Maintenance and Service Guide

HP OmniBook 5 16 inch Laptop Next Gen AI PC
16-ag1xxx, 16-bc1xxx

HP Pavilion 16 inch Laptop PC
16z-ag000, 16-ag0xxx

SUMMARY

This guide provides maintenance information about such topics as spare parts, removal and replacement of parts, security, and backing up.

Legal information

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Product notice

This guide describes features that are common to most models. Some features may not be available on your computer.

Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated, which is always enabled. High-speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.microsoft.com. **If your product ships with Windows in S Mode:** Windows in S Mode works exclusively with apps from the Microsoft Store within Windows. Certain default settings, features, and apps cannot be changed. Some accessories and apps that are compatible with Windows may not work (including some antivirus, PDF writers, driver utilities, and accessibility apps), and performance may vary, even if you switch out of S Mode. If you switch to Windows, you cannot switch back to S Mode. Learn more at Windows.com/SmodeFAQ.

To access the latest user guides, go to http://www.hp.com/support, and follow the instructions to find your product. Then select **Manuals**.

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By installing, copying, downloading, or otherwise using any software product preinstalled on this computer, you agree to be bound by the terms of the HP End User License Agreement (EULA). If you do not accept these license terms, your sole remedy is to return the entire unused product (hardware and software) within 14 days for a full refund subject to the refund policy of your seller.

For any further information or to request a full refund of the price of the computer, please contact your seller.

Safety warning notice

Reduce the possibility of heat-related injuries or of overheating the computer by following the practices described.

⚠ **WARNING!** To reduce the possibility of heat-related injuries or of overheating the computer, do not place the computer directly on your lap or obstruct the computer air vents. Use the computer only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or rugs or clothing, to block airflow. Also, do not allow the AC adapter to come into contact with the skin or a soft surface, such as pillows or rugs or clothing, during operation. The computer and the AC adapter provided by HP comply with the user-accessible surface temperature limits defined by applicable safety standards.

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1 Product description

This table provides detailed product information.

Table 1-1 Product components and their descriptions

Category	Description
Product Name	HP OmniBook 5 16 inch Laptop Next Gen AI PC 16-ag1xxx, 16-bc1xxx
Processors	**AMD® Processors**
	AMD Ryzen™ AI 7 350 (5.0 GHz max frequency, 16 MB L3 cache, 8 cores, 54 W)
	AMD Ryzen AI 7 H 350 (5.0 GHz max frequency, 16 MB L3 cache, 8 cores, 54 W)
	AMD Ryzen AI 5 340 (4.8 GHz max frequency, 16 MB L3 cache, 6 cores, 54 W)
	AMD Ryzen AI 5 H 340 (4.8 GHz max frequency, 16 MB L3 cache, 6 cores, 54 W)
	AMD Ryzen 7-8840U 5.1 GHz processor (8 cores, 16 MB L3 cache, 15 W)
	AMD Ryzen 5-8540U 4.9 GHz processor (6 cores, 16 MB L3 cache, 15 W)
Chipset	AMD integrated soldered-on-chip (SoC)
Graphics	AMD Radeon®
Display	40.6 cm (16.0 in), WUXGA (1920 × 1200), antiglare, LED, ultrawide viewing area (UWVA), National Television System Committee (NTSC) standard, eDP 1.2 without Panel Self Refresh (PSR), LCD flat panel; typical brightness: 300 nits • Nontouchscreen display panel with narrow bent bezel • Touch-on-panel (TOP) display panel with narrow flat bezel
	40.6 cm (16.0 in), WUXGA (1920 × 1200), organic light-emitting diode (OLED) + low blue light (LBL), UWVA, DCI-P3, eDP 1.2 without PSR, 60 Hz VRR, OLED bent panel with narrow flat bezel; typical brightness: 300 nits

Table 1-1 Product components and their descriptions (continued)

Category	Description
Memory	Integrated system memory • 32 GB of RAM • 32 GB of RAM (The People's Republic of China) • 24 GB of RAM • 24 GB of RAM (The People's Republic of China) • 16 GB of RAM • 16 GB of RAM (The People's Republic of China) • 8 GB of RAM
	Low-Power Double Data Rate (LPDDR5 and LPDDR5X) -7500 and 6400
Storage: solid-state drive	Support for the following: • 1 TB, M.2 2280, peripheral component interconnect express (PCIe), nonvolatile memory express (NVMe), value, solid-state drive (SSD) system storage • 1 TB, M.2 2280, peripheral component interconnect express (PCIe), nonvolatile memory express (NVMe), value, solid-state drive (SSD) (The People's Republic of China) • 512 GB, M.2 2280, PCIe, NVMe, value, SSD system storage • 512 GB, M.2 2280, PCIe, NVMe, value, SSD system storage (The People's Republic of China)
Audio and video	Support for the following audio features: • DTS: X Ultra • Dual speakers • HP Audio Boost • XiaoWei
	Support for HP True Vision full high-definition (FHD) Camera - indicator LED, USB2.0, HD BSI sensor, f2.0, wide dynamic range (WDR)/temporal noise reduction (TNR), 80° narrow field-of-view (NFOV), 1080p by 30 frames per second (FPS)
	Support for HP True Vision full high-definition (FHD) Camera - indicator LED, infrared LED, USB2.0, HD BSI sensor, f2.0, wide dynamic range (WDR)/temporal noise reduction (TNR), 80° narrow field-of-view (NFOV), 1080p by 30 frames per second (FPS)
	Support for dual array digital microphones with appropriate software, featuring beam forming, echo cancellation, and noise suppression
Wireless	**Wireless Local Area Network (WLAN)**
	Mediatek RZ616 M.2 2230 Wi-Fi® 6E + Bluetooth® 5.3 AIM-T 160 MHz PCI-e + USB WLAN module
	Realtek 8852BE 2x2 M.2 2230 Wi-Fi 6 ax +Bluetooth WW WLAN

Table 1-1 **Product components and their descriptions (continued)**

Category	Description
Ports	Hot plug/unplug and autodetect for correct output to wide-aspect vs. standard-aspect video
	• Audio-out (headphone)/Audio-in (microphone) combo jack • High-definition multimedia interface (HDMI) 2.1 out up to 4 K @ 60 Hz with HDCP 2.2 through adapter • USB 3.2 Gen 1 Type-A (left side) • USB 3.2 Gen 2 Type-A (right side) • USB 3.2 Gen 2 Type-C® ports (2) (right side) – Power delivery – Data transfer – Display Port 1.4a out up to 4K (60 Hz) out through dongle for HWP – Display Port 2.1 out up to 4K (60 Hz) out through dongle for KRK – HDMI 2.1 out up to 4K (60 Hz) with HDCP 2.2 through dongle – HP Sleep and Charge
Keyboard/pointing devices	**Keyboard:** Island-style notebook PC keyboard with touchpad in the following configurations (includes keyboard cable): • Darker sky blue opaque finish with darker meteor silver opaque keys • Glacier silver finish with soft gray keys
	Touchpad
	Touchpad with image sensor
	Multitouch gestures enabled
	Precision touchpad support
	Taps enabled as default
Power requirements	**Battery:** 3 cell, 59 WHr, Long Life, polymer battery
	AC adapter: 65 W AC adapter, (nPFC, USB Type-C, 1.8 m [6.6 ft])
	Power cord: C5, 1.0 m (3.3 ft), conventional with sticker and C5, 1.0 m (3.3 ft), premium with sticker
Security	• Microphone mute • Privacy camera shutter door • Trusted Platform Module (TPM) 2.0 firmware
Operating system	Windows® 11 Pro
	Windows 11 Pro High End
	Windows 11 Pro High End China
	Windows 11 Pro China
	Windows 11 Pro Value
	Windows 11 Pro Value China
	Windows 11 Pro Entry

Table 1-1 Product components and their descriptions (continued)

Category	Description
	Windows 11 Pro Entry China
	Windows 11 Home 64 Desktop AIO Chinese Market CPPP
	Windows 11 Home in S Mode for Developed Markets (ML)
	Windows 11 Home in S Mode Advanced ML
	Windows 11 Home in S Mode Plus ML
	Windows 11 Home in S Mode ML
	Windows 11 Home in S Mode Value ML
	Windows 11 Home in S Mode Entry ML
	Windows 11 Home in S Mode for Emerging Markets (EM/SL)
	Windows 11 Home in S Mode Advanced SL
	Windows 11 Home in S Mode Plus SL
	Windows 11 Home in S Mode SL
	Windows 11 Home in S Mode Value SL
	Windows 11 Home in S Mode Entry SL
	Windows 11 Home in S Mode for China Market
	Windows 11 Home in S Mode High End CPPP
	Windows 11 Home in S Mode CPPP
	Windows 11 Home in S Mode for APAC Markets
	Windows 11 Home in S Mode Plus SL APAC PPP
	Windows 11 Home in S Mode SL APAC PPP
	Windows 11 Home in S Mode Value SL APAC PPP
	Windows 11 Home in S Mode Entry SL APAC PPP
	Windows 11 Home in S Mode for Africa Markets
	Windows 11 Home in S Mode SL Africa PPP
	Windows 11 Home in S Mode for Indonesia Market
	Windows 11 Home in S Mode Plus SL Indonesia PPP (IDPPP)
	Windows 11 Home in S Mode SL Indonesia PPP (IDPPP)
	Windows 11 Home in S Mode Value SL Indonesia PPP (IDPPP)
	Windows 11 Home in S Mode Entry SL Indonesia PPP (IDPPP)
	Windows 11 Home in S Mode for India Market
	Windows 11 Home in S Mode Plus SL India PPP (IPPP)
	Windows 11 Home in S Mode SL India PPP (IPPP)
	Windows 11 Home in S Mode Value SL India PPP (IPPP)
	Windows 11 Home in S Mode Entry SL India PPP (IPPP)

Table 1-1 Product components and their descriptions (continued)

Category	Description
	Windows 11 Home for Developed Market (ML)
	Windows 11 Home Advanced ML
	Windows 11 Home Plus ML
	Windows 11 Home ML
	Windows 11 Home for Developed Market (ML)
	Windows 11 Home Advanced ML
	Windows 11 Home Plus ML
	Windows 11 Home ML
	Windows 11 Home for Emerging Market (EM/SL)
	Windows 11 Home Advanced SL
	Windows 11 Home Plus SL
	Windows 11 Home SL
	Windows 11 Home Value SL
	Windows 11 Home Entry SL
	Windows 11 Home for China Market
	Windows 11 Home High End China PPP (CPPP)
	Windows 11 Home China PPP (CPPP)
	Windows 11 Home for India Market
	Windows 11 Home Plus SL India PPP (IPPP)
	Windows 11 Home SL India PPP (IPPP)
	Windows 11 Home Value SL India PPP (IPPP)
	Windows 11 Home Entry SL India PPP (IPPP)
	Windows 11 Home for Indonesia Market
	Windows 11 Home Plus SL Indonesia PPP (IDPPP)
	Windows 11 Home SL Indonesia PPP (IDPPP)
	Windows 11 Home Value SL Indonesia PPP (IDPPP)
	Windows 11 Home Entry SL Indonesia PPP (IDPPP)
	Windows 11 Home for APAC Market
	Windows 11 Home Plus SL APAC PPP
	Windows 11 Home SL APAC PPP
	Windows 11 Home Value SL APAC PPP
	Windows 11 Home Entry SL APAC PPP
	Windows 11 Home for Africa PPP Market
	Windows 11 Home Plus SL Africa PPP

Table 1-1 Product components and their descriptions (continued)

Category	Description
	Windows 11 Home SL Africa PPP
	Windows 11 Home Value SL Africa PPP
	Windows 11 Home Entry SL Africa PPP
	Windows 11 Pro Entry China
Serviceability	**End-user replaceable parts**
	AC adapter
	Power cord
	Bottom cover
	Battery

2 Components

Your computer features top-rated components. This chapter provides details about your components, where they are located, and how they work.

Locating hardware

Use these instructions to find out what hardware is installed on your computer:

To find out what hardware is installed on your computer, select the **Search icon** in the taskbar, type `device manager` in the search box, and then select the **Device Manager** app.

For information about system hardware components and the system BIOS version number, press fn+esc (select products only).

Locating software

Use these instructions to find out what software is installed on your computer:

- Right-click the **Start** button, and then select **Apps and Features**.

Right side

Identify the components on the right side of the computer.

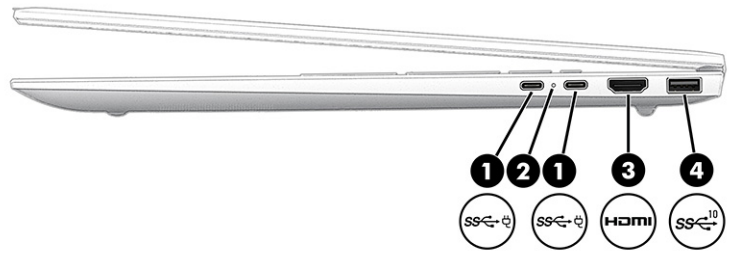


Table 2-1 **Right-side components and their descriptions**

	Component	Description
(1)	USB Type-C power connectors and 10 Gbps ports with HP Sleep and Charge and DisplayPort output (2)	Connect an AC adapter that has a USB Type-C connector, supplying power to the computer and, if needed, charging the computer battery. – and – Connect a USB device, provide high-speed data transfer, and charge small devices (such as a smartphone), even when the computer is off. NOTE: Use a standard USB Type-C charging cable or cable adapter (purchased separately) when charging a small external device. – and – Connect a display device that has a USB Type-C connector, providing DisplayPort output.
(2)	AC adapter and battery light	• White: The AC adapter is connected and the battery is fully charged. • Blinking amber: The AC adapter is disconnected and the battery has reached a low battery level. • Amber: The AC adapter is connected and the battery is charging. • Off: The battery is not charging.
(3)	HDMI port	Connects an optional video or audio device, such as a high-definition television, any compatible digital or audio component, or a high-speed High-Definition Multimedia Interface (HDMI) device.
(4)	USB Type 10 Gbps port	Connects a USB device, provides high-speed data transfer, and (for select products) charges small devices (such as a smartphone) when the computer is on or in Sleep mode. NOTE: Use a standard USB Type-A charging cable or cable adapter (purchased separately) when charging a small external device.

Left side

Identify the components on the left side of the computer.

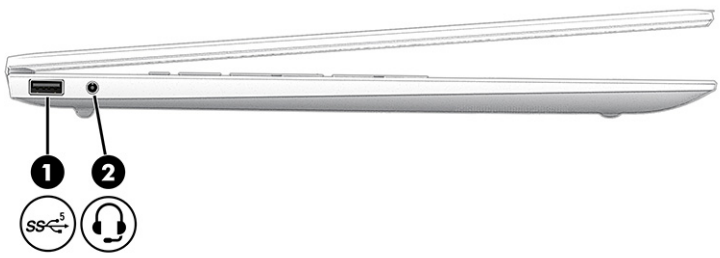


Table 2-2 **Left-side components and their descriptions**

		Component	Description
(1)		USB 5 Gbps port	Connects a USB device, provides high-speed data transfer, and (for select products) charges small devices (such as a smartphone) when the computer is on or in Sleep mode. NOTE: Use a standard USB Type-A charging cable or cable adapter (purchased separately) when charging a small external device.
(2)		Audio-out (headphone)/Audio-in (microphone) combo jack	Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects an optional headset microphone. This jack does not support optional standalone microphones. WARNING! To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, see the *Regulatory, Safety, and Environmental Notices*. To access this guide: ■ Select the **Search** icon in the taskbar, type `HP Documentation` in the search box, and then select **HP Documentation**. NOTE: When a device is connected to the jack, the computer speakers are disabled.

360 modes

If your computer offers 360 modes, the following illustration shows how you can use and fold your device.



Display

The computer display can include essential components such as speakers, antennas, cameras, and microphones.

Low blue light mode (select products only)

Your computer display is shipped from the factory in low blue light mode for improved eye comfort and safety. Also, blue light mode automatically adjusts blue light emissions when you are using the computer at night or for reading.

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

Wake-on-voice (select products only)

Use the wake-on-voice feature to bring the computer out of the Sleep state quickly.

To access the wake-on-voice settings, follow these steps:

1. Select the **Search** icon in the taskbar, type `XiaoWei` in the search box, and then select **XiaoWei**.
2. When the tool opens, scan the QR code with your mobile device, which takes you to the settings page, where you can select your wake-on-voice features.
3. Follow the on-screen instructions.

NOTE: Allow the XiaoWei app to continue running on the computer.

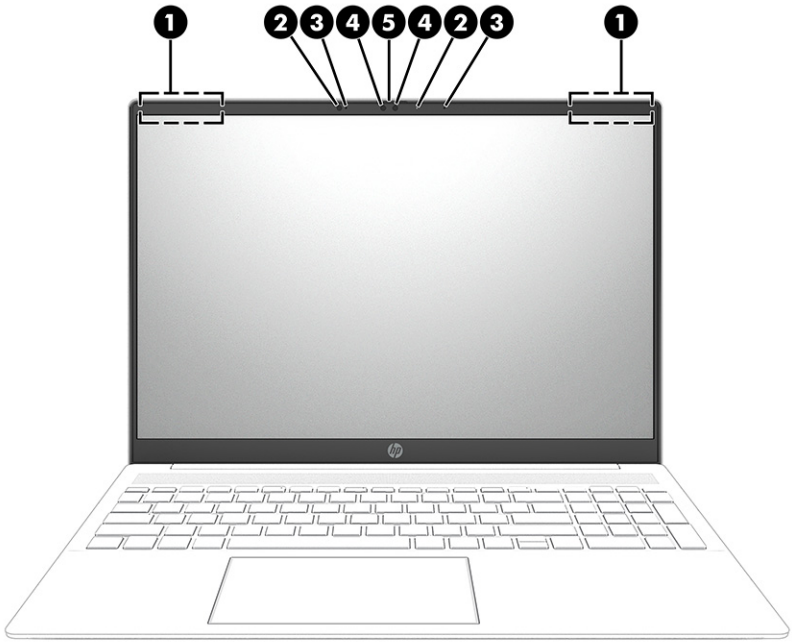


Table 2-3 **Display components and their descriptions**

	Component	Description
(1)	WLAN antennas* (2)	Send and receive wireless signals to communicate with wireless local area networks (WLANs).
(2)	Camera lights (2) (select products only)	On: One or more cameras are in use.
(3)	Internal microphones (2)	Record sound.
(4)	Cameras (2) (select products only)	Allow you to video chat, record video, and record still images. Some cameras also allow a facial recognition logon to Windows, instead of a password logon. NOTE: Camera functions vary depending on the camera hardware and software installed on your product.
(5)	Camera privacy cover	By default, the camera lens is uncovered, but you can slide the camera privacy cover to block the camera's view. To use the camera, slide the camera privacy cover in the opposite direction to reveal the lens. NOTE: If you have both front-facing and rear-facing cameras, when one camera lens is revealed and ready to use, the other is concealed.

*The antennas are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas free from obstructions.

For wireless regulatory notices, see the section of the *Regulatory, Safety, and Environmental Notices* that applies to your country or region.

To access this guide:

- Select the **Search** icon in the taskbar, type `HP Documentation` in the search box, and then select **HP Documentation**.

Keyboard area

Keyboards can vary by language.

NOTE: The keyboard area, including the function keys and (select products only) power key, is disabled in stand, tent, and tablet modes. To enable the keyboard, including the power key, change to the clamshell mode.

Touchpad settings and components

Learn the touchpad settings and components.

Touchpad settings

Learn how to adjust touchpad settings.

Adjusting touchpad settings

Use these steps to adjust touchpad settings and gestures.

1. Select the **Search** icon in the taskbar, type `touchpad settings` in the search box, and then press enter.
2. Choose a setting.

Turning on the touchpad

Follow these steps to turn on the touchpad.

1. Select the **Search** icon in the taskbar, type `touchpad settings` in the search box, and then press enter.
2. Using an external mouse, click the **Touchpad** button.

   If you are not using an external mouse, press the Tab key repeatedly until the pointer rests on the **touchpad** button. Then press the spacebar to select the button.

Touchpad components

Identify the touchpad components.

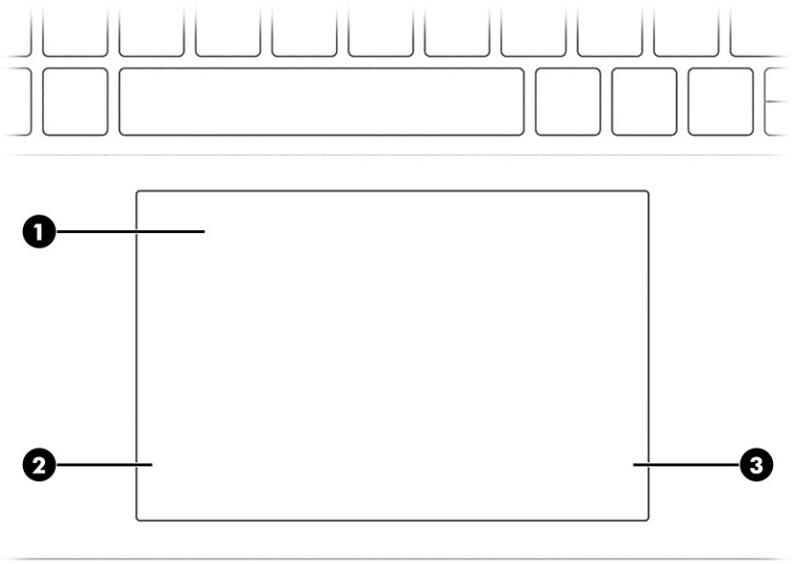


Table 2-4 Touchpad components and their descriptions

	Component	Description
(1)	Touchpad zone	Reads your finger gestures to move the pointer or activate items on the screen.
(2)	Left touchpad button	Functions like the left button on an external mouse.
(3)	Right touchpad button	Functions like the right button on an external mouse.

Lights

Identify the lights on the computer.

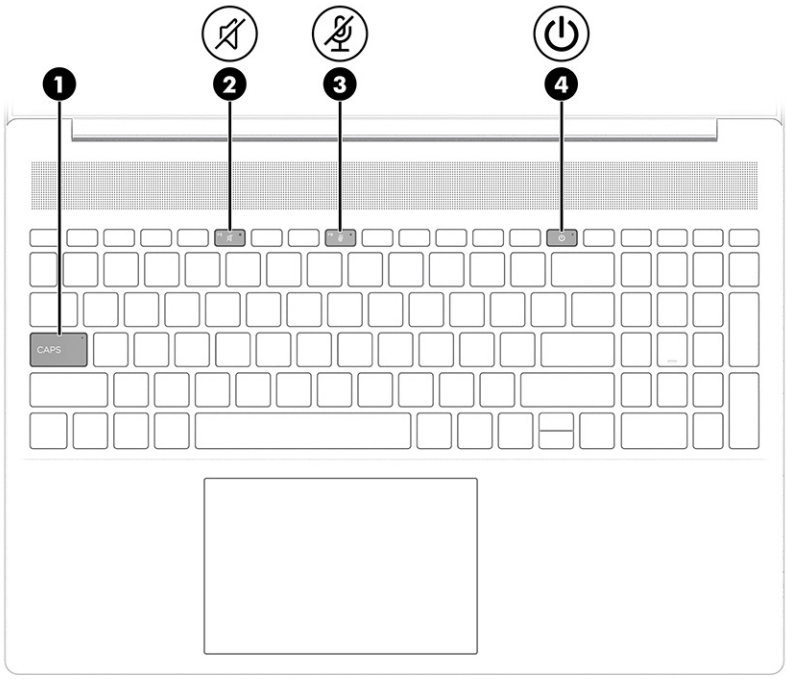


Table 2-5 Lights and their descriptions

		Component	Description
(1)		Caps lock light	On: Caps lock is on, which switches the key input to all capital letters.
(2)		Mute light	• On: Computer sound is off. • Off: Computer sound is on.
(3)		Microphone mute light	• On: Microphone is off. • Off: Microphone is on.
(4)		Power light	• On: The computer is on. • Blinking (select products only): The computer is in the Sleep state, a power-saving state. The computer shuts off power to the display and other unnecessary components. • Off: Depending on your computer model, the computer is off, in Hibernation, or in Sleep. Hibernation is the power-saving state that uses the least amount of power.

Special keys

Identify the special keys.

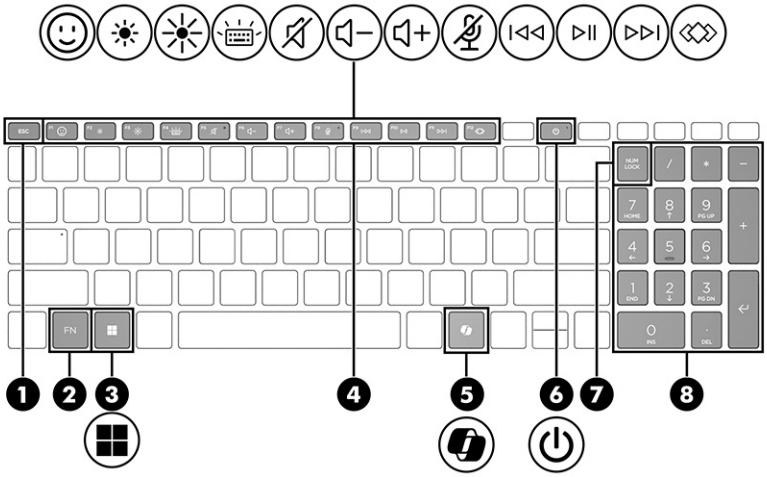


Table 2-6 Special keys and their descriptions

		Component	Description
(1)		esc key	Displays system information when pressed in combination with the fn key.
(2)		fn key	Executes specific functions when pressed in combination with another key.
(3)		Windows key	Opens the Start menu. **NOTE:** Pressing the Windows key again will close the Start menu.
(4)		Action keys	Execute frequently used system functions as defined by the icon symbols on f1 through f12 function keys.
(5)		Windows Copilot key	Opens Windows Copilot (select products only). Copilot in Windows (select products only) requires Windows 11. Some features require a neural processing unit (NPU). The timing of feature delivery and availability varies by market and device. You must have a Microsoft account to use the Copilot feature. When the Copilot feature is not available, pressing the Copilot key opens the Bing search engine. See http://aka.ms/WindowsAIFeatures.

Table 2-6 **Special keys and their descriptions (continued)**

		Component	Description
(6)		Power button	• When the computer is off, press the button briefly to turn on the computer. • When the computer is on, press the button briefly to initiate Sleep. • When the computer is in the Sleep state, press the button briefly to exit Sleep (select products only). • When the computer is in Hibernation, press the button briefly to exit Hibernation. **IMPORTANT:** Pressing and holding down the power button results in the loss of unsaved information. If the computer has stopped responding and shutdown procedures are ineffective, press and hold the power button down for at least 10 seconds to turn off the computer. To learn more about your power and sleep settings: ▪ Right-click the **Power** icon , and then select **Power and sleep settings**.
(7)		num lock key	Alternates between the navigational and numeric functions on the integrated numeric keypad.
(8)		Integrated numeric keypad	A separate keypad to the right of the alphabet keyboard. When num lock is pressed, the keypad can be used like an external numeric keypad. **NOTE:** If the keypad function is active when the computer is turned off, that function is reinstated when the computer is turned back on.

Bottom

Identify the bottom components.

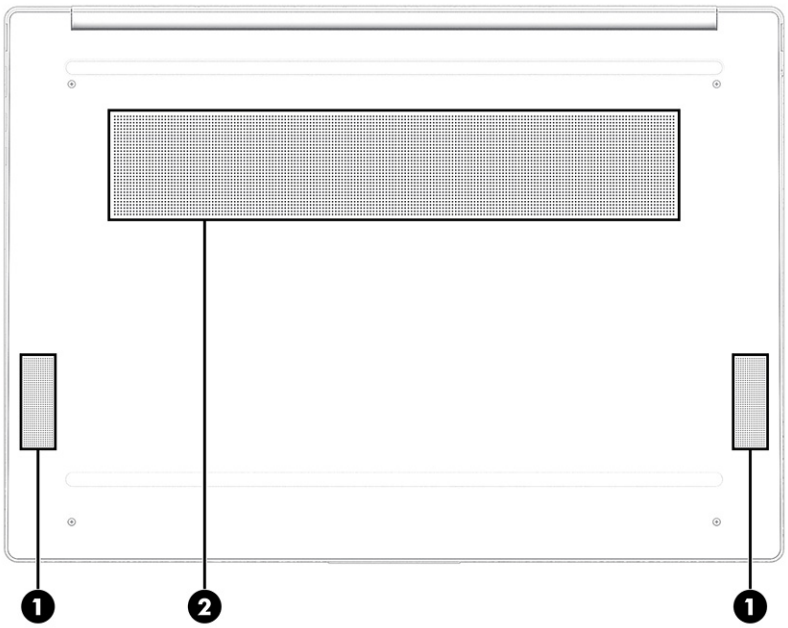


Table 2-7 Bottom components and their descriptions

	Component	Description
(1)	Speakers (2)	Produce sound.
(2)	Vent	Enables airflow to cool internal components. NOTE: The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.

Labels

The labels affixed to the computer provide information that you might need when you troubleshoot system problems or travel internationally with the computer. Labels can be in paper form or imprinted on the product.

IMPORTANT: Check the following locations for the labels described in this section: the bottom of the computer, inside the battery bay, under the service door, on the back of the display, or on the bottom of a tablet kickstand.

- Service label—Provides important information to identify your computer. When contacting support, you might be asked for the serial number, the product number, or the model number. Locate this information before you contact support.

  Your service label will resemble one of the following examples. Refer to the illustration that most closely matches the service label on your computer.

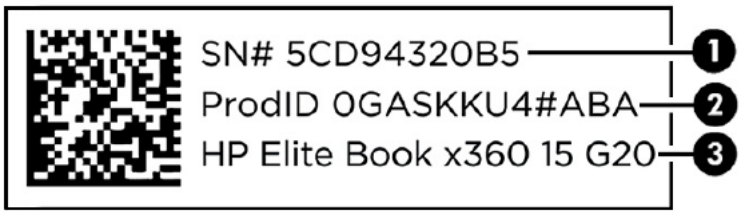


Table 2-8 Service label components

Component	
(1)	Serial number
(2)	Product ID
(3)	HP product name and model number

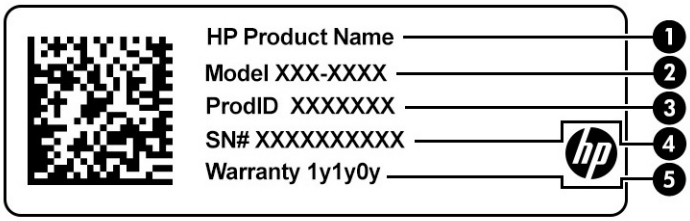


Table 2-9 Service label components

Component	
(1)	HP product name
(2)	Model number
(3)	Product ID
(4)	Serial number
(5)	Warranty period

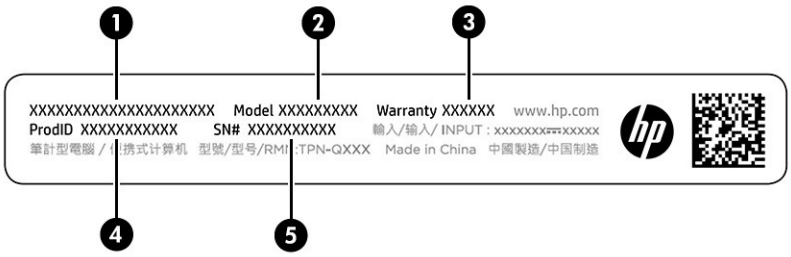


Table 2-10 Service label components

Component	
(1)	HP product name

Table 2-10 Service label components (continued)

Component	
(2)	Model number
(3)	Warranty period
(4)	Product ID
(5)	Serial number

- Regulatory labels—Provide regulatory information about the computer.
- Wireless certification labels—Provide information about optional wireless devices and the approval markings for the countries or regions in which the devices have been approved for use.

3 Illustrated parts catalog

Use this information to determine the spare parts that are available for the computer.

Computer major components

To identify the computer major components, use this illustration and table.

NOTE: HP continually improves and changes product parts. For complete and current information about supported parts for your computer, go to http://partsurfer.hp.com, select your country or region, and then follow the on-screen instructions.

NOTE: Details about your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer.

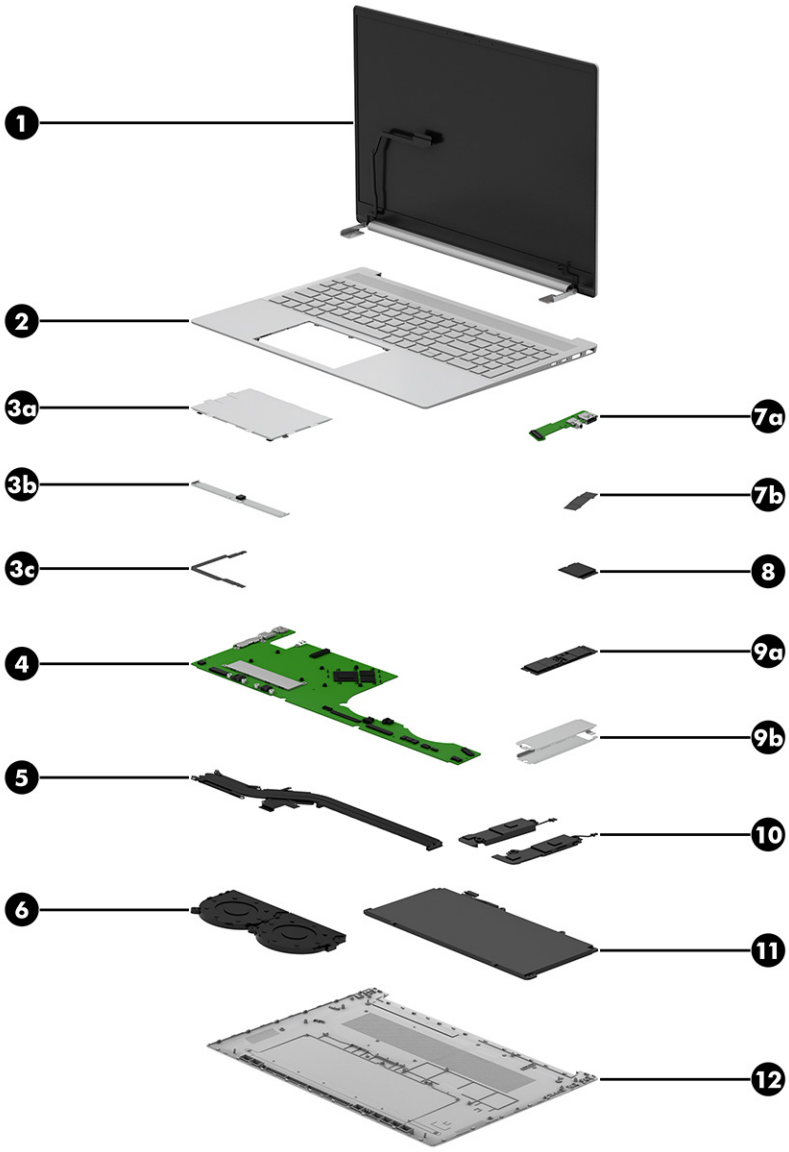


Table 3-1 Computer major component descriptions and part numbers

Item	Component	Spare part number
(1)	**Display assembly** NOTE: Display spare parts are available only as subcomponents. For spare part information, see Display assembly subcomponents on page 23.	
(2)	**Top cover and keyboard**	
	Darker sky blue opaque finish with darker meteor silver opaque keys (includes backlight cable and keyboard cable)	P34237-xxx
	Glacier silver finish with soft gray keys (includes keyboard cable)	P34238-xxx
	NOTE: For a detailed list of country codes, see Top cover and keyboard on page 72.	

Table 3-1 Computer major component descriptions and part numbers (continued)

Item	Component	Spare part number
(3a)	**Touchpad** NOTE: The touchpad spare part kit does not include the touchpad bracket or the touchpad cable. The touchpad bracket is not available as a spare part. The touchpad cable is available using spare part number N94794-001.	
	Darker sky blue finish	N94793-001
	Glacier silver finish	P33602-001
(3b)	**Touchpad bracket**: Not available as a spare part	
(3c)	**Touchpad cable** (includes double-sided adhesive)	N94794-001
(4)	**System board** (includes integrated processor, a graphics subsystem with UMA memory, and replacement thermal material)	
	Equipped with an AMD Ryzen AI 7 350 processor, 32 GB of system memory, and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33576-601
	Equipped with an AMD Ryzen AI 7 350 processor, 32 GB of system memory, flexible OLED (FOLED), and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33579-601
	Equipped with an AMD Ryzen AI 7 350 processor, 24 GB of system memory, and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33577-601
	Equipped with an AMD Ryzen AI 7 350 processor, 16 GB of system memory, and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33575-601
	Equipped with an AMD Ryzen AI 7 350 processor, 16 GB of system memory, flexible OLED (FOLED), and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33578-601
	Equipped with an AMD Ryzen AI 5 340 processor, 16 GB of system memory, and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33574-601
	Equipped with an AMD Ryzen AI 7 350 processor, 32 GB of system memory, and the Windows 11 operating system for use only in the People's Republic of China	P33590-601
	Equipped with an AMD Ryzen AI 7 350 processor, 24 GB of system memory, and the Windows 11 operating system for use only in the People's Republic of China	P33591-601
	Equipped with an AMD Ryzen AI 7 350 processor, 16 GB of system memory, and the Windows 11 operating system for use only in the People's Republic of China	P33589-601
	Equipped with an AMD Ryzen AI 5 340 processor, 16 GB of system memory, and the Windows 11 operating system for use only in the People's Republic of China	P33588-601
	Equipped with an AMD Ryzen R7 8840U processor, 16 GB of system memory, and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33582-601
	Equipped with an AMD Ryzen R7 8840U processor, 16 GB of system memory, and the Windows 11 operating system for use only in the People's Republic of China	P33586-601
	Equipped with an AMD Ryzen R5 8540U processor, 16 GB of system memory, and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33580-601
	Equipped with an AMD Ryzen R5 8540U processor, 16 GB of system memory, and the Windows 11 operating system for use only in the People's Republic of China	P33584-601
	Equipped with an AMD Ryzen R5 8540U processor, 8 GB of system memory, and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33581-601

Table 3-1 Computer major component descriptions and part numbers (continued)

Item	Component	Spare part number
	Equipped with an AMD Ryzen R5 8540U processor, 8 GB of system memory, and the Windows 11 operating system for use only in the People's Republic of China	P33585-601
(5)	**Heat sink** (includes captive screws and replacement thermal material)	P33595-001
(6)	**Fans** (includes cable)	N94801-001
(7a)	**Connector board** (includes connector) NOTE: The connector board spare part kit does not include the connector board cable. The connector cable is available using spare part number N94774-001.	N94773-001
(7b)	**Connector board cable**	N94774-001
(8)	**WLAN module**	
	Realtek 8852BE M.2 2230 Wi-Fi 6 + Bluetooth 5.3 worldwide WLAN module	M91238-005
	Mediatek RZ616 M.2 2230 Wi-Fi 6E + Bluetooth 5.3 AIM-T 160 MHz PCI-e + USB WLAN module	N22541-005
	Realtek 8852BE-VT M.2 2230 Wi-Fi 6 11ax +Bluetooth 5.4 WW WLAN	P06350-005
	WLAN antenna plate (not illustrated): Included in the Miscellaneous Kit, spare part number N94790-001.	
(9a)	**SSD**	
	512 GB, M.2 2280, PCIe-4×4, NVMe, SSD for use in all countries and regions except the People's Republic of China	N45476-005
	1 TB, M.2 2280, PCIe-4×4, NVMe, value SSD for use only in the People's Republic of China	N77394-005
	512 GB, M.2 2280, PCIe-4×4, NVMe, SSD for use only in the People's Republic of China	N77392-005
	1 TB, M.2 2280, PCIe-4×4, NVMe, value SSD for use in all countries and regions except the People's Republic of China	N45474-005
(9b)	**SSD bracket**	Not available as a spare part
(10)	**Speakers** (includes left and right speakers, cables, and four rubber isolators)	N94802-001
(11)	**3 cell, 59 Whr, LI-ion battery** (includes cable)	N66215-005
	Battery cable (not illustrated)	N94799-001
(12)	**Bottom cover** (includes three rubber feet)	
	Glacier silver finish	P34240-001
	Sky blue finish	P34633-001

Display assembly subcomponents

To identify the display assembly subcomponents, use this illustration and table.

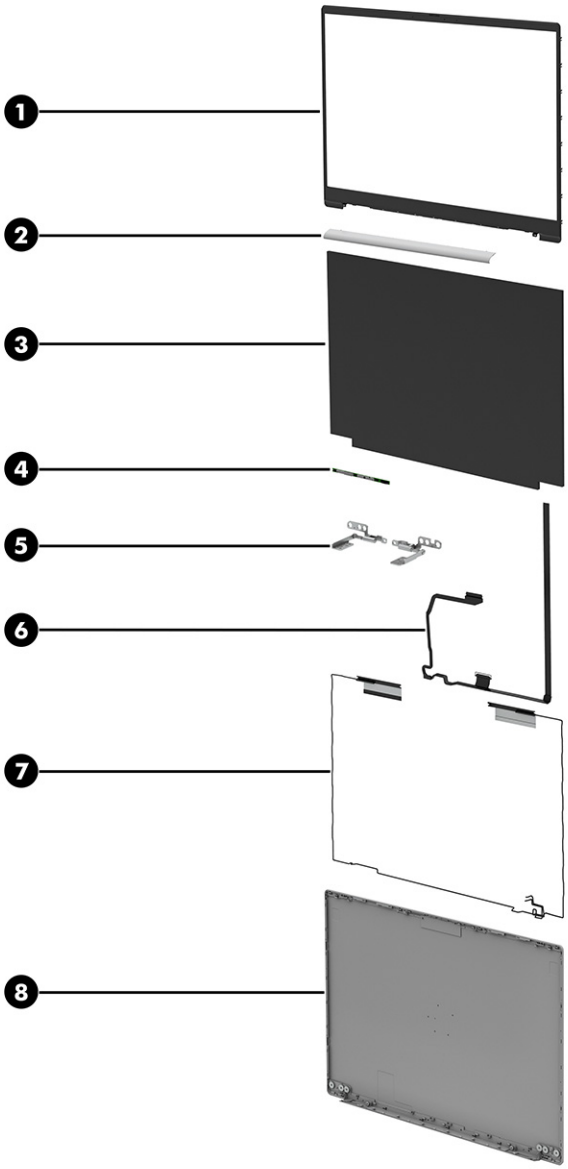


Table 3-2 Display component descriptions and part numbers

Item	Component	Spare part number
(1)	**Display bezel** (includes display hinge cap)	
	Glacier silver finish for use on computer models equipped with an infrared webcam	P33598-001
	Glacier silver finish for use on computer models not equipped with an infrared webcam	P33624-001
	Sky blue finish for use on computer models equipped with an infrared webcam	N94784-001
	Display Adhesive Kit (not illustrated, includes double-sided adhesive for use on display bezel)	N94787-001
(2)	**Display hinge cap** NOTE: The display hinge cap is included in the display bezel spare part kit.	
(3)	**Display panel**	

Table 3-2 Display component descriptions and part numbers (continued)

Item	Component	Spare part number
	40.6 cm (16.0 in), 2K (2048 × 1280), brightview, organic light-emitting diode (OLED) + low blue light (LBL), ultrawide viewing area (UWVA), Digital Cinema Initiatives - Protocol 3 (DCI-P3), embedded DisplayPort™ (eDP) 1.4 + panel self-refresh (PSR) 2, 120 Hz variable refresh rate (VRR), non-touchscreen display panel with narrow bent bezel; typical brightness: 400 nits	P33622-001
	40.6 cm (16.0 in), WUXGA (1920 × 1200), antiglare, LED, ultrawide viewing area (UWVA), National Television System Committee (NTSC) standard, eDP 1.2 without PSR, non-touchscreen display panel with narrow bent bezel, LCD flat panel; typical brightness: 300 nits	P33593-001
	40.6 cm (16.0 in), WUXGA (1920 × 1200), antiglare, LED, UWVA, NTSC standard, eDP 1.2 without PSR, touch-on-panel (TOP) display panel with narrow flat bezel, LCD flat panel; typical brightness: 300 nits	P33594-001
	40.6 cm (16.0 in), WUXGA (1920 × 1200), organic light-emitting diode (OLED) + low blue light (LBL), UWVA) DCI-P3), eDP 1.2 without PSR, 60 Hz VRR, OLED bent panel with narrow flat bezel; typical brightness: 300 nits	P33592-001
(4)	**Webcam/microphone module** (includes microphone rubber covers and double-sided adhesive) NOTE: The webcam/microphone module spare part kit does not include the webcam/microphone module cable. The webcam/microphone module cable is included in the display panel cable spare part kit.	
	For use on computer models equipped with an infrared webcam	N94789-001
	For use on computer models not equipped with an infrared webcam	N94788-001
(5)	**Display hinges** (2, includes left and right hinges)	N94778-001
(6)	**Display panel cable** (includes webcam/microphone module cable and double-sided adhesive)	
	For use on computer models equipped with a touchscreen display panel	N94786-001
	For use on computer models not equipped with a touchscreen display panel	N94785-001
(7)	**WLAN antennas** (includes left and right WLAN antenna cables and transceivers and double-sided adhesive)	N94790-001
(8)	**Display back cover** (includes wireless antenna cables)	
	Glacier silver finish	P34240-001
	Sky blue finish	P34633-001

Miscellaneous parts

To identify the miscellaneous parts, use this table.

Table 3-3 Miscellaneous part descriptions and part numbers

Component	Spare part number
AC adapter	
65 W AC adapter (nPFC, USB Type-C, 1.8 m [6.6 ft], HF)	N90678-001
65 W AC adapter (nPFC, USB Type-C, 1.8 m [6.6 ft])	L67440-001
HP USB External DVD+-RW Drive	747080-001
Miscellaneous Kit (includes connector board connector plate, SSD thermal pad, and WLAN antenna plate)	P33599-001

Table 3-3 Miscellaneous part descriptions and part numbers (continued)

Component	Spare part number
Mouse	
HP 240 Bluetooth black mouse	M61216-001
HP Z3700 dual silver wireless mouse	N33387-001
Power cord (C5, 1.0 m [3.3 ft], conventional with sticker) + AC adapter bundle for use in Thailand	M85418-001
Power cord (C5, 1.0 m [3.3 ft], conventional with sticker, halogen free [HF])	M79264-001
Power cord (C5, 1.0 m [3.3 ft], conventional with sticker, HF)	M79266-001
Power cord (C5, 1.0 m [3.3 ft], conventional with sticker)	
For use in Australia	L19358-001
For use in Denmark	L19360-001
For use in Europe	L19361-001
For use in India	L19363-001
For use in Israel	L19362-001
For use in Japan	L19365-001
For use in North America	L19367-001
For use in the People's Republic of China	L19368-001
For use in South Africa	L19369-001
For use in South Korea	L19366-001
For use in Switzerland	L19370-001
For use in Taiwan	L19372-001
For use in Thailand	L19371-001
For use in the United Kingdom	L19373-001
Screw Kit	P33597-001

4 Removal and replacement procedures preliminary requirements

Use this information to properly prepare to disassemble and reassemble the computer.

Tools required

You need the following tools to complete the removal and replacement procedures:

- Magnetic Phillips P1 screwdriver
- Nonconductive, nonmarking pry tool
- Suction cups (2)
- Torx T5 screwdriver
- Tweezers

Service considerations

The following sections include some of the considerations that you must keep in mind during disassembly and assembly procedures.

NOTE: As you remove each subassembly from the computer, place the subassembly and all accompanying screws away from the work area to prevent damage.

Plastic parts

Using excessive force during disassembly and reassembly can damage plastic parts.

Cables and connectors

Handle cables with extreme care to avoid damage.

IMPORTANT: When servicing the computer, be sure that cables are placed in their proper locations during the reassembly process. Improper cable placement can damage the computer.

Apply only the tension required to unseat or seat the cables during removal and insertion. Handle cables by the connector whenever possible. In all cases, avoid bending, twisting, or tearing cables. Be sure that cables are routed so that they cannot be caught or snagged as you remove or replace parts. Handle flex cables with extreme care; these cables tear easily.

Drive handling

Note the following guidelines when handling drives.

IMPORTANT: Drives are fragile components. Handle them with care. To prevent damage to the computer, damage to a drive, or loss of information, observe these precautions:

- Before removing or inserting a hard drive, shut down the computer. If you are unsure whether the computer is off or in Hibernation or Sleep mode, turn the computer on, and then shut it down through the operating system.
- Before handling a drive, be sure that you are discharged of static electricity. While handling a drive, avoid touching the connector.
- Before removing an optical drive, be sure that a disc is not in the drive, and be sure that the optical drive tray is closed.
- Handle drives on surfaces covered with at least 2.54 cm (1 inch) of shock-proof foam.
- Avoid dropping drives from any height onto any surface.
- After removing a hard drive or an optical drive, place it in a static-proof bag.
- Avoid exposing an internal hard drive to products that have magnetic fields, such as monitors or speakers.
- Avoid exposing a drive to temperature extremes or liquids.
- If a drive must be mailed, place the drive in a bubble pack mailer or other suitable form of protective packaging, and label the package “FRAGILE.”

Electrostatic discharge information

A sudden discharge of static electricity from your finger or other conductor can destroy static-sensitive devices or microcircuitry. Often the spark is neither felt nor heard, but damage occurs. An electronic device exposed to electrostatic discharge (ESD) might not appear to be affected at all and can work perfectly throughout a normal cycle. The device might function normally for a while, but it has been degraded in the internal layers, reducing its life expectancy.

Networks built into many integrated circuits provide some protection, but in many cases, the discharge contains enough power to alter device parameters or melt silicon junctions.

IMPORTANT: To prevent damage to the device when you remove or install internal components, observe these precautions:

- Keep components in their electrostatic-safe containers until you are ready to install them.
- Before touching an electronic component, discharge static electricity by using the guidelines described in Personal grounding methods and equipment on page 30.
- Avoid touching pins, leads, and circuitry. Handle electronic components as little as possible.
- If you remove a component, place it in an electrostatic-safe container.

Generating static electricity

Follow these static electricity guidelines:

- Different activities generate different amounts of static electricity.
- Static electricity increases as humidity decreases.

Table 4-1 Static electricity occurrence based on activity and humidity

Event	55% relative humidity	40% relative humidity	10% relative humidity
Walking across carpet	7,500 V	15,000 V	35,000 V
Walking across vinyl floor	3,000 V	5,000 V	12,000 V
Motions of bench worker	400 V	800 V	6,000 V
Removing dual in-line packages (DIPs) from plastic tube	400 V	700 V	2,000 V
Removing DIPs from vinyl tray	2,000 V	4,000 V	11,500 V
Removing DIPs from polystyrene foam	3,500 V	5,000 V	14,500 V
Removing bubble pack from PCB (printed circuit board)	7,000 V	20,000 V	26,500 V
Packing PCBs in foam-lined box	5,000 V	11,000 V	21,000 V

NOTE: Multiple electric components can be packaged together in plastic tubes, trays, or polystyrene foam.

As little as 700 V of static electricity can degrade a product.

Preventing electrostatic damage to equipment

Many electronic components are sensitive to ESD. Circuitry design and structure determine the degree of sensitivity.

The following packaging and grounding precautions are necessary to prevent static electricity damage to electronic components:

- To avoid hand contact, transport products in static-safe containers such as tubes, bags, or boxes.
- Protect all electrostatic parts and assemblies with conductive or approved containers or packaging.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free stations.
- Place items on a grounded surface before removing them from their container.
- Always be properly grounded when touching a sensitive component or assembly.
- Avoid contact with pins, leads, or circuitry.
- Place reusable electrostatic-sensitive parts from assemblies in protective packaging or conductive foam.

Personal grounding methods and equipment

Using certain equipment can prevent static electricity damage to electronic components.

- **Wrist straps** are flexible straps with a maximum of 1 MΩ ±10% resistance in the ground cords. To provide proper ground, wear a strap snug against bare skin. Verify that the ground cord is connected and fits snugly into the banana plug connector on the grounding mat or workstation.
- You can use **heel straps, toe straps, and boot straps** at standing workstations. These straps are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use them on both feet with a maximum of 1 MΩ ±10% resistance between the operator and ground.

Table 4-2 **Static shielding protection levels**

Method	Voltage
Antistatic plastic	1,500
Carbon-loaded plastic	7,500
Metallized laminate	15,000

Grounding the work area

To prevent static damage at the work area, follow these precautions:

- Cover the work surface with approved static-dissipative material.
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use static-dissipative mats, foot straps, or air ionizers to give added protection.
- Handle electrostatic sensitive components, parts, and assemblies by the case or PCB laminate. Handle them only at static-free work areas.
- Turn off power and input signals before inserting and removing connectors or test equipment.

- Use fixtures made of static-safe materials when fixtures must directly contact dissipative surfaces.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and polystyrene foam.
- Use conductive field service tools, such as cutters, screwdrivers, and vacuums.
- Avoid contact with pins, leads, or circuitry.

Recommended materials and equipment

HP recommends certain materials and equipment to prevent static electricity:

- Antistatic tape
- Antistatic smocks, aprons, or sleeve protectors
- Conductive bins and other assembly or soldering aids
- Conductive foam
- Conductive tabletop workstations with ground cord of 1 MΩ ±10% resistance
- Static-dissipative table or floor mats with hard tie to ground
- Field service kits
- Static awareness labels
- Wrist straps and footwear straps providing 1 MΩ ±10% resistance
- Material handling packages
- Conductive plastic bags
- Conductive plastic tubes
- Conductive tote boxes
- Opaque shielding bags
- Transparent metallized shielding bags
- Transparent shielding tubes

Cleaning your computer

Cleaning your computer regularly removes dirt and debris so that your device continues to operate at its best. Use the following information to safely clean the external surfaces of your computer.

Enabling HP Easy Clean (select products only)

HP Easy Clean helps you to avoid accidental input while you clean the computer surfaces. This software disables devices such as the keyboard, touch screen, and touchpad for a preset amount of time so that you can clean all computer surfaces.

1. Start HP Easy Clean in one of the following ways:
   - Select the **Start** menu, and then select **HP Easy Clean**.
   - Select the **HP Easy Clean** icon in the taskbar.
   - Select **Start**, and then select the **HP Easy Clean** tile.
2. Now that your device is disabled for a short period, see Removing dirt and debris from your computer on page 32 for the recommended steps to clean the high-touch, external surfaces on your computer. After you remove the dirt and debris, you can also clean the surfaces with a disinfectant. See Cleaning your computer with a disinfectant on page 33 for guidelines to help prevent the spread of harmful bacteria and viruses.

Removing dirt and debris from your computer

Here are the recommended steps to clean dirt and debris from your computer.

For computers with wood veneer, see Caring for wood veneer (select products only) on page 34.

1. Wear disposable gloves made of latex (or nitrile gloves, if you are latex-sensitive) when cleaning the surfaces.
2. Turn off your device and unplug the power cord and other connected external devices. Remove any installed batteries from items such as wireless keyboards.

⚠ **CAUTION:** To prevent electric shock or damage to components, never clean a product while it is turned on or plugged in.

3. Moisten a microfiber cloth with water. The cloth should be moist, but not dripping wet.

IMPORTANT: To avoid damaging the surface, avoid abrasive cloths, towels, and paper towels.

4. Wipe the exterior of the product gently with the moistened cloth.

IMPORTANT: Keep liquids away from the product. Avoid getting moisture in any openings. If liquid makes its way inside your HP product, it can cause damage to the product. Do not spray liquids directly on the product. Do not use aerosol sprays, solvents, abrasives, or cleaners containing hydrogen peroxide or bleach that might damage the finish.

5. Start with the display (if applicable). Wipe carefully in one direction, and move from the top of the display to the bottom. Finish with any flexible cables, like power cord, keyboard cable, and USB cables.
6. Be sure that surfaces have completely air-dried before turning the device on after cleaning.

7. Discard the gloves after each cleaning. Clean your hands immediately after you remove the gloves.

See Cleaning your computer with a disinfectant on page 33 for recommended steps to clean the high-touch, external surfaces on your computer to help prevent the spread of harmful bacteria and viruses.

Cleaning your computer with a disinfectant

The World Health Organization (WHO) recommends cleaning surfaces, followed by disinfection, as a best practice for preventing the spread of viral respiratory illnesses and harmful bacteria.

After cleaning the external surfaces of your computer using the steps in Removing dirt and debris from your computer on page 32, Caring for wood veneer (select products only) on page 34, or both, you might also choose to clean the surfaces with a disinfectant. A disinfectant that is within HP's cleaning guidelines is an alcohol solution consisting of 70% isopropyl alcohol and 30% water. This solution is also known as rubbing alcohol and is sold in most stores.

Follow these steps when disinfecting high-touch, external surfaces on your computer:

1. Wear disposable gloves made of latex (or nitrile gloves, if you are latex-sensitive) when cleaning the surfaces.
2. Turn off your device and unplug the power cord and other connected external devices. Remove any installed batteries from items such as wireless keyboards.

⚠ **CAUTION:** To prevent electric shock or damage to components, never clean a product while it is turned on or plugged in.

3. Moisten a microfiber cloth with a mixture of 70% isopropyl alcohol and 30% water. The cloth should be moist, but not dripping wet.

⚠ **CAUTION:** Do not use any of the following chemicals or any solutions that contain them, including spray-based surface cleaners: bleach, peroxides (including hydrogen peroxide), acetone, ammonia, ethyl alcohol, methylene chloride, or any petroleum-based materials, such as gasoline, paint thinner, benzene, or toluene.

IMPORTANT: To avoid damaging the surface, avoid abrasive cloths, towels, and paper towels.

4. Wipe the exterior of the product gently with the moistened cloth.

IMPORTANT: Keep liquids away from the product. Avoid getting moisture in any openings. If liquid makes its way inside your HP product, it can cause damage to the product. Do not spray liquids directly on the product. Do not use aerosol sprays, solvents, abrasives, or cleaners containing hydrogen peroxide or bleach that might damage the finish.

5. Start with the display (if applicable). Wipe carefully in one direction, and move from the top of the display to the bottom. Finish with any flexible cables, like power cord, keyboard cable, and USB cables.
6. Be sure that surfaces have completely air-dried before turning the device on after cleaning.
7. Discard the gloves after each cleaning. Clean your hands immediately after you remove the gloves.

Caring for wood veneer (select products only)

Your product might feature high-quality wood veneer. As with all natural wood products, proper care is important for best results over the life of the product. Because of the nature of natural wood, you might see unique variations in the grain pattern or subtle variations in color, which are normal.

- Clean the wood with a dry, static-free microfiber cloth or chamois.
- Avoid cleaning products containing substances such as ammonia, methylene chloride, acetone, turpentine, or other petroleum-based solvents.
- Do not expose the wood to sun or moisture for long periods of time.
- If the wood becomes wet, dry it by dabbing with an absorbent, lint-free cloth.
- Avoid contact with any substance that might dye or discolor the wood.
- Avoid contact with sharp objects or rough surfaces that might scratch the wood.

See Removing dirt and debris from your computer on page 32 for the recommended steps to clean the high-touch, external surfaces on your computer. After you remove the dirt and debris, you can also clean the surfaces with a disinfectant. See Cleaning your computer with a disinfectant on page 33 for sanitizing guidelines to help prevent the spread of harmful bacteria and viruses.

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

- To avoid hand contact, transport products in static-safe tubes, bags, or boxes.
- Protect ESD-sensitive parts and assemblies with conductive or approved containers or packaging.
- Keep ESD-sensitive parts in their containers until the parts arrive at static-free workstations.
- Place items on a grounded surface before removing items from their containers.
- Always be properly grounded when touching a component or assembly.
- Store reusable ESD-sensitive parts from assemblies in protective packaging or nonconductive foam.
- Use transporters and conveyors made of antistatic belts and roller bushings. Be sure that mechanized equipment used for moving materials is wired to ground and that proper materials are selected to avoid static charging. When grounding is not possible, use an ionizer to dissipate electric charges.

Accessing support information

To find the HP support that you need, use this information.

Table 4-3 **Support information locations**

Service consideration	Path to access information
Records of reported failure incidents stored on the computer	**Windows®:** Preoperating system failures are logged in the BIOS Event Log. To view the BIOS Event Log: 1. Press the power button. 2. Immediately and repeatedly press esc when the power button light turns white. NOTE: If you do not press esc at the appropriate time, you must restart the computer and again repeatedly press esc when the power button light turns white to access the utility. 3. Press f10 to enter the BIOS setup. 4. Complete one of these tasks: • (On commercial products) Under the **Main** tab, select **BIOS event log**, and then select **View BIOS Event Log**. • (On consumer products) Under the **Main** tab, select **System Log**. Post-operating system failures are logged in the Event Viewer. 1. Turn on the computer and allow the operating system to open. 2. Select the search icon in the taskbar. 3. Type `Event Viewer`, and then press enter. 4. Select the log from the left panel. Details display in the right panel. **Chrome™:** 1. Go to support.google.com/chrome. 2. Search `collect Chrome device logs`.
Technical bulletins	To locate technical bulletins: 1. Go to www.hp.com. 2. Place the cursor over **Problem solving** to display more options. 3. Select **Support & Troubleshooting**. 4. Type the serial number, product number, or product name to go to the product support page. 5. Select **Advisories** to view technical bulletins.
Repair professionals	To locate repair professionals: 1. Go to www.hp.com. 2. Place the cursor over **Support resources** to display more options. 3. Select **Authorized service providers**.

Table 4-3 Support information locations (continued)

Service consideration	Path to access information
Component and diagnosis information, failure detection, and required action	To locate diagnosis information and actions: 1. Go to http://www.hp.com/go/techcenter/pcdiags. 2. Select **Get Support**. 3. Near the bottom of the window, select **Notebook PCs**, and then select your location.

5 Removal and replacement procedures for Customer Self-Repair parts

This chapter provides removal and replacement procedures for Customer Self-Repair parts.

NOTE: The Customer Self-Repair program is not available in all locations. Installing a part that is not supported by the Customer Self-Repair program can void your warranty. Check your warranty to determine whether Customer Self-Repair is supported in your location.

NOTE: The HP Support YouTube Channel (in English) has videos that provide step-by-step removal and replacement instructions for many common parts and models.

Component replacement procedures

To remove and replace computer components, use these procedures.

NOTE: Details about your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer.

NOTE: HP continually improves and changes product parts. For complete and current information about supported parts for your computer, go to https://partsurfer.hp.com/, select your country or region, and then follow the on-screen instructions.

Make special note of each screw size and location during removal and replacement.

Preparation for disassembly

To remove and replace computer components, use these procedures:

For initial safety procedures, see Removal and replacement procedures preliminary requirements on page 27.

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation or Sleep mode, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.

Bottom cover

To remove the bottom cover, use this procedure and illustration.

Table 5-1 Bottom cover descriptions and part numbers

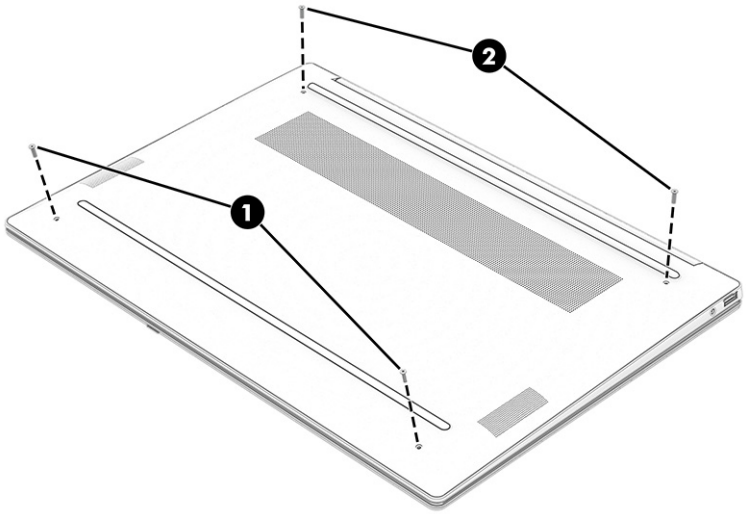
Description	Spare part number
Bottom cover (includes three rubber feet)	
Glacier silver finish	P34240-001
Sky blue finish	P34633-001

Before removing the bottom cover, prepare the computer for disassembly (see Preparation for disassembly on page 38).

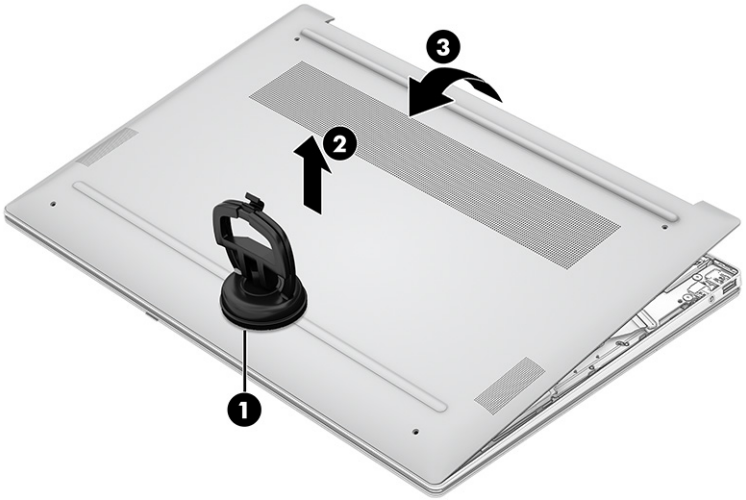
Remove the bottom cover:

1. Close the computer and rest it upside down on a flat work surface with the front toward you.

2. Remove the two Phillips M2.0 × 4.9 screws **(1)** and two Phillips M2.0 × 8.4 screws **(2)** that secure the bottom cover to the computer.



3. Attach a suction cup **(1)** to the bottom cover in the location shown in the following illustration.
4. Use the suction cup to separate the front edge of the bottom cover **(2)** from the computer, and then swing the rear edge of the bottom cover **(3)** up and forward and remove the bottom cover.



To replace the bottom cover, reverse the removal procedures.

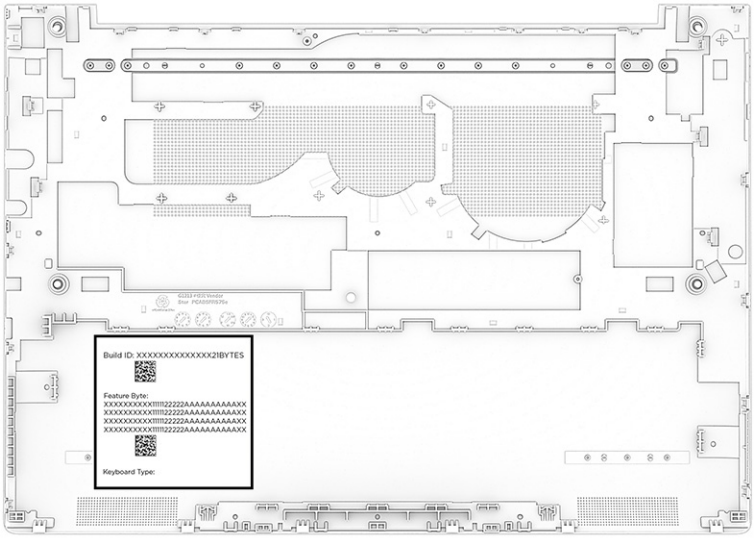
When replacing the bottom cover, remove the Feature Byte label from the inside of the old bottom cover and place it on the inside of the new bottom cover. Be sure to keep this label with the computer, as the label is required for any future repairs.

You can locate product labels:

- Laser etched on the old bottom cover.

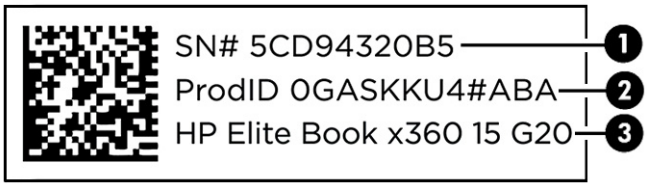
- In HP System Information by pressing fn + esc when you turn on the computer.

NOTE: Bottom cover appearance might vary.

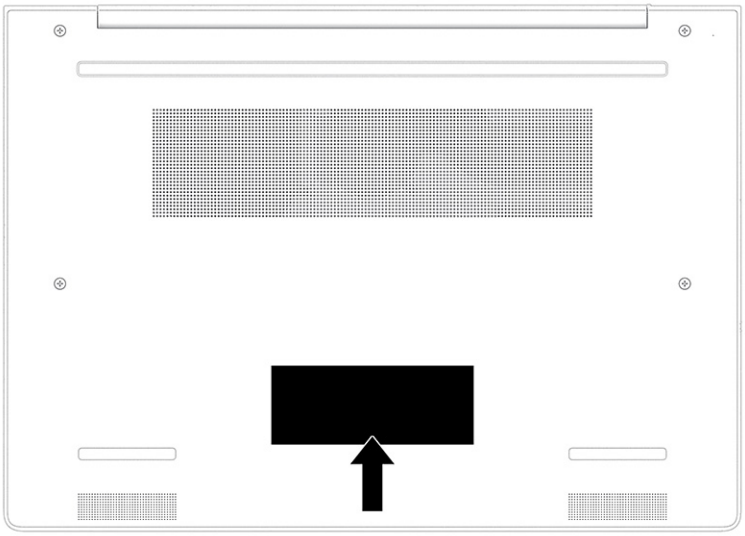


Hand write the product information onto the label of the new bottom cover. Use a ballpoint pen or marker to avoid smudging.

Example of label information



New bottom cover label location



Battery

The battery removal procedure differs depending on whether you are removing and replacing the existing battery or installing a new battery. To install a new battery, you must use a revive kit.

-
- To remove and replace the existing battery, see Removing and reinstalling the same battery on page 41.
- To install a new battery, see Installing a new battery on page 43.

Removing and reinstalling the same battery

To remove the battery and reinstall it, use this procedure and illustration.

⚠ **WARNING!** To avoid personal injury and damage to the product:

- Do *not* puncture, twist, or crack the battery.
- Do *not* cause an external puncture or rupture to the battery, which can cause a short inside the battery that can result in battery thermal runaway.
- Do *not* handle or touch the battery enclosure with sharp objects such as tweezers or pliers, which might puncture the battery.
- Do *not* compress or squeeze the battery case with tools or heavy objects stacked on top of the case. These actions can apply undue force on the battery.
- Do *not* touch the connectors with any metallic surface or object, such as metal tools, screws, or coins, which can cause shorting across the connectors.

For additional battery information, see the *Regulatory, Safety, and Environmental Notices*. To access this guide, select the **Search** icon in the taskbar, type `HP Documentation` in the search box, and then select **HP Documentation**.

Before removing the battery, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 38).
2. Remove the bottom cover (see Bottom cover on page 38).

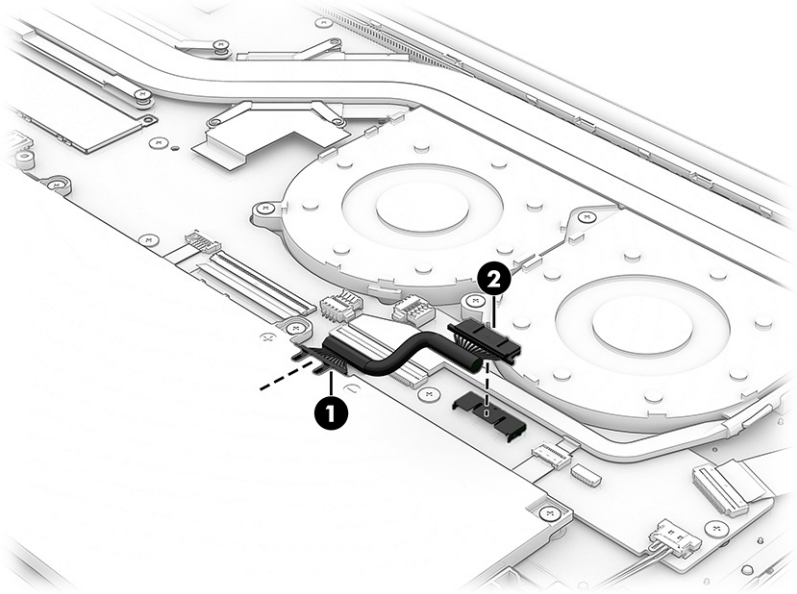
WARNING! To reduce potential safety issues, use only the user-replaceable battery provided with the computer, a replacement battery provided by HP, or a compatible battery purchased from HP.

IMPORTANT: Removing a battery that is the sole power source for the computer can cause loss of information. To prevent loss of information, save your work or shut down the computer through Windows before you remove the battery.

Remove the battery:

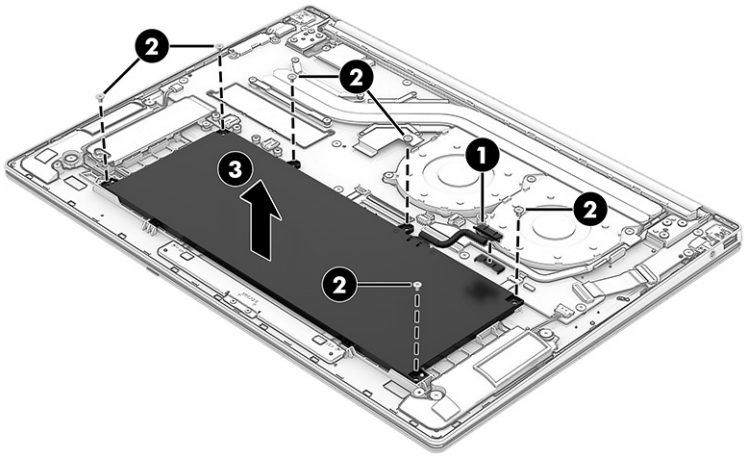
1. If it is necessary to replace the battery cable, disconnect the battery cable **(1)** from the battery, and then disconnect the battery cable **(2)** from the system board.

   The battery cable is available using spare number N94799-001.



2. Disconnect the battery cable **(1)** from the system board.
3. Remove the six Phillips M2.0 × 3.3 screws **(2)** that secure the battery to the computer.

4. Remove the battery **(3)** from the computer.



To reinstall the battery, reverse the removal procedures.

NOTE: When reinstalling the battery, be sure to completely reassemble the computer and plug in the AC adapter before turning the computer on.

Installing a new battery

To install a battery, use these procedures and illustrations. You must use a revive kit to remove the old battery and install a new one. The revive kit includes an empty containment tray and a containment tray with a battery preinstalled.

Table 5-2 Battery descriptions and part numbers

Description	Spare part number
3 cell, 59 Whr, Li-ion battery (includes cable)	N66215-005
Battery cable	N94799-001

Before starting this replacement procedure:

- Ensure other individuals are sufficiently clear of your workspace.
- Ensure your workspace is clear of any flammable material such as paper or oils.

- Locate the nearest ABC dry chemical fire-extinguisher for use in an emergency.

⚠ **WARNING!** This procedure requires removing the battery or disconnecting the battery cable. Use care to avoid bending, twisting, or puncturing the battery regardless of its condition. Failure to follow this replacement guide or to use HP recommended tools might damage the system and/or cause a safety hazard.

- Do *not* remove the battery from the containment tray.
- Do *not* handle or touch the battery enclosure with sharp objects such as tweezers or pliers, which might puncture the battery.
- Do *not* touch the connectors with any metallic surface or object, such as metal tools, screws, or coins, which can cause shorting across the connectors.

Should a part become stuck or difficult to remove when opening a unit where a swollen battery is suspected, or if the battery becomes stuck in the unit, stop, and contact HP Support for assistance. Do not try to remove a battery by force.

NOTE: Latch locations and internal components might vary.

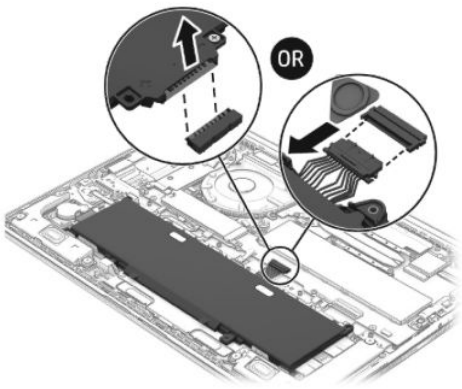
Before removing the battery, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 38).
2. Remove the bottom cover (see Bottom cover on page 38).

⚠ **WARNING!** To reduce potential safety issues, use only the user-replaceable battery provided with the computer, a replacement battery provided by HP, or a compatible battery purchased from HP.

IMPORTANT: Removing a battery that is the sole power source for the computer can cause loss of information. To prevent loss of information, save your work or shut down the computer through Windows before you remove the battery.

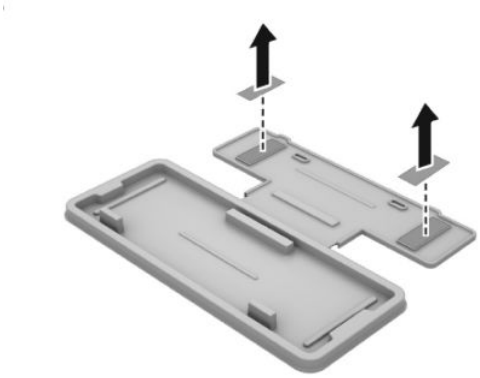
1. Remove the battery using the revive kit:
   a. Disconnect the battery cable from the system board. The connector location might vary.



b. Open the empty battery containment tray.



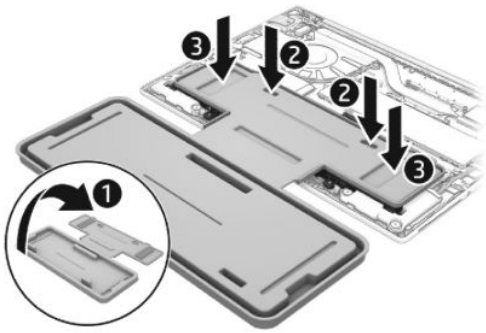
c. Remove the paper backing layer from the adhesive on the tray.



d. Turn the tray **(1)** over so that the adhesive is facing down.

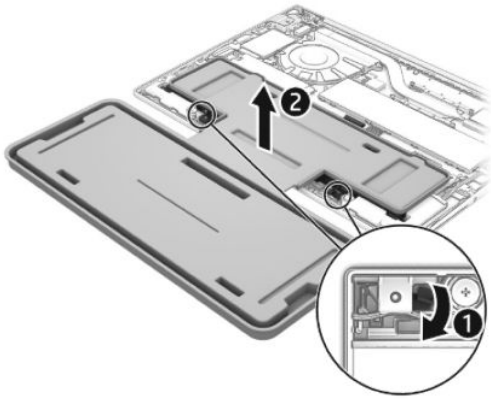
e. Place the tray **(2)** centered on the battery.

f. Press down on the indentations on the tray **(3)** to adhere it to the battery.

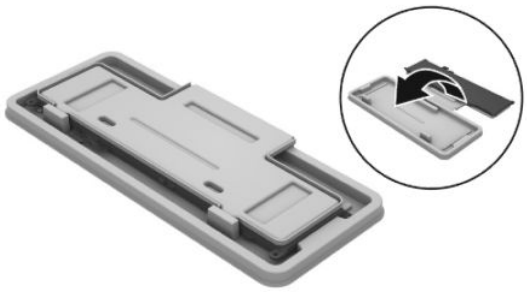


g. Rotate to unlock the latches **(1)** that secure the battery to the computer. Number of latches and latch locations might vary.

h. Lift the top of the tray **(2)** to remove the battery from the computer.



i. Rotate the battery up and over into the cavity of the containment tray.

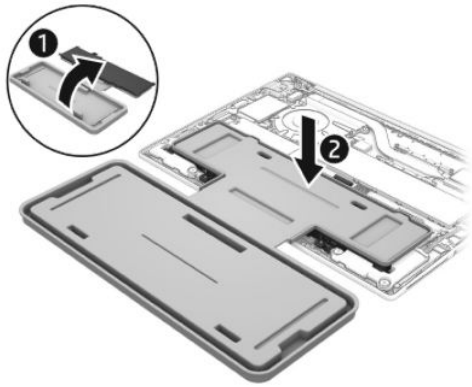


NOTE: Please recycle responsibly. For more information about recycling programs, see the HP website at http://www.hp.com/recycle.

2. Install the battery using the revive kit:

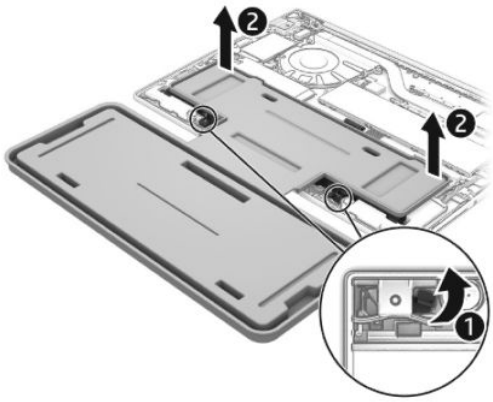
a. Open the containment tray that includes the new battery.

b. Turn the tray **(1)** over so the battery is facing downward, and then insert the battery **(2)** into the computer. Adhesive secures the battery to the tray.

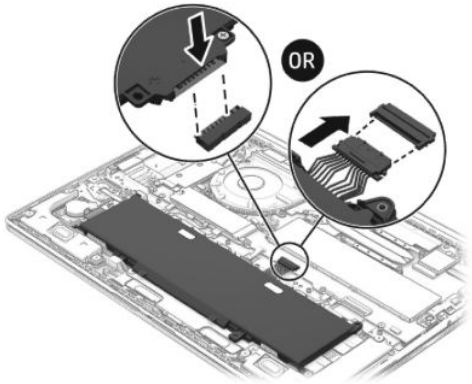


c. Rotate to lock the latches **(1)** to secure the battery. Number of latches and latch locations might vary.

d. Lift the containment tray **(2)** off the battery.



e. Connect the battery cable to the system board. The connector location might vary.



NOTE: When replacing the battery, be sure to completely reassemble the computer and plug in the AC adapter before turning the computer on.

6 Removal and replacement procedures for authorized service provider parts

This chapter provides removal and replacement procedures for authorized service provider parts.

IMPORTANT: Only an authorized service provider should access the components described in this chapter. Accessing these parts can damage the computer or void the warranty.

NOTE: Details about your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer.

NOTE: The HP Support YouTube Channel (in English) has videos that provide step-by-step removal and replacement instructions for many common parts and models.

Component replacement procedures

To remove and replace computer components, use the procedures described in this section.

NOTE: HP continually improves and changes product parts. For complete and current information about supported parts for your computer, go to https://partsurfer.hp.com/, select your country or region, and then follow the on-screen instructions.

Make special note of each screw size and location during removal and replacement.

Preparation for disassembly

To remove and replace computer components, use these procedures:

For initial safety procedures, see Removal and replacement procedures preliminary requirements on page 27.

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation or Sleep mode, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.

Speakers

To remove the speakers, use this procedure and illustration.

Table 6-1 Speaker description and part number

Description	Spare part number
Speakers (includes left and right speakers, cables, and four rubber isolators)	N94802-001

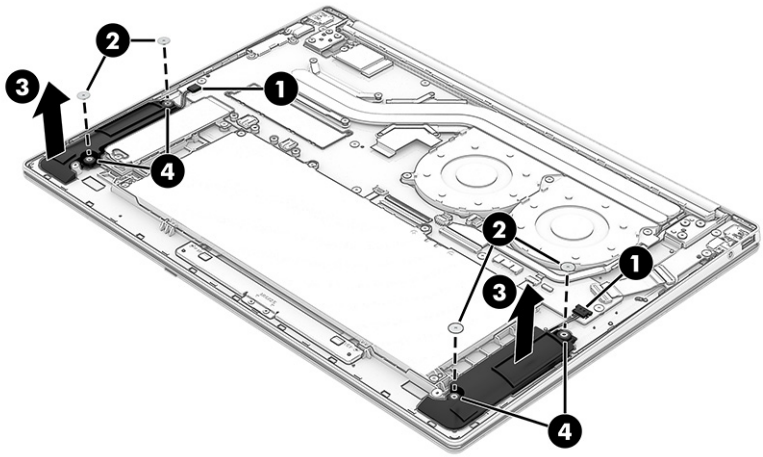
Before removing the speakers, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 38).
2. Remove the bottom cover (see Bottom cover on page 38).
3. Disconnect the battery cable from the computer (see Battery on page 41).

Remove the speakers:

1. Disconnect the speaker cables **(1)** from the system board.
2. Remove the four Phillips M2.0 × 2.4 broadhead screws **(2)** that secure the speakers to the computer.
3. Remove the speakers **(3)** from the computer.

NOTE: When removing the speakers, make note of the location of the rubber isolator locations **(4)**. The absence of or damage to these isolators can result in degraded speaker performance.



To replace the speakers, reverse the removal procedures.

Solid-state drive

To remove the SSD, use this procedure and illustration.

Table 6-2 SSD descriptions and part numbers

Description	Spare part number
1 TB, M.2 2280, PCIe-4×4, NVMe, value SSD for use in all countries and regions except the People's Republic of China	N45474-005
512 GB, M.2 2280, PCIe-4×4, NVMe, SSD for use in all countries and regions except the People's Republic of China	N45476-005
1 TB, M.2 2280, PCIe-4×4, NVMe, value SSD for use only in the People's Republic of China	N77394-005
512 GB, M.2 2280, PCIe-4×4, NVMe, SSD for use only in the People's Republic of China	N77392-005

Before removing the SSD, follow these steps:

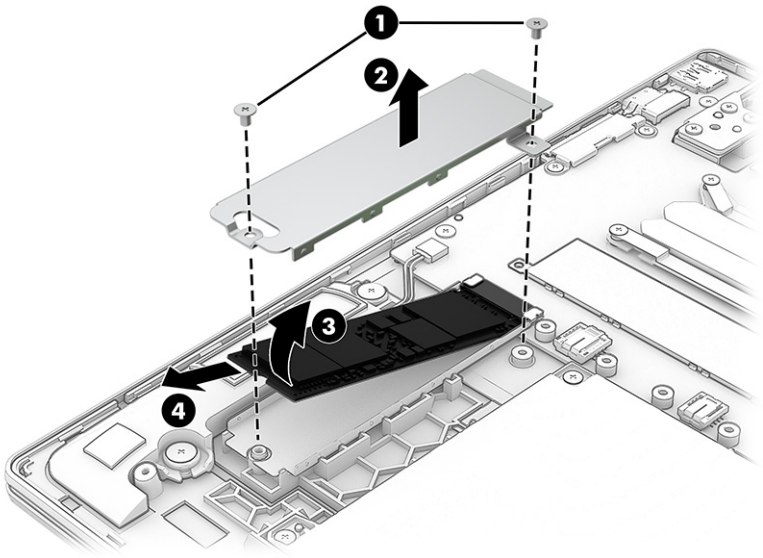
1. Prepare the computer for disassembly (see Preparation for disassembly on page 38).
2. Remove the bottom cover (see Bottom cover on page 38).
3. Disconnect the battery cable from the computer (see Battery on page 41).

Remove the SSD:

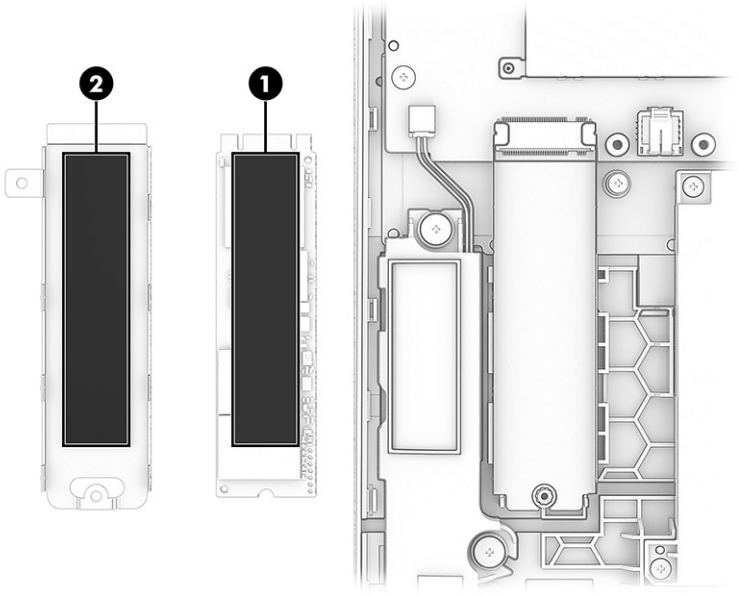
1. Remove the two Phillips M2.0 × 3.3 screws **(1)** that secure the SSD and shield to the computer.
2. Remove the SSD shield **(2)**.

   Retain the SSD shield because you will need it when you install an SSD. The SSD shield is not available as a spare part component.
3. Lift the edge of the SSD **(3)** opposite the slot until it rests at an angle.

4. Remove the SSD **(4)** by pulling the drive away from the slot at an angle.



5. Thoroughly clean the thermal material from the surfaces of the SSD **(1)** and the SSD shield **(2)** each time you remove the SSD and shield. Replacement SSD thermal material is available in the Miscellaneous Kit, spare part number N94803-001. The following illustration shows the replacement thermal material locations.



To replace the SSD, reverse the removal procedures.

NOTE: The SSD is designed with a notch to prevent incorrect insertion.

WLAN module

To remove the WLAN module, use this procedure and illustration.

Table 6-3 **WLAN module descriptions and part numbers**

Description	Spare part number
Realtek 8852BE M.2 2230 Wi-Fi 6 + Bluetooth 5.3 worldwide WLAN module	M91238-005
Realtek 8852BE-VT M.2 2230 Wi-Fi 6 11ax +Bluetooth 5.4 WW WLAN	P06350-005
Mediatek RZ616 M.2 2230 Wi-Fi 6E + Bluetooth 5.3 AIM-T 160 MHz PCI-e + USB WLAN module	N22541-005

IMPORTANT: To prevent an unresponsive system, replace the wireless module only with a wireless module authorized for use in the computer by the governmental agency that regulates wireless devices in your country or region. If you replace the module and then receive a warning message, remove the module to restore device functionality, and then contact technical support.

Before removing the WLAN module, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 38).
2. Remove the bottom cover (see Bottom cover on page 38).
3. Disconnect the battery cable from the computer (see Battery on page 41).

Remove the WLAN module:

1. Remove the WLAN antenna plate **(1)** that secures the WLAN antenna cables to the WLAN module.

   NOTE: The WLAN antenna plate is available in the Miscellaneous Kit, spare part number N94803-001.

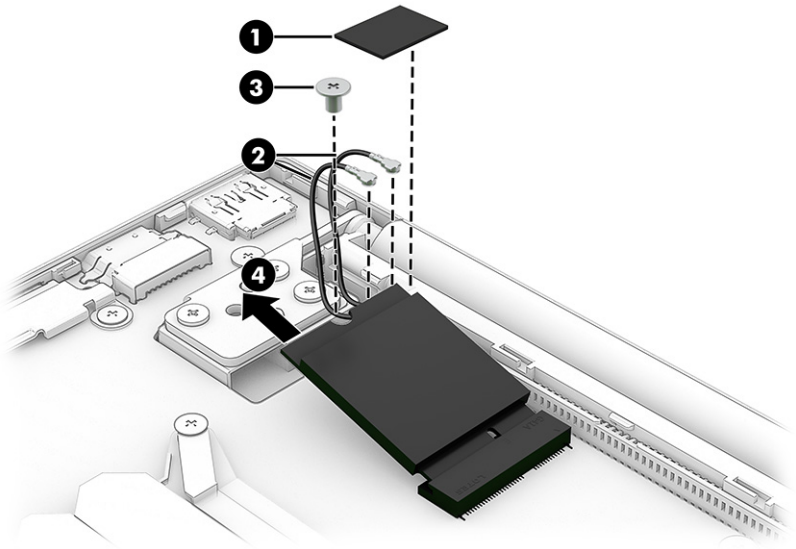
2. Carefully disconnect the two WLAN antenna cables **(2)** from the terminals on the WLAN module.

   Computer models have either one or two WLAN antennas. On models with two antennas, the #1 WLAN antenna cable connects to the WLAN module #1 Main terminal. The #2 WLAN antenna cable connects to the WLAN module #2 Aux terminal.

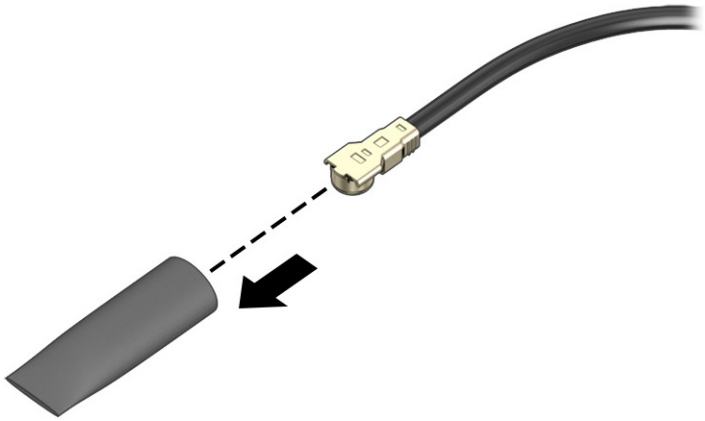
3. Remove the Phillips M2.0 × 2.3 screw **(3)** that secures the WLAN module to the system board.

   The edge of the WLAN module opposite the slot lifts up.

4. Remove the WLAN module **(4)** by pulling the module away from the slot at an angle.



5. If the WLAN antenna is not connected to the terminal on the WLAN module, install a protective sleeve on the antenna connector, as shown in the following illustration.



To replace the WLAN module, reverse the removal procedures.

NOTE: The WLAN module is designed with a notch to prevent incorrect insertion.

Connector board cable

To remove the connector board cable, use this procedure and illustration.

Table 6-4 **Connector board cable description and part number**

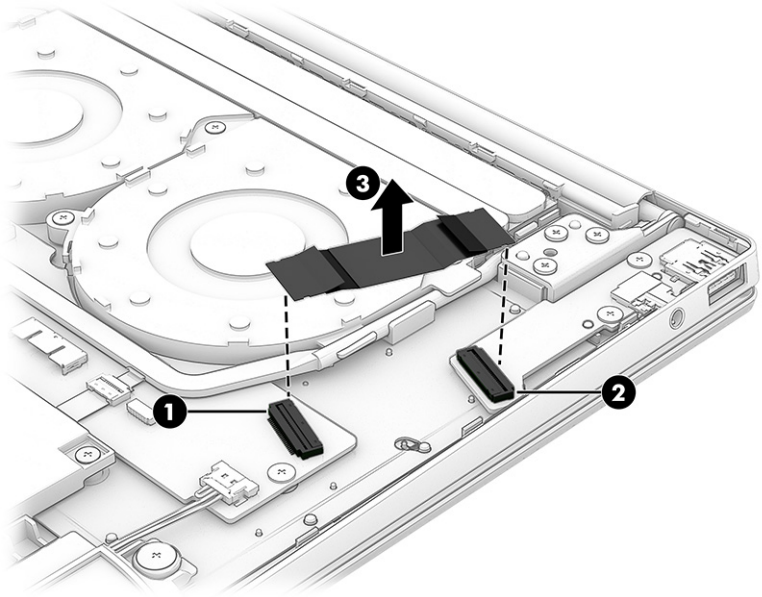
Description	Spare part number
Connector board cable	N94774-001

Before removing the connector board cable, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 38).
2. Remove the bottom cover (see Bottom cover on page 38).
3. Disconnect the battery cable from the computer (see Battery on page 41).

Remove the connector board cable:

1. Release the zero insertion force (ZIF) connector **(1)** the connector board cable is connected to, and then disconnect the connector board cable from the system board.
2. Release the ZIF connector **(2)** the connector board cable is connected to, and then disconnect the connector board cable from the connector board.
3. Remove the connector board cable **(3)** from the computer.



To replace the connector board cable, reverse the removal procedures.

Connector board

To remove the connector board, use this procedure and illustration.

Table 6-5 Connector board description and part number

Description	Spare part number
Connector board (includes USB port and audio jack)	N94773-001
NOTE: The connector board spare part kit does not include the connector cable. The connector cable is available using spare part number N94774-001.	

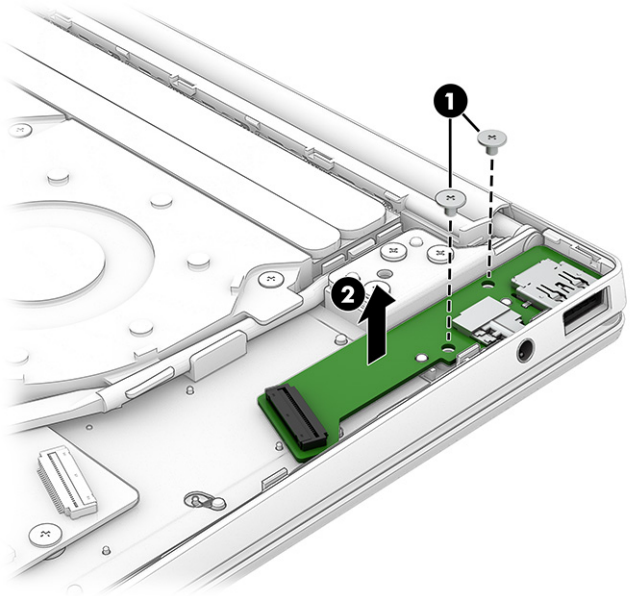
Before removing the connector board, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 38).
2. Remove the bottom cover (see Bottom cover on page 38).
3. Disconnect the battery cable from the computer (see Battery on page 41).

4. Remove the connector board cable (see Connector board cable on page 54).

Remove the connector board:

1. Remove the two Phillips M2.0 × 2.9 screws **(1)** that secure the connector board to the computer.
2. Remove the connector board **(2)** from the computer.



To replace the connector board, reverse the removal procedures.

Fan

To remove the fan, use these procedures and illustrations.

Table 6-6 Fan description and part number

Description	Spare part number
Fan (includes fan cable)	N94801-001

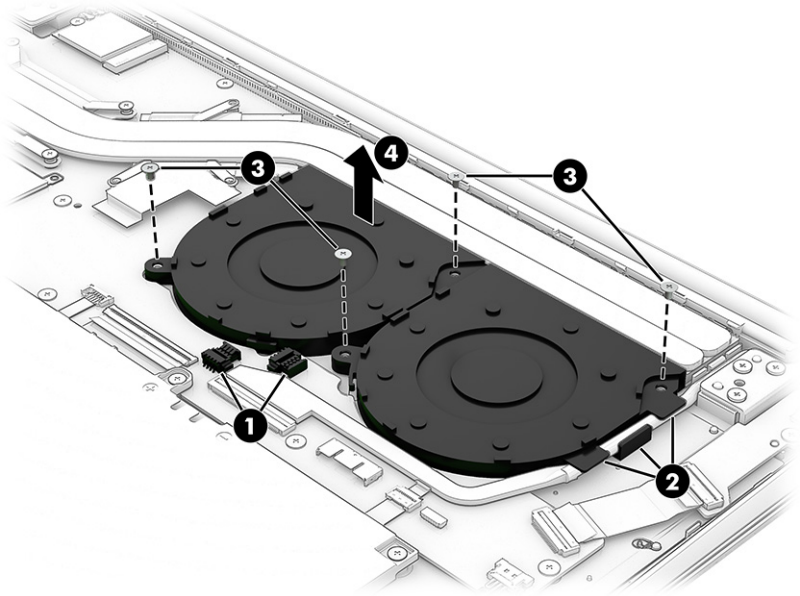
Before removing the fan, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 38).
2. Remove the bottom cover (see Bottom cover on page 38).
3. Disconnect the battery cable from the computer (see Battery on page 41).

Remove the fan:

1. Disconnect the fan cable **(1)** from the system board.
2. Release the display panel cable from the retention clips **(2)** that are built into the fan.
3. Remove the four Phillips M2.0 × 3.3 screws **(3)** that secure the fan to the computer.

4. Remove the fan **(4)** from the computer.



To replace the fan, reverse the removal procedures.

Display assembly

To remove and disassemble the display assembly, use these procedures and illustrations.

The display assembly is available only at the the subcomponent level. Subcomponent level spare part information is available in the subcomponent level disassembly subsection.

Before removing the display assembly, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 38).
2. Remove the bottom cover (see Bottom cover on page 38).
3. Disconnect the battery cable from the computer (see Battery on page 41).

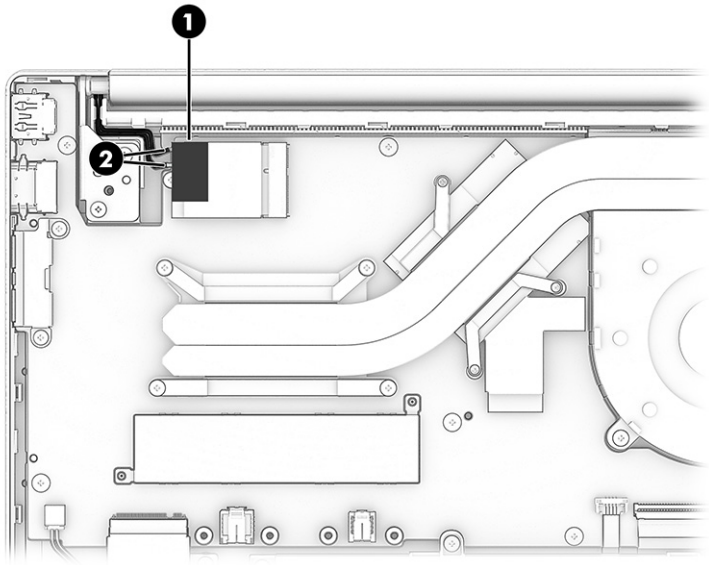
Remove the display assembly:

1. Remove the WLAN antenna plate **(1)** that secures the WLAN antenna cables to the WLAN module.

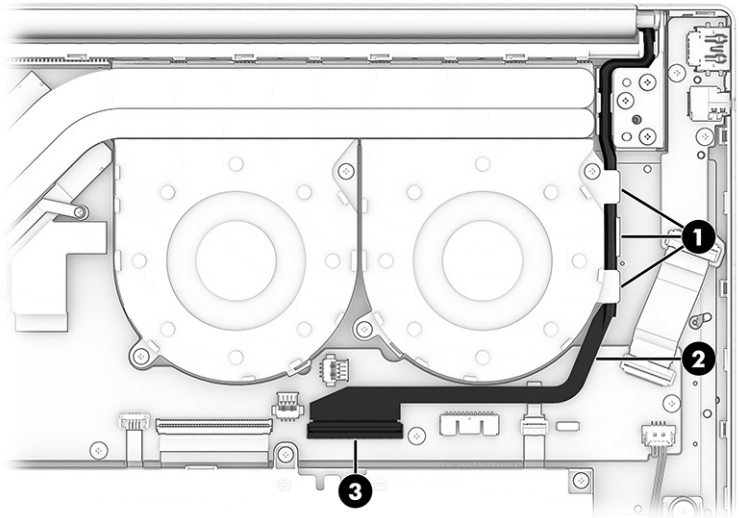
NOTE: The WLAN antenna plate is available in the Miscellaneous Kit, spare part number N94803-001.

2. Carefully disconnect the two WLAN antenna cables **(2)** from the terminals on the WLAN module.

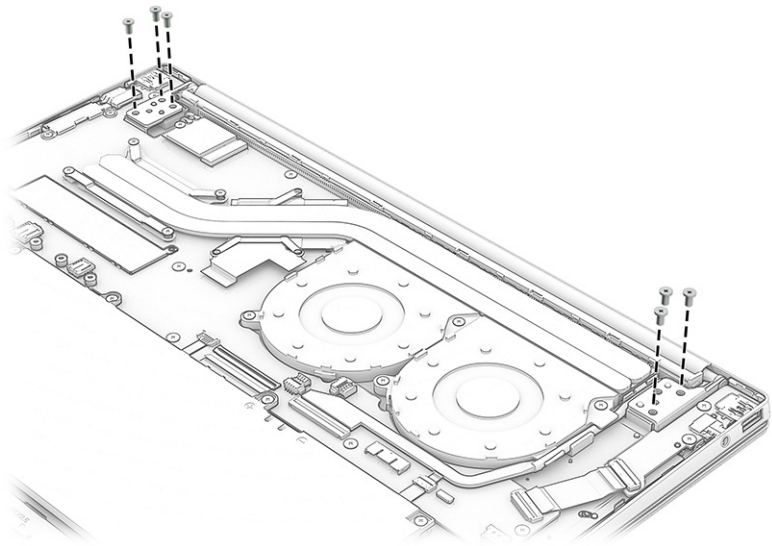
   Computer models have either one or two WLAN antennas. On models with two antennas, the #1 WLAN antenna cable connects to the WLAN module #1 Main terminal. The #2 WLAN antenna cable connects to the WLAN module #2 Aux terminal.



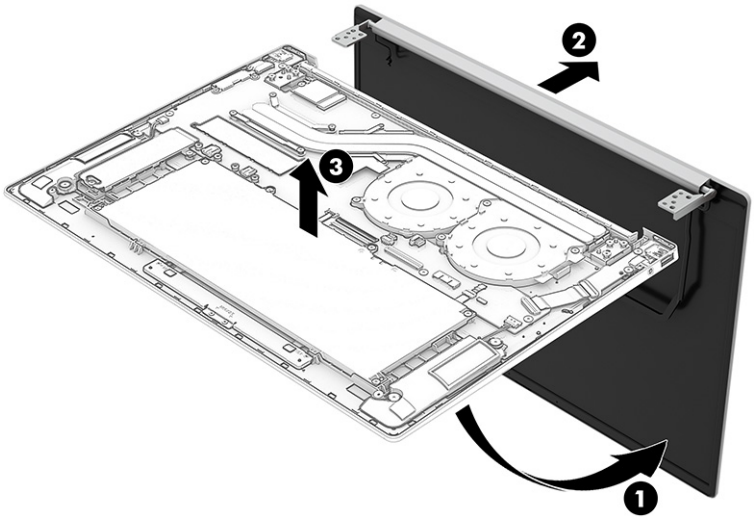
3. Release the display panel cable from the retention clips **(1)** that are built into the left fan.
4. Release the display panel cable **(2)** from the computer. The display panel cable is attached to the computer with double-sided adhesive.
5. Disconnect the display panel cable **(3)** from the system board.



6. Remove the six Phillips M2.5 × 5.6 screws that secure the display assembly to the computer.



7. Swing the top edge of the display assembly **(1)** down and away from the top cover and keyboard until it rests at a 90-degree angle.
8. Release the display hinges from the top cover by sliding the display assembly **(2)** straight back.
9. Separate the top cover and keyboard **(3)** from the display assembly.



10. To remove the display bezel and access the display assembly internal components:

    To avoid damaging the display panel, do not use a tool to release the inside edges of the display bezel. You can use a tool only when you insert it from the outside edges of the top, left, and right edges of the bezel. Use your fingers to lift up on the bezel. Avoid pressing down on the panel during bezel removal.

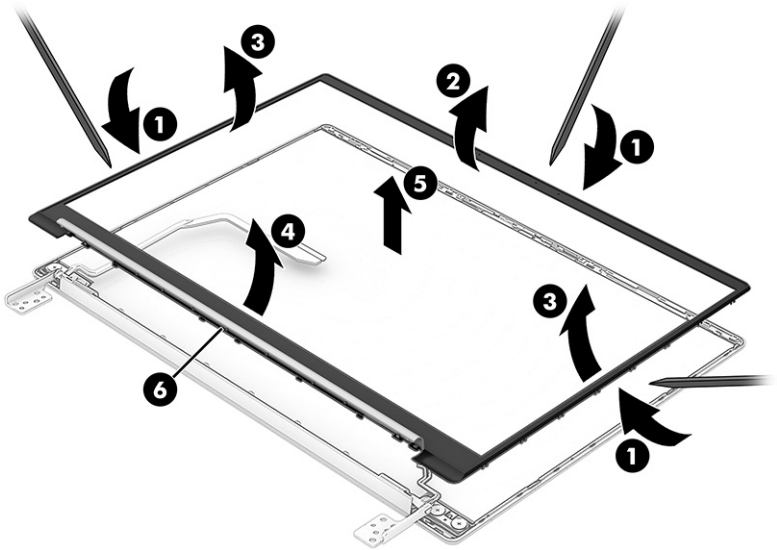
    a. Use a thin plastic tool **(1)**, such as a case utility tool, to separate the outside edges of the display bezel from the display assembly.

b. In the following sequence, release the top **(2)**, left **(3)** and right, and bottom **(4)** edges of the display bezel from the display assembly.

c. Remove the display bezel **(5)**.

The display bezel is available using the following spare part numbers and includes the display hinge cover **(6)**:

- N94782-001: Mineral silver finish for use on computer models equipped with an infrared webcam
- N94783-001: Natural silver finish for use on computer models equipped with an infrared webcam
- N94780-001: Natural silver finish for use on computer models not equipped with an infrared webcam
- N94784-001: Sky blue finish for use on computer models not equipped with an infrared webcam



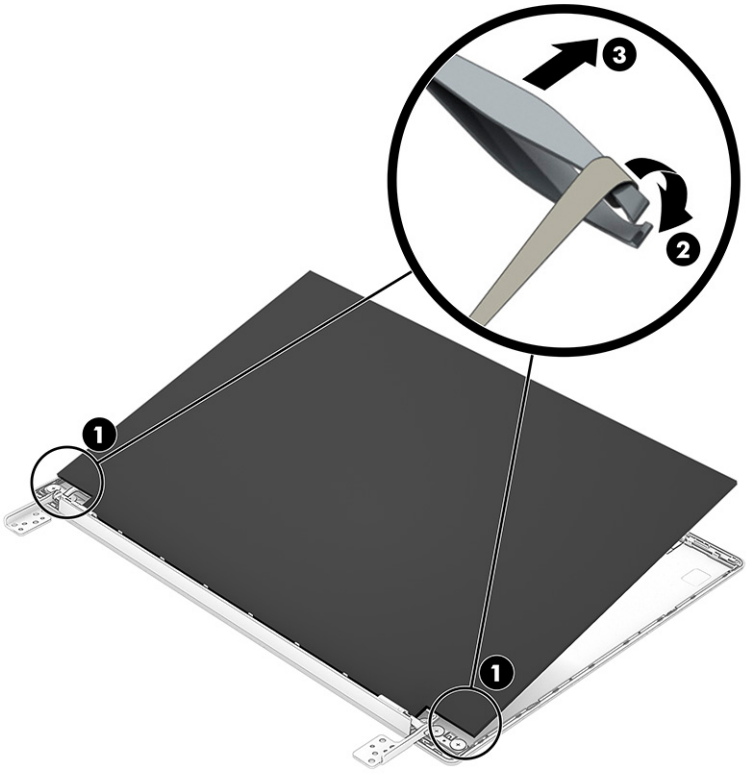
11. To remove the display panel:

a. Remove the display bezel.

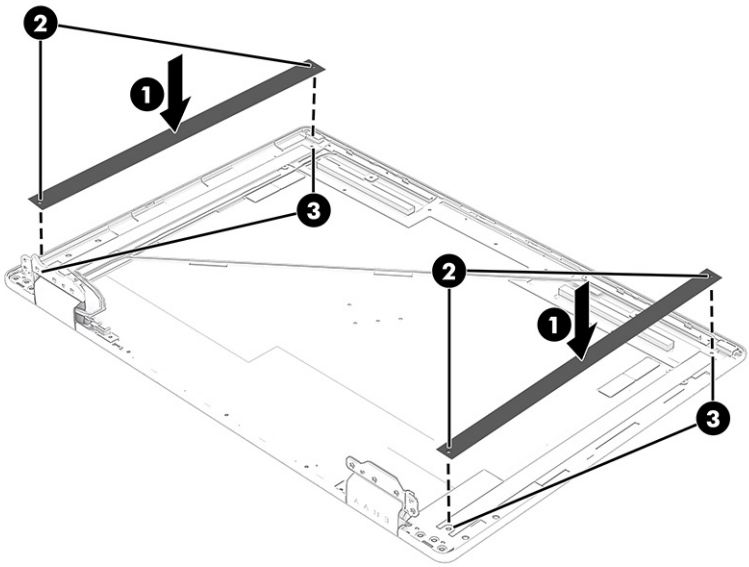
b. Locate the display panel assembly retention tape **(1)** in the lower corners of the display assembly.

c. Use a pair of tweezers to grasp the tape **(2)**.

d. Carefully pull the tape up **(3)** as far as it will stretch.



e. When replacing the display panel assembly retention tape **(1)**, align the holes **(2)** in the tape with the alignment holes **(3)** on the display back cover.

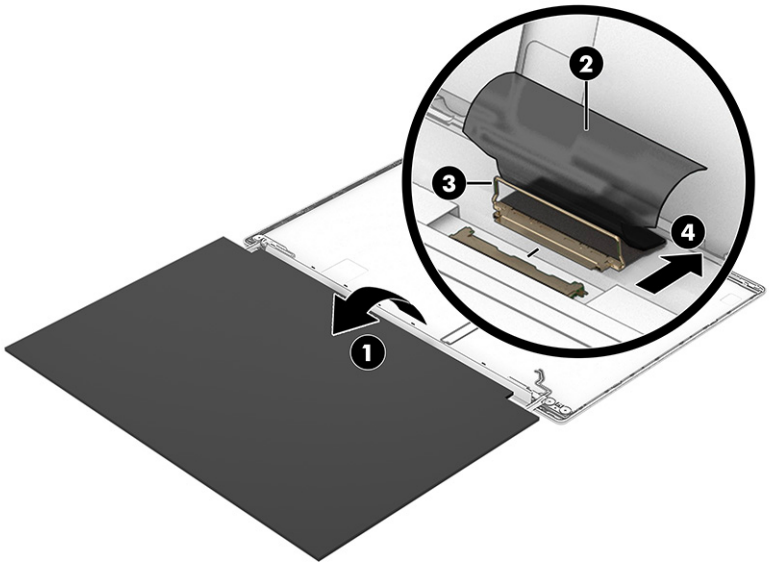


f. Lift the top edge of the display panel **(1)** and swing it up and forward until it rests upside down in front of the display back cover.

g. Release the retention tape **(2)** that secures the display panel cable to the display panel.

h. Release the retention bar **(3)** that secures the display panel cable to the display panel.

i. Disconnect the display panel cable **(4)** from the display panel.



j. Remove the display panel.

The display panel is available using the following spare part numbers:

- N94770-001: 40.6 cm (16.0 in), WUXGA (1366 × 768), antiglare, UWVA, touchscreen display panel, typical brightness: 300 nits
- N94769-001: 40.6 cm (16.0 in), WUXGA (1366 × 768), antiglare, UWVA, nontouchscreen display panel, typical brightness: 300 nits

12. To remove the hinges:

a. Remove the display bezel.

b. Remove the display panel.

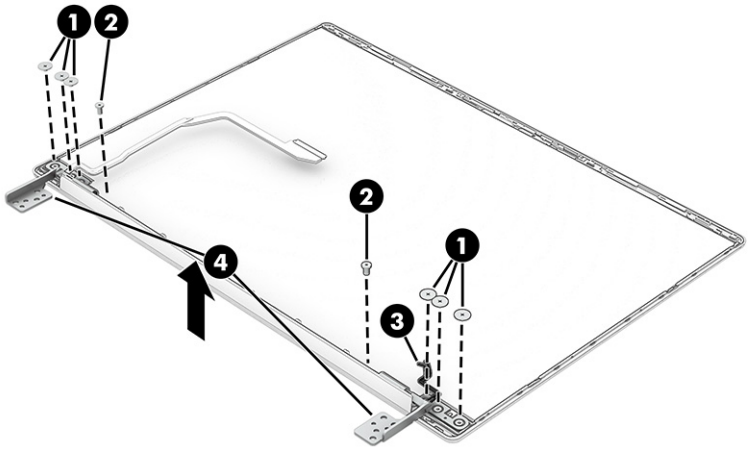
c. Remove the six Phillips M2.5 × 2.8 broadhead screws **(1)** that secure the hinges to the display back cover.

d. Remove the two Phillips M2.5 × 5.6 screws **(2)** that secure the hinges to the display back cover.

e. Release the wireless antenna cables from the retention clip **(3)** that is built into the right hinge.

f. Remove the hinges **(4)**.

The hinges are available using spare part number N94778-001.



13. To remove the display panel cable, webcam/microphone module, and webcam/microphone module cable:

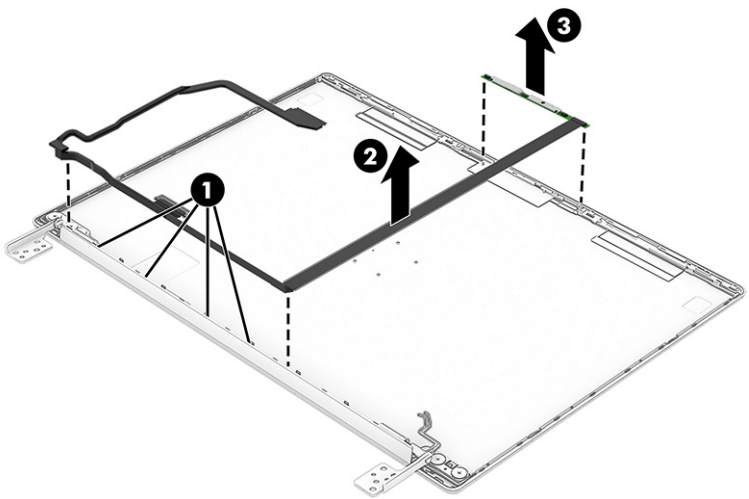
    a. Remove the display bezel.

    b. Remove the display panel.

    c. Release the display panel cable from the retention clips **(1)** and routing channels that are built into the bottom edge of the display back cover.

    d. Detach the webcam/microphone module cable **(2)** from the display back cover. The webcam/microphone module cable is attached to the display back cover with double-sided adhesive.

    e. Detach the webcam/microphone module **(3)** from the display back cover. The webcam/microphone module is attached to the display back cover with double-sided adhesive.

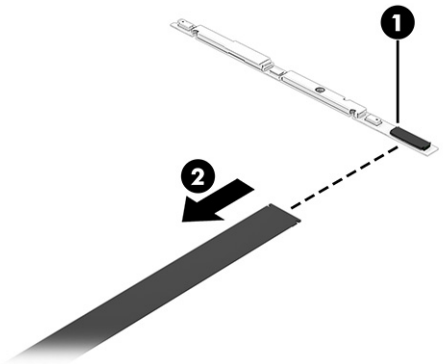


    f. Release the ZIF connector **(1)** the webcam/microphone module cable is connected to, and then disconnect the webcam/microphone module cable **(2)** from the webcam/microphone module.

    The display panel cable is available using spare part numbers N94786-001 (for use on computer models equipped with a touchscreen display panel) and N94785-001 (for use on

computer models not equipped with a touchscreen display panel). The display panel cable spare part kit includes the webcam/microphone module cable.

The webcam/microphone module is available using spare part numbers N94789-001 (for use on computer models equipped with an infrared webcam) and N94788-001 (for use on computer models not equipped with an infrared webcam).



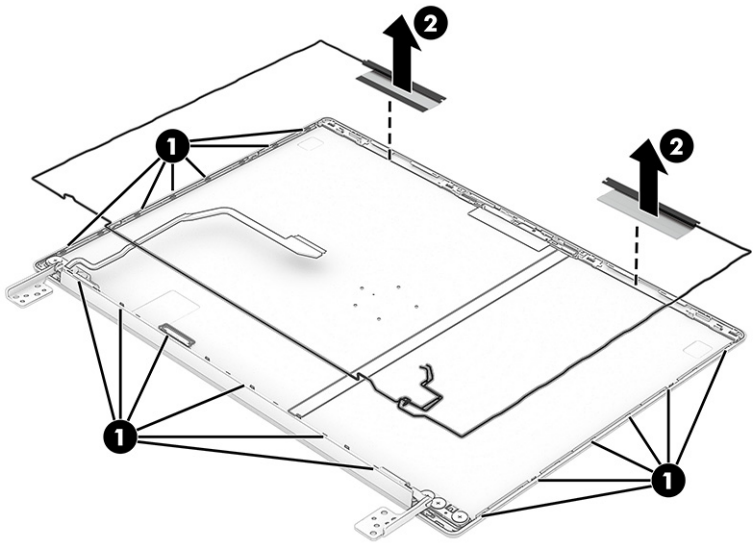
14. To remove the wireless antenna cables and transceivers:

    a. Remove the display bezel.

    b. Remove the display panel.

    c. Release the wireless antenna cables from the retention clips **(1)** and routing channels that are built into the display back cover.

    d. Detach the wireless antenna transceivers **(2)** from the display back cover. The wireless antenna transceivers are attached to the display back cover with double-sided adhesive.



    e. Remove the wireless antenna cables and transceivers.

    The wireless antennas are available using spare part number N94790-001.

To reassemble and replace the display assembly, reverse the removal procedures.

Touchpad cable

To remove the touchpad cable, use this procedure and illustration.

Table 6-7 Touchpad description and part number

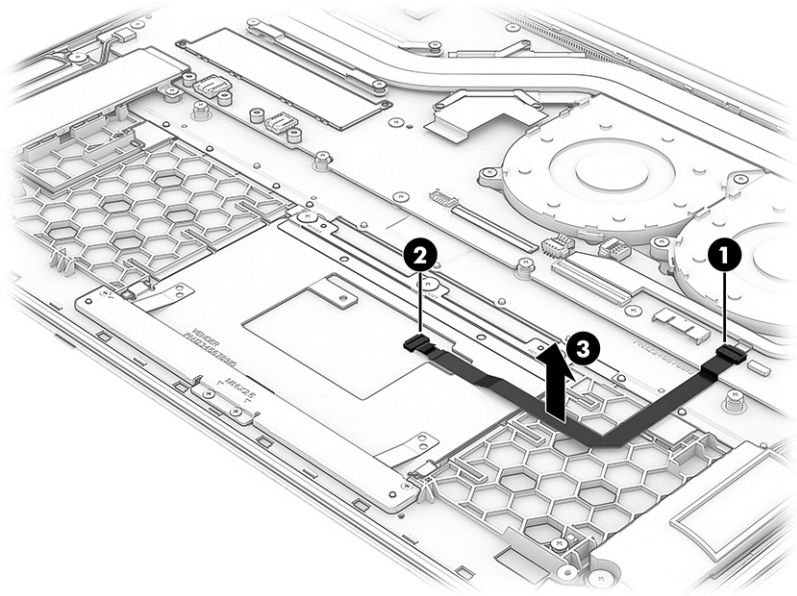
Description	Spare part number
Touchpad cable (includes double-sided adhesive)	N94794-001

Before removing the touchpad cable, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 38).
2. Remove the bottom cover (see Bottom cover on page 38).
3. Remove the battery (see Battery on page 41).

Remove the touchpad cable:

1. Release the ZIF connector **(1)** the touchpad cable is connected to, and then disconnect the touchpad cable from the system board.
2. Release the ZIF connector **(2)** the touchpad cable is connected to, and then disconnect the touchpad cable from the touchpad.
3. Detach the touchpad cable **(3)** from the computer. The touchpad cable is attached to the computer with double-sided adhesive.



4. Remove the touchpad cable.

To replace the touchpad cable, reverse the removal procedures.

Touchpad

To remove the touchpad, use this procedure and illustration.

Table 6-8 Touchpad descriptions and part numbers

Description	Spare part number
Darker sky blue finish	N94793-001
Glacier silver finish	P33602-001
NOTE: The touchpad spare part kit does not include the touchpad bracket or the touchpad cable. The touchpad bracket is not available as a spare part. The touchpad cable is available using spare part number N94794-001.	

Before removing the touchpad, follow these steps:

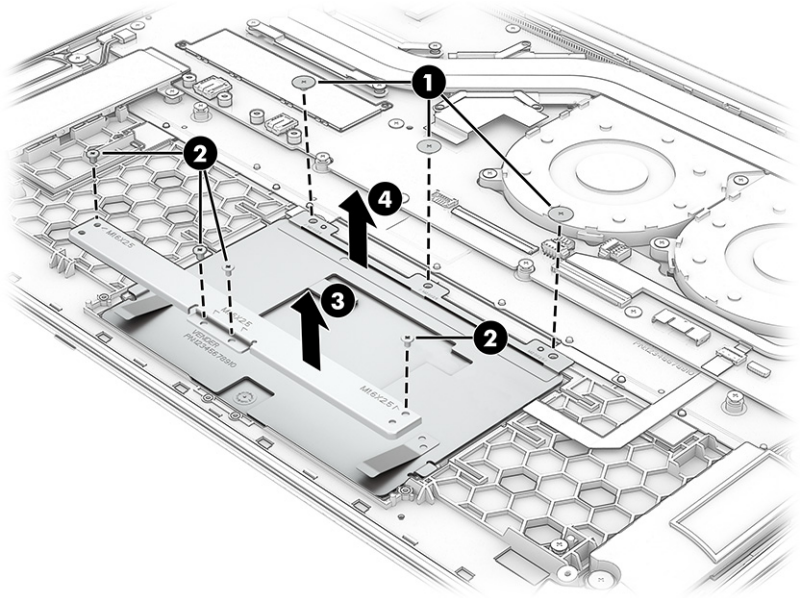
1. Prepare the computer for disassembly (see Preparation for disassembly on page 38).
2. Remove the bottom cover (see Bottom cover on page 38).
3. Remove the battery (see Battery on page 41).
4. Remove the touchpad cable (see Touchpad cable on page 65).

Remove the touchpad:

1. Remove the three Phillips M2.0 × 2.4 broadhead screws **(1)** that secure the touchpad to the computer.
2. Remove the four Phillips M2.0 × 2.5 screws **(2)** that secure the touchpad and bracket to the computer.
3. Remove the touchpad bracket **(3)**.

NOTE: The touchpad bracket is not available as a spare part.

4. Remove the touchpad **(4)** from the computer.



To replace the touchpad and bracket, reverse the removal procedures.

System board

To remove the system board, use these procedures and illustrations.

Table 6-9 System board descriptions and part numbers

Description	Spare part number
All system board spare part kits include an integrated processor, a UMA graphics subsystem memory, and replacement thermal material.	
Equipped with an AMD Ryzen AI 7 350 processor, 32 GB of system memory, and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33576-601
Equipped with an AMD Ryzen AI 7 350 processor, 32 GB of system memory, flexible OLED (FOLED), and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33579-601
Equipped with an AMD Ryzen AI 7 350 processor, 24 GB of system memory, and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33577-601
Equipped with an AMD Ryzen AI 7 350 processor, 16 GB of system memory, and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33575-601
Equipped with an AMD Ryzen AI 7 350 processor, 16 GB of system memory, flexible OLED (FOLED), and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33578-601
Equipped with an AMD Ryzen AI 5 340 processor, 16 GB of system memory, and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33574-601
Equipped with an AMD Ryzen AI 7 350 processor, 32 GB of system memory, and the Windows 11 operating system for use only in the People's Republic of China	P33590-601
Equipped with an AMD Ryzen AI 7 350 processor, 24 GB of system memory, and the Windows 11 operating system for use only in the People's Republic of China	P33591-601
Equipped with an AMD Ryzen AI 7 350 processor, 16 GB of system memory, and the Windows 11 operating system for use only in the People's Republic of China	P33589-601

Table 6-9 System board descriptions and part numbers (continued)

Description	Spare part number
Equipped with an AMD Ryzen AI 5 340 processor, 16 GB of system memory, and the Windows 11 operating system for use only in the People's Republic of China	P33588-601
Equipped with an AMD Ryzen R7 8840U processor, 16 GB of system memory, and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33582-601
Equipped with an AMD Ryzen R7 8840U processor, 16 GB of system memory, and the Windows 11 operating system for use only in the People's Republic of China	P33586-601
Equipped with an AMD Ryzen R5 8540U processor, 16 GB of system memory, and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33580-601
Equipped with an AMD Ryzen R5 8540U processor, 16 GB of system memory, and the Windows 11 operating system for use only in the People's Republic of China	P33584-601
Equipped with an AMD Ryzen R5 8540U processor, 8 GB of system memory, and the Windows 11 operating system for use in all countries and regions except the People's Republic of China	P33581-601
Equipped with an AMD Ryzen R5 8540U processor, 8 GB of system memory, and the Windows 11 operating system for use only in the People's Republic of China	P33585-601

Before removing the system board, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 38).
2. Remove the bottom cover (see Bottom cover on page 38).
3. Remove the battery (see Battery on page 41).
4. Remove the fan (see Fan on page 56).

When you replace the system board, be sure to remove the following components (as applicable) from the defective system board and install them on the replacement system board:

- Solid-state drive (see Solid-state drive on page 51).
- WLAN module (see WLAN module on page 52).
- Heat sink (see Heat sink on page 70).

Remove the system board:

1. Remove the WLAN antenna plate **(1)** that secures the WLAN antenna cables to the WLAN module.

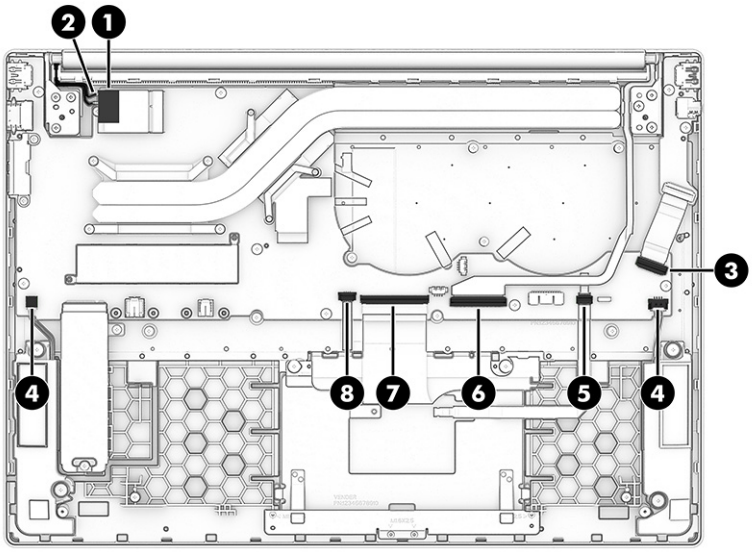
NOTE: The WLAN antenna plate is available in the Miscellaneous Kit, spare part number N94803-001.

2. Carefully disconnect the two WLAN antenna cables **(2)** from the terminals on the WLAN module.

NOTE: Computer models have either one or two WLAN antennas. On models with two antennas, the #1 WLAN antenna cable connects to the WLAN module #1 Main terminal. The #2 WLAN antenna cable connects to the WLAN module #2 Aux terminal.

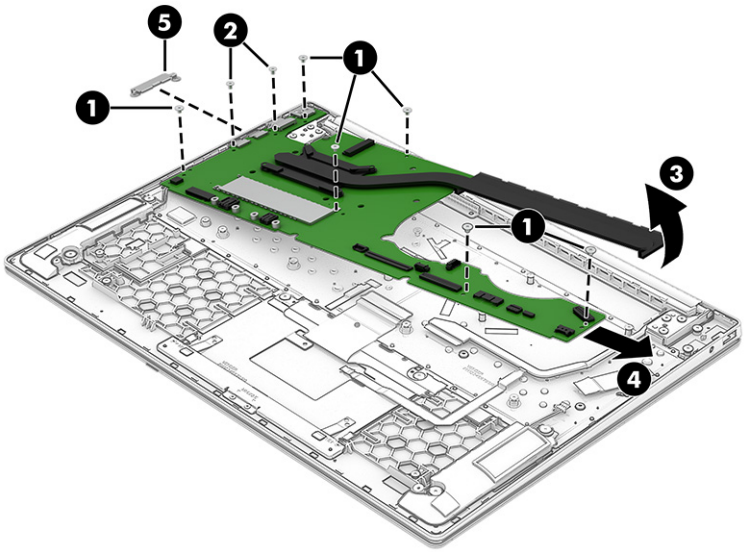
3. Release the ZIF connector **(3)** the connector board cable is connected to, and then disconnect the connector board cable from the system board.
4. Disconnect the speaker cables **(4)** from the system board.

5. Release the ZIF connector **(5)** the touchpad cable is connected to, and then disconnect the touchpad cable from the system board.
6. Release the ZIF connector **(6)** the display panel cable is connected to, and then disconnect the display panel cable from the system board.
7. Release the ZIF connector **(7)** the keyboard cable is connected to, and then disconnect the keyboard cable from the system board.
8. Release the ZIF connector **(8)** the keyboard backlight cable is connected to, and then disconnect the keyboard backlight cable from the system board.



9. Remove the six Phillips M2.0 × 2.9 screws **(1)** that secure the system board to the computer.
10. Remove the two Phillips M2.0 × 3.2 screws **(2)** that secure the system board and the I/O bracket to the computer.
11. Lift the right side of the system board **(3)** until it rests at an angle.
12. Remove the system board **(4)** by sliding it up and to the right at an angle.

13. When removing the system board, be sure that the I/O bracket **(5)** is not misplaced. The I/O bracket is is not available as a spare part.



To install the system board, reverse the removal procedures.

Heat sink

To remove the heat sink, use these procedures and illustrations.

Table 6-10 Heat sink description and part number

Description	Spare part number
Heat sink (includes replacement thermal material)	N94798-001

Before removing the heat sink, follow these steps:

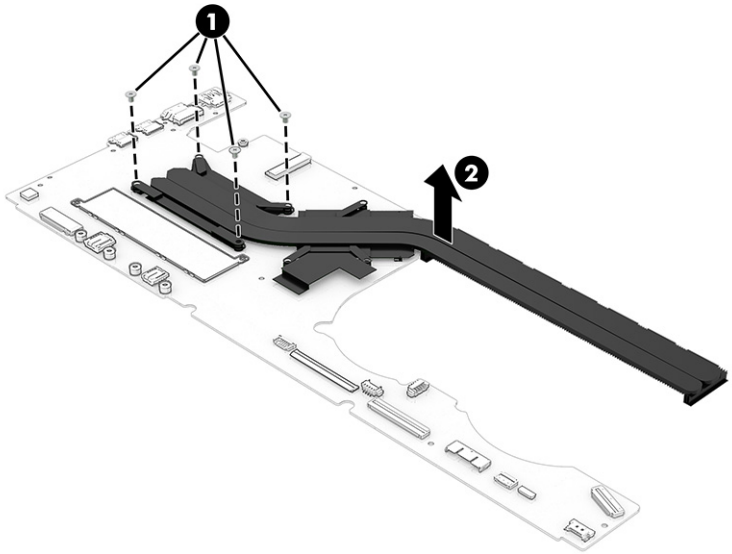
1. Prepare the computer for disassembly (see Preparation for disassembly on page 38).
2. Remove the bottom cover (see Bottom cover on page 38).
3. Remove the battery (see Battery on page 41).
4. Remove the fan (see Fan on page 56).
5. Remove the system board (see System board on page 67).

Remove the heat sink:

NOTE: Steps 1 through 3 apply to computer models equipped with a graphics subsystem with discrete memory. Steps 4 through 6 provide heat sink removal information for computer models equipped with a graphics subsystem with UMA memory.

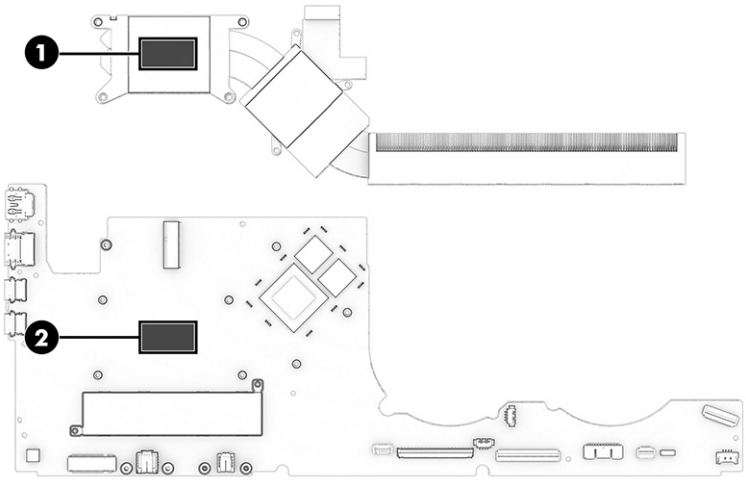
1. In the order indicated on the heat sink, remove the four Phillips M2.0 × 3.3 screws **(1)** that secure the heat sink to the system board.

2. Remove the heat sink **(2)**.



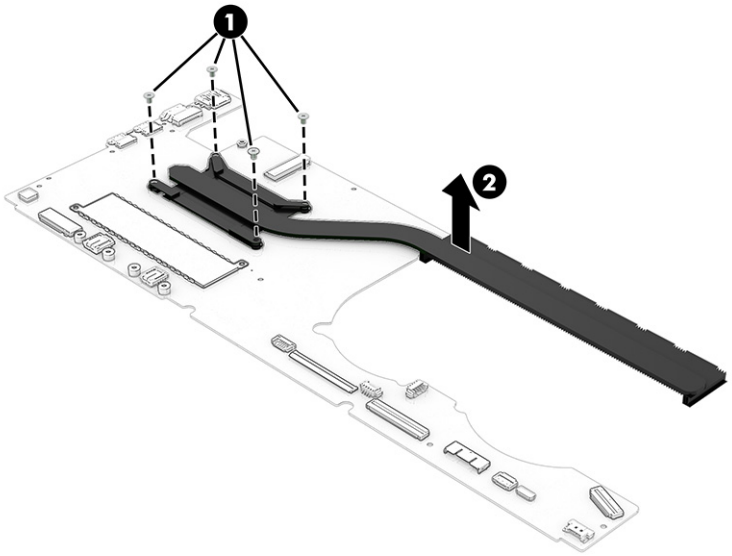
3. Thoroughly clean the thermal material from the surfaces of the heat sink and the system board components each time the heat sink is removed. Replacement thermal material is included with the heat sink and system board spare part kits. The following illustration shows the replacement thermal material locations.

   Thermal paste is used on the processor **(1)** and on the heat sink area **(2)** that services the processor.



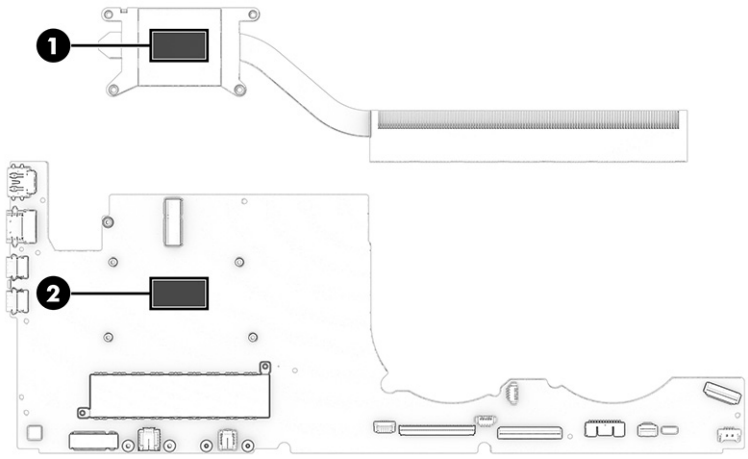
4. In the order indicated on the heat sink, remove the four Phillips M2.0 × 3.3 screws **(1)** that secure the heat sink to the system board.

5. Remove the heat sink (2).



6. Thoroughly clean the thermal material from the surfaces of the heat sink and the system board components each time the heat sink is removed. Replacement thermal material is included with the heat sink and system board spare part kits. The following illustration shows the replacement thermal material locations.

   Thermal paste is used on the processor (1) and on the heat sink area (2) that services the processor.



To replace the heat sink, reverse the removal procedures.

Top cover and keyboard

The top cover and keyboard remains after removing all other spare parts from the computer. In this section, the first table provides the main spare part number for the top covers and keyboards. The second table provides the country codes.

Table 6-11 Top cover with keyboard descriptions and part numbers

Description	Spare part number
Top cover and keyboard in darker sky blue opaque finish with darker meteor silver opaque keys (includes backlight cable and keyboard cable)	P34237-xxx
Top cover and keyboard in glacier silver finish with soft gray keys (includes backlight cable and keyboard cable)	P34238-xxx

Table 6-12 Spare part country codes

For use in country or region	Spare part number	For use in country or region	Spare part number	For use in country or region	Spare part number
Belgium	-A41	Israel	-BB1	South Korea	-AD1
Bulgaria	-261	Italy	-061	Spain	-071
The Czech Republic and Slovakia	-FL1	Japan	-291	Switzerland	-BG1
Denmark, Finland, and Norway	-DH1	The Netherlands	-B31	Taiwan	-AB1
France	-051	Portugal	-131	Thailand	-281
French Canada	-DB1	Romania	-271	Turkey	-141
Germany	-041	Russia	-251	Ukraine	-BD1
Greece	-151	Saudi Arabia	-171	United Kingdom	-031
Hungary	-211	Slovenia	-BA1	United States	-001

7 Using Setup Utility (BIOS)

Setup Utility, or Basic Input/Output System (BIOS), controls communication between all the input and output devices on the system (such as disk drives, display, keyboard, mouse, and printer). Setup Utility (BIOS) includes settings for the types of devices installed, the startup sequence of the computer, and the amount of system and extended memory.

NOTE: To start Setup Utility on convertible computers, your computer must be in notebook mode and you must use the keyboard attached to your notebook.

Starting Setup Utility (BIOS)

You have several ways to access the Setup Utility (BIOS).

IMPORTANT: Use extreme care when making changes in Setup Utility (BIOS). Errors can prevent the computer from operating properly.

Use one of these options:

- Turn on or restart the computer and quickly press f10.
- Turn on or restart the computer, quickly press esc, and then press f10 when the Start menu is displayed.

Updating Setup Utility (BIOS)

Updated versions of Setup Utility (BIOS) might be available on the HP website. Most BIOS updates on the HP website are packaged in compressed files called *SoftPaqs*. Some download packages contain a file named `Readme.txt`, which contains information regarding installing and troubleshooting the file.

Determining the BIOS version

To decide whether you need to update Setup Utility (BIOS), first determine the BIOS version on your computer.

To reveal the BIOS version information (also known as *ROM date* and *System BIOS*), use one of these options.

- HP Support Assistant

  1. Select the **Search** icon in the taskbar, type `support` in the search box, and then select the **HP Support Assistant** app.

     – or –

     Select the question mark icon in the taskbar.

  2. Under **My notebook**, select **Specifications**.

- Setup Utility (BIOS)

  1. Start Setup Utility (BIOS) (see Starting Setup Utility (BIOS) on page 74).
  2. Select **Main**, and then make note of the BIOS version.
  3. Select **Exit**, select one of the options, and then follow the on-screen instructions.

- In Windows, press ctrl+alt+s.

To check for later BIOS versions, see Preparing for a BIOS update on page 75.

Preparing for a BIOS update

Be sure to follow all prerequisites before downloading and installing a BIOS update.

IMPORTANT: To reduce the risk of damage to the computer or an unsuccessful installation, download and install a BIOS update only when the computer is connected to reliable external power using the HP AC adapter provided with the computer (select products only), a replacement AC adapter provided by HP, or an AC adapter with the power rating specified on the product label. Do not download or install a BIOS update while the computer is running on battery power, docked in an optional docking device, or connected to an optional power source. During the download and installation, follow these instructions:

- Do not disconnect power from the computer by unplugging the power cord from the AC outlet.
- Do not shut down the computer or initiate Sleep.
- Do not insert, remove, connect, or disconnect any device, cable, or cord.

NOTE: If your computer is connected to a network, consult the network administrator before installing any software updates, especially system BIOS updates.

Downloading a BIOS update

After you review the prerequisites, you can check for and download BIOS updates.

1. Perform one of these tasks:
   - Select the **Search** icon in the taskbar, type `support` in the search box, and then select the **HP Support Assistant** app.
   - Select the question mark icon in the taskbar.
2. Select **Updates**. The **Checking for Updates** window opens, and Windows checks for updates.
3. Follow the on-screen instructions.
4. At the download area, follow these steps:
   a. Identify the most recent BIOS update and compare it to the BIOS version currently installed on your computer. If the update is more recent than your BIOS version, make a note of the date, name, or other identifier. You might need this information to locate the update later, after it has been downloaded to your hard drive.
   b. Follow the on-screen instructions to download your selection to the hard drive.

      Make a note of the path to the location on your hard drive where the BIOS update is downloaded. You will need to access this path when you are ready to install the update.

Installing a BIOS update

BIOS installation procedures vary. Follow any instructions that appear on the screen after the download is complete. If no instructions appear, follow these steps.

1. Select the **Search** icon in the taskbar, type `file` in the search box, and then select **File Explorer**.
2. Select your hard drive designation. The hard drive designation is typically Local Disk (C:).
3. Using the hard drive path you recorded earlier, open the folder that contains the update.
4. Double-click the file that has an .exe extension (for example, *filename*.exe).

   The BIOS installation begins.
5. Complete the installation by following the on-screen instructions.

NOTE: After a message on the screen reports a successful installation, you can delete the downloaded file from your hard drive.

8 Backing up, restoring, and recovering

You can use Windows tools or HP software to back up your information, create a restore point, reset your computer, create recovery media, or restore your computer to its factory state. Performing these standard procedures can return your computer to a working state faster.

IMPORTANT: If you are performing recovery procedures on a tablet, the tablet battery must be at least 70% charged before you start the recovery process.

IMPORTANT: For a tablet with a detachable keyboard, connect the tablet to the keyboard base before beginning any recovery process.

Backing up information and creating recovery media

These methods of creating recovery media and backups are available on select products only.

Using Windows tools for backing up

HP recommends that you back up your information immediately after initial setup. You can do this task either using Windows Backup locally with an external USB flash drive or using online tools.

NOTE: If computer storage is 32 GB or less, Microsoft System Restore is disabled by default.

Using the HP Cloud Recovery Download Tool to create recovery media (select products only)

You can use the HP Cloud Recovery Download Tool to create HP Recovery media on a bootable USB flash drive.

For details:

- Go to http://www.hp.com, search for HP Cloud Recovery, and then select the result that matches the type of computer that you have.

NOTE: If you cannot create recovery media yourself, contact support to obtain recovery discs. Go to http://www.hp.com/support, select your country or region, and then follow the on-screen instructions.

IMPORTANT: HP recommends that you follow the Restoring and recovery methods on page 79 to restore your computer before you obtain and use the HP recovery discs. Using a recent backup can return your machine to a working state sooner than using the HP recovery discs. After the system is restored, reinstalling all the operating system software released since your initial purchase can be a lengthy process.

Restoring and recovering your system

You have several tools available to recover your system both within and outside of Windows if the desktop cannot load.

HP recommends that you attempt to restore your system using the Restoring and recovery methods on page 79.

Creating a system restore

System Restore is available in Windows. The System Restore software can automatically or manually create restore points, or snapshots, of the system files and settings on the computer at a particular point.

When you use System Restore, it returns your computer to its state at the time you made the restore point. Your personal files and documents should not be affected.

Restoring and recovery methods

After you run the first method, test to see whether the issue still exists before you proceed to the next method, which might now be unnecessary.

1. Run a Microsoft System Restore.
2. Run Reset this PC.

   NOTE: The options **Remove everything** and then **Fully clean the drive** can take several hours to complete and leave no information on your computer. It is the safest way to reset your computer before you recycle it.

3. Recover using HP Recovery media. For more information, see Recovering using HP Recovery media on page 79.

For more information about the first two methods, see the Get Help app:

- Select the **Start** button, select **All apps**, select the **Get Help** app, and then enter the task you want to perform.

NOTE: You must be connected to the internet to access the Get Help app.

Recovering using HP Recovery media

You can use HP Recovery media to recover the operating system and drivers that were installed at the factory. On select products, you can create recovery media on a bootable USB flash drive using the HP Cloud Recovery Download Tool.

For details, see Using the HP Cloud Recovery Download Tool to create recovery media (select products only) on page 78.

NOTE: If you cannot create recovery media yourself, contact support to obtain recovery discs. Go to http://www.hp.com/support, select your country or region, and then follow the on-screen instructions.

To recover your system:

- Insert the HP Recovery media, and then restart the computer.

NOTE: HP recommends that you follow the Restoring and recovery methods on page 79 to restore your computer before you obtain and use the HP recovery discs. Using a recent backup can return your machine to a working state sooner than using the HP recovery discs. After the system is restored, reinstalling all the operating system software released since your initial purchase can be a lengthy process.

Changing the computer boot order

If your computer does not restart using the HP Recovery media, you can change the computer boot order, which is the order of devices listed in BIOS for startup information. You can select an optical drive or a USB flash drive, depending on the location of your HP Recovery media.

IMPORTANT: For a tablet with a detachable keyboard, connect the tablet to the keyboard base before beginning these steps.

To change the boot order:

1. Insert the HP Recovery media.
2. Access the system **Startup** menu.
   - For computers or tablets with keyboards attached, turn on or restart the computer or tablet, quickly press esc, and then press f9 for boot options.
   - For tablets without keyboards, turn on or restart the tablet, and then quickly press and hold one of the following buttons:
     - Volume up
     - Volume down

     Then select **f9**.
3. Select the optical drive or USB flash drive from which you want to boot, and then follow the on-screen instructions.

Using HP Sure Recover (select products only)

Select computer models are configured with HP Sure Recover, a PC operating system (OS) recovery solution built into the hardware and software. HP Sure Recover can fully restore the HP OS image without installed recovery software.

Using HP Sure Recover, an administrator or user can restore the system and install:

- Latest version of the operating system
- Platform-specific device drivers
- Software applications, in the case of a custom image

To access the latest documentation for HP Sure Recover, go to http://www.hp.com/support. Follow the on-screen instructions to find your product and locate your documentation.

9 Using HP PC Hardware Diagnostics

You can use the HP PC Hardware Diagnostics utility to determine whether your computer hardware is running properly. The three versions are HP PC Hardware Diagnostics Windows, HP PC Hardware Diagnostics UEFI (Unified Extensible Firmware Interface), and (for select products only) Remote HP PC Hardware Diagnostics UEFI, a firmware feature.

Using HP PC Hardware Diagnostics Windows (select products only)

HP PC Hardware Diagnostics Windows is a Windows-based utility that allows you to run diagnostic tests to determine whether the computer hardware is functioning properly. The tool runs within the Windows operating system to diagnose hardware failures.

If HP PC Hardware Diagnostics Windows is not installed on your computer, you must download and install it. To download HP PC Hardware Diagnostics Windows, see Downloading HP PC Hardware Diagnostics Windows on page 83.

Using an HP PC Hardware Diagnostics Windows hardware failure ID code

When HP PC Hardware Diagnostics Windows detects a failure that requires hardware replacement, a 24-digit failure ID code is generated for select component tests. For interactive tests, such as keyboard, mouse, or audio and video palette, you must perform troubleshooting steps before you can receive a failure ID.

You have several options after you receive a failure ID:

- Select **Next** to open the Event Automation Service (EAS) page, where you can log the case.
- Scan the QR code with your mobile device, which takes you to the EAS page, where you can log the case.
- Select the box next to the 24-digit failure ID to copy your failure code and send it to support.

Accessing HP PC Hardware Diagnostics Windows

After HP PC Hardware Diagnostics Windows is installed, you can access it from HP Support Assistant or the Start menu.

Accessing HP PC Hardware Diagnostics Windows from HP Support Assistant

After HP PC Hardware Diagnostics Windows is installed, follow these steps to access it from HP Support Assistant:

1. Complete one of the following tasks:
   - Select the **Search** icon in the taskbar, type `support` in the search box, and then select the **HP Support Assistant** app.
   - Select the question mark icon in the taskbar.
2. Select **Fixes & Diagnostics**.
3. Select **Run hardware diagnostics**, and then select **Launch**.
4. When the tool opens, select the type of diagnostic test that you want to run, and then follow the on-screen instructions.

NOTE: To stop a diagnostic test, select **Cancel**.

Accessing HP PC Hardware Diagnostics Windows from the Start menu (select products only)

After HP PC Hardware Diagnostics Windows is installed, follow these steps to access it from the Start menu:

1. Select the **Start** button, and then select **All apps**.
2. Select **HP PC Hardware Diagnostics Windows**.
3. When the tool opens, select the type of diagnostic test that you want to run, and then follow the on-screen instructions.

NOTE: To stop a diagnostic test, select **Cancel**.

Downloading HP PC Hardware Diagnostics Windows

The HP PC Hardware Diagnostics Windows downloading instructions are provided in English only. You must use a Windows computer to download this tool because only .exe files are provided.

Downloading the latest HP PC Hardware Diagnostics Windows version from HP

To download HP PC Hardware Diagnostics Windows from HP, follow these steps:

1. Go to http://www.hp.com/go/techcenter/pcdiags. The HP PC Diagnostics home page is displayed.
2. Select **Diagnose PC Hardware issues in Windows**, scroll down to the expanded window that appears, and then select **Download**.
3. A pop-up that asks what you want to do with the file opens. Select **Open** or **Save As**. The latest version of the diagnostics tool opens or downloads to the selected location.

Downloading the HP PC Hardware Diagnostics Windows from the Microsoft Store

You can download the HP PC Hardware Diagnostics Windows from the Microsoft Store:

1. Select the Microsoft Store app on your desktop or select the **Search** icon in the taskbar, and then type `Microsoft Store` in the search box.
2. Type `HP PC Hardware Diagnostics Windows` in the **Microsoft Store** search box.
3. Follow the on-screen directions.

The tool downloads to the selected location.

Downloading HP Hardware Diagnostics Windows by product name or number (select products only)

You can download HP PC Hardware Diagnostics Windows by product name or number.

NOTE: For some products, you might have to download the software to a USB flash drive by using the product name or number.

1. Go to http://www.hp.com/support.
2. Select **Software and Drivers**, select your type of product, and then enter the product name or number in the search box that is displayed.
3. In the **Diagnostics** section, select **Download**, and then follow the on-screen instructions to select the specific Windows diagnostics version to be downloaded to your computer or USB flash drive.

The tool downloads to the selected location.

Installing HP PC Hardware Diagnostics Windows

To install HP PC Hardware Diagnostics Windows, navigate to the folder on your computer or the USB flash drive where the .exe file downloaded, double-click the .exe file, and then follow the on-screen instructions.

Using HP PC Hardware Diagnostics UEFI

HP PC Hardware Diagnostics Unified Extensible Firmware Interface (UEFI) allows you to run diagnostic tests to determine whether the computer hardware is functioning properly. The tool runs outside the operating system so that it can isolate hardware failures from issues that are caused by the operating system or other software components.

NOTE: For some products, you must use a Windows computer and a USB flash drive to download and create the HP UEFI support environment because only .exe files are provided. For more information, see Downloading HP PC Hardware Diagnostics UEFI to a USB flash drive on page 86.

If your PC does not start in Windows, you can use HP PC Hardware Diagnostics UEFI to diagnose hardware issues.

Using an HP PC Hardware Diagnostics UEFI hardware failure ID code

When HP PC Hardware Diagnostics UEFI detects a failure that requires hardware replacement, a 24-digit failure ID code is generated.

For assistance in solving the problem, complete one of these tasks:

- Select **Contact HP**, accept the HP privacy disclaimer, and then use a mobile device to scan the failure ID code that appears on the next screen. The HP Customer Support - Service Center page appears with your failure ID and product number automatically filled in. Follow the on-screen instructions.
- Contact support, and provide the failure ID code.

Starting HP PC Hardware Diagnostics UEFI

To start HP PC Hardware Diagnostics UEFI, follow this procedure.

1. Turn on or restart the computer, and quickly press esc.
2. Press f2.

   The BIOS searches three places for the diagnostic tools, in the following order:

   a. Connected USB flash drive

   NOTE: To download the HP PC Hardware Diagnostics UEFI tool to a USB flash drive, see Downloading the latest HP PC Hardware Diagnostics UEFI version on page 86.

   b. Hard drive

   c. BIOS
3. When the diagnostic tool opens, select the type of diagnostic test that you want to run, and then follow the on-screen instructions.

Starting HP PC Hardware Diagnostics UEFI through HP Hotkey Support software (select products only)

This section describes how to start HP PC Hardware Diagnostics UEFI through HP Hotkey Support software.

NOTE: You must disable fast boot to access HP PC Hardware Diagnostics UEFI from the HP System Information application.

To disable fast boot:

1. Turn on or restart the computer, and when the HP logo appears, press f10 to enter Computer Setup.
2. Select **Advanced**, and then select **Boot Options**.
3. Clear **Fast Boot**.
4. Select **Save Changes and Exit**, and then select **Yes**.

To start HP PC Hardware Diagnostics UEFI through HP Hotkey Support software, follow this procedure:

1. From the **Start** menu, open the HP System Information Application or press fn+esc.
2. In HP System Information screen, select **Run System Diagnostics**, select **Yes** to run the application, and then select **Restart**.

IMPORTANT: To prevent loss of data, save your work in all open apps before restarting your computer.

NOTE: When the restart is complete, the computer opens the HP PC Hardware Diagnostics UEFI Application. Proceed with the troubleshooting tests.

Downloading HP PC Hardware Diagnostics UEFI to a USB flash drive

Downloading HP PC Hardware Diagnostics UEFI to a USB flash drive can be useful in some situations.

- HP PC Hardware Diagnostics UEFI is not included in the preinstallation image.
- HP PC Hardware Diagnostics UEFI is not included in the HP Tool partition.
- The hard drive is damaged.

NOTE: The HP PC Hardware Diagnostics UEFI downloading instructions are provided in English only, and you must use a Windows computer to download and create the HP UEFI support environment because only `.exe` files are provided.

Downloading the latest HP PC Hardware Diagnostics UEFI version

To download the latest HP PC Hardware Diagnostics UEFI version to a USB flash drive, follow these steps:

1. Go to http://www.hp.com/go/techcenter/pcdiags. The HP PC Diagnostics home page is displayed.
2. Select **Diagnose PC Hardware Issues outside of the OS**, scroll down to the expanded window that appears, and then select **Download**.
3. A pop-up that asks what you want to do with the file opens. Select **Open** or **Save As**. The latest version of the diagnostics tool opens or downloads to the selected location.

Downloading HP PC Hardware Diagnostics UEFI by product name or number (select products only)

You can download HP PC Hardware Diagnostics UEFI by product name or number (select products only) to a USB flash drive.

NOTE: For some products, you might have to download the software to a USB flash drive by using the product name or number.

1. Go to http://www.hp.com/support.
2. Enter the product name or number, select your computer, and then select your operating system.
3. In the **Diagnostics** section, follow the on-screen instructions to select and download the specific UEFI Diagnostics version for your computer.

Using Remote HP PC Hardware Diagnostics UEFI settings (select products only)

Remote HP PC Hardware Diagnostics UEFI is a firmware (BIOS) feature that downloads HP PC Hardware Diagnostics UEFI to your computer. It can then run the diagnostics on your computer, and it might upload results to a preconfigured server.

For more information about Remote HP PC Hardware Diagnostics UEFI, go to http://www.hp.com/go/techcenter/pcdiags, select **Diagnose Other Potential Issues**, scroll down to **Remote PC Hardware Diagnostics UEFI**, and then select **Learn More**.

Downloading Remote HP PC Hardware Diagnostics UEFI

Remote HP PC Hardware Diagnostics UEFI is also available as a SoftPaq that you can download to a server.

Downloading the latest Remote HP PC Hardware Diagnostics UEFI version

You can download the latest Remote HP PC Hardware Diagnostics UEFI version to a USB flash drive.

1. Go to http://www.hp.com/go/techcenter/pcdiags. The HP PC Diagnostics home page is displayed.
2. Select **Diagnose PC Hardware Issues outside of the OS**, scroll down to the expanded window that appears, and then select **Download**.
3. A pop-up that asks what you want to do with the file opens. Select **Open** or **Save As**. The latest version of the diagnostics tool opens or downloads to the selected location.

Downloading Remote HP PC Hardware Diagnostics UEFI by product name or number

You can download Remote HP PC Hardware Diagnostics UEFI by product name or number.

NOTE: For some products, you might have to download the software by using the product name or number.

1. Go to http://www.hp.com/support.
2. Select **Software and Drivers**, select your type of product, enter the product name or number in the search box that is displayed, select your computer, and then select your operating system.
3. In the **Diagnostics** section, follow the on-screen instructions to select and download the **Remote UEFI** version for the product.

Customizing Remote HP PC Hardware Diagnostics UEFI settings

Using the Remote HP PC Hardware Diagnostics setting in Computer Setup (BIOS), you can perform several customizations.

- Set a schedule for running diagnostics unattended. You can also start diagnostics immediately in interactive mode by selecting **Execute Remote HP PC Hardware Diagnostics UEFI**.
- Set the location for downloading the diagnostic tools. This feature provides access to the tools from the HP website or from a server that has been preconfigured for use. Your computer does not require the traditional local storage, such as a hard drive or USB flash drive, to run remote diagnostics.

- Set a location for storing the test results. You can also set the user name and password that you use for uploads.
- Display status information about the diagnostics run previously.

To customize Remote HP PC Hardware Diagnostics UEFI settings, follow these steps:

1. Turn on or restart the computer, and when the HP logo appears, press f10 to enter Computer Setup.
2. Select **Advanced**, and then select **Settings**.
3. Make your customization selections.
4. Select **Main**, then select **Save Changes and Exit** to save your settings.

Your changes take effect when the computer restarts.

10 Specifications

This chapter provides specifications for your computer system.

Computer specifications

This section provides specifications for your computer. When you travel with your computer, the computer dimensions and weights, as well as input power ratings and operating specifications, provide helpful information.

Table 10-1 Computer specifications

	Metric	U.S.
Dimensions		
Width	**357.7 mm**	14.1 in
Depth	**254.9 mm**	10.0 in
Height (front to back)	**17.9 to 18.6 mm**	0.71 to 0.73 in
Weight	**1799 kg**	3.97 lb
Input power		
Operating voltage and current	19.5 V DC @ 2.31 A - 45 W	
	19.5 V DC @ 3.33 A - 65 W	
	19.5 V DC @ 4.62 A - 90 W	
	19.5 V DC @ 7.70 A - 150 W	
	19.5 V DC @ 10.3 A - 200 W	
Temperature		
Operating	**5°C to 35°C**	41°F to 95°F
Nonoperating	**-20°C to 60°C**	-4°F to 140°F
Relative humidity (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%	
Maximum altitude (unpressurized)		
Operating	**-15 m to 3,048 m**	-50 ft to 10,000 ft

Table 10-1 Computer specifications (continued)

	Metric	U.S.
Nonoperating	-15 m to 12,192 m	-50 ft to 40,000 ft

NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The device operates well within this range of temperatures.

Display specifications

This section provides specifications for your display.

Table 10-2 Display specifications

	Metric	U.S.
Active diagonal size	40.6 cm	16.0 in
Resolution	2048 × 1280 1920 × 1200	
Surface treatment	Antiglare (LED panel) Brightview (OLED panel)	
Brightness	400 nits 300 nits	
Viewing angle	UWVA	
Backlight	LED	
Display panel interface	eDP 1.2 without PSR	

Solid-state drive specifications

This section provides specifications for your solid-state drives.

Table 10-3 Solid-state drive specifications

	256 GB*	512 GB*	1 TB*
Dimensions			
Height	1.0 mm	1.0 mm	1.0 mm
Length	50.8 mm	50.8 mm	50.8 mm
Width	28.9 mm	28.9 mm	28.9 mm
Weight	< 10 g	< 10 g	< 10 g
Interface type	PCIe	PCIe	PCIe
Ready time, maximum (to not busy)	1.0 ms	< 1.0 ms	1.0 ms
Access times, logical	0.1 ms	0.1 ms	0.1 ms
Transfer rate			

Table 10-3 Solid-state drive specifications (continued)

	256 GB*	512 GB*	1 TB*
Sequential read	up to 2150 MBps	up to 2150 MBps	up to 2150 MBps
Random read	Up to 300,000 IOPs	Up to 300,000 IOPs	Up to 300,000 IOPs
Sequential write	up to 1550 MBps	up to 1550 MBps	up to 1550 MBps
Random write	Up to 100,000 IOPs	Up to 100,000 IOPs	Up to 100,000 IOPs
Total logical sectors	468,883,296	1,000,215,216	1,500,336,388
Operating temperature	**0°C to 70°C** (32°F to 158°F)	**0°C to 70°C** (32°F to 158°F)	**0°C to 70°C** (32°F to 158°F)

*1 GB = 1 billion bytes when referring to hard drive storage capacity. Actual accessible capacity is less. Actual drive specifications might differ slightly.

NOTE: Certain restrictions and exclusions apply. Contact support for details.

11 Power cord set requirements

This chapter provides power cord requirements for countries and regions.

The wide-range input feature of the computer permits it to operate from any line voltage from 100 V AC to 120 V AC, or from 220 V AC to 240 V AC.

The three-conductor power cord set included with the computer meets the requirements for use in the country or region where the equipment is purchased.

Power cord sets for use in other countries or regions must meet the requirements of the country and region where the computer is used.

Requirements for all countries

These power cord requirements are applicable to all countries and regions.

- The length of the power cord set must be at least **1.0 m** (3.3 ft) and no more than **2.0 m** (6.5 ft).
- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country or region where the power cord set will be used.
- The power cord sets must have a minimum current capacity of 10 A and a nominal voltage rating of 125 V AC or 250 V AC, as required by the power system of each country or region.
- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with the appliance inlet on the back of the computer.

Requirements for specific countries and regions

To determine power cord requirements for specific countries and regions, use this table.

Table 11-1 Power cord requirements for specific countries and regions

Country/region	Accredited agency	Applicable note number
Argentina	IRAM	1
Australia	SAA	1
Austria	OVE	1
Belgium	CEBEC	1
Brazil	ABNT	1
Canada	CSA	2

Table 11-1 Power cord requirements for specific countries and regions (continued)

Country/region	Accredited agency	Applicable note number
Chile	IMQ	1
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
India	BIS	1
Israel	SII	1
Italy	IMQ	1
Japan	JIS	3
Netherlands	KEMA	1
New Zealand	SANZ	1
Norway	NEMKO	1
The People's Republic of China	CCC	4
Saudi Arabia	SASO	7
Singapore	PSB	1
South Africa	SABS	1
South Korea	KTL	5
Sweden	SEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	6
Thailand	TISI	1
United Kingdom	ASTA	1
United States	UL	2

1. The flexible cord must be Type HO5VV-F, three-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
2. The flexible cord must be Type SVT/SJT or equivalent, No. 18 AWG, three-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V AC) or NEMA 6-15P (15 A, 250 V AC) configuration. CSA or C-UL mark. UL file number must be on each element.
3. The appliance coupler, flexible cord, and wall plug must bear a T mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCTF, three-conductor, 0.75 mm² or 1.25 mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V AC) configuration.
4. The flexible cord must be Type RVV, three-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the CCC certification mark.

5. The flexible cord must be Type H05VV-F three-conductor, 0.75 mm² conductor size. KTL logo and individual approval number must be on each element. Approval number and logo must be printed on a flag label.
6. The flexible cord must be Type HVCTF three-conductor, 1.25 mm² conductor size. Power cord set fittings (appliance coupler, cable, and wall plug) must bear the BSMI certification mark.
7. For 127 V AC, the flexible cord must be Type SVT or SJT 3-conductor, 18 AWG, with plug NEMA 5-15P (15 A, 125 V AC), with UL and CSA or C-UL marks. For 240 V AC, the flexible cord must be Type H05VV-F three-conductor, 0.75 mm² or 1.00 mm² conductor size, with plug BS 1363/A with BSI or ASTA marks.

12 Recycling

When a nonrechargeable or rechargeable battery has reached the end of its useful life, do not dispose of the battery in general household waste. Follow the local laws and regulations in your area for battery disposal.

HP encourages customers to recycle used electronic hardware, HP original print cartridges, and rechargeable batteries. For more information about recycling programs, see the HP website at http://www.hp.com/recycle.

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