User Guide

HSD-0015-Q
OMEN X 65
Omen X Emperium 65 Display
OMEN X Emperium 65 with NVIDIA® G-SYNC® HDR
OMEN X Emperium 65 Big Format Gaming Display with NVIDIA® G-SYNC® HDR

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**.

About This Guide

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

⚠ 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.

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

This product incorporates HDMI technology.

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1 Getting Started

Important safety information

An AC power cord is 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 power cord set to use with the monitor, see 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.

• Disconnect power from the computer by unplugging the power cord from the AC outlet.

• If provided with a 3-pin attachment plug on the power cord, plug the cord into a grounded (earthed) 3-pin outlet. Do not disable the power cord grounding pin, for example, by attaching a 2-pin adapter. The grounding pin is an important safety feature.

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 from the AC outlet, grasp the cord by the plug.

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, as well as the computer, connect all power cords for the computer and its peripheral devices (such as a monitor, printer, scanner) to some form of surge protection device such as a power strip or uninterruptible power supply (UPS). Not all power strips provide surge protection; the power strips must be specifically labeled as having this 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 HP LCD monitor.

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

Care should be taken to route all cords and cables connected to the LCD monitor so that they cannot be pulled, grabbed, or tripped over.

Product features and components

Product features

The monitor features include the following:

- 163.89 cm (64.5-inch) diagonal viewable area with 3840 × 2160 resolution, plus full-screen support for lower resolutions; support for variable refresh rate maximum up to 144 Hz, includes custom scaling for maximum image size while preserving original aspect ratio

- Panel with a direct-lit LED local dimming backlight solution

- Ambient lights on the back of the monitor are adjustable using the on-screen display (OSD) menu

- 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

- DisplayPort and HDMI video inputs

- HDMI Audio Return Channel (ARC) on the HDMI 3 input

- Analog audio line-out

- Two USB ports for SHIELD

- Two USB charging ports

- Sony/Philips Digital Interface (S/PDIF) optical audio port

- Cable routing clip

- Detachable feet for flexible monitor head mounting solutions

- Plug and Play capability if supported by your operating system

- 400 mm integrated VESA mounting

- On-screen display (OSD) adjustments in ten languages for easy setup and screen optimization

- High-Bandwidth Digital Content Protection (HDCP 2.2) copy protection on all digital inputs

- Windows® 10 support

NOTE: For safety and regulatory information, see 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**.

NVIDIA features

- NVIDIA® G-SYNC® HDR for PC gaming via the DisplayPort input. Requires NVIDIA GeForce® GTX 1050 (or higher - GTX 1070 or higher recommended)

- NVIDIA® SHIELD® powered by Android TV™ with 4K HDR streaming, built-in Chromecast™, and Google Assistant™

- NVIDIA G-SYNC HDR on NVIDIA SHIELD for gaming and video content

- NVIDIA G-SYNC HDR features 1000-nit peak brightness, 384 zones full array local dimming, DCI-P3 color gamut and tear-free, stutter-free gaming

NOTE: For detailed setup and use instructions, access the latest SHIELD user guide at https://shield.nvidia.com/support.

Rear components
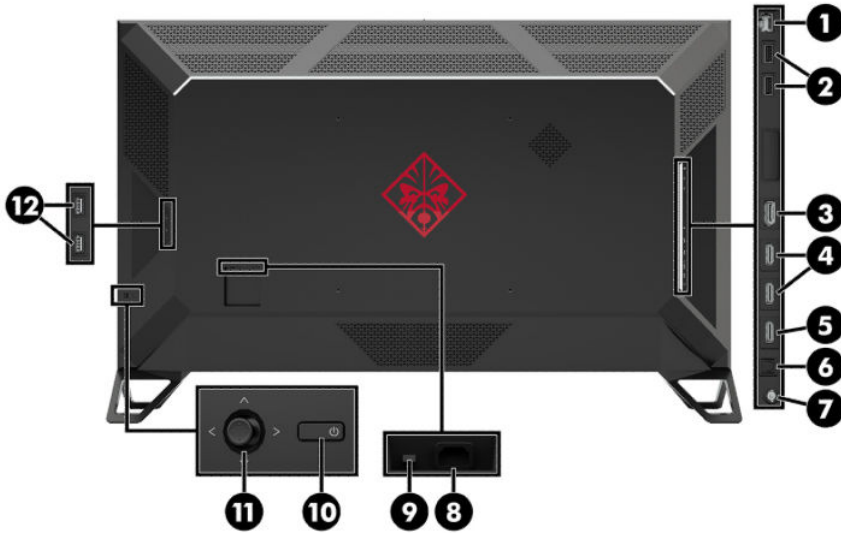
Component		Function
1	RJ-45 (network) jack	Connects a network cable to SHIELD.
2	USB ports (2)	Connect optional devices to SHIELD.
		IMPORTANT: These USB ports connect directly to SHIELD and are used to connect optional USB devices, such as flash drives for expandable storage, to SHIELD.
3	DisplayPort connector	Connects a DisplayPort cable to the source device.
4	HDMI ports (2)	Connect an HDMI cable to the source device.
5	HDMI (ARC) port	Connects to an audio/video receiver with an HDMI cable.
		NOTE: If supported by the receiver, the monitor will receive video and audio from the receiver and also send audio from the monitor back to the receiver.
6	S/PDIF port	Sends digital audio to an audio/video receiver.
7	Analog audio line-out	Connects optional powered speakers, soundbar, headphones, or earbuds.
		WARNING! To reduce the risk of personal injury, adjust the volume before using headphones, earbuds, or a headset. For additional safety information, see the *Product Notices* provided in your documentation kit.
8	Power connector	Connects an AC power cord to the monitor.
9	Master power switch	Turns off all power to the monitor.
		NOTE: Setting the switch to the Off position yields the lowest power state for the monitor when it is not in use.
10	Power button	Turns the monitor on or off.
11	OSD joystick	Opens the OSD menu, selects an item from the menu, or closes the OSD menu.
12	USB charging ports (2)	Provide power charging for USB interface devices.

Setting up the monitor

Use caution when setting up the monitor

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.

Attaching the monitor feet

⚠ **CAUTION:** The screen is fragile. Avoid touching or applying pressure to the screen; doing so can cause damage.

1. Position the monitor head face up on a flat surface covered by a clean, dry cloth.

2. Attach the feet to the bottom of the monitor head (1) using the eight screws and Allen wrench included with the monitor (2).
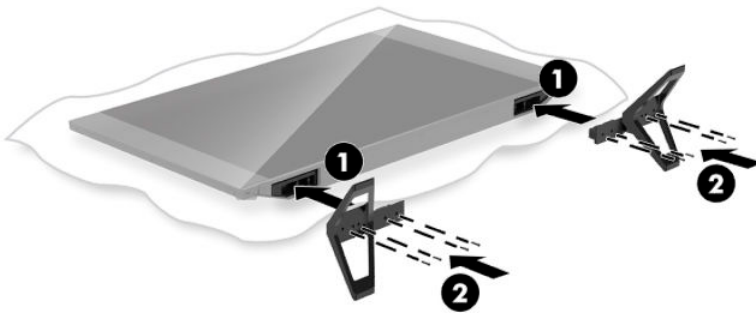
Routing the cables

Locate the cable clip on the back of the monitor and then route the cables through the clip.
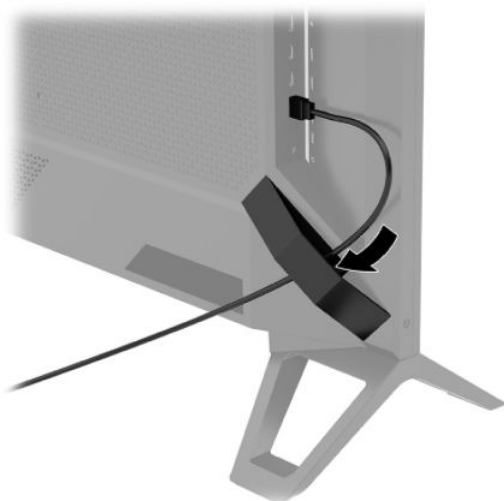
📝 **IMPORTANT:** The cables should be routed through the cable clip before connecting the cables to the ports on the back of the monitor.

The power connector location does not allow for the AC power cord to be routed through the cable clip.

Connecting the cables

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

2. Connect a video cable.

   - Connect one end of a DisplayPort cable to the DisplayPort connector on the back of the monitor and the other end to the DisplayPort connector on the source device.
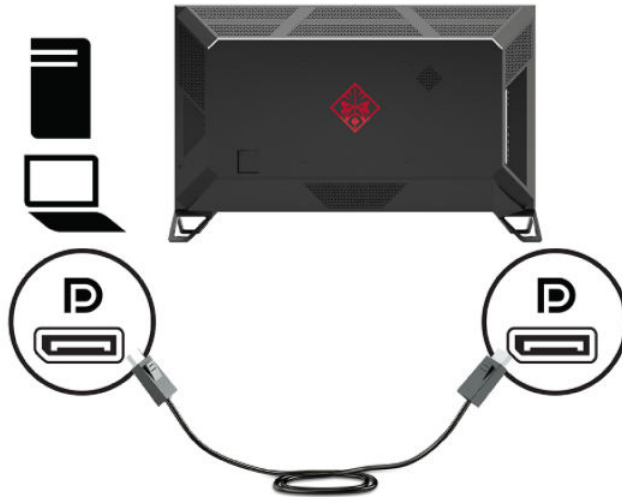
   IMPORTANT: To use G-SYNC, the NVIDIA graphics processing unit (GPU) must be connected to the DisplayPort connector on the monitor.

   - Connect one end of an HDMI cable to the HDMI port on the back of the monitor and the other end to the source device.
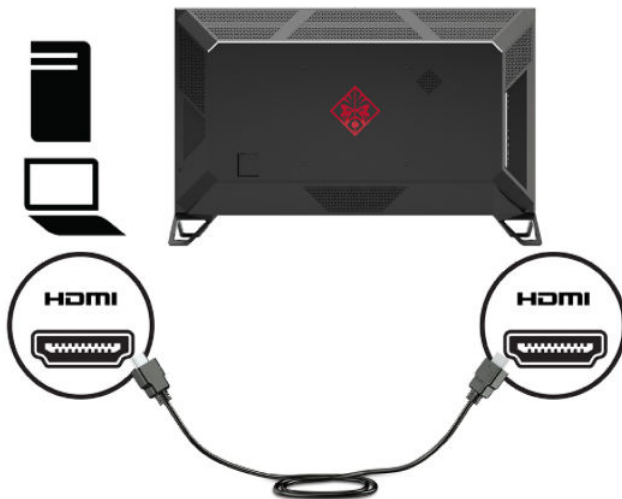
3. Connect one end of the network cable to the RJ-45 (network) jack on the back of the monitor and the other end to the network.
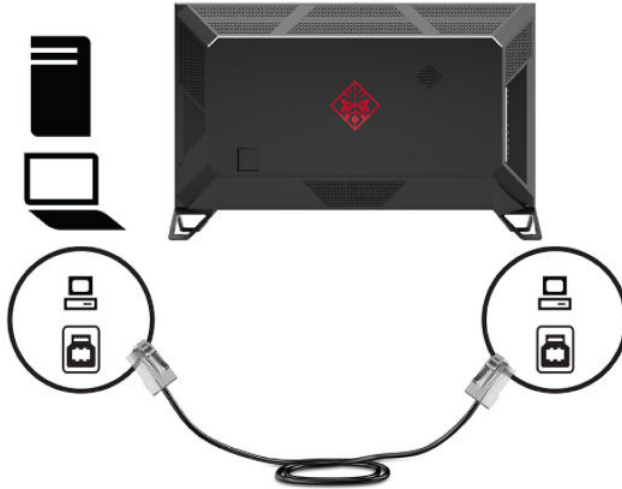
> **NOTE:** A wireless network connection can also be used to connect SHIELD to the network.

4. To pass audio through the monitor, or hear audio from SHIELD, connect one end of a 1/8-inch (3.5 mm) stereo analog audio cable to the audio line-out connector on the monitor and connect the opposite end to a soundbar or audio/video receiver.

OR

Connect one end of a fiber optic cable to the S/PDIF connector on the monitor and connect the opposite end to a soundbar, headphones, earbuds, or audio/video receiver.

> **NOTE:** If your audio/video receiver supports ARC, connect one end of an HDMI cable to the HDMI 3 connector on the monitor and connect the opposite end to your audio/video receiver.

For details, see Rear components on page 3.
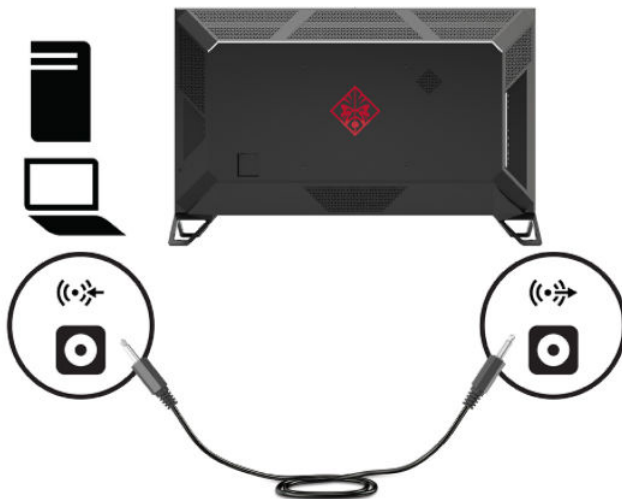
5. Connect the power cord to the monitor. Then connect the power cord to the AC outlet.
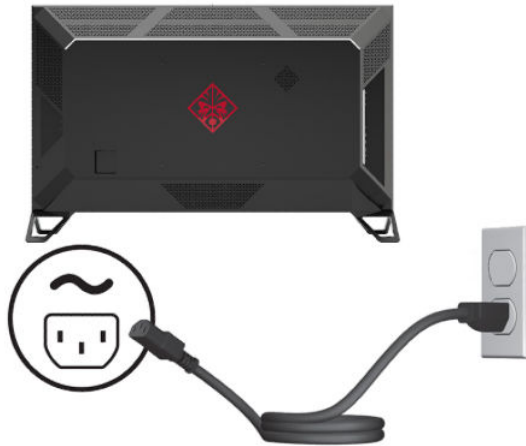
⚠ **WARNING!** To reduce the risk of electric shock or damage to the equipment:

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

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

Disconnect power from the equipment by unplugging the 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 power cord from the AC outlet, grasp the cord by the plug.

Turning on the monitor

1. Press the power button on the source device to turn it on.

2. Press the power button on the back of the monitor to turn it on.

    IMPORTANT: Ensure that the master power switch is in the On position. The master power switch is located next to the power cord connector on the back of the monitor. For details, see Rear components on page 3.

    NOTE: The monitor may also be turned on using the optional remote control. For detailed instructions, see Using the optional remote control on page 10.
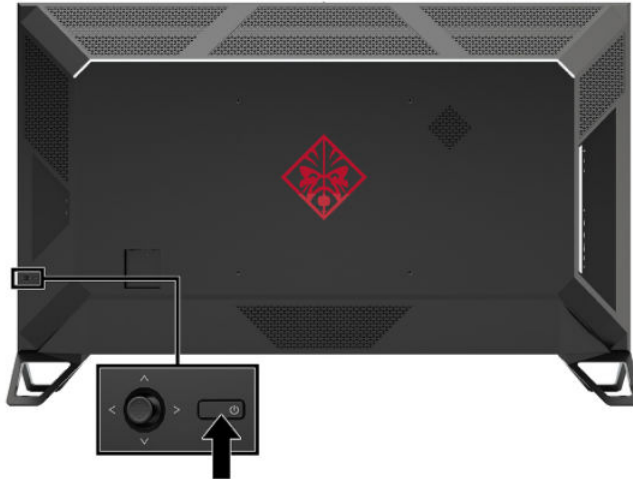
IMPORTANT: Burn-in damage may occur on monitors that display the same static image on screen for twelve or more hours. To avoid burn-in damage, always activate a screen saver application or turn off the monitor when it will be unused for a prolonged period. Image retention is a condition that may occur on all LCD screens. A burned-in image on the monitor is not covered under the HP warranty.

NOTE: If pressing the power button has no effect, the Power Button Lockout feature may be enabled. To disable this feature, press and hold the monitor power button for 10 seconds.

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 current preset display resolution, and the recommended preset display resolution.

The monitor automatically scans the signal inputs for an active input and uses the first found active input for the monitor.

Mounting the monitor

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

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

CAUTION: This monitor supports the VESA industry-standard 400 mm mounting holes. To attach a third-party mounting solution to the monitor head, four 6 mm, 1.0 pitch, 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, it is important to use the power and video cables provided with the monitor.

Removing the monitor feet

⚠ **CAUTION:** 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 face up on a flat surface covered by a clean, dry cloth.

3. Remove the screws from the feet (1) and detach the feet from the monitor (2).
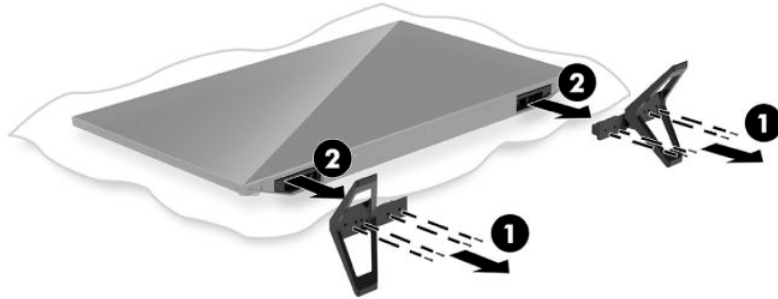
Attaching the monitor head to a mounting device

1. Remove the monitor feet. See .

2. Locate the 400 mm x 400 mm VESA mounting holes on the back of the monitor. Then follow the instructions included with your mounting device.
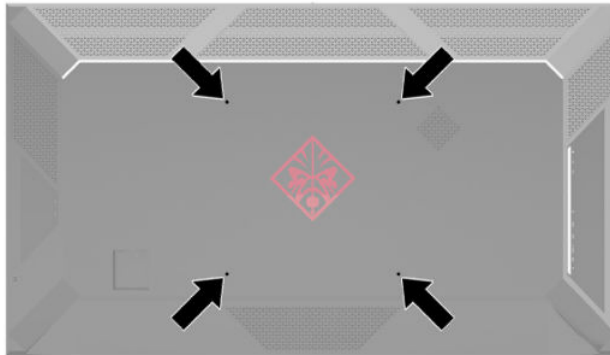
📝 **IMPORTANT:** Follow the mounting device manufacturer's instructions when mounting the monitor to a wall or swing arm.

2   Using the monitor

Downloading the monitor driver

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

To download the file:

1. Go to http://www.hp.com/support.

2. Select **Software and Drivers**.

3. Select your product type.

4. Enter **Omen X 65** in the search field.

For the latest NVIDIA GeForce drivers for your computer, go to https://www.geforce.com/drivers.

Using the optional remote control

You can use the optional remote control accessory to access the OSD menu, navigate through the OSD menu choices, and make adjustments to settings.
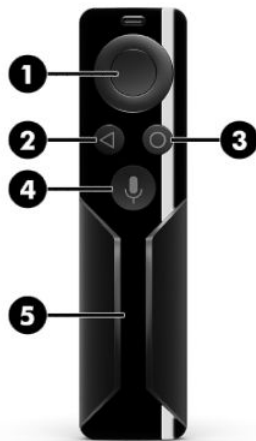
	Component	Function
1	5-way directional pad (D-PAD)	Opens the OSD menu, navigates the OSD menu and selects an item from the menu, or closes the OSD menu.
2	Back	If the OSD menu is open, closes the OSD menu or goes back to the previous OSD screen.
		If the OSD menu is closed and you press the button for an extended period of time, opens shortcut menu (input source selection/power off).
3	Home	If the OSD menu is closed, opens the OSD menu.
4	Voice search button	Press and release to use voice activation to search for items.
5	Touch bar	Swipe up/down for volume up/down adjustments.

Component	Function
	Tap twice to mute.

Using the on-screen display (OSD) menu

Use the OSD menu to adjust the screen image based on your preferences. You can access and make adjustments in the OSD menu by using the OSD joystick on the back of the monitor or the monitor's optional remote control. See Using the optional remote control on page 10 for detailed instructions.

To access the OSD menu and make adjustments:

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, select, and adjust the menu choices.

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

Main menu	Description
Gaming	Adjusts game-related settings including overclocking, gaming-assist crosshair, and ambient lighting
Picture	Selects and adjusts picture-related settings including color preset, local dimming, and backlight mode
Input	Selects the video input signal
Power	Adjusts the power settings
Audio	Adjusts the audio settings
Menu	Adjusts the OSD menu controls
Management	Returns all OSD menu settings to the default settings
Information	Displays important information about the monitor
Exit	Exits the OSD menu screen

Selecting color presets

Use the OSD menu to select from a variety of color presets that configure the monitor for a variety of different viewing situations. To access the color presets:

1. In the OSD menu, select the **Picture** menu.

2. Select the **Color** menu, and then select a color preset. The following table describes the available color presets.

NOTE: Each preset has both a standard dynamic range (SDR) and high dynamic range (HDR) configuration.

Color preset	Description
Standard	Recommended for general computing use; this mode has an sRGB gamut in SDR and a DCI-P3 gamut in HDR. Both modes have a D65 white point.

Color preset	Description
Gaming	Identical to the Standard preset, but also enables game-specific options including overdrive. In HDR, this preset uses the 2084 PQ + clip response, as recommended by the HDR Gaming Interest Group, a consortium of gaming developers and monitor manufacturers.
Cinema	Recommended for watching film and television content. For SDR content, the preset uses a Rec. 709 gamut, a BT.1886 EOTF, a D65 white point, and a brightness of 100 nits to match the configuration of reference monitors used by broadcasters and studios. For HDR content, the preset uses a DCI-P3 gamut, a 2084 PQ EOTF, and a D65 white point.
Vivid	Identical to the Standard preset, but also provides a wide DCI-P3 gamut (with no additional chroma boosting) for SDR content.
Warm	Identical to the Cinema color preset, but provides a warmer D55 white point in both SDR and HDR. This white point is close to that used by 35 mm projectors and may be preferred for watching black-and-white films because it more closely matches their original appearance.
Cool	Identical to the Standard color preset, but provides a cooler, more blue look than the standard white point. This preset uses a D75 white point.
Low Blue Light	Identical to the Standard color preset, but reduces the amount of blue spectral energy emitted by the monitor. This color preset has a very warm color temperature (4874K).

Using RGB Gain Control

RGB Gain Control can be used to adjust the color temperature of any color preset. RGB gain adjustments are stored separately for each color preset. Each RGB gain adjustment supports both boost and cut adjustments.

Adjusting the ambient lighting

The color and brightness of the ambient lights on the back of the monitor can be adjusted using the OSD menu or OMEN Command Center.

To adjust the ambient lighting:

1. Press the center of the OSD joystick to open the OSD menu. Select **Gaming**, and then select **Ambient Lighting**.

2. Select a setting:

   - **Off**: Turns off the ambient lighting.

   - **Screen glow**: Makes backlight color follow the screen average color for gaming and video.

   - **Static color**: Sets ambient light color to red, green, blue, yellow, purple, orange, and cyan.

   - **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.

Using USB storage devices

Your built-in SHIELD features 16 GB of internal storage. You can increase the storage space for applications and media by setting up a USB drive to replace or increase internal storage.

Using replacement storage devices

You can increase the storage space for applications and media on your SHIELD by setting up a USB drive to replace the existing internal storage. Primary uses include DVR and server storage for applications such as the included PLEX application. You can connect external hard drives or flash drives using the two USB 3.0 downstream ports located on the back of the monitor. See for the location of these ports. These USB 3.0 downstream ports are compatible with all external hard drives and USB flash drives.

📝 **NOTE:**   External drives must be adopted as internal storage to be used for application or game storage.

📝 **IMPORTANT:**   When you format a USB drive as internal storage, it replaces your current internal storage. You will no longer be able to use storage space on your existing internal storage for installing large game files. Make sure the new USB storage space is larger than your current internal storage (16 GB). Additionally, when you format a USB drive as internal storage, all data on the drive is erased, it becomes encrypted to your SHIELD, and can no longer be used interchangeably with other devices such as personal computers or cameras.

To prepare a USB or external hard drive for use as internal storage, format the drive in one of the following data formats.

- FAT32 (32GB or less): SHIELD supports the FAT32 data format. Most drives that are 32 GB or less are already formatted as FAT32. If the storage drive is not formatted, format it to FAT32 using your computer. When using a FAT32 drive, your SHIELD will not be able to process files that are larger than 4 GB.

- exFAT (64 GB or more): SHIELD supports the exFAT data format. Storage drives that are 64 GB and above come pre-formatted as exFAT. This newer data format is able to process files that are larger than 4 GB.

To access the USB storage drive on your SHIELD:

1.   Insert the USB drive into one of the two USB 3.0 downstream ports. See for the location of these ports.

2.   Go to **Settings**. Then select **Device**.

3.   Select **Storage & reset**. Then select **USB Storage**.

📝 **IMPORTANT:**   SHIELD does not support the NTFS file system.

Using supplemental storage devices

Alternatively, you can set up your USB drive as removable storage for sharing files. However, you cannot install applications and games to removable storage. You will no longer be able to use this USB drive to share content between SHIELD and your monitor without formatting.

Powering USB devices

You can power USB devices, such as an amplifier for an external antenna, by connecting them to the USB ports on the back of the monitor. See Rear components on page 3 for the location of these ports.
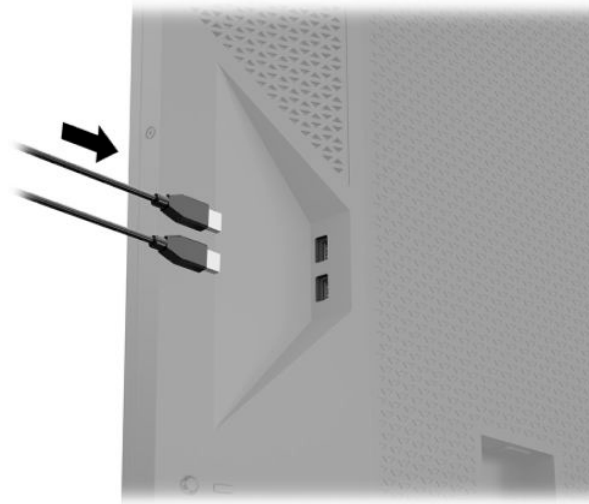
Using universal remote controls

As an alternative to the official remote control, sold separately, universal remote controls can be used to control multiple devices from a single remote. The Omen X Emperium 65 monitor infrared (IR) codes have been loaded into the Logitech Harmony remote database allowing your monitor to be directly controlled by any Harmony remote. To add your monitor to your Harmony remote, enter **HP** as the manufacturer and **Omen X 65** as the product name in the Harmony application or program.

The IR codes provided to Logitech include discrete Power Toggle, Input Menu, and Audio Mute commands. The Harmony database also includes commands to directly access each monitor input to allow easy switching between connected devices.

Using the Omen X Emperium 65 monitor with Smart Home Systems

To integrate the Omen X Emperium 65 monitor into a Smart Home System, you will need to enter the IR codes directly into the control software. The following table lists the IR codes for the Omen X Emperium 65 monitor.

Function	IR Code
Up	0x807E52AD
Down	0x807E53AC
Left	0x807E54AB
Right	0x807E55AA
OK	0x807E56A9
Back	0x807E57A8
Home	0x807E58A7
Input Menu	0x807E5BA4
Volume Up	0x807E50AF

Function	IR Code
Volume Down	0x807E51AE
Volume Mute	0x807E59A6

You can also program code sequences to select a specific monitor input. The following table lists IR functions that should be sequenced to directly access each input.

Input	IR Code Function Sequence
NVIDIA SHIELD	Input Menu, OK
DisplayPort	Input Menu, Down, OK
HDMI 1	Input Menu, Down, Down, OK
HDMI 2	Input Menu, Down, Down, Down, OK
HDMI 3	Input Menu, Down, Down, Down, Down, OK

3   Support and troubleshooting

Solving common problems

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

Problem	Possible cause	Solution
Monitor automatically switches from NVIDIA SHIELD mode to the DisplayPort input after a monitor OSD Factory Reset is performed.	Monitor is following a worldwide low-power efficiency standard that requires the monitor to reset to a low-power consumption input.	To return back to SHIELD mode, open the monitor OSD menu and select **NVIDIA SHIELD** from the input menu.
Monitor plays video without sound.	Surround sound settings are incorrect for your configuration.	Open the SHIELD interface and select **Settings**, select **Display and Sound**, and then select **Advanced Settings**. In the **Surround Sound** setting options, set to **Auto** or **Fixed Volume**.
Screen is blank or video is flashing.	Power cord is disconnected.	Connect the power cord.
	Monitor is turned off.	Press the rear panel power button.
	Master power switch is set to Off.	Set the master power switch on the rear of the monitor to the On position.
	Video cable is improperly connected.	Connect the video cable properly. See Connecting the cables on page 5 for more information.
	System is in sleep mode.	Press any key on the keyboard or move the mouse to inactivate the screen blanking utility.
	Video card is incompatible.	Open the OSD menu and select the **Input Control** menu. Set **Auto-Switch Input** to **Off** and manually select the input.
Screen appears to flicker periodically.	Ambient Light Sensor has been turned on.	Turn off the Ambient Light Sensor option. Open the OSD menu and select **Picture**, select **Ambient Light Sensor**, and then set Ambient Light Sensor to **Off**.
Image appears blurred, indistinct, or too dark.	Brightness setting is too low.	Open the OSD menu and select **Brightness** to adjust the brightness scale as needed.
Check Video Cable is displayed on the screen.	Monitor video cable is disconnected.	Connect the appropriate video signal cable between the computer and monitor. Be sure that the computer power is off while connecting the video cable. **NOTE:** For best performance, use the DisplayPort cable included with your monitor.
The monitor is off but it did not seem to enter into a low-power sleep mode.	The monitor's power-saving control is disabled.	Open the OSD menu and select **Power Control**, select **Auto-Sleep Mode**, and then set auto-sleep to **On**.
OSD Lockout is displayed.	The monitor's OSD Lockout function is enabled.	Press and hold the joystick in the left position for 10 seconds to disable the OSD Lockout function.
Power Button Lockout is displayed.	The monitor's Power Button Lockout feature is enabled.	Press and hold the power button on the rear panel for 10 seconds to unlock the power button function.

Button lockouts

Holding down the power button or holding the joystick on the rear panel in the left position for 10 seconds will lock out the functionality of the buttons. You can restore the functionality by holding the buttons down again for 10 seconds. This functionality is available only when the monitor is turned on and displaying an active signal, and the OSD is closed.

Contacting support

To resolve a hardware or software problem, 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 on how to contact HP and open a support case.

Preparing to call technical support

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

- Monitor model number
- Monitor serial number
- 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 serial number and product number

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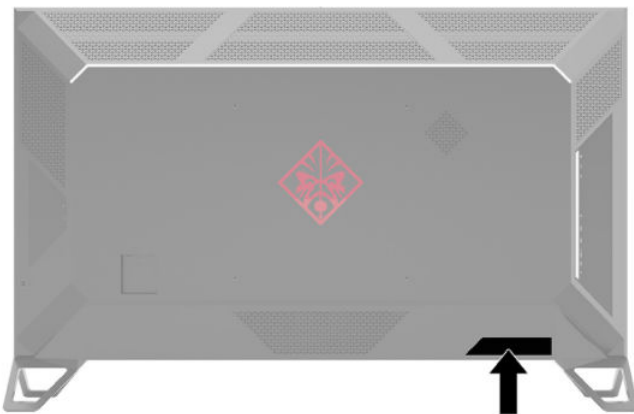
4   Maintaining the monitor

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 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 outlet that you can easily reach. Disconnect the monitor by grasping the plug firmly and pulling it from the outlet. Never disconnect the monitor by pulling the cord.

- Turn 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 in 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 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 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.

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 monitor model to find the model-specific QuickSpecs.

Display	163.89 cm wide screen	64.5-inch wide screen
Type	VA	
Viewable image size	163.89 cm diagonal	64.5-inch diagonal
Weight		
Without feet	32.4 kg	71.4 lbs
With feet	36.1 kg	79.6 lbs
Dimensions (without feet)		
Height	83.22 cm	32.77 in
Depth	8.39 cm	3.30 in
Width	144.81 cm	57.01 in
Dimensions (with feet)		
Height	93.42 cm	36.78 in
Depth	34.04 cm	13.40 in
Width	144.81 cm	57.01 in
Maximum graphic resolution		
DisplayPort	3840 × 2160 (144 Hz)	
HDMI port	3840 × 2160 (60 Hz)	
Optimum graphic resolution	3840 × 2160 (60 Hz) for DisplayPort connector and HDMI ports	
Dot pitch	372 (H) × 372 (V) (um) or 0.372 (H) × 0.372 (V) (mm)	
Pixels per inch	68 PPI	
Horizontal frequency	30 KHz to 323 KHz	
Vertical refresh rate	24 Hz to 144 Hz	
Environmental requirements		
Operating temperature	5°C to 35°C	41°F to 95°F
Storage temperature	-20°C to 60°C	-29°F to 140°F
Relative humidity	20% to 80%	

Operating altitude	**0 m to 5,000 m**	0 to 16,400 ft
Storage altitude	**0 m to 12,192 m**	0 to 40,000 ft
Power source	100 V ac to 240 V ac 50/60 Hz	
Measured power consumption		
Full power	700 W (2 sec)	
Typical settings	420 W	
Sleep	<0.5 W	
Off	<0.5 W	
Input terminal	One audio line-out, one S/PDIF port, one DisplayPort connector, three HDMI ports, one RJ-45 port, two USB ports, and two USB power charging ports	
Optional remote control		
Processor	NVIDIA® Tegra® X1 processor	
RAM	3 GB	
Storage	16 GB, adaptable storage over USB Type-A ports	
Video	4K HDR supported	
Audio	High-resolution audio playback up to 24-bit/192 KHz	
Connectivity	Gigabit LAN, USB-A 3.0 × 2, Wi-Fi 802.11 AC dual band, 2 × 2 MIMO, Bluetooth 4.1 LE	

IMPORTANT: The DisplayPort 144 Hz refresh rate for 4K mode applies only when the OSD OverClock function is turned on. To turn on the OverClock function, open the OSD menu, select **Picture**, select **Gaming**, and set OverClock to On. The default setting is Off, which limits the refresh rate to 120 Hz.

Preset display resolutions

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

HDMI display resolutions

Display Mode	Horz freq (kHz)	Vert freq (Hz)
VESA 640 × 480	31.47	60
VESA 800 × 600	37.88	60
VESA 1024 × 768	48.36	60
640 × 480p	31.48	60
720 × 480p	31.5	60
720 × 576p	31.25	50
1280 × 720p @ 50	37.5	50
1280 × 720p @ 60	45	60

HDMI display resolutions

Display Mode	Horz freq (kHz)	Vert freq (Hz)
1920 × 1080p @ 50	56.25	50
1920 × 1080p @ 60	67.5	60
3840 × 2160p @ 24	53.5	24
3840 × 2160p @ 25	56.3	25
3840 × 2160p @ 30	67.5	30
3840 × 2160p @ 50	112.5	50
3840 × 2160p @ 60	135	60

DisplayPort display resolutions

Display Mode	Horz freq (kHz)	Vert freq (Hz)
VESA 640 × 480	31.47	60
VESA 800 × 600	37.88	60
VESA 1024 × 768	48.36	60
3840 × 2160 @ 24	52.4	24
3840 × 2160 @ 30	65.7	30
3840 × 2160 @ 60	133.3	60
3840 × 2160 @ 82	181.7	82
3840 × 2160 @ 98	218	98
3840 × 2160 @ 120	268.6	120
3840 × 2160 @ 144	323.9	144

Energy saver feature

The monitor supports a reduced power state. The reduced power state will be initiated if the monitor detects the absence of either the horizontal sync signal or the vertical sync signal. Upon detecting the absence of these signals, the monitor screen is blanked, the backlight is turned off, and the power light turns amber. When the monitor is in the reduced power state, the monitor will utilize <0.5 watts of power. There is a brief warm-up period before the monitor returns to its normal operating state.

Refer to the computer manual for instructions on setting the energy saver mode (sometimes called power management feature).

NOTE: The above energy saver feature works only when the monitor is connected to a computer that has energy saver features.

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

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 23.

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 on 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 28.

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 on 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)

- Commission takes low profile on e-accessibility

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

- 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.