**hp** ®

i n v e n t

# User's Guide

## f1904 LCD Monitor

**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.

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# 1

# Product Features

The f1904 LCD Monitor has an active matrix, thin-film transistor (TFT), liquid crystal display (LCD). The monitor features include:

- Large 19-inch (48.3 cm) viewable area display.

- 1280 × 1024 factory-set resolution, plus full-screen support for lower resolutions.

- 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 base for flexible mounting solutions.

- Multiple video inputs supported:

  - ❏ VGA Analog

  - ❏ DVI-I supports either Analog or Digital signal input

- VGA analog and DVI-Digital signal cables included.

- Plug and Play capability if supported by your system.

- On-Screen Display (OSD) adjustments in English, French, German, Italian, Spanish, and Dutch for ease of setup and screen optimization.

- This CD includes an information file (INF), Image Color Matching file (ICM), auto-adjustment pattern software, and this user guide.

- Energy Saver feature for Energy Star compliance.

■ Compliant with the following regulated specifications:

❏ EPA ENERGY STAR

❏ European Union CE Directives

❏ Swedish MPR II 1990

❏ Swedish TCO '03

With select models, the monitor comes with a set of Harmon Kardon speakers with a separate power supply.

# 2

# 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, refer to the "Power Cord Set Requirements" section in Appendix C.

⚠ **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:

■ Do not open your monitor cabinet or attempt to service this product yourself. Adjust only those controls that are covered in the operating instructions. 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 discussed 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.

■ 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.

■ 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.

■ 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.

■ 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

To clean the monitor, follow these steps:

1. Turn off the monitor and the computer.

2. Dust the monitor by wiping the screen and the cabinet with a soft, clean cloth.

If the screen 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. Never use water to clean an LCD screen.

# Shipping the Monitor

Keep the original packing box in a storage area. You may need it later if you move or ship your monitor.

# 3

# Setting Up the Monitor

To set up the monitor, ensure that the power is turned off to the monitor, computer system, and other attached devices, then follow these steps:

1. Place the monitor in a convenient, well-ventilated location near your computer.

2. Connect one end of the monitor signal cable to the video connector on the rear panel of the computer, and the other end to the back of the monitor.
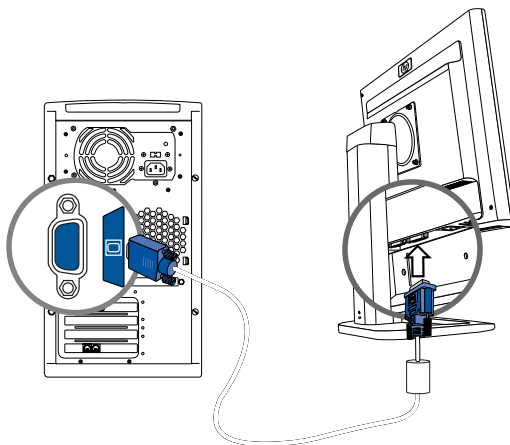
*Connecting the VGA Signal Cable*

✎ 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. When connecting the DVI-D signal cable to the DVI connector on the monitor, you must connect the other end of the DVI-D cable to the DVI connector on the computer. Connect one end of the power cable to the back of the monitor, and the other end to an electrical wall outlet.
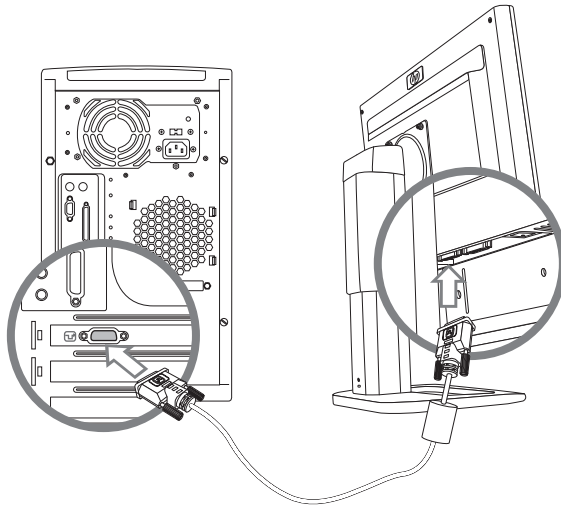


*Connecting the DVI-D Signal Cable*

3. Connect one end of the power cable to the back of the monitor, and the other end to a power source.
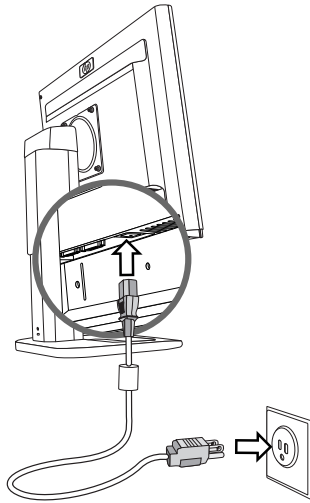


*Connecting the Power Cable*

4. Adjust the monitor as needed for your comfort using the monitor's tilt, swivel, and height adjustment capabilities.
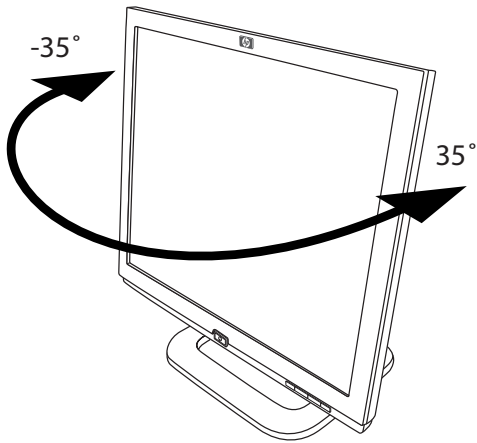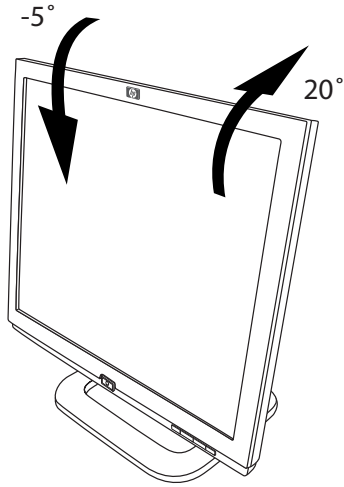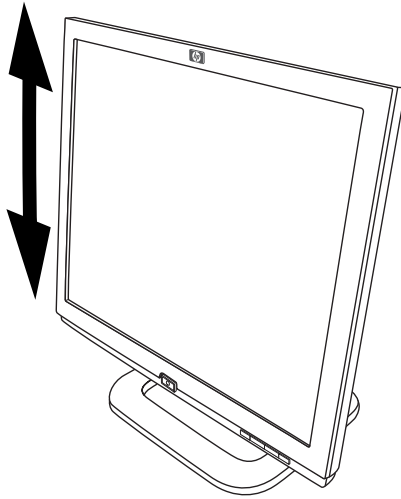
⚠ **WARNING:** To reduce the risk of electric shock or damage to your equipment:

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 that is easily accessible at all times.

Disconnect power from the monitor by unplugging the power cord from the electrical outlet.

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. When unplugging from the electrical outlet, grasp the cord by the plug.

⚠ **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.

# Selecting the Signal Connectors and Cables

There are two signal input connectors: One VGA connector and one DVI-I connector. The monitor will automatically determine which inputs have valid video signals. The inputs can be selected through the On-Screen Display (OSD) feature or by pressing the Signal Input 1 or 2 buttons on the monitor front bezel.

The video mode supported by the DVI-I connector is determined by the video cable used. For digital operation, use the DVI-D to DVI-D signal cable provided. For analog operation, a DVI-A to VGA signal cable must be attached to the DVI-I input (not provided with the monitor).

# Connecting Speakers

A set of speakers are included with your monitor (select models only).

1. Place the speakers in a location near the monitor.

2. Plug the right speaker into the main power source.
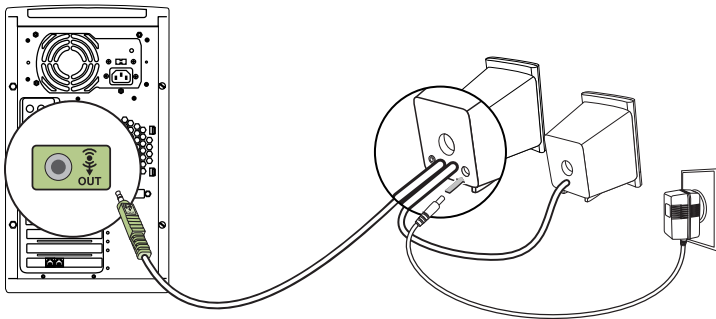


3. Plug the right speaker audio cable (green plug) into the PC. Refer to your PC user's guide for instructions on how to connect your speakers to the PC.

4. Turn on the PC, the monitor, and the speakers.

# Removing the Monitor Base

You can remove the monitor base to mount the monitor on a wall, a swing arm or other mounting fixture. Read the caution and warning statements below before beginning the procedure.

**CAUTION:** Before beginning to disassemble the monitor, be sure the monitor is turned off and the power and signal cables are both disconnected.

Lay the front bezel down on a soft area to prevent it from getting scratched, defaced, or broken.

**WARNING:** Do not remove the base from the monitor while the monitor is in the upright position. Before removing the monitor from the base, ensure that the monitor is lying flat, front bezel down, and that the base is set to the maximum base extension. Attempting to remove the monitor from the base while it is upright in the minimum base extension may result in injury to the user.

1. Disconnect and remove the signal and power cables from the back of the monitor.

2. Remove the four screws as shown in the following illustration.
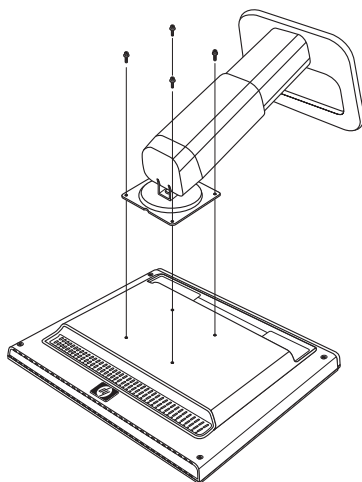


△ **CAUTION:** Ensure that the bottom of the monitor base is positioned over a table or desktop before removing the base from the monitor.

3. Remove the monitor base from the monitor.

## Mounting the Monitor

1. Remove the monitor base. Refer to "Removing the Monitor Base" steps in the previous section.

   When the base has been removed, four threaded mounting holes are exposed on the monitor panel. These are to be used for mounting purposes. These mounting holes are spaced 100 mm apart and are compliant with the Video Electronics Standards Association (VESA) standard for mounting flat panel displays.

2. Mount the monitor to a swing arm or other mounting fixture by following the instructions included with the mounting fixture to be used.

# 4

# Operating the Monitor

## Installing the Drivers

The monitor comes with driver software allowing you to take advantage of the Plug and Play feature of the Microsoft® Windows® Me, Windows 2000, or Windows XP operating system. This software enables the computer to communicate with the monitor and use all the monitor features. Without this software, the monitor settings and display images cannot be correct.

✎ HP computers may come with the Plug and Play drivers preinstalled. If you have an older computer, these drivers may not be preinstalled and you may need to install the drivers from the CD-ROM disc that came with the monitor.

You can also download the latest version of a driver from the HP Monitors Support Web site. Go to
http://www.hp.com
select your country/region, and then follow the links to the support page for monitors.

### Windows 2000 users

✎ The procedure for installing the driver for your operating system may vary from this.

*To install the driver for the f1904 monitor:*

1. Click **Start**, select **Settings**, and then click **Control Panel**.
2. Double-click **Display**.

3. Click the **Settings** tab.

4. Click **Advanced Properties** or **Advanced**, and select the **Monitor** tab.

5. Click **Properties**.

6. Click the **Driver** tab.

7. Click **Update Driver** and click **Next**.

8. Select the recommended option and then click **Next**.

9. Select the **Specify a Location** box and then click **Next**.

10. Find and open the **hp_f1904.inf** file on the CD-ROM disc in the Drivers directory, and click **OK**.

11. Click **Next** to install the selected monitor.

## Windows Me users

✎ The procedure for installing the driver for your operating system may vary from this.

*To install the driver for the f1904 monitor:*

1. Click **Start**, select **Settings**, and then click **Control Panel**.

2. Double-click **Display**.

3. Select the **Settings** tab.

4. Click the **Advanced** button.

5. Select the **Monitor** tab.

6. Click the **Change** button.

7. Select the **Specify the location of the driver** box and then click **Next**.

8. Click **Next**.

9. Find and open the **hp_f1904.inf** file on the CD-ROM disc in the Drivers directory, and click **OK**.

10. Click **Next** to install the selected monitor.

# Windows XP users

✎ The procedure for installing the driver for your operating system may vary.

*To install the driver for the f1904 monitor:*

1. Click **Start**.
2. Click **Control Panel**.
3. Click **Appearance and Themes**.
4. Click **Display**.
5. Select the **Settings** tab.
6. Click the **Advanced** button.
7. Select the **Monitor** tab.
8. Click **Properties**.
9. Select the **Driver** tab.
10. Click **Update Driver**.
11. Select the **Install from a list or specific location** box and then click **Next**.
12. Select the **Don't search** box and then click **Next**.
13. Click **Have Disk**.
14. Click **Browse**.
15. Find and open the **hp_f1904.inf** file on the CD-ROM disc in the Drivers directory, and click **OK**.
16. Click **Next** to install the selected monitor.

If the installation procedure of the monitor driver for the Windows 2000, Windows Me, or Windows XP operating system is different, or if you need more detailed installation information, please refer to the Microsoft Windows information that came with the computer.

# Front Panel Components
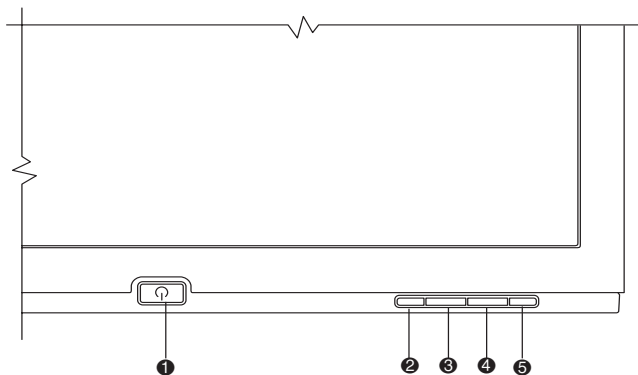


| No. | Control | Function |
|-----|---------|----------|
| ❶ | On/Off | Turns the monitor on and off |
| ❷ | Menu | • When OSD is active, closes setting screens and exits OSD.<br>• When OSD is inactive, opens and closes OSD. |
| ❸ | Left or Down Browse/ Input 1 | • When OSD is active, navigates OSD settings menu and adjusts settings.<br>• When OSD is inactive, selects the VGA signal input setting. |
| ❹ | Right or Up Browse/ Input 2 | • When OSD is active, navigates OSD settings menu and adjusts settings.<br>• When OSD is inactive, selects the DVI-I signal input setting. |
| ❺ | Select/Auto | • When OSD is active, acts as an Enter (Select) key to select setting screen options.<br>• When OSD is inactive, performs an auto-adjustment to optimize image quality. |

# Adjusting Monitor Settings

Press the menu button on the front panel of your monitor to view the On-Screen Display (OSD) Menu. The Main Controls window pops up and you can make adjustments to your monitor's various features. Use the left arrow and right arrow keys in the menu window to make your adjustments.

# Using the On-Screen Display

The adjustments for screen settings are located in the On-Screen Display (OSD) menus. Two OSD menus are available; one for basic adjustments, and one for advanced adjustments.

To access the Basic OSD Menu, press the Menu button on the monitor's front panel.

**Basic OSD Menu Levels**

| Menu Level 1 | Menu Level 2 |
| --- | --- |
| Brightness | Adjustment Scale |
| Contrast | Adjustment Scale |
| Auto Adjustment | |
| Advanced Menu | |
| Exit | |

To access the Advanced OSD Menu, press the menu button again, or select **Advanced Menu** from the Basic OSD Menu.

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

The Advanced OSD Menu has up to two sublevels and can be viewed in one of six available languages. The following table provides the menus and their functions at each level:

**Advanced OSD Menu Levels**

| Level 1 | Level 2 | Level 3 |
| --- | --- | --- |
| Brightness | Adjustment Scale | |
| Contrast | Adjustment Scale | |

### Advanced OSD Menu Levels

| Level 1 | Level 2 | Level 3 |
|---------|---------|---------|
| Image Control | Auto Adjustment | "Adjusting Message" |
| | Horizontal Position | Adjustment Scale |
| | Vertical Position | Adjustment Scale |
| | Clock | Adjustment Scale |
| | Clock Phase | Adjustment Scale |
| | Cancel | |
| | Save and Return | |

✎ The Video Clock and Clock Phase selections are not available when the monitor is operating in the DVI-D (digital) mode.

| | | |
|---------|---------|---------|
| Color | 9300 K | |
| | 6500 K | |
| | Custom Color | RGB Color Adjustment |
| | Cancel | |
| | Save and Return | |
| Language | Deutsche | |
| | English | |
| | Espanol | |
| | Francais | |
| | Italiano | |
| | Nederlands | |
| | Cancel | |
| | Save and Return | |
| Management | Power Saver | On/Off Selection |
| | Power On Recall | On/Off Selection |
| | Mode Display | On/Off Selection |
| | Serial Number | (display serial no.) |
| | Basic Menu | |
| | Cancel | |
| | Save and Return | |

| Advanced OSD Menu Levels | | |
|---|---|---|
| **Level 1** | **Level 2** | **Level 3** |
| OSD Control | Horizontal Position | Adjustment Scale |
| | Vertical Position | Adjustment Scale |
| | OSD Timeout | Adjustment Scale |
| | OSD Transparency | Adjustment Scale |
| | Cancel | |
| | Save and Return | |
| Video Input Controls | Input Selection | Analog (D-SUB) |
| | | Analog (DVI) |
| | | Digital (DVI) |
| | | Auto Detect |
| | Cancel | |
| | Save and Return | |
| Factory Reset | Yes | |
| | No | |
| Exit | | |

# Using the Auto-Adjustment Function

You can easily optimize the screen performance for the VGA interface by using the Auto button and the auto-adjustment pattern software on the CD-ROM disc provided.

1. Insert the provided CD-ROM disc into the computer.

2. Run the software file Adjustment pattern.exe (from the CD-ROM drive) to display a setup test pattern.

3. Press the Auto button to produce a stable, centered image.

The optimizer utility on the CD-ROM contains the drivers for Windows Me, Windows 2000, or Windows XP. For the f1904 monitor, use the D:\Drivers\hp_f1904.inf (or E:\Drivers\hp_f1904.inf) file.

# Optimizing Analog Video

This monitor contains advanced circuitry that allows the flat panel screen to function as a standard monitor. Two controls in the on-screen display can be adjusted to improve image performance: Clock and Clock Phase. Use these controls only when the auto-adjust function does not provide a satisfactory image.

✎ The Clock must first be set correctly since the Clock Phase settings are dependent on the main Clock setting.

■ 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.

✎ When using the controls, you will obtain the best results by using the adjustment pattern application provided on the CD-ROM.

✎ 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, select **Yes** from the Factory Reset menu in the on-screen display.

# 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 turned off. | Turn on the power. |
| | Video cable is improperly connected. | Connect the video cable properly. Refer to 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. |

| Problem | Possible Cause | Solution |
|---------|----------------|----------|
| Image is not centered. | Position may need adjustment. | Press the Menu button to access the OSD Menu. Select **Image Control/ Horizontal Position** or **Vertical Position** 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 "Factory Preset Display Modes" in Appendix B). Restart your computer so that the new settings take effect. |

# Using the World Wide Web

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

# 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

■ Serial number for the 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

# B

# Technical Specifications

## f1904 Flat Panel Monitor

| | | |
|---|---|---|
| Display | 19.0 inches | 48.3 cm |
| Type | TFT LCD | |
| Viewable Image Size | 19.0-inch diagonal | 48.3 cm |
| Tilt | –5 to 20° | |
| Swivel | +35 to –35° | |
| Face Treatment | Anti-glare polarizer with hard coating | |
| Maximum Weight (Unpacked) | 17.2 lbs. | 7.8 kg (unpacked) |
| Dimensions (include pedestal) | | |
| Height (min) | 15.8 inches | 400.0 mm |
| Height (max) | 20.6 inches | 525.0 mm |
| Depth | 8.5 inches | 215.4 mm |
| Width | 16.6 inches | 422.5 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 | |

## f1904 Flat Panel Monitor *(Continued)*

| | | |
|---|---|---|
| Horizontal Frequency (analog mode) | 30 to 82 kHz | |
| Vertical Refresh Rate (analog mode) | 56 to 76 Hz | |
| Environmental Requirements Temperature: | | |
| Operating Temperature | 41to 95° F | 5 to 35° C |
| Non-operating Temperature | –4 to 140° F | –20 to 60° C |
| Relative Humidity | 20 to 80% | |
| Power Source | 100–240 VAC, 50/60 Hz | |
| Power Consumption | <40 watts typical | |
| Input Terminals | 15-pin D-type connector with cable included DVI-I connector with DVI-D cable included | |

All performance specificatons are provided by the component manufacturer. Performance specifications represent component manufacturer averages and actual performance may vary.

# Recognizing Preset Display Resolutions

The display resolutions listed below are the most commonly used modes and are set as factory defaults. This monitor automatically recognizes these preset modes and they will appear properly sized and centered on the screen.

**Factory Preset Display 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 | 61.8 | 65.9 |
| 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 for f1904 Monitor

The HP f1904 TFT monitor uses high-precision technology, manufactured according to HP 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 HP f1904 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.

■ 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 HP f1904 display does not have more than:

■ 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.).

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

# Entering User Modes

The video controller signal may occasionally call for a mode that is not preset if:

■ You are not using a standard graphics adapter.

■ You are not using a preset mode.

If this occurs, you may need to readjust the parameters of the monitor screen by using the on-screen display. Your changes can be made to any or all of these modes and saved in memory. The monitor automatically stores the new setting, then recognizes the new mode just as it does a preset mode. In addition to the 16 factory preset modes, there are four user modes that can be entered and stored.

# Energy Saver Feature

When the monitor is in its normal operating mode, the monitor uses less than 40 watts of power and the Power light is green.

The monitor also supports a reduced power state. The reduced power state will be entered into if the monitor detects the absence of either the horizontal sync signal and/or the vertical sync signal. Upon detecting the absence of these signals, the monitor screen is blanked, the backlight is turned off, and the Power light is turned amber. When the monitor is in the reduced power state, the monitor will utilize less than 2 watts of power. There is a brief warm up period before the monitor will return to its 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 connected to computers that have energy saver features.

By selecting settings in the monitor's Energy Saver utility, you can also program the monitor to enter into the reduced power state at a predetermined time. When the monitor's Energy Saver utility causes the monitor to enter the reduced power state, the Power light blinks amber.

# 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, 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 (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

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.

# 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 '03 Requirements



## Congratulations!

The display you have just purchased carries the TCO'03 Display label. This means that your display is designed, manufactured and tested according to some of the strictest quality and environmental requirements in the world. This makes for a high performance product, designed with the user in focus that also minimizes the impact on our natural environment.

Some of the features of the TCO'03 Display requirements:

## Ergonomics

■ Good visual ergonomics and image quality in order to improve the working environment for the user and to reduce sight and strain problems. Important parameters are luminance, contrast, resolution, reflectance, color rendition, and image stability.

# Energy

- Energy-saving mode after a certain time — beneficial both for the user and the environment.
- Electrical safety.

# Emissions

- Electromagnetic fields.
- Noise emissions.

# Ecology

- The product must be prepared for recycling and the manufacturer must have a certified environmental management system such as EMAS or ISO 14000.
- For information on the HP recycling program, refer to the HP Web site at:
  http://www.hp.com/hpinfo/globalcitizenship/environment/ recycle/hardware.html
- Restrictions on:
  - ❏ chlorinated and brominated flame retardants and polymers
  - ❏ heavy metals such as cadmium, mercury and lead

The requirements included in this label have been developed by TCO Development in co-operation with scientists, experts, and users as well as manufacturers all over the world. Since the end of the 1980s TCO has been involved in influencing the development of IT equipment in a more friendly direction. Our labelling system started with displays in 1992 and is now requested by users and IT-manufacturers all over the world.

For more information, please visit
**www.tcodevelopment.com**