

ViewSonic®

E90f/E90fb

Color Monitor



With Plug & Play[™]

19" (18.0" Viewable Diagonal)

User Guide

Guide de l'utilisateur

Guía del usuario

Guia do Usuário

ユーザーズ ガイド

使用手冊

使用手冊

사용자 안내서

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As an ENERGY STAR® partner, ViewSonic Corporation has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

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Product Registration

To register your product online, go to the ViewSonic website for your region. See the Customer Support table in this guide.

| | |
|-------------------------|-----------------------------|
| Product name: | ViewSonic E90f/E90fb |
| Model number: | VCDTS23307-1 |
| Document number: | E90f/E90fb-1_UG_407 |
| Serial number: | _____ |
| Purchase date: | _____ |

Product disposal at end of product life

ViewSonic is concerned about the preservation of our environment. Please dispose of this product properly at the end of its useful life. Your local waste disposal company may provide information about proper disposal.

Getting Started

NOTE: The word “Windows” refers to Microsoft Windows 95, NT, 98, 2000 and Me (Millennium).

Package Contents

- *E90f/E90fb* monitor
- Quick Start Guide
- Power cord
- D-sub video cable (for VGA graphics card)
- ViewSonic Wizard CD-ROM (includes User Guide PDF and INF/ICM display optimization files)

Precautions

- For best viewing conditions sit at least 18” from the monitor.
 - Avoid touching the screen with your fingers. Oils from the skin are difficult to remove.
 - **NEVER REMOVE THE REAR COVER.** The monitor contains high voltage parts. You may suffer serious injury if you touch these parts.
 - Avoid exposing the monitor to direct sunlight or another heat source, including an open flame. The monitor should be facing away from direct sunlight to reduce glare.
 - Always handle your monitor with care when moving it.
 - Place your monitor in a well ventilated area. Do not place anything on the monitor that prevents adequate dissipation of heat.
 - Ensure the area around the monitor is clean and free of moisture.
 - Keep the monitor away from magnets, motors, transformers, speakers, and televisions.
 - Do not place heavy objects on the monitor, video cable, or power cord.
 - If smoke, abnormal noise, or strange odor is present, immediately switch the monitor off and call your dealer or ViewSonic. It is dangerous to continue using the monitor.
-

Quick Installation

- 1 Connect the monitor and computer power cords to a properly grounded AC outlet.
- 2 Connect the video cable from your monitor to your computer.

NOTE: Macintosh users may need an adapter. (See *Customer Support* on page 12.)

- 3 Turn on your monitor, then your computer. This sequence (monitor before computer) is important.

NOTE: Windows 95, 98 or 2000 users may receive a message asking them to install the INF file. This is on the CD.

- 4 Insert the ViewSonic Wizard CD.

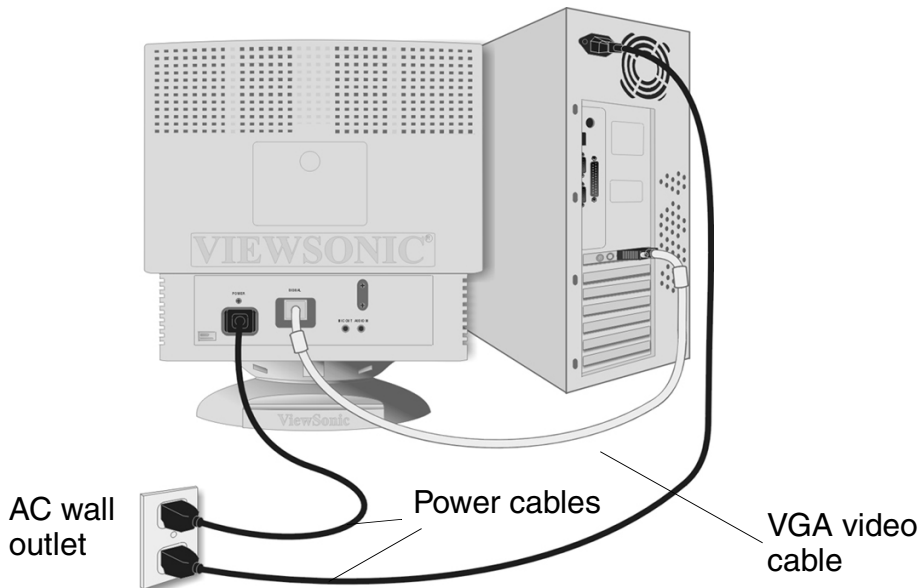
NOTE: If you do not have a CD-ROM drive, contact ViewSonic Customer Support.

NOTE: If the CD does not auto-start, double-click the CD icon in Windows Explorer, then double-click **vswzrd.exe**.

Macintosh users: from the Macintosh desktop, double-click on the “ViewSonic Wizard” folder, then double-click on the “ViewSonic” icon.

- 5 Follow the on-screen instructions. Windows users: Set the timing mode (see *Setting up the Timing Mode* on page 5).

To register your product online, go to the ViewSonic website for your region. See the Customer Support table in this guide.



Using Your Monitor

Setting the Timing Mode

Setting the timing mode is important for maximizing the quality of the screen image and minimizing eye strain. The **timing mode** consists of the **resolution** (example: 1280 x 1024) and **refresh rate** (or vertical frequency, example: 75 Hz). For the best picture quality, set your monitor to:
VESA® 1280 x 1024@ 75 Hz.

To set the Resolution:

- 1 Right-click on the Windows desktop.
- 2 Click *Properties* on the drop-down menu.
- 3 Click the *Settings* tab.
- 4 Select the resolution by moving the slider, which displays in the *Desktop area* or *Screen area* in the window.

NOTE: The refresh rate should already be set if you have completed the ViewSonic Wizard CD installation (or refer to your graphics card's documentation).

OSD Lock Settings

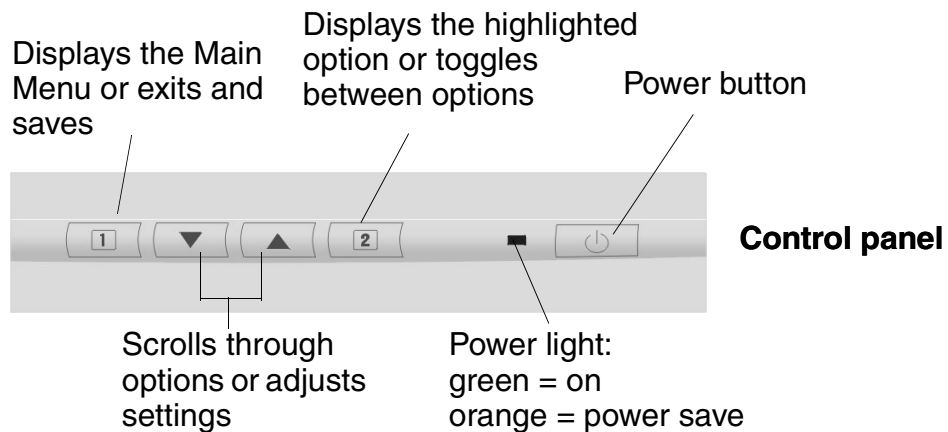
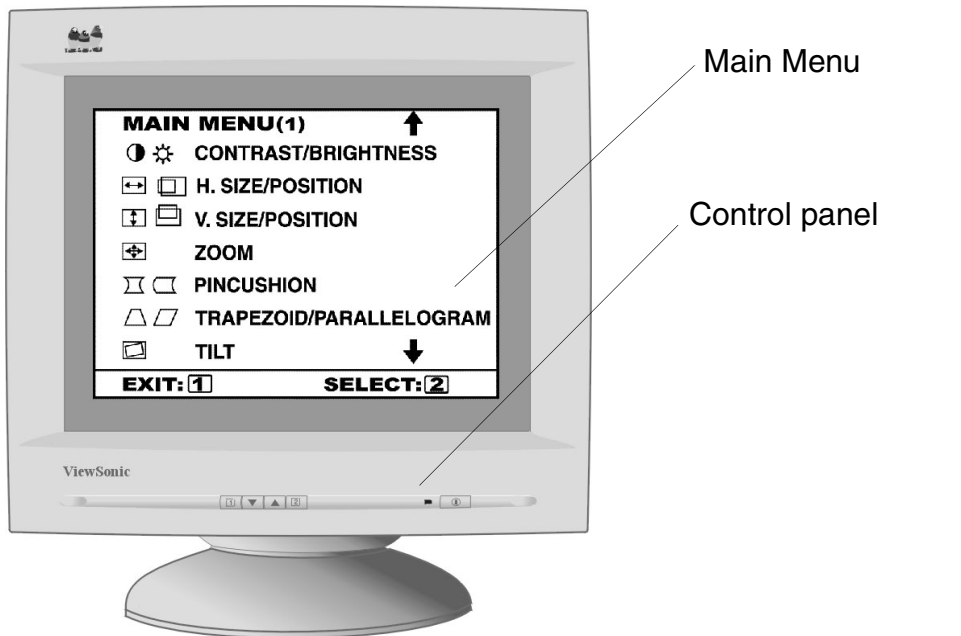
You have the option of using the OSD Lock feature to prevent current image adjustments from being changed.

- **OSD Lock:** Press and hold [1] and the down arrow ▼ for 10 seconds. If any buttons are pressed the message *OSD Locked* will display for 5 seconds.
- **OSD Unlock:** Press and hold [1] and the down arrow ▼ again for 10 seconds.

Adjusting the Screen Image

Use the buttons on the monitor control panel to adjust the OnView® controls.

- 1 Press [1] to display the Main Menu.
NOTE: OnView® controls disappear after 15 seconds.
- 2 Press ▲ or ▼ to highlight an option.
- 3 Press [2].
- 4 Press ▲ or ▼ to adjust the setting.
- 5 Press [1] *twice* to save and exit.



Menu Options

| Control | Explanation |
|---------|-------------|
|---------|-------------|



Contrast adjusts the difference between the image background (black level) and the foreground (white level).



Brightness adjusts the background black level of the screen image.



Zoom expands and contracts the entire screen image.



Horizontal Size adjusts width of the screen image.



Horizontal Position moves the screen image left or right.



Vertical Size adjusts the height of the screen image.



Vertical Position moves the screen image up or down.



Pincushion curves the vertical sides of the screen image.



Pin Balance curves the vertical edges of the screen image to the left or right.



Trapezoid adjusts the top and bottom of the screen image until they have equal length.



Parallelogram slants the vertical edges of the screen image until they are parallel.



Tilt rotates the entire screen image.

Control Explanation



Degauss removes the build-up of magnetic fields that can cause irregular colors to appear around the edges of screen images. There are two ways to degauss the display: automatically by turning the monitor on, or manually by selecting the Degauss control from the menu.

With Degauss selected from the menu, press button [2] to degauss the monitor manually.

Important: *Do not degauss repeatedly. Doing so can be harmful to the display. Wait at least 20 minutes before selecting this control again.*



ViewMatch® Color provides several color options: preset color temperatures and User Color which allows you to adjust red (R), green (G), and blue (B). The factory setting for this product is 9300K (9300° Kelvin).

9300K — Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting).

6500K — Adds red to the screen image for warmer white and richer red.

5000K — Adds blue and green to the screen image for a darker color.

User Color — Individual adjustments for red, green, and blue.



H. Moire (Horizontal Moire) reduces *vertical* interference patterns that appear as ripples, waves, or unwanted background color textures. Moire interference patterns are most noticeable when viewing images having closely spaced lines or finely detailed patterns.



V. Moire (Vertical Moire) reduces *horizontal* interference patterns that appear as ripples, waves, or unwanted background color textures. Moire interference patterns are most noticeable when viewing images having closely spaced lines or finely detailed patterns.



Language allows you to choose from among several languages for the menus and control screens: English, French, German, Italian, and Spanish.



OSD Position allows you to move the on-screen menus and control screens.

| Control | Explanation |
|---------|-------------|
|---------|-------------|



Memory Recall returns adjustments to the original factory settings if the display is operating in a Preset Timing Mode. (See the table at the bottom of page 10.)

Exception: This control does not affect changes made with the **User Color** control.



Viewmeter[®] displays information regarding the current input signal coming from the graphics card of the computer. See *Setting the Timing Mode* on page 5.

Other Information

Specifications

| | |
|-----------------------------|---|
| CRT | Type: Full 19" (18.0" viewable diagonal area), 0.21 mm Horizontal, 0.13 mm Vertical, and 0.25 mm diagonal dot pitch, 90° deflection Phosphor: RGB P22 medium/short persistence Glass surface: Anti-reflection. anti-static, Standard light transmission rate = 46% |
| Input signal | Video: RGB Analog (0.7 Vp-p, 75 Ohms) Sync: f _H : 30-86 kHz, f _V : 50-150 Hz H/V Separate (TTL), Composite Sync |
| Compatibility | Windows: VGA up to 1280 x 1024, non-interlaced Power Macintosh ¹ : up to 1024 x 768 (may require MAC [®] cable adapter) |
| Power | Voltage: 100–240 VAC, 50/60 Hz (auto switch) Consumption: 100W (typical), 110W (maximum) |
| Display area | Factory Setting: 352 mm (H) x 264 mm (V) (Typical) Full Scan: 360 mm (H) x 270 mm (V) (Depends on signal timing) |
| Operating conditions | Temperature: 32° F to 104° F (+0° C to +40° C) Humidity: 5% to 95% (no condensation) Altitude: -1,312 feet to 9,482.5 feet (-400 m to 3,000 m) |
| Storage conditions | Temperature: -40° F to +140° F (-40° C to +60° C) Humidity: 5% to 95% (no condensation) Altitude: -1,312 feet to 39,370 feet (-400 m to 12,000 m) |
| Dimensions (monitor) | 464 mm (W) x 492 mm (H) x 472 mm (D) 18.3" (W) x 19.4" (H) x 18.6" (D) |
| Weight (monitor) | 48.5 lb (22 kg) |
| Regulatory approvals | UL, cUL, FCC-B, MPR-II, DHHS, E2K, EPA ENERGY STAR [®] , TUV/S, NOM, ICES-003, VCCI, BSMI, PSB, C-Tick |
| Power modes | Green = On (normal, <100w) Orange = Off mode (< 3 W) |

¹ Macintosh users may need an adapter. Contact ViewSonic (see *Customer Support* on page 12).

Preset Timing Modes

VGA 640 x 400 @ 70 Hz
VESA[®] 640 x 480 @ 75 Hz
VESA 800 x 600 @ 75, 85 Hz
VESA 1024 x 768 @ 75 Hz
VESA 1024 x 768 @ 60,75,85 Hz
VGA 640 x 480 @ 60Hz

VESA 1280 x 1024 @ 75 Hz
VESA 1600 x 1200 @ 60 Hz
Macintosh[®] 640 x 480 @ 67 Hz
Macintosh 832 x 624 @ 75 Hz
Macintosh 1024 x 768 @ 75 Hz

Troubleshooting

No power

- Make sure power button (or switch) is ON.
- Make sure A/C power cord is securely connected to the back of the monitor and to a power outlet.
- Plug another electrical device (like a radio) into the power outlet to verify that the outlet is supplying proper voltage.

Power is ON but no screen image

- Make sure the video cable supplied with the monitor is tightly secured to the video output port on the back of the computer. If the other end of the video cable is not attached permanently to the monitor, tightly secure it to the monitor.
- Adjust brightness and contrast.
- **NOTE:** Macintosh users may need an adapter. Contact Customer Support for more information.

Flickering

- Not enough power supplied. Connect the monitor to a different outlet. If using a surge protector, reduce the number of devices plugged in.
- Check the ViewMeter® from the main menu to verify the refresh rate (vertical frequency) is 75 Hz or higher. See “Specifications” on page 10.
- Remove any devices from the area around the monitor that emit magnetic fields such as radios, surge protectors, unshielded speakers, fluorescent lights, AC power converters, desk fans, etc.
- Make sure the graphics card in your computer can use non-interlaced mode at the desired frequencies. To enable your graphics card to support higher refresh rates, try selecting fewer colors or running lower resolutions.

Wrong or abnormal colors

- If any colors (red, green, or blue) are missing, check the video cable to make sure it is securely connected. Loose or broken pins in the cable connector could cause an improper connection.
- Connect the monitor to another computer.
- Select Degauss from the Main Menu. Do this only once.
- If you have an older graphics card, contact ViewSonic® Customer Support.

Entire screen image rolls vertically

- Make sure video input signals are within the monitor's specified frequency range.
- Try the monitor with another power source, graphics card, or computer system.
- Connect the video cable securely.

Control buttons do not work

- Press only one button at a time.

Customer Support

For technical support or product service, see the table below or contact your reseller.

NOTE: You will need the product serial number.

| Country/ Region | Web site | T = Telephone F = FAX | Email |
|---|---------------------------|--|------------------------------------|
| United States | viewsonic.com/ support | T: (800) 688-6688 F: (909) 468-1202 | service.us@ viewsonic.com |
| Canada | viewsonic.com/ support | T: (800) 688-6688 F: (909) 468-1202 | service.ca@ viewsonic.com |
| United Kingdom | viewsoniceurope.com | T: 0800 833 648 F: (01293) 643910 | service.eu@ viewsoniceurope.com |
| Europe, Middle East, Baltic countries, and North Africa | viewsoniceurope.com | Contact your reseller | service.eu@ viewsoniceurope.com |
| Australia and New Zealand | viewsonic.com.au | T: +61 2 9929 3955 F: +61 2 9929 8393 | service.au@ viewsonic.com |
| Singapore/India and Southeast Asia | viewsonic.com.sg | T: 65 273 4018 F: 65 273 1566 | service.sg@ viewsonic.com |
| Other Asia/Pacific countries and Indian Peninsula | viewsonic.com.tw | T: 886 2 2246 3456 F: 886 2 8242 3668 | service.ap@ viewsonic.com |
| South Africa | viewsonic.com/asia | T: 886 2 2246 3456 F: 886 2 8242 3668 | service.ap@ viewsonic.com |

Cleaning the Monitor

- MAKE SURE THE MONITOR IS TURNED OFF.
- NEVER SPRAY OR POUR ANY LIQUID DIRECTLY ONTO THE SCREEN OR CASE.

To clean the screen:

- 1 Wipe the screen with a clean, soft, lint-free cloth. This removes dust and other particles.
- 2 If still not clean, apply a small amount of non-ammonia, non-alcohol based glass cleaner onto a clean, soft, lint-free cloth, and wipe the screen.

To clean the case:

- 1 Use a soft, dry cloth.
- 2 If still not clean, apply a small amount of a non-ammonia, non-alcohol based, mild non-abrasive detergent onto a clean, soft, lint-free cloth, then wipe the surface.

DISCLAIMER

ViewSonic® does not recommend the use of any ammonia or alcohol-based cleaners on the monitor screen or case. Some chemical cleaners have been reported to damage the screen and/or case of the monitor. ViewSonic will not be liable for damage resulting from use of any ammonia or alcohol-based cleaners.

Limited Warranty

VIEWSONIC MONITORS

What the warranty covers:

ViewSonic® warrants its products to be free from defects in material and workmanship during the warranty period. If a product proves to be defective in material or workmanship during the warranty period, **ViewSonic** will, at its sole option, repair or replace the product with a like product. Replacement product or parts may include remanufactured or refurbished parts or components.

How long the warranty is effective:

ViewSonic color monitors, including the display tubes, are warranted for three (3) years for all parts and three (3) years for all labor from the date of the first consumer purchase.

Who the warranty protects:

This warranty is valid only for the first consumer purchaser.

What the warranty does not cover:

1. Any product on which the serial number has been defaced, modified or removed.
2. Damage, deterioration or malfunction resulting from:
 - a. Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
 - b. Repair or attempted repair by anyone not authorized by **ViewSonic**.
 - c. Any damage of the product due to shipment.
 - d. Removal or installation of the product.
 - e. Causes external to the product, such as electrical power fluctuations or failure.
 - f. Use of supplies or parts not meeting **ViewSonic**'s specifications.
 - g. Normal wear and tear.
 - h. Any other cause which does not relate to a product defect.
3. Removal, installation, and set-up service charges.

How to get service:

1. **For information about receiving service under warranty, contact ViewSonic Customer Support.** You will need to provide your product's serial number.
2. To obtain service under warranty, you will be required to provide (a) the original dated sales slip, (b) your name, (c) your address, (d) a description of the problem, and (e) the serial number of the product.
3. Take or ship the product freight prepaid in the original container to an authorized **ViewSonic** service center or **ViewSonic**.
4. For additional information or the name of the nearest **ViewSonic** service center, contact **ViewSonic**.

Limitation of implied warranties:

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION CONTAINED HEREIN INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Exclusion of damages:

VIEWSONIC'S LIABILITY IS LIMITED TO THE COST OF REPAIR OR REPLACEMENT OF THE PRODUCT. VIEWSONIC SHALL NOT BE LIABLE FOR:

1. DAMAGE TO OTHER PROPERTY CAUSED BY ANY DEFECTS IN THE PRODUCT, DAMAGES BASED UPON INCONVENIENCE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME, LOSS OF PROFITS, LOSS OF BUSINESS OPPORTUNITY, LOSS OF GOODWILL, INTERFERENCE WITH BUSINESS RELATIONSHIPS, OR OTHER COMMERCIAL LOSS, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.
2. ANY OTHER DAMAGES, WHETHER INCIDENTAL, CONSEQUENTIAL OR OTHERWISE.
3. ANY CLAIM AGAINST THE CUSTOMER BY ANY OTHER PARTY.

Effect of state law:

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow limitations on implied warranties and/or do not allow the exclusion of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

Sales outside the U.S.A. and Canada:

For warranty information and service on **ViewSonic** products sold outside of the U.S.A. and Canada, contact **ViewSonic** or your local **ViewSonic** dealer.

ViewSonic Monitor Warranty (V2.0)

Release Date: 10-15-1999

Appendix

Safety Guidelines

CAUTION: The socket-outlet should be installed near the equipment and should be easily accessible.

CAUTION: Use a properly grounded power cord. Always use the appropriate AC cord certified for your country. Examples:

| | | | |
|---------------|-----|-------------------|--------------------------------|
| USA..... | UL | Switzerland | SEV |
| Canada..... | CSA | Britain | BASE/BS |
| Germany | VDE | Japan | Electric Appliance Control Act |

IMPORTANT NOTICE CONCERNING POWER CORD SELECTION

The power cord set for this unit has been enclosed and has been selected according to the country of destination and must be used to prevent electric shock. Use the following guidelines if it is necessary to replace the original cord set, or if the cord set is not enclosed.

The female receptacle of the cord set must meet IEC-60320 requirements and may look like (Figure A1 below):



United States and Canada

In the United States and Canada the male plug is a NEMA5-15 style (Figure A2), UL Listed, and CSA Labeled. For units which are mounted on a desk or table, type SVT or SJT cord sets may be used. For units which sit on the floor, only SJT type cord sets may be used. The cord set must be selected according to the current rating for your unit. Please consult the table below for the selection criteria for power cords used in the United States and Canada.

| Cord Type | Size of Conductors in Cord | Maximum Current Rating of Unit |
|-----------|----------------------------|--------------------------------|
| SJT | 18 AWG | 10 Amps |
| | 16 AWG | 12 Amps |
| | 14 AWG | 12 Amps |
| SVT | 18 AWG | 10 Amps |
| | 17 AWG | 12 Amps |

Europe

Use a cord set appropriate for the receptacles in your country. The cord set is HAR-Certified with a special mark on the outer sheath or on the insulation of one of the inner conductors.

AC PLUG CORD PRECAUTIONS FOR THE UNITED KINGDOM

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET THEN THE PLUG SHOULD BE CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO AN APPROPRIATE SOCKET.

If a new plug is to be fitted, observe the wiring code as shown below. If in any doubt, consult a qualified electrician.

WARNING! THIS APPLIANCE MUST BE EARTHED.

IMPORTANT: The wires in this mains lead are coloured as follows:

Green-and-Yellow: Earth
 Blue: Neutral
 Brown: Live

If the coloured wires of the mains lead of this appliance do not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the Earth symbol or coloured GREEN or GREEN-AND-YELLOW.

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK. The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

If you have any questions concerning which proper power cord to use, consult the dealer from whom you have purchased the product.

Compliance Information

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

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

FCC Warning

To assure continued FCC compliance, the user must use grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores. If a BNC cable is going to be used, use only a shielded BNC(5) cable. Also, any unauthorized changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device.

Notice for Japan

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

ViewSonic Corporation