



Maintenance and Service Guide

HP Spectre x360 13 Convertible PC
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Product notice

This guide describes features that are common to most models. Some features may not be available on the 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 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. Go to <http://www.microsoft.com> for details.

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

Software terms

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, the 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 the seller.

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

Safety warning notice


 **WARNING!** To reduce the possibility of heat-related injuries or of overheating the device, do not place the device directly on a lap or obstruct the device air vents. Use the device 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 contact the skin or a soft surface, such as pillows or rugs or clothing, during operation. The device and the AC adapter comply with the user-accessible surface temperature limits.

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1 Product description

Table 1-1 Product components and descriptions

Category	Description
Product Name	HP Spectre x360 13 Convertible PC (model numbers 13-aw0001 through 13-aw0999; CTO model number 13t-aw000)
Processors	Intel® Core™ i7-1065G7 1.3-GHz (turbo up to 3.9-GHz) processor (3200 MHz FSB, 8-MB L3 cache, quad core, 12 W) Intel Core i5-1035G4 1.1-GHz (turbo up to 3.7-GHz) processor (3200 MHz FSB, 6-MB L3 cache, quad core, 12 W)
Chipset	Intel integrated soldered on circuit (SoC)
Graphics	Graphics Card: Intel Iris® Plus integrated brand graphics
Panel	<ul style="list-style-type: none">13.3-in., ultra high-definition (UHD) (3840×2160), brightview, organic light emitting diodes (OLED), ultraslim (1.275-mm, 3.67-mm bent), UWVA, 400 nits, 96% NTSC, DCI-P3 100%, embedded DisplayPort (eDP)+panel self refresh (PSR), antireflection (AR), touchscreen display assembly with narrow bezel (HDR mode)13.3-in., UHD (3840×2160), brightview, OLED, ultraslim (1.275-mm, 3.67-mm bent), UWVA, 400 nits, 96% NTSC, DCI-P3 100%, eDP+PSR, touchscreen display assembly with narrow bezel (HDR mode)13.3-in., full high-definition (FHD) (1920×1080), brightview, white light emitting diode (WLED), ultraslim III (2.0-mm, 3.8-mm bent), UWVA, 1000 nits sharing, 150 nits sharing, 72% NTSC, eDP+PSR, AR, touchscreen display assembly13.3-in., FHD (1920×1080), brightview, WLED, ultraslim III (2.0-mm, 3.8-mm bent), UWVA, 400 nits, 72% NTSC, eDP+PSR, AR, low power touchscreen display assembly13.3-in., FHD (1920×1080), brightview, WLED, ultraslim III (2.0-mm, 3.8-mm bent), UWVA, 400 nits, 72% NTSC, eDP+PSR, low power touchscreen display assembly
Memory	Support for LPDDR4x-3200, 1.2 V system memory Support for 16-GB (32 GB×32) or 8-GB of system memory (16 GB×32)
Storage	Solid-state drive: <ul style="list-style-type: none">2-TB, 2280, peripheral component interconnect express-3×4 (PCIe), non-volatile memory express (NVMe), Secure Seal (SS) solid-state drive with three-layer cell (TLC)1-TB, 2280, PCIe-3×4, NVMe, SS solid-state drive with TLC1-GB, 2280, PCIe-3×2×2, NVMe, solid-state drive+32-GB 3D XPoint512-GB, 2280, PCIe-3×4, NVMe, SS solid-state drive with TLC512-GB, 2280, PCIe-3×2×2, NVMe, solid-state drive+32-GB 3D XPoint256-GB, 2280, PCIe-3×4, NVMe, SS solid-state drive with TLC
Audio and video	Audio: <ul style="list-style-type: none">Bang and Olufsen Audio ControlDual speakersSupport for HP Audio BoostSupport for Far Field Cortana Camera: Integrated one-piece fixed HD 720p infrared camera

Table 1-1 Product components and descriptions (continued)

Category	Description
Audio and video <i>(continued)</i>	Microphones: Dual-array microphone
Optical drive	Optional external DVD+/-RW DL SuperMulti, 9.5-mm tray load, SATA
Wireless	Integrated wireless wide area network (WWAN) option (optional): Intel XMM™ 7560 LTE-Advanced Pro (Cat16) WWAN module with 4 antennas Wireless local area network (WLAN) option: Intel Wi-Fi 6 AX201 + Bluetooth 5.0 non-vPro 802.11ax 2x2, MU-MIMO, supporting gigabit file transfer speeds with 2 antennas
External media cards	HP MultiFormat microSD™ media card reader Nano SIM
Internal card expansion	One next generation form factor (NGFF) slot for solid-state drive One NGFF slot for WWAN module (only on computer models equipped with WWAN)
Ports	<ul style="list-style-type: none"> • Audio-out (headphone)/audio-in (microphone) combo jack • USB 3.1 Type-A Gen. 1 port • USB 3.1 Type-C Gen. 2 Thunderbolt™ port (2)
Security	<ul style="list-style-type: none"> • Fingerprint reader: Windows Hello • Webcam kill switch • Infrared camera: Windows Hello • Microphone mute with on/off key on keyboard • Trusted Platform Module (TPM) 2.0 - Discrete
Sensor	<ul style="list-style-type: none"> • Accelerometer • Accelerometer+Gyroscope+eCompass • Infrared thermal sensor
Power requirements	Support for the following AC adapters: 65-W HP Smart AC adapter (non-PFC, slim, USB Type-C, straight, 1.0-m) 65-W HP Smart AC adapter (non-PFC, USB Type-C, RC, 1.0-m) Support for a 4-cell, 60.7-Wh, 3.946-Ah, Li-ion battery
Operating system	<ul style="list-style-type: none"> • Windows® 10 Home 64-bit • Windows 10 Home 64-bit Advanced • Windows 10 Home 64-bit Advanced Single Language • Windows 10 Home 64-bit High-End Chinese Market CPP • Windows 10 Home 64-bit Plus • Windows 10 Home 64-bit Plus Single Language • Windows 10 Home 64-bit Plus Single Language Africa Market PPP • Windows 10 Home 64-bit Plus Single Language APAC EM PPP • Windows 10 Home 64-bit Plus Single Language India Market PPP • Windows 10 Home 64-bit Plus Single Language Indonesia Market PPP

Table 1-1 Product components and descriptions (continued)

Category	Description
	<ul style="list-style-type: none">• Windows 10 Professional 64-bit

2 Getting to know the computer

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

Locating hardware

To find out what hardware is installed on the computer:

- ▲ Type `device manager` in the taskbar search box, and then select the **Device Manager** app.

A list displays all the devices installed on the computer.

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

Locating software

To find out what software is installed on the computer:

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

Right side

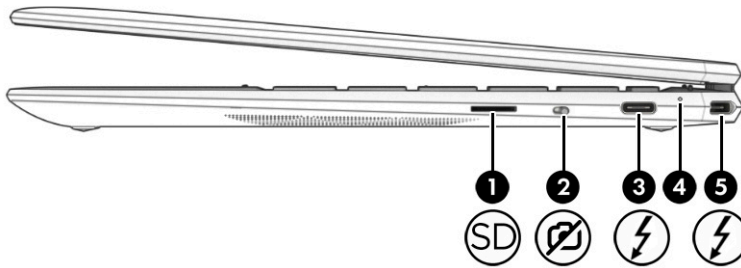


Table 2-1 Right-side components and their descriptions





Component	Description
(1)  microSD™ memory card reader	<p>Reads optional memory cards that enable you to store, manage, share, or access information.</p> <p>To insert a card:</p> <ol style="list-style-type: none"> 1. Hold the card label-side up, with connectors facing the computer. 2. Insert the card into the memory card reader, and then press in on the card until it is firmly seated. <p>To remove a card:</p> <ul style="list-style-type: none"> ▲ Press in on the card, and then remove it from the memory card reader.
(2)  Camera privacy switch	Turns the camera off and on.
(3)  USB Type-C power connector and Thunderbolt™ port with HP Sleep and Charge	<p>Connects an AC adapter that has a USB Type-C connector, supplying power to the computer and, if needed, charging the computer battery.</p> <p>– and –</p> <p>Even when the computer is off, connects and charges most USB devices that have a Type-C connector, such as a cell phone, camera, activity tracker, or smartwatch, and provides high-speed data transfer.</p> <p>– and –</p> <p>Connects a display device that has a USB Type-C connector, providing DisplayPort™ output.</p> <p>NOTE: The computer may also support a Thunderbolt docking station.</p> <p>NOTE: Cables and/or adapters (purchased separately) may be required.</p>
(4) AC adapter and battery light	<ul style="list-style-type: none"> • White: The AC adapter is connected and the battery is fully charged. • Blinking white: 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.

Table 2-1 Right-side components and their descriptions (continued)

Component	Description
(4) AC adapter and battery light <i>(continued)</i>	• Off: The battery is not charging.
(5)  USB Type-C power connector and Thunderbolt port with HP Sleep and Charge	<p>Connects an AC adapter that has a USB Type-C connector, supplying power to the computer and, if needed, charging the computer battery.</p> <p>– and –</p> <p>Even when the computer is off, connects and charges most USB devices that have a Type-C connector, such as a cell phone, camera, activity tracker, or smartwatch, and provides high-speed data transfer.</p> <p>– and –</p> <p>Connects a display device that has a USB Type-C connector, providing DisplayPort output.</p> <p>NOTE: The computer may also support a Thunderbolt docking station.</p> <p>NOTE: Cables and/or adapters (purchased separately) may be required.</p>

Left side

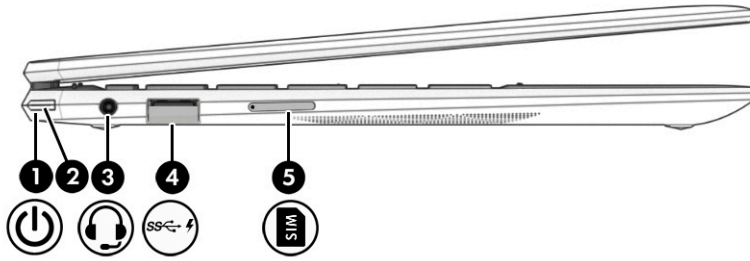







Table 2-2 Left-side components and their descriptions

Component	Description
(1)  Power light	<ul style="list-style-type: none"> On: The computer is on. Off: The computer is off, in Hibernation, or in the Sleep state.
(2)  Power button	<ul style="list-style-type: none"> When the computer is off, press the button 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. <p>IMPORTANT: Pressing and holding down the power button results in the loss of unsaved information.</p> <p>If the computer has stopped responding and shutdown procedures are ineffective, press and hold the power button down for at least 5 seconds to turn off the computer.</p>
(3)  Audio-out (headphone)/Audio-in (microphone) combo jack	<p>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.</p> <p>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 <i>Regulatory, Safety, and Environmental Notices</i>.</p> <p>To access this guide:</p> <ul style="list-style-type: none"> ▲ Type HP Documentation in the taskbar search box, and then select HP Documentation. <p>NOTE: When a device is connected to the jack, the computer speakers are disabled.</p>
(4)  USB SuperSpeed port with HP Sleep and Charge	<p>Connects a USB device, provides high-speed data transfer, and even when the computer is off, charges most products such as a cell phone, camera, activity tracker, or smartwatch.</p>
(5)  Nano SIM card slot (select products only)	<p>Supports a wireless subscriber identity module (SIM) card. The SIM card slot is located on the left side of the computer.</p>

Display

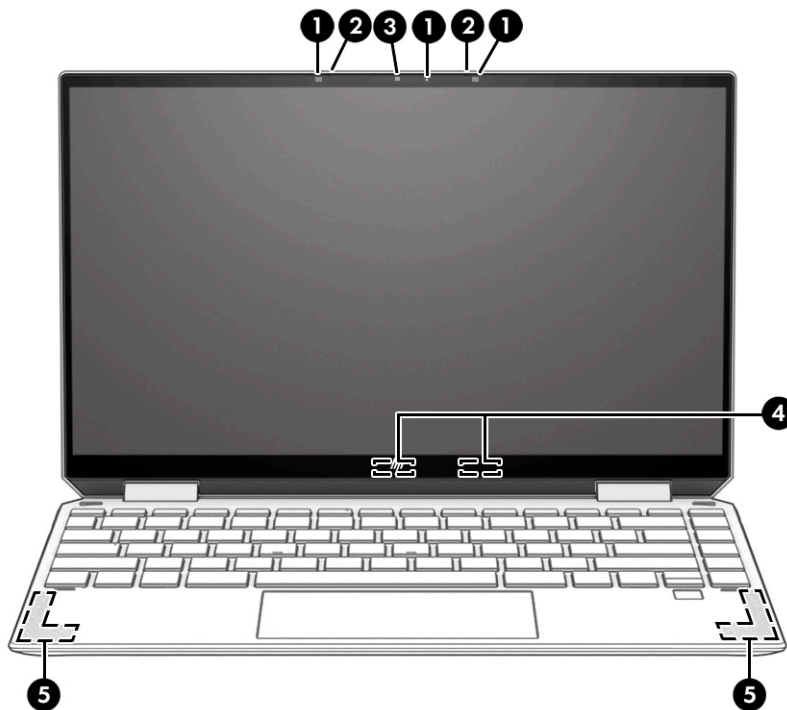


Table 2-3 Display components and their descriptions

Component	Description
(1) Camera light	On: The camera is in use.
(2) Internal microphones	Record sound.
(3) Camera	Allows 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 the product.
(4) WLAN antennas*	Send and receive wireless signals to communicate with WLANs.
(5) WWAN antennas (select products only)*	Send and receive wireless signals to communicate with WWANs.

*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 the country or region.

To access this guide:

- ▲ Type `HP Documentation` in the taskbar search box, and then select **HP Documentation**.

Keyboard area

Touchpad

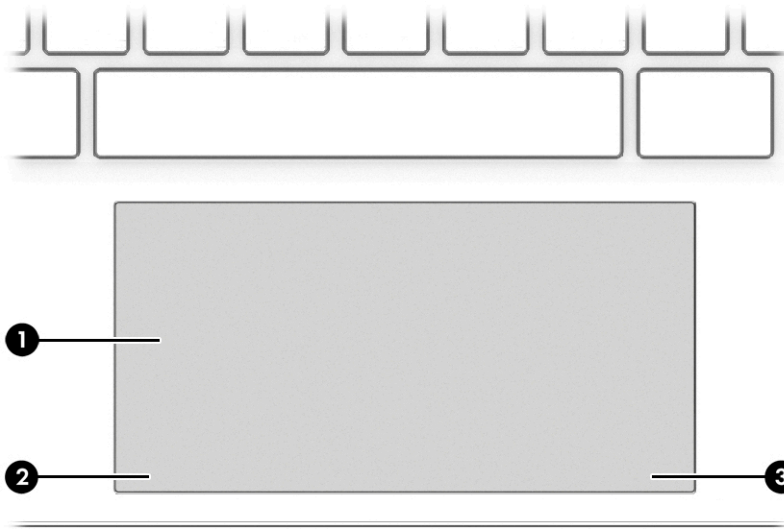


Table 2-4 Touchpad components and their descriptions

Component	Description
(1) Touchpad zone	Reads finger gestures to move the pointer or activate items on the screen.
(2) Left control zone	Textured area that allows you to perform additional gestures.
(3) Right control zone	Textured area that allows you to perform additional gestures.

Lights

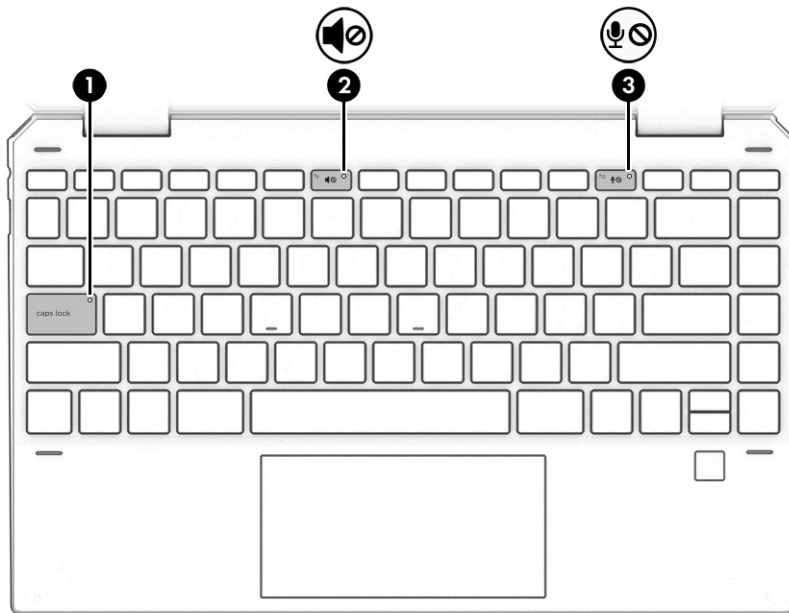




Table 2-5 Lights and their descriptions

Component	Description
(1) Caps lock light	On: Caps lock is on, which switches the key input to all capital letters.
(2)  Mute light	<ul style="list-style-type: none">• On: Computer sound is off.• Off: Computer sound is on.
(3)  Microphone mute light	<ul style="list-style-type: none">• On: Microphone is off.• Off: Microphone is on.

Fingerprint reader

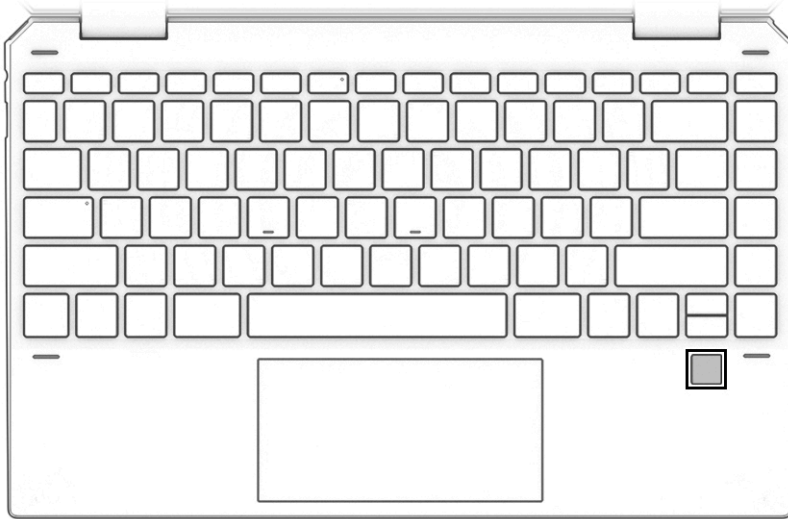


Table 2-6 Fingerprint reader and its description

Component	Description
Fingerprint reader	Allows a fingerprint logon to Windows, instead of a password logon.

Special keys

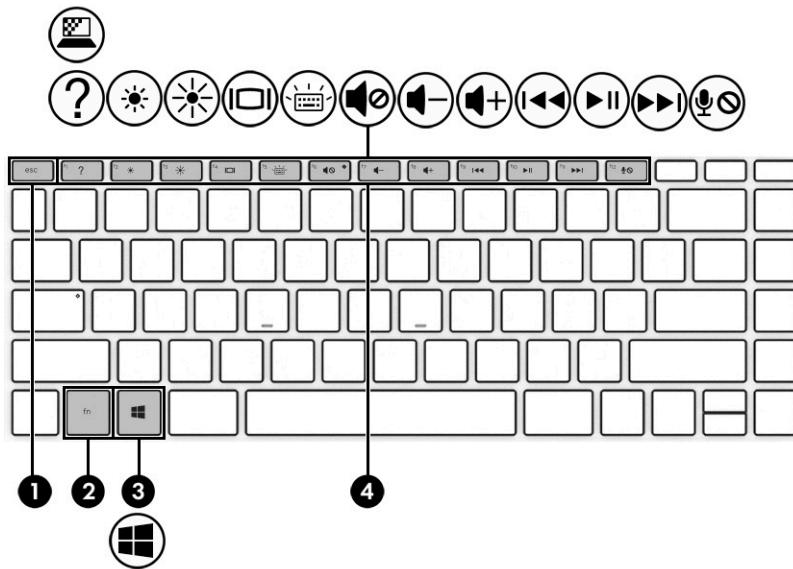



Table 2-7 Special keys and their descriptions

Component	Description
(1) <code>esc</code> key	Displays system information when pressed in combination with the <code>fn</code> key.
(2) <code>fn</code> 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.

Bottom

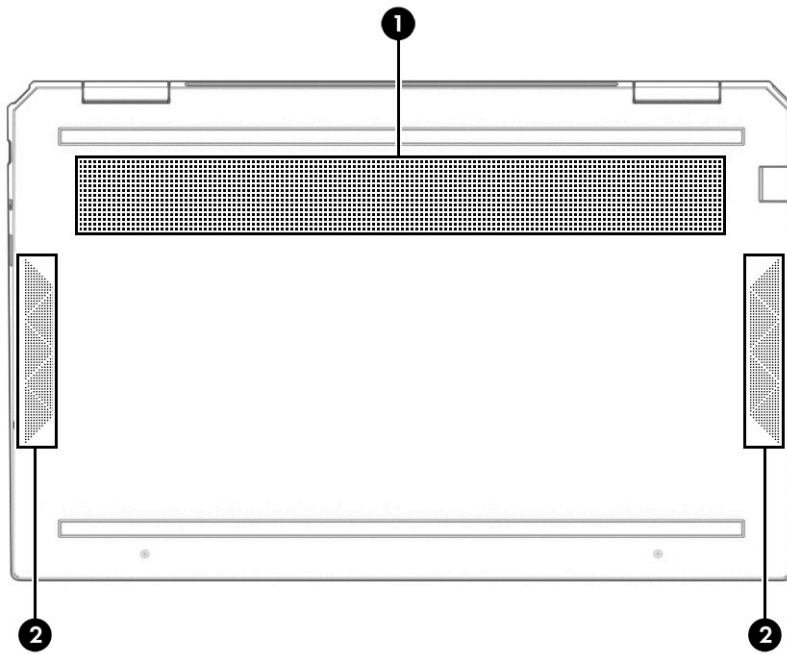


Table 2-8 Bottom components and their descriptions

Component	Description
(1) 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.
(2) Speakers	Produce sound.

Rear



Table 2-9 Rear component and its description

Component	Description
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 you may need when you troubleshoot system problems or travel internationally with the computer. Labels may 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 the computer. When contacting support, the serial number, the product number, or the model number may be required. Locate this information before contacting support.

The service label will resemble one of the examples shown below. Refer to the illustration that most closely matches the service label on the computer.

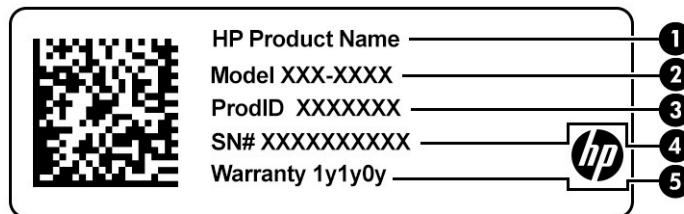


Table 2-10 Service label components

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

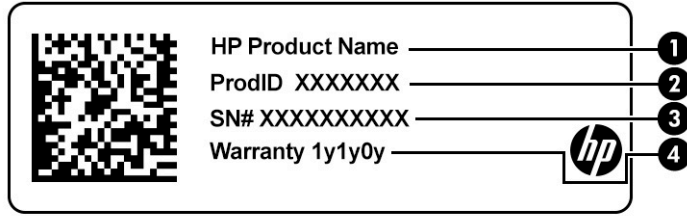




Table 2-11 Service label components

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

- Regulatory label(s)—Provide(s) regulatory information about the computer.
- Wireless certification label(s)—Provide(s) 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

Computer major components

-
-  **NOTE:** HP continually improves and changes product parts. For complete and current information on supported parts for the computer, go to <http://partsurfer.hp.com>, select the country or region, and then follow the on-screen instructions.
 -  **NOTE:** Details about the computer, including model number, serial number, product identification, and length of warranty, are on the service tag at the bottom of the computer. See [Labels on page 14](#) for details.
-

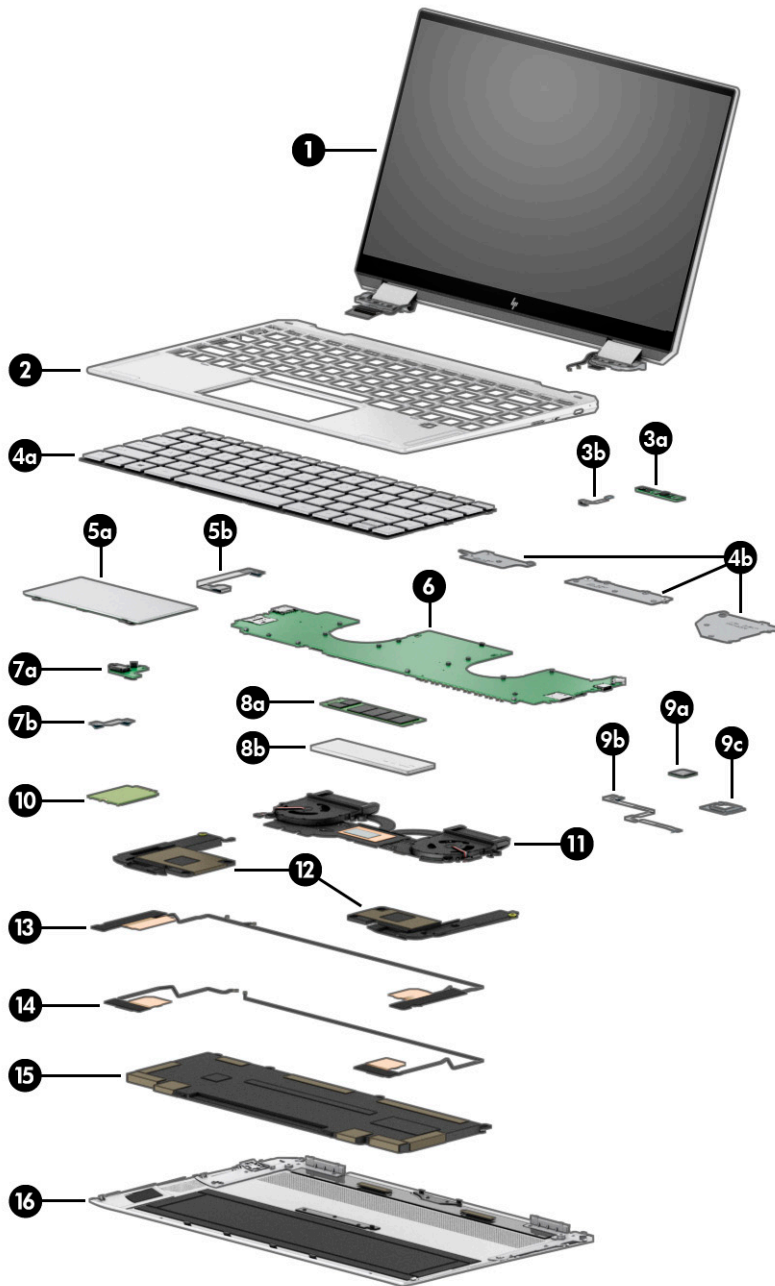


Table 3-1 Computer component descriptions and spare part information

Item	Component	Spare part number
(1)	Display assembly:	
	13.3-in., UHD (3840×2160), brightview, OLED, ultraslim, UWVA, 400 nits, eDP+PSR, AR, touchscreen display assembly with narrow bezel in natural silver finish	L75192-001
	13.3-in., UHD (3840×2160), brightview, OLED, ultraslim, UWVA, 400 nits, eDP+PSR, AR, touchscreen display assembly with narrow bezel in nightfall black finish	L72404-001
	13.3-in., UHD (3840×2160), brightview, OLED, ultraslim, UWVA, 400 nits, eDP+PSR, AR, touchscreen display assembly with narrow bezel in Poseidon blue finish	L75196-001

Table 3-1 Computer component descriptions and spare part information (continued)

Item	Component	Spare part number
	13.3-in., UHD (3840×2160), brightview, OLED, ultraslim, UWVA, 400 nits, eDP+PSR, touchscreen display assembly with narrow bezel in natural silver finish	L75194-001
	13.3-in., UHD (3840×2160), brightview, OLED, ultraslim, UWVA, 400 nits, eDP+PSR, touchscreen display assembly with narrow bezel in nightfall black finish	L72406-001
	13.3-in., UHD (3840×2160), brightview, OLED, ultraslim, UWVA, 400 nits, eDP+PSR, touchscreen display assembly with narrow bezel in Poseidon blue finish	L75198-001
	13.3-in., FHD (1920×1080), brightview, WLED, ultraslim III, UWVA, 1000 nits sharing, 150 nits, eDP+PSR, AR, touchscreen display assembly in natural silver finish	L75191-001
	13.3-in., FHD (1920×1080), brightview, WLED, ultraslim III, UWVA, 1000 nits sharing, 150 nits, eDP+PSR, AR, touchscreen display assembly in nightfall black finish	L72403-001
	13.3-in., FHD (1920×1080), brightview, WLED, ultraslim III, UWVA, 1000 nits sharing, 150 nits, eDP+PSR, AR, touchscreen display assembly in Poseidon blue finish	L75195-001
	13.3-in., FHD (1920×1080), brightview, WLED, ultraslim III, UWVA, 400 nits, eDP+PSR, AR, low power touchscreen display assembly in natural silver finish	L75193-001
	13.3-in., FHD (1920×1080), brightview, WLED, ultraslim III, UWVA, 400 nits, eDP+PSR, AR, low power touchscreen display assembly in nightfall black finish	L72405-001
	13.3-in., FHD (1920×1080), brightview, WLED, ultraslim III, UWVA, 400 nits, eDP+PSR, AR, low power touchscreen display assembly in Poseidon blue finish	L75197-001
(2a)	Top cover:	
	For use only on computer models not equipped with WWAN capability in all countries and/or regions except Japan in natural silver finish	L72408-001
	For use only on computer models not equipped with WWAN capability in Japan in natural silver finish	L74817-001
	For use only on computer models equipped with WWAN capability in all countries and/or regions except Japan in nightfall black finish	L72410-001
	For use only on computer models equipped with WWAN capability in Japan in nightfall black finish	L74819-001
	For use only on computer models not equipped with WWAN capability in all countries and/or regions except Japan in nightfall black finish	L72407-001
	For use only on computer models not equipped with WWAN capability in Japan in nightfall black finish	L74816-001
	For use only on computer models not equipped with WWAN capability in all countries and/or regions except Japan in Poseidon blue finish	L72409-001
	For use only on computer models not equipped with WWAN capability in Japan in Poseidon blue finish	L74818-001
(3a)	Infrared sensor board (does not include cable)	L71968-001
(3b)	Infrared sensor board cable	L71960-001
(4a)	Keyboard with backlight and privacy filter in natural silver finish (includes backlight cable and keyboard cable):	
	For use in Belgium	L72387-A41
	For use in Bulgaria	L72387-261
	For use in Canada	L72387-DB1

Table 3-1 Computer component descriptions and spare part information (continued)

Item	Component	Spare part number
	For use in the Czech Republic and Slovakia	L72387-FL1
	For use in Denmark, Finland, and Norway	L72387-DH1
	For use in France	L72387-051
	For use in Germany	L72387-041
	For use in Greece	L72387-151
	For use in Hungary	L72387-211
	For use in Israel	L72387-BB1
	For use in Italy	L72387-061
	For use in Japan	L72387-291
	For use in Latin America	L72387-161
	For use in the Netherlands	L72387-331
	For use in Portugal	L72387-131
	For use in Romania	L72387-271
	For use in Russia	L72387-251
	For use in Saudi Arabia	L72387-171
	For use in Slovenia	L72387-F81
	For use in South Korea	L72387-AD1
	For use in Spain	L72387-071
	For use in Switzerland	L72387-BG1
	For use in Taiwan	L72387-AB1
	For use in Thailand	L72387-281
	For use in Turkey	L72387-141
	For use in Uruguay	L72387-BD1
	For use in the United Kingdom	L72387-031
	For use in the United States	L72387-001
	Keyboard with backlight in natural silver finish (includes backlight cable and keyboard cable):	
	In ghost white finish:	
	For use in Belgium	L73750-A41
	For use in Bulgaria	L73750-261
	For use in Canada	L73750-DB1
	For use in the Czech Republic and Slovakia	L73750-FL1
	For use in Denmark, Finland, and Norway	L73750-DH1
	For use in France and Africa	L73750-FM1

Table 3-1 Computer component descriptions and spare part information (continued)

Item	Component	Spare part number
	For use in Germany	L73750-041
	For use in Greece	L73750-151
	For use in Hungary	L73750-211
	For use in Israel	L73750-BB1
	For use in Italy	L73750-061
	For use in Japan	L73750-291
	For use in Latin America	L73750-161
	For use in the Netherlands	L73750-331
	For use in Portugal	L73750-131
	For use in Romania	L73750-271
	For use in Russia	L73750-251
	For use in Saudi Arabia	L73750-171
	For use in Slovenia	L73750-F81
	For use in South Korea	L73750-AD1
	For use in Spain	L73750-071
	For use in Switzerland	L73750-BG1
	For use in Taiwan	L73750-AB1
	For use in Thailand	L73750-281
	For use in Turkey	L73750-141
	For use in Uruguay	L73750-BD1
	For use in the United Kingdom	L73750-031
	For use in the United States	L73750-001
	Keyboard with backlight and privacy filter in nightfall black finish (includes backlight cable and keyboard cable):	
	For use in Belgium	L72385-A41
	For use in Bulgaria	L72385-261
	For use in Canada	L72385-DB1
	For use in the Czech Republic and Slovakia	L72385-FL1
	For use in Denmark, Finland, and Norway	L72385-DH1
	For use in France	L72385-051
	For use in Germany	L72385-041
	For use in Greece	L72385-151
	For use in Hungary	L72385-211
	For use in Israel	L72385-BB1

Table 3-1 Computer component descriptions and spare part information (continued)

Item	Component	Spare part number
	For use in Italy	L72385-061
	For use in Japan	L72385-161
	For use in Latin America	L72385-161
	For use in the Netherlands	L72385-331
	For use in Portugal	L72385-131
	For use in Romania	L72385-271
	For use in Russia	L72385-251
	For use in Saudi Arabia	L72385-171
	For use in Slovenia	L72385-F81
	For use in South Korea	L72385-AD1
	For use in Spain	L72385-071
	For use in Switzerland	L72385-BG1
	For use in Taiwan	L72385-AB1
	For use in Thailand	L72385-281
	For use in Turkey	L72385-141
	For use in Uruguay	L72385-BD1
	For use in the United Kingdom	L72385-031
	For use in the United States	L72385-001
	Keyboard with backlight in nightfall black finish (includes backlight cable and keyboard cable):	
	For use in Belgium	L73748-A41
	For use in Bulgaria	L73748-261
	For use in Canada	L73748-DB1
	For use in the Czech Republic and Slovakia	L73748-FL1
	For use in Denmark, Finland, and Norway	L73748-DH1
	For use in France	L73748-051
	For use in Germany	L73748-041
	For use in Greece	L73748-151
	For use in Hungary	L73748-211
	For use in Israel	L73748-BB1
	For use in Italy	L73748-061
	For use in Japan	L73748-291
	For use in Latin America	L73748-161
	For use in the Netherlands	L73748-331

Table 3-1 Computer component descriptions and spare part information (continued)

Item	Component	Spare part number
	For use in Portugal	L73748-131
	For use in Romania	L73748-271
	For use in Russia	L73748-251
	For use in Saudi Arabia	L73748-171
	For use in Slovenia	L73748-F81
	For use in South Korea	L73748-AD1
	For use in Spain	L73748-071
	For use in Switzerland	L73748-BG1
	For use in Taiwan	L73748-AB1
	For use in Thailand	L73748-281
	For use in Turkey	L73748-141
	For use in Uruguay	L73748-BD1
	For use in the United Kingdom	L73748-031
	For use in the United States	L73748-001
	Keyboard with backlight and privacy filter in Poseidon blue finish (includes backlight cable and keyboard cable):	
	For use in Belgium	L72386-A41
	For use in Bulgaria	L72386-261
	For use in Canada	L72386-DB1
	For use in the Czech Republic and Slovakia	L72386-FL1
	For use in Denmark, Finland, and Norway	L72386-DH1
	For use in France	L72386-051
	For use in Germany	L72386-041
	For use in Greece	L72386-151
	For use in Hungary	L72386-211
	For use in Israel	L72386-BB1
	For use in Italy	L72386-061
	For use in Japan	L72386-291
	For use in Latin America	L72386-161
	For use in the Netherlands	L72386-331
	For use in Portugal	L72386-131
	For use in Romania	L72386-271
	For use in Russia	L72386-251
	For use in Saudi Arabia	L72386-171

Table 3-1 Computer component descriptions and spare part information (continued)

Item	Component	Spare part number
	For use in Slovenia	L72386-F81
	For use in South Korea	L72386-AD1
	For use in Spain	L72386-071
	For use in Switzerland	L72386-BG1
	For use in Taiwan	L72386-AB1
	For use in Thailand	L72386-281
	For use in Turkey	L72386-141
	For use in Uruguay	L72386-BD1
	For use in the United Kingdom	L72386-031
	For use in the United States	L72386-001
	Keyboard with backlight in Poseidon blue finish (includes backlight cable and keyboard cable):	
	In ghost white finish:	
	For use in Belgium	L73749-A41
	For use in Bulgaria	L73749-261
	For use in Canada	L73749-DB1
	For use in the Czech Republic and Slovakia	L73750-FL1
	For use in Denmark, Finland, and Norway	L73749-DH1
	For use in France and Africa	L73749-FM1
	For use in Germany	L73749-041
	For use in Greece	L73749-151
	For use in Hungary	L73749-211
	For use in Israel	L73749-BB1
	For use in Italy	L73749-061
	For use in Japan	L73749-291
	For use in Latin America	L73749-161
	For use in the Netherlands	L73749-331
	For use in Portugal	L73749-131
	For use in Romania	L73749-271
	For use in Russia	L73749-251
	For use in Saudi Arabia	L73749-171
	For use in Slovenia	L73749-F81
	For use in South Korea	L73749-AD1
	For use in Spain	L73749-071

Table 3-1 Computer component descriptions and spare part information (continued)

Item	Component	Spare part number
	For use in Switzerland	L73749-BG1
	For use in Taiwan	L73749-AB1
	For use in Thailand	L73749-281
	For use in Turkey	L73749-141
	For use in Uruguay	L73749-BD1
	For use in the United Kingdom	L73749-031
	For use in the United States	L73749-001
(4b)	Keyboard brackets (not available as a spare part)	
	Keyboard Foil Kit (not illustrated, for use only on computer models equipped with WWAN capability and a keyboard with backlight)	L74820-001
	Power button (not illustrated):	
	In natural silver finish	L74814-001
	In nightfall black finish	L74815-001
	In Poseidon blue finish	L72402-001
(5a)	Touchpad (includes touchpad bracket, does not include touchpad cable):	
	In natural silver finish	L71966-001
	In nightfall black finish	L71965-001
	In Poseidon blue finish	L71967-001
(5b)	Touchpad cable	L71958-001
(6)	System board (includes processor and replacement thermal material):	
	Equipped with an Intel Core i7-1065G7 1.3-GHz (turbo up to 3.9-GHz) processor (3200 MHz FSB, 8-MB L3 cache, quad core, 12 W), a UMA graphics subsystem, 16-GB of system memory, the Windows 10 operating system, for use only on computer models equipped with WWAN capability	L71987-601
	Equipped with an Intel Core i7-1065G7 1.3-GHz (turbo up to 3.9-GHz) processor (3200 MHz FSB, 8-MB L3 cache, quad core, 12 W), a UMA graphics subsystem, 16-GB of system memory, the Windows 10 operating system, for use only on computer models equipped with an OLED display assembly	L71986-601
	Equipped with an Intel Core i7-1065G7 1.3-GHz (turbo up to 3.9-GHz) processor (3200 MHz FSB, 8-MB L3 cache, quad core, 12 W), a UMA graphics subsystem, 16-GB of system memory, and the Windows 10 operating system	L71988-601
	Equipped with an Intel Core i7-1065G7 1.3-GHz (turbo up to 3.9-GHz) processor (3200 MHz FSB, 8-MB L3 cache, quad core, 12 W), a UMA graphics subsystem, 8-GB of system memory, and the Windows 10 operating system	L71989-601
	Equipped with an Intel Core i5-1035G4 1.1-GHz (turbo up to 3.7-GHz) processor (3200 MHz FSB, 6-MB L3 cache, quad core, 12 W), a UMA graphics subsystem, 8-GB of system memory, and the Windows 10 operating system	L71985-601
	System Board Foil Kit (not illustrated, for use only on computer models equipped with WWAN capability and a keyboard with backlight)	L72399-001

Table 3-1 Computer component descriptions and spare part information (continued)

Item	Component	Spare part number
	System Board Mylar Kit (not illustrated, for use only on computer models equipped with WWAN capability and a keyboard with backlight)	L72400-001
(7a)	Audio jack board (does not include cable)	L71969-001
(7b)	Audio jack board cable	L71959-001
(8a)	Solid-state drive:	
	2-TB, PCIe, NVMe, solid-state drive with TLC	L71983-001
	1-TB, PCIe, NVMe, solid-state drive with TLC	L71979-001
	512-GB, PCIe, NVMe, solid-state drive with TLC	L71984-001
	256-GB, PCIe, NVMe, solid-state drive with TLC	L71982-001
	1-TB, PCIe, NVMe+32-GB 3D XPoint solid-state drive	L71980-001
	512-GB, PCIe, NVMe+32-GB 3D XPoint solid-state drive	L71981-001
(8b)	Solid-state drive shield (not available as a spare part)	
(9a)	Fingerprint reader module:	
	In natural silver finish	L71963-001
	In nightfall black finish	L71964-001
	In Poseidon blue finish	L71962-001
(9b)	Fingerprint reader module cable	L71957-001
(9c)	Fingerprint reader module bracket (not available as a spare part)	
(10)	Intel XMM 7560 LTE-Advanced Pro (Cat16) WWAN module with 4 antennas	L40752-005
(11)	Fan/heat sink assembly	L71961-001
(12)	Speakers (includes left and right speakers, cables, and rubber isolator):	
	For use only on computer models equipped with WWAN capability	L71977-001
	For use only on computer models not equipped with WWAN capability	L71978-001
	Speaker Gasket Kit (not illustrated, for use only with Speaker Kit with spare part number L71977-001)	L72401-001
	Speaker Sponge Kit (not illustrated)	L81716-001
(13) and (14)	WWAN Antenna Kit	L72398-001
(15)	Battery (4-cell, 60.7-Wh, 3.946-Ah, Li-Ion, includes cable)	L60373-005
(16)	Bottom cover (includes shielding, heat sink grounding pads, and the RJ-45 cover):	
	In natural silver finish	L71954-001
	In nightfall black finish for use only on computer models with WWAN capability	L71956-001
	In nightfall black finish for use only on computer models without WWAN capability	L71955-001
	In Poseidon blue finish	L71953-001

Table 3-1 Computer component descriptions and spare part information (continued)

Item	Component	Spare part number
	Rubber Foot Kit (not illustrated):	
	In natural silver finish	L71974-001
	In nightfall black finish	L71975-001
	In Poseidon blue finish	L71973-001
	SIM tray (not illustrated; in nightfall black finish, for use only on computer models equipped with WWAN capability)	L75185-001
	USB door (not illustrated):	
	In natural silver finish	L71971-001
	In nightfall black finish	L71972-001
	In Poseidon blue finish	L71970-001

Miscellaneous parts

Table 3-2 Miscellaneous components and descriptions

Component	Spare part number
AC adapter:	
65-W HP Smart AC adapter (non-PFC, slim, USB Type-C, straight, 1.0-m)	L04650-850
65-W HP Smart AC adapter (non-PFC, USB Type-C, RC, 1.0-m)	L32392-001
Duck head adapter (C5NS sticker, premium, black):	
For use in India	L33157-001
For use in Japan	L50818-006
For use in the People's Republic of China	L50818-005
Adapters:	
HP Elite USB Type-C MultiPort Hub	L39752-001
HP USB External DVD-RW Drive	747080-001
HP USB-to-Gigabit RJ45 Adapter	829941-001
HP USB Type-C-to-HDMI 2.0 Adapter	829941-001
HP USB Type-C-to-MultiPort Hub	935325-001
HP USB Type-C-to-RJ45 Adapter	855560-001
HP USB Type-C-to-USB Type-A Dongle	833960-001
HP USB Type-C-to-USB Type-A Hub	916838-001
HP USB Type-C-to-VGA Adapter	831751-001
Pen:	
In ash silver finish, Impreza	929863-001
In natural silver finish, Impreza	929863-002
Pen tip:	
Cadillac/Sunwoda	L04536-001
Impreza/Sunwoda	L04536-002
Power cord (C5 connector, 1.0-m, FDH sticker, conventional):	
For use in Argentina	L30811-001
For use in Australia	L22327-001
For use in Denmark	L22322-001
For use in Europe	L22321-001
For use in India	L36820-001
For use in Israel	L22323-001
For use in Italy	L30813-001
For use in Japan	L22330-001

Table 3-2 Miscellaneous components and descriptions (continued)

Component	Spare part number
For use in North America	L22319-001
For use in the People's Republic of China	L36823-001
For use in South Africa	L22325-001
For use in South Korea	L22328-001
For use in Switzerland	L22324-001
For use in Taiwan	L22329-001
For use in Thailand	L22326-001
For use in the United Kingdom	L22320-001
Screw Kit	L71976-001
HP 13.3-in black sleeve	L78253-001

4 Removal and replacement procedures preliminary requirements

Tools required

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


- Flat-bladed screw driver
- Magnetic screw driver
- Torx5 screw driver
- Phillips P0 and P1 screw drivers

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

 **IMPORTANT:** Using excessive force during disassembly and reassembly can damage plastic parts. Use care when handling the plastic.

Cables and connectors

 **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.

Cables must be handled with extreme care to avoid damage. 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 in such a way that they cannot be caught or snagged by parts being removed or replaced. Handle flex cables with extreme care; these cables tear easily.

Drive handling



IMPORTANT: Drives are fragile components that must be handled 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, 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 (one in.) 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 damage

Electronic components are sensitive to electrostatic discharge (ESD). Circuitry design and structure determine the degree of sensitivity. Networks built into many integrated circuits provide some protection, but in many cases, ESD contains enough power to alter device parameters or melt silicon junctions.

A discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Even if the spark is neither felt nor heard, damage may have occurred.

An electronic device exposed to ESD may not be affected at all and can work perfectly throughout a normal cycle. Or the device may function normally for a while, then degrade in the internal layers, reducing its life expectancy.



IMPORTANT: To prevent damage to the tablet when you are removing or installing 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 this section.
- 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.

The following table shows how humidity affects the electrostatic voltage levels generated by different activities.



IMPORTANT: A product can be degraded by as little as 700 V.

Table 4-1 Typical electrostatic voltage levels

Event	Typical electrostatic voltage levels		
	Relative humidity		
	10%	40%	55%
Walking across carpet	35,000 V	15,000 V	7,500 V
Walking across vinyl floor	12,000 V	5,000 V	3,000 V
Motions of bench worker	6,000 V	800 V	400 V
Removing DIPS from plastic tube	2,000 V	700 V	400 V
Removing DIPS from vinyl tray	11,500 V	4,000 V	2,000 V
Removing DIPS from polystyrene foam	14,500 V	5,000 V	3,500 V
Removing bubble pack from PCB	26,500 V	20,000 V	7,000 V
Packing PCBs in foam-lined box	21,000 V	11,000 V	5,000 V

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.

Workstation guidelines

Follow these grounding workstation guidelines:

- Cover the workstation with approved static-shielding material.
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use conductive field service tools, such as cutters, screw drivers, and vacuums.
- When fixtures must directly contact dissipative surfaces, use fixtures made only of static-safe materials.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and polystyrene foam.
- Handle ESD-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting or removing connectors or test equipment.

Equipment guidelines

Grounding equipment must include either a wrist strap or a foot strap at a grounded workstation.

- When seated, wear a wrist strap connected to a grounded system. Wrist straps are flexible straps with a minimum of $1\text{ M}\Omega \pm 10\%$ resistance in the ground cords. To provide proper ground, wear a strap snugly against the skin at all times. On grounded mats with banana-plug connectors, use alligator clips to connect a wrist strap.
- When standing, use foot straps and a grounded floor mat. Foot straps (heel, toe, or boot straps) can be used at standing workstations and are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use foot straps on both feet with a minimum of $1\text{ M}\Omega \pm 10\%$ resistance between the operator and ground. To be effective, the conductive must be worn in contact with the skin.

The following grounding equipment is recommended to prevent electrostatic damage:

- Antistatic tape
- Antistatic smocks, aprons, and sleeve protectors
- Conductive bins and other assembly or soldering aids
- Nonconductive foam
- Conductive tabletop workstations with ground cords of $1\text{ M}\Omega \pm 10\%$ resistance
- Static-dissipative tables or floor mats with hard ties to the ground
- Field service kits
- Static awareness labels
- Material-handling packages
- Nonconductive plastic bags, tubes, or boxes
- Metal tote boxes
- Electrostatic voltage levels and protective materials


The following table lists the shielding protection provided by antistatic bags and floor mats.

Table 4-2 Shielding protection provided by antistatic bags and floor mats

Material	Use	Voltage protection level
Antistatic plastics	Bags	1,500 V
Carbon-loaded plastic	Floor mats	7,500 V
Metallized laminate	Floor mats	5,000 V

5 Removal and replacement procedures


This chapter provides removal and replacement procedures for Authorized Service Provider only parts.

 **IMPORTANT:** Components described in this chapter should be accessed only by an authorized service provider. Accessing these parts can damage the computer or void the warranty.

IMPORTANT: This computer does not have user-replaceable parts. Only HP authorized service providers should perform the removal and replacement procedures described here. Accessing the internal part could damage the computer or void the warranty.

Component replacement procedures

 **NOTE:** Details about the computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of the computer. See [Labels on page 14](#) for details.

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

There are as many as 100 screws that must be removed, replaced, and/or loosened when servicing Authorized Service Provider only parts. Make special note of each screw size and location during removal and replacement.

Bottom cover

 **NOTE:** The bottom cover spare part kit includes system board shielding and keyboard/top cover magnets.

Table 5-1 Bottom cover description and spare part number information

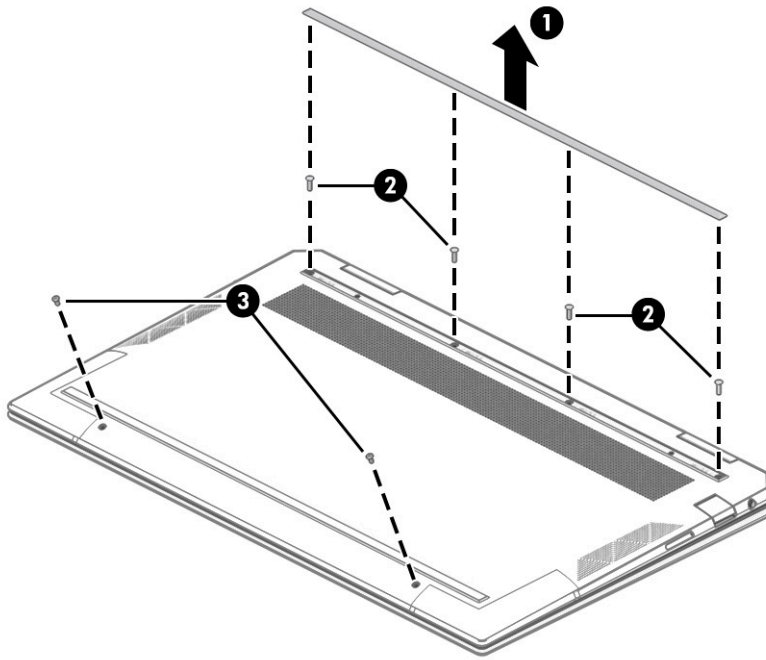
Description	Spare part number
In natural silver finish	L71954-001
In nightfall black finish for use only on computer models with WWAN capability	L71956-001
In nightfall black finish for use only on computer models without WWAN capability	L71955-001
In Poseidon blue finish	L71953-001

Before disassembling the computer, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.

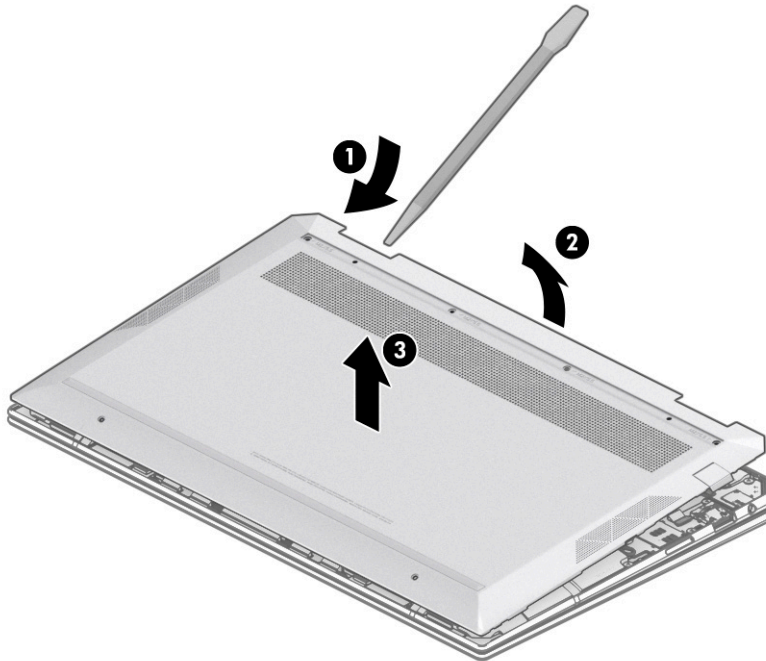
Remove the bottom cover:

1. Turn the computer upside down with the front toward you.
2. Remove the rubber foot **(1)**.
The rubber foot is included in the Rubber Foot Kits using the following spare part numbers:
 - L71974-001 – In natural silver finish
 - L71975-001 – In nightfall black finish
 - L71973-001 – In Poseidon blue finish
3. Remove the four Phillips M2.5×6.1 screws **(2)** that secure the bottom cover to the computer.
4. Remove the two Torx5 M2.0×3.8 screws **(3)** that secure the bottom cover to the computer.



5. Insert a case utility tool **(1)** or similar thin plastic tool into the display hinge areas of the bottom cover.
6. Separate the rear edge **(2)** of the bottom cover from the top cover.

7. Remove the bottom cover (3).



Reverse this procedure to install the bottom cover.

Battery

Table 5-2 Battery description and spare part number information

Description	Spare part number
4-cell, 60.7-Wh, 3.946-Ah, Li-ion battery (includes cable)	L60373-005

Before removing the battery, follow these steps:


1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)).

Remove the battery:

1. Disconnect the battery cable (1) from the system board.

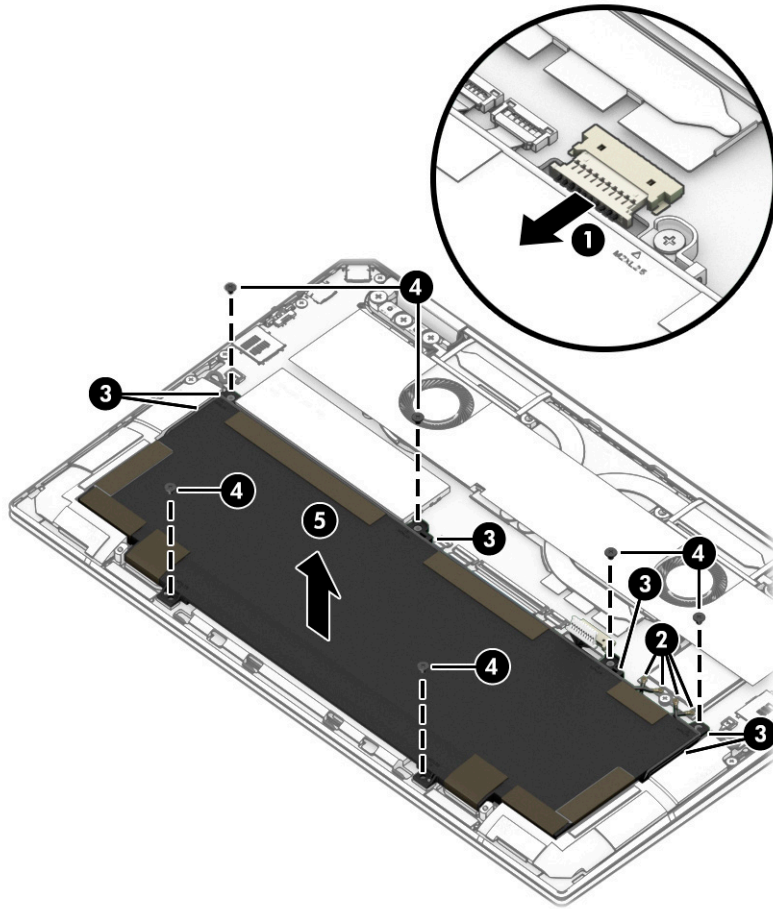
 **NOTE:** Step 2 applies only to computer models equipped with WWAN capability.

2. Disconnect the WWAN antenna cables (2) from the WWAN module.

 **NOTE:** The #1/blue WWAN antenna cable connects to the WWAN module **#1/Main** terminal. The #2/red WWAN antenna cable connects to the WWAN module **#2/Aux** terminal.

3. Release the WWAN antenna cables from the retention clips (3) built into the battery.

4. Remove the six Phillips M2.0×2.7 screws (4) that secure the battery to the top cover.
5. Remove the battery (5).



Reverse this procedure to install the battery.

WWAN module

Table 5-3 WWAN module description and spare part number information

Description	Spare part number
Intel XMM 7560 LTE-Advanced Pro (Cat16) WWAN module with 4 antennas	L40752-005



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 WWAN module, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 36](#)).

Remove the WWAN module:


1. Disconnect the WWAN antenna cables **(1)** from the WWAN module.

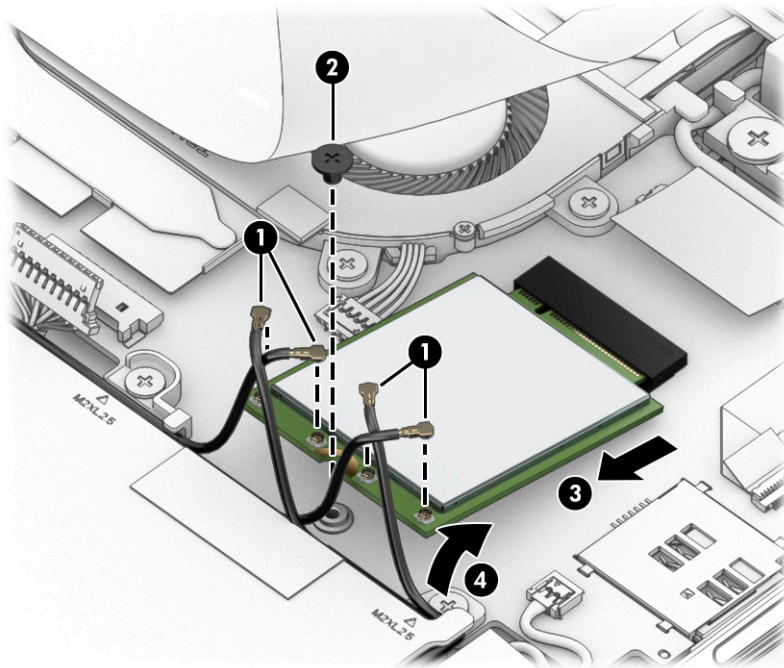


NOTE: The #1/blue WWAN antenna cable connects to the WWAN module **#1/Main** terminal. The #2/ red WWAN antenna cable connects to the WWAN module **#2/Aux** terminal.

2. Remove the Phillips M2.0×2.7 screw **(2)** that secures the WWAN module to the top cover.
3. Release the WWAN module **(3)** by sliding it away from the slot.

4. Remove the WWAN module (4).

 **NOTE:** WWAN modules are designed with a notch to prevent incorrect insertion.



Reverse this procedure to install the WWAN module.

Solid-state drive

Table 5-4 Solid-state drive description and spare part number information

Description	Spare part number
2-TB, PCIe, NVMe, solid-state drive with TLC	L71983-001
1-TB, PCIe, NVMe, solid-state drive with TLC	L71979-001
512-GB, PCIe, NVMe, solid-state drive with TLC	L71984-001
256-GB, PCIe, NVMe, solid-state drive with TLC	L71982-001
1-TB, PCIe, NVMe+32-GB 3D XPoint solid-state drive	L71980-001
512-GB, PCIe, NVMe+32-GB 3D XPoint solid-state drive	L71981-001

Before removing the solid-state drive, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 36](#)).

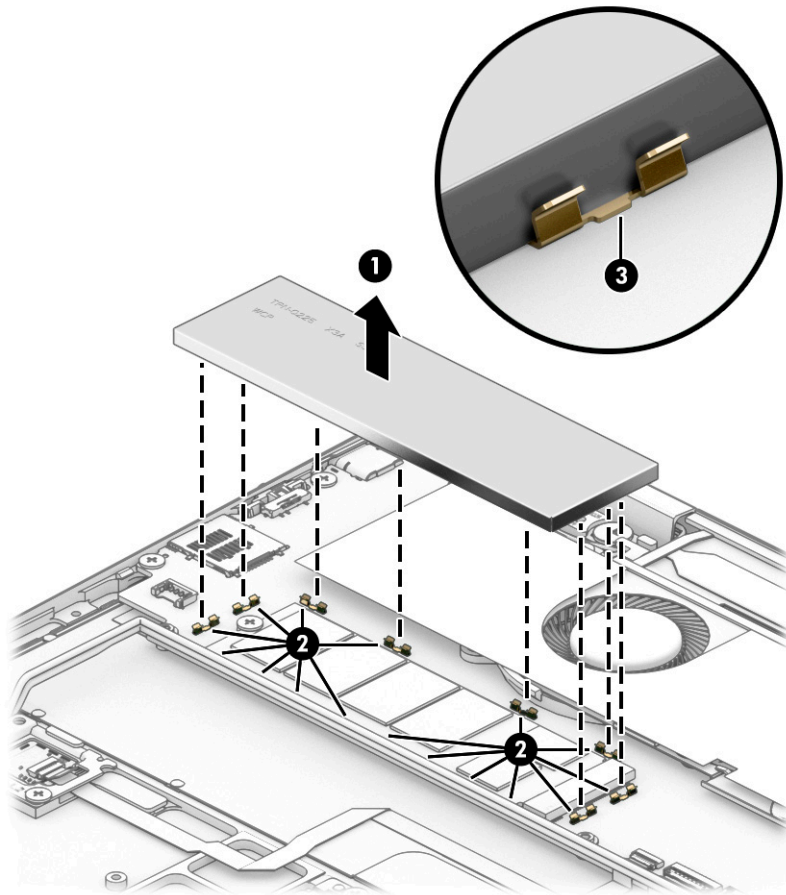
Remove the solid-state drive:

1. Remove the solid-state drive shield **(1)** from the system board.


The solid-state drive is not available as a spare part.

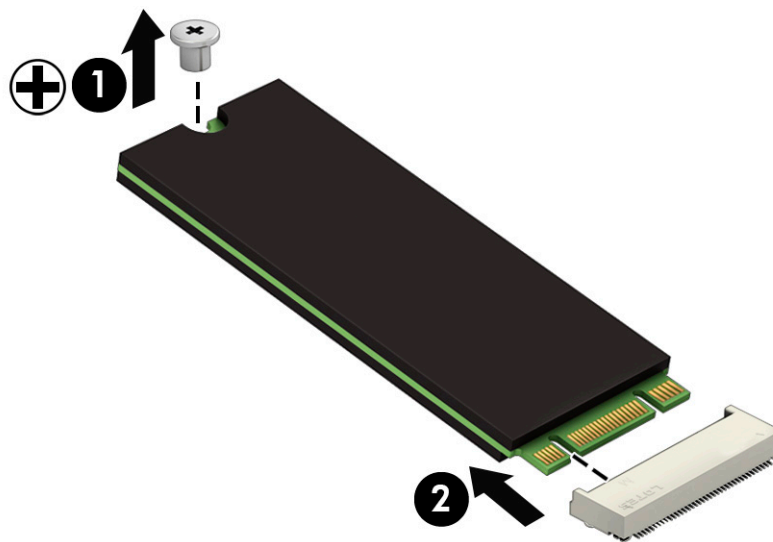


NOTE: The solid-state drive shield is secured to the system board by a series of metal clips **(2)**. When installing the shield, special care should be taken to make sure that the shield is correctly installed in these clips **(3)**.



2. Remove the Phillips M2.0×2.7 screw (1) that secures the solid-state drive to the system board.
3. Release the solid-state drive (2) by sliding it away from the slot.

 **NOTE:** solid-state drives are designed with a notch to prevent incorrect insertion.



Reverse this procedure to install the solid-state drive and shield.

Audio jack board cable

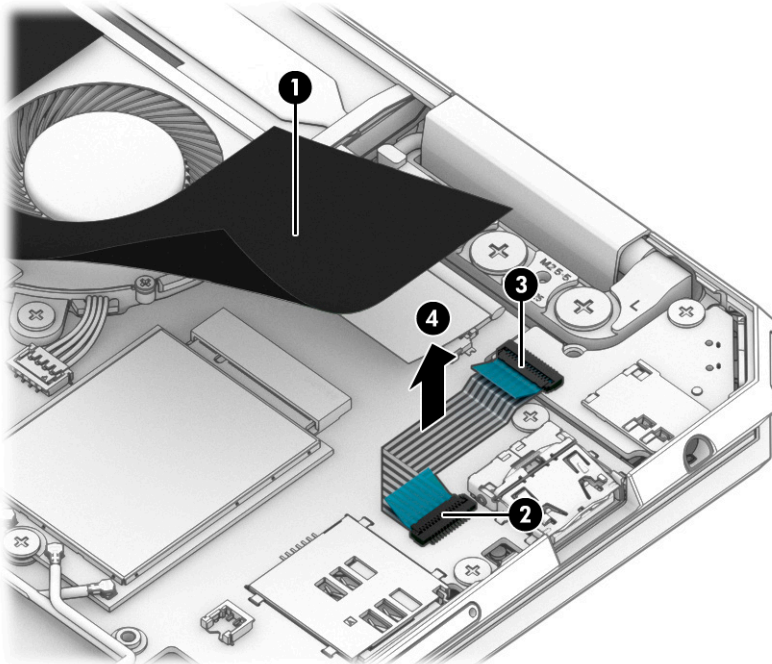
 **NOTE:** The audio jack board cable is available using spare part number L71959-001.

Before removing the audio jack board cable, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 36](#)).

Remove the audio jack board cable:

1. Release the system board Mylar shield **(1)** that covers the audio jack board cable.
2. Release the ZIF connector **(2)** to which the audio jack board cable is connected, and then disconnect the audio jack board cable from the system board.
3. Release the ZIF connector **(3)** to which the audio jack board cable is connected, and then disconnect the audio jack board cable from the audio jack board.
4. Remove the audio jack board cable **(4)**.



Reverse this procedure to install the audio jack board cable.

Audio jack board


 **NOTE:** The audio jack board spare part kit does not include the audio jack board cable. The audio jack board cable is available using spare part number L71959-001.

Table 5-5 Audio jack board description and spare part number information

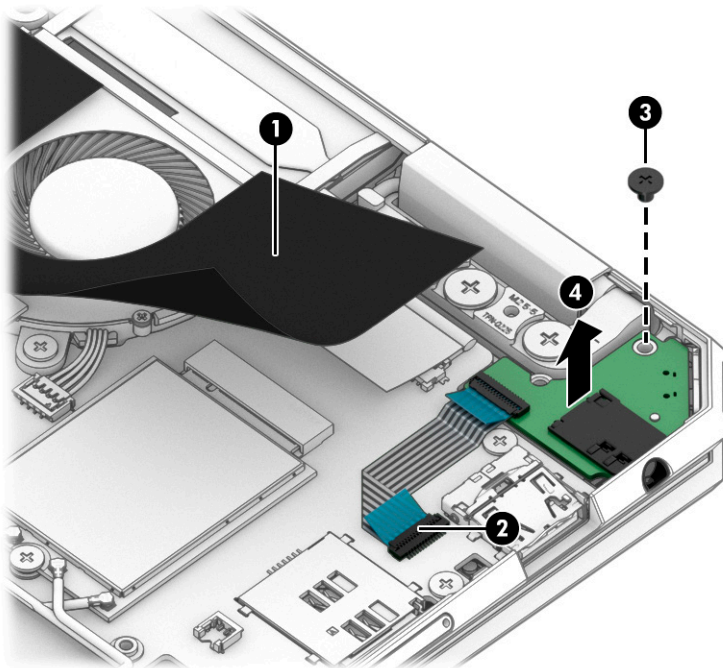
Description	Spare part number
Audio jack board	L71969-001

Before removing the audio jack board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 36](#)).

Remove the audio jack board:

1. Release the system board Mylar shield (1) that covers the audio jack board cable.
2. Release the ZIF connector (2) to which the audio jack board cable is connected, and then disconnect the audio jack board cable from the system board.
3. Remove the Phillips M2.0×2.7 screw (3) that secures the audio jack board to the top cover.
4. Remove the audio jack board (4).



Reverse this procedure to install the audio jack board and cable.

Display assembly

Table 5-6 Display assembly description and spare part number information

Description	Spare part number
13.3-in., UHD (3840×2160), brightview, OLED, ultraslim, UWVA, 400 nits, eDP+PSR, AR, touchscreen display assembly with narrow bezel in natural silver finish	L75192-001
13.3-in., UHD (3840×2160), brightview, OLED, ultraslim, UWVA, 400 nits, eDP+PSR, AR, touchscreen display assembly with narrow bezel in nightfall black finish	L72404-001
13.3-in., UHD (3840×2160), brightview, OLED, ultraslim, UWVA, 400 nits, eDP+PSR, AR, touchscreen display assembly with narrow bezel in Poseidon blue finish	L75196-001
13.3-in., UHD (3840×2160), brightview, OLED, ultraslim, UWVA, 400 nits, eDP+PSR, touchscreen display assembly with narrow bezel in natural silver finish	L75194-001
13.3-in., UHD (3840×2160), brightview, OLED, ultraslim, UWVA, 400 nits, eDP+PSR, touchscreen display assembly with narrow bezel in nightfall black finish	L72406-001
13.3-in., UHD (3840×2160), brightview, OLED, ultraslim, UWVA, 400 nits, eDP+PSR, touchscreen display assembly with narrow bezel in Poseidon blue finish	L75198-001
13.3-in., FHD (1920×1080), brightview, WLED, ultraslim III, UWVA, 1000 nits sharing, 150 nits, eDP+PSR, AR, touchscreen display assembly in natural silver finish	L75191-001
13.3-in., FHD (1920×1080), brightview, WLED, ultraslim III, UWVA, 1000 nits sharing, 150 nits, eDP+PSR, AR, touchscreen display assembly in nightfall black finish	L72403-001
13.3-in., FHD (1920×1080), brightview, WLED, ultraslim III, UWVA, 1000 nits sharing, 150 nits, eDP+PSR, AR, touchscreen display assembly in Poseidon blue finish	L75195-001
13.3-in., FHD (1920×1080), brightview, WLED, ultraslim III, UWVA, 400 nits, eDP+PSR, AR, low power touchscreen display assembly in natural silver finish	L75193-001
13.3-in., FHD (1920×1080), brightview, WLED, ultraslim III, UWVA, 400 nits, eDP+PSR, AR, low power touchscreen display assembly in nightfall black finish	L72405-001
13.3-in., FHD (1920×1080), brightview, WLED, ultraslim III, UWVA, 400 nits, eDP+PSR, AR, low power touchscreen display assembly in Poseidon blue finish	L75197-001


Before removing the display assembly, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 36](#)).

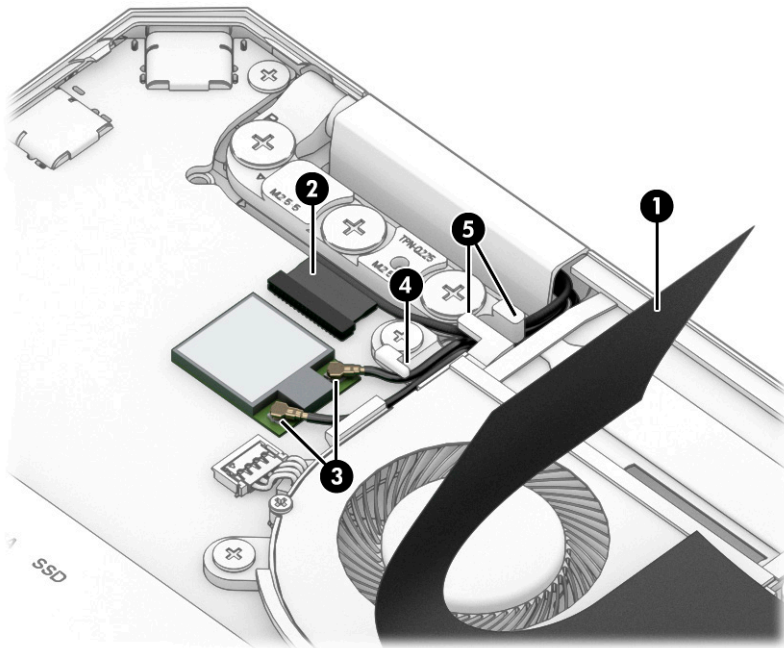
Remove the display assembly:

1. Release the system board Mylar shield **(1)** that covers the WLAN antenna cables and the webcam/microphone module cable.
2. Disconnect the webcam/microphone module cable **(2)** from the system board.

3. Disconnect the WLAN antenna cables (3) from the WLAN module.

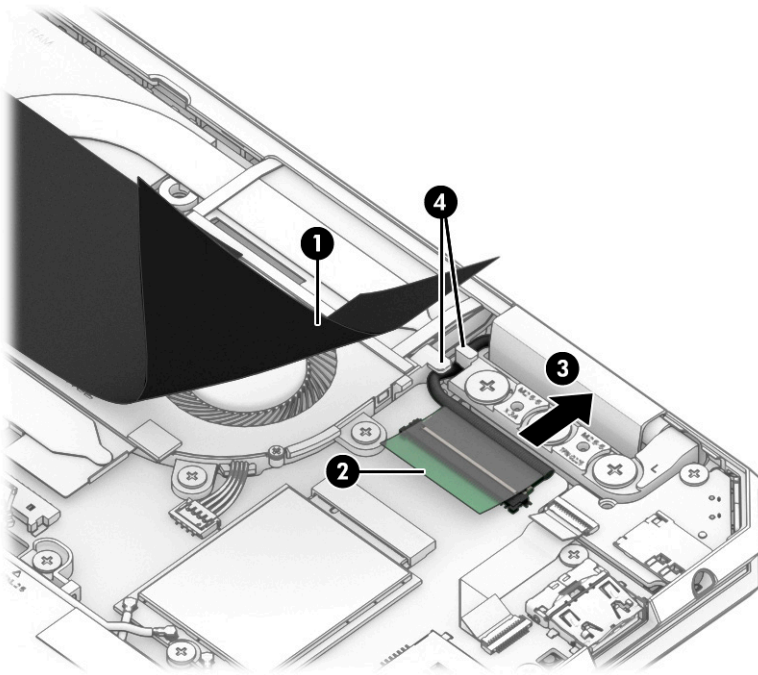
 **NOTE:** The #1/white WLAN antenna cable connects to the WLAN module #1/Main terminal. The #2/ black WLAN antenna cable connects to the WLAN module #2/Aux terminal.

4. Release the wireless antenna cables from the retention clip (4) and routing channel built into the fan/heat sink assembly.
5. Release the webcam/microphone module cable and the wireless antenna cables from the retention clip (5) and routing channel built into the fan/heat sink assembly.

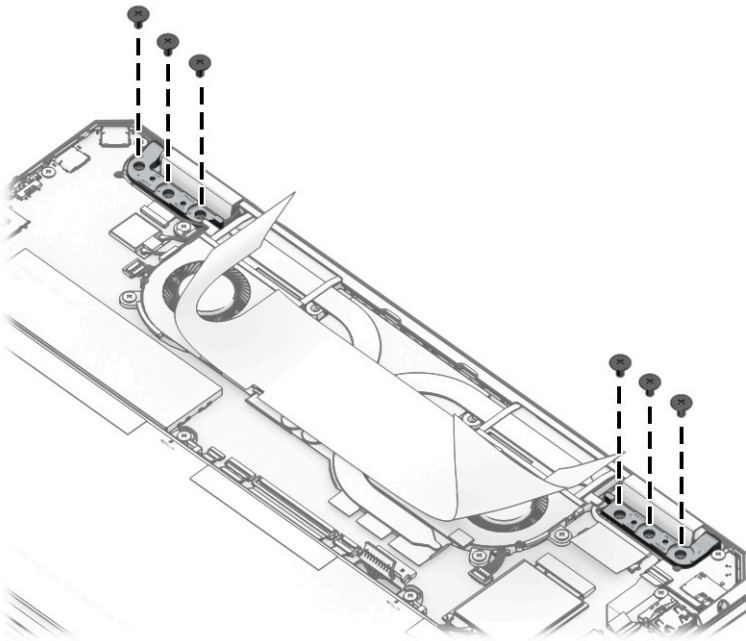


6. Release the system board Mylar shield (1) that covers the display panel cable.
7. Release the adhesive support strip (2) that secures the display panel cable to the system board.
8. Disconnect the display panel cable (3) from the system board.

9. Release the display panel cable from the retention clips (4) and routing channel built into the fan/heat sink assembly.

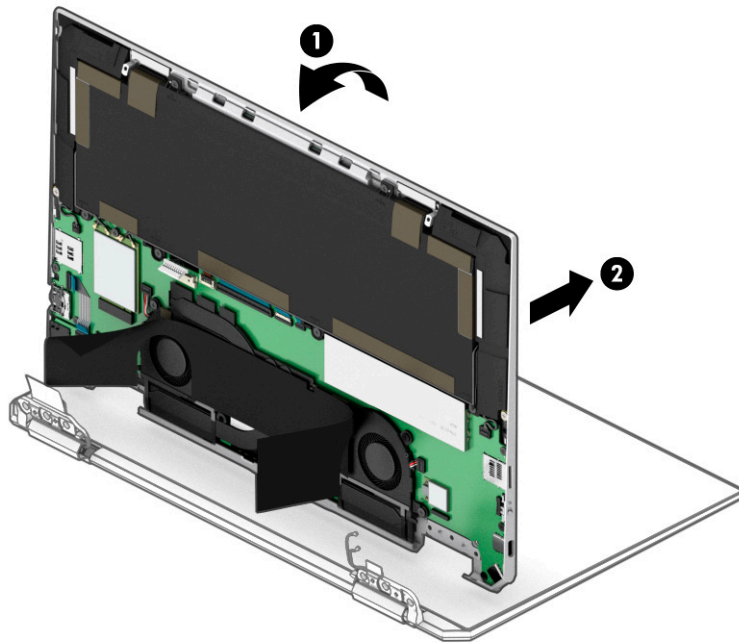


10. Remove the six Phillips M2.0×5.7 screws that secure the display assembly to the top cover.



11. Swing the top cover (1) up and away from the display assembly.

12. Slide the display assembly (2) away from the top cover and remove the display assembly.



Reverse this procedure to install the display assembly.

Speakers



NOTE: The speaker spare part kit includes the left and right speakers, cables, and 2 rubber isolators.

Table 5-7 Speakers description and spare part number information

Description	Spare part number
For use only on computer models equipped with WWAN capability	L71977-001
For use only on computer models not equipped with WWAN capability	L71978-001
Speaker Gasket Kit (for use only with Speaker Kit with spare part number L71977-001)	L72401-001
Speaker Sponge Kit	L81716-001


Before removing the speakers, follow these steps:

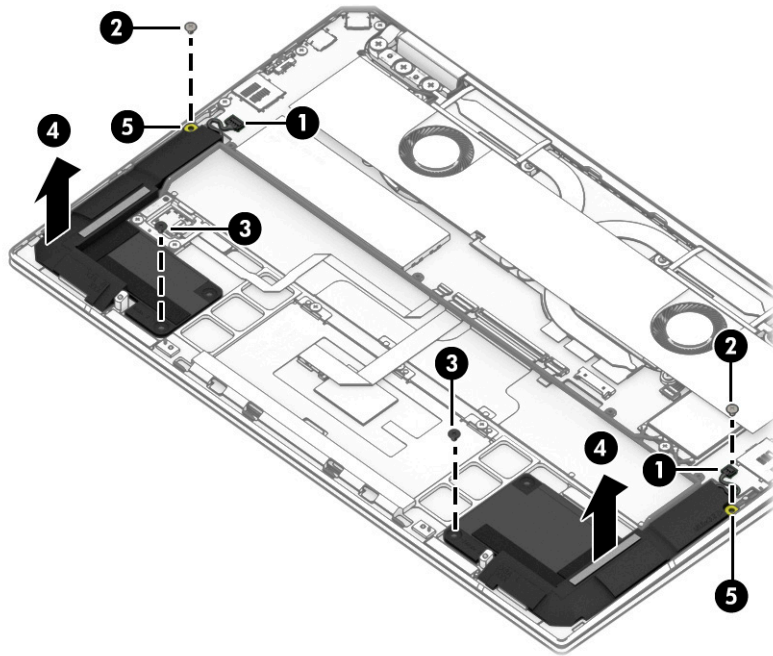
1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)).
5. Remove the battery (see [Battery on page 36](#)).

Remove the speakers:

1. Disconnect the speaker cables **(1)** from the system board.
2. Remove the two Phillips M2.0×3.6 shoulder screws **(2)** that secure the speakers to the top cover.
3. Remove the two Phillips M1.5×2.1 screws **(3)** that secure the speakers to the top cover.

4. Remove the speakers (4).

 **NOTE:** When removing the speakers, make note of the location and condition of the rubber isolators (5). These isolators are critical to the performance of the speakers. The absence of these isolators or damage to them can degrade the speakers performance.



Reverse this procedure to install the speakers.

WWAN antenna

Table 5-8 WWAN antenna description and spare part number information

Description	Spare part number
WWAN Antenna Kit (includes left and right antenna cables, transceivers, and adhesive)	L72398-001

Before removing the WWAN antenna, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)).
5. Remove the battery (see [Battery on page 36](#)).
6. Remove the speakers (see [Speakers on page 48](#)).

Remove the WWAN antenna:

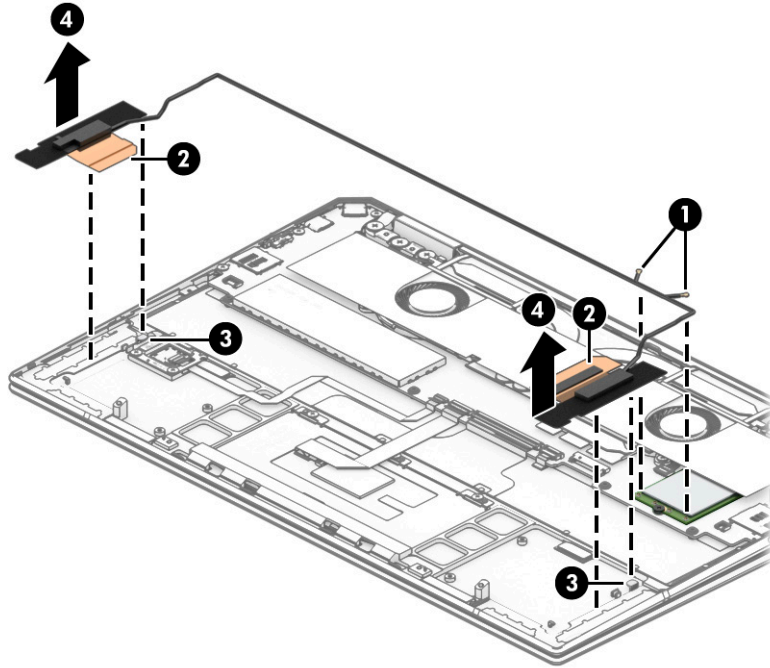
1. Disconnect the WWAN antenna cables **(1)** from the WWAN module.



NOTE: The #1/blue WWAN antenna cable connects to the WWAN module **#1/Main** terminal. The #2/ red WWAN antenna cable connects to the WWAN module **#2/Aux** terminal.

2. Detach the antenna transceiver foil **(2)** from the top cover. (The transceivers are attached to the top cover with adhesive.)
3. Release the clip **(3)** that secures the antenna transceiver body to the top cover.

4. Remove the WWAN antenna (4).



Reverse this procedure to install the WWAN antenna.

Fingerprint reader module



NOTE: The fingerprint reader module spare part kit includes the bracket but does not include the fingerprint reader module cable. The fingerprint reader module cable is available using spare part number L71957-001.

Table 5-9 Fingerprint reader module description and spare part number information

Description	Spare part number
In natural silver finish	L71963-001
In nightfall black finish	L71964-001
In Poseidon blue finish	L71962-001

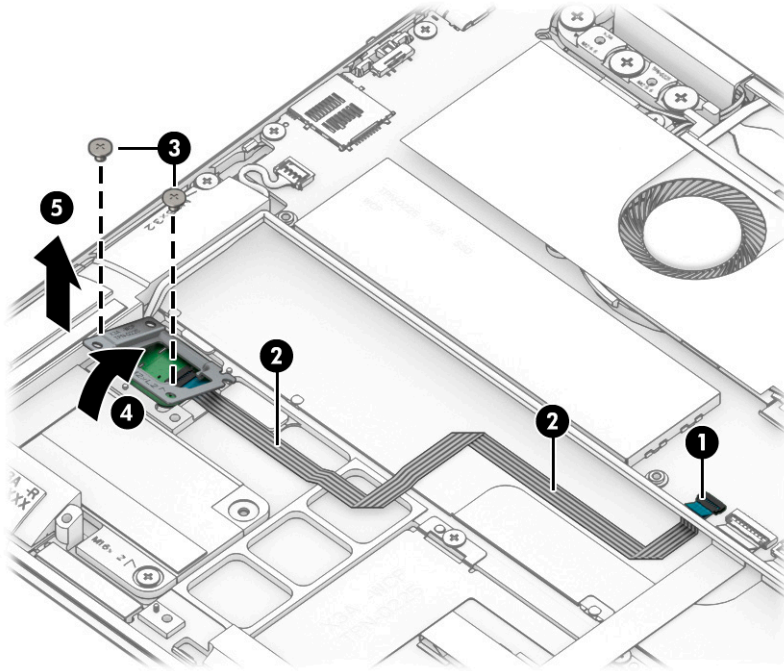
Before removing the fingerprint reader module, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)).
5. Remove the battery (see [Battery on page 36](#)).
6. Remove the speakers (see [Speakers on page 48](#)).

Remove the fingerprint reader module:

1. Release the ZIF connector **(1)** to which the fingerprint reader module cable is connected, and then disconnect the fingerprint reader module cable from the system board.
2. Detach the fingerprint reader module cable **(2)** from the top cover. (The fingerprint reader module cable is attached to the top cover with adhesive.)
3. Remove the two Phillips M2.0×2.7 screws **(3)** that secure the fingerprint reader module and bracket to the top cover.
4. Remove the fingerprint reader module bracket **(4)**.

5. Remove the fingerprint reader module (5).



Reverse this procedure to install the fingerprint reader module and cable.

Fingerprint reader module cable

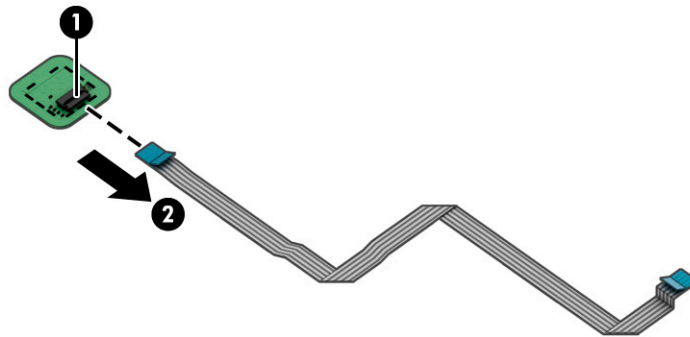
 **NOTE:** The fingerprint reader module cable is available using spare part number L71957-001.

Before removing the fingerprint reader module cable, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)), and then remove the following components:
 - a. Battery (see [Battery on page 36](#))
 - b. Speakers (see [Speakers on page 48](#))
 - c. Fingerprint reader module (see [Fingerprint reader module on page 52](#))

Remove the fingerprint reader module cable:

- ▲ Release the ZIF connector (1) to which fingerprint reader module cable is connected, and then disconnect the fingerprint reader module cable (2) from the fingerprint reader module.



Reverse this procedure to install the fingerprint reader module cable.

Touchpad cable

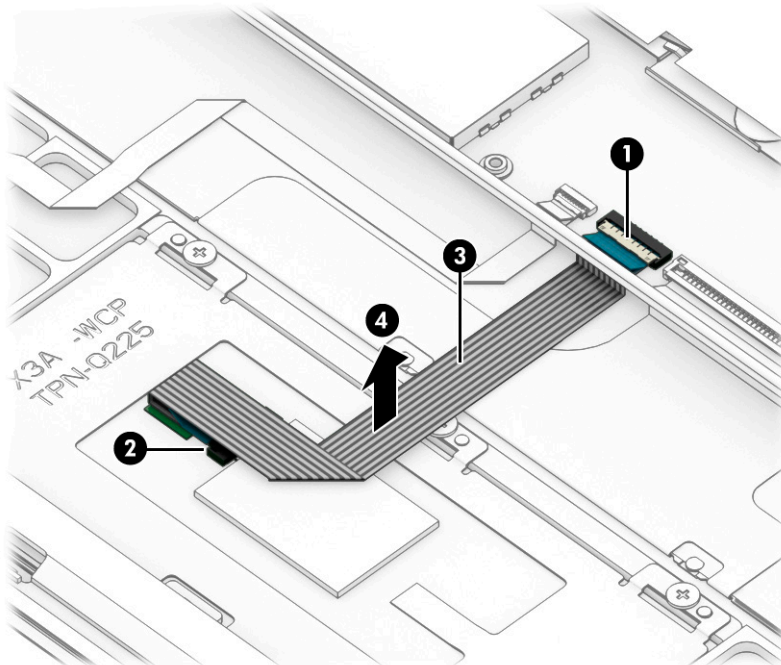
 **NOTE:** The touchpad cable is available using spare part number L71958-001.

Before removing the touchpad cable, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)).
5. Remove the battery (see [Battery on page 36](#)).
6. Remove the speakers (see [Speakers on page 48](#)).

Remove the touchpad cable:

1. Release the ZIF connector (1) to which the touchpad cable is connected, and then disconnect the touchpad cable from the system board.
2. Release the ZIF connector (2) to which the touchpad cable is connected, and then disconnect the touchpad cable from the touchpad.
3. Detach the touchpad cable (3) from the top cover. (The touchpad cable is attached to the top cover with adhesive.)
4. Remove the touchpad (4).



Reverse this procedure to install the touchpad cable.

Touchpad

 **NOTE:** The touchpad spare part kit does not include the touchpad cable. The touchpad cable is available using spare part number L71958-001.

Table 5-10 Touchpad description and spare part number information

Description	Spare part number
In natural silver finish	L71966-001
In nightfall black finish	L71965-001
In Poseidon blue finish	L71967-001


Before removing the touchpad, follow these steps:

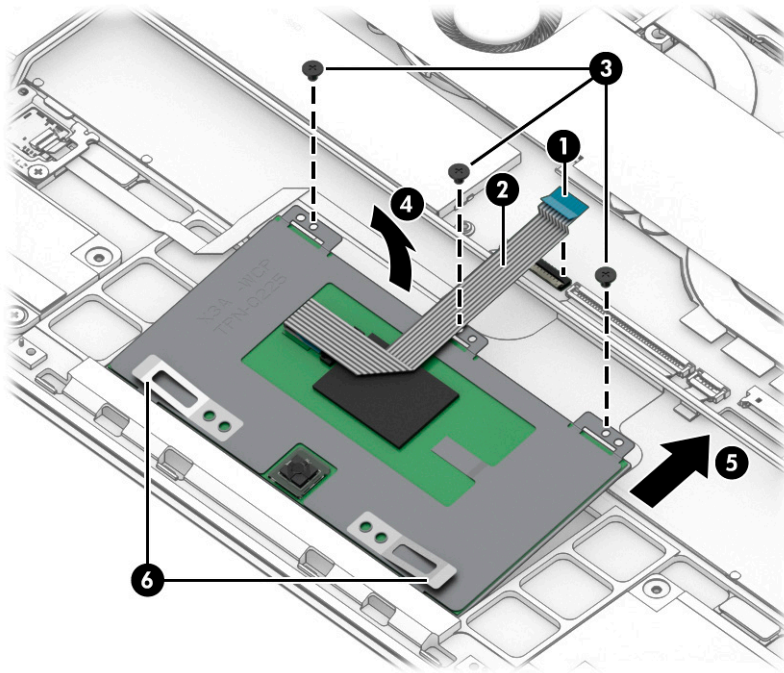
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)).
5. Remove the battery (see [Battery on page 36](#)).

Remove the touchpad:

1. Release the ZIF connector **(1)** to which the touchpad cable is connected, and then disconnect the touchpad cable from the system board.
2. Detach the touchpad cable **(2)** from the top cover. (The touchpad cable is attached to the top cover with adhesive.)
3. Remove the three Phillips M1.5×2.1 screws **(3)** that secure the touchpad and bracket to the top cover.
4. Release the touchpad by lifting the top edge **(4)** until it rests at an angle.

- Remove the touchpad (5) by sliding it toward the system board at an upward angle.

 **NOTE:** When installing the touchpad, make sure the spring clips (6) on the bottom edge of the touchpad fit into the openings on the top cover.



Reverse this procedure to install the touchpad and cable.

System board

 **NOTE:** The system board spare part kit includes the processor and replacement thermal material.

Table 5-11 System board description and spare part number information

Description	Spare part number
Equipped with an Intel Core i7-1065G7 1.3-GHz (turbo up to 3.9-GHz) processor (3200 MHz FSB, 8-MB L3 cache, quad core, 12 W), a UMA graphics subsystem, 16-GB of system memory, the Windows 10 operating system, for use only on computer models equipped with WWAN capability	L71987-601
Equipped with an Intel Core i7-1065G7 1.3-GHz (turbo up to 3.9-GHz) processor (3200 MHz FSB, 8-MB L3 cache, quad core, 12 W), a UMA graphics subsystem, 16-GB of system memory, the Windows 10 operating system, for use only on computer models equipped with an OLED display assembly	L71986-601
Equipped with an Intel Core i7-1065G7 1.3-GHz (turbo up to 3.9-GHz) processor (3200 MHz FSB, 8-MB L3 cache, quad core, 12 W), a UMA graphics subsystem, 16-GB of system memory, and the Windows 10 operating system	L71988-601
Equipped with an Intel Core i7-1065G7 1.3-GHz (turbo up to 3.9-GHz) processor (3200 MHz FSB, 8-MB L3 cache, quad core, 12 W), a UMA graphics subsystem, 8-GB of system memory, and the Windows 10 operating system	L71989-601
Equipped with an Intel Core i5-1035G4 1.1-GHz (turbo up to 3.7-GHz) processor (3200 MHz FSB, 6-MB L3 cache, quad core, 12 W), a UMA graphics subsystem, 8-GB of system memory, and the Windows 10 operating system	L71985-601

Table 5-11 System board description and spare part number information (continued)

Description	Spare part number
System Board Foil Kit (for use only on computer models equipped with WWAN capability and a keyboard with backlight)	L72399-001
System Board Mylar Kit	L72400-001

Before removing the system board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)).
5. Remove the battery (see [Battery on page 36](#)).
6. Remove the display assembly (see [Display assembly on page 44](#)).



NOTE: When replacing the system board, remove the following components from the defective system board and install them on the replacement system board:

- WWAN module (see [WWAN module on page 38](#))
- Solid-state drive (see [Solid-state drive on page 40](#))
- Fan/heat sink assembly (see [Fan/heat sink assembly on page 61](#))

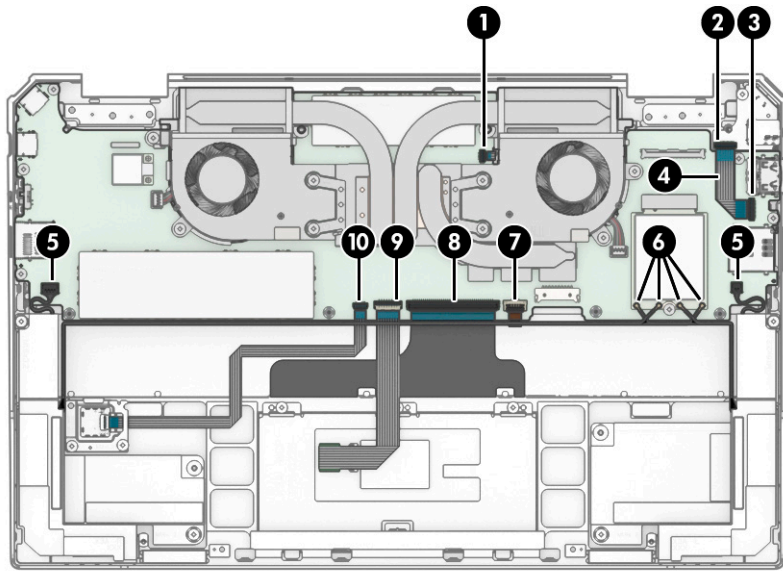
Remove the system board:

1. Disconnect the following cables from the system board:
 - (1) Infrared sensor board ZIF connector cable
 - (2) Audio jack board ZIF connector cable (on system board)
 - (3) Audio jack board ZIF connector cable (on audio jack board)
 - (4) Detach the audio jack board cable from the system board. (The Audio jack board cable is attached to the system board with adhesive.)
 - (5) Speaker cables
 - (6) WWAN module antenna cables

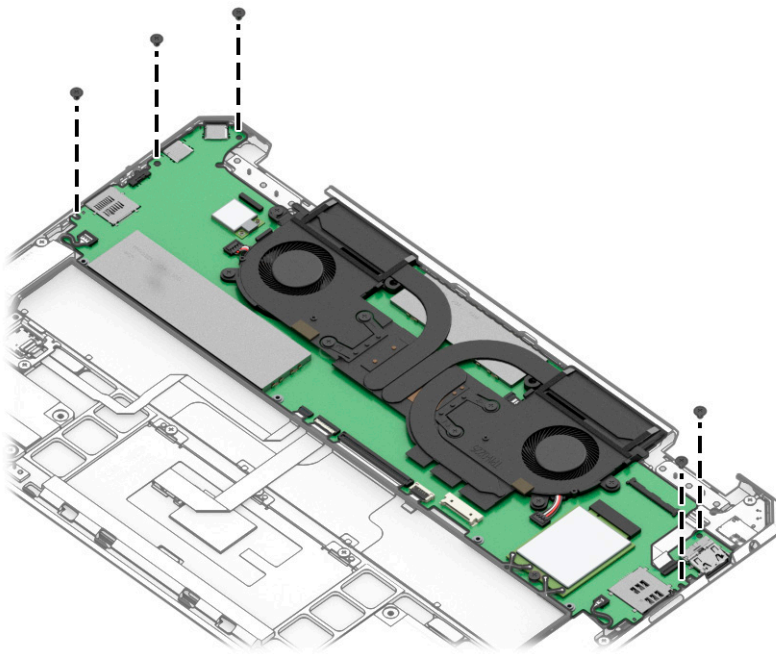


NOTE: The #1/blue WWAN antenna cable connects to the WWAN module **#1/Main** terminal. The #2/ red WWAN antenna cable connects to the WWAN module **#2/Aux** terminal.

- (7) Keyboard backlight ZIF connector cable
- (8) Keyboard ZIF connector cable
- (9) Touchpad ZIF connector cable
- (10) Fingerprint reader module ZIF connector cable

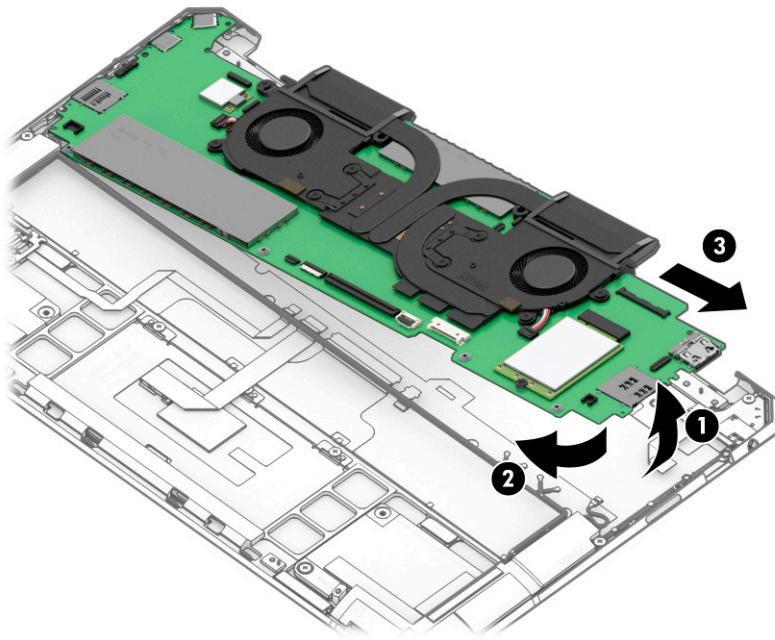


2. Remove the five Phillips M2.0×2.7 screws that secure the system board to the top cover.




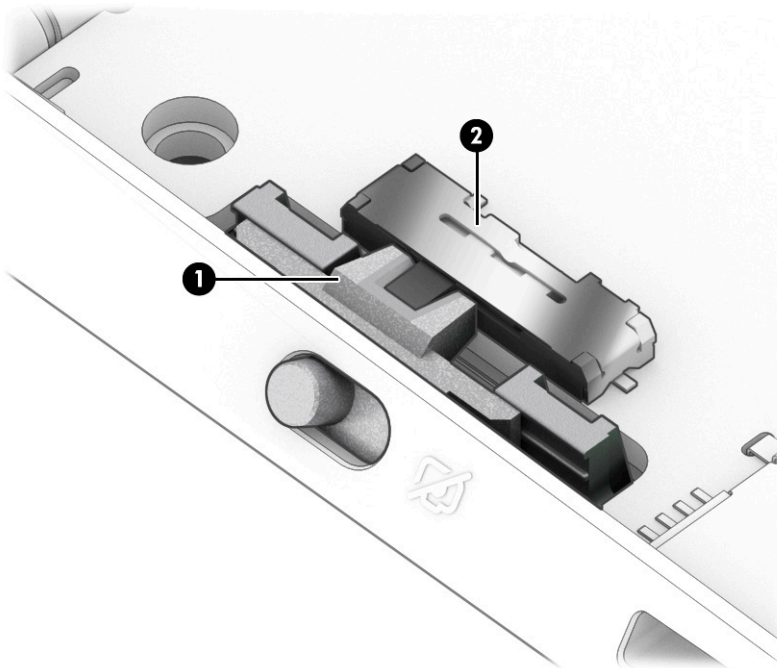
3. Lift the right side **(1)** of the system board until it rests at an angle.
4. Rotate the right side of the system board **(2)** clockwise until the connectors on the left side of the system board are clear of the top cover.

5. Remove the system board (3) by sliding it up and to the right at an angle.



6. Remove the system board.

 **NOTE:** When installing the system board, make sure the camera privacy switch actuator (1) on the top cover properly engages with the camera privacy switch (2) on the system board. Failure to follow this note will cause this feature to not work properly.



Reverse this procedure to install the system board.

Fan/heat sink assembly

Table 5-12 Fan/heat sink assembly description and spare part number information

Description	Spare part number
Fan/heat sink assembly (includes replacement thermal material)	L71961-001

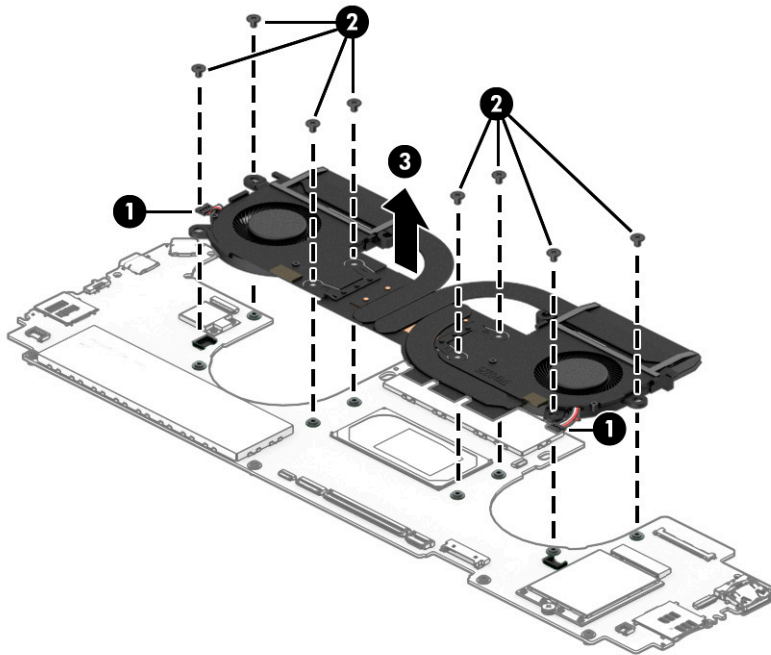
Before removing the fan/heat sink assembly, follow these steps:


1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)), and then remove the following components:
 - a. Battery (see [Battery on page 36](#))
 - b. Display assembly (see [Display assembly on page 44](#))
 - c. System board (see [System board on page 57](#))

Remove the fan/heat sink assembly:

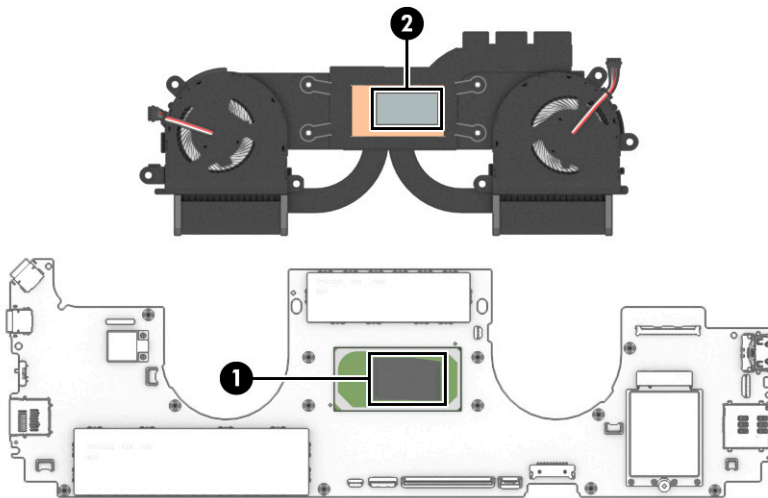
1. Disconnect the fan cables **(1)** from the system board.
2. Remove the eight Phillips M2.0×2.7 screws **(2)** that secure the fan/heat sink assembly to the system board.

3. Remove the fan/heat sink assembly (3).



 **NOTE:** The thermal material must be thoroughly cleaned from the surfaces of the fan/heat sink assembly and the system board components each time the fan/heat sink assembly is removed.

Thermal material is used on the processor (1) and the fan/heat sink assembly section (2) that services it. Replacement thermal material is included in the fan/heat sink assembly and system board spare part kits.



Reverse this procedure to install the fan/heat sink assembly.

Keyboard

Keyboard with backlight and privacy filter in natural silver finish (includes backlight cable and keyboard cable):					
For use in Belgium	L72387-A41	For use in Italy	L72387-061	For use in South Korea	L72387-AD1
For use in Bulgaria	L72387-261	For use in Japan	L72387-161	For use in Spain	L72387-071
For use in Canada	L72387-DB1	For use in Latin America	L72387-161	For use in Switzerland	L72387-BG1
For use in the Czech Republic and Slovakia	L72387-FL1	For use in the Netherlands	L72387-331	For use in Taiwan	L72387-AB1
For use in Denmark, Finland, and Norway	L72387-DH1	For use in Portugal	L72387-131	For use in Thailand	L72387-281
For use in France	L72387-051	For use in Romania	L72387-271	For use in Turkey	L72387-141
For use in Germany	L72387-041	For use in Russia	L72387-251	For use in Uruguay	L72387-BD1
For use in Greece	L72387-151	For use in Saudi Arabia	L72387-171	For use in the United Kingdom	L72387-031
For use in Hungary	L72387-211	For use in Slovenia	L72387-F81	For use in the United States	L72387-001
For use in Israel	L72387-BB1				
Keyboard with backlight and privacy filter in natural silver finish (includes backlight cable and keyboard cable):					
For use in Belgium	L72387-A41	For use in Italy	L72387-061	For use in South Korea	L72387-AD1
For use in Bulgaria	L72387-261	For use in Japan	L72387-161	For use in Spain	L72387-071
For use in Canada	L72387-DB1	For use in Latin America	L72387-161	For use in Switzerland	L72387-BG1
For use in the Czech Republic and Slovakia	L72387-FL1	For use in the Netherlands	L72387-331	For use in Taiwan	L72387-AB1
For use in Denmark, Finland, and Norway	L72387-DH1	For use in Portugal	L72387-131	For use in Thailand	L72387-281
For use in France	L72387-051	For use in Romania	L72387-271	For use in Turkey	L72387-141
For use in Germany	L72387-041	For use in Russia	L72387-251	For use in Uruguay	L72387-BD1
For use in Greece	L72387-151	For use in Saudi Arabia	L72387-171	For use in the United Kingdom	L72387-031
For use in Hungary	L72387-211	For use in Slovenia	L72387-F81	For use in the United States	L72387-001
For use in Israel	L72387-BB1				
Keyboard with backlight and privacy filter in nightfall black finish (includes backlight cable and keyboard cable):					
For use in Belgium	L72385-A41	For use in Italy	L72385-061	For use in South Korea	L72385-AD1
For use in Bulgaria	L72385-261	For use in Japan	L72385-161	For use in Spain	L72385-071

For use in Canada	L72385-DB1	For use in Latin America	L72385-161	For use in Switzerland	L72385-BG1
For use in the Czech Republic and Slovakia	L72385-FL1	For use in the Netherlands	L72385-331	For use in Taiwan	L72385-AB1
For use in Denmark, Finland, and Norway	L72385-DH1	For use in Portugal	L72385-131	For use in Thailand	L72385-281
For use in France	L72385-051	For use in Romania	L72385-271	For use in Turkey	L72385-141
For use in Germany	L72385-041	For use in Russia	L72385-251	For use in Uruguay	L72385-BD1
For use in Greece	L72385-151	For use in Saudi Arabia	L72385-171	For use in the United Kingdom	L72385-031
For use in Hungary	L72385-211	For use in Slovenia	L72385-F81	For use in the United States	L72385-001
For use in Israel	L72385-BB1				
Keyboard with backlight in nightfall black finish (includes backlight cable and keyboard cable):					
For use in Belgium	L73748-A41	For use in Italy	L73748-061	For use in South Korea	L73748-AD1
For use in Bulgaria	L73748-261	For use in Japan	L73748-161	For use in Spain	L73748-071
For use in Canada	L73748-DB1	For use in Latin America	L73748-161	For use in Switzerland	L73748-BG1
For use in the Czech Republic and Slovakia	L73748-FL1	For use in the Netherlands	L73748-331	For use in Taiwan	L73748-AB1
For use in Denmark, Finland, and Norway	L73748-DH1	For use in Portugal	L73748-131	For use in Thailand	L73748-281
For use in France	L73748-051	For use in Romania	L73748-271	For use in Turkey	L73748-141
For use in Germany	L73748-041	For use in Russia	L73748-251	For use in Uruguay	L73748-BD1
For use in Greece	L73748-151	For use in Saudi Arabia	L73748-171	For use in the United Kingdom	L73748-031
For use in Hungary	L73748-211	For use in Slovenia	L73748-F81	For use in the United States	L73748-001
For use in Israel	L73748-BB1				
Keyboard with backlight and privacy filter in Poseidon blue finish (includes backlight cable and keyboard cable):					
For use in Belgium	L72386-A41	For use in Italy	L72386-061	For use in South Korea	L72386-AD1
For use in Bulgaria	L72386-261	For use in Japan	L72386-161	For use in Spain	L72386-071
For use in Canada	L72386-DB1	For use in Latin America	L72386-161	For use in Switzerland	L72386-BG1
For use in the Czech Republic and Slovakia	L72386-FL1	For use in the Netherlands	L72386-331	For use in Taiwan	L72386-AB1
For use in Denmark, Finland, and Norway	L72386-DH1	For use in Portugal	L72386-131	For use in Thailand	L72386-281

For use in France	L72386-051	For use in Romania	L72386-271	For use in Turkey	L72386-141
For use in Germany	L72386-041	For use in Russia	L72386-251	For use in Uruguay	L72386-BD1
For use in Greece	L72386-151	For use in Saudi Arabia	L72386-171	For use in the United Kingdom	L72386-031
For use in Hungary	L72386-211	For use in Slovenia	L72386-F81	For use in the United States	L72386-001
For use in Israel	L72386-BB1				
Keyboard with backlight in Poseidon blue finish (includes backlight cable and keyboard cable):					
For use in Belgium	L73749-A41	For use in Italy	L73749-061	For use in South Korea	L73749-AD1
For use in Bulgaria	L73749-261	For use in Japan	L73749-161	For use in Spain	L73749-071
For use in Canada	L73749-DB1	For use in Latin America	L73749-161	For use in Switzerland	L73749-BG1
For use in the Czech Republic and Slovakia	L73749-FL1	For use in the Netherlands	L73749-331	For use in Taiwan	L73749-AB1
For use in Denmark, Finland, and Norway	L73749-DH1	For use in Portugal	L73749-131	For use in Thailand	L73749-281
For use in France	L73749-051	For use in Romania	L73749-271	For use in Turkey	L73749-141
For use in Germany	L73749-041	For use in Russia	L73749-251	For use in Uruguay	L73749-BD1
For use in Greece	L73749-151	For use in Saudi Arabia	L73749-171	For use in the United Kingdom	L73749-031
For use in Hungary	L73749-211	For use in Slovenia	L73749-F81	For use in the United States	L73749-001
For use in Israel	L73749-BB1				

Before removing the keyboard, follow these steps:

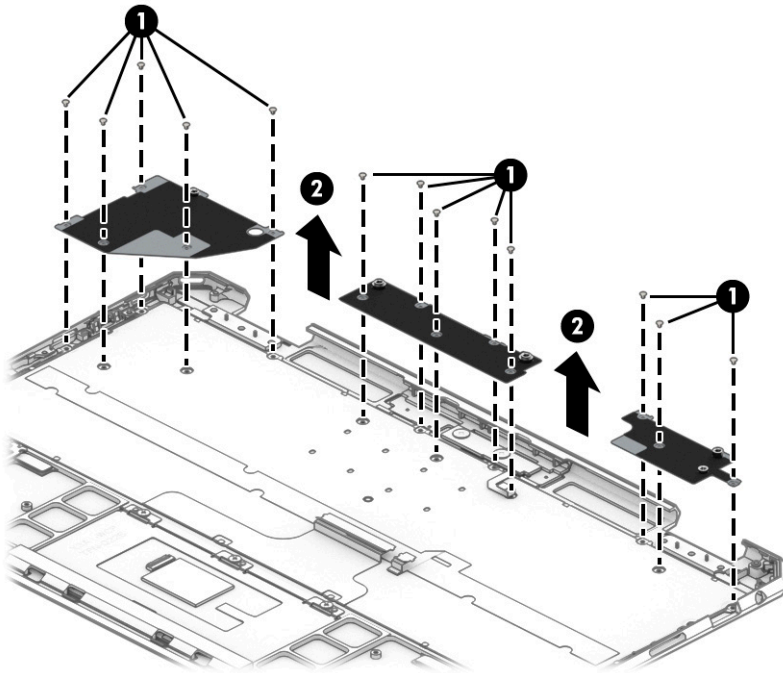
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)), and then remove the following components:
 - a. Battery (see [Battery on page 36](#))
 - b. Display assembly (see [Display assembly on page 44](#))
 - c. System board (see [System board on page 57](#))

Remove the keyboard:

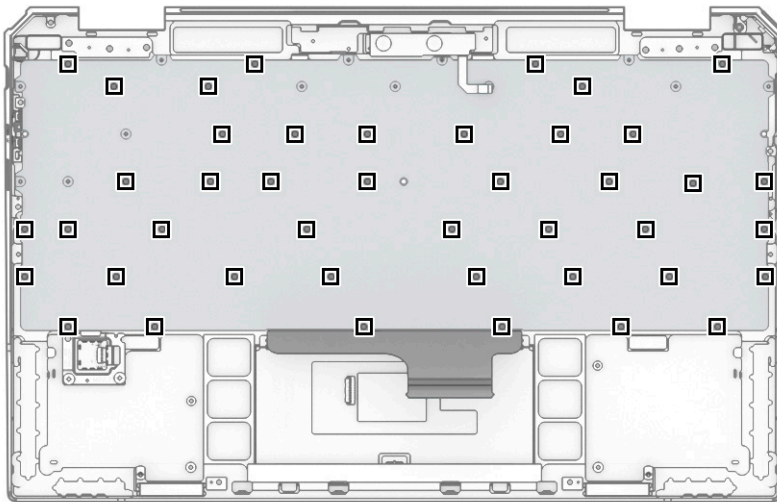
1. Remove the 13 Phillips M1.1×1.7 screws **(1)** that secure the keyboard brackets to the top cover.

2. Remove the left, center, and right keyboard brackets (2).

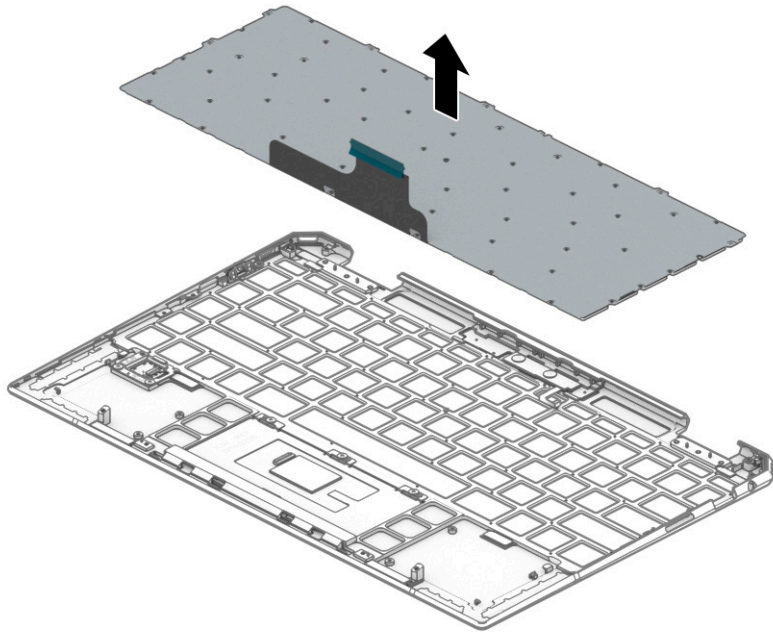
The keyboard brackets are not available as spare parts.



3. Remove the 42 Phillips M2.0×2.7 screws that secure the keyboard to the top cover as shown in the following illustration.



4. Remove the keyboard.



Reverse this procedure to install the keyboard.

Infrared sensor board


 **NOTE:** The infrared sensor board spare part kit does not include the infrared sensor board cable. The infrared sensor board cable is available using spare part number L71960-001.

Table 5-13 Infrared sensor board description and spare part number information

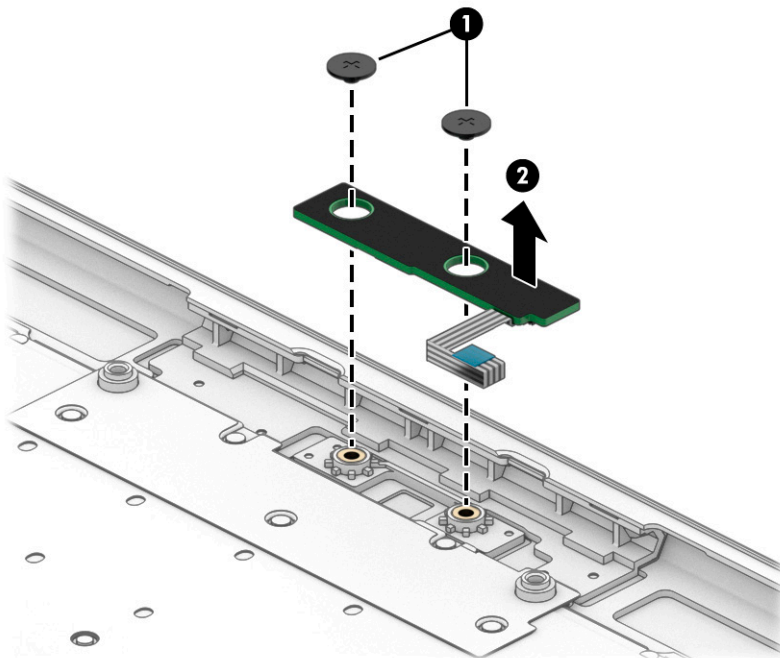
Description	Spare part number
Infrared sensor board	L71968-001

Before removing the infrared sensor board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)), and then remove the following components:
 - a. Battery (see [Battery on page 36](#))
 - b. Display assembly (see [Display assembly on page 44](#))
 - c. System board (see [System board on page 57](#))

Remove the infrared sensor board:

1. Remove the two Phillips M2.0×1.9 broad head screws (1) that secure the infrared sensor board to the top cover.
2. Remove the infrared sensor board (2) and cable.



Reverse this procedure to install the infrared sensor board and cable.

Infrared sensor board cable

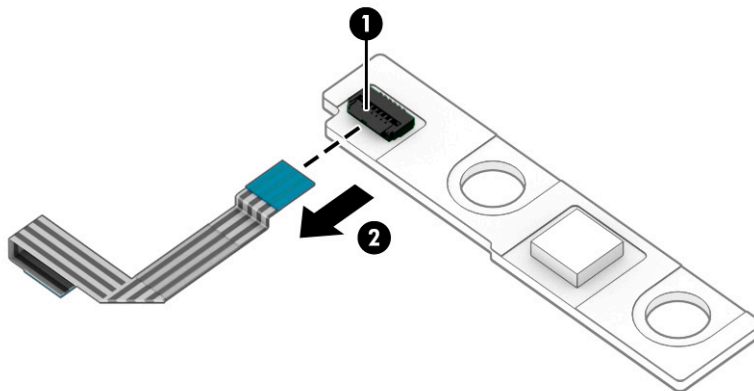
 **NOTE:** The infrared sensor board cable is available using spare part number L71960-001.

Before removing the infrared sensor board cable, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 34](#)), and then remove the following components:
 - a. Battery (see [Battery on page 36](#))
 - b. Display assembly (see [Display assembly on page 44](#))
 - c. System board (see [System board on page 57](#))
 - d. Infrared sensor board (see [System board on page 57](#))

Remove the infrared sensor board cable:


- ▲ Release the ZIF connector (1) to which infrared sensor board cable is connected, and then disconnect the infrared sensor board cable (2) from the infrared sensor board.



Reverse this procedure to install the infrared sensor board cable.

6 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)

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

▲ Turn on or restart the computer and quickly press **f10**.

– or –

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) may 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. Type **support** in the taskbar search box, and then select the **HP Support Assistant** app.


– or –

Select the question mark icon in the taskbar.


 2. Select **My notebook**, and then select **Specifications**.
- Setup Utility (BIOS)
 1. Start Setup Utility (BIOS) (see [Starting Setup Utility \(BIOS\) on page 70](#)).
 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 [Downloading a BIOS update on page 71](#).

Downloading a BIOS update

 **CAUTION:** 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 AC adapter. 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.

1. Type `support` in the taskbar search box, and then select the **HP Support Assistant** app.
– or –
Select the question mark icon in the taskbar.
2. Select **Updates**, and then select **Check for updates and messages**.
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 may 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.

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. Type `file` in the taskbar 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.

7 Using HP PC Hardware Diagnostics

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 in order to diagnose hardware failures.

If HP PC Hardware Diagnostics Windows is not installed on your computer, first you must download and install it. To download HP PC Hardware Diagnostics Windows, see [Downloading HP PC Hardware Diagnostics Windows on page 72](#).

After HP PC Hardware Diagnostics Windows is installed, follow these steps to access it from HP Help and Support or HP Support Assistant.

1. To access HP PC Hardware Diagnostics Windows from HP Help and Support:
 - a. Select the **Start** button, and then select **HP Help and Support**.
 - b. Select **HP PC Hardware Diagnostics Windows**.

– or –

To access HP PC Hardware Diagnostics Windows from HP Support Assistant:

- a. Type `support` in the taskbar search box, and then select the **HP Support Assistant** app.
- or –
- a. Select the question mark icon in the taskbar.
 - b. Select **Troubleshooting and fixes**.
 - c. Select **Diagnostics**, and then select **HP PC Hardware Diagnostics Windows**.
2. When the tool opens, select the type of diagnostic test that you want to run, and then follow the on-screen instructions.

 **NOTE:** If you need to stop a diagnostic test at any time, select **Cancel**.

When HP PC Hardware Diagnostics Windows detects a failure that requires hardware replacement, a 24-digit Failure ID code is generated. The screen displays one of the following options:

- A Failure ID link is displayed. Select the link and follow the on-screen instructions.
- A Quick Response (QR) code is displayed. With a mobile device, scan the code and then follow the on-screen instructions.
- Instructions for calling support are displayed. Follow those instructions.

Downloading HP PC Hardware Diagnostics Windows

- The HP PC Hardware Diagnostics Windows download 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

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

1. Go to <http://www.hp.com/go/techcenter/pcdiags>. The HP PC Diagnostics home page is displayed.
2. Select **Download HP Diagnostics Windows**, and then select a location on your computer or a USB flash drive.

The tool is downloaded to the selected location.

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

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

To download HP PC Hardware Diagnostics Windows by product name or number, follow these steps:

1. Go to <http://www.hp.com/support>.
2. Select **Get 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 is downloaded to the selected location.

Installing HP PC Hardware Diagnostics Windows

To install HP PC Hardware Diagnostics Windows, follow these steps:

- ▲ Navigate to the folder on your computer or the USB flash drive where the .exe file was downloaded, double-click the .exe file, and then follow the on-screen instructions.

Using HP PC Hardware Diagnostics UEFI

 **NOTE:** For Windows 10 S computers, 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 74](#).

HP PC Hardware Diagnostics UEFI (Unified Extensible Firmware Interface) 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.


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

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:

- ▲ Select **Get Support**, and then use a mobile device to scan the QR code that displays 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.

– or –

Contact support, and provide the Failure ID code.

 **NOTE:** To start diagnostics on a convertible computer, your computer must be in notebook mode, and you must use the attached keyboard.

 **NOTE:** If you need to stop a diagnostic test, press *esc*.

Starting HP PC Hardware Diagnostics UEFI

To start HP PC Hardware Diagnostics UEFI, follow these steps:

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 74](#).


- b. Hard drive
- c. BIOS

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

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 the following 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 download 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:

1. Go to <http://www.hp.com/go/techcenter/pcdiags>. The HP PC Diagnostics home page is displayed.
2. Select **Download HP Diagnostics UEFI**, and then select **Run**.

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

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

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

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 execute 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>, and then select **Find out more**.

Downloading Remote HP PC Hardware Diagnostics UEFI


 **NOTE:** HP Remote PC Hardware Diagnostics UEFI is also available as a Softpaq that can be downloaded to a server.

Downloading the latest Remote HP PC Hardware Diagnostics UEFI version

To download the latest Remote HP PC Hardware Diagnostics UEFI version, follow these steps:

1. Go to <http://www.hp.com/go/techcenter/pcdiags>. The HP PC Diagnostics home page is displayed.
2. Select **Download Remote Diagnostics**, and then select **Run**.

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

 **NOTE:** For some products, it may be necessary to download the software by using the product name or number.

To download HP Remote PC Hardware Diagnostics UEFI by product name or number, follow these steps:

1. Go to <http://www.hp.com/support>.
2. Select **Get 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 the following 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**.
- 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 disk 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 settings used 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**, and then **Save Changes and Exit** to save your settings.

Your changes take effect when the computer restarts.

8 Specifications

Computer specifications

The power information in this section may be helpful if you plan to travel internationally with the computer.

The computer operates on DC power, which can be supplied by an AC or a DC power source. The AC power source must be rated at 100–240 V, 50–60 Hz. Although the computer can be powered from a standalone DC power source, it should be powered only with an AC adapter or a DC power source that is supplied and approved by HP for use with this computer.

The computer can operate on DC power within the following specifications. Operating voltage and current varies by platform. The voltage and current for your computer is located on the regulatory label.

Table 8-1 Computer specifications

	Metric	U.S.
Dimensions:		
Computer models equipped with a WWAN module:		
Width	30.1 cm	12.1 in
Depth	19.1 cm	7.7 in
Height	1.7 cm	0.7 in
Weight	1.32 kg	2.91 lbs
Computer models not equipped with a WWAN module:		
Width	30.1 cm	12.1 in
Depth	19.1 cm	7.7 in
Height	1.7 cm	0.7 in
Weight	1.31 kg	2.88 lbs
Input power		
Operating voltage and current	5 V dc @ 2 A / 12 V dc @ 3 A / 15 V dc @ 3 A – 45 W USB-C	
	5 V dc @ 3 A / 9 V dc @ 3 A / 12 V dc @ 3.75 A / 15 V dc @ 3 A – 45 W USB-C	
	5 V dc @ 3 A / 9 V dc @ 3 A / 10 V dc @ 3.75 A / 12 V dc @ 3.75 A / 15 V dc @ 3 A / 20 V dc @ 2.25 A – 45 W USB-C	
	5 V dc @ 3 A / 9 V dc @ 3 A / 12 V dc @ 5 A / 15 V dc @ 4.33 A / 20 V dc @ 3.25 A – 65 W USB-C	
	5 V dc @ 3 A / 9 V dc @ 3 A / 10 V dc @ 5 A / 12 V dc @ 5 A / 15 V dc @ 4.33 A / 20 V dc @ 3.25 A – 65 W USB-C	
	5 V dc @ 3 A / 9 V dc @ 3 A / 10 V dc @ 5 A / 12 V dc @ 5 A / 15 V dc @ 5 A / 20 V dc @ 4.5 A – 90 W USB-C	
	19.5 V dc @ 2.31 A – 45 W	
	19.5 V dc @ 3.33 A – 65 W	


Table 8-1 Computer specifications (continued)

	Metric	U.S.
	19.5 V dc @ 4.62 A – 90 W	
	19.5 V dc @ 6.15 A – 120 W	
	19.5 V dc @ 6.9 A – 135 W	
	19.5 V dc @ 7.70 A – 150 W	
	19.5 V dc @ 10.3 A – 200 W	
	19.5 V dc @ 11.8 A – 230 W	
	19.5 V dc @ 16.92 A – 330 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
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.		

9 Backing up, restoring, and recovering

This chapter provides information about the following processes, which are standard procedure for most products:


- **Backing up your personal information**—You can use Windows tools to back up your personal information (see [Using Windows tools on page 79](#)).
- **Creating a restore point**—You can use Windows tools to create a restore point (see [Using Windows tools on page 79](#)).
- **Creating recovery media** (select products only)—You can use the HP Cloud Recovery Download Tool (select products only) to create recovery media (see [Using the HP Cloud Recovery Download Tool to create recovery media \(select products only\) on page 79](#)).
- **Restoring and recovery**—Windows offers several options for restoring from backup, refreshing the computer, and resetting the computer to its original state (see [Using Windows tools on page 79](#)).

 **IMPORTANT:** If you will be 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

Using Windows tools


 **IMPORTANT:** Windows is the only option that allows you to back up your personal information. Schedule regular backups to avoid information loss.

You can use Windows tools to back up personal information and create system restore points and recovery media.

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

For more information and steps, see the Get Help app.

1. Select the **Start** button, and then select the **Get Help** app.
2. Enter the task you want to perform.

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

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.

To download the tool:

- ▲ Go to the Microsoft Store and search for HP Cloud Recovery.

For details, go to <http://www.hp.com/support>, search for HP Cloud Recovery, and then select "HP PCs – Using the Cloud Recovery Tool (Windows 10, 7)."



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.

Restoring and recovery

Restoring, resetting, and refreshing using Windows tools

Windows offers several options for restoring, resetting, and refreshing the computer. For details, see [Using Windows tools on page 79](#).

Recovering using HP Recovery media

HP Recovery media is used to recover the original operating system and software programs that were installed at the factory. On select products, it can be created 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 79](#).



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.

Changing the computer boot order

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

To change the boot order:



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

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, quickly hold down the volume up button, and then select **f9**.

– or –

Turn on or restart the tablet, quickly hold down the volume down button, and 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 OS recovery solution built into the hardware and firmware. 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>. Select **Find your product**, and then follow the on-screen instructions.

10 Power cord set requirements

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

The 3-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

The following 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 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

Table 10-1 Power cord requirements

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
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
The 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
The United Kingdom	ASTA	1
The United States	UL	2

1. The flexible cord must be Type H05VV-F, 3-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.

Table 10-1 Power cord requirements (continued)

Country/region	Accredited agency	Applicable note number
2.	The flexible cord must be Type SVT/SJT or equivalent, No. 18 AWG, 3-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, 3-conductor, 0.75 mm ² or 1.25 mm ² 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, 3-conductor, 0.75 mm ² 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 3-conductor, 0.75 mm ² conductor size. KTL logo and individual approval number must be on each element. Corset approval number and logo must be printed on a flag label.	
6.	The flexible cord must be Type HVCTF 3-conductor, 1.25 mm ² 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 3-conductor, 0.75 mm ² or 1.00 mm ² conductor size, with plug BS 1363/A with BSI or ASTA marks.	

11 Recycling

When a non-rechargeable 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 Web site at <http://www.hp.com/recycle>.

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