

# **User's Guide**

HP f2105 LCD Monitor

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

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

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Text set off in this manner indicates additional information.

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## Product Features

### HP LCD Flat Panel Monitor

The HP LCD Monitor (liquid crystal display) has an active matrix, thin-film transistor (TFT) screen.



The flat-panel monitor features:

- Large 21-inch (53.3 cm) diagonal viewable area display.
- 1680 × 1050 factory-set resolution, plus full-screen support for lower resolutions.
- Dual video inputs supported:
  - VGA analog (data)
  - DVI digital (data) (select models only)

- Convenient access to two Universal Serial Bus (USB) 2.0 ports to use with two USB devices, such as a digital camcorder or a USB flash drive. You must connect your high-speed USB hub cable from the monitor to the PC to enable two USB 2.0 ports on the monitor.
- Fast response time provides better experience for gaming and graphics.
- Easy to view from a sitting or standing position, or while moving from one side of the monitor to the other.
- Tilt and height adjustment capabilities.
- Removable pedestal and Video Electronics Standards Association (VESA) 100-mm standard mounting holes for flexible mounting solutions, including wall mounting.
- Security lock slot for a Kensington lock security cable (security cable sold separately).
- Plug and Play capability, if supported by your PC system.
- Onscreen display (OSD) adjustments for ease of setup and screen optimization. Choose English, French, German, Italian, Spanish, or Dutch.
- Built-in stereo speakers with a speaker mini-jack-to-mini-jack cable.
- Audio support connections include:
  - Audio In connector.
  - Headphone jack connector.
  - Audio Out connector to use with a subwoofer and other external speakers (sold separately).
- Integrated power supply.
- Energy Saver feature reduces power consumption.

- Compliance with the following regulated specifications:
  - ❑ European Union CE directives.
  - ❑ Swedish MPR II 1990.
  - ❑ TCO environmental requirements.
- This CD includes:
  - ❑ f2105 User Guide.
  - ❑ An Information (INF) file.
  - ❑ Image Color Matching (ICM) file.
  - ❑ Auto-adjustment pattern software.
  - ❑ Safety information.
  - ❑ TCO environmental requirements.
  - ❑ Adobe Acrobat Reader.



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## Safety and Maintenance Guidelines

### Important Safety Information

The power cord is designed for use with your monitor. To use a different cord, use only a power source and connection compatible with this monitor. For information on the correct power cord set to use with your monitor, see “Power Cord Set Requirements” in Appendix B.



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

---



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

---



**CAUTION:** To protect your monitor, as well as your PC, connect all power cords for your PC and its peripheral devices (such as a monitor, printer, or scanner) to a surge protection device such as a power strip with surge protection or uninterruptible power supply (UPS).

Not all power strips provide surge protection; the power strips must be specifically labeled as having this ability. Use a power strip whose manufacturer offers a damage replacement policy so you can replace your equipment if surge protection fails.

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## Safety Precautions

- Avoid applying pressure to the LCD screen; doing so can cause damage.
- Use only a power source and connection compatible with this monitor, as indicated on the label/back plate of the monitor.
- Be sure the total ampere rating of the products connected to the outlet does not exceed the current rating of the electrical outlet, and the total ampere rating of the products connected to the cord does not exceed the rating of the cord. Look on the power label to determine the ampere rating (Amps or A) for each device.
- Install your monitor near an outlet that you can easily reach. Disconnect the monitor by grasping the plug firmly and pulling it from the outlet. Never disconnect the monitor by pulling the cord.
- Do not allow anything to rest on the power cord. Do not walk on the cord.

## **Maintenance Guidelines**

To enhance the performance and extend the life of your monitor:

- Do not open your monitor cabinet or attempt to service this product yourself. If your monitor is not operating properly or has been dropped or damaged, contact your HP authorized dealer, reseller, or service provider.
- Adjust only those controls that are described in the operating instructions.
- Turn your monitor off when not in use. You can substantially increase the life expectancy of your monitor by using a screen saver and turning off the monitor when not in use.
- Keep your monitor in a well-ventilated area, away from excessive light, heat, or moisture.
- Slots and openings in the cabinet are provided for ventilation. These openings must not be blocked or covered. Never push objects of any kind into cabinet slots or other openings.
- Unplug your monitor from the wall outlet before cleaning.
- Do not drop your monitor or place it on an unstable surface.
- When removing the monitor pedestal base, you must lay the monitor face down on a soft area to prevent it from getting scratched, defaced, or broken.

## Cleaning the Monitor

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

1. Turn off the PC and the monitor.
2. Unplug your monitor from the wall outlet before cleaning.



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

---

3. Wipe the screen with a dry, soft, clean cloth.
  - ❑ If the screen requires additional cleaning, use an antistatic screen cleaner.
4. Dust the monitor housing. Use a damp cloth to clean the cabinet.
  - ❑ If the cabinet requires additional cleaning, use a clean cloth dampened with isopropyl alcohol.
5. Plug in the monitor.
6. Turn on the monitor and the PC.

## Shipping the Monitor

Keep the original packing box in a storage area. You may need it later if you move or ship your monitor. When you ship the monitor, prepare it for shipping by folding it into position.

## Preparing the Monitor for Shipping

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



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

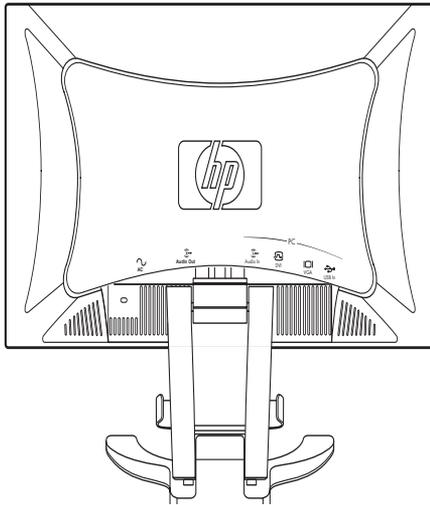
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**CAUTION:** Do not touch the LCD screen; doing so can cause damage.

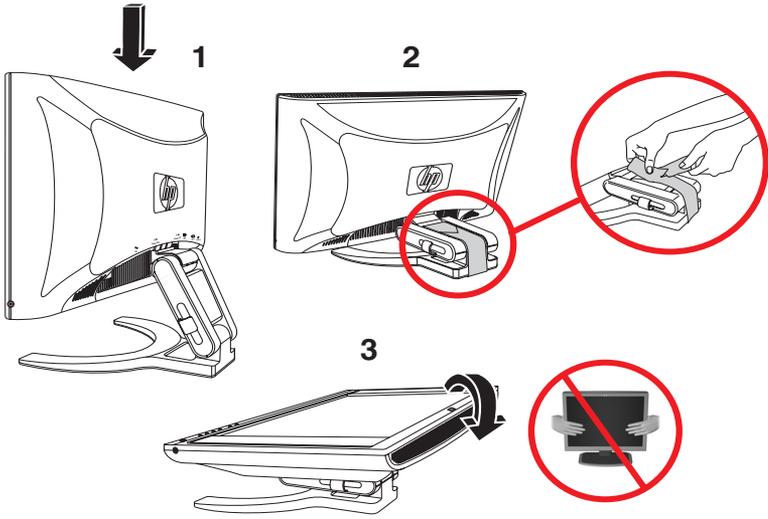
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1. Disconnect the power, video, audio, and USB cables from the side and back of the monitor.



2. Push the panel straight down to flatten the hinge **(1)**, as shown in the following illustration. Place the strap that came with the monitor around the base by threading it through the hinge **(2)**.

Rotate the front of the panel down to a horizontal position (3). Avoid applying pressure to the LCD screen, doing so can cause damage.



### *Folding the monitor for shipping*



**WARNING:** Do not lay the LCD panel of the monitor on a flat surface while trying to attach the strap to the monitor base. The hinge of the base can spring suddenly and this could cause damage or injury.



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# Setting Up the Monitor

## Before You Begin

1. Unpack the monitor. Make sure all contents are included. Store the box and packing foam.
2. Ensure that the power is turned off to the monitor, PC system, and other attached devices (monitor ships in off position).
3. Determine the video cable or cables that you want to connect from the PC video card outputs to the VGA and DVI-D (select models only) connectors on the monitor. You can connect one or both cables.
  - ❑ VGA cable: Standard VGA 15-pin cable.
  - ❑ DVI-D cable (select models only): For digital operation, use the DVI-D-to-DVI-D video cable provided. The DVI-D cable supplied with this monitor is for digital-to-digital connection only. Your PC must have a DVI-compatible graphics card installed for use with this cable. Your DVI-compatible graphics card may not support the optimal monitor resolution. Refer to the documentation that came with your graphics card.
4. Determine if the monitor is to be desktop-mounted or wall-mounted. See “Installing the Monitor” in this chapter.
5. Prepare a flat area to use when assembling the monitor. You may need a flat, soft, protected area for placing the monitor screen-down while preparing it for wall mounting.
6. You need a Phillips head screwdriver for preparing the monitor for wall mounting. You may need a straight-slot screwdriver to secure some cables.

## Installing the Monitor

You can install the monitor on a desktop or wall mount (not included with monitor). Place the monitor in a convenient, well-ventilated location near your PC.

If the monitor is installed on a:

- desktop or table, see “Placing the Monitor on a Desktop” in this chapter.
- wall, swing arm, or other mounting fixture, see “Wall Mounting the Monitor” in this chapter.

Connect the monitor after you have installed it. See “Back and Side-Panel Connectors” in this chapter.

## Placing the Monitor on a Desktop

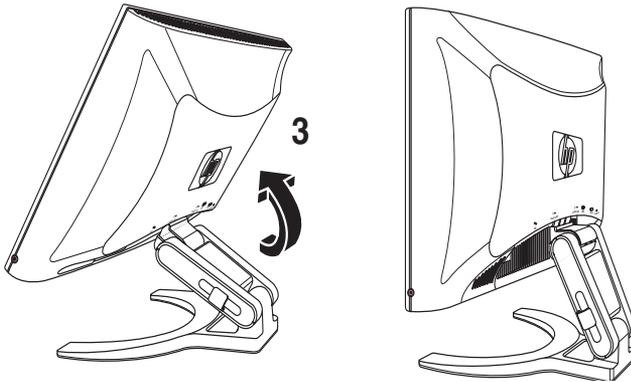
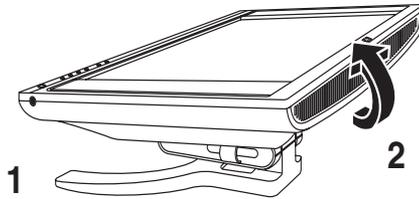
To place the monitor on a desktop or table, you must unfold the monitor.



**CAUTION:** Do not touch the LCD screen, doing so can cause damage.

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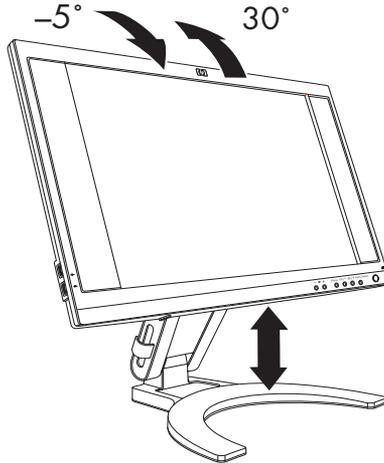
1. Set the monitor on a flat surface.
2. Hold the base of the monitor (**1**) and lift up the panel at the top (**2**) without touching the LCD screen, as shown in the following illustration.
3. Continue to lift the panel (**3**) to its easily adjustable position.



*Opening the monitor*

4. Stand the monitor in the upright position on a desktop or table.

Tilt and adjust the height of the monitor for proper viewing. Do not tilt the monitor beyond its easily adjustable position. You can adjust the monitor so that the panel is fully forward and the bottom of the panel is close to the desktop, if desired.



*Adjusting the monitor tilt*



**CAUTION:** Avoid applying pressure to the LCD screen; doing so can cause damage.

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

---



## Wall Mounting the Monitor

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



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

---



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

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

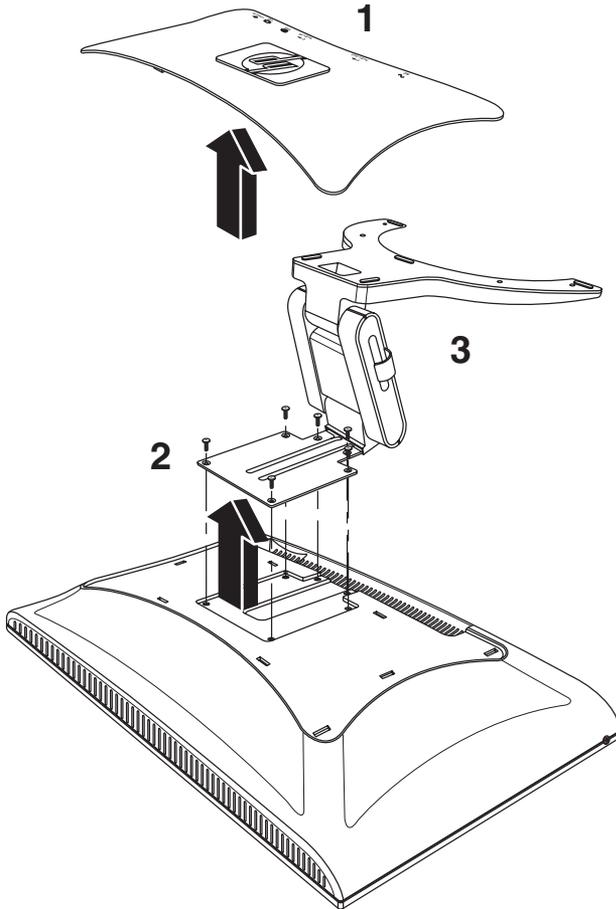


**CAUTION:** The screen is fragile. Placing the monitor screen down on a flat, soft area prevents scratches, defacing, and breakage.

---

1. Set the monitor screen down on a flat, soft, protected surface, and turn the pedestal upright.

2. Pull up on the bottom edge and remove the back cover (**1**), as shown in the following illustration. Set the back cover aside. Six screws are exposed.



*Wall mounting the monitor*

3. Holding the pedestal base assembly so it cannot fall, remove the six screws (**2**). Use a Phillips head screwdriver. Lift the assembly (**3**) and set it aside.

4. Save the removed items (screws, back cover, and pedestal base assembly) for future use. The four threaded mounting holes on the monitor panel are spaced 100 mm apart and are compliant with the VESA standard for mounting flat-panel monitors.
5. Use the four holes to attach a swing arm or other mounting fixture. Follow the instructions included with the mounting fixture to ensure that the monitor is safely attached.

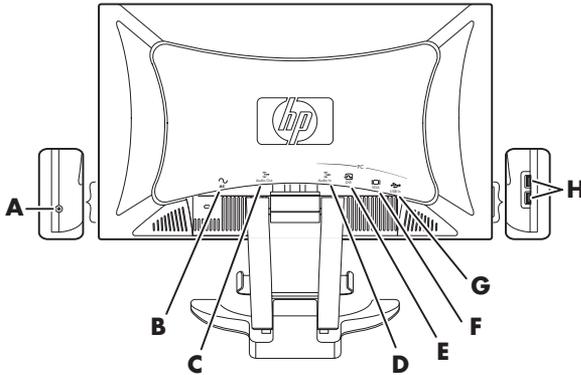
## **Reinstalling the Pedestal Base**

To reinstall the desktop pedestal base assembly for the monitor:

1. Remove the mounting fixture.
2. Reverse the preceding instructions to attach the pedestal base assembly onto the panel (be sure to insert the top two screws first), and then replace the rectangular back cover and snap it into place on the monitor.

## Back and Side-Panel Connectors

Back and side-panel connectors



Item	Label	Icon	Connector	Function
<b>A</b>	(Stereo Headphone jack)			Connects headphones and mutes monitor speakers
<b>B</b>	AC (Power)			Provides power to monitor
<b>C</b>	Audio Out			Connects external speakers or subwoofer (sold separately)
<b>D</b>	Audio In			Connects monitor speakers to PC
<b>E</b>	DVI			Connects monitor to PC (select models only)
<b>F</b>	VGA			Connects monitor to PC
<b>G</b>	USB In			Connects USB hub on monitor to PC to enable the USB 2.0 ports
<b>H</b>	(USB 2.0 ports)			Connects two USB devices

## Connecting the Monitor to the PC

To connect the monitor video input to the PC:

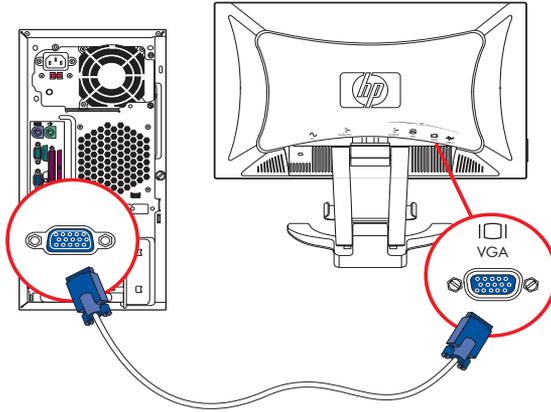
1. Place the monitor upright, as shown in the following illustration.
2. Connect the VGA or DVI-D (select models only) video cable from the monitor to the VGA or DVI video connector on the back panel of the PC.



You can connect the VGA cable, the DVI-D cable, or both. Only one cable is connected for typical installations. The DVI-D connector (select models only) on the monitor is for digital-to-digital connection only. If you connect both analog and DVI-D cables, the PC connects through the analog cable by default. To change to your DVI-D cable, you must change it in your monitor settings. Your PC must have a DVI-compatible graphics card installed for use with this DVI-D video cable. Your DVI-compatible graphics card may not support the optimal monitor resolution. Refer to the documentation that came with your graphics card.

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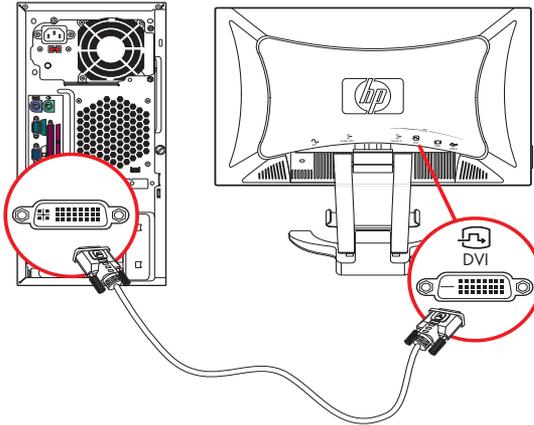
- ❑ Connect one end of the 15-pin VGA cable to the VGA (analog) input connector on the monitor. Then connect the other end to the VGA (analog) output connector on the PC.



## VGA

*Connecting the VGA cable*

3. Connect one end of the DVI-D cable to the DVI-D input connector (select models only) on the monitor. Then connect the other end to the DVI connector on the PC.



## DVI

### Connecting the DVI-D cable



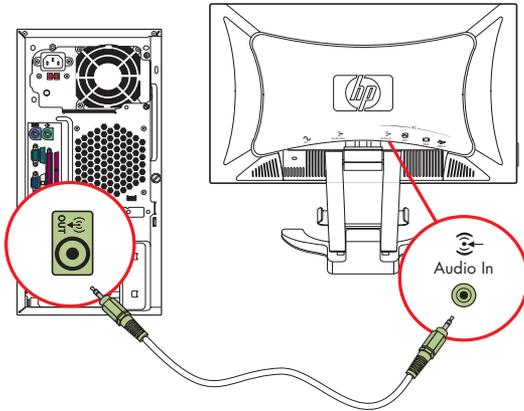
The DVI-D connector (select models only) on the monitor and the DVI-D cable is for digital-to-digital connection only. Your PC must have a DVI-compatible graphics card and a DVI connector for use with this DVI-D cable.

4. Connect the audio cable to the Audio Line Out connector (green) on the PC and to the Audio In connector (green) on your monitor to enable the built-in monitor speakers.



Plugging in headphones to the monitor disables the built-in monitor speakers.

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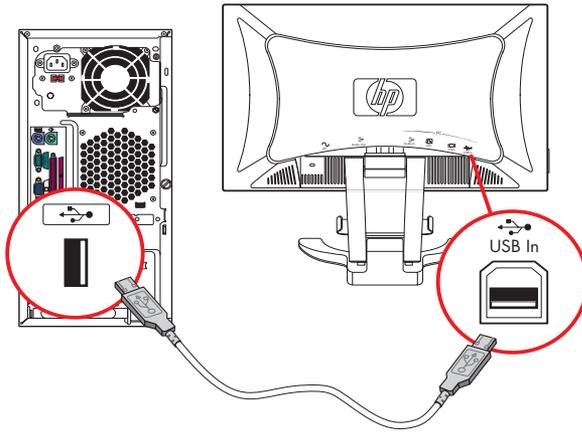


## Audio

### Connecting the audio cable

5. If you have external speakers or a subwoofer (sold separately), connect your external speaker cable to the Audio Out (blue) connector on the monitor to your speakers or subwoofer. Refer to the documentation that came with your speakers or subwoofer for more setup information.
6. As needed, you can connect headphones to the headphones jack connector on the side of the monitor. The headphones connector is item **A** in the illustration in the section "Back and Side-Panel Connectors."

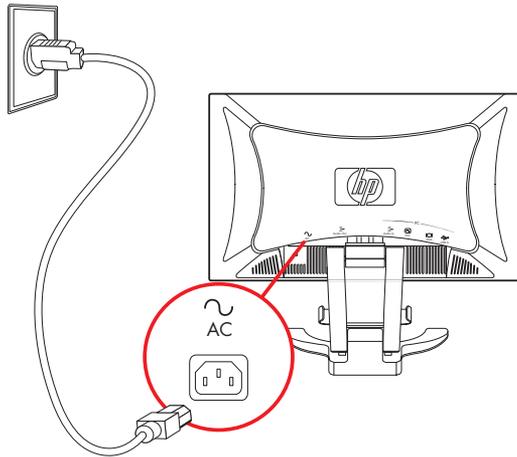
7. Connect the USB hub cable from the PC to the USB In connector on the monitor to enable the two USB 2.0 ports on the side of the monitor. The USB 2.0 ports cannot work without the USB cable attached.



## USB

*Connecting the USB hub cable*

8. Read the following warning, and then connect the power cord to the monitor and to an electrical wall outlet.



### Connecting the power cord



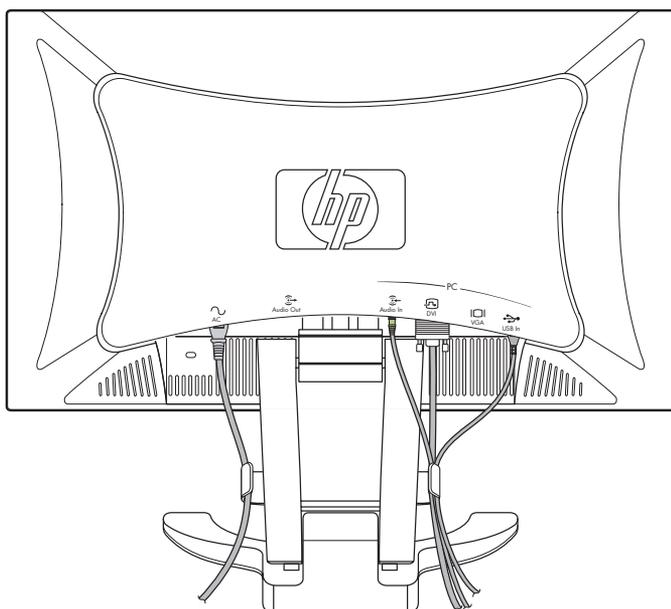
**WARNING:** To reduce the risk of electric shock or damage to your equipment:

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature. Plug the power cord into a grounded (earthed) electrical outlet.
  - Be sure that the grounded power outlet you plug the power cord into is easily accessible to the operator and located as close to the equipment as possible. A power cord should be routed so that it is not likely to be walked on or pinched by items placed upon it or against it.
  - Do not place anything on power cords or cables. Arrange them so that no one may accidentally step on or trip over them. Do not pull on a cord or cable.
  - See "Power Cord Set Requirements" in Appendix B for additional information.
-

9. Place the cables through the two cable management clasps on the back of the monitor base. See illustration in “Cable Management” in this chapter.
10. Adjust the monitor height and angle.
11. Turn on the PC, the monitor, and any other attached devices.
12. Adjust the display using the Menu button, the Adjust buttons, and the Auto/Select button. If the monitor does not function correctly, configure the monitor as described in “Using the Auto-Adjustment Function” on page 4–3.

## Cable Management

You can place the cables through the two cable management clasps at the back of the monitor base to neatly organize all of the cables of the monitor.



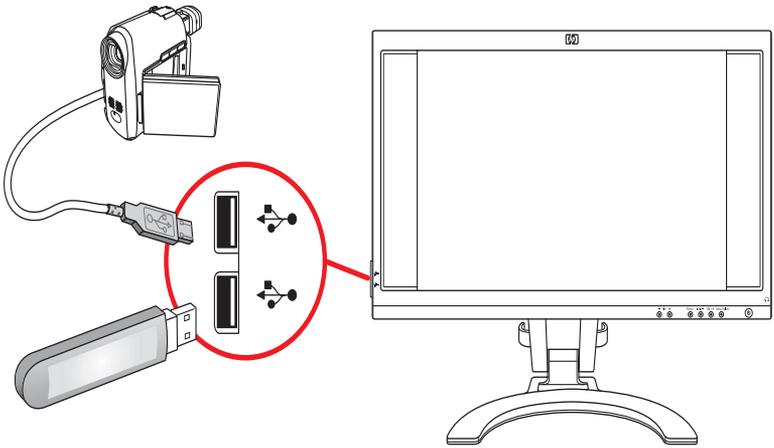
## Connecting USB Devices to the Monitor

You can connect two USB devices, such as a digital camcorder or a USB flash drive, to your monitor.



You must connect the USB hub cable from the monitor to the PC to enable the USB 2.0 ports on the monitor. Refer to step 7 in the section "Connecting the Monitor to the PC."

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*Connecting USB devices*

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# Operating the Monitor

## CD Software and Utilities

The CD that comes with this monitor contains files you can install on your PC:

- An INF file
- An ICM file
- Auto-adjustment pattern utility
- Adobe Acrobat Reader

The auto-adjustment pattern utility is a single pattern program that helps improve the picture quality of your VGA (analog) input monitor. See “Using the Auto-Adjustment Function” in this chapter.

Adobe Acrobat Reader can be installed from the menu.

## The Information File

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

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

## The Image Color Matching File

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



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

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## Installing INF and ICM Files

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

### Installing from the CD

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

1. Insert the CD in your disc drive. The CD menu displays.
2. View the "INF and ICM Readme" file (in English only).
3. Select **Install INF and ICM Files** in the CD menu.
4. Follow the onscreen instructions.
5. After the files are installed, restart the PC.
6. Ensure that the proper resolutions and refresh rates appear in the Display Control Panel settings. Refer to your Windows operating system documentation for more information.



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

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## Downloading from the World Wide Web

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

1. Refer to: **<http://www.hp.com/support>**
2. Select your country/region.
3. Select **Download Drivers and Software**.
4. Enter the model number for your monitor to go to the software download pages for your monitor.
5. Download and install the INF and ICM files using the instructions in the download pages.

## Using the Auto-Adjustment Function

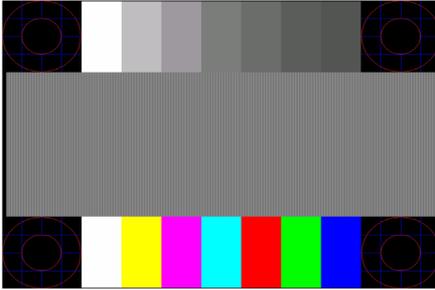
You can easily optimize the screen performance for the VGA (analog) input by using the Auto/Select button on the monitor and the auto-adjustment pattern software utility on the CD provided.

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

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

To use the auto-adjustment feature:

1. Allow the monitor to warm up for 20 minutes before adjusting.
2. Press the Auto/Select button on the monitor front panel.
  - ❑ You can also press the Menu button, then select **Auto-Adjustment** from the OSD Main Menu. See "Adjusting Monitor Settings" in this chapter.
  - ❑ If the result is not satisfactory, continue with the procedure.
3. Insert the CD in your disc drive. The CD menu launches.
4. Select **Open Auto-Adjustment Software**.
5. The setup test pattern displays.

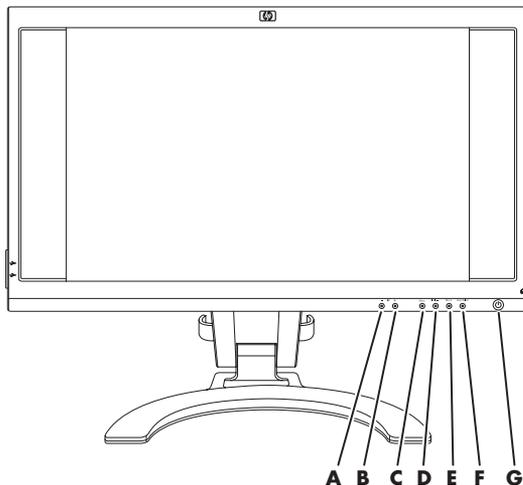


*Auto-adjustment setup test pattern*

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

## Front-Panel Buttons

The monitor buttons are located on the front panel.



Front-panel buttons

Item	Label	Function
<b>A</b>	 (Vol down/minus)	Decreases the volume level of the monitor speakers. Does not control volume of optional subwoofer or optional external speakers (sold separately).
<b>B</b>	 (Vol up/plus)	Increases the volume level of the monitor speakers. Does not control volume of optional subwoofer or optional external speakers (sold separately).
<b>C</b>	<b>Menu</b> (Onscreen display)	<i>OSD Menu Active</i> <i>OSD Inactive</i> Closes OSD.            Opens OSD. (Also closes setting screens on OSD menu.)

<b>Item</b>	<b>Label</b>	<b>Function</b>	
<b>D</b>	 (VGA/minus)	<i>OSD Menu Active</i> Navigates down or left browse, and adjusts settings down.	<i>OSD Inactive</i> Selects the VGA (analog) video input.
<b>E</b>	 (DVI/plus)	<i>OSD Menu Active</i> Navigates up or right browse, and adjusts settings up.	<i>OSD Inactive</i> Selects the DVI video input (select models only).
<b>F</b>	<b>Auto/Select</b>	<i>OSD Menu Active</i> Acts as an Enter (Select) key to select setting screen options.	<i>OSD Inactive</i> Starts auto-adjustment, which automatically adjusts the display to the ideal setting (VGA input only).
<b>G</b>	 Power	<i>Power switch</i> Turns monitor on and to standby (sleep mode).	<i>Power light</i> Displays blue when monitor is fully powered. Displays amber when monitor is in sleep mode.

## Using the Onscreen Display

1. If the monitor is not already on, press the Power switch (**G**) to turn on the monitor.
2. To access the OSD menu, press the Menu button (**C**). The OSD Main Menu displays.  
Auto Adjustment appears for VGA (analog) connections only.
3. To access the Advanced OSD menu, press the Menu button again. The OSD Advanced Menu displays. See “Adjusting Monitor Settings” in this chapter for more information.
4. To navigate through the Main or Advanced OSD menu, press the **+** (Plus) button (**E**) on the monitor’s front panel to scroll up, or the **-** (Minus) button (**D**) to scroll in reverse. Then press the Auto/Select button (**F**) to select the highlighted function.
  - ❑ The menu moves to the top if you scroll down at the bottom of the selections. The menu moves to the bottom if you scroll up at the top of the selections.
5. To adjust the scale of a selected item, press the **+** or **-** buttons.
6. Select **Save and Return**.
  - ❑ If you don’t want to save the setting, select **Cancel** from the Advanced Menu or **Exit** from the Main Menu.
7. Press the Menu button to exit the OSD.



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If the buttons remain untouched for 30 seconds (factory default) while displaying a menu, new adjustments and settings (except for brightness and contrast) revert to previous settings. The menu then closes.

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## Adjusting Monitor Settings

The screen adjustments are set in the OSD menus. Two OSD menus are available:

- Main
- Advanced

### Main Menu

To access the Main Menu, press the Menu button on the monitor. The Main Menu level 1 displays.

The following table describes Main Menu selections and levels.

**Main Menu**

<b>Icon</b>	<b>Menu level 1</b>	<b>Menu level 2</b>
	Brightness	Adjustment Scale
	Contrast	Adjustment Scale
	Auto Adjustment*	
	Advanced Menu	
	Exit	

\*Auto Adjustment appears for VGA (analog) connections only.

## Advanced Menu

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



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

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

Advanced Menu				
	Level 1	Level 2	Level 3	Factory Preset
	Brightness	Adjustment Scale		
	Contrast	Adjustment Scale		
	Image Control			
		Auto Adjustment (VGA analog only)		
		Horizontal Position	Adjustment Scale	
		Vertical Position	Adjustment Scale	
		Custom Scaling	Fill to Screen	
			Fill to Aspect Ratio	
			One to One	
		Sharpness (non-native modes)	Adjustment Scale	

<b>Advanced Menu</b>			
<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Factory Preset</b>
	Clock	Adjustment Scale	
	Clock Phase	Adjustment Scale	
	Cancel		
	Save and Return		
	Color	9300 K	
		6500 K	
	Custom Color	RGB Color Adjustment	Custom Color
	Cancel		
	Save and Return		
	Language	Deutsch	
		English	English
		Español	
		Français	
		Italiano	
		Nederlands	
		Cancel	
		Save and Return	
	Management		
	Power Saver	On/Off Selection	
	Power On Recall	On/Off Selection	
	Mode Display	On/Off Selection	
	Power On Status Display	On/Off Selection	

<b>Advanced Menu</b>			
<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Factory Preset</b>
	Sleep Timer	Timer Menu	
	Video Input Select	Analog (VGA)	
		Digital (DVI)	
		Auto Detect	
	Basic Menu		
	Cancel		
	Save and Return		
	OSD Control		
	Horizontal Position	Adjustment Scale	
	Vertical Position	Adjustment Scale	
	OSD Timeout	Adjustment Scale	
	OSD Transparency	Adjustment Scale	
	Cancel		
	Save and Return		
	Information	(displays model/input data)	
	Factory Reset	Yes	
		No	
	Exit		

## Selecting the Video Input Connectors

The two input connectors are:

- VGA connector (analog)
- DVI-D connector (digital) (select models only)

The monitor automatically determines which inputs have valid video signals and displays the image. The video input can be manually selected through the OSD feature or selected using the monitor buttons by pressing the  / - (Minus) button for VGA (analog) input or the  / + (Plus) button for DVI (digital) input.



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

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## Identifying Monitor Conditions

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

- **Input Signal Out of Range** — Indicates the monitor does not support the video input signal because the resolution or response rate are set higher than the monitor supports. Set the resolution and response rate to the value displayed. Restart your PC for the new settings to take effect.
- **Going to Sleep** — Indicates the screen display is entering a sleep mode. The speakers are turned off in sleep mode.
- **Check Video Cable** — Indicates a video input cable is not properly connected to the PC or monitor.
- **OSD Lock** — The OSD can be enabled or disabled by pressing and holding the Menu button on the front panel for 10 seconds. If the OSD is locked, the warning message “OSD Lock” displays for 10 seconds.
  - If the OSD is locked, press and hold the Menu button for 10 seconds to unlock the OSD.
  - If the OSD is unlocked, press and hold the Menu button for 10 seconds to lock the OSD.
- **No Input Signal** — Indicates the monitor is not receiving a video signal from the PC on the monitor video input connector(s). Check to see if the PC or input signal source is off or in the power-saving mode.
- **Auto Adjustment is in Progress** — Indicates the auto-adjustment function is active. See “Adjusting Screen Quality” in this chapter.
- **Multiple Inputs are active — Use the OSD to select the desired video input** — Indicates that the monitor is connected to two video inputs. The monitor is trying to display using both inputs, but after 10 seconds the monitor uses the default input.

## Adjusting Screen Quality

The auto-adjustment feature automatically fine-tunes the image quality for display size, position, clock, and phase each time a new video mode is displayed. For more precise adjustments of the VGA (analog) input, run the Auto-Adjustment software on the CD. See "Using the Auto-Adjustment Function" in this chapter.

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

## Setting Optimal Display Resolution

Your f2105 monitor looks best when using a display resolution of 1680 x 1050. To change your display resolution in Windows:

1. Right-click anywhere on an open portion of the Windows desktop and select **Properties**.
2. Select the **Settings** tab from the Display Properties window.
3. Adjust the Screen resolution slider to 1680 x 1050.

If 1680 x 1050 is not a selectable setting, download and install the latest updates for the graphic card in your PC. For HP or Compaq PCs, graphic card updates can be found on the support pages of **<http://www.hp.com/support>**

4. For optimal color, adjust the Color Quality to its highest setting (usually 32-bit).
5. Click OK to save the changes.

## Enhancing the Video Function

Wide-screen monitors like the HP f2105 have a tendency to stretch the picture when the monitor is set at Fill to Screen mode. You can use the Custom Scaling feature described below to change the monitor display mode to a One to One or a Fill to Aspect Ratio mode which removes the stretching effect.

The monitor includes a custom scaling feature that allows you to enhance the video performance by adjusting the viewable image to an optimal display. You can choose a One to One display, a Fill to Screen display, or a Fill to Aspect Ratio display. The Custom Scaling feature enhances video performance by changing the screen's aspect ratio (the ratio of the picture's width to its height) to display 4:3 (standard broadcast) and 16:9 (wide-screen) formats.

To use the Custom Scaling feature:

1. Press the Menu button on the front panel of the monitor to launch the On Screen Display (OSD) Main Menu.
2. Select **Advanced Menu**.
3. Select **Image Control** from the OSD Advanced Menu. When the Image Control menu opens, use the **+** and **-** buttons to scroll down and then select **Custom Scaling**.

4. In the Custom Scaling menu, use the OSD up and down buttons on the front panel to select and highlight the desired display format:

- ❑ **One to One** — The image is not stretched or altered, but it may appear smaller than the active viewing area. Black borders may appear at the edge of the display, depending on the resolution setting. When custom scaling is set to One to One, the Sharpness selection is disabled.



- ❑ **Fill to Screen** — This display format adjusts the horizontal and vertical size of the image to fill the screen. Aspect ratio is not preserved, so the image appears stretched. There are no black borders at the edge of the display.



- ❑ **Fill to Aspect Ratio** — This display format adjusts the horizontal and vertical size of the image to fill the screen as much as possible while maintaining the selected aspect ratio. For most video modes, black borders appear on the sides of the screen, but the image is not skewed or stretched. This format optimizes the image for 16:9 format sources such as wide-screen broadcast and DVD format.



Some DVD wide-screen modes may provide formats other than 16:9. When this occurs, black video borders may remain visible above and below the displayed image when Fill to Aspect Ratio is active.

5. When the desired display setting is highlighted, press the Menu button to confirm the selection. The OSD returns to the Image Control menu. To keep the new setting select **Save**, otherwise select **Cancel**.
6. Press the Menu button and select **Exit** to close the Main menu.

## Optimizing Analog Video

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

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

- **Clock Phase** — Increase or decrease the value to minimize video distortion or video jitter.

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

To obtain the best results:

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

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

## Entering User Modes

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

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

Ten user modes can be entered and stored, in addition to the factory preset modes. See the table "Preset Video Modes" in Appendix B.

## **Power-Saver Feature**

When the monitor is in normal operating mode, the Power light is blue and the monitor uses the typical power wattage. For power usage, refer to Appendix B, "Technical Specifications".

The monitor also supports a power-saver mode that is controlled by the PC. When the monitor is in the reduced power state, the monitor screen is blank, the backlight is off, and the Power light is amber. The monitor uses minimum power. When awakened, a brief warm-up period occurs before the monitor returns to normal operating mode. The energy-saving reduced power state activates if the monitor does not detect either the horizontal sync signal or the vertical sync signal. The power-saver mode must be activated on your PC for this feature to work.

Refer to your PC documentation for instructions on setting energy-saver features (sometimes called power management features).



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

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# Troubleshooting

## Solving Common Problems

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

<b>Problem</b>	<b>Possible Cause</b>	<b>Solution</b>
Screen is blank.	Power cord is disconnected.	Connect the power cord.
	Power switch is turned off.	Turn on the power.
	Video cable is improperly connected.	Connect the video cable properly. For more information, see "Connecting the Monitor to the PC" on page 3–9.
	Screen blanking utility is active.	Press a 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/Select button on the monitor front panel. If this does not correct the image, press the Menu button to open the Main Menu, and adjust the brightness and contrast scales as needed.

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<b>Problem</b>	<b>Possible Cause</b>	<b>Solution</b>
Image is not centered.	Position may need adjustment.	Press the Menu button to access the OSD menu. Select <b>Image Control/Horizontal Position</b> or <b>Vertical Position</b> to adjust the horizontal or vertical position of the image.
"Check Video Cable" displays on screen.	Monitor video cable is disconnected.	Connect the monitor video cable to the VGA connector on the PC, or connect the DVI-D signal cable to the DVI connector on the PC. Be sure that the PC power is off while connecting the video cable. DVI-D signal cable and DVI-D connector are for select models only.
"Out of Range" displays on screen.	Video resolution and response rate are set higher than what your monitor supports.	Restart your PC and enter Safe Mode. Change your settings to a supported setting. See the table "Preset Video Modes" in Appendix B. Restart your PC so that the new settings take effect.
USB 2.0 ports are not working.	USB hub cable is not properly connected between the monitor and the PC.	Make sure the USB hub cable is securely connected to the monitor and the PC.

Problem	Possible Cause	Solution
Sound is not working.	Audio In and Audio Out connectors were not used properly. Microphones are plugged in.	Check the setup poster and make sure the audio cable is connected correctly to the monitor and the PC. If you have external speakers or a subwoofer (sold separately), connect your external speaker cable to the Audio Out (blue) connector on the monitor to your speakers or subwoofer. Refer to the documentation that came with your speakers or subwoofer for more setup information.
Unable to set the monitor to the optimal resolution.	Graphics card may not support highest resolution.	Make sure that the graphics card supports the optimal resolution [1680 x 1050 @ 60 Hz]
	May not have most current driver installed.	Make sure that the latest supported driver is installed for the graphics card: For HP and Compaq systems download the latest graphics driver for your system from: <b><a href="http://www.hp.com/support">http://www.hp.com/support</a></b> For other systems, refer to the Web site for your graphics card. If the current graphics card does not support the optimal resolution, upgrade the graphics card to a newer card that supports the optimal resolution.

## Using the World Wide Web

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

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

## Preparing to Call Technical Support

If you cannot solve a problem using the troubleshooting tips in this section, you may need to call technical support. For technical support contact information, refer to the printed documentation included with the monitor. Have the following available when you call:

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

## Locating the Rating Label

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

Locate the monitor rating label on the back of the monitor.

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# Technical Specifications

All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

## HP f2105 LCD Monitor

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### Specifications

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Display type	TFT LCD Active Matrix	
Screen size	21 inch (53.3 cm)	Visual diagonal
Viewable image size	17.8 inch diagonal (45.4 cm)	
Display height	11.2 inches (28.4 cm)	
Tilt	-5° to 30°	
Face treatment	Antiglare polarizer with hard coating	
Maximum weight (unpacked)	< 21.1 lb. < 9.2 kg	
Dimensions (including base)	Height x Width x Depth 18.3 x 23.2 x 11.3 inches 465 x 588 x 287 millimeters	
Maximum graphics resolution	1680 x 1050 (60 Hz)	

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## Specifications

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Dot pitch 0.270 x 0.270 mm

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Horizontal frequency (analog mode) 30 to 94 kHz

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Vertical response rate (analog mode) 48 to 85 Hz

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### Environmental requirements

#### Temperature:

Operating temperature 41 to 95° F (5 to 35° C)

Non-operating temperature -4 to 140° F (-20 to 60° C)

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Relative humidity 20% to 80%

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Power source 100–240V<sup>~</sup>, 50/60 Hz

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Power consumption < 90 watts typical

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Sleep power consumption < 2 watts typical

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### Input terminals

VGA 15-pin D-type connector

DVI-D 24-pin D-type connector

DVI-D input connector is for select models only.

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## Preset Video Modes

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

HP f2105 supports preset modes 1 through 21.

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### Factory Preset Video Input Modes

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<b>Preset</b>	<b>Pixel format</b>	<b>Horizontal frequency (kHz)</b>	<b>Vertical frequency (Hz)</b>
1	640 x 480	31.5	59.9
2	640 x 480	37.5	75.0
3	720 x 400	31.5	70.1
4	800 x 600	37.9	60.3
5	800 x 600	46.9	75.0
6	832 x 624	49.7	74.6
7	1024 x 768	48.4	60.0
8	1024 x 768	60.0	75.0
9	1024 x 768	68.7	85.0
10	1152 x 720	44.9	60.0
11	1152 x 870	68.7	75.1
12	1152 x 900	61.8	66.0
13	1280 x 768	47.4	60.0
14	1280 x 960	60.0	60.0
15	1280 x 1024	64.0	60.0

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**Factory Preset Video Input Modes** *(Continued)*

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<b>Preset</b>	<b>Pixel format</b>	<b>Horizontal frequency (kHz)</b>	<b>Vertical frequency (Hz)</b>
16	1280 x 1024	80.0	75.0
17	1280 x 1024	91.2	85.0
18	1600 x 1000	61.7	60.0
19	1600 x 1200 Maximum resolution (scaled to fit screen)	75.0	60.0
20	1680 x 1050 Optimum resolution	65.3	60.0
21	1920 x 1200 Maximum resolution (scaled to fit screen)	74.0	60.0

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## LCD Monitor Quality and Pixel Policy

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

- A pixel consists of one red, one green, and one blue subpixel.
- 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 subpixel (dot defect) is less visible than a defective whole pixel and is small and only visible on a specific background.

The HP LCD Monitor has:

- 0 defective full pixels
- 3 defective bright subpixels (maximum)
- 5 defective dark subpixels (maximum)
- Less than 5 total dot defects

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

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

## Power Cord Set Requirements

The monitor power supply is provided with automatic line switching (ALS). This feature allows the monitor to operate on input voltages between 100–120V<sup>~</sup> or 200–240V<sup>~</sup>.

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

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

The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product. In addition, the cross-sectional area of the wire must be a minimum of 0.75 mm<sup>2</sup> or 18AWG, and the length of the cord must be between 4.94 ft. (1.5 m) and 12 ft. (3.6 m). If you have questions about the type of power cord to use, contact your HP-authorized service provider.

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

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# Agency Regulatory Notices

## Federal Communications Commission Notice

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

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

## **Modifications**

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

## **Cables**

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

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

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

For questions regarding your product, contact:

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

Or, call

1-(800)-474-6836

For questions regarding this FCC declaration, contact:

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

Or, call

1-(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 Union Regulatory Notice

This product complies with the following EU directives:

- Low Voltage Directive 73/23/EEC
- EMC Directive 89/336/EEC

Compliance with these directives implies conformity to applicable harmonized European standards (European Norms) which are listed on the EU Declaration of Conformity issued by Hewlett-Packard for this product or product family.

This compliance is indicated by the following conformity marking placed on the product:



This marking is valid for non-Telecom products and EU harmonized Telecom products (e.g., Bluetooth).



This marking is valid for EU non-harmonized Telecom products.  
\*Notified body number (used only if applicable — refer to the product label).

## **Disposal of Waste Equipment by Users in Private Households in the European Union**



This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

## 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。

## Japanese Power Cord Notice

製品には、同梱された電源コードをお使い下さい。  
同梱された電源コードは、他の製品では使用出来ません。

## Korean Notice

### B급 기기 (가정용 정보통신기기)

이 기기는 가정용으로 전자파적합등록을 한 기기로서  
주거지역에서는 물론 모든지역에서 사용할 수 있습니다.

## Materials Disposal

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

- Mercury in the fluorescent lamp in the display LCD.
- Lead in the solder and some component leads.

Disposal of this material can be regulated because of environmental considerations. For disposal or recycling information, contact your local authorities, HP Planet Partners (<http://www.hp.com/recycle>), or the Electronic Industries Alliance (EIA) (<http://www.eiae.org>).

## HP Recycling Program

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

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

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

Part Number: 393631-B22