

SONY[®]

User Guide

Personal Computer
VGC-LV series



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Before Use

Congratulations on your purchase of this Sony VAIO® computer, and welcome to the on-screen User Guide. Sony has combined leading-edge technology in audio, video, computing, and communications to provide state-of-the-art personal computing experience.

! External views illustrated in this manual may look slightly different from those of your computer.

Information in the supplied manuals including this User Guide is intended for users of the VAIO computers with the Microsoft® Windows Vista® 32-bit operating system. You may find differences in the information when your computer comes preinstalled with the 64-bit operating system.



How to find specifications

Some features, options, and supplied items may not be available on your computer.

To find out about the configuration of your computer, visit the VAIO Link web site at <http://www.vaio-link.com>.

Finding More about Your VAIO Computer

This section provides support information about your VAIO computer.

1. Printed Documentation

- Quick Start Guide** — An overview of components connection, set-up information, etc.
- Troubleshooting and Recovery Guide**
- Regulations, Guarantee, EULA and Service Support**

2. On-screen Documentation

- User Guide** (This manual) — Features of your computer and information about solving common problems.


To view this on-screen guide:

- 1 Double-click the **Me&My VAIO** icon on the desktop.
- 2 Click **Menu, Me&My VAIO, I Need Help**, and **VAIO User Guide**.
- 3 Open the folder for your language.
- 4 Select the guide you want to read.



You can manually browse to the user guides by going to **Computer > VAIO (C:)** (your C drive) > **Documentation > Documentation** and opening the folder for your language.

- Windows Help and Support** — A comprehensive resource for practical advice, tutorials, and demonstrations to help you learn to use your computer.

To access **Windows Help and Support**, click **Start**  and **Help and Support**, or press and hold the Microsoft Windows key and press the **F1** key.

3. Support Web Sites

If you have any problem with the computer, you can visit the VAIO-Link web site at <http://www.vaio-link.com> for troubleshooting.

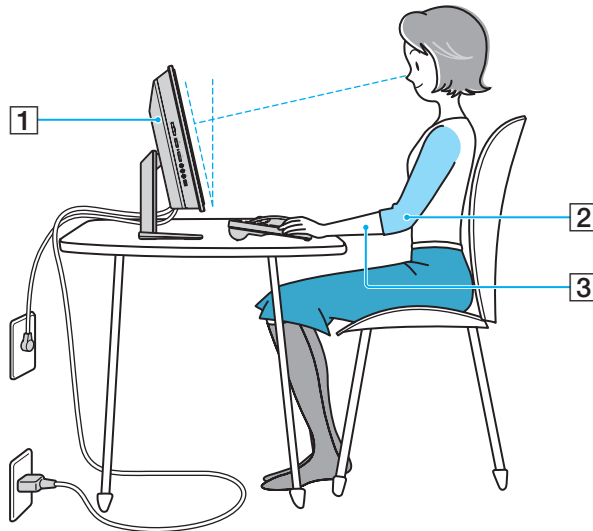
Before contacting VAIO-Link by telephone, try to solve the problem by reading the supplied documentation and visiting other Sony web sites.

- ❑ For more about VAIO and becoming part of the growing VAIO community, visit the web site at <http://www.club-vaio.com>.
- ❑ For online purchases, visit the web site at <http://www.sonystyle-europe.com>.
- ❑ For other Sony products, visit the web site at <http://www.sony.net>.

When you contact VAIO-Link by telephone, have the serial number of your VAIO computer ready at hand. The serial number is located on the bottom, the back panel, or inside the battery compartment of your VAIO computer.

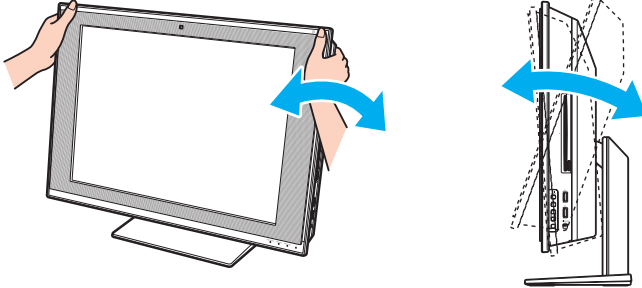
Ergonomic Considerations

Whenever possible, you should attempt to take account of the following ergonomic considerations:



- ❑ **Position of your computer** – Place the display directly in front of you (1). Keep your forearms horizontal (2), with your wrists in a neutral, comfortable position (3) while using the keyboard or the pointing device. Let your upper arms hang naturally at your sides. Take frequent breaks while using your computer. Excessive use of the computer may strain eyes, muscles, or tendons.
- ❑ **Furniture and posture** – Sit in a chair with good back support. Adjust the level of the chair so your feet are flat on the floor. A footrest may make you more comfortable. Sit in a relaxed, upright posture and avoid slouching forward or leaning far backwards.

- ❑ **Viewing angle of the display** – Use the display's tilting feature to find the best position. You can reduce eye strain and muscle fatigue by adjusting the tilt of the display to the proper position. Adjust the brightness level of the display as well.



! While adjusting the viewing angle, do not exert excessive pressure on your computer, especially on the center of the speaker grill, to eliminate a risk of mechanical damage.

- ❑ **Lighting** – Choose a location where windows and lights do not cause glare and reflection on the display. Use indirect lighting to avoid bright spots on the display. Proper lighting adds to your comfort and work efficiency.
- ❑ **Ventilation** – Make sure you leave at least 10 cm of space behind and at least 20 cm of space on each side of the main unit.

Getting Started

This section describes how to get started using your VAIO computer.

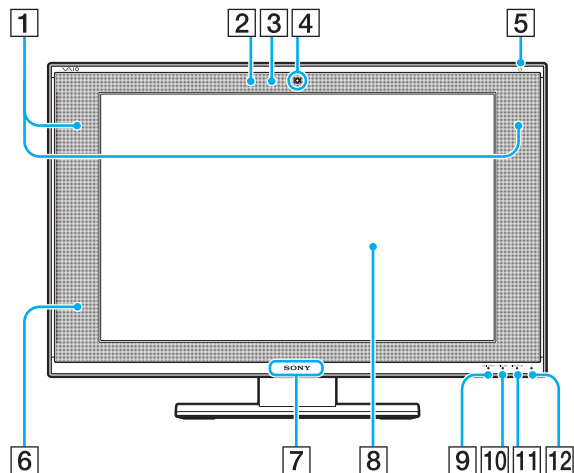
- ❑ **Locating Controls and Ports** ([page 10](#))
- ❑ **About the Indicator Lights** ([page 15](#))
- ❑ **Setting Up Your Computer** ([page 16](#))
- ❑ **Shutting Down Your Computer Safely** ([page 32](#))
- ❑ **Updating Your Computer** ([page 33](#))

Locating Controls and Ports

Take a moment to identify the controls and ports shown on the following pages.

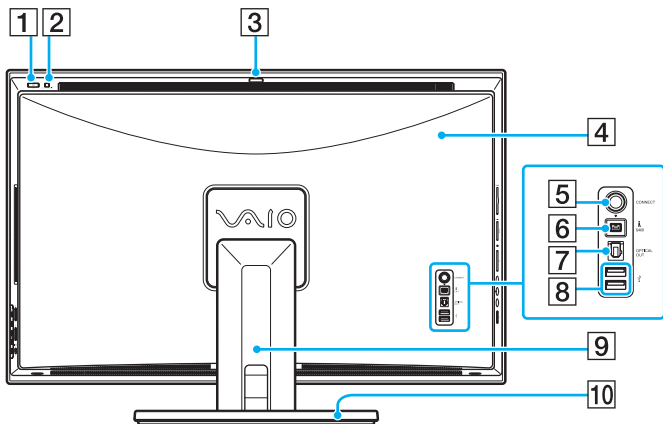
! The appearance of your computer may be different from those illustrated in this manual due to variations in specifications. It may also vary in some countries or areas.

Front

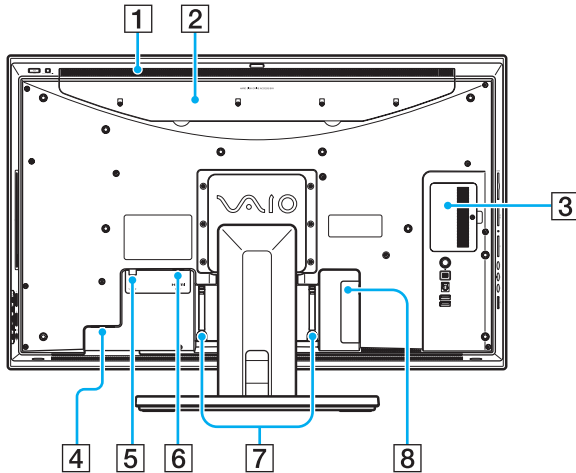


- 1 Built-in speakers (stereo)
- 2 Built-in microphone (monaural)
- 3 Built-in **MOTION EYE** camera indicator ([page 15](#))
- 4 Built-in **MOTION EYE** camera ([page 43](#))
- 5 Power indicator ([page 15](#))
- 6 Remote sensor
Point the supplied remote commander to this sensor for operations.
- 7 **SONY** logo lamp ([page 106](#))
- 8 LCD screen ([page 125](#))
- 9 **HDMI SELECT** indicator ([page 15](#))
- 10 **WIRELESS** indicator ([page 15](#))
- 11 **DISPLAY OFF** indicator ([page 15](#))
- 12 Disc drive indicator ([page 15](#))

Back



- 1** Power button
 - 2** **DISPLAY OFF** button
Press this button to turn off the LCD backlight. While the HDMI input is selected ([page 63](#)), pressing this button also turns off the volume.
 - 3** Capture angle adjuster ([page 44](#))
 - 4** Back panel cover
Remove the back panel cover to access the ports and jacks behind it ([page 16](#)).
 - 5** **CONNECT** button ([page 25](#)), ([page 27](#))
 - 6** i.LINK 4-pin (S400) port ([page 98](#))
 - 7** **OPTICAL OUT** port ([page 95](#))
(Output Sampling Rate: 44.1 KHz/48.0 KHz/96.0 KHz)
 - 8** Hi-Speed USB (USB 2.0) ports * ([page 96](#))
 - 9** Base stand cover
Remove the base stand cover to bundle cables to keep them tidy ([page 16](#)).
 - 10** Base stand ([page 129](#))
- * Support high-/full-/low- speeds.



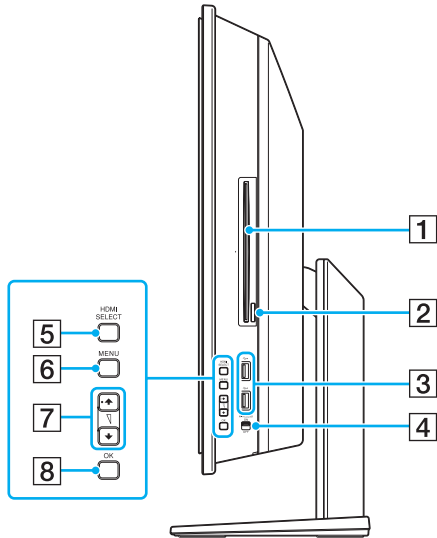
- 1 Air exhaust vent ([page 128](#))
- 2 **HARD DISK DRIVE ACCESS BAY** cover ([page 119](#))
- 3 Memory module compartment cover ([page 113](#))
- 4 AC In port ([page 21](#))
- 5 VHF/UHF input port* ([page 52](#))
- 6 **HDMI INPUT** port ([page 61](#))
- 7 Cable clamps ([page 23](#))
- 8 Network (Ethernet) port ([page 79](#))

* On selected models only.



! The area around the air exhaust vent (1) becomes hot while your computer is on. Be sure to wait until the computer cools down before you touch it.

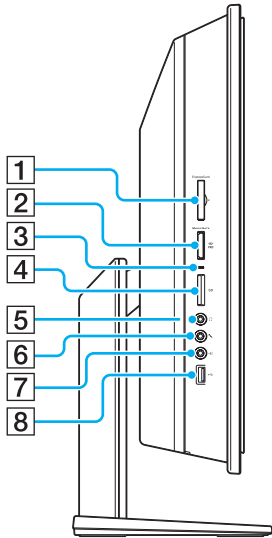
Right



- 1 Optical disc drive ([page 45](#))
- 2 Drive eject button ([page 46](#))
- 3 Hi-Speed USB (USB 2.0) ports* ([page 96](#))
- 4 **WIRELESS** switch ([page 81](#))
- 5 **HDMI SELECT** button ([page 63](#))
- 6 **MENU** button ([page 63](#))
- 7 Up/Down buttons ([page 63](#))
- 8 **OK** button ([page 63](#))

* Support high-/full-/low- speeds.

Left





- 1 **ExpressCard**/34 slot ([page 71](#))
- 2 Memory Stick slot^{*1} ([page 66](#))
- 3 Media Access indicator ([page 15](#))
- 4 **SD** memory card slot ([page 74](#))
- 5 Headphones jack ([page 95](#))
- 6 Microphone jack
Connect an external microphone.
- 7 Line In jack
Connect an external audio device for audio input.
- 8 Hi-Speed USB (USB 2.0) port^{*2} ([page 96](#))

^{*1} Your computer supports both the standard-size Memory Stick and the Duo-size Memory Stick.

^{*2} Supports high-/full-/low- speeds.

About the Indicator Lights

Your computer is equipped with the following indicator lights:

Indicator	Functions
Power 	Illuminates in green when the computer is on, illuminates in orange while the computer is in Sleep mode, and turns off when the computer is off.
Built-in MOTION EYE camera	Illuminates while the built-in MOTION EYE camera is in use.
Media Access	Illuminates when data is read from or written to a memory card. (Do not place the computer into Sleep mode or turn it off when this indicator is lit.) When the indicator is unlit, the memory card is not in use.
HDMI SELECT	Illuminates in green while the HDMI input is selected.
DISPLAY OFF	Illuminates in orange when the LCD backlight is turned off.
Disc drive 	Illuminates while the built-in storage device or the optical disc drive is running to read or write data. Do not place the computer into Sleep mode or turn it off when this indicator is lit.
WIRELESS	Illuminates when one or more wireless options are enabled.

Setting Up Your Computer

Removing and Replacing the Covers

Before accessing some ports and jacks on the back of your computer, you first need to remove the back panel cover from the computer and the base stand cover from the base stand.

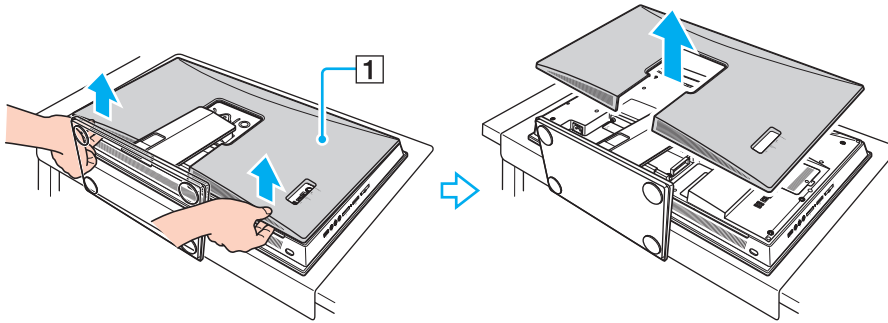
To remove the back panel cover and the base stand cover

- 1 Gently face down your computer on a flat surface.

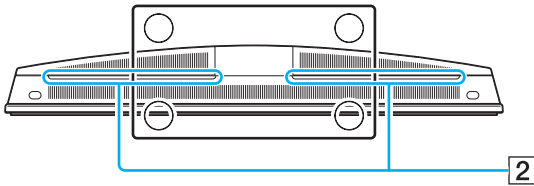


When facing down your computer, be sure to place it on a soft cloth to avoid damage to the LCD screen.

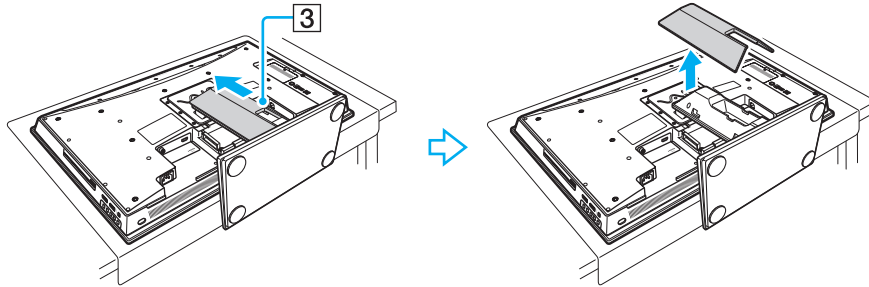
- 2 Grasp the back panel cover (1) with both hands, gently lift it, and remove it from the computer.



! Put your fingertips underneath the back panel cover (2) when removing the cover from the computer.

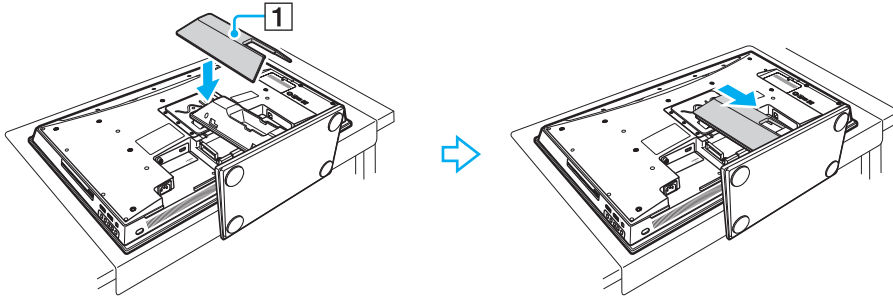


- 3 Slide the base stand cover (3) in the direction of the arrow and remove it from the base stand.

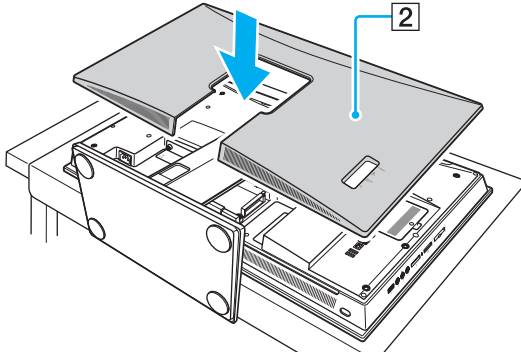


To replace the back panel cover and the base stand cover

- 1 Put the base stand cover (1) back on the base stand and slide it in the direction of the arrow.



- Put the back panel cover (2) so as to fit the projections inside the cover into the respective holes on the back of the computer and push in the cover toward the computer.



! Keep the back panel cover and the stand cover on the computer unless access to the back panel is necessary.

Connecting a Power Source and Cables

You need a power cord to connect your computer to an AC power source and it must be plugged into the power source before you establish communication with your wireless keyboard and mouse. In addition, you need to connect other cables if you want to use some functions of your computer, such as the TV function.

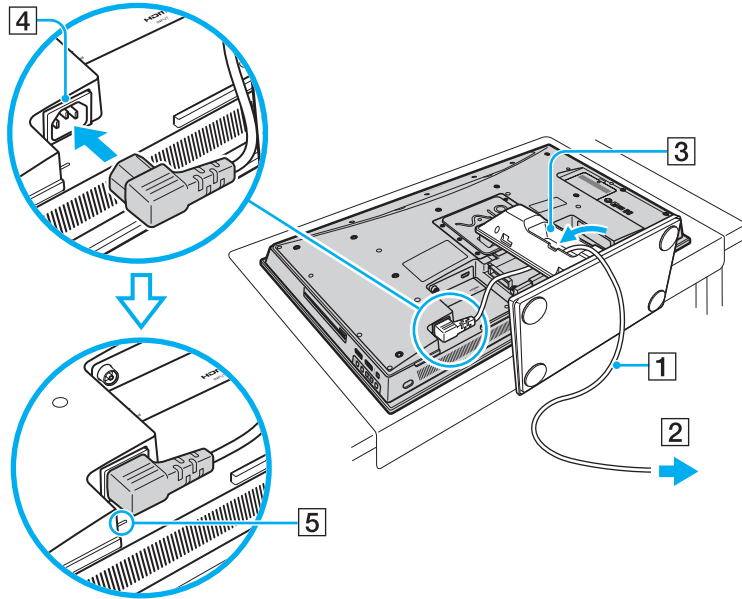


Use only the supplied power cord for your computer.

To connect the power cord and other cables

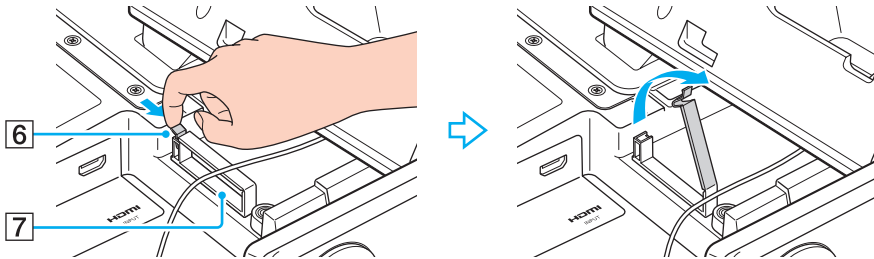
- 1 Remove the back panel cover and the base stand cover from the computer.
See **Removing and Replacing the Covers** ([page 16](#)) for the procedure.

- 2 Plug one end of the power cord (1) into the AC outlet (2), put the other end through the hole (3) in the base stand, and plug it into the AC In port (4) on the computer as illustrated below.

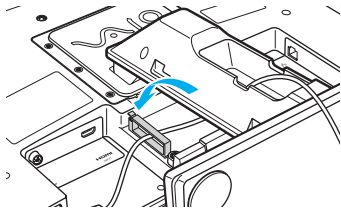


! Be sure to push the plug into the AC In port all the way to the guide line (5).

- 3 Connect other cables to the computer, if necessary.
 - ❑ To set up TV connections available on models with the TV tuner board, see **Using the TV Function (page 52)**.
 - ❑ To connect an HDMI cable to the **HDMI INPUT** port for using the HDMI Input function (page 61).
 - ❑ To connect your computer to an Ethernet network, see **Using the Network (LAN) (page 79)**.
- 4 Slightly pull the tab (6) of the cable clamp (7) with your fingertip in the direction of the arrow and gently pull it up to open the cable clamp.



- 5 Route the cable(s) through the cable clamp and then snap the cable clamp back shut.



- 6 Replace the stand cover and the back panel cover.
See **Removing and Replacing the Covers (page 16)** for the procedure.



To disconnect your computer completely from AC power, unplug the power cord when the computer is off.

Make sure that the AC outlets are easily accessible.



If you unplug the power cord from your computer while the computer is on or in Sleep mode, you may lose all unsaved data.

Connecting the Wireless Keyboard

A wireless keyboard and four AA alkaline batteries for use in the keyboard are supplied with your computer. Before attempting to use the wireless keyboard, you must install the batteries and establish communication between the computer and the keyboard.




If you find your keyboard not working, for example after replacing the keyboard batteries, try the following steps for reconnection.

To connect the wireless keyboard




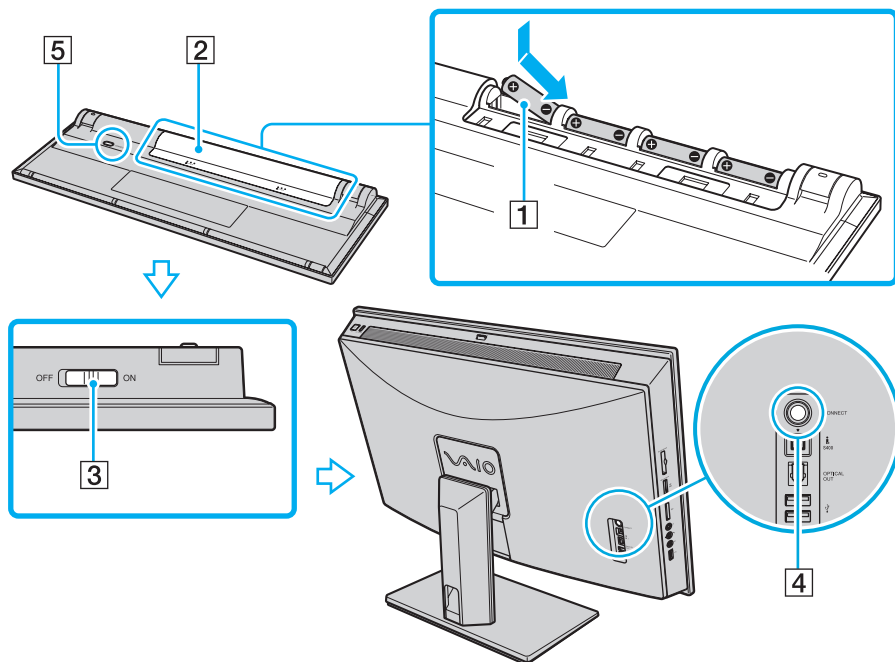
To connect the wireless keyboard, it must be located within a range of 30 cm to 1 m from the computer.

- 1 Insert the supplied four AA batteries (1) into the battery compartment (2) on the bottom of the wireless keyboard.
- 2 Turn on the computer.
- 3 Slide the power switch (3) on the back of the keyboard to the **ON** position.
- 4 Press the **CONNECT** button (4) on the back of the computer.
- 5 Press the **CONNECT** button (5) on the bottom of the keyboard within 10 seconds from step 4.

The connect indicator  turns on in the LCD window on the keyboard when connection is established between the computer and the keyboard. If not, repeat the procedure.



If the wireless keyboard is left unused for 20 minutes or longer, the connect indicator  will turn off to conserve battery power. This indicates that the connection between your computer and the keyboard is lost. Press the **Fn** key to check that the connect indicator turns on before using the keyboard.



You can check the battery indicator ( or ) in the LCD window on the wireless keyboard for its battery power level.

If the wireless keyboard does not operate properly, the batteries may need to be replaced. If you do not intend to use the wireless keyboard for an extended period of time, remove the batteries to avoid possible damage from battery leakage.

If you want to put the wireless keyboard in a more 'ergonomic' position, flip open the keyboard feet.

Connecting the Wireless Mouse

A wireless mouse and two AA alkaline batteries for use in the mouse are supplied with your computer. Before attempting to use the wireless mouse, you must install the batteries and establish communication between your computer and the mouse.



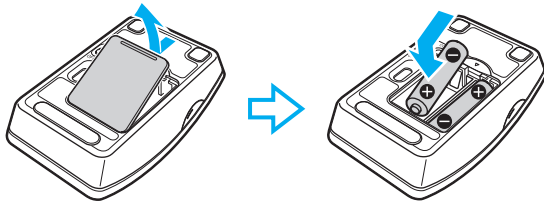
If you find your mouse not working, for example after replacing the mouse batteries, try the following steps for reconnection.

To connect the wireless mouse



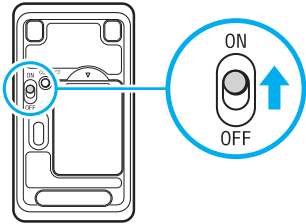
To connect the wireless mouse, it must be located within a range of 30 cm to 1 m from the computer.

- 1 Insert the supplied two AA batteries into the wireless mouse as shown below:

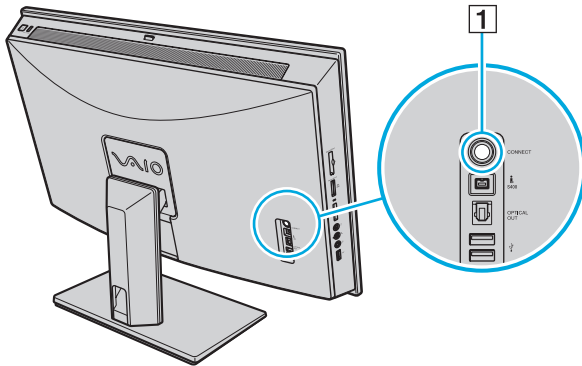


- 2 Turn on the computer.

- Slide the power switch on the bottom of the mouse to the **ON** position.



- Press the **CONNECT** button (1) on the back of the computer.



- Press the **CONNECT** button on the bottom of the mouse within 10 seconds from step 4. Communication between the mouse and the computer should now be established.



If the wireless mouse does not operate properly, the batteries may need to be replaced. If you do not intend to use the wireless mouse for an extended period of time, remove the batteries to avoid possible damage from battery leakage.

Preparing for Wall Mounting

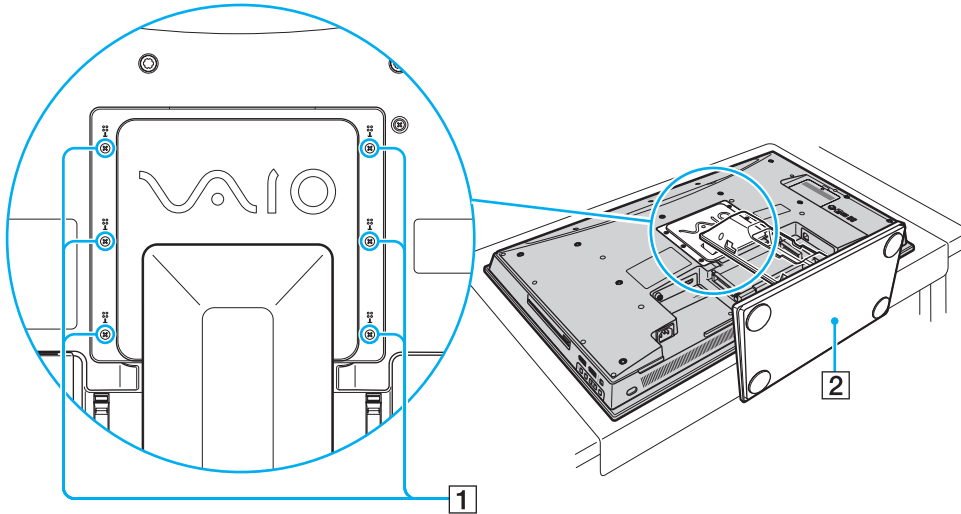
Your computer is equipped with four holes on its back panel, which look similar to those compliant with the Video Electronics Standards Association (VESA) mounting standard, for connecting to your mounting system.

! Be sure to establish wireless communication between your computer and the wireless mouse and keyboard before mounting the computer on the wall.

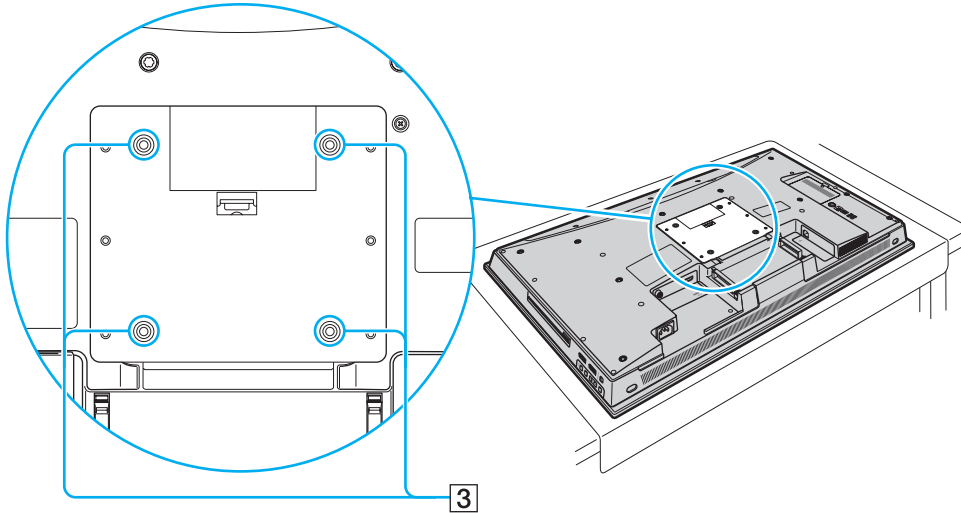
It is recommended that you allow adequate clearance between the wall and the back of your computer when mounting the computer on the wall so that you can access the ports and buttons on the back of the computer.

To reveal the mounting holes

- 1 Remove the back panel cover from the computer.
See **Removing and Replacing the Covers (page 16)** for the procedure.
- 2 Unscrew the six screws (1) and remove the base stand (2).




- 3 Use the four holes (3) for mounting by following the instructions described in the manual that came with your mounting system.



Shutting Down Your Computer Safely

To avoid losing unsaved data, be sure to shut down your computer properly, as described below.

To shut down your computer

- 1 Turn off any peripherals connected to the computer.
- 2 Click **Start**, the arrow  next to the **Lock** button, and then **Shut Down**.
- 3 Respond to any prompts warning you to save documents or to consider other users and wait for the computer to turn off automatically.
The power indicator light turns off.

Updating Your Computer

Be sure to install the latest updates on your computer with the following software applications so that the computer can run more efficiently.

Windows Update

Click **Start, All Programs**, and **Windows Update** and then follow the on-screen instructions.

VAIO Update 4

Click **Start, All Programs, VAIO Update 4**, and **VAIO Update Options** and then follow the on-screen instructions.



Your computer must be connected to the Internet to download the updates.

Using Your VAIO Computer

This section describes how to get the most out of using your VAIO computer.

- ❑ **Using the Keyboard** ([page 35](#))
- ❑ **Using the Touch Pad** ([page 39](#))
- ❑ **Using the Mouse** ([page 40](#))
- ❑ **Using the Built-in Camera** ([page 43](#))
- ❑ **Using the Optical Disc Drive** ([page 45](#))
- ❑ **Using the TV Function** ([page 52](#))
- ❑ **Using the HDMI Input Function** ([page 61](#))
- ❑ **Using the Memory Stick** ([page 66](#))
- ❑ **Using Other Modules / Memory Cards** ([page 71](#))
- ❑ **Using the Internet** ([page 78](#))
- ❑ **Using the Network (LAN)** ([page 79](#))
- ❑ **Using the Wireless LAN** ([page 81](#))
- ❑ **Using the Bluetooth Function** ([page 88](#))

Using the Keyboard

A wireless keyboard is supplied with your computer.

The wireless keyboard uses a standard key arrangement with additional keys that perform specific functions.

Using the Wireless Keyboard

! To maintain good communication, operate the wireless keyboard within the distance limitations of keyboard: 10 m from your computer.

Confirm that the supplied AA batteries are properly installed.

Press the **CONNECT** button located on the back of your computer first, and then press the **CONNECT** button on the bottom of the wireless keyboard.

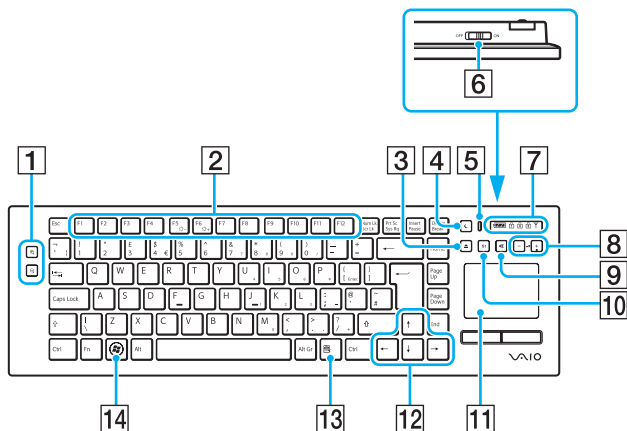
If you find your keyboard not working after replacing the keyboard batteries, reconnect the keyboard. See **Connecting the Wireless Keyboard (page 25)** for the detailed procedure.

Avoid using any wireless devices that exchange radio signals on the 2.4 GHz frequency band near the wireless keyboard. These devices may cause interference, causing the keyboard to stop working properly.

Do not place metal furniture or objects near your computer or wireless keyboard, as this may create interference, causing the keyboard to stop working properly.

Do not mix old (used) and new batteries when replacing batteries in the wireless keyboard. Always use the same type and manufacture of the battery.




Do not mix alkaline with manganese batteries. Using incompatible batteries or mixing used, new or different types of batteries can damage the wireless keyboard.





Illustrated above is the English keyboard as an example.

- 1** Zoom buttons
Changes the size of an image or a document displayed on some software.
Press to make the view look smaller and further away (zoom out).
Press to make the view look bigger and closer (zoom in).
See the help file included with the **VAIO Control Center** for more information.
 - 2** Function keys
Perform certain tasks. The task associated with each function key varies among software applications except the following combinations with the **Fn** key to change the LCD brightness of your computer screen.
Fn+F5: Decreases lighting intensity of the LCD screen.
Fn+F6: Increases lighting intensity of the LCD screen.
- !** When the HDMI input is selected, you cannot use the function keys on the wireless keyboard to change the LCD brightness. To change the brightness for the HDMI input, see **Using the HDMI Input Control Buttons (page 63)** for the procedure.
- 3** Disc drive eject button
Ejects the optical disc from the drive.
 - 4** Sleep button
Provides a lower level of power consumption.
For details on power management, see **Using the Power Saving Mode (page 107)**.
 - 5** Power indicator
A green bar appears when the power switch is turned on.
 - 6** Power switch
Slide the switch to turn the wireless keyboard on and off.


7 Indicators

 (Battery):  indicates that the AA batteries for the wireless keyboard are sufficient and switches to  when the batteries wear out.

 (Num lock): Turns on when the **Num Lk** key is activated.

 (Caps lock): Turns on when the **Caps Lock** key is activated.

 (Scroll lock): Turns on when the **Scr Lk** key is activated.

 (Connect): Turns on when connection between the computer and the wireless keyboard is established and the keyboard is ready for use ([page 25](#)).

8 Volume control buttons

Increase (+) or decrease (-) the volume.



When the HDMI input is selected, you cannot use the volume control buttons on the wireless keyboard to change the volume. To change the volume for the HDMI input, see **Using the HDMI Input Control Buttons** ([page 63](#)) for the procedure.

9 Muting button

Turns the volume on and off.

10 S1 button

Executes the task that is assigned to the button by default. You can change the default assignment with the **VAIO Control Center**.

11 Touch pad

See **Using the Touch Pad** ([page 39](#)) for more information.

12 Directional arrow keys

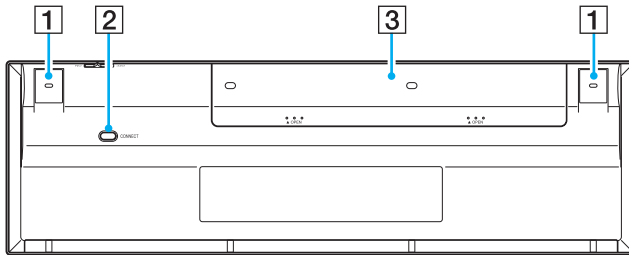
Move the pointer on the computer screen.

13 Applications key

Displays a shortcut menu in certain software applications.

14 Windows key

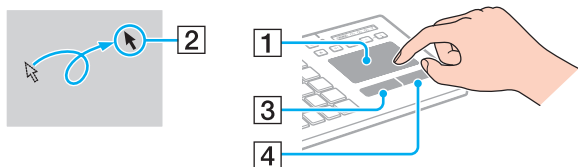
Displays the **Start** menu.



- 1** Keyboard feet
Flip open to adjust the keyboard angle.
- 2** **CONNECT** button [\(page 25\)](#)
Press to enable the wireless keyboard to communicate with the computer.
- 3** Battery compartment
Storage compartment for the AA batteries.

Using the Touch Pad

You can point to, select, drag, and scroll objects on the screen using the touch pad.



Action	Description
Point	Slide your finger on the touch pad (1) to place the pointer (2) on an item or object.
Click	Press the left button (3) once.
Double-click	Press the left button twice.
Right-click	Press the right button (4) once. In many applications, this action displays a shortcut menu.
Drag	Slide your finger on the touch pad while pressing the left button.
Scroll	Slide your finger along the right edge of the touch pad to scroll vertically. Slide your finger along the bottom edge to scroll horizontally (the scroll function is available only with applications that support a touch pad scroll feature).



You can disable/enable the touch pad with the **Fn+F11** keys while a mouse is connected to your computer. To change other touch pad settings, use the **VAIO Control Center**.

You can disable/enable the Motion Pointer feature with the **Fn+F1** keys that keeps moving the pointer or scrolling when your fingertip reached an edge of the touch pad.

If pointer movement or scrolling continues against your intention, your fingertip may have reached an edge of the touch pad. In such a case, take your finger off the touch pad. It is recommended that you put your finger on the touch pad around its center to start an operation.

Using the Mouse

A wireless mouse is supplied with your computer.

Using the Wireless Mouse

The wireless optical mouse has no cables to plug in and uses a light-emitting diode (LED) instead of a ball.

! To maintain good communication, operate the wireless mouse within the distance limitations of mouse: 10 m from your computer.

Confirm that the supplied AA batteries are properly installed.

Press the **CONNECT** button located on the back of your computer first, and then press the **CONNECT** button on the bottom of the wireless mouse.

If you find your mouse not working after replacing the mouse batteries, reconnect the mouse. See **Connecting the Wireless Mouse (page 27)** for the detailed procedure.

Avoid using any wireless devices that exchange radio signals on the 2.4 GHz frequency band near the wireless mouse. These devices may cause interference, causing the mouse to stop working properly.

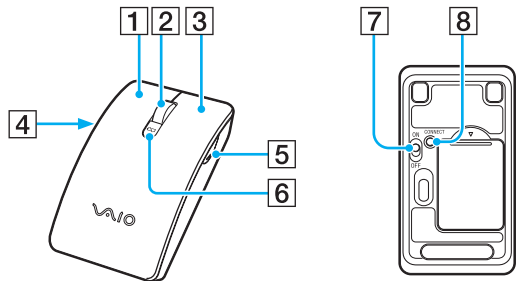
Use surfaces such as plain paper, card stock, or fabric that have minimal repetitive patterns.

Avoid using the wireless mouse on surfaces such as mirrors, smooth glass, or magazines that have half- tone printing.

Do not place metal furniture near your computer or wireless mouse, as this may create interference, causing the mouse to stop working properly.

Do not mix old (used) and new batteries when replacing batteries in the wireless mouse. Always use the same type and manufacture of the battery.

Do not mix alkaline with manganese batteries. Using incompatible batteries or mixing used, new or different types of batteries can damage the wireless mouse.



- 1** Left button
Click or double-click the left button to select items. To drag and drop items, hold the left button down while sliding the mouse, then release the button to drop the item.
- 2** Central wheel
Rotate the central wheel to scroll up or down a page. Press the wheel once to lock the scroll action and control the movement by moving the entire mouse (the scroll function is available only with applications that support it).
- 3** Right button
Press the right button once to display a context-sensitive shortcut menu (if any).
- 4** Left side button
Press the left side button to go back to the previous page. Pressing it works in the same way as pressing the back button on the **Internet Explorer**. To change the button assignment, press and hold the central wheel.
- 5** Right side button
Press the right side button to go forward to the page you viewed before. Pressing it works in the same way as pressing the forward button on the **Internet Explorer**. To change the button assignment, press and hold the central wheel.
- 6** Battery indicator
Blinks when the mouse batteries are running out of power.
- 7** Power switch
Slide the switch to turn the mouse on and off.
- 8** **CONNECT** button ([page 27](#))
Press to enable communication between the computer and the wireless mouse.

Adjusting the Mouse Functions

- 1 Click **Start** and **Control Panel**.
- 2 Click **Mouse** under **Hardware and Sound**.
The **Mouse Properties** window appears.
- 3 Change the settings.

Using the Built-in Camera

Your computer is equipped with a built-in **MOTION EYE** camera.

With the preinstalled image capture software, you can perform the following operations:

- ❑ Capturing still images and movies
- ❑ Sensing and capturing object movements for monitoring purposes
- ❑ Editing captured data



Turning on the computer activates the built-in **MOTION EYE** camera.

Video conference is possible with the appropriate software.



Launching or exiting your instant messaging or video editing software does not activate or deactivate the built-in **MOTION EYE** camera.

Do not place your computer into Sleep mode while you are using the built-in **MOTION EYE** camera.

You cannot operate the built-in **MOTION EYE** camera with the **Microsoft Windows Movie Maker** software.

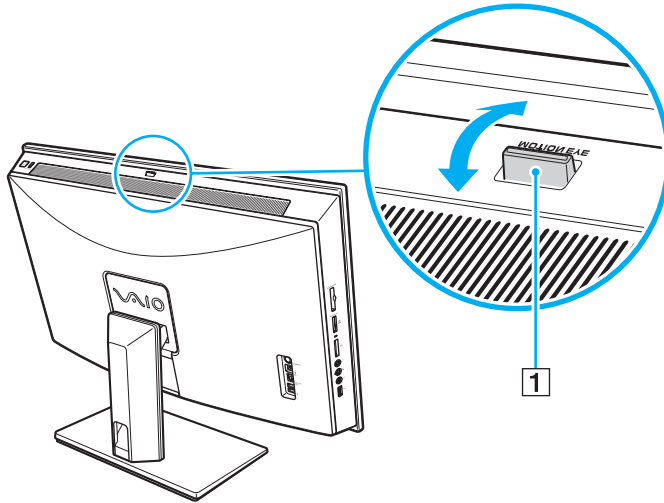
To use the preinstalled image capture software

- 1 Click **Start**, **All Programs**, **ArcSoft WebCam Companion 2**, and **WebCam Companion 2**.
- 2 Click the desired icon in the main window.
For detailed information on how to use the software, see the help file included with the software.



When capturing an image or a movie in a dark place, click the **Capture** icon or the **Record** icon in the main window, and then click the **WebCam Settings** icon and select the low light or low light compensation option in the properties window.

You can change the capture angle of the built-in **MOTION EYE** camera with the capture angle adjuster (1) on the back of your computer. Push down or up the horizontal bar to adjust the angle upward or downward, respectively, until you see the live feed in the desired angle.



Using the Optical Disc Drive

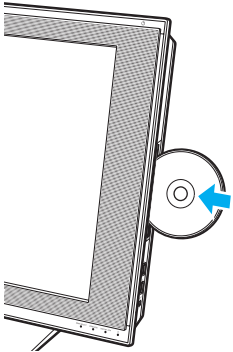
Your computer is equipped with an optical disc drive.

To insert a disc

! Be sure to attach the 8 cm disc adapter to an 8 cm disc before inserting the disc into the optical disc drive slot.

Slide the disc straight into the slot so as not to apply excessive pressure to the disc or slot.

- 1 Turn on the computer.
- 2 With the label side facing toward you, slide a disc into the optical disc drive slot.



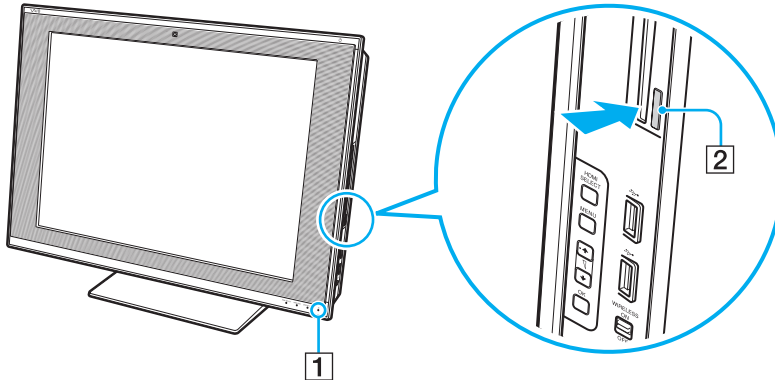
To remove a disc

! The drive eject button is disabled when your computer is turned off.

Do not remove the optical disc when your computer is in Sleep mode. Be sure to bring the computer back into Normal mode before removing the disc.

Be sure not to pull out the optical disc forcefully before it completely slides out.

- 1 Check that the disc drive indicator light (1) is unlit.
 - 2 Press the drive eject button (2) or the disc drive eject button on the wireless keyboard.
- The optical disc slides out.



Alternatively, you can remove a disc with some mouse operations.

To do so, click **Start** and **Computer**, right-click the optical disc drive icon, and select **Eject**.

If pressing either button does not slide the disc out of the drive, restart your computer and repeat the procedure.

Supported Disc Media

Your computer plays and records CDs, DVDs, and Blu-ray Disc™ media, depending on the model you purchased. See the reference chart below to find out which type of optical disc drive supports which types of media.

PR: playable and recordable
P: playable but not recordable
–: not playable or recordable

	CD-ROM	Video CD	Music CD	CD Extra	CD-R/RW	DVD-ROM	DVD-Video	DVD-R/RW	DVD+R/RW	DVD+R DL (Double Layer)	DVD-R DL (Dual Layer)	DVD-RAM*1 *2	BD-ROM	BD-R/RE*3
DVD±RW/±R DL/RAM	P	P	P	P	PR	P	P	PR	PR	PR	PR	PR	–	–
Blu-ray Disc	P	P	P	P	PR	P	P	PR	PR	PR	PR	PR	P	PR*4
Blu-ray Disc Combo	P	P	P	P	PR*5	P	P	PR	PR	PR	PR	PR	P	P

*1 The DVD±RW/RAM disc drive on your computer does not support the DVD-RAM cartridge. Use non-cartridge discs or discs with a removable cartridge.

*2 Writing data to single-sided DVD-RAM discs (2.6 GB) compliant with DVD-RAM Version 1.0 is not supported. DVD-RAM Version 2.2/12X-SPEED DVD-RAM Revision 5.0 disc is not supported.

*3 The Blu-ray Disc drive on your computer does not support BD-RE Disc media in Version 1.0 format and Blu-ray Disc media with a cartridge.

*4 Supports writing data to BD-R Version 1.1/1.2/1.3 discs (single-layer discs with the capacity of 25 GB, dual-layer discs with the capacity of 50 GB) and BD-RE Version 2.1 discs (single-layer discs with the capacity of 25 GB, dual-layer discs with the capacity of 50 GB).

*5 Writing data to Ultra Speed CD-RW discs is not supported.

! This product is designed to play back discs that conform to the Compact Disc Digital Audio standard specifications (CD Standard). A DualDisc is a two sided disc product which mates DVD recorded material on one side with digital audio material on the other side. Be aware that the audio side (non-DVD side) of a DualDisc may not play on this product because it does not conform to the CD Standard.

When you buy pre-recorded or blank discs for use with your VAIO computer, be sure to read the notices on the disc package carefully to check both playback and recording compatibility with your computer's optical disc drives. Sony does NOT guarantee the compatibility of VAIO optical disc drives with discs that are not compliant with the official "CD," "DVD," or "Blu-ray Disc" standard. USING NON-COMPLIANT DISCS CAN CAUSE FATAL DAMAGE TO YOUR VAIO PC OR CREATE SOFTWARE CONFLICTS AND CAUSE SYSTEM HANGING.

For inquiries about disc formats, contact the individual publisher of the pre-recorded disc or the manufacturer of the recordable disc.



8 cm disc writing is not supported.

With the supplied 8cm disc adapter, the Blu-ray Disc drive is capable of reading 8cm DVD-R, DVD-RW, DVD+RW, and DVD+R DL discs, but not 8cm CD-ROM, DVD-RAM discs and Blu-ray Disc media.

! To play copyright protected Blu-ray Disc media continually, update the AACS key. The AACS key update requires Internet access.

As with other optical media devices, circumstances may limit compatibility or prevent Blu-ray Disc media playback. VAIO computers may not support movie playback on packaged media recorded in AVC or VC1 formats at high bit rates.

Region settings are required for some contents on DVD and BD-ROM Disc media. If the region setting on the optical disc drive does not match the region coding on the disc, playback is not possible.

Some contents may restrict video output to standard definition or prohibit analog video output. It is strongly recommended that a digital HDCP compliant environment be implemented for optimum compatibility and viewing quality.

Do not use memory-resident utility software when playing or writing a disc. This may cause the computer to malfunction.

Notes on Using the Optical Disc Drive

Notes on writing data to a disc

- ❑ Only use circular discs. Do not use discs in any other shape (star, heart, card, etc.), as this may damage the optical disc drive.
- ❑ Do not strike or shake your computer while the optical disc drive is writing data to a disc.
- ❑ Do not plug or unplug the power cord while the optical disc drive is writing data to a disc.

Notes on playing discs

To achieve optimum performance when playing discs, you should follow these recommendations:

- ❑ Some CD players and computer optical disc drives may not be able to play audio CDs created with the CD-R or CD-RW media.
- ❑ Some DVD players and computer optical disc drives may not be able to play DVDs created with the DVD+R DL, DVD-R DL, DVD+R, DVD+RW, DVD-R, DVD-RW, or DVD-RAM media.
- ❑ You may not be able to play some of Blu-ray Disc contents on your computer, or the computer may become unstable during Blu-ray Disc playback. To play such contents normally, download and install the latest updates for the **WinDVD BD** using the **VAIO Update**.
For information on how to use the **VAIO Update**, see **Updating Your Computer (page 33)**.
- ❑ Depending on system environment, you may find sound interruptions and/or dropped frames during AVC HD playback.
- ❑ Do not place your computer into the power saving mode while your computer is playing a disc.

Notes on region codes

- ❑ Region code indicators are labeled on the discs or packages to indicate in which region and on what type of player you can play the disc. Unless the region code indicates "2" (Europe belongs to region "2"), "5" (Russia belongs to region "5"), or "all" (this means that you can play this disc in most regions of the world), you cannot play the disc on your computer.

! If you change the region code while the **WinDVD** or **WinDVD BD** software is running, restart the software or eject the disc and re-insert it to make the new setting effective.
- ❑ Do not try to change the region code settings of the drive. Any difficulties caused by changing the region code settings of the drive are not covered by the warranty.

Playing Discs

To play a disc

- 1 Insert a disc into the optical disc drive.

! Close all running software applications before playing a disc.

- 2 If nothing appears on the desktop, click **Start, All Programs**, and the desired software to play the disc. For instructions on how to use the software, see the help file included with the software.

Copying Files to Discs

To copy files to a disc

- 1 Insert a recordable disc into the optical disc drive.

! Close all running software applications before copying files to a disc.

- 2 If nothing appears on the desktop, click **Start, All Programs**, and the desired disc burning software to copy files to the disc. For instructions on how to use the software, see the help file included with the software.

Using the TV Function

Your computer may have a dual DVB-T TV tuner board installed. The **Windows Media Center** included in the **Microsoft Windows Vista Ultimate** or **Home Premium** operating system enables TV program viewing, recording and playback.

The dual DVB-T TV-tuner supports the following broadcast:

- ❑ Digital terrestrial TV (DVB-T):
System: DVB-T
Video system: MPEG2*
Frequency band: 48.25 MHz - 855.25 MHz



Features and options in this section may not be available on your computer.
See the specifications to find out about the configuration of your computer.




Any functions related to digital terrestrial television (DVB-T) will only work in countries or areas where free-to-air DVB-T MPEG2* digital terrestrial TV signals are broadcasted. Make sure you can receive a free-to-air DVB-T MPEG2* signal in your area.



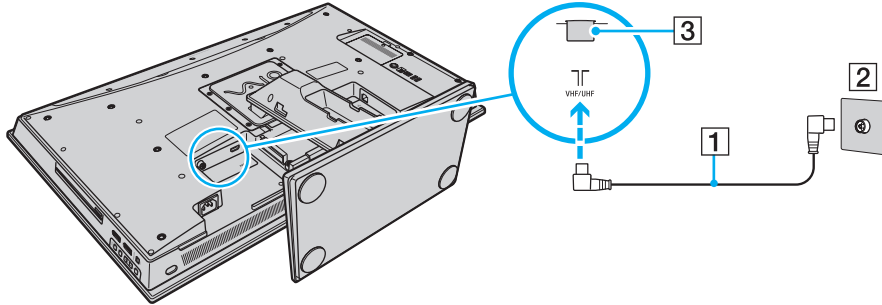
On models with a dual DVB-T TV tuner board, you can record up to two digital channels at the same time, or watch a TV program while recording another.

* MPEG4/H.264 AVC also applies to French models sold in France when using the **TV Enhance pour VAIO**. See **Setting up TV Enhance pour VAIO (page 60)** for more information.

To connect your computer to land-based (terrestrial) or cable TV services

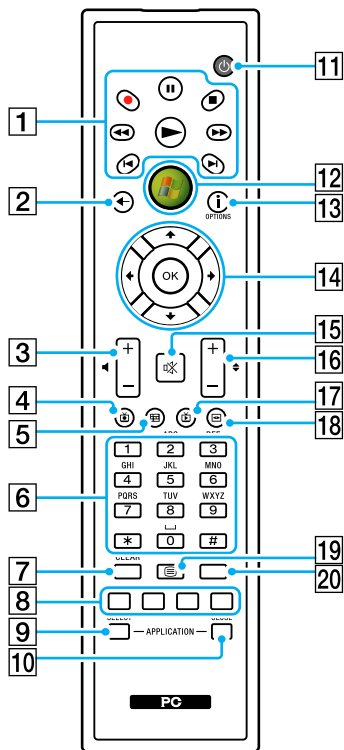
 You need to remove the back panel cover from the computer and the base stand cover from the base stand before setting up the TV connection. See **Removing and Replacing the Covers (page 16)** for the procedure. For information on how to connect cables to the computer, see **Connecting a Power Source and Cables (page 21)**.

- 1 Connect one end of a TV coaxial cable (1) to the **VHF/UHF** input port (3) on the computer.
- 2 Connect the other end of the cable to your TV wall outlet/cable service access (2).



Using the Remote Commander

If your computer supports the TV function, then a remote commander is supplied with the computer for using a wide variety of AV related software applications, including the **Windows Media Center**.



Illustrated above is the English remote commander as an example.

- 1** Pause button
Press to pause media playback. Press again to resume playback.
Stop button
Press to stop media playback or TV recording session.
Forward button
Press to fast-forward media at three speeds.
Skip button
Press to move media forward, for example, one audio track, one DVD chapter, and 30 seconds of recorded TV or video.
Replay button
Press to move media backward, for example, one audio track, one DVD chapter, and 7 seconds of TV or video.
Rewind button
Press to move media backward at three speeds.
Record button
Press to begin recording.
Play button
Press to begin media playback.
 - 2** Back button
Press to return to the previous window.
 - 3** Volume control buttons
Press to increase (+) or decrease (-) the volume.
- !**
When the HDMI input is selected, you cannot use the volume control buttons on the remote commander to change the volume. To change the volume for the HDMI input, see **Using the HDMI Input Control Buttons** (page 63) for the procedure.
- 4** Recorded TV button
Press to view previously recorded TV programs.

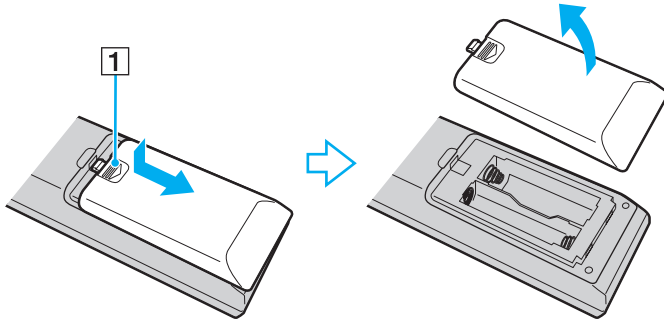
- 5 Guide button
Press to view the TV program guide for your area.
- 6 Alphanumeric buttons
Press to select specific channels or enter text. (Press **ENTER** or **OK** to activate the channel selection.)
- 7 **CLEAR** button
Press to backspace and delete entered text.
- 8 Teletext TV program mode buttons
 - Red button
Press to jump to the red shortcut link in teletext TV program mode.
 - Green button
Press to jump to the green shortcut link in teletext TV program mode.
 - Yellow button
Press to jump to the yellow shortcut link in teletext TV program mode.
 - Blue button
Press to jump to the blue shortcut link in teletext TV program mode.
- 9 **APPLICATION SELECT** button
Press to switch among open applications. This button works the same as the **Alt+Tab** keys.
- 10 **APPLICATION CLOSE** button
Press to close the active application window.
- 11 Sleep button
Press to place the computer into Sleep mode to reduce power consumption.
- 12 Start button
Press to open the **Start** menu of the **Windows Media Center**.
- 13 More button / **OPTIONS** button
Press to view additional options that are available for features on software applications, such as the **Windows Media Center**.
- 14 Directional arrow buttons
Press the **↑**, **↓**, **←**, and **→** buttons to move the pointer on the screen.
OK button
Press to select the desired action or window option. When watching full-screen TV, press to return to the previous channel. Press again to switch between channels.
- 15 Muting button
Press to turn off the sound. Press again to restore the sound.
- 16 Channel/Page buttons
Press to change or page up/down channels (no number input required).
- 17 Live TV button
Press to view TV programs.
- 18 DVD menu button / **MENU** button
Press to open the main menu on the playback media, such as a DVD media.
- 19 Teletext TV program mode selection button
Press to activate/deactivate teletext TV program mode.
- 20 **ENTER** button
Press to activate a feature or an action, such as channel selection or a return to the previous channel. (This button's actions are similar to using the **OK** button.)

Before you use the remote commander

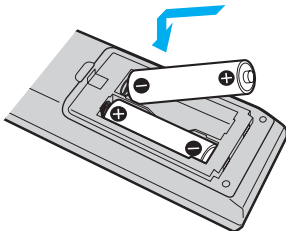
Before using the remote commander, you need to insert the supplied AA manganese batteries to enable communication between the computer and the remote commander.

To insert batteries

- 1 Turn the remote commander over.
- 2 Slightly push down the dented area (1), slide the battery cover in the direction of the arrow, and remove the cover.



- 3 Insert the supplied two AA batteries into the remote commander.



- 4 Put the battery cover back on the remote commander and slide it in the reverse direction of the arrow illustrated above until the cover clicks into place.



If the remote commander does not operate properly, you may need to replace the batteries. When the remote commander is not going to be used for an extended period of time, remove the batteries to avoid possible damage from battery leakage.

Setting up the Windows Media Center

The first time you launch the **Windows Media Center**, the setup wizard will pop up. To configure the TV tuner, click **Custom setup** and follow the on-screen instructions. In the **Optional Setup** window, click **Configure tuners, TV signal, and Guide** and follow the on-screen instructions.

In case the TV tuner was not configured during the first run of the **Windows Media Center**, you can do this by selecting **set up TV** in the **TV + Movies** section.

When you want to change TV input signal (TV Signal or TV Signal Type) or change location, click **settings** in the **Tasks** section and then click **TV**.

In this case, a new channel scan needs to be done, the previous channel list and **Guide** information is lost, and scheduled timer recordings are canceled.



On models with a dual DVB-T TV tuner board, you can record up to two digital channels at the same time, or watch a TV program while recording another.

Setting up TV Enhance pour VAIO

The **TV Enhance pour VAIO** is available on French models sold in France only.

The **TV Enhance pour VAIO** allows you to watch and record free-to-air standard definition and high definition digital terrestrial TV, improving your multimedia experience.

To launch the application, start the **Windows Media Center** and go to **TNT** and select:

- TV en direct**: to start watching live TV.
- TV enregistrée**: to access your TV recordings.
- Guide**: to consult the electronic program guide.
- TV + menu**: to watch live TV and have easy access to settings.

The first time you launch the **TV Enhance pour VAIO**, the setup wizard will pop up. Follow the on-screen instructions to configure the application.

When you want to re-scan channels or to change location, go to the **Menu** and **Paramètres**, and then click **Paramètres signal** or **Rechercher les chaînes**. See the help file included with the software for more information.



On models with a dual DVB-T TV tuner board, you can record up to two digital channels at the same time, or watch a TV program while recording another.

The supplied remote commander can also be used in the **TV Enhance pour VAIO** but the following buttons are reserved for the **Windows Media Center**: Live TV, Recorded TV, Guide, DVD and More.

Using the HDMI Input Function

Your computer is equipped with an **HDMI INPUT** port that enables you to connect a device with the HDMI output port, such as an HDD video recorder and a video game player, to the computer. With the HDMI Input function, the computer can receive the high-definition video and sound outputs from the connected device and you can view and hear them on the computer without turning on your computer and starting Windows.



You cannot record the HDMI input, such as a TV program, displayed on your computer with the HDMI Input function.

Connecting the HDMI Device

You need an HDMI cable to connect the HDMI device to your computer and display the HDMI input from the device on the computer.



An HDMI cable is not supplied with your computer.

Be sure to use an HDMI cable approved by HDMI Licensing, LLC.

To connect your computer to the HDMI device



You need to remove the back panel cover from the computer and the base stand cover from the base stand before setting up the HDMI connection. See **Removing and Replacing the Covers (page 16)** for the procedure. For information on how to connect cables to the computer, see **Connecting a Power Source and Cables (page 21)**.

- 1 Connect an HDMI cable to the HDMI output port on the device and the other end to the **HDMI INPUT** port on the computer.
- 2 Turn on the connected device.
The **HDMI SELECT** button and the **HDMI SELECT** indicator light illuminate in green. If not, press the **HDMI SELECT** button to switch the display input to the HDMI input.









You do not need to turn on your computer to switch the display input.

Using the HDMI Input Control Buttons

The HDMI input control buttons allow you to switch the display and sound input between the computer input and the HDMI input from the connected device and change the display and sound settings for the HDMI input.

The following table describes the task assigned to each control button.

HDMI input control buttons	Assigned tasks	
	While the HDMI input is selected	While the computer input is selected
HDMI SELECT button 	Switches the display and sound input to the computer input.  While the HDMI input is selected, the HDMI SELECT indicator light illuminates in green.	Switches the display and sound input to the HDMI input.
MENU button 	Shows the On-Screen Display (OSD) menu window on the display.	Shows the On-Screen Display (OSD) menu window on the display.
Up/Down buttons 	Changes the sound volume. While the OSD menu is displayed, you can use these buttons for selecting options.	While the OSD menu is displayed, use these buttons for selecting options.  To change the sound volume, use the volume control buttons on the wireless keyboard or the supplied remote commander.
OK button 	While the OSD menu is displayed, you can use this button to confirm your selection.	While the OSD menu is displayed, you can use this button to confirm your selection.

Using the OSD Menu

You can change the display and sound settings for the HDMI input with the OSD menu.



! While the computer input is selected, you cannot change the brightness and sound volume from the OSD menu. For details on changing these settings, see **Using the Wireless Keyboard (page 35)**.

While the HDMI input is selected, you cannot use the function keys or the volume control buttons on the wireless keyboard to change the brightness and sound volume.

To use the OSD menu

- 1 Press the **MENU** button.
- 2 Make a selection for your desired setting.

The following shows some of the examples on changing the features and functions of the HDMI input.

Language mode	To select the language mode of the OSD menu 1 Select OPTION and LANGUAGE . 2 Select the desired language.
SONY logo lamp	To change the default SONY logo lamp activity for the HDMI input mode 1 Select OPTION and LOGO LAMP . 2 Select ON or OFF .  To change the settings while the computer input is selected, see Changing the default SONY logo lamp activity (page 106) for the procedure.
Input Sensing feature	You can select three kinds of Input Sensing modes. AUTO ON mode automatically selects the HDMI input when the connected device is turned on while your computer is off or in Sleep mode. AUTO OFF (Normal) / AUTO OFF (Power Save) mode does not switch the input mode automatically. AUTO OFF (Normal) mode is selected by default. To select the Auto Input Sensing feature 1 Select OPTION and INPUT SENSING . 2 Select the desired mode.  Selecting AUTO OFF (Power Save) reduces power consumption.

Using the Memory Stick

The Memory Stick is a compact, portable, and versatile IC recording media especially designed for exchanging and sharing digital data with compatible products, such as digital cameras, mobile phones, and other devices. Because it is removable, it can be used for external data storage.

Before You Use the Memory Stick

The Memory Stick slot on your computer can accommodate both standard- and Duo-size media and supports Memory Stick PRO, Memory Stick PRO Duo, and Memory Stick PRO-HG Duo with high-speed data transfer and large data capacity capabilities.

For the latest information about the Memory Stick, visit the Memory Stick web site at <http://www.memorystick.com/en/>.

!
Be sure to hold the Memory Stick with the arrow pointing in the correct direction as you insert it into the slot. To avoid damaging your computer or the media, do not force the Memory Stick into the slot if you cannot insert it smoothly.

Before using a Memory Stick Micro (M2), be sure to insert it into an M2 Standard-size adaptor or M2 Duo adaptor. If you insert the media directly into the Memory Stick slot without the adaptor, you may not be able to remove it from the slot.

The Memory Stick Micro in an M2 Duo adaptor may not operate properly if it is additionally inserted into a Memory Stick Duo adaptor.

To remove a Memory Stick

!
Do not remove the Memory Stick while the Media Access indicator light is lit. If you do, you may lose data. Large volumes of data may take time to load, so make sure the indicator is unlit before removing the Memory Stick.

- 1** Check that the Media Access indicator light is unlit.
- 2** Push in the Memory Stick toward the computer and release.
The Memory Stick ejects.
- 3** Pull the Memory Stick out of the slot.

!
Always remove the Memory Stick gently, or it may pop out unexpectedly.

Formatting a Memory Stick

To format a Memory Stick

The Memory Stick has been formatted in the factory default setting and is ready for use. If you want to reformat the media with your computer, follow these steps.

! Be sure to use the device that is designed to format the media and supports the Memory Stick when formatting the media.

Formatting the Memory Stick erases the entire data on the media. Before formatting the media, make sure that it does not contain your valuable data.

Do not remove the Memory Stick from the slot while formatting. This could cause a malfunction.

- 1 Carefully slide the Memory Stick into the slot until it clicks into place.
- 2 Click **Start** and **Computer** to open the **Computer** window.
- 3 Right-click the Memory Stick icon and select **Format**.
- 4 Click **Restore device defaults**.

! The size of the allocation unit and file system may change.

Do not select **NTFS** from the **File system** drop-down list as it may cause a malfunction.



The formatting process will be completed more quickly if you select **Quick Format** in **Format options**.

- 5 Click **Start**.
- 6 Follow the on-screen instructions.

! It may take time to format the Memory Stick depending on the media type.

Notes on Using the Memory Stick

- ❑ Your computer has been tested and found compatible with Sony branded Memory Stick with capacity of up to 16 GB that are available as of January 2009. However, not all the Memory Stick that meet the same specifications as the compatible media are guaranteed of compatibility.
- ❑ Inserting a Memory Stick with multiple conversion adaptors is not guaranteed of compatibility.
- ❑ MagicGate is the general name of the copyright protection technology developed by Sony. Use a Memory Stick with the MagicGate logo to use this feature.
- ❑ Except for your personal use, it is against the copyright law to use any audio and/or image data you recorded without prior consent from the respective copyright holders. Accordingly, the Memory Stick with such copyrighted data can be used only within the law.
- ❑ The Memory Stick slot on your computer does not support 8-bit parallel data transfer (high-speed data transfer).
- ❑ Do not insert more than one Memory Stick into the slot. Improper insertion of the media may damage both your computer and the media.

Using Other Modules / Memory Cards

Using the ExpressCard Module

Your computer is equipped with an ExpressCard/34 slot* for transferring data among digital cameras, camcorders, music players, and other audio/video devices. This slot can only accommodate an ExpressCard/34 (34 mm wide) module*.

* Referred to as the ExpressCard slot and the ExpressCard module in this manual.



If the module does not go into the slot easily, remove it gently and verify you are inserting it in the proper direction.

Make sure you use the most recent driver software provided by the ExpressCard module manufacturer.

To remove an ExpressCard module



Insert the ExpressCard slot protector to block any particles from entering the slot when not using an ExpressCard module. Before moving your computer, be sure to insert the ExpressCard slot protector into the slot.



To remove an ExpressCard module when your computer is off, skip steps 1 to 4.

- 1 Double-click the **Safely Remove Hardware** icon on the taskbar.
- 2 Select the hardware you want to unplug.
- 3 Click **Stop**.
- 4 Follow the on-screen instructions to remove the ExpressCard module.
- 5 Push in the ExpressCard module toward the computer so that the module pops out.
- 6 Gently take hold of the ExpressCard module and pull it out of the slot.

Using the SD Memory Card

Your computer is equipped with an **SD** memory card slot. You can use this slot to transfer data among digital cameras, camcorders, music players, and other audio/video devices.

Before you use the SD memory card

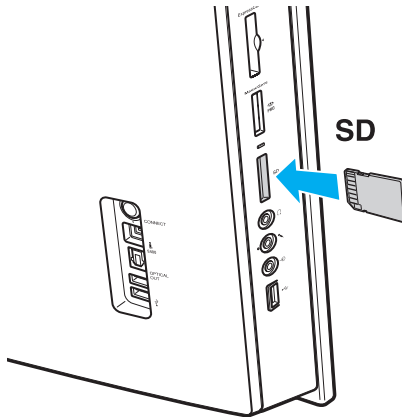
The **SD** memory card slot on your computer supports the following memory cards:

- SD memory card
- SDHC memory card
- MultiMediaCard (MMC)

For the latest information on compatible memory cards, see **Finding More about Your VAIO Computer** ([page 5](#)) to visit the appropriate support web site.

To insert an SD memory card

- 1 Locate the **SD** memory card slot ([page 14](#)).
- 2 Hold the SD memory card with the arrow pointing toward the slot.
- 3 Carefully slide the SD memory card into the slot until it clicks into place.
Do not force the card into the slot.



If the SD memory card does not go into the slot easily, remove it gently and verify you are inserting it in the proper direction.

To remove an SD memory card

- 1 Check that the Media Access indicator light is unlit.
- 2 Push in the SD memory card toward the computer and release.
The SD memory card ejects.
- 3 Pull the SD memory card out of the slot.

Notes on Using Memory Cards

General notes on using the memory card

- ❑ Be sure to use memory cards that are compliant with the standards supported by your computer.
- ❑ Be sure to hold the memory card with the arrow pointing in the correct direction as you insert it into the slot. To avoid damaging your computer or the media, do not force the memory card into the slot if you cannot insert it smoothly.
- ❑ Use care when inserting or removing the memory card from the slot. Do not force it in or out of the slot.
- ❑ Do not remove the memory card while the media access indicator light is lit. If you do, you may lose data.
- ❑ Do not attempt to insert an memory card or memory card adaptor of a different type into the memory card slot. An incompatible memory card or memory card adaptor may cause difficulty in removing from the slot and can cause damage to your computer.

Notes on using the SD memory card

- ❑ Your computer has been tested and found compatible only with major memory cards available as of January 2009. However, not all memory cards that meet the same specifications as the compatible media are guaranteed of compatibility.
- ❑ SD memory cards with capacity of up to 2 GB and SDHC memory cards with capacity of up to 32 GB have been tested and found compatible with your computer.
- ❑ The SD memory card slot on your computer does not support the high-speed data transfer feature of the SD memory card and the SDHC memory card.

Using the Internet

Before using the Internet, you need to sign up with an Internet Service Provider (ISP) and set up devices required for connecting your computer to the Internet.

The following types of Internet connection services may be available from your ISP:

- Fiber to the Home (FTTH)
- Digital Subscriber Line (DSL)
- Cable modem
- Satellite
- Dial-up

For detailed information on devices required for the Internet and how to connect your computer to the Internet, ask your ISP.



To connect your computer to the Internet using the wireless LAN function, you need to set up the wireless LAN network. See **Using the Wireless LAN (page 81)** for more information.



When you connect your computer to the Internet, be sure to take appropriate security measures to protect the computer against online threats.

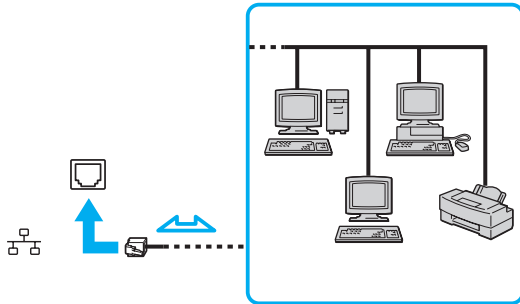
Depending on the service contract with your ISP, you may need to connect an external modem device, for example a USB telephone modem, a DSL modem, or a cable modem, to your computer to connect to the Internet. For the detailed instructions on connection setups and modem configuration, see the manual that came with your modem.

Using the Network (LAN)

You can connect your computer to 1000BASE-T/100BASE-TX/10BASE-T type networks with an Ethernet network cable. Connect one end of a network cable (not supplied) to the network (Ethernet) port on the back of the computer and the other end to your network. For detailed settings and devices needed to connect to the network, ask your network administrator.



You need to remove the back panel cover from the computer to access the network (Ethernet) port. See **Removing and Replacing the Covers** (page 16) for the procedure.



Your computer can be connected to the network with the default settings.

!

Do not plug a telephone cable into the network (Ethernet) port on your computer.

If the network (Ethernet) port is connected to one of the telephone lines mentioned below, high electric current to the port may cause damage, overheating, or fire.

- Home (intercom speakerphone) or business-use telephone lines (multi-line business telephone)
- Public telephone subscriber line
- Private branch exchange (PBX)

Using the Wireless LAN

Using the Wireless LAN (WLAN), all your digital devices with the built-in WLAN function communicate freely with each other through a network. A WLAN is a network in which a user can connect to a Local Area Network (LAN) through a wireless (radio) connection.

You can communicate without an access point, which means that you can communicate with a limited number of computers (ad-hoc). Or you can communicate through an access point, which allows you to create a full infrastructure network.



In some countries, using WLAN products may be restricted by the local regulations (e.g. limited number of channels). Therefore, before activating the WLAN function, read the wireless LAN regulations guide carefully.

WLAN uses the IEEE 802.11a^{*}/b/g standard or the IEEE 802.11n^{*} draft standard, which specifies the type of technology used. The standard includes the encryption methods: Wired Equivalent Privacy (WEP), which is a security protocol, Wi-Fi Protected Access 2 (WPA2), and Wi-Fi Protected Access (WPA). Proposed jointly by the IEEE and Wi-Fi Alliance, both WPA2 and WPA are specifications of standards based on interoperable security enhancements that increase the level of data protection and access control for existing Wi-Fi networks. WPA is designed to be forward compatible with the IEEE 802.11i specification. It utilizes the enhanced data encryption Temporal Key Integrity Protocol (TKIP) in addition to user authentication using 802.1X and Extensible Authentication Protocol (EAP). Data encryption protects the vulnerable wireless link between clients and access points. Besides that, there are other typical LAN security mechanisms to ensure privacy, such as: password protection, end-to-end encryption, virtual private networks, and authentication. WPA2, the second generation of WPA, provides stronger data protection and network access control and is also designed to secure all versions of 802.11 devices, including 802.11b, 802.11a, 802.11g, and 802.11n draft standard, multi-band and multi-mode. In addition, based on the ratified IEEE 802.11i standard, WPA2 provides government grade security by implementing the National Institute of Standards and Technology (NIST) FIPS 140-2 compliant AES encryption algorithm and 802.1X-based authentication. WPA2 is backward compatible with WPA.

* See the specifications to find out about the configuration of your computer.

The IEEE 802.11b/g standard is a wireless LAN standard, using the 2.4 GHz band. The IEEE 802.11g standard provides higher-speed communications than the IEEE 802.11b standard.

The IEEE 802.11a standard is a wireless LAN standard, using the 5 GHz band.

The IEEE 802.11n draft standard is a wireless LAN standard, using the 2.4 GHz or 5 GHz band.

Wireless LAN devices using the 2.4 GHz band cannot communicate with devices using the 5 GHz band because the frequencies are different.

The 2.4 GHz band used by wireless LAN compatible devices is also used by other various devices. Although technologies to minimize interference from other devices that use the same band are employed on wireless LAN compatible devices, such interference may cause lower communication speed, narrower communication range, or broken wireless connections.

The communication speed varies depending on the distance between communication devices, existence of obstacles between such devices, the device configuration, the radio conditions, and the software in use. In addition, communications may be cut off depending on the radio conditions.

The communication range varies depending on the actual distance between communication devices, existence of obstacles between such devices, the radio conditions, the ambient environment that includes existence of walls and materials of such walls, and the software in use.

Actual communication speed may not be as fast as the one displayed on your computer.

Deploying IEEE 802.11b and IEEE 802.11g products on the same wireless network may reduce the communication speed due to radio interference. Taking this into consideration, the IEEE 802.11g products are designed to reduce the communication speed to ensure communications with IEEE 802.11b products. When the communication speed is not as fast as expected, changing the wireless channel on the access point may increase the communication speed.

Communicating without an Access Point (Ad-hoc)

An ad-hoc network is a network in which a LAN is created only by wireless devices themselves, with no other central controller or access point. Each device communicates directly with other devices in the network. You can set up an ad-hoc network easily at home.



To communicate without an access point (ad-hoc)

! The IEEE 802.11a standard, using the 5 GHz band, and the IEEE 802.11n draft standard, using the 2.4 GHz or 5 GHz band, are not available on ad-hoc networks.

- 1 Turn on the **WIRELESS** switch.
- 2 Click **Start, All Programs, and VAIO Control Center**.
- 3 Click **Network Connections** and **VAIO Smart Network**.
- 4 Click **Advanced** in the right pane.



For information on the **VAIO Smart Network** software, see the help file included with the software.

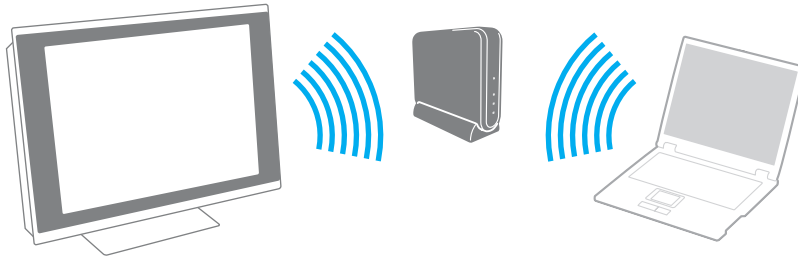
- 5 Click the button next to or above your desired wireless option(s).
Make sure the **WIRELESS** indicator light turns on.
- 6 Click **Start** and **Control Panel**.
- 7 Click **View network status and tasks** under **Network and Internet**.
- 8 Click **Set up a connection or network** in the left pane.
The **Set up a connection or network** window appears.
- 9 Select an option to specify the ad-hoc network settings and click **Next**.
- 10 Follow the on-screen instructions.

Communicating with an Access Point (Infrastructure)

An infrastructure network is a network that extends an existing wired local network to wireless devices by providing an access point (not supplied). The access point bridges the wireless and wired LAN and acts as a central controller for the wireless LAN network. The access point coordinates transmission and reception from multiple wireless devices within a specific range.

The access point will select which channel to use on an infrastructure network.

! For details on how to select the channel that will be used by the access point, see the manual that came with your access point.



To connect to a wireless network

- 1 Make sure an access point is set up.
See the manual that came with your access point for more information.
- 2 Turn on the **WIRELESS** switch.
- 3 Click **Start, All Programs**, and **VAIO Control Center**.
- 4 Click **Network Connections** and **VAIO Smart Network**.
- 5 Click **Advanced** in the right pane.





For information on the **VAIO Smart Network** software, see the help file included with the software.

- 6 Click the button next to or above your desired wireless option(s).
Make sure the **WIRELESS** indicator light turns on.



Wireless LAN communication (IEEE 802.11a standard) using only the 5 GHz band, available on selected models only, is disabled by default. To enable 5 GHz band communication, you need to select the option to use the 5 GHz band or both the 2.4 GHz and 5 GHz bands on the **WLAN** tab in the **VAIO Smart Network** settings window.

- 7 Right-click  or  on the taskbar and select **Connect to a network**.
- 8 Select the desired access point and click **Connect**.



For WPA-PSK or WPA2-PSK authentication, you must enter a passphrase. The passphrase is case sensitive and must be a text string between 8 and 63 characters in length or a hexadecimal string of 64 characters.

Stopping Wireless LAN Communications

To stop wireless LAN communications

Click the button next to or above the **WLAN** icon in the **VAIO Smart Network** window.

! Turning off the wireless LAN function while accessing remote documents, files, or resources may result in data loss.

Using the Bluetooth Function

You can establish wireless communications between your computer and other Bluetooth® devices such as another computer or a mobile phone. You can transfer data between these devices without cables at a range of up to 10 meters in an open area.

Notes on using the Bluetooth function

- ❑ The data transfer rate varies, depending on the following conditions:
 - ❑ Obstacles, such as walls, located between devices
 - ❑ Distance between devices
 - ❑ Material used in walls
 - ❑ Proximity to microwaves and cordless telephones
 - ❑ Radio frequency interference and other environmental conditions
 - ❑ Device configuration
 - ❑ Type of software application
 - ❑ Type of operating system
 - ❑ Use of both wireless LAN and Bluetooth functions at the same time on your computer
 - ❑ Size of file being exchanged
- ❑ Large files may occasionally be corrupted during continuous transfer due to limitations of the Bluetooth standard and electromagnetic interference in the environment.
- ❑ All Bluetooth devices must be certified to make sure that the applicable standard requirements are maintained. Even if standards are met, individual device performance, specifications, and operation procedures can vary. Data exchange may not be possible in all situations.

- ❑ Video and audio may not be synchronized if you play videos on your computer with audio output from a connected Bluetooth device. This is a frequent occurrence with Bluetooth technology and is not a malfunction.
- ❑ The 2.4 GHz band, with which Bluetooth devices or wireless LAN devices work, is used by various devices. Bluetooth devices use the technology to minimize the interference from other devices that use the same wave length. Simultaneous use of the Bluetooth function and wireless communication devices, however, may cause radio interference and result in reduced communication speeds and distances than the standard values.



Read the Bluetooth regulations guide before using the Bluetooth function.

- ❑ The Bluetooth function may not work with other devices, depending on the manufacturer or the software version employed by the manufacturer.
- ❑ Connecting multiple Bluetooth devices to your computer may cause channel congestion, resulting in poor performance of the devices. This is normal with Bluetooth technology and is not a malfunction.

Bluetooth Security

The Bluetooth wireless technology has an authentication function, which allows you to determine with whom you choose to communicate. With the authentication function, you can prevent any anonymous Bluetooth devices from accessing your computer.

The first time two Bluetooth devices communicate, a common passkey (a password required for authentication) should be determined for both devices to be registered. Once a device is registered, there is no need to re-enter the passkey.

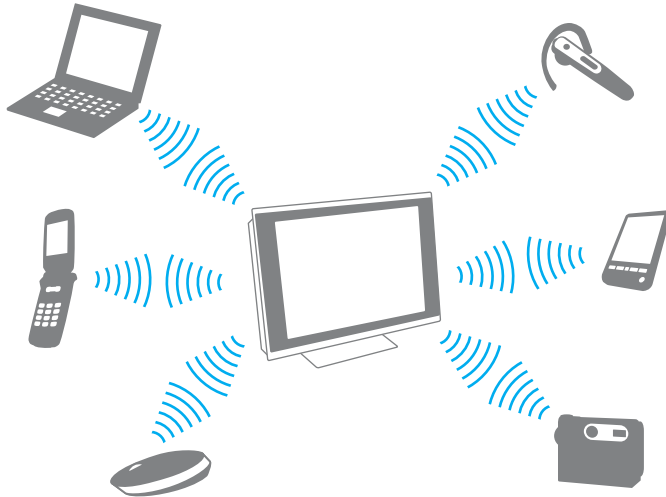


The passkey can be different each time, but must be the same at both ends.

For certain devices, such as a mouse, no passkey can be entered.

Communicating with Another Bluetooth Device

You can connect your computer to a Bluetooth device such as another computer, a mobile phone, a PDA, a headset, a mouse, or a digital camera without the use of any cables.



To communicate with another Bluetooth device

To communicate with another Bluetooth device, you first need to set up the Bluetooth function. For setting up and using the Bluetooth function, search for Bluetooth information using **Windows Help and Support**.

- 1 Turn on the **WIRELESS** switch.
- 2 Click **Start, All Programs**, and **VAIO Control Center**.
- 3 Click **Network Connections** and **VAIO Smart Network**.
- 4 Click **Advanced** in the right pane.



For information on the **VAIO Smart Network** software, see the help file included with the software.

- 5 Click the button next to or above the **Bluetooth** icon in the **VAIO Smart Network** window. Make sure the **WIRELESS** indicator light turns on.

Stopping Bluetooth Communications

To stop Bluetooth communications

- 1 Turn off the Bluetooth device that is communicating with your computer.
- 2 Click the button next to or above the **Bluetooth** icon in the **VAIO Smart Network** window.

Using Peripheral Devices

You can add functionality to your VAIO computer by using the various ports on the computer.

- ❑ **Connecting External Speakers or Headphones** ([page 95](#))
- ❑ **Connecting a USB Device** ([page 96](#))
- ❑ **Connecting an i.LINK Device** ([page 98](#))

Connecting External Speakers or Headphones

You can connect external sound output devices (not supplied), such as speakers or headphones, to your computer.

Since your computer is capable of outputting digital signals through the **OPTICAL OUT** port, you can connect an S/PDIF device such as digital headphones or an audio/video amplifier to the port and enhance the sound quality of your computer. For more information, see the manual that came with your S/PDIF device.

! To hear sound from the S/PDIF device connected to the **OPTICAL OUT** port, you need to change the sound output device. For the detailed instructions, see **How do I change the sound output device?** (page 171).

To connect external speakers

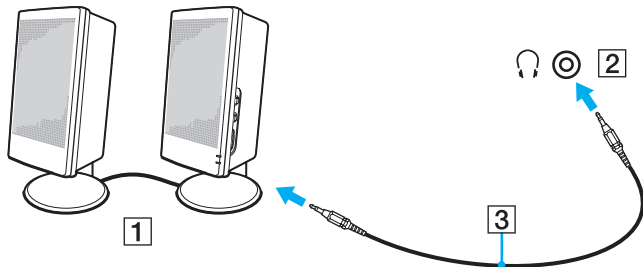


Make sure your speakers are designed for computer use.



Turn down the volume of the speakers before you turn them on.

Connect external speakers (1) to the headphones jack (2) with a speaker cable (3) (not supplied).

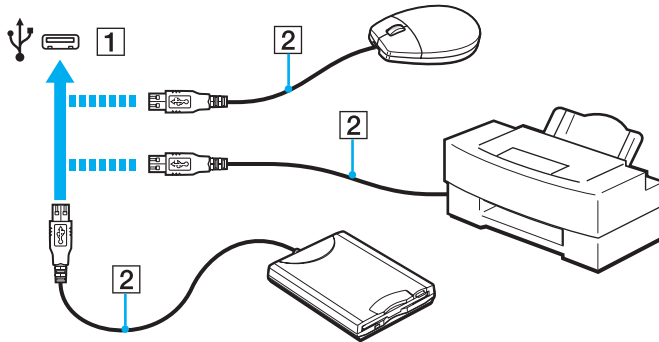


Connecting a USB Device

You can connect a Universal Serial Bus (USB) device to your computer, such as a mouse, floppy disk drive, speaker, and printer.

To connect a USB device

- 1 Choose the USB port (1) you prefer to use.
- 2 Plug the USB device cable (2) into the USB port.



Notes on connecting a USB device

- ❑ You may need to install the driver software supplied with your USB device before use. See the manual that came with the USB device for more information.
- ❑ Be sure to use a USB printer compatible with your version of Windows to print documents.
- ❑ For information on how to remove a USB device, see the manual that came with the device.
- ❑ To protect your computer and/or USB devices from damage, observe the following:
 - ❑ When moving the computer with USB devices connected, avoid exposing the USB ports to shock or impact.
 - ❑ Do not put the computer into a bag or carrying case when it has USB devices connected.

Connecting an i.LINK Device

Your computer is equipped with an i.LINK port which you can use to connect an i.LINK device, such as a digital video camcorder.



i.LINK is a trademark of Sony Corporation used only to designate that a product contains an IEEE 1394 connection. The procedure to establish an i.LINK connection may vary, depending on a software application, an operating system, and a compatible i.LINK device. Not all products with an i.LINK connection can communicate with each other. See the manual that came with your compatible i.LINK device for more information on operating conditions and proper connection. Before connecting compatible i.LINK PC peripherals to your system, such as a CD-RW or hard disk drive, confirm their operating system compatibility and required operating conditions.

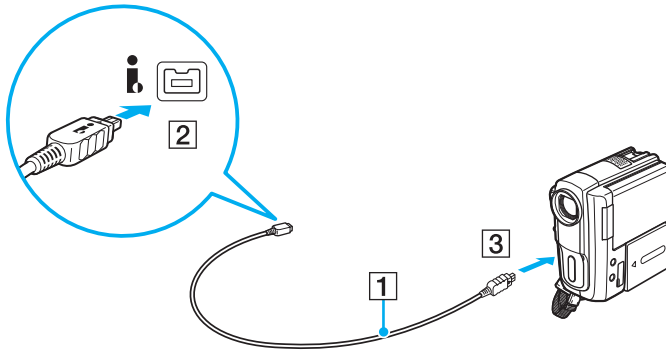
Notes on connecting i.LINK devices

- ❑ The i.LINK port on your computer does not supply power to an external device. If the external device requires external power, be sure to connect it to a power source.
- ❑ The i.LINK port supports transfer rates up to 400 Mbps. However, the actual transfer rate depends on the transfer rate of the external device.
- ❑ The optional i.LINK cables may not be available in some countries or areas.
- ❑ An i.LINK connection with other compatible devices is not fully guaranteed.
- ❑ The i.LINK connection may not be available depending on the software applications, operating system, and i.LINK-compatible devices you use. See the manual that came with your software for more information.
- ❑ Check the working conditions and operating system compatibility of i.LINK-compatible PC peripherals (for example, an HDD or a CD-RW drive) before you connect them to your computer.

Connecting a Digital Video Camcorder

To connect a digital video camcorder

Plug one end of an i.LINK cable (1) (not supplied) into the i.LINK port (2) on the computer and the other end into the DV In/Out port (3) on the digital video camcorder.



 The connection procedure varies depending on your compatible i.LINK device. See the manual that came with the device for more information.

You cannot access the pictures stored on a Memory Stick when using an i.LINK connection.

Customizing Your VAIO Computer

This section briefly describes how to change the main settings of your VAIO computer. Among other things, you will learn how to use and customize the look of your Sony software and utilities.

- ❑ **Setting the Password** ([page 101](#))
- ❑ **Using the VAIO Control Center** ([page 106](#))
- ❑ **Using the Power Saving Mode** ([page 107](#))

Setting the Password

Use one of the BIOS functions to set the password.

Once you have set the password, you will be prompted to enter the password after the VAIO logo appears to start your computer. The power-on password allows you to protect your computer from unauthorized access.

Adding the Power-on Password

The power-on password is provided to protect your computer from unauthorized access.

There are two types of the power-on passwords: the machine password and the user password. The machine password is provided for users with administrative rights on the computer to change all the setup options in the BIOS setup screen, as well as to start the computer. The user password is provided for the standard users to allow for changing some of the BIOS setup options, as well as starting the computer. To set the user password, you must first set the machine password.



Once you have set the power-on password, you cannot start your computer without entering the password. Be sure not to forget the password. Write down your password and keep it safe and private from other people.

If you forget the power-on password and need assistance to reset it, a password reset fee will be charged, and your computer may need to be sent in for service to reset the password.

To add the power-on password (machine password)

- 1 Turn on the computer.
- 2 Press the **F2** key when the VAIO logo appears.
The BIOS setup screen appears. If not, restart the computer and press the **F2** key several times when the VAIO logo appears.
- 3 Press the **←** or **→** key to select **Security** to display the **Security** tab, select **Set Machine Password**, and then press the **Enter** key.
- 4 On the password entry screen, enter the password twice and press the **Enter** key.
The password can be up to 32 alphanumeric characters (including spaces) long.
- 5 Select **Password when Power On** under **Security** and press the **Enter** key.
- 6 Change the setting from **Disabled** to **Enabled**.
- 7 Press the **←** or **→** key to select **Exit**, select **Exit Setup**, and then press the **Enter** key.
At the confirmation prompt, press the **Enter** key.

To add the power-on password (user password)

!

Make sure you set the machine password before setting the user password.

- 1 Turn on the computer.
- 2 Press the **F2** key when the VAIO logo appears.
The BIOS setup screen appears. If not, restart the computer and press the **F2** key several times when the VAIO logo appears.
- 3 Enter the machine password and press the **Enter** key.
- 4 Press the **←** or **→** key to select **Security** to display the **Security** tab, select **Set User Password**, and then press the **Enter** key.
- 5 On the password entry screen, enter the password twice and press the **Enter** key.
The password can be up to 32 alphanumeric characters (including spaces) long.
- 6 Press the **←** or **→** key to select **Exit**, select **Exit Setup**, and then press the **Enter** key.
At the confirmation prompt, press the **Enter** key.

Changing/Removing the Power-on Password

To change or remove the power-on password (machine password)

- 1 Turn on the computer.
- 2 Press the **F2** key when the VAIO logo appears.
The BIOS setup screen appears. If not, restart the computer and press the **F2** key several times when the VAIO logo appears.
- 3 Enter the machine password and press the **Enter** key.
- 4 Press the **←** or **→** key to select **Security** to display the **Security** tab, select **Set Machine Password**, and then press the **Enter** key.
- 5 On the password entry screen, enter the current password once and a new password twice, and then press the **Enter** key.
To remove the password, leave the **Enter New Password** and **Confirm New Password** fields blank and press the **Enter** key.
- 6 Press the **←** or **→** key to select **Exit**, select **Exit Setup**, and then press the **Enter** key.
At the confirmation prompt, press the **Enter** key.

To change or remove the power-on password (user password)

- 1 Turn on the computer.
- 2 Press the **F2** key when the VAIO logo appears.
The BIOS setup screen appears. If not, restart the computer and press the **F2** key several times when the VAIO logo appears.
- 3 Enter the user password and press the **Enter** key.
- 4 Press the **←** or **→** key to select **Security** to display the **Security** tab, select **Set User Password**, and then press the **Enter** key.
- 5 On the password entry screen, enter the current password once and a new password twice, and then press the **Enter** key.
To remove the password, leave the **Enter New Password** and **Confirm New Password** fields blank and press the **Enter** key.
- 6 Press the **←** or **→** key to select **Exit**, select **Exit Setup**, and then press the **Enter** key.
At the confirmation prompt, press the **Enter** key.

Using the VAIO Control Center

The **VAIO Control Center** utility allows you to access system information and to specify preferences for system behavior.

To use the VAIO Control Center

- 1 Click **Start, All Programs,** and **VAIO Control Center**.
- 2 Select the desired control item and change the settings.
- 3 Once finished, click **OK**.
The setting of the desired item has been changed.



For more information about each option, see the help file included with the **VAIO Control Center**.

Some of the control items will not be visible if you open the **VAIO Control Center** as a standard user.

Changing the default SONY logo lamp activity

The **SONY** logo lamp illuminates when you turn on your computer. You can change this default activity of the lamp to make it stay unlit by following these steps:

- 1 Click **Start, All Programs,** and **VAIO Control Center**.
- 2 Click **Display** and **Logo Lamp Control**.
- 3 Follow the on-screen instructions.

! You cannot change this option for the HDMI input. To change settings, see **Using the OSD Menu (page 64)** for the procedure.

Using the Power Saving Mode

In addition to the normal operating mode, your computer has a distinct power saving mode called Sleep mode.

Using Normal Mode

This is the normal state of the computer when it is in use. The green power indicator light is lit in this mode.

Using Sleep Mode

Sleep mode turns off the LCD screen and places the built-in storage device(s) and the CPU into a low power consumption mode. The orange power indicator light illuminates in this mode.

! Turn off your computer if you do not intend to use it for a long period of time.

To activate Sleep mode

Click **Start**, the arrow next to the **Lock** button, and **Sleep**.



Alternatively, you can press the sleep button on the wireless keyboard or the remote commander to place your computer into Sleep mode.

When your computer is in Sleep mode, you cannot insert a disc.

To return to Normal mode

- Press any key on the wireless keyboard or the sleep button on the remote commander.
- Press the power button on your computer.

! Make sure that the batteries of your wireless keyboard and remote commander are properly installed and not worn out.

If you press and hold the power button for more than four seconds, your computer will turn off automatically. You will lose all unsaved data.

If the computer is not used for a certain period of time, it will enter Sleep mode. To modify this, you can change the Sleep mode settings.

To change the Sleep mode settings

- 1 Click **Start**, **Control Panel**, **Hardware and Sound**, and **Power Options**.
- 2 Click **Change plan settings** under the current power plan.
- 3 Change the time to place the computer into Sleep mode and click **Save Changes**.

Upgrading Your VAIO Computer

Your VAIO computer and memory modules use high precision components and electronic connectors technology. To avoid invalidation of the warranty during your product warranty period, we recommend that:

- ❑ You should contact your dealer to install a new memory module.
- ❑ You should not install it yourself, if you are not familiar with upgrading memory on a computer.
- ❑ You should not touch the connectors or open the memory module compartment cover.

Contact VAIO-Link if you need assistance.



The type of module and the amount of memory installed on your computer may differ depending on the model you purchased. See the specifications to find out about the configuration of your computer.

- ❑ **Adding and Removing Memory (page 111)**
- ❑ **Adding the Hard Disk Drive (page 118)**

Adding and Removing Memory

If you want to expand the functionality of your computer, you can increase the amount of memory by installing optional memory modules. Before you upgrade your computer's memory, read the notes and procedures in the following pages.

Notes on adding/removing memory modules

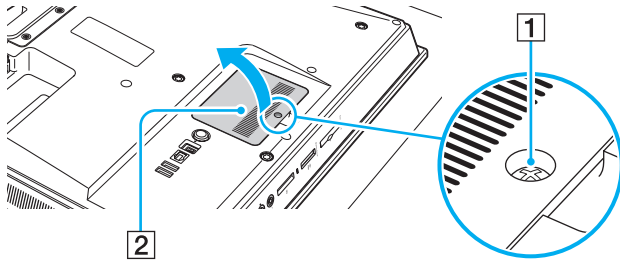
- ❑ Be careful when changing memory. Improper installation of memory modules may cause damage to your system. This damage may void your manufacturer's warranty.
- ❑ Only use memory modules that are compatible with your computer. If a memory module is not detected by the computer or the Windows operating system becomes unstable, contact the sales dealer or the manufacturer of your memory module.
- ❑ Electrostatic discharge (ESD) can damage electronic components. Before touching a memory module, ensure the following:
 - ❑ The procedures described in this document assume user familiarity with the general terminology associated with personal computers and with the safety practice and regulatory compliance requirements for using and modifying electronic equipment.
 - ❑ Turn off your computer and disconnect it from the power cord and from any telecommunication links, networks, or modems before you remove any cover or panel from the computer. Failure to do so may result in personal injury or equipment damage.
 - ❑ ESD can damage memory modules and other components. Install the memory module only at an ESD workstation. If such a station is not available, do not work in a carpeted area, and do not handle materials that produce or hold static electricity (cellophane wrappers, for example). Ground yourself by maintaining contact with an unpainted metal portion of the chassis while performing the procedure.
 - ❑ Do not open the memory module package before you are ready to change the module. The package protects the module from ESD.

- Use the special bag supplied with the memory module or wrap the module in aluminum foil to protect it from ESD.
- Introducing any liquids, foreign substances, or objects into the memory module slots or other internal components of your computer will result in damage to the computer and any repair costs will not be covered by the warranty.
- Do not place the memory module in a location subject to:
 - Heat sources such as radiators or air ducts
 - Direct sunlight
 - Excessive dust
 - Mechanical vibration or shock
 - Strong magnets or speakers that are not magnetically shielded
 - Ambient temperature of more than 35°C or less than 5°C
 - High humidity
- Handle the memory module with care. To avoid injuries to your hands and fingers, do not touch the edges of the components and circuit boards inside your computer.

Removing and Installing a Memory Module

To change or add a memory module

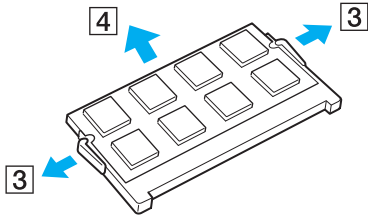
- 1 Shut down the computer, turn off all peripheral devices, and disconnect peripheral devices from the accessible ports and jacks.
- 2 Remove the back panel cover from the computer.
See **Removing and Replacing the Covers (page 16)** for the procedure.
- 3 Disconnect the power cord and the rest of the peripheral devices.
- 4 Wait about an hour until the computer cools down.
- 5 Unscrew the screw (1) and remove the memory module compartment cover (2).



- 6 Touch a metal object to discharge static electricity.

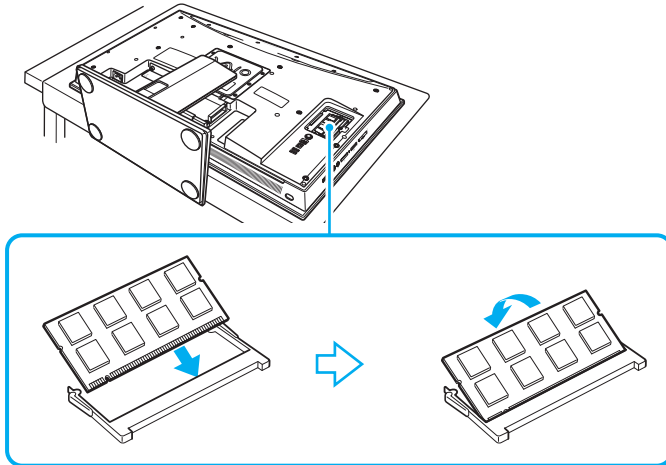
7 Remove the currently installed memory module as follows:

- Pull the latches in the direction of the arrows (3).
The memory module is released.
- Make sure that the memory module tilts up and then pull it out in the direction of the arrow (4).



8 Remove the new memory module from its packaging.

- 9 Slide the memory module into the memory module slot and push it in until it clicks into place.



! Do not touch any other components on the motherboard.

If you want to install only one memory module, be sure to use the lower slot.

Be sure to insert the connector edge of the memory module into the slot while aligning the notch on the module with the small projection in the open slot. Do not force the memory module into the slot in a wrong orientation, as it may cause damage to the slot and the module.

- 10 Replace the memory module compartment cover and tighten the screw.
- 11 Connect the power cord and the peripheral devices that you disconnected in step 3.
- 12 Replace the back panel cover.
See **Removing and Replacing the Covers (page 16)** for the procedure.
- 13 Plug the computer and the rest of the peripheral devices to the power source.
- 14 Turn on all peripheral devices and then the computer.

Viewing the Amount of Memory

To view the amount of memory

- 1 Turn on the computer.
- 2 Click **Start, All Programs**, and **VAIO Control Center**.
- 3 Click **System Information** and **System Information**.

You can view the amount of system memory in the right pane. If the additional memory does not appear, repeat the installation procedure and restart the computer.

Adding the Hard Disk Drive

Your computer is equipped with the **HARD DISK DRIVE ACCESS BAY** to hold an additional 3.5-inch hard disk drive. Review the manufacturer's information provided with your new hard disk drive before attempting to install it in the computer.

! Some hard disks are not compatible with your computer. Contact the manufacturer of your hard disk for compatibility with VAIO computers.

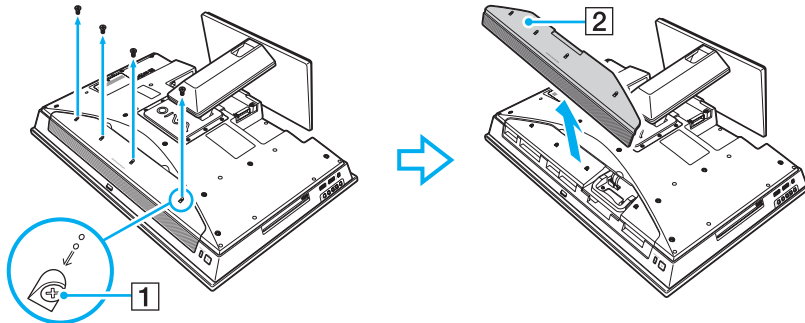
Make sure you unplug your computer and peripheral devices from the power sources before installing or removing a hard disk. Installing or removing a hard disk while your computer is plugged to its power source may cause damage to the computer and the peripheral devices as well as the hard disk.

If you need assistance to install a hard disk, contact VAIO-Link.

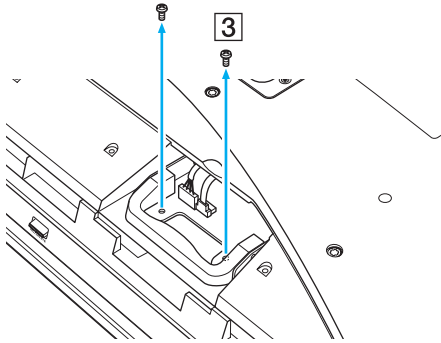
Installing an Additional Hard Disk Drive

To install an additional hard disk drive

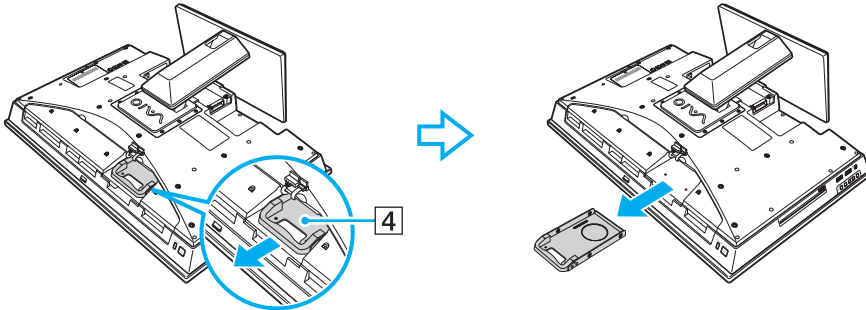
- 1 Shut down the computer, turn off all peripheral devices, and disconnect peripheral devices from the accessible ports and jacks.
- 2 Remove the back panel cover from the computer.
See **Removing and Replacing the Covers** ([page 16](#)) for the procedure.
- 3 Disconnect the power cord and the rest of the peripheral devices.
- 4 Wait about an hour until the computer cools down.
- 5 Unscrew the four screws (1) and remove the **HARD DISK DRIVE ACCESS BAY** cover (2).



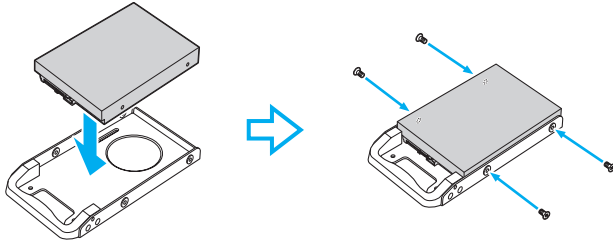
- 6 Unscrew the two screws (3) securing the drive holder.



- 7 Pull out the drive holder (4) from the **HARD DISK DRIVE ACCESS BAY** and set it aside.

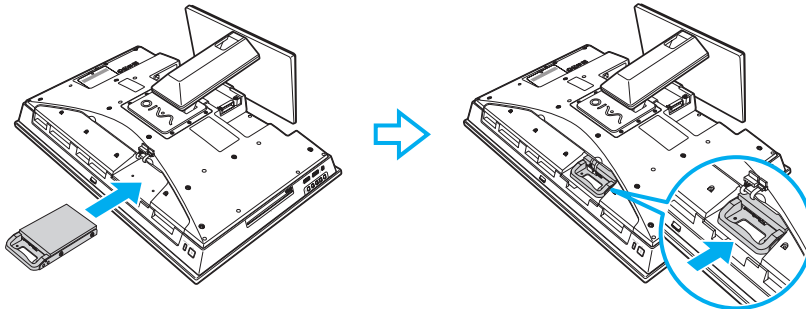


- 8 Place a new drive into the drive holder and align the holes on each side of the drive holder.
- 9 Secure the drive to the drive holder with screws, through the holes on each side of the drive holder.



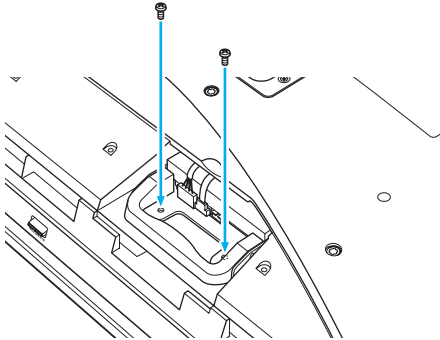
! A new hard disk drive comes with the necessary screws. Do not overtighten these screws when securing the drive to the drive holder.

- 10 Slide the drive holder into the drive bay until it clicks into place and secure it with the screws.



- 11 Connect the Serial ATA power cable and the Serial ATA cable.

- 12 Tighten the screws to secure the drive holder.



- 13 Replace the drive bay cover and tighten the screws.
- 14 Connect the power cord and the peripheral devices that you disconnected in step 3.
- 15 Replace the back panel cover.
See **Removing and Replacing the Covers (page 16)** for the procedure.
- 16 Plug the computer and the rest of the peripheral devices to the power source.
- 17 Turn on all peripheral devices and then the computer.

Identifying the Additional Hard Disk Space

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

To identify the additional hard disk space

- 1 Log on to Windows as a user with administrative rights.
- 2 Click **Start**, right-click **Computer**, and select **Manage**.
The **Computer Management** window appears.
- 3 Under the file directory on the right, click **Disk Management** under **Storage**.
- 4 Right-click on the newly installed, unformatted hard disk (disk label identified with red marking) and select **Initialize Disk**.
- 5 Click on the allocated area of the disk.
- 6 Right-click the area and select **New Partition**.
The **New Partition** wizard window appears.
- 7 Follow the on-screen instructions to complete the process.

The Windows Vista operating system recognizes the new hard disk drive and applies the NTFS format to it.

Precautions

This section describes safety guidelines and precautions to help you protect your VAIO computer from potential damage.

- ❑ **Handling the LCD Screen** ([page 125](#))
- ❑ **Using the Power Source** ([page 126](#))
- ❑ **Handling Your Computer** ([page 127](#))
- ❑ **Handling the Built-in Camera** ([page 130](#))
- ❑ **Handling Discs** ([page 131](#))
- ❑ **Using Headphones** ([page 134](#))
- ❑ **Handling the Memory Stick** ([page 135](#))
- ❑ **Handling the Built-in Storage Device** ([page 136](#))

Handling the LCD Screen

- ❑ Do not leave the LCD screen facing the sun. This could damage the LCD screen. Be careful when using your computer near a window.
- ❑ Do not scratch the surface of the LCD screen or exert pressure on it. This could cause a malfunction.
- ❑ Using your computer in low temperature conditions may produce a residual image on the LCD screen. This is not a malfunction. When the computer returns to normal temperature, the screen returns to normal.
- ❑ A residual image may appear on the LCD screen if the same image is displayed for a long period of time. The residual image disappears after a while. You can use a screen saver to prevent residual images.
- ❑ The LCD screen becomes warm during operation. This is normal and does not indicate a malfunction.
- ❑ The LCD screen is manufactured using high-precision technology. You may, however, see tiny black points and/or bright points (red, blue, or green) that continuously appear on the LCD screen. This is a normal result of the manufacturing process and does not indicate a malfunction.
- ❑ Avoid rubbing the LCD screen. This could damage the screen. Use a soft, dry cloth to wipe the surface of the LCD screen.
- ❑ Do not change the LCD screen orientation setting in the **Tablet PC Settings** window even when there are change options available for selection, as this may make your computer unstable. Sony assumes no liability for any malfunctions arising from changes to the settings.

Using the Power Source



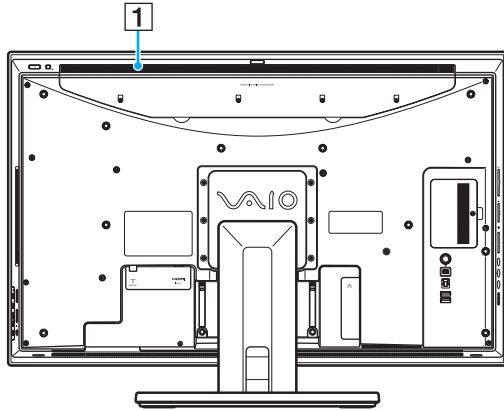
See the specifications to find out about the configuration of your computer.

- Do not share the AC outlet with other power-consuming equipment, such as a photocopier or a shredder.
- You can purchase a power strip with a surge protector. This device helps prevent damage to your computer caused by sudden power surges, in an electrical storm, for example.
- Do not place heavy objects on the power cord.
- To disconnect the cord, pull it out by holding the plug. Never pull the cord itself.
- Unplug your computer from the AC outlet if you are not planning to use the computer for a long period of time.
- Make sure that the AC outlet is easily accessible.
- Use the power cord supplied with your computer or genuine Sony products. Do not use any other power cord as it may cause a malfunction.

Handling Your Computer

- ❑ Clean the cabinet with a soft cloth, which is dry or lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder, or solvent such as alcohol or benzene, as these may damage the finish of your computer.
- ❑ If you drop a solid object or any liquid onto your computer, shut down the computer and then unplug it. You may want to have the computer checked by qualified personnel before operating it again.
- ❑ Do not drop your computer.
- ❑ Do not place your computer in a location subject to:
 - ❑ Heat sources, such as radiators or air ducts
 - ❑ Direct sunlight
 - ❑ Excessive dust
 - ❑ Moisture or rain
 - ❑ Mechanical vibration or shock
 - ❑ Strong magnets or speakers that are not magnetically shielded
 - ❑ Ambient temperature of more than 35°C or less than 5°C
 - ❑ High humidity
- ❑ Do not place electronic equipment near your computer. The electromagnetic field of the equipment may cause the computer to malfunction.
- ❑ Use your computer on a solid, stable surface.
- ❑ Do not place your computer near draperies that may block its air vents.

- ❑ When holding your computer, be sure to wait until it cools down. The back of your computer may be extremely hot around the air exhaust vent (1).



- ❑ Your computer uses high-frequency radio signals and may cause interference to radio or TV reception. If this occurs, relocate the computer a suitable distance away from the set.
- ❑ Use only specified peripheral equipment and interface cables. Otherwise, problems may occur.
- ❑ Do not use cut or damaged connection cables.
- ❑ If your computer is brought directly from a cold location to a warm one, moisture may condense inside the computer. In this case, allow at least one hour before turning on the computer. If any problems occur, unplug the computer and contact VAIO-Link.
- ❑ Make sure you disconnect the power cord before cleaning your computer.
- ❑ To avoid losing data when your computer is damaged, back up your data regularly.

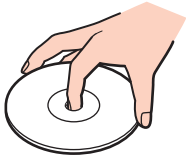
- ❑ Do not grasp the base stand to lift your computer as the stand may break and cause the main unit to fall, resulting in damage to the computer or personal injuries.
- ❑ To lift or move your computer, grasp the bottom corners of the main unit with both hands from behind the computer to avoid any damage to the LCD screen. There is a risk of scratching the LCD screen, for example with your waist belt buckle, if you hold your computer from its front.

Handling the Built-in Camera

- ❑ Do not touch the lens protection cover of the built-in **MOTION EYE** camera, as it may cause scratches on the cover and such scratches will appear on the captured images.
- ❑ Do not let the direct sunlight get into the lens of the built-in **MOTION EYE** camera regardless of your computer's power state, as it may cause the camera to malfunction.
- ❑ The built-in **MOTION EYE** camera is disabled while videos or still images are imported from an i.LINK-compatible device connected to the i.LINK port.
- ❑ Clean the lens protection cover of the built-in **MOTION EYE** camera with a blower brush or a soft brush. If the cover is extremely dirty, wipe it off with a soft dry cloth. Do not rub the cover, as it is sensitive to pressure.

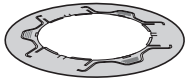
Handling Discs

- ❑ Fingerprints and dust on the surface of a disc may cause read errors. Always hold the disc by its edges and central hole, as shown below:



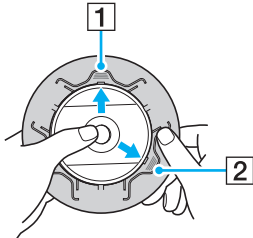
- ❑ Proper care of the disc is essential to its continuous reliability. Do not use solvents (such as benzine, thinner, alcohol, commercially available cleaners, or anti-static spray) which may cause damage to the disc.
- ❑ For normal cleaning, hold the disc by its edges and use a soft cloth to wipe the surface from the center out.
- ❑ If the disc is badly soiled, moisten a soft cloth with water, wring it out well, and use it to wipe the surface of the disc from the center out. Wipe off any remaining moisture with a dry soft cloth.
- ❑ Never affix an adhesive label to a disc. This will affect the use of the disc and may result in irreparable damage.

- ❑ An 8 cm disc adapter exclusively designed for your model is provided for use of 8 cm discs on your computer.

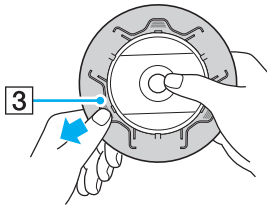


To attach an 8 cm disc to the adapter

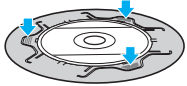
- 1 With its label facing upward, attach the disc to the adapter (VAIO logo side up) by pulling each of the tabs (1) and (2) outward.



- 2 Pull the tab (3) outward and hold the disc with the adapter securely.



- 3 Press the tabs (indicated by the arrows below) and then make sure the disc is level with the surface of the adapter.



Notes on using the 8 cm disc adapter

- Be sure to attach an 8 cm disc to the adapter before using it on your computer. Not using the supplied adapter or using a similar kind of the adapter with the disc may cause a disc recognition error or result in a stuck disc, a damaged disc, or a malfunction of your computer.
- Remove the adapter from an 8 cm disc when not using the disc. Keeping the adapter attached may deform the disc.
- Do not leave the adapter in a place subject to high temperatures to avoid deformation. Use of the deformed adapter with an 8 cm disc may cause a disc recognition error or result in a stuck disc, a damaged disc, or a malfunction of your computer.
- Not all types of the 8 cm disc can fit into the adapter.

Using Headphones

Preventing hearing damage – Avoid using headphones at high volume. Hearing experts advise against continuous, loud and extended play. If you experience a ringing in your ears, reduce the volume or discontinue use.

Handling the Memory Stick

- ❑ Do not touch the Memory Stick connector with your finger or metallic objects.
- ❑ Use only the adhesive label supplied with the Memory Stick as a label.
- ❑ Do not bend, drop, or expose the Memory Stick.
- ❑ Do not disassemble or modify the Memory Stick.
- ❑ Do not let the Memory Stick get wet.
- ❑ Do not use or store the Memory Stick in a location subject to:
 - ❑ Static electricity
 - ❑ Electrical noise
 - ❑ Extremely high temperatures, such as in a car parked in the sun
 - ❑ Direct sunlight
 - ❑ High humidity
 - ❑ Corrosive substances
- ❑ Use the storage case supplied with the Memory Stick.
- ❑ Be sure to make a backup copy of your valuable data.
- ❑ Keep the Memory Stick and the Memory Stick adaptors out of reach of children. There is a risk of swallowing them.
- ❑ When using the Memory Stick Duo, do not use a fine-tipped pen to write on the label adhered to the Memory Stick Duo. Exerting pressure on the media may damage internal components.

Handling the Built-in Storage Device

The built-in storage device (hard disk drive or solid state drive) has a high storage density and reads or writes data in a short time. However, it can be easily damaged if improperly used. If the built-in storage device is damaged, the data cannot be restored. To prevent losing data, you should be careful when handling your computer.



Features and options in this section may not be available on your computer.

See the specifications to find out about the configuration of your computer.

To avoid damaging your hard disk drive

- Do not subject your computer to sudden movements.
- Keep your computer away from magnets.
- Do not place your computer in a location subject to mechanical vibration or in an unstable position.
- Do not move your computer while the power is on.
- Do not turn off the power or restart your computer while reading or writing data to the hard disk drive.
- Do not use your computer in a place subject to extreme changes in temperature.
- Do not remove the hard disk drive from your computer.

To avoid damaging your solid state drive

- Do not turn off the power or restart your computer while reading or writing data to the solid state drive.
- Do not remove the solid state drive from your computer.

Troubleshooting

This section describes how to solve common problems you might encounter when using your VAIO computer. Many problems have simple solutions. Try these suggestions before contacting VAIO-Link.



Features and options in this section may not be available on your computer.

- Computer** ([page 139](#))
- System Security** ([page 145](#))
- Built-in Camera** ([page 146](#))
- Networking** ([page 148](#))
- Bluetooth Technology** ([page 153](#))
- Optical Discs** ([page 156](#))
- Display** ([page 160](#))
- Printing** ([page 162](#))
- Microphone** ([page 163](#))
- Mouse** ([page 164](#))
- Speakers** ([page 166](#))
- Touch Pad** ([page 167](#))
- Keyboard** ([page 168](#))
- Floppy Disks** ([page 170](#))
- Audio/Video** ([page 171](#))


- ❑ **HDMI Input** ([page 174](#))
- ❑ **Memory Stick** ([page 176](#))
- ❑ **Peripherals** ([page 177](#))

Computer

What should I do if my computer does not start?

- ❑ Make sure your computer is securely plugged into a power source and turned on and the power indicator light shows the power is on.
- ❑ Disconnect all connected USB devices (if any), and then restart your computer.
- ❑ Remove any extra memory modules you may have installed since purchase, and then restart your computer.
- ❑ If your computer is plugged into a power strip or an uninterruptible power supply (UPS), make sure the power strip or UPS is plugged into a power source and turned on.
- ❑ If the orange **DISPLAY OFF** indicator is lit, press the **DISPLAY OFF** button.
- ❑ Make sure the brightness and contrast controls are adjusted correctly.
- ❑ Make sure the computer input is selected. To change the display input, press the **HDMI SELECT** button on the right of the computer.
- ❑ Unplug the power cord. Wait three to five minutes. Plug the power cord again and press the power button to turn on your computer.
- ❑ Condensation may cause your computer to malfunction. If this occurs, do not use the computer for at least one hour.
- ❑ Check that you are using the supplied Sony power cord. For your safety, use only the genuine Sony power cord, which is supplied by Sony for your VAIO computer.
- ❑ Make sure your computer is not in Sleep mode by pressing the power button on the computer or the sleep button on the wireless keyboard or the remote commander. If you press and hold the power button for more than four seconds, your computer will turn off automatically.

What should I do if the green power indicator light turns on but my screen remains blank?

- ❑ If the orange **DISPLAY OFF** indicator is lit, press the **DISPLAY OFF** button.
- ❑ Make sure the computer input is selected. To change the display input, press the **HDMI SELECT** button on the right of the computer.
- ❑ Press the **Alt+F4** keys several times to close the application window. An application error may have occurred.
- ❑ Press the **Ctrl+Alt+Delete** keys and click the arrow  next to the **Shut down** button and **Restart**.
- ❑ Press and hold the power button for more than four seconds to shut down your computer. Unplug the power cord and leave the computer for about five minutes. Then, plug the power cord and turn on the computer again.

! Make sure that the batteries of your wireless keyboard and remote commander are properly installed and not worn out.

Turning off your computer with the power button or the **Ctrl+Alt+Delete** keys may cause loss of unsaved data.

What should I do if my computer or software stops responding?

- ❑ If your computer stops responding while a software application is running, press the **Alt+F4** keys to close the application window.
- ❑ If the **Alt+F4** keys do not work, click **Start**, the arrow next to the **Lock** button, and **Shut Down** to turn off your computer.
- ❑ If your computer does not turn off, press the **Ctrl+Alt+Delete** keys and click the arrow next to the **Shut down** button and **Shut Down**.
If the **Windows Security** window appears, click **Shut Down**.
- ❑ If your computer still does not turn off, press and hold the power button until the computer turns off.
!
Turning off your computer with the **Ctrl+Alt+Delete** keys or the power button may cause loss of unsaved data.
- ❑ Unplug the power cord. Wait three to five minutes. Plug the power cord again and press the power button to turn on your computer.
- ❑ Try reinstalling the software.
- ❑ Contact the software publisher or designated provider for technical support.

Why doesn't my computer enter Sleep mode?

Your computer may become unstable if the operating mode is changed before the computer completely enters Sleep mode.

To restore your computer to normal mode

- 1 Close all open programs.
- 2 Click **Start**, the arrow next to the **Lock** button, and **Restart**.
- 3 If your computer does not restart, press the **Ctrl+Alt+Delete** keys and click the arrow next to the **Shut down** button and **Restart**.
- 4 If this procedure does not work, press and hold the power button until the computer turns off.



Turning off your computer with the power button may cause loss of unsaved data.

What should I do if Windows does not accept my password and returns a message, Enter Onetime Password?

If you enter a wrong power-on password three times consecutively, the **Enter Onetime Password** message appears and Windows will not start. Press and hold the power button for more than four seconds to check that the power indicator light turns off. Wait for 10 or 15 seconds, then restart your computer and enter the correct password. When entering the password, check that the Num lock and Caps lock indicators are unlit. If both or either of the lights is lit, press the **Num Lk** (or **Num Lock**) key or the **Caps Lock** key to turn off the indicator before entering the password.

What should I do if my game software does not work or it keeps crashing?

- ❑ Check the web site of the game if there are any patches or updates to download.
- ❑ Make sure you have installed the latest video driver software.
- ❑ On some VAIO models, the graphics memory is shared with the system. The optimal graphic performance in this case is not guaranteed.

What should I do if I cannot remember the power-on password?

If you have forgotten the power-on password, contact VAIO-Link to reset it. A reset fee will be charged.

How can I change the boot device order?

You can use one of the BIOS functions to change the boot device order. Follow these steps:

- 1 Turn on your computer.
- 2 Press the **F2** key when the VAIO logo appears.
The BIOS setup screen appears. If not, restart the computer and press the **F2** key several times when the VAIO logo appears.
- 3 Press the **←** or **→** key to select **Boot**.
- 4 Press the **↑** or **↓** key to select your desired priority under **Boot Priority** and press the **Enter** key.
- 5 Press the **↑** or **↓** key to select the device to which you want to assign the priority and press the **Enter** key.
- 6 Press the **←** or **→** key to select **Exit**, select **Exit Setup**, and then press the **Enter** key.
At the confirmation prompt, press the **Enter** key.

Why doesn't my screen turn off after the automatic turn-off time has passed?

The VAIO original screen saver disables the timer setting, which you can select using the Windows power options, for your screen to turn off.

Select a screen saver other than the VAIO original screen saver.

What should I do if I cannot boot my computer from the USB floppy disk drive connected to the computer?

To boot your computer from the USB floppy disk drive, you need to change the boot device.

Turn on your computer and press the **F11** key when the VAIO logo appears.

How do I check the volume of the recovery partition?

Your built-in storage device contains the recovery partition where the data for the system recovery is stored. To check the volume of the recovery partition, follow these steps:

- 1 Click **Start**, right-click **Computer**, and select **Manage**.
- 2 Click **Disk Management** under **Storage** in the left pane.
The volume of the recovery partition and the total volume of the C drive are displayed in the **Disk 0** row in the center pane.

System Security

How can I protect my computer against security threats, such as viruses?

The Microsoft Windows operating system is preinstalled on your computer. The best way to protect your computer against security threats, such as viruses, is to download and install the latest Windows updates regularly.

You can get important Windows updates by doing the following:



Your computer must be connected to the Internet to download the updates.

- 1 Connect to the Internet.
- 2 Double-click the **Windows Security Alerts** icon on the taskbar.
- 3 Follow the on-screen instructions to set up automatic or scheduled updates.

How do I keep my antivirus software updated?

You can keep the **McAfee** software program current with the latest updates from McAfee, Inc.

To download and install the latest security updates, follow these steps:

- 1 Click **Start, All Programs, McAfee, and McAfee SecurityCenter**.
- 2 Click the button located at the upper left corner of the window to update the software.
- 3 Follow the on-screen instructions to download updates.

See the help file included with your software program for more information.

Built-in Camera

Why does the viewfinder show no images or poor-quality images?

- ❑ The built-in **MOTION EYE** camera cannot be shared by more than one software application. Exit the current application before launching another.
- ❑ The viewfinder may show some noise, for example horizontal streaks, if you view a rapid-moving object. This is normal and does not indicate a malfunction.
- ❑ If the problem persists, restart your computer.

Why are captured images poor in quality?

- ❑ The images captured under the fluorescent light may show reflections of light.
- ❑ A dark portion in captured images may appear as a noise.
- ❑ If the lens protection cover is dirty, you cannot take a clear shot. Clean the cover. See **Handling the Built-in Camera (page 130)**.

What should I do if captured images contain dropped frames and audio interruptions?

- ❑ The effect settings on your software application may cause dropped frames. See the help file included with your software application for more information.
- ❑ There may be more software applications running than your computer can handle. Exit the applications that you are not currently using.
- ❑ The power management function of your computer may be active. Check the CPU performance.

What should I do if captured images flicker?

This problem occurs when you use the camera under fluorescent lights due to the mismatch between lighting output frequency and shutter speed.

To reduce flicker noise, change the direction of the camera or the brightness of camera images. In some software applications, you can set an appropriate value to one of the camera properties (e.g. light source, flicker, etc.) to eliminate flicker noise.

Why is the video input from the built-in MOTION EYE camera suspended for a few seconds?

The video input may be suspended for a few seconds if:

- a shortcut key with the **Fn** key is used.
- the CPU load increases.

This is normal and does not indicate a malfunction.

What should I do if my computer becomes unstable when it enters a power saving mode while the built-in MOTION EYE camera is in use?

If your computer automatically enters Sleep mode, change the corresponding power saving mode setting. To change the setting, see **Using the Power Saving Mode (page 107)**.

Networking

What should I do if my computer cannot connect to a wireless LAN access point?

- ❑ Connection capability is affected by distance and obstructions. You need to place your computer away from obstructions or move any access point you may be using closer to the computer.
- ❑ Make sure the **WIRELESS** switch is on and the **WIRELESS** indicator light is lit on your computer.
- ❑ Make sure power to the access point is on.
- ❑ If you want to connect your computer to a wireless LAN access point using the 5 GHz band, make sure the option to use the 5 GHz band or both the 2.4 GHz and 5 GHz bands is selected on the **WLAN** tab in the **VAIO Smart Network** settings window. Wireless LAN communication (IEEE 802.11a standard) using only the 5 GHz band, available on selected models only, is disabled by default.
- ❑ Follow these steps to check the settings:
 - 1 Click **Start** and **Control Panel**.
 - 2 Click **View network status and tasks** under **Network and Internet**.
 - 3 Click **Connect to a network** to confirm that your access point is selected.
- ❑ Make sure the encryption key is correct.

- ❑ Make sure **Maximum Performance** is selected for **Wireless Adapter Settings** in the **Power Options** window. Selecting any other option may result in a communication failure. To change the settings, follow these steps:
 - 1 Right-click the power status icon on the taskbar and select **Power Options**.
 - 2 Click **Change plan settings** under the current power plan.
 - 3 Click **Change advanced power settings**.
 - 4 Select the **Advanced settings** tab.
 - 5 Double-click **Wireless Adapter Settings** and **Power Saving Mode**.
 - 6 Select **Maximum Performance** from the drop-down list for **Plugged in**.

What should I do if I cannot access the Internet?

- ❑ Check the access point settings. See the manual that came with your access point for more information.
- ❑ Make sure your computer and the access point are connected to one another.
- ❑ Place your computer away from obstacles or move any access point you may be using closer to the computer.
- ❑ Make sure your computer is properly configured for Internet access.
- ❑ Make sure **Maximum Performance** is selected for **Wireless Adapter Settings** in the **Power Options** window. Selecting any other option may result in a communication failure. Follow the steps in **What should I do if my computer cannot connect to a wireless LAN access point? (page 148)** to change the settings.

Why is the data transfer speed slow?

- ❑ The wireless LAN data transfer speed is affected by distance and obstructions between devices and access points. Other factors include device configurations, radio conditions, and software compatibility. To maximize the data transfer speed, place your computer away from obstacles or move any access point you may be using closer to the computer.
- ❑ If you are using a wireless LAN access point, the device may be temporarily overloaded depending on how many other devices are communicating via the access point.
- ❑ If your access point interferes with other access points, change the access point channel. See the manual that came with your access point for more information.
- ❑ Make sure **Maximum Performance** is selected for **Wireless Adapter Settings** in the **Power Options** window. Selecting any other option may result in a communication failure. Follow the steps in **What should I do if my computer cannot connect to a wireless LAN access point? (page 148)** to change the settings.

How do I avoid data transfer interruptions?

- ❑ When your computer is connected to an access point, data transfer interruptions may occur if a large file is exchanged or the computer is placed in close proximity to microwaves and cordless telephones.
- ❑ Move your computer closer to the access point.
- ❑ Make sure the access point connection is intact.
- ❑ Change the access point channel. See the manual that came with your access point for more information.
- ❑ Make sure **Maximum Performance** is selected for **Wireless Adapter Settings** in the **Power Options** window. Selecting any other option may result in a communication failure. Follow the steps in **What should I do if my computer cannot connect to a wireless LAN access point? (page 148)** to change the settings.

What are channels?

- ❑ Wireless LAN communication uses divided frequency bands known as channels. Third-party wireless LAN access point channels may be preset to different channels from Sony devices.
- ❑ If you are using a wireless LAN access point, see connectivity information contained in the manual that came with your access point.

Why does the network connection stop when I change the encryption key?

Two computers with the wireless LAN function may lose a peer-to-peer network connection if the encryption key is changed. You can either change the encryption key back to the original profile or re-enter the key on both computers so the key matches.

How do I display the VAIO Smart Network window?

To display the **VAIO Smart Network** window on the desktop, follow these steps:

- 1 Click **Start**, **All Programs**, and **VAIO Control Center**.
- 2 Click **Network Connections** and **VAIO Smart Network**.
- 3 Click **Advanced** in the right pane.



For information on the **VAIO Smart Network** software, see the help file included with the software.

Bluetooth Technology

What should I do if other Bluetooth devices cannot find my computer?

- ❑ Make sure both devices have the Bluetooth function enabled.
- ❑ If the **WIRELESS** indicator light is unlit, turn on the **WIRELESS** switch.
- ❑ Your computer and the device may be too far apart. Wireless Bluetooth technology works best when the devices are within 10 meters of each other.

What should I do if I cannot find the Bluetooth device I want to communicate with?

- ❑ Check that the Bluetooth function of the device you want to communicate with is on. See the other device's manual for more information.
- ❑ If the device you want to communicate with is already communicating with another Bluetooth device, it may not be found or it may not be able to communicate with your computer.
- ❑ To allow other Bluetooth devices to communicate with your computer, follow these steps:
 - 1 Click **Start, Control Panel, Hardware and Sound, Bluetooth Devices**, and **Bluetooth Settings**.
 - 2 Click the **Options** tab and select the **Allow Bluetooth devices to find this computer** check box.

What should I do if other Bluetooth devices cannot connect to my computer?

- Check the suggestions in **What should I do if I cannot find the Bluetooth device I want to communicate with?** (page 153).
- Make sure the other devices are authenticated.
- The data transfer distance can be shorter than 10 meters depending on existing obstacles between the two devices, on radio wave quality, and on the operating system or the software in use. Move your computer and Bluetooth devices closer to each other.

Why is my Bluetooth connection slow?

- The data transfer speed depends on the obstructions and/or the distance between the two devices, on the radio wave quality, and on the operating system or the software in use. Move Bluetooth devices closer to your computer.
- The 2.4 GHz radio frequency used by Bluetooth and wireless LAN devices is also used by other devices. Bluetooth devices incorporate technology that minimizes interference from other devices using the same wavelength, however, communication speed and connection range may be reduced. Interference from other devices may also stop communications altogether.
- Connection capability is affected by distance and obstructions. You need to place your computer away from obstacles or move the device to which it is connected closer to the computer.
- Identify and remove obstacles between your computer and the device to which it is connected.

Why can't I use the services supported by the connected Bluetooth device?

Connection is only possible for services also supported by the computer with the Bluetooth function. For more details, search for Bluetooth information using **Windows Help and Support**.

Why can't I use the Bluetooth function when I log onto my computer as a user with a standard user account?

The Bluetooth function may not be available to a user with a standard user account on your computer. Log onto the computer as a user with administrative rights.

Why can't I use the Bluetooth devices when I switch users?

If you switch users without logging off your system, the Bluetooth devices will not work. Be sure to log off before switching users. To log off your system, click **Start**, the arrow next to the **Lock** button, and **Log Off**.

Why can't I exchange business card data with a mobile phone?

The business card exchange function is not supported.

What should I do if I do not hear sound from my headphones or audio/video controller?

Check the SCMS-T settings. If your headphones or audio/video controller does not support SCMS-T content protection, you need to connect the device using the Advanced Audio Distribution Profile (A2DP). Follow these steps:

- 1 Click **Start, Control Panel, Hardware and Sound, and Bluetooth Devices**.
- 2 Right-click the icon for the device that you want to connect using the A2DP and select **Control**.
- 3 Click to cancel the **Connect to a device only if it supports SCMS-T content protection** check box under **SCMS-T Settings**.

Optical Discs

Why does my computer freeze when I try to read a disc?

The disc that your computer is trying to read may be dirty or damaged. Follow these steps:

- 1 Press the **Ctrl+Alt+Delete** keys and click the arrow next to the **Shut down** button and **Restart** to restart the computer.
- 2 Remove the disc from the optical disc drive.
- 3 Check the disc for dirt or damage. If you need to clean the disc, see **Handling Discs (page 131)** for instructions.

What should I do if the disc does not slide out?

- Make sure your computer is on.
- Press the drive eject button on the computer or the disc drive eject button on the wireless keyboard.
- If either button does not work, click **Start** and **Computer**, right-click the optical disc drive icon, and select **Eject**.
- Try restarting your computer.

What should I do if I cannot play a disc properly on my computer?

- Make sure the disc is inserted into the optical disc drive with the label side facing toward you.
- Make sure the necessary program(s) is installed according to the manufacturer's instructions.
- If a disc is dirty or damaged, your computer will stop responding. Follow these steps:
 - 1** Press the **Ctrl+Alt+Delete** keys and click the arrow next to the **Shut down** button and **Restart** to restart the computer.
 - 2** Remove the disc from the optical disc drive.
 - 3** Check the disc for dirt or damage. If you need to clean the disc, see **Handling Discs (page 131)** for instructions.
- If you are playing a disc and cannot hear sound, do any of the following:
 - The volume may have been turned off by the muting button on the wireless keyboard or the remote commander. Press the button once again.
 - The volume may have been minimized with the volume down button on the wireless keyboard or the remote commander. Press the volume up button to turn up the volume loud enough to hear sound.
 - Right-click the volume icon on the taskbar and click **Open Volume Mixer** to check the settings.
 - Check the volume setting in the audio mixer.
 - If you are using external speakers, check the volume settings on the speakers and the connections between the speakers and your computer.

- ❑ Make sure the correct driver software is installed. Follow these steps:
 - 1 Click **Start** and **Control Panel**.
 - 2 Click **System and Maintenance**.
 - 3 Click **System**.
 - 4 Click **Device Manager** in the left pane.

The **Device Manager** window appears with a listing of your computer's hardware devices.
If an "X" or an exclamation point appears on the listed device, you may need to enable the device or reinstall the driver software.
 - 5 Double-click the optical disc drive device to open a list of the optical disc drives of your computer.
 - 6 Double-click the desired drive.

You can confirm the driver software by selecting the **Driver** tab, and clicking **Driver Details**.
 - 7 Click **OK** to close the window.
- ❑ Make sure an adhesive label is not affixed to a disc. Adhesive labels can come off while the disc is in the optical disc drive and damage the drive or cause it to malfunction.
- ❑ If a region code warning appears, the disc may be incompatible with the optical disc drive. Check the package to make sure the region code is compatible with the optical disc drive.
- ❑ If you notice condensation on your computer, do not use the computer for at least one hour. Condensation can cause the computer to malfunction.

What should I do if I cannot play Blu-ray Disc media or my computer becomes unstable during Blu-ray Disc playback?

You may not be able to play some Blu-ray Disc contents on your computer, or the computer may become unstable during Blu-ray Disc playback. To play such contents normally, download and install the latest updates for the **WinDVD BD** using the **VAIO Update**.

For information on how to use the **VAIO Update**, see **Updating Your Computer** ([page 33](#)).

What should I do if I cannot write data to CD media?

- Make sure you neither launch any software application nor allow any to launch automatically, not even a screen saver.
- If you are using a CD-R/RW disc with an adhesive label affixed, replace it with one with no affixed adhesive label. Using a disc with an affixed adhesive label could cause a write error or other damage.

What should I do if I cannot write data to DVD media?

- Make sure you are using the correct DVD recordable media.
- Check which DVD recordable format is compatible with your optical disc drive. Some brands of DVD recordable media do not work.

Why can't I write data to Blu-ray Disc media?

- Check if your optical disc drive supports the Blu-ray Disc writing function.
- BD-R Disc media are not rewritable. You cannot add or erase data to or from the BD-R Disc media.

Display

Why did my screen go blank?

- ❑ Your computer screen may go blank if the computer enters Sleep mode. If the computer is in Sleep mode, press any key to bring the computer back into Normal mode. See **Using the Power Saving Mode (page 107)** for more information.
- ❑ Make sure the computer input is selected. To change the display input, press the **HDMI SELECT** button on the right of the computer.
- ❑ Make sure your computer is securely plugged into a power source and turned on and the power indicator light is lit.
- ❑ The LCD backlight of your computer may have been turned off. Press the **DISPLAY OFF** button.

What should I do if I do not see proper images or videos?

- ❑ Be sure to select **Highest (32 bit)** for the display colors before using video/image software or starting DVD playback. Selecting any other option may prevent such software from displaying images successfully. To change the display colors, follow these steps:
 - 1 Right-click on the desktop and select **Personalize**.
 - 2 Click **Display Settings**.
 - 3 Select **Highest (32 bit)** under **Colors**.
- ❑ Do not change the display resolution or colors while using video/image software or playing DVDs, as it may cause unsuccessful playback/display or unstable system operations. Additionally, it is recommended you disable your screen saver before starting DVD playback. If the screen saver is enabled, it may be activated during DVD playback and prevent it from running successfully. Some screen savers have been found to even change the display resolution and colors.

What should I do if my screen is dark?

Press the **Fn+F6** keys to brighten your computer screen.

How do I run Windows Aero?

To run Windows Aero, follow these steps:

- 1 Click **Start** and **Control Panel**.
- 2 Click **Customize colors** under **Appearance and Personalization**.
- 3 Click **Open classic appearance properties for more color options**.
- 4 Select **Windows Aero** from the **Color scheme** options on the **Appearance** tab.
- 5 Click **OK**.

For information about the Windows Aero features, such as Windows Flip 3D, see **Windows Help and Support**.

Printing

What should I do if I cannot print a document?

- ❑ Make sure your printer is on, and the printer cable is securely connected to the ports on the printer and your computer.
- ❑ Make sure your printer is compatible with the Windows operating system installed on your computer.
- ❑ You may need to install the printer driver software before you use your printer. See the manual that came with your printer for more information.
- ❑ If your printer is not functioning after your computer resumes from Sleep mode, then restart the computer.
- ❑ If the bidirectional communication functions are provided with your printer, disabling the functions on your computer may enable printing. Follow these steps:
 - 1 Click **Start** and **Control Panel**.
 - 2 Click **Printer** under **Hardware and Sound**.
 - 3 Right-click the printer icon and select **Properties**.
 - 4 Click the **Ports** tab.
 - 5 Click to cancel the **Enable bidirectional support** check box.
 - 6 Click **OK**.

This disables the bidirectional communication functions of the printer, such as data transfer, status monitoring, and remote panel.

Microphone

What should I do if my microphone does not work?

- ❑ If you are using an external microphone, make sure the microphone is turned on and is properly plugged into the microphone jack on your computer.
- ❑ Your sound input device may have been incorrectly configured. To configure the sound input device, follow these steps:
 - 1 Close all open programs.
 - 2 Click **Start** and **Control Panel**.
 - 3 Click **Hardware and Sound**.
 - 4 Click **Manage audio devices** under **Sound**.
 - 5 On the **Recording** tab, select the desired device for sound input and click **Set Default**.

How can I prevent microphone feedback?

Microphone feedback occurs when the microphone receives the sound from a sound output device, such as a speaker.

To prevent this problem:

- ❑ Keep the microphone away from a sound output device.
- ❑ Turn down the volume of the speakers and the microphone.

Mouse

What should I do if my computer does not recognize my mouse?

- Make sure the power switch on the bottom of the wireless mouse is in the **ON** position.
- Make sure another mouse is not connected.
- Make sure the supplied AA batteries are properly installed.
- Press the **CONNECT** button on your computer and then on the wireless mouse within 10 seconds to re-establish the connection between the two devices.
- The supplied AA batteries may have run out of power. Replace the batteries.

What should I do if the pointer does not move when I use my mouse?

- ❑ Make sure another mouse is not connected.
- ❑ If the pointer does not move while a software application is running, press the **Alt+F4** keys to close the application window.
- ❑ If the **Alt+F4** keys do not work, press the Windows key once and then the **→** key several times, select **Restart** with the **↑** or **↓** key, and press the **Enter** key to restart your computer.
- ❑ If your computer does not restart, press the **Ctrl+Alt+Delete** keys, select the arrow next to the **Shut down** button with the **↓** and **→** keys and then **Restart** with the **↑** or **↓** key, and press the **Enter** key to restart your computer.
- ❑ If this procedure does not work, press and hold the power button until the computer turns off.



Turning off your computer with the power button may cause loss of unsaved data.

- ❑ Avoid using any wireless devices that exchange radio signals on the 2.4 GHz frequency band near your wireless mouse. These devices may cause interference, causing your mouse to stop working properly.
- ❑ Do not place metal furniture near your computer or wireless mouse, as this may create interference, causing your mouse to stop working properly.

Speakers

What should I do if I do not hear sound from the built-in speakers?

- ❑ If you are using a program that has its own volume control, make sure the volume control is properly set. See the program's help file for more information.
- ❑ The volume may have been turned off by the muting button on the wireless keyboard or the remote commander. Press the button once again.
- ❑ The volume may have been minimized by the volume down button on the wireless keyboard or the remote commander. Press the volume up button to turn up the volume loud enough to hear sound.
- ❑ Check the Windows volume controls by clicking the volume icon on the taskbar.
- ❑ Your sound output device may have been incorrectly configured. To change the sound output device, see **How do I change the sound output device? (page 171)**.

What should I do if my external speakers do not work?

- ❑ Check the suggestions in **What should I do if I do not hear sound from the built-in speakers? (page 166)**.
- ❑ Make sure your speakers are properly connected and the volume is turned up loud enough to hear sound.
- ❑ Make sure your speakers are designed for computer use.
- ❑ If your speakers have a muting button, set the button to off.
- ❑ If your speakers require external power, make sure the speakers are connected to a power source. See the manual that came with your speakers for more information.

Touch Pad

What should I do if the touch pad does not work?

- ❑ You may have disabled the touch pad. Press the **Fn+F11** keys to enable the touch pad.
- ❑ If the pointer does not move while a software application is running, press the **Alt+F4** keys to close the application window.
- ❑ If the **Alt+F4** keys do not work, press the Windows key once and then the **→** key several times, select **Restart** with the **↑** or **↓** key, and press the **Enter** key to restart your computer.
- ❑ If your computer does not restart, press the **Ctrl+Alt+Delete** keys, select the arrow next to the **Shut down** button with the **↓** and **→** keys and then **Restart** with the **↑** or **↓** key, and press the **Enter** key to restart your computer.
- ❑ If this procedure does not work, press and hold the power button until the computer turns off.

! Turning off your computer with the power button may cause loss of unsaved data.

Keyboard

What should I do if the keyboard configuration is wrong?

The language layout of your wireless keyboard is labeled on the packaging box. If you choose a different regional keyboard when you complete the Windows setup, the key configuration will be mismatched.

To change the keyboard configuration, follow these steps:

- 1 Click **Start** and **Control Panel**.
- 2 Click **Clock, Language, and Region**, and click **Regional and Language Options**.
- 3 Change the settings as desired.

What should I do if I cannot enter certain characters with the keyboard?

- If you cannot enter **U, I, O, P, J, K, L, M**, and so on, the **Num Lk** key may be activated. Check that the Num lock indicator light is unlit. If the Num lock indicator is lit, press the **Num Lk** key to turn it off before entering these characters.
- Avoid using any wireless devices that exchange radio signals on the 2.4 GHz band near the wireless keyboard. These devices may cause interference, causing the keyboard to stop working properly.
- Do not place metal furniture or objects near your computer or wireless keyboard, as this may create interference, causing the keyboard to stop working properly.

What should I do if my computer does not recognize my keyboard?

- Make sure the power switch on the back of the wireless keyboard is in the **ON** position.
- Make sure the supplied AA batteries are properly installed.
- Press the **CONNECT** button on your computer and then on the wireless keyboard to re-establish the connection between the two devices.
- The supplied AA batteries may have run out of power. Replace the batteries.

Floppy Disks

Why doesn't the Safely Remove Hardware icon appear on the taskbar when the drive is connected?

Your computer does not recognize the floppy disk drive. First, make sure the USB cable is properly connected to the USB port. If you need to secure the connection, wait a few moments for the computer to recognize the drive. If the icon still does not appear, follow these steps:

- 1 Close all programs that are accessing the floppy disk drive.
- 2 Wait until the indicator light on the floppy disk drive turns off.
- 3 Push the eject button to remove the disk, and disconnect the USB floppy disk drive from your computer.
- 4 Reconnect the floppy disk drive by plugging the USB cable into the USB port.
- 5 Restart the computer by clicking **Start**, the arrow next to the **Lock** button, and **Restart**.

What should I do if I cannot write data to a floppy disk?

- Make sure the floppy disk is properly inserted in the drive.
- If the disk is inserted properly and you are still unable to write data to it, the disk may be full or write-protected. You can either use a floppy disk that is not write-protected or disable the write-protect feature.

Audio/Video

What should I do if I cannot use my digital video camcorder?

If a message appears stating that the i.LINK device is disconnected or turned off, the i.LINK cable may not be securely plugged into the port on your computer or camcorder. Unplug the cable, and plug it in once again. See **Connecting an i.LINK Device** (page 98) for more information.

How do I turn off the Windows startup sound?

To turn off the Windows startup sound, follow these steps:

- 1 Click **Start** and **Control Panel**.
- 2 Click **Hardware and Sound**.
- 3 Click **Manage audio devices** under **Sound**.
- 4 On the **Sounds** tab, click to cancel the **Play Windows Startup sound** check box.
- 5 Click **OK**.

How do I change the sound output device?

If you do not hear sound from the device connected to a port, such as the USB port, HDMI output port, optical output port, or headphones jack, you need to change the device for sound output.

- 1 Close all open programs.
- 2 Click **Start** and **Control Panel**.
- 3 Click **Hardware and Sound**.
- 4 Click **Manage audio devices** under **Sound**.
- 5 On the **Playback** tab, select the desired device for sound output and click **Set Default**.

What should I do if I do not hear the sound from the sound output device connected to the HDMI output port, optical output port, or headphones jack?

- ❑ You need to change the sound output device if you want to hear sound from the device connected to a port, such as the HDMI output port, optical output port, or headphones jack. For the detailed procedure, see **How do I change the sound output device?** ([page 171](#)).
- ❑ If you still hear no sound from the sound output device, follow these steps:
 - 1 Follow steps 1 to 4 in **How do I change the sound output device?** ([page 171](#)).
 - 2 On the **Playback** tab, select the HDMI or S/PDIF icon and click **Properties**.
 - 3 Click the **Advanced** tab.
 - 4 Select the sample rate and bit depth (for example, 48000 Hz, 16 bit) which the device supports.
 - 5 Click **OK**.

How do I output the Dolby Digital or DTS sound through an S/PDIF-compatible device?

To output the Dolby Digital or DTS sound from a disc through an S/PDIF-compatible device connected to your computer, follow these steps:

- 1 Click **Start** and **Control Panel**.
- 2 Click **Hardware and Sound**.
- 3 Click **Manage audio devices** under **Sound**.
- 4 On the **Playback** tab, select the optical out icon and click **Properties**.
- 5 Click the **Supported Formats** tab.
- 6 Click to select the **DTS Audio** and **Dolby Digital** check boxes.
- 7 Click **OK**.

! If the Dolby Digital or DTS output is connected to a device that does not support it, the device will not play any sound. In such a case, cancel the **DTS Audio** and **Dolby Digital** check boxes.

Why do sound interruptions and/or dropped frames occur when I play high-definition videos, such as those recorded with the AVCHD digital video camcorder?

Playing high-definition videos requires substantial hardware resources, such as CPU, GPU, or system memory performance on your computer. During the video playback, some operations and/or functions may become unavailable, and sound interruptions, dropped frames, and playback failure may occur depending on the configuration of your computer.

HDMI Input

What should I do if I cannot change the volume with the Up/Down buttons?

You cannot change the volume with the Up/Down buttons while the computer input is selected. Press the **HDMI SELECT** button on the right of the computer to switch the display input to the HDMI input.



The **HDMI SELECT** button and the **HDMI SELECT** indicator light illuminate in green when the HDMI input is selected.

What should I do if I cannot change the volume or the brightness with the wireless keyboard or the remote commander?

You cannot change the volume or the brightness with the wireless keyboard or the remote commander while the HDMI input is selected. Use the Up/Down buttons to change the volume or the OSD menu to change the brightness. To change settings from the OSD menu, see **Using the OSD Menu (page 64)** for the procedure.



The **HDMI SELECT** button and the **HDMI SELECT** indicator light illuminate in green when the HDMI input is selected.

How do I display the Windows desktop?

To display the Windows desktop, make sure your computer is turned on, and then press the **HDMI SELECT** button on the right of the computer to switch the display input to the computer input. If your computer screen remains blank, see **What should I do if the green power indicator light turns on but my screen remains blank? (page 140)**.

How do I save input images or sound from the connected HDMI-compatible device to files on my computer?

You cannot save such images or sound to files on your computer. In addition, you cannot record the HDMI input, such as a TV program, displayed on your computer or control the **Windows Media Center** with the HDMI Input function.

How do I turn off the Sony logo lamp while viewing the HDMI input?

You need to change the settings with the OSD menu to turn off the Sony logo lamp. See **Using the OSD Menu (page 64)** for more information.

Memory Stick

What should I do if I cannot use a Memory Stick that was formatted on a VAIO computer on other devices?

You may need to reformat your Memory Stick.

Formatting a Memory Stick erases all data, including music data previously saved on it. Before you reformat a Memory Stick, back up important data and confirm that the Memory Stick does not contain files you want to keep.

- 1 Copy the data from the Memory Stick onto your built-in storage device to save data or images.
- 2 Format the Memory Stick by following the steps in **Formatting a Memory Stick** (page 69).

Can I copy images from a digital camera using a Memory Stick?

Yes, and you can view video clips that you have recorded with Memory Stick-compatible digital cameras.

Why can't I write data to a Memory Stick?

Some versions of the Memory Stick are equipped with an erasure prevention switch to protect data from accidental erasure or overwriting. Make sure the erasure prevention switch is off.

Peripherals

What should I do if I cannot connect a USB device?

- ❑ If applicable, check the USB device is turned on and using its own power supply. For example, if you are using a digital camera, check if the battery is charged. If you are using a printer, check if the power cable is connected properly to the AC outlet.
- ❑ Try using another USB port on your computer. The driver software could be installed to the specific port you used the first time you connected the device.
- ❑ See the manual that came with your USB device for more information. You may need to install software before you connect the device.
- ❑ Try connecting a simple, low-powered device such as a mouse to test if the port is working at all.
- ❑ USB hubs may prevent a device from working because of a power distribution failure. We recommend you connect the device directly to your computer without a hub.

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