



# User Guide

HP HC270cr

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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 on display features, setting up the display, 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). An important alert 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.



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# 1 Getting Started

## Important safety information


A power cord is included with the display. If another cord is used, use only a power source and connection appropriate for this display. For information on the correct power cord set to use with the display, 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*. It describes proper workstation setup and proper posture, and 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:** For the protection of the display, as well as the computer, connect all power cords for the computer and its peripheral devices (such as a display, 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 display.


 **WARNING!** LCD displays 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 display so that they cannot be pulled, grabbed, or tripped over.

 **WARNING!** Danger of an unacceptable high leakage current for the patient may be caused by insufficient system configuration:

Accessories being connected to analog or digital interfaces must comply with the respective European or international standards (e.g. EN 60950 for data processing devices and EN 60601–1 for medical devices). Furthermore, all configurations building an ME system must comply with the European or international standard 60601–1. Every person connecting additional devices to a signal input or output is configuring a medical system and is therefore responsible for the ME system complying with the applicable version of the European or international standard 60601–1. If you have questions, please contact customer support or your local representative.

 **IMPORTANT:** This product contains equipment that is of the type specified by the Ministry of Internal Affairs and Communications (MIC) as meeting technical standards.




 **NOTE:** The EMISSIONS characteristics of this equipment make it suitable for use in industrial areas and hospitals (CISPR 11 class A). If it is used in a residential environment (for which CISPR 11 class B is normally required) this equipment might not offer adequate protection to radio-frequency communication services. The user might need to take mitigation measures, such as relocating or re-orienting the equipment.

## Indications for use/intended use

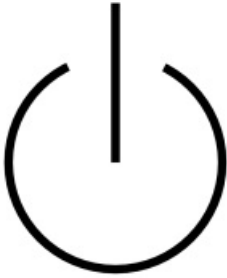

- This monitor is intended for healthcare professionals viewing patient information, records, medical examination images, or results in a hospital or clinical medical environment.
- This monitor is not intended for use in the primary interpretation or diagnosis of medical images for human diseases or injury.
- Do not operate this monitor with any surgical, life-support, or radiological equipment (mammography equipment included).
- Do not use this monitor with radiology, pathology, or mammography systems for patient diagnosis purposes.

## Symbols used

**Table 1-1 Symbols and descriptions**

Symbol	Reference	Title
		<ul style="list-style-type: none"><li>• Read the user/technical manual</li><li>• Follow all warnings, handling, and safety advice</li></ul>
		<p>Do not dispose of this device, or parts of it by putting it into the conventional domestic waste! Observe the national regulations about electrical and electronic devices relevant for your product. You will find further information under:</p> <p>DIRECTIVE 2002/96/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on waste electrical and electronic equipment (WEEE)</p>
		<p>CE-labeling; the CE sign confirms compliance to all relevant guidelines and regulations</p>

**Table 1-1 Symbols and descriptions (continued)**

Symbol	Reference	Title
	IEC 60417-5009	Stand-by
	IEC 60529	<p>N<sub>1</sub> = 0 Non-protected</p> <ol style="list-style-type: none"> <li>Protected against solid foreign objects of 50 mm and greater</li> <li>Protected against solid foreign objects of 12.5 mm and greater</li> <li>Protected against solid foreign objects of 2.5 mm and greater</li> <li>Protected against solid foreign objects of 1.0 mm and greater</li> <li>Dust-protected</li> <li>Dust-tight</li> </ol> <p>N<sub>2</sub> = 0 Non-protected</p> <ol style="list-style-type: none"> <li>Protection against vertically falling water drops</li> <li>Protection against vertically falling water drops when enclosure tilted up to 15°</li> <li>Protected against spraying water</li> <li>Protected against splashing water</li> <li>Protected against water jets</li> <li>Protected against powerful water jets</li> <li>Protected against the effects of temporary immersion in water</li> <li>Protected against the effects of continuous immersion in water</li> </ol> <p><b>NOTE:</b> When a characteristic numeral is not required to be specified, it is replaced by the letter X (XX if both numerals are omitted).</p>

## Product features and components

### Features

The display features include the following:

- 68.58 cm (27 in) diagonal viewable area display with 2560 × 1440 resolution, plus full-screen support for lower resolutions; includes custom scaling for maximum image size while preserving original aspect ratio
- Nonglare with an LED backlight
- Wide viewing angle to allow viewing from a sitting or standing position, or moving from side to side

- Integrated dual-band radio frequency identification (RFID) card reader
- Integrated webcam, noise canceling microphone, and infrared (IR) sensors
- Edge-to-edge anti-glare cover glass
- IP32 on the front
- Automatic backlight monitoring
- Luminance uniformity
- User calibration support provided by the HP Healthcare Edition DICOM Calibration Tool, available for download at <http://www.hp.com/support>



**NOTE:** The calibration software must be used with either the X-Rite i1Display Pro or Klein K10–A colorimeter.

- Ambient light sensor
- Image autorotation, which requires installation of the HP Image Auto-rotate Utility available at <http://www.hp.com/support>
- DisplayPort, USB Type-C Alt mode (DP 1.2), HDMI, and VGA video inputs
- DisplayPort multi-stream support
- Picture-in-picture (PIP) functionality to enable the HDMI, DisplayPort, USB Type-C, and VGA inputs to be viewed in a small secondary window or side by side in the main window
- Audio-out (headphone) jack
- USB 3.0 hub with one USB Type-C upstream port, one USB Type-B upstream port (connects to the computer), and two USB Type-A downstream ports (connect to USB devices)
- USB Type-C port with power delivery up to 65 W
- USB cable to connect the display's USB hub to the USB port on the computer
- Four buttons on the front bezel that can be reconfigured to quickly allow selection of the most commonly used operations
- Integrated speakers
- Capacitive unified communications and collaboration (UCC) controls and on-screen display (OSD) buttons
- Tilt capability
- Pivot capability to rotate the display head from landscape to portrait
- Swivel and height adjustment capabilities
- Removable stand for flexible display head mounting solutions
- HP Quick Release 2 device to quickly attach the display head to the stand with a simple click, and then remove it with the convenient sliding tab release
- Plug and Play capability if supported by your operating system
- Security cable slot provision on the back of the display for an optional security cable
- Cable management feature for placement of cables and cords
- OSD adjustments in several languages for easy setup and screen optimization
- High-Bandwidth Digital Content Protection (HDCP) copy protection on all digital inputs

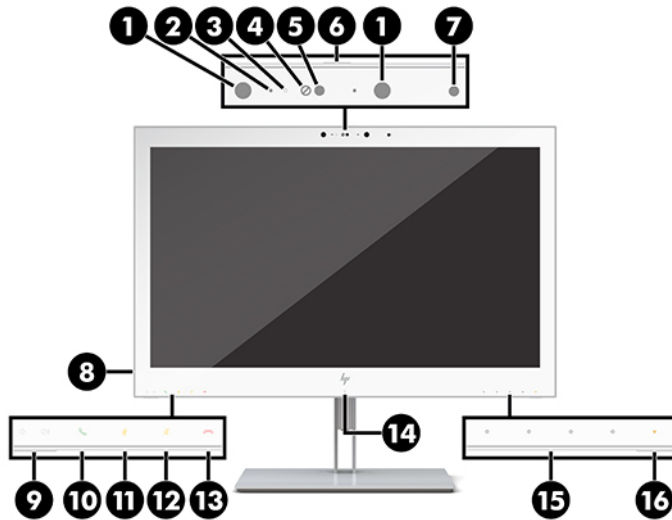
- Compliance with Digital Imaging and Communications in Medicine (DICOM) Part 14 for use in healthcare clinical reviews by healthcare professionals in peer consultation, patient consultation, and surgical planning

**⚠ WARNING!** This display is intended for use viewing medical images for image capture verification, collaboration, patient consultation, and any other non-diagnostic purpose. This display is not intended for use in viewing medical images for primary interpretation or diagnosis of any disease.

- Compliance with IEC 60601-1-2:2015
- Expected service life: 5 years
- Microsoft Skype for Business certification
- Windows® Hello facial recognition to allow signing in with increased security
- Vidyo ready
- Energy saver feature to meet requirements for reduced power consumption

**📄 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**.

## Front components



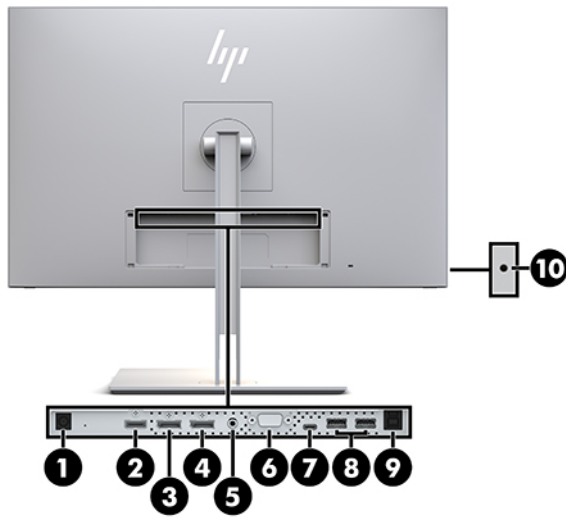
**Table 1-2 Front components and functions**

Control		Function
1	Infrared lights	On: The IR camera is in use.
2	Camera microphones	Allow you to participate in a video conference.
3	Camera light	On: The camera is in use.
4	IR camera lens	Transmits your image when the Hello log-in function is on.
5	Webcam lens	Transmits your image in a video conference.
6	Camera shutter	Covers the camera lens when the camera is not in use.










**Table 1-2 Front components and functions (continued)**

Control	Function
7	Ambient light sensor Automatically adjusts the screen brightness based on the lighting conditions in your environment.
8	Audio-out (headphone) jack Connects optional powered stereo speakers or headphones to the display. <b>CAUTION:</b> To reduce the risk of personal injury, adjust the volume before using headphones, earbuds, or a headset. For additional safety information, see the <i>Product Notices</i> included with your product. <b>NOTE:</b> When a device is connected to a headphone jack, the speakers are disabled.
9	Volume buttons Press to increase (+) or decrease (-) speaker volume.
10	Answer/Call button Press to answer or make a call. Solid green light: A call is in progress. Blinking red and green lights: A call is incoming.
11	Mute microphone button Press to mute or activate the camera microphone. Amber: The microphone is muted.
12	Mute speaker button Press to mute or activate the speakers. Amber: Speakers are muted.
13	Reject/Hang-up button Press to decline or end a call. Blinking red and green lights: A call is incoming.
14	RFID sensor Reads radio frequency identification cards.
15	Function buttons Press to open the OSD menu, make adjustments, or close the OSD menu. A light above the <b>Menu</b> button indicates that the OSD menu is open. You can reassign functions for three of the buttons to quickly access the menu items you use most. For details, see <a href="#">Reconfiguring the function buttons on page 20</a> .
16	Power light White: The display is on. Amber: The display is in a reduced power state because of inactivity.

## Rear components



**Table 1-3** Rear components and descriptions

Component	Icon	Function
1 Power connector		Connects an AC adapter to the display.
2 HDMI port	HDMI	Connects an HDMI cable to the source device.
3 DisplayPort IN port		Connects a DisplayPort cable to the source device.
4 DisplayPort OUT port		Connects a DisplayPort cable from the primary display to the secondary display.
5 Audio-IN port		Connects an analog audio device to the display.
6 VGA port		Connects a VGA cable to the source device.
7 USB Type-C upstream port		Connects to a USB Type-C device to provide video, audio, or USB 3.1 upstream data, in addition to power delivery up to 65 W. Also charges the battery of a connected device.
8 USB Type-A downstream ports (2)		Connects optional USB devices to the display.
9 USB Type-B upstream port		Connects the computer to the display to enable the USB downstream ports. See step 3 in <a href="#">Connecting the cables on page 9</a> .
10 Headphone (audio OUT) jack		Connects headphones or optional speakers to the display.



**NOTE:** The USB Type-C upstream port can function as a single cable connection between the source device and the display for DisplayPort audio/video input, as a USB 3.0 upstream connection, or as a power source to deliver up to 65 watts of power to attached devices. Power outputs are 5V/3A, 9V/3A, 10V/5A, 12V/5A, 15V/4.33A, 20V/3.25A to achieve 65 watts of output.

## Setting up the display

To set up the display, ensure that the power is turned off to the display, computer system, and other attached devices, and then follow the instructions below.

### Use caution when setting up the display

To prevent damage to the display, 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.

If installing a stand, position the display facedown on a flat surface covered with protective sheet foam or a nonabrasive cloth. This prevents the screen from getting scratched, defaced, or broken and prevents damage to the control buttons.

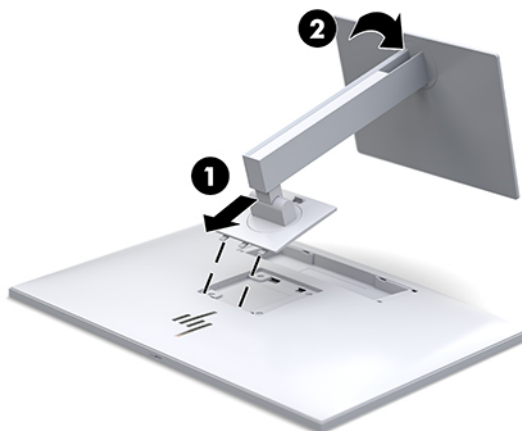
### Attaching the stand



**TIP:** Consider the placement of the display, because the bezel might cause interfering reflections from surrounding light and bright surfaces.

The display uses the HP Quick Release 2 for easy mounting of the display head. To mount the display head onto the stand:


1. Position the display head facedown on a flat surface covered by a clean, dry cloth.
2. Slide the top of the mounting plate (1) on the stand under the upper lip of the recess on the back of the display.
3. Lower the bottom of the stand's mounting plate (2) into the recess until it snaps into place.
4. The HP Quick Release 2 latch pops up when the stand is locked in place.



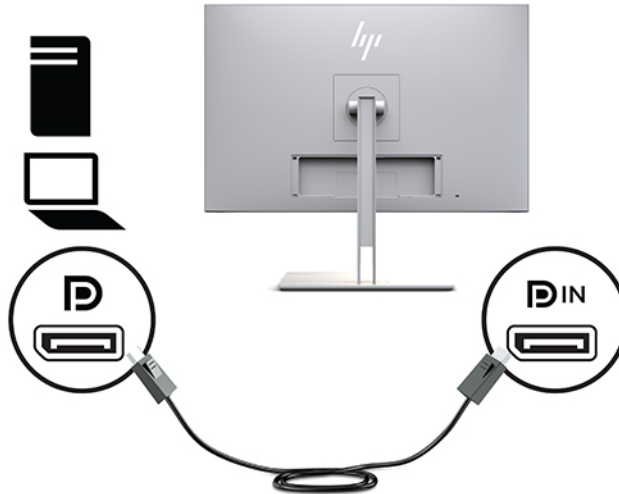


## Connecting the cables

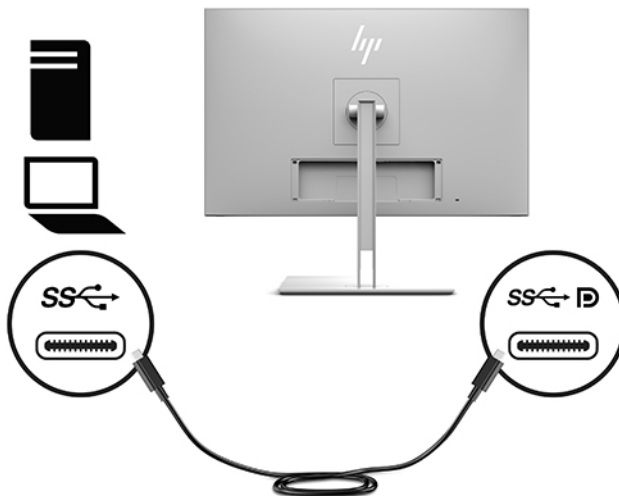
1. Place the display in a convenient, well-ventilated location near the computer.
2. Connect a video cable.

 **NOTE:** The display will automatically determine which inputs have valid video signals. The inputs can be selected by pressing the **Next Input** button on the front of the display or through the on-screen display (OSD) by pressing the **Menu** button and selecting **Input Control**.

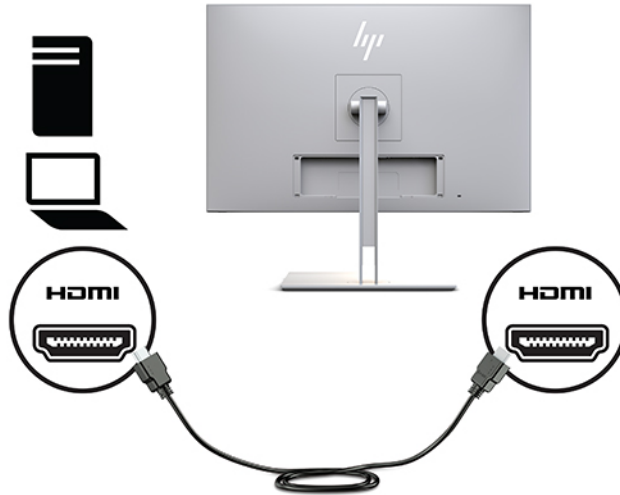
- Connect one end of a DisplayPort cable to the DisplayPort IN port on the back of the display and the other end to the DisplayPort port on the source device.



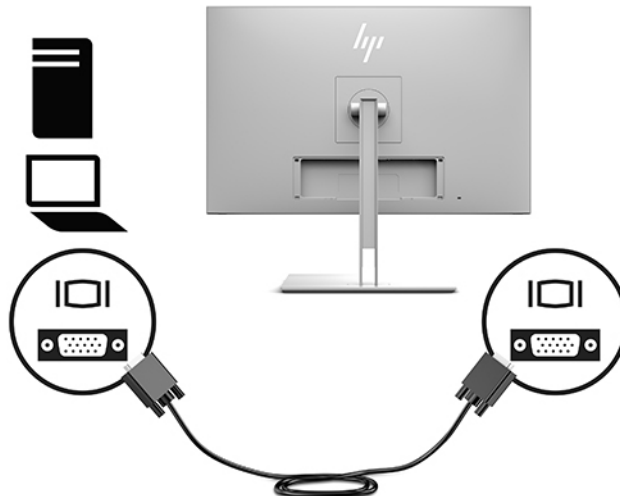
- Connect one end of a USB Type-C cable to the USB Type-C port on the back of the display and the other end to the source device.



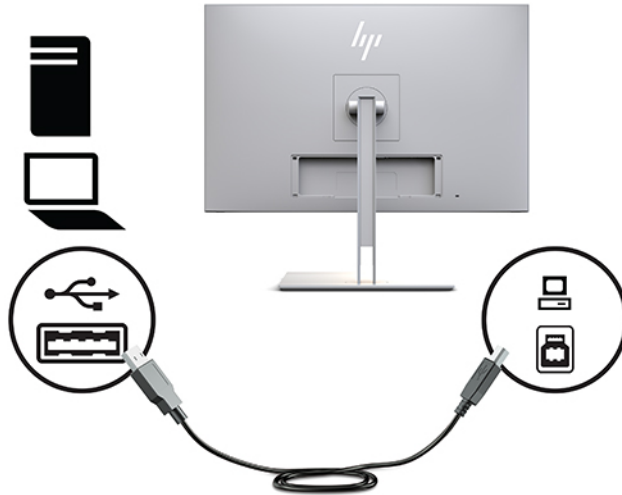
- Connect one end of an HDMI cable to the HDMI port on the back of the display and the other end to the source device.



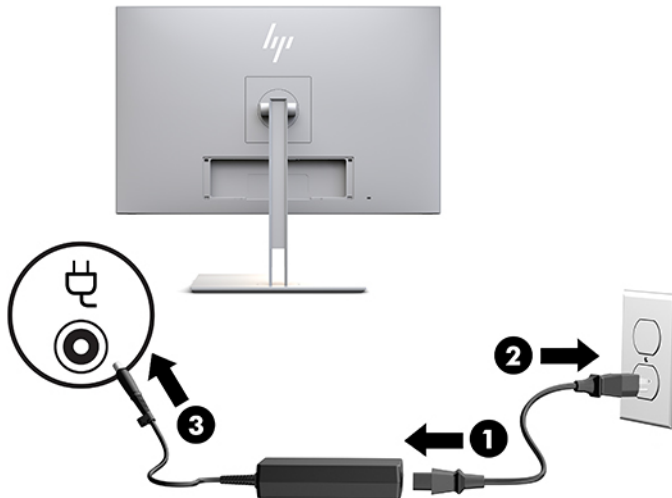
- Connect one end of a VGA cable to the VGA port on the back of the display and the other end to the VGA port on the source device.



3. Connect the USB upstream cable's Type-B connector to the USB upstream port on the back of the display and the cable's Type-A connector to the USB downstream port on the source device.



4. Connect one end of the AC power cord to the AC adapter (1) and the other end to the AC outlet (2). Then connect the AC adapter to the display (3).



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

## Connecting USB devices

USB ports are used to connect devices such as a USB storage device, USB keyboard, or USB mouse. There are two downstream USB ports on the display that provide standard USB connections.

**CAUTION:** Incorrect handling of peripheral devices can damage the display itself or devices connected to it. Before connecting your display to additional peripheral devices, such as additional displays or other patient-monitoring devices, turn off the display power and disconnect the power cable from the AC outlet.

**Table 1-4 USB ports and functions**

Component	Icon	Function
USB 3.0 standard downstream ports (2)		Connect optional USB devices to the display
USB Type-C port (1)		Connects to a USB Type-C enabled source to provide video, audio, USB 3.1 upstream data, and power delivery up to 65 W to power and charge the battery of connected devices

**NOTE:** You must connect the USB upstream cable from the computer to the display to enable the USB downstream ports on the display. For detailed instructions, see [Connecting the cables on page 9](#).



## Installing the cable cover

After connecting all of the cables to the back of the display, install the cable cover by inserting the bottom edge of the cover into the recess on the back of the display (1) and then pressing in on the top of the cover (2) until it snaps into place.

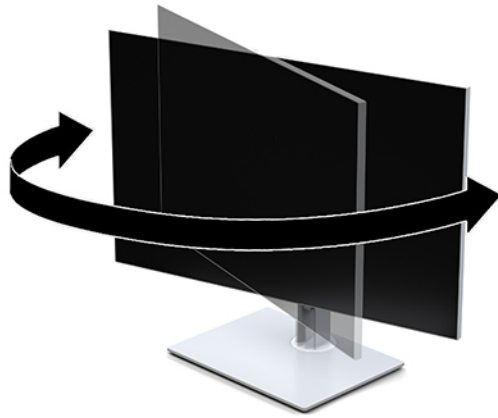


## Adjusting the display

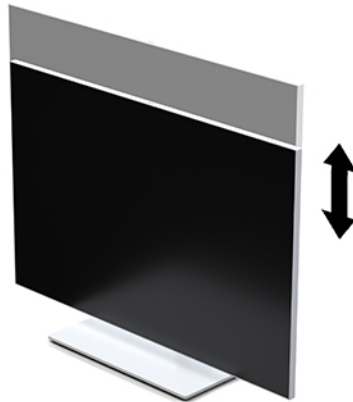
1. Tilt the display head forward or backward to set it to a comfortable eye level.



2. Swivel the display head to the left or right for the best viewing angle.



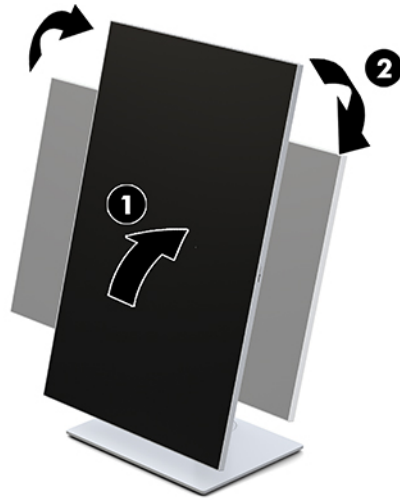
3. Adjust the display's height to a comfortable position for your individual workstation. The display's top bezel edge should not exceed a height that is parallel to your eye height. A display that is positioned low and reclined may be more comfortable for users with corrective lenses. The display should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




4. You can pivot the display head from landscape to portrait orientation viewing to adapt to your application.
  - a. Adjust the display to full height position and tilt the display head back to full tilt position (1).
  - b. Pivot the display head clockwise 90° or counterclockwise 90° from landscape to portrait orientation (2).



**IMPORTANT:** If the display is not in full height and full tilt position when pivoting, the bottom right corner of the display head will come in contact with the base and potentially cause damage to the display head.



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 **NOTE:** To view information on the screen in portrait mode, you can install the HP Image Auto-rotate Utility. The software can be downloaded from <http://www.hp.com/support>. The position of the OSD menu can also be rotated to portrait mode. To rotate the OSD menu, access the OSD menu by pressing the **Menu** button on the front of the monitor. Then select **OSD Control** from the menu, and select **OSD Rotation**.


---


## Turning on the display

1. Press the power button on the source device to turn it on.
2. Press the power button on the bottom of the front bezel of the display to turn it on.



---

 **CAUTION:** Burn-in damage may occur on all LCD displays that display the same static image on screen for 12 or more consecutive hours. To avoid burn-in damage, always activate a screen saver application or turn off the display when it will not be in use for a prolonged period. Burn-in damage 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 display power button for 10 seconds.

 **NOTE:** You can disable the power LED in the OSD menu. Press the **Menu** button on the front of the display to open the OSD. In the OSD select **Power Control**, select **Power LED**, and then select **Off**.

---


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

The display automatically scans the signal inputs for an active input and uses that input for the display.

## Mounting the display

The display 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.

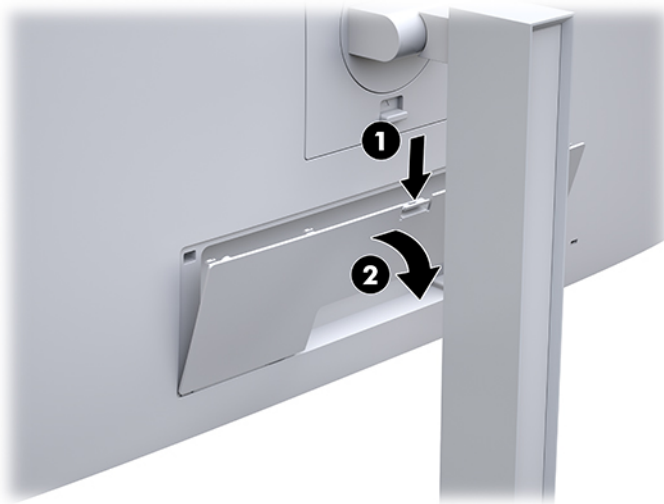
 **CAUTION:** This display supports the VESA industry standard 100 mm mounting holes. To attach a third-party mounting solution to the display head, four 4 mm, 0.7 pitch, 10 mm–long screws are required. Longer screws may damage the display. It is important to verify that the manufacturer’s mounting solution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

## Removing the display stand

You can remove the display head from the stand to attach the display head to a wall, a swing arm, or other mounting fixture.

 **CAUTION:** Before beginning to disassemble the display, be sure the display is turned off and all cables are disconnected.

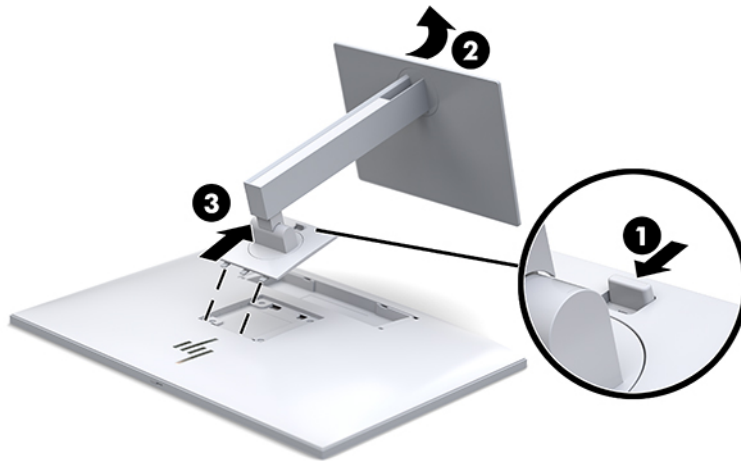
1. Remove the cord cover by pressing down on the latch at the top of the cord cover (1) and pulling the cord cover down and away from the back of the display (2).



2. Disconnect and remove all cables from the display.
3. Position the display head facedown on a flat surface covered by a clean, dry cloth.
4. Push up on the latch near the bottom center of the display to unlock the HP Quick Release 2 (1).
5. Swing the bottom of the stand up until the mounting plate clears the recess in the back of the display (2).

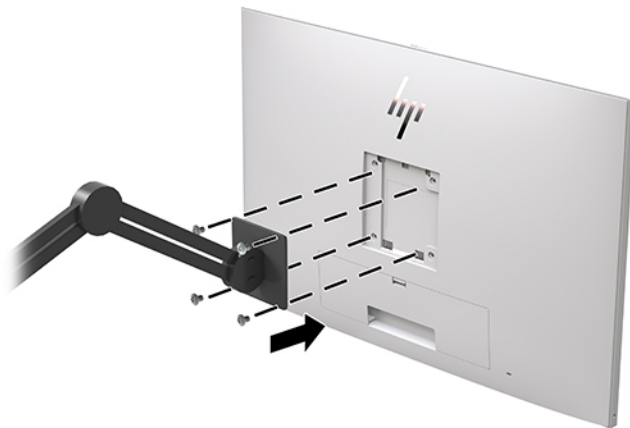


6. Slide the stand out of the recess (3).




### Attaching the display head to a mounting device

1. Remove the display head from the stand. See [Removing the display stand on page 16](#).
2. Remove the four screws from the VESA holes located on the back of the display head.
3. Attach the mounting plate to the wall or swing arm of your choice using the four screws that you removed from the VESA holes on the back of the display.



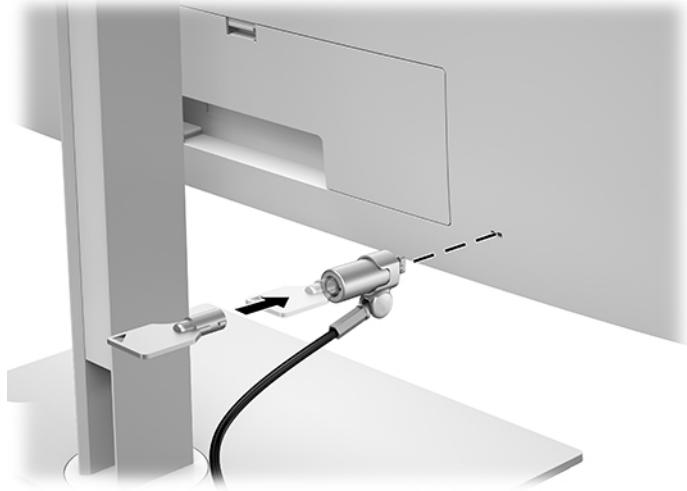
---

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

---

## Installing a security cable

You can secure the display to a fixed object with an optional security cable available from HP.



## 2 Using the display

### Downloading the display drivers

You can download and install the following files from <http://www.hp.com/support>.

- INF (Information) file
- ICM (Image Color Matching) files (one for each calibrated color space)

To download the files:

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

### Using the on-screen display (OSD) menu

Use the on-screen display (OSD) to adjust the screen image based on your preferences. You can access and make adjustments in the OSD using the buttons on the front of the display.

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

1. If the display is not already on, press the power button to turn on the display.
2. To access the OSD menu, press one of the four front bezel function buttons to activate the buttons, and then press the **Menu** button to open the OSD.
3. Use the four function buttons to navigate, select, and adjust the menu choices. The button labels are variable depending on the menu or sub-menu that is active.

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

**Table 2-1 OSD menu options and descriptions**

Main Menu	Description
Brightness	Adjusts the brightness level of the screen.
Color Control	Selects DICOM setting and color space, and adjusts screen color.
Input Control	Selects the video input signal.
Image Control	Adjusts the screen image.
PIP Control	Selects and adjusts the picture in picture image.
Power Control	Adjusts the power settings.
Menu Control	Adjusts the on-screen display (OSD) and function button controls.
Management	Enables/disables DDC/CI support and returns all OSD menu settings to the default settings.
USB Host Selection	Selects the USB input source.

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

Main Menu	Description
Sanitization	Updates the sanitization log, opens the view sanitization log, and sets the hourly alert schedule.
Exit	Exits the OSD menu screen.

## Reconfiguring the function buttons

Pressing one of the four front bezel buttons activates the buttons and displays the icons above the buttons. The factory default button icons and functions are shown below.

**Table 2-2 Function buttons and descriptions**

Button	Function
1 <a href="#">Menu</a>	Opens the OSD (On-Screen Display) menu.
2 <a href="#">Color Control</a> Assignable function button 2	Opens the Color Control menu.
3 <a href="#">Viewing Modes</a> Assignable function button 3	Switches the display's viewing mode.
4 <a href="#">Next Active Input</a> Assignable function button 4	Switches the display's input source to the next active input.

You can change the three assignable function buttons from their default values so that when the buttons are activated you can quickly access commonly used menu items.



**NOTE:** You can only reconfigure the three function buttons. You can not reconfigure the [Menu](#) button or the power button.

To reconfigure the function buttons:


1. Press one of the four front bezel buttons to activate the buttons, and then press the [Menu](#) button to open the OSD.
2. In the OSD, select **Menu Control**, select **Configure Function Buttons**, and then select one of the available options for the button you want to reconfigure.

## Using color options

This display has been certified as compliant with DICOM Part 14. The display can be used by clinicians to view medical images for clinical review, peer consultation, patient consultation, or image verification. The display is not intended for use in diagnosis, cure, treatment, or prevention of human disease or other medical conditions.

The display is factory-calibrated, and the default color setting is DICOM (0.0 ALC). To change the color setting to another preset or custom setting:

1. Press the **Menu** button on the front of the display to open the OSD menu.
2. Navigate to and highlight the **Color Control** menu, and then select the desired color setting – either a preset or custom setting option.
3. Click **Save and Return**.

 **NOTE:** When viewing medical images, make sure the display color setting is set to DICOM.

 **NOTE:** DICOM color selection will disable Dynamic Contrast Ratio (DCR).


The following table lists options on the Color Control menu:

**Table 2-3 Color control menu options**


Main Menu	Description
sRGB (D65)	Sets your screen colors to adapt to the color standards used in the image technology industry.
DICOM (0.0 ALC)	Sets the screen to DICOM Part 14 GSDF at zero ambient light compensation.
DICOM (2.2 ALC)	Sets the screen to DICOM Part 14 GSDF at 2.2 ambient light setting for darker viewing conditions.
Neutral	Sets the color scheme to a point in the 6500K color temperature range.
Cool	Sets the color scheme to a point in the 9300K color temperature range.
Viewing Modes	Sets the display viewing mode.
Custom RGB	Allows you to select and adjust your own color levels. <ul style="list-style-type: none"> <li>• R: Set the red color levels.</li> <li>• G: Set the green color levels.</li> <li>• B: Set the blue color levels.</li> </ul>

## Calibrating the display

If you choose to change the factory-calibrated DICOM settings or the sRGB color space, you will need to recalibrate the display. To calibrate or change the DICOM or sRGB color setting, you will need to download the HP Healthcare Edition DICOM Calibration Tool from the HP displays support website.

 **CAUTION:** Before installing the software, connect either a video cable and the USB Type-B to USB Type-A (upstream) cable between the computer and your display (cable provided), or a USB Type-C to USB Type-C cable (provided) between the computer and your display. For more information, see [Connecting the cables on page 9](#).

1. Go to <http://www.hp.com/support>.
2. Select **Software and Drivers**.
3. Search for your display model.
4. Select **Support & Drivers**.
5. Select **HP Healthcare Edition DICOM Calibration Tool** to download and install.

 **CAUTION:** To calibrate the display, the HP Healthcare Edition DICOM Calibration Tool must be run in Administrator mode.

## Using the RFID card reader

The display features a dual-band RFID card reader capable of reading 125 kHz and 13.56 MHz frequencies simultaneously. The card reader allows you to log in to the system quickly using authorized card credentials.



**NOTE:** Most common RFID card credentials are supported, but configuration may be necessary before first use.

1. Connect the USB Type-A to USB Type-B cable by connecting the USB Type-A connector to the USB downstream port on the source device and the USB Type-B connector to the USB upstream port on the back of the display.
2. Place your RFID card/badge near the RFID card reader located in the center of the display's bottom bezel. Make sure the card/badge is no farther than 2 cm from the RFID card reader.



**CAUTION:** Other magnetic devices near the RFID card reader may affect the card detection.

3. Move the card/badge away from the RFID card reader after it is detected. Detection should be automatic and completed within seconds.

## Using Windows Hello

On products equipped with a fingerprint reader or an infrared camera, you can use Windows Hello to sign in by swiping your finger or looking at the camera.

To set up Windows Hello, follow these steps:

1. Select the **Start** button, select **Settings**, select **Accounts**, and then select **Sign-in options**.
2. Under **Windows Hello**, follow the on-screen instructions to add both a password and a numeric PIN, and then enroll your fingerprint or facial ID.



**NOTE:** The PIN is not limited in length, but it must consist of numbers only. No alphabetic or special characters are allowed.

## Using picture-in-picture (PIP) and picture-beside-picture (PBP)

The display supports both PIP, where one source is overlaid over another, and PBP, where one source is positioned adjacent to another either horizontally (for landscape orientation) or vertically (for portrait orientation).

To use PIP or PBP:

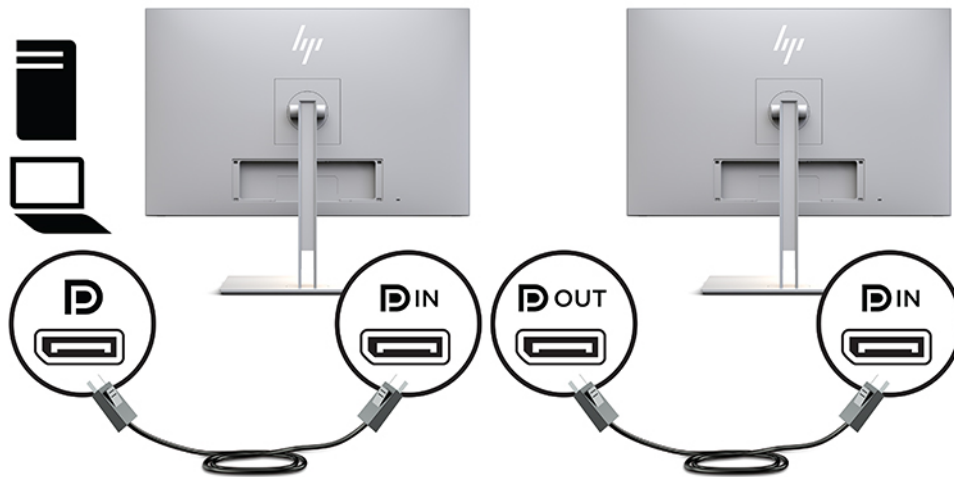
1. Connect a secondary input source to the display.
2. Press one of the four front bezel function buttons to activate the buttons, and then press the **Menu** button to open the OSD.
3. In the OSD, select **PIP Control**, select **PIP On/Off**, and then select either **Picture-in-Picture** or **Picture-beside-Picture**.
4. The display will scan the secondary inputs for a valid input and use that input for the PIP/PBP picture. If you want to change the PIP/PBP input, select **PIP Control** in the OSD, select **Assign Inputs**, and then select the desired input.
5. If you want to change the size of the PIP, select **PIP Size** in the OSD, and then select a desired size.
6. If you want to adjust the position of the PIP, select **PIP Position** in the OSD, and then select a desired position.

## DisplayPort multistreaming

If you are using DisplayPort as the primary video input source, you can multistream to other DisplayPort displays connected in a daisy chain configuration. You can connect up to four displays in this configuration if supported by the graphics card.

To use DisplayPort multistreaming:

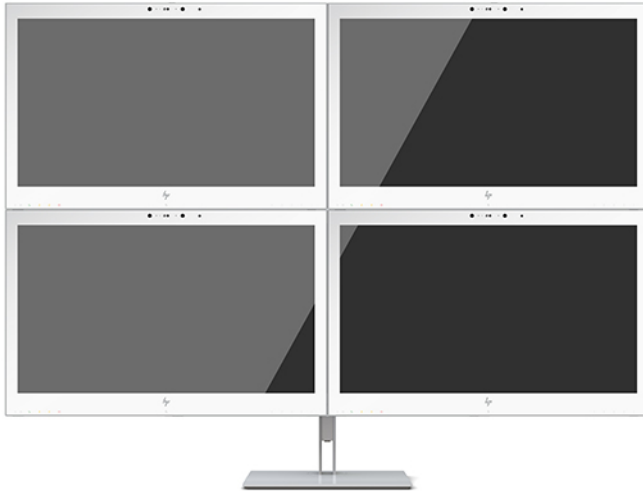
1. Make sure that DisplayPort is used for your primary video input.
2. Add a second display by connecting a DisplayPort cable between the DisplayPort OUT port on the primary display and the DisplayPort IN port on a secondary multistream display or the DisplayPort input port on a secondary non-multistream display.



3. You can set the connected display to display the same image as the primary display or a different image. In the OSD for the connected display, select **Management**, select **DisplayPort Output**, and then select one of the following:
  - a. **DisplayPort 1.1 Compatibility Mode** (default) — Allows the same video image to be sent to all displays downstream of the display you are configuring
  - b. **DisplayPort 1.2** — Allows a different image to be sent to all displays downstream of the display you are configuring
4. After setting the DisplayPort Compatibility Mode in the OSD, use the computer operating system's display settings to set the display mode for the secondary display to either mirror the image of the primary display or extend the second display for a different image from the primary display.

To connect additional displays downstream (up to four maximum), all but the final display in the chain must support DisplayPort multistreaming.

Connect from the DisplayPort OUT of one display to the DisplayPort IN of the next, until you have the desired number of displays.



If you want different information on each screen, be sure that all upstream displays are configured to DisplayPort 1.2 mode, as described above.

The number of displays you can connect through DisplayPort multistreaming depends on a number of factors, including the resolutions and scan rates used for each display and the capabilities of your GPU or embedded graphics system. Check the manual that came with your graphics card for further information on its capabilities.

**Table 2-4 DisplayPort multistreaming**

Resolution	Multistreaming maximum displays quantity
1280 × 720	4
1600 × 900	4
1920 × 1080	4
1920 × 1200	3
2560 × 1440	2

## Using Auto-Sleep Mode

The display supports an OSD menu option called Auto-Sleep Mode that allows you to enable or disable a reduced power state for the display. When Auto-Sleep Mode is enabled (enabled by default), the display will enter a reduced power state when the host PC signals low power mode (absence of either horizontal or vertical sync signal).

Upon entering this reduced power state, the display screen is blanked, the backlight is turned off, and the power light turns amber. The display draws less than 1 W of power when in this reduced power mode. The display will wake from the sleep mode when the host PC sends an active signal to the display (for example, if you activate the mouse or keyboard).

You can disable the Auto-Sleep Mode in the OSD. Press one of the four front bezel function buttons to activate the buttons, and then press the **Menu** button to open the OSD. In the OSD press **Power Control**, select **Auto-Sleep Mode**, and then select **Off**.



# 3 Support and troubleshooting

## Solving common problems

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

**Table 3-1 Problems and solutions**

Problem	Possible Cause	Solution
Screen is blank or video is flashing.	Power cord is disconnected.	Connect the power cord.
	Power button is turned off.	Press the front power button. <b>NOTE:</b> If pressing the power button has no effect, press and hold the power button for 10 seconds to disable the Power Button Lockout feature.
	Video cable is improperly connected.	Connect the video cable properly. For more information, see <a href="#">Connecting the cables on page 9</a> .
	System is in sleep mode.	Press any key on the keyboard or move the mouse to inactivate the screen blanking utility.
	Video card compatibility.	Open the OSD menu and select the <b>Input Control</b> menu. <b>Set Auto-Switch Input to Off</b> and manually select the input.
Image appears blurred, indistinct, or too dark.	Brightness setting is too low.	Open the OSD menu and select <b>Brightness</b> to adjust the brightness scale as needed.
No speaker volume or low speaker volume.	Volume is turned down in the OSD.	Open the OSD, select <b>Audio Control</b> , select <b>Volume</b> , and adjust the volume scale.
	Volume is muted.	If the mute speaker light is amber, the volume is muted. Press the mute speaker button or the +/- (Plus/Minus) button.
	Headphones are plugged in.	Unplug the headphones. The speakers are disabled when the headphones are plugged in.
	No audio source is selected.	Open the OSD menu and select <b>Audio Control</b> , and select the audio source.
	No default PC playback device is selected.	Open <b>PC setting</b> , select <b>Sound</b> , select <b>Playback</b> , and then set HC270cr as the <b>Default Device</b> .
<b>Check Video Cable</b> is displayed on screen.	Display video cable is disconnected.	Connect the appropriate video signal cable between the computer and display. Be sure that the computer power is off while connecting the video cable.
<b>Input Signal Out of Range</b> is displayed on screen.	Video resolution and/or refresh rate are set higher than the display supports.	Change the settings to a supported setting (see <a href="#">Preset display resolutions on page 32</a> ).
The display is off but it did not seem to enter a low-power mode.	The display's power saving control is disabled.	Open the OSD menu and select <b>Power Control</b> , select <b>Auto-Sleep Mode</b> , and then set auto-sleep to <b>On</b> .
<b>OSD Lockout</b> is displayed.	The display's OSD Lockout function is enabled.	Press and hold the <b>Menu</b> button on the front of the display for 10 seconds to disable the OSD Lockout function.

**Table 3-1 Problems and solutions (continued)**

<b>Problem</b>	<b>Possible Cause</b>	<b>Solution</b>
<b>Power Button Lockout</b> is displayed.	The display's Power Button Lockout function is enabled.	Press and hold the power button for 10 seconds to unlock the power button function.
Power Voltage	Interruption Note	An imaging system displays an image that could be altered, but in a way that would not affect the diagnosis or treatment.

## Button lockouts

Holding down the power button or **Menu** button for ten seconds will lock out the functionality of that button. You can restore the functionality by holding the button down again for ten seconds. This functionality is only available when the display is powered on, 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:

- Display model number
- Display 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

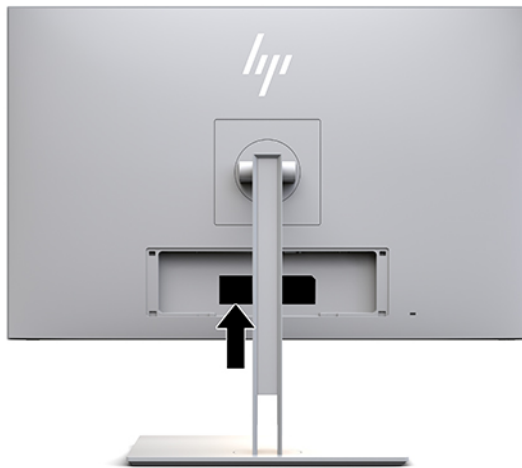
The serial number and product number are located on a label on the back of the display. You may need these numbers when contacting HP about the display.

The model number and serial number can also be found in the OSD. Press the [Menu](#) button, scroll down and select the **Management** tab. Then select the **Information** tab.

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 **NOTE:** You may need to partially pivot the display head to read the label.

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# 4 Maintaining the display

## Maintenance guidelines

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

- Do not open the display cabinet or attempt to service this product yourself. Adjust only those controls that are covered in the operating instructions. If the display 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 display, as indicated on the label/back plate of the display.
- Be sure the total ampere rating of the products connected to the outlet does not exceed the current rating of the AC outlet, and the total ampere rating of the products connected to the cord does not exceed the rating of the cord. Look on the power label to determine the ampere rating (AMPS or A) for each device.
- Install the display near an outlet that you can easily reach. Disconnect the display by grasping the plug firmly and pulling it from the outlet. Never disconnect the display by pulling the cord.
- Turn the display off when not in use. You can substantially increase the life expectancy of the display by using a screen saver program and turning off the display when not in use.



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

- Slots and openings in the cabinet are provided for ventilation. These openings must not be blocked or covered. Never push objects of any kind into cabinet slots or other openings.
- Do not drop the display 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 display in a well-ventilated area, away from excessive light, heat or moisture.
- When removing the display stand, you must position the display facedown on a soft area to prevent it from getting scratched, defaced, or broken.

## Cleaning the display

1. Turn off the display.
2. Disconnect any external devices.
3. Dust the display by wiping the screen and the cabinet with a soft, clean antistatic cloth.



**IMPORTANT:** The cloth should be moist, but not wet. Water dripping into the ventilation or other points of entry can cause damage to the display. Allow the unit to air-dry before use.

4. Next, use any of the following germicidal wipe formulations to safely disinfect all exposed surfaces of your display. Refer to the directions for use provided by the manufacturer of the wipes.



**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.

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

**Table 4-1 Recommended cleaning formulas**

Recommended cleaning formulas
Benzyl-C12-18-alkyldimethyl ammonium chlorides: <0.1%, quaternary ammonium compounds, C12-14-alkyl[(ethylphenyl)methyl]dimethyl, chlorides: <0.1%
Isopropanol: 10-20%, 2-butoxyethanol: <5%, quaternary ammonium compounds, C12-18-alkyl[(ethylphenyl)methyl]dimethyl, chlorides: <0.5%, benzyl-C12-18-alkyldimethyl ammonium chlorides: <0.5%
Quaternary ammonium compounds, C12-18-alkyl[(ethylphenyl)methyl]dimethyl, chlorides: <0.5%, benzyl-C12-18-alkyldimethyl ammonium chlorides: <0.5%
Isopropyl alcohol: 55.0%, alkyl dimethyl benzyl ammonium chlorides: 0.250%, Alkyl (68% C12, 32% C14) dimethyl ethylbenzyl ammonium chloride: 0.250%
Isopropanol: 10-20%, ethylene glycol monobutyl ether (2-butoxyethanol): 1-5%, diisobutylphenoxyethoxyethyl dimethyl benzyl ammonium chloride: 0.1-0.5%
Sodium hypochlorite 0.1-1%
Cellulose: 10-30%, ethyl alcohol: 0.10-1.00%
Isopropyl alcohol: 30-40%, water 60-70%
Hydrogen peroxide: 0.1-1.5%
Dichlorvos 18.6%




**NOTE:** Contact your local HP sales representative for recommended brands of ready-to-use cleaning wipes which have been tested and recommended for cleaning and disinfecting the display.

5. Update the sanitization log. For detailed instructions, see [Using the sanitization menu on page 30](#).

## Using the sanitization menu

The sanitization menu can be used to update the sanitization log, view the sanitization log, and set sanitization schedule alerts. To access the sanitization menu:

1. Press one of the four front bezel buttons to activate the buttons, and then press the **Menu** button to open the OSD.
2. In the OSD, select **Sanitization**.

 **TIP:** To access the sanitization button more quickly, press one of the four front bezel buttons to activate the buttons, and then press the sanitization button.



3. Use the four front bezel buttons to navigate, select, and adjust the menu choices. The button labels are variable depending on the menu or sub-menu that is active.

**Table 4-2 Sanitization menu choices and descriptions**

Menu choice	Description
Enable sanitization log	When the check box is selected (default setting), all sanitization log functions are enabled.
Update sanitization log	Places an entry in the first sanitization log list and resets the timer.
View sanitization log	Displays the first 27 sanitization log entries.
Hours since last sanitization	Displays the number of hours since the last sanitization log entry.
Show alert message when hourly schedule is exceeded	When the check box is selected (default is cleared), it enables the set hourly alert schedule function and will display an <b>Update Sanitization Log</b> message on the screen.
Set hourly alert schedule	Allows the user to set the number of hours between sanitization log updates and when that number of hours expires an <b>Update Sanitization Log</b> message will appear on the display.

## Shipping the display

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

# 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 display model to find the model-specific QuickSpecs.

## 68.58 cm/27 in model

**Table A-1 68.58 cm/27 in model specifications**

Specification	Measurement	
<b>Display</b>	<b>68.58 cm</b> wide screen	27 in wide screen
<b>Type</b>	IPS	
<b>Viewable image size</b>	<b>68.58 cm</b> diagonal	27 in diagonal
<b>Weight</b> (unpacked)	<b>8.81 kg</b>	19.42 lbs
<b>Dimensions (including stand)</b>		
Height (highest position)	<b>55.49 cm</b>	21.85 in
Height (lowest position)	<b>44.49 cm</b>	17.52 in
Depth	<b>24.70 cm</b>	9.72 in
Width	<b>65.06 cm</b>	25.61 in
<b>Maximum graphic resolution</b>	2560 × 1440 (60 Hz)	
<b>Optimum graphic resolution</b>	2560 × 1440 (60 Hz)	
<b>Environmental requirements temperature</b>		
Operating temperature	5 to 35° C	41 to 95° F
Storage temperature	-20 to 60° C	-4 to 140° F
Transportation temperature	-34° to 60° C	-29° F to 140° F
<b>Transportation storage humidity</b>	5% to 95% RH at 38.7° C	
<b>Transportation atmospheric pressure range</b>	186 hPa~1013 hPa	
<b>IP level</b>	IP32	
<b>Power source</b>	100–240 VAC 50/60 Hz, 29V dc/9.47A	FSP180–ABAM1
<b>Sleep</b>	< 1W	
<b>Off</b>	< 1W	
<b>Input terminal</b>	One DisplayPort port, one USB Type-C port, one HDMI port, one VGA port, one analog audio-in jack, and one USB Type-B port	

## Preset display resolutions

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

### 68.58 cm/27 in model

**Table A-2 Preset display resolutions**

Preset	Pixel format	Horz freq (kHz)	Vert freq (Hz)
1	720 × 400	31.469	70.087
2	800 × 600	37.879	60.317
3	1024 × 768	48.363	60.004
4	1280 × 720	45.000	60.000
5	1280 × 1024	63.981	60.020
6	1440 × 900	55.935	59.887
7	1600 × 900	60.000	60.000
8	1600 × 1200	75.000	60.000
9	1680 × 1050	65.290	59.954
10	1920 × 1080	67.500	60.000
11	1920 × 1200	74.038	59.950
12	1920 × 1200	74.556	59.885
13	2560 × 1440	88.787	59.951

## High-definition video formats

**Table A-3 Preset timing resolutions**

Preset	Timing name	Pixel format	Horz freq (kHz)	Vert freq (Hz)
1	480p	640 × 480	31.469	59.940
2	480p	720 × 480	31.469	59.940
3	720p60	1280 × 720	45.000	60.000
4	576p	720 × 576	31.250	50.000
5	720p50	1280 × 720	37.500	50.000
6*	1080i60	1920 × 1080	33.750	60.000
7*	1080i50	1920 × 1080	28.125	50.000
8	1080p60	1920 × 1080	67.500	60.000
9	1080p50	1920 × 1080	56.250	50.000

\* For HDMI input only



## Energy saver feature

The display supports a reduced power state. The reduced power state will be initiated if the display detects the absence of either the horizontal sync signal or the vertical sync signal. Upon detecting the absence of these signals, the display screen is blanked, the backlight is turned off, and the power light turns amber. When the display is in the reduced power state, the display will utilize less than 1 W of power. There is a brief warm-up period before the display will return 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 power saver feature works only when the display is connected to a computer that has energy saver features.

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

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## 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 35](#).

#### 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 40](#).

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](http://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

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**NOTE:** Support is in English only.

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- 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](#).