Notice

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USA

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hp pavilion fx50
P3901
15-inch LCD monitor
(15-inch Viewable Image)

User’s Guide
Important Safety Instructions

WARNING

For your safety always connect equipment to a grounded wall outlet. Always use a power cord with a properly grounded plug, such as the one provided with the equipment, or one in compliance with your national safety standards. This equipment can be disconnected from the power by removing the power cord from the power outlet. This means the equipment must be located close to an easily accessible power outlet.

To avoid electrical shock, do not open the monitor’s cover. There are no user-serviceable parts inside. Only qualified service personnel should service these parts.

Make sure your PC is powered off before connecting or disconnecting a display peripheral.

Working in Comfort

Thank you for selecting HP monitor equipment. To optimize your comfort and productivity, it’s important that you set up your work area correctly and use your HP equipment properly. With that in mind, we have developed some setup and use recommendations for you to follow based on established ergonomic principles.

You can consult the online version of Working in Comfort preloaded on the hard disk of HP computers, or visit HP’s Working in Comfort web site at: http://www.hp.com/ergo/

CAUTION

The lightning flash with arrowhead symbol, situated within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” which may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation mark within an equilateral triangle is intended to alert the user to the presence of important operating and servicing instructions in the literature accompanying the appliance.

WARNING

Before you connect any cables or install your HP monitor, refer to the above safety instructions. Refer also to the user’s manual that accompanies your PC and the video adapter to ensure this equipment is correctly installed.
What Your New Monitor Offers

Your HP monitor is an LCD 15-inch, high resolution, multi-synchronous color monitor. Multi-synchronous means that the monitor supports a range of video modes. It is optimized for use with all Hewlett-Packard computers.

Your HP color monitor has the following features:

- A 15-inch Thin Film Transistor (TFT) liquid crystal display.
- Support of video modes up to 1024 x 768 at a 75 Hz refresh rate.
- Auto-configuration of display position, clock and phase.
- Integrated 2 x 8W PMPO speaker plus microphone.
  2 upstream (PC to monitor), 2 downstream (microphone and headphone connector)
- An On-Screen Display (OSD) allows you to adjust all settings with on-screen menus.
- A power management system (VESA\(^1\) standard) controlled from suitably equipped HP computers to automatically reduce the power consumption of the monitor. This system complies with the Energy Star Computers Program initiated by the US EPA\(^2\) specification for energy efficient monitors. As an Energy Star Partner, Hewlett-Packard has determined that this product meets the Energy Star guidelines for energy efficiency.\(^3\)
- Plug and Play capability (compliant with VESA DDC1, DDC2B standards) that enables the monitor to identify itself to suitably equipped HP computers.
- Your HP monitor complies with TCO 99 requirements.
- Your monitor complies with MPRII guidelines for upper limits of electrical and electrostatic emissions, from the Swedish National Board of Measurement and Testing.
- Slot for security lock.

---

1. VESA is the Video Electronics Standards Association.
2. The US EPA is the United States Environmental Protection Agency.
3. ENERGY STAR is a US registered service mark of the US EPA.
Unpacking Your Monitor

Check for the following items. If they are missing or damaged, consult your place of purchase immediately.

- 1 LCD
- 1 power cord and adapter
- 2 audio cables
- 1 video cable
- 1 quick setup card
- 1 warranty booklet
- 1 CD-ROM
Setting Up Your Monitor

Where to Place the Monitor
Place your monitor on a flat sturdy surface. Ensure the operating site is free from excessive heat and moisture.

WARNING
Before you connect any cables, or install your HP monitor, refer to the safety instructions at the beginning of this manual. Refer also to the user’s manual that accompanies your PC and video adapter to ensure this equipment is correctly installed.

Connecting the Cables
This monitor is equipped with an auto-sensing power supply for voltage ranges 100 ~ 240V AC, 50 ~ 60 Hz. Only use with the supplied adapter.

1. Make sure the system power is turned off.
2. Plug the signal cable into the signal connector at the rear of the PC.
3. Plug the adapter output cable into the jack at the rear of the monitor and the power cord to the adapter.
Setting Up Your Monitor

4 Plug the video cable into the video connector at the rear of the monitor. Secure the cable by tightening the thumb screws on the video connector.

5 Connect the audio cables to the connectors according to the following color definitions:
   - Red + Green end ➔ PC
   - Red + Blue end ➔ rear of LCD monitor

6 Connect the power cord to the power source.

7 Turn on the computer and the monitor.

Connecting the Speakers

Your monitor comes with built-in speakers. If you bought your monitor with a Hewlett-Packard™ Pavilion home PC, you will have two sets of speakers: an external set shipped with the PC, and the built-in monitor speakers.

The PC’s external speakers connect to a Speaker Out port identified on your PC's setting up poster, and will provide the best sound with most Pavilion PCs.

If you want to use the monitor’s built-in speakers, you must connect them to the Line Out port on the back of your PC. Use the two audio cables provided for connecting the speakers and the microphone to the PC; refer to Step 5 of “Connecting the Cables” on page 6.

If your computer does not have a Line Out port, you can purchase a sound card with a Line Out port to use the internal monitor speakers.

If you are not sure which port you have and your sound quality is poor, try connecting your external speakers to the Speaker Out port.
Setting Up Your Monitor

Changing the Monitor Viewing Position

Your monitor can be rotated to either a landscape or portrait position.
1. Tilt the lower part of the monitor upwards.
2. Rotate the monitor clockwise until the monitor controls are on the left side.
3. Firmly push the lower part of the monitor downwards to secure it in the new position.

To rotate your display, you need to install specific software.
How To Install The Drivers

In order to take advantage of the Plug & Play functionality of your Windows 95/98/2000 operating system, HP Monitors come with a driver.

To install this driver:

Windows 95 and 98 Users

1. Click on Start, select Settings, then click Control Panel.
2. Double click on Display.
3. Click on the Settings tab.
4. Click on Advanced Properties or Advanced... and select the Monitor tab.
5. Click on Change... to select the model of the HP Monitor you are using.
6. Click on Have Disk...
7. Click on Browse... to find the P3901.INF file on your CD-ROM under the \Drivers directory and click on OK.
8. Select your monitor type from the Models box and click on OK to install the selected monitor.

Windows 2000 Users only

1. Click on Start, select Settings, then click Control Panel.
2. Double click on Display.
3. Click on the Settings tab.
4. Click on Advanced Properties or Advanced... and select the Monitor tab.
5. Click on Properties.
6. Click on the Driver tab.
7. Click on Update Driver... and click on Next.
8. Select the Recommended option and click on Next.
9. Check the Specify a Location box.
10. Find and open the P3901.INF file on your CD-ROM under the \Drivers directory and click on OK.
11. Click on Next to install the selected monitor.

Your operating system and your HP Monitor are now set up to work in optimum conditions.

If the installation procedure of your monitor driver on your Windows 95/98/2000 version is different or you need more detailed installation information, please refer to Windows 95/98/2000 user’s manual.
Adjusting Your Monitor

A Look at the Control Panel

There are 5 buttons which perform the following operations:

1. **Auto Adjustment button**: automatically adjusts the main settings.
2. **Validation (Enter Sub-Menu) button**: acts as an enter button, selects sub-menus.
3. **Volume Control/Select and Adjustment buttons**: mute and unmute the speaker when pressed simultaneously.
4. **Menu button**.

When to Adjust the Monitor

- When the monitor is installed for the first time
- If the resolution or frequency has been changed
- If the graphic card has been changed
- If the monitor is connected to a different computer
- After using the Recall function, (refer to “Miscellaneous” on page 17).

**NOTE**

It is recommended that you select a video mode of 1024 x 768 at 60Hz on your computer for optimum performance.
hp pavilion fx50 15” lcd monitor
Adjusting Your Monitor

**Automatic Setup**

Using the Auto button and the test pattern on the CD-ROM provided, you can easily optimize your screen performance.

1. Insert the CD-ROM provided into the PC. Run the program D:\auto.exe to display a pattern used for setup.
2. Press the Auto button. Normally, this should produce a stable, centered image.

Your optimizer utility also contains driver for Windows 95, Windows 98 or Windows 2000 D:\Drivers\P3901.INF.

**Manual Setup**

Follow these steps only if further adjustments are needed. For further information, refer to “Using Your Monitor” on page 11.

1. Display the pattern using the CD-ROM as described above.
2. Press Enter to display the OSD menu.
3. Select the Geometry icon.
4. Select Pixel Clock and adjust the value to minimize vertical bars.
5. Select Phase and adjust the value to minimize horizontal bars.
7. Press the Exit button to save the values.
Using Your Monitor

Setting the Language
The OSD menus can be displayed in several different languages. To change your language setting, refer to “Miscellaneous” on page 17.

The Auto Button
The Auto button automatically adjusts V-Position, H-Position, Pixel Clock and Phase for an optimal image.

1. Press the Auto button and the following on-screen menu is displayed:

```
AUTO-ADJUSTMENT
YES    NO

MENU : SELECT
EXIT
```

2. Press the Auto button again to activate the auto-adjustment feature. You are then prompted to save the auto settings by pressing the button.

**NOTE**
For best results, it is recommended to use the CD-ROM supplied with the monitor to display a pattern before using the Auto button.

The On-Screen Display (OSD) Main Menu
The Main Menu of the On-Screen Display (OSD) is divided into six groups of features (or sub-menus) for making adjustments.

1. Luminance
2. Geometry
3. Auto Adjustment
4. Color adjustment
5. Audio
6. Miscellaneous
Each of these functions is described in turn in this section.

Making Adjustments
1. Press the **Menu** button to access the main OSD.
2. Use the < or > buttons to move through the sub-menus, and press ▼ to enter the sub-menu.
3. Use the < or > buttons to move through the various choices within the sub-menu, and validate your choice by pressing the ▼ button.
4. Press the < or > buttons to adjust the settings, then press the **Menu** button to exit the sub-menu.
5. Press the **Menu** button to exit the respective sub-menus, and press the **Menu** button to exit the OSD.

**NOTE**
Before exiting the OSD, you are prompted to save your settings.

The Sub-Menus

Luminance

- **Contrast** adjusts the difference between the light and dark areas.
- **Brightness** adjusts the brightness of the display.

To make adjustments in the **Luminance** sub-menu:
Using Your Monitor

1. Press the **Menu** button and use the < or > buttons to highlight the **Luminance** icon.
2. Press the **Menu** button to select the feature.
3. Use the < or > buttons to choose either **Contrast** or **Brightness**, then press **Menu** to select it.
4. Press < or > buttons to adjust the settings (the settings are automatically saved).
5. Press the **Menu** button to exit the sub-menu, then press the **Menu** button to exit the respective sub-menus.
6. Press the **Menu** button to exit the OSD.

**Geometry**

- **Hor. (horizontal) Position**: adjusts the horizontal position of the display.
- **Ver. (vertical) Position**: adjusts the vertical position of the display.
- **Language Select**: Deutsch, English, Español, Français, Italiano, Japanese.
- **Phase**: adjusts the phase of pixel clock. It can improve the focus of your screen as well.
- **Pixel Clock**: adjusts the frequency of the pixel.

To make adjustments in the **Geometry** sub-menu:

1. Press the **Menu** button and use the < or > buttons to highlight the **Geometry** icon.
2. Press the **Menu** button to select the feature.
3. Use the < or > buttons to choose one of the menu items listed above, then press the **Menu** button to select it.
4. Press < or > buttons to adjust the settings (the settings are automatically saved).
hp pavilion fx50 15” lcd monitor
Using Your Monitor

5 Press the Menu button to exit the sub-menu, then press the Menu button to exit the respective sub-menus.
6 Press the Menu button to exit the OSD.

Auto Adjustment

The Auto button automatically adjusts V-Position, H-Position, Pixel Clock and Phase for an optimal image.

To use the Auto Adjustment sub-menu:
1 Press the Auto button and the following on-screen menu is displayed:

2 Press the Auto button again to activate the auto-adjustment feature. You are then prompted to save the auto settings by pressing the button.

NOTE
For optimum results, it is recommended that you display the pattern provided on the CD-ROM supplied with your monitor, before using the Auto button.

Color Adjustment

This function is defined as color temperature adjustment. There are three preset modes. The following is the value of each preset mode.

<table>
<thead>
<tr>
<th>Color mode</th>
<th>Color Temperature (Preset Mode)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>9300k</td>
</tr>
<tr>
<td>C2</td>
<td>6500k</td>
</tr>
<tr>
<td>C3</td>
<td>5800k</td>
</tr>
</tbody>
</table>

To make adjustments in the Color Temperature sub-menu:
1. Press the Menu button and use the < or > buttons to highlight the Color icon.
2. Use the < or > to choose one of the options listed above.
3. To validate your choice, use the Menu button to exit the sub-menus until you are prompted to save your changes. Press the button to select Yes.
4. To make changes in User Mode, use the < or > buttons to highlight the User Mode icon then press the button.

5. Use the < or > buttons to choose R, G or B (Red, Green or Blue), then press the button to enter the chosen menu item.
Using Your Monitor

6 Use the < or > buttons to make the required adjustments (the settings are automatically saved).

Audio

This feature allows you to adjust the volume and mute/unmute the speaker.

To make adjustments in the Volume sub-menu:

1 Press the Menu button and then use the < or > buttons to locate the Volume sub-menu, then press the button.

2 Press the button to choose the required menu item.

3 Use the < or > buttons to adjust the setting (the settings are automatically saved).

4 Press the Menu button to exit the sub-menu, then press the Menu button to exit the respective sub-menus.

5 Press the Menu button to exit the OSD.
To mute/unmute the speaker you can adjust the settings in the sub-menu, using the < or > buttons. Use Menu to exit the OSD.

You can press the buttons to simultaneously mute/unmute the speaker.

**Miscellaneous**

This function contains the following menu items:

- **Hor. (horizontal) Position**: adjusts the horizontal position of the OSD.
- **Ver. (vertical) Position**: adjusts the vertical position of the OSD.
- **Language Select**: Deutsch, English, Español, Français, Italiano, Japanese.
- **OSD Time**: shows you how many seconds the OSD is displayed on-screen.
To access the **Recall** function, first select **Information**, then select **Recall** from the sub-menu.

**Recall**: If you press , factory preset settings will be recalled. The settings that are affected by the **Recall** function are

- Screen Geometry
- Horizontal Frequency
- Vertical Frequency
- Brightness / Contrast

**WARNING**  
By pressing the button all previous adjustments are lost (refer to “Adjusting Your Monitor” on page 9 to adjust the monitor again).

**Setting the Amount of Displayed Information**  
To set the amount of displayed information, change the screen resolution of your computer. The higher the screen resolution, the more information you can see on the screen. It is recommended that you use a resolution of **1024 x 768**. It is recommended that you use a refresh rate of **60 Hz**. The image refresh rate is the number of times per second that the image is redrawn.

**NOTE**  
LCD technology does not cause any flicker at low refresh rates.

**Minimizing Energy Consumption**  
If your computer supports VESA monitor power management (available on many HP computers), you can minimize the power consumed by the monitor. There are two power saving modes:

- Suspend mode (uses less than 5W)
- Sleep mode (uses less than 5W)
When the monitor enters power saving mode, the message **No Signal** is displayed for a few seconds before the screen blanks. In power saving mode the front panel indicator light is amber.

To set these power saving modes, refer to the manual that came with your computer.

**Supported Video Modes**

Your monitor comes with the standard modes shown in the table below. It also supports intermediate video modes. With the intermediate modes, the displayed image may need to be optimized using the buttons on the front panel. All modes are non-interlaced.

<table>
<thead>
<tr>
<th>Screen Resolution</th>
<th>Image Refresh Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>640 x 350</td>
<td>70Hz</td>
</tr>
<tr>
<td>640 x 480</td>
<td>60Hz, 75Hz</td>
</tr>
<tr>
<td>720 x 400</td>
<td>70Hz</td>
</tr>
<tr>
<td>800 x 600</td>
<td>60Hz, 75Hz</td>
</tr>
<tr>
<td>1024 x 768</td>
<td>60Hz, 75Hz</td>
</tr>
</tbody>
</table>

**NOTE**

Selecting a combination of screen resolution/image refresh rate higher than 1024 x 768 at 75Hz will affect display performance. If you select a video mode not supported by your monitor, the following message will be displayed:

![Message Display](image_url)
Troubleshooting

Before calling HP check the following:

**There is no picture and LED is off:**
- Check that the monitor is switched on.
- Check that the power cord is properly connected.
- Check the electrical outlet.
- Test and see if monitor works on another PC previously set to another monitor’s supported resolution.

**There is no picture and the LED is on:**
- Check that the monitor is not in power saving mode.
- Adjust the **Contrast** and **Brightness** through OSD or control buttons.
- Check that the PC is switched on.
- Check that the video cable has no bent pins.
- Test that the monitor works on another PC previously set to another monitor’s supported resolution.

**The picture is fuzzy:**
- Adjust your monitor, using the **Automatic Adjustment** function (refer to “Auto Adjustment” on page 14).
- If you are running a Windows 95/98/2000 Operating System then install the **INF** file - Plug and Play driver (refer to “How To Install The Drivers” on page 8).
- Change the resolution to the recommended resolution 1024 x 768 at 60Hz.

**Pixels are missing:**
- Refer to “LCD Monitor Quality and Pixel Policy” on page 21.

**Colors are not pure:**
- Check that the video cable has no bent pins and is firmly attached to both the PC and monitor Video Connectors.
- Recall the colors default factory settings (refer to “Miscellaneous” on page 17).
- Adjust the **RGB** (Red, Green and Blue) colors to as required (refer to “Color Adjustment” on page 14).
The picture is not centered:
• Adjust your monitor using the Automatic Adjustment function (refer to “Auto Adjustment” on page 14).

LCD Monitor Quality and Pixel Policy
Your Hewlett-Packard TFT display uses high precision technology, manufactured according to HP standards, to guarantee trouble-free personal computing. Nevertheless, your 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 HP P3901 displays. 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.
Defective sub-pixels are less visible than defective whole pixels.
Defective sub-pixels are small and only visible on a specific background.
Defective means either the pixel or sub-pixel is stuck always ON, a bright spot on a dark background, or it is stuck always OFF, a dark spot on a bright background. The first is the more visible of the two.
A dot defect is a stuck sub-pixel.
Your HP P3901 will not have more than:
• 10 total dot defects
• 8 stuck full pixels
• 8 stuck red sub-pixels
• 5 stuck green sub-pixels (green is most visible)
• 8 stuck blue sub-pixels
• No more than two adjacent pixels may be stuck
Adjacent is defined as less than 15mm edge to edge
• No more than two pairs of two-adjacent stuck pixels per display
To locate defective pixels, the unit 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.).

HP expects that over time, the industry will continue to improve its ability to produce displays with fewer cosmetic imperfections and HP will adjust our guidelines as improvements are made.
## Technical Specifications

<table>
<thead>
<tr>
<th><strong>Liquid Crystal Monitor</strong></th>
<th><strong>Size</strong></th>
<th>15 inch diagonal and viewable image</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>TFT liquid crystal display</td>
<td></td>
</tr>
</tbody>
</table>

**Input Signal**
- **Video**: 0.7 Vpp analog RGB
- **Synchronization**: Separated H/V (TTL level)

**Interface**
- **Input Connector**: 15-pin D-SUB

**Scanning Frequency**
- **Horizontal**: 31–60 kHz
- **Vertical**: 56–75 Hz

**Max. Resolution (H x V)**
- 1024 x 768 (75 Hz)

**Recommended Resolution (H x V)**
- 1024 x 768 (60Hz)

**Power Source**
- **AC/DC Adapter**
  - **Input Rating**: 100–240v, 1.5 A
  - **Output**: 12V, 3A
  - **Frequency**: 50/60 Hz
  - **Power Consumption**: less than 36W in operating mode

**Operating Environment**
- **Temperature**: 15 °C to 40 °C
- **Humidity**: 10% RH through 80% RH (without condensation)

**Storage Environment**
- **Temperature**: -20 °C to 60 °C
- **Humidity**: 10% RH through 85% RH (without condensation)

**Dimensions**
- 379.6 (H) 417.4 (W) 205 (D) mm

**Weight**
- 6 Kg

**Tilt Stand**
- **Tilt Angle**: -5° to 25°
Care and Cleaning

To maximize the screen life-span of this product and prevent damage to the liquid crystal display, it is recommended that you:

- Do not let liquid get on or into the monitor.
- Do not store or use the monitor in locations exposed to heat, direct sunlight, or extreme cold.
- Do not store or use the monitor in locations exposed to high humidity or in a dusty environment.
- Do not press sharp or pointed objects against the monitor.
- Avoid touching or pressing the screen of the monitor.
- Avoid setting contrast and brightness to their maximum levels for prolonged periods.
- Switch the monitor off when it is not in use.

Your monitor is anti-glare. To prevent damage to the monitor screen’s coating, use a regular household glass cleaner when cleaning the screen.

To clean the screen:
1. Switch the monitor off and remove the power plug (pull the plug, not the cable).
2. Soak a soft gauze cloth with isopropyl alcohol or ethyl alcohol and gently wipe the surface of the monitor. Avoid dusting it or wiping it with a cloth dampened with water.
3. Dry with a clean, soft cotton cloth.

Do not use cleaning solutions containing fluoride, acids, or alkalis. Do not use ketone substances such as acetone or solvents such as xylene or toluene to clean the monitor. Do not use benzene, thinner, ammonia, or any volatile substance to clean the monitor’s screen or cabinet. These chemicals may damage the monitor. Never use water to clean a LCD screen.
Environmental Information

HP has a strong commitment toward the environment. Your HP monitor has been designed to respect the environment as much as possible.

HP can also take back your old monitor for recycling when it reaches the end of its useful life.

HP has a product take-back program in several countries. The collected equipment is sent to one of HP's recycling facilities in Europe or the USA. As many parts as possible are reused. The remainder is recycled. Special care is taken for batteries and other potentially toxic substances, which are reduced to non-harmful components through a special chemical process. If you require more details about HP's product take-back program, contact your dealer or your nearest HP Sales Office.
Regulatory Information

DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and CEN/CENELEC 45014

Manufacturer's Name: Hewlett-Packard Company
Manufacturer's Address: 10500 Ridgeview Court
                           Cupertino, CA 95015-4101, USA

Declares, that the products:
   Product Name: hp pavilion fx50 15 inch LCD Color Monitor
   Model Number: P3901X "X" = A...Z

Conforms to the following Product Specifications:

SAFETY
   - International: IEC 60950:1991 + A1 + A2 +A3 +A4
   - Europe: EN 60950:1992 + A1 + A2 +A3 +A4+A11

ELECTRO MAGNETIC COMPATIBILITY
   - EN 50082-1:1992
     IEC 801-3:1984 - 3V/m
     IEC 801-4:1988 / prEN 55024-4-1993 - 1 kV Power Lines
     - IEC 61000-3-3:1994 / EN 61000-3-3:1995
     - FCC Title 47 CFR, Part 15 class B
     - ICES-003, Issue 3
     - VCCI-B
     - AS/NZ 3548:1995

Products bearing the CE marking 2) also comply with:

Supplementary information:
These products comply with the requirements of the following Directives and carry the CE-
marking accordingly:
the EMC Directive 89/336/EEC and Low Voltage Directive 73/23/EEC, both amended by the
Directive 93/68/EEC.

1) 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.

2) All products sold in the European Economic Area (EEA) bear the CE marking.

United States, January 2001
Quality Manager

For Compliance Information ONLY, contact:
USA contact: Hewlett-Packard Company, Corporate Product Regulations Manager, 3000
Hanover Street, Palo Alto, CA 94304 Phone: (+1) (650) 857-1501.
Notice for the USA: FCC Class B Statement

Federal Communications Commission Radio Frequency Interference Statement Warning:

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 correct the interference by one or more of the following measures:

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

Hewlett-Packard's FCC Compliance Tests were conducted using HP-supported peripheral devices and HP shielded cables, such as those you receive with your system. Changes or modifications not expressly approved by Hewlett-Packard could void the user's authority to operate the equipment.

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.

Safety Warning for USA

If the power cord is not supplied with your monitor, select the proper power cord according to your national electric specifications.

- USA: use a UL listed type SVT detachable power cord

Notice for Canada

This Class "B" digital apparatus complies with all requirements of the Canadian Interference-Causing Equipment Regulations (ICES.003).

Cet appareil numérique de la Classe B est conforme à la norme MB-003 du Canada.

X-Ray Radiation Notice

If you must replace the cathode ray tube, replace it only with a CRT.
Congratulations! You have just purchased a TCO99 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.

TCO 99

This product is approved under TCO'99 Environmental requirements for Information Technology equipment. The approved criteria and requirements are described in the documents TCO'99 Environment, Revision 4, August 1999. The criteria have been developed by TCO (The Swedish Confederation of Professional Employees) in co-operation with users, manufacturers, authorities and environmental organisations, taking advice from renowned experts in the field. The requirements cover a wide range of issues, such as energy consumption, emissions, electrical safety, release of hazardous substances, as well as working conditions for employees in the production plant. Energy consumption is required to be lower than set limits. The product must contain provisions for recycling. The input frequency needs to be switchable, and there is a requirement for decreased noise emissions.

Warning for Korea

Using this device, which has a maximum input power of 125W, in a building inhabited by people may cause interference with radio and television reception. In such a case, users are requested to modify their operating conditions and/or to take necessary actions to correct the interference immediately.

Notice for Germany

Hinweis für Deutschland: Geräuschemission
Lärmangabe nach Maschinenlärmmverordnung - 3 GSGV
LpA < 70db am Arbeitsplatz normaler Betrieb nach EN27779:
11.92

Notice for Japan (Class B)

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。
取り扱い説明書に従って正しい取り扱いをして下さい。
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 (e.g. 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 Naturskyddsföreningen (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 obliged 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 chlorine, and these 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 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.

Cadmium

1. Bio-accumulative is defined as substances which accumulate within living organisms
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.

Mercury\(^2\)

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.

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\(^2\)

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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2. Lead, Cadmium and Mercury are heavy metals which are Bio-accumulative.