Reference Guide

Color Monitor Series
5500, 7500, 7550, 9500

Document Part Number: 326689-002

May 2003

WARNING: Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.

CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

Reference Guide
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1
Introduction

Your microprocessor-based, digitally controlled color monitor is a high-performance and easy-to-use product. It employs the latest on-screen menu technology.

Kit Contents

The monitor kit contains:

- CRT monitor
- Monitor Base (preinstalled on select models)
- AC power cord (select models)
- Documentation kit

2

Safety and Maintenance Guidelines

Safety Guidelines

Power Requirements

Refer to the "Power Cord Set Requirements" section in "Agency Regulatory Notices," for information on the correct power cord set for this device.

Important Safety Information

WARNING: To reduce the risk of electric shock or damage to your equipment, do not disable the power cord grounding feature. This equipment is designed to be connected to a grounded (earthed) power outlet that is easily accessible to the operator. The grounding plug is an important safety feature.

WARNING: For your safety, be sure that the power outlet you plug the power cord into is easily accessible and located as close to the equipment as possible. When you need to disconnect the power to the equipment, unplug the power cord from the power outlet by grasping the plug firmly. Never pull on the cord.

CAUTION: For the protection of your monitor, as well as your computer, connect all power cords for your computer and its peripheral devices (such as a monitor, printer, scanner) to some form of surge protection device such as a power strip or Uninterruptible Power Supply (UPS). Not all power strips provide surge protection; the power strips must be specifically labeled as having this ability. Use a power strip whose manufacturer offers a Damage Replacement Policy so you can replace your equipment if surge protection fails.

Maintenance Guidelines

To enhance the performance and extend the life of your monitor, follow these guidelines:

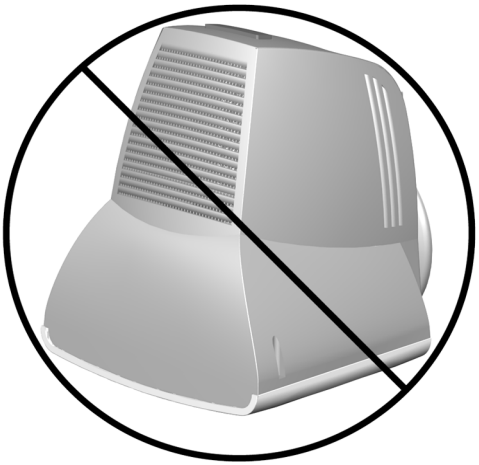
- Do not open your monitor cabinet or attempt to service this product yourself. If your monitor is not operating properly, or has been dropped or damaged, first unplug from power outlet, then contact your Hewlett-Packard authorized dealer, reseller, or service provider.
- Adjust only those controls that are discussed in the operating instructions.
- Place your monitor at least 3 inches (76 mm) away from walls or other enclosures.
- Use only a power source and connection appropriate for this monitor, as indicated on the label/back plate of the monitor.
- Be sure the total ampere rating of the products connected to the outlet does not exceed the current rating of the electrical outlet, and the total ampere rating of the products connected to the cord does not exceed the rating of the cord. Look on the power label to determine the ampere rating (AMPS or A) for each device.

- Install your monitor near an outlet that you can easily reach. Disconnect the monitor by grasping the plug firmly and pulling it from the outlet. Never disconnect the monitor by pulling the cord.
- Turn your monitor off when not in use. You can substantially increase the life of your monitor by using a screen saver program and turning off the monitor when not in use.
- Unplug your monitor from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning. If the screen requires additional cleaning, use an antistatic CRT screen cleaner.

CAUTION: Do not use benzene, thinner, ammonia, or any other volatile substances to clean your monitor or the screen. These chemicals may damage the cabinet finish as well as the screen.

- Slots and openings in the cabinet are provided for ventilation. These openings must not be blocked or covered. Never push objects of any kind into cabinet slots or other openings.
- Do not place plants on top of your monitor. Water or dirt from the plant may get into the vents.
- Do not drop your monitor or place it on an unstable surface.
- Do not allow anything to rest on the power cord. Do not walk on the cord.
- Keep your monitor in a well-ventilated area, away from excessive light, heat or moisture. Keep your monitor away from high-capacity transformers, electric motors, and other devices with strong magnetic fields.
- In a two-monitor system, place your monitors as far apart from one another as possible to lessen interference between them.

- Do not place the monitor face down. Damage could result to the front panel controls or the monitor screen.



Removing the Monitor Base

In the event that you need to disassemble the base from the monitor, follow these instructions:

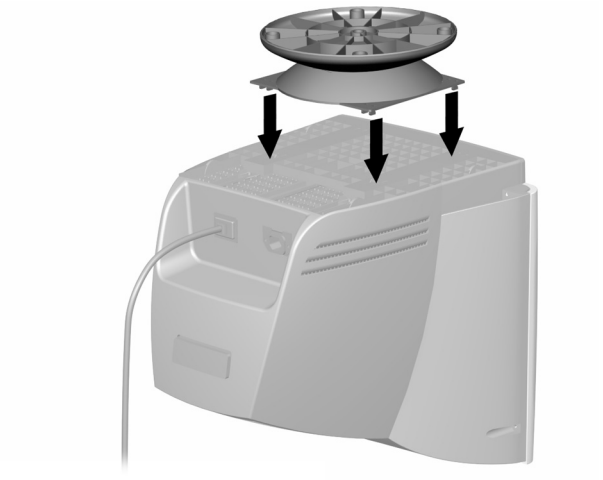
1. If you must remove the base attachment, release the catch and slide the base toward the back of your monitor.
2. Lift the base up and away from your monitor.

3
Installation

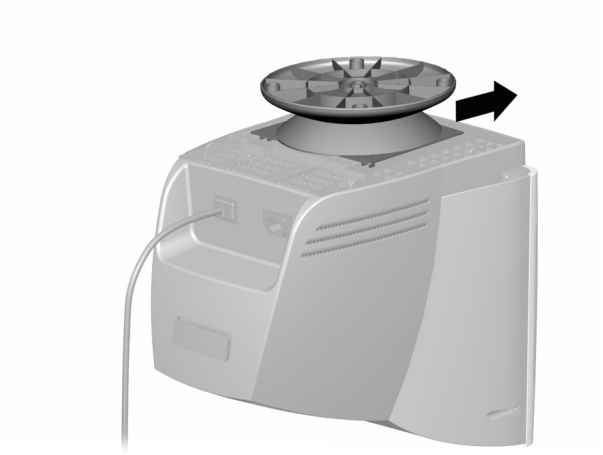
Monitor Base Installation

On some monitors, the base must be attached prior to monitor installation. If you need to attach the base, follow these steps:

1. Align the hooks on the base with the sockets on the bottom of the monitor and attach
   the base.



2. Push the base toward the front of the monitor until it stops.



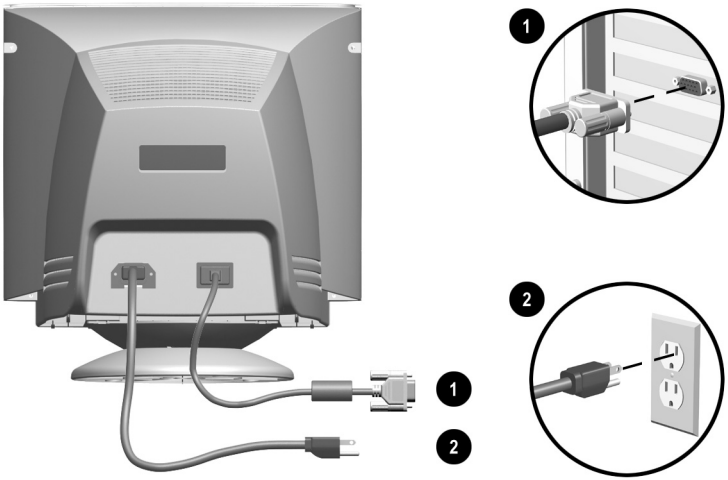
Monitor Installation

Before installing your monitor, place it in a convenient, well-ventilated location near your computer.

1. Turn off the power to your computer and other peripheral devices.
2. Connect the video cable (blue connector) ❶ from the back of the monitor to the blue 15-pin connector on the back of the computer. Tighten the cable screws to secure the cable to the connector.

CAUTION: To avoid damaging the video cable, ensure that the cable aligns with the 15-pin connector. Do not force the cable onto the connector.

3. Connect the power cord ❷ to the back of the monitor, then connect the power cord to a power outlet.



4. Power on your computer and monitor.

If your monitor fails to function properly, refer to "Troubleshooting."

5. If necessary, adjust the front panel monitor controls according to your personal preference. See "Front Panel Controls" for detailed information.

Your monitor installation is now complete.

4

Operation

Information Files

The CD-ROM included with this monitor contains two data files that must be installed onto your computer: an .INF file and an .ICM file.

The .INF file designates software and defines monitor resources used by Microsoft Windows to ensure monitor compatibility with the graphics adapter in your computer.

The .ICM file provides color matching consistency between your monitor screen and your printer. Once installed, this file is activated by graphics programs that have this color-matching feature.

To install these files on your computer:

1. Insert the *Software and Reference Guide* CD-ROM in your computer's optical drive.
2. When the CD-ROM menu launches, select Install **INF and ICM Files**.
3. To get the latest .INF and .ICM files, download them from the HP Web site. Access http://www.hp.com/go/support and select your monitor model to download the appropriate files.

Front Panel Controls

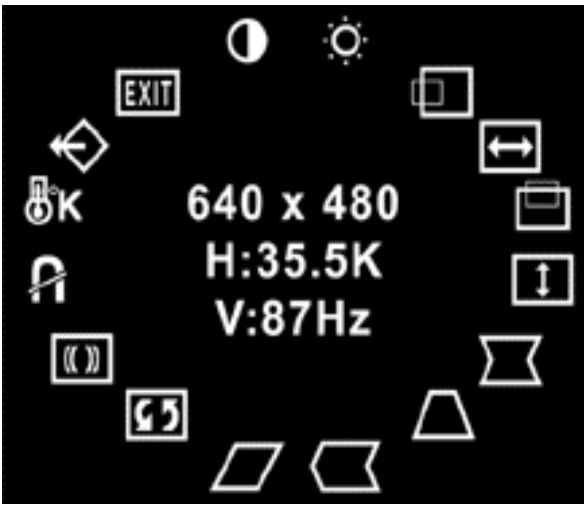
Front Panel Controls

Item	Icon	Name	Function
❶		Select	Launches on-screen displays, selects functions and adjustments, and exits menus and On-Screen Display.
❷		Left Adjustment	Moves backward through menu options or decreases adjustment levels.
❸		Right Adjustment	Moves forward through menu options or increases adjustment levels.
❹		Power/LED	Controls power to the monitor. The LED on the power button indicates the state of the monitor.

On-Screen Display

The On-Screen Display (OSD) adjusts the screen image based on your viewing preferences. To access the OSD, do the following:

1. If the monitor is not already on, press the **Power** button to turn on the monitor.
2. Press the **Select** button to display the On-Screen Display menu. A screen similar to this one appears. For a description of the icons that appear on the screen, see "On-Screen Display Functions" later in this chapter.



Not all OSD features are available on all models. The OSD for your monitor may be different. See "On-Screen Display Functions" for a features list for your model.

3. To move to a function, press the Right-Adjustment or Left-Adjustment button on the front panel of your monitor until the function is highlighted.

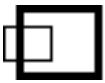
4. Press the **Select** button on the monitor choose the function.
5. The adjustment window displays. Press the Right-Adjustment or Left-Adjustment buttons to increase (Right) or decrease (Left) the level of adjustment.
6. Press **Select** to save the new adjustment.
7. To exit the On-Screen Display, select the **Exit** icon and press the Select button once.

On-Screen Display Functions

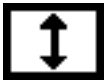
Use the Right-Adjustment and Left-Adjustment buttons found on the front control panel of your monitor to adjust these functions.

The shaded area indicates that this function is available in the model indicated.

On-Screen Display Icons and Functions

Icon	Function	Description	5500	7500 & 7550	9500
	Contrast	Right-Adjustment increases the contrast and Left-Adjustment decreases the contrast.			
	Brightness	Right-Adjustment increases the brightness and Left-Adjustment decreases the brightness.			
	Horizontal Position	Right-Adjustment moves the image to the right and Left-Adjustment moves the image to the left.			

On-Screen Display Icons and Functions *(Continued)*

Icon	Function	Description	5500	7500 & 7550	9500
	Horizontal Size	Right-Adjustment increases the horizontal size and Left-Adjustment decreases the horizontal size.			
	Vertical Position	Right-Adjustment moves the image up and Left-Adjustment moves the image down.			
	Vertical Size	Right-Adjustment increases the vertical size and Left-Adjustment decreases the vertical size.			
	Pincushion	Right-Adjustment makes the image sides convex and Left-Adjustment makes the image concave.			
	Trapezoid	Right-Adjustment adjusts the image so the top is larger and Left-Adjustment adjusts the image so that the bottom is larger.			
	Pin Balance	Right-Adjustment moves the top and bottom of the image to the right and Left-Adjustment moves the top and bottom of the image to the left.			

On-Screen Display Icons and Functions *(Continued)*

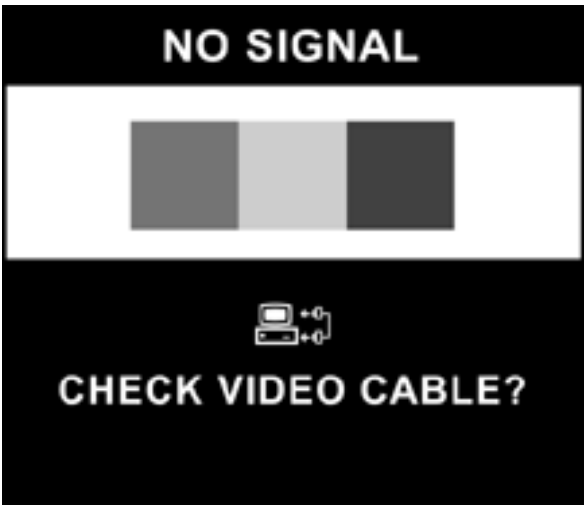
Icon	Function	Description	5500	7500 & 7550	9500
	Parallelo-gram	This control corrects the tilted vertical edges of the image on both sides of the screen that are in the same direction.			
	Tilt (Rotation)	Right-Adjustment tilts the sides of the image to the right and Left-Adjustment tilts the sides of the image to the left.			
	Moire	Right-Adjustment increases the Moire correction and Left-Adjustment decreases the Moire correction.			
	Degauss	This control demagnetizes the screen to reduce color impurities. Hewlett-Packard suggests you not degauss more than once within a 30-minute period of time.			

On-Screen Display Icons and Functions *(Continued)*

Icon	Function	Description	5500	7500 & 7550	9500
	Color Temp	Right-Adjustment selects the color temperature to the right and Left-Adjustment selects the color temperature to the left.			
	Reset	This control resets the monitor to factory default values.			
	Exit	This control exits the OSD menu.			

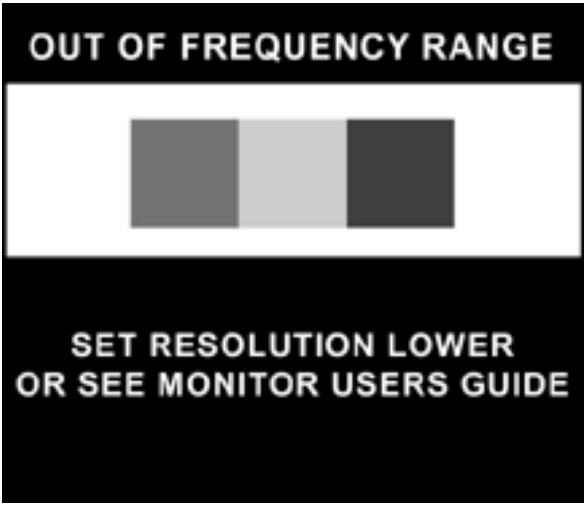
Monitor Messages

No Signal Message



If a No Signal message displays on your monitor, check to be sure your video cable is properly connected and ensure that your computer is powered on.

Out of Frequency Range Message



If an Out of Frequency Range message displays on your monitor, your video resolution and/or refresh rate are set higher than the levels your monitor supports.

To change the video resolution or refresh rate on your monitor, follow these steps:

1. Restart your computer.
2. Enter Safe Mode on your computer. Refer to your computer's operating system Help for instructions on entering Safe Mode.
3. Change your display settings to a supported setting (see "Technical Specifications").
4. Restart your computer so that the new settings take effect.

Using the Energy Saver Mode

Your monitor is designed to meet strict Environmental Protection Agency (EPA) Energy Star requirements for reduced power consumption. Using a combination of hardware and software functions, this energy-saving feature allows your computer to control your monitor's power consumption and reduce your monitor's power state when not in use.

Power Management Status for 5500/15" Series Monitors

State	LED Color	Power Consumption	Description
On	Green	< 80 watts	Normal Operation
Sleep	Amber	< 5 watts	Monitor screen is blank. High voltage is off. Heater voltage is off. There is a brief warm-up period before returning to full power mode.

Power Management Status for 7500 and 7550/17" Series Monitors

State	LED Color	Power Consumption	Description
On	Green	< 100 watts	Normal Operation
Sleep	Amber	< 5 watts	Monitor screen is blank. High voltage is off. Heater voltage is off. There is a brief warm-up period before returning to full power mode.

Power Management Status for 9500/19" Series Monitors

State	LED Color	Power Consumption	Description
On	Green	< 130 watts	Normal Operation
Sleep	Amber	< 5 watts	Monitor screen is blank. High voltage is off. Heater voltage is off. There is a brief warm-up period before returning to full power mode.

Your monitor's energy saver feature works only when your monitor is connected to a computer that also has energy saver features.

The Energy Saver utility, with its energy saving features, is available with all Microsoft Windows operating systems. Some features are also available in DOS. Refer to your computer's user guide for instructions on setting energy saver features (also referred to as power management features).

A

Troubleshooting

Solving Common Problems

The following table lists possible problems, the possible cause of each problem, and the recommended solutions.

Problem	Possible Cause	Solution
Screen is blank.	Power cord is disconnected.	Connect the power cord.
	Power switch is off.	Turn on power.
	Video cable is improperly connected.	Connect video cable properly.
	Screen blanking utility is active.	Depress any key on the keyboard or move the mouse.
Image appears blurred, indistinct, or too dark.	Brightness and contrast are too low.	Press the **SELECT** button to access the On-Screen Display. Select the Brightness and/or Contrast icons to adjust as needed.
Color is abnormal.	A magnetic object may be nearby.	Move the object farther away.

Problem	Possible Cause	Solution
	Monitor may have been moved or inadvertently bumped.	Press the **SELECT** button to access the On-Screen Display. Select Degauss to activate. Hewlett-Packard suggests you not degauss more than once within a 30-minute period of time.
Image is too large or too small.	Horizontal width may need adjustment.	Press the **SELECT** button to access the On-Screen Display. Select H. Size to adjust as needed.
	Vertical height may need adjustment.	Press the **SELECT** button to access the On-Screen Display. Select V. Size to adjust as needed.
Image is not centered.	Horizontal position may need adjustment.	Press the **SELECT** button to access the On-Screen Display. Select H. Position to adjust as needed.
	Vertical position may need adjustment.	Press the **SELECT** button to access the On-Screen Display. Select V. Position to adjust as needed.

Problem	Possible Cause	Solution
"No Signal" is displayed on screen.	Monitor video cable is disconnected.	Connect the 15-pin monitor video cable to the computer. Be sure that the computer power is on.
"Out of Frequency" is displayed on screen.	Video resolution and/or refresh rate are set higher than what your monitor supports.	Restart your computer and enter Safe Mode. Change your settings to a supported setting (see "Technical Specifications"). Restart your computer so that the new settings take effect.
Monitor is overheating.	There is not enough air space to allow proper ventilation.	Leave at least 3 inches (76 mm) of ventilation space around the monitor, and do not place objects on top of the monitor.

Using the Worldwide Web

Before contacting customer services, refer to the support Web site at: http://www.hp.com/go/support.

Preparing to Call Technical Support

If you cannot solve a problem using the troubleshooting tips in this section, you may need to call technical support. Have the following information available when you call:

- The monitor
- Monitor model number
- Serial number for the monitor
- Purchase date on invoice
- Conditions under which the problem occurred
- Error messages received
- Hardware configuration
- Hardware and software you are using

B

Technical Specifications

5500/15" Series Monitor

Screen Size	15" (38 cm) visual diagonal Viewable screen size 13.8" (35 cm)
Dot Pitch	0.28 mm (Diagonal)
Display Area Default	199 x 265 (mm) typical
Display Colors	Infinite
Display Resolutions	Refresh Rates
640 x 480	60 Hz
640 x 480	75 Hz
640 x 480	85 Hz
720 x 400	70 Hz
800 x 600	75 Hz
800 x 600	85 Hz (preferred resolution)
1024 x 768	60 Hz (maximum resolution)
Synchronization (Horizontal)	30 to 54 KHz
Synchronization (Vertical)	50 to 120 Hz
Max Pixel Clock	70 MHz Max.
Input Signal	Video RGB Analog Sync. TTL Separate
Video Cable	15-pin D-sub connector
Power Input Voltage Frequency	100 to 240V AC 50 $\pm$3 to 60 $\pm$3 Hz
Inrush Current	30 amps @ 120V 60 amps @ 220V

(Continued)

Power Consumption	80 W (Max.)
Dimension (W x H x D) Unpacked w/attached base	14.4 x 15.7 x 16.5 inches (maximum) 365 x 400 x 418 mm (maximum)
Weight	29 lb Max. 13 kg Max.
Operating Temperature	50° F to 95° F 10° C to 35° C
Storage Temperature	-22° F to 140° F -30° C to 60° C
Humidity	20% to 80% (non-condensing)
Altitude	Up to 10,000 ft./3048 meters
TCO'99	Some models meet TCO'99
MPRII	Some models meet MPRII
Plug and Play	Yes

7500/17" Series Monitor

Screen Size	17" (43 cm) visual diagonal Viewable screen size 16" (40.6 cm)
Dot Pitch	0.28 mm (Diagonal)
Display Area Default	234 x 312 (mm) typical
Display Colors	Infinite
Display Resolutions 640 x 480 640 x 480 640 x 480 720 x 400 800 x 600 800 x 600 1024 x 768 1024 x 768 1280 x 1024	Refresh Rates 60 Hz 75 Hz 85 Hz 70 Hz 75 Hz 85 Hz 75 Hz 85 Hz (preferred user resolution) 60 Hz (maximum resolution)
Synchronization (Horizontal)	30 to 70 KHz
Synchronization (Vertical)	50 to 140 Hz
Max Pixel Clock	110 MHz Max.
Input Signal	Video RGB Analog Sync. TTL Separate
Video Cable	15-pin D-sub connector
Power Input Voltage Frequency	100 to 240V AC 50 $\pm$3 to 60 $\pm$3 Hz
Inrush Current	30 amps @ 120V 60 amps @ 220V
Power Consumption	100 W (Max.)
Dimension (W x H x D) Unpacked w/attached base	16.6 x 17 x 17.5 inches (maximum) 410 x 432 x 445 mm (maximum)

Weight	38 lb Max. 17 kg Max.
Operating Temperature	50° F to 95° F 10° C to 35° C
Storage Temperature	-22° F to 140° F -30° C to 60° C
Humidity	20% to 80% (non-condensing)
Altitude	Up to 10,000 ft./3048 meters
TCO'99	Some models meet TCO'99
MPRII	Some models meet MPRII
Plug and Play	Yes

7550/17" Flat CRT Monitor

Screen Size	17" (43 cm) visual diagonal Viewable screen size 16" (40.6 cm) Anti-Glare Coating
Dot Pitch	0.25 to 0.28 mm (variable)
Display Area Default	234 x 312 (mm) typical
Display Colors	Infinite
Display Resolutions 640 x 480 640 x 480 640 x 480 720 x 400 800 x 600 800 x 600 1024 x 768 1024 x 768 1280 x 1024 1600 x 1200	Refresh Rates 60 Hz 75 Hz 85 Hz 70 Hz 75 Hz 85 Hz 75 Hz 85 Hz (preferred user resolution) 75 Hz 65 Hz (maximum resolution)
Synchronization (Horizontal)	30 to 86 KHz
Synchronization (Vertical)	50 to 140 Hz
Max Pixel Clock	180 MHz Max.
Input Signal	Video RGB Analog Sync. TTL Separate
Video Cable	15-pin D-sub connector
Power Input Voltage Frequency	100 to 240V AC 50 $\pm$3 to 60 $\pm$3 Hz
Inrush Current	30 amps @ 120V 60 amps @ 220V
Power Consumption	100 W (Max.)
Dimension (W x H x D) Unpacked w/attached base	16.1 x 17 x 17.4 inches (maximum) 410 x 432 x 442 mm (maximum)

Weight	42 lb Max. 19 kg Max.
Operating Temperature	50° F to 95° F 10° C to 35° C
Storage Temperature	-22° F to 140° F -30° C to 60° C
Humidity	20% to 80% (non-condensing)
Altitude	Up to 10,000 ft./3048 meters
TCO'99	Some models meet TCO'99
MPRII	Some models meet MPRII
Plug and Play	Yes

9500/19" Series Monitor

Screen Size	19" (48 cm) visual diagonal Viewable screen size 18" (46 cm) Anti-Glare Coating
Dot Pitch	0.26 mm (Diagonal) 0.22 mm (Horizontal)
Display Area Default	264 x 352 (mm) typical
Display Colors	Infinite
Display Resolutions 640 x 480 640 x 480 720 x 400 800 x 600 800 x 600 1024 x 768 1024 x 768 1280 x 1024 1280 x 1024 1600 x 1200	Refresh Rates 60 Hz 85 Hz 70 Hz 75 Hz 85 Hz 75 Hz 85 Hz 75 Hz 85 Hz (preferred user resolution) 75 Hz (maximum resolution)
Synchronization (Horizontal)	30 to 96 KHz
Synchronization (Vertical)	50 to 160 Hz
Max Pixel Clock	210 MHz Max.
Input Signal	Video RGB Analog Sync. TTL Separate
Video Cable	15-pin D-sub connector
Power Input Voltage Frequency	100 to 240V AC 50 $\pm$3 to 60 $\pm$3 Hz
Inrush Current	30 amps @ 120V 60 amps @ 220V
Power Consumption	130 W (Max.)

Dimension (W x H x D) Unpacked w/attached base	17.9 x 18.5 x 18.7 inches (maximum) 455 x 470 x 475 mm (maximum)
Weight	44 lb Max. 20 kg Max.
Operating Temperature	50° F to 95° F 10° C to 35° C
Storage Temperature	-22° F to 140° F -30° C to 60° C
Humidity	20% to 80% (non-condensing)
Altitude	Up to 10,000 ft./3048 meters
TCO'99	Some models meet TCO'99
MPRII	Some models meet MPRII
Plug and Play	Yes

C

Agency Regulatory Notices

Federal Communications Commission Notice

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

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

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hewlett Packard Company may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods to maintain compliance with FCC Rules and Regulations.

Declaration of Conformity for Products Marked with FCC Logo, United States Only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding your product, contact:

Hewlett Packard Company
P. O. Box 692000, Mail Stop 530113
Houston, Texas 77269-2000

Or, call1

1-800- 652-6672

For questions regarding this FCC declaration, contact:

Hewlett Packard Company
P. O. Box 692000, Mail Stop 510101
Houston, Texas 77269-2000

Or, call

(281) 514-3333

To identify this product, refer to the Part, Series, or Model number found on the product.

Canadian Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Avis Canadien

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Notice

Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (in brackets are the equivalent international standards):

- EN55022 (CISPR 22) - Electromagnetic Interference
- EN55024 (IEC61000-4-2,3,4,5,6,8,11) - Electromagnetic Immunity
- EN61000-3-2 (IEC61000-3-2) – Power Line Harmonics
- EN61000-3-3 (IEC61000-3-3) – Power Line Flicker
- EN60950 (IEC950) - Product Safety

Japanese Notice

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

Korean Notice

사용자 안내문 (B급기기)
이 기기는 비업무용으로 전자파장해 검정을 받은
기기로서, 주거지역에서는물론 모든 지역에서
사용할 수 있습니다.

EPA Energy Star Compliance

Monitors that are marked with the Energy Star Logo meet the requirements of the EPA Energy Star program. As an Energy Star Partner, Hewlett Packard Company has determined that this product meets the Energy Star guidelines for energy efficiency. Specific details on using the Energy Saving features can be found in the energy saver or power management section of the computer manual.

Power Cord Set Requirements

The monitor power supply is provided with Automatic Line Switching (ALS). This feature allows the monitor to operate on input voltages between 100-120V or 200-240V.

The power cord set (flexible cord or wall plug) received with the monitor meets the requirements for use in the country where you purchased the equipment.

If you need to obtain a power cord for a different country, you should purchase a power cord that is approved for use in that country.

The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product. In addition, the cross-sectional area of the wire must be a minimum of 0.75 mm²

or 18AWG, and the length of the cord must be between 6 feet (1.8 m) and 12 feet (3.6 m). If you have questions about the type of power cord to use, contact your HP authorized service provider.

A power cord should be routed so that it is not likely to be walked on or pinched by items placed upon it or against it. Particular attention should be paid to the plug, electrical outlet, and the point where the cord exits from the product.

D

TCO'99 Requirements

You have just purchased a TCO'99 approved and labelled product. Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also to the further development of environmentally adapted electronics products.

Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem, as far as computers and other electronics equipment are concerned, is that environmentally harmful substances are used both in the products and during their manufacture. Since it is not so far possible to satisfactorily recycle the majority of electronics equipment, most of these potentially damaging substances sooner or later enter nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (internal) and natural (external) environments. Since all methods of electricity generation have a negative effect on the environment (for example, acidic and climate-influencing emissions, radioactive waste), it is vital to save energy. Electronics equipment in offices is often left running continuously and thereby consumes a lot of energy.

What does labelling involve?

This product meets the requirements for the TCO'99 scheme which provides for international and environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Svenska Naturskyddsforeningen (The Swedish Society for Nature Conservation) and Statens Energimyndighet (The Swedish National Energy Administration).

Approval requirements cover a wide range of issues: environment, ergonomics, usability, emission of electric and magnetic fields, energy consumption and electrical and fire safety.

The environmental demands impose restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons) and chlorinated solvents, among other things. The product must be prepared for recycling and the manufacturer is obligated to have an environmental policy which must be adhered to in each country where the company implements its operational policy.

The energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, physical and visual ergonomics and good usability.

Below you will find a brief summary of the environmental requirements met by this product. The complete environmental criteria document may be ordered from:

TCO Development
SE-114 94 Stockholm, Sweden
Fax: +46 8 782 92 07

Email (Internet): development@tco.se

Current information regarding TCO'99 approved and labelled products may also be obtained via the Internet, using the address: http://www.tco-info.com

Environmental Requirements

Flame Retardants

Flame retardants are present in printed circuit boards, cables, wires, casings and housings. Their purpose is to prevent, or at least to delay the spread of fire. Up to 30% of the plastic in a computer casing can consist of flame retardant substances. Most flame retardants contain bromine or chloride, and those flame retardants are chemically related to another group of environmental toxins, PCBs. Both the flame retardants containing bromine or chloride and the PCBs are suspected of giving rise to severe health effects, including reproductive damage in fish-eating birds and mammals, due to the bioaccumulative processes. Flame retardants have been found in human blood and researchers fear that disturbances in foetus development may occur.

The relevant TCO'99 demand requires that plastic components weighing more than 25 grams must not contain flame retardants with organically bound bromine or chlorine. Flame retardants are allowed in the printed circuit boards since no substitutes are available.

Bioaccumulative is defined as substances which accumulate within living organisms.

Cadmium

Cadmium is present in rechargeable batteries and in the color-generating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses. The relevant TCO'99 requirement states that batteries, the color-generating layers of display screens and the electrical or electronics components must not contain any cadmium.

Cadmium is a heavy metal that is Bioaccumulative.

Mercury

Mercury is sometimes found in batteries, relays and switches. It damages the nervous system and is toxic in high doses. The relevant TCO'99 requirement states that batteries may not contain any mercury. It also demands that mercury is not present in any of the electrical or electronics components associated with the labelled unit. There is however one exception. Mercury is, for the time being, permitted in the back light system of flat panel monitors as there today is no commercially available alternative. TCO aims on removing this exception when a mercury free alternative is available.

Mercury is a heavy metal that is Bioaccumulative.

CFCs (Freons)

The relevant TCO'99 requirement states that neither CFCs nor HCFCs may be used during the manufacture and assembly of the product. CFCs (freons) are sometimes used for washing printed circuit boards. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on earth of ultraviolet light with e.g. increased risks of skin cancer (malignant melanoma) as a consequence.

Lead

Lead can be found in picture tubes, display screens, solders and capacitors. Lead damages the nervous system and in higher doses, causes lead poisoning. The relevant TCO´99 requirement permits the inclusion of lead since no replacement has yet been developed.

Lead is a heavy metal that is Bioaccumulative.