

# Reference Manual

The Reference Manual and the Important Tips can be accessed on your computer. When a printer is connected, the Reference Manual can also be printed.

- The Reference Manual explains functions for you to make greater use of the computer, such as how to add peripheral devices, how the Setup Utility works, and other useful information. (Refer to the cover of this manual for a list of the main contents included.)
- Important Tips provides information on how to maximize use of the battery pack, which is necessary for computing away from your home or office.

## Opening the Reference Manual or Important Tips

### ● Reference Manual

Windows 2000

Select [Reference Manual] in [Start] - [Programs] - [Panasonic] - [On-Line Manuals]

Windows XP

Select [Reference Manual] in [start]

### ● Important Tips

Select  on the desktop

Important Tips can also be accessed from the following menu.

Windows 2000

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

Windows XP

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

When the Reference Manual or Important Tips is started up for the first time, the License Agreement of the Acrobat Reader may be displayed. If it is displayed, after reading the agreement, select [Accept] to access the Reference Manual or Important Tips.

#### NOTE

- Illustrations may be difficult to view depending on the magnification. If the illustration is too small, magnify the display.
- When the taskbar is hidden at the bottom portion of Acrobat Reader, set the maximum display window size.
- If a printer is connected, we recommend printing pages. The illustrations and display samples may not print with a high quality.

Windows XP

- When switching to a different user with the Fast User Switching function, PDF files may not be printed properly. In this case, log off all users, and try the operation once more. If the problem persists, restart the computer.

# List of Error Codes

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 any of the below error messages other than the ones marked with an asterisk (\*), write down the message and contact Panasonic Technical Support (☎ page 42). 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 is 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 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 (☎ page 42).

## **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 (☎ page 42).

## **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

## **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 (Summary)

When a problem occurs, refer to this page. The “Reference Manual” also contains detailed information. If a problem appears to be related to a software application, read the software related manual. If you still cannot troubleshoot the problem, contact Panasonic Technical Support (☎ page 42).

<Only for CF-50E\*\*\*\*\*/CF-50G\*\*\*\*\*>

You can use the PC Information Viewer to check the computer's usage status. (☞ <sup>Reference Manual</sup> “Dealing with Problems (Advanced)”)

## ● Starting Up

<b>The power indicator or battery indicator is not lit</b>	<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>
<b>[Enter Password] is displayed</b>	Input your Supervisor Password or User Password. If you have forgotten it, contact Panasonic Technical Support (☎ page 42).
<b>POST Startup Error(s) is displayed</b>	☞ page 21
<b>Windows startup, or an operation is extremely slow</b>	Press <b>(F9)</b> in the Setup Utility (☞ <sup>Reference Manual</sup> “Setup Utility”). 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.)
<b>The date and time are incorrect</b>	<ul style="list-style-type: none"> <li>● You can set the date and time using the following procedure. <ul style="list-style-type: none"> <li><b>Windows 2000</b> : [Start] - [Settings] - [Control Panel] - [Date/Time]</li> <li><b>Windows XP</b> : [start] - [Control Panel] - [Date, Time, Language, and Regional Options] - [Date and Time]</li> </ul> </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 (☎ page 42).</li> <li>● This computer will not correctly recognize the date and time starting from the year 2100 A.D.</li> </ul>
<b>When resuming from the standby or hibernation mode, [Enter Password] does not appear even if a password has been set in the Setup Utility</b>	<p>Even when a password has been set in the Setup Utility, [Enter Password] does not appear when the computer resumes from the standby or hibernation mode.</p> <p>If you want to use the security function when using the standby or hibernation mode, use the Windows password as follows:</p> <p><b>Windows 2000</b> Set the password in [Control Panel] - [Users and Passwords], then add the check mark for [Prompt for password when computer goes off standby] in [Control Panel] - [Power Options] - [Advanced].</p> <p><b>Windows XP</b> Select the account to change in [Control Panel] - [User Accounts] and set the password, then add the check mark for [Prompt for password when computer resumes from standby] in [Control Panel] - [Performance and Maintenance] - [Power Options] - [Advanced].</p>
<b>When “Invalid system disk. Replace the disk, and then press any key.” (or a similar message) is displayed</b>	<ul style="list-style-type: none"> <li>● This means a floppy disk that does not contain system startup information has been left in the floppy disk drive. Remove the floppy disk, and press any key.</li> <li>● If the message still appears even after trying the above measure, this may be an indication that some type of hard disk failure has occurred. Contact Panasonic Technical Support (☎ page 42).</li> </ul>
<b>When the administrator password is forgotten</b>	<p><b>Windows 2000</b> After reinstalling, setup Windows and then set the password again.</p> <p><b>Windows XP</b> If you have created a password reset disk (☞ page 15), a message is displayed when you fail to correctly enter the password. Follow the message’s instructions and set the password again by using the password reset disk.</p> <p>If you have not created a password reset disk, after reinstalling, setup Windows and then set the password again.</p>

# Dealing with Problems (Summary)

## Starting Up (continued)

When the previous item is not the cause	<ul style="list-style-type: none"> <li>● Press <b>(F9)</b> in the Setup Utility (☞ <small>Reference Manual</small> “Setup Utility”). This will restore the Setup Utility’s settings to their default values (except the password settings).</li> <li>● Try removing all peripheral devices.</li> <li>● Check a disk error using the following procedure.             <ol style="list-style-type: none"> <li>1 Display [Local Disk (C:) Properties].                 <ul style="list-style-type: none"> <li><b>Windows 2000</b> Select [Local Disk(C:)] with the right button in [My Computer], and select [Properties].</li> <li><b>Windows XP</b> Select [Local Disk(C:)] with the right button in [start] - [My Computer], and select [Properties].</li> </ul> </li> <li>2 Select [Tools] - [Check Now].</li> <li>3 Select [Start] after selecting required items in [Check disk options].</li> </ol> </li> <li>● At start-up, press <b>(F8)</b> to operate the computer in the Safe Mode.</li> <li>● At startup, hold down <b>(F8)</b> when [Panasonic] boot screen disappears, and release your finger when the Windows Advanced Option Menu is displayed. Start the computer in Safe Mode, and confirm the details of the error.</li> </ul>
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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>.</li> <li>● If you want to switch the display destination repeatedly by pressing <b>(Fn) + (F3)</b>, make sure that the display destination has switched completely each time before pressing <b>(Fn) + (F3)</b> again.</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. (☞ <small>Reference Manual</small> “Computing on the Road”) Press the power switch.</li> </ul>
When the battery pack is used, the screen is darker than when the AC adaptor is connected	<p>Press <b>(Fn) + (F2)</b> and adjust the brightness. Note, however, that when the brightness is increased, the battery running time will become shorter.</p> <p>Brightness can be set to separate levels for when the AC adaptor is connected and when it is disconnected.</p>
The cursor cannot be controlled properly	<ul style="list-style-type: none"> <li>● If you are using an external mouse, ensure that the external mouse has been connected correctly.</li> <li>● Restart the computer by using the keyboard (Press <b>(Win)</b>, <b>(U)</b>, and select [Restart] with <b>(→) (←) (↑) (↓)</b>, then press <b>(Enter)</b>).</li> <li>● If the computer does not respond to keyboard commands, read “No response” (☞ page 26).</li> </ul>
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 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.</li> <li>● Stop playing the MPEG file before switching the display destination.</li> <li><b>Windows XP</b></li> <li>● When using Dualview, use the same display colors for the external display as those used by the LCD.</li> <li>● When using Dualview, do not press <b>(Fn) + (F3)</b>.</li> </ul>

<b>The external display no longer displays properly</b>	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.
<b>When you want to display the fonts or icons at a larger size</b>	Change the settings as follows (for more details, refer to the Windows Help). <b>Windows 2000</b> <b>1</b> Select [Start] - [Settings] - [Control Panel] - [Display] - [Appearance]. <b>2</b> Select the scheme labeled “large” or “extra large” in [Scheme] to change the font size, and select [Icon] in [Item] to change the icon size. <b>3</b> Select [OK]. You can change the size of the icons, etc. using “Icon Enlarger” (☞ page 13). <b>Windows XP</b> <b>1</b> Select [start] - [Control Panel] - [Appearance and Themes] - [Display] - [Appearance]. <b>2</b> Select the font size in [Font size], and select [Effects] and then add the check mark for [Use large icons] to increase the icon size. <b>3</b> Select [OK], then select [OK]. You can change the size of the icons, etc. using “Icon Enlarger” (☞ page 14).
<b>Windows XP</b> <b>An error occurs or the computer freezes while using Dualview</b>	If you use a 3D screen saver while in Dualview mode at a high resolution, an error may occur or the computer may freeze. Under these conditions, do not use a 3D screen saver.

## ● Fast User Switching function **Windows XP**

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

<b>The red indicator lights</b>	The battery level is very low (the charge is less than approx. 9% capacity). Connect the AC adaptor. You can use the computer when the indicator light is orange. If you do not have an AC adaptor, save your data and power off your computer. After replacing the battery pack with a fully charged one, turn your computer on.
<b>The red indicator blinks</b>	Quickly save your data and power off your computer. Remove the battery pack and disconnect the AC adaptor, then connect them again. If the problem persists, contact Panasonic Technical Support. The battery pack or recharging function may be defective.
<b>The orange indicator blinks</b>	Battery cannot be recharged temporarily because the internal temperature of the battery pack is outside of the acceptable temperature range for recharging. Once the allowable range requirement is satisfied, charging begins automatically. Your computer can be used normally.

# Dealing with Problems (Summary)

## ● Reference Manual

<b>The Reference Manual is not displayed</b>	Is Acrobat Reader installed? If Acrobat Reader is not installed, run the following*1 in [Start]*2 - [Run] to reinstall the program. When installing the program, do not change the installation destination folder. If the destination folder is changed, the Reference Manual cannot be opened from [Start]*2 menu. *1 <CF-50A*****/CF-50B*****>: [c:\util\reader\ar505enu.exe] <CF-50E*****/CF-50G*****>: [c:\util\reader\m\acroreader51_enu_full.exe] *2 <b>Windows XP</b> : [start]
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## ● Shutting down

<b>Windows cannot be shut down or restarted</b>	If a USB device is connected, try removing it.
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## ● Disk Operations

<b>If the CD drive vibrates excessively or is noisy</b>	<ul style="list-style-type: none"><li>● Is the disc bent or labeled?</li><li>● Check to see if the disc is inserted correctly, and check that the disc is in good condition. If the disc is good and inserted correctly, set [CD Drive Speed] to [Low] in the Setup Utility. (📖 <small>Reference Manual</small> “Setup Utility”)</li></ul>
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## ● Others

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

When reinstall procedure is performed, the contents of the hard disk will be erased. Be sure to back up any critical data that is on your hard disk before running the reinstall procedure.

The reinstall procedure will return the computer to its original condition.

- If you have created partitions for data, the data may be erased or become corrupt as a result of the reinstall procedure.

## Before Reinstallation

### ● Preparing

- The Product Recovery CD-ROM  
<Only for CF-50A\*\*\*\*\*/CF-50B\*\*\*\*\*>
- The Backup Disk (e.g., FIRST AID FD) you made earlier (☞ page 15)

#### NOTE

<Only for CF-50A\*\*\*\*\*/CF-50B\*\*\*\*\*>

If you have not created the FIRST AID FD, you can create by using the following procedure.

**Windows 2000** : [Create Backup Disk] in [Start] - [Programs] - [Panasonic].

**Windows XP** : [Create Backup Disk] in [start] - [All Programs] - [Panasonic].

If you can not create this disk, contact Panasonic Technical Support (☞ page 42).

### ● Important

- Before the reinstallation procedure, remove all peripherals.
- Be sure the AC adaptor is connected until the reinstallation procedure is completed.
- Even if reinstallation is executed to return this unit to its condition at the time of purchase, the region code will not be returned to its original condition. (☞ <sup>Reference</sup>Manual “CD Drive”)

## Reinstalling

#### CAUTION

For users intending to change the partitioning of the hard disk:

- Do not use the FDISK program that comes as a standard with Windows 95, Windows 98, and Windows 98 Second Edition, as this has been shown to result in an error in the partitioning settings.

The following FDISK programs will enable the correct settings:

- FDISK program that comes as a standard with Windows Me
- Windows 98 and Windows 98 Second Edition FDISK programs for hard disks that is larger than 64 GB in size\*

\* A patch for correcting the bug in the standard FDISK program has been made available as a free download. For details, refer to the Microsoft Web Site.

- When selecting [2] in-step 8, the partition can also be divided in two. (☞ page 28)

- 1 Turn the computer on, and press **(F2)** while [Panasonic] boot screen is displayed.  
The Setup Utility will start up.  
If the password has been set, enter the Supervisor Password.

- 2 Write down all of the contents of the Setup Utility and then press **(F9)**.

At the confirmation message, select [Yes] and press **(Enter)**.

- 3 Select [Boot] menu, then select [CD Drive] and press **(F6)** until [CD Drive] is at the top of [Boot] menu.

- 4 Place the disc number one of the recovery CDs into the CD drive.

- 5 Press **(F10)**.

At the confirmation message, select [Yes] and press **(Enter)**.

The computer will restart, and this screen should appear.

<CF-50A\*\*\*\*\*/CF-50B\*\*\*\*\*>

Select a number

1. Start restoring the operating system.
2. Erase the whole data on HDD for security.
3. End

<CF-50E\*\*\*\*\*/CF-50G\*\*\*\*\*>

Select a number

1. [ Recovery ] Reinstall Windows.
2. [ Erase HDD ] Erase the whole data on HDD for security.
0. [ Cancel ] Cancel.



# Reinstalling Software

- 6 Select the following.  
 <CF-50A\*\*\*\*\*/CF-50B\*\*\*\*\*>  
 [1. Start restoring the operating system.]  
 <CF-50E\*\*\*\*\*/CF-50G\*\*\*\*\*>  
 [1.[Recovery]]

The License Agreement screen should appear.

- 7 Select [1. Yes, I agree to the provisions above and wish to continue!].  
 This screen should appear.  
 <CF-50A\*\*\*\*\*/CF-50B\*\*\*\*\*>

## Windows 2000

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Select a number
-----
1. Restore Windows(R) 2000 Professional to the whole HDD.
2. Make two partitions, for the operating system and data. And restore
  Windows(R) 2000 Professional to the operating system partition.
  (All existing partitions on HDD will be lost.)
3. Restore Windows(R) 2000 Professional to the first partition.
4. End
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```

## Windows XP

```

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Select a number
-----
1. Restore Windows(R) XP Professional to the whole HDD.
2. Make two partitions, for the operating system and data. And restore
  Windows(R) XP Professional to the operating system partition.
  (All existing partitions on HDD will be lost.)
3. Restore Windows(R) XP Professional to the first partition.
4. End
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```

<CF-50E\*\*\*\*\*/CF-50G\*\*\*\*\*>

## Windows 2000

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-----
Select a number
-----
Reinstalling : Windows(R) 2000 Professional
-----
1. Reinstall Windows to the whole HDD to factory default.
2. Make two partitions, for the operating system and data. And reinstall
  Windows to the operating system partition.
  (All existing partitions on HDD will be lost.)
3. Reinstall Windows to the first partition.
-----
0. Cancel
-----
  
```

## Windows XP

```

-----
Select a number
-----
Reinstalling : Windows(R) XP Professional
-----
1. Reinstall Windows to the whole HDD to factory default.
2. Make two partitions, for the operating system and data. And reinstall
  Windows to the operating system partition.
  (All existing partitions on HDD will be lost.)
3. Reinstall Windows to the first partition.
-----
0. Cancel
-----
  
```

- 8 Make a selection from the menu.
- When selecting [2], enter the basic partition size for the operating system installation and press **(Enter)**. (The data partition size is the remainder after subtracting the basic partition size.)
  - To select [3], the initial partition size must be 6 GB or more of the hard disk size. Reinstallation cannot be performed with a small partition size.

- 9 At the confirmation message, press **(Y)**.  
 The operation of reinstallation for the hard disk starts automatically. (The operations take about 15 minutes.)

## CAUTION

- Do not cancel the reinstallation procedure before it is completed.
- When a message appears instructing you to insert the next CD, insert the recovery CD showing the next number in the sequence, and then select [OK]. If the message “The media does not contain the correct file” appears, select [OK]. A message will appear instructing you to insert the next CD. Confirm that the proper recovery CD has been inserted by opening the tray of the CD drive and then close the tray, then select [OK].

- 10 After the reinstallation procedure completes, the following message will appear on the display.

<CF-50A\*\*\*\*\*/CF-50B\*\*\*\*\*>

## Windows 2000

Windows(R) 2000 Professional install wizard will start after reboot.  
 Remove the Product Recovery CD-ROM, then restart the computer by pressing  
 Ctrl + Alt + Del (Delete).

## Windows XP

Windows(R) XP Professional install wizard will start after reboot.  
 Remove the Product Recovery CD-ROM, then restart the computer by pressing  
 Ctrl + Alt + Del (Delete).

<CF-50E\*\*\*\*\*/CF-50G\*\*\*\*\*>

## Windows 2000

```

-----
[Recovery] is complete.
Windows(R) 2000 Professional install wizard will start after reboot.
Please Remove the Product Recovery CD-ROM, and press
Ctrl + Alt + Del(Delete) to reboot.
-----
  
```

## WindowsXP

```

-----
[Recovery] is complete.
Windows(R) XP Professional install wizard will start after reboot.
Please Remove the Product Recovery CD-ROM, and press
Ctrl + Alt + Del(Delete) to reboot.
-----
  
```

- 11 Remove the Product Recovery CD-ROM, then restart the computer by pressing **(Ctrl)** + **(Alt)** + **(Del)**.

- 12 Turn the computer on, and press **(F2)** while [Panasonic] boot screen is displayed.

The Setup Utility will start up.

If the password has been set, enter the Supervisor Password.

- 13 Press **(F9)**.

At the confirmation message, select [Yes] and press **(Enter)**. (The Setup Utility settings will return to their default values. Even the security settings with the exception of the password(s) will return to their default values.)

**14** Press **F10**.

At the confirmation message, select [Yes] and press **Enter**.

**15** Perform the setup procedure for Windows by following the instructions on the screen. (☞ page 13)

**16** Run the Setup Utility and change the settings where necessary.

#### <Changing the drive letter>

You can change the drive letter for the CD drive or hard disk drive by the following steps.

- Drive letters can only be changed when two or more partitions have been created on the hard disk drive. The name of the C: drive cannot be changed.
- We recommend that you make these changes before installing applications.

#### Windows 2000

- 1** Select [Start] - [Settings] - [Control Panel] - [Administrative Tools] - [Computer Management].
- 2** Select [Disk Management] from [Storage].
- 3** Right click on the partition of the hard disk or the name of the CD drive and select [Change Drive Letter and Path].
- 4** Select [Edit].
- 5** Select [Assign a drive letter] and the new drive letter, and then select [OK].
- 6** At the confirmation message, select [Yes].

#### Windows XP

- 1** Select [start] - [Control Panel] - [Performance and Maintenance] - [Administrative Tools] - [Computer Management].
- 2** Select [Disk Management] from [Storage].
- 3** Right click on the partition of the hard disk or the name of the CD drive and select [Change Drive Letter and Paths].
- 4** Select [Change].
- 5** Select [Assign the following drive letter] and the new drive letter, and then select [OK].
- 6** At the confirmation message, select [Yes].

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# Hard Disk Data Erase Utility

This computer is equipped with a utility for completely erasing hard disk data. When disposing of or transferring ownership of this device, erase all data on the hard disk in order to prevent the theft of hard disk data following the steps below.

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

## Preparing

You will need the Product Recovery CD-ROM.

### NOTE

- Be sure the AC adaptor is connected until the procedure is completed.
- This utility can only be used for internal hard disk. It cannot be used to erase data from external hard disks.
- This utility cannot erase data from damaged disk.
- This utility cannot erase data for specific partitions.
- After executing this utility, the computer cannot be booted from the hard disk.

## Procedure

- 1 Turn the computer on, and press **(F2)** while [Panasonic] boot screen is displayed. The Setup Utility will start up. If the password has been set, enter the Supervisor Password.
- 2 Select [Boot] menu, then select [CD Drive] and press **(F6)** until [CD Drive] is at the top of [Boot] menu.
- 3 Place the disc number one of the recovery CDs into the CD drive.

- 4 Press **(F10)**.  
At the confirmation message, select [Yes] and press **(Enter)**.  
The computer will restart, and this screen should appear.

<CF-50A\*\*\*\*\*/CF-50B\*\*\*\*\*>

```
-----  
Select a number  
-----  
1. Start restoring the operating system.  
2. Erase the whole data on HDD for security.  
3. End  
-----
```

<CF-50E\*\*\*\*\*/CF-50G\*\*\*\*\*>

```
-----  
Select a number  
-----  
1. [ Recovery ] Reinstall Windows.  
2. [ Erase HDD ] Erase the whole data on HDD for security.  
  
0. [ Cancel ] Cancel.  
-----
```

- 5 Select the following.  
<CF-50A\*\*\*\*\*/CF-50B\*\*\*\*\*> [2. Erase the whole data on HDD for security.]  
<CF-50E\*\*\*\*\*/CF-50G\*\*\*\*\*> [2. [Erase HDD]]

- 6 At the confirmation message, press **(Y)**.

- 7 At the start menu, press **(Enter)**.

- 8 The time required for erasing data will be displayed.  
Press **(Space)**.

- 9 At the confirmation message, press **(Enter)**.  
The operation of erasing the hard disk starts.

- 10 After the operation is complete:  
Under normal conditions, the message [Hard disk data has been deleted.] will be displayed.  
If a problem occurred during the operation, an error message will be displayed.

- 11 Remove the Product Recovery CD-ROM, then turn off the computer by using the power switch.

# B's Recorder/B's CLiP

## <Model with a DVD-ROM & CD-R/RW drive / Model with a DVD MULTI drive >

“B's Recorder GOLD5” (hereafter, B's Recorder) and “B's CLiP” are CD and DVD recording software applications developed by B.H.A Corporation.

Here, explanations are given on general information about B's Recorder and B's CLiP, the installation procedure, and how to access the online manual. Refer to the online manual concerning the detailed use of the software application (☞ page 34).

### ● Applicable Media

- CD-R\* (one-time recordable CD media)
- CD-RW (rewritable CD media)

\* Applicable only for B's Recorder. It cannot be used for B's CLiP.

## Before Installing the Software

### Windows 2000

Uninstall Adaptec CD-Burning Plug-in.

- 1 Select [Start] - [Settings] - [Control Panel] - [Add/Remove Programs].
- 2 Select [Windows Media Player 7] - [Change/Remove].
- 3 Select [Remove Windows Media components] and select [Next].
- 4 Select [Adaptec CD-Burning Plug-in] from the components list, and select [Next].
- 5 If the [Windows Media setup is now ready to uninstall] message appears, select [Next].
- 6 Select [Finish] and restart the computer.

### Windows XP

Select [(X:)]\* in [start] - [My Computer] with the right button, select [Properties] - [Recording], then delete the check mark for [Enable CD recording on this drive].

(Delete the check mark for [Enable CD recording on this drive] every time a new user is added.)

\* “X” is the drive letter. You can change the letter to suit your preference.

## Installing the Software

### CAUTION

- Close all other software application before running the Setup program for B's Recorder and B's CLiP for added safety.
- Log on with the administrator authority.
- Take care not to lose the serial number.

- ① Set “B's Recorder GOLD/B's CLiP” disc in the drive.  
[B.H.A setup launcher] screen will appear (allow some time for disc recognition). When the setup program will not run automatically, input [X:\Setuputil.exe]\*<sup>1</sup> in [Start]\*<sup>2</sup> - [Run] and select [OK].

### Windows 2000

At the message, select [OK].

- ② Select [B's Recorder GOLD5] and follow the on-screen instructions.  
During the course of the installation process, you will be asked to input a serial number. Input the serial number marked on the sticker and the disc.
- ③ Upon completion of the installation, select [Yes, I want to restart my computer now], then select [Finish]. The computer will restart.
- ④ Input [X:\Setuputil.exe]\*<sup>1</sup> in [Start]\*<sup>2</sup> - [Run] and select [OK].  
[B.H.A setup launcher] screen will appear.

### Windows 2000

At the message, select [OK].




- ⑤ Select [B's CLiP] and follow the on-screen instructions.  
During the course of the installation process, you will be asked to input a serial number. Input the serial number marked on the sticker and the disc.
- ⑥ Upon completion of the installation, select [Yes, I want to restart my computer now], then select [Finish]. The computer will restart.

\*<sup>1</sup> “X” is the drive letter. You can change the letter to suit your preference.

\*<sup>2</sup> **Windows XP** : [start]

# B's Recorder/B's CLiP


## CAUTION

- You cannot eject the disc by using the eject button on the drive while  is displayed on the taskbar. To eject the disc in this case, move the cursor to the indicator and right-click it to select [Eject].  
Do not eject discs in any other way except the one described above.
- When formatting a disc with B's CLiP, right-click  or  to select [Format]. Do not select [My computer].  
After formatting the disc, eject it then re-insert before using it.
- When settings are changed using the following method, only a user with administrator authority can make the settings:  
Select the CD drive icon or the B's CLiP icon on the Taskbar with the right button, and select [Properties] - [B's CLiP Page Settings].

### Windows 2000

- If CD/DVD media with B's CLiP format is removed while the content of that media is displayed in Explorer, the contents of the media may remain displayed in Explorer even after the media is removed. This will not affect the computer's operation. When another CD/DVD media is inserted, the Explorer display will be updated.

### Windows XP

- Do not use the Fast User Switching function.  
If this function is used,  will no longer be shown on the user taskbar after the switching is complete. (If this happens, log off of Windows, and return to the original user.)

## How to access the Online Manual

### ● B's Recorder

**Windows 2000** : Select [Start] - [Programs] - [B.H.A] - [B's Recorder GOLD5] - [User's Manual].


**Windows XP** : Select [start] - [All Programs] - [B.H.A] - [B's Recorder GOLD5] - [User's Manual].

### ● B's CLiP

**Windows 2000** : Select [Start] - [Programs] - [B.H.A] - [B's CLiP] - [User's Manual].

**Windows XP** : Select [start] - [All Programs] - [B.H.A] - [B's CLiP] - [User's Manual].

## Information

- If B's Recorder and B's CLiP do not operate properly, we recommend carefully reading the online help file first for problems with the operating environment or operations.  
If you still cannot troubleshoot the problem, contact B.H.A ( described below).
- **About Copies**  
When writing to discs, make sure that you are not infringing any copyrights.  
It is illegal to copy audio CDs for non-personal use.  
When backing up software, make sure that you are not infringing any software copyrights for that product.

## SUPPORT INFORMATION

Inquires about B's Recorder and B's CLiP should be made to B.H.A.

URL: <http://www.bhacorp.com/support/>

<http://www.bha.co.jp/support/> (Japanese)

area	language	e-mail
U.S./Canada/Australia	English, French (Canada)	winntsupport@bhacorp.com
Europe	English, German, French	eurosupport@bhacorp.com
Asia	Chinese	asiastupport@bhacorp.com

WinDVD™ (hereafter, WinDVD) is a software application for DVD playback.

Here, you will find explanations and general information on the installation procedure and how to access the online manual.

## Installing WinDVD

### CAUTION

- Close all other software application before running the Setup program for WinDVD for added safety.
- Log on with the administrator authority.

① Set the WinDVD CD-ROM in the drive.

The WinDVD setup program will run automatically (allow some time for disc recognition). When the setup program will not run automatically, input [x:\setup] in [Start]\* - [Run] and select [OK]. (“x” is the drive letter. You can change the letter to suit your preference.)

\* **Windows XP** : [start]

② Select [Next] at the Welcome Message.

③ After reading the “License Agreement”\*, select [Yes] if you agree to the terms.

\* Refer to the “LIMITED USE LICENSE AGREEMENT” on the Operating Instructions of the computer.

④ Follow the on-screen instructions and install WinDVD.

### <Confirmation of the DVD-ROM drive settings>

To run WinDVD, it is necessary to make the following settings.

① **Windows 2000** Select [Start] - [Settings] - [Control Panel] - [System] - [Hardware] - [Device Manager].

**Windows XP** Select [start] - [Control Panel] - [Performance and Maintenance] - [System] - [Hardware] - [Device Manager].


② Double-click [Primary IDE Channel] for [IDE ATA/ATAPI controllers].

③ Select [Advanced Settings], and confirm that [Transfer Mode] is set to [DMA if available] for [Device 0] and [Device 1].

④ Double-click [Secondary IDE Channel] for [IDE ATA/ATAPI controllers] and perform as the step ③.

## Running WinDVD

### Windows 2000

Select [Start] - [Programs] - [InterVideo WinDVD] - [InterVideo WinDVD] or select  on the desktop.

### Windows XP

Select [start] - [All Programs] - [InterVideo WinDVD] - [InterVideo WinDVD] or select  on the desktop.

### <How to access the online manual>

Select “?” of the WinDVD control panel.

### NOTE

- Do not enter the standby or hibernation mode while WinDVD is running.
- Do not start WinDVD while the hard disk drive’s indicator is blinking immediately after the computer was started up.
- If you maximize the video display window, you can return to the original window size by double-clicking over the images.
- During video playback (while the access lamp is on), do not eject the disc.
- Do not use other applications or the Command Prompt, and do not change the settings of the screen properties.
- In some cases, when the number of colors for the display is increased, a message appears and the DVD cannot be played. If this happens, reduce the number of display colors.
- Immediately after resuming from a pause, frame dropping may occur depending on the operating environment or DVD video (images or sounds are disrupted).
- In the Dualview or simultaneous (internal/external) display mode, there are times when images or video are not displayed correctly.
- During a prolonged period of rapid advance, the pause mode may be established at some point. If this happens, exit WinDVD, and restart.



## About Regions Setting

<Only for CF-50A\*\*\*\*\*/CF-50B\*\*\*\*\*>

The regions setting can be changed for up to 5 times. After the fifth change is made, it will no longer be possible either to change the setting or to return to the original setting.

<Only for CF-50E\*\*\*\*\*/CF-50G\*\*\*\*\*>

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

<Example>

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

For Europe: "2"

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

- In the case of a DVD-Video with a specific region code:

The drive will automatically be set with the same region code as the DVD-Video.

- In the case of any other DVD-Video:

[Confirm Region] appears. Select region code and select [OK]. Play now begins.

([Confirm Region] may not be displayed for some DVD-Videos. To confirm the current region code and the number of settings remaining, right-click on the WinDVD screen and select [Setup] - [Region].)

### CAUTION

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

### NOTE

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

## Information

Inquires about WinDVD should be made to InterVideo, Inc.

InterVideo, Inc.

URL: <http://www.intervideo.com/>

E-mail: [support@intervideo.com](mailto:support@intervideo.com)

# Names and Functions of Parts

The illustrations shown may differ from the actual physical appearances.

## LCD

## Function Keys

For information on the key combinations available.

(Reference Manual "Key Combinations").

There are dots near function keys to enable you to locate the key's position by touch.

## LED Indicators

(Reference Manual "LED Indicators")

- Caps Lock
- Numeric key (NumLk)
- Scroll lock (ScrLk)
- CD drive status\*
- Floppy disk drive status
- Hard disk drive status
- Power status

\* The access lamp on the CD drive lights at the same time as this indicator. (In some cases, only one of them may light.)

## Power Switch

Before using the computer for the first time, carefully read [Limited Use License Agreement]. If you agree to the conditions, remove the seal.

## CD Drive (Reference Manual "CD Drive")

<Only for the model with a wireless LAN>

## Wireless LAN Antenna (Reference Manual "Wireless LAN")

(Reference Manual "Wireless LAN")

## Keyboard

There is a small bar on **F**, **J**, and to enable you to locate the key's position by touch.

## Speakers

- To adjust the volume: **Fn** + **F5** / **Fn** + **F6**
- Speaker on/off: **Fn** + **F4**

## Touch Pad (page 19)

## Headphone Jack

Use this connector to connect headphones or amplifier-equipped speakers. Audio output from the internal speaker is disabled when headphones or external speakers are connected.

## Microphone Jack

Use only a monaural condenser microphone. Using an input source other than a monaural condenser microphone may not allow audio to be input or may damage the equipment.

<Only for the model with a wireless LAN>

## Wireless LAN Antenna (Reference Manual "Wireless LAN")

(Reference Manual "Wireless LAN")

## Floppy Disk Drive

## DC-IN Jack

DC IN 15.6V

## PC Card Slots (Reference Manual "PC Cards")

(Reference Manual "PC Cards")

## Security Lock LOCK

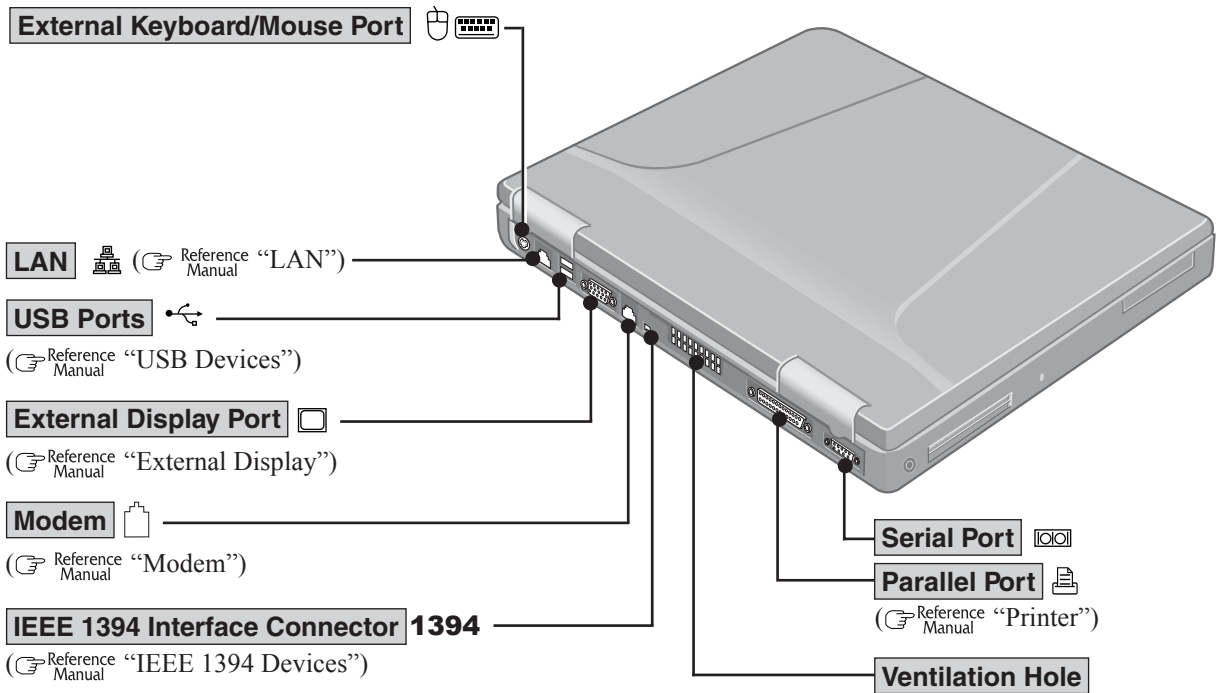
A Kensington cable can be connected to prevent theft of your computer. For more information, please read the manual that comes with the cable.

## LED Indicators (Reference Manual "LED Indicators")

(Reference Manual "LED Indicators")

- Power status
- Battery pack status

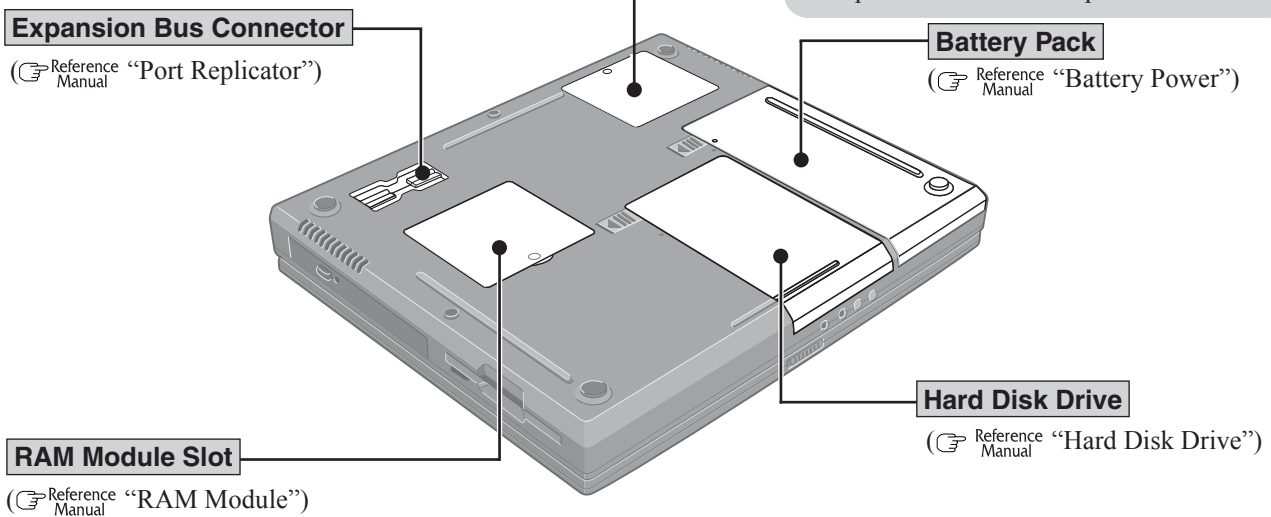
# Names and Functions of Parts




These holes allow heat to exit.

**CAUTION**  
Do not block or place the computer in a location that may prevent proper ventilation.

**CAUTION**  
This cover is not to be opened by anyone except authorized service personnel.





A lithium ion battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

L'appareil que vous vous êtes procuré est alimenté par une batterie au lithium-ion. Pour des renseignements sur le recyclage de la batterie, veuillez composer le 1-800-8-BATTERY.

# Specifications

This page provides the specifications for the basic model CF-50AAKHU DM/CF-50BB2HU DM/CF-50AAKHUKM/CF-50BB2HUKM/CF-50EAKQU DM/CF-50EAKQUKM/CF-50GB2UUDM/CF-50GB2UUKM. The model number will change depending on the configuration of the unit, such as, CPU speed, memory size, HDD size, Operating System, LCD type, and whether a DVD-ROM drive, a DVD-ROM&CD-R/RW drive or a DVD MULTI drive is included or not.

## To check the model number:

Check the bottom of the computer or the box the computer came in at the time of purchase.

## To check CPU speed, memory size and the hard disk drive (HDD) size:

Run the Setup Utility (☞ Reference Manual "Setup Utility") and select [Information] menu.

Confirm the required information by checking the following items.

CPU speed: [CPU Speed]

Memory size: [System Memory]

Hard disk drive size: [Primary Master]

## ● Main Specifications

### <CF-50A\*\*\*\*\*/CF-50B\*\*\*\*\*>

Model No.	CF-50AAKHU DM	CF-50AAKHUKM	CF-50BB2HU DM	CF-50BB2HUKM
CPU	Mobile Intel® Pentium® 4 Processor 2.0 GHz-M		Mobile Intel® Pentium® 4 Processor 2.2 GHz-M	
	L2 (Second) Cache Memory: 512 KB			
Memory (Expandable to)	256 MB (768 MB Max. )		512 MB (1024 MB Max. )	
Video Memory	64 MB			
LCD	Type		15.0 UXGA type (TFT)	
	Displayed Colors*1		256/65536/16M colors (640 × 480 dots/800 × 600 dots/1024 × 768 dots)	
External Display	256/65536/16M colors (640 × 480 dots/800 × 600 dots/1024 × 768 dots/1280 × 1024 dots/1600 × 1200 dots/2048 × 1536 dots)*2			
Hard Disk Drive	40 GB*3		60 GB*3	
Operating System	Microsoft® Windows® 2000 Professional with Service Pack 3	Microsoft® Windows® XP Professional with Service Pack 1	Microsoft® Windows® 2000 Professional with Service Pack 3	Microsoft® Windows® XP Professional with Service Pack 1

### <CF-50E\*\*\*\*\*/CF-50G\*\*\*\*\*>

Model No.	CF-50EAKQU DM	CF-50EAKQUKM	CF-50GB2UUDM	CF-50GB2UUKM
CPU	Intel® Pentium® M Processor 1.4 GHz		Intel® Pentium® M Processor 1.6 GHz	
	L2 (Second) Cache Memory: 1 MB			
Memory (Expandable to)	256 MB (768 MB Max. )		512 MB (1024 MB Max. )	
Video Memory	64 MB			
LCD	Type		15.0 UXGA type (TFT)	
	Displayed Colors*1		256/65536/16M colors (640 × 480 dots/800 × 600 dots/1024 × 768 dots)	
External Display	256/65536/16M colors (640 × 480 dots/800 × 600 dots/1024 × 768 dots/1280 × 1024 dots/1600 × 1200 dots/2048 × 1536 dots)*2			
Hard Disk Drive	40 GB*3		60 GB*3	
Operating System	Microsoft® Windows® 2000 Professional with Service Pack 3	Microsoft® Windows® XP Professional with Service Pack 1	Microsoft® Windows® 2000 Professional with Service Pack 3	Microsoft® Windows® XP Professional with Service Pack 1

\*1 A 16 M color display is achieved by using the dithering function.

Windows XP : 256 color depth and the resolution of 640 × 480 are not supported.

Windows 2000 : Setting 256 color depth or the resolution of 640 × 480 is not recommended.

\*2 Maximum resolution depends on the specifications of the external display.

Windows XP : 256 color depth and the resolution of 640 × 480 are not supported.

Windows 2000 : Setting 256 color depth or the resolution of 640 × 480 is not recommended.

\*3 1GB = 10<sup>9</sup> bytes

# Specifications

## Other Specifications

<b>Keyboard</b>		87 keys			
<b>Slots</b>	<b>PC Card Slots</b>	Two Type I or Type II, or one Type III			
		Allowable current 3.3 V: 400 mA, 5 V: 400 mA (total for two slots)			
	<b>RAM Module Slot<sup>*1</sup></b>	200-pin, SO-DIMM, DDR-SDRAM, PC2100			
<b>Interface</b>	<b>Parallel Port</b>	Dsub 25-pin female			
	<b>External Display Port</b>	Mini Dsub 15-pin female			
	<b>Serial Port</b>	Dsub 9-pin male			
	<b>Microphone Jack<sup>*2</sup></b>	Miniature jack, 3.5 DIA			
	<b>Headphone Jack</b>	Miniature jack, 3.5 DIA Impedance 32 Ω, Output Power 4 mW x 2			
	<b>External Keyboard/Mouse Port</b>	Mini DIN 6-pin female			
	<b>Expansion Bus Connector</b>	Dedicated 100-pin female			
	<b>USB Port</b>	4-pin x 2, USB 2.0			
	<b>Modem</b>	RJ-11 Data: 56 kbps (V.92 & K56flex) FAX:14.4 kbps			
	<b>LAN</b>	RJ-45	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX		
	<b>Wireless LAN</b>	802.11b			
	<b>IEEE1394 Interface Connector</b>	4-pin x 1			
	<b>Pointing Device</b>		Touch Pad		
<b>Speaker</b>		Stereo Speaker			
<b>Utility Programs</b>		Setup Utility, DMI Viewer, Adobe® Acrobat® Reader, Hard Disk Data Erase Utility <sup>*3</sup> <Only for CF-50E*****/CF-50G*****> PC Information Viewer, Intel® PROSet, WLAN Security Client			
<b>Sound</b>		WAVE and MIDI playback			
<b>Floppy Disk Drive</b>		720 KB/1.44 MB (two-mode)			
<b>Optical Disc</b>	<b>DVD-ROM Drive</b>	Supports	DVD-ROM	DVD-5, DVD-9, DVD-10, DVD-18, DVD-R <sup>*4</sup> (3.95 GB, 4.7 GB), DVD-RW <sup>*4</sup> (4.7 GB), DVD-RAM <sup>*4*5</sup> (2.6 GB, 4.7 GB)	
			CD-ROM	CD-Audio, CD-ROM, CD-R <sup>*4</sup> , Photo CD, VideoCD, Enhanced Music CD, CD-RW <sup>*4</sup> , CD-TEXT	
		DVD-ROM read <sup>*6</sup>		8x speed (Max.)	
		CD-ROM read <sup>*6</sup>		24x speed (Max.)	
		<b>DVD-ROM &amp; CD-R/RW Drive</b>	Supports	DVD-ROM	DVD-5, DVD-9, DVD-10, DVD-18, DVD-R <sup>*4</sup> (3.95 GB, 4.7 GB), DVD-RW <sup>*4</sup> (4.7 GB), DVD-RAM <sup>*4*5</sup> (2.6 GB, 4.7 GB), DVD+R <sup>*4</sup> , DVD+RW <sup>*4</sup>
				CD-ROM	CD-Audio, CD-ROM, CD-R, Photo CD, VideoCD, Enhanced Music CD, CD-RW, CD-TEXT
	DVD-ROM read <sup>*6</sup>		8x speed (Max.)		
	CD-ROM read <sup>*6</sup>		24x speed (Max.)		
	CD-R write <sup>*7</sup>		4x speed, 8x speed, 16x speed (Max.), 24x speed (Max.)		
	CD-RW write		4x speed, 8x speed, 10x speed		
	<b>DVD MULTI Drive</b>	Supports	DVD-ROM	DVD-5, DVD-9, DVD-10, DVD-18, DVD-R <sup>*4</sup> (3.95 GB, 4.7 GB), DVD-RW <sup>*4</sup> (4.7 GB), DVD-RAM <sup>*4*5</sup> (2.6 GB, 4.7 GB)	
			CD-ROM	CD-Audio, CD-ROM, CD-R, Photo CD, VideoCD, Enhanced Music CD, CD-RW, CD-TEXT	
		CD-ROM read <sup>*6</sup>		24X speed (Max.)	
		DVD-ROM read <sup>*6</sup>		8X speed (Max.)	
		CD-R write <sup>*7</sup>		4X speed, 8X speed, 16X speed (Max.)	
		CD-RW write		4X speed, 8X speed	
		DVD-R write		1X speed	
		DVD-RW write		1X speed	
	DVD-RAM write		2X speed		

<b>Battery</b>	<b>Battery Pack</b>	Li-ion 11.1 V, 6.3 Ah			
		Operating Time* <sup>8</sup>	<CF-50A*****/CF-50B*****> UXGA type: Approx. 1.4 hours - 3.2 hours XGA type: Approx. 1.7 hours - 3.7 hours <CF-50E*****/CF-50G*****> UXGA type: Approx. 2.1 hours - 6.4 hours XGA type: Approx. 2.5 hours - 7.4 hours		
			Charging Time* <sup>8</sup>	Power On	<CF-50A*****/CF-50B*****> Approx. 6 hours <CF-50E*****/CF-50G*****> Approx. 3.5 hours
		Power Off	Approx. 3.5 hours		
	<b>Clock Battery</b>	Coin type lithium battery 3.0 V			
<b>AC adaptor*<sup>9</sup></b>		Input	100 V - 240 V AC, 50 Hz/60 Hz	Output	15.6 V DC, 5.0 A
<b>Power Consumption*<sup>10</sup></b>		Approx. 70 W* <sup>11</sup> / Approx. 90 W (maximum when recharging in the ON state)			
<b>Environment</b>		In use	Temperature	5 °C to 35 °C {41 °F to 95 °F}	
			Humidity	30% to 80% RH (No condensation)	
		Not in use	Temperature	-20 °C to 60 °C {-4 °F to 140 °F}	
			Humidity	30% to 90% RH (No condensation)	
<b>Physical Dimensions (W × H × D)</b>		307 mm × 45 mm × 260 mm {12.1 " × 1.8 " × 10.2 "}			
<b>Weight</b>		Approx. 3.4 kg {Approx. 7.6 lb.}			

\*<sup>1</sup> Only a RAM card designed for PC2100 can be added.

\*<sup>2</sup> Use only a monaural condenser microphone.

\*<sup>3</sup> The Product Recovery CD-ROM is required.

\*<sup>4</sup> Read only.

\*<sup>5</sup> In the case of DVD-RAM, only non-cartridge discs or removable cartridge discs can be used.

\*<sup>6</sup> If an unbalanced disc (e.g., a disc with which the balance has been displaced from the center) is inserted, the speed may become slower if there are large vibrations while the disc is rotating.

\*<sup>7</sup> Depending on the disc, the writing speed may become slower.

\*<sup>8</sup> Varies depending on the usage conditions.

\*<sup>9</sup> The AC adaptor is compatible with power sources up to 240 V AC adaptor.

This computer is supplied with a 125 V AC compatible AC cord.

\*<sup>10</sup> Approx. 0.9 W when the battery pack is fully charged (or not being charged) and the computer is OFF.

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

\*<sup>11</sup> Rated power consumption.

# LIMITED WARRANTY

**For U.S.A.**

## PANASONIC PERSONAL COMPUTER AND PERIPHERALS LIMITED WARRANTY

Panasonic Computer Solutions Company (referred to as "Panasonic") will repair this product (other than software, which is covered by a separate warranty) with new or rebuilt parts, free of charge in the U.S.A. for three (3) years from the date of original purchase in the event of a defect in materials or workmanship. This warranty includes the AC adaptor but excludes the batteries and all other options and accessories which are covered for a period of one (1) year from the date of purchase.

This warranty is extended solely to the original purchaser. A purchase receipt or other proof of date of original purchase will be required before warranty performance is rendered.

This warranty only covers failures due to defects in materials or workmanship which occur during normal use. It does not cover damage which occurs in shipment or failures which are caused by products not supplied by Panasonic, or failures which result from alteration, accident, misuse, introduction of liquid or other foreign matter into the unit, abuse, neglect, installation, maladjustment of consumer controls, improper maintenance, modification or service by anyone other than a Factory Service Center or authorized Panasonic Service Dealer, or damage that is attributable to acts of God.

### **Limits and Exclusions:**

There are no other express warranties except as listed below.

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This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state. If a problem with your product develops during or after the warranty period, you may contact our representatives at 1-800-LAPTOP5. If the problem is not handled to your satisfaction, then write to the Consumer Affairs Division at the address indicated below.

## SOFTWARE LIMITED WARRANTY

Panasonic Computer Solutions Company (referred to as "Panasonic") warrants to you only that the disk(s) or other media on which the Programs are furnished will be free from defects in materials and workmanship under normal use for a period of sixty (60) days from the date of delivery thereof to you, as evidenced by your purchase receipt.

This is the only warranty Panasonic makes to you. Panasonic does not warrant that the functions contained in the Programs will meet your requirements or that the operation of the Programs will be uninterrupted or error free.

Panasonic's entire liability, and your exclusive remedy under this warranty shall be limited to the replacement, in the United States, of any defective disk or other media which is returned to Panasonic's Authorized Service Center, together with a copy of the purchase receipt, within the aforesaid warranty period.

Anything in the foregoing to the contrary notwithstanding, Panasonic shall have no obligation for any defects in the disk(s) or other media on which the Programs are furnished resulting from your storage thereof, or for defects that have been caused by operation of the disk(s) or other media otherwise than on the Product or in environmental conditions other than those specified by Panasonic by alteration, accident, misuse, abuse, neglect, mishandling, misapplication, installation, maladjustment of consumer controls, improper maintenance, modification of damage that is attributable to acts of God. In addition, Panasonic shall have no obligation for any defects in the disk(s) or other media if you have modified, or attempted to modify any Program.

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Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you.

This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

This Limited Warranty will be governed by the laws the State of New York, without regard to its conflict-of-laws rules.

\* \* \*

To obtain service or technical assistance within the continental U.S.A. and Alaska.

**DIAL TOLL FREE: 1-800-LAPTOP5**

Correspondence requesting product information should be sent to:  
Panasonic Computer Solutions Company  
50 Meadowlands Parkway, Panazip 2F-5, Secaucus, NJ 07094

## For Canada

### PANASONIC COMPUTER AND PERIPHERALS LIMITED WARRANTY

**Coverage** – Panasonic Canada Inc. (“PCI”) warrants to you, the first end user customer, this computer product (excluding software media), when purchased from PCI or from a PCI authorized reseller, to be free from defects in materials and workmanship under normal use, subject to the terms set forth below, during the period of warranty coverage specified.

Scope of Coverage	Period of Coverage	Type of Failure Coverage
Whole Product (except Batteries), AC adaptor and CD-ROM (if factory installed)	Three (3) Years from Date of Original End User Customer Purchase	Defective Materials or Workmanship
Batteries, CD-ROM (unless factory installed), Port Replicator, Extra Memory Modules and all other Peripherals, Options and Accessories	One (1) Year from Date of Original End User Customer Purchase	Defective Materials or Workmanship

**Remedy** – In the event of a warranty claim, contact PCI’s representatives within the applicable warranty period, identifying the nature of the defect claimed, at 1-800-668-8386 between 9:00 A.M. and 5:00 P.M., Eastern Time Zone, Mon. – Fri. (excluding holidays) for instructions on how to obtain service. A purchase receipt or other proof of date of original purchase is required before warranty service is performed. Defective parts covered by this Limited Warranty will be repaired or replaced with new or comparable rebuilt parts on an exchange basis. Warranty replacement or repair is subject to the terms of this Limited Warranty for the balance of the original period of warranty coverage.

**No Coverage** – This Limited Warranty does not cover products purchased outside Canada. Neither does it cover damage to, failure of, or defects in a product or accessory through mishandling, improper installation, abnormal use, misuse, neglect, accident, introduction of liquid or other foreign matter into the product, alteration or servicing by anyone not authorized by PCI, or act of God.

#### **IF YOU SHIP THE PRODUCT FOR WARRANTY SERVICE**

Carefully pack the product, preferably in the original carton. Include details of defect claimed and proof of date of original purchase. No liability is assumed for loss or damage to the product while in transit, if you chose your own transportation carrier.

### SOFTWARE MEDIA LIMITED WARRANTY

**Coverage** – Panasonic Canada Inc. (“PCI”) warrants to you, the first end user customer, that the disk(s) or other media on which software program(s) is/are supplied will be free from defects in materials and workmanship under normal use in Canada for a period of sixty (60) days from date of receipt as evidenced by your purchase receipt for your Panasonic Computer product.

THIS IS THE ONLY WARRANTY THAT PCI MAKES RESPECTING THE SOFTWARE MEDIA. PCI does not warrant the software. Please refer to the software licensor’s written warranty (accompanying the copy of the software) for any software warranty claim.

**Claim Procedure** – In the event of a defect in material or workmanship in the media during the sixty (60) day warranty period, and you return it, transportation costs prepaid, to Panasonic Canada Inc., Computer Products Marketing, at the above address, within the warranty period, together with a copy of your purchase receipt, and an explanation of the suspected defect, PCI will replace in Canada the defective disk(s) or other media.

**Remedy** – PCI’s entire liability, and your only remedy for any breach of this software media warranty is limited to replacement of the media only. It does not cover any other damages, including, but not limited to, loss of use or profit loss, or special, indirect or consequential damages, or other claims, whether or not of similar character.

**No Coverage** – This limited warranty does not apply if the disk(s) or other media has been used in other than a Panasonic product, or in environmental conditions other than those specified by PCI or the manufacturer, or if subjected to misuse, neglect, mishandling, modification or attempted modification of the program, or if damaged by accident or act of God. PCI is not responsible for damage to or loss of any program, data or removable storage media.

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**IN ANY EVENT, PCI’S MAXIMUM LIABILITY FOR ANY BREACH SHALL NOT EXCEED THE AMOUNT ACTUALLY PAID BY YOU FOR THE COMPUTER PRODUCT.**

**NO ACTION, REGARDLESS OF ITS BASIS, MAY BE BEGUN AGAINST PCI MORE THAN TWO (2) YEARS AFTER THE CAUSE OF ACTION AROSE.**

**Statutory Warranties** – Some jurisdictions do not allow these limitations or exclusions, so they may not apply to you.





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

**Outline of the International ENERGY STAR® Office Equipment Program**

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

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