

SONY®

VAIO® MX Computer System Reference Manual



NOTICE

© 2002 Sony Electronics Inc. Reproduction in whole or in part without written permission is prohibited. All rights reserved. This manual and the software described herein, in whole or in part, may not be reproduced, translated, or reduced to any machine-readable form without prior written approval.


SONY ELECTRONICS INC. PROVIDES NO WARRANTY WITH REGARD TO THIS MANUAL, THE SOFTWARE, OR OTHER INFORMATION CONTAINED HEREIN AND HEREBY EXPRESSLY DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE WITH REGARD TO THIS MANUAL, THE SOFTWARE, OR SUCH OTHER INFORMATION. IN NO EVENT SHALL SONY ELECTRONICS INC. BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES, WHETHER BASED ON TORT, CONTRACT, OR OTHERWISE, ARISING OUT OF OR IN CONNECTION WITH THIS MANUAL, THE SOFTWARE, OR OTHER INFORMATION CONTAINED HEREIN OR THE USE THEREOF.

Sony Electronics Inc. reserves the right to make any modification to this manual or the information contained herein at any time without notice. The software described herein is governed by the terms of a separate user license agreement.

This product contains software owned by Sony and licensed by third parties. Use of such software is subject to the terms and conditions of license agreements enclosed with this product. Some of the software may not be transported or used outside the United States. Software specifications are subject to change without notice and may not necessarily be identical to current retail versions.

Updates and additions to software may require an additional charge. Subscriptions to online service providers may require a fee and credit card information. Financial services may require prior arrangements with participating financial institutions.

Sony, VAIO, the VAIO logo, VisualFlow, Giga Pocket, SonicStage, MovieShaker, DVgate, Media Bar, Handycam, PictureGear and i.LINK are trademarks or registered trademarks of Sony.

MagicGate, Memory Stick, and  are trademarks of Sony Corporation.

Intel and Pentium are trademarks or registered trademarks of the Intel Corporation. Microsoft, Windows, and the Windows logo are trademarks or registered trademarks of the Microsoft Corporation. PS/2 is a registered trademark of the IBM Corporation.

All other trademarks are trademarks or registered trademarks of their respective owners.

Owner's Record

The model number and serial number are located on the back of your Sony VAIO computer. Record the 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

DVD-RW Laser Diode Properties

Laser Output	0.39 mW (CD-read)
	0.18 mW (DVD-read)
	2.58 mW (DVD-write)
	11.5 mW (CD-write)
Wave Length	650-662 nm (DVD)
	773-797 nm (CD)

MiniDisc Laser Diode Properties

Laser Output	4.5 mW (MD-read)
	60 mW (MD-write)
Wave Length	765-805 nm (MD)

- ❑ 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.

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

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

! Caution—For ADSL, HomePNA, 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 rechange, 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.

**! Pour le MiniDisc :
Danger—Radiation laser 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.**

! Attention : Pour ADSL, HomePNA, 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.

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

Sony Computing Support can be reached at <http://www.sony.com/pcsupport>.

Regulatory Information

Declaration of Conformity

Trade Name: SONY

Model No.: PCV-MXS20

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.

Model No.: PCVA-IFT2

This device complies with Part 15 of the FCC rules. Operation is subject to the condition that this device may not cause harmful interference.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the 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. The FCC Ringer Equivalence Number (REN) for this equipment is 0.7B. If requested, this information must be provided to the telephone company.

This modem uses the USOC RJ-11 telephone jack.

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 to determine the maximum REN for the calling area.

If the terminal 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 modem, for repair or warranty information, please contact 1-888-4-SONY-PC, or write to the Sony Customer Information Center, 12451 Gateway Blvd., Fort Myers, FL 33913. If the trouble is causing harm to the telephone network, the telephone company may request that you remove 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).

This equipment cannot be used on public coin service provided by the telephone company.

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

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 to send any message via a telephone facsimile machine 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.

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.

! 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

NOTICE: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the users satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection.

The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Equipment malfunctions or any repairs or alterations made by the user to this equipment may give the telecommunications company cause to request that the user disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION: Users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority, or electrician, as appropriate.

NOTICE: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals 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 Ringer Equivalence Numbers of all the devices does not exceed 5. The Ringer Equivalence Number for this equipment is 0.7B.

Avis de l'Industrie Canada

AVIS : L'étiquette d'Industrie Canada identifie le matériel homologué.

Cette étiquette certifie que le matériel est conforme aux normes de protection, d'exploitation et de sécurité des réseaux de télécommunications, comme le prescrivent les documents concernant les exigences techniques relatives au matériel terminal. Le Ministère n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée de raccordement. L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêche pas la dégradation du service dans certaines situations.

Les réparations de matériel homologué doivent être coordonnées par un représentant désigné par le fournisseur. L'entreprise de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'énergie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

Avertissement : L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours à un service d'inspection des installations électriques, ou à un électricien, selon le cas.

AVIS : L'indice d'équivalence de la sonnerie (IES) assigné à chaque dispositif terminal indique le nombre maximal de terminaux qui peuvent être raccordés à une interface.

La terminaison d'une interface téléphonique peut consister en une combinaison de quelques dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5. L'indice d'équivalence de la sonnerie de ce matériel est de 0.7B.

Contents

NOTICE	ii
Owner's Record	ii
Safety Information and Caution	iii
Regulatory Information.....	v
FCC Part 68	vi
Telephone Consumer Protection Act of 1991 (United States)	vi
Telephone Consumer Guidelines (Canada).....	vi
Disposal of Lithium Battery	vii
Industry Canada Notice.....	viii
Avis de l'Industrie Canada.....	viii
 <i>Chapter 1 — Identifying Components.....</i>	 <i>1</i>
Front View	2
Drives.....	3
Buttons and Switches	4
Indicators and receivers	6
Connectors	7
Rear View	8
I/O Connectors	10
Expansion Slots	15
 <i>Chapter 2 — Configuring Your System</i>	 <i>17</i>
Accessing the BIOS Setup Utility	18
Changing the Display's Power Management Settings.....	19

Chapter 3 — Removing, Installing, and Replacing Components	25
Removing the Side Panel	26
Replacing the Side Panel	27
Removing a PCI Add-in Card	28
Installing a PCI Add-In Card	30
Replacing the Lithium Battery	32
Removing a Memory Module	35
Installing System Memory	37
Removing a Slot Cover	41
Covering an Open I/O Slot	42
Installing a 3.5-inch Internal Hard Disk Drive	43
To identify additional hard disk space	47
Removing the Power Supply	48
Replacing the Power Supply	49
Chapter 4 — System Board	51
Memory Module (DDR-DIMM) Slots	52
Power Supply and Aux Power Headers	53
CLR CMOS Jumper	55
Chapter 5 — CMOS Setup Options	57
Main Screen	59
Advanced Screen	61
Power Screen	64
Boot Screen	65
Exit Screen	66
Chapter 6 — Miscellaneous Technical Information	67
User and Supervisor Passwords	68
Beep Code Error Messages	69
PCI Configuration Status and Error Messages	70
DMA Channel Assignments	72
System I/O Address Map	73
Memory Map	75
IRQ Summary	77

<i>Chapter 7 — Specifications</i>	79
Processors	79
Chipset	79
AGP Bus	79
PCI Bus	79
Memory Modules	80
Memory Configurations	80
L2 Cache	80
Graphics	80
Audio	81
Communications	81
Giga Pocket I/O.....	81
I/O and Expansion Slots	82
Hard Drives and Controllers	82
Optical Drive.....	82
System BIOS	83
<i>Index</i>	85

Chapter 1

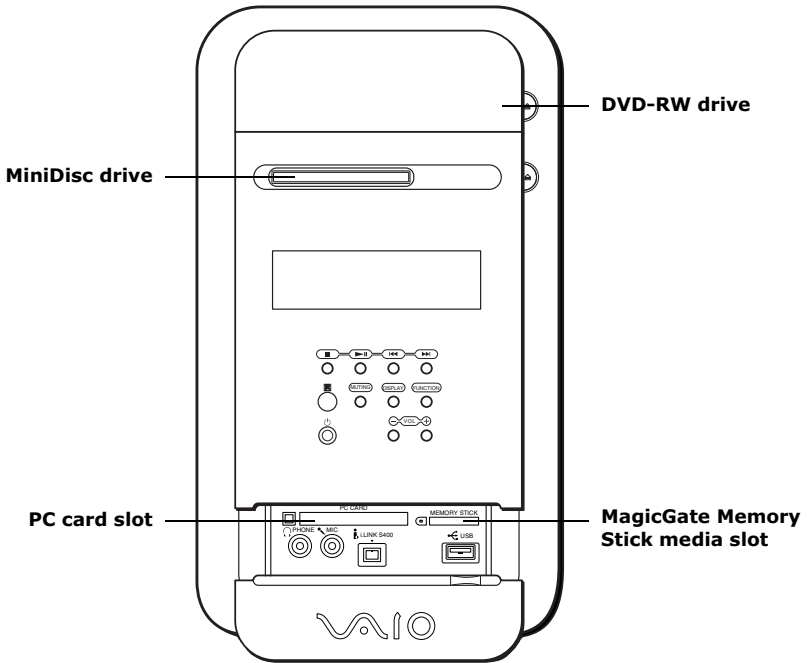
Identifying Components

The following sections identify and describe each component that is visible from the exterior of the VAIO® MX computer. Internal components are identified in the appropriate section of this manual.

Front View



Drives



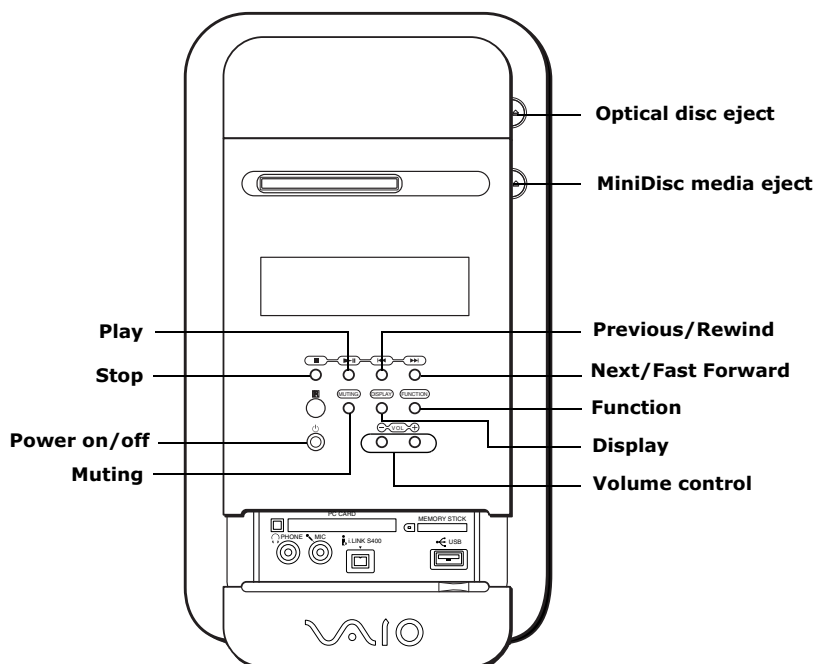
Drive

Description

MiniDisc drive	Plays and records music to and from a MiniDisc media. Supports Net MD protocol for secure music transfers.
PC card slot	Accommodates one Type I or Type II PCMCIA card.
DVD-RW drive	See Specifications sheet for details.*
MagicGate™ Memory Stick® media slot	Accommodates a MagicGate Memory Stick media.

* The Specifications sheet is supplied with your computer's original documentation.

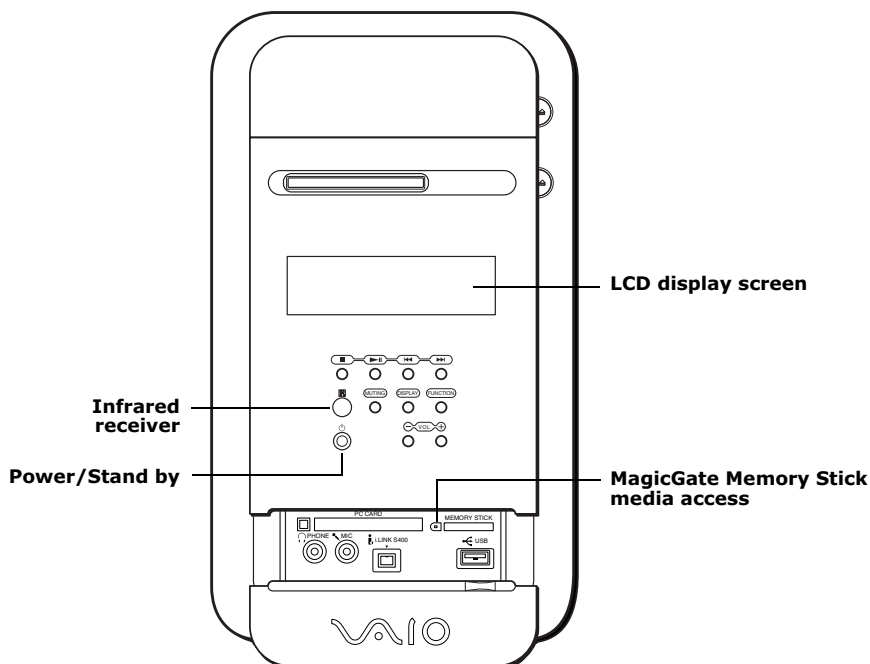
Buttons and Switches



<i>Button or switch</i>	<i>Description</i>
Play button	Plays the current DVD, CD, or MiniDisc media contents.
Stop button	Stops the current playback of DVD, CD, or MiniDisc media.
Power on/off button	Turns system power on and off.
Muting button	Mutes the current sound output.
Optical disc eject button	Automatically opens and closes the optical drive tray.
MiniDisc media eject button	Ejects a MiniDisc media from the MiniDisc drive.

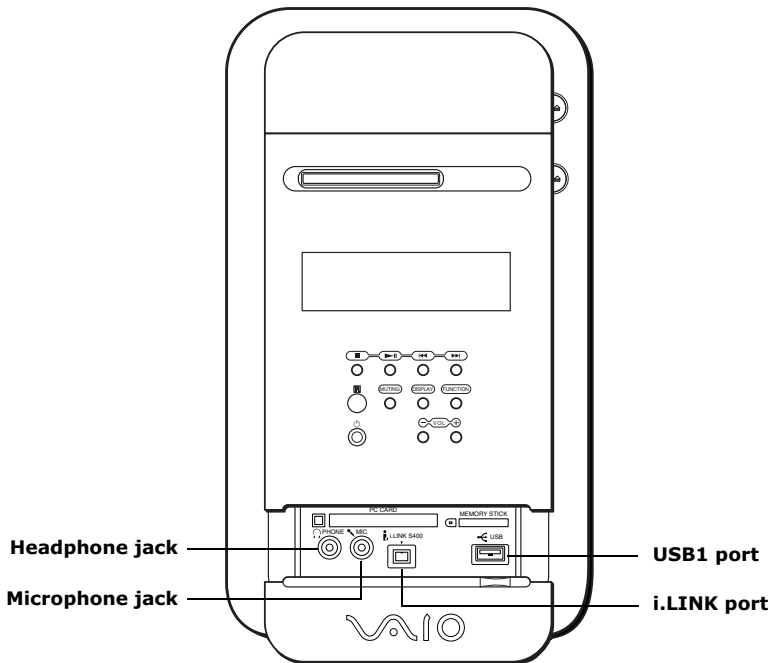
<i>Button or switch</i>	<i>Description</i>
Previous/Rewind button	Skips to the previous track on the current playback of a DVD, CD or MiniDisc media.
Next/Fast Forward button	Skips to the next track on the current playback of a DVD, CD or MiniDisc media.
Function button	Selects the operation mode of the computer.
Display button	Selects the display mode on the LCD display screen.
Volume control buttons	Increases or decreases the volume.

Indicators and receivers



Indicator or receiver	Description
Infrared receiver	Enables the computer to receive signals from the remote control. (For proper remote control operation, do not block the infrared receiver.)
Power/Stand by indicator	Stand by (amber) indicates the computer is in Stand by mode. On (blue) indicates the computer is out of Stand by mode and ready to use. Off (no color) indicates the computer is turned off or in hibernation mode.
LCD display screen	Displays the current operating mode and status of the computer.
MagicGate™ Memory Stick® media access indicator light	The indicator light is amber when the Memory Stick media slot is in use.

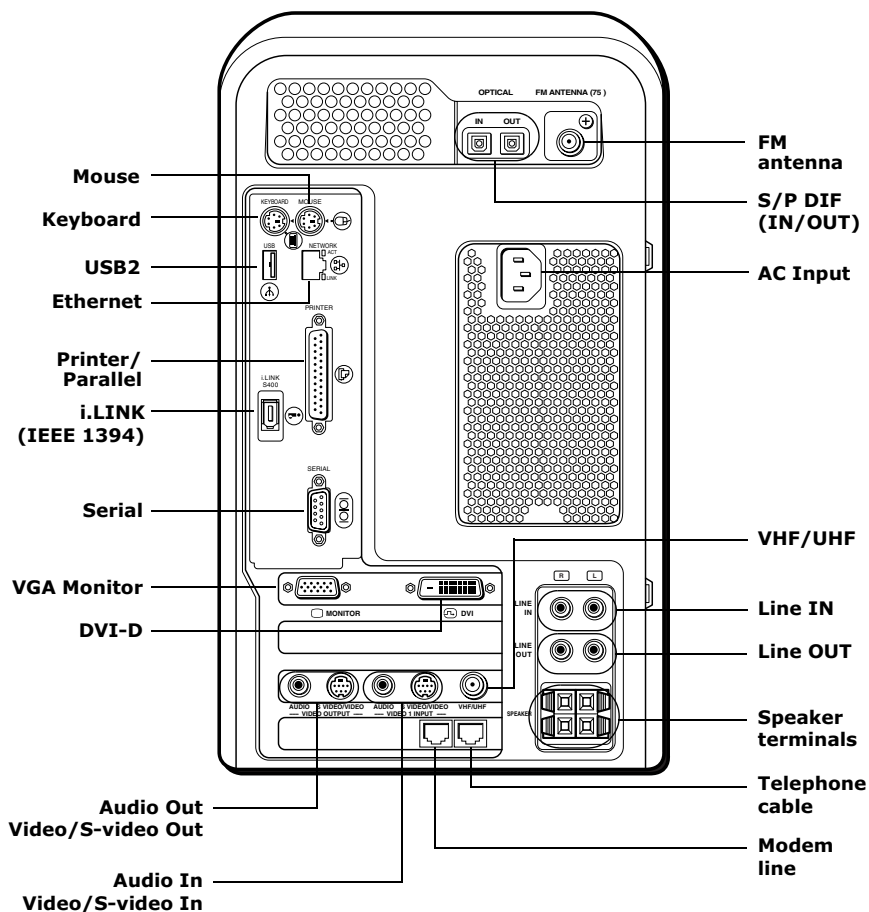
Connectors



Connector	Description
Headphone jack	Connection for headphones.
Microphone jack	Connection for a microphone.
USB1 port	Connects to USB devices.
i.LINK® port (IEEE 1394)*	Connects to a digital device that has a 4-pin i.LINK header.

- * To connect to a 6-pin i.LINK device, use the i.LINK port on the back of the system. A 6-pin i.LINK connector 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 connector cannot supply power to the device.

Rear View



Icon

Description









Mouse port



Keyboard port



Universal Serial Bus (USB) port

<i>Icon</i>	<i>Description</i>
	Ethernet port (for LAN connection only)
	Printer/parallel port
	i.LINK (IEEE 1394) port
	Serial port
	VGA Monitor port
	DVI-D (LCD) Monitor port

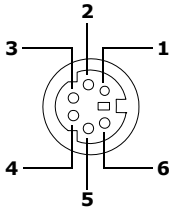
<i>Connector</i>	<i>Description</i>
Audio Out jack	Connection for an audio cable (supplied).
Video/S-video Out jack	Connection for a video cable adapter (supplied) or an S-video cable (optional).
Audio In jack	Connection for an audio cable (supplied).
Video/S-video In jack	Connection for a video cable adapter (supplied) or an S-video cable (optional).
FM antenna port	Connection for an FM antenna.
S/P DIF (IN/OUT) optical ports	Connection for a digital audio or optical device.
AC Input port	Connection for the supplied power cord.
VHF/UHF port	Connection for a TV coaxial cable (supplied).
Line IN jacks (R/L)	Connection for an audio device.
Line OUT jacks (R/L)	Connection for an audio device.
Stereo speaker terminals (R/L)	Connection for the supplied stereo speakers.
Telephone cable jack	Connection for a phone cable.
Modem line jack	Connection for a modem (supplied) cable to the telephone wall jack.

I/O Connectors

The following section identifies the various I/O connectors.

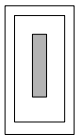
Keyboard and Mouse Ports

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 standard 4-pin USB ports. One USB port is located at the front, and another at the rear of the system.



Ethernet Port

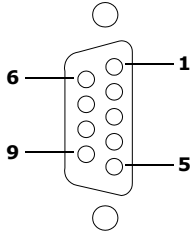
The Ethernet port at the rear of the system is used to connect to a 10Base-T/100Base-TX Ethernet network.

Ethernet



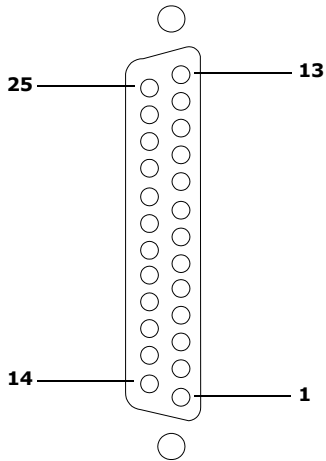
Serial Port

The serial port is a standard 9-pin DB-9 male port.



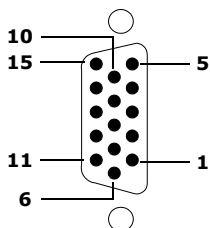
Printer/Parallel Port

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



VGA Monitor Port

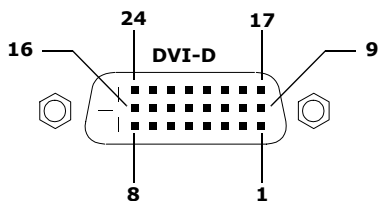
The monitor port is a standard 15-pin female high-density VGA-type port located on the AGP plug-in card.



DVI-D Port

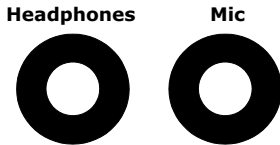
The DVI-D port is a 24-pin DVI-D port that can be attached to a Sony XGA LCD panel (PCVA-15XD2), which uses a DVI-D connector cable (sold separately). The DVI-D port is located on the AGP plug-in card.

You can physically connect both a VGA and an LCD monitor at the same time. However, you cannot use both monitors at the same time. If you operate only one monitor to the system, the system automatically detects which monitor is connected. If you connect both monitors, you must choose one monitor from the Display settings.



Mic and Headphones Jacks

The microphone and headphones jacks are physically identical, but have different connections. They are standard 3.5 mm stereo mini-jacks, located at the front of the computer.

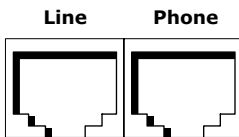



<i>Connector</i>	<i>Description</i>
Headphones	1.0 Vrms (typical).
Mic	Electret condenser microphone input.

Telephone and Line Jacks

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



Your computer has only one RJ-11 female phone jack if you have a HomePNA modem installed. The modem installed on your computer may differ depending on the configuration you purchased.



 Accidentally plugging a phone line from the wall into the modem's telephone jack, and a telephone into the line jack, does not damage the modem card or telephone equipment. However, the modem will not work correctly.

i.LINK (IEEE 1394) Ports

The 6-pin i.LINK port on the back of the system can supply power from the computer to a 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 PC peripherals 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.

**6-pin i.LINK
(IEEE 1394)**



**On back of
system**

**4-pin i.LINK
(IEEE 1394)**



**At bottom of
front panel**

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.

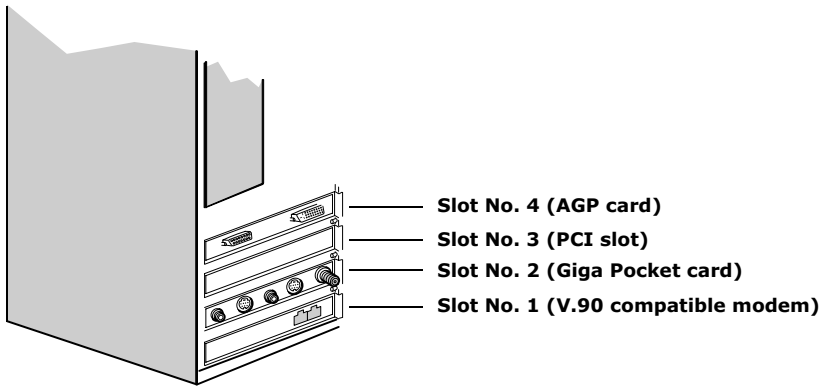
Expansion Slots

There are three PCI slots on your system unit.

- ❑ PCI slot No. 1 is occupied by a fax/modem card. The installed V.90 compatible modem has two RJ-11 jacks (Line In and Phone), while an optional HomePNA modem has only one jack (Line In).
- ❑ PCI slot No. 2 is occupied by a Giga Pocket™ card.
- ❑ PCI slot No. 3 is available for expansion.

The AGP slot (No. 4) is occupied by an AGP card.

See Specifications sheet for details.*



* The Specifications sheet is supplied with your computer's original documentation.

Chapter 2

Configuring Your System

This chapter contains information on configuring your system. Configuring your system can consist of the following:

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

Accessing the BIOS Setup Utility

You must 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 selecting 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.

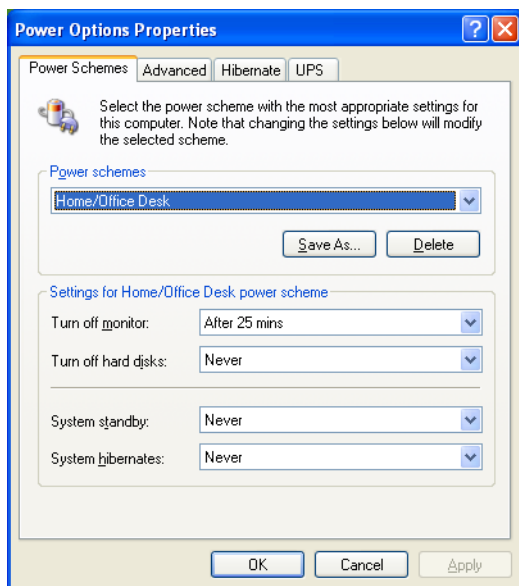
- 4 Once you select an option, press ESC to back out of each menu until you reach the top level, where the menu bar appears.
- 5 To exit the BIOS setup utility, press ESC from any top-level screen and follow the prompts.

Changing the Display's Power Management Settings

A display that has power management capability is designed to operate on reduced power or shut itself off after the system has been 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 standby, and System hibernates.

The Turn off monitor option allows 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.

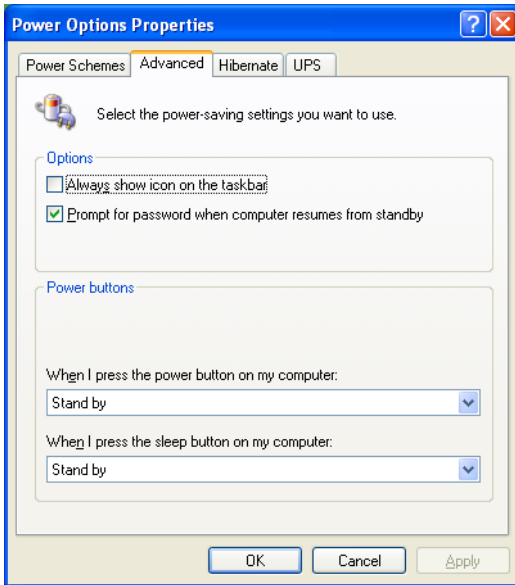
The Turn off hard disks option allows you to specify the period of inactivity (in minutes) that you want to elapse before your hard disks turn off when your computer is running on AC power.

The System standby option allows 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 allows 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.

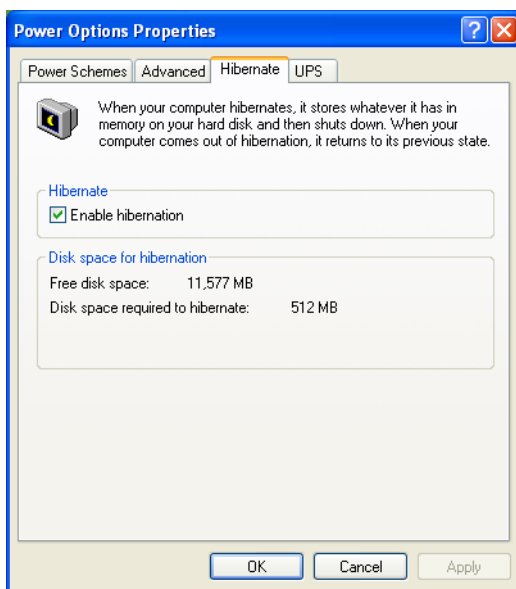
- 3 To save a new power scheme, first modify the settings, click Save As, type a descriptive name, and then click OK.

- 4 Click the Advanced tab.



- 5 Select the desired settings.

- Click the Hibernate tab.

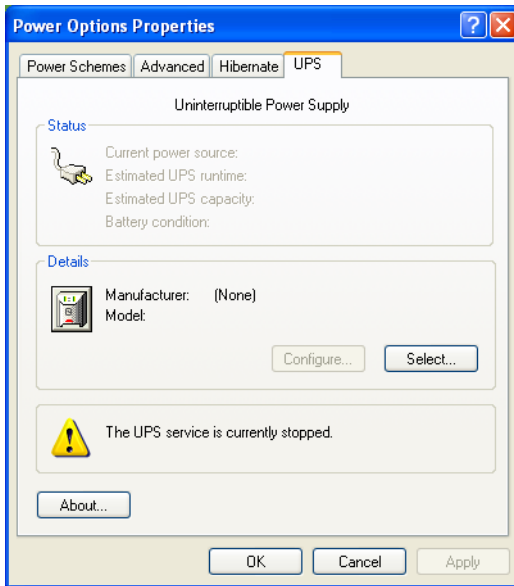


- Select the settings most appropriate for your system.

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 currently supplied with your system.




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

Chapter 3

Removing, Installing, and Replacing Components

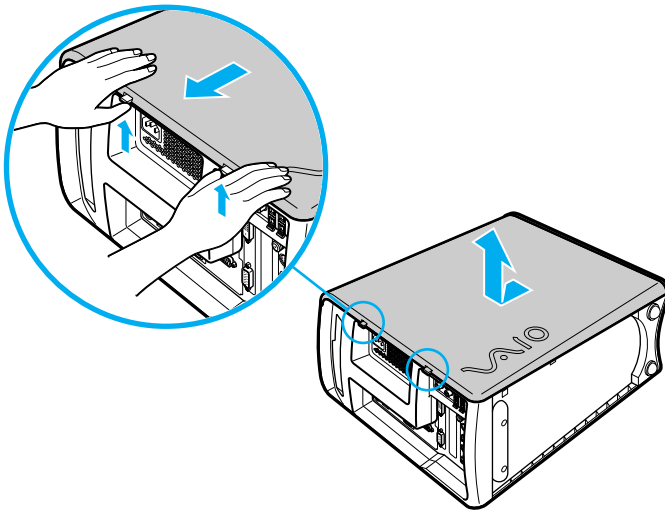
This chapter describes removing, installing, and replacing major components for upgrading, reconfiguring, and troubleshooting the components.

! 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.

 Your system's configuration may vary from the illustrations in this section, depending on the hardware options purchased.

Removing the Side Panel

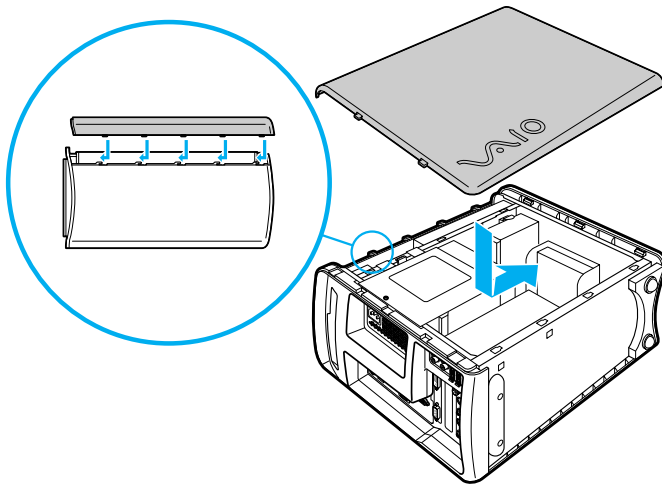
- 1 Shut down your computer and turn off all peripheral devices, such as your printer.
- 2 Unplug your computer and any peripheral devices.
- 3 Gently place the system unit on its side, as shown in the illustration.
- 4 Locate the release tabs on the edge of the side panel. Press and hold the tabs while sliding the panel towards you.
- 5 When the side panel releases, lift it up and away from the unit.



! If you remove the side panel immediately after you shut down your computer, the components may be too hot to touch. Wait until the internal parts of the system unit cool down before you attempt to remove the side panel.

Replacing the Side Panel

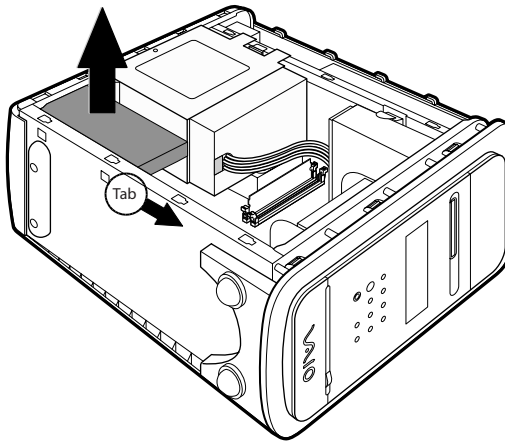
- 1 Carefully align the tabs on the side panel to the chassis frame. The side panel should lie flat against the chassis, with approximately 3/8 inch of clearance between the front edge of the side panel and the front of the chassis.
- 2 Press the side panel firmly against the unit and slide it forward until the panel snaps into place.



Removing a PCI Add-in Card

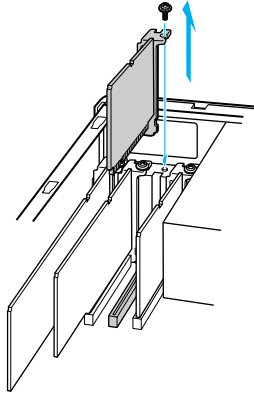
! Before opening the system unit, save and close all open files, exit all open applications, turn off the power to all attached peripheral devices, shut down the computer, and unplug the power cord.


- 1 Remove the side cover (see “Removing the Side Panel” on page 26).
- 2 Remove the amplifier block unit that covers the PCI slots, as follows:
 - ❑ Press the amplifier block tab and slide it to the right.
 - ❑ Slide the amplifier block unit out and lift it away from the unit, without disconnecting or twisting the attached wiring.



- 3 Disconnect any cables attached to the add-in card you want to remove.
- 4 Remove the screw that secures the add-in card to the chassis.

- 5 Remove the add-in card from the PCI slot and store the card in an anti-static wrapper for future use.



 Grasp the card with one hand on each end, and gently pull up as you rock the card from side to side.


! Hold the add-in card by its edges and do not touch any components or contacts on the card. Static electricity in your body may damage sensitive components on the card. As a precaution, touch any exposed metal part on the metal chassis (preferably the metal part on the power supply) before handling an add-in card to discharge any static electricity in your body.

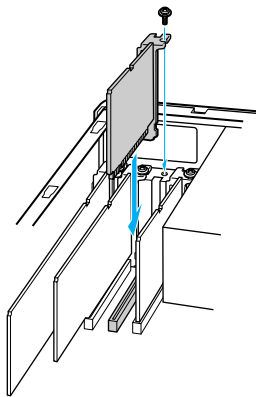
- 6 If you do not replace the card or install another add-in card, install a slot cover over the vacant slot at the rear of the chassis (see [“Covering an Open I/O Slot”](#) on page 42).
- 7 Replace the side cover (see [“Replacing the Side Panel”](#) on page 27).

Installing a PCI Add-In 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 cover (see [“Removing the Side Panel”](#) on page 26).
- 2 Locate an available expansion slot.
- 3 Remove the slot cover adjacent to the selected slot (see [“Removing a Slot Cover”](#) on page 41).
- 4 Insert the add-in 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. Assume that the top of the bracket fits snugly against the chassis lip after the card is fully inserted.



- 5 Replace the screw that secures the card.

- 6 Attach any necessary cables to the card (see the instructions that came with the add-in card).
- 7 Replace the amplifier block unit to cover the PCI slots, as follows:
 - ❑ Without disconnecting or twisting the attached wiring, slide the amplifier block unit into its frame.
 - ❑ Slide the amplifier block tab to the left to lock it into place.
- 8 Replace the side cover (see [“Replacing the Side Panel”](#) on page 27).
- 9 Turn on the computer and follow any instructions that came with the add-in 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 turning it off. The lithium battery has a typical life of three years, after which the battery may be too weak to power the CMOS memory.

! 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 18).

Do not handle damaged or leaking batteries.

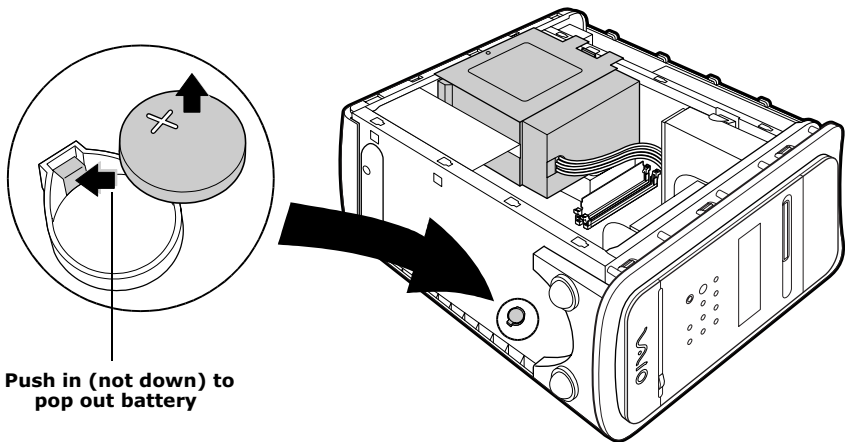
The lithium battery may explode if mistreated. Do not disassemble it or dispose of it in fire.

- 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 cover (see [“Removing the Side Panel”](#) on page 26).


- 8 If necessary, remove any add-in cards (see “[Removing a PCI Add-in Card](#)” on page 28) 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-in 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 pop out the battery.



- 10 Gently lift out the battery and dispose of it according to the instructions that came with the new battery.
- 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-in cards that were removed.
- 13 Reconnect any cables that were disconnected.
- 14 Replace the side cover (see “[Replacing the Side Panel](#)” on page 27).

- 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.

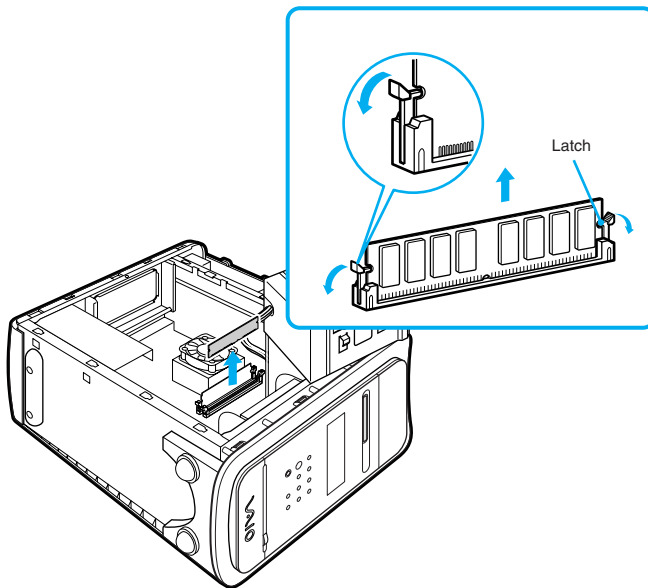
The computer’s BIOS settings are now restored.

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, all of your computer's memory sockets are filled.

! 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 cover (see “Removing the Side Panel” on page 26).
- 2 Remove the power supply (see “Removing the Power Supply” on page 48).
- 3 Locate the memory module you wish to remove.



 The memory modules are located beneath the power supply.

- 4 Push down the handle on each side of the memory module to eject the module from its socket.

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

- 5 Grasp one edge of the memory module and lift out. Store the module in a static-free bag.

Installing System Memory


! 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 8 MB. The maximum memory size is 1 GB. The BIOS automatically detects the type, size and speed of the memory modules.

Memory module configurations (MB)*

<i>DIMM1</i>	<i>DIMM2</i>
128, 256, 512	128, 256, 512

* Your computer ships with at least 512 MB of memory. DDR-SDRAM is expandable to 1 GB. Your model may ship with more than 512 MB DDR-SDRAM, depending on the system configuration you purchased.

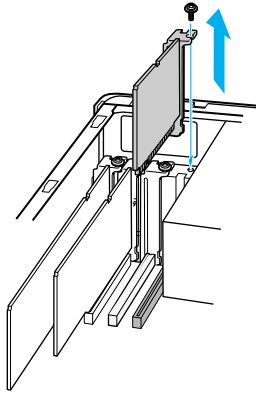
 Use only PC2100 memory. Your system does not support EDO or buffered DDR-SDRAM, or PC100/133 SDRAM memory modules.


- 2 If necessary, remove the memory module you wish to replace (see “[Removing a Slot Cover](#)” on page 41).

! Touch any exposed metal part 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 cover (see “[Removing the Side Panel](#)” on page 26).
- 5 Remove the power supply (see “[Removing the Power Supply](#)” on page 48).
- 6 Remove the screw that secures the AGP add-in card to the chassis.
- 7 Press down on the handle at the edge of the AGP slot.

8 Remove the AGP add-in card.

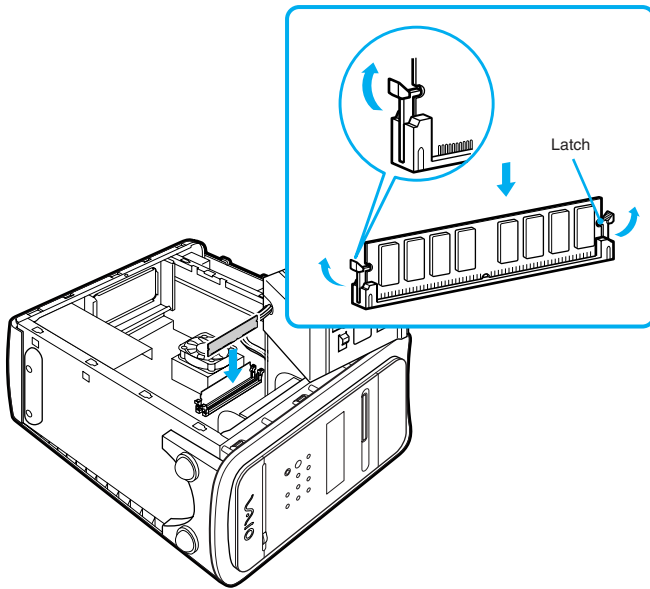


 Grasp the card with one hand on each end, and gently pull up as you rock the card from side to side.

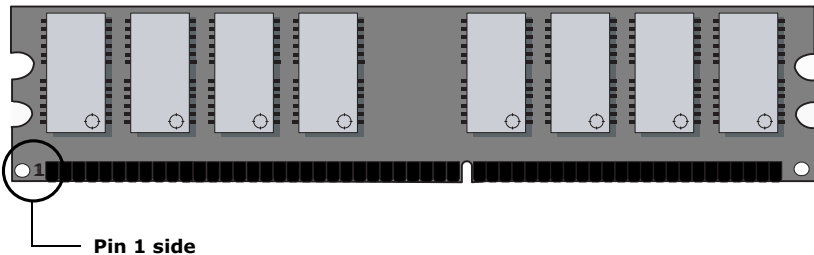
! Hold the add-in card by its edges and do not touch any components or contacts on the card. Static electricity in your body may damage sensitive components on the card. As a precaution, touch any exposed metal part on the metal chassis (preferably the metal part on the power supply) before handling an add-in card to discharge any static electricity in your body.

! Do not remove the Giga Pocket card (located in PCI slot No. 2) unless directed by a service technician. The Giga Pocket card is a fragile hardware component.


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



Memory module (DDR-DIMM)



- 10 Carefully but firmly insert the edge of the module into the socket.
- 11 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.

- 12 Replace the AGP card and secure using the screw removed earlier.



Press down firmly on the AGP card, until the latch locks it into place in the slot.

- 13 Replace the power supply (see [“Replacing the Power Supply”](#) on page 49).
- 14 Replace the side cover (see [“Replacing the Side Panel”](#) on page 27).
- 15 Reconnect the power cord and turn on the computer.

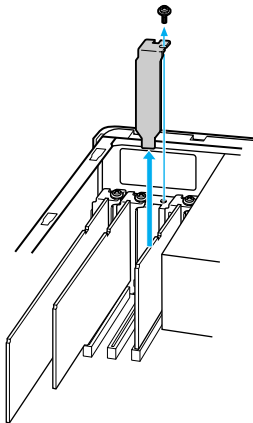
Your computer automatically recognizes the extra memory and configures itself accordingly when you turn on the computer. No further action is required.

Removing a Slot Cover

Remove the slot cover when you install an add-in card that occupies a previously-empty 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.

- 1 Remove the side cover (see [“Removing the Side Panel”](#) on page 26).
- 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.

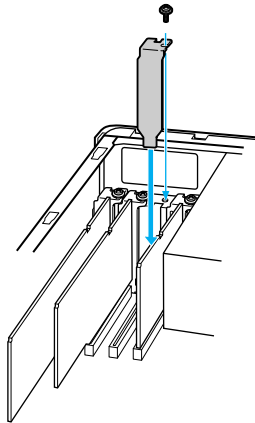


Covering an Open I/O Slot

- !** 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 hole. 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 (removed earlier) between the chassis and system board.



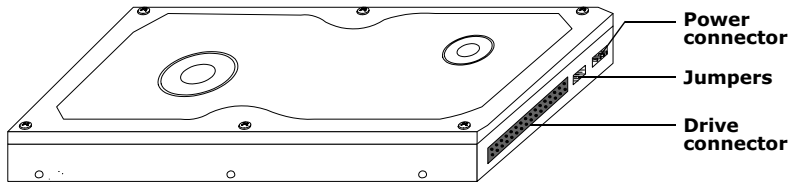
- 2 Push the slot cover down until it rests firmly on the lip in the chassis. All add-in card brackets and slot covers rest on this lip.
- 3 Replace the screw (removed earlier) to secure the I/O slot cover.

Installing a 3.5-inch Internal Hard Disk Drive

Models that have only one hard disk drive have an available bay to hold an additional 3.5-inch hard disk drive. The drive you install must not require front panel access. Your system can support ATA-33, ATA-66 or ATA-100 hard disk drives. Sony recommends installing an ATA-100 hard disk drive to take full advantage of the system's features. The hard disk drive access light blinks when either internal drive is active.

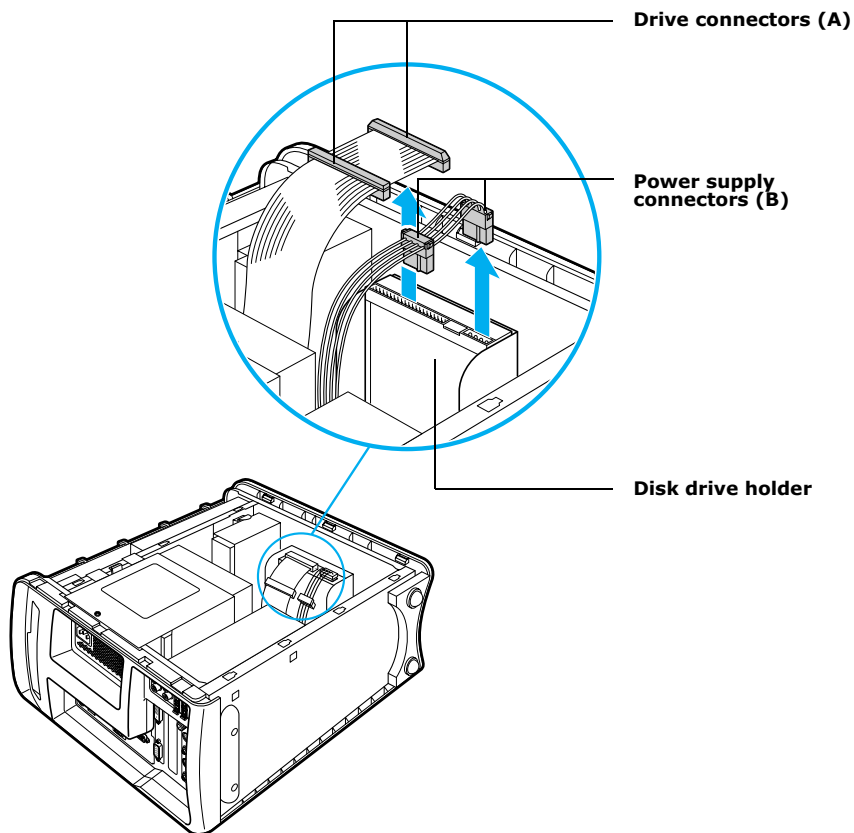
! Before opening the system unit, save and close all open files, exit all open applications, turn off the power to all attached peripheral devices, shut down the computer, and unplug the power cord.

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



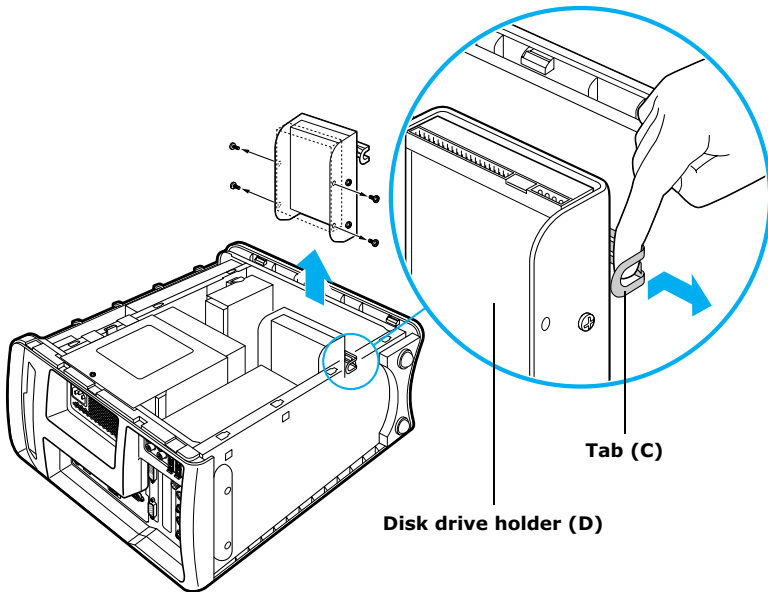
- 2 Remove the side cover (see [“Removing the Side Panel”](#) on page 26).

- 3 Disconnect the drive connector (A in diagram).

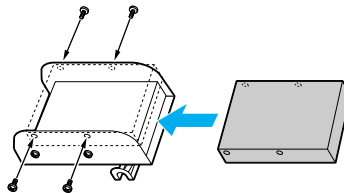


- 4 Disconnect the power connector (B in diagram).

- 5 Pull out on the tab (C) that secures the drive holder to the chassis.

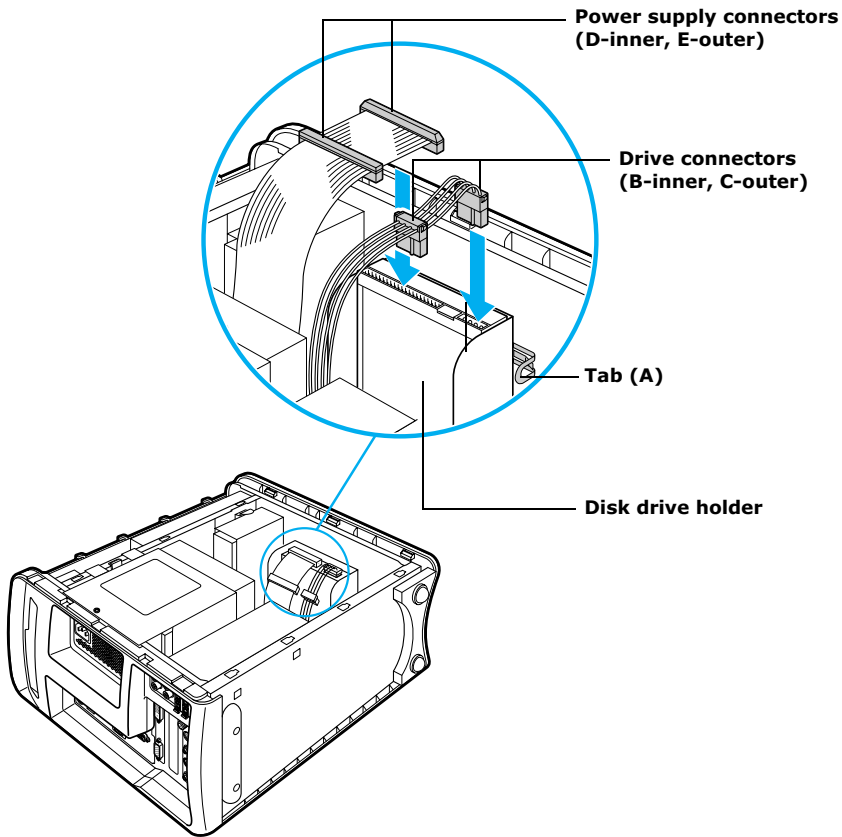


- 6 Slide the disk drive holder (D) holder up and out.
- 7 Slide the new drive into the bottom part of the drive holder and align the holes on each side of the drive holder.



- 8 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.



- 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 cover (see [“Replacing the Side Panel”](#) on page 27).
- 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.

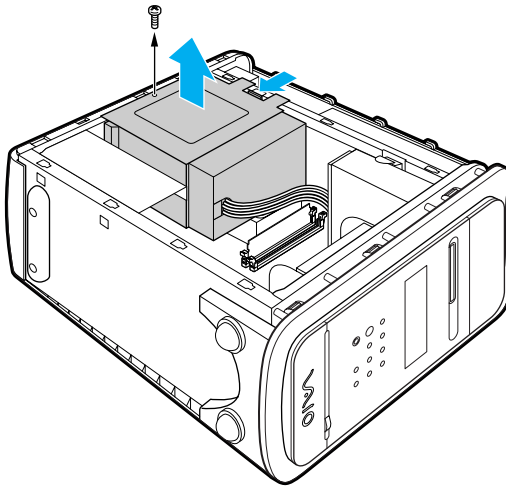
The Windows® XP operating system recognizes the new hard disk drive and applies the NTFS format.

Removing the Power Supply

You remove the main power supply before you insert a memory module (see “Installing System Memory” on page 37).

! 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 that latches the power supply to the chassis.
- 3 Slide the power supply up until the power supply clears the chassis.



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

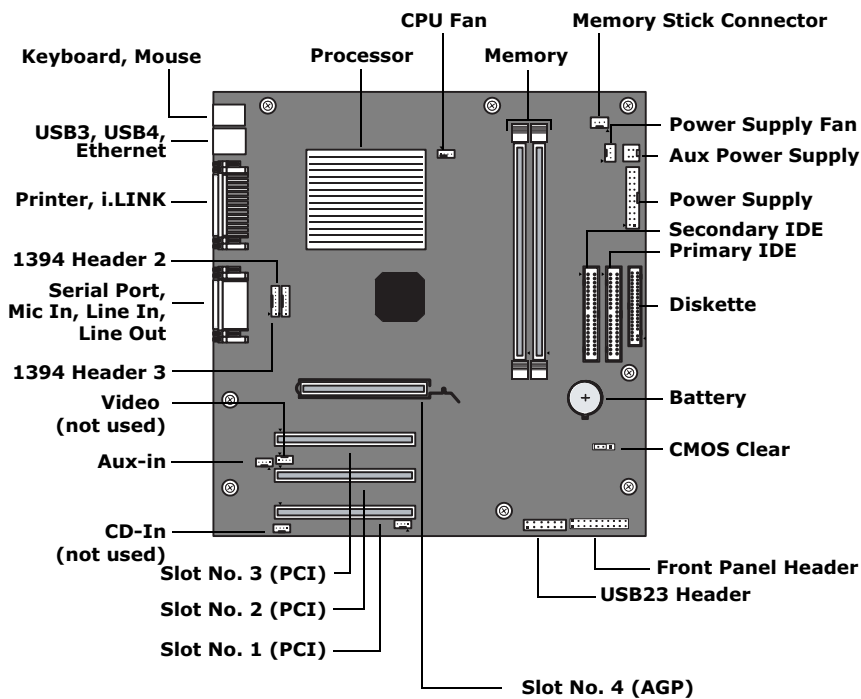
Replacing the Power Supply

- 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.

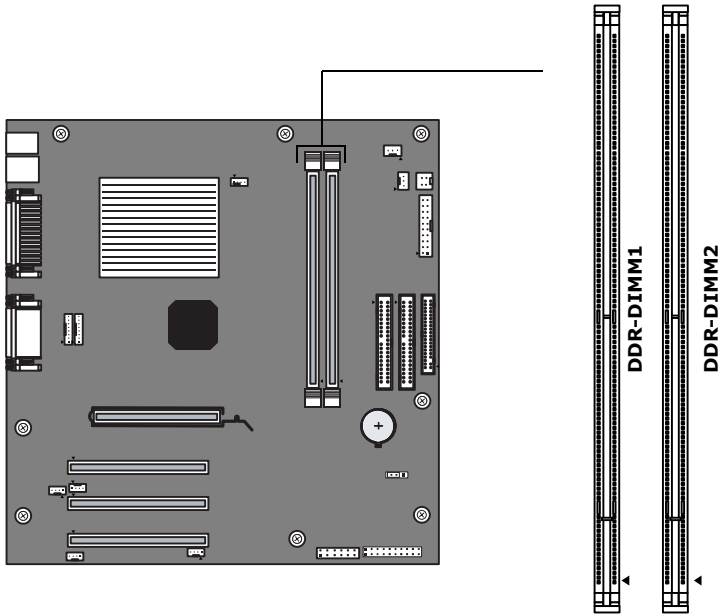
Chapter 4

System Board

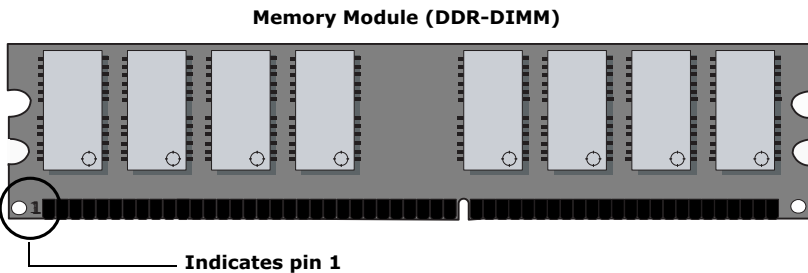
This chapter identifies and describes components on the system board.



Memory Module (DDR-DIMM) Slots

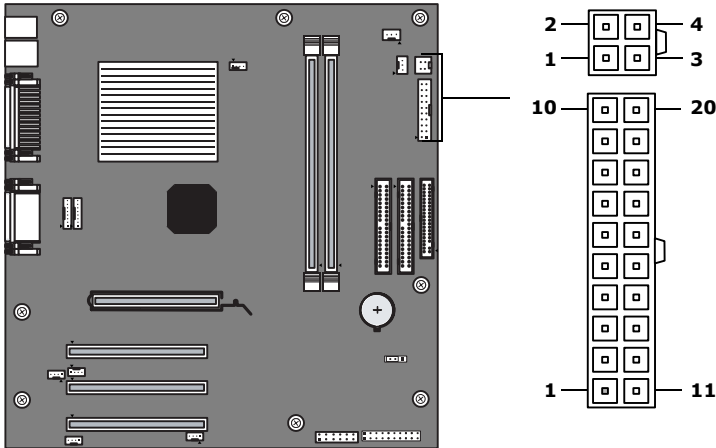


Both sides of each Double-data rate, Dual Inline Memory Module (DDR-DIMM) look very similar. The side with pin 1 has a small "1" to the left of pin 1. Be sure to orient the memory module correctly in the slot (a small triangle on the slot indicates pin 1).



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
16	Ground

Power Supply header (Continued)

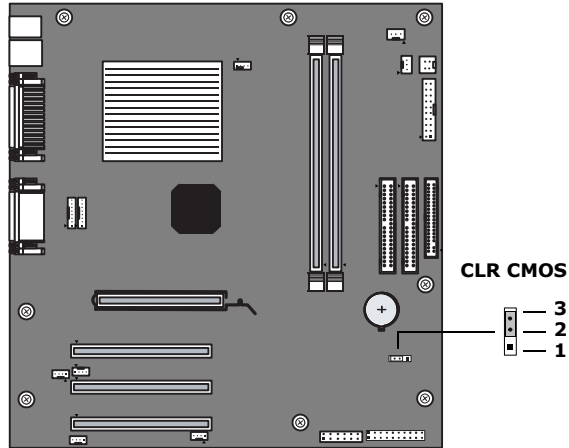
<i>Pin</i>	<i>Signal Name</i>
17	Ground
18	No Connection
19	+5 V
20	+5 V

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>
2-3	Normal
1-2	Clear CMOS Password

 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 18).

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	[01/01/2001]
▶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 Specifications sheet for details.*
BIOS Revision/Version	1003 (depends on model)

* The Specifications sheet is supplied with your computer's original documentation.

►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*	122943 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 Internal Frequency [2000 MHz]*

- ▶ I/O Device Configuration (see “[I/O Device Configuration Sub-Menu](#)” on page 62)
- ▶ PCI Configuration (see “[PCI Configuration Sub-Menu](#)” on page 63)

* Depends on model.

►I/O Device Configuration Sub-Menu

Onboard AC97 Audio Controller	[Disabled] Enabled
Onboard 1394 Controller	[Enabled] Disabled
Onboard Lan Controller	[Enabled] Disabled
Onboard Serial Port 1	[3F8H/IRQ4] 2F8H/IRQ3 3E8H/IRQ4 2E8H/IRQ10 Disabled
Onboard Parallel Port	[378H/IRQ7] 278H/IRQ5 Disabled 3BCH/IRQ7
Parallel Port Mode	[Normal] EPP ECP ECP+EPP

► PCI Configuration Sub-Menu

Slot 1 IRQ	[Auto]
to	NA
Slot 3 IRQ	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
PWR Up On Modem Act	[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
-12V Voltage	[(displays actual voltage)] Ignore
-5V Voltage	[(displays actual voltage)] Ignore

Boot Screen

- | | |
|----------------------|---|
| 1. ATAPI CD-ROM | [(displays installed drive)]
Disabled |
| 2. Removable Device | [Legacy Floppy]
LS120
ZIP
ATAPI MO
USB FDD
USB ZIP |
| 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 summary

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.

The Sony Online Support technical representative needs to know how many beeps your system produces if there is an error, so be sure to count the number of beeps before calling for support.

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.
Secondary IDE Controller Resource Conflict	The secondary IDE controller has requested a resource that is already in use.
Serial Port 1 Resource Conflict	Serial port 1 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>
02	Standard floppy disk controller.
04	Direct memory access (DMA) controller.

System I/O Address Map

<i>Address Range (hex)</i>	<i>Description</i>
0x00000000-0x00000CF7	PCI bus
0x00000000-0x00000CF7	Direct memory access controller
0x00000D00-0x0000FFFF	PCI bus
0x000003B0-0x000003BB	Intel® 82845 Processor to AGP Controller
0x000003B0-0x000003BB	nVIDIA GeForce2 MX with external TMDS (Sony)
0x000003C0-0x000003DF	Intel® 82845 Processor to AGP Controller
0x000003C0-0x000003DF	nVIDIA GeForce2 MX with external TMDS (Sony)
0x0000D800-0x0000D8FF	Sony MPEG2 Encoder Board (WDM)
0x0000FE00-0x0000FEFF	Ricoh R/RL/5C476(II) or Compatible CardBus Controller
0x0000FD00-0x0000FDFF	Ricoh R/RL/5C476(II) or Compatible CardBus Controller
0x0000FC00-0x0000FCFF	Ricoh R/RL/5C476(II) or Compatible CardBus Controller
0x0000FC00-0x0000FCFF	Lucent Win Modem
0x0000FA00-0x0000FAFF	Ricoh R/RL/5C476(II) or Compatible CardBus Controller
0x0000FAF8-0x0000FAFF	Lucent Win Modem
0x0000D400-0x0000D4FF	Realtek RTL8139 Family PCI Fast Ethernet NIC
0x00000A79-0x00000A79	ISAPNP Read Data Port
0x00000279-0x00000279	ISAPNP Read Data Port
0x00000274-0x00000277	ISAPNP Read Data Port
0x0000E400-0x0000E47F	Motherboard resources
0x0000E800-0x0000E81F	Motherboard resources
0x0000EC00-0x0000EC3F	Motherboard resources
0x0000040B-0x0000040B	Motherboard resources
0x00000480-0x0000048F	Motherboard resources
0x000004D6-0x000004D6	Motherboard resources
0x00000010-0x0000001F	Motherboard resources
0x00000022-0x0000002D	Motherboard resources
0x00000030-0x0000003F	Motherboard resources
0x00000044-0x0000005F	Motherboard resources

<i>Address Range (hex)</i>	<i>Description</i>
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
0x000000F0-0x000000FF	Numeric data processor
0x00000378-0x0000037F	Printer Port (LPT1)
0x000003F8-0x000003FF	Communications Port (COM1)
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
0x0000B800-0x0000B80F	Intel® 82801BA Bus Master IDE Controller
0x000001F0-0x000001F7	Primary IDE Channel
0x000003F6-0x000003F6	Primary IDE Channel
0x00000170-0x00000177	Secondary IDE Channel
0x00000376-0x00000376	Secondary IDE Channel
0x0000B400-0x0000B41F	Intel® 82801BA/BAM USB Universal Host Controller - 2442
0x0000B000-0x0000B01F	Intel® 82801BA/BAM USB Universal Host Controller - 2444

Memory Map

<i>Address range</i>	<i>Default configuration</i>
0x0000-0x9FFFF	System board
0xF0000-0xFFFFF	System board
0x100000-0x1FFFFFFF	System board
0xFEC00000-0xFEC000FF	System board
0xFEE00000-0xFEE00FFF	System board
0xA0000-0xBFFFF	PCI bus
0xA0000-0xBFFFF	Intel® 82845 Processor to AGP Controller
0xA0000-0xBFFFF	nVIDIA GeForce2 MX with external TMDS (Sony)
0xC8000-0xDFFFF	PCI bus
0x20000000-0xFFFFFFFF	PCI bus
0xEE000000-0xEFEFFFFFFF	Intel® 82845 Processor to AGP Controller
0xEE000000-0xEFEFFFFFFF	nVIDIA GeForce2 MX with external TMDS (Sony)
0xEFF00000-0xF7FFFFFFF	Intel® 82845 Processor to AGP Controller
0xF8000000-0xFBFFFFFFF	Intel® 82845 Processor to AGP Controller
0xF0000000-0xF7FFFFFFF	nVIDIA GeForce2 MX with external TMDS (Sony)
0xED800000-0xED80FFFF	Sony MPEG2 Encoder Board (WDM)
0xFFDFF000-0xFFDFFFFF	Ricoh R/RL/5C476(II) or Compatible CardBus Controller
0xFFDFE000-0xFFDFEFFF	Ricoh R/RL/5C476(II) or Compatible CardBus Controller
0xE8000000-0xEBFFFFFFF	Ricoh R/RL/5C476(II) or Compatible CardBus Controller
0xDF000-0xDFFFF	Ricoh R/RL/5C476(II) or Compatible CardBus Controller
0xFFDFD000-0xFFDFDFFF	Ricoh R/RL/5C476(II) or Compatible CardBus Controller
0xFFDFC000-0xFFDFCFFF	Ricoh R/RL/5C476(II) or Compatible CardBus Controller
0xE4000000-0xE7FFFFFFF	Ricoh R/RL/5C476(II) or Compatible CardBus Controller
0xDE000-0xDEFFF	Ricoh R/RL/5C476(II) or Compatible CardBus Controller

<i>Address range</i>	<i>Default configuration</i>
0xFFDFCF00-0xFFDFCFFF	Lucent Win Modem
0xED000000-0xED0000FF	Realtek RTL8139 Family PCI Fast Ethernet NIC
0xEC800000-0xEC8007FF	Texas Instruments OHCI Compliant IEEE 1394 Host Controller
0xEC000000-0xEC003FFF	Texas Instruments OHCI Compliant IEEE 1394 Host Controller
0xFFA00000-0xFFBFFFFFFF	Motherboard resources
0xFFE00000-0xFFFFFFFF	Motherboard resources



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

IRQ Summary

IRQ	Description
0	System timer
0	System timer
1	Standard 101/102-Key or Microsoft Natural Keyboard
2	Programmable interrupt controller
3	ACPI IRQ Holder for PCI IRQ Steering
3	Intel® 82801BA/BAM SMBus Controller - 2443
3	USB Audio Device
4	Communications Port (COM1)
6	Standard Floppy Disk Controller
7	Printer Port (LPT1)
8	System CMOS/real time clock
9	SCI IRQ used by ACPI bus
9	ACPI IRQ Holder for PCI IRQ Steering
9	ACPI IRQ Holder for PCI IRQ Steering
9	ACPI IRQ Holder for PCI IRQ Steering
9	ACPI IRQ Holder for PCI IRQ Steering
9	ACPI IRQ Holder for PCI IRQ Steering
9	Realtek RTL8139 Family PCI Fast Ethernet NIC
9	Texas Instruments OHCI Compliant IEEE 1394 Host Controller
9	Sony MPEG2 Encoder Board (WDM)
9	WDM Communication Device
9	Intel® 82801BA/BAM USB Universal Host Controller 1
9	Intel® 82801BA/BAM USB Universal Host Controller 2
10	MPU-401 Compatible MIDI Device
11	ACPI IRQ Holder for PCI IRQ Steering
11	nVIDIA GeForce2 MX (Sony)
12	PS/2 Compatible Mouse Port
13	Numeric data processor
14	Intel® 82801BA Ultra ATA Storage Controller
14	Primary IDE controller (dual fifo)
15	Intel® 82801BA Ultra ATA Storage Controller
15	Secondary IDE controller (dual fifo)

Chapter 7

Specifications

This chapter describes the technical specifications for your VAIIO® MX computer.

Processors

See Specifications sheet for details.*

Chipset

Intel 845 chipset

AGP Bus

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

1 AGP slot

PCI Bus

PCI Level 2.2, 33 MHz zero wait state

3 PCI slots - not all PCI slots are available. (See Specifications sheet for details.)*

* The Specifications sheet is supplied with your computer's original documentation.

Memory Modules

Installed memory	See Specification sheet for details.**
Maximum memory	1 GB (512 MB in each socket)
Voltage	2.5 V memory only
Pins	184-pins with gold-plated contacts
Memory type	2.5 V PC2100 Mhz unrestricted CAS latency 2, unbuffered, 64-bit (NON-ECC) DDR-SDRAM DIMM

Memory Configurations

<i>DIMM1*</i>	<i>DIMM2*</i>
128, 256, 512	128, 256, 512

* Your computer ships with at least 512 MB of memory. DDR-SDRAM is expandable to 1 GB. Your model may ship with more than 512 MB DDR-SDRAM, depending on the system configuration you purchased. Use only PC2100 (266 MHz) supported memory. Your system does not support EDO, buffered/unbuffered SDR-SDRAM, or PC100/133 SDRAM memory modules.

L2 Cache

Installed	256 KB or 512 KB of Advanced Transfer cache
-----------	---

Graphics

AGP Controller*	See Specifications sheet for details.**
Video memory	See 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.

** The Specifications sheet is supplied with your computer's original documentation.

Audio

Sound chip	Sony Digital Audio System
Wave synthesis	Software synthesis
Sound effects	DirectX® software
Audio sampling rate	Up to 48 kHz at 16 bits
Front panel connectors	Mic (for microphone) Headphones (for stereo headphones)

Communications

Modem	V.90 compatible data/fax modem (REN 0.7B)*
Fax	14.4 Kbps maximum
i.LINK (IEEE 1394)	400 Mbps, OHCI chip set

* 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 In L/R S-Video/Video In S-Video/Video Out Audio Out L/R VHF/UHF
------	---

I/O and Expansion Slots

Serial port	One high-speed NS16C550-compatible port
Parallel port	One high-speed bi-directional Centronics-compatible port with ECP and EPP modes
Modem ports	Two RJ-11 ports (for line and phone)*
USB ports	USB1 (front panel) USB2 (rear panel)
PCI slots	Not all PCI slots are available for expansion. (See Specifications sheet for details.)**
IDE headers	Primary and secondary (each supports two IDE drives)

* Systems installed with an optional HomePNA modem have a single RJ-11 port.

Hard Drives and Controllers

<i>Drive</i>	<i>Description</i>
IDE hard drive*	120 GB C = 16 GB / D = 104 GB
EIDE controller	Supports up to four EIDE drives (supports PIO Mode 4 EIDE drives and Ultra DMA/100 Mode drives)

* Bus-mastering EIDE driver installed.

Optical Drive

<i>Drive</i>	<i>Description</i>
DVD-RW drive	See Specifications sheet for details.**

** The Specifications sheet is supplied with your computer's original documentation.

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-in card auto-configure

* Flash-ROM update utility is available from the Sony Computing Support Web site at <http://www.sony.com/pcsupport>.

Index

A

- AGP bus specifications 79
- audio specifications 81

B

- battery - See lithium battery
- beep codes 69
- BIOS Setup Utility
 - See CMOS Setup Utility
- BIOS setup utility
 - advanced screen 61
 - boot screen 65
 - exit screen 66
 - main screen 59
 - options 57
 - power screen 64
 - screens 57
- BIOS specifications 83

C

- chipset specifications 79
- CLR CMOS Jumper 55
- CMOS - See Also BIOS
- CMOS Setup Utility 18
- codes, beeps 69
- communications, specifications 81
- computer
 - lithium battery vii
- configuring
 - power management 19
- connectors
 - i.LINK 7
 - monitor 12
 - power 53
 - USB 7

- cover 27
 - removing 26
- cover, slot 41
- covering I/O slot 42
- CPU - See processor

D

- display, power management 19
- disposal of lithium battery vii
- DMA channel assignments 72
- drive
 - installing additional 3.5 drive 43
- DVD-ROM drive
 - performance of discs 3, 82
- DVD-RW drive
 - location of 3

E

- error messages
 - beep codes 69
 - PCI configuration 70
- expansion slots 15
 - specifications for 82
- expansion slots - See Also slots

F

- fax/modem - See modem card
- front view 2
 - buttons and switches 4
 - connectors 7
 - drives 3
 - indicators 6
 - indicators and receivers 6

G

Giga Pocket specifications 81
graphics controller - See graphics
graphics specifications 80

H

hard drive specifications 82

I

i.LINK connector 7
I/O connectors
 i.LINK 14
 keyboard and mouse 10
 mic, line in, headphones 13
 monitor 12
 printer port 11
 serial port 1 11
 telephone and line 13
 USB ports 10
I/O slot covering 42
I/O slot specifications 82
icons, description of 8, 9
IEEE 1394 - See i.LINK
installing
 3.5 hard disk drive 43
 PCI add-in card 30
 system memory 37

K

keyboard connector 10

L

L2 cache specifications 80
lithium battery
 disposal vii
 safety precautions vii
lithium battery, replacing 32

M

memory - See Also system memory
memory configuration specifications
 80

memory module
 connector 52
 removing 35
 specifications 80
messages
 error 69
 status and error 70
microprocessor - See processor
MiniDisc drive
 location of 3
modem - See Also communications
monitor - See display
monitor connector 12
mouse connector 10

O

optical drive specifications 82

P

passwords, user and supervisor 68
PCI add-in card
 installing 30
 removing 28
PCI bus specifications 79
power connector 53
power management, configuring 19
processor specifications 79

R

RAM - See system memory
rear view 8
 I/O connectors 10
 icons 8
removing
 cover 26
 memory module 35
 PCI add-in card 28
 slot cover 41
replacing 27
 cover 27
replacing lithium battery 32
resolution - See graphics

S

See Also communications

slot - See I/O slot

slot cover, removing 41

specifications

- AGP bus 79

- audio 81

- BIOS 83

- chipset 79

- communications 81

- Giga Pocket 81

- graphics 80

- hard drives and controllers 82

- I/O and expansion slots 82

- L2 cache 80

- memory configurations 80

- memory module 80

- optical drives 82

- PCI bus 79

- processor 79

- status and error messages 70

- supervisor password 68

- system board

 - CLR CMOS Jumper 55

 - memory module connector 52

 - power connector 53

- system memory, installing 37

U

- USB connectors 7

- user password 68

