

# **User's Guide**

FP9419 LCD Monitor



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

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Text set off in this manner indicates additional information.

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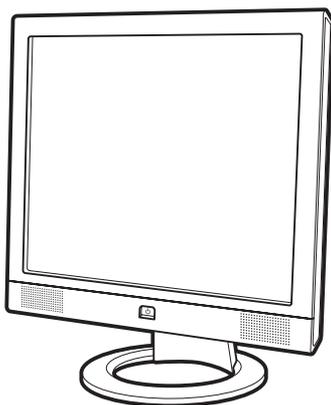
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## Product Features

The FP9419 LCD Monitor (Liquid Crystal Display) has an active matrix, Thin-Film Transistor (TFT) screen.



The flat panel monitor features include:

- Large 19-inch (48.3 cm) diagonal viewable area display.
- 1280 × 1024 factory-set resolution, plus full-screen support for lower resolutions.
- Dual video inputs supported:
  - VGA Analog
  - DVI-D supports Digital signal input
- VGA analog and DVI-D digital signal cables included.
- Fast response time of 16ms provides better experience for gaming and graphics.

- Easy to view from a sitting or standing position, or while moving from one side of the monitor to the other.
- Tilt adjustment capabilities.
- Removable pedestal and VESA 100mm mounting holes for flexible mounting solutions including wall mounting.
- Security lock slot.
- Plug and Play capability, if supported by your system.
- On-Screen Display (OSD) adjustments for ease of setup and screen optimization. Choose English, French, German, Italian, Spanish, or Dutch.
- Integrated stereo speakers.
- Audio support connections include a PC line-in connector, and a headphone jack connector.
- Integrated power supply.
- Energy Saver feature reduces power consumption.
- Complies with the following regulated specifications:
  - EPA ENERGY STAR
  - European Union CE Directives
  - Swedish MPR II 1990
  - TCO '99 Environmental Requirements
- This CD includes:
  - An Information file (INF)
  - Image Color Matching file (ICM)
  - Auto-adjustment pattern software
  - This User's Guide

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## Safety and Maintenance Guidelines

### Important Safety Information

A power cord is included with your monitor. If another cord is used, use only a power source and connection appropriate for this monitor. For information on the correct power cord set to use with your monitor, see "Power Cord Set Requirements" in Appendix B.



**WARNING:** To reduce the risk of electric shock or damage to your equipment, do not disable the power cord grounding feature. The grounding plug is an important safety feature. Connect the equipment to a grounded (earthed) power outlet.

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

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**CAUTION:** To protect 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 a surge protection device such as a power strip with surge protection 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:

- 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, contact your HP authorized dealer, reseller, or service provider.
- Adjust only those controls that are described in the operating instructions.
- 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.
- Do not allow anything to rest on the power cord. Do not walk on the cord.
- Turn your monitor off when not in use. You can substantially increase the life expectancy 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 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.

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- Keep your monitor in a well-ventilated area, away from excessive light, heat or moisture.
- 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 drop your monitor or place it on an unstable surface.
- When removing the monitor base, you must lay the monitor face down on a soft area to prevent it from getting scratched, defaced, or broken.

## Cleaning the Monitor

The monitor is a high-quality optical device that requires special care when cleaning. To clean the monitor, follow these steps:

1. Turn off the monitor and the computer.
2. Unplug your monitor from the wall outlet before cleaning.
3. Wipe the screen with a soft, clean cloth.
  - ❑ If the screen requires additional cleaning, use an antistatic screen cleaner.
4. Dust the monitor housing. Use a damp cloth to clean the cabinet.
  - ❑ If the cabinet requires additional cleaning, use a clean cloth dampened with isopropyl alcohol.



**CAUTION:** Do not use benzene, thinner, ammonia, or any volatile substance to clean the monitor screen or cabinet. These chemicals may damage the monitor. Do not use liquid cleaners or aerosol cleaners. Never use water to clean an LCD screen.

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5. Plug in the monitor.
6. Turn on the computer and monitor.

## Shipping the Monitor

Keep the original packing box in a storage area. You may need it later if you move or ship your monitor. When you ship the monitor, you should remove the base from the pedestal.

## Removing the Monitor Base

Read the following warning and caution statements before beginning the procedure.



**WARNING:** Do not remove the base from the pedestal while the monitor is standing in the upright position. Attempting to remove the base from the pedestal while the monitor is upright may injure the user.

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**WARNING:** Before disassembling the monitor, turn off the monitor power, and disconnect all power, video, and audio cables. To disconnect power from the equipment, unplug the power cord from the power outlet by grasping the plug firmly. Never pull on the cord.

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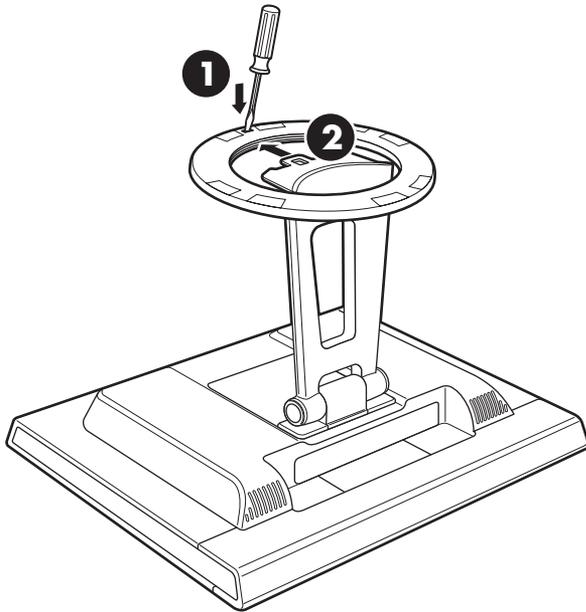
**CAUTION:** The screen is fragile. Placing the monitor screen down on a flat, soft area prevents scratches, defacing, or breakage.

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To remove the base from the pedestal:

1. Disconnect the power, video, and audio cables from the monitor.
2. Lay the monitor face down on a flat, soft protected surface. Turn the pedestal upright.

3. On the bottom side of the base, carefully slide a slotted screwdriver into the opening ❶, as shown in the following illustration. Push the screwdriver towards the top of the monitor, slide the base ❷ slightly back, towards the bottom of the monitor, to unlock it. Pull the base completely away from the pedestal with a firm grip.



#### *Removing the Base from the Monitor Pedestal*

4. Fold the pedestal hinge in the shipping position to the back of the monitor. Remove only the base, not the hinge, when shipping.



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## Setting Up the Monitor

### Before You Begin

1. Unpack the monitor. Make sure all contents are included. Store the boxes.
2. Ensure that the power is turned off to the monitor, computer system, and other attached devices (monitor ships in off position).
3. Determine the video cable or cables that you will connect from the computer video card outputs to the VGA and DVI inputs on the monitor. You can connect one or both cables.
  - ❑ **VGA cable:**  
Standard VGA 15-pin cable.
  - ❑ **DVI-D cable:**  
For digital operation, use the DVI-D to DVI-D video cable provided. The DVI-D cable supplied with this monitor is for digital-to-digital connection only. Your computer must have a DVI-compatible graphics card installed for use with this cable.
4. Determine if the monitor will be desktop mounted or wall mounted.
  - ❑ See "Installing the Monitor".

## Installing the Monitor

You can install the monitor on a desktop or wall mount. Place the monitor in a convenient, well-ventilated location near your computer.

If the monitor will be installed on a:

- Desktop or table, see the “Placing the Monitor on a Desktop” section.
- Wall, swing arm, or other mounting fixture, see the “Mounting the Monitor” section.

Connect the monitor after you have installed it. See “Connecting the Monitor”.

## Placing the Monitor on a Desktop

Before you place the monitor on a desktop or table, you must attach the monitor base.

To place the monitor on a desktop or table:

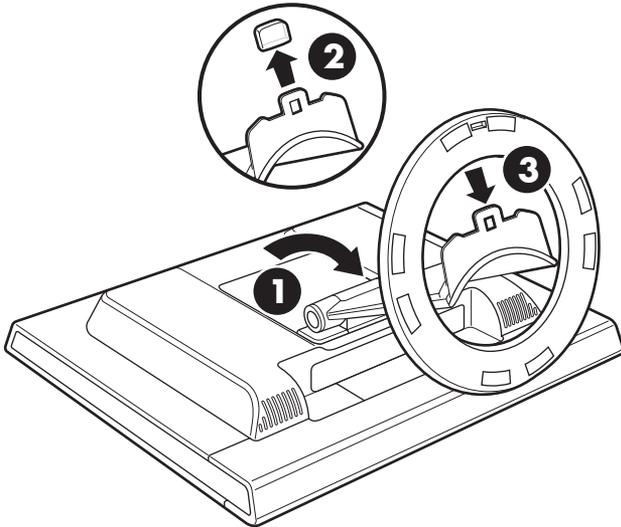
1. Lay the monitor face down on a flat, soft, protected surface.



**CAUTION:** The screen is fragile. Placing the monitor screen down on a flat, soft area prevents scratches, defacing, or breakage.

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- Place the pedestal all the way towards the bottom of the monitor as shown in the following illustration ❶.



#### *Inserting the Base onto the Monitor Pedestal*

- Remove the plastic cap on the pedestal end ❷.
- Using both hands, firmly push the circular base into the bottom of the pedestal to lock the pedestal base in place ❸. When the base locks, it will make a clicking sound. Make sure the base is securely locked onto the pedestal before continuing with the setup.
- Stand the monitor in the upright position.



**WARNING:** Tilt the monitor carefully. If you tilt the monitor back more than 30 degrees, beyond its easily adjustable position, it could fall over. Position the monitor so that it cannot fall off the table if bumped.



## Mounting the Monitor

Before you mount the monitor on a wall, a swing arm or other mounting fixture, you must remove the monitor pedestal and back mounting cover. You will need a Phillips head screwdriver. Read the following warning and caution statements before beginning the procedure.



**WARNING:** Ensure that the monitor is lying flat, screen down. Attempting to remove the pedestal and base from the monitor while it is upright may result in injury to the user.

---



**CAUTION:** Before disassembling the monitor, turn off the monitor power, and disconnect all power, video, and audio cables.

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If you are changing from a desktop installation to a wall mount, you must first remove the monitor base. See “Removing the Monitor Base” in the previous chapter.

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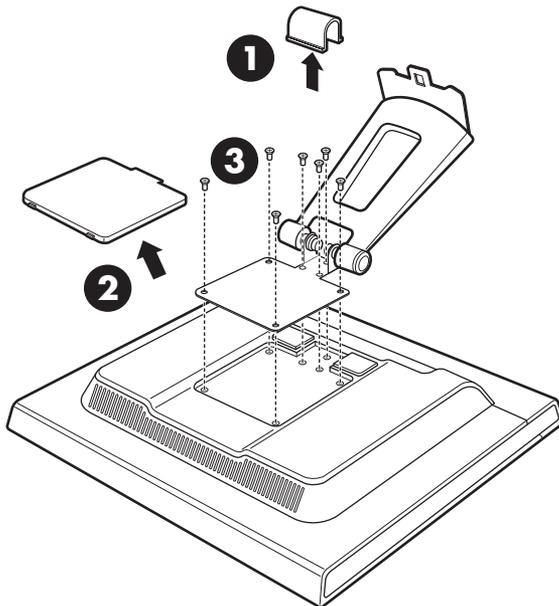
To install the monitor on a wall, a swing arm or other mounting fixture:

1. Pinch and remove the hinge cover and set it aside ❶. Three screws and the hinges are exposed.
2. Lay the monitor down on a flat, soft, protected surface. Turn the pedestal upright.



**CAUTION:** The screen is fragile. Placing the monitor screen down on a flat, soft area prevents scratches, defacing, or breakage.

3. Remove the rectangular back cover ❷ as shown in the following illustration. Four screws are exposed.
4. Turn the pedestal towards the bottom of the monitor.
5. Remove all seven screws ❸. Use a Phillips head screwdriver.



### Wall Mounting the Monitor

6. Remove the pedestal.
7. Replace the hinge cover on the pedestal.
8. Save the screws, back cover, pedestal, and base for future use.
9. Mount the monitor to a swing arm or other mounting fixture.

When the back cover has been removed, four threaded mounting holes are exposed on the monitor panel. These mounting holes are spaced 100 mm apart and are compliant with the Video Electronics Standards Association (VESA) standard for mounting flat panel monitors.

Use the four holes to attach a swing arm or other mounting fixture. Follow the instructions included with the mounting fixture, to insure that the monitor is safely attached.

## Connecting the Monitor

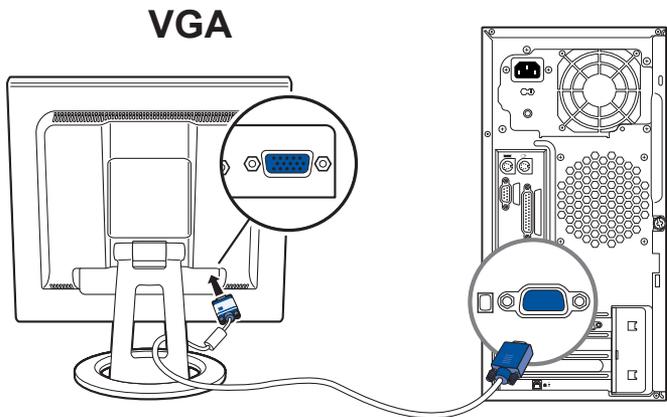
To connect the monitor video input to the computer:

1. Place the monitor upright as shown in the following illustration.
2. Connect the video cable from the monitor to the video connector on the rear panel of the computer.



You can connect the VGA cable, the DVI-D cable, or both. Only one cable is connected for typical installations.

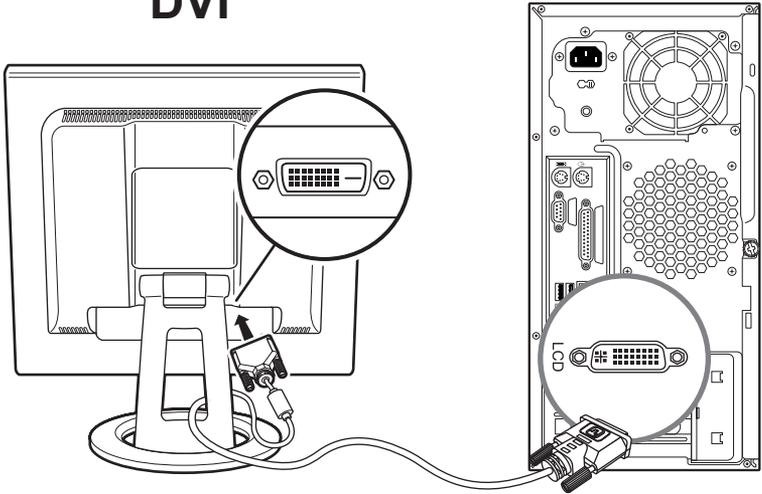
- ❑ Connect one end of the 15-pin VGA cable to the VGA input connector on the monitor. Then connect the other end to the VGA output connector on the computer.



*Connecting the VGA Cable*

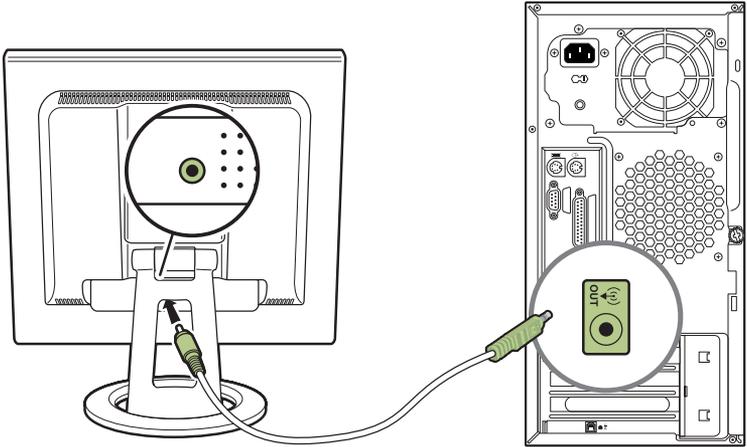
- ❑ Connect one end of the DVI-D cable to the DVI input connector on the monitor. Then connect the other end to the DVI connector on the computer.

## DVI



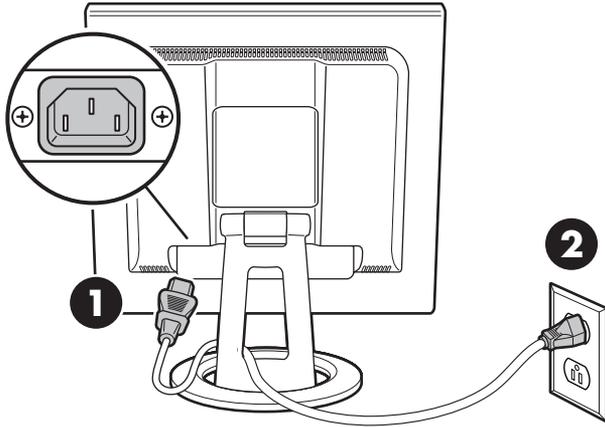
*Connecting the DVI-D Cable*

3. Connect the PC audio line-out connector from the computer to your monitor to enable the monitor speakers. Connect the headphone jack connector (as needed).



*Connecting the Audio Cable*

4. Read the warning below. Then connect one end of the power cable to the monitor, and the other end to an electrical wall outlet.



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### Connecting the Power Cable



**WARNING:** To reduce the risk of electric shock or damage to your equipment:

Do not disable the power cord grounding plug. The grounding plug is an important safety feature. Plug the power cord into a grounded (earthed) electrical outlet.

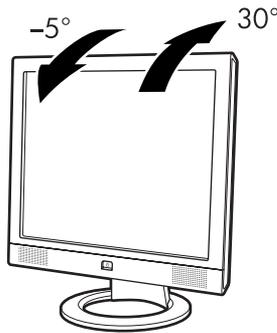
Be sure that the grounded power outlet you plug the power cord into is easily accessible to the operator and located as close to the equipment as possible. A power cord should be routed so that it is not likely to be walked on or pinched by items placed upon it or against it.

Do not place anything on power cords or cables. Arrange them so that no one may accidentally step on or trip over them. Do not pull on a cord or cable.

See "Power Cord Set Requirements" for additional information.

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5. Apply power to the computer and monitor, and other attached devices.
6. The Monitor Status displays:
  - VGA Input: Active** or **No Input Signal**
  - DVI Input: Active** or **No Input Signal**
  - Mode: Settings**
7. Adjust the monitor as needed for your comfort using the monitor's tilt adjustment capability.



### *Adjusting the Tilt*



**WARNING:** Tilt the monitor carefully. If you tilt the monitor back more than 30 degrees, beyond its easily adjustable position, it could fall over. Position the monitor so that it cannot fall off the table if bumped.



8. Test the monitor function. If it does not function correctly, configure the monitor as described in the next chapter, "Operating the Monitor".



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# Operating the Monitor

## CD Software and Utilities

The CD included with this monitor contains two files you can install on your computer:

- An .INF (Information) file
- An .ICM (Image Color Matching) file

This CD also contains the Auto-Adjustment utility. This single pattern program helps improve the picture quality of your VGA input flat panel monitor. See “Using the Auto-Adjustment Function.”

Adobe Acrobat Reader® is supplied on this CD and can be installed from the menu.

## The Information File

This monitor is Windows Plug and Play compatible and the monitor will work correctly without installing the .INF file. The .INF file (Information file) enables the computer to communicate with the monitor and use all the monitor features. The .INF file defines monitor resources used by Microsoft Windows® operating systems to ensure monitor compatibility with your computer’s graphics adapter.

Monitor Plug and Play compatibility requires that the computer’s graphics card is VESA DDC2 compliant and that the monitor connects directly to the graphics card. Plug and Play does not work through separate BNC type connectors or through distribution buffers/boxes. You may have to install the .INF file from the CD if these conditions are not met.

## The Image Color Matching File

The .ICM files provide more accurate color representation by supplying data to graphics programs to provide consistent color matching from monitor screen to printer, or from scanner to the monitor screen. The .ICM files contain a monitor color system profile. These files are activated from within graphics programs that support this feature.



The ICM color profile is written in accordance with the International Color Consortium (ICC) Profile Format Specification.

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## Installing .INF and .ICM Files

If you determine that you need to update these files, you can install .INF and .ICM files from the CD, or download them from the Internet.

### Installing from the CD

To install .INF and .ICM files on your computer from the CD:

1. Insert the CD in your computer's CD-ROM drive. The CD menu displays.
2. View the "INF and ICM Readme" file.
3. Select **Install INF and ICM Files**.
4. Follow the on-screen instructions.
5. After the files have been installed, restart Windows.
6. Ensure that the proper resolutions and refresh rates appear in the Windows Display control panel. Refer to your Operating System documentation for more information.



You may need to install the digitally signed monitor INF or ICM files manually from the CD, in the event of an installation error. Refer to the INF and ICM Readme file on the CD.

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## Downloading from the World Wide Web

To download the latest version of .INF and .ICM files from the HP Monitors Support Web site:

1. Refer to: <http://www.hp.com/support>  
Select your country/region.
2. Follow the links for your monitor to the support page and download page.
3. Ensure your system meets the requirements.
4. Download the software by following the instructions.

## Using the Auto-Adjustment Function

You can easily optimize the screen performance for the VGA input by using the Select/Auto button and the auto-adjustment pattern software on the CD provided.

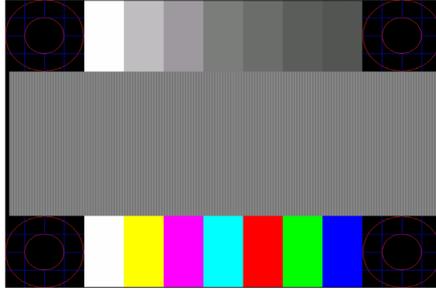
Do not use this procedure if your monitor is using a DVI input. If your monitor is using an analog (VGA) input, this procedure can correct the following image quality conditions:

- Fuzzy or unclear focus
- Ghosting, streaking or shadowing effects
- Faint vertical bars
- Thin horizontal scrolling lines
- Picture off-center

To use the Adjustment pattern with your flat panel monitor:

1. Press the Select/Auto button under the monitor's front panel.
  - You can also press the Menu button, then select **Auto Adjustment** from the OSD Main Menu. See the "Adjusting Monitor Settings" section.
  - If the result is not satisfactory, continue with the procedure.

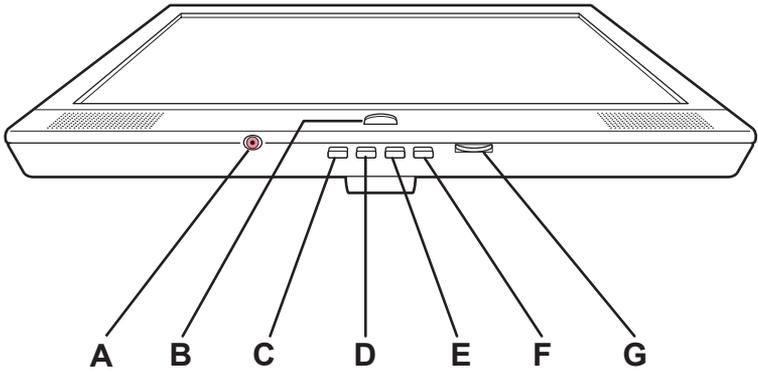
2. Insert the CD in your computer's CD-ROM drive. The CD menu launches.
3. Select **Open Auto-Adjustment Software**.
4. The setup test pattern displays.



5. Press the Select/Auto button on the monitor front panel to produce a stable, centered image.

## Front Panel Components

The monitor buttons are located under the front panel.



No.	Control	Function	
<b>A</b>	 (Headphone jack)	Connects a headphone set to the monitor. When the headphone jack is connected, the monitor speakers are muted.	
<b>B</b>	 (On/Off)	<i>Power Switch</i> Turns monitor on and off.	<i>Power LED</i> Fully powered: Green Sleep mode: Amber
<b>C</b>	<b>menu</b> (On-Screen Display)	<i>OSD Menu Active</i> Button closes OSD. (Also closes setting screens on OSD menu.)	<i>OSD Inactive</i> Button opens OSD (activates).
<b>D</b>	<b>-/1</b> (Minus)	<i>OSD Menu Active</i> Button navigates down or left browse, and adjusts settings down.	<i>OSD Inactive</i> Button selects the VGA video input.
<b>E</b>	<b>+ /2</b> (Plus)	<i>OSD Menu Active</i> Button navigates up or right browse, and adjusts settings.	<i>OSD Inactive</i> Button selects the DVI-D video input.
<b>F</b>	<b>Select–Auto</b>	<i>OSD Menu Active</i> Button acts as an Enter (Select) key to select setting screen options.	<i>OSD Inactive</i> Auto-adjustment. Button automatically adjusts the display to the ideal setting.
<b>G</b>	 (Volume control)	Controls the volume level of the monitor speakers. Turn counter-clockwise to increase volume. Turn clockwise to decrease volume.	
	Speakers	Audio feature for music, alarms, and other sounds.	

## Using the On-Screen Display

Press the menu button under the front panel of your monitor to view the On-Screen Display (OSD) Menu. The Main Menu window displays on top of the contents of the screen. You can use the **+** and **-** keys to control the monitor's features.

1. If the monitor is not already on, press the Power switch to turn on the monitor.
2. To access the OSD Menu, press the menu button under the monitor's front panel. The OSD Main Menu displays.



3. To access the Advanced OSD Menu, press the menu button again. The OSD Advanced Menu displays. See the next section for more information.
4. To navigate through the Main or Advanced OSD Menu, press the **+** (Plus) button on the monitor's front panel to scroll up, or the **-** (Minus) button to scroll in reverse.
  - ❑ The menu will move to the top if you scroll down at the bottom of the selections. The menu will move to the bottom if you scroll up at the top of the selections.
5. To select an item from the OSD Menu, use the **+** or **-** buttons to scroll to and highlight your selection, then press the Select button to select that function.
6. To adjust the scale of a selected item, press the **+** or **-** buttons.

7. Select **Save and Return**.

- If you don't want to save the setting, select **Cancel** from the Advanced Menu or **Exit** from the Main Menu.

8. Press the menu button to exit the OSD.



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If the buttons remain untouched for 30 seconds (factory default) while displaying a menu, new adjustments will be discarded, except for brightness and contrast. Any changed settings will revert to previous settings and the menu will close.

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## Adjusting Monitor Settings

The screen adjustments are set in the On-Screen Display (OSD) menus. Two OSD menus are available:

- Main
- Advanced

### Main Menu OSD

To access the Main Menu OSD, press the menu button under the monitor's front panel. The Main Menu Level 1 displays.

The following table describes Main Menu selections and levels:

Main Menu	
Menu Level 1	Menu Level 2
Brightness	Adjustment Scale
Contrast	Adjustment Scale
Auto Adjustment (Analog only)	
Advanced Menu	
Exit	

## Advanced Menu OSD

To access the Advanced Menu OSD, press the menu button again (twice), or select **Advanced Menu** from the Main Menu. The Advanced Menu level 1 displays.



After selecting the Advanced Menu from the Main Menu, the Advanced Menu remains the default OSD on subsequent power-ups of the monitor until the Main Menu is selected or Factory Reset is applied.

The Advanced Menu OSD has up to three levels and can be viewed in one of six available languages. The following table describes Advanced Menu selections, levels and factory presets:

Advanced Menu OSD			
Level 1	Level 2	Level 3	Factory Preset
Brightness	Adjustment Scale		90
Contrast	Adjustment Scale		80
Image Control (Analog only)	Auto Adjustment	"Adjusting" Message	
	Horizontal Position	Adjustment Scale	
	Vertical Position	Adjustment Scale	
	Clock	Adjustment Scale	
	Clock Phase	Adjustment Scale	
	Cancel		
	Save and Return		
	Color	9300 K	
6500 K			6500 K
Custom Color		Custom Color Adjustment	
Cancel			
	Save and Return		
Language	Deutsch		
	English		English
	Español		

**Advanced Menu OSD (Continued)**

<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Factory Preset</b>
	Français		
	Italiano		
	Nederlands		
	Cancel		
	Save and Return		
Management	Power Saver	On/Off Selection	On
	Power On Recall	On/Off Selection	On
	Mode Display	On/Off Selection	Off
	Serial Number	(Display Serial Number)	
	Basic Menu		Main (Basic)
	Cancel		
	Save and Return		
OSD Control	Horizontal Position	Adjustment Scale	50
	Vertical Position	Adjustment Scale	50
	OSD Timeout	Adjustment Scale	30 Seconds
	OSD Transparency	Adjustment Scale	
	Save and Return		
	Cancel		
Video Input Controls	Input Selection	Analog (D-SUB)	
		Digital (DVI)	
		Auto Detect	
	Cancel		
Factory Reset	Yes		
	No		
Exit			

## Selecting the Video Input Connectors

The two input connectors are:

1. VGA connector (analog)
2. DVI-D connector (digital)

The monitor will automatically determine which inputs have valid video signals and display the image. The inputs can be manually selected through the On-Screen Display (OSD) feature, or on the front of the monitor by pressing the **-/1** button for VGA input or the **+ /2** button for DVI input.

The monitor displays the following conditions:

VGA Input Status	DVI-D Input Status	Monitor Displays:
Active Video	Active Video	Default Mode per OSD
Active Video	Inactive Video	Analog Video
Active Video	No Connect	Analog Video
Inactive Video	Active Video	Digital Video
No Connect	Active Video	Digital Video
Inactive Video	Inactive Video	Sleep Mode
Inactive Video	No Connect	Sleep Mode
No Connect	Inactive Video	Sleep Mode
No Connect	No Connect	"Check Video Cable" message



**CAUTION:** Burn-in image damage may occur on monitors that display the same static image on screen for a prolonged period of time. To avoid burn-in image damage on your monitor screen, you should always activate a screen saver application or turn off the monitor when it is not in use for a prolonged period of time.

## Identifying Monitor Conditions

Special messages will display on the monitor screen for the following monitor conditions:

■ **Input Signal Out of Range**

**SET MONITOR TO:**

**1280 x 1024 @ 60 Hz**

*Moves around screen* — Indicates the monitor does not support the video input signal because the resolution and/or refresh rate are set higher than the monitor supports.

Set the resolution and refresh rate for 1280 x 1024 at 60 Hz. Restart your computer for the new settings to take effect.

- **Going to Sleep** — Indicates the screen display is entering a sleep mode. The speakers are turned off in sleep mode.
- **Check Video Cable** — Indicates the video cable is not properly connected to the computer or monitor.
- **OSD Lock** — The OSD can be enabled or disabled by pressing and holding the menu button on the front panel for 10 seconds. If the OSD is locked, the warning message “OSD Lock” displays for ten seconds.
- ❑ If the OSD is locked, press and hold the menu button for 10 seconds to unlock the OSD.
  - ❑ If the OSD is unlocked, press and hold the menu button for 10 seconds to lock the OSD.
- **No Signal Input** — Indicates the monitor is not receiving a video signal from the computer or either of the two monitor video input connectors. Check to see if the computer or input signal source is off or in the power saving mode.
- **Multiple Inputs are active — Use the OSD to select the desired video input** — Indicates the monitor has more than one video input.
- **Auto Adjustment is in Progress** — Indicates the Auto Adjustment function is active. See “Adjusting Screen Quality”.

## Adjusting Screen Quality

The Auto-adjustment feature automatically fine-tunes the image quality for display size, position, clock, and phase each time a new video mode is displayed. For more precise adjustments, run the Auto-Adjust software on the CD. See "Using the Auto-Adjustment Function".

If additional image quality improvement is desired, use the Clock and Phase controls of the monitor to fine-tune the image. See "Optimizing Analog Video".

## Optimizing Analog Video

This monitor contains advanced circuitry that allows the flat panel screen to function as a standard analog monitor. Two controls in the Advanced Menu OSD (On-Screen Display) can be adjusted to improve analog image performance:

- **Clock** — Increase or decrease the value to minimize any vertical bars or stripes visible on the screen background.
- **Clock Phase** — Increase or decrease the value to minimize video distortion or video jitter.

Use these controls only when the auto-adjust function does not provide a satisfactory monitor image in analog mode.

To obtain the best results:

1. Allow the monitor to warm up for 20 minutes before adjusting.
2. Display the adjustment pattern application provided on the CD.
3. Access the Advanced Menu OSD; select **Image Control**.
4. Set the main Clock correctly first, since the Clock Phase settings depend on the main Clock setting.
  - When adjusting the Clock and Clock Phase values, if the monitor images become distorted, continue adjusting the values until the distortion disappears.

To restore the factory settings, access the Advanced Menu OSD, select **Factory Reset**, and select **Yes**.

## **Entering User Modes**

The video controller signal may occasionally require a custom user mode if you are not using a standard graphics adapter or preset mode. In this condition, you may need to create a user mode. You can use the OSD (On-Screen Display) to:

- Create a user-defined mode with custom monitor screen parameters.
- Readjust the parameters of any user mode.
- Save them in memory. The monitor automatically stores the new setting, then recognizes the new mode just as it does a preset mode.

Ten user modes can be entered and stored, in addition to the 15 factory preset modes (see the table "Factory Preset Video Input Modes" in Appendix B).

## Power Saver Feature

When the monitor is in normal operating mode, the Power light is green and the monitor uses less than 50 watts of power.

The monitor also supports a power saver mode that is controlled by the PC. When the monitor is in the reduced power state, the monitor screen is blank, the backlight is off, the speakers are off, and the Power light is amber. The monitor will use less than 2 watts of power. The energy saving reduced power state will activate if the monitor does not detect either the horizontal sync signal and/or the vertical sync signal. The OSD Power Saver feature must be activated on your PC for this feature to work.

A brief warm-up period occurs before the monitor returns to normal operating mode.

Refer to your computer manual for instructions on setting energy saver features (sometimes called power management features).



The above energy saver feature works only when the monitor is connected to computers that have energy saver features.

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# Troubleshooting

## Solving Common Problems

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

<b>Problem</b>	<b>Possible Cause</b>	<b>Solution</b>
Screen is blank.	Power cord is disconnected.	Connect the power cord.
	Power switch is turned off.	Turn on the power.
	Video cable is improperly connected.	Connect the video cable properly. See Chapter 3, "Setting Up the Monitor," for more information.
	Screen blanking utility is active.	Press any key on the keyboard or move the mouse to turn off the screen blanking utility.
Image appears blurred, indistinct, or too dark.	Brightness and contrast are too low.	Press the Auto button on the front panel. If this does not correct the image, press the Menu button to open the Basic OSD Menu, and adjust the brightness and contrast scales as needed.

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<b>Problem</b>	<b>Possible Cause</b>	<b>Solution</b>
Image is not centered.	Position may need adjustment.	Press the Menu button to access the OSD Menu. Select <b>Image Control/Horizontal Position</b> or <b>Vertical Position</b> to adjust the horizontal or vertical position of the image.
"No Connection, Check Signal Cable" is displayed on screen.	Monitor video cable is disconnected.	Connect the 15-pin monitor video cable to the VGA connector on the computer, or connect the DVI-D signal cable to the DVI connector on the computer. Be sure that the computer power is off while connecting the video cable.
"Out of Range. Set Monitor to 1280 x 1024 @ 60Hz" 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 the table in "Preset Video Modes" in Appendix B). Restart your computer so that the new settings take effect.

## Using the World Wide Web

Before contacting customer service, refer to the HP Support Web site at: <http://www.hp.com/support>

Select your country/region, and then follow the links to the support page for your monitor.

## Preparing to Call Technical Support

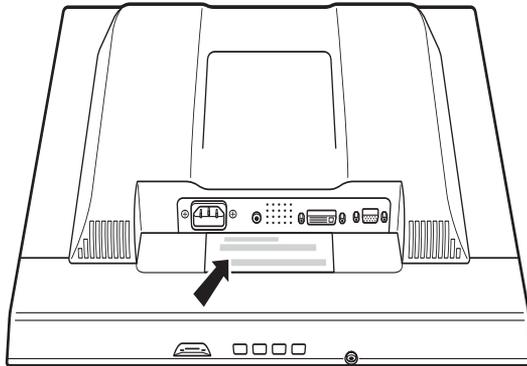
If you cannot solve a problem using the troubleshooting tips in this section, you may need to call technical support. Have the following available when you call:

- The monitor
- Monitor model number (located on label in back of monitor)
- Monitor serial number (located on label in back of monitor)
- Purchase date on invoice
- Conditions under which the problem occurred
- Error messages received
- Hardware configuration
- Name and version of the hardware and software you are using

## Locating the Rating Label

The rating label on the monitor provides the spare part number, product number, and serial number. You may need these numbers when contacting HP about your monitor model.

Locate the FP9419 monitor rating label on the rear cover between the connectors and buttons.



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## Technical Specifications

### FP9419 LCD Monitor

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#### FP9419 LCD Monitor

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Display Type	19.0 inches	48.3 cm
	TFT LCD Active Matrix	
Viewable Image Size	19.0-inch diagonal	48.3 cm
Tilt	-5 to 30°	
Face Treatment	Anti-glare polarizer with hard coating	
Maximum Weight	15.4 lbs. (unpacked)	7 kg (unpacked)
Dimensions (including Base)		
Height	17.7 inches	449.9 mm
Width	16.8 inches	426.7 mm
Depth	9.1 inches	230 mm
Maximum Graphics Resolution	1280 x 1024 (75 Hz) analog and digital modes	
Text Mode	720 x 400	
Dot Pitch	0.294 x 0.294 mm	
Horizontal Frequency (analog mode)	30 to 83 kHz	
Vertical Refresh Rate (analog mode)	56 to 76 Hz	

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**FP9419 LCD Monitor (Continued)**

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Environmental Requirements

Temperature:

Operating Temperature	41 to 95° F	5 to 35° C
Non-operating Temperature	-4 to 140° F	-20 to 60° C

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Relative Humidity	20 to 80%
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Power Source	100–240V $\nu$ , 50/60 Hz
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Power Consumption	<50 watts typical
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Sleep Power Consumption	<2 watts typical
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Input Terminals	1 VGA 15-pin D-type connector	Analog cable included
	2 DVI-D connector	DVI-D cable included

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All performance specifications are provided by the component manufacturers. Performance specifications represent the highest specification of all HP's component manufacturers' typical level specifications for performance and actual performance may vary either higher or lower.

## Preset Video Modes

This monitor automatically recognizes fifteen preset video input modes that will appear properly sized and centered on the screen. The following modes are assigned at the factory and are the most commonly used display resolutions.

### Factory Preset Video Input Modes

Preset	Pixel Format	Horz Freq (kHz)	Vert Freq (Hz)
1	640 x 480	31.5	60.0
2	640 x 480	37.9	72.0
3	640 x 480	37.5	75.0
4	720 x 400	31.5	70.0
5	800 x 600	37.9	60.0
6	800 x 600	48.1	72.0
7	800 x 600	46.9	75.0
8	832 x 624	49.7	75.0
9	1024 x 768	48.4	60.0
10	1024 x 768	60.0	75.0
11	1152 x 870	68.7	75.0
12	1152 x 900	71.8	76.5
13	1280 x 960	60.0	60.0
14	1280 x 1024	63.9	60.0
15	1280 x 1024	80.0	75.0

## LCD Monitor Quality and Pixel Policy

The FP9419 LCD Monitor uses high-precision technology, manufactured according to high standards, to guarantee trouble-free performance. Nevertheless, the display may have cosmetic imperfections that appear as small bright or dark spots. This is common to all LCD displays used in products supplied by all vendors and is not specific to the FP9419 LCD Monitor. These imperfections are caused by one or more defective pixels or sub-pixels.

- A pixel consists of one red, one green, and one blue sub-pixel.
- A defective whole pixel is always turned on (a bright spot on a dark background), or it is always off (a dark spot on a bright background). The first is the more visible of the two.
- A defective sub-pixel (dot defect) is less visible than a defective whole pixel and is small and only visible on a specific background.

The FP9419 LCD Monitor has:

- Less than 5 total dot defects
- 0 defective full pixels
- 3 defective bright sub-pixels (maximum)
- 5 defective dark sub-pixels (maximum)
- No more than two adjacent (less than 2.5 mm edge-to-edge) and defective pixels
- No more than two pairs of two adjacent defective pixels

To locate defective pixels, the monitor should be viewed under normal operating conditions and in normal operating mode at a supported resolution and refresh rate, from a distance of approximately 50 cm (16 in.).

We expect that, over time, the industry will continue to improve its ability to produce displays with fewer cosmetic imperfections and we will adjust guidelines as improvements are made.

## **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 $\surd$  or 200–240V $\surd$ .

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 mm<sup>2</sup> 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.



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# 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, call

1-800-474-6836

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 (IEC60950) — 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

### B급 기기 (가정용 정보통신기기)

이 기기는 가정용으로 전자파적합등록을 한 기기로서  
주거지역에서는 물론 모든지역에서 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.

## HP Recycling Program

HP offers product end-of-life return programs for HP and other manufacturers' hardware in several geographic areas.

The terms and availability of these programs vary by geography because of differences in regulatory requirements and local customer demand. For information on the HP recycling program, refer to the HP Web site at:

[http://www.hp.com/hpinfo/globalcitizenship/  
environment/recycle/hardware.html](http://www.hp.com/hpinfo/globalcitizenship/environment/recycle/hardware.html)

## TCO '99 Requirements



You have just purchased a TCO '99 approved and labeled 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 to the further development of environmentally adapted electronics products.

*Why do we have environmentally labeled computers?*

In many countries/regions, environmental labeling 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 the environmental labeling involve?*

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

The requirements cover a wide range of issues: environmental, ergonomic, usability, reduction of electric and magnetic fields, energy consumption, and electrical 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 obliged to have an environmental policy which must be adhered to in each country/region where the company implements its operational policy.

The energy requirements include a demand that the computer and/or monitor, 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.

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

E-mail (Internet): [development@tco.se](mailto:development@tco.se)

Current information regarding TCO '99 approved and labeled products may also be obtained over 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 bio-accumulative<sup>1</sup> processes. Flame retardants have been found in human blood and researchers fear that disturbances in fetus 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.

### *Cadmium:<sup>1</sup>*

Cadmium is present in rechargeable batteries and in the colour-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.

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1. *Bio-accumulative is defined as substances which accumulate within living organisms. Lead, Cadmium and Mercury are heavy metals which are bio-accumulative.*

*Mercury:*<sup>1</sup>

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 labeled 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.

*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:*<sup>1</sup>

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.

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1. *Bio-accumulative is defined as substances which accumulate within living organisms. Lead, Cadmium and Mercury are heavy metals which are bio-accumulative.*

