and standard floppy disks. The drive letter is "A". The SuperDisk drive is called as follows:

My Computer, Windows Explorer : 3 1/2 Floppy

## Usage Precautions

- **Do not leave a disk in the drive while transporting your computer.**  
Remove the disk by pressing the eject button before your computer is off or enters the standby or hibernation mode, so the head locking mechanism may engage when the computer is powered off.
- Consecutive disk access of the SuperDisk drive between 30°C and 35°C {86 °F and 95 °F} for 15 minutes or more may damage the data on the disk.
- Do not remove a disk while accessing data. This may damage data on the disk.  
(While accessing the disk, the access lamp (MP) lights. Be sure that the access lamp is turned off when removing a disk.)
- Never insert foreign objects into the slot of the SuperDisk drive. It may cause a malfunction.
- Only use labels that come with disks.
- If dust has accumulated on the head surface, problems may occur when reading or writing data. In this case, cleaning the head is recommended using a cleaner kit. (SDD HCL produced by Imation)
- Do not place the AC adaptor to the front of the SuperDisk drive. Magnetic noise may cause an error.
- Do not disassemble the SuperDisk drive.
- Do not set [SuperDisk Operation] to [Disable] with the Setup Utility while a disk is in the SuperDisk drive. The disk will not be able to be removed by pressing the eject button. ( page 62)
- Do not set [USB Floppy Boot] to [Enable] with the Setup Utility when you use the SuperDisk drive.
- When the computer is turned on or during a reboot, a sound like the rotating of a motor will be audible several times. This is not a malfunction.
- During the initial 10 seconds after inserting a SuperDisk or during data access, a shrill noise may be produced. This is not a malfunction.

## Installing/Removing a SuperDisk Drive

 page 32

## Formatting the Disk

It may take about 10 minutes to format the SuperDisk. Because of this, be sure to disable the power saving function beforehand so as not to enter the power saving mode while formatting the SuperDisk.

### CAUTION

- An error may occur later in the process of formatting a write-protected medium. To prevent this, be sure to format the medium after confirming beforehand that the write-protect state has been changed.
- DISKCOPY command does not support the SuperDisk.
- When MS-Backup is executed, the message "No Controller board detected" may be displayed. When an error message is displayed, click [OK], then continue running the MS-Backup program.

## Software Preparation Windows 98

If the check mark is added for [Auto insert notification] under [Start] - [Settings] - [Control Panel] - [System] - [Device Manager] - [Disk drives] - [MATSHITA LS-120 XXXX] - [Settings] - [Options], after entering the standby or hibernation mode, the computer may not function properly. In this case, delete the check mark for [Auto insert notification].

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 12 V are not supported.  
**Windows NT** CardBus type cards are also not supported.

#### Windows 98   Windows 2000

- 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, reboot the computer.

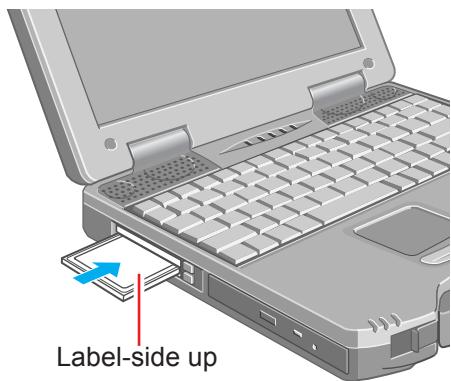
#### Windows 98

- Do not use a CardBus type card and a non-CardBus type card at the same time.
- For the following cases, be sure the power has been turned off before proceeding.
  - When removing a network card
  - When replacing a CardBus type card with another card (including another CardBus type card)
  - When inserting one more CardBus type card with one already inserted
- 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.

### NOTE

Before connecting a PC Card, change the multimedia pocket device in accordance with the media in which the driver of PC Card exists. Once a screen to install a driver is displayed, the multimedia pocket device cannot be recognized even if it is properly installed.

## Installing/Removing the PC Card

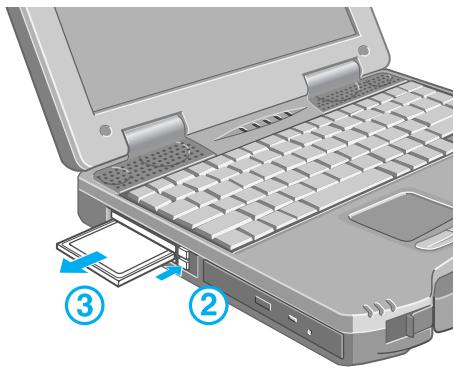


### ● Installing a PC Card

Slide the PC Card in until it snaps into place. Refer to the manual for each card on how to install the card (insertion is typically label-side up).

#### CAUTION

- In the case of a PC Card to connect a peripheral device (SCSI, IEEE 1394, etc.), first connect the peripheral device to the card, and then insert the card after switching ON the device.
- When inserting a card, do not force the card in if difficulty is encountered. 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.

- ① Double-click (Windows 2000: ) on the taskbar and select the PC Card, then press [Stop].  
Follow the on-screen instructions.  
(When removing a PC Card after turning off the computer, this step is not need.)
- ② Press the button, and then press the button again.
- ③ Slide the PC Card out.

## PC Card Utility Program Windows NT

### About Phoenix Card Executive™ 2.0 for Windows NT®

When using a Windows NT® model, confirm that Phoenix Card Executive™ 2.0 for Windows NT® is installed. If [Card Executive 2.0 for NT] is displayed in the [Control Panel], this indicates that the program is installed.

If Phoenix Card Executive™ 2.0 for Windows NT® has been uninstalled, or the hard disk or Windows NT® Service Pack has been reinstalled, reinstall Phoenix Card Executive™ 2.0 for Windows NT®.

- 1 Select [Start] - [Run].
- 2 Input [c:\util\drivers\pccard\setup.exe], select [OK], then follow the on-screen instructions.

#### NOTE

Do not use the Control Panel Icon labeled [PC Card (PCMCIA)]. This Control Panel will no longer function.

Instead, use the Control Panel Icon labeled [Card Executive 2.0 for NT] when checking on the status of the PC Cards in your system.

# RAM Module

42

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

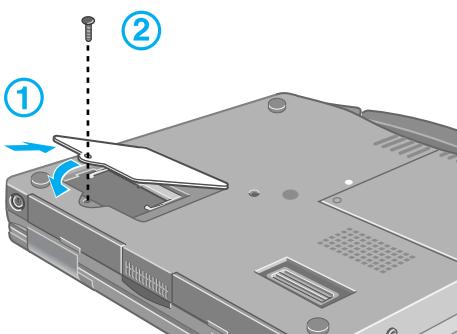
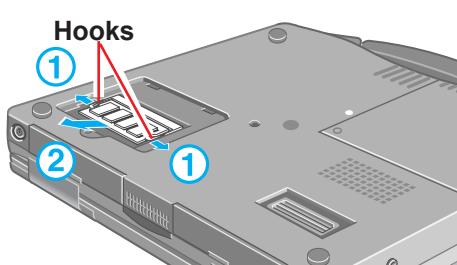
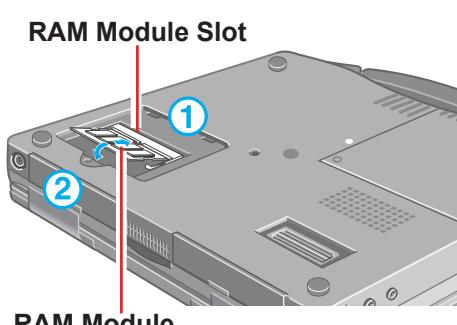
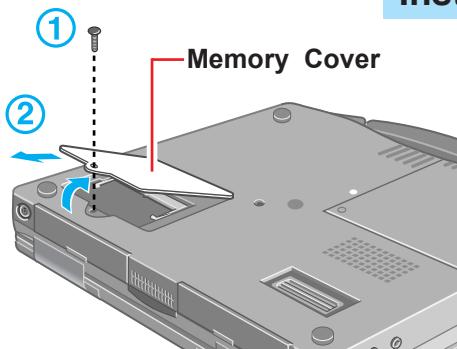
144 pins, SO-DIMM, 3.3 V, SDRAM, PC100 Compliant

Only a RAM module designed for PC100 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. In addition, it is easy to damage the RAM modules or internal components of the computer. Therefore, when installing or removing a RAM module, handle the module with extreme care.

## Installing/Removing the RAM Module



### 1 Power off your computer (Starting Up/Shutting Down)

Do not shut down using the standby or hibernation mode.

### 2 Remove the memory cover after removing the screw holding it in place

Turn the computer over and use a screwdriver to remove the screw.

### CAUTION

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.

### 3 ● Installing the RAM module

① Slide in the module at an angle.

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.

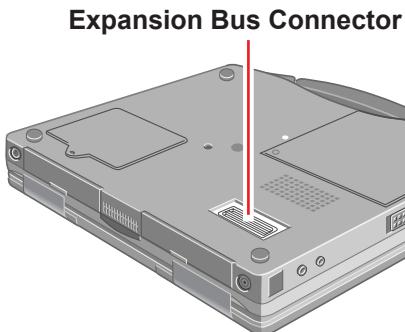
### 4 Put the cover back into place, then fasten the screw

### NOTE

Whether the RAM module is properly recognized or not can be confirmed in [Main] of the Setup Utility. If the RAM module is not recognized, power off the computer and reinstall it.

# Port Replicator

43



**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.

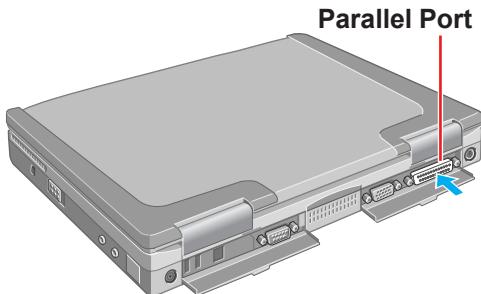
## 1 Power off your computer

(  "Starting Up/Shutting Down")

Do not shut down using the standby or hibernation mode.

### NOTE

Before connecting a printer, change the multimedia pocket device in accordance with the media in which the driver of the printer exists. Once a screen to install a driver is displayed, the multimedia pocket device cannot be recognized even if it is properly installed.



## 2 Connect the printer to your computer

## 3 Turn on the printer, then turn on your computer

## 4 Setting your printer

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

\* Windows 2000: [Set as Default Printer]

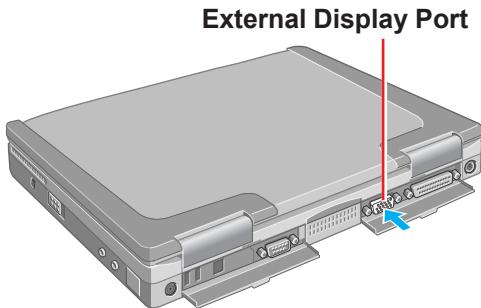
### NOTE

- 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 the [Parallel Port] in the Setup Utility is optimal. ( [page 61](#))

# External Display

45

- 1 Power off your computer (☞ "Starting Up/Shutting Down")  
Do not shut down using the standby or hibernation mode.



- 2 Connect the external display to your computer

**NOTE**

For more detailed information, refer to the operation manual of the external display.

- 3 Turn on the external display, then turn on your computer

**NOTE**

When an external display is connected, the computer displays on both the internal LCD and the external display after Windows starts up regardless of the [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)**.

However, in the following cases, the setting cannot be changed with **(Fn) + (F3)**.

- When either the internal LCD or external display is set to [Secondary] in [Start] - [Settings] - [Control Panel] - [Display] - [Settings] - [Advanced] - [Displays].

- **Windows 98** When the computer is in the Dual-Display mode.

(☞ page 46)

- 4 **Windows 98** **Windows 2000**

## Select your external display

Set your external display for [Monitor] in [Start] - [Settings] - [Control Panel] - [Display] - [Settings] - [Advanced].

When a monitor that does not conform to the Plug & Play standards is connected, select [Change]\* and make the monitor settings.

\* Windows 2000 : [Monitor] - [Properties] - [Driver] - [Update Driver].

**NOTE**

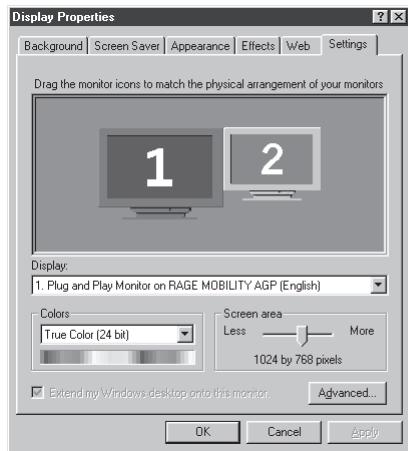
For more detailed information, refer to the operation manual of the external display.

## Using Dual-Display Mode Windows 98

When an external display is connected, it is possible to use both the LCD of the computer (i.e., internal LCD) and the external display as an extended display domain with the Dual-Display Mode.

It is possible to drag a window from the internal LCD to the external display.

### Setting Dual-Display Mode



**1 In [Start] - [Settings] - [Control Panel] - [Display], select [Settings]**

**2 Click the monitor icon of the external display [2]**

The display asks you to enable this monitor, select [Yes], then select [Apply].

**3 Set the screen area and colors**

This step is to set the screen area and colors for the internal LCD and external display. The internal LCD and external display are each assigned a monitor number ([1] or [2]). For the internal LCD [1] and external display [2], click on each of them to set the screen area and colors.

To confirm the monitor numbers:

By clicking and holding down on the monitor icon in the Display Properties dialog box, the monitor number corresponding to the icon will be displayed.

#### NOTE

Set the colors to 16 bits or less when setting the resolution of the external display to 1280 x 1024 or more. The screen area will not be properly displayed when the colors are set to 24 bits or more.

**4 Set the position of the extension display (External Display [2])**

Drag and drop the monitor icon of the external display [2]. Operations will be facilitated when the monitor number matches the actual arrangement position of the external display.

**5 Select [OK] and restart the computer**

#### NOTE

- If you change the resolution and/or color setting, be sure to restart the computer.
- There are some applications (Panasonic Hand Writing etc.) that cannot be used in the Dual-Display Mode.
- 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.
- **[Fn] + [F3]** does not work when the computer is in the Dual-Display Mode.
- When the Dual-Display mode is being utilized, the pop-up icon window is displayed only on the display set to [Primary]. The setting of the primary side can be changed in [Display] - [Settings] - [Advanced] - [Displays].
- To end the Dual-Display mode, turn off the power and remove the external display.

## CAUTION

- 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 Extension Display is changed or the Dual-Display Mode is closed.)

### When there is no display after the position of the Extension Display is changed:

The application running is being displayed at the position of the Extension Display before the change. Return the position of the Extension Display to the condition before the change once, move the application to the internal LCD (internal LCD [1]), and then correct the position of the Extension Display.

### When there is no display when the Dual-Display Mode is disabled:

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

- 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 Dual-Display Mode 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 [Desktop Theme] of the [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 [Mouse] and then select [Pointers].

    2 Select [Windows Standard] in [Scheme] and then press [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.

- Do not execute a DOS program during the playing of an MPEG file. The computer will no longer operate properly.

- Do not play MPEG files on an external display.

**NOTE****Windows NT**

Only the USB floppy disk drive (CF-VFDU03) can be used. Install the driver before use ( page 49). Other USB devices are not supported.

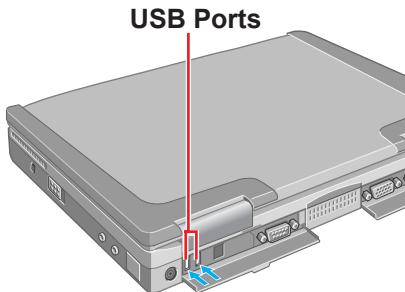
## Installing USB Devices

**1****Power off your computer** ( "Starting Up/Shutting Down")

Do not shut down using the standby or hibernation mode.

**NOTE**

Before connecting a USB device, change the multimedia pocket device in accordance with the media in which the driver of the USB device exists. Once a screen to install a driver is displayed, the multimedia pocket device cannot be recognized even if it is properly installed.

**2****Connect the USB device to your computer****NOTE**

- For more detailed information, refer to the operation manual of the USB device. You may need to install drivers compatible with the OS you are using for your USB devices. Follow the on-screen instructions and refer to the operation manual for USB devices on how to install the driver.
- When 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, USB devices may have to be removed temporarily and the computer restarted in cases where the computer is unable to start up properly.

## Removing USB Devices

**CAUTION**

Do not remove USB devices while your computer is in the standby or hibernation mode.

**1****Windows 2000**

**Double-click  on the taskbar and select the USB device, then press [Stop]**

Follow the on-screen instructions.

(When  is not displayed or when removing a USB device after turning off the computer, this step is not needed.)

**2****Remove the USB device**

## USB Floppy Disk Drive

When using the USB floppy disk drive (CF-VFDU03), be careful of the following points.

- If Windows is running in the Safe Mode, do not use the floppy disk drive. The computer will not operate properly.
- Do not open files such as Microsoft Word and Microsoft Excel files saved on a floppy disk directly from the floppy disk. Copy the files to the hard disk of the computer and then open them from the hard disk.
- When starting up the OS from the USB floppy disk drive, set [USB Floppy Boot] in the Setup Utility ([page 61](#)) to [Enable].  
If [USB Floppy Boot] is set to [Enable], the following restrictions apply.
  - Regardless of the Boot Menu setting, the OS can only be started up from the USB floppy disk drive.
  - The [Operating System not found] error message will be displayed if the start up disk is not in the USB floppy disk drive or the USB floppy disk drive is not connected. In such cases, connect the USB floppy disk drive, set the start up disk into the drive, and then restart the computer.
  - The SuperDisk drive cannot be used.
- When [USB Floppy Boot] in the Setup Utility is set to [Enable] and the OS is started up from the USB floppy disk, do not enter the standby or hibernation mode from the MS-DOS mode.
- Format a floppy disk with a capacity setting that matches the actual capacity of the disk. Proper formatting is not possible by specifying an incorrect capacity.

### Windows 98

- About the MS-DOS Mode
  - When formatting a floppy disk using the FORMAT command, confirm that the floppy disk is write enabled. If the floppy disk is write disabled, an error message will appear on the screen after the disk appears to have been formatted. In such cases, the disk will not have been formatted.
  - When the cluster scan of the Scandisk command is executed for a 2HD format floppy disk, an error message may appear. Perform a floppy disk check with Scandisk of Windows.

### Windows NT

When using the USB floppy disk drive, install the USB floppy disk drive driver by the following procedure.

- 1 Remove the SuperDisk drive from the multimedia pocket.
  - 2 Select [Start] - [Run], input [c:\util\drivers\usbfd\ufd105.exe], then select [OK].
  - 3 At the [Setup Complete], select [Yes, I want to restart my computer now], then select [Finish].
- The computer will restart.

### NOTE

#### When uninstalling the USB floppy disk drive driver

- 1 Select [Start] - [Settings] - [Control Panel] - [Add/Remove Programs].
- 2 Select [Phoenix USBFDD Driver], then select [Add/Remove].
- 3 At the [Confirm File Deletion], select [Yes].
- 4 When [Uninstall successfully completed] is displayed, select [OK].
- 5 At the [Add/Remove Programs Properties], select [OK].

# Infrared Data Communications

Windows 98

Windows 2000

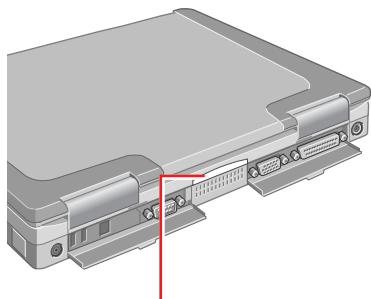
50

## NOTE

### Windows NT

An application software is needed to use the infrared data communications. The infrared data communications can not be used at 4 Mbps data transfer speed.

Your computer is equipped with an infrared communications port enabling you to transfer data without a cable.



Infrared Communication Port

## Preparations for Infrared Data Communications

- Set the address of your infrared communications port to enable. (☞ page 50)
- Be sure the computers are not in direct contact with one another.
- A port-to-port distance of 20 cm to 50 cm {8" to 20"} is recommended.

## Problems with Infrared Data Communications

- An object is located between both ports.
- There are other electronic devices nearby causing interference, such as a television, VCR, wireless headphone, etc.
- Direct sunlight or white glowing light, such as fluorescent lighting; can cause interference with communications between the ports.
- When moving your computer while it is transmitting/receiving data.

## Setting for Infrared Data Communications

- 1 Run the Setup Utility (☞ page 59)
- 2 Using → and ←, select [Advanced]
- 3 Using ↑ and ↓, select [IrDA Port] and press Enter
- 4 Using ↑ and ↓, select [Auto] and press Enter
- 5 Press F10, then select [Yes]
- 6 **Windows 98**  
Add the check mark for [Enable infrared communication] in [Start] - [Settings] - [Control Panel] - [Infrared] - [Options] and press [OK]

### Windows 2000

Add the check mark for [Allow others to send files to your computer using infrared communications] in [Start] - [Settings] - [Control Panel] - [Wireless Link] - [File Transfer] and press [OK]

(To next page)

## Data Communications

### Windows 98

**NOTE**

Be sure to enable the use of the Infrared Communication Port in the same way for the computer with which communications will take place. It is possible to confirm whether infrared communications is possible with another computer by selecting [Status] in [Start] - [Settings] - [Control Panel] - [Infrared].

- 1 Position your computer so that the infrared communication port is face-to-face with the port of another computer**
- 2 Select [My Computer] - [Infrared Recipient] on both computers**
- 3 Select [Send Files] on the computer that will send a file**
- 4 Select the file to be sent, then select [Open] to commence the sending of the file**

It will be sent to the [My Received Files] folder of the receiving computer.

**NOTE**

Separate application software is necessary for processing at a transfer speed of 4 Mbps or when communicating with a computer running Windows 95 or Windows NT.

### Windows 2000

**NOTE**

Be sure to enable the use of the Infrared Communication Port in the same way for the computer with which communications will take place. It is possible to confirm whether infrared communications is possible with another computer by selecting [File Transfer] in [Start] - [Settings] - [Control Panel] - [Wireless Link].

- 1 Position your computer so that the infrared communication port is face-to-face with the port of another computer**
- 2 Double-click [Wireless Link] on the desktop on the computer that will send a file**
- 3 Select the file to be sent, and then press [Send]**
- 4 Select [Yes] on the computer that will receive the file and after receiving the file, then select [Close]**

It will be sent to the desktop of the receiving computer.

**NOTE**

- Infrared communications cannot be performed with a computer running an Operating System (OS) other than Windows 98 or Windows 2000.
- Communications at 4 Mbps is not supported due to the lack of software.

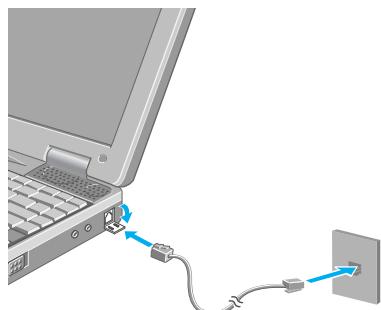
## Connecting to a Telephone Line and Settings

Windows 98

Windows 2000

Windows NT (page 54)

When using the internal modem, set [Modem/LAN] to [Enable]\* in the Setup Utility.  
(\* Default)



### 1 Connecting a telephone line to the internal modem

It is not possible to connect the internal modem to any of the following lines.

- Internal home phones
- Intercoms

#### CAUTION

Do not use the PBX internal phone lines installed in company offices. Doing so may lead to a fire or electric shock.

#### NOTE

There are cases telephone construction (or installation) work will be necessary depending on the shape of the connector of the telephone line.

### 2 Windows 98

- ① Select [Modems] in [Start] - [Settings] - [Control Panel].
- ② Select [Lucent Win Modem].
- ③ Select [Dialing Properties].

Input the necessary information (items such as the country, area code, etc.) and select [OK], then select [OK].

#### Windows 2000

Select [Edit] in [Start] - [Settings] - [Control Panel] - [Phone and Modem Options] - [Dialing Rules].

Input the necessary information (items such as the country, area code, etc.) and then select [OK].

#### CAUTION

Do not use standby and hibernation functions during communications.

## Ring Resume Function

Windows 98

Windows 2000

With this function, if the phone to the line connected to the internal modem rings in the standby mode, the power of the computer automatically switches ON.

This function is convenient when using automatic information receiving applications like 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.

### NOTE

- The computer cannot resume from the hibernation mode.
- The computer cannot resume if a phone is connected to the line of a modem other than the internal modem (e.g., a PC Card modem).
- Concerning the setting for [System standby] in [Start] - [Settings] - [Control Panel] - [Power Management]\*, 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 : [Power Options]

- When the internal 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.

## Connecting to a Telephone Line and Settings

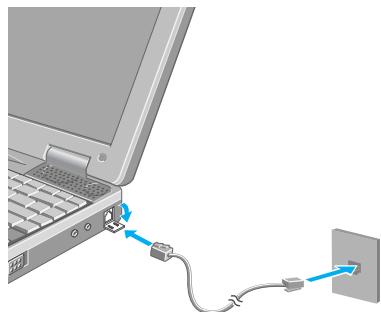
Windows NT

Windows 98

Windows 2000

(page 52)

When using the internal modem, set [Modem/LAN] to [Enable]\* in the Setup Utility.  
(\* Default)



### 1 Connecting a telephone line to the internal modem

It is not possible to connect the internal modem to any of the following lines.

- Internal home phones
- Intercoms

#### CAUTION

Do not use the PBX internal phone lines installed in company offices. Doing so may lead to a fire or electric shock.

#### NOTE

There are cases telephone construction (or installation) work will be necessary depending on the shape of the connector of the telephone line.

### 2 Install the modem driver

- 1 Select [Start] - [Run].
- 2 Input [c:\util\drivers\cmode\setup.exe] and select [OK].
- 3 Select [Next], then select [Next].
- 4 Select [Finish].

### 3 Select [Modems] in [Start] - [Settings] - [Control Panel]

### 4 Select [Dialing Properties]

Input the necessary information (items such as the country, area code, etc.) and select [OK], then select [Close].

### 5 Restart the computer

#### CAUTION

Do not use standby and hibernation functions during communications.

## Using LAN

Windows 98

Windows 2000

Windows NT (☞ page 56)

When using the LAN, set [Modem/LAN] to [Enable]\* in the Setup Utility. (\* Default)

### Setting LAN

Windows 98

- 1 Select [Device Manager] in [Start] - [Settings] - [Control Panel] - [System]
- 2 Select [Intel 8255x-based PCI Ethernet Adapter (10/100)] in [Network adapters], then select [Properties]
- 3 Remove a check mark [Disable in this hardware profile], select [OK], then select [Close]
- 4 Restart the computer

### Using the computer as a network computer

Windows 98

Windows 2000

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.

#### NOTE

- Do not use standby or hibernation functions during communications.
- Unable to connect to network (When the indicator of your HUB unit does not light):

#### Windows 98

- 1 Select [Network] in [Start] - [Settings] - [Control Panel].
- 2 Select [Intel 8255x-based PCI Ethernet Adapter (10/100)].
- 3 Select [Properties].
- 4 Select [Advanced].
- 5 Select [Link Speed & Duplex] from [Property], set [Value] to the communication speed (10 Mbps or 100 Mbps) suitable for your network environment, then select [OK].

#### Windows 2000

- 1 Select [Device Manager] in [Start] - [Settings] - [Control Panel] - [System] - [Hardware].
- 2 Select [Intel 8255x-based PCI Ethernet Adapter (10/100)] from [Network adapters].
- 3 Select [Action] - [Properties]
- 4 Select [Advanced].
- 5 Select [Link Speed & Duplex] from [Property], set [Value] to the communication speed (10 Mbps or 100 Mbps) suitable for your network environment, then select [OK].

## Using LAN

Windows NT

Windows 98 Windows 2000 ( page 55)

When using the LAN, set [Modem/LAN] to [Enable]\* in the Setup Utility. (\* Default)

- 1 Select [Network] in [Start] - [Settings] - [Control Panel]**
- 2 Select [Yes]**

<When the settings for the modem have already been made>  
After selecting [Adapter] and selecting [Add], proceed to step 5.
- 3 Select [Wired to the network], then select [Next]**
- 4 Select [Select from list], then select [Have Disk]**
- 5 Input [c:\util\drivers\clan] and select [OK]**
- 6 Select [Intel(R) PRO Adapter], then select [OK]**

<When the settings for the modem have already been made>

  - 1 Select [Intel(R) PRO Adapter], then select [OK]
  - 2 Select your protocol and network service (etc.).
  - 3 Select [Close] and follow the on-screen instructions, then proceed to step 12.
- 7 Select [Next]**
- 8 Select your protocol, then select [Next]**
- 9 Select your network service, then select [Next]**
- 10 Select [Next]**
- 11 Input [c:\winnt\i386] and select [Continue]**

<When the settings for the modem have already been made>  
Perform this procedure only when the screen to insert the Windows NT CD is displayed.

Follow the on-screen instructions.  
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.
- 12 In [Start]-[Run], input [c:\sp6\sp6i386.exe] and select [OK]**  
Follow the on-screen instructions.

**NOTE**

- Do not use standby and hibernation functions during communications.
- 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.
- When the indicator of your hub unit does not light:
  - 1 Select [Adapters] in [Start] - [Settings] - [Control Panel] - [Network].
  - 2 Select [Intel 8255x-based PCI Ethernet Adapter (10/100)].
  - 3 Select [Properties]-[Advanced].
  - 4 Select [Link Speed & Duplex] from [Setting], and set [Value] to the communication speed (10 Mbps or 100 Mbps) suitable for your network environment.

## Wake up from LAN

This is a function 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.

\* Windows NT: off/standby/hibernation

To use this function:

**Windows 98**   **Windows 2000**

- 1 Select [Device Manager]\*<sup>1</sup> in [Start] - [Settings] - [Control Panel] - [System].
- 2 Select [Intel 8255x-based PCI Ethernet Adapter (10/100)] from [Network adapters].
- 3 Select [Properties]<sup>2</sup>.
- 4 Select [Power Management], add the check mark for [Allow the computer to turn off this device to save power.] and [Allow this device to bring the computer out of standby.], then select [OK].

\*<sup>1</sup> Windows 2000: [Hardware] - [Device Manager]

\*<sup>2</sup> Windows 2000: [Action] - [Properties].

**Windows NT**

Set [Wake up from LAN] to [Enable] with the Setup Utility. ( [page 61](#))

### 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.

**Windows 98**   **Windows 2000**

- When using the Wake up from LAN function, remove the check mark for [Prompt for password when computer goes off standby] in [Start] - [Settings] - [Control Panel] - [Power Management]\* - [Advanced].  
\* Windows 2000 : [Power Options]
- The Wake up from LAN function will not operate under the following conditions:
  - When the computer has been shut down.
  - **Windows 98**  
When the computer has been placed in standby or hibernation mode from MS-DOS mode.
- This works on Windows 98 or Windows 2000 irrespective of the [Wake up from LAN] setting of the Setup Utility.

**Windows NT**

- The Wake up from LAN function will not operate under the following conditions:
  - When the computer has been shut down by pressing the power switch for more than four seconds.
  - When the password has been input incorrectly, and the computer has returned to standby, hibernation, or power off status.
- When using the Wake up from LAN function, the password is not necessary even if the password has been set in the Setup Utility.

# Hard Disk Drive

58

To change your hard disk drive, contact Panasonic Technical Support

## CAUTION

### To customers:

- To change your hard disk, contact Panasonic Technical Support.
- Be sure to back up all important data before the change.
- If [Hard Disk Lock] is set to [Enable] in the Setup Utility, change this to [Disable] before the change.

### To technicians (at Panasonic Technical Support):

Be careful when replacing the hard disk. The hard disk is extremely sensitive to shock. In addition, static electricity could later affect some internal components.

## Installing/Removing the Hard Disk

(For technicians at Panasonic Technical Support)

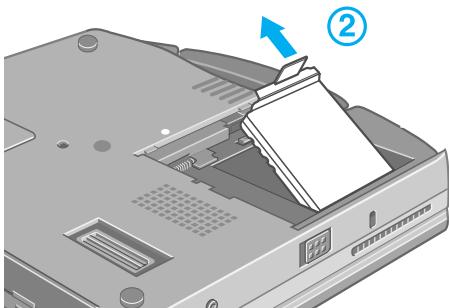
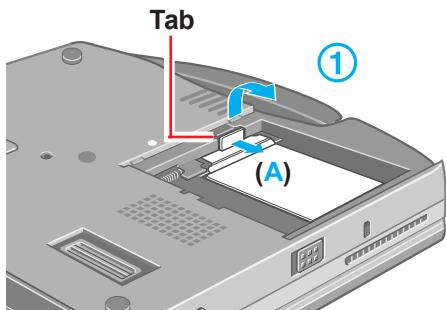
### 1 Power off your computer (☞ "Starting Up/Shutting Down")

Do not shut down using the standby or hibernation mode.  
Disconnect the AC adaptor.

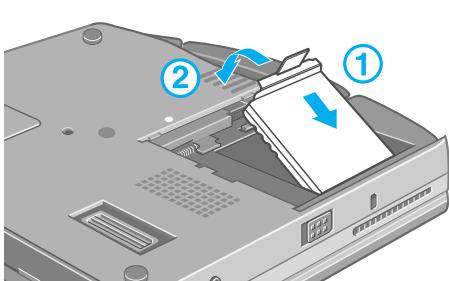
### 2 Remove the main battery pack (☞ page 29)

### 3 ● Removing the hard disk

- ① While pulling the tab in the direction indicated by the arrow (A), lift the hard disk.



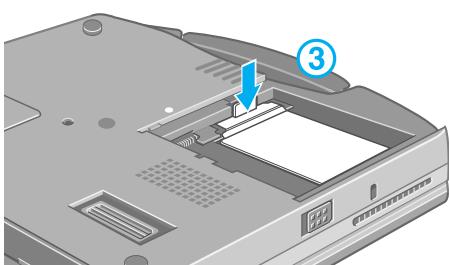
- ② Remove the hard disk.



### ● Installing the hard disk

- ① Insert the hard disk as shown in the figure.

- ② Put the hard disk in place.



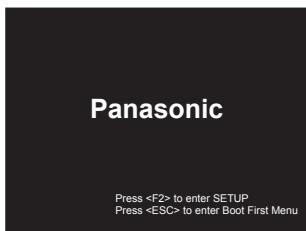
- ③ Connect the hard disk (via the hard disk connector) to the computer.

### 4 Insert the battery pack and then put the battery pack cover back into place (☞ page 29)

# Setup Utility

59

## Running the Setup Utility



- 1 Turn on or restart the computer**
- 2 Press **[F2]** while [Press <F2> to enter SETUP] is displayed soon after the computer begins the startup procedure**

(If you fail to press **[F2]** at this time, restart your computer.)

- If [**Enter your password**] is displayed

Enter your password.

(The Supervisor Password must be entered to change items of the [Advanced] menu. Entering the User Password will not allow you to make changes to any of the items.)

### NOTE

- For more details, on-line help is available; press **[F1]**.
- To close the Setup Utility, see [page 64](#).

### ● Key Operations

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

## Main Menu

Model No.:	CF-xxxxxxxx
Serial No.:	xxxxxxxxxx
BIOS Version:	Vx.xxLxx
System Time:	[xx:xx:xx]
System Date:	[xx/xx/yyyy]
System Memory:	xxx MB
Primary Master:	xx GB
Secondary Master:	CD Drive
NumLock:	[Off]
Touch Pad:	[Enable]
Speaker:	[Enable]
Display:	[Simultaneous]
Display Expansion:	[Enable]
Refresh Battery	

## Parameters (\_\_ : Default)

NumLock* <sup>1</sup>	On <u>Off</u>
Touch Pad	Disable <u>Enable</u>
Speaker	Disable <u>Enable</u>
Display* <sup>2</sup>	External Monitor Internal LCD <u>Simultaneous</u>
Display Expansion	Disable <u>Enable</u>
Refresh Battery	Refreshing the battery (  page 28)

\*<sup>1</sup> Does not operate for Windows NT or Windows 2000.

\*<sup>2</sup> When an external display is connected, the computer displays on both the internal LCD and the external display after Windows starts up regardless of the [Display] setting.

## Advanced Menu

Device Configuration:	[BIOS]
Serial Port:	[Auto]
IrDA Port:	[Auto]
Parallel Port:	[Auto]
Mode:	[ECP]
Sound Controller:	[Enable]
USB Floppy Boot:	[Disable]
Modem/LAN:	[Enable]
Boot up from LAN:	[Disable]
Wake up from LAN:	[Disable]

### Parameters (    : Default)

Device Configuration	<u>BIOS</u> OS
Serial Port	Disable Enable <u>Auto</u>
I/O IRQ*1	<u>3F8/IRQ4</u> 2F8/IRQ3 3E8/IRQ11 2E8/IRQ10
IrDA Port	Disable Enable <u>Auto</u>
I/O IRQ*1	<u>3F8/IRQ4</u> <u>2F8/IRQ3</u> 3E8/IRQ11 2E8/IRQ10
Parallel Port	Disable Enable <u>Auto</u>
Mode*2	Uni-directional Bi-directional <u>ECP</u> EPP*3
I/O IRQ*1	<u>378/IRQ7</u> 278/IRQ5 3BC/IRQ7*4
Sound Controller	Disable <u>Enable</u>
USB Floppy Boot*5	Disable Enable
Modem/LAN	Disable <u>Enable</u>
Boot up from LAN*6	<u>Disable</u> Enable
Wake up from LAN*6*7	<u>Disable</u> Enable

\*1 This item is displayed only when the setting of each port is [Enable].

\*2 This item is displayed only when [Parallel Port] is set to [Enable] or [Auto].

\*3 This item is not displayed only when [I/O IRQ] for [Parallel Port] is set to [3BC/IRQ7].

\*4 This item is not displayed only when [Mode] is set to [EPP].

\*5 If [USB Floppy Boot] is set to [Enable], regardless of the Boot Menu setting, the OS can only be started up from the USB floppy disk drive. In addition, the SuperDisk drive cannot be used.

\*6 [Disable] is automatically set when [Modem/LAN] is set to [Disable].

\*7 Wake up function works on Windows 98 or Windows 2000 irrespective of the [Wake up from LAN] setting.

## Security Menu

Password on boot:	[Enable]
► Set Supervisor Password:	[Enter]
Hard Disk Lock:	[Disable]
User Password Protection:	[No Protection]
► Set User Password:	[Enter]
SuperDisk Operation:	[Enable]
Processor Serial Number:	[Disable]

### NOTE

**If starting up the Setup Utility with the User Password;**

The User Password can only be set when the Supervisor Password has been set and [User Password Protection] has been set to [No Protection].

## Parameters

( \_\_: Default)

Password on boot	Disable <u>Enable</u>
Set Supervisor Password	To the sub-menu
Hard Disk Lock* <sup>1</sup>	<u>Disable</u> Enable
User Password Protection	<u>No Protection</u> Protected
Set User Password* <sup>1</sup>	To the sub-menu
SuperDisk Operation	Disable <u>Enable</u>
Processor Serial Number* <sup>2</sup>	Enable <u>Disable</u>

\*<sup>1</sup> Setting impossible when the Supervisor Password is not set.

\*<sup>2</sup> When [Enable] is set for [Processor Serial Number], it is necessary to shut down the computer once.

## Power Menu

When Windows 98 or Windows 2000 is starting up, the individual timeout functions of the Setup Utility will not work.

Power Management Mode:	[Enable (Always)]
HDD Motor Timeout:	2 min
ECO Mode Timeout:	2 min
Power Switch:	[Off]
Fn+F7/Fn+F10 Key:	[Enable]
CD Drive Speed:	[High]

## Parameters

( \_\_ : Default)

Power Management Mode* <sup>1</sup>	Disable Enable (Battery) <u>Enable (Always)</u>
HDD Motor Timeout* <sup>1</sup>	Automatically set through setting of Power Management Mode ( <u>2 min</u> / Never)
ECO Mode Timeout* <sup>1</sup>	Automatically set through setting of Power Management Mode ( <u>2 min</u> / Never)
Power Switch* <sup>1</sup>	Standby Hibernation* <sup>2</sup> <u>Off</u>
Hibernation Timeout* <sup>1*3</sup> Standby Timeout* <sup>1*3</sup>	<u>Never</u> 4 min 16 min
Fn+F7/Fn+F10 Key	Disable <u>Enable</u>
CD Drive Speed* <sup>4</sup>	<u>High</u> Low

\*<sup>1</sup> Does not operate for Windows 98 or Windows 2000. The actual operation is set on Windows.

\*<sup>2</sup> On Windows 98 or Windows NT, this is not displayed when a hibernation-specific partition is not available. Reinstall the OS to create a partition by using the Product Recovery CD-ROM.

On Windows 2000, this item is not displayed.

\*<sup>3</sup> Not displayed when [Power Switch] is set to [Off].

### Windows NT

Since access to the hard disk occurs often on Windows NT, standby/hibernation timeout may not function according to the set times.

\*<sup>4</sup> "CD Drive" indicates a drive such as a CD-ROM drive, DVD-ROM drive or CD-R/RW drive.

For a CD-R/RW drive, the description for "CD Drive Speed" applies to read only.

## Power Management Modes

Windows NT

Power Management Functions automatically set	Power Management Mode	Enable (Always) (Setting at the time of purchase)	Enable(Battery)	Disable
	HDD Motor Timeout	2 min	2 min	Never
	ECO Mode Timeout	2 min	2 min	Never
	Power Conservation (AC Adaptor Connected)	Enable	Disable	Disable

## Boot Menu

1. [SuperDisk Drive]<sup>\*1</sup>
2. [Hard Disk Drive]
3. [CD Drive]<sup>\*2</sup>
4. [Network Boot]

<sup>\*1</sup> This item is shown even when the SuperDisk drive is not installed or [SuperDisk Operation] is set to [Disable].

<sup>\*2</sup> The description for "CD Drive" applies to the DVD-ROM drive and CD-R/RW drive.

<sup>\*3</sup> This item is displayed only when both [Modem/LAN] and [Boot up from LAN] in Advanced Menu are set to [Enable].

The default order is as follows:

[SuperDisk Drive] → [Hard Disk Drive] → [CD Drive] → [Network Boot].

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 First Menu**

The device for starting up the Operating System can also be selected during computer start-up. After the computer is turned on, the device selection display will appear when **(ESC)** is pressed while "Press <ESC> to enter Boot First Menu" is shown. (When selecting [CD Drive] from Boot First Menu, if the disc has not been set in the CD-ROM drive, it is not possible to start up from the disc.)

When the setting of the [Boot] menu is changed, the selection screen display will also change.

"Starting Up/Shutting Down")

- If [USB Floppy Boot] in Advanced Menu is set to [Enable], regardless of the Boot Menu setting, the OS can only be started up from the USB floppy disk drive.

## Exit Menu

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

## 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. The password remains. This item may not be displayed when starting up the Setup Utility with the User Password.
Load Previous Values	Load previous values from CMOS for all Setup items.
Save Current Values	Save your changes to CMOS.

## Network

- When the power saving function is running, communications software may malfunction. For example, communications may be halted if the standby (hibernation) mode is activated. The computer must be restarted if one of these modes is entered during data communications.

Be sure that the power of the display is off (for energy conservation purposes) or the computer enters standby (hibernation) mode after the communications software is closed.

- **Windows 98**

The network connection may be severed under the condition the power of the display is off (for energy conservation purposes) and standby (hibernation) mode. When network or communication software is to be used, set [System standby], [Turn off monitor] and [Turn off hard disks] (in [Start] - [Settings] - [Control Panel] - [Power Management]) to [Never].

- **Windows NT**

The network connection may be severed when entering the ECO mode and standby (hibernation) mode. Be sure to disable the [Standby/Hibernation Timeout]\* settings with the Setup Utility if you require a network environment. The computer will not operate properly. If this occurs, restart the computer.

\* Since access to the hard disk occurs often on Windows NT, standby/hibernation timeout may not function according to the set times. However, be sure to set off just to be safe.

- **Windows 2000**

The network connection may be severed under the condition the power of the display is off (for energy conservation purposes) and standby (hibernation) mode. When network or communication software is to be used, set [System standby], [System hibernates], [Turn off monitor] and [Turn off hard disks] (in [Start] - [Settings] - [Control Panel] - [Power Options]) to [Never].

## When Adding New Software or Hardware Components

Windows NT

- Some of the contents of Service Pack 6 (installed at the time of purchase) may be overwritten. Therefore, after adding a new software or hardware component, be sure to install (UPDATE) Service Pack 6. (See the c:\sp6\readme.htm file.)  
*<Only if necessary>*

In addition, if you install Service Pack 6, some files of Phoenix APM 2.0 for Windows NT® and Phoenix Card Executive 2.0 for Windows NT® may be overwritten. Therefore, after installing Service Pack 6, also re-install Phoenix APM 2.0 for Windows NT® and Phoenix Card Executive 2.0 for Windows NT®.

- At times you may be prompted to copy Windows NT® files. Input [c:\winnt\i386] as the copy source and select [OK].

### <Installing Service Pack 6>

In [Start] - [Run], input [c:\sp6\sp6i386.exe] and select [OK]. Follow the on-screen instructions.

## Enabling Power Conservation

Windows NT

Confirm that Phoenix APM 2.0 for Windows NT® is installed. (If [APM 2.0 for NT] is displayed in [Control Panel], this means that the program is installed.) If the program is not installed, be sure to install it. ( [page 24](#))

## Windows Security Function

Windows NT

Windows 2000

Windows NT or Windows 2000 has a security function that differs from the security function of the Setup Utility. For detailed information, refer to the Windows help.

### NOTE

- Set the password for secrecy and protection.
- Only an account for the Administrator is created the first time the computer is started. Create accounts for person who is actually going to use a computer.
- We recommend using an NTFS file system in order to use the Windows security function.

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.

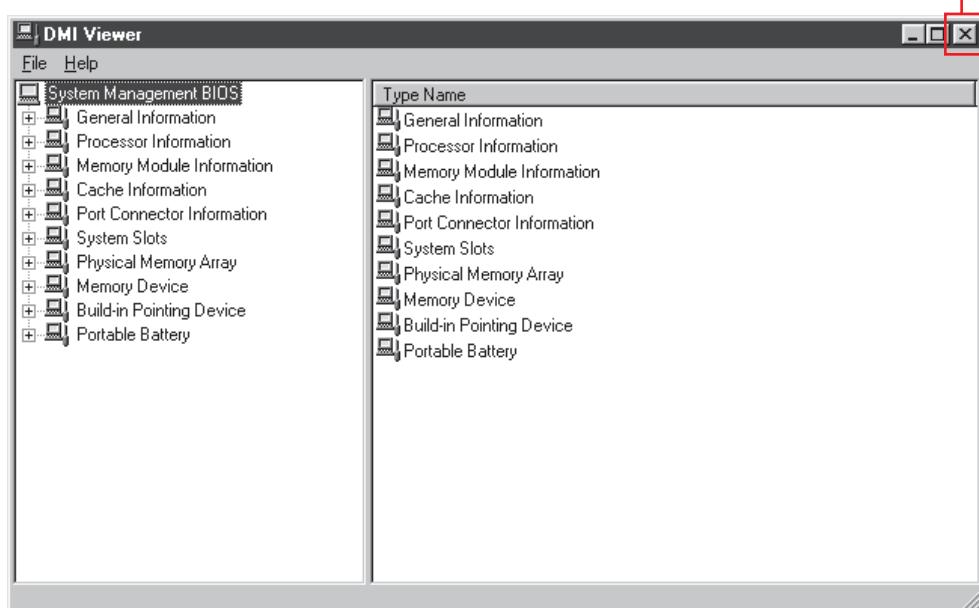
## Running DMI Viewer

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

The screen shown below is displayed.

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

**Click to close the DMI Viewer**



## 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**

**Input the file name (and select the folder) and select [Save]**

# List of Error Codes

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The following is a list of the messages that BIOS can display. Most of them occur during POST. Some of them display information about a hardware device, e.g., the amount of memory installed. Others may indicate a problem with a device, such as the way it has been configured. Following the list are explanations of the messages and remedies for reported problems.

If your system displays one of except the messages marked below with an asterisk (\*), write down the message and contact Panasonic Technical Support. If your system fails after you make changes in the Setup menus, reset the computer, enter Setup and install Setup defaults or correct the error.

## **0200 Failure Fixed Disk**

Fixed disk in not working or not configured properly. Check to see if fixed disk is attached properly. Run Setup. Find out if the fixed-disk type is correctly identified.

## **0210 Stuck key**

Stuck key on keyboard.

## **0211 Keyboard error**

Keyboard not working.

## **0212 Keyboard Controller Failed**

Keyboard controller failed test. May require replacing keyboard controller.

## **0213 Keyboard locked - Unlock key switch**

Unlock the system to proceed.

## **0230 System RAM Failed at offset : nnnn**

System RAM failed at offset *nnnn* of in the 64k block at which the error was detected.

## **0231 Shadow RAM Failed at offset : nnnn**

Shadow RAM failed at offset *nnnn* of the 64k block at which the error was detected.

## **0232 Extended RAM Failed at offset : nnnn**

Extended memory not working or not configured properly at offset *nnnn*.

## **0250 System battery is dead - Replace and run SETUP**

The CMOS clock battery indicator shows the battery is dead. Replace the battery and run Setup to reconfigure the system.

## **\*0251 System CMOS checksum bad - Default configuration used**

System CMOS has been corrupted or modified incorrectly, perhaps by an application program that changes data stored in CMOS. The BIOS installed Default SETUP Values. If you do not want these values, enter Setup and enter your own values. If the error persists, check the system battery or contact Panasonic Technical Support.

## **0260 System timer error**

The timer test failed. Requires repair of system board.

## **0270 Real time clock error**

Real-time clock fails BIOS test. May require board repair.

## **\*0280 Previous boot incomplete - Default configuration used**

Previous POST did not complete successfully. POST loads default values and offers to run Setup. If the failure was caused by incorrect values and they are not corrected, the next boot will likely fail. On systems with control of **wait states**, improper Setup settings can also terminate POST and cause this error on the next boot. Run Setup and verify that the wait-state configuration is correct. This error is cleared the next time the system is booted.

## **0281 Memory Size found by POST differed from EISA CMOS**

Memory size found by POST differed from EISA CMOS.

## **02B0 Diskette drive A error**

## **02B1 Diskette drive B error**

Drive A: or B: is present but fails the BIOS POST diskette tests. Check to see that the drive is defined with the proper diskette type in Setup and that the diskette drive is attached correctly.

## **02B2 Incorrect Drive A type - run SETUP**

Type of floppy drive A: not correctly identified in Setup.

## **02B3 Incorrect Drive B type - run SETUP**

Type of floppy drive B: not correctly identified in Setup.

## **02D0 System cache error - Cache disabled**

Contact Panasonic Technical Support.

## **02F0: CPU ID:**

CPU socket number for Multi-Processor error.

## **02F4: EISA CMOS not writable**

ServerBIOS2 test error: Cannot write to EISA CMOS.

# List of Error Codes

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## **02F5: DMA Test Failed**

ServerBIOS2 test error: Cannot write to extended DMA (Direct Memory Access) registers.

## **02F6: Software NMI Failed**

ServerBIOS2 test error: Cannot generate software NMI (Non-Maskable Interrupt).

## **02F7: Fail - Safe Timer NMI Failed**

ServerBIOS2 test error: Fail-Safe Timer takes too long.

## **device address Conflict**

Address conflict for specified *device*.

## **Allocation Error for: device**

Run ISA or EISA Configuration Utility to resolve resource conflict for the specified *device*.

## **Failing Bits : nnnn**

The hex number *nnnn* is a map of the bits at the RAM address which failed the memory test. Each 1 (one) in the map indicates a failed bit. See error 230,231 or 232 for offset address of the failure in System, Extended or Shadow memory.

## **Invalid System Configuration Data**

Problem with NVRAM (CMOS) data.

## **I/O device IRQ conflict**

I/O device IRQ conflict error.

## **Operating System not found**

Operating system cannot be located on either drive A: or drive C:. Enter Setup and see if fixed disk and drive A: are properly identified.

## **Parity Check 1 nnnn**

Parity error found in the system bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ?????. Parity is a method for checking errors in binary data. A parity error indicates that some data has been corrupted.

## **Parity Check 2 nnnn**

Parity error found in the I/O bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ?????.

## **Press <F1> to resume, <F2> to Setup**

Displayed after any recoverable error message. Press <F1> to start the boot process or <F2> to enter a Setup and change the settings. Write down and follow the information shown on the screen.

# Dealing With Problems (Advanced)

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When a problem occurs, refer to this page. If you still cannot troubleshoot the problem, contact Panasonic Technical Support.

## ● Starting Up

The power indicator or battery indicator is not lit	<ul style="list-style-type: none"><li>Check the cable connection for the AC adaptor.</li><li>Check to see if a fully charged battery is properly installed.</li><li>Remove the battery pack and disconnect the AC adaptor, then connect them again.</li></ul>
 is displayed	Input your password. If you have forgotten it, contact Panasonic Technical Support.
POST Startup Error(s) is displayed	 page 68
Windows startup, or an operation is extremely slow	Press <b>F9</b> in the Setup Utility (  page 59). 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"><li>You can set the date and time through [Date/Time] in [Start] - [Settings] - [Control Panel].</li><li>When the computer is connected to a LAN, confirm the date and time of the server.</li><li>If you continue to experience problems, the internal battery maintaining the clock may need to be replaced. Contact Panasonic Technical Support.</li><li>This computer will not correctly recognize the date and time starting from the year 2100 A.D.</li></ul> <p><b>Windows NT</b></p> <ul style="list-style-type: none"><li>When [APM 2.0 for NT] is not displayed in [Control Panel], this indicates that Phoenix APM 2.0 for Windows NT® is not installed. When the standby or hibernation function is used under this condition, the date and time may be incorrectly displayed. Correct the date and time, and then install Phoenix APM 2.0 for Windows NT®.</li><li>When the standby or hibernation function is used frequently, discrepancies may occur in the display of the date and time even if APM 2.0 for Windows NT is installed. You can set the date and time through [Date/Time] in [Start] - [Settings] - [Control Panel].</li></ul>
When the previous item is not the cause	<ul style="list-style-type: none"><li>Press <b>F9</b> in the Setup Utility ( page 59). This will restore the Setup Utility's settings to their default values (except the password settings).</li><li>Try removing all peripheral devices.</li></ul> <p><b>Windows 98</b></p> <ul style="list-style-type: none"><li>Run SCANDISK to check the hard disk.</li><li>At start-up, press <b>Ctrl</b> to operate the computer in the Safe mode.</li><p><b>Windows 2000</b></p><ul style="list-style-type: none"><li>Click [Local Disk(C:)] in [My Computer] with the right button, select [Properties], and then select [Tools] - [Check Now].</li><li>At start-up, press <b>F8</b> to operate the computer in the Safe mode.</li></ul></ul>
<b>Windows 98</b> <b>Windows 2000</b> When resuming from the standby or hibernation mode,  does not appear even if a password has been set in the Setup Utility	Use the Windows password as the following. Select [Start] - [Settings] - [Control Panel] - [Power Management]* - [Advanced], then add the check mark for [Prompt for password when computer goes off standby]. * Windows 2000: [Power Options]
<b>Windows NT</b> <b>NT does not start up</b>	Try the steps listed below. <b>1</b> Power off, then power on again. <b>2</b> If [Press spacebar NOW to ...] is displayed, press the space key. <b>3</b> If [Hardware Profile/Configuration Recover Menu] is displayed, follow the on-screen instructions.

# Dealing With Problems (Advanced)

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## ● Battery Indicator

The red indicator lights. Repeated beeping sound while the computer is in use.	The battery level is low. Save your data and power off your computer. After connecting the AC adaptor or replacing the battery pack with a fully charged one, turn your computer on.
The red indicator blinks	<ul style="list-style-type: none"><li>The battery pack or recharging function may be defective. Quickly remove the battery pack and disconnect the AC adaptor, then connect them again.</li><li>If the problem persists, contact Panasonic Technical Support.</li></ul>
The orange indicator blinks	Unable to charge because of an improper temperature range. (☞  "Precautions")

## ● Character Input

Only capital letters are being input	If <b>CapsLock</b> is on, the Caps Lock function is ON. To switch it off, press <b>Caps Lock</b> .
How to input European characters (ß, à, ç), symbols or Euro Currency Symbol is unclear	<b>Windows 98</b> <b>Windows 2000</b> Select [Start] - [Programs] - [Accessories] - [System Tools] - [Character Map]. The Character Map will be displayed. Point to the desired font name and select it. <b>Windows NT</b> Select [Start] - [Programs] - [Accessories] - [Character Map]. The Character Map will be displayed. Point to the desired font name and select it.

## ● Setup Utility

[Enter Password] is displayed	Enter the User Password or Supervisor Password. If you have forgotten it, contact Panasonic Technical Support.
[Advanced] menu can not be registered	Restart the Setup Utility with the Supervisor Password.
All or some items in [Security] menu can not be registered	Restart the Setup Utility with the Supervisor Password.
<b>F9</b> does not work	Restart the Setup Utility with the Supervisor Password.

## ● Application Software

Computer hangs	<ul style="list-style-type: none"><li>Press <b>Ctrl</b> + <b>Alt</b> + <b>Del</b> and select [Shut Down].</li><li>After shutting down by sliding the power switch for more than four seconds, slide the power switch to power on and open the application again. If the program no longer works normally, go to [Start] - [Settings] - [Control Panel] - [Add/Remove Programs] to delete the program. Then, reinstall the program.</li></ul>
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# Dealing With Problems (Advanced)

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## ● Display

No display after powering on	<ul style="list-style-type: none"><li>When there is no display to an external display.<ul style="list-style-type: none"><li>Check your cable connection to the external display.</li><li>Confirm your display is powered on.</li><li>Check the settings for your external display.</li></ul></li><li>Try changing the display by pressing <b>(Fn) + (F3)</b>. <b>Windows 98</b> The combination does not work when the computer is in the Dual-Display Mode.</li><li>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 <b>(Fn) + (F3)</b>.</li></ul>
The power has not been turned off, but after a certain period of time, there is no display	<ul style="list-style-type: none"><li>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 <b>(Ctrl)</b>.</li><li>To save power, your computer may have automatically entered the standby or hibernation mode. Slide the power switch.</li></ul>
The cursor cannot be controlled	Restart the computer by using the keyboard (e.g.,  ).
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"><li>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.</li><li>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.</li></ul>
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.
The screen becomes disordered	<ul style="list-style-type: none"><li>Changing the number of colors of the display may affect the screen. Restart the computer. <b>Windows 98</b></li><li>When using Dual-Display mode, use the same display colors for the external display as those used by the LCD.</li></ul>
The display destination of the screen cannot be changed with <b>(Fn) + (F3)</b>	In the following cases, the setting cannot be changed with <b>(Fn) + (F3)</b> . <ul style="list-style-type: none"><li>When either the internal LCD or external display is set to [Secondary] in [Displays] of Display Properties. <b>Windows 98</b> When the computer is in the Dual-Display mode.</li></ul>
After the display destination of the screen is switched with <b>(Fn) + (F3)</b> , the display destination returns to both the internal LCD and external display upon operation	Under the condition that the [MS-DOS Prompt]* screen is set to "Full Screen", the display destination returns to both the internal LCD and external display if "EXIT" is input and the [MS-DOS Prompt]* screen is closed, or "Full Screen" is canceled (e.g., <b>Alt</b> + <b>Enter</b> ), when the display destination of the screen is switched with <b>(Fn) + (F3)</b> . Press <b>(Fn) + (F3)</b> again.

\* Windows NT, Windows 2000: [Command Prompt]

# Dealing With Problems (Advanced)

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## ● Connecting Peripherals

Your peripheral does not work (An error occurs while installing the driver)	You need to use drivers conforming to the current operating system (version). Some earlier drivers will no longer work. To confirm the version, select [System] in [Start] - [Settings] - [Control Panel]. For more information, ask the manufacturer of the driver in question.
Unable to print	<ul style="list-style-type: none"><li>● Check the computer-printer connection.</li><li>● Make sure the printer is on.</li><li>● Make sure the printer is in the online state.</li><li>● Make sure paper is in the printer tray and there is no paper jam.</li><li>● Has the Setup Utility been used to set [Parallel Port] to [Enable] or [Auto].</li><li>● Depending on the printer, EPP or ECP may not work at times.</li></ul>
The cursor does not move from mouse operations	Check your mouse connection, then reboot the computer from the keyboard. From the keyboard, you may choose to press down on  , then select [Shut Down].
The device connected to the serial port does not work	<ul style="list-style-type: none"><li>● Check the connection.</li><li>● Confirm that the device driver for the serial port works. Refer to the reference manual of the device.</li><li>● Confirm that two mouse devices are not connected, one through the external keyboard/mouse port and the other through the serial port.</li><li>● Try setting [Touch Pad] to [Disable] in the Setup Utility.</li><li>● Confirm that [Serial Port] has not been set to [Disable].</li><li>● Depending on the device, the operable I/O and IRQ may be limited. Try different I/O and IRQ settings in the Setup Utility.</li></ul> <p><b>Windows 2000</b></p> <ul style="list-style-type: none"><li>● A mouse connected to the serial port will not work.</li></ul>
External mouse or trackball connected to the external keyboard/mouse port does not work	<ul style="list-style-type: none"><li>● Try setting [Touch Pad] to [Disable] in the Setup Utility.</li><li>● 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.</li></ul> <p><b>Windows 98</b></p> <ul style="list-style-type: none"><li>● If a switch is made to the Touch Pad mode in Panasonic Hand Writing, any external mouse or trackball connecting to the external keyboard/mouse port will not operate.</li></ul>
A PC Card does not work	<ul style="list-style-type: none"><li>● Make sure the card is properly inserted.</li><li>● Confirm that the card conforms to the PC Card Standard.</li><li>● Note that after a driver is installed, the computer must be rebooted.</li><li>● Check that the proper port settings have been made.</li><li>● Read the PC Card's manual. Or, you may need to call the manufacturer of the PC Card.</li><li>● Try removing/reinstalling the PC card by following the proper procedure.  <a href="#">page 39</a></li></ul> <p><b>Windows NT</b></p> <ul style="list-style-type: none"><li>● When [Card Executive 2.0 for NT] is not displayed in [Control Panel], install Phoenix Card Executive™ 2.0 for Windows NT®.</li><li>● Confirm that a PC Card compatible with Windows NT is being used.</li></ul> <p><b>Windows 2000</b></p> <ul style="list-style-type: none"><li>● Confirm that a driver for Windows 2000 has been installed.</li></ul>
You do not know the available RAM module	 <a href="#">page 42</a>
The RAM module has not been recognized	<ul style="list-style-type: none"><li>● Make sure the RAM module has been properly inserted.</li><li>● Use the RAM module that supports the recommended specifications.</li></ul>

(To next page)

# Dealing With Problems (Advanced)

## ● Connecting Peripherals

The address map for IRQ, I/O port address, etc. is unclear	<b>Windows 98</b> Check the address map by going to [View Resources] in [Start] - [Settings] - [Control Panel] - [System] - [Device Manager] - [Computer] - [Properties]. <b>Windows NT</b> Select [Start] - [Programs] - [Administrative Tools (Common)] - [Windows NT Diagnostics] to see the present conditions. <b>Windows 2000</b> Check the address map by going to [View] - [Resources by type] in [Start] - [Settings] - [Control Panel] - [System] - [Hardware] - [Device Manager].
A USB device does not work	<b>Windows 98</b> <b>Windows 2000</b> ● Make sure a driver is installed. ● Contact the manufacturer of the product. <b>Windows NT</b> USB devices are not supported, except for the USB floppy disk drive (CF-VFDU03).
It is not easy to hear of the microphone sound	<b>1</b> Double click  on the taskbar. <b>2</b> Select [Options] - [Properties]. <b>3</b> Check [Playback], and add the check mark ✓ for [Microphone], then press [OK]. <b>4</b> Select [Options] - [Advanced Controls]. <b>5</b> Press [Advanced] in [Microphone]. <b>6</b> Add the check mark ✓ for [+20dB Gain]*, then press [Close]. <b>7</b> Click ✕ in the top of right corner of the window. * Windows NT: [20 dB]
<b>Windows NT</b> IrDA does not work	Separate communications software is necessary.
<b>Windows NT</b> Some devices do not work	Press <b>F9</b> in the Setup Utility.

# Dealing With Problems (Advanced)

## Disk Operations

Cannot read/write to a disk	<ul style="list-style-type: none"><li>Has the disk been correctly inserted?</li><li>Has the disk been correctly formatted?</li><li>Has the Setup Utility been used to set [SuperDisk Operation] to [Enable]? ( page 62)</li><li>Your disk content may be corrupted.</li></ul>
Unable to write to a disk	Is the disk write-protected?
How to format a disk is unclear	Select [Format] in [My Computer] - [3 1/2 Floppy (A:)] - [File]. After confirming the disk volume and format type, start formatting.
Unable to read/write to the hard disk	<ul style="list-style-type: none"><li>Your drive or file may not have been properly set.</li><li>Check to see if the hard disk is full. If it is full, delete unnecessary files.</li><li>Your hard disk content may be corrupted. Contact Panasonic Technical Support.</li></ul>
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 computer does not recognize the CD-ROM drive	<ul style="list-style-type: none"><li>Is the CD-ROM drive properly mounted in the multimedia pocket? <b>Windows 98</b></li><li>Have you installed the drivers?</li><li>Did you restart the computer after installing the drivers?</li></ul>
The access lamp (  ) does not light	Is the disc loaded on the tray correctly?
Cannot play disc or read data from it	Is the disc bent, scratched, or dirty?
Cannot eject disc (disk)	<p>Is the computer powered on? To remove a disc (disk) when the computer is powered off, insert a sharp object such as the bent-out tip of a paper clip into the emergency hole. Pushing it completely to the end will free the tray so that it can be pulled out.</p> <p><b>CAUTION</b></p> <p>&lt;SuperDisk drive&gt; However, because there is the possibility that the lock mechanism of the head carriage may not move, do not use this method except for emergencies.</p>
A blue background appears on the screen with the MPEG image	Did you open the CD-ROM drive or remove the MPEG disc while it was operating? Re-insert the MPEG disc and close the CD-ROM drive. Press <b>Enter</b> .
The CD-ROM drive vibrates a lot	<ul style="list-style-type: none"><li>Is the disc bent labeled?</li><li>Set the [CD Drive Speed] to [Low] in the Setup Utility. ( page 63)</li></ul>
The disc tray does not close	Did you touch the eject button when you close the tray?

# Dealing With Problems (Advanced)

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## ● Network

<b>Unable to connect to a network</b>	<ul style="list-style-type: none"><li>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.</li><li>If the standby or hibernation mode is entered, the computer may have to be re-started.</li></ul>
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## ● Sound

<b>The sound is not heard</b>	<ul style="list-style-type: none"><li>Try changing the mute by pressing <b>(Fn) + (F4)</b> or <b>(Fn) + (F6)</b>.</li><li>Has the Setup Utility been used to set [Speaker] to [Disable]? ( <a href="#">page 60</a>)</li></ul>
<b>The computer produces a strange sound</b>	If the computer has not been used for a long period of time, it may produce an unusual sound at start up. The sound may continue for a short period of time, but if the computer starts up in a normal manner, then the problem is not serious. If, however, the computer fails to start up, contact Panasonic Technical Support.

## ● Shutting Down

<b>Unable to shut down Windows</b>	Do not shut down Windows during music playback.
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## ● Standby or Hibernation

**Windows 98**

<b>After entering the standby or hibernation mode, the computer does not function properly</b>	Delete the check mark for [Auto insert notification] under [Options] in [Start] - [Settings] - [Control Panel] - [System] - [Device Manager] - [Disk Drives] - [MATSHITA XXXX], then press [OK].
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## ● System File Checker

**Windows 98**

<b>The message [System File Checker identified that the following file may be corrupted] appears</b>	<p>Microsoft Corporation has announced that, with a computer in which Internet Explorer 5.01 is installed, if the [System File Checker] from the [Tools] menu in [Start] - [Programs] - [Accessories] - [System Tools] - [System Information] is executed, the following may occur.</p> <ul style="list-style-type: none"><li>The message [System File Checker identified that the following file may be corrupted] may appear for following normal files: SETUPX.DLL      MSCAT32.DLL      MSSIP32.DLL      SOFTPUB.DLL CRYPTUI.DLL      CRYPTNET.DLL      CRYPTTEXT.DLL      MSOSS.DLL MSSIGN32.DLL</li><li>In such cases, there is the possibility that the system will become unstable if the file is repaired with the System File Checker.</li></ul> <p>In this computer, since Internet Explorer 5.01 is the default browser, if the above message [System File Checker identified that the following file may be corrupted] appears for normal files, select [Ignore] and then press [OK]. Thereafter, do not use the System File Checker.</p>
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