



Maintenance and Service Guide

HP Chromebook 11 G8 Education Edition
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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.

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

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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 your 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 description

Category	Description
Product Name	HP Chromebook 11 G8 Education Edition
Processor	<ul style="list-style-type: none">• Intel® Celeron™ N4120 1.1 GHz (SC turbo up to 2.6 GHz) quad core processor (4.0 MB L2 cache, 2400 MHz FSB, 6 W)• Intel Celeron N4100 1.1 GHz (SC turbo up to 2.4 GHz) quad core processor (4.0 MB L2 cache, 2400 MHz FSB, 6 W)• Intel Celeron N4020 1.1 GHz (SC turbo up to 2.8 GHz) dual core processor (4.0 MB L2 cache, 2400 MHz FSB, 6 W)• Intel Celeron N4000 1.1 GHz (SC turbo up to 2.6 GHz) dual core processor (4.0 MB L2 cache, 2400 MHz FSB, 6 W)
Chipset	Intel integrated with soldered-on-circuit (SoC) processor
Panel	<ul style="list-style-type: none">• 11.6-inch, high-definition (HD) (1366×768), antiglare, white light emitting diode (WLED), UWVA, liquid crystal display (LCD), eDP 1.2 without PSR, 50, slim touchscreen display; typical brightness: 220 nits• 11.6-inch, HD (1366×768), antiglare, WLED, UWVA, LCD, eDP, 50, slim non-touchscreen display; typical brightness: 220 nits• 11.6-inch, HD (1366×768), antiglare, WLED, SVA, LCD, eDP, 45, slim non-touchscreen display; typical brightness: 220 nits
Memory	Support for the following: LPDDR4-4266, 0.6 V, non-upgradeable, on-board system memory in 16-GB configuration LPDDR4-3733, 1.1 V, non-upgradeable, on-board system memory in 16-GB and 8-GB configurations
Storage	Embedded Multimedia Controller (eMMC): Supports M0-276 MMC v 5.0 in 64-, 32-, and 16-GB configurations
Audio and video	Fixed (no tilt), 720p HD WKCD camera integrated into display assembly Single microphone with appropriate echo-cancellation, noise-suppression software Dual speakers
Wireless	Integrated wireless local area network (WLAN) with two built-in antennas Support for the Intel 9560 ac 2×2 +Bluetooth 5.0® MU-MIMO M.2 2230 non-vPro MIPI +BRI WW WLAN module
Keyboard/pointing devices	Island-style, spill-resistant, textured standard notebook keyboard in chalkboard gray and pebble gray finish Island-style, spill-resistant, textured standard notebook keyboard in dark sage green and sage green finish Touchpad
Power requirements	Supports a 2-cell, 47.36-WHr, 6.15-AHr, Li-ion battery Supports a 45-W, AC adapter (non-PFC, standard USB Type-C, straight connector)

Table 1-1 Product description (continued)

Category	Description
	Supports a 1-meter C5 power cord
Operating system	Preinstalled: Chrome64
Serviceability	End user replaceable parts: AC adapter

2 Components

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

Right side

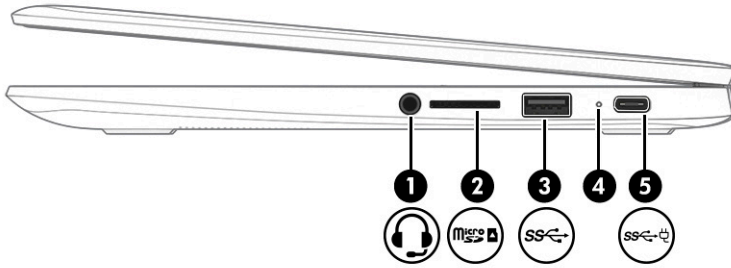


Table 2-1 Right-side components and their descriptions





Component	Description
<p>(1)  Audio-out (headphone)/Audio-in (microphone) combo jack</p>	<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>NOTE: When a device is connected to the jack, the computer speakers are disabled.</p>
<p>(2)  MicroSD™ memory card reader</p>	<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.
<p>(3)  USB SuperSpeed port</p>	<p>Connects a USB device, such as a cell phone, camera, activity tracker, or smartwatch, and provides high-speed data transfer.</p>
<p>(4) AC adapter and battery light</p>	<ul style="list-style-type: none"> • White: The AC adapter is connected and the battery is fully charged. • Amber: The AC adapter is connected and the battery is charging.

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

Component	Description
(5)  USB Type-C power connector and super speed port	<ul style="list-style-type: none">• Blinking amber: The battery has an error.• Off: The battery is not charging. <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>Connects a USB device that has a Type-C connector, such as a cell phone, camera, activity tracker, or smartwatch, and provides data transfer.</p> <p>– and –</p> <p>Connects a display device that has a USB Type-C connector, providing DisplayPort™ output.</p> <p>NOTE: Cables, adapters, or both (purchased separately) may be required.</p>

Left side

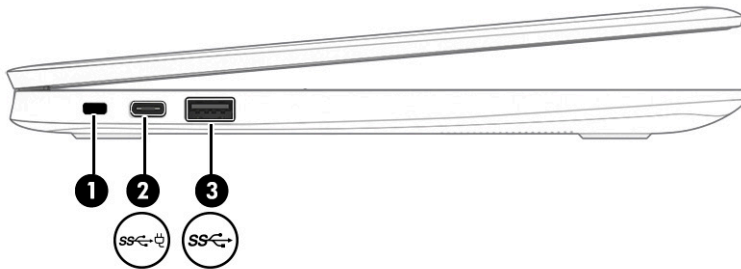




Table 2-2 Left-side components and their descriptions

Component	Description
(1)	<p>Nano security cable slot</p> <p>Attaches an optional security cable to the computer.</p> <p>NOTE: The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.</p>
(2)	<p>  USB Type C Power Connector and Super Speed port. </p> <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>Connects a USB device that has a Type-C connector, such as a cell phone, camera, activity tracker, or smartwatch, and provides data transfer.</p> <p>– and –</p> <p>Connects a display device that has a USB Type-C connector, providing DisplayPort output.</p> <p>NOTE: Cables, adapters, or both (purchased separately) may be required.</p>
(3)	<p>  USB SuperSpeed port </p> <p>Connects a USB device, such as a cell phone, camera, activity tracker, or smartwatch, and provides high-speed data transfer.</p>

Display

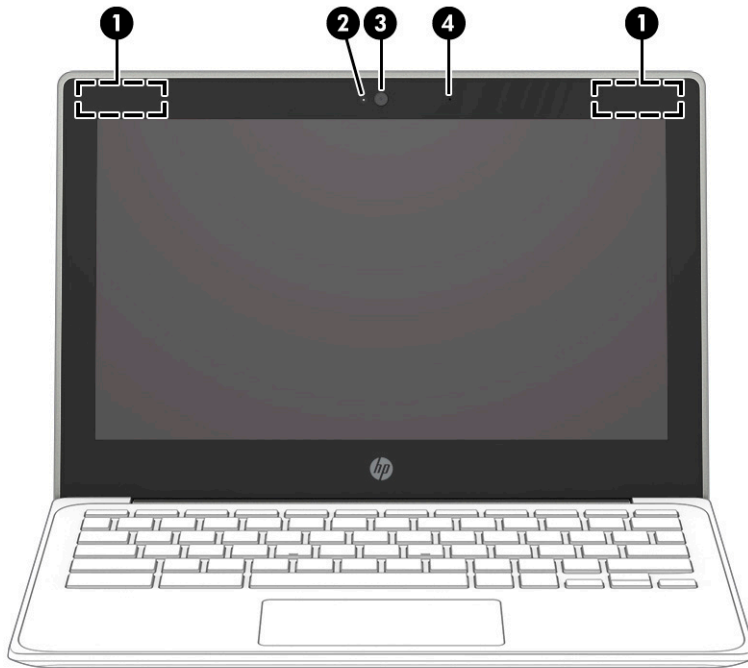


Table 2-3 Display components and their descriptions

Component	Description
(1) WLAN antennas*	Send and receive wireless signals to communicate with wireless local area networks (WLANs).
(2) Camera light	On: The camera is in use.
(3) Camera	Allows you to video chat, record video, and record still images.
(4) Internal microphone	Record sound.

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

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

To access this guide, go to <http://www.hp.com/support>, 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
Touchpad zone	Reads your finger gestures to move the pointer or activate items on the screen.

Bottom



Table 2-5 Bottom components and their descriptions

Components	Description
Speaker vents	Enable 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 your computer. When contacting support, you may be asked for the serial number, the product number, or the model number. Locate this information before you contact support.

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

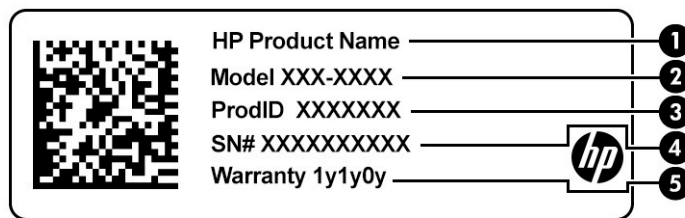


Table 2-6 Service label components

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

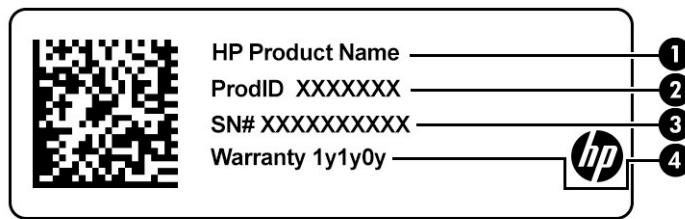


Table 2-7 Service label components


Component
(1) HP product name
(2) Product ID

Table 2-7 Service label components (continued)

Component	
(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

 **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.

Computer major components

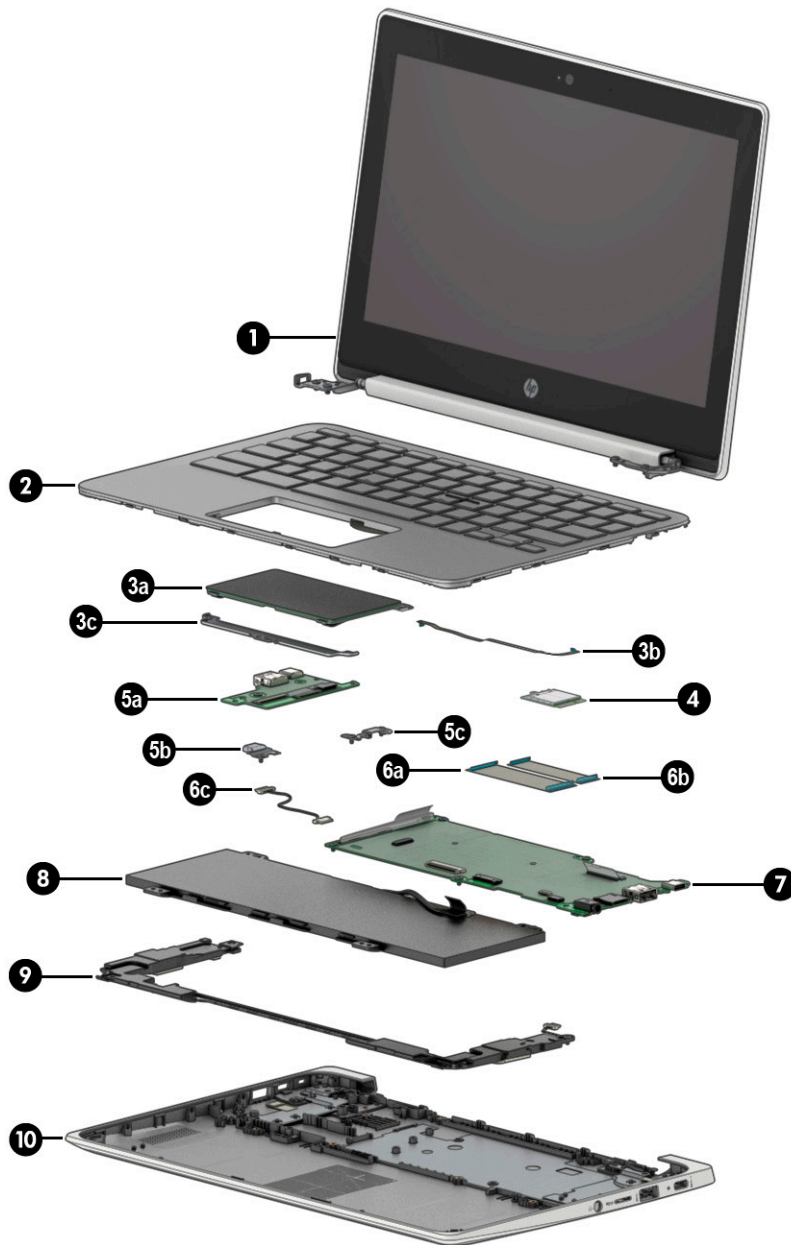


Table 3-1 Major component spare part information

Item	Component	Spare part number
(1)	Display assembly: The display assembly is spared at the subcomponent level only. For more display assembly spare part information, see Display components on page 15 .	
(2)	Keyboard/top cover in chalkboard gray finish (includes keyboard cable):	
	For use in Belgium	L90338-A41
	For use in Brazil	L90338-201
	For use in Canada	L90338-DB1
	For use in the Czech Republic and Slovakia	L90338-FL1
	For use in Denmark, Finland, and Norway	L90338-DH1
	For use in France	L90338-051
	For use in Germany	L90338-041
	For use in Israel	L90338-BB1
	For use in Italy	L90338-061
	For use in Latin America	L90338-161
	For use in the Netherlands	L90338-B31
	For use in Portugal	L90338-131
	For use in Romania	L90338-271
	For use in Russia	L90338-251
	For use in Saudi Arabia	L90338-171
	For use in South Korea	L90338-AD1
	For use in Spain	L90338-071
	For use in Switzerland	L90338-BG1
	For use in Taiwan	L90338-AB1
	For use in Thailand	L90338-281
	For use in Turkey	L90338-141
	For use in the United Kingdom	L90338-031
	For use in the United States	L90338-001
	Keyboard/top cover in dark sage gray finish (includes keyboard cable):	
	For use in Belgium	L90339-A41
	For use in Brazil	L90339-261
	For use in Canada	L90339-DB1
	For use in the Czech Republic and Slovakia	L90339-FL1
	For use in Denmark, Finland, and Norway	L90339-DH1
	For use in France	L90339-051
	For use in Germany	L90339-041

Table 3-1 Major component spare part information (continued)

Item	Component	Spare part number
	For use in Israel	L90339-BB1
	For use in Italy	L90339-061
	For use in Latin America	L90339-161
	For use in the Netherlands	L90339-B31
	For use in Portugal	L90339-131
	For use in Romania	L90339-271
	For use in Russia	L90339-251
	For use in Saudi Arabia	L90339-171
	For use in South Korea	L90339-AD1
	For use in Spain	L90339-071
	For use in Switzerland	L90339-BG1
	For use in Taiwan	L90339-AB1
	For use in Thailand	L90339-281
	For use in Turkey	L90339-141
	For use in the United Kingdom	L90339-031
	For use in the United States	L90339-001
(3a)	Touchpad:	
	In chalkboard gray finish	L89789-001
	In dark sage gray finish	L89790-001
(3b)	Touchpad cable (included in the Cable Kit, spare part number L89767-001)	
(3c)	Touchpad bracket	L89791-001
(4)	Intel 9560 ac 2*2 + Bluetooth 5.0 MU-MIMO M.2 2230 non-vPro WLAN module	L41693-005
	WLAN bracket (not illustrated)	M00452-001
(5a)	Connector board (includes audio jack and USB port)	L89792-001
(5b)	Left-side I/O bracket	L89793-001
(5c)	Right-side I/O bracket	L89793-001
(6a)	Connector board high-speed cable (included in the Cable Kit, spare part number L89767-001)	
(6b)	Connector board low-speed cable (included in the Cable Kit, spare part number L89767-001)	
(6c)	Power cable (included in the Cable Kit, spare part number L89767-001)	
(7)	System board (includes processor, heat sink, and replacement thermal material):	
	Equipped with an Intel Celeron N4120 processor, 8 GB of system memory, 64 GB of eMMC system storage, and the Google Chrome operating system	L89782-001
	Equipped with an Intel Celeron N4120 processor, 8 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome operating system	L89781-001

Table 3-1 Major component spare part information (continued)

Item	Component	Spare part number
	Equipped with an Intel Celeron N4120 processor, 4 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome operating system	L89780-001
	Equipped with an Intel Celeron N4020 processor, 4 GB of system memory, 64 GB of eMMC system storage, and the Google Chrome operating system	L89779-001
	Equipped with an Intel Celeron N4020 processor, 4 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome operating system	L89778-001
	Equipped with an Intel Celeron N4020 processor, 4 GB of system memory, 16 GB of eMMC system storage, and the Google Chrome operating system	L89777-001
(8)	Battery (2-cell, 47.36-WHr, 6.15-AHr, Li-ion; includes cable)	L75783-005
	Battery bracket (not illustrated)	L98587-001
	Battery tape (not illustrated)	L14905-001
(9)	Speakers (include left and right speakers, cables, and 2 rubber isolators)	L89788-001
(10)	Bottom cover:	
	In chalkboard gray finish	L89764-001
	In dark sage gray finish	L89765-001

Display components

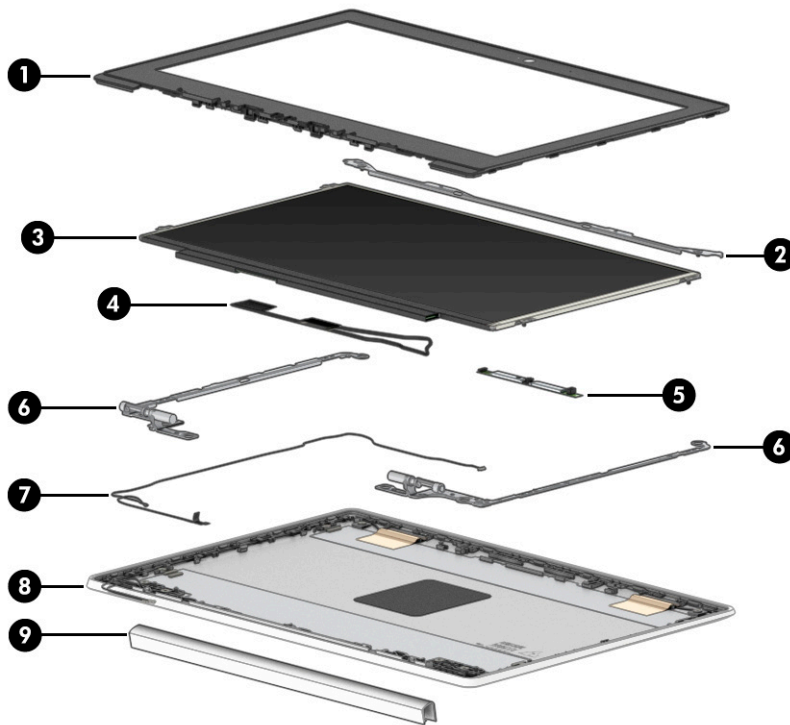


Table 3-2 Display component spare part information

Item	Component	Spare part number
(1)	Display bezel	L89773-001
(2)	Display bracket	L89774-001
(3)	Display panel:	
	11.6-in, HD, antiglare, LED, UWVA, touchscreen display panel	L89785-001
	11.6-in, HD, antiglare, LED, UWVA, non-touchscreen display panel	L89784-001
	11.6-in, HD, antiglare, LED, SVA, non-touchscreen display panel	L89783-001
(4)	Display panel cable:	
	For use only on computers equipped with a touchscreen display assembly	L89776-001
	For use only on computers equipped with a non-touchscreen display assembly	L89775-001
(5)	Webcam module (includes double-sided adhesive)	L51916-001
(6)	Display hinges (2)	L89768-001
(7)	Webcam module cable (included in the Cable Kit, spare part number L89767-001)	
(8)	Display back cover (includes the wireless antenna cables and transceivers):	
	In chalkboard gray finish	L89771-001
	In dark sage gray finish	L89772-001
(9)	Display hinge cover:	

Table 3-2 Display component spare part information (continued)

Item	Component	Spare part number
	In chalkboard gray finish	L89769-001
	In dark sage gray finish	L89770-001

Miscellaneous parts

Table 3-3 Miscellaneous spare part information

Component	Spare part number
45-W, AC Adapter (non-PFC, USB Type-C, 1.8-m, 3-pin)	L43407-001
Cable Kit (includes adapter cable, connector board high-speed cable, connector board low-speed cable, touchpad cable, and webcam module cable)	L89767-001
Power cord (C5, 1.0-m, conventional with sticker):	
For use in Argentina	L19357-001
For use in Australia	L19358-001
For use in Brazil	L19359-001
For use in Denmark	L19360-001
For use in Europe	L19361-001
For use in India	L19363-001
For use in Israel	L19362-001
For use in Italy	L19364-001
For use in North America	L19367-001
For use in South Africa	L19369-001
For use in South Korea	L19366-001
For use in Switzerland	L19370-001
For use in Taiwan	L19372-001
For use in Thailand	L19371-001
For use in the United Kingdom	L19373-001
Rubber Kit (includes touchpad bracket bumper)	L89786-001
Screw Kit	L89787-001

4 Removal and replacement procedures preliminary requirements

Tools required

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

- Flat-bladed screwdriver
- Magnetic screwdriver
- Phillips P0 and P1 screwdrivers

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

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

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

Component replacement procedures

There are as many as 53 screws that must be removed, replaced, and/or loosened when servicing the computer. Make special note of each screw size and location during removal and replacement.

Keyboard/top cover

Table 5-1 Keyboard/top cover spare part information

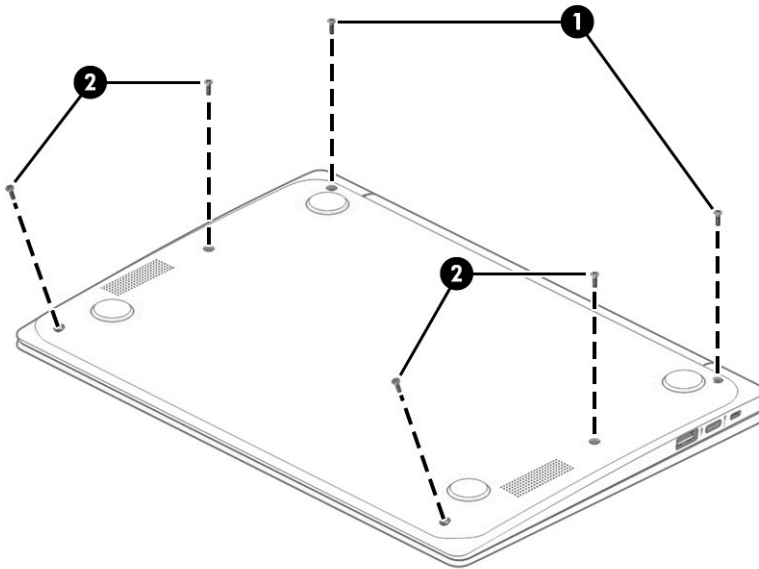
For use in country or region	Spare part number	For use in country or region	Spare part number	For use in country or region	Spare part number
Keyboard/top cover with backlight (includes backlight cable and keyboard cable):		For use in Israel	L90338-BB1	For use in South Korea	L90338-AD1
For use in Belgium	L90338-A41	For use in Italy	L90338-061	For use in Spain	L90338-071
For use in Brazil	L90338-201	For use in Latin America	L90338-161	For use in Switzerland	L90338-BG1
For use in Canada	L90338-DB1	For use in the Netherlands	L90338-B31	For use in Taiwan	L90338-AB1
For use in the Czech Republic and Slovakia	L90338-FL1	For use in Portugal	L90338-131	For use in Thailand	L90338-281
For use in Denmark, Finland, and Norway	L90338-DH1	For use in Romania	L90338-271	For use in Turkey	L90338-141
For use in France	L90338-051	For use in Russia	L90338-251	For use in the United Kingdom	L90338-031
For use in Germany	L90338-041	For use in Saudi Arabia	L90338-171	For use in the United States	L90338-001
Keyboard/top cover without backlight (includes keyboard cable):		For use in Israel	L90339-BB1	For use in South Korea	L90339-AD1
For use in Belgium	L90339-A41	For use in Italy	L90339-061	For use in Spain	L90339-071
For use in Brazil	L90339-201	For use in Latin America	L90339-161	For use in Switzerland	L90339-BG1
For use in Canada	L90339-DB1	For use in the Netherlands	L90339-B31	For use in Taiwan	L90339-AB1

Table 5-1 Keyboard/top cover spare part information (continued)

For use in country or region	Spare part number	For use in country or region	Spare part number	For use in country or region	Spare part number
For use in the Czech Republic and Slovakia	L90339-FL1	For use in Portugal	L90339-131	For use in Thailand	L90339-281
For use in Denmark, Finland, and Norway	L90339-DH1	For use in Romania	L90339-271	For use in Turkey	L90339-141
For use in France	L90339-051	For use in Russia	L90339-251	For use in the United Kingdom	L90339-031
For use in Germany	L90339-041	For use in Saudi Arabia	L90339-171	For use in the United States	L90339-001

Remove the keyboard/top cover:

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. Close the computer and position it upside down.
5. Remove the two Phillips M2.5×8.7 screws **(1)** the four Phillips M2.5×7.2 screws **(2)** that secure the keyboard/top cover to the bottom cover.



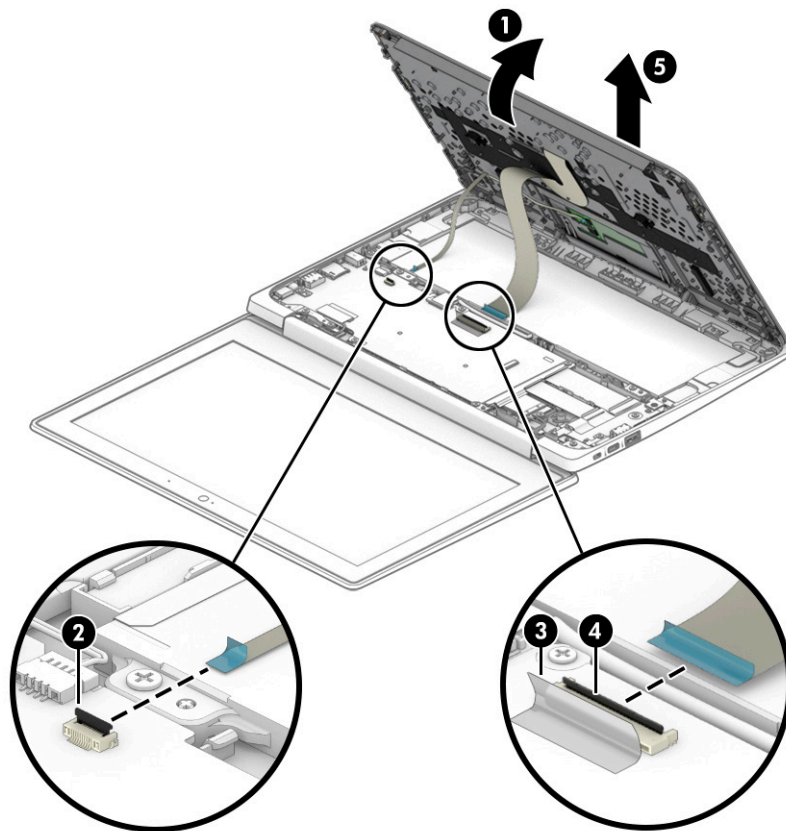
6. Open the computer and rest it on its left side.

7. Use a thin plastic tool **(1)** to separate the rear edge of the keyboard/top cover **(2)** from the bottom cover.




8. Position the computer right side up with the rear toward you.
9. Open the computer as far as it will open.
10. Lift the rear edge of the keyboard/top cover **(1)** as far as the keyboard cable and touchpad cable allow.
11. Release the zero insertion force (ZIF) connector **(2)** to which the touchpad board cable is connected, and then disconnect the touchpad cable from the system board.
12. Release the shielding **(3)** that covers the keyboard cable ZIF connector.
13. Release the ZIF connector **(4)** to which the keyboard cable is connected, and then disconnect the keyboard cable from the system board.

14. Remove the keyboard/top cover (5).



Reverse this procedure to install the keyboard/top cover.

Touchpad cable

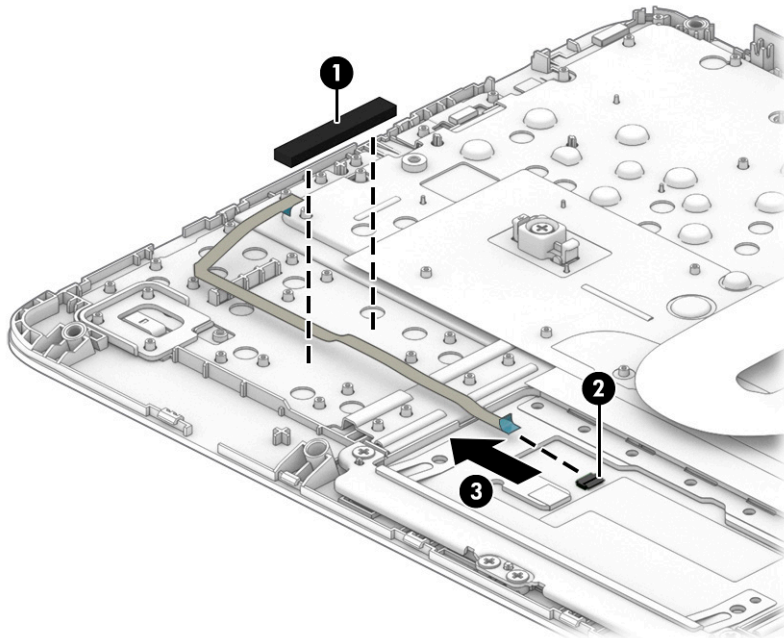
 **NOTE:** The touchpad cable is included in the Cable Kit, spare part number L89767-001.

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 keyboard/top cover (see [Keyboard/top cover on page 23](#)).

Remove the touchpad cable:

1. Turn the keyboard/top cover upside down with the front toward you.
2. Remove the pad (1) that secures the touchpad cable to the keyboard/top cover.
3. Release the ZIF connector (2) to which the touchpad cable is connected, and then disconnect the touchpad cable from the touchpad.
4. Remove the touchpad cable (3).



Reverse this procedure to install the touchpad cable.

Touchpad

Table 5-2 Touchpad spare part information

Description	Spare part number
In chalkboard gray finish	L89789-001
In dark sage gray finish	L89790-001

Before removing the touchpad, follow these steps:

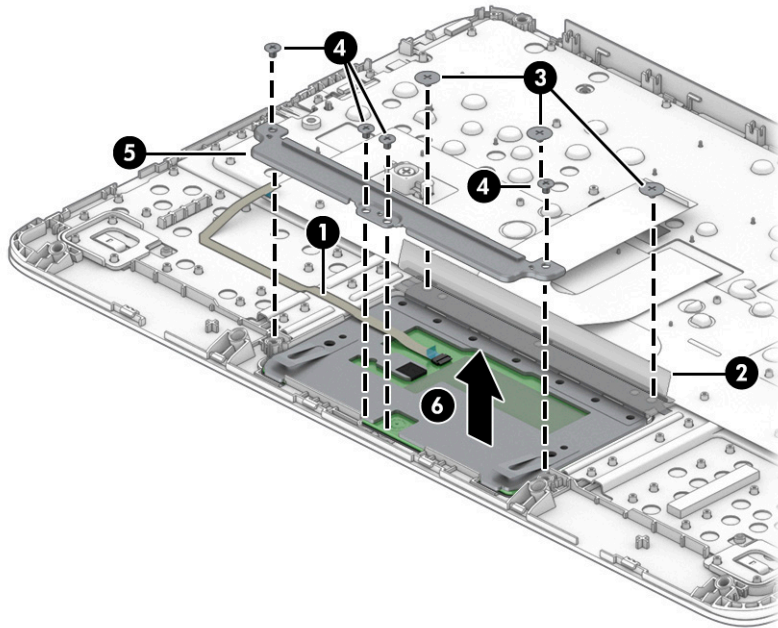
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 23](#)).

Remove the touchpad:

1. Turn the keyboard/top cover upside down with the front toward you.
2. Remove the pad **(1)** that secures the touchpad cable to the keyboard/top cover.
3. Release the shielding **(2)** that covers the touchpad screws.
4. Remove the three Phillips M2.0×2.2 broad head screws **(3)** that secure the touchpad to the keyboard/top cover.
5. Remove the four Phillips M2.0×2.9 screws **(4)** that secure the touchpad and touchpad bracket to the keyboard/top cover.
6. Remove the touchpad bracket **(5)**.

The touchpad bracket is available using spare part number L89791-001.

7. Remove the touchpad (6) and cable.



Reverse this procedure to install the touchpad.

Speakers

Table 5-3 Speaker spare part information

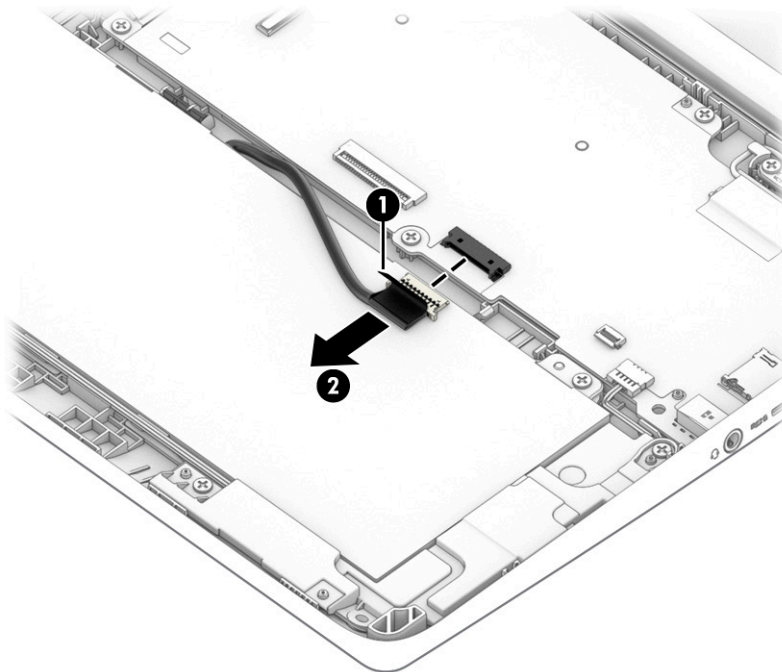
Description	Spare part number
Speakers (include left and right speakers, cables, and 2 rubber isolators)	L89788-001

Before removing the speakers, 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 keyboard/top cover (see [Keyboard/top cover on page 23](#)).

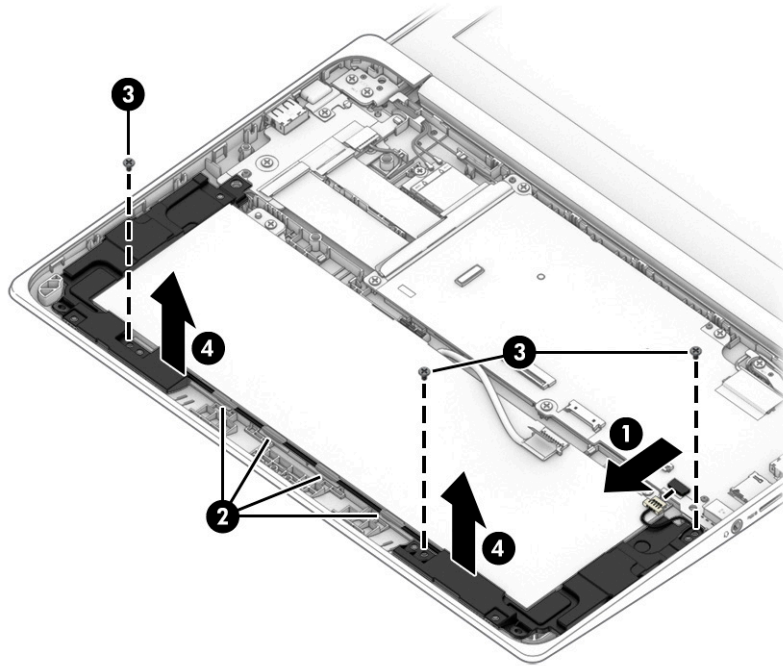
Remove the speakers:

1. Release the shielding (1) that covers the battery cable and connector.
2. Disconnect the battery cable (2) from the system board.



3. Disconnect the speaker cable (1) from the system board.
4. Release the speaker cable from the routing clips (2) and channel built into the battery.
5. Remove the three Phillips M2.0×4.2 screws (3) that secure the speakers to the bottom cover.

6. Remove the speakers (4).



Reverse this procedure to install the speakers.

Battery

Table 5-4 Battery spare part information

Description	Spare part number
Battery (2-cell, 47.36-WHr, 6.15-AHr, Li-ion; includes cable)	L75783-005
Battery bracket	L98587-001
Battery tape	L14905-001

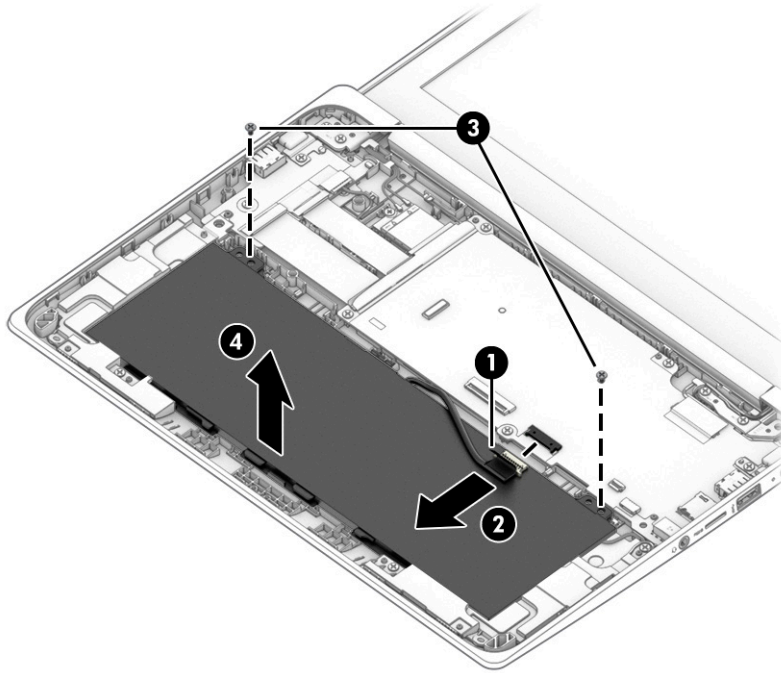
Before removing the battery, follow these steps:

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 keyboard/top cover (see [Keyboard/top cover on page 23](#)).
5. Remove the speakers (see [Speakers on page 30](#)).

Remove the battery:

1. Release the shielding (1) that covers the battery cable and connector.
2. Disconnect the battery cable (2) from the system board.
3. Remove the two Phillips M2.0×4.2 screws (3) that secure the battery to the bottom cover.

4. Remove the battery (4).




Reverse this procedure to install the battery.

WLAN module

Table 5-5 WLAN module spare part information

Description	Spare part number
Intel 9560 ac 2x2 + Bluetooth 5.0 MU-MIMO M.2 2230 non-vPro WLAN module	L41693-005
WLAN bracket	M00452-001

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

Before removing the WLAN module, follow these steps:

1. 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 keyboard/top cover (see [Keyboard/top cover on page 23](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 31](#)).

Remove the WLAN module:

1. Disconnect the WLAN antenna cables **(1)** from the terminals on the WLAN module.

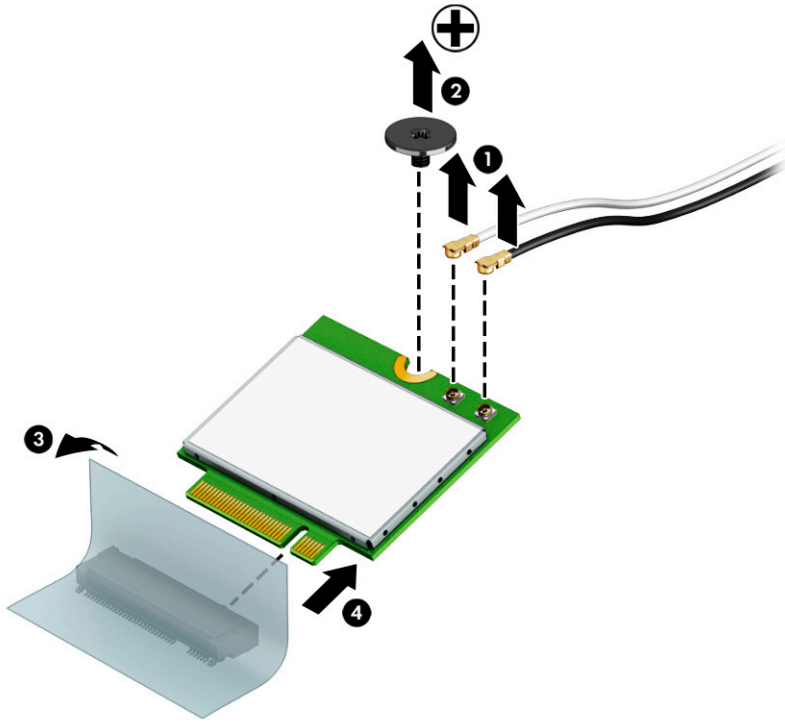


NOTE: The #1/white WLAN antenna cable connects to the WLAN module **#1/Main** terminal. The #2/ black WLAN antenna cable connects to the WLAN module **#2/Aux** terminal.

2. Remove the Phillips M2.0x2.9 screw **(2)** that secures the WLAN module to the system board. (The WLAN module tilts up.)
3. Release the shielding **(3)** that secures the WLAN module to the slot.


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

 **NOTE:** WLAN modules are notched to prevent incorrect installation.



Reverse this procedure to install the WLAN module.

Connector board cables

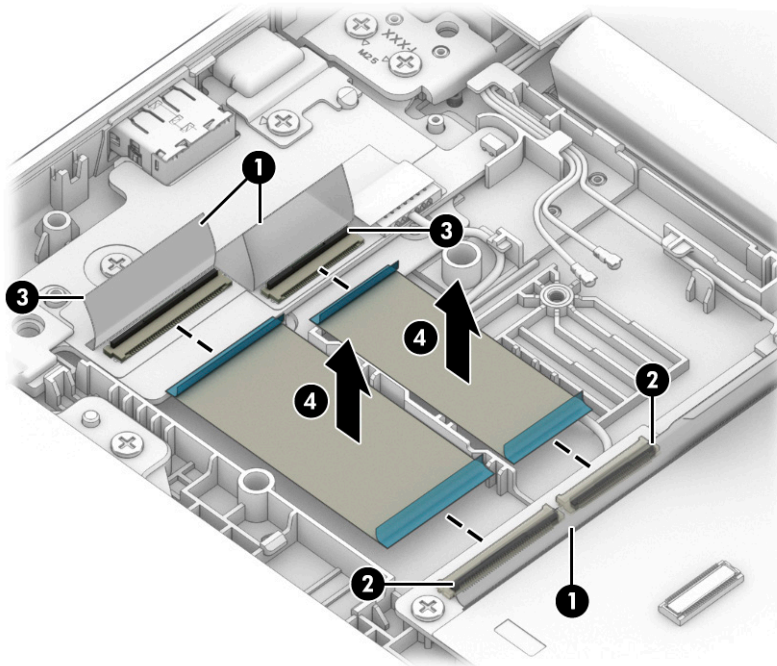
 **NOTE:** The connector board cables are included in the Cable Kit, spare part number L89767-001.

Before removing the connector board cables, 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 keyboard/top cover (see [Keyboard/top cover on page 23](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 31](#)).

Remove the connector board cables:

1. Release the shielding (1) that covers the connector board cable ZIF connectors.
2. Release the ZIF connectors (2) to which the connector board cables are connected, and then disconnect the connector board cables from the system board.
3. Release the ZIF connectors (3) to which the connector board cables are connected, and then disconnect the connector board cables from the connector board.
4. Remove the connector board cables (4).



Reverse this procedure to install the connector board cables.

Connector board

Table 5-6 Connector board spare part information

Description	Spare part number
Connector board (includes audio jack and USB port and rubber bumper)	L89792-001

Before removing the connector board, follow these steps:

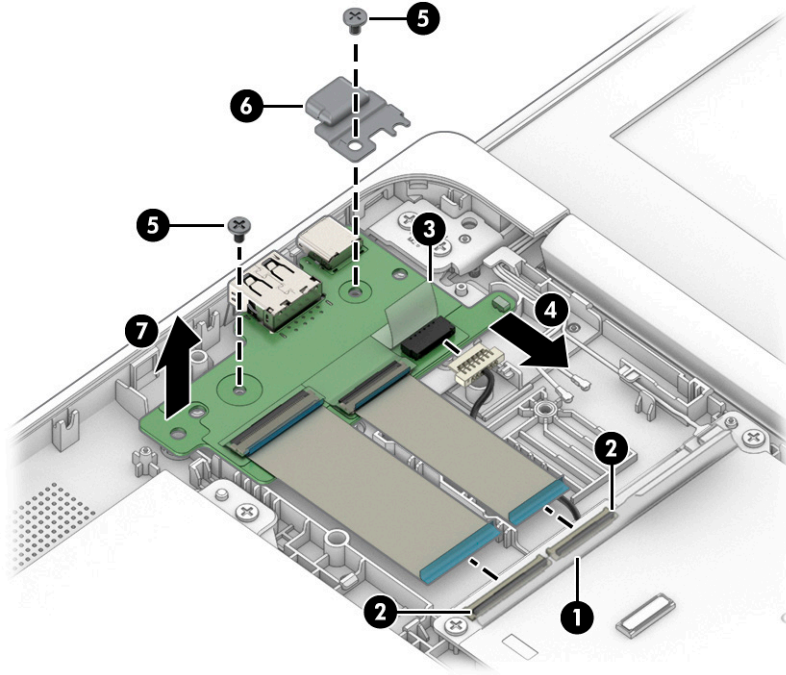
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 23](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 31](#)).

Remove the connector board:

1. Release the shielding **(1)** that covers the connector board cable ZIF connectors on the system board.
2. Release the ZIF connectors **(2)** to which the connector board cables are connected, and then disconnect the connector board cables from the system board.
3. Release the shielding **(3)** that covers the power cable connector.
4. Disconnect the power cable **(4)** from the connector board.
5. Remove the two Phillips M2.0×4.2 screws **(5)** that secure the connector board to the bottom cover.
6. Remove the left-side I/O bracket **(6)**.

The left-side I/O bracket is available using spare part number L89793-001.

7. Remove the connector board (7) and cables.



Reverse this procedure to install the connector board.

System board



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

Table 5-7 System board spare part information

Description	Spare part number
Equipped with an Intel Celeron N4120 processor, 8 GB of system memory, 64 GB of eMMC system storage, and the Google Chrome operating system	L89782-001
Equipped with an Intel Celeron N4120 processor, 8 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome operating system	L89781-001
Equipped with an Intel Celeron N4120 processor, 4 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome operating system	L89780-001
Equipped with an Intel Celeron N4020 processor, 4 GB of system memory, 64 GB of eMMC system storage, and the Google Chrome operating system	L89779-001
Equipped with an Intel Celeron N4020 processor, 4 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome operating system	L89778-001
Equipped with an Intel Celeron N4020 processor, 4 GB of system memory, 16 GB of eMMC system storage, and the Google Chrome operating system	L89777-001

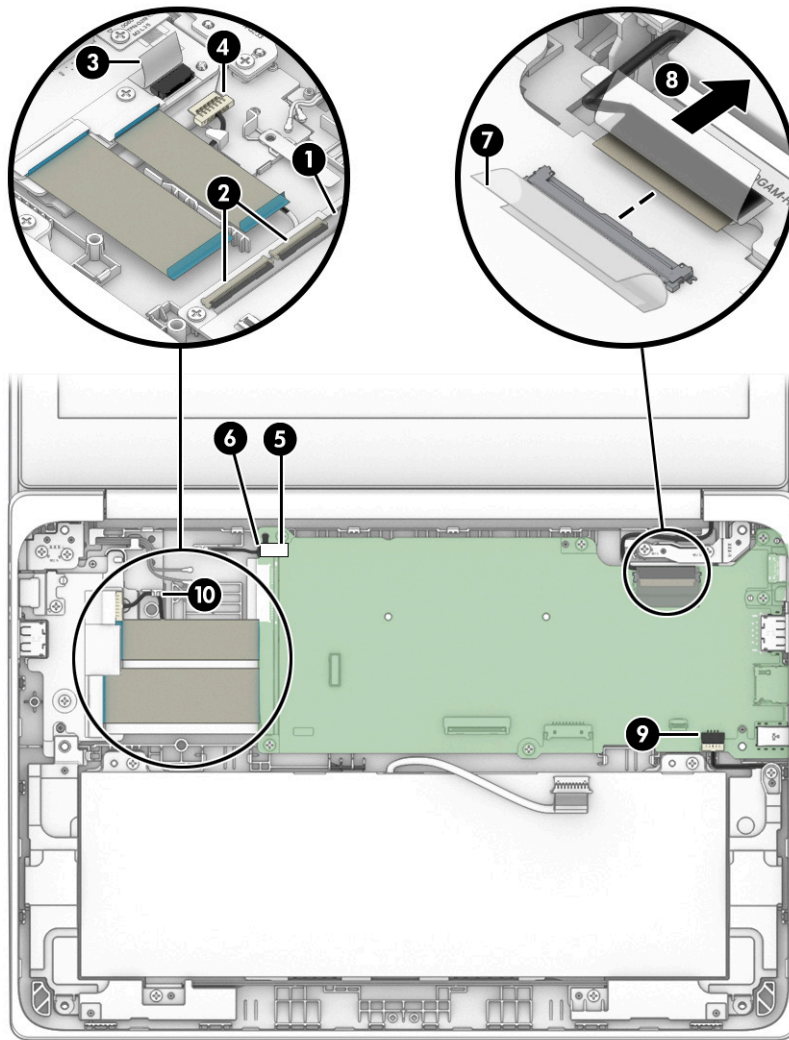
Before removing the system board, follow these steps:

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 keyboard/top cover (see [Keyboard/top cover on page 23](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 31](#)).
6. Remove the WLAN module (see [WLAN module on page 33](#)).

Remove the system board:

1. Release the shielding **(1)** that covers the connector board cable ZIF connectors on the system board.
2. Release the ZIF connectors **(2)** to which the connector board cables are connected, and then disconnect the connector board cables from the system board.
3. Release the shielding **(3)** that covers the power cable connector.
4. Disconnect the power cable **(4)** from the connector board.
5. Disconnect the webcam module cable **(5)** from the system board.
6. Release the shielding **(6)** that covers the display panel cable connector.
7. Disconnect the display panel cable **(7)** from the system board.
8. Disconnect the speaker cable **(8)** from the system board.

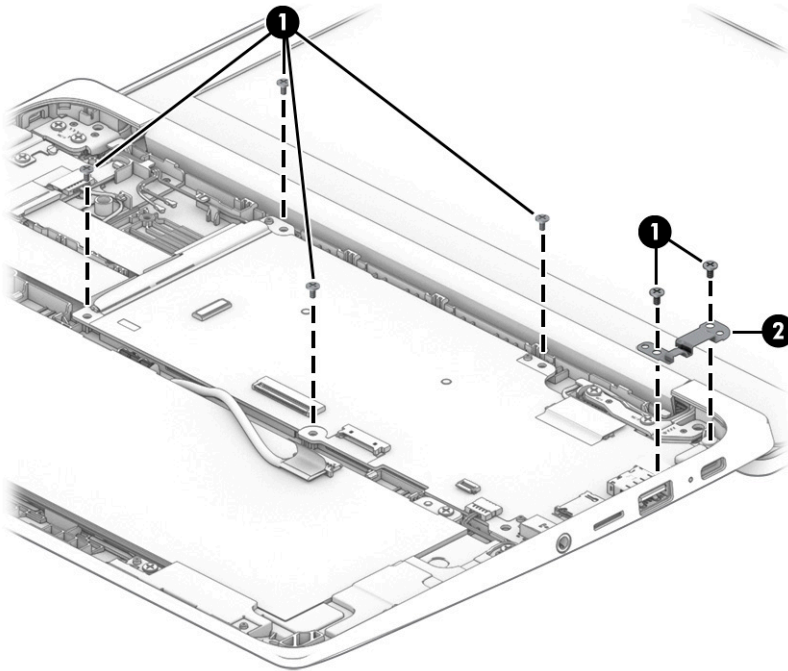
9. Release the power cable from the retention clip (9) built into the bottom cover.



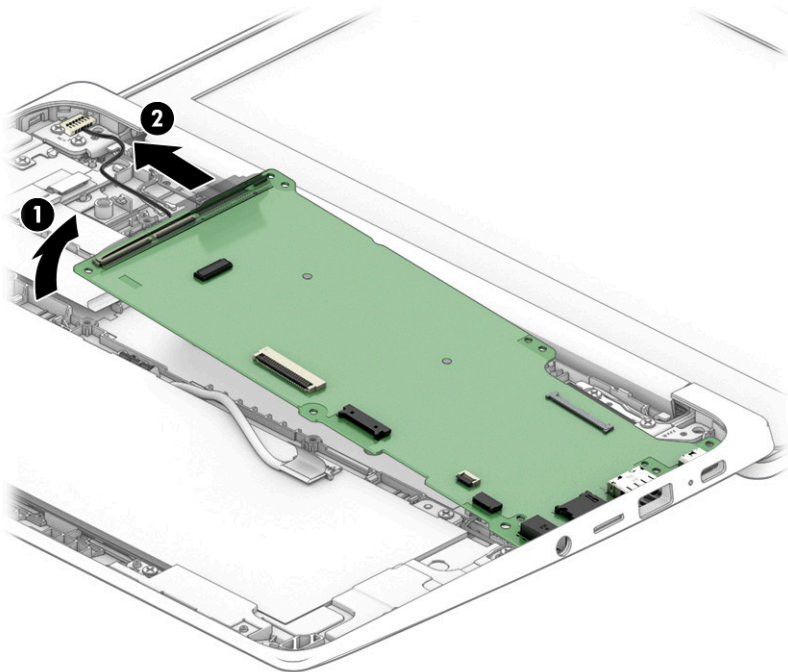
10. Remove the six Phillips M2.0×4.2 screws (1) that secure the system board to the bottom cover.

11. Remove the right-side I/O bracket (2).

The I/O bracket is available using spare part number L89793-001.



12. Lift the left side the system board (1) until it rests at an angle.
13. Remove the system board (2) by sliding it up and to the left at an angle.



Reverse this procedure to install the system board.

Power cable

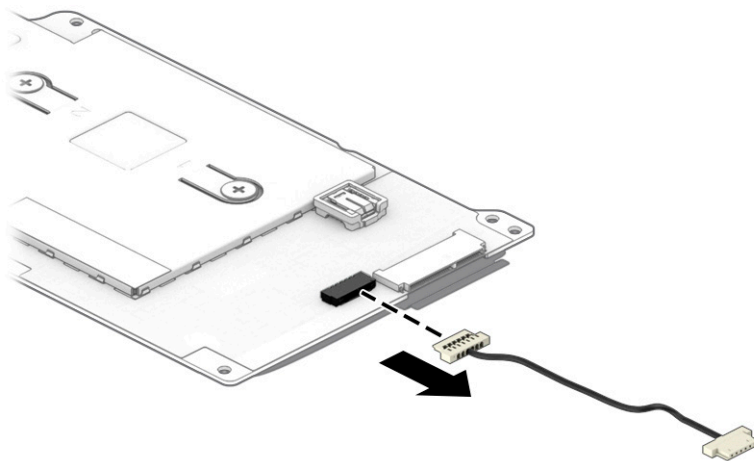
 **NOTE:** The power cable is included in the Cable Kit, spare part number L89767-001.

Before removing the power 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 keyboard/top cover (see [Keyboard/top cover on page 23](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 31](#)).
6. Remove the WLAN module (see [WLAN module on page 33](#)).
7. Remove the system board (see [System board on page 38](#)).

Remove the power cable:

1. Turn the system board upside down with the rear toward you.
2. Disconnect the power cable from the system board.



Reverse this procedure to install the power cable.

Display assembly

 **NOTE:** The display assembly is spared at the subcomponent level only. See the removal section for each component for information.

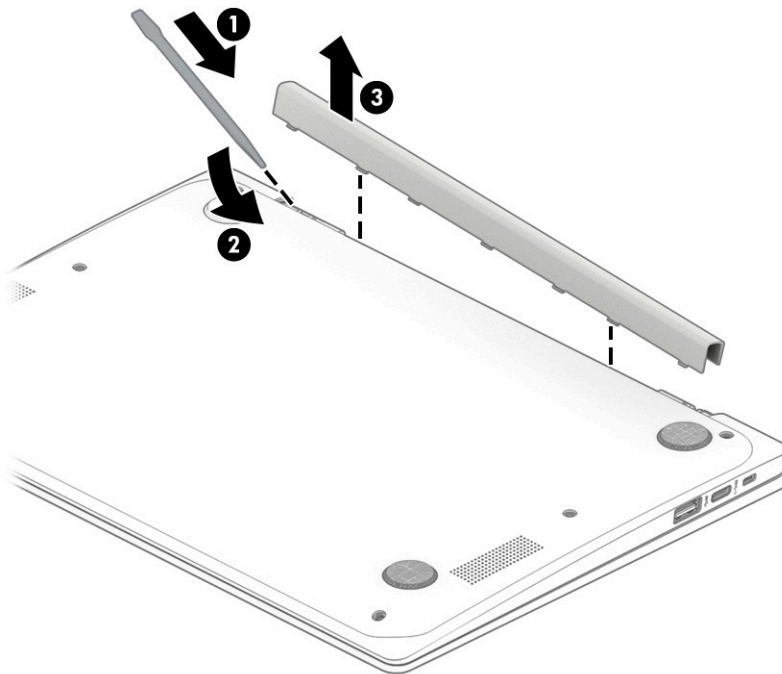
Before removing the display assembly, follow these steps:

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 keyboard/top cover (see [Keyboard/top cover on page 23](#)).
5. Disconnect the battery from the system board (see [Battery on page 31](#)).

Remove the display assembly:

1. Remove the display hinge cover by following these steps:
 - a. Close the computer.
 - b. Turn the computer upside down with the front toward you.
 - c. Use a case utility tool (1) or similar thin, plastic tool to separate the left (2) and right edges of the hinge cover from the display assembly.
 - d. Remove the hinge cover (3).

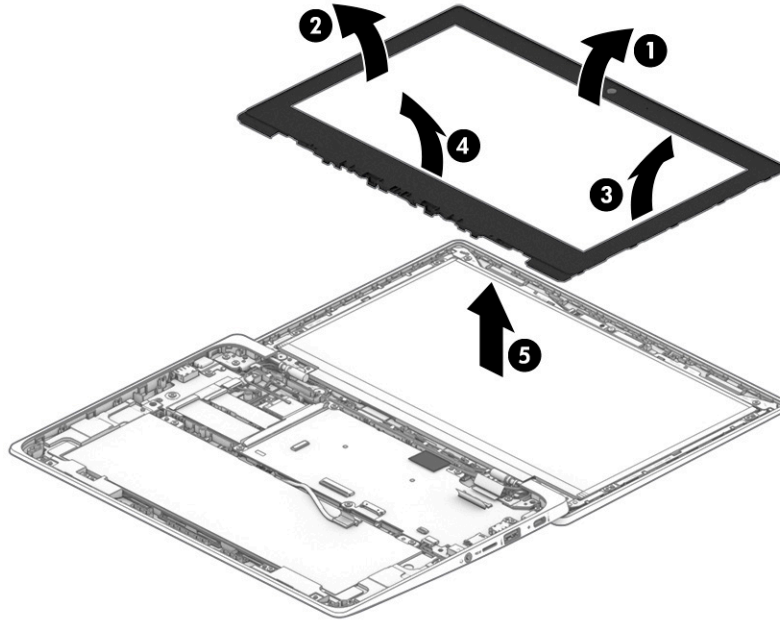
The hinge cover is available using spare part numbers L89769-001 (in chalkboard gray finish) and L89770-001 (in dark sage gray finish).



2. Remove the display bezel by following these steps:

- a. Turn the computer right side up with the rear toward you.
- b. Open the computer as far as it will open.
- c. Release the top edge of the display bezel **(1)** from the display assembly.
- d. Release the left and right edges of the display bezel **(2)** from the display assembly.
- e. Release the bottom edge of the display bezel **(3)** from the display assembly.
- f. Remove the display bezel **(4)**.

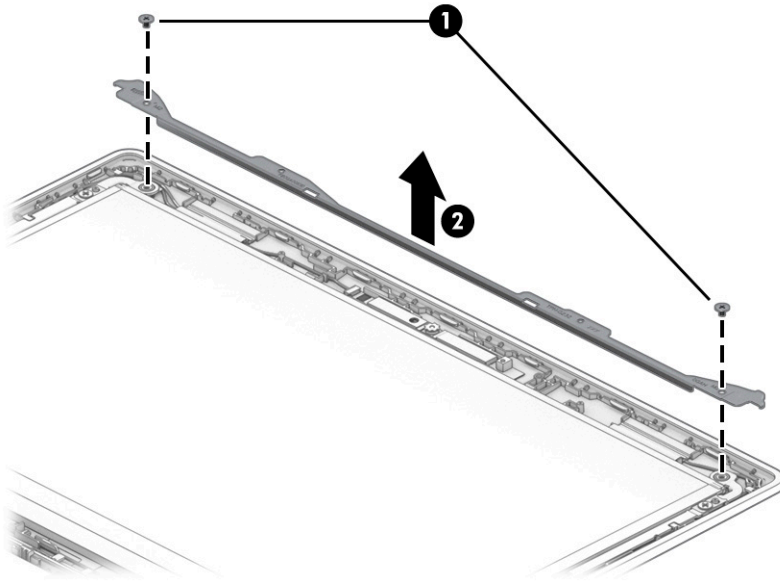
The display bezel is available using spare part number L89773-001.



3. Remove the display bracket by following these steps:
 - a. Remove the two Phillips M2.0×2.9 screws **(1)** that secure the display bracket to the display back cover.

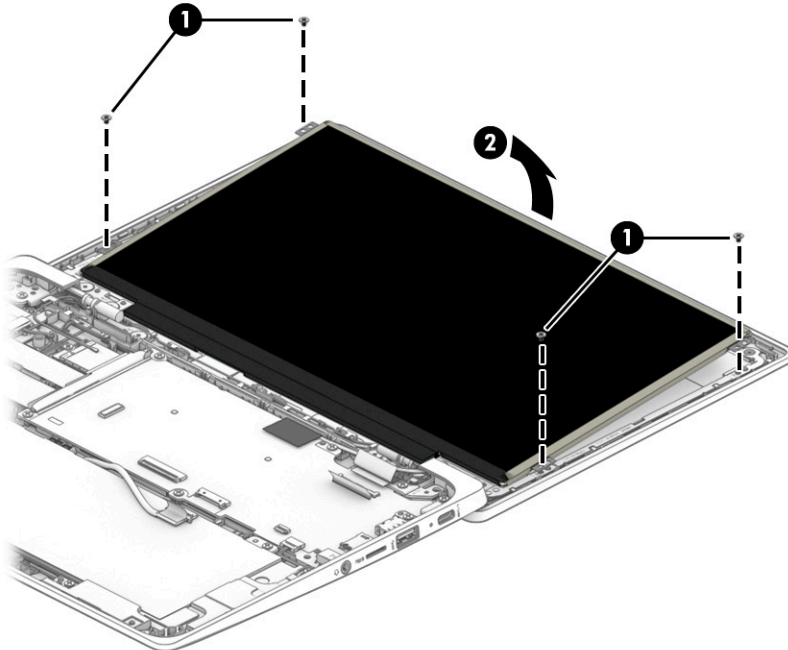
- b. Remove the display bracket (2).

The display bracket is available using spare part number L89774-001.



4. Remove the display panel by following these steps:

- a. Remove the four Phillips M2.0×2.9 screws (1) that secure the display panel to the display back cover.
b. Swing the top edge (2) of the display panel up and forward until it rests upside down on the computer.

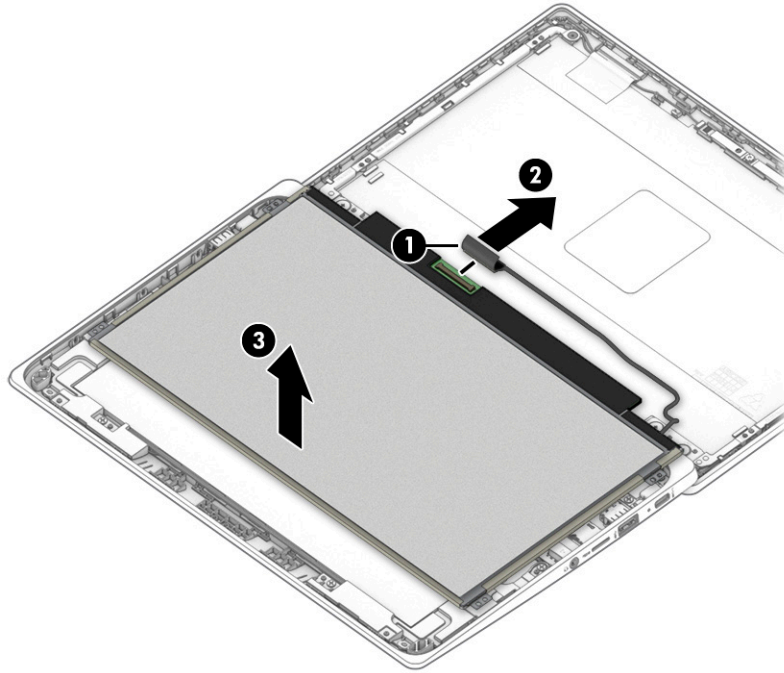


- c. Release the adhesive support strip (1) that secures the display panel cable connector to the display panel.
d. Disconnect the display panel cable (2) from the display panel.

- e. Remove the display panel (3).

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

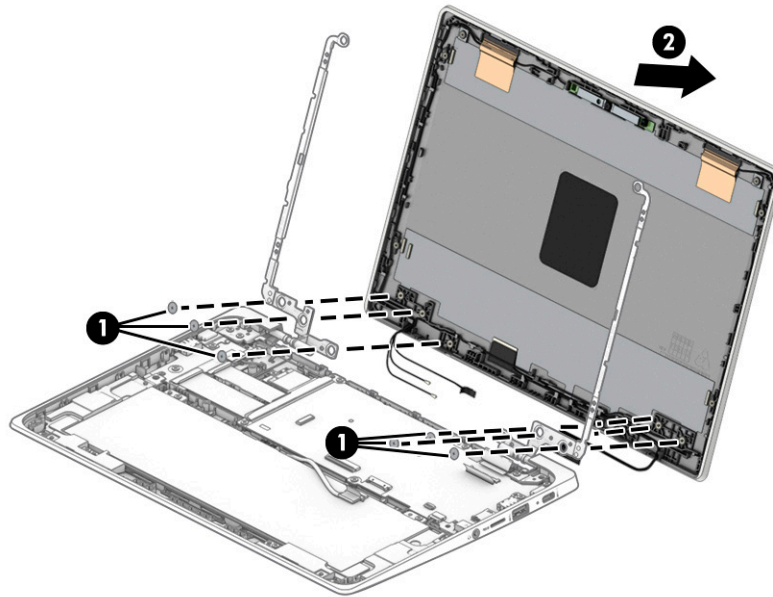
- L89785-001 – 11.6-in, HD, antiglare, LED, UWVA, touchscreen display panel
- L89784-001 – 11.6-in, HD, antiglare, LED, UWVA, non-touchscreen display panel
- L89783-001 – 11.6-in, HD, antiglare, LED, SVA, non-touchscreen display panel



5. Remove the display back cover by following these steps:
- a. Remove the six Phillips M2.5×3.0 broad head screws (1) that secure the display back cover to the display hinges.

- b. Remove the display back cover (2).

The display back cover is available using spare part numbers L89771-001 (in chalkboard gray finish) and L89772-001 (in dark sage gray finish).

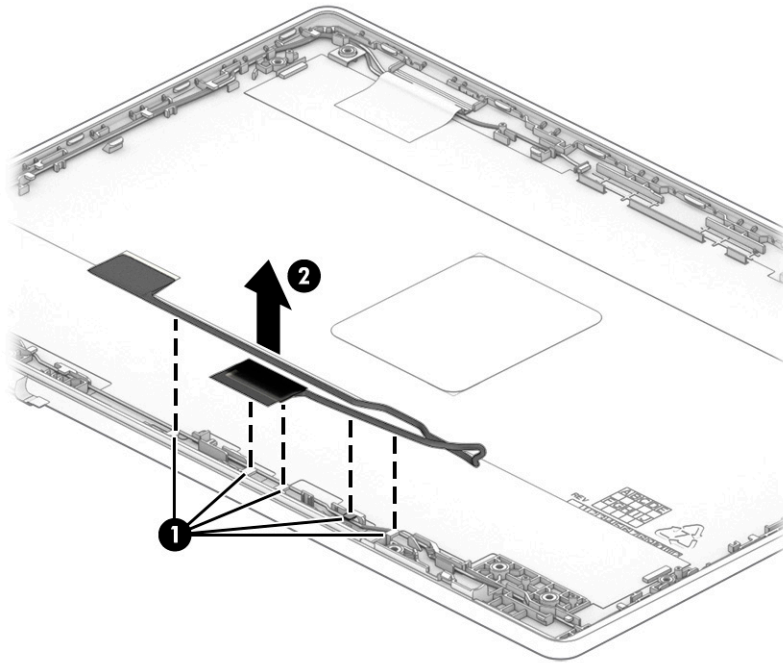


- 6. Remove the display panel cable by following these steps:

- a. Release the display panel cable from the retention clips (1) and routing channel built into the bottom edge of the display back cover.

- b. Remove the display panel cable (2).

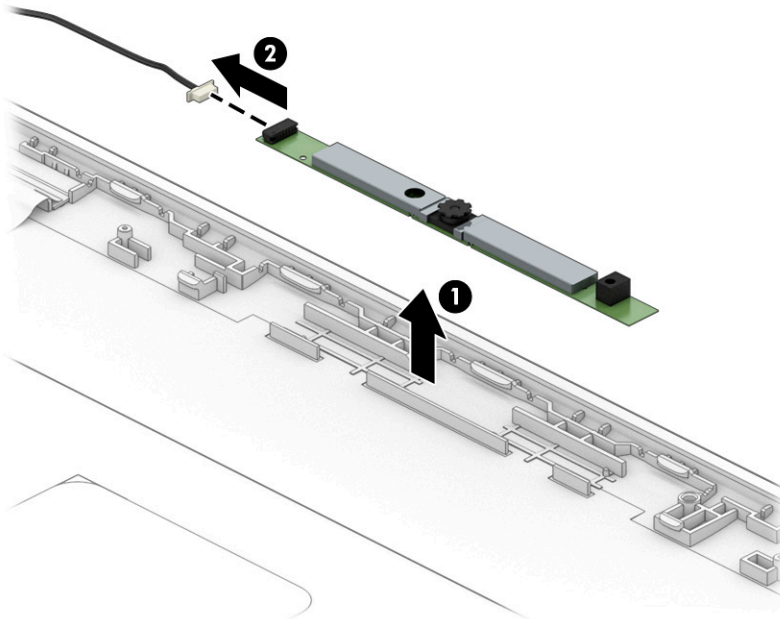
The display panel cable is available using spare part numbers L89776-001 (for use only on computers equipped with a touchscreen display assembly) and L89775-001 (for use only on computers equipped with a non-touchscreen display assembly).



- 7. Remove the webcam module by following these steps:

- a. Detach the webcam module (1) from the display back cover. (The webcam module is attached to the display back cover with double-sided adhesive.)

- b. Release the ZIF connector (2) to which the webcam module cable is connected, and then disconnect the webcam module cable from the webcam module.



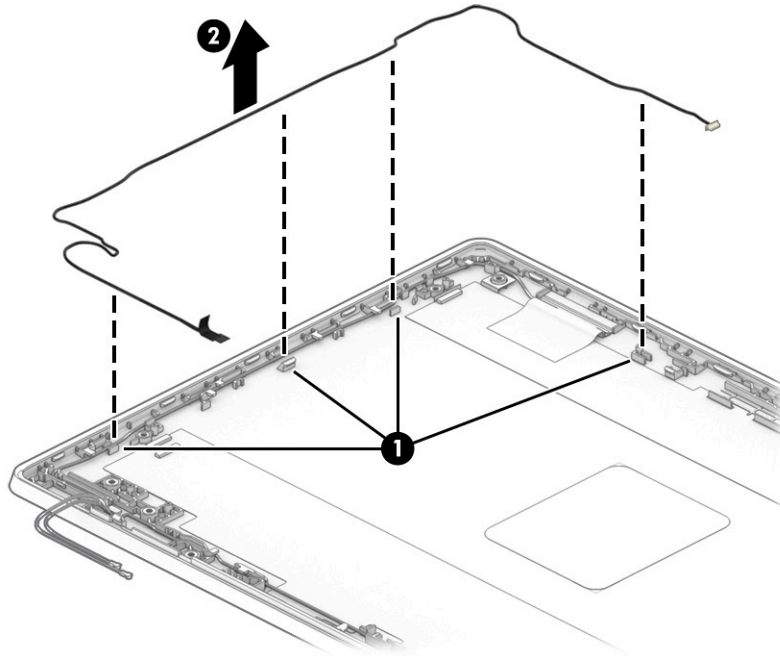
- c. Remove the webcam module.

The webcam module is available using spare part number L51916-001.

- 8. Remove the webcam module cable by following these steps:
 - a. Release the webcam module cable from the retaining clips (1) built into the left hinge area of the display back cover.

- b. Remove the webcam module cable (2).

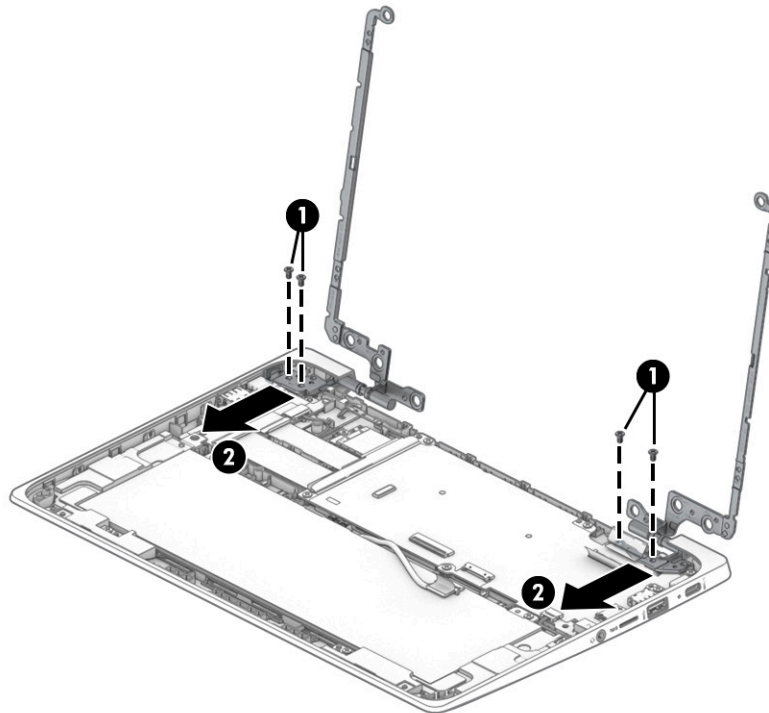
The webcam module cable is included in the Cable Kit, spare part number L89767-001.



- 9. Remove the display hinges by following these steps:

- a. Remove the four Phillips M2.5×4.7 screws that secure the display hinges to the bottom cover.
- b. Slide the hinges (2) forward and remove them.

The display hinges are available using spare part number L89768-001.



Reverse this procedure to reassemble and install the display assembly.

6 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 V–240 V, 50 Hz–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 6-1 Computer specifications

	Metric	U.S.
Dimensions:		
Width	29.5 cm	11.6 in
Depth	20.5 cm	8.1 in
Height	1.9 cm	0.7 in
Weight	1.3 kg	2.9 lbs
Input power	Rating	
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	
	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		

Table 6-1 Computer specifications (continued)

	Metric	U.S.
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.		

7 Backing up, resetting, and recovering

Backing up

You can back up your data to an optional USB flash drive or SD memory card or through Google Drive™. For detailed information about creating a backup, go to <http://www.support.google.com>.

Resetting

A factory reset erases all the information on your computer hard drive, including all the files in the Downloads folder. Before you reset, be sure to back up your files to an optional USB flash drive, to an SD memory card, or through Google Drive. The factory reset won't delete any of your files on Google Drive or an external storage device.


 **IMPORTANT:** Resetting permanently erases everything on your computer hard drive, including your downloaded files. If possible, back up your files before you reset your computer.

You might want to reset your computer in the following circumstances:

- You see the message "Reset this Chrome device."
- You are having problems with your user profile or settings.
- You restarted your computer, and it still doesn't work properly.
- You want to change the owner of your computer.

To reset your computer:


1. Under the **Settings** menu, click **Advanced**.
2. In the **Powerwash** section, click **Powerwash**.
3. Click **Restart**, and then sign in with your Google Account.


 **NOTE:** The account you sign in with after you reset your computer will be recognized as the owner account.

4. Follow the on-screen instructions to reset your computer.
5. After you complete the reset, you can set up your computer and check to see whether the problem is fixed.

Recovering

When your Chrome OS™ (operating system) isn't working properly, you can perform a recovery. A recovery reinstalls the operating system and software programs and restores the original factory settings. Locally saved files and saved networks are deleted for all accounts. Your Google Accounts and any data synced to your Google Drive are not affected by a system recovery.

 **IMPORTANT:** Recovery permanently erases everything on your computer hard drive, including your downloaded files. If possible, back up your files before you recover your computer.

 **NOTE:** For more information about performing a system recovery on your computer, go to <http://www.support.google.com>.

Before beginning the recovery process, you need the following:

- A USB flash drive or SD memory card with a capacity of 4 GB or greater. Because all data is erased from this storage device when the recovery media is created, back up any files from the device before you begin.
- A computer with Internet access. You must also have administrative rights to the computer.
- Computer AC adapter. The computer must be plugged into AC power during recovery.
- Your computer displaying the “Chrome OS is missing or damaged” screen displaying on your computer. If this message is not already displayed:
 - Turn on the computer, press and hold the **esc+f3** keys, and then press the power button. The computer restarts, and the screen shows the “Chrome OS is missing or damaged” screen.

Installing the Chromebook Recovery Utility

The Chromebook Recovery Utility is an app that recovers the original operating system and software programs that were installed at the factory. This utility can be installed from the Chrome Web Store on any computer.

To install the Chromebook Recovery Utility:

- ▲ Open the Chrome Web Store, search for `chrome recovery`, click **Chromebook Recovery Utility** from the Apps list, and follow the on-screen instructions.

Creating recovery media

Use recovery media to recover the original operating system and software programs that were installed at the factory.

To create recovery media:


1. Turn on a computer that has Internet access.
-
2. Click the **Launcher** icon, and then click **All Apps**.
 3. In the Apps window, click **Recovery**, and then click **Get started**.
 4. Follow the on-screen instructions to create the recovery media.


 **NOTE:** All data and partitions on your recovery media will be deleted. Do not remove the USB flash drive or SD memory card until the process is complete.

Recovering the Chrome operating system

To recover the Chrome operating system on your computer using the recovery media that you created:

1. Disconnect any external devices connected to your computer, plug in the power cord, and then turn on the computer.
2. To enter recovery mode, press and hold **esc+f3**, and then press the power button. When the “Chrome OS is missing or damaged” screen is displayed, insert the recovery media into your computer. The recovery process begins immediately.
3. Wait while Chrome verifies the integrity of the recovery media.

 **NOTE:** If you need to cancel the recovery during the verification process, press and hold the power button until the computer turns off. Do not disrupt the system recovery process after the verification step is complete.

 **NOTE:** If an error message is displayed, you might need to run the Chrome Recovery Utility again or use a different USB flash drive or SD memory card.

4. When the “System Recovery is complete” message is displayed, remove the recovery media.
The computer restarts with Chrome OS reinstalled.

Setting up your computer after a reset or recovery

After a reset or recovery is complete, perform the initial setup process. For details about setting up the computer, go to <http://www.support.google.com>.

Erase and reformat the recovery media

During the process of creating recovery media, the USB flash drive or SD memory card is formatted as a recovery tool. After you recover your computer, you must erase the recovery media if you want to reuse your USB flash drive or SD memory card to store other files. Use the steps in this section to erase the recovery media using the Chromebook Recovery Utility.

1. Click the **Launcher** icon, and then click **All Apps**.
2. In the apps window, click **Recovery**.
3. Click the **Settings** icon, and then click **Erase recovery media**.
4. Select the USB flash drive or SD memory card that you inserted, click **Continue**, and then click **Erase now**.
5. After the recovery media is erased, click **Done** to close the Chromebook Recovery Utility, and then remove the USB flash drive or SD memory card.

The media is ready to be formatted using a formatting tool provided by your operating system.

8 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 8-1 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 8-1 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.

9 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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