

SONY

VAIO Digital Studio™ System Reference Manual



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Owner's Record

The model number and serial number are located on the back panel of your Sony VAIO® computer. Record the model and serial number in the space provided here, and keep in a secure location. Refer to the model and serial numbers when you call your Sony Service Center.

| | |
|----------------|--|
| Model Number: | |
| Serial Number: | |

Safety Information and Caution

Your computer's installed optical drives may vary, depending on the system configuration you have purchased. See the online specifications sheet for details on your installed optical drives.

For questions regarding your product or for the Sony Service Center nearest you, visit the Sony Computing Support Web site at <http://www.sony.com/pcsupport>.

DVD±RW Laser Diode Properties

| | | |
|---------------------|-------------------|------------------|
| Laser Output | 32 mW (DVD-Write) | 77 mW (CD-Write) |
| | 0.8 mW (DVD-Read) | 1.6 mW (CD-Read) |
| Wave Length | 654-660 nm (DVD) | 780-787 nm (CD) |

DVD-RW Laser Diode Properties

| | | |
|---------------------|-------------------|------------------|
| Laser Output | 23 mW (DVD-Write) | 38 mW (CD-Write) |
| | 0.8 mW (DVD-Read) | 0.8 mW (CD-Read) |
| Wave Length | 655-660 nm (DVD) | 779-787 nm (CD) |

DVD-ROM Laser Diode Properties

| | | |
|---------------------|------------------|-----------------|
| Laser Output | 0.7 mW (DVD) | 0.4 mW (CD) |
| Wave Length | 640-660 nm (DVD) | 770-810 nm (CD) |

CD-RW Laser Diode Properties

| | |
|---------------------|--------------------|
| Laser Output | 1.5 mW (CD-Read) |
| | 59.4 mW (CD-Write) |
| Wave Length | 780-784 nm (CD) |

CD-ROM Laser Diode Properties

| | |
|---------------------|------------------|
| Laser Output | 1.0 mW (CD-Read) |
| Wave Length | 760-810 nm (CD) |

- ❑ To prevent fire or shock hazard, do not expose your desktop to rain or moisture. To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.
- ❑ Never install modem or telephone wiring during a lightning storm.
- ❑ Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- ❑ Never touch uninsulated telephone wire or terminals unless the telephone line has been disconnected at the network interface.
- ❑ Use caution when installing or modifying telephone lines.
- ❑ Avoid using the modem during an electrical storm.
- ❑ Do not use the modem or a telephone to report a gas leak in the vicinity of the leak.
- ❑ The socket outlet shall be installed near the equipment and shall be easily accessible.

! To change the backup battery, please contact your nearest Sony Service Center.

! Caution—The use of optical instruments with this product will increase eye hazard. As the laser beam used in this product is harmful to the eyes, do not attempt to disassemble the drive cabinet. Refer servicing to qualified personnel only.

! Danger—Visible and invisible laser radiation when open. Avoid direct exposure to beam.

! For DVD-RW: Danger—Visible and invisible laser radiation when open. Avoid direct exposure to beam.

! For CD-RW: Danger—Invisible laser radiation when open. Avoid direct exposure to beam.

! Caution—For ADSL and V.90 modem models; to reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord.

- ❑ Pour prévenir tout risque d'incendie ou d'électrocution, garder cet appareil à l'abri de la pluie et de l'humidité.
- ❑ Pour prévenir tout risque d'électrocution, ne pas ouvrir le châssis de cet appareil et ne confier son entretien qu'à une personne qualifiée.
- ❑ Ne jamais effectuer l'installation de fil modem ou téléphone durant un orage électrique.
- ❑ Ne jamais effectuer l'installation d'une prise téléphonique dans un endroit mouillé à moins que la prise soit conçue à cet effet.
- ❑ Ne jamais toucher un fil téléphonique à découvert ou un terminal à moins que la ligne téléphonique n'ait été débranché de l'interface réseau.
- ❑ Soyez très prudent lorsque vous installez ou modifiez les lignes téléphoniques.
- ❑ Évitez d'utiliser le modem durant un orage électrique.
- ❑ N'utilisez pas le modem ni le téléphone pour prévenir d'une fuite de gaz vous êtes près de la fuite.
- ❑ L'appareil doit être le plus près possible d'une prise murale pour en faciliter l'accès.

! Pour changer la pile de recharge, veuillez contacter votre centre de service Sony le plus près.

! Avertissement : L'utilisation d'instruments optiques avec ce produit augmente les risques pour les yeux. Puisque le faisceau laser utilisé dans ce produit est dommageable pour les yeux, ne tentez pas de désassembler le boîtier. Adressez-vous à un agent de service qualifié.

! Danger : Radiation laser visible et invisible si ouvert. Évitez l'exposition directe au faisceau.

! Pour les DVD-RW : Danger— Radiation laser visible si ouvert. Évitez l'exposition directe au faisceau.

! Pour les CD-RW : Danger— Radiation laser visible et invisible si ouvert. Évitez l'exposition directe au faisceau.

! Attention : Pour ADSL et V.90 modele modem; afin de réduire les risques d'incendie, n'utilisez qu'un cordon de communication NO. 26 AWG ou plus gros.

Regulatory Information

Declaration of Conformity

| | |
|--------------------|--|
| Trade Name: | SONY |
| Model No.: | PCV-1112 (RZ series model) PCV-7772 (RX series model) |
| Responsible Party: | Sony Electronics Inc. |
| Address: | 680 Kinderkamack Rd. Oradell, NJ 07649 |
| Telephone: | 201-930-6972 |

This phone number is for FCC-related matters only.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Model No.: PCVA-IMB4A

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Only peripherals (computer input/output devices, terminals, printers, etc.) that comply with FCC Class B limits may be attached to this computer product. Operation with noncompliant peripherals is likely to result in interference to radio and television reception.

All cables used to connect peripherals must be shielded and grounded. Operation with cables, connected to peripherals, that are not shielded and grounded, may result in interference to radio and television reception.

FCC Part 68

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the rear of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

This modem uses the USOC RJ-11 telephone jack.

A telephone plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. The REN is used to determine the quantity of devices which may be connected to the telephone line.

Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:AAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g. 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operations of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, for repair or warranty information, please contact the Sony Customer Information Service Center at 1-888-4-SONY-PC (1-888-476-6972), or write to the Sony Customer Information Center, 12451 Gateway Blvd., Fort Myers, FL 33913, or find Sony Customer Service on the Web at <http://www.sony.com/pcsupport>. If this equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment from the network until the problem is resolved.

Repair of this equipment should be made only by a Sony Service Center or Sony authorized agent. For the Sony Service Center nearest you, call 1-888-4-SONY-PC (1-888-476-6972), or visit the Sony Computing Web site at <http://www.sony.com/>

Connection to Party Line Service is subject to state tariffs. Contact the state public utility commission, public service commission, or corporation commission for information.

If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of this equipment does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

Please use a surge arrester against electrical surges.

Telephone Consumer Protection Act of 1991 (United States)

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device, including FAX machines, to send any message unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business, other entity, or individual sending the message, and the telephone number of the sending machine or such business, other entity, or individual. (The telephone number provided may not be a 900 number or any other number for which charges exceed local or long distance transmission charges.)

In order to program this information into your facsimile machine, see your fax software documentation.

Telephone Consumer Guidelines (Canada)

Please refer to your telephone directory under 'Privacy Issues' and/or 'Terms of Service.' For more detailed information, please contact:

CRTC
Terrasses de la Chaudière
Tour centrale 1 promenade du Portage
5 étage Hull PQ K1A 0N2.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Disposal of Lithium Battery

You can return your unwanted lithium batteries to your nearest Sony Service Center or Factory Service Center.

 In some areas the disposal of lithium batteries in household or business trash may be prohibited.

For the Sony Service Center nearest you, call 1-888-476-6972 in the United States or 1-800-961-7669 in Canada.

! **Do not handle damaged or leaking lithium batteries. In some areas, the disposal of lithium batteries in household or business trash may be prohibited.**

! **Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.**

! **The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 212°F (100°C), or incinerate. Dispose of used battery promptly. Keep away from children.**

! **Ne pas manipuler les batteries au lithium qui fuient ou sont endommagées.**

! **Une batterie non conforme présente un danger d'explosion. La remplacer seulement par une batterie identique ou de type équivalent recommandé par le fabricant. Évacuer les batteries usées selon les directives du fabricant.**

! **La manutention incorrecte du module de batterie de cet appareil présente un risque d'incendie ou de brûlures chimiques. Ne pas démonter, incinérer ou exposer à une température de plus de 100°C. Évacuer promptement la batterie usée. Garder hors de portée des enfants.**

Industry Canada Notice

This equipment meets the applicable Industry Canada technical specifications.

The Ringer Equivalence Number (REN) is an indication of the maximum number of devices allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices does not exceed 5.

Avis de l'Industrie Canada

Le présent matériel est conforme aux spécifications techniques applicables d'Industrie Canada.

L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'exécède pas 5.

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Chapter 1

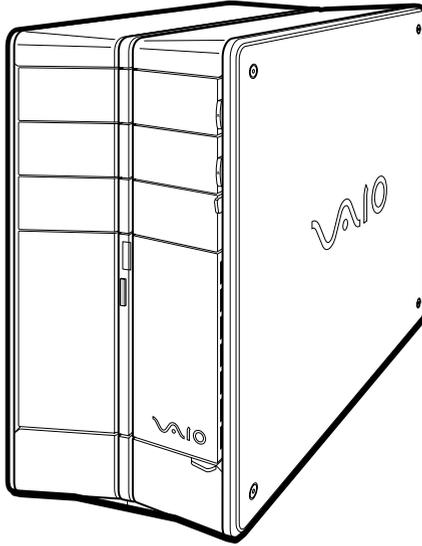
Identifying Components

The following sections identify and describe each component that is visible from the exterior of the VAIO® Digital Studio™ computer. Your computer's components may vary, based on the model and features you purchased. Your computer may not be equipped with all of these hardware features and the location of the controls, ports, and jacks may vary from the illustrations shown in this section. For details on the hardware configuration of your system, see the online specifications sheet.

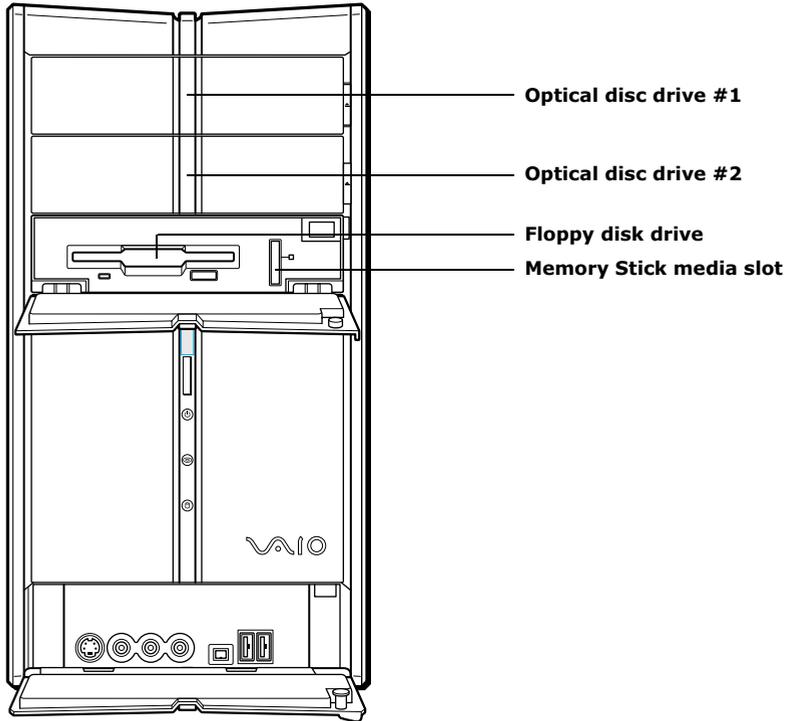
To view this the online specifications sheet:

- 1 Click **Start** in the Windows taskbar, then click **Help and Support**.
- 2 From the **VAIO Help and Support** menu, click **VAIO User Guide**.
- 3 Locate the link in the text, “View the **VAIO® Computer Specifications**, which lists your computer's hardware configuration and preinstalled software information.”

Front View (PCV-RZ Series model)

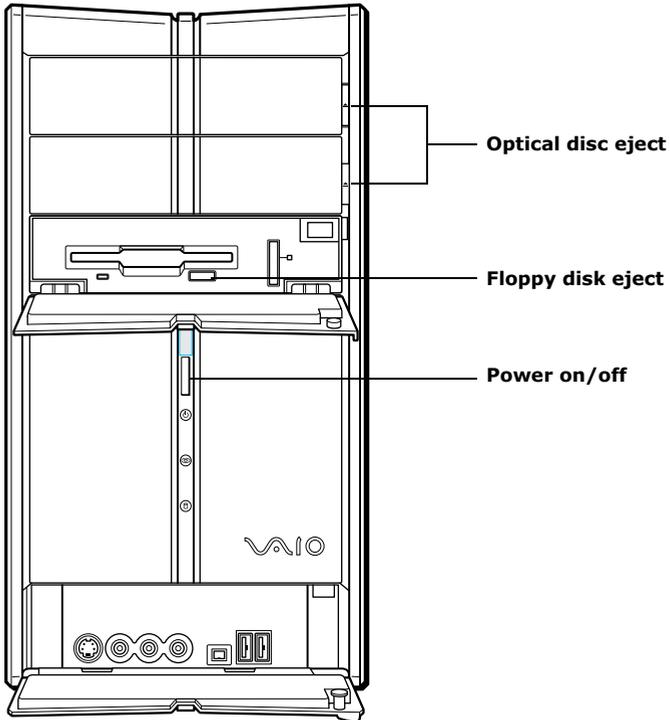


Drives



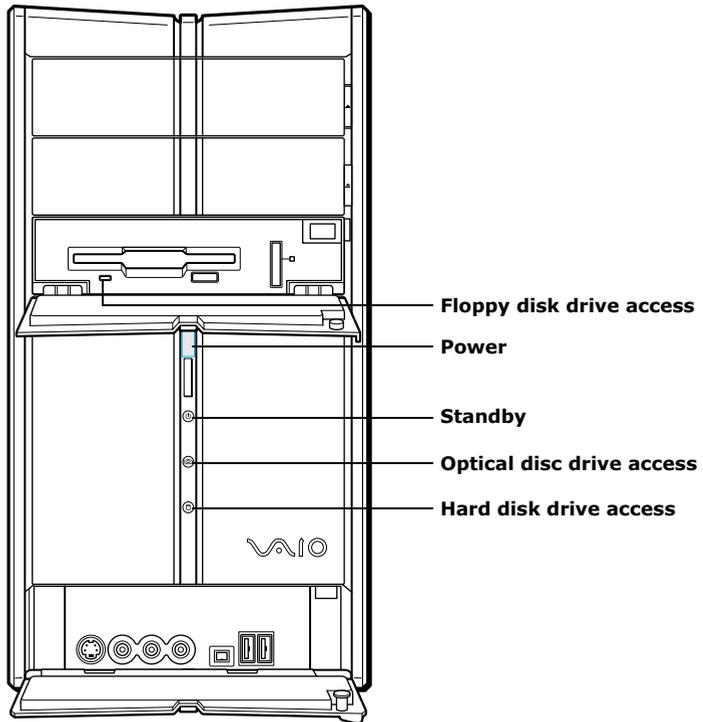
| <i>Drive</i> | <i>Description</i> |
|--------------------------|--|
| Optical disc drive #1 | See online specifications sheet for details. |
| Optical disc drive #2 | See online specifications sheet for details. |
| Floppy disk drive | 3.5-inch, 1.44 MB. |
| Memory Stick® media slot | Accommodates Memory Stick media. |

Buttons and Switches



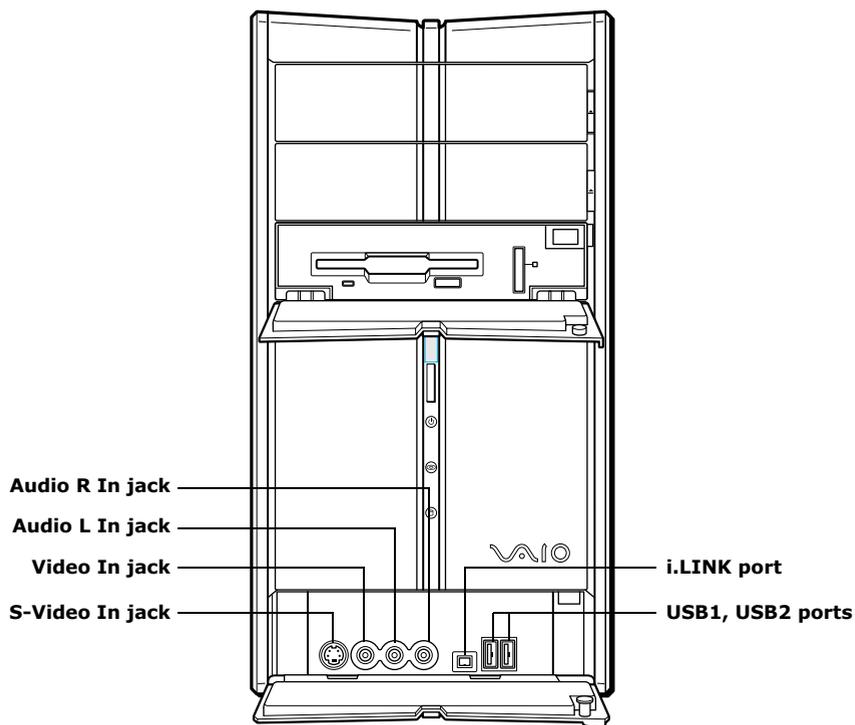
| <i>Button or switch</i> | <i>Description</i> |
|---------------------------|--|
| Optical disc eject button | Automatically opens and closes the optical drive tray. |
| Floppy disk eject button | Ejects a floppy disk. |
| Power on/off switch | Turns system power on, off, or into Stand by mode. |

Indicators



| <i>Indicator</i> | <i>Description</i> |
|-------------------------------------|---|
| Floppy disk drive access indicator | Light is green while reading and writing data from and to a floppy disk. |
| Power indicator | Light is blue while the power is on. |
| Standby indicator | Light is red when the computer is placed in Standby mode. |
| Optical disc drive access indicator | Light is amber while reading and writing data from and to the optical drives. |
| Hard disk drive access indicator | Light is amber while reading and writing data from and to the hard disk. |

Connectors (Models Equipped with Giga Pocket Features)

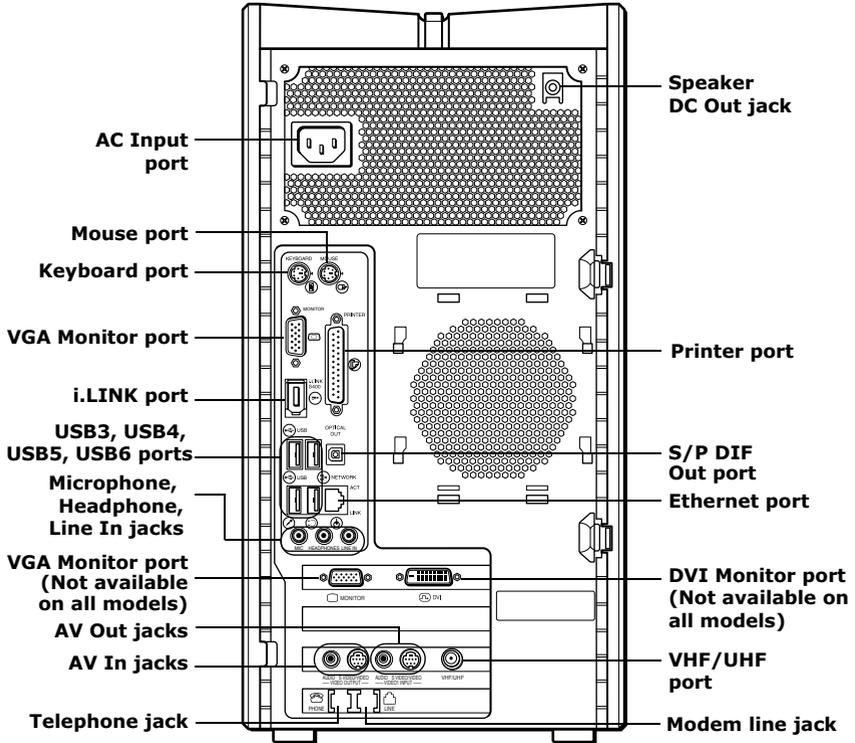


| Connector | Description |
|---------------------------|---|
| Audio R In jack* | Connects to an audio cable (supplied). |
| Audio L In jack* | Connects to an audio cable (supplied). |
| Video In jack* | Connects to a video cable (supplied). |
| S-Video In jack* | Connects to an S-video cable (optional). |
| i.LINK® (IEEE 1394) port† | Connects to a digital device that has a 4-pin i.LINK connector. |
| USB1, USB2 ports | Connects to compatible high/full/low-speed USB devices. |

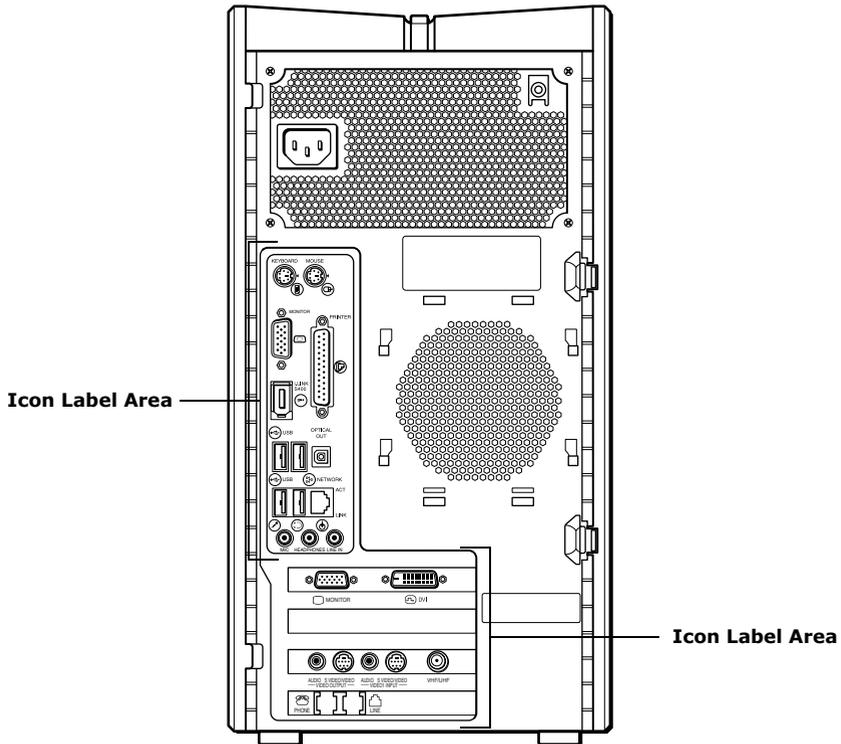
* The audio and video connections are available only on models equipped with Giga Pocket™ features.

† To connect to a 6-pin i.LINK device, use the 6-pin i.LINK port on the back of the system. A 6-pin i.LINK cable can supply power from the computer to the device if the device also has a 6-pin i.LINK port. A 4-pin i.LINK cable cannot supply power to the device.

*Rear View
(Model Equipped with Giga Pocket Features)*



Icon Labels



| <i>Icon</i> | <i>Description</i> |
|---|--------------------------------------|
|  | Mouse port |
|  | Keyboard port |
|  | VGA Monitor port |
|  | i.LINK® S400 (IEEE 1394) port |
|  | Universal Serial Bus (USB 2.0) ports |

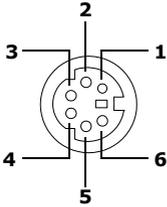
| <i>Icon</i> | <i>Description</i> |
|---|---|
|  | Microphone jack |
|  | Headphones jack |
|  | Line In jack (audio) |
|  | Audio Out jack |
|  | Video/S-video Out jack |
|  | Audio In jack |
|  | Video/S-video In jack |
|  | Telephone jack |
|  | Printer port |
|  | S/P DIF Optical Out port |
|  | Ethernet port (for LAN connection only) |
|  | DVI Monitor port |
|  | VHF/UHF port |
|  | Modem Line jack |

I/O Connectors

The following section identifies the various I/O connectors.

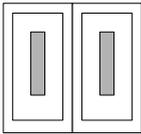
Keyboard and Mouse Ports

The keyboard and mouse ports are physically identical and have the same pinout. They are standard 6-pin PS/2® compatible female ports.



USB Ports

The USB ports are 4-pin USB 2.0 ports. Two USB ports are located at the front, and four at the rear of the system. USB 2.0 technology supports high/full/low-speed USB devices.



Ethernet Port

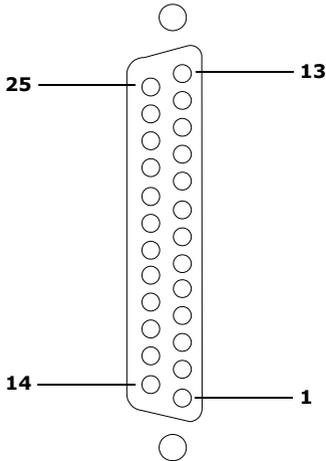
The Ethernet port at the rear of the system is used to connect to a 10BASE-T/100BASE-TX Ethernet network.

Ethernet



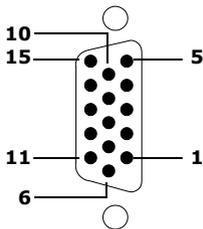
Printer Port

The printer port is a standard 25-pin DB-25 female port.



VGA Monitor Port

The monitor port is a standard 15-pin female high-density VGA-type port located on the AGP plug-in card.



Microphone, Headphones, and Line In Jacks

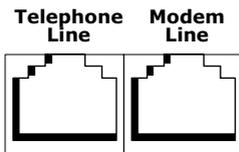
The microphone, headphones, and line in jacks are physically identical, but have different connections. They are standard 3.5 mm stereo mini-jacks.



| Connector | Description |
|------------|--|
| Microphone | Electret condenser microphone input. |
| Headphones | 1.0 Vrms (typical). |
| Line In | 1.0 Vrms (typical), 10 Kohm impedance. |

Telephone and Modem Line Jacks

The telephone and modem line jacks are physically identical and have identical connections. They are standard RJ-11 female phone jacks. However, the line jack is for connecting a telephone line that comes from the wall to the computer, and the telephone jack is for connecting the telephone to a computer.



S/P DIF Optical Out Port

The Plastic Optical Fiber (POF) output port for the Sony®/Phillips Digital Interface (S/P DIF) can be used to connect compatible audio or video equipment, such as CD/DVD players or MiniDisc recorders.



i.LINK S400 (IEEE 1394) Ports

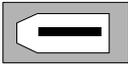
The 6-pin i.LINK® port on the back panel of the system can supply power from the computer to an i.LINK device if the device also has a 6-pin i.LINK port. The 6-pin port supplies 10 V to 12 V and a maximum power of 6 watts.

 i.LINK is a trademark of Sony used only to designate that a product contains an IEEE 1394 connection. The i.LINK connection may vary, depending on the software applications, operating system and compatible i.LINK devices. All products with an i.LINK connection may not communicate with each other.

Refer to the documentation that came with your compatible i.LINK device for information on operating conditions and proper connections. Before connecting compatible i.LINK devices to your system, such as an optical disc or hard disk drive, confirm their operating system compatibility and required operating conditions.

The 4-pin i.LINK port at the bottom of the front panel does not supply power to an i.LINK device.

6-pin i.LINK port (IEEE 1394)



**On back of
system**

4-pin i.LINK port (IEEE 1394)



**Behind lower
front panel**

Speaker DC Out Jack

The Speaker DC Out jack on the back panel of the system is the connection for the supplied speaker power cable.

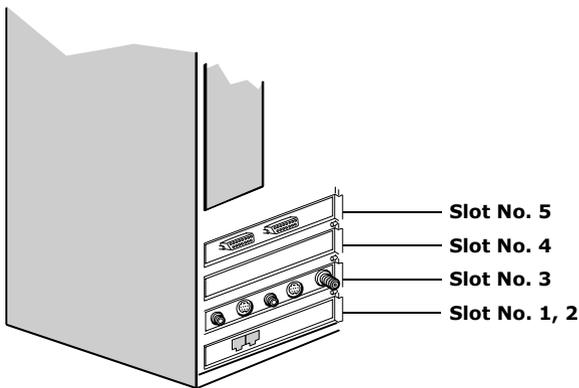


Expansion Slots

There are five expansion slots; however, four slot covers are visible from the back panel (see "System Board" on page 51).

| <i>Expansion Slot No.</i> | <i>Description</i> |
|---------------------------|---|
| 5 | Occupied by a VGA and DVI monitor card.* |
| 4 | Available for expansion. |
| 3 | Occupied by a Giga Pocket™ card.* |
| 2 | Available for expansion when the CNR slot is not occupied. Only one slot can be occupied at a time. |
| 1 | Occupied by a fax/modem card. The V.90 compatible modem has two RJ-11 jacks (Telephone and Line). |

* Your system may not have this feature, based on the configuration you purchased.



Chapter 2

Configuring Your System

This chapter contains information on configuring your system.

- Making changes to the BIOS settings.
- Making changes to the display's power management settings.

Accessing the BIOS Setup Utility

Access the BIOS Setup Utility to make changes to the BIOS settings (see “CMOS Setup Options” on page 57 for information on BIOS settings).

! Before rebooting the system, save and close all open files, and exit open applications.

- 1 Reboot your computer by selecting **Shut Down...** from the Start menu, then select **Restart**.
- 2 When the Sony logo appears, press F3. The following message appears at the bottom of the screen.

Press <F2> for setup.

- 3 Press F2.

Each menu presents options for modifying the system configuration. Use the left and right arrow keys to select a menu from the menu bar. Use the up and down arrow keys to select items within a menu. Once an item is highlighted, use the plus/minus (+/-) keys to modify a setting.

If an item has a triangle (▶) to its left, this indicates that a sub-menu of options is available. Press ENTER to access a sub-menu. If a sub-menu contains items with a triangle, there is another layer of options from which to select.

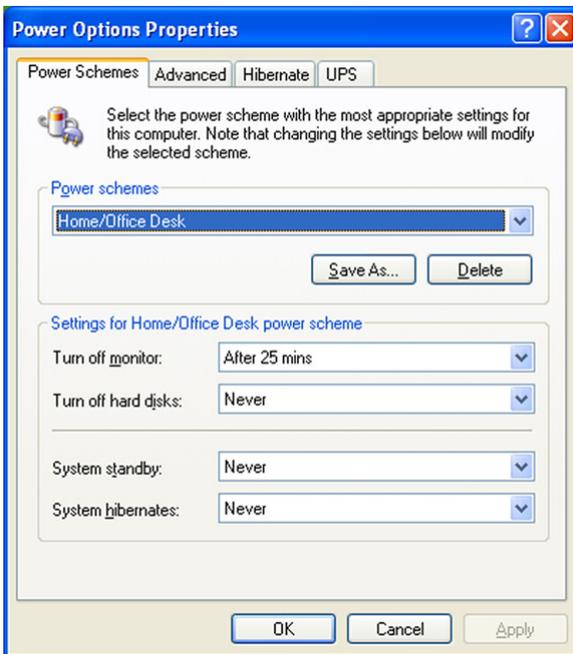
- 4 Once you select an option, press ESC to back out of each menu until you reach the top level, where the menu bar appears.
- 5 To exit the BIOS setup utility, press ESC from any top-level screen and follow the prompts.

Changing Power Management Settings

Power Management capability is designed to enable your computer to reduce power or shut itself off after being idle for a specified period of time.

- 1 From the **Start** menu, point to **Settings**, click **Control Panel**, then click **Display**.

The Power Options Properties dialog box opens, with the Power Schemes tab displayed.



- 2 Select the power scheme that is most appropriate for the way you use your computer.

To change a power scheme, change the settings for Turn off monitor, and Turn off hard disks, System stand by, and System hibernates.

The Turn off monitor option enables you to specify the period of inactivity (in minutes) that you want to elapse before your monitor turns off when your computer is running on AC power. The display reactivates when you move the mouse or press a key.

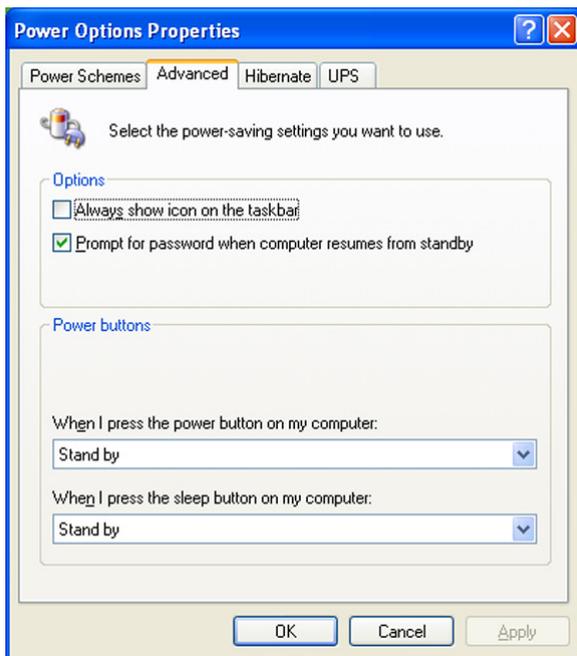
The Turn off hard disks option enables you to specify the period of inactivity (in minutes) that you want to elapse before your hard disks turn off when your computer is running on AC power.

The System stand by option enables you to specify the period of inactivity (in minutes) that you want to elapse before your computer goes on Stand by when your computer is running on AC power. Power is reactivated when you click the left mouse button or press spacebar on the keyboard.

The System hibernates option enables you to specify the period of inactivity (in minutes) before your computer goes in the hibernate state. Power is reactivated when you push the power button.

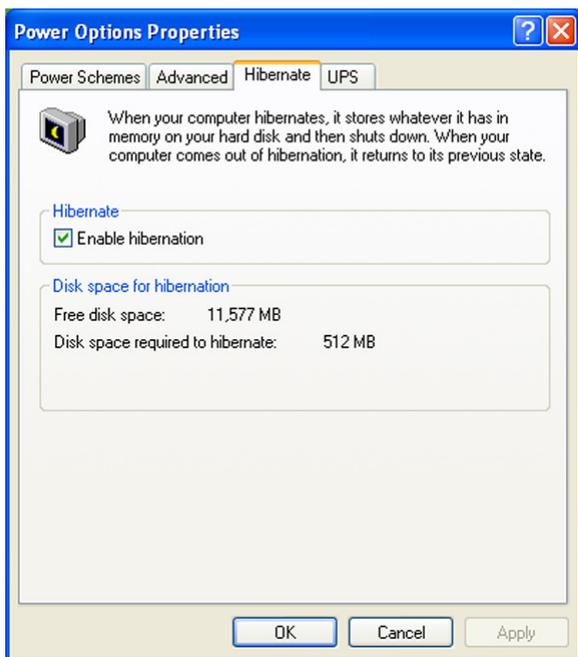
- 3 To save a new power scheme, first modify the settings, click **Save As**, type a descriptive name, and then click **OK**.

- 4 Click the **Advanced** tab.



- 5 Select the desired settings.

- Click the **Hibernate** tab.

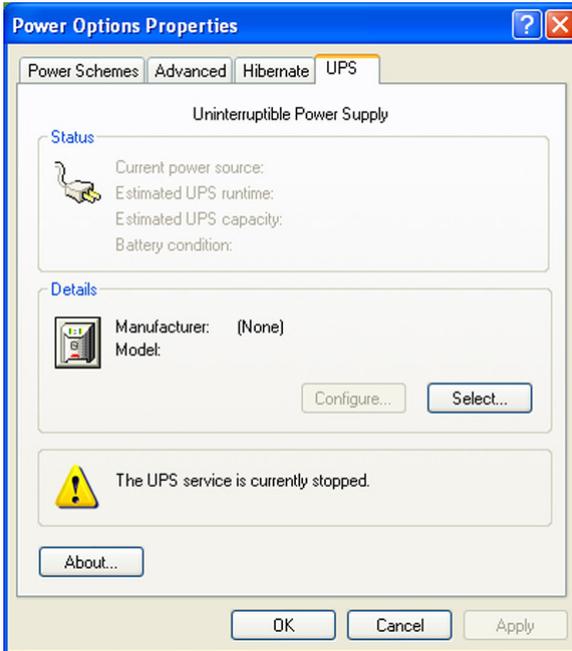


- Select the settings most appropriate for your system.

8 Click the **UPS** tab.

The UPS tab enables you to select and configure an Uninterruptible Power Supply (UPS) device for your system.

 A UPS device is an optional accessory not supplied with your system.



9 Select the settings most appropriate for your system and click **OK**. For more information about configuring a UPS device, refer to the Microsoft® Windows® XP operating system Help.

Chapter 3

Upgrading and Maintaining Components

This chapter describes upgrade and maintenance procedures.

! Before opening the system unit, save and close all open files, exit all open applications, turn off the power to all attached peripheral devices, shut down the computer, and unplug the power cord.

 System configuration may vary, depending on the model purchased. Your computer may not include all of the hardware features shown in the illustrations of this section.

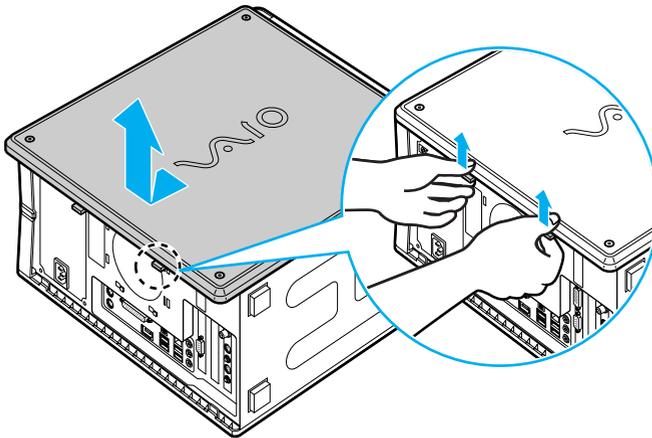
Removing the Side Panel

You must remove the side panel to access the system board, add-on cards, power supply, battery, memory, and internal drives.

To remove the side panel (PCV-RZ series model)

- 1 Shut down your computer and turn off all peripheral devices, such as your printer.
- 2 Unplug your computer and disconnect any peripheral devices.
- 3 Locate the two tabs on the back edge of the right side panel.
- 4 Press up on these tabs and slide the side panel towards you.
- 5 Lift up the side panel and set aside.

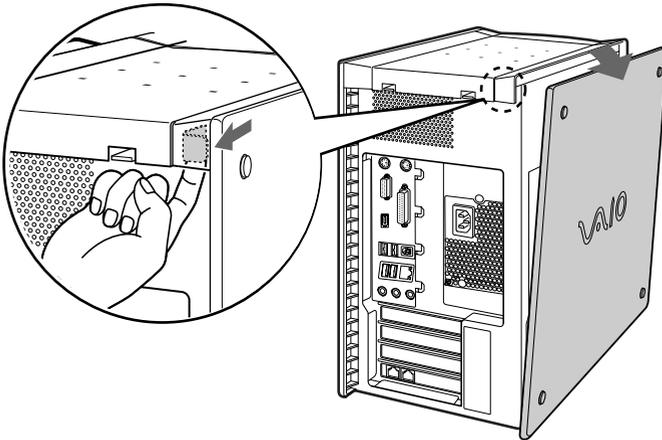
Removing the side panel (PCV-RZ series model equipped with Giga Pocket)



To remove the side panel (PCV-RX series model)

- 1 Shut down your computer and turn off all peripheral devices, such as your printer.
- 2 Unplug your computer and any peripheral devices.
- 3 Locate the tab on the upper right side of the rear panel, and pull it back until the side panel releases.
- 4 Lift the side panel away from the unit and set aside.

Removing the side panel (PCV-RX series model)

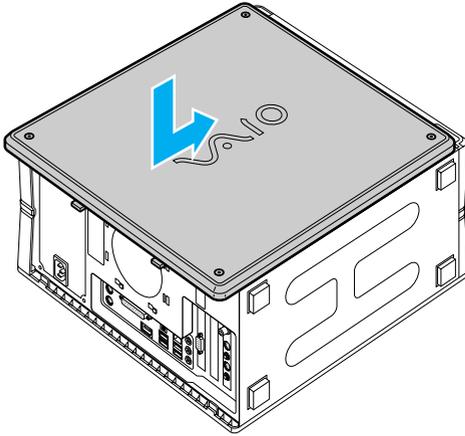


Replacing the Side Panel

To replace the side panel (PCV-RZ series model)

- 1 Align tabs on the side panel to the tracks on the chassis frame.
- 2 Gently slide the side panel onto the chassis, until the tabs lock the panel into place.

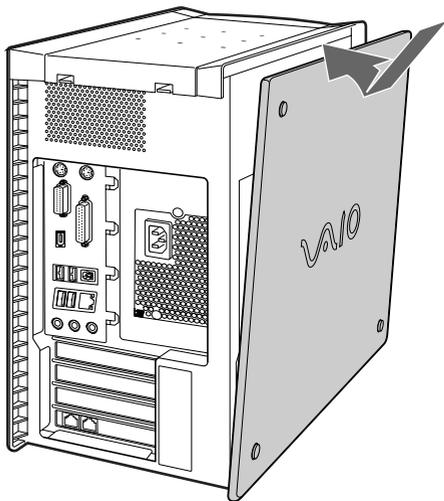
Replacing the side panel (PCV-RZ series model equipped with Giga Pocket)



To replace the side panel (PCV-RX series model)

- 1 Align the tabs on the side panel to the chassis rim.
- 2 Press the side panel firmly against the unit until it snaps into place.

Replacing the side panel (PCV-RX series model)



Installing an Add-on Card

Your computer may have one or more open expansion slots, depending on the model configuration. An expansion slot enables you to install add-on cards to expand the functionality of your system. The length of the add-on card should not exceed 9.05 inches.

 Add-on card configuration varies by model. Some models, such as Configure-to-Order (CTO) systems, may contain preinstalled add-on cards.

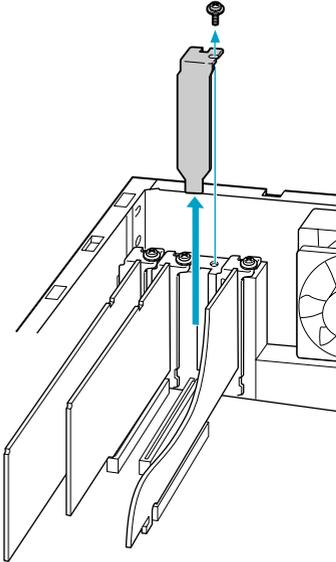
! Observe the proper safety precautions when you add cards to your Sony computer.

To install an add-on card

- 1 Shut down your computer and turn off all peripheral devices, such as your printer.
- 2 Unplug your computer and any peripheral devices.
- 3 Remove the side panel.
- 4 Locate an available expansion slot. Remove the slot cover's screw, and then remove the slot cover.

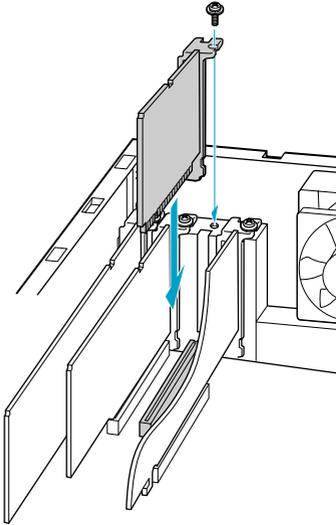
! When removing a slot cover, be careful not to damage components on the system board or add-on cards. You may need to temporarily remove add-on cards or other components that may be next to the slot cover you want to remove.

Removing the slot cover



- Install the add-on card by inserting it into the expansion slot and secure it with the screw from the expansion slot cover.

Installing an add-on card



- 1 Attach any internal cables that the card requires. See the instructions supplied with the add-on card.
- 2 Replace the side panel. See [“Replacing the Side Panel”](#) on page 26.
- 3 Reconnect all peripheral devices and the power cord, and then turn on the computer.

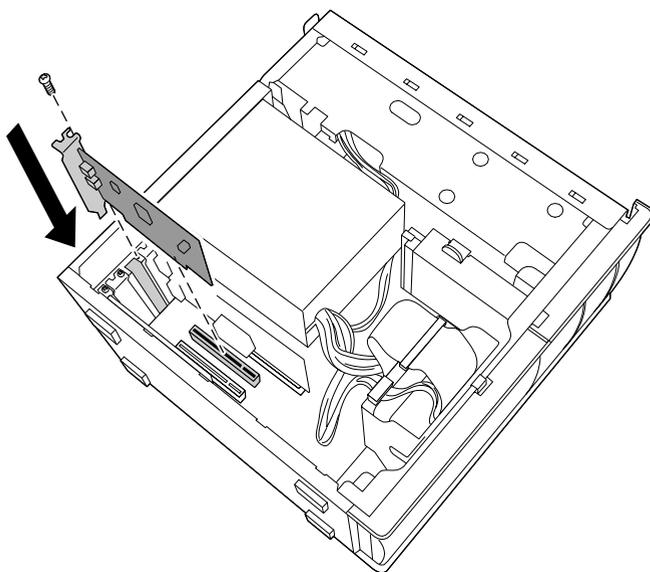
Installing an Add-On Card

! Before opening the system unit, save and close all open files, exit all open applications, turn off the power to all attached peripheral devices, shut down the computer, and unplug the power cord.

- 1 Remove the side panel (see “Removing the Side Panel” on page 24).
- 2 Locate an available expansion slot.
- 3 Remove the slot cover adjacent to the selected slot (see “Removing a Slot Cover” on page 42).
- 4 Insert the add-on card into the PCI slot. Use a gentle rocking motion, pressing down until the card is fully seated.

 Align the card's bracket so that the bottom of the bracket fits into the slot at the bottom of the chassis. Assure that the top of the bracket fits snugly against the chassis lip after the card is fully inserted.

Installing a PCI add-on card (PCV-RX series model)



- 5 Replace the screw that secures the card.
- 6 Attach any necessary cables to the card (see the instructions that came with the add-on card).
- 7 Replace the side panel (see [“Replacing the Side Panel”](#) on page 26).
- 8 Turn on the computer and follow any instructions that came with the add-on card.

Replacing the Lithium Battery

! Before opening the system unit, save and close all open files, exit all open applications, turn off the power to all attached peripheral devices, shut down the computer, and unplug the power cord.

You may need to replace the lithium battery if your computer consistently loses the date or time settings after it is turned off. The lithium battery has a typical life of three years, after which the battery may be too weak to power the CMOS memory.

! Do not handle damaged or leaking batteries.

The lithium battery may explode if mistreated. Do not disassemble it or dispose of it in fire.

When you remove the lithium battery, all values stored in the CMOS memory (BIOS setup values and Plug and Play values) may be lost. Although the computer can hold the charge for a short time while replacing the battery, it is safer to assume that the settings will be lost. When the values are lost, the BIOS values revert to their factory-default settings (see “[Accessing the BIOS Setup Utility](#)” on page 16).

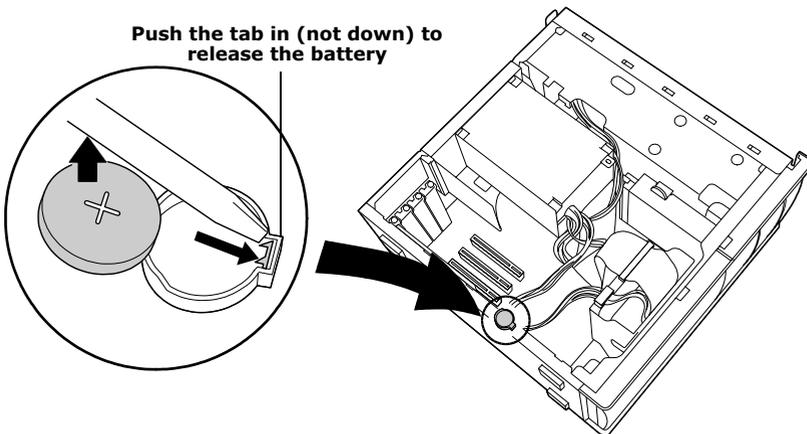
- 1 Reboot your computer by selecting **Shut Down...** from the **Start** menu, and then selecting **Restart**.
- 2 If the error message “Error: Check date and time settings” appears during the reboot sequence, press F2 during the reboot process to access the BIOS Setup Utility. Otherwise it is not necessary to replace the battery at this time, and you can skip all remaining steps.
- 3 Compare all the BIOS options to their default settings (see “[CMOS Setup Options](#)” on page 57). Make a list of all the BIOS options that are different from their default values. Refer to this list when you restore the BIOS settings later.
- 4 Select Exit Discarding Changes from the main menu using the right arrow key.
- 5 Press Enter, type Y when prompted to discard changes, then press Enter to exit the BIOS Setup Utility.
- 6 Turn off the computer and unplug the power cord.
- 7 Remove the side panel (see “[Removing the Side Panel](#)” on page 24).

- 8 If necessary, remove any add-on cards to gain access to the battery. You may also need to disconnect some cables.

! Touch any exposed metal part of chassis to discharge static electricity in your body before handling an add-on card or other sensitive electronic component.

- 9 Use a small flathead screwdriver or your finger to push in (not down) against the small tab at one end of the battery holder to release the battery.

Installing a lithium battery (PCV-RX series model)



- 10 Gently lift out the battery and dispose of it properly.
- 11 Insert the new battery into the battery holder, with the plus (+) side up, and press down until the battery is secure.

 The Sony CR2032 battery is recommended. Using a type of battery other than a CR2032 may present a risk of fire or explosion.

- 12 Replace any add-on cards that were removed.
- 13 Reconnect any cables that were disconnected.
- 14 Replace the side panel (see [“Replacing the Side Panel”](#) on page 26).
- 15 Reconnect the power cord and turn on the computer.

- 16 If the error message “Error: Check date and time settings.” appears during the reboot sequence, press F2 during the reboot process to access the BIOS Setup Utility. If no error message displays, the computer’s BIOS settings were retained during the battery replacement and you can skip the remaining steps.
- 17 Refer to the list you made in step 3 and restore any non-default BIOS settings (see “[CMOS Setup Options](#)” on page 57).
- 18 Select **Exit Saving Changes** from the main menu using the right arrow key.
- 19 Press Enter, type Y when prompted to discard changes, then press Enter to exit the BIOS Setup Utility.

The computer’s BIOS settings are now restored.

Removing a Memory Module

You may need to remove a memory module if you change the memory configuration or replace a bad module. By default, your computer's memory sockets are filled with DDR-DIMM modules.

! Before opening the system unit, save and close all open files, exit all open applications, turn off the power to all attached peripheral devices, shut down the computer, and unplug the power cord.

- 1 Remove the side panel (see “[Removing the Side Panel](#)” on page 24).

 Remove the power supply to access the memory modules underneath.*

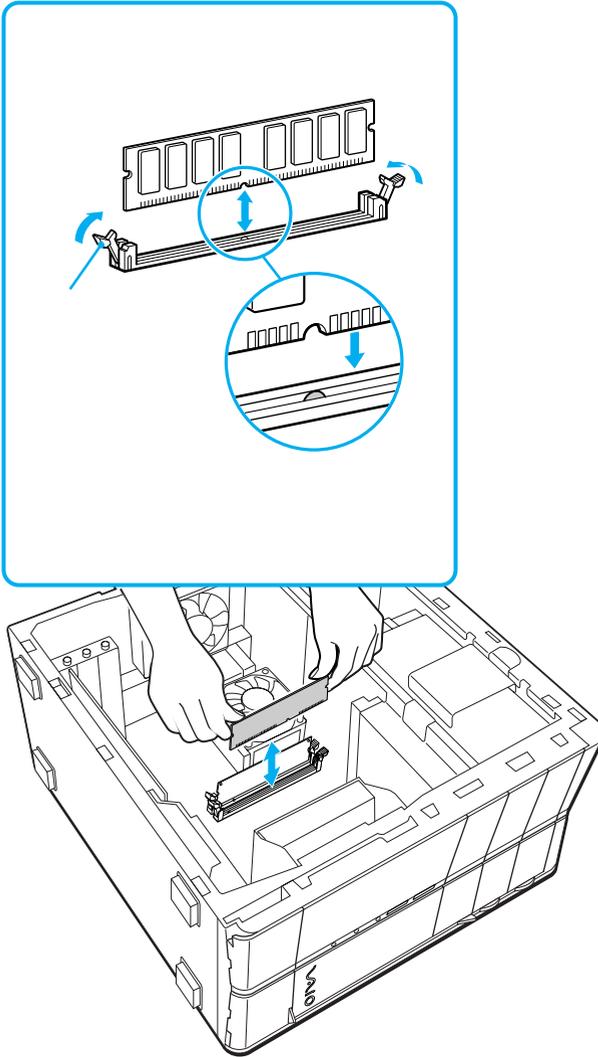
- 2 Remove the power supply (see “[Removing the Power Supply \(PCV-RX series models\)](#)” on page 49).*

! Touch any exposed metal part of the chassis to discharge static electricity in your body before handling the memory module.

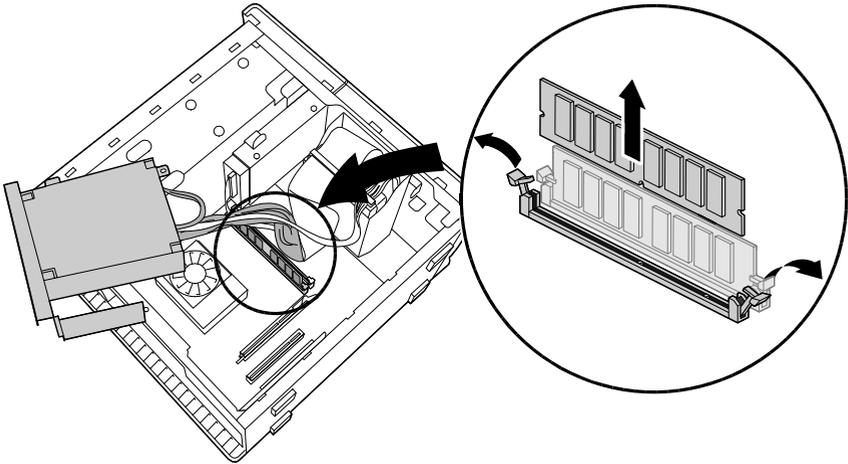
- 3 Locate the memory module you wish to remove.

* Applicable to PCV-RX models only.

Removing a memory module (PCV-RZ series model)



Removing a memory module (PCV-RX series model)



 The memory modules are located beneath the power supply (applicable to PCV-RX models only).

- 4 Push down the handle on each side of the memory module to eject the module from its socket.
- 5 Grasp one edge of the memory module and lift out. Store the module in a static-free bag.

Installing Memory Modules

Your system supports PC2700 DDR-SDRAM memory modules. The DDR-DIMM memory modules can be single- or double-sided and installed in either socket.

! Before opening the system unit, save and close all open files, exit all open applications, turn off the power to all attached peripheral devices, shut down the computer, and unplug the power cord.

- 1 Choose the size of the memory module and configuration as shown in the following table. Memory modules can vary in size and speed between sockets. The minimum memory size is 128 MB. The maximum memory size is 1.0 GB. The BIOS automatically detects the type, size and speed of the memory modules.

Memory module configurations (MB)*

| <i>DIMM1</i> | <i>DIMM2</i> |
|------------------|------------------|
| 0, 128, 256, 512 | 0, 128, 256, 512 |

* Your computer ships with at least 512 MB of memory and is expandable to 1.0 GB. Your model may ship with more than 512 MB SDRAM depending on the configuration you purchased.

 Use only PC2700 memory. Your system does not support EDO, buffered DDR-SDRAM, or PC100/133 SDRAM memory.

- 2 If necessary, remove the memory module you wish to replace (see “Removing a Memory Module” on page 36).

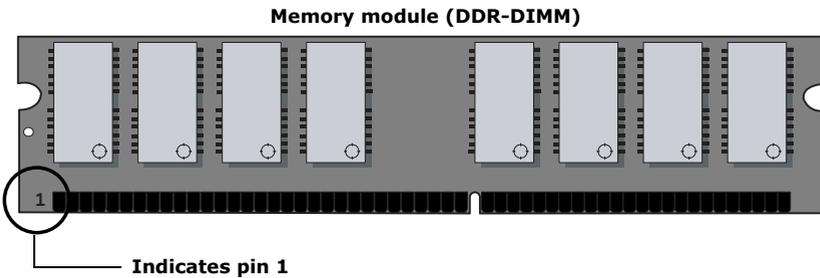
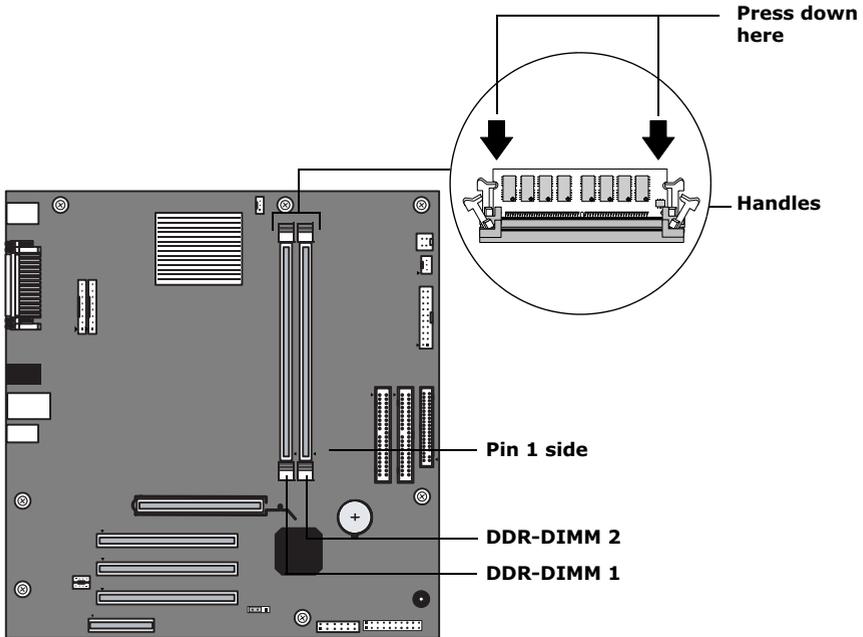
! Touch any exposed metal portion of the chassis to discharge static electricity in your body before handling a memory module.

- 3 Remove the new memory module(s) from its anti-static package. Hold the memory module only by its edges to prevent static-electricity damage.
- 4 Remove the side panel (see “Removing the Side Panel” on page 24).
- 5 Remove the power supply (see “Removing the Power Supply (PCV-RX series models)” on page 49).*

! Do not remove the Giga Pocket™ card (located in PCI slot No. 3) unless directed by a service technician. The Giga Pocket card is a fragile hardware component.

* Applicable to PCV-RX models only.

- 6 Align the module over the appropriate socket, noting the location of pin 1 on the module and pin 1 on the socket.



- 7 Carefully but firmly insert the edge of the module into the socket.

- 8 Press down firmly and evenly at both corners until the module is fully seated.

 When the module is fully seated, the handles on each side are straight up and locked into the slot on each side of the module. If the handles are not totally straight upright, continue to press down on each side of the module until the handles lock into place.

- 9 Replace the power supply (see [“Replacing the Power Supply \(PCV-RX series model\)”](#) on page 50).*
- 10 Replace the side panel (see [“Replacing the Side Panel”](#) on page 26).
- 11 Reconnect the power cord and turn on the computer.

After restarting your computer, the system recognizes the additional memory and automatically make the proper configurations.

* Applicable to PCV-RX models only.

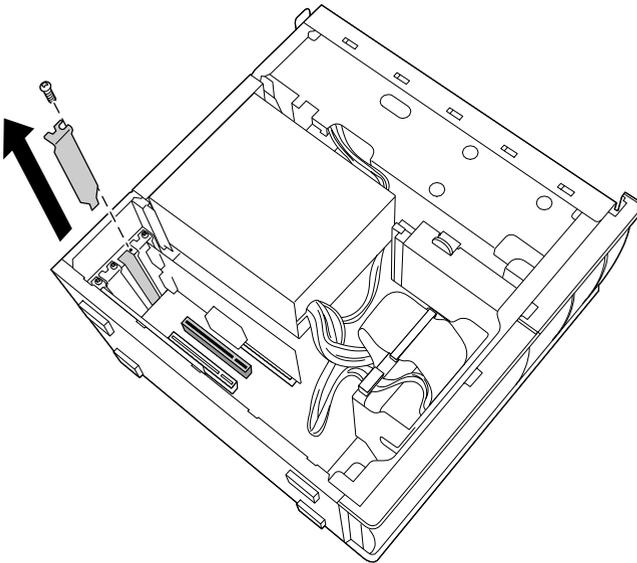
Removing a Slot Cover

To install an add-on card that occupies a slot, remove the slot cover.

! Before opening the system unit, save and close all open files, exit all open applications, turn off the power to all attached peripheral devices, shut down the computer, and unplug the power cord.

- 1 Remove the side panel (see “Removing the Side Panel” on page 24).
- 2 Locate the slot whose cover you want to remove.
- 3 Lay the system on its side.
- 4 Remove the screw from the slot cover.
- 5 Remove the loose slot cover and retain it for future use.

Removing a slot cover (PCV-RX series model)



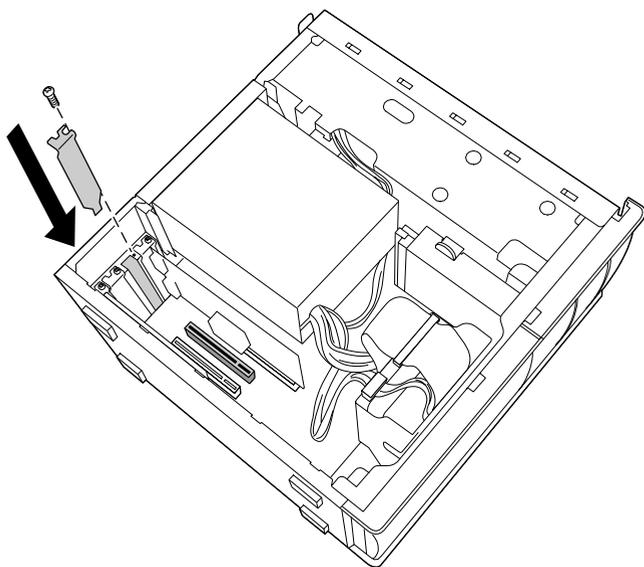
Covering an Open I/O Slot

! Before opening the system unit, save and close all open files, exit all open applications, turn off the power to all attached peripheral devices, shut down the computer, and unplug the power cord.

Slot covers prevent air from escaping through the empty slot. If air escapes, the components inside the computer cannot be properly cooled. This may damage some components, especially the main processor, which generates the most heat.

- 1 Slide the tip of the slot cover between the chassis and system board.

Covering an open I/O slot (PCV-RX series model)



- 2 Push the slot cover down until it rests firmly on the lip in the chassis. All add-on card brackets and slot covers rest on this lip.
- 3 Replace the slot cover's screw to secure the I/O slot cover.

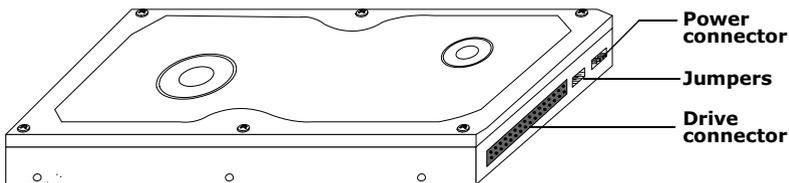
Installing an Additional Hard Disk Drive

Your computer is equipped with an available bay to accommodate an additional 3.5-inch hard disk drive. The hard disk drive access light is lit when either drive is activated, however, the drives are not accessible from the front panel. Sony recommends an ATA-100 hard disk drive to take full advantage of the system's features.

 Some models, such as Configure-to-Order (CTO) systems, may already have a second hard disk drive installed.

! Before opening the system unit, save and close all open files, exit all open applications, turn off the power to all attached peripheral devices, shut down the computer, and unplug the power cord.

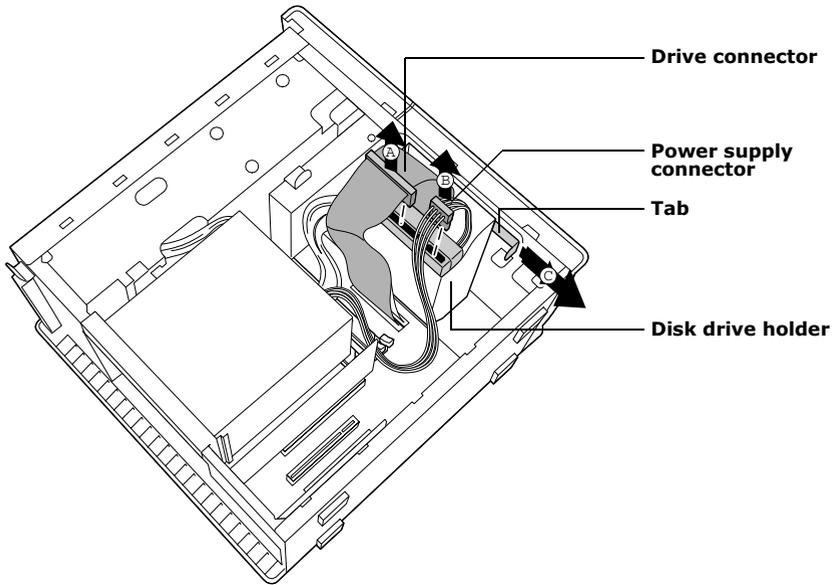
- 1 Configure the jumpers on the new drive as a slave device (see your new drive's documentation for configuration instructions).



- 2 Remove the side panel (see [“Removing the Side Panel”](#) on page 24).

- 3 Disconnect the drive connector (A).

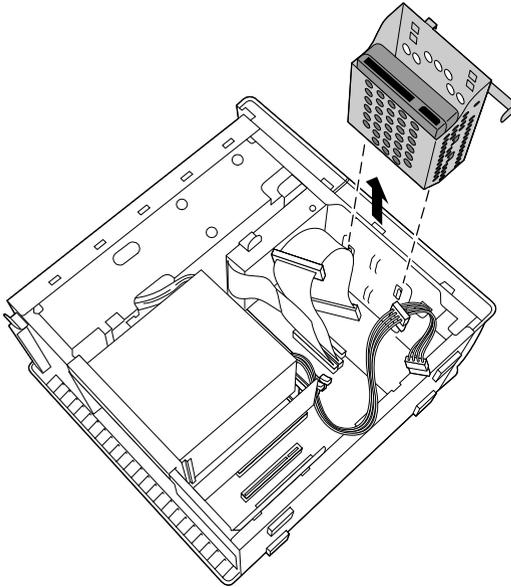
Disconnecting the system (PCV-RX series model)



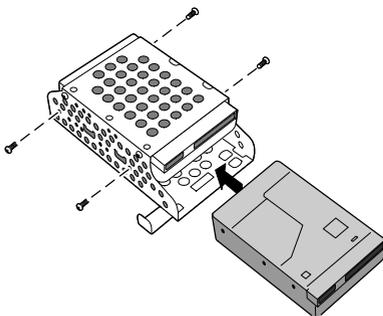
- 4 Disconnect the power connector (B).
- 5 Pull out on the tab (C) that secures the drive holder to the chassis.

- Slide the drive holder up and out.

Installing an internal hard disk drive (PCV-RX series model)



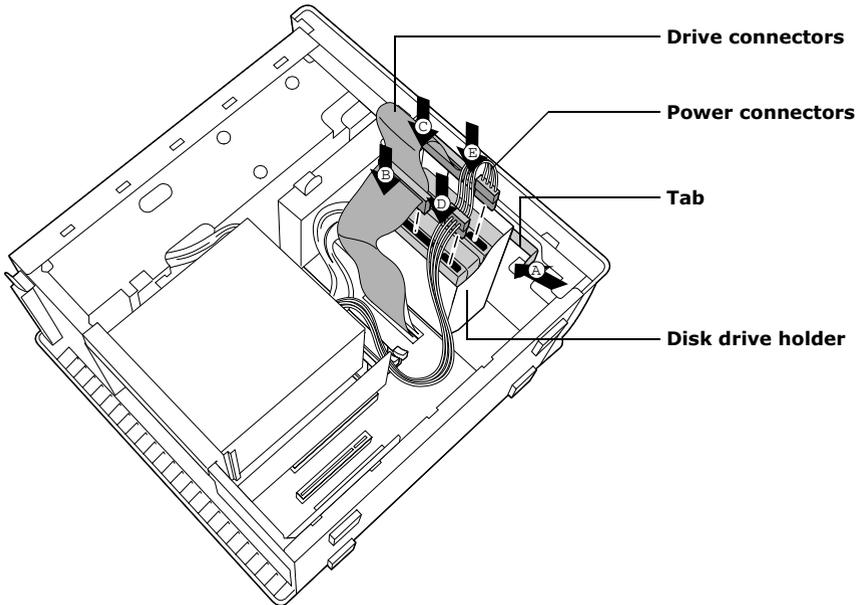
- Slide the new drive into the bottom part of the drive holder and align the holes on each side of the drive holder.



- Secure the drive to the drive holder using screws in each of the two holes on each side of the drive holder (screws are provided with the new drive). Do not overtighten the screws.

- 9 Slide the drive holder back into the chassis so that the edge of the holder is flush with the chassis.
- 10 Push in on the tab (A) to securely latch the holder to the chassis.

Installing an internal hard disk drive (PCV-RX series model)



- 11 Connect the inner drive cable connector (B) to the first drive.
- 12 Connect the outer drive cable connector (C) to the second drive.
- 13 Connect the first power connector (D) to the first drive.
- 14 Connect the second power connector (E) to the second drive.
- 15 Replace the side panel (see [“Replacing the Side Panel”](#) on page 26).
- 16 Reconnect the power cord to the system and then turn on your computer.

To identify additional hard disk space

When you initialize the new hard disk drive, it must be configured as an extended partition in Windows NT file system (NTFS) format.

- 1 Log on in Windows® as Administrator.
- 2 Click **Start** in the Windows taskbar and right-click on **My Computer**. A shortcut menu appears.
- 3 Select **Manage**. The Computer Management window appears.
- 4 From the file directory on the right, go to **Storage** and then select **Disk Management**.
- 5 Right-click on the newly installed, unformatted drive (Disk label identified with red marking), and from the shortcut menu, select **Initialize Disk**.
- 6 Click on the Unallocated area of the drive and then right-click to display the shortcut menu.
- 7 Select **New Partition**. The New Partition wizard appears.
- 8 Follow the onscreen instructions to complete the process.

The Windows® XP operating system recognizes the new hard disk drive and applies the NTFS format.

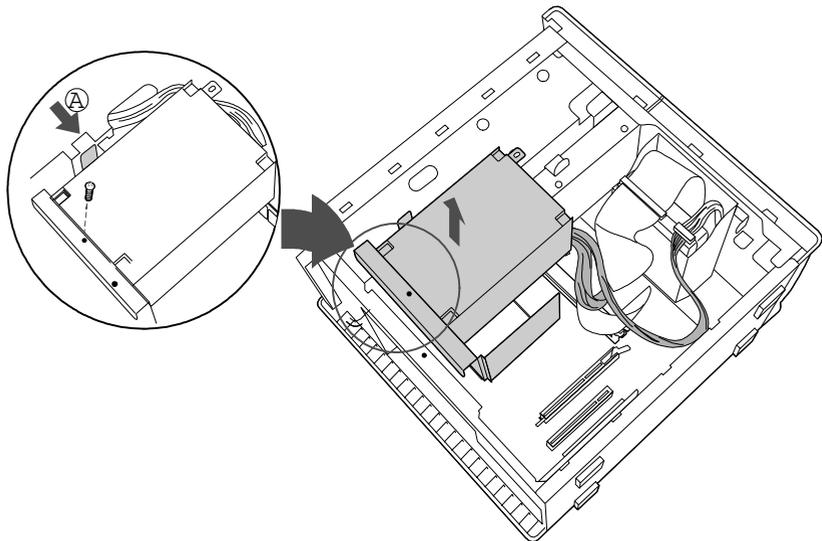
Removing the Power Supply (PCV-RX series models)

Remove the power supply when you insert a memory module (see “Removing a Memory Module” on page 36).

! Before opening the system unit, save and close all open files, exit all open applications, turn off the power to all attached peripheral devices, shut down the computer, and unplug the power cord.

- 1 Remove the screw that secures the power supply to the rear of the chassis.
- 2 Pull the tab (A) that latches the power supply to the chassis.
- 3 Slide the power supply up until the power supply clears the chassis.

Removing the power supply (PCV-RX series model)



- 4 Rotate the power supply upside down and rest it on top of the chassis where the hard drive is located.

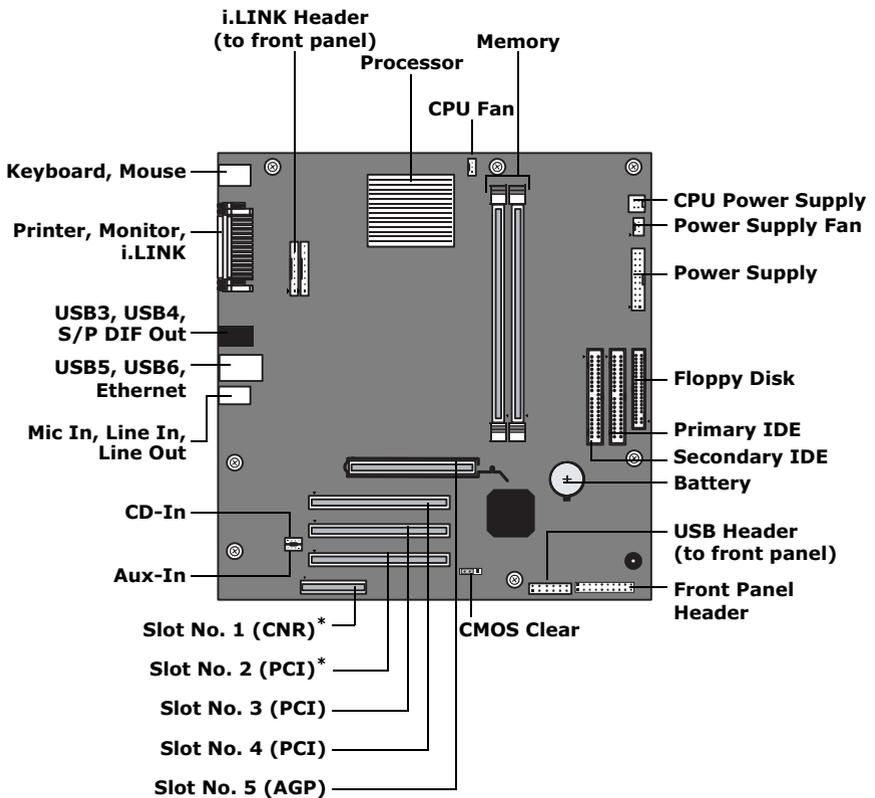
Replacing the Power Supply (PCV-RX series model)

- 1 Rotate the power supply down and slide it down along the rails on each side of the chassis opening.
- 2 Replace the screw that secures the power supply to the rear of the chassis.

Chapter 4

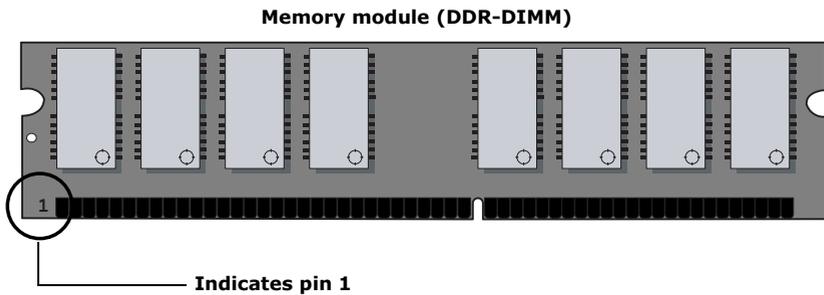
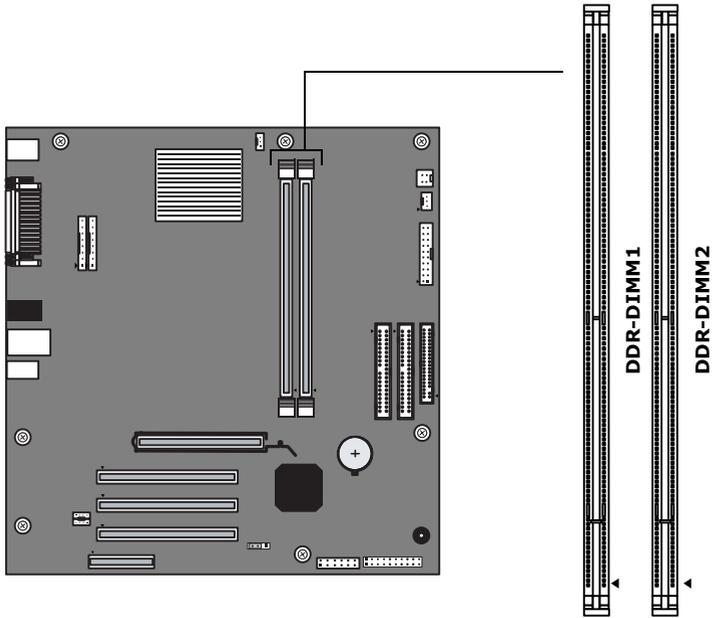
System Board

This chapter identifies and describes components on the system board.



* The CNR slot no. 1 and PCI slot no. 2 are located under slot cover no. 1, 2. Only one expansion slot can be used at a time.

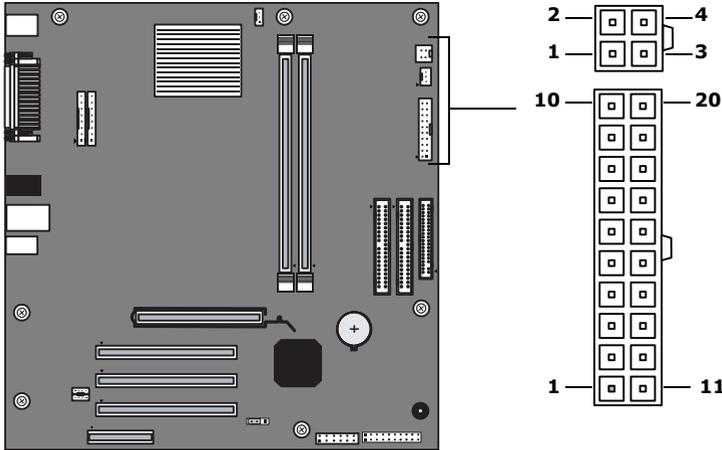
Memory Module (DDR-DIMM) Slots



Align pin 1 of the Dual Inline Memory Module (DDR-DIMM) to the small triangle located on the memory module slot of the system board.

Power Supply and Aux Power Headers

The power supply header on the system board connects to the power supply header labelled P1.



Power Supply header

Pin *Signal Name*

| | |
|----|---|
| 1 | +3.3 V |
| 2 | +3.3 V |
| 3 | Ground |
| 4 | +5 V |
| 5 | Ground |
| 6 | +5 V |
| 7 | Ground |
| 8 | PWRGD (Power Good) |
| 9 | +5 VSB |
| 10 | +12 V |
| 11 | +3.3 V |
| 12 | -12 V |
| 13 | Ground |
| 14 | PS-ON# (power supply remote on/off control) |
| 15 | Ground |

Power Supply header (Continued)

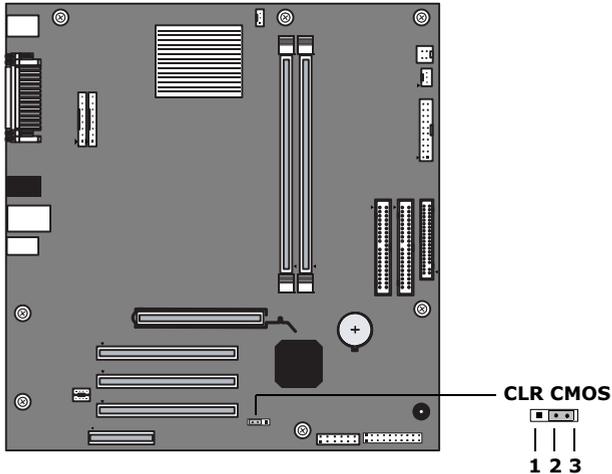
| <i>Pin</i> | <i>Signal Name</i> |
|------------|--------------------|
| 16 | Ground |
| 17 | Ground |
| 18 | No Connection |
| 19 | +5 V |
| 20 | +5 V |

Aux Power header

| <i>Pin</i> | <i>Signal Name</i> |
|------------|--------------------|
| 1 | Ground |
| 2 | Ground |
| 3 | +12 V |
| 4 | +12 V |

CLR CMOS Jumper

The CLR CMOS Jumper clears the BIOS password setting.



CLR CMOS Jumper Settings

| <i>Jumper Plug Position</i> | <i>Function</i> |
|-----------------------------|---------------------|
| 1-2 | Clear CMOS Password |
| 2-3 | Normal |

 The configuration jumpers should never need changing unless otherwise directed by a technical support or service technician.

Chapter 5

CMOS Setup Options

This chapter describes each screen in the Award BIOS Setup Utility (see “[Accessing the BIOS Setup Utility](#)” on page 16).

The Award BIOS setup has five menu items on the menu bar. These are:

- ❑ Main
- ❑ Advanced
- ❑ Power
- ❑ Boot
- ❑ Exit

Options that you can change are enclosed in brackets. Text that is not enclosed in brackets cannot be changed.

A small triangle (▶) indicates that there is a sub-menu with additional information and options. Press Enter to display the sub-menu. The information and options in a sub-menu are context-sensitive (they appear or disappear, depending on which options you select).

The item shown in [brackets] in this guide is the default option. The option shown in [brackets] on the screen is the option currently set for your system.

The other available options for each item are shown without brackets directly below the default option in this guide. The available options are listed in the order they occur when you press the + key.

Use the left and right arrow keys to choose a menu item. Use the up and down arrow keys to select an option. Press Enter to display a list of options, or press the + or - key to cycle through the other options.

If you display the list of options, use the up and down arrow keys to select an option in the list, then press Enter to choose the selection.

Press Esc to go back to the main menu.

Press F10 to save the changes and exit, or press Esc to discard the changes.

Follow the on-screen prompts for other choices. The bottom of the screen presents a summary of the keys to use for navigation and control.

Main Screen

| | |
|-----------------------|--|
| System Time | [00:00:00] |
| System Date | [01/01/2003] |
| ▶Primary Master | (see “IDE Sub-Menus” on page 60) |
| ▶Primary Slave | (see “IDE Sub-Menus” on page 60) |
| ▶Secondary Master | (see “IDE Sub-Menus” on page 60) |
| ▶Secondary Slave | (see “IDE Sub-Menus” on page 60) |
| Supervisor Password | [Disabled] |
| User Password | [Disabled] |
| Installed Memory | See online specifications sheet for details. |
| BIOS Revision/Version | 1002 (depends on model) |

▶IDE Sub-Menus

| | |
|-------------------------------------|--|
| Type | [Auto] User Type HDD CD-ROM LS-120 ZIP-100 MO Other ATAPI None |
| Translation Method [*] | [LBA] Large Normal Match Partition Table Manual |
| Cylinders [†] | [1024] |
| Heads [†] | [255] |
| Sectors [‡] | [63] |
| CHS Capacity [*] | 8422 MB |
| Maximum LBA Capacity [*] | 40992 MB (depends on model) |
| Multi-Sector Transfers [*] | [Maximum] Disabled 2 Sectors 4 Sectors 8 Sectors 16 Sectors 32 Sectors |
| PIO Mode ^{**} | [4] |
| ULTRA DMA Mode [†] | [5] |
| Set Device As ^{††} | [Auto] Floppy Hard Disk |

* This option appears when Type is set to User Type HDD.

† This option appears when Type is set to Auto or User Type HDD.

‡ This option appears when Type is set to Auto or User Type HDD.

** This option appears when Type is not set to None.

†† This option appears when Type is set to ZIP-100 or MO.

Advanced Screen

CPU Speed [1500MHz]*

Hyper Threading Technology [Enabled][†]
Disabled

- ▶ I/O Device Configuration (see [“I/O Device Configuration Sub-Menu”](#) on page 62)
- ▶ PCI Configuration (see [“PCI Configuration Sub-Menu”](#) on page 62)

* CPU Speed may vary, depending on the model purchased.

† Hyper Threading Technology may vary, depending on the model purchased.

▶ I/O Device Configuration Sub-Menu

| | |
|---------------------------------|---|
| Onboard AC97 Audio Controller | [Enabled] Disabled |
| Onboard AC97 Modem Controller | [Enabled] Disabled |
| Onboard 1394 Controller | [Enabled] Disabled |
| Onboard Lan Controller | [Enabled] Disabled |
| Onboard Parallel Port | [378H/IRQ7] 278H/IRQ5 Disabled 3BCH/IRQ7 |
| Parallel Port Mode | [Normal] EPP ECP ECP+EPP |
| Onboard Memory Stick Controller | [Enabled] Disabled |

▶ PCI Configuration Sub-Menu

| | |
|--------------------------------|---|
| Slot 1 IRQ to Slot 3 IRQ | [Auto] NA 3 4 5 7 9 10 11 12 14 15 |
| VGA BIOS Sequence | [PCI/AGP] AGP/PCI |
| Onboard LAN Boot ROM | [Disabled] Enabled |

Power Screen

▶Power Up Control

| | |
|---------------------|-----------------------|
| AC PWR Loss Restart | [Disabled] Enabled |
| Wake On LAN | [Disabled] Enabled |

▶Hardware Monitor

| | |
|-----------------|---|
| MB Temperature | [(displays actual temperature)] Ignore |
| CPU Temperature | [(displays actual temperature)] Ignore |
| CPU Fan Speed | [(displays actual RPM)] Ignore |
| Power Fan Speed | [(displays actual RPM)] Ignore |
| VCORE Voltage | [(displays actual voltage)] Ignore |
| +3.3V Voltage | [(displays actual voltage)] Ignore |
| +5V Voltage | [(displays actual voltage)] Ignore |
| +12V Voltage | [(displays actual voltage)] Ignore |

Boot Screen

| | |
|----------------------|--|
| 1. ATAPI CD-ROM | [(displays installed drive)] Disabled |
| 2. Removable Device | [Legacy Floppy] LS120 ZIP-100 ATAPI MO USB FDD Disabled |
| 3. IDE Hard Drive | [(displays installed drive)] Disabled |
| 4. Other Boot Device | [Disabled] INT18 Device (Network) SCSI Boot Device |
| Silent Boot | [Enabled] Disabled |

Exit Screen

Exit Saving Changes

Exit Discarding Changes

Load Setup Defaults

Discard Changes

Save Changes

Chapter 6

Miscellaneous Technical Information

This chapter contains information on the following subjects:

- ❑ User and Supervisor password
- ❑ Beep code error messages
- ❑ PCI configuration status and error messages
- ❑ DMA channel assignments
- ❑ System I/O address map
- ❑ Memory map
- ❑ IRQ settings

 Models equipped with Giga Pocket features may require increased system resources due to additional hardware.

User and Supervisor Passwords

The system allows you to specify up to two passwords (a User password and a Supervisor password) in the CMOS Setup Utility. The User password is required; the Supervisor password is optional.

Access to the CMOS Setup Utility depends on which passwords were previously set, as indicated next.

| <i>If you set these passwords...</i> | <i>...the following passwords are required:</i> |
|--------------------------------------|--|
| User password only | User password is required at bootup. |
| Supervisor password only | No password is required at bootup. Supervisor password is required by most setup options. |
| Both passwords | User password is required at bootup. Supervisor password is required by most setup options. |

Beep Code Error Messages

During a normal bootup, a single short beep signifies that the system is OK. Other beep patterns signify errors. The number of beeps indicates the specific error that occurred.

If a system error occurs, the Sony Online Support technicians require the number of beeps your system produces.

PCI Configuration Status and Error Messages

The following is a list of status and error messages that may appear on your system from time to time.

| <i>Message</i> | <i>Meaning</i> |
|--|---|
| Floppy Disk Controller Resource Conflict | The floppy disk controller has requested a resource that is already in use. |
| NVRAM Checksum Error, NVRAM Cleared | The NVRAM data was reinitialized due to an NVRAM checksum error. |
| NVRAM Cleared By Jumper | The Clear CMOS jumper block has been changed to the clear position. |
| NVRAM Data Invalid, NVRAM Cleared | Invalid entry in the NVRAM. |
| Parallel Port Resource Conflict | The parallel port has requested a resource that is already in use. |
| PCI Error Log is Full | This message is displayed when more than 15 PCI conflict errors are detected. No additional PCI errors can be logged. |
| PCI I/O Port Conflict | Two devices requested the same resource, resulting in a conflict. |
| PCI IRQ Conflict | Two devices requested the same resource, resulting in a conflict. |
| PCI Memory Conflict | Two devices requested the same resource, resulting in a conflict. |
| Primary Boot Device Not Found | The designated primary boot device (hard disk drive, floppy disk drive, CD-ROM drive, or network drive) could not be found. |
| Primary IDE Controller Resource Conflict | The primary IDE controller has requested a resource that is already in use. |
| Primary Input Device Not Found | The designated primary input device (keyboard, mouse, or other, if input is redirected) could not be found. |
| Primary Output Device Not Found | The designated primary output device (display, serial port, or other, if input is redirected) could not be found. |

| <i>Message</i> | <i>Meaning</i> |
|--|---|
| Secondary IDE Controller Resource Conflict | The secondary IDE controller has requested a resource that is already in use. |
| Static Device Resource Conflict | A non-Plug and Play ISA card has requested a resource that is already in use. |
| System Board Device Resource Conflict | A non-Plug and-Play ISA card has requested a resource that is already in use. |

DMA Channel Assignments

This shows the factory default values. The Windows® operating system reassigns resources to best meet the needs of a particular configuration.

| <i>DMA Channel</i> | <i>Default Assignment</i> |
|--------------------|---------------------------------|
| Channel 4 | Direct memory access controller |
| Channel 2 | Standard floppy disk controller |

System I/O Address Map

| <i>Resource</i> | <i>Device Status</i> |
|-----------------------|-------------------------------------|
| 0x00000000-0x00000CF7 | PCI bus |
| 0x00000000-0x00000CF7 | Direct memory access controller |
| 0x00000D00-0x0000FFFF | PCI bus |
| 0x000003B0-0x000003BB | SiS® Accelerated Graphics Port |
| 0x000003B0-0x000003BB | NVIDIA® GeForce™ FX 5800 Ultra |
| 0x000003C0-0x000003DF | SiS Accelerated Graphics Port |
| 0x000003C0-0x000003DF | NVIDIA GeForce FX 5800 Ultra (Sony) |
| 0x00000A79-0x00000A79 | ISAPNP Read Data Port |
| 0x00000279-0x00000279 | ISAPNP Read Data Port |
| 0x00000274-0x00000277 | ISAPNP Read Data Port |
| 0x0000E400-0x0000E47F | Motherboard resources |
| 0x0000E480-0x0000E4FF | Motherboard resources |
| 0x0000E600-0x0000E61F | Motherboard resources |
| 0x00000480-0x0000048F | Motherboard resources |
| 0x00000010-0x0000001F | Motherboard resources |
| 0x00000022-0x0000002D | Motherboard resources |
| 0x00000030-0x0000003F | Motherboard resources |
| 0x00000044-0x0000005F | Motherboard resources |
| 0x00000062-0x00000063 | Motherboard resources |
| 0x00000065-0x0000006F | Motherboard resources |
| 0x00000074-0x0000007F | Motherboard resources |
| 0x00000091-0x00000093 | Motherboard resources |
| 0x000000A2-0x000000BF | Motherboard resources |
| 0x000000E0-0x000000EF | Motherboard resources |
| 0x000004D0-0x000004D1 | Motherboard resources |
| 0x00000020-0x00000021 | Programmable interrupt controller |
| 0x000000A0-0x000000A1 | Programmable interrupt controller |
| 0x00000080-0x00000090 | Direct memory access controller |
| 0x00000094-0x0000009F | Direct memory access controller |
| 0x000000C0-0x000000DF | Direct memory access controller |
| 0x00000040-0x00000043 | System timer |
| 0x00000070-0x00000073 | System CMOS/real time clock |
| 0x00000061-0x00000061 | System speaker |

| <i>Resource</i> | <i>Device Status</i> |
|-----------------------|--|
| 0x000000F0-0x000000FF | Numeric data processor |
| 0x000003F2-0x000003F5 | Standard floppy disk controller |
| 0x000003F7-0x000003F7 | Standard floppy disk controller |
| 0x00000378-0x0000037F | Printer Port (LPT1) |
| 0x00000060-0x00000060 | Standard 101/102-Key or Microsoft® Natural PS/2® Keyboard |
| 0x00000064-0x00000064 | Standard 101/102-Key or Microsoft Natural PS/2 Keyboard |
| 0x0000002E-0x0000002F | Motherboard resources |
| 0x00000295-0x00000296 | Motherboard resources |
| 0x00000240-0x00000247 | Sony Memory Stick controller (WB) |
| 0x0000B400-0x0000B40F | SiS PCI IDE Controller |
| 0x000001F0-0x000001F7 | Primary IDE Channel |
| 0x000003F6-0x000003F6 | Primary IDE Channel |
| 0x00000170-0x00000177 | Secondary IDE Channel |
| 0x00000376-0x00000376 | Secondary IDE Channel |
| 0x0000B000-0x0000B0FF | Agere Systems™ AC'97 Modem |
| 0x0000A800-0x0000A87F | Agere Systems AC'97 Modem |
| 0x0000A400-0x0000A4FF | YAMAHA AC-XG Audio Device |
| 0x0000A000-0x0000A07F | YAMAHA AC-XG Audio Device |
| 0x00009800-0x000098FF | Sony Advanced Encoder Board (Kernel Streaming) |
| 0x00009400-0x000094FF | Realtek® RTL8139/810x |



I/O addresses that may be used by add-on cards are not listed.

Memory Map

| <i>Resource</i> | <i>Device</i> |
|--------------------------|--|
| 0x0000-0x9FFFF | System board |
| 0xF0000-0xFFFFF | System board |
| 0x100000-0x1FFFFFFF | System board |
| 0xFEC00000-0xFECFFFFFFF | System board |
| 0xFEE00000-0xFEEFFFFFFF | System board |
| 0xA0000-0xBFFFF | PCI bus |
| 0xA0000-0xBFFFF | SiS® Accelerated Graphics Port |
| 0xA0000-0xBFFFF | NVIDIA® GeForce™ FX 5800 Ultra (Sony) |
| 0xC8000-0xDFFFF | PCI bus |
| 0x20000000-0xFEBFFFFFFF | PCI bus |
| 0xE7000000-0xE7FFFFFFF | SiS Accelerated Graphics Port |
| 0xE7000000-0xE7FFFFFFF | NVIDIA GeForce FX 5800 Ultra (Sony) |
| 0xEFF00000-0xFEBFFFFFFF | SiS Accelerated Graphics Port |
| 0xE8000000-0xEBFFFFFFF | SiS Accelerated Graphics Port |
| 0xF0000000-0xF7FFFFFFF | NVIDIA GeForce FX 5800 Ultra (Sony) |
| 0xFFEE0000-0xFFEFFFFFFF | Motherboard resources |
| 0xFFFE0000-0xFFFFFFFFFFF | Motherboard resources |
| 0xE6800000-0xE6800FFF | SiS 7001 PCI to USB Open Host Controller |
| 0xE6000000-0xE6000FFF | SiS 7001 PCI to USB Open Host Controller |
| 0xE5800000-0xE5800FFF | SiS 7001 PCI to USB Open Host Controller |
| 0xE5000000-0xE5000FFF | SiS PCI to USB Enhanced Host Controller |
| 0xE4800000-0xE4800FFF | Sony Advanced Encoder Board(KernelStreaming) |
| 0xE4000000-0xE4000FFF | Realtek® RTL8139/810x Family Fast Ethernet NIC |
| 0xE3800000-0xE3800FFF | NEC OHCI Compliant IEEE 1394 Host Controller |

 I/O addresses that may be used by add-on cards are not listed.

IRQ Settings

| <i>Resource</i> | <i>Device</i> |
|-----------------|---|
| 0 | System timer |
| 1 | Standard 101/102-Key or Microsoft® Natural PS/2® Keyboard |
| 6 | Standard floppy disk controller |
| 8 | System CMOS/real time clock |
| 11 | Sony Memory Stick controller (WB) |
| 12 | PS/2 Compatible Mouse |
| 13 | Numeric data processor |
| 14 | Primary IDE Channel |
| 15 | Secondary IDE Channel |
| 16 | NVIDIA® GeForce™ FX 5800 Ultra (Sony) |
| 17 | Realtek® RTL8139/810x Family Fast Ethernet NIC |
| 18 | Agere Systems™ AC'97 Modem |
| 18 | YAMAHA AC-XG Audio Device |
| 18 | Sony Advanced Encoder Board (KernelStreaming) |
| 18 | NEC OHCI Compliant IEEE 1394 Host Controller |
| 20 | Microsoft® ACPI-Compliant System |
| 20 | SiS® 7001 PCI to USB Open Host Controller |
| 21 | SiS 7001 PCI to USB Open Host Controller |
| 22 | SiS 7001 PCI to USB Open Host Controller |
| 23 | SiS PCI to USB Enhanced Host Controller |

Chapter 7

Specifications

This chapter describes the technical specifications for your VAI0 Digital Studio™ computer.

 System configuration may vary, depending on the model purchased. Your computer may not include all of the hardware features discussed in this section.

Processor

See online specifications sheet for details.

Chipset

See online specifications sheet for details.

AGP Bus

AGP interface specification, version 2.0 (supports 2x/4x)

One AGP slot

PCI Bus

PCI Level 2.2, 33 MHz zero wait state

Three PCI slots - not all slots are available. (See online specifications sheet for details.)

Memory Modules

| | |
|------------------|--|
| Installed memory | See online specifications sheet for details. |
| Maximum memory | 1.0 GB (512 MB in each socket) |
| Voltage | 2.5 V memory only |
| Pins | 184-pins with gold-plated contacts |
| Memory type | 2.5 V PC2700 DDR-SDRAM unrestricted, unbuffered, 64-bit (Non-ECC) DDR-SDRAM DIMM modules |

Memory Configurations

| <i>DIMM1*</i> | <i>DIMM2*</i> |
|------------------|------------------|
| 0, 128, 256, 512 | 0, 128, 256, 512 |

* Your computer ships with at least 512 MB and is expandable to 1.0 GB. DDR-DIMM memory modules must be 2.5 volts, PC2700, 4-clock between sockets and 64-bit or 42-bit 133 MHz SDRAM.

L2 Cache

| | |
|-----------|-----------------------------------|
| Installed | 512 KB of Advanced Transfer cache |
|-----------|-----------------------------------|

Graphics

| | |
|---|--|
| AGP Controller* | See online specifications sheet for details. |
| Video memory | See online specifications sheet for details. |
| Resolution (displayed resolution depends on the graphics display you use) | |
| True color (32-bits) | Up to 1600 x 1200 at 85 Hz non-interlaced |
| High color (16-bits) | Up to 1600 x 1200 at 100 Hz non-interlaced |
| 256 colors (8-bits) | Up to 1600 x 1200 at 100 Hz non-interlaced |

* Supports DDC-1 and DDC-2b standards for Plug and Play displays.

Audio

| | |
|-----------------------|--|
| Sound chip | See online specifications sheet for details. |
| Wave synthesis | Software synthesis |
| Sound effects | DirectX® software |
| Audio sampling rate | Up to 48 kHz at 16-bits |
| Rear panel connectors | Microphone Headphones (for stereo headphones) Line In (from stereo audio source) |

Communications

| | |
|-------------------------------|---------------------------------|
| Modem* | V.90 compatible data/fax modem† |
| Fax | 14.4 Kbps maximum |
| i.LINK® (IEEE 1394) interface | 400 Mbps, OHCI chip set |
| Ethernet | 10BASE-T/100BASE-TX |

* Installed modem may vary, depending on the system configuration purchased.

† This modem is capable of downloading at 56 Kbps. Your phone service, online service, or Internet Service Provider may not support this technology or operate at this speed.

Giga Pocket I/O*

| | |
|-------|--|
| Rear | Audio L/R In jack Video/S-Video In jack Video/S-Video Out jack Audio L/R Out jack VHF/UHF port |
| Front | Video/S-Video In jack Audio L/R In jack |

* System configuration may vary, depending on the model purchased. See the online specification sheet for details.

I/O and Expansion Slots

| | |
|------------------------------|--|
| Speaker DC Out jack | One connection for speaker power cable. |
| Printer port | One high-speed bi-directional Centronics-compatible port with ECP and EPP modes. |
| Modem jacks | Two RJ-11 jacks (telephone and line). (See online specifications sheet for details.) |
| USB 2.0 ports* | USB1 and USB2 (front panel) USB3, USB4, USB5, USB6 (rear panel) (See online specifications sheet for details.) |
| AGP slot | One slot for an AGP card. |
| PCI slots | Not all PCI slots are available for expansion. (See online specifications sheet for details.) |
| CNR slot | One slot for a CNR modem. |
| IDE headers | Primary and secondary (each supports two IDE drives) |
| i.LINK® (IEEE 1394) ports | One 4-pin port on the front panel One 6-pin port on the rear panel |

* Universal Serial Bus (USB) 2.0 technology supports high/full/low speeds.

Floppy Disk Drive and Controller

| <i>Drive</i> | <i>Description</i> |
|------------------------|---|
| Floppy disk controller | 82077-compatible (supports up to 2.88 MB) |
| Floppy disk drive | 3.5-inch, 1.44 MB. |

Hard Drives and Controller

| <i>Drive</i> | <i>Description</i> |
|-----------------|---|
| EIDE controller | Supports up to four EIDE drives (supports PIO Mode 4 EIDE drives and Ultra DMA/100 Mode drives) |
| IDE hard drive* | See online specifications sheet for details. |

* Bus-mastering EIDE driver installed.

Optical Drives

| <i>Drive</i> | <i>Description</i> |
|------------------|--|
| Optical drive #1 | See online specifications sheet for details. |
| Optical drive #2 | See online specifications sheet for details. |

System BIOS

| | |
|-----------------------|--|
| Make and model | Award-based |
| ROM | 2 Mb Flash-ROM |
| Passwords | User and supervisor passwords supported |
| Power management | APM 1.2 |
| Advanced features | ACPI-1.0 compliant hardware for use with APM and PNP BIOS APIs |
| Plug and Play devices | Supported with steerable DMA channels and interrupts |
| Special features | PC-99 compliant, multi-boot, PCI add-on card auto-configure |

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