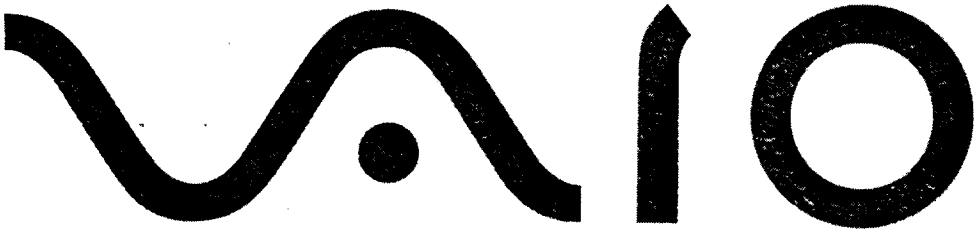
Sony PC Reference Manual

PCV-220/PCV-240



SONY

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Safety Information

Owner's Record

The model number and serial number are located on the back of your Sony PC. Record the serial number in the space provided here. Refer to the model and serial number when you call your Sony Service Center.

Model Number: PCV-220/PCV-240

Serial Number:_____

WARNING

- To prevent fire or shock hazard, do not expose your Sony PC to rain or moisture.
- 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 use of optical instruments with this product will increase eye hazard.

Regulatory Information

Declaration of Conformity

Trade Name: SONY
Model No.: PCV-220/PCV-240
Responsible Party:
Sony Electronics Inc.
Address:
1 Sony Drive
Park Ridge, NJ 07656
Telephone No: 201-930-6970
Contact: Louis Mecseri

This device complies with Part 15 of FCC Rules. Operation is subject to the two following 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 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 non-compliant 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 ringer equivalence number (REN) and the FCC registration number are printed on the modem board. If requested, this information must be supplied to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the phone line. Excessive REN's 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 REN's 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 REN's, contact the telephone company to determine the maximum REN for the calling area.

This modem uses the USOC RJ-11 telephone jack.

If this equipment causes harm to the telephone network, the telephone company will, when practical, notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify you 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 notify you in advance, 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 1-888-4SONY-PC, or write to the Sony Customer Information Center, One Sony Drive, Park Ridge, NJ 07656.

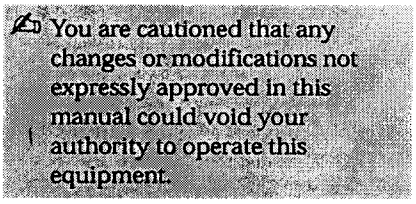
This equipment cannot be used on telephone-company-provided coin service. Connection to Party Line Service is subject to state tariffs.

Repair of the modem should be made only by a Sony Service Center or Sony authorized agent. For the Sony Service Center nearest you, call 1-800-222-SONY (1-800-222-7669).

Telephone Consumer Protection Act of 1991

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, see your fax software documentation.



TV Tuner Cautions

IMPORTANT SAFEGUARDS

1. Read instructions – All the safety and operating instructions should be read before the product is operated.

2. Retain instructions – The safety and operating instructions should be retained for future reference.

3. Heed Warnings – All warnings on the product and in the operating instructions should be adhered to.

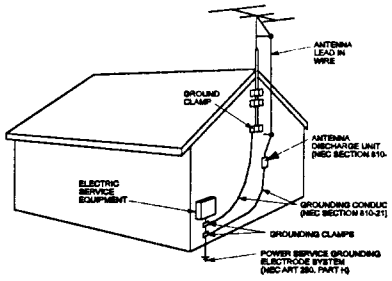
4. Follow instructions – All operating and use instructions should be followed.

5. Alternate Warnings – This computer is equipped with a three-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

6. Lightning – For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug your computer from the wall outlet and disconnect the antenna or cable system from the TV tuner card. This will prevent damage to the product due to lightning and power-line surges.

7. Power Lines – An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

8. Outdoor Antenna Grounding – If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Insure that your installation is in compliance with local ordinances, or for the US, Article 810 of the National Electrical Code, ANSI/NFPA 70, which provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See diagram.



Example of antenna grounding as per National Electrical Code, ANSI/NFPA 70 Part No.

Contents

Chapter 3 — Removing, Installing and Reinstalling Components

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Chapter 7 — Fax/Modem Card

Chapter 8 — BIOS Setup Options

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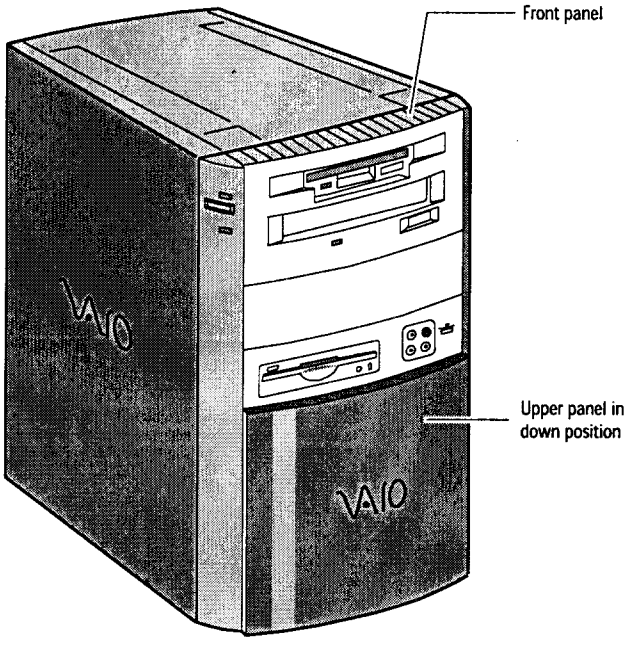
Chapter 10 — Specifications

Chapter 1
Identifying Components

The following sections identify and describe each component that is visible from the exterior of the Sony PC system. Internal components are identified in the appropriate section of this manual.

Front View



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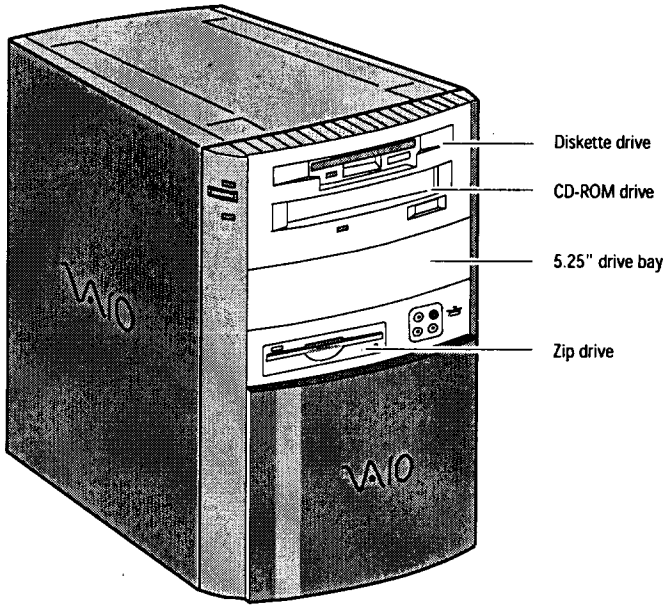
You access the front panel by sliding the upper panel down. To slide the upper panel down, you must first push in on the lower panel.

Drives



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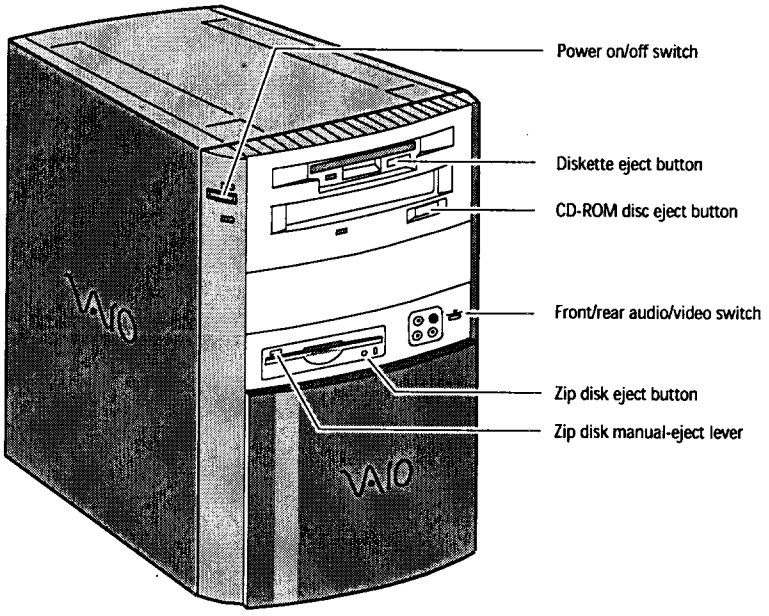
Drive	Description
Diskette drive	3.5-inch, 1.44 Mbyte.
CD-ROM drive	24X (maximum performance).*
5.25-inch drive bay (empty)	One 5.25-inch drive bay is available. Use a drive bay cover when the drive bay is empty (as delivered) or when you do not need to access the drive in that bay.
Zip® drive	Iomega 100-Mbyte Zip drive.

**Data on the CD-ROM is read at a variable transfer rate, ranging from 10X at the innermost track to 24X at the outermost track (the data transfer standard 1X rate is 150 kbytes/s). The average data transfer rate is 17X (2250 kbytes/s).*

Buttons and Switches



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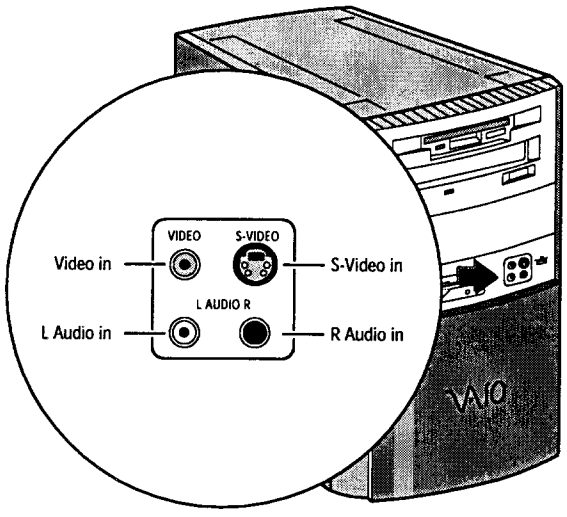
Button or switch	Description
Power on/off switch	Turns system power on and off.
Diskette eject button	Ejects a diskette.
CD-ROM disc eject button	Automatically opens and closes the CD-ROM tray.
Front/rear audio/ video switch	Selects the front or rear audio/video connectors.
Zip disk eject button	Ejects a Zip disk.
Zip disk manual-eject lever	Manually ejects a stuck Zip disk.

Connectors



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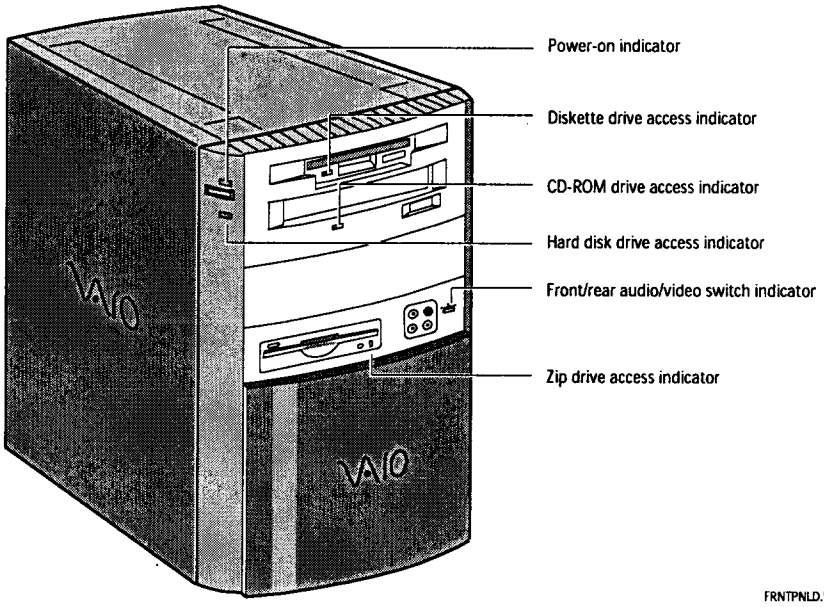
Name	Connector Type	Description
Video in	RCA phono jack	Composite video input (from standard video output source such as VCR or camcorder).
S-Video in	S-Video jack	S-video input (from any video source with S-video output).
Left audio in	RCA phono jack	Left audio input (from any external stereo audio output source with left channel).
Right audio in	RCA phono jack	Right audio input (from any external stereo audio output with right channel).

Indicators



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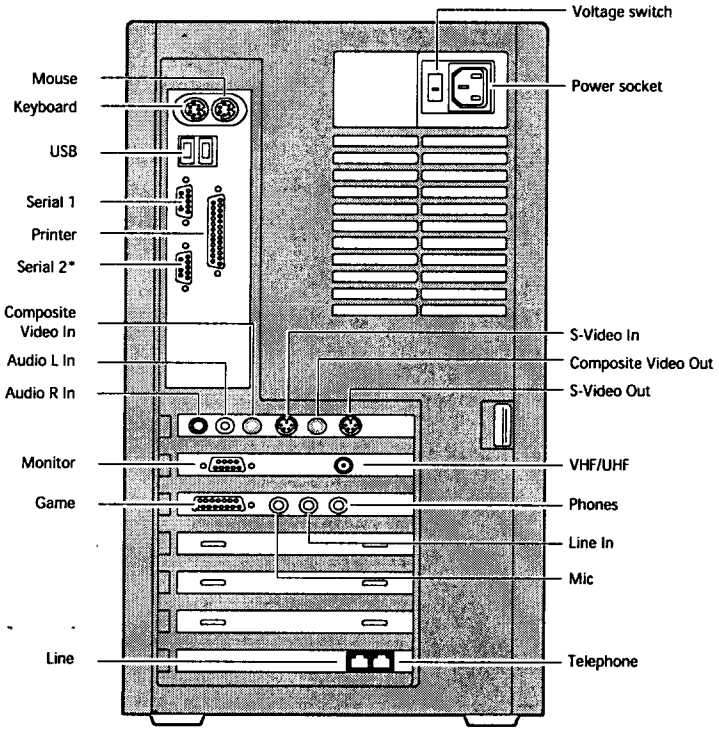
Indicator	Description
Power-on indicator	On (green) when system is powered on.
Diskette drive access indicator	On (green) indicates diskette drive activity.
CD-ROM drive access indicator	On (orange) indicates CD-ROM or compact disc activity.
Hard disk drive access indicator	On (orange) indicates hard disk drive activity.
Front/rear A/V indicator	On (orange) indicates Audio/Video connectors are accessible from front panel.
Zip® drive access indicator	On (orange) indicates Zip disk activity.*

**If indicator blinks slowly for more than a minute or so, the drive could be stalled or the auto-diagnostic program could have encountered an error. Reboot your computer. If the condition persists, call Sony Electronics at 888-4SONY-PC (888-476-6972), 7 days a week, 24 hours a day.*

Rear View



* To maximize available resources, the Serial 2 port on your Sony PC is disabled by default. You can enable the Serial 2 port by using the BIOS setup utility. For details, see "Accessing the BIOS Setup Utility" in the online Sony PC Reference Manual.

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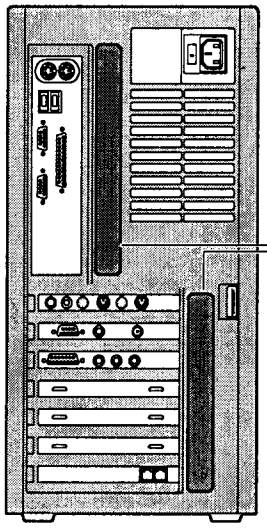
Icons



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Icon	Description
	Mouse connector
	Keyboard connector
	USB connector
	Serial port connector
	Printer port connector
	Game/MIDI port connector
	Phones jack
	Line in jack (audio)
	Microphone jack

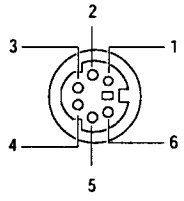
Icon	Description
	Left audio in jack
	Right audio in jack
	Composite video in jack
	S-video in jack
	S-video out jack
	Composite video out jack
	VHF/UHF connector
	Monitor connector
	Line (for telephone line from primary service jack)
	Telephone (for phone)

I/O Connectors

The following section identifies the various I/O connectors.

Keyboard and Mouse

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



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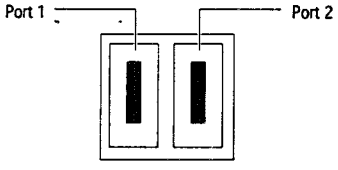
Note

Because the BIOS correctly senses the type of device connected to a port, it is not a problem if the mouse is connected to the keyboard connector and vice versa.

USB Ports



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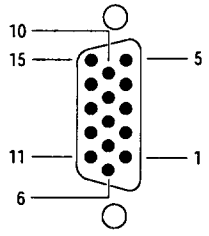
Serial 1 and Serial 2 Ports

Serial 1 and Serial 2 ports are physically identical and have the same pinout. They are standard 9-pin DB-9 male connectors.



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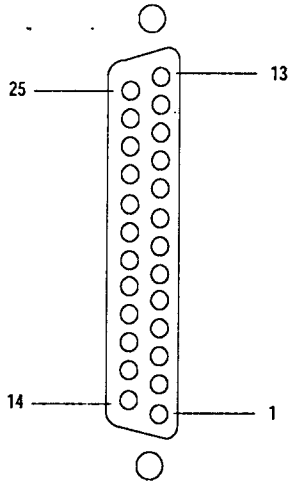
Note

Serial 1 port is permanently assigned the label COM1, and Serial 2 port is permanently assigned the label COM2. The BIOS Setup Utility refers to Serial 1 port as Serial Port A and to Serial 2 port as Serial Port B.

Printer Port

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



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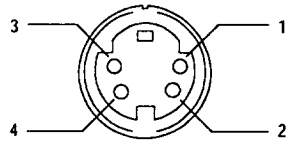
S-Video In and S-Video Out

The S-Video In and S-Video Out connectors are physically identical, but do not have the same connections. They are standard 4-pin S-video jacks.



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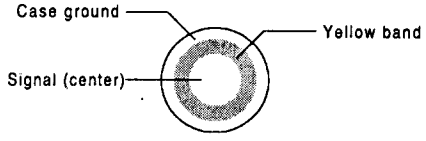
Video In and Video Out

The Video In and Video Out jacks are for composite video and have physically identical connectors. They are standard RCA phono jacks.

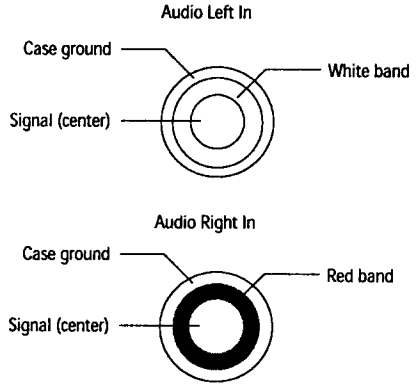


WARNING

⚠ *Do not plug video cables into the wrong connectors. This could possibly damage the video card in the PC and the equipment to which it is connected.*

Audio Left In and Audio Rright In

The Audio Left In and Audio Right In jacks are physically identical. They are standard RCA phono jacks. The Audio Left In jack has a white center band and the Audio Right In has a red center band.



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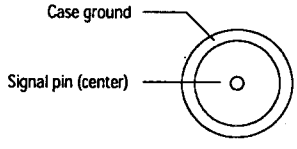
VHF/UHF

The VHF/UHF connector is a standard RF coaxial female connector. It is used for connecting to conventional VHF/UHF input sources such as a TV antenna or cable televesion.



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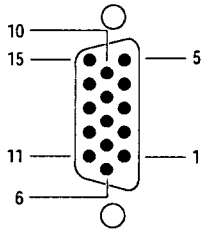
Monitor

The Monitor connector is a standard 15-pin female high-density VGA-type connector.



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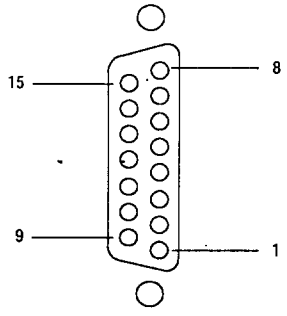
Game Port

The Game port is a standard 15-pin DB-15 female connector. This port is also used to connect MIDI devices.



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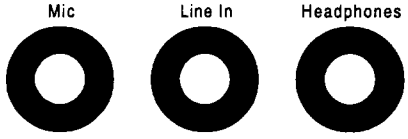
Mic, Line In and Phones

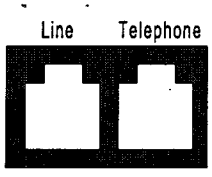
The Mic, Line In and Phones jacks are physically identical, but have different connections. They are standard 3.5 mm stereo mini-jacks.



Connector	Description
Mic	Electrolet condenser microphone input
Line In	1.0 Vrms (typical), 10 Kohm impedance
Phones	1.0 Vrms (typical)

Telephone and Line

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 to a telephone.



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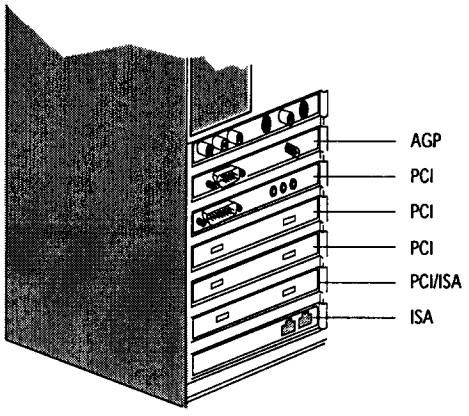
Note

Although it is possible to accidentally plug a phone line from the wall into the modem's Telephone jack, and a telephone into the Line jack, no damage to the modem card or telephone equipment will result. However, the modem may not work correctly.

Expansion Slots

Two dedicated PCI slots and one shared PCI/ISA slot are available for expansion. The shared PCI/ISA slot can be used for either a PCI or ISA add-in card, but not both at once.



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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
- Changing the voltage range
- Changing the system board jumper position

Accessing the BIOS Setup Utility

You must access the BIOS Setup Utility to make changes to the BIOS settings (see "BIOS Setup Options" on page 91 for information on BIOS settings).

WARNING

⚠ *Before you reboot the system, be sure to save any open files and exit from Windows®.*

1. Reboot the system. The following message appears during the inital boot sequence:

   Press <F1> for setup

2. Press F1 to access the BIOS Setup Utility.

   Each menu presents options for modifying the system configuration. Use the left and right arrow keys to choose a menu from the menu bar. Use the up and down arrow keys to choose 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 this sub-menu. If that sub-menu contains items with a triangle, there is another layer of options from which to choose.

3. Once you select an option, press ESC to back out of each menu until you reach the top level, where the menu bar appears.

4. To exit the BIOS Setup Utility, press ESC from any top-level screen and follow the prompts.

Changing the Display's Power-management Settings

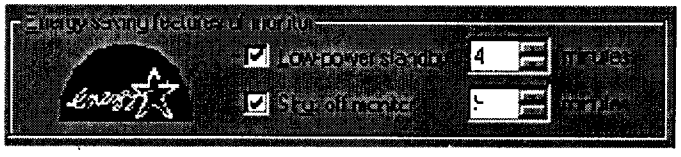
A display that has power management capability is designed to operate on reduced power or shut itself off after the system has been idle for a specified period of time.

1 From the Start button, choose Settings, then choose Control Panel.

2 Double-click the Display icon.

3 Click the Screen Saver tab.

If your display is Energy-Star compliant or has other energy-saving features, the Energy saving features of the monitor dialog box appears. Otherwise, the options in the dialog box are grayed out.



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4 Select Low-power standby or Shut off monitor.

Selecting the Low-power standby option blanks the screen (similar to a screen saver) and automatically reduces power to the display after a specified amount of time. The display reactivates as soon as you move the mouse or press a key (as long as the keyboard or mouse are not USB devices).

Selecting the Shut off monitor option automatically turns off the display if the system has been idle for a specified amount of time. Power is reactivated as soon as you move the mouse or press a key (as long as the keyboard or mouse are not USB devices).

5 Select the number of minutes to wait between the last keyboard or mouse activity and activation of the power-management settings.

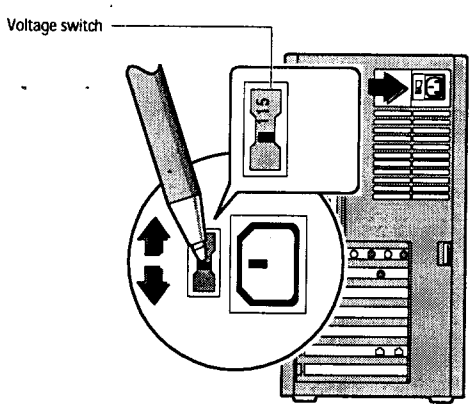
Changing the System Voltage Range

The Sony PCV-220/PCV-240 system ships with the system voltage set for 115 VAC. There should be no reason to change this setting. However, if for some reason you must operate using 200 to 240 VAC, you must use a different power cable (not provided) and set the voltage switch to 230.

WARNING

⚠ *Before you turn the system off, be sure to save any open files and exit from Windows.*

1. Turn off the system and unplug the power cable.
2. Insert a pen or other pointed instrument (letter opener, small screwdriver) into the slot on the voltage switch and slide the switch up or down until the appropriate voltage number appears on the switch.
3. Connect the appropriate power cable to the system.
4. Turn the system on and verify that the system is operating properly.



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Voltage range	Switch setting
110 to 120 VAC	115
200–240 VAC	230

Caution

⚠ *For 200 to 240 VAC operation, change the voltage selector switch on the rear of the system* **before** *plugging in the power cable. Plugging a system set for 115 VAC into a 200–240 VAC outlet may damage your system and peripherals connected to the system.*

Do not use the power cable supplied with your system if it is not the correct type for the electrical service you plan to use. Consult a qualified electrician or service center to obtain the correct power cable. The power cable supplied with your Sony PCV-220/PCV-240 is intended for use only in the USA, where the standard power outlets are 110 to 120 VAC.

Configuring the System Board

The system board contains one configuration jumper that provides three modes of operation: Normal mode, Configuration mode, and Recovery mode.

Normal mode allows normal access to the BIOS Setup Utility. The CPU input clock is forced to remain at 66 MHz (fast mode), and the BIOS uses the User CMOS settings (as opposed to the System CMOS settings). The CMOS and NVRAM settings are only cleared if the checksum test returns false. Access to specific setup fields is controlled by a supervisor password or user password.

Configure mode sets the CPU input clock to 60 MHz (slow mode) and the BIOS Setup Utility automatically appears during the reboot sequence. The Configure mode enables a Maintenance screen in the BIOS Setup Utility that contains two additional options: Clear Passwords and Set CPU Speed. During this mode, the System CMOS settings are used (as opposed to the User CMOS settings). When you exit the BIOS Setup Utility, a message appears that instructs the user to turn off power and reposition the jumper to the Normal position.

Recovery mode sets the CPU input clock to 66 MHz (fast mode) and attempts to perform a blind BIOS update. If the recovery fails, beep codes alert the user to the failure and the system waits for the insertion of a boot diskette in the A drive. No video is enabled at this point.

Note

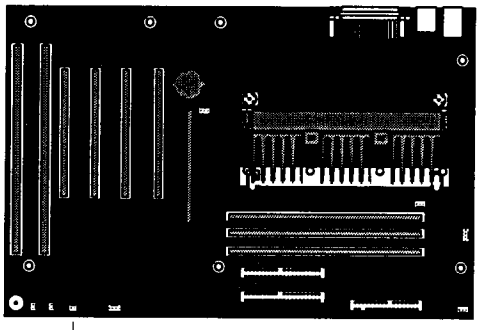
This jumper should never need changing unless otherwise directed by a technical support or service technician.

WARNING

Before you open the system, be sure to save any open files, exit from Windows, turn off the power of the computer and all attached peripherals, and unplug the power cable.

1. Remove the side panel (see "Removing the Side Panel" on page 26).
2. Remove any add-in cards that may block access to the jumper (see "Removing an Add-in Card" on page 38). The jumper is located adjacent to the PCI connector of slot #2.

3 Set the jumper as directed by a service technician (also see "Configuration Jumper (J8B2)" on page 80).



4 Replace any add-in cards removed earlier.

5 Reinstall the side panel (see "Reinstalling the Side Panel" on page 33).

Chapter 3
Removing, Installing and Reinstalling Components

This chapter describes how to remove, install and reinstalling major components on the Sony PC for the purpose of upgrading, reconfiguring, replacing or troubleshooting components.

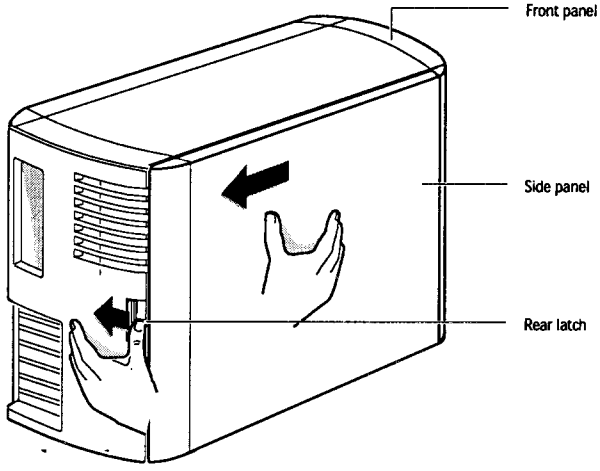
WARNING

⚠ *Before you open the system, be sure to save any open files, exit from Windows, turn off the power of the computer and all attached peripherals, and unplug your system.*

Removing the Side Panel

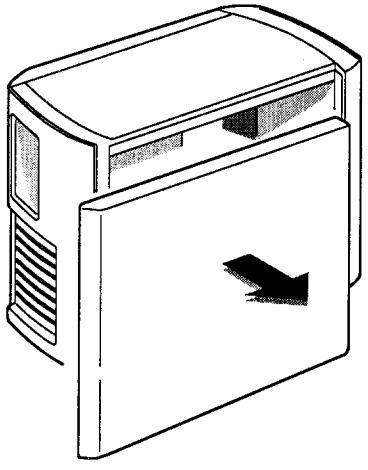
You must remove the side panel to access the system board, add-in cards, power supply, battery, and internal drives.

1 From the rear of the unit, push the rear latch in with your left thumb as you slide the side panel back with your right hand. The panel slides open only about ¼ inch.



OM04582.VSD

2 Pull the panel straight out.



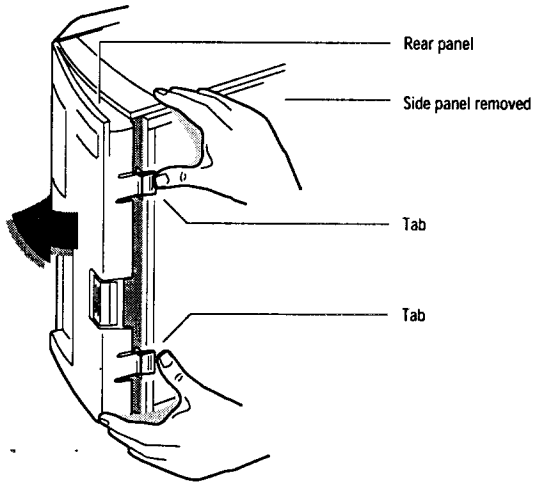
OM04584.VSD

Removing the Rear Panel

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

1 Remove the side panel (see "Removing the Side Panel" on page 26).

2 Push both tabs on the rear panel in and towards the rear to unsnap the rear panel, then pull the panel out.



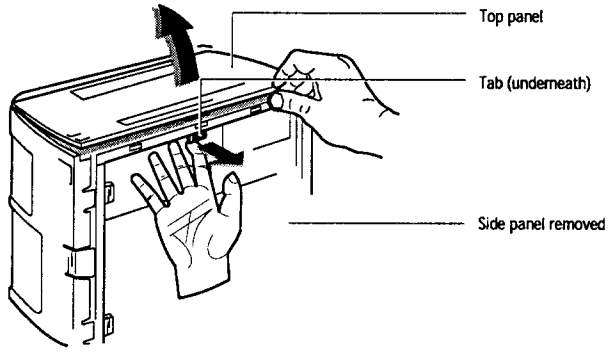
OM04589.VSD

Removing the Top Panel

You must remove the top panel to remove the front panel or to remove the diskette drive.

1 Remove the side panel (see "Removing the Side Panel" on page 26).

2 Pull the tab (located underneath the top panel about one inch behind the front edge) towards you to unsnap the top panel, then lift the panel out.

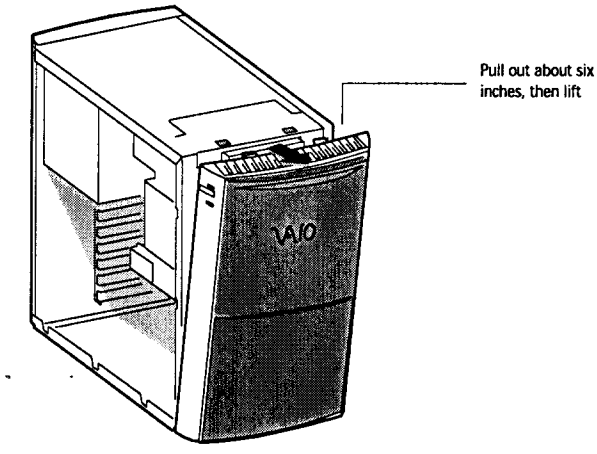


OM04590.VSD

Removing the Front Panel

You must remove the front panel to add or replace a drive, or to remove and replace the drive bay cover.

1. Remove the side panel (see "Removing the Side Panel" on page 26).
2. Remove the top panel (see "Removing the Top Panel" on page 28).
3. Pull the top of the front panel out about six inches, then lift the front panel out from the slots at the bottom.



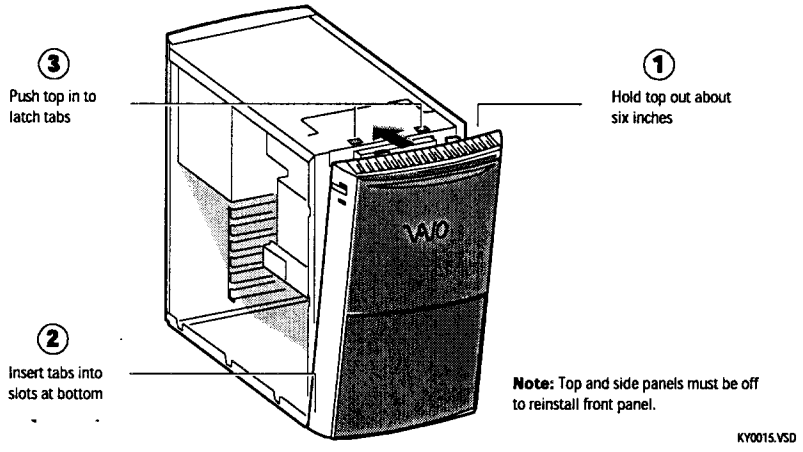
OM04598.VSD

Reinstalling the Front Panel

1 Hold the top of the front panel out about six inches away from the top front edge of the chassis.

2 Insert the tabs (located on the bottom of the front panel) into the slots at the bottom of the chassis.

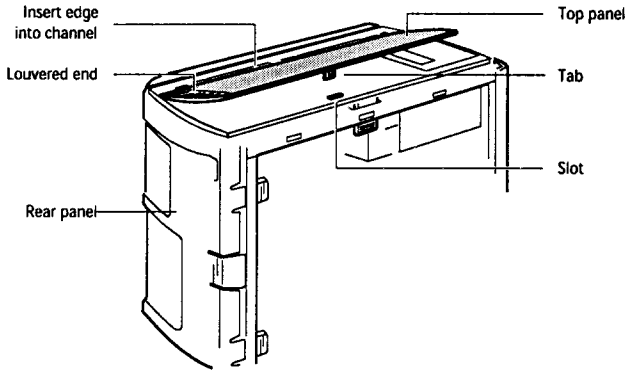
3 Push the top of the front panel in until the tabs snap into place.



Reinstalling the Top Panel

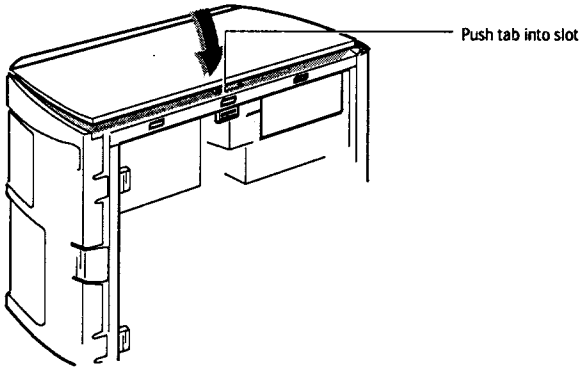
1 Position the top panel so that the louvered end faces the rear of the unit.

2 Insert the long edge (opposite the tab) of the panel into the channel formed by the chassis and the side panel.



OM04708.VSD

3 Press the top panel down until the single tab snaps into the slot in the top of the chassis.

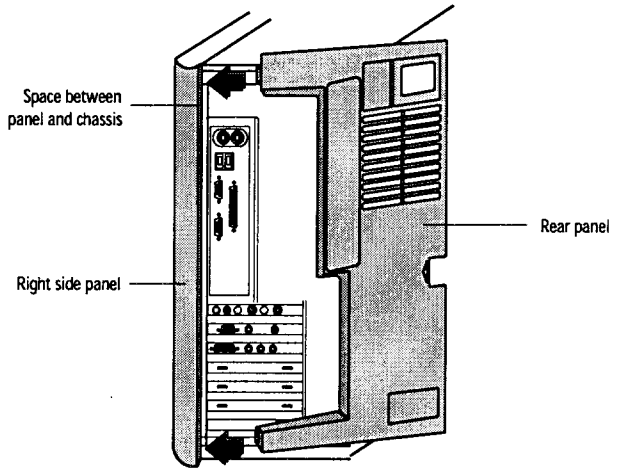


KY0016.VSD

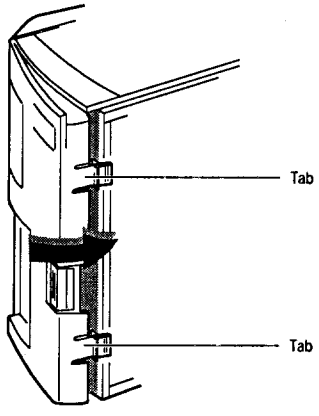
Reinstalling the Rear Panel

The side panel must be off to reinstall the rear panel. The top panel can be on or off.

1 Insert the tabs (on the left side of the rear panel at the top and bottom ends) into the space formed by the chassis and the side panel.



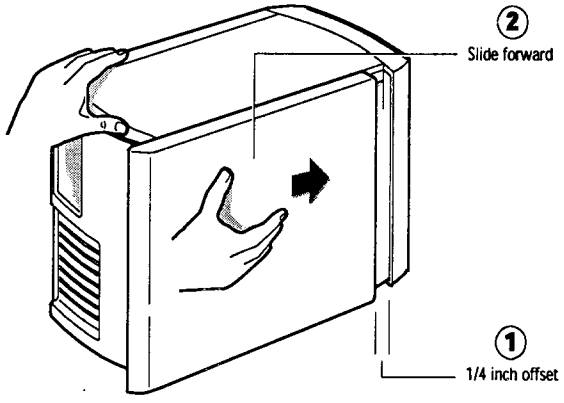
2 Insert the tabs (on the right side of the rear panel) into the slots at the rear of the chassis and press in until both tabs snap into place.



Reinstalling the Side Panel

1 Position the side panel flush against the side of the unit, with the side panel offset from the rear of the unit by about ¼ inch.

2 Hold the unit with your left hand as you slide the side panel forward with your right hand until the panel snaps into place.

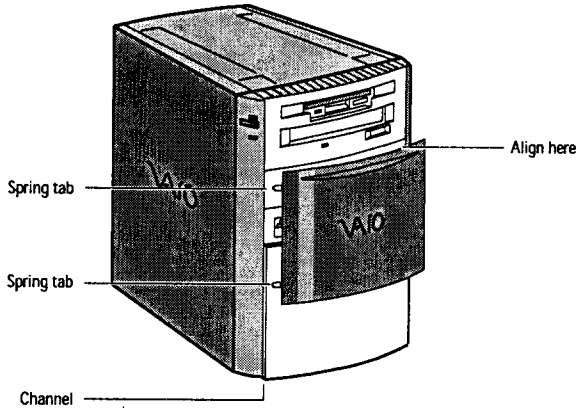


OM04592.VSD

Resinstalling the Front Panel Top Cover

The front panel top cover slides up and down to cover or expose the front panel.

1 Position the front panel top cover so that the top of the cover is aligned with the bottom of the CD-ROM drive.



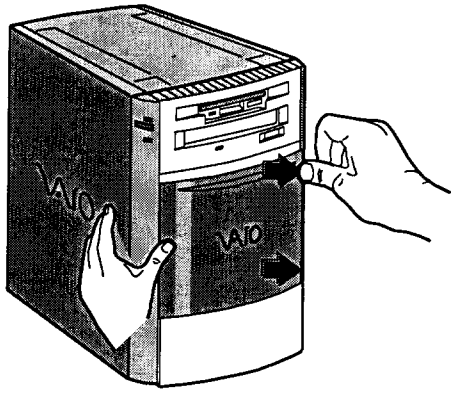
2 Insert the metal spring tabs (on the left side of the front panel top cover) so that they fit inside the channel formed by the junction of the left and front panels.

3 Use your left hand to hold the left side of the cover in the channel.

4 Use your right thumb to push on the upper right side of the cover (push in and towards the left side) until the upper tab snaps into place.

5 Use your right thumb to push on the lower right side of the cover (push in and towards the left side) until the lower tab snaps into place.

6 Slide the cover up and down to ensure a smooth fit.



KY0018.VSD

Installing an Add-In Card

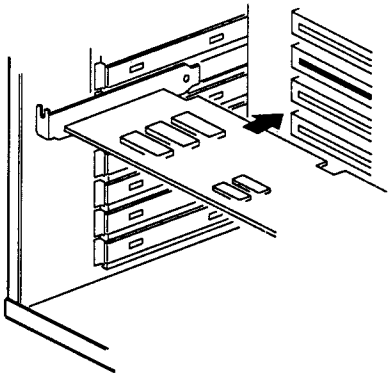
WARNING

⚠ Before you open the system, be sure to save any open files, exit from Windows, turn off the power of the computer and all attached peripherals, and unplug your system.

1. Remove the side panel (see "Removing the Side Panel" on page 26).
2. Remove the rear panel (see "Removing the Rear Panel" on page 27).
3. Select an available PCI or ISA slot connector on the system board.
4. Remove the slot cover that is adjacent to the slot connector on the system board (see "Removing a Slot Cover" on page 62).
5. Insert the add-in card into the PCI or ISA slot connector. Use a gentle rocking motion, pressing down until the card is fully seated.

Note

Be sure that you first align the card's bracket so that the bottom of the bracket fits into the slot at the bottom of the chassis. Also be sure that the top of the bracket fits snugly against the chassis lip after the card is fully inserted.



OM04578.VSD

6. Attach any cables to the card that may be necessary (see the documentation that came with the add-in card).
7. Reinstall the I/O cover (see "Reinstalling the I/O Cover" on page 61).

8 Reinstall the rear panel (see "Reinstalling the Rear Panel" on page 32).

9 Reinstall the side panel (see "Reinstalling the Side Panel" on page 33).

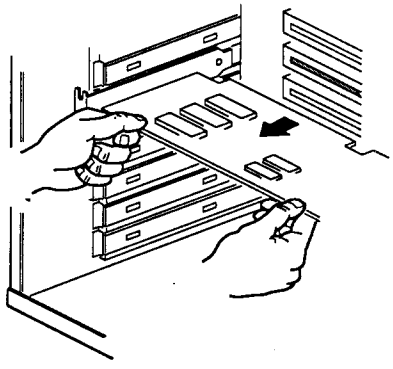
10 Turn on the system and follow any instructions that come with your add-in card.

Removing an Add-in Card

WARNING

Before you open the system, be sure to save any open files, exit from Windows, turn off the power of the computer, turn off power to all attached peripherals, and unplug the computer.

1. Remove the side panel (see "Removing the Side Panel" on page 26).
2. Remove the rear panel (see "Removing the Rear Panel" on page 27).
3. Remove the I/O cover (see "Removing the I/O Cover" on page 59).
4. Disconnect any cables attached to the add-in card.
5. Remove the add-in card from the PCI or ISA slot connector and store the card in an anti-static wrapper for future use.



OM04578.VSD

Note

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

Caution

Hold the add-in card by its edges and do not touch any components or connector contacts on the card. The static electricity in your body can possibly 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) just before handling an add-in card, in order to discharge any static electricity in your body.

6 If you do not reinstall 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 64).

7 Reinstall the I/O cover (see "Reinstalling the I/O Cover" on page 61).

8 Reinstall the rear panel (see "Reinstalling the Rear Panel" on page 32).

9 Reinstall the side panel (see "Reinstalling the Side Panel" on page 33).

Replacing the Lithium Battery

You need to replace the Lithium battery if your system consistently loses the date or time settings after turning off your system. The Lithium battery has a typical life of over three years, after which the battery may be too weak to power the CMOS memory.

Caution

⚠ *When you remove the Lithium backup battery, all values stored in the CMOS memory (BIOS setup values and the Plug and Play values) may be lost. Although the system can hold the charge for a short time while replacing the battery, it is safer to assume that the settings may 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).*

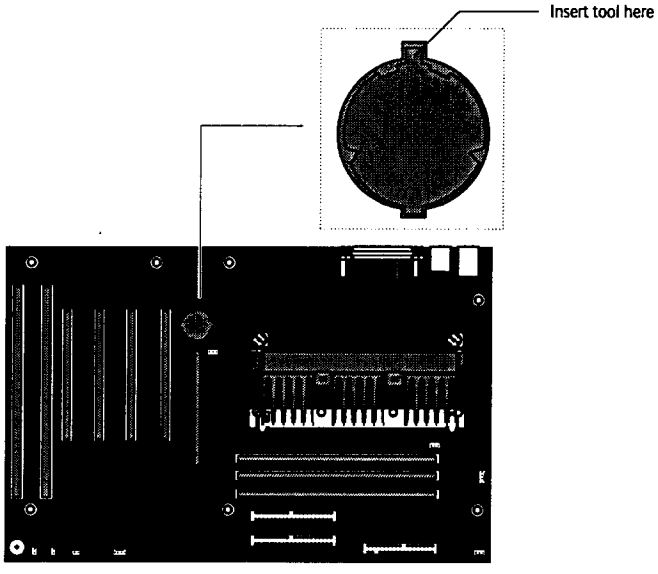
1. Reboot your system by selecting Shut Down... from the Start menu, then select Restart the computer.
2. If the error message "Error: Check date and time settings"appears during the reboot sequence, press F1 during the reboot process to access the BIOS Setup Utility. Otherwise it is not necessary to replace the battery at this time, and you can skip all remaining steps.
3. Compare all the BIOS options to their default settings (see "BIOS Setup Options" on page 91). Make a list of all the BIOS options that are different from their default values. You will refer to this list when you restore the BIOS settings later.
4. Press ESC, then select Exit Discarding Changes to exit the BIOS Setup Utility.
5. Turn off the system and unplug the power cable.
6. Remove the side panel (see "Removing the Side Panel" on page 26).
7. Lay the system down on its side so that the open side faces up.

8 If necessary, remove any add-in cards (see "Removing an Add-in Card" on page 38) to gain access to the battery. You may also need to disconnect some cables.

Caution

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

9 Insert a small flatblade screwdriver (or the tip of a letter opener) into the small space at the top of the battery holder.



KY0039.VSD

10 Gently pry the battery out and dispose of the battery according to the instructions that came with the new battery.

11 Insert the new battery into the battery holder, with the plus (+) side up.

Note

✍ The Sony CR2032 battery is recommended.

12 Reinstall any add-in cards that were removed.

13 Reconnect any cables that were disconnected.

14 Reinstall the side panel (see "Reinstalling the Side Panel" on page 33).

15 Reconnect the power cable and turn on the system.

16 If an error message "Error: Check date and time settings." appears during the reboot sequence, press F1 to access the BIOS Setup Utility. Otherwise, the system'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.

18 Press ESC until the Exit Setup Utility dialog box appears and choose Exit Saving Changes to exit the BIOS Setup Utility.

The system's BIOS settings are now restored.

Installing System Memory

WARNING

⚠ *Before you open the system, be sure to save any open files, exit from Windows, turn off power of the computer and all attached peripherals, and unplug your system.*

1 Remove the side panel (see "Removing the Side Panel" on page 26).

2 Remove any add-in cards (see "Removing an Add-in Card" on page 38) and other components as needed to gain access to the memory modules.

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 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 384 MB. The BIOS automatically detects the type, size and speed of the memory modules.

Memory module configurations (MB)*

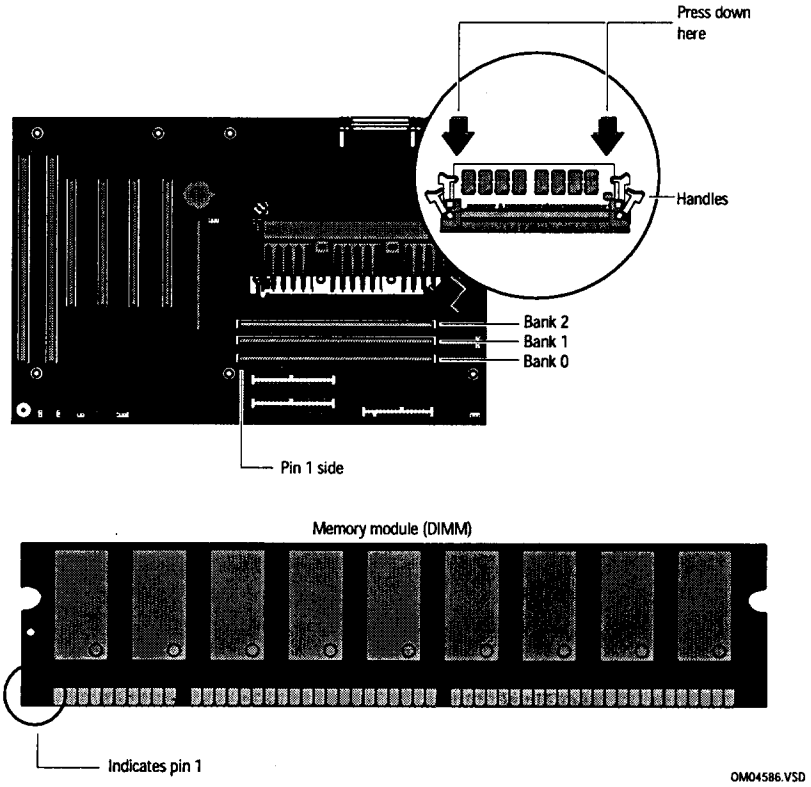
Bank 0	Bank 1	Bank 2
0, 8, 16, 32, 64, 128	0, 8, 16, 32, 64, 128	0, 8, 16, 32, 64, 128

**The PCV-220 is shipped with 32 MB; the PCV-240 is shipped with 64 MB.*

Caution

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

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



6 Carefully but firmly insert the edge of the module into the socket.

7 Press downward firmly and evenly at both corners until the module is fully seated.

Note

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.

8 Reinstall any add-in cards and other components that were removed.

9 Reinstall the side panel (see "Reinstalling the Side Panel" on page 33).

Your system will automatically recognize the extra memory and configure itself accordingly when you turn on the system. No further action is required.

Removing the Drive Bay Cover

The Sony PC is shipped with one drive bay empty, ready to accept an additonal drive of your choice.

A drive bay cover and EMI shield are used to cover the empty drive bay. The cover ensures that there is adequate air flow inside the computer to keep all components within the specified temperature range. The EMI shield prevents the PC from emanating electromagnetic waves, which may interfere with other nearby electronic devices.

WARNING

⚠ *Do not operate the system without the drive bay cover installed if the drive bay is empty. It could cause your system to overheat and possibly destroy the processor and other internal components.*

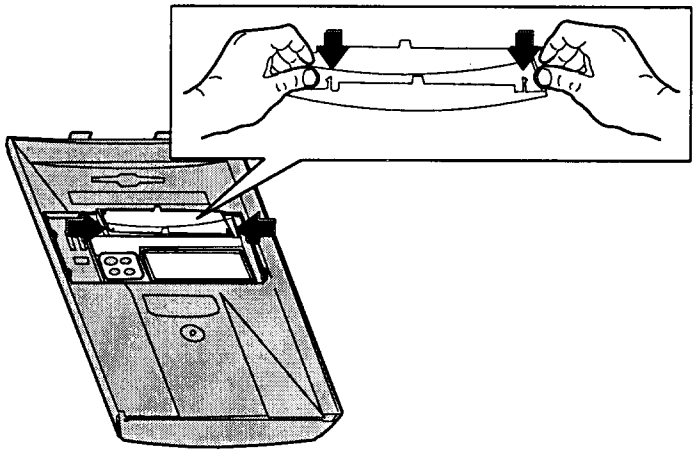
The drive bay cover is an insert mounted in a plastic frame in the front panel. Remove the drive bay cover only if you need to access a new drive installed in that bay. If you install a drive that you do not need to access from the front, such as a hard disk drive, do not remove the drive bay cover.

WARNING

⚠ *Before you open the system, be sure to save any open files, exit from Windows, turn off power of the computer and all attached peripherals, and unplug your system.*

1. Remove the side panel (see "Removing the Side Panel" on page 26).
2. Remove the top panel (see "Removing the Top Panel" on page 28).
3. Remove the front panel (see "Removing the Front Panel" on page 29).

4 Snap the drive bay cover out of the front panel by pressing in on the tabs on each side of the drive bay cover. The cover pops out of the front of the panel. Save the drive bay cover for future use.



OM04901.VSD

5 Reinstall the front panel (see "Reinstalling the Front Panel" on page 30).

6 Reinstall the top panel (see "Reinstalling the Top Panel" on page 31).

7 Reinstall the side panel (see "Reinstalling the Side Panel" on page 33).

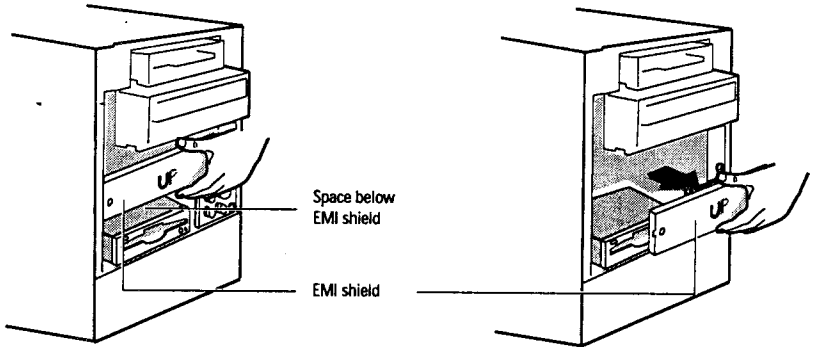
Removing the EMI Shield

You remove the EMI (electromagnetic interference) shield when you install an additional drive. The EMI shield covers the unused 5.25-inch drive bay. It reduces the possibility that your system will interfere with other nearby electronic devices.

Note

The EMI shield is made of very lightweight metal material and bends easily. Be careful not to bend the shield so that it no longer fits in the drive bay.

1. Remove the side panel (see "Removing the Side Panel" on page 26).
2. Remove the top panel (see "Removing the Top Panel" on page 28).
3. Remove the front panel (see "Removing the Front Panel" on page 29).
4. Insert your fingers between the metal shield and Zip drive and gently pull out the metal shield. Save the EMI shield for future use.



Note

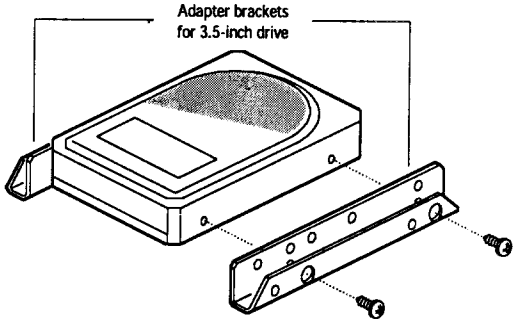
The EMI shield is held in place only by the tension created by a good fit. If you need to reinstall the shield, it is important not to bend the material so that it no longer fits.

Installing a New Drive

WARNING

⚠ *Before you open the system, be sure to save any open files, exit from Windows, turn off power of the computer, turn off power to all attached peripherals, and unplug the computer.*

1. Remove the side panel (see "Removing the Side Panel" on page 26).
2. Remove the top panel (see "Removing the Top Panel" on page 28).
3. Remove the front panel (see "Removing the Front Panel" on page 29).
4. Set any necessary switches and jumpers on the new drive (see the instructions that come with your drive).
5. If you install a drive that you must access from the front, such as a removeable disk or tape drive, or if the drive is a 5.25-inch drive, remove the drive bay cover from the front panel (see "Removing the Drive Bay Cover" on page 46). Otherwise, skip this step.
6. Remove the EMI shield from the empty drive bay (see "Removing the EMI Shield" on page 48).
7. If you install a 3.5-inch drive, use an adapter bracket (not included) for the 5.25-inch drive bay. Otherwise, skip this step.



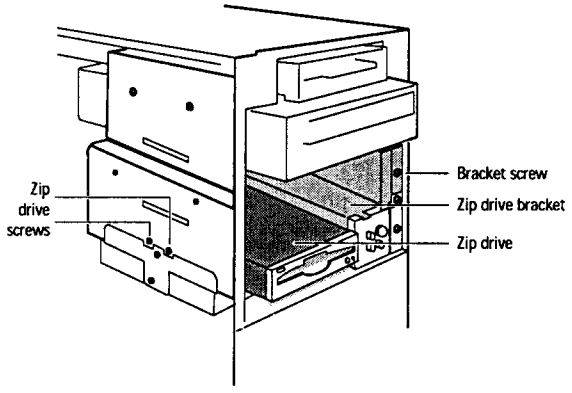
OM04594.VSD

Note

✍ *Adapter brackets are sold at most computer supply stores.*

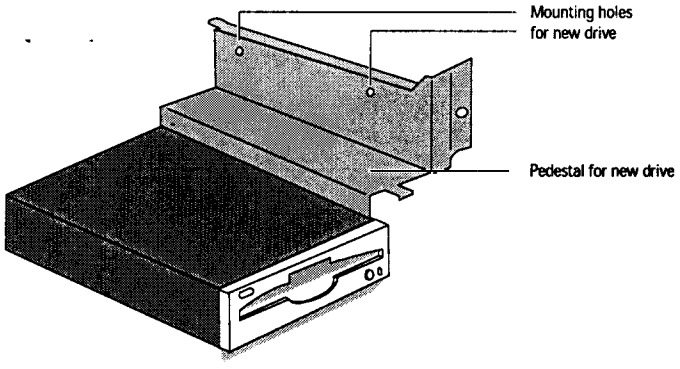
8 Disconnect the cables from the rear of the Zip drive.

9 Remove the two screws that secure the Zip drive and one screw that secures the Zip drive bracket.



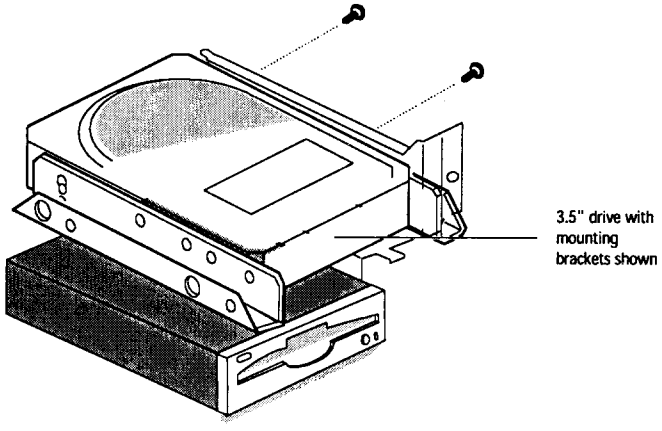
KY0047.VSD

10 Slide the Zip drive out of the drive bay carrier and rest it on a working surface.



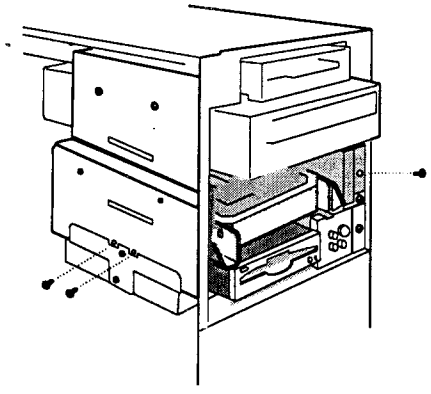
KY0051.VSD

11 Secure the new drive to the Zip drive bracket with two screws (provided with your new drive).



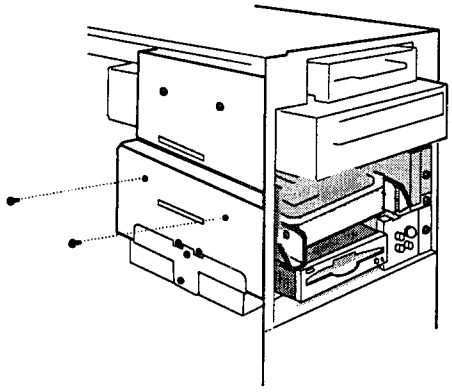
KY0052.VSD

12 Insert the drive assembly into the drive bay carrier and secure the Zip drive with the three screws removed earlier.



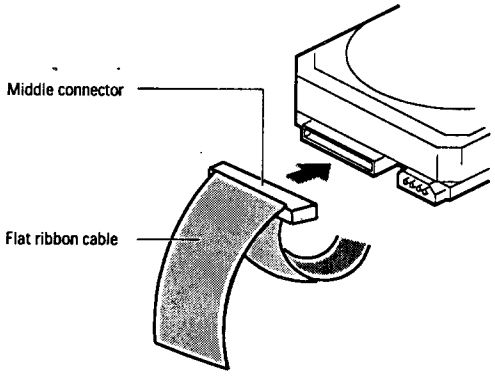
KY0053.VSD

13 Secure the new drive to the drive bay carrier using two screws provided with the new drive.



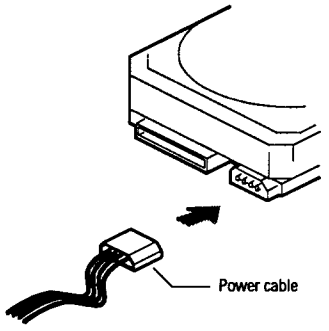
KY0054.VSD

14 Attach the spare middle connector (on the existing hard drive's flat ribbon cable) to the connector on the back of the new drive.



OM04593.VSD

15 Attach a spare power connector (labelled P3 or P7) to the back of the new drive.



KY0028.VSD

Note

You may need to cut the plastic tie around the spare power connectors to obtain more slack.

16 Reconnect the Zip drive cables.

17 Reinstall the front panel (see "Reinstalling the Front Panel" on page 30).

18 Reinstall the top panel (see "Reinstalling the Top Panel" on page 31).

19 Reinstall the side panel (see "Reinstalling the Side Panel" on page 33).

20 Turn on the system.

21 Press F1 during the bootup sequence to access the BIOS Setup Utility (see "Accessing the BIOS Setup Utility" on page 18).

22 Set up the BIOS for the new drive (see "BIOS Setup Options" on page 91).

Removing the Power Supply

You must remove the power supply if you need to remove the processor, to gain access to the memory modules, or to remove the system board.

WARNING

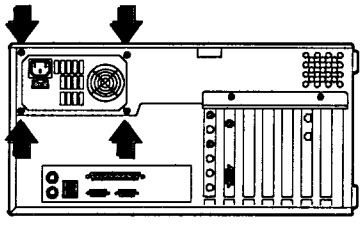
Before you open the system, be sure to save any open files, exit from Windows, turn off power of the computer, turn off power to all attached peripherals, and unplug the computer.

1. Remove the side panel (see "Removing the Side Panel" on page 26).
2. Remove the front panel (see "Removing the Front Panel" on page 29).
3. Remove the rear panel (see "Removing the Rear Panel" on page 27).
4. Remove the top panel (see "Removing the Top Panel" on page 28).
5. Remove all add-in cards to allow access to the cable connectors on the drives and system board (see "Removing an Add-in Card" on page 38).
6. Unplug the power supply cables from all disk drives (P2 to P6).

   Note

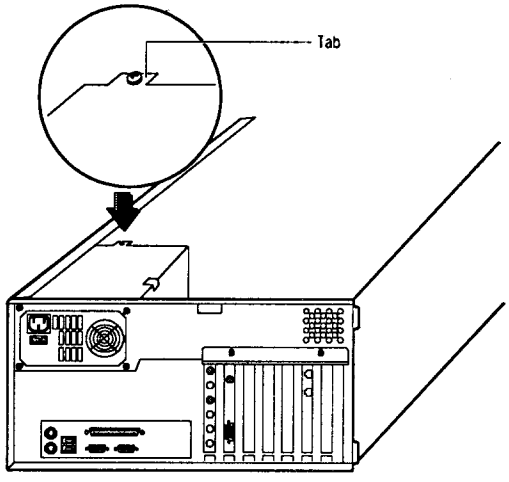
   You may need to remove the diskette drive to reach the power connector (see "Removing the Diskette Drive" on page 58).

7. Lay the system down on its side so that the open side faces up, and remove the four screws at the rear that attach the power supply to the chassis.



OM04915A.VSD

8 Remove the screw from the tab on the inside of the chassis that attaches the power supply and lift out the power supply. Temporarily rest the power supply on the chassis or drive carrier.



9 Unplug the power supply cable (P1) from the system board by pushing in on the connector's tab and pulling up, using a slight side-to-side rocking motion.

Note

You may need to remove one or more memory modules to gain access to P1 (see "Removing a Memory Module" on page 56).

10 Reverse this process to reinstall the power supply.

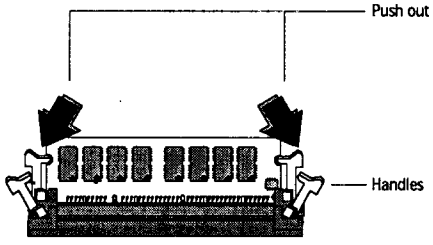
Removing a Memory Module

You may need to remove a memory module if you change the memory configuration or replace a bad module.

WARNING

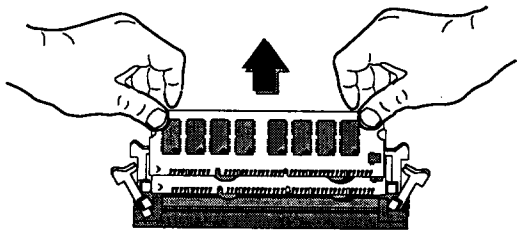
⚠ *Before you open the system, be sure to save any open files, exit from Windows, turn off power of the computer and all attached peripherals, and unplug your system.*

1. Remove the side panel (see "Removing the Side Panel" on page 26).
2. Remove any add-in cards (see "Removing an Add-in Card" on page 38) and other components as needed to gain access to the memory modules.
3. Push outward on the handle on each side of the memory module to eject the module from its socket.



KY0042.VSD

4 Lift the memory module out by grasping it by its edges. Store the module in a static-free bag.



KY0043.VSD

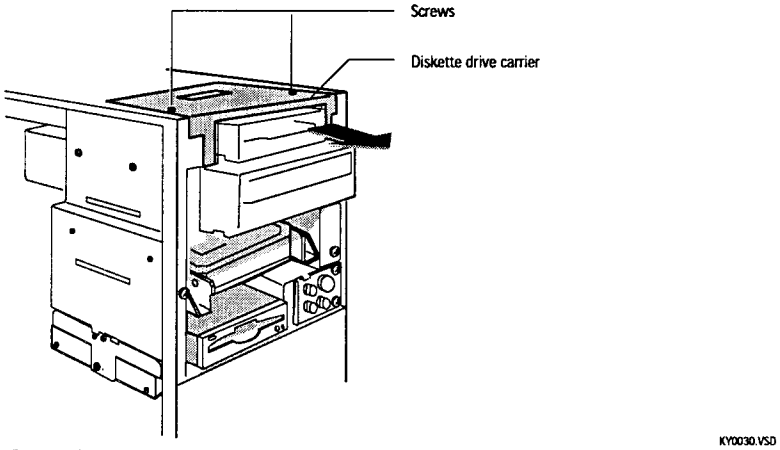
Caution

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

Removing the Diskette Drive

You may need to pull the diskette drive out to access its power connector if you need to remove the power supply (see "Removing the Power Supply" on page 54).

1 Remove the two screws that secure the diskette drive carrier to the chassis.



2 Slide out the diskette drive carrier.

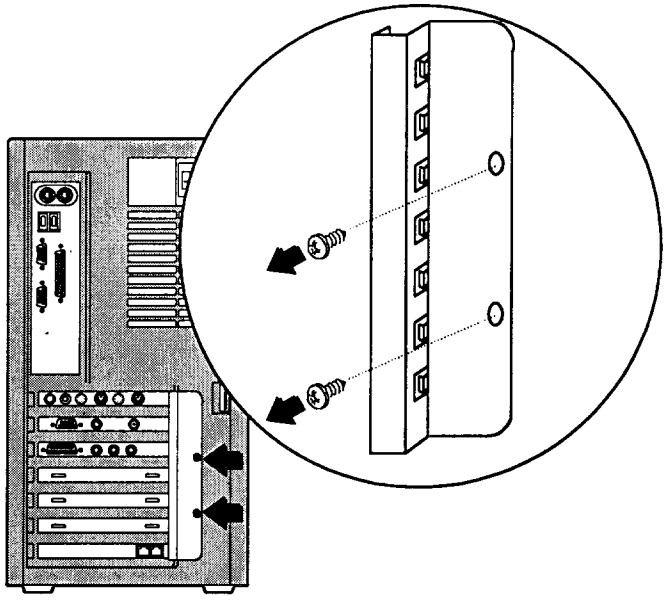
3 Unplug the power connector (P6) and flat ribbon cable, as needed.

Removing the I/O Cover

You remove the I/O cover when you install or remove an add-in card.

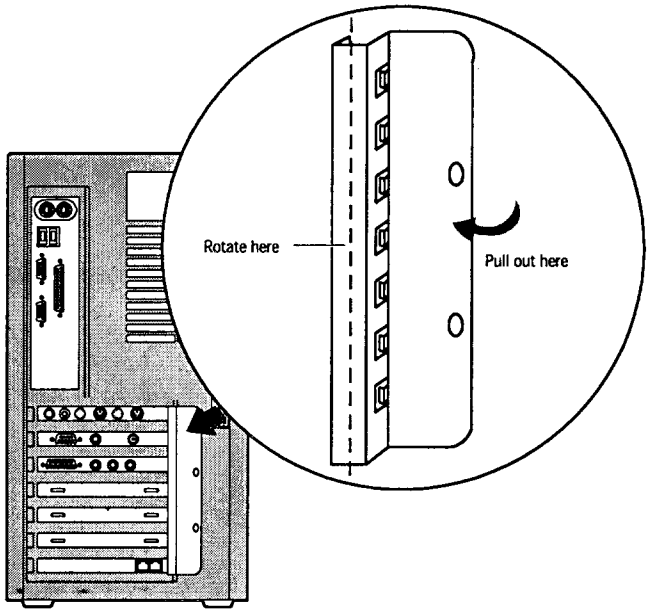
The I/O cover fits over a lip on the chassis. It secures all add-in cards into position, eliminating the screw usually required to secure each card.

1. Remove the side panel (see "Removing the Side Panel" on page 26).
2. Remove the rear panel (see "Removing the Rear Panel" on page 27).
3. Remove the two screws that attach the I/O cover to the rear of the chassis.



KY0044.VSD

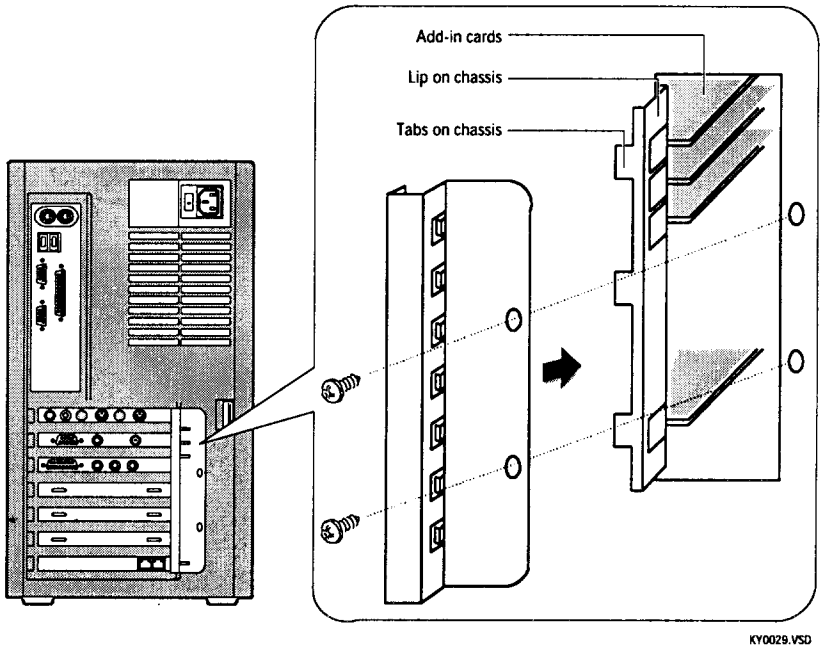
4 Pry the I/O cover off of its tabs. You may need to insert a small flatblade screwdriver under the I/O cover. The cover swings off as though the left side were hinged.



OM04709.VSD

Reinstalling the I/O Cover

1 Hook the I/O cover over the tabs at the rear of the chassis and align the holes in the cover with the holes in the chassis. Rotate the I/O cover firmly against the chassis.



Note

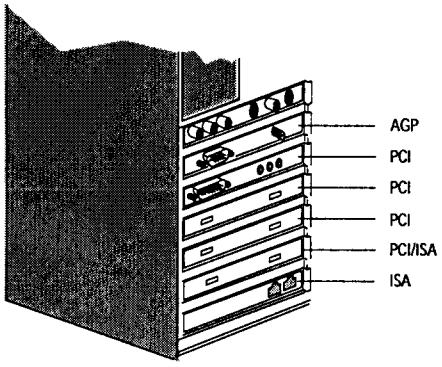
If you are using multiple add-in cards, you need to apply additional pressure to seat the I/O cover flush against the chassis.

2 Secure the I/O cover with the two screws removed earlier.

Removing a Slot Cover

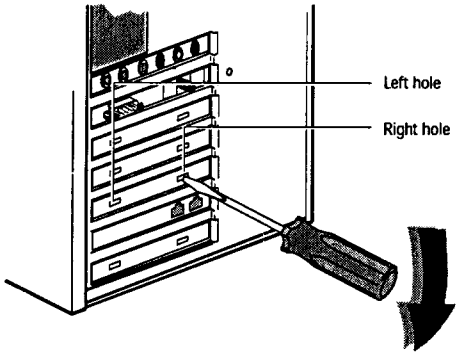
You remove a slot cover when you install an add-in card that occupies a previously empty slot.

1 Locate the slot whose cover you want to remove.



OM04577B.VSD

2 From the rear of the system, insert a small flathead screwdriver into the hole on the right side of the slot cover. Push the screwdriver down until the attachment point above the hole breaks.



OM04577A.VSD

3 Repeat step 2 for the left hole.You may need to move the screwdriver up and down at each hole until the cover breaks completely free.

4 Carefully reach into the chassis with your fingers and remove the loose slot cover and discard.

WARNING

The slot opening may have sharp edges. To avoid possible injury, do not insert your fingers into slot opening.

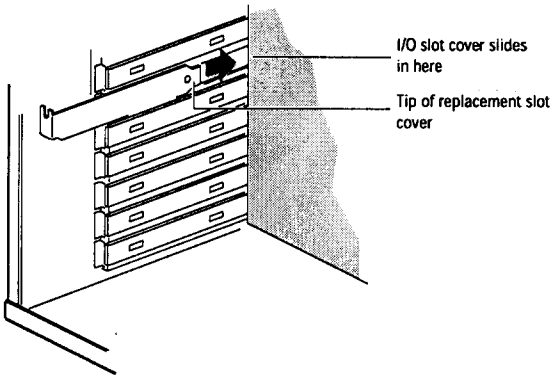
Note

If you accidentally bend the metal between I/O slots, use a pair of pliers to bend the metal around the slot opening, bringing it back into alignment. To test the fit, install an add-in card in the affected slot. If the add-in card does not fit correctly, remove the card and repeat this process until the card fits correctly.

Covering an Open I/O Slot

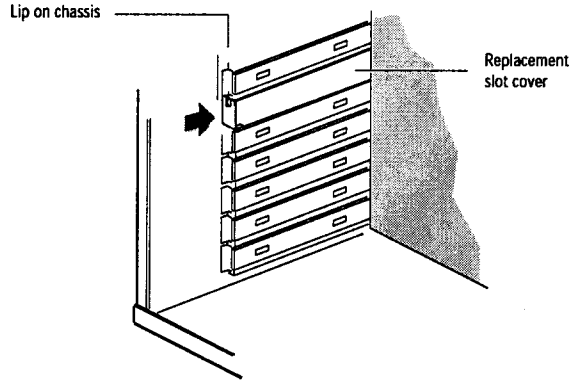
Slot covers prevent air from escaping through the empty hole. If air escapes, the components inside the computer cannot be properly cooled. This could possibly damage some components, especially the main processor (which generates the most heat).

1 Fit the tip of the replacement slot cover (not supplied) inside the sheet metal.



OM04576.VSD

2 Position the slot cover so that the top of the slot cover rests firmly on the lip in the chassis. All add-in card brackets and slot covers rest on this lip.

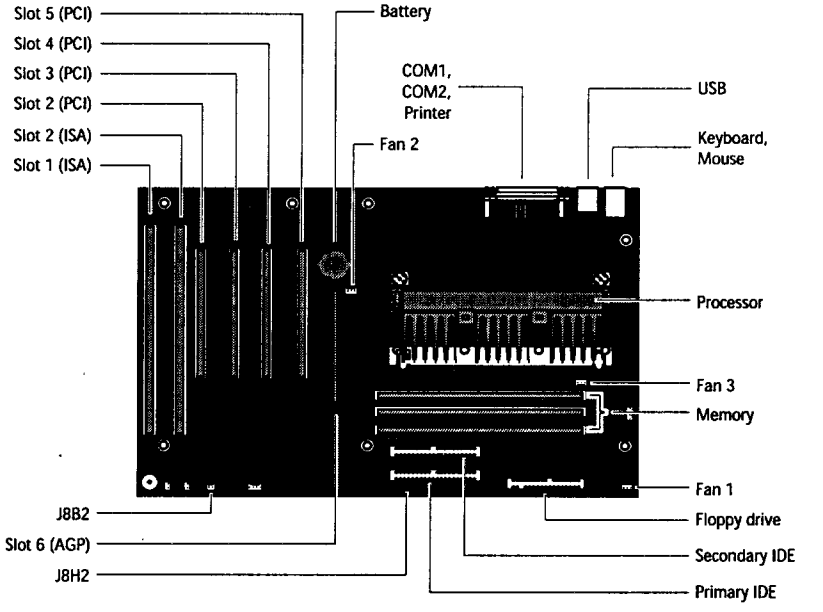


KY0045.VSD

3 Reinstall the I/O cover.

Chapter 4
System Board

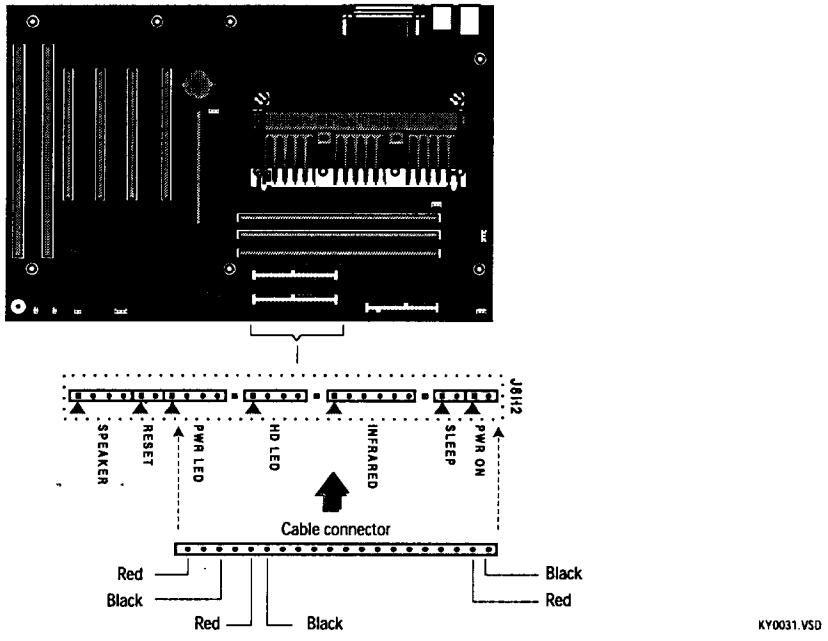
This chapter identifies each component on the system board and provides a detailed description of each connector and jumper on the system board.



Connectors

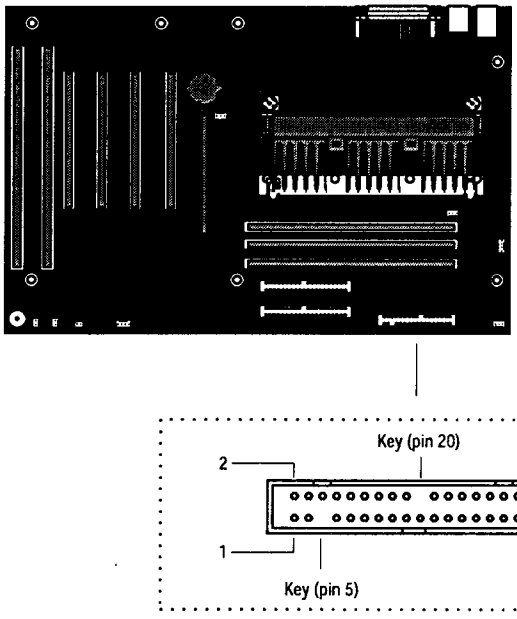
Front Panel Header (J8H2)

The front panel header has 27 pins that provide connections to various front panel functions. A 20-pin connector with only six wires is used to interface the system board to the front panel.



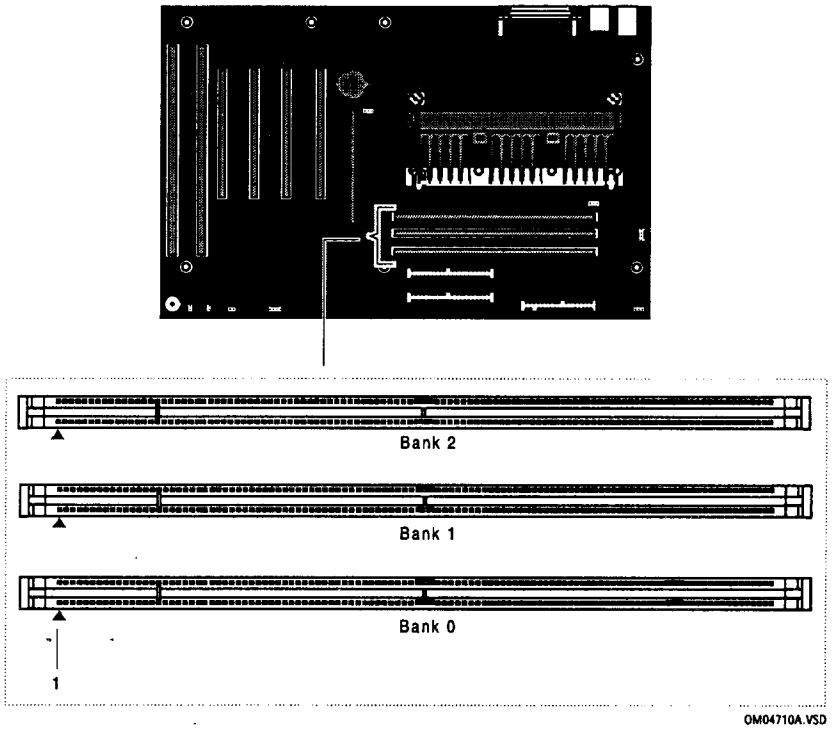
Name	Description
PWR ON	Connects to power-on light on front panel
SLEEP	(not used)
INFRARED	(not used)
HD LED	Connects to hard disk drive access light on front panel
PWR LED	Connects to the power-on switch on front panel
RESET	(not used)
SPEAKER	(not used)

Diskette Drive Connector



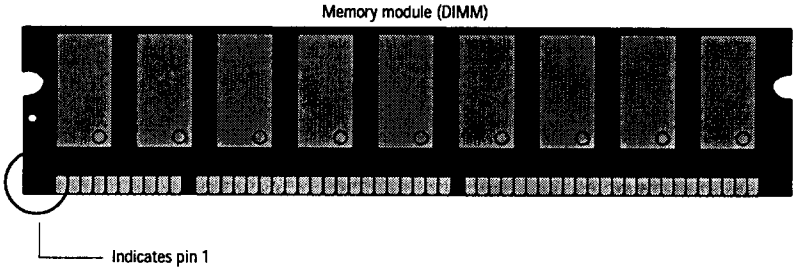
OM04701H.VSD

Memory Module (DIMM) Connectors



Memory Module (DIMM)

Both sides of each DIMM (Dual Inline Memory Module) look very much alike. The side with pin 1 has a small "1" to the left of pin 1. Be sure to orient a DIMM correctly in the DIMM connector (a small triangle on the connector indicates pin 1).



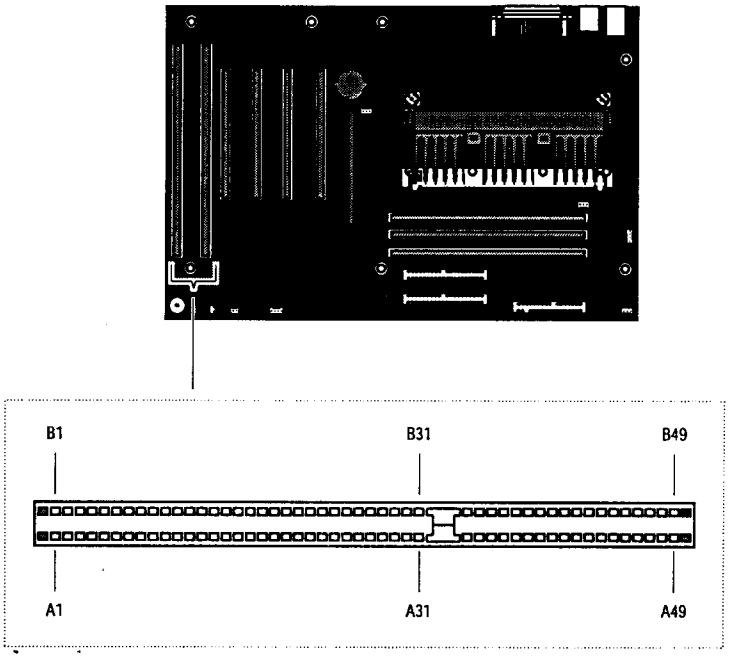
Slot Connectors

There are a total of two ISA slot connectors, four PCI slot connectors, and one AGP slot connector. Slot #2 (ISA) and slot #2 (PCI) slot connectors share a common slot opening at the rear of the chassis. The slot connectors for slot #2 are positioned so that only one card (ISA card or PCI card) can occupy either slot connector.

Note

Slot #2 (ISA) and slot #2 (PCI) connectors do not support bus mastering.

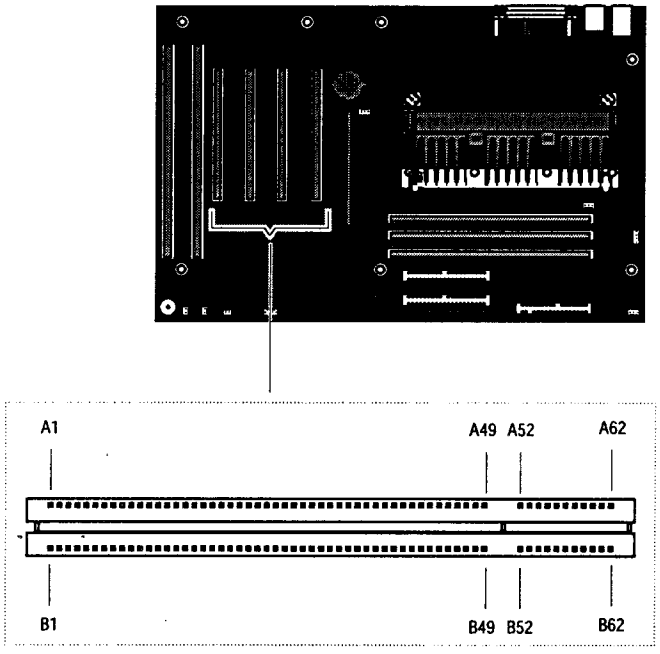
ISA Slot Connectors



OM04712A.VSD

PCI Slot Connectors

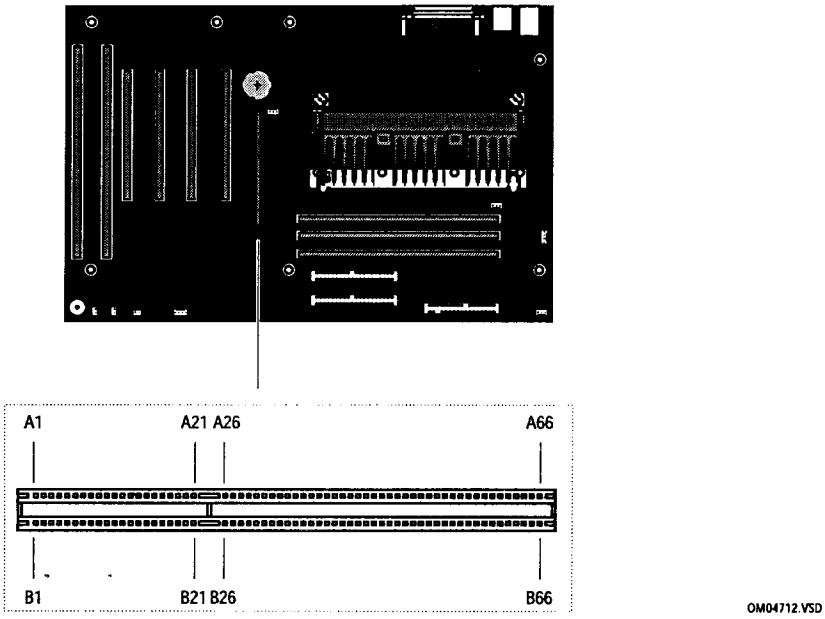
There are four PCI slot connectors. Slot #2 (PCI) may be used only if slot #2 (ISA) is not used. PCI slots support 32-bit 5V and Universal (3.3/5V) PCI add-in cards.



OM04599B.VSD

AGP Slot Connector

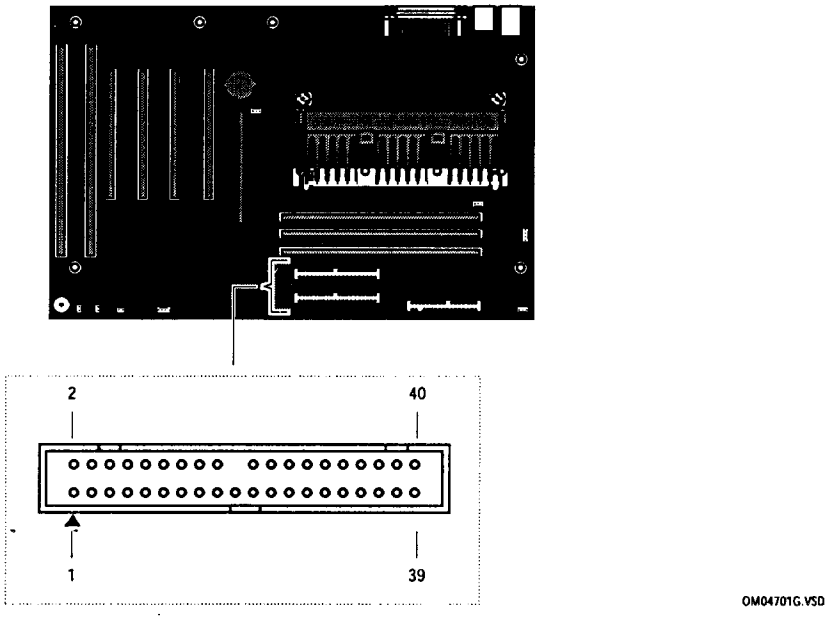
The AGP (Advanced Graphics Port) slot connector is occupied by the video add-in card, which is shipped with the original system.



OM04712.VSD

IDE Connectors

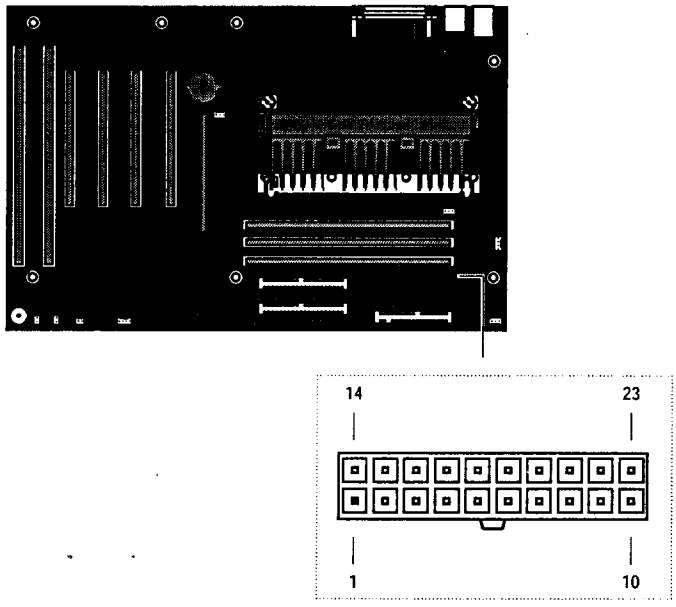
There are two IDE connectors on the system board: a Primary IDE and a Secondary IDE connector. Each IDE connector supports up to two IDE drives using a ribbon cable with two connectors.



OM04701G.VSD

Power Connector

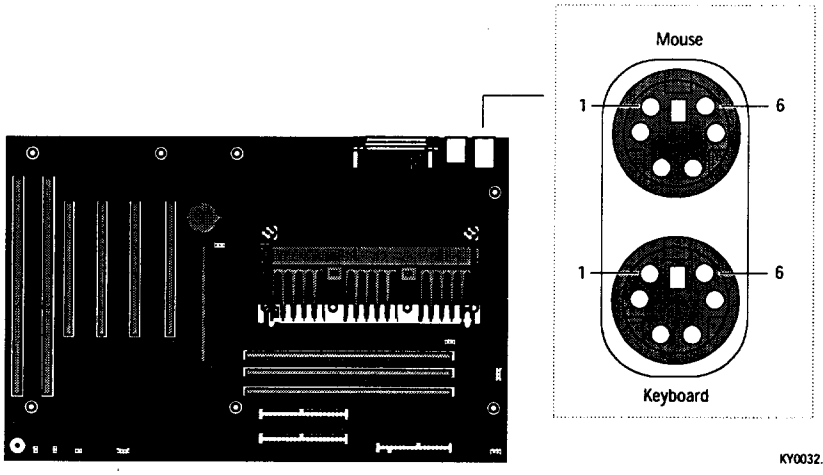
The power supply connector on the system board connects to the power supply cable labelled P1.



OM04701I.VSD

Keyboard and Mouse Connectors

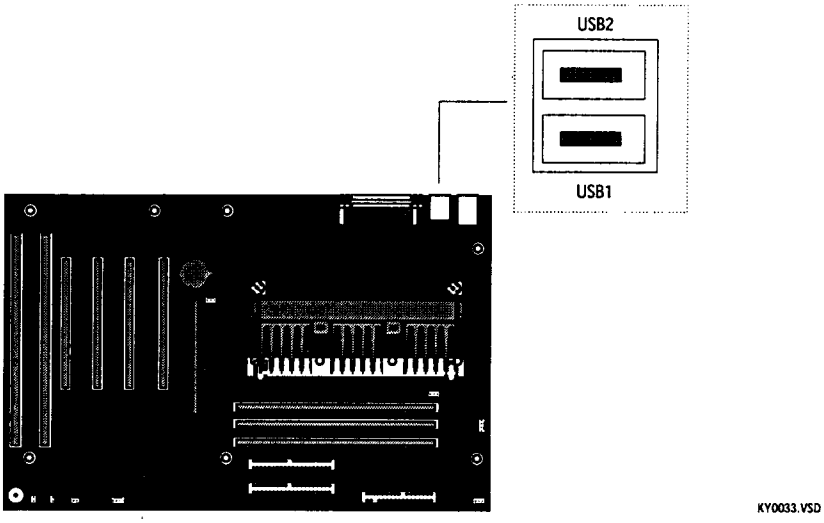
The keyboard and mouse connectors are 6-pin P/S 2-type connectors. They have identical pinouts.



Keyboard and Mouse	
Pin	**Signal Name**
1	DATA
2	NC
3	GND
4	+5V (fused)
5	CLOCK
6	NC

USB Connectors

There are two standard USB ports.



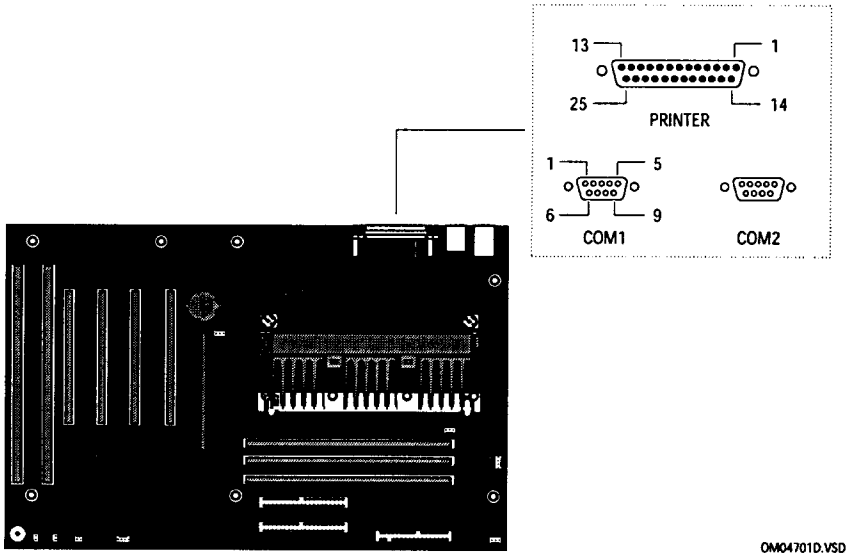
Pin	Signal Name
1	PWR
2	SIGNAL
3	SIGNAL
4	GND

Note

USB ports are included to provide state-of-the-art technology. Your operating system supports a limited number of USB devices. You may need to install software (device drivers) supplied with your USB device before using the USB device.

Serial 1, Serial 2 and Printer Connectors

The Serial 1, Serial 2 and Printer connectors are mounted in a single bracket on the system board. Serial 1 and Serial 2 are DB-9 male connectors. The Printer connector is a DB-25 female connector.



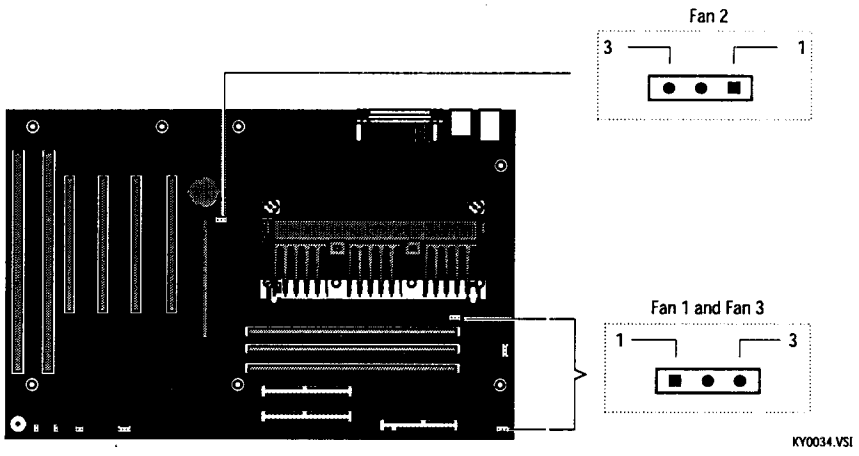
Serial 1 and Serial 2 connectors

Pin	Signal Name
1	DCD
2	DSR
3	SIN
4	RTS
5	SOUT
6	CTS
7	DTR
8	RI
9	GND

Printer connector	
Pin	**Signal Name**
1	STROBE-
2	DATA BIT 0
3	DATA BIT 1
4	DATA BIT 2
5	DATA BIT 3
6	DATA BIT 4
7	DATA BIT 5
8	DATA BIT 6
9	DATA BIT 7
10	ACK
11	BUSY
12	FEERROR
13	SLCT
14	AITPFD
15	FAULT
16	PRINT
17	SLOT IN
18	GND
19	GND
20	GND
21	GND
22	GND
23	GND
24	GND
25	GND

Fan Connectors

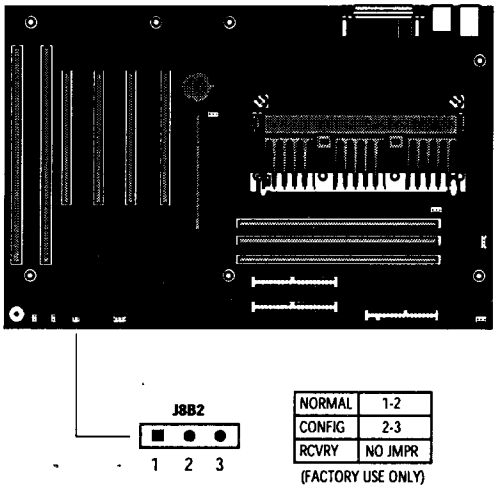
The Fan 1, Fan 2 and Fan 3 connectors are physically identical and have the same pinout. They provide an output of +12 VDC to a fan's motor (FAN-C).



Fan 1, Fan 2, Fan 3	
Pin	**Signal Name**
1	GND
2	+12 VDC (FAN-C)
3	GND

Configuration Jumper (J8B2)

The configuration jumper provides access to a configuration mode and a recovery mode. The configuraion mode enables additional options in the BIOS to appear after the system is restarted. The jumper should always be in the Normal position unless otherwise directed by a technical support person.

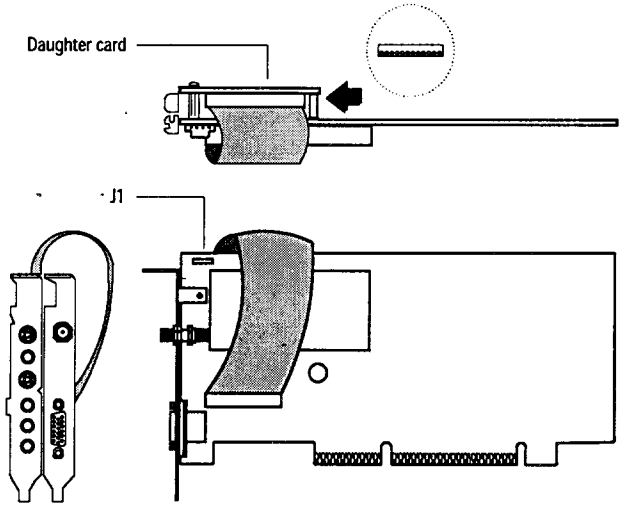


Position	Pins	Description
NORMAL	1 - 2	Normal operation
CONFIG	2 - 3	Configuration mode
RCVRY	No jumper	Recovery mode

Chapter 5
Video Card

The video card plugs into the only AGP slot on the system board (slot #6). The video card has a daughter card that is attached by two screws. A ribbon cable interconnects the two cards. A cable from the front audio/video panel attaches to a 12-pin connector on the back of the daughter card. The cable and connector are keyed to prevent incorrect insertion (black and red wires face up).

A three-wire cable from J1 on the video card connects to the Video In connector on the Audio/Game/MIDI card. J1 is keyed to prevent incorrect insertion.



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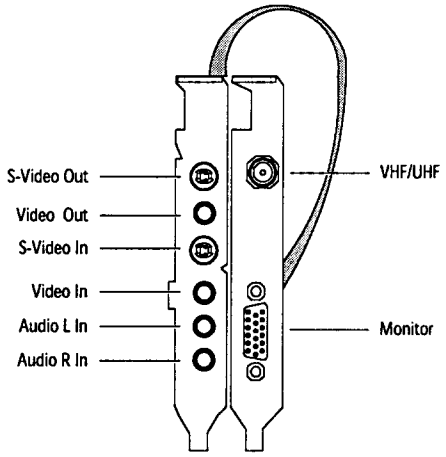

S-Video Out
Video Out
S-Video In
Video In
Audio L In
Audio R In
VHF/UHF
Monitor

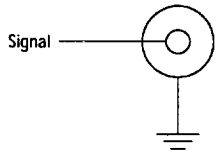
KY0036.VSD

Connectors

Name	Connector Type	Description
S-Video Out	S-video connector	Connects to S-video input of video device
Video Out	RCA phono jack, yellow band	Connects to video input of composite video device
S-Video In	S-video connector	Connects to S-video output of video device
Video In	RCA phono jack, yellow band	Connects to video output of composite video device
Audio L In	RCA phono jack, white band)	Connects to left audio channel of video device
Audio R In	RCA phono jack, red band	Connects to right audio channel of video device
VHF/UHF	RF coaxial connector, female	Connects to VHF/UHF source (TV antenna, cable TV, satellite TV, VCR, laser disc)
Monitor	15-pin high-density female connector	Connects to VGA connector on computer display unit

Audio L In and Audio R In schematic

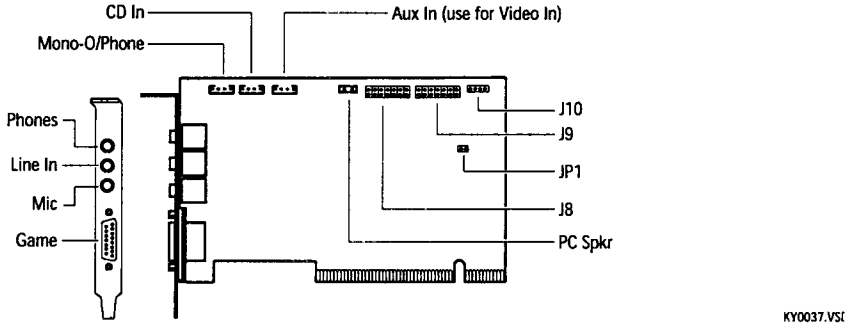
The Audio L In and Audio R In connectors are physically identical and both have the same connections.



KY0046.VSD

Chapter 6
Audio/Game/MIDI Card

The Audio/Game/MIDI card plugs into a PCI slot (slot #5). It interconnects with the Video card via a three-wire cable from J1 on the Video card to the Video In connector on the Audio/Game/MIDI card.



Note

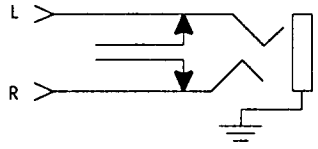
Use the connector labeled Aux In for Video In.

Connectors

Name	Connector Type	Description
Mono-O/ Phone	4-pin connector	Connects to unmarked connector on Fax/Modem card
CD-In	4-pin connector	Connects to Audio Out on CD-ROM drive
Aux In	4-pin connector	Connects to J1 on Video card (used for Video In)
PC Spkr	2-pin connector	Not used
J8	14-pin header	Not used
J9	14-pin header	Not used
J10	4-pin header	Not used
JP1	2-pin header	Not used
Line Out	Stereo mini-jack (3.5 mm)	Connects to headphones
Line In	Stereo mini-jack (3.5 mm)	Connects to stereo audio source (not audio source from video device)
Mic In	Stereo mini-jack (3.5 mm)	Connects to microphone
MIDI/Game	Female DB-15	Connects to game controller/joystick or MIDI device

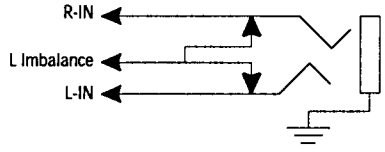
Schematics

Phones



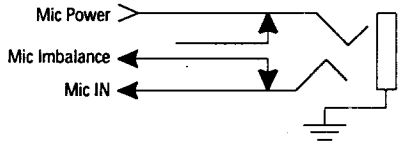
OM04713.VSD

Line In



OM04713B.VSD

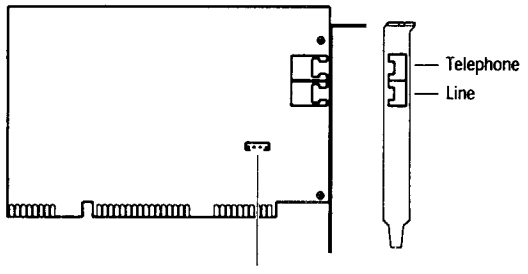
Mic



OM04713A.VSD

Chapter 7
Fax/Modem Card

The fax/modem card occupies an ISA slot (slot #1). It connects to the Mono-O/Phone connector on the Audo/Game/MIDI card with a 3-wire cable. There are two RJ-11 jacks, one to connect a telephone line, and one to connect a phone.



KY0038.VSD

Connectors

Name	Connector Type	Description
Telephone	RJ-11	Connects to phone
Line	RJ-11	Connects to telephone line
Unmarked	4-pin connector on board	Connects to Mono-O/Phone connector on Audio/Game/MIDI card (connector is keyed)

Chapter 8
BIOS Setup Options

This chapter describes each screen in the BIOS Setup Utility (see "Accessing the BIOS Setup Utility" on page 18).

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

- Main
- Advanced
- Security
- Power
- Boot
- Exit

Options that the user can change are enclosed in brackets. Text that is not enclosed in brackets is used to provide information to the user and cannot be changed by the user. A small triangle (▸) indicates a sub-menu that opens another screen with additional information and options. The information and options are context-sensitive (they appear or disappear, depending on a previously-selected option). The option shown in brackets is the default option. Other available options are shown without brackets below the default option in the order they occur.

Main Screen

Processor Type	Pentium®II
Processor Speed	
PCV-220	266 MHz
PCV-240	300 MHz
Cache RAM	512 KB
Total Memory	
PCV-220	32 MB
PCV-240	64 MB
BIOS Version	(Example: 4A4LL0X0.86A.0006.B)
Language:	[English (US)] Italiano Français Deutsch Espanõl
System Time:	[00:00:00]
System Date:	[01/01/1988]

▸Floppy Options

Diskette A:	[1.44 MB 5¼" 2.88 MB 3½" 360 KB 5¼" 1.2 MB 5¼" 720 KB 3½" Disabled
Diskette B:	[Disabled] 1.44 MB 5¼" 2.88 MB 3½" 360 KB 5¼" 1.2 MB 5¼" 720 KB 3½"
Floppy Write Protect:	[Disabled] Enabled

▮Primary IDE Master	[IBM-DHEA-36480]
Type:	[AUTO] NONE ATAPI Removable CD-ROM USER
Cylinders:	[12592]
Heads:	[16]
Sectors:	[63]
Maximum Capacity:	6499 MB
Multi-Sector Transfers:	[16 Sectors] 2 Sectors 4 Sectors 8 Sectors Disabled
LBA Mode Control:	[Enabled] Disabled
32 Bit I/O:	[Disabled] Enabled
Transfer Mode:	[Fast PIO 4 & Bus Mastering] Standard Fast PIO 1 Fast PIO 2 Fast PIO 3
Ultra DMA:	[Mode 2] Disabled Mode 0 Mode 1

▸Primary IDE Slave	[None]
Type:	[AUTO] NONE ATAPI Removable CD-ROM USER
Cylinders:	[12592]
Heads:	[16]
Sectors:	[63]
Maximum Capacity:	6499 MB
Multi-Sector Transfers:	[Disabled] 2 Sectors 4 Sectors 8 Sectors 16 Sectors
LBA Mode Control:	[Disabled] Enabled
32 Bit I/O:	[Disabled] Enabled
Transfer Mode:	[Standard] Fast PIO 1 Fast PIO 2 Fast PIO 3 Fast PIO 4 & Bus Mastering
Ultra DMA:	[Disabled] Mode 0 Mode 1 Mode 2

▮Secondary IDE Master	[CD-ROM CDU611]
Type:	[AUTO] NONE ATAPI Removable CD-ROM USER
Cylinders:	[12592]
Heads:	[16]
Sectors:	[63]
Maximum Capacity:	6499 MB
Multi-Sector Transfers:	[Disabled] 2 Sectors 4 Sectors 8 Sectors 16 Sectors
LBA Mode Control:	[Disabled] Enabled
32 Bit I/O:	[Disabled] Enabled
Transfer Mode:	[Standard] Fast PIO 1 Fast PIO 2 Fast PIO 3 Fast PIO 4 & Bus Mastering
Ultra DMA:	[Disabled] Mode 0 Mode 1 Mode 2

▸Secondary IDE Slave	[None]
Type:	[AUTO] NONE ATAPI Removable CD-ROM USER
Cylinders:	[12592]
Heads:	[16]
Sectors:	[63]
Maximum Capacity:	6499 MB
Multi-Sector Transfers:	[Disabled] 2 Sectors 4 Sectors 8 Sectors 16 Sectors
LBA Mode Control:	[Disabled] Enabled
32 Bit I/O:	[Disabled] Enabled
Transfer Mode:	[Standard] Fast PIO 1 Fast PIO 2 Fast PIO 3 Fast PIO 4 & Bus Mastering
Ultra DMA:	[Disabled] Mode 0 Mode 1 Mode 2

Advanced Screen

Plug and Play OS:	[Yes] No
Reset Configuration Data:	[No] Yes
ECC Configuration	[Non-ECC] ECC
Memory Cache:	[Enabled] Disabled
▸ Resource Configuration	
▸ Memory Reservation	
C800 - CBFF:	[Available] Reserved
CC00 - CFFF:	[Available] Reserved
D000 - D3FF:	[Available] Reserved
D800 - DBFF:	[Available] Reserved
DC00 - DFFF:	[Available] Reserved
Memory Hole	[Disabled] Conventional Extended
ECC Configuration	[Non-ECC] ECC
▸ IRQ Reservation	
IRQ 3:	[Available] Reserved
IRQ 4:	[Available] Reserved
IRQ 5:	[Available] Reserved
IRQ 7:	[Available] Reserved

IRQ 9:	[Available] Reserved
IRQ 10:	[Available] Reserved
IRQ 11:	[Available] Reserved
▮Peripheral Configuration	
Serial port A:	[Enabled] Auto Disabled
Base I/O address:	[3F8] 2F8 3E8 2E8
Interrupt:	[IRQ 4] IRQ 3
Serial port B:	[Disabled] Auto Enabled
Mode*:	Normal IrDA ASK-IR
Base I/O address*:	2F8 3E8 2E8 3F8
Interrupt*:	IRQ 4 IRQ 3

* *This option appears only if you enable Serial port B.*

Parallel port:	[Auto] Disabled Enabled
Mode:	[ECP] Output only Bi-directional EPP
Base I/O address:	[378] 278 228
Interrupt:	[IRQ 7] IRQ 5
DMA channel:	[DMA 3] DMA 1
Floppy disk controller:	[Enabled] Disabled
IDE controller:	[Both] Disabled Primary Secondary
Legacy USB Support	[Disabled] Enabled

▸Keyboard Configuration

Numlock:	[Auto] On Off
Key Click:	[Disabled] Enabled
Keyboard auto-repeat rate:	[30/sec] 26.7/sec 21.8/sec 18.5/sec 13.3/sec 10/sec 6/sec 2/sec
Keyboard auto-repeat delay:	[1/2 sec] 3/4 sec 1 sec 1/4 sec

▸Video Configuration

Palette Snooping:	[Disabled] Enabled

▸DMI Event Logging

Event log capacity:	Space available
Event log validity:	Valid
View DMI event log:	[Enter]
Clear all DMI event logs:	[No] Yes
Event Logging	[Enabled] Disabled
ECC Event Logging	[Disabled] Enabled
Mark DMI events as read	[Enter]

Security Screen

User Password Is:	Clear
Supervisor Password Is:	Clear
Set User Password	[Enter]
Set Supervisor Password	{Enter]
Unattented Start:	[Disabled] Enabled

Power Screen

Power Management:	[Enabled] Disabled
Fan Always On:	[Yes] No
Inactivity Timer:	[30 Minutes] Off 1 Minute 2 Minutes 4 Minutes 6 Minutes 8 Minutes 12 Minutes 16 Minutes
Hard Drive:	[Enabled] Disabled
VESA Video Power Down:	[Enabled] Disabled

Boot Screen

Restore On AC/Power Loss:	[Last State] Stay Off Power On
On Modem Ring:	[Stay Off] Power On
On LAN:	[Power On] Stay Off
On PME:	[Stay Off] Power On
Quickboot Mode:	[Enabled] Disabled
Scan User Flash Area:	[Disabled] Enabled
First Boot Device	[ATAPI CD-ROM Drive] Removable Devices Network Boot Hard Drive
Second Boot Device	[Removable Devices] Hard Drive ATAPI CD-ROM Drive Network Boot
Third Boot Device	[Hard Drive] Removable Devices Network Boot ATAPI CD-ROM Drive
Fourth Boot Device	[Network Boot] Hard Drive Removable Devices ATAPI CD-ROM Drive

- Hard Drive
  1. [Current HDD]]
     Bootable ISA Cards
  2. [Bootable ISA Cards]
     Current HDD
- Removable Devices
  1. [Legacy Floppy Drives]

Maintenance screen

Note

This screen appears only when the system board jumper is in the Configure position.

Clear Passwords

Set CPU Speed

Exit screen

Exit Saving Changes

Exit Discarding Changes

Load Setup Defaults

Load Custom Defaults

Chapter 9
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
- IRQ assignments
- System I/O address map
- Memory map

About User and Supervisor Passwords

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

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

If you set these passwords...	...the following passwords are required:
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 will need 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.

Message	Meaning
Floppy Disk Controller Resource Conflict	The diskette 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, diskette 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.
Serial Port 2 Resource Conflict	Serial port 2 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. Windows 95 reassigns resources to best meet the needs of a particular configuration.

DMA Channel	Default Assignment
0	Open
1	Maestro DOS Games/FM Devices (DOS)
2	Standard floppy disk controller
3	ECP Printer Port (LPT1)
4	Direct Memory Access controller
5	Open
6	LT WinModem
7	LT WinModem

IRQ Assignments

Note

This shows the factory default values. Windows 95 will reassign resources to best meet the needs of a particular configuration. PCI IRQs can be shared between several PCI devices.

IRQ #	Default Assignment
0	System timer
1	Standard 101/102-key or Microsoft Natural Keyboard
2	Programmable interrupt controller
3	LT WinModem
4	COM1
5	Maestro Device Manager/Enumerator/Wave, WaveTable Synthesis devices
6	Standard diskette drive controller
7	Printer (LPT1)
8	System CMOS/real time clock
9	Shared between IRQ holder for PCI steering and ATI 3D Rage Pro (DirectX)
10	Standard universal PCI-to-USB host controller
11	Open
12	PS/2 mouse port
13	Numeric data processor
14	Shared between Intel 82371AB bus master IDE controller and Primary IDE controller (dual FIFO)
15	Intel 82371AB bus master IDE controller
15	Secondary IDE controller (dual FIFO)

System I/O Address Map

Address Range (hexadecimal)	Description
0000 - 000F	EISA DMA controller
0020 - 0021	Programmable interrupt controller
0040 - 0043	System timer
0060	Standard 101/102-key or Microsoft Natural Keyboard
0061	System speaker
0064	Standard 101/102-key or Microsoft Natural Keyboard
0070 - 0071	System CMOS/real-time clock
0078 - 0080	System board resources
0081 - 008F	DMA controller
00A0 - 00A1	Programmable interrupt controller
00C0 - 00DF	DMA controller
00F0 - 00FF	Numeric data processor
0108 - 010F	LT WinModem
0120 - 013F	Standard universal PCI-to-USB host controller
0170 - 0177	Shared between Intel 82371SB PCI bus master IDE controller and secondary IDE controller (dual FIFO)
01F0 - 01F7	Shared between Intel 82371SB PCI bus master IDE controller and primary IDE controller (dual FIFO)
0200 - 0207	Maestro Gameport joystick controller
0220-022F	Maestro DOS games/FM devices (DOS)
0274 - 0277	I/O Read Data port for ISA PnP enumerator
02F8 - 02FF	LT WinModem
0330 - 0331	Maestro MPU0401 (Win/DOS)
0376	Shared between secondary IDE controller (dual FIFO) and Intel 82371SB PCI bus master IDE controller
0378 - 037B	Printer (LPT1)
0388 - 038B	Maestro DOS games/FM devices (DOS)
03B0 - 03BB	ATI 3D Rage Pro (DirectX)
03C0 - 03DF	ATI 3D Rage Pro (DirectX)
03F0 - 03F5	Standard floppy disk controller

Address Range (hexadecimal)	Description
03F6	Shared between primary IDE controller (dual FIFO) and Intel 82371SB PCI bus master IDE controller
03F7	Standard floppy disk controller
03F8 - 03FF	COM1
04D0 - 04D1	System board resources
0778 - 077F	ECP printer port (LPT1)
7000 - 700F	System board resources
8000 - 803F	System board resources
0CF8 - 0CFF	PCI bus
E000 - EFFF	Intel 82443LX Pentium® II processor-to-AGP controller
E800 - E8FF	ATI 3D Rage Pro (DirectX)
F800 - F8FF	Maestro Device Manager, Maestro Enumerator, and Maestro Wave/WaveTable Synthesis devices
FCF0 - FCF7	Shared between Intel 82371SB PCI bus master IDE controller and primary PCI IDE controller (dual FIFO)
FCF8 - FCFF	Shared between secondary PCI IDE controller and Intel 82371SB PCI bus master IDE controller

Memory Map

Address range	Default configuration
00000000 - 0009FFFF	System board extension for PnP BIOS
000A0000 - 000AFFFF	ATI 3D Rage Pro (DirectX)
000B0000 - 000BFFFF	ATI 3D Rage Pro (DirectX)
000C0000 - 000CBFFF	Unavailable for use by devices
000E0000 - 000E3FFF	System board resources
000E4000 - 000FFFFF	System board extension for PnP BIOS
00100000 - 01FFFFFF	System board extension for PnP BIOS
F8000000 - FBFFFFFF	Intel 82443LX Pentium® II processor-to-PCI bridge controller
FD000000 - FDFFFFFF	ATI 3D Rage Pro (DirectX)
FD000000 - FEDFFFFF	Intel 82443LX Pentium® II processor-to-AGP controller
FEDFE000 - FEDFEFFF	ATI 3D Rage Pro (DirectX)
FFF80000 - FFFBFFFF	System board extension for PnP BIOS
FFFC0000 - FFFFFFFF	System board resources

Chapter 10
Specifications

This chapter describes the technical specifications for the Sony PCV-220/ PCV-240.

Processor

PCV-220	266 MHz Intel Pentium II processor
PCV-240	300 MHz Intel Pentium II processor

Memory Modules (DIMMs)

Installed memory	PCV-220: 32 Mbytes SDRAM (66 MHz) PCV-240: 64 Mbytes SDRAM (66 MHz)
Maximum memory	384 Mbytes in three 168-pin DIMM sockets
Voltage	3.3 V memory only
Pins	168-pins with gold-plated contacts
SDRAM speed	60 ns, unrestricted CAS latency 2, unbuffered, Intel 4-clock
SDRAM data transfer rate	100 Mbytes/second non-contiguous burst
SDRAM bus speed	66 MHz
SDRAM data path	64 bits (non-ECC) or 72 bits (ECC)

DIMM Configurations

DIMM Size*	Non-ECC (64 bits) and ECC (72 bits)
8 MB	1 Mbit
16 MB	2 Mbit
32 MB	4 Mbit
64 MB	8 Mbit
128 MB	16 Mbit

** Can be installed in one, two or three sockets. Memory size can vary between sockets. DIMMs can be single-sided or double-sided.*

L2 Cache

Installed	512 Kbytes secondary write-back cache
Controller	Intel 82440LX PAC

Graphics

Controller*	ATI 3D RAGE PRO (DirectX) 64-bit AGP
Video memory	4 Mbytes (installed)
Resolution (displayed resolution depends on the graphics display you are using)	
True color (32 bits)	Up to 1152 x 864 at 85 Hz non-interlaced
True color (24 bits)	Up to 1280 x 1024 at 85 Hz non-interlaced
High color (16 bits)	Up to 1600 x 1200 at 85 Hz non-interlaced
256 colors (8 bits)	Up to 1600 x 1200 at 85 Hz non-interlaced

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

Video

Video playback	"Sony-tuned" MPEG Digital Video supports full-screen playback at 30 fps, 640x480x16
Input connectors	Composite in, S-video in, VHF/UHF in
Output connectors	Composite out, S-video out
Plug and Play	Configuration of DDC-compatible displays
TV tuner (built in)	VHF/UHF

Audio

Controller	PCI ESS Maestro-1 audio accelerator
MIDI wavetable synthesizer	2 MB sound set with 64-voice polyphony
Surround sound	3D-enhanced
Audio sampling rate	Up to 48 KHz at 16 bits
Front panel connectors	Left Audio In Right Audio In
Rear panel connectors	Left Audio In (from video source) Right Audio In (from video source) Line In (from stereo audio source) Phones (for headphones) Mic (for microphone)

Communications

Modem	33.6 Kbps DSVD with K56flex® technology
Fax/modem	14.4 Kbps

I/O and Expansion Slots

Serial ports	Two high-speed NS16C550-compatible ports
Parallel port	One high-speed bi-directional Centronics-compatible port with ECP and EPP modes
MIDI/game port	One (supports MIDI in/out or two joysticks — adapter cable not supplied)
Modem ports	Two RJ-11 connectors (for line and phone)
USB ports	USB 1 and USB 2
PCI slots	Four (one shares slot #2)
ISA slots	Two (one shares slot #2)
IDE connectors	Primary and Secondary (each supports two IDE drives)

Drives and Controllers

Diskette controller	765A-compatible (supports up to 2.88 MByte)
Diskette drive	1.44 MByte 3.5-inch
EIDE controller	Supports up to four EIDE drives (supports PIO Mode 4 EIDE drives and Ultra DMA/33 Mode drives)
IDE hard drive	6.4 GByte (bus-mastering EIDE driver installed)
ZIP drive	Uses 100-MByte ZIP disks
CD-ROM drive	Data transfer rate up to 24X (max. performance)*

** Data on the CD-ROM is read at a variable transfer rate, ranging from 10X at the innermost track to 24X at the outermost track (the data transfer standard 1X rate is 150 Kbytes/s). The average data transfer rate is 17X (2250 Kbytes/s).*

BIOS

Make and model	Phoenix BIOS
ROM	2-MByte flash*
Languages	Multiple language support (built in)†
Passwords	User and supervisor passwords supported
Recovery boot block	Supported
Power management	Supports APM 1.2
Plug and Play devices	Supported

** Flash-ROM update utility is available.*

† Flash language update utility available.

Power Supply

Power management control	Software
Processor voltage regulator	On system board
Power	200 W peak, 120 W continuous
Current draw (max.)	6A at 12 VDC 18A at 5 VDC* 14A at 3.3 VDC* 0.3A at -5 VDC 0.8A at -12 VDC

** 5V current to expansion slots should not exceed 2A per slot. Combined 5V and 3.3V power not to exceed 110W.*

Environment

Operating temperature	10 to 35°C (50 to 95°F)
Non-operating (storage) temperature	-30 to 60°C (-22 to 140°F)
Operating humidity	80% RH at 36°C (with no hard disk drive)
Non-operating humidity	92% RH at 36°C
Dimensions	Approx. 9 in (w) x 14-7/8 in (h) x 18 in (d) (226 x 376 x 455 mm)
Weight (without monitor) as shipped	Approx. 29.5 lb (13.4 kg)

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