

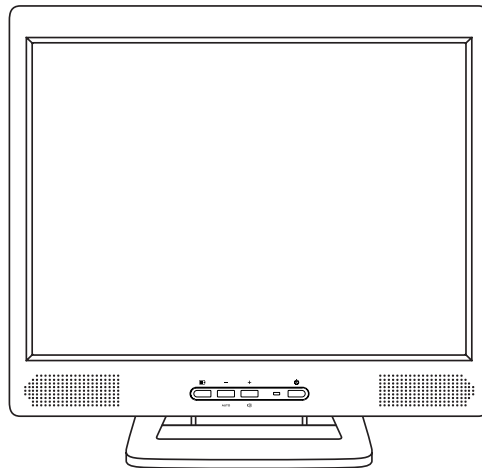


i n v e n t

hp pavilion vf52 lcd monitor

(15-inch/38.1-centimeter viewable image)

user's guide



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Table of Contents

Introduction.....	1
Features.....	1
For Your Safety.....	1
Installation.....	2
Unpacking the Monitor.....	2
Locations and Functions of Controls.....	3
Making the Connections.....	4
Using Your Monitor.....	5
Installing the Drivers.....	5
Turning the Display On and Off.....	6
Tilting the Display.....	7
Setting the Video Mode.....	7
Setting the Refresh Rate.....	7
Minimizing Power Consumption.....	7
Caring for and Cleaning the Display.....	8
Adjusting Your Display.....	8
Summary of Control Buttons.....	8
Displaying the OSD “Main Menu”.....	9
Selecting Items in the OSD Menu.....	9
Changing Settings by using the OSD Menu.....	9
Using the Direct Keys.....	15
Troubleshooting.....	17
LCD Monitor Quality and Pixel Policy.....	18
Technical Information.....	18
Display Information.....	18
Video Modes.....	19
Unknown Video Modes.....	19
Recycling your Product.....	19
Regulatory Information.....	20
Federal Communications Commission Notice.....	20
Canadian Notice.....	20
EPA Energy Star Compliance.....	21
Power Cord Set Requirements.....	21

Introduction

This LCD monitor has a 15-inch / 38.1-centimeter active matrix TFT (thin film transistor) liquid crystal display module. It is designed for use with any Windows®-based PC. The monitor's compact-sized design provides great space savings on your computer desk.

Features

Important features include:

- Automatic configuration to the PC video settings with maximum XGA resolution.
- Three control buttons plus OSD (on-screen display) for monitor settings provide adjustment and configuration with ease and instant feedback.
- Integrated audio speakers provide stereo sound.
- Support of analog video input allows for direct and immediate replacement of CRT displays.
- A tilt feature to optimize viewing position.
- An anti-glare coating on the panel to reduce the reflection of ambient light.
- Flicker-free performance across all recommended video modes.
- Support for high refresh rates up to 76 Hz.
- VESA DDC2B Plug-and-Display compliant.
- A Power-saving feature that is compatible with Microsoft® Windows.
- Compliance with Swedish MPR II guidelines for reduced electromagnetic emissions.

For Your Safety



WARNING: To completely disconnect power from your display, you must remove the power cord from the wall outlet and then remove the power cable from the display.

For your safety and the protection of your monitor, follow these precautions:

- Use only the factory-supplied power cord* that shipped with your monitor.
- To prevent electrical shock, do not disassemble the display. The cover should be removed only by qualified service personnel.
- Do not cover the air vents.
- To avoid the risk of damage to the display and electrical shock to yourself, do not expose the display to rain or moisture.

If any of the following conditions occur, unplug the display and contact qualified service personnel:

- The power cord or plug is frayed or damaged.
- You have spilled liquid into the display.
- The display has been exposed to rain or water.
- The display does not operate correctly when the operating instructions are followed.
- The display has been dropped or the cabinet has been damaged.

*The power cable is for use with the supplied power adapter only. In case of loss or damage, contact the retailer for replacement.

Working in Comfort

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

These recommendations can be found in the onscreen version of the Safety & Comfort Guide, which is preloaded on the hard disk drive of your HP computer.

To view the Safety & Comfort Guide online:

Type

<http://www.hp.com/ergo/>

into your Web browser address box, and then press Enter on the keyboard.

NOTE: This monitor is not intended for use in an office workspace.



WARNING: To reduce the risk of serious injury, read the Safety & Comfort Guide. It describes proper workstation setup, posture, and health and work habits for computer users. It also provides important electrical and mechanical safety information.

Installation

Please follow the instructions in this chapter to install your LCD monitor.

NOTE: Before connecting your display, first read through the instructions in this chapter and the safety precautions in the previous chapter.

Unpacking the Monitor

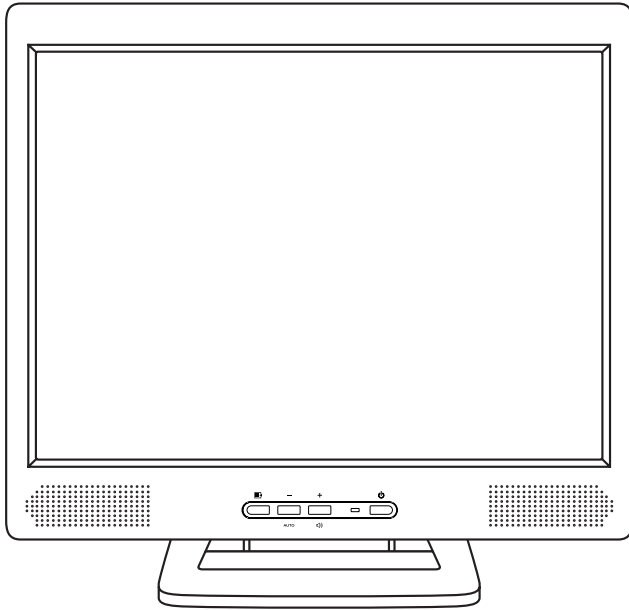
When you are unpacking the display, make sure that you have the following items:

- The LCD monitor
 - AC power adapter with attached DC power cable and separate power cord
 - Analog video signal cable
 - Audio cable
 - The CD with software drivers and this User's Guide
 - The Warranty
-

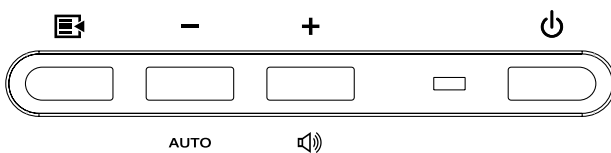
NOTE: Place the monitor on a flat, sturdy surface. Choose an area free from excessive heat, moisture, and sunlight.

Locations and Functions of Controls



There are three control buttons and one Power button on the front panel of the display, as well as a LED for power status indication.



You use the Power button, the button on the right in the button panel on the front of your monitor, to turn on and off the monitor.



The functions of the three control buttons and the Power button on the front panel of your monitor are described in the following table.

Button	Symbol	Press the Button to:
Select		Show the OSD menu ("Main Menu") while it is off. <i>Or</i> Execute the selected function in the OSD menu.
Minus	—	Move a selected item downward or decrease a user-adjustable value in OSD Menu. <i>Or</i> Start the Auto Setup (Direct-key function).
Plus	+	Move a selected item upward or increase a user-adjustable value in OSD Menu. <i>Or</i> Start the Audio Function Menu (Direct-key function).
Power		Turn on or turn off the monitor. The power indicator (green LED) on the left of the Power button lights while the monitor is on.

Making the Connections

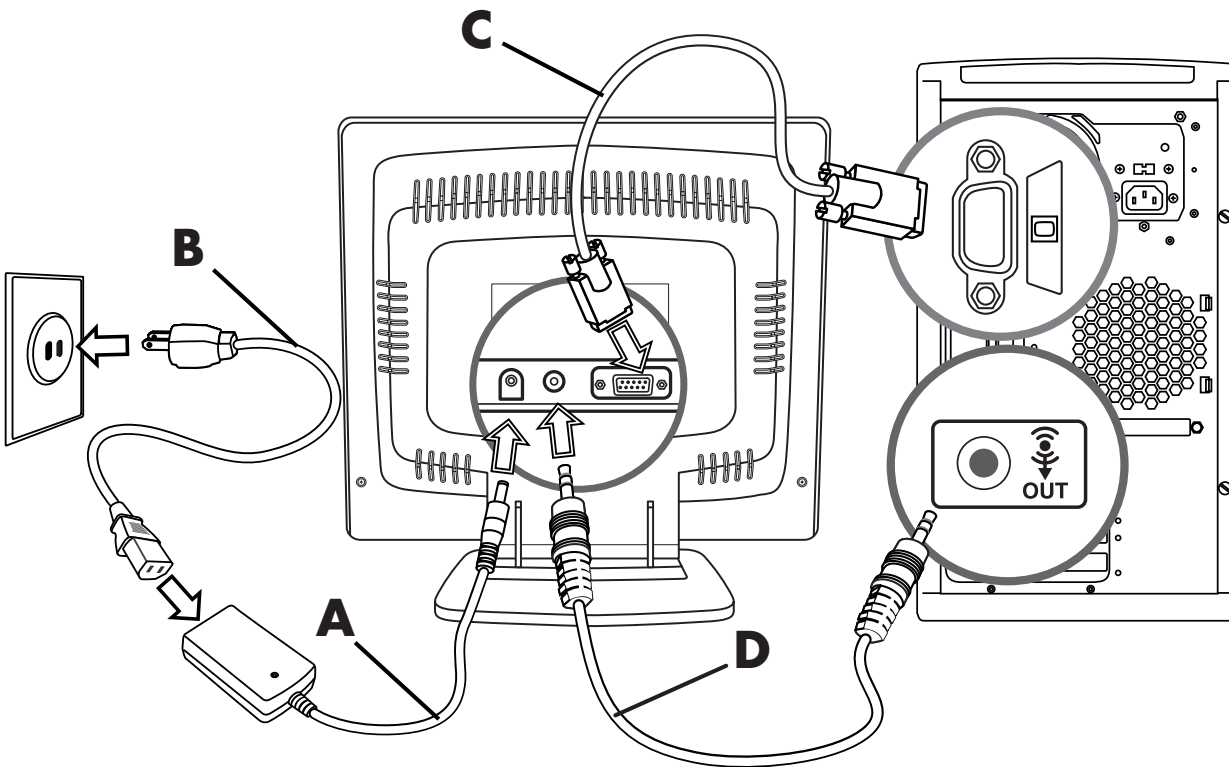
Before connecting any cables, make sure that the computer and monitor are turn off.

To connect the monitor:

1 Locate the following items:

- AC power adapter with the attached DC power cable (A) and separate power cord (B).
- Analog video signal cable (C).
- Audio cable (D).

2 Plug the AC power adapter DC power cable (A) into the power jack on the back of the monitor.



3 Plug the separate (two-prong) power cord (B) into the AC power adapter (A), and then into the power source.

4 Plug the analog video signal cable (C) into the Analog Video Input port on the back of the monitor, and then into your computer video port (blue VGA connector). (Please check your computer documentation for the video port location.)

5 Plug the audio cable (D) to the Audio jack on the back of the monitor, and then into the computer audio out port (green connector).

NOTE: For best display performance, it is strongly recommended that you use Auto Setup to automatically configure the monitor settings.

Using Your Monitor

This chapter contains information about using your LCD 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 will not be correct.

NOTE: 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> and click the Support link.

If the monitor driver installation procedure differs from the steps provided here, or if you need more detailed installation information, please refer to the Microsoft Windows information that came with the computer.

Windows 2000 Users

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

To install the driver for the 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_vf52.inf** file on the CD-ROM disc in the Drivers directory, and then click **OK**.
- 11 Click **Next** to install the selected monitor.

Windows Me Users

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

To install the driver for the monitor:

- 1 Click **Start**, select **Settings**, and then click **Control Panel**.
- 2 Double-click **Display**.
- 3 Click 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_vf52.inf** file on the CD-ROM disc in the Drivers directory, and then click **OK**.
- 10 Click **Next** to install the selected monitor.

Windows XP Users

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

To install the driver for the monitor:

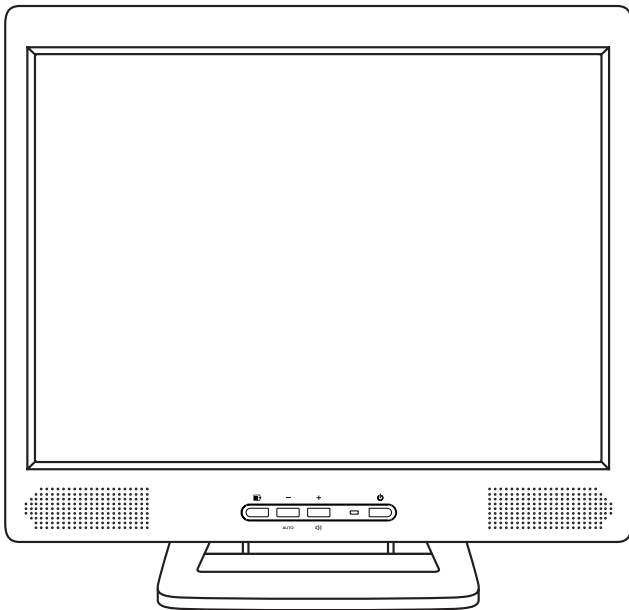
- 1 Click **Start**.
- 2 Click **Control Panel**.
- 6 Click **Appearance and Themes**.
- 3 Click **Display**.
- 4 Select the **Settings** tab.

- 5 Click the **Advanced** button.
- 6 Select the **Monitor** tab.
- 7 Click **Properties**.
- 8 Select the **Driver** tab.
- 9 Click **Update Driver**.
- 10 Select the **Install from a list or specific location** box and then click **Next**.
- 11 Select the **Don't search** box and then click **Next**.
- 12 Click **Have Disk**.
- 13 Click **Browse**.
- 14 Find and open the **hp_vf52.inf** file on the CD-ROM disc in the Drivers directory, and then click **OK**.
- 15 Click **Next** to install the selected monitor.

Turning the Display On and Off

You use the Power button, the button on the right in the button panel on the front of your monitor, to turn the monitor on and off.

When the monitor is on, the Power indicator light (LED) near the Power button illuminates. The light is green when both the monitor and PC are active, it is amber when the monitor is in a reduced power mode, and the light is off when the monitor is off.



If your PC supplies power saving signals to the monitor, the monitor power management features reduce power consumption to low levels when your PC goes into its power-saving mode. See “Minimizing Power Consumption” on page 7 for more information.

If your PC doesn't use industry standard power-save signaling techniques, you can reduce power consumption by turning off the display when it won't be used for an extended period. You can turn the display off even if you leave your PC running.

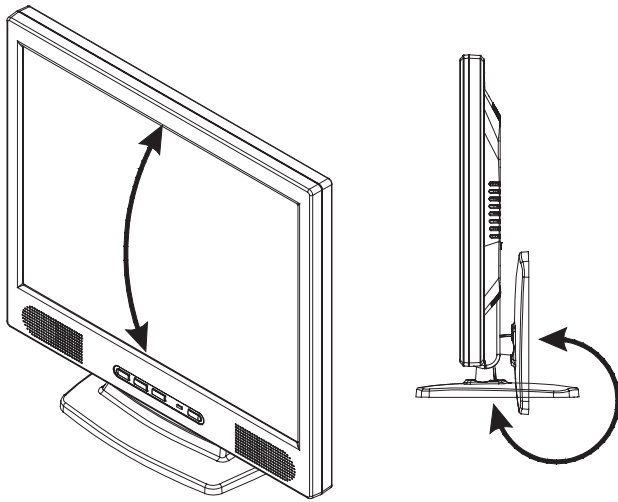
NOTE: Because of the technology used in LCD panels, screen savers will not prolong the life of your display. So if the display will not be used for an extended period, be sure to turn it off.



WARNING: To completely disconnect power from your display, you must remove the power cord from the wall outlet and then remove the power cable from the display.

Tilting the Display

The monitor has a tilt feature that allows you to tilt the display back and forth as well as left and right to find the most comfortable viewing position. To tilt the display, grasp the sides and push the display back or pull it toward you, or turn it left or right until it is in the desired position. The display can be tilted 20° backward and 5° forward.



NOTE: Do not tilt the display by grasping the top edge.

Setting the Video Mode

Since the display resolution of this monitor is 1024 pixels by 768 lines, the display will perform best when your PC is set to a screen resolution of 1024 x 768. If you use a lower resolution (such as 640 x 480), the image is expanded to fill the screen.

Your display supports many common video modes, as shown in “Video Modes” on page 19. Check the documentation supplied with your PC and video adapter card to find out which modes they support.

To see what the video mode is on your PC, check the settings for the Display Properties in the Windows Control Panel of your PC.

Setting the Refresh Rate

The image *refresh rate* is the number of times per second that the image is refreshed; it is also known as the *vertical frequency*.

Your LCD Monitor is flick-free at all supported refresh rates.

Although your LCD monitor supports up to 75 Hz for analog video input, we recommend that you use 60 Hz refresh rate for best performance. The table in “Video Modes” on page 19 shows the image refresh rates supported by the display at different screen resolution.

To set the refresh rate with a standard Windows installation, follow the steps mentioned in your Windows or video card documentation.

Minimizing Power Consumption

Many PCs support industry standard power-save signaling techniques. Power management features reduce the display’s power consumption after a period of keyboard or mouse inactivity.

When the monitor is in a power-saving mode, the screen is blank and the power indicator is amber. Pressing a key on the keyboard or moving the mouse restores the image in several seconds. Consult your PC documentation for information about setting the power-saving modes.

The display accepts the signals for standard power-saving mode, and when the PC goes into power saving mode then the display also goes into power saving.

Caring for and Cleaning the Display

To maximize screen life and prevent damage to the LCD panel, we recommend that you:

- Use the display power management system (if available on your PC).
- If you don't use a power management system, turn off the display when you won't be using it for an extended period.
- Don't press, rub, or poke the display with your finger or other object.
- Handle your display with care.

Your LCD module is a high-quality optical device that requires special care when cleaning.



WARNING: Don't use liquid, aerosol, or abrasive cleaning solutions to clean the screen.

To clean the screen:

- 1 Shut down the PC.
- 2 Turn off and unplug the display.
- 3 Gently dust the screen with a dry, soft, line-free cloth.

NOTE: If the screen is still dirty, you can dampen the cloth with several drops of distilled water. Make sure the LCD panel is completely dry before you turn the display back on.

- 4 Plug in the display.
- 5 Turn on your PC and display.

Adjusting Your Display

This chapter contains information about how to change the display settings for your LCD Monitor. It is designed with an OSD (on-screen display) menu to help you easily make adjustments for optimum performance.

NOTE: You must perform Auto Setup before making any adjustment. See "Using Auto Setup" on page 9.

Summary of Control Buttons

The functions of the three control buttons and the Power button on the front panel of your monitor are described in the following table.

Button	Symbol	Press the Button to:
Select		Show the OSD menu ("Main Menu") while it is off. <i>Or</i> Execute the selected function in the OSD menu.
Minus	-	Move a selected item downward or decrease a user-adjustable value in OSD Menu. <i>Or</i> Start the Auto Setup (Direct-key function).
Plus	+	Move a selected item upward or increase a user-adjustable value in OSD Menu. <i>Or</i> Start the Audio Function Menu (Direct-key function).
Power		Turn on or turn off the monitor. The power indicator (green LED) on the left of the Power button lights while the monitor is on.

Displaying the OSD “Main Menu”

You can use the OSD features to change the screen settings of your display. To display the OSD “Main Menu”, press the ‘Select’ button.

The following table briefly describes each of the items in the OSD “Main Menu”.

Item	Description
Auto	Automatically adjust the display settings by using this “Auto Setup” icon. See “Using Auto Setup” on page 9.
Management	Open the “Management” submenu where you can select Brightness, Contrast or the image position for further adjustment. See “Adjusting the “Management” Submenu” on page 10.
Clock/Phase	Open the “Clock/Phase” submenu where you can select Clock or Phase for further adjustment. See “Adjusting the “Clock/Phase” Submenu” on page 12.
Color	Open the “Color” submenu where you can select Color Temperature, RGB and Black Level for further adjustment. See “Adjusting the “Color” Submenu” on page 12.
OSD Display	Open the “OSD Display” submenu where you can select H. position or V. position of the OSD display for further adjustment. See “Adjusting the “OSD Display” Submenu” on page 14.
Factory Recall	Recall factory-setting values back. See “Adjusting the Factory Recall” on page 14.
Languages	Open the “Languages” submenu where you can select one of the five languages for your preference in display OSD messages. See “Selecting Language for Your Preference” on page 15.
Exit	Close and exit the OSD main menu.

Selecting Items in the OSD Menu

To select items in the OSD “Main Menu”, you will use the ‘+’ (plus) or ‘-’ (minus) buttons on the front panel of the monitor to highlight the item, then you will press the ‘Select’ button.

To select items in the OSD submenus, you will use all three control buttons. To select a specific submenu, you use the ‘+’ or ‘-’ buttons to move forward or backward to the item to be adjusted, and then select it by pressing the ‘Select’ button.

Changing Settings by using the OSD Menu

Using Auto Setup

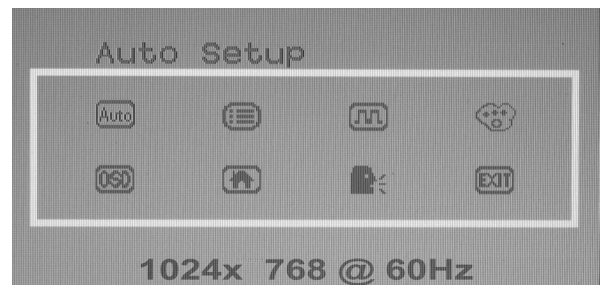
You can easily optimize the screen performance for the monitor VGA interface by using the Auto button and the auto-adjustment pattern software on the CD-ROM disc that came with the monitor.

To perform the Auto Setup using the Auto button, you should follow the steps below:

- 1 Insert the CD-ROM disc into a drive on the PC.
- 2 Run the software file Adjustment Pattern.exe (from the CD-ROM drive) to display a setup test pattern.
- 3 Press the ‘Auto’ button (by pressing the ‘-’ button when the OSD “Main Menu” is not shown) to produce a stable, centered image.

To perform the Auto Setup function by using the Main Menu, you should follow the steps below:

- 1 Press the ‘Select’ button to show the OSD “Main Menu”.
- 2 The ‘Auto’ icon should be highlighted already.



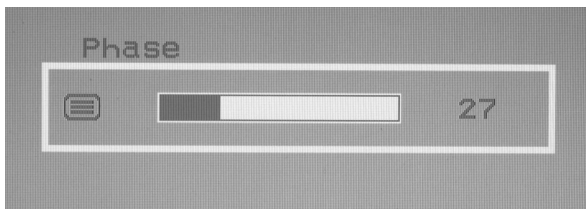
- 3 Press the 'Select' button to select and execute the Auto Setup function. After the execution of the Auto Setup function, it will show the follow message:



If the image looks correct, choose **Yes**.

Or

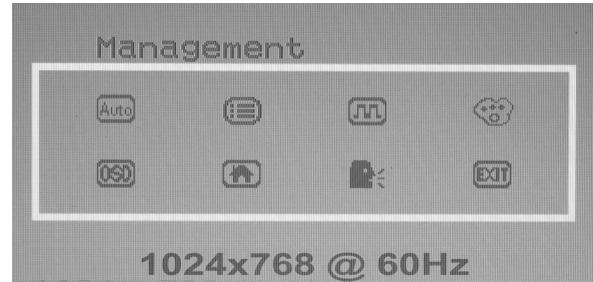
If the image requires further adjustment, choose **No**, and the 'Phase' bar will show. Then you can adjust Phase by using the '+' or '-' buttons. When all text appears focused and there is no instability in the image, press the 'Select' button to end the adjustment.



Adjusting the "Management" Submenu

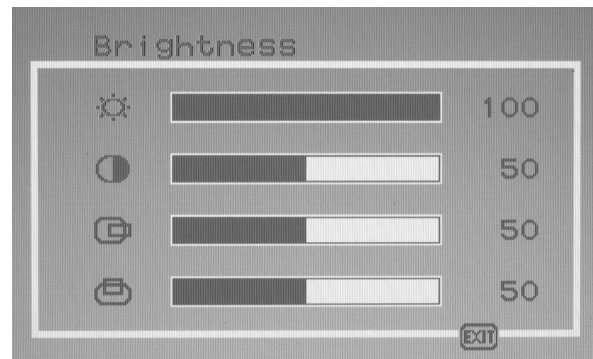
To perform the adjustment in the "Management" submenu you should follow the steps below:

- 1 Press the 'Select' button to show the OSD "Main Menu".
- 2 Use the '+' or '-' button to move (forward or backward) to the management icon and highlight it.

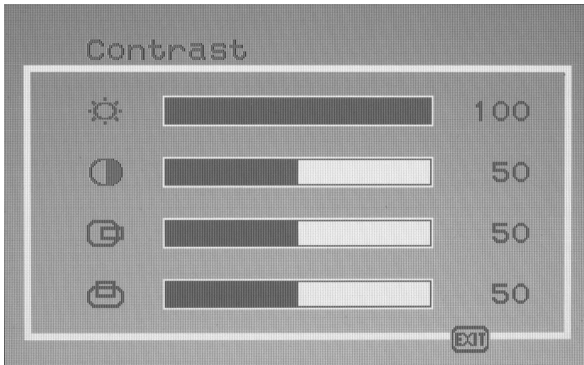


- 3 Press the 'Select' button to enter the "Management" Submenu. It will show four items for your further adjustment.

If 'Brightness' is selected, you may use the '+' or '-' buttons to adjust the setting of brightness. The fullness of the graphic bar as well as the numerical value at the right corner is changed accordingly.

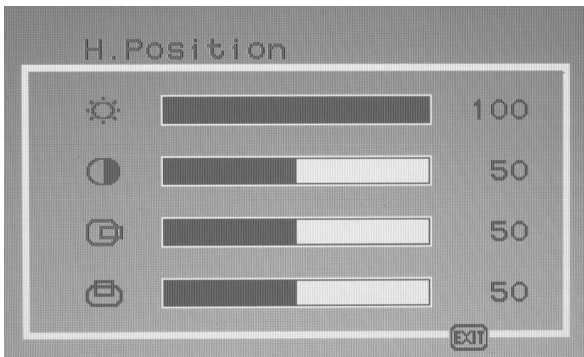


If 'Contrast' is selected, you may use the '+' or '-' buttons to adjust the setting of contrast. The fullness of the graphic bar as well as the numerical value at the right corner is changed accordingly.

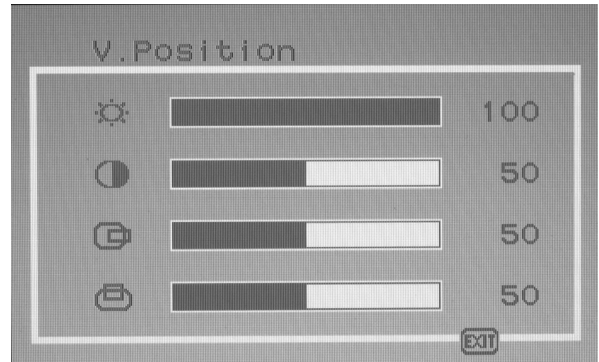


NOTE: We recommend you do Auto Setup before adjusting the contrast setting.

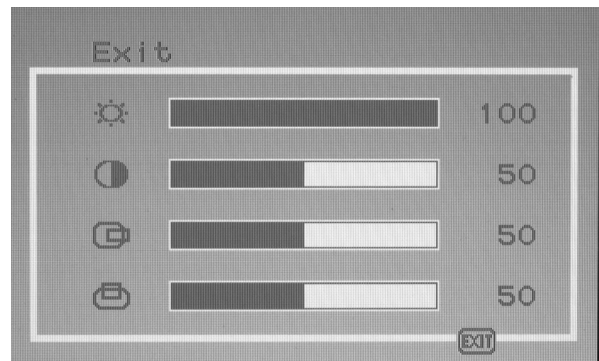
If 'H. position' is selected, you may use the '+' or '-' buttons to adjust the setting of the horizontal position of the image. The fullness of the graphic bar as well as the numerical value at the right corner is changed accordingly.



If 'V. position' is selected, you may use the '+' or '-' buttons to adjust the setting of the vertical position of the image. The fullness of the graphic bar as well as the numerical value at the right corner is changed accordingly.



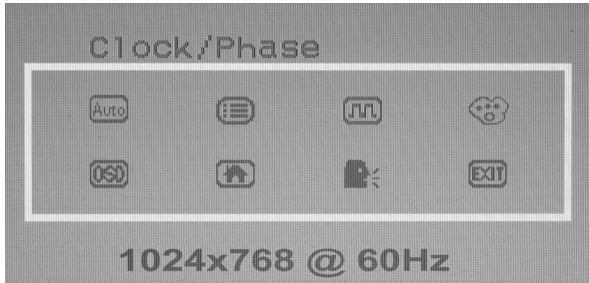
If 'Exit' is selected, it will exit the "Management" submenu and go back to the "Main Menu".



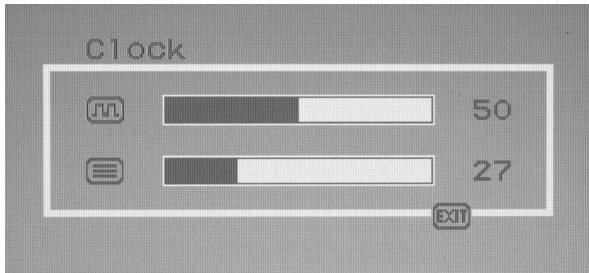
Adjusting the “Clock/Phase” Submenu

To adjust the “Clock/Phase” submenu you should follow the steps below:

- 1 Bring-up the OSD “Main Menu”.
- 2 Use the ‘+’ or ‘-’ button to move (forward or backward) to the clock/phase icon and highlight it.

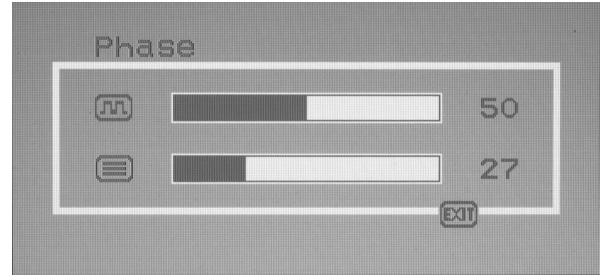


- 3 If ‘Clock’ is selected, you may use the ‘+’ or ‘-’ buttons to adjust the setting of clock. The fullness of the graphic bar as well as the numerical value at the right corner is changed accordingly.



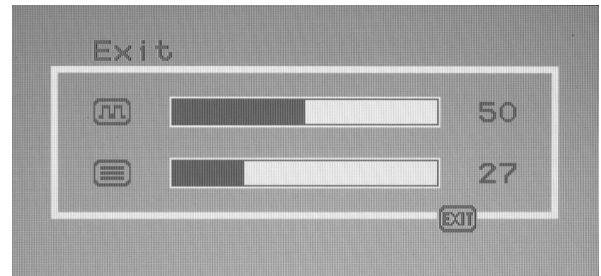
NOTE: We recommend you perform the Auto Setup first. And adjust the clock setting only if the image looks incorrect.

If ‘Phase’ is selected, you may use the ‘+’ or ‘-’ buttons to adjust the setting of phase. The fullness of the graphic bar as well as the numerical value at the right corner is changed accordingly.



NOTE: We recommend you perform the Auto Adjust before adjusting the phase.

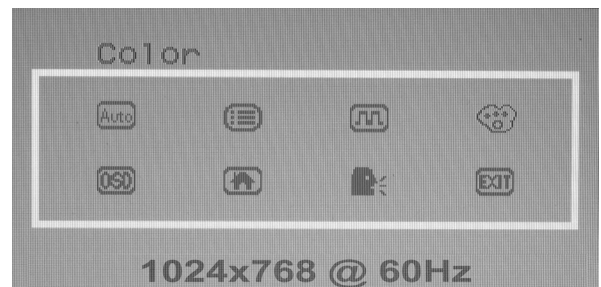
If ‘Exit’ is selected, it will exit the “Clock/Phase” submenu and go back to the “Main Menu”.



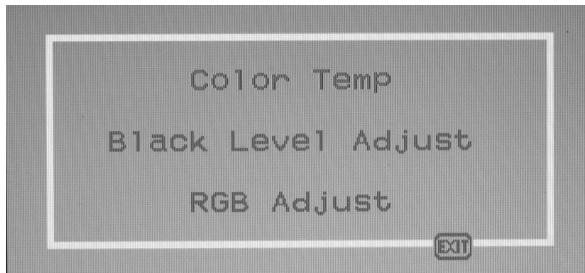
Adjusting the “Color” Submenu

To do adjustment in the “Color” submenu you should follow the steps below:

- 1 Bring-up the OSD “Main Menu”.
- 2 Use the ‘+’ or ‘-’ button to move (forward or backward) to the Color icon and highlight it.



- 3 Press the 'Select' button to enter the "Color" submenu. It will show three items for your further adjustment.

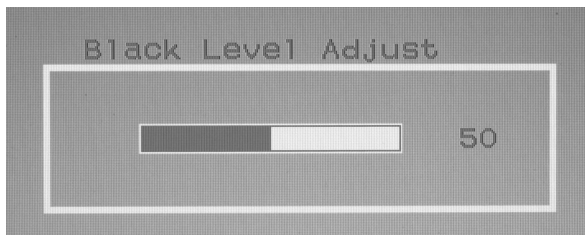


If 'Color Temp' is selected, you may use the '+' or '-' buttons to select one of the three settings. Press the 'Select' button will return you back to the "Color" submenu.

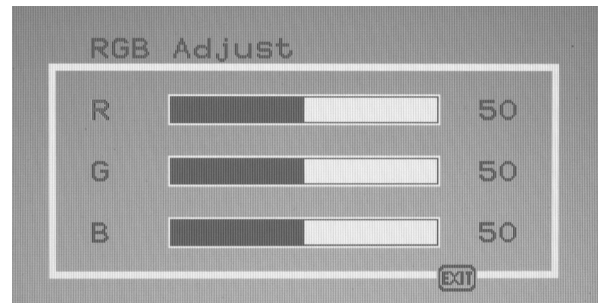


Note: As you choose an item, your screen immediately updates to reflect this setting.

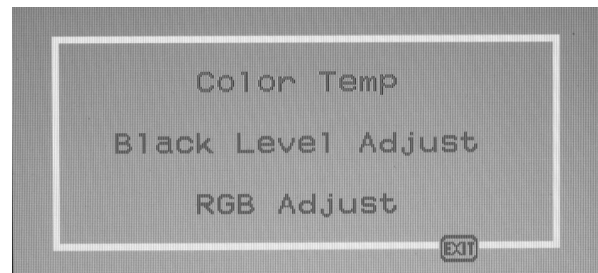
If 'Black Level Adjust' is selected, it will bring-up "Black Level Adjust" submenu. You can adjust its setting by using the '+' or '-' buttons.



If 'RGB Adjust' is selected, it will show the "RGB Adjust" submenu. Use the '+' or '-' buttons to choose and highlight one of the three options (Red, Green and Blue), and then press the 'Select' button to select it. This will show the corresponding bar on menu, and you can adjust its setting by using the '+' or '-' buttons. This control may be helpful in achieving a more natural appearance in graphic images and closer color matching between the printer and the display.



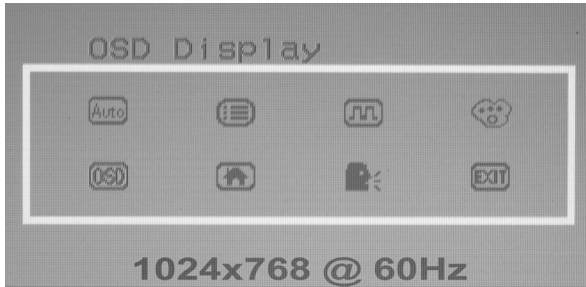
If 'Exit' is selected, it will exit the "Color" submenu and go back to the "Main Menu".



Adjusting the “OSD Display” Submenu

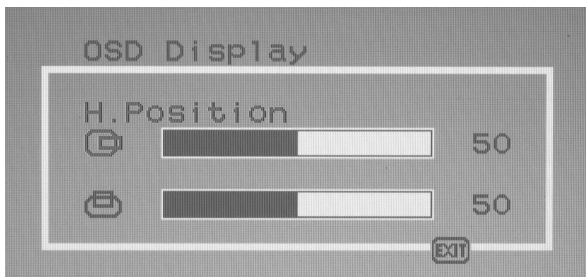
To adjust the OSD H and V, positions you should follow the steps below:

- 1 Bring-up the OSD “Main Menu”.
- 2 Use the ‘+’ or ‘-’ button to move (forward or backward) to the OSD display icon and highlight it.

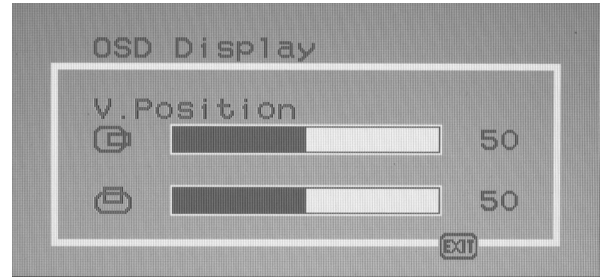


- 3 Use ‘Select’ button to enter the “OSD Display” submenu. It will show two items for your further adjustment.

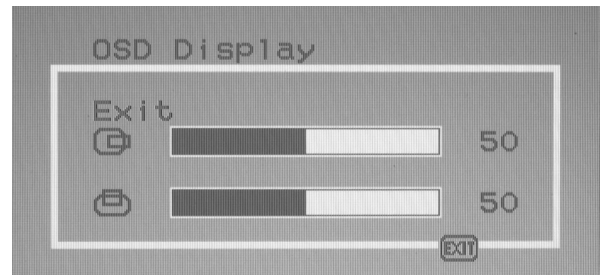
If ‘H. Position’ is selected, you may use the ‘+’ or ‘-’ buttons to adjust the setting of H. position of the OSD display. The fullness of the graphic bar as well as the numerical value at the right corner is changed accordingly.



If ‘V. Position’ is selected, you may use the ‘+’ or ‘-’ buttons to adjust the setting of V. position of the OSD display. The fullness of the graphic bar as well as the numerical value at the right corner is changed accordingly.



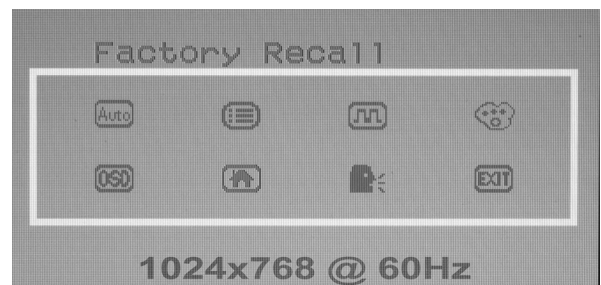
If ‘Exit’ is selected, it will exit the “OSD Display” submenu and go back to the “Main Menu”.



Adjusting the Factory Recall

To recall factory settings back you should follow the steps below:

- 1 Bring-up the OSD “Main Menu”.
- 2 Use the ‘+’ or ‘-’ button to move (forward or backward) to the factory recall icon and highlight it.

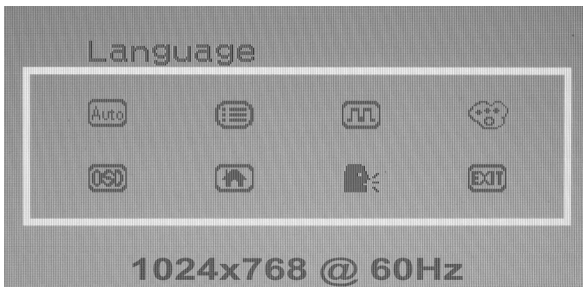


- 3 Press the ‘Select’ button to activate the factory recall action.

Selecting Language for Your Preference

To select one of the five languages for your preference you should follow the steps below:

- 1 Bring-up the OSD “Main Menu”.
- 2 Use the ‘+’ or ‘-’ button to move (forward or backward) to the languages icon and highlight it.



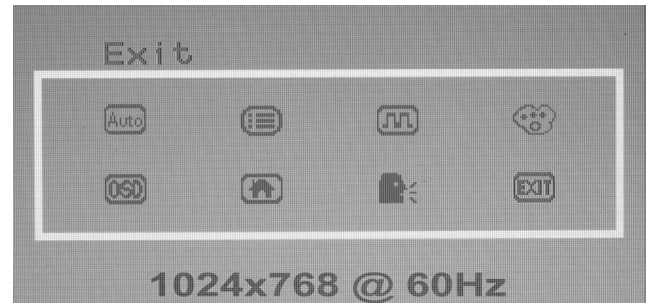
- 3 Use ‘Select’ button to enter the “Language” submenu. It will show five items for your selection. Use the ‘+’ or ‘-’ button to move (forward or backward) to the languages you prefer and press the ‘Select’ button to select it.



NOTE: As you choose an item, your OSD information displayed immediately updates to reflect this setting.

Exit and Close the OSD Menu

To exit and close the OSD menu you should use the ‘+’ or ‘-’ button to move (forward or backward) to the exit icon and then press the ‘Select’ button.



Using the Direct Keys

There are hot key control functions: Auto Setup, and Audio Function. The direct access is only effective while OSD “Main Menu” is inactivated (not visible on the screen). For detail descriptions see below.

Auto Setup by Direct Key

Use Auto Setup whenever you apply a new video mode or change the refresh rate. While the Auto Setup routine is running, you should have a stable image displayed on the screen. Do not move items around the screen, play games, or view video during Auto Setup.

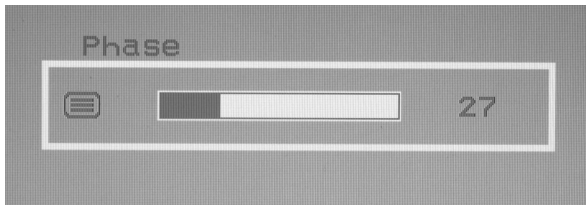
Once you have executed Auto Setup for a particular mode, the display will store the new values in its permanent memory.

To execute Auto Setup by direct key:

- 1 Press the '-' button with no OSD "Main Menu" displayed, to start the execution of Auto Setup. The image will change color and appear to jitter during the Auto Setup function. After the function is complete, you are asked whether the image appears correct or not.



- 2 If the image looks correct, choose **Yes**, and then the OSD will close automatically. If the image requires further adjustment, choose **No**, and the 'Phase' bar will show. Then you can adjust Phase by using the '+' or '-' buttons. When all text appears focused and there is no instability in the image, press the 'Select' button to end the adjustment and close the OSD menu.



Audio Function by Direct Key

To perform the audio function by direct key:

- 1 Press the '+' button with no OSD "Main Menu" displayed to show the "Audio function" menu. There are two items for your selection.

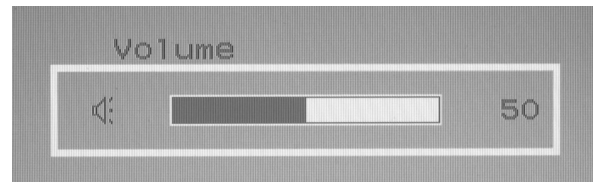


- 2 Use the '+' or '-' button to move (forward or backward) to the function icon and highlight it, and then press 'Select' to select it.

If 'Audio Mute' is selected, you may use the '+' or '-' buttons to activate or deactivate mute function.



If 'Volume' is selected, you may use the '+' or '-' buttons to adjust the setting of volume of the speaker. The fullness of the graphic bar as well as the numerical value at the right corner is changed accordingly.



Troubleshooting

This chapter contains information about how to troubleshoot your LCD Monitor. If you have tried all of the items listed below, check your warranty and contact Support. Go to <http://www.hp.com> and click the Support link.

My display doesn't work, even though the computer appears to work.

- 1** Make sure the power cable is securely plugged into the display.
- 2** Make sure the display is turned on.
- 3** Try turning the display off and then turning it on again.
- 4** Make sure the display's power cord is plugged into a power outlet and into the AC power adapter. Check to see whether the outlet works by plugging another device (such as a lamp) into the outlet. (If the light on the front of the display is lighted, it is getting power. Try the next item on this procedure.)
- 5** Check the cable connection between the display and the computer. The cable connectors must be pushed in all the way.

The message "Check Cable" appears on my display.

This message appears when the video cable is not properly connected to the computer.

- 1** Make sure the analog video cable is plugged into the Analog Video Input port on the back of the display.
- 2** Make sure the other end of analog video cable is plugged into the PC's video port.

The message "No Sync." appears on my display.

This message appears when there is no video signal from the computer with cable already connected.

- 1** Make sure that the computer's power is turned on.
- 2** Make sure that your graphic card has its output.

The message "Signal Out of Range" appears on my display.

This message appears when the input signal is beyond the display's capability.

Set your PC to a supported video mode, preferably 1024 x 768 at 60 Hz. See "Setting the Video Mode" on page 7.

The image is very unstable.

- 1** Set your PC to a supported video mode, preferably 1024 x 768 at 60 Hz. See "Setting the Video Mode" on page 7.
- 2** Restore the original factory settings by choosing **Factory Recall** in the OSD "Factory Recall" submenu.
- 3** Perform the Auto Setup function. See "Auto Setup by Direct Key" on page 15.

NOTE: Even if your PC's setting is out of the range of video modes that are supported by your LCD monitor, it may still be displayed with reduced quality. This provides you with an opportunity to change your PC's setting to a correct one.

LCD Monitor Quality and Pixel Policy

The HP vf52 TFT monitor uses high-precision technology, manufactured according to HP standards, to guarantee trouble-free performance. Nevertheless, the monitor may have cosmetic imperfections that appear as small bright or dark spots. This is common to all LCD monitors used in products supplied by all vendors and is not specific to the HP vf52 monitors. 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 vf52 monitor does not have more than:

- 5 total dot defects.
- Zero defective full pixels.
- 3 bright sub-pixels (red, green or blue; always on).
- 5 dark sub-pixels (red, green or blue; always off).
- No more than two adjacent (less than 2.5 mm edge-to-edge) 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, 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 LCD monitors with fewer cosmetic imperfections and HP will adjust guidelines as improvements are made.

Technical Information

This chapter contains technical information about your LCD Monitor.

Display Information

LCD Module	15-in (38.1-cm), active matrix TFT, anti-glare coating, 0.297 mm pixel pitch
Display Size	304 mm x 228 mm
Viewing Angle	
Left/Right	-60° / 60° (Typical)
Up/Down	-55° / 45° (Typical)
Luminance	250 cd/m ² (Typical)
Contrast Ratio	350:1 (Typical)
Display Colors	262144 (6 bits/colour)
Audio Output	2 W +2 W (rms)
AC Adapter	
Input	100 — 120 V [~] Full Range, 1.2 A (1,2 A) — 0.6 A (0,6 A)
Output	12 V [—] , 3.3 A (3,3 A)
Power consumption	Operating mode: 30 W maximum Off mode: 2 W maximum
Signal Input	RGB positive 0.7 V _{pp} , 75 ohm
Video Signal	Separate & Composite, TTL Level
Sync signals	
Line (horizontal) frequency	30 kHz ~ 63 kHz
Raster (vertical) frequency	56 Hz ~ 76 Hz
Pixel dot clock	80 MHz (maximum)
Recommended video mode	1024 x 768 @ 60 Hz
Pedestal tilt	20° forward, -5° backward
Dimensions (W x H x D)	341 mm x 323 mm x 42 mm
Weight	3.0 kg
Operating Conditions	5° ~ 40° C at altitude 0 ~ 2000 m 5° ~ 30° C at altitude 2000 ~ 3000 m
Temperature	20% ~ 85% RH, non-condensing
Humidity	3000 m Maximum
Altitude	
Storage Conditions	
Temperature	-20° ~ 60° C
Humidity	5% ~ 95% RH
Altitude	10000 m Maximum

Video Modes

Your LCD monitor supports the following industry-standard combinations of screen resolution and refresh rates. Other combinations are possible, but may require adjustments to the image.

For optimum performance, set your PC to a screen resolution of 1024 x 768 at a 60 Hz refresh rate.

Supported Resolution (dots x lines)	Vertical Frequency (Refresh Rate)
VGA 640 x 480	60 Hz
640 x 480	70 Hz
640 x 480	72 Hz
640 x 480	75 Hz
640 x 350	70 Hz
SVGA 800 x 600	56 Hz
800 x 600	60 Hz
800 x 600	70 Hz
800 x 600	72 Hz
800 x 600	75 Hz
XGA 1024 x 768	60 Hz
1024 x 768	70 Hz
1024 x 768	72 Hz
1024 x 768	75 Hz
US TEXT 720 x 400	70 Hz
Power 640 x 480	67 Hz
MAC 832 x 624	75 Hz

NOTE: The display is capable of going beyond these recommended modes.

Unknown Video Modes

Like all other monitors, the your LCD monitor is designed to work with standard video modes. However, not all video/graphic cards use only standard display modes.

Your LCD monitor uses state-of-the-art technology, which is designed to automatically synchronize to any display video mode listed in the above table. We recommend that you choose one of the supported video modes listed above. If you choose an unknown video mode, you will need to manually adjust the clock, phase, and image position; the resulting display may still be bad.

If you must use an unknown mode that is not in the listed display video modes, you should run Auto Setup first. If Auto Setup doesn't provide adequate image adjustment, then you must manually adjust the clock, phase, horizontal position, and vertical position. If this does not work, please chose a recommended video mode.

Recycling your Product

HP has a strong commitment toward the environment. Your 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.

This product contains the following materials may require special handling at the end-of-life:

- Mercury in the liquid display.

Regulatory Information

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, TX 77269-2000

Or, call

1-800- 652-6672

For questions regarding this FCC declaration, contact:

Hewlett-Packard Company
P. O. Box 692000, Mail Stop 510101
Houston, TX 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.

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.

