



User Guide

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Product notice

This guide describes features that are common to most models. Some features may not be available on your product. To access the latest user guide, go to <http://www.hp.com/support>, and follow the instructions to find your product. Then select **User Guides**.






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About This Guide

This guide provides information about monitor features, setting up the monitor, using the software and technical specifications.

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-  **WARNING!** Indicates a hazardous situation that, if not avoided, **could** result in death or serious injury.
 -  **CAUTION:** Indicates a hazardous situation that, if not avoided, **could** result in minor or moderate injury.
 -  **IMPORTANT:** Indicates information considered important but not hazard-related (for example, messages related to property damage). Warns the user that failure to follow a procedure exactly as described could result in loss of data or in damage to hardware or software. Also contains essential information to explain a concept or to complete a task.
 -  **NOTE:** Contains additional information to emphasize or supplement important points of the main text.
 -  **TIP:** Provides helpful hints for completing a task.
-



This product incorporates HDMI technology.

Table of contents

1 Getting started	1
Important safety information	1
Product features and components	1
Features	1
Rear components	3
Setting up the monitor	4
Use caution when setting up the monitor	4
Removing the stand's hinge blocker	4
Connecting the cables	5
Connecting USB devices	7
Adjusting the monitor	8
Installing a security cable	9
Storing headphones	9
Mounting the monitor head	10
Removing the monitor stand	10
Attaching the VESA mounting bracket	11
Turning on the monitor	12
2 Using the monitor	13
Enabling G-SYNC	13
Downloading the monitor driver	13
Using the OSD	13
Display mode	14
Using Deep Sleep mode	14
Using the ambient light	15
Selecting a faster response time for gaming	15
Adjusting blue light output	16
Using RGB Gain Control	16
Viewing the Frame Rate	16
Message Timers	17
Using the Crosshair feature	18
Using Multi-Monitor Align	18
3 Support and troubleshooting	19
Solving common issues	19
OSD Lockout	19

Contacting support	20
Preparing to call technical support	20
Locating the serial number and product number	20
4 Maintaining the monitor	21
Maintenance guidelines	21
Cleaning the monitor	21
Shipping the monitor	21
Appendix A Technical specifications	22
Preset display resolutions	23
Entering user modes	24
Appendix B Accessibility	25
Accessibility	25
Finding the technology tools you need	25
Our commitment	25
International Association of Accessibility Professionals (IAAP)	25
Finding the best assistive technology	26
Assessing your needs	26
Accessibility for HP products	26
Standards and legislation	27
Standards	27
Mandate 376 – EN 301 549	27
Web Content Accessibility Guidelines (WCAG)	27
Legislation and regulations	27
United States	28
21st Century Communications and Video Accessibility Act (CVAA)	28
Canada	28
Europe	29
United Kingdom	29
Australia	29
Worldwide	29
Useful accessibility resources and links	30
Organizations	30
Educational institutions	30
Other disability resources	30
HP links	30
Contacting support	31

1 Getting started

Important safety information


An AC adapter and power cord may be included with the monitor. If another cord is used, use only a power source and connection appropriate for this monitor. For information about the correct AC power cord set to use with the monitor, refer to the *Product Notices* provided in your documentation kit.

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

- Plug the power cord into an AC outlet that is easily accessible at all times.
- If the power cord has a 3-pin attachment plug, plug the cord into a grounded (earthed) 3-pin outlet.
- Disconnect power from the computer by unplugging the power cord from the AC outlet. When unplugging the power cord from the AC outlet, grasp the cord by the plug.


For your safety, do not place anything on power cords or cables. Care should be taken to route all cords and cables connected to the monitor so that they cannot be stepped on, pulled, grabbed, or tripped over.

To reduce the risk of serious injury, read the *Safety & Comfort Guide* provided with your user guides. It describes proper workstation setup and proper posture, health, and work habits for computer users. The *Safety & Comfort Guide* also provides important electrical and mechanical safety information. The *Safety & Comfort Guide* is also available on the Web at <http://www.hp.com/ergo>.

 **IMPORTANT:** For the protection of the monitor and the computer, connect all power cords for the computer and its peripheral devices (such as a monitor, printer, scanner) to a surge protection device such as a power strip or uninterruptible power supply (UPS). Not all power strips provide surge protection; the power strip must be specifically labeled as having this capability. Use a power strip whose manufacturer offers a damage replacement policy so you can replace the equipment if surge protection fails.

Use the appropriate and correctly sized furniture designed to properly support your monitor.

 **WARNING!** Monitors that are inappropriately situated on dressers, bookcases, shelves, desks, speakers, chests, or carts may fall over and cause personal injury.

 **NOTE:** This product is suitable for entertainment purposes. Consider placing the monitor in a controlled luminous environment to avoid interference from surrounding light and bright surfaces that may cause disturbing reflections from the screen.

Product features and components

Features

This product is an NVIDIA G-SYNC-qualified monitor, which allows you to enjoy PC gaming with smooth, responsive, tear-free performance while gaming. The external source connected to your monitor must have an NVIDIA G-SYNC 10 series or higher graphics card installed in order to use G-SYNC. HP recommends that for the best game play, the latest supported graphics driver also be installed.

NVIDIA G-SYNC technology is designed to eliminate stuttering and tearing in games and videos by locking a monitor's refresh rate to the frame rate of the graphics card. Check with your graphics card manufacturer for compatibility with G-SYNC-enabled monitors. See [Enabling G-SYNC on page 13](#) for more information,



NOTE: The monitor must be connected to the system with a DisplayPort cable to use NVIDIA G-SYNC. See [Enabling G-SYNC on page 13](#) for more information.



NOTE: Adaptive refresh rates vary by monitor. More information is available at <http://www.geforce.com/hardware/technology/g-sync>.

The monitor features include the following:

- 62.23 cm (24.5 in) diagonal viewable area with 1920 × 1080 FHD resolution, plus full-screen support for lower resolutions
- Tilt and height-adjustment capabilities
- High-Definition Multimedia Interface (HDMI) video input
- DisplayPort video input
- High-bandwidth Digital Content Protection (HDCP) used on all inputs
- USB hub with one upstream port and two downstream ports
- Audio-out (headset) jack
- DisplayPort and USB Type-B-to-USB Type-A cables included
- Plug and Play capability if supported by your operating system
- On-screen display (OSD) adjustments in ten languages for easy setup and screen optimization
- Frames-per-second indicator displayed on the monitor screen, adjustable using the OSD menu
- Message timer displayed on the monitor screen, adjustable using the OSD menu
- Gaming crosshair displayed on the monitor screen, adjustable using the OSD menu
- Security cable slot on the rear of the monitor for an optional security cable
- User-configurable ambient lighting with full-range LEDs
- Convenient headphone storage hook on monitor stand
- NVIDIA® G-SYNC™ technology with high refresh rates, providing PC gaming advantages in reaction time and a more true-to-life experience
 - Smoothness is achieved by synchronizing monitor refresh rates to the GPU in your GeForce GTX-powered desktop or notebook, eliminating screen tearing and minimizing display stutter and input lag.
 - Scenes appear instantly, objects look sharper, and game play is super smooth, giving you a stunning visual experience and a serious competitive edge.
- NVIDIA Ultra Low Motion Blur (ULMB) technology is an additional mode that decreases motion blur and minimizes ghosting introduced when on-screen elements are rapidly moving. With ULMB, objects in motion look smoother than they do during standard operation. ULMB is only available through a DisplayPort input.
- VESA mounting capability for attaching the monitor to a wall -mount device or swing arm



NOTE: For safety and regulatory information, refer to the *Product Notices* provided in your documentation kit. To access the latest user guide, go to <http://www.hp.com/support> and follow the instructions to find your product. Then select **User Guides**.

Rear components



Table 1-1 Rear components and their descriptions

Component	Function
(1) Power button	Turns the monitor on or off.
(2) OSD joystick	Opens the OSD menu, selects an item from the menu, or closes the OSD menu.
(3) Security cable slot	Connects an optional security cable to the monitor.
(4) Audio-out jack	Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. WARNING! To reduce the risk of personal injury, adjust the source device volume before using headphones, earbuds, or a headset. For additional safety information, see the <i>Product Notices</i> provided in your documentation kit.
(5) USB ports (downstream) (2)	Connect USB cables to a peripheral device, such as a keyboard, mouse, or USB hard drive.
(6) USB Type-B port (upstream)	Connects the USB hub cable to a source device such as a computer or game console.
(7) Power connector	Connects an AC adapter.
(8) Service port	Used by qualified HP service technicians only.
(9) DisplayPort connector	Connects a DisplayPort cable to a source device such as a computer or game console.
(10) HDMI port	Connects an HDMI cable to a source device such as a computer or game console.

Setting up the monitor

Use caution when setting up the monitor

⚠ WARNING! To reduce the risk of serious injury, read the *Safety & Comfort Guide*. It describes proper workstation setup and proper posture, health, and work habits for computer users. The *Safety & Comfort Guide* also provides important electrical and mechanical safety information. The *Safety & Comfort Guide* is available on the Web at <http://www.hp.com/ergo>.

📄 IMPORTANT: To prevent damage to the monitor, do not touch the surface of the LCD panel. Pressure on the panel may cause nonuniformity of color or disorientation of the liquid crystals. If this occurs, the screen will not recover to its normal condition.

IMPORTANT: To prevent the screen from getting scratched, defaced, or broken and prevent damage to the control buttons, position the monitor facedown on a flat surface covered with protective sheet foam or a nonabrasive cloth.

Removing the stand's hinge blocker

The monitor is shipped with a hinge blocker that locks the monitor head in the lowest height position on the stand. You must remove the hinge blocker to adjust the height of the monitor head.

To remove the hinge blocker, gently press down the monitor head (1) and pull the hinge blocker out of the stand (2).




Connecting the cables


 **NOTE:** The monitor ships with a DisplayPort video cable.

1. Place the monitor in a convenient, well-ventilated location near the computer or source device.
2. Before connecting the cables, route the cables through the cable management guide on the rear of the monitor.

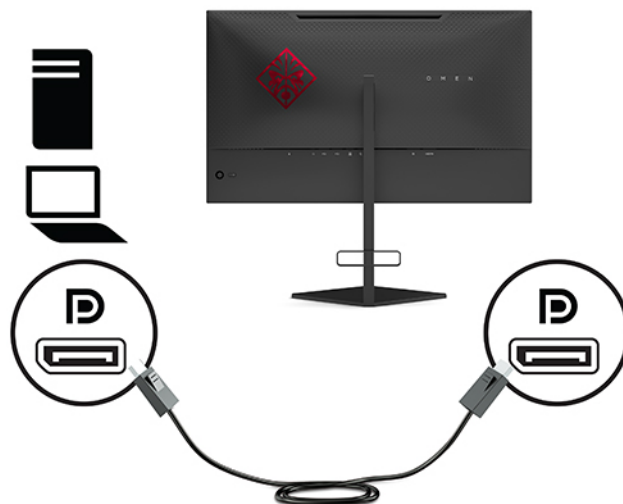


3. Connect a video cable.

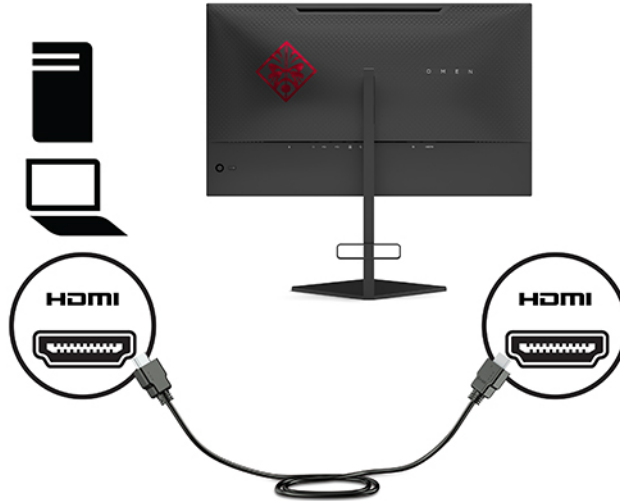
 **NOTE:** The monitor automatically determines which inputs have valid video signals. The inputs can also be selected by pressing the center of the OSD joystick and selecting **Input**.

 **NOTE:** DisplayPort is the preferred connection type for optimal performance.

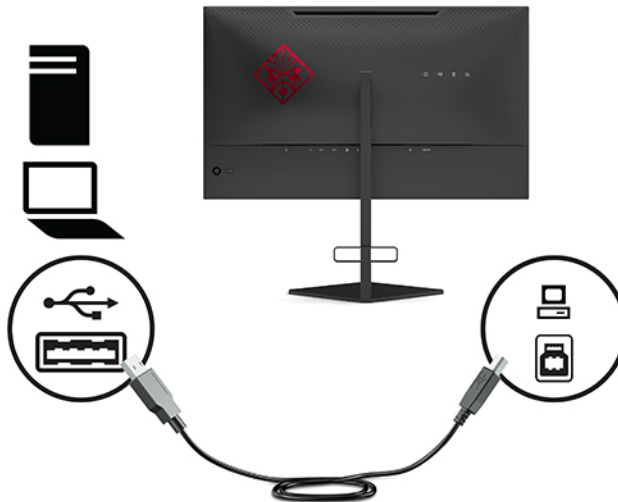
- Connect one end of a DisplayPort cable to the DisplayPort connector on the rear of the monitor and the other end to the DisplayPort connector on the source device.




- Connect one end of an HDMI cable to the HDMI port on the rear of the monitor and the other end to the HDMI port on the source device.



4. Connect the Type-B connector on the USB upstream cable to the USB Type-B upstream port on the rear of the monitor. Then connect the cable's Type-A connector to the USB Type-A downstream port on the source device.



 **NOTE:** You must connect the USB Type-B upstream cable from the source device (computer, laptop, gaming console) to the rear of the monitor to enable the USB Type-A downstream ports on the monitor. For more information, see [Connecting USB devices on page 7](#).

5. Connect one end of the AC power cord to the AC adapter (1) and the other end to a grounded AC outlet (2), and then connect the AC adapter to the power connector on the monitor (3).

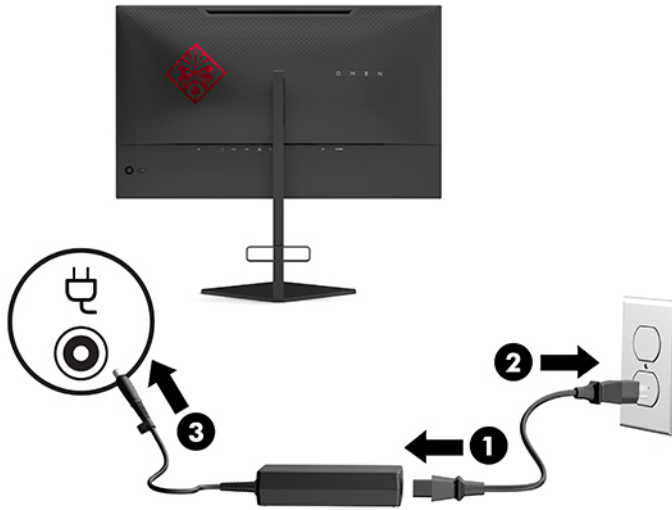
⚠ WARNING! To reduce the risk of electric shock or damage to the equipment:

Do not disable the AC power cord grounding plug. The grounding plug is an important safety feature.

Plug the AC power cord into a grounded (earthed) AC outlet that is easily accessible at all times.

Disconnect power from the equipment by unplugging the AC power cord from the AC outlet.

For your safety, do not place anything on power cords or cables. Arrange them so that no one may accidentally step on or trip over them. Do not pull on a cord or cable. When unplugging the AC power cord from the AC outlet, grasp the cord by the plug.



Connecting USB devices

The rear of the monitor provides one USB Type-B upstream port and two USB Type-A downstream ports.

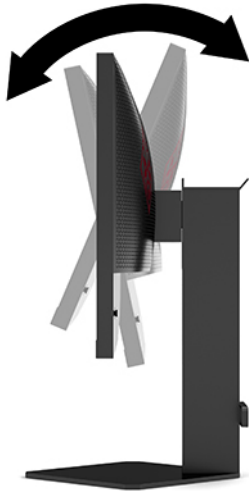
📝 NOTE: You must connect the USB Type-B upstream cable from the source device to the monitor to enable the USB Type-A downstream ports on the monitor.



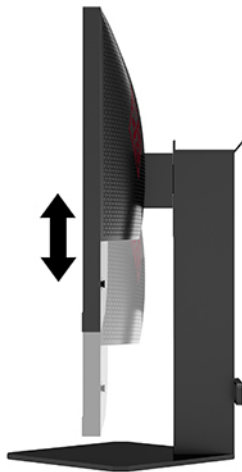
Adjusting the monitor

⚠ WARNING! To reduce the risk of serious injury, read the *Safety & Comfort Guide*. It describes proper workstation setup and proper posture, health, and work habits for computer users. The *Safety & Comfort Guide* also provides important electrical and mechanical safety information. The *Safety & Comfort Guide* is available on the Web at <http://www.hp.com/ergo>.

1. Tilt the monitor head forward or backward to set it to a comfortable eye level.



2. Adjust the monitor's height to a comfortable position for your individual workstation. The monitor's top bezel edge should not exceed a height that is parallel to your eye height. A monitor that is positioned low and reclined may be more comfortable for users with corrective lenses. The monitor should be repositioned as you adjust your working posture throughout the work day.



Installing a security cable

You can secure the monitor to a fixed object with an optional security cable available from HP. Use the key provided to attach and remove the lock.



Storing headphones

The monitor features a headphone hook at the top of the stand for convenient headphone storage.



Mounting the monitor head

The monitor head can be attached to a wall, swing arm, or other mounting fixture.

IMPORTANT: This monitor supports the VESA industry-standard 100 mm mounting holes. To attach a third-party mounting solution to the monitor, four 4 mm, 0.7 pitch, and 10 mm–long screws are required. Longer screws may damage the monitor. It is important to verify that the manufacturer’s mounting solution is compliant with the VESA standard and is rated to support the weight of the monitor head. For best performance, use the power and video cables provided with the monitor.

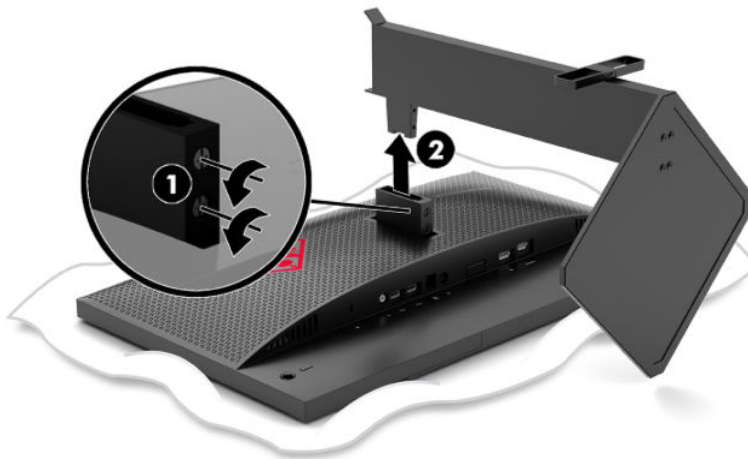
NOTE: This apparatus is intended to be supported by UL– or CSA–Listed wall-mount bracket.

Removing the monitor stand

You can remove the monitor head from the stand to install the monitor head on a wall, a swing arm, or other mounting fixture.

IMPORTANT: Before beginning to disassemble the monitor, be sure that the monitor is turned off and all cables are disconnected.

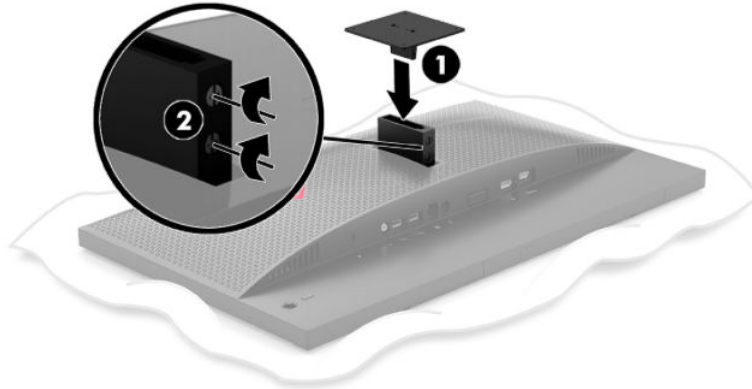
1. Disconnect and remove all cables from the monitor.
2. Position the monitor head facedown on a flat surface covered by a clean, dry cloth.
3. Remove the two screws on the underside of the stand’s hinge (1), and then slide the stand off the monitor head (2).



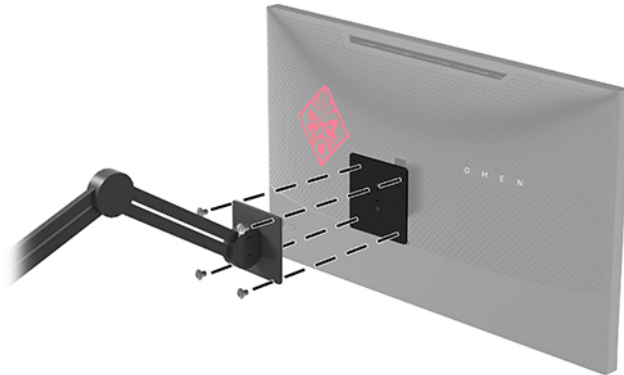
Attaching the VESA mounting bracket


A VESA mounting bracket is included with the monitor for use when attaching the monitor head to a wall, swing arm, or other mounting fixture.

1. Remove the monitor stand. See [Removing the monitor stand on page 10](#).
2. Insert the VESA mounting bracket into the slot on the back of the monitor head's hinge (1), and then install the two screws (2) to secure the bracket.



3. To attach the monitor head to a swing arm or other mounting device, insert four mounting screws through the holes on the mounting device and into the screw holes on the VESA mounting bracket.





 **IMPORTANT:** Follow the mounting device manufacturer's instructions when mounting the monitor to a wall or swing arm.

Turning on the monitor

1. Press the power button on the source device to turn it on.
2. Press the power button on the rear of the monitor to turn it on.



 **IMPORTANT:** Burn-in image damage may occur on monitors that display the same static image on the screen for 12 or more consecutive hours of nonuse. To avoid burn-in image damage on the monitor screen, you should always activate a screen saver application or turn off the monitor when it will not be in use for a prolonged period of time. Image retention is a condition that may occur on all LCD screens. A burned-in image on the monitor is not covered under the HP warranty.

 **NOTE:** You can disable the power light in the OSD menu. Press the center of the OSD joystick, and then select **Power**. Select **Power LED**, and then select **Off**.

When the monitor is turned on, a monitor status message displays for five seconds. The message shows which input is the current active signal, the status of the auto-switch input setting (On or Off; default is On), the current detected display resolution, and the recommended preset display resolution.

The monitor automatically scans the signal inputs for the last active input, or in case of a no signal condition, the first detected active input for the monitor.

2 Using the monitor

Enabling G-SYNC

The NVIDIA control panel software must be downloaded and installed from <http://www.geforce.com/drivers>. In order to use NVIDIA G-SYNC, you must have a G-SYNC-compatible graphics card and be connected to the system via DisplayPort. A list of compatible cards is available at <http://www.geforce.com/hardware/technology/g-sync/supported-gpus>.

To enable the monitor for G-SYNC:

1. Right-click on the Windows® desktop and select **NVIDIA Control Panel**.
2. Select **Display** from the links on the left, and choose **Set up G-SYNC**.
3. Check the box titled **Enable G-SYNC**.

Downloading the monitor driver

You can download and install the monitor INF (Information) driver file from <http://www.hp.com/support>.

1. Go to <http://www.hp.com/support>.
2. Select **Software and Drivers**.
3. Select your product type.
4. Enter your HP monitor model in the search field and follow the on-screen instructions.

This monitor is Windows Plug and Play-compatible and the monitor will work correctly without installing the INF file. Monitor Plug and Play compatibility requires that the computer's graphics card is VESA DDC2-compliant and that the monitor connects directly to the graphics card. Plug and Play does not work through separate BNC-type connectors or through distribution buffers/boxes.

Using the OSD

Use the OSD menu to adjust the monitor screen image based on your preferences. You can access and make adjustments in the OSD menu using the OSD joystick on the monitor's rear panel.

To access the OSD menu and make adjustments, do the following:

1. If the monitor is not already on, press the power button to turn on the monitor.
2. To access the OSD menu, press the center of the OSD joystick.
3. Move the joystick up, down, left, or right to navigate menu choices. Press the center of the joystick to make a selection.

The following table lists the menu selections in the OSD main menu.

Table 2-1 OSD main menu options and their descriptions

Main menu	Description
Gaming	Selects and adjusts gaming preferences, such as response time, ULMB, frame rate, message timers, crosshair, ambient lighting, and multi-monitor align.

Table 2-1 OSD main menu options and their descriptions (continued)

Main menu	Description
Image	Adjusts the screen image, including luminance, adaptive contrast, dark boost, gamma, and image scaling.
Color	Provides a variety of color presets that configure the monitor for different viewing situations.
Input	Selects the video input signal (DisplayPort or HDMI).
Power	Adjusts the power settings.
Menu	Adjusts the OSD menu controls.
Management	Returns all OSD menu settings to the factory default settings.
Information	Displays important information about the monitor.
Exit	Exits the OSD menu screen.

Display mode

The display mode of the monitor is reported in the monitor status message that appears when the monitor is turned on and when the video input is changed. The current display mode is shown in the **Information** menu window and at the bottom of the OSD's main menu in the status bar area. Modes of operation are **Normal** and **G-SYNC**.



NOTE: In order for the G-SYNC mode to be active, the NVIDIA graphics card control panel must have G-SYNC turned on.

Using Deep Sleep mode

The monitor is enabled by default to enter a reduced power state mode called Deep Sleep mode. This occurs 13 minutes after the host PC signals low power mode (which is an absence of either horizontal or vertical sync signal).

Upon entering Deep Sleep mode, the monitor screen is blanked, the backlight is turned off, the power light turns amber, and the monitor draws less than 0.5 W of power.

The monitor wakes from Deep Sleep mode when the host computer sends an active signal to the monitor (for example, if you activate the mouse or keyboard). To disable Deep Sleep in the OSD:

1. Press the center of the OSD joystick to open the OSD.
2. In the OSD, select **Power**.
3. Select either **DP Deep Sleep** or **HDMI Deep Sleep**, and then select **Off**.

Using the ambient light

The monitor features an ambient light to illuminate a desktop or wall and enhance the gaming experience. You can adjust the color and brightness of the ambient light or turn it off in the OSD menu or OMEN Command Center.

To adjust the ambient lighting:

1. Press the center of the OSD joystick to open the OSD.
2. In the OSD, select **Gaming**, and then select **Ambient Lighting**.
3. Select a setting:
 - **Off**: Turns off the ambient lighting.
 - **Task Light**: Emulates an adjustable white desk light for better reading or viewing.
 - **Screen Glow**: Makes backlight color follow the screen average color for gaming and video.
 - **Static Color**: Sets ambient light colors to red, green, blue, yellow, purple, cyan, orange, or custom.
 - **Random Color**: Randomly cycles ambient light color through the static colors.
 - **LED Brightness**: Adjusts the ambient lighting brightness.


 **NOTE:** Ambient lighting is set to On (Omen Red) by default.



Selecting a faster response time for gaming

To set a faster response time:

1. Press the center of the OSD joystick to open the OSD menu.
2. Select **Gaming** and then select **Response Time**.
3. Cycle through the adjustment levels to increase or decrease response time.

 **NOTE:** The default response time setting is optimized for G-SYNC gaming purposes. All performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

Adjusting blue light output

Decreasing the blue light emitted by the monitor reduces the blue light exposure to your eyes. HP monitors provide settings to reduce the blue light output and create a more relaxing and less stimulating image while you view content on the screen.

To adjust your monitor to a comfortable viewing light:

1. Press the center of the OSD joystick to open the OSD.
2. Select **Color**.
3. Select **Low Blue Light** (TUV certified) for improved eye comfort.

Using RGB Gain Control

The RGB Gain Control can be used to manually adjust the color temperature of any color preset, making all color presets adjustable user modes. Adjustments are stored separately for each color preset.

To adjust the color temperature:

1. Press the center of the OSD joystick to open the OSD.
2. Select **Color**.
3. Select **RGB Gain Control**.
4. Select either **Red Color ADJ SCALE GRAPHIC**, **Green Color ADJ SCALE GRAPHIC**, or **Blue Color ADJ SCALE GRAPHIC**.



NOTE: Exiting the menu will auto-save the RGB color settings.

Viewing the Frame Rate

Turning on the Frame Rate function allows you to view the current active input frames per second (FPS) in a number that will appear in one section on the screen. Color and Location submenus allow you to select FPS text colors and screen locations.

To view the FPS on the screen:

1. Press the center of the OSD joystick to open the OSD.
2. Select **Gaming**.
3. Select **Frame Rate**, and then select **On**.
4. Set the color and location of the FPS displayed on the screen.



NOTE: Frame Rate and Message Timer OSD functions share the same color and location settings.

Message Timers

The Message Timers menu presents two types of timers that display preset reminder/information messages. The timer menu will have an On/Off option and Start, Stop, and Reset controls. Selecting On shows the current selected timer value at the current selected location of the screen. The default is the top right corner.

The on-screen timer format initially shows minutes and seconds (0:00) but will display hours as time progresses. There are two different message timer options, but only one timer (Speedrun or Countdown) at a time can be chosen. Options for both timers include the color of the timer numbers and the location of the timer on the screen.

To use the Message Timers:

1. Press the center of the OSD joystick to open the OSD.
2. In the OSD, select **Gaming**.
3. Select and adjust the timers using the options described below.
 - **Speedrun Timer:** This is a progress timer showing minutes and seconds (0:00). It starts at zero and continues to 24 hours. Once the timer reaches the 24-hour limit, a 20-second message appears informing you that the timer has expired. This timer allows you to track the amount of time you've spent in a game or performing a specific task.
 - **Countdown Timer:** You can use the adjustment bar to choose a start time between one and five minutes in single-minute increments and then between 5 and 120 minutes in 5-minute increments. The timer counts down to 0:00 and then shows a message for 20 seconds in the center of the screen. The Message submenu allows you to select the exact message that will appear on the screen. The default value for the countdown timer is 20 minutes.
 - **Start:** Starts the selected timer.
 - **Stop:** Pauses or stops the timer but does not reset the timer. Selecting the Start option again continues the timer counter.
 - **Reset:** Resets the timer counter to the selected start value.
 - **Message:** Allows you to select the on-screen message that appears when the selected timer expires. The following messages can be selected:
 - Your Gaming Timer has Expired!
 - Please Stop Playing the Game!
 - Please Take a Break!
 - Please Shutdown the Computer!

To set the message timer as a hot key:

1. Press the center of the OSD joystick to open the OSD.
2. In the OSD, select **Menu**.
3. Select **Message Timer** for the button you want to use for the hot key.
4. Use the hot key to cycle between Start, Stop, and Restart.

The following conditions are in effect when using the Message Timer hot key:

- If the Crosshair option is active, pressing the Message Timer hot key will turn on the selected Message Timer and turn off Crosshair.
- If the FPS option is active, pressing the Message Timer hot key will turn on the selected Message Timer and turn off FPS.
- If the Message Timer is active, and either FPS or Crosshair is activated, then the Message Timer is hidden but continues to run in the background.

Using the Crosshair feature

The Crosshair menu allows you to customize various characteristics of a monitor-controlled OSD pointer through the submenus listed below. To use the Crosshair option:

1. Press the center of the OSD joystick to open the OSD.
2. In the OSD, select **Gaming**.
3. Select **Crosshair**, and then select **On**.
4. Configure the Crosshair using the submenus listed below.
 - **Configure:** Select individual graphics parts that make up an on-screen crosshair/pointer by selecting the check boxes next to the options you want to display. Multiple options can be combined to form your own customized Crosshair. A preview window will be displayed at the bottom of the Crosshair OSD menu.
 - **Color:** Allows you to select the Crosshair color on the screen.
 - **Location:** Allows you to select the Crosshair location on the screen.

Using Multi-Monitor Align

The Multi-Monitor Align OSD option displays a full-screen alignment pattern that will assist you in setting up multiple monitors side by side. Selecting this option exits the OSD and displays the full screen alignment pattern.

To use Multi-Monitor Align:

1. Press the center of the OSD joystick to open the OSD.
2. In the OSD, select **Gaming**.
3. Select **Multi-Monitor Align**, and then select **On**.
4. Press the center of the joystick to exit the pattern.

3 Support and troubleshooting

Solving common issues

The following table lists possible issues, the possible cause of each issue, and the recommended solutions.

Table 3-1 Common issues and solutions

Issue	Possible cause	Solution
Screen is blank or video is flashing.	AC power cord is disconnected.	Connect the AC power cord.
	Monitor is off.	Press the monitor power button.
	Video cable is not connected.	Connect a video cable between the source device and monitor. Be sure that the computer power is off while you connect the video cable. See Connecting the cables on page 5 for more information.
	System is in Deep Sleep mode.	Press any key on the keyboard or move the mouse to exit Deep Sleep mode.
	Video card is incompatible.	Replace the video card or connect the video cable to one of the computer's onboard video sources. A list of compatible NVIDIA G-SYNC video cards is available at http://www.geforce.com/hardware/technology/g-sync/supported-gpus .
Image appears blurred, indistinct, or too dark.	Brightness setting is too low.	Open the OSD menu. Select Image and then select Luminance to adjust the brightness scale as needed.
Images in motion seem blurry.	NVIDIA Ultra Low Motion Blur (ULMB) is not turned on.	To turn on ULMB, you must disable NVIDIA G-SYNC in the NVIDIA Control Panel on the Windows desktop. Then open the OSD and select Gaming . Select ULMB , and then select On .
"Input Signal Not Found" is displayed on the screen.	Video cable is disconnected.	Connect a video cable between the source device and monitor. Be sure that the computer power is off while you connect the video cable. See Connecting the cables on page 5 for more information.
"Input Signal Out of Range" is displayed on the screen.	Video resolution and/or refresh rate are set higher than the monitor supports.	Change the settings to a supported setting (see Preset display resolutions on page 23).
The monitor did not enter into a low-power sleep mode.	The monitor's Deep Sleep mode is disabled.	Open the OSD menu and select Power . Then select either DP Deep Sleep or HDMI Deep Sleep . Then select On .
"On-screen Menus are Locked" is displayed on the screen.	The monitor's OSD Lockout function is enabled.	With monitor on, hold center button of joystick down for 10 seconds to turn OSD Lockout on or off.

OSD Lockout

Holding down the center of the OSD joystick for ten seconds will lock out the functionality of the OSD. You can restore the functionality by holding down the button again for ten seconds. This functionality is only available when the monitor is turned on, displaying an active signal, and the OSD is closed.

Contacting support

To resolve a hardware or software issue, go to <http://www.hp.com/support>. Use this site to get more information about your product, including links to discussion forums and instructions on troubleshooting. You can also find information about how to contact HP and open a support case.

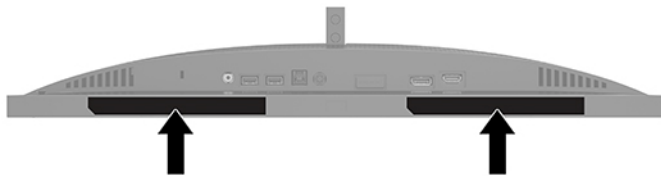
Preparing to call technical support

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

- Monitor model number
- Monitor serial number
- Purchase date on invoice
- Conditions under which the issue occurred
- Error messages received
- Hardware configuration
- Name and version of the hardware and software you are using

Locating the serial number and product number

The serial number and product number are located on a label on the bottom edge of the monitor head. You may need these numbers when contacting HP about the monitor model.



4 Maintaining the monitor

Maintenance guidelines

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

- Do not open the monitor cabinet or attempt to service this product yourself. Adjust only those controls that are covered in the operating instructions. If the monitor is not operating properly or has been dropped or damaged, contact an authorized HP dealer, reseller, or service provider.
- Use only a power source and connection appropriate for this monitor, as indicated on the label/back plate of the monitor.
- Be sure that the total ampere rating of the products connected to the AC outlet does not exceed the current rating of the AC outlet and that 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 the monitor near an AC outlet that you can easily reach. Disconnect the monitor by grasping the plug firmly and pulling it from the AC outlet. Never disconnect the monitor by pulling the cord.
- Turn the monitor off when it is not in use and use a screen saver program. Doing this can substantially increase the life expectancy of the monitor.



NOTE: A burned-in image on the monitor is not covered under the HP warranty.

- Never block the slots and openings of the cabinet or push objects into them. These openings provide ventilation.
- Do not drop the monitor or place it on an unstable surface.
- Do not allow anything to rest on the AC power cord. Do not walk on the cord.
- Keep the monitor in a well-ventilated area, away from excessive light, heat, or moisture.

Cleaning the monitor

1. Turn off the monitor and unplug the AC power cord from the AC outlet.
2. Disconnect any external devices.
3. Dust the monitor by wiping the screen and the cabinet with a soft, clean antistatic cloth.
4. For more difficult cleaning situations, use a 50/50 mix of water and Isopropyl alcohol.



IMPORTANT: Do not use cleaners that contain any petroleum-based materials such as benzene, thinner, or any volatile substance to clean the monitor screen or cabinet. These chemicals may damage the monitor.

IMPORTANT: Spray the cleaner onto a cloth and use the damp cloth to gently wipe the screen surface. Never spray the cleaner directly on the screen surface. It may run behind the bezel and damage the electronics. The cloth should be moist, but not wet. Water dripping into the ventilation openings or other points of entry can cause damage to the monitor. Allow the monitor to air-dry before use.

Shipping the monitor

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

A Technical specifications



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

For the latest specifications or additional specifications on this product, go to <http://www.hp.com/go/quickspecs/> and search for your specific model to find the model-specific QuickSpecs.

Table A-1 Technical specifications

Specification	Measurement	
Display, wide-screen	62.23 cm	24.5 in
Panel type	TN LCD	
Viewable image size	62.23 cm, diagonal	24.5 in, diagonal
Tilt	-5° to 23°	
Height adjustment	0 mm to 130 mm	0 in to 5.12 in
Weight (with stand)	5.51 kg	12.15 lb
Dimensions (including stand)		
Height	48.96 cm	19.28 in
Depth	27.25 cm	10.73 in
Width	55.75 cm	21.95 in
Maximum graphic resolution	1920 × 1080 @ 240 Hz (DisplayPort only)	
Optimum graphic resolution	1920 × 1080 @ 60 Hz	
Static contrast ratio	1000:1 typical	
Dot pitch	0.283 (H) mm × 0.280 (V) mm	
Pixels per inch	89.7 PPI	
Horizontal scan rate	DP = 30–279 kHz HDMI = 30–90 kHz	
Vertical scan rate	DP = 48–240 Hz HDMI = 48–60 Hz	
Response time	The default response time for the monitor is 3 ms. The response time can be adjusted to as fast as 1 ms in the display menu. All performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.	
Environmental requirements		
Temperature		
Operating temperature	5°C to 35°C	41°F to 95°F
Non-operating temperature	-34°C to 60°C	-29°F to 140°F

Table A-1 Technical specifications (continued)

Specification	Measurement	
Relative humidity	20% to 80%	
Altitude		
Operating	0 m to 5,000 m	0 ft to 16,400 ft
Storage	0 m to 12,192 m	0 ft to 40,000 ft
Power source	100 V ac to 240 V ac 50/60 Hz	
Measured power consumption		
Full power	65 W	
Typical settings	35 W	
Sleep	< = 0.5 W	
Off	< = 0.5 W	
Power adapter	65 W	
Input terminals	One HDMI port and one DisplayPort connector	

Preset display resolutions

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

Table A-2 Preset display resolutions

Preset display resolutions
640 × 480 @ 60 Hz
720 × 480 @ 60 Hz (HDMI only)
720 × 576 @ 60 Hz (HDMI only)
800 × 600 @ 60 Hz
1024 × 768 @ 60 Hz
1280 × 720 @ 50 Hz (HDMI only)
1280 × 720 @ 60 Hz (HDMI only)
1920 × 1080 @ 50 Hz (HDMI only)
1920 × 1080 @ 60 Hz
1920 × 1080 @ 100 Hz (DisplayPort only)
1920 × 1080 @ 120 Hz (DisplayPort only)
1920 × 1080 @ 144 Hz (DisplayPort only)
1920 × 1080 @ 200 Hz (DisplayPort only)
1920 × 1080 @ 240 Hz (DisplayPort only)

Entering user modes

Under the following conditions, the video controller signal may occasionally call for a mode that is not preset:

- You are not using a standard graphics adapter.
- You are not using a preset mode.

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

B Accessibility

Accessibility

HP is working to weave diversity, inclusion and work/life into the fabric of our company, so it is reflected in everything we do. Here are some examples of how we are putting differences to work to create an inclusive environment focused on connecting people to the power of technology throughout the world.

Finding the technology tools you need

Technology can unleash your human potential. Assistive technology removes barriers and helps you create independence at home, at work, and in the community. Assistive technology helps increase, maintain, and improve the functional capabilities of electronic and information technology. For more information, see [Finding the best assistive technology on page 26](#).

Our commitment

HP is committed to providing products and services that are accessible for people with disabilities. This commitment supports our company's diversity objectives and helps us ensure that the benefits of technology are available to all.

Our accessibility goal is to design, produce, and market products and services that can be effectively used by everyone, including people with disabilities, either on a stand-alone basis or with appropriate assistive devices.

To achieve our goal, this Accessibility Policy establishes seven key objectives to guide our actions as a company. All HP managers and employees are expected to support these objectives and their implementation in accordance with their roles and responsibilities:

- Raise the level of awareness of accessibility issues within our company, and provide our employees with the training they need to design, produce, market, and deliver accessible products and services.
- Develop accessibility guidelines for products and services, and hold product development groups accountable for implementing these guidelines where competitively, technically, and economically feasible.
- Involve people with disabilities in the development of accessibility guidelines, and in the design and testing of products and services.
- Document accessibility features and make information about our products and services publicly available in an accessible form.
- Establish relationships with leading assistive technology and solution providers.
- Support internal and external research and development that will improve assistive technology relevant to our products and services.
- Support and contribute to industry standards and guidelines for accessibility.

International Association of Accessibility Professionals (IAAP)

IAAP is a not-for-profit association focused on advancing the accessibility profession through networking, education, and certification. The objective is to help accessibility professionals develop and advance their careers and to better enable organizations to integrate accessibility into their products and infrastructure.

HP is a founding member, and we joined to participate with other organizations to advance the field of accessibility. This commitment supports our company's accessibility goal of designing, producing, and marketing products and services that can be effectively used by people with disabilities.

IAAP will make our profession strong by globally connecting individuals, students, and organizations to learn from one another. If you are interested in learning more, go to <http://www.accessibilityassociation.org> to join the online community, sign up for newsletters, and learn about membership options.

Finding the best assistive technology

Everyone, including people with disabilities or age-related limitations, should be able to communicate, express themselves, and connect with the world using technology. HP is committed to increasing accessibility awareness within HP and with our customers and partners. Whether it's large fonts that are easy on the eyes, voice recognition that lets you give your hands a rest, or any other assistive technology to help with your specific situation—a variety of assistive technologies make HP products easier to use. How do you choose?

Assessing your needs

Technology can unleash your potential. Assistive technology removes barriers and helps you create independence at home, at work, and in the community. Assistive technology (AT) helps increase, maintain, and improve the functional capabilities of electronic and information technology.

You may choose from many AT products. Your AT assessment should allow you to evaluate several products, answer your questions, and facilitate your selection of the best solution for your situation. You will find that professionals qualified to do AT assessments come from many fields, including those licensed or certified in physical therapy, occupational therapy, speech/language pathology, and other areas of expertise. Others, while not certified or licensed, may also provide evaluation information. You will want to ask about the individual's experience, expertise, and fees to determine if they are appropriate for your needs.

Accessibility for HP products

The following links provide information about accessibility features and assistive technology, if applicable, included in various HP products. These resources will help you select the specific assistive technology features and product(s) most appropriate for your situation.

- [HP Elite x3—Accessibility Options \(Windows 10 Mobile\)](#)
- [HP PCs—Windows 7 Accessibility Options](#)
- [HP PCs—Windows 8 Accessibility Options](#)
- [HP PC's—Windows 10 Accessibility Options](#)
- [HP Slate 7 Tablets—Enabling Accessibility Features on Your HP Tablet \(Android 4.1/Jelly Bean\)](#)
- [HP SlateBook PCs—Enabling Accessibility Features \(Android 4.3, 4.2/Jelly Bean\)](#)
- [HP Chromebook PCs—Enabling Accessibility Features on Your HP Chromebook or Chromebox \(Chrome OS\)](#)
- [HP Shopping—peripherals for HP products](#)

If you need additional support with the accessibility features on your HP product, see [Contacting support on page 31](#).

Additional links to external partners and suppliers that may provide additional assistance:

- [Microsoft Accessibility information \(Windows 7, Windows 8, Windows 10, Microsoft Office\)](#)
- [Google Products accessibility information \(Android, Chrome, Google Apps\)](#)

- [Assistive Technologies sorted by impairment type](#)
- [Assistive Technologies sorted by product type](#)
- [Assistive Technology vendors with product descriptions](#)
- [Assistive Technology Industry Association \(ATIA\)](#)

Standards and legislation

Standards

Section 508 of the Federal Acquisition Regulation (FAR) standards was created by the US Access Board to address access to information and communication technology (ICT) for people with physical, sensory, or cognitive disabilities. The standards contain technical criteria specific to various types of technologies, as well as performance-based requirements which focus on functional capabilities of covered products. Specific criteria cover software applications and operating systems, web-based information and applications, computers, telecommunications products, video and multi-media, and self-contained closed products.

Mandate 376 – EN 301 549

The EN 301 549 standard was created by the European Union within Mandate 376 as the basis for an online toolkit for public procurement of ICT products. The standard specifies the functional accessibility requirements applicable to ICT products and services, together with a description of the test procedures and evaluation methodology for each accessibility requirement.

Web Content Accessibility Guidelines (WCAG)

Web Content Accessibility Guidelines (WCAG) from the W3C's Web Accessibility Initiative (WAI) helps web designers and developers create sites that better meet the needs of people with disabilities or age-related limitations. WCAG advances accessibility across the full range of web content (text, images, audio, and video) and web applications. WCAG can be precisely tested, is easy to understand and use, and allows web developers flexibility for innovation. WCAG 2.0 has also been approved as [ISO/IEC 40500:2012](#).

WCAG specifically addresses barriers to accessing the web experienced by people with visual, auditory, physical, cognitive, and neurological disabilities, and by older web users with accessibility needs. WCAG 2.0 provides characteristics of accessible content:

- **Perceivable** (for instance, by addressing text alternatives for images, captions for audio, adaptability of presentation, and color contrast)
- **Operable** (by addressing keyboard access, color contrast, timing of input, seizure avoidance, and navigability)
- **Understandable** (by addressing readability, predictability, and input assistance)
- **Robust** (for instance, by addressing compatibility with assistive technologies)

Legislation and regulations

Accessibility of IT and information has become an area of increasing legislative importance. This section provides links to information about key legislation, regulations, and standards.

- [United States](#)
- [Canada](#)
- [Europe](#)

- [United Kingdom](#)
- [Australia](#)
- [Worldwide](#)

United States

Section 508 of the Rehabilitation Act specifies that agencies must identify which standards apply to the procurement of ICT, perform market research to determine the availability of accessible products and services, and document the results of their market research. The following resources provide assistance in meeting Section 508 requirements:

- www.section508.gov
- [Buy Accessible](#)

The U.S. Access Board is currently updating the Section 508 standards. This effort will address new technologies and other areas where the standards need to be modified. For more information, go to [Section 508 Refresh](#).

Section 255 of the Telecommunications Act requires telecommunications products and services to be accessible to people with disabilities. FCC rules cover all hardware and software telephone network equipment and telecommunications equipment used in the home or office. Such equipment includes telephones, wireless handsets, fax machines, answering machines, and pagers. FCC rules also cover basic and special telecommunications services, including regular telephone calls, call waiting, speed dialing, call forwarding, computer-provided directory assistance, call monitoring, caller identification, call tracing, and repeat dialing, as well as voice mail and interactive voice response systems that provide callers with menus of choices. For more information, go to [Federal Communication Commission Section 255 information](#).

21st Century Communications and Video Accessibility Act (CVAA)

The CVAA updates federal communications law to increase the access of persons with disabilities to modern communications, updating accessibility laws enacted in the 1980s and 1990s to include new digital, broadband, and mobile innovations. Regulations are enforced by the FCC and documented as 47 CFR Part 14 and Part 79.

- [FCC Guide on the CVAA](#)

Other U.S. legislation and initiatives

- [Americans with Disabilities Act \(ADA\), Telecommunications Act, the Rehabilitation Act and others](#)

Canada

The Accessibility for Ontarians with Disabilities Act was established to develop and implement accessibility standards to make goods, services, and facilities accessible to Ontarians with disabilities and to provide for the involvement of persons with disabilities in the development of the accessibility standards. The first standard of the AODA is the customer service standard; however, standards for transportation, employment, and information and communication are also being developed. The AODA applies to the Government of Ontario, the Legislative Assembly, every designated public sector organization, and to every other person or organization that provides goods, services, or facilities to the public or other third parties and that has at least one employee in Ontario; and accessibility measures must be implemented on or before January 1, 2025. For more information, go to [Accessibility for Ontarians with Disability Act \(AODA\)](#).

Europe

EU Mandate 376 ETSI Technical Report ETSI DTR 102 612: "Human Factors (HF); European accessibility requirements for public procurement of products and services in the ICT domain (European Commission Mandate M 376, Phase 1)" has been released.

Background: The three European Standardization Organizations have set up two parallel project teams to carry out the work specified in the European Commission "Mandate 376 to CEN, CENELEC and ETSI, in Support of Accessibility Requirements for Public Procurement of Products and Services in the ICT Domain."

ETSI TC Human Factors Specialist Task Force 333 has developed ETSI DTR 102 612. Further details about the work performed by STF333 (e.g., Terms of Reference, specification of the detailed work tasks, time plan for the work, previous drafts, listing of comments received and means to contact the task force) can be found at the [Special Task Force 333](#).

The parts relating to the assessment of suitable testing and conformity schemes were carried out by a parallel project, detailed in CEN BT/WG185/PT. For further information, go to the CEN project team website. The two projects are closely coordinated.

- [CEN project team](#)
- [European Commission mandate for e-accessibility \(PDF 46KB\)](#)

United Kingdom

The Disability Discrimination Act of 1995 (DDA) was enacted to ensure that websites are accessible to blind and disabled users in the United Kingdom.

- [W3C UK Policies](#)

Australia

The Australian government has announced their plan to implement [Web Content Accessibility Guidelines 2.0](#).

All Australian government websites will require Level A compliance by 2012, and Double A by 2015. The new standard replaces WCAG 1.0, which was introduced as a mandated requirement for agencies in 2000.

Worldwide

- [JTC1 Special Working Group on Accessibility \(SWG-A\)](#)
- [G3ict: The Global Initiative for Inclusive ICT](#)
- [Italian accessibility legislation](#)
- [W3C Web Accessibility Initiative \(WAI\)](#)

Useful accessibility resources and links

The following organizations may be good resources for information about disabilities and age-related limitations.



NOTE: This is not an exhaustive list. These organizations are provided for informational purposes only. HP assumes no responsibility for information or contacts you may encounter on the Internet. Listing on this page does not imply endorsement by HP.

Organizations

- American Association of People with Disabilities (AAPD)
- The Association of Assistive Technology Act Programs (ATAP)
- Hearing Loss Association of America (HLAA)
- Information Technology Technical Assistance and Training Center (ITTATC)
- Lighthouse International
- National Association of the Deaf
- National Federation of the Blind
- Rehabilitation Engineering & Assistive Technology Society of North America (RESNA)
- Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI)
- W3C Web Accessibility Initiative (WAI)

Educational institutions

- California State University, Northridge, Center on Disabilities (CSUN)
- University of Wisconsin - Madison, Trace Center
- University of Minnesota computer accommodations program

Other disability resources

- ADA (Americans with Disabilities Act) Technical Assistance Program
- Business & Disability network
- EnableMart
- European Disability Forum
- Job Accommodation Network
- Microsoft Enable
- U.S. Department of Justice - A Guide to disability rights Laws

HP links

[Our contact webform](#)

[HP comfort and safety guide](#)

[HP public sector sales](#)

Contacting support



NOTE: Support is in English only.

- Customers who are deaf or hard of hearing that have questions about technical support or accessibility of HP products:
 - Use TRS/VRS/WebCapTel to call (877) 656-7058 Monday through Friday, 6 a.m. to 9 p.m. Mountain Time.
- Customers with other disabilities or age-related limitations who have questions about technical support or accessibility of HP products, choose one of the following options:
 - Call (888) 259-5707 Monday through Friday, 6 a.m. to 9 p.m. Mountain Time.
 - Complete the [Contact form for people with disabilities or age-related limitations](#).