



HP Chromebook 11 G6 Education Edition

Maintenance and Service Guide
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Product notice

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

Not all features are available in all editions of Windows 10. This computer may require upgraded and/or separately purchased hardware, drivers and/or software to take full advantage of Windows 10 functionality. See for <http://www.microsoft.com> details.

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 defined by the International Standard for Safety of Information Technology Equipment (IEC 60950).

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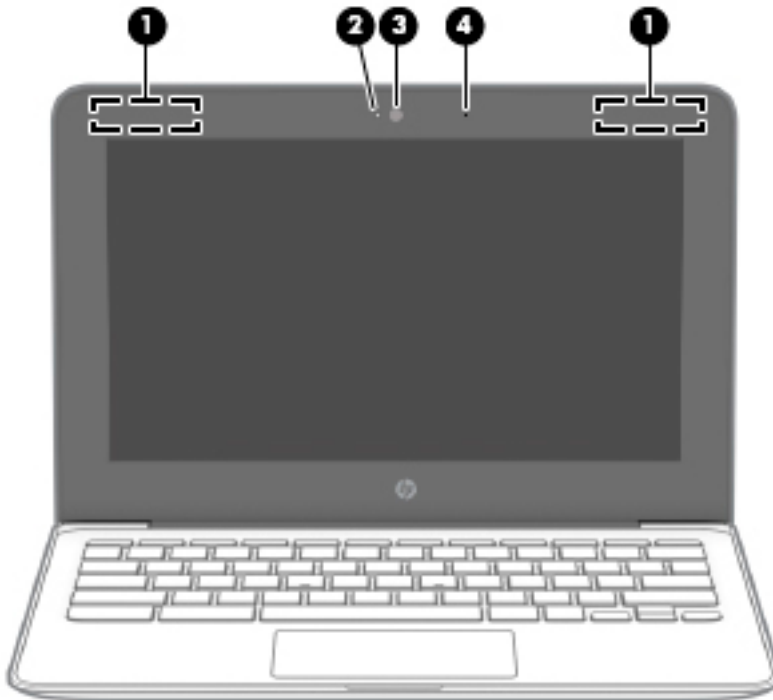
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1 Product description

Category	Description
Product Name	HP Chromebook 11 G6 Education Edition
Processor	Intel® Celeron™ N3450 1.10-GHz (turbo up to 2.20-GHz) quad core processor (2400-MHz, 2.0-MB L2 cache, 6.0-W) Intel Celeron N3350 1.10-GHz dual core processor (2400-MHz, 2.0-MB L2 cache, 6-W)
Chipset	Intel integrated soldered-on-circuit (SoC)
Panel	11.6-in, high-definition (HD), BrightView (1366×768), white light-emitting diode (WLED), UWVA 50 220, eDP 1.2 without PSR, slim, TouchScreen display assembly 11.6-in, HD, AntiGlare (1366×768), WLED, SVA 220, eDP, slim, non-TouchScreen display assembly
Memory	Supports LPDDR4-3733 1.1-V memory Supports 8-GB or 16-GB on-board system memory
Storage	Supports 64-GB, 32-GB, or 16-GB on-board embedded MultiMedia Controller (eMMC) storage
Audio and video	Fixed (no tilt) integrated webcam, with LED Single microphone Two speakers
Wireless	Integrated wireless local area network (WLAN) options by way of on-board wireless module Two built-in WLAN antennas Supports the Intel 7265ac 2×2 + Bluetooth 4.2 (non-VPro) Combo Adapter
Ports	<ul style="list-style-type: none">• Headphone/microphone combo jack• MicroSD memory card reader• USB 2.0 ports (4)
Power requirements	Supports a 2-cell, 47-WHr, 6.15-WHr, Li-Ion battery Supports a 45-W AC adapter (non-PFC, USB Type-C, 3-pin)
Operating system	Preinstalled: Google Chrome operating system
Serviceability	End user replaceable parts: AC adapter

2 External component identification

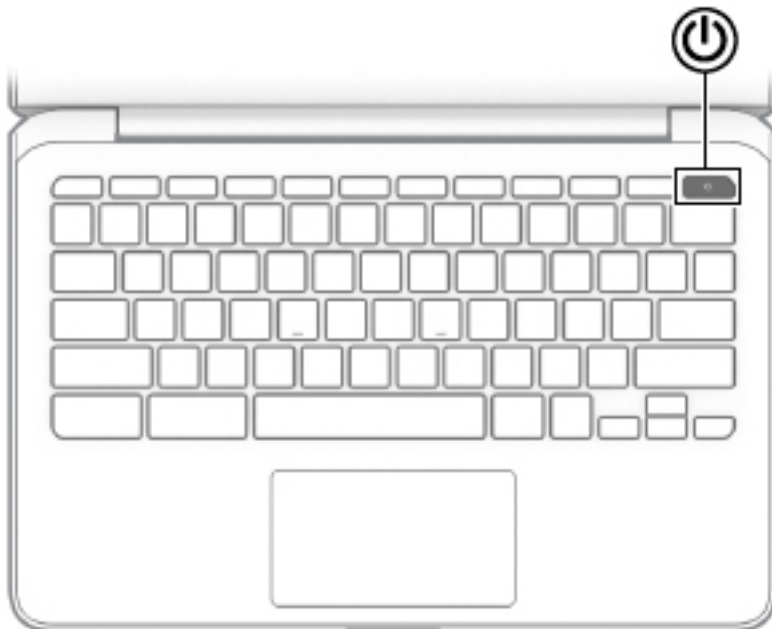
Display




Item	Component	Description
(1)	WLAN antennas (2)*	Send and receive wireless signals to communicate with WLANs. NOTE: The position of the WLAN antennas may differ, depending on the computer model.
(2)	Camera light	On: The camera is in use.
(3)	Camera	Records video, captures still photographs, and allows video conferences and online chat by means of streaming video.
(4)	Internal microphone	Records sound.

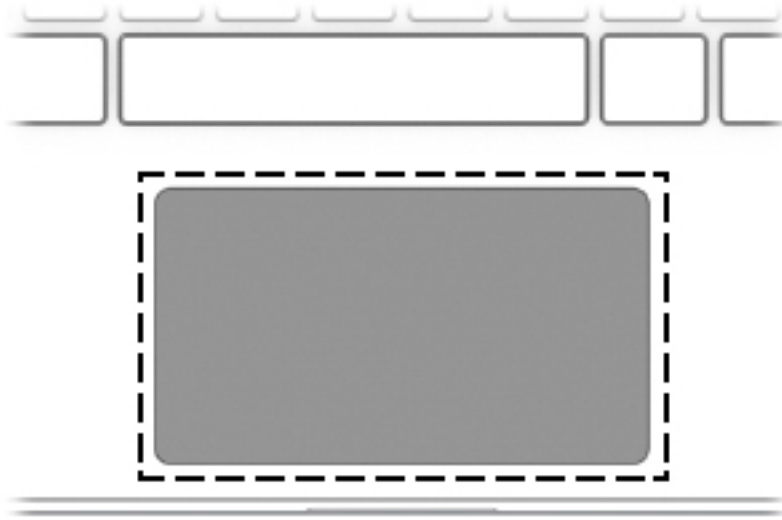
*The antennas, IR emitters (select models only), and sensors are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas, IR emitters, and sensors free from obstructions. For wireless regulatory notices, see the section of the *Regulatory, Safety, and Environmental Notices* that applies to your country or region.

Button



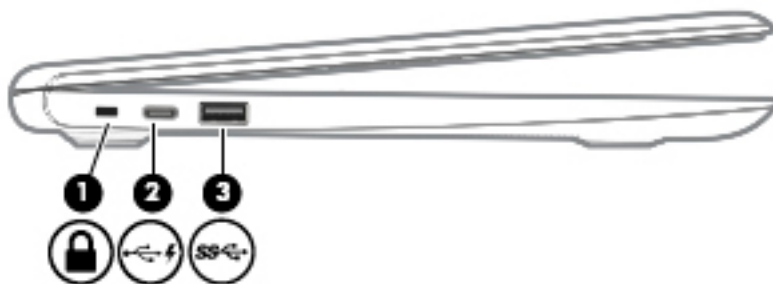
	Component	Description
	Power button	<ul style="list-style-type: none">• When the computer is off, press the button to turn on the computer.• When the computer is in the Sleep state, press the button briefly to exit Sleep.• When the computer is on and you want to lock the screen, press the button until you see the sign-in screen appear. Pressing the power button during screen-lock mode turns off the computer.• When the computer is on and you want to turn it off, press and hold the button to lock the screen, and then continue to press the button until the computer turns off.




TouchPad



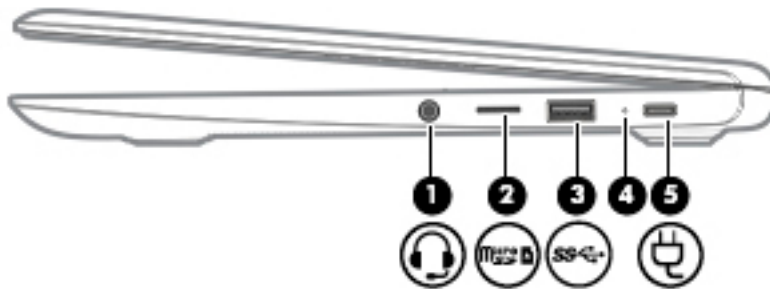
Component	Description
TouchPad zone	Moves the on-screen pointer and selects or activates items on the screen.





Left side



Item	Component	Description
(1)	 Nano security cable slot	Attaches an optional security cable to the computer. NOTE: The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.
(2)	 USB Type-C power connector and charging port	Connects an AC adapter that has a USB Type-C connector, supplying power to the computer and, if needed, charging the computer battery. Also connects a USB device with a Type-C connector and can charge products such as cell phones, laptops, tablets, and MP3 players, even when the computer is off.
(3)	 USB 3.x SuperSpeed port	Connects a USB device, such as a cell phone, camera, activity tracker, or smartwatch, and provides high-speed data transfer.

Right side




Item	Component	Description
(1)	 Audio-out (headphone)/Audio-in (microphone) 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 microphone-only devices.</p> <p>WARNING! To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset.</p> <p>NOTE: When a device is connected to the jack, the computer speakers are disabled.</p> <p>NOTE: Be sure that the device cable has 4-conductor connector that supports both audio-out (headphone) and audio-in (microphone).</p>
(2)	 MicroSD memory card reader	<p>Reads optional memory cards that 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"> ▲ Pull out the card.
(3)	 USB 3.x SuperSpeed port	<p>Connects a USB device, such as a cell phone, camera, activity tracker, or smartwatch, and provides high-speed data transfer.</p>
(4)	AC adapter and battery light	<ul style="list-style-type: none"> • White: The AC adapter is connected and the battery is charged. • Amber: The AC adapter is connected and the battery is charging. • Off: The computer is using battery power.
(5)	 USB Type-C power connector and charging port	<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>

Bottom



Component	Description
Speakers (2)	Produce sound.

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.

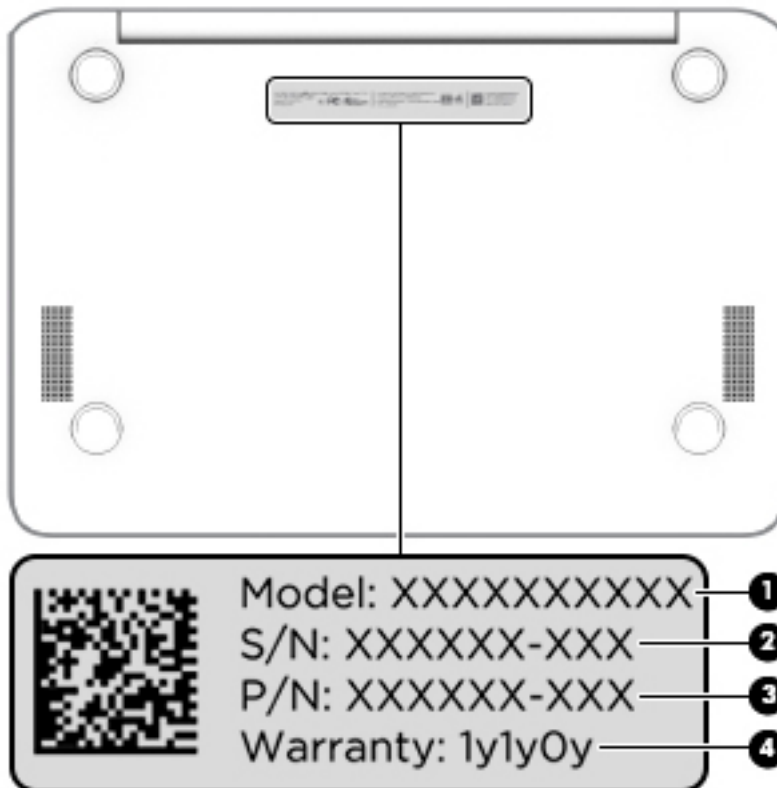
Labels

The labels affixed to the computer provide information that may be needed when troubleshooting system problems or travelling internationally with the computer.

 **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 examples shown below. Refer to the illustration that most closely matches the service label on your computer.

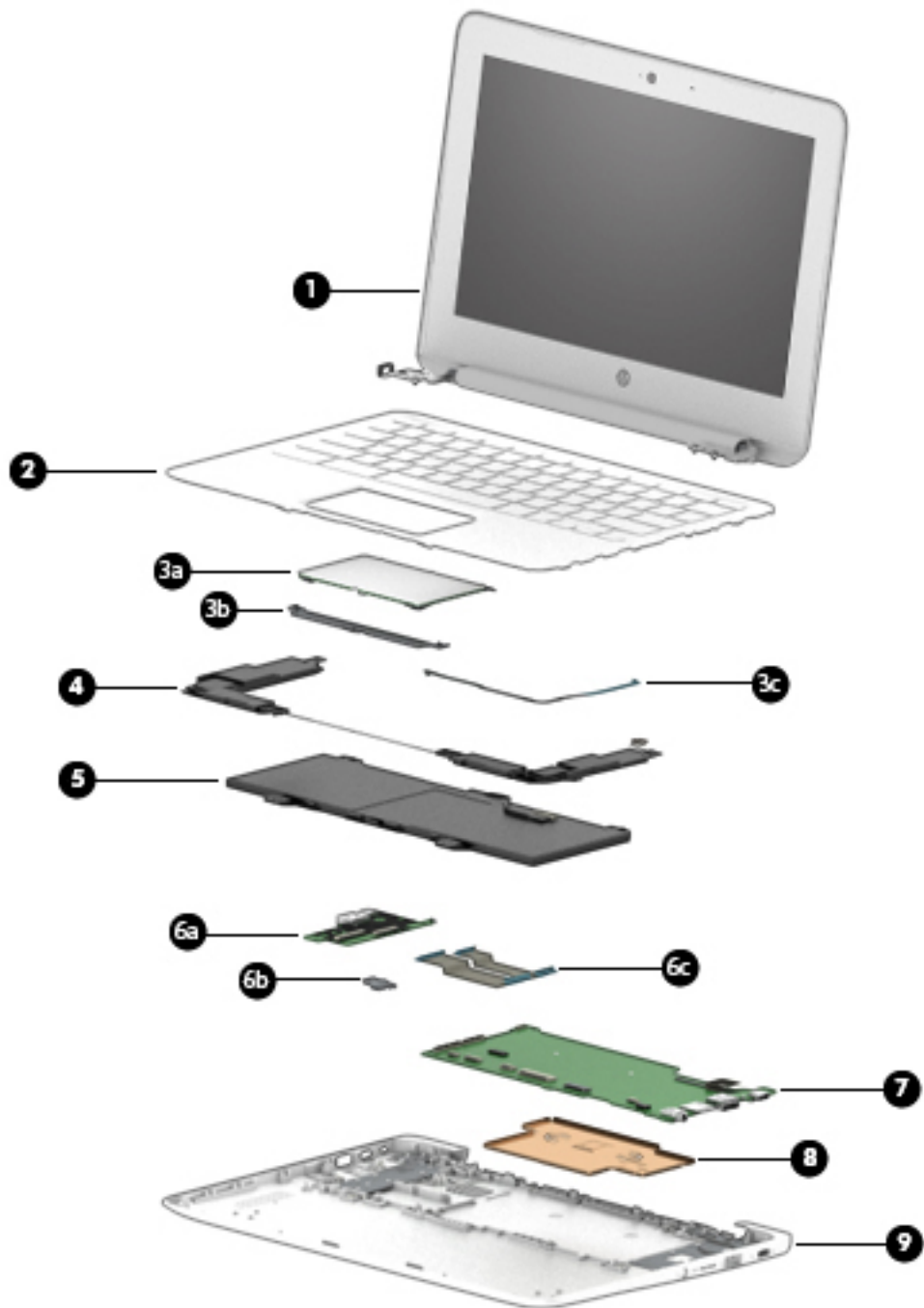


Component

(1) Model number

Component	
(2)	Serial number
(3)	Product number
(4)	Warranty period

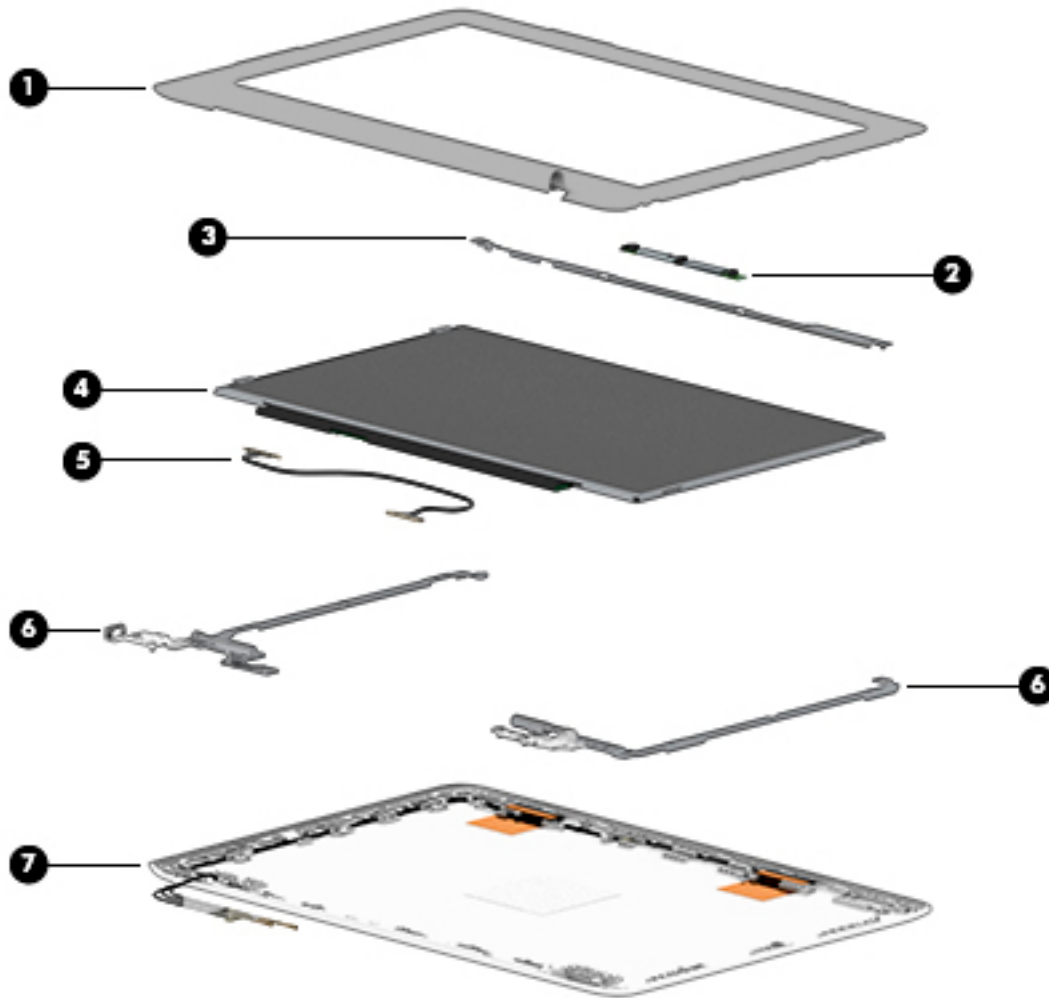
Computer components



Item	Component	Spare part number
(1)	11.6-in. display assembly: The display assembly is spared at the subcomponent level only. For more display assembly spare part information, see Display assembly subcomponents on page 12 .	
(2)	Keyboard/top cover (includes keyboard cable):	
	For use in Belgium	L14921-A41
	For use in Brazil	L14921-201
	For use in Canada	L14921-DB1
	For use in the Czech Republic and Slovakia	L14921-FL1
	For use in Denmark, Finland, and Norway	L14921-DH1
	For use in France	L14921-051
	For use in Germany	L14921-041
	For use in India	L14921-DD1
	For use in Israel	L14921-BB1
	For use in Italy	L14921-061
	For use in Latin America	L14921-161
	For use in the Netherlands	L14921-B31
	For use in Portugal	L14921-131
	For use in Romania	L14921-271
	For use in Russia	L14921-251
	For use in Saudi Arabia	L14921-171
	For use in South Korea	L14921-AD1
	For use in Spain	L14921-071
	For use in Sweden and Finland	L14921-B71
	For use in Switzerland	L14921-BG1
	For use in Taiwan	L14921-AB1
	For use in Thailand	L14921-281
	For use in Turkey	L14921-141
	For use in the United Kingdom	L14921-031
	For use in the United States	L14921-001
(3a)	TouchPad (does not include cable)	L14922-001
(3b)	TouchPad bracket	L18300-001
(3c)	TouchPad cable (included in the Cable Kit, spare part number L14906-001, and includes double-sided adhesive)	
(4)	Speakers (include cables)	L14920-001
(5)	Battery (2-cell, 47-WHr, 6.15-AHr, Li-ion, includes cable)	917725-855
	Battery connector tape (not illustrated)	L14905-001

Item	Component	Spare part number
(6a)	USB port board (does not include cable)	L14923-001
(6b)	USB port board cable (included in the Cable Kit, spare part number L14906-001, and includes double-sided adhesive)	
(6c)	USB port board bracket	L14359-001
(7)	System board (includes processor, on-board Intel 7265ac 2×2 + Bluetooth 4.2 (non-VPro) WLAN module, system memory, eMMC storage, the Google Chrome operating system, and replacement thermal material):	
	Equipped with an Intel Celeron N3450 1.10-GHz (turbo up to 2.20-GHz) quad core processor (2400-MHz, 2.0-MB L2 cache, 6.0-W), an Intel graphics subsystem with UMA video memory, 8-GB of system memory, and 64-GB of eMMC storage	L15856-001
	Equipped with an Intel Celeron N3450 1.10-GHz (turbo up to 2.20-GHz) quad core processor (2400-MHz, 2.0-MB L2 cache, 6.0-W), an Intel graphics subsystem with UMA video memory, 8-GB of system memory, and 32-GB of eMMC storage	L15855-001
	Equipped with an Intel Celeron N3450 1.10-GHz (turbo up to 2.20-GHz) quad core processor (2400-MHz, 2.0-MB L2 cache, 6.0-W), an Intel graphics subsystem with UMA video memory, 4-GB of system memory, and 32-GB of eMMC storage	L15854-001
	Equipped with an Intel Celeron N3350 1.10-GHz dual core processor (2400-MHz, 2.0-MB L2 cache, 6-W), an Intel graphics subsystem with UMA video memory, 8-GB of system memory, and 64-GB of eMMC storage	L15853-001
	Equipped with an Intel Celeron N3350 1.10-GHz dual core processor (2400-MHz, 2.0-MB L2 cache, 6-W), an Intel graphics subsystem with UMA video memory, 8-GB of system memory, and 32-GB of eMMC storage	L15852-001
	Equipped with an Intel Celeron N3350 1.10-GHz dual core processor (2400-MHz, 2.0-MB L2 cache, 6-W), an Intel graphics subsystem with UMA video memory, 4-GB of system memory, and 32-GB of eMMC storage	L15851-001
	Equipped with an Intel Celeron N3350 1.10-GHz dual core processor (2400-MHz, 2.0-MB L2 cache, 6-W), an Intel graphics subsystem with UMA video memory, 4-GB of system memory, and 16-GB of eMMC storage	L15850-001
(8)	Heat sink (includes replacement thermal material)	928840-001
(9)	Bottom cover:	
	In chalkboard gray finish	L14901-001
	In delicate orange finish	L14904-001
	Rubber Foot Kit (not illustrated, includes bottom cover feet)	L20220-001

Display assembly subcomponents



Item	Component	Spare part number
(1)	Display bezel	L14912-001
(2)	Webcam/microphone module (does not include cable; includes double-sided adhesive)	L07235-001
(3)	Display panel bracket	L14913-001
(4)	Display panel (does not include display panel cable):	
	For use only on computer models equipped with an HD BrightView TouchScreen display assembly	L14918-001
	For use only on computer models equipped with an AntiGlare TouchScreen display assembly	L22362-001
	For use only on computer models equipped with non-TouchScreen display assembly	L14917-001
(5)	Display panel cable:	
	For use only on computer models equipped with an HD BrightView TouchScreen display assembly	L14916-001
	For use only on computer models equipped with an AntiGlare TouchScreen display assembly	L14915-001

Item	Component	Spare part number
	For use only on computer models equipped with non-TouchScreen display assembly	L14914-001
(6)	Display hinges (2)	L14907-001
(7)	Display back cover (includes the webcam/microphone module cable and wireless antenna cables and transceivers):	
	In chalkboard gray finish	L14908-001
	In delicate orange finish	L14911-001

Miscellaneous parts

Component	Spare part number
45-W AC adapter (non-PFC, USB Type-C, 3-pin)	934739-850
Cable Kit (includes TouchPad cable and USB port board cable)	L14906-001
Power cord (C5 connector, 1.00-m):	
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 the People's Republic of China	L19368-001
For use in South Africa	L19369-001
For use in South Korea	L19366-001
For use in Switzerland	L19370-001
For use in Taiwan	L19372-001
For use in Thailand	L19371-001
For use in the United Kingdom	L19373-001
Rubber Foot Kit (includes bottom cover rear foot strip)	L20220-001
Screw Kit	L14919-001

4 Removal and replacement preliminary requirements

Tools required

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

- Flat-bladed screw driver
- Magnetic screw driver
- Phillips P00 and P0 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




CAUTION: Using excessive force during disassembly and reassembly can damage plastic parts. Use care when handling the plastic parts. Apply pressure only at the points designated in the maintenance instructions.

Cables and connectors

 **CAUTION:** 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

 **CAUTION:** 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 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 a diskette drive or optical drive, be sure that a diskette or disc is not in the drive and be sure that the optical drive tray is closed.

Handle drives on surfaces covered with at least one inch of shock-proof foam.

Avoid dropping drives from any height onto any surface.

After removing drive, place it in a static-proof bag.

Avoid exposing a 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."

Grounding guidelines

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.

⚠ CAUTION: To prevent damage to the computer 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.

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

Typical electrostatic voltage levels			
Event	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 Styrofoam	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 Styrofoam.
- 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 one megohm $\pm 10\%$ 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 one megohm 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 computerop workstations with ground cords of one megohm 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.

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.

 **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.

CAUTION: 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 your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer. See [Labels on page 8](#) 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 44 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.

Keyboard/top cover



NOTE: All keyboard/top cover spare part kits include the keyboard cable.

For use in country/region	Spare part number	For use in country/region	Spare part number
For use in Belgium	L14921-A41	For use in Romania	L14921-271
For use in Brazil	L14921-201	For use in Russia	L14921-251
For use in Canada	L14921-DB1	For use in Saudi Arabia	L14921-171
For use in the Czech Republic and Slovakia	L14921-FL1	For use in South Korea	L14921-AD1
For use in Denmark, Finland, and Norway	L14921-DH1	For use in Spain	L14921-071
For use in France	L14921-051	For use in Sweden and Finland	L14921-B71
For use in Germany	L14921-041	For use in Switzerland	L14921-BG1
For use in India	L14921-291	For use in Taiwan	L14921-AB1
For use in Israel	L14921-161	For use in Thailand	L14921-281
For use in Italy	L14921-B31	For use in Turkey	L14921-141
For use in Latin America	L14921-161	For use in the United Kingdom	L14921-031
For use in the Netherlands	L14921-B31	For use in the United States	L14921-001
For use in Portugal	L14921-131		

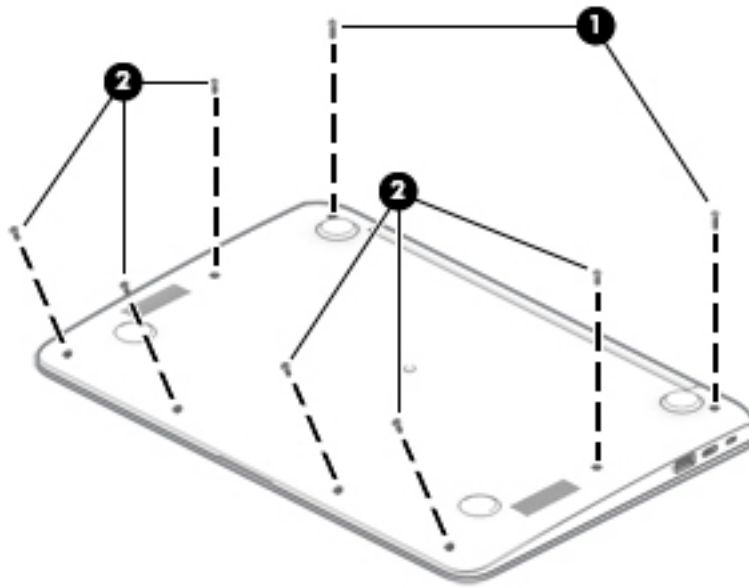
Before disassembling the computer, follow these steps:

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 keyboard/top cover:

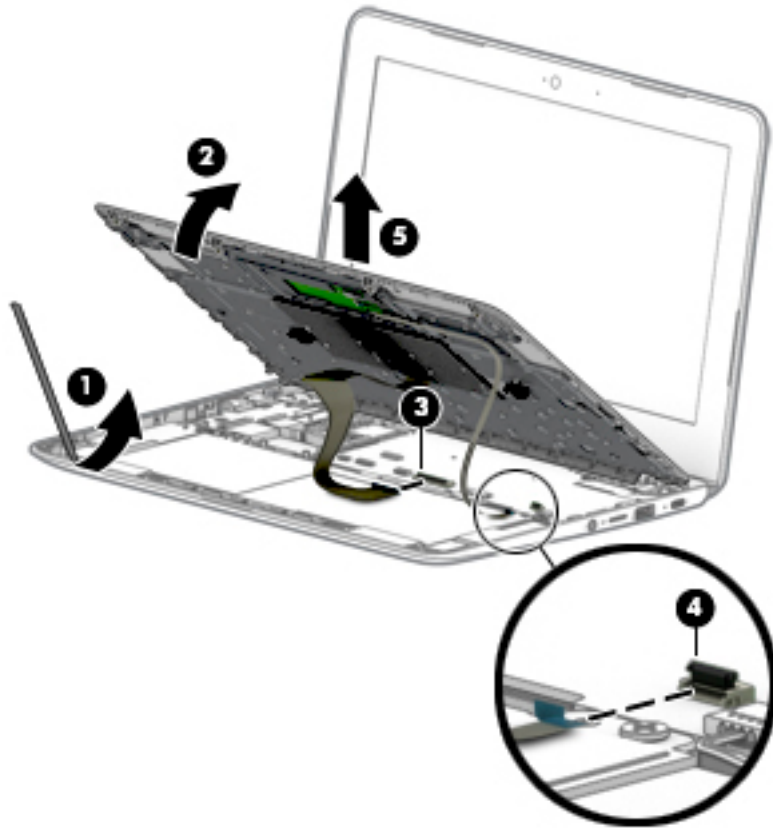
1. Remove the two Phillips M2.5×8.7 screws **(1)** that secure the bottom cover to the computer.

2. Remove the six Phillips M2.5×6.6 screws **(2)** that secure the bottom cover to the computer.



3. Turn the computer right side with the front toward you.
4. Open the computer.
5. Use a case utility tool **(1)** or similar thin plastic tool to separate the front edge of the keyboard/top cover **(2)** from the bottom cover.
6. Release the zero insertion force (ZIF) connector **(3)** to which the keyboard cable is connected, and then disconnect the keyboard cable from the system board.
7. Release the ZIF connector **(4)** to which the TouchPad cable is connected, and then disconnect the TouchPad cable from the system board.

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



Reverse this procedure to install the keyboard/top cover.

TouchPad cable



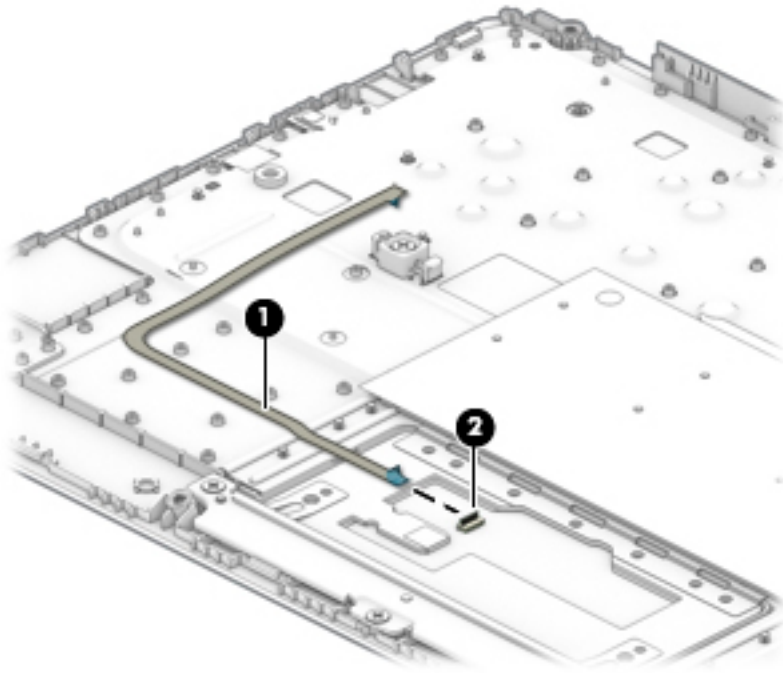
NOTE: The TouchPad spare part kit does not include the TouchPad cable. The TouchPad cable is included in the Cable Kit, spare part number L14906-001, and includes double-sided adhesive.

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 20](#)).

Remove the TouchPad cable:

1. Detach the TouchPad cable (1) from the keyboard/top cover. (The TouchPad cable is attached to the keyboard/top cover with double-sided adhesive.)
2. Release the ZIF connector (2) to which TouchPad cable is connected, and then disconnect the TouchPad cable from the TouchPad.



3. Remove the TouchPad cable.

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 included in the Cable Kit, spare part number L14906-001, and includes double-sided adhesive.

Description	Spare part number
TouchPad	L14922-001

Before removing the TouchPad, follow these steps:

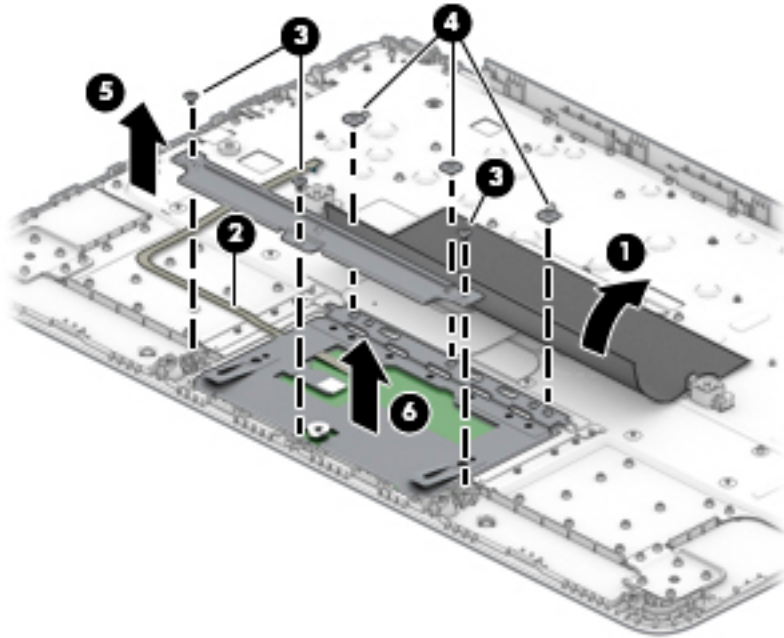
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord 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 20](#)).

Remove the TouchPad:

1. Release the shielding material **(1)** that covers the top edge of the TouchPad.
2. Detach the TouchPad cable **(2)** from the keyboard/top cover. (The TouchPad cable is attached to the keyboard/top cover with double-sided adhesive.)
3. Remove the three Phillips M2.0×2.7 screws **(3)** that secure the TouchPad and TouchPad bracket to the keyboard/top cover.
4. Remove the three Phillips M2.0×2.2 broad head screws **(4)** that secure the TouchPad to the keyboard/top cover.
5. Remove the TouchPad bracket **(5)**.

The TouchPad bracket is available using spare part number L18300-001.

6. Remove the TouchPad (6).



Reverse this procedure to install the TouchPad.

Battery

Description	Spare part number
2-cell, 47-WHr, 6.15-AHr, Li-ion battery (includes cable)	917725-855

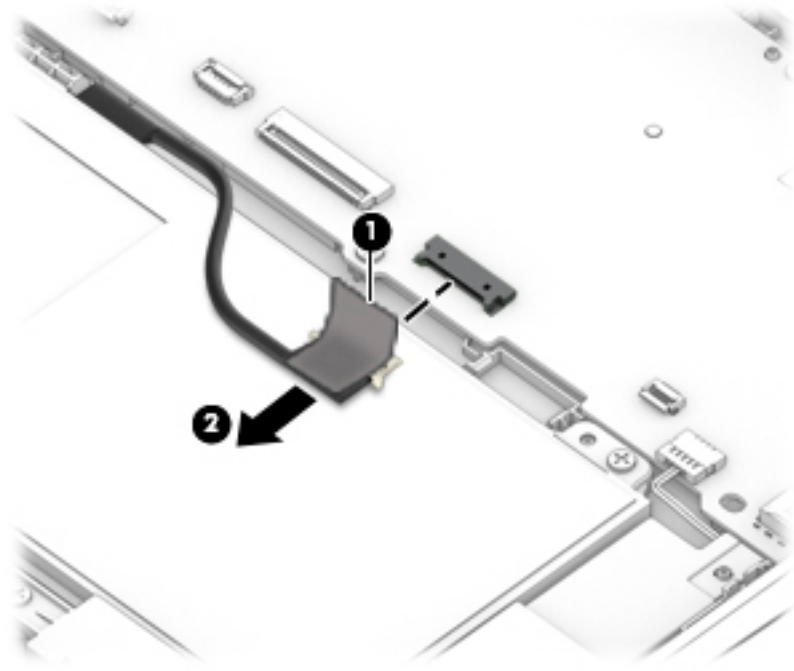
Before removing the battery, follow these steps:

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 20](#)).

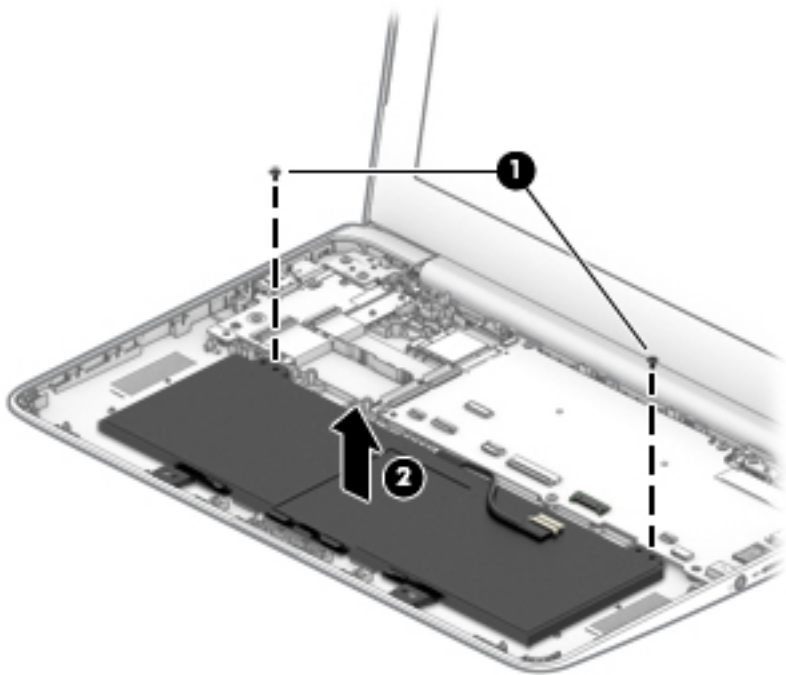
Remove the battery:

1. Release the tape (1) that secures the battery cable connector to the system board.
The battery connector tape is available using spare part number L14905-001.

2. Disconnect the battery cable from the system board (2).



3. Remove the two Phillips M2.0×4.1 screws (1) that secure the battery to the bottom cover.
4. Remove the battery (2).



Reverse this procedure to install the battery.

Speakers

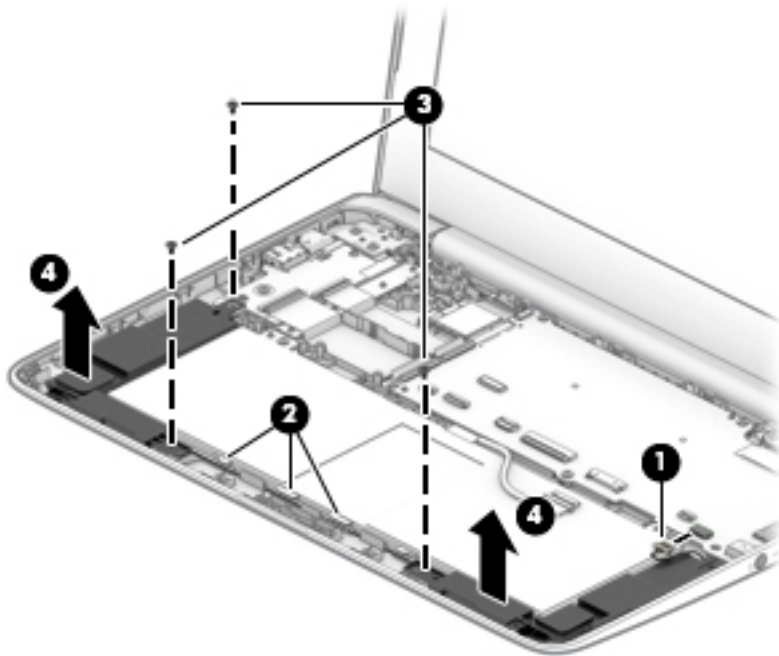
Description	Spare part number
Speaker (include cables)	L14920-001

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 keyboard/top cover (see [Keyboard/top cover on page 20](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 25](#)).


Remove the speakers:

1. Disconnect the speaker cable (1) from the system board.
2. Release the speaker cable (2) from the retention channel/retention clips built into the bottom cover.
3. Remove the three Phillips M2.0×4.1 screws (3) that secure the speakers to the bottom cover.
4. Remove the speakers (4).



Reverse this procedure to install the speakers.

USB port board cable

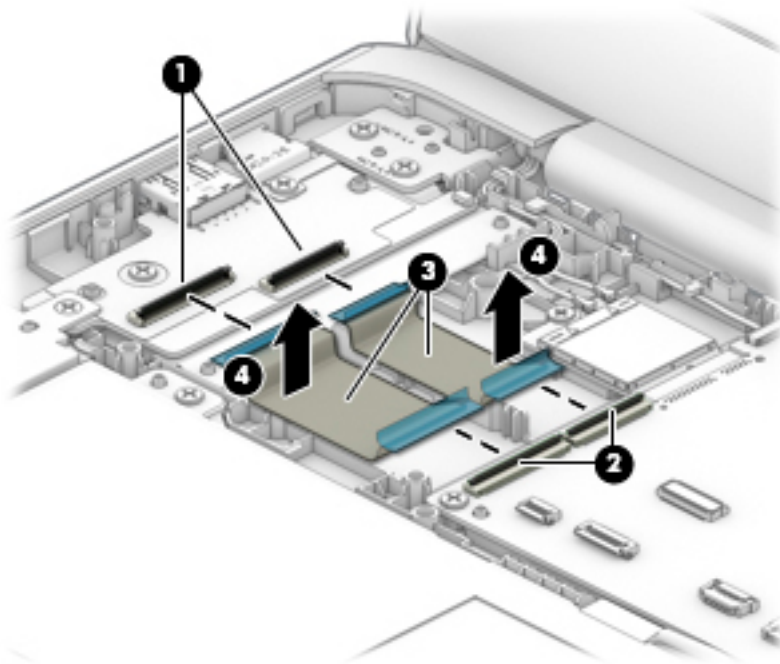
 **NOTE:** The USB port board spare part kit does not include the USB port board cable. The USB port board cable is included in the Cable Kit, spare part number L14906-001, and includes double-sided adhesive.

Before removing the USB port 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 keyboard/top cover (see [Keyboard/top cover on page 20](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 25](#)).

Remove the USB port board cables:

1. Release the two ZIF connectors (1) to which the USB port board cables are connected, and then disconnect the USB port board cables from the system board.
2. Release the two ZIF connectors (2) to which the USB port board cables are connected, and then disconnect the USB port board cables from the USB port board.
3. Detach the USB port board cables (3) from the bottom cover. (The USB port board cables are attached to the bottom cover with double-sided adhesive.)
4. Remove the USB port board cable (4).



Reverse this procedure to install the USB port board cable.

USB port board



NOTE: The USB port board spare part kit does not include the USB port board cable. The USB port board cable is included in the Cable Kit, spare part number L14906-001, and includes double-sided adhesive.

Description	Spare part number
USB port board	L14923-001

Before removing the USB port board, follow these steps:

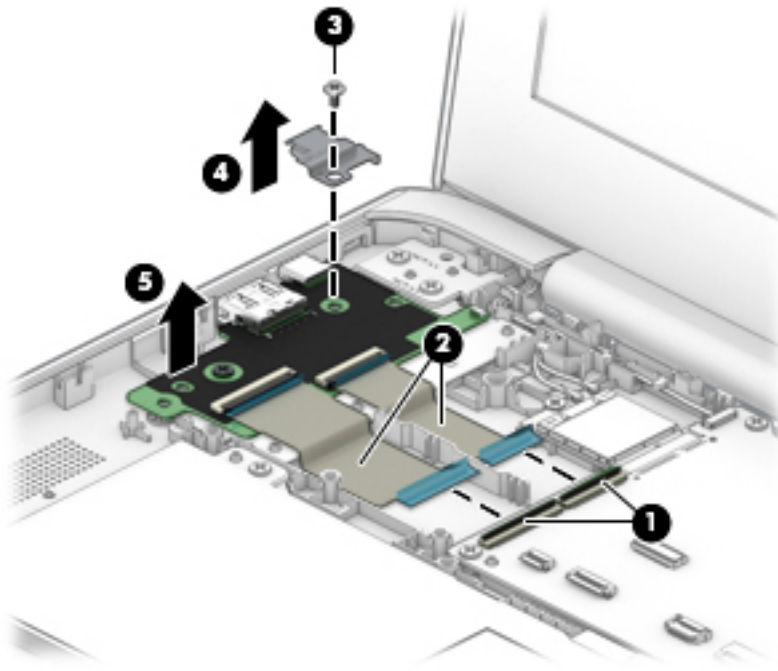
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord 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 20](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 25](#)).

Remove the USB port board:

1. Release the two ZIF connectors **(1)** to which the USB port board cables are connected, and then disconnect the USB port board cables from the system board.
2. Detach the USB port board cables **(2)** from the bottom cover. (The USB port board cables are attached to the bottom cover with double-sided adhesive.)
3. Remove the Phillips M2.0×4.1 screw **(3)** that secures the USB port board to the keyboard/top cover.
4. Remove the USB port board bracket **(4)**.

The USB port board bracket is available using spare part number L14359-001.

5. Remove the USB port board (5).



Reverse this procedure to install the USB port board.

System board



NOTE: All system board spare part kits include a processor, an on-board Intel 7265ac 2×2 + Bluetooth 4.2 (non-VPro) WLAN module, system memory, eMMC storage, the Google Chrome operating system, and replacement thermal material.

Description	Spare part number
Equipped with an Intel Celeron N3450 1.10-GHz (turbo up to 2.20-GHz) quad core processor (2400-MHz, 2.0-MB L2 cache, 6.0-W), an Intel graphics subsystem with UMA video memory, 8-GB of system memory, and 64-GB of eMMC storage	L15856-001
Equipped with an Intel Celeron N3450 1.10-GHz (turbo up to 2.20-GHz) quad core processor (2400-MHz, 2.0-MB L2 cache, 6.0-W), an Intel graphics subsystem with UMA video memory, 8-GB of system memory, and 32-GB of eMMC storage	L15855-001
Equipped with an Intel Celeron N3450 1.10-GHz (turbo up to 2.20-GHz) quad core processor (2400-MHz, 2.0-MB L2 cache, 6.0-W), an Intel graphics subsystem with UMA video memory, 4-GB of system memory, and 32-GB of eMMC storage	L15854-001
Equipped with an Intel Celeron N3350 1.10-GHz dual core processor (2400-MHz, 2.0-MB L2 cache, 6-W), an Intel graphics subsystem with UMA video memory, 8-GB of system memory, and 64-GB of eMMC storage	L15853-001
Equipped with an Intel Celeron N3350 1.10-GHz dual core processor (2400-MHz, 2.0-MB L2 cache, 6-W), an Intel graphics subsystem with UMA video memory, 8-GB of system memory, and 32-GB of eMMC storage	L15852-001
Equipped with an Intel Celeron N3350 1.10-GHz dual core processor (2400-MHz, 2.0-MB L2 cache, 6-W), an Intel graphics subsystem with UMA video memory, 4-GB of system memory, and 32-GB of eMMC storage	L15851-001
Equipped with an Intel Celeron N3350 1.10-GHz dual core processor (2400-MHz, 2.0-MB L2 cache, 6-W), an Intel graphics subsystem with UMA video memory, 4-GB of system memory, and 16-GB of eMMC storage	L15850-001

Before removing the system board, follow these steps:

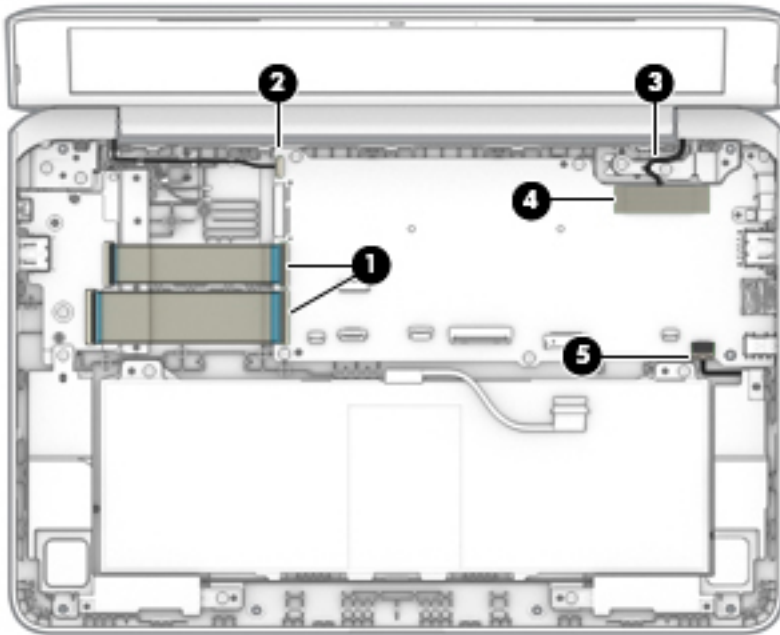
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Keyboard/top cover on page 20](#)).
5. Remove the keyboard/top cover (see [Keyboard/top cover on page 20](#)).
6. Disconnect the battery cable from the system board (see [Battery on page 25](#)).

When replacing the system board, be sure to remove the heat sink (see [Heat sink on page 33](#)) from the defective system board and install it on the replacement system board.

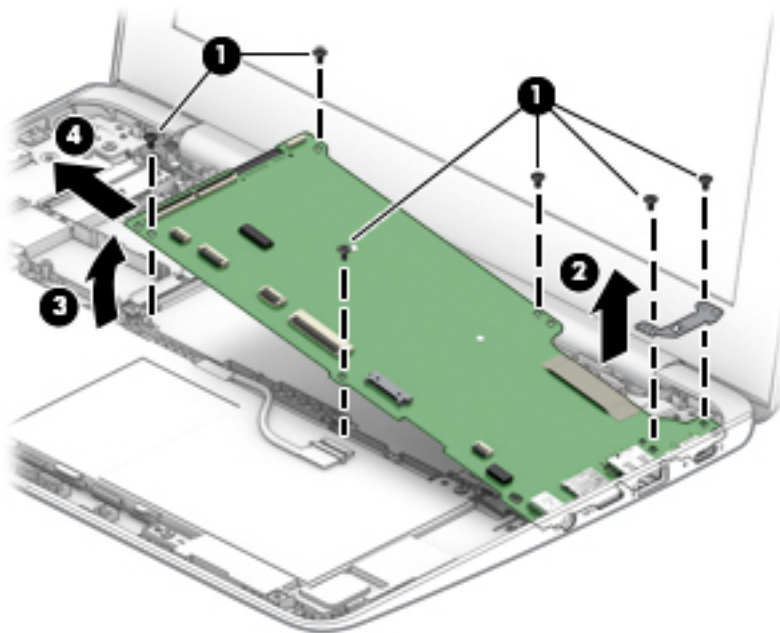
Remove the system board:

1. Release the two ZIF connectors **(1)** to which the USB port board cables are connected, and then disconnect the USB port board cables from the system board.
2. Disconnect the display webcam/microphone cable **(2)** from the system board.
3. Release the adhesive strip **(3)** that secures the display panel cable to the system board.

4. Disconnect the display panel cable (4) from the system board.
5. Disconnect the speaker cable (5) from the system board.



6. Remove the six Phillips M2.0×4.1 screws (1) that secure the system board to the bottom cover.
7. Remove the system board bracket (2).
8. Lift the left edge of the system board (3) until it rests at an angle.
9. Remove the system board (4) by sliding it up and to the left at an angle.



10. Remove the system board.
Reverse this procedure to install the system board.

Heat sink

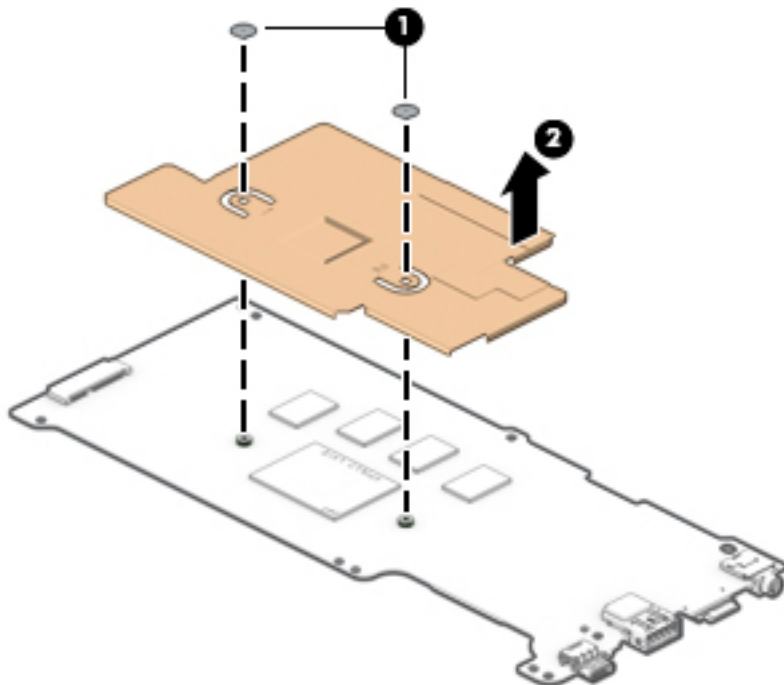
Description	Spare part number
Heat sink (includes replacement thermal material)	928840-001


Before removing the heat sink, 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 keyboard/top cover (see [Keyboard/top cover on page 20](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 25](#)).
6. Remove the system board (see [System board on page 31](#)).

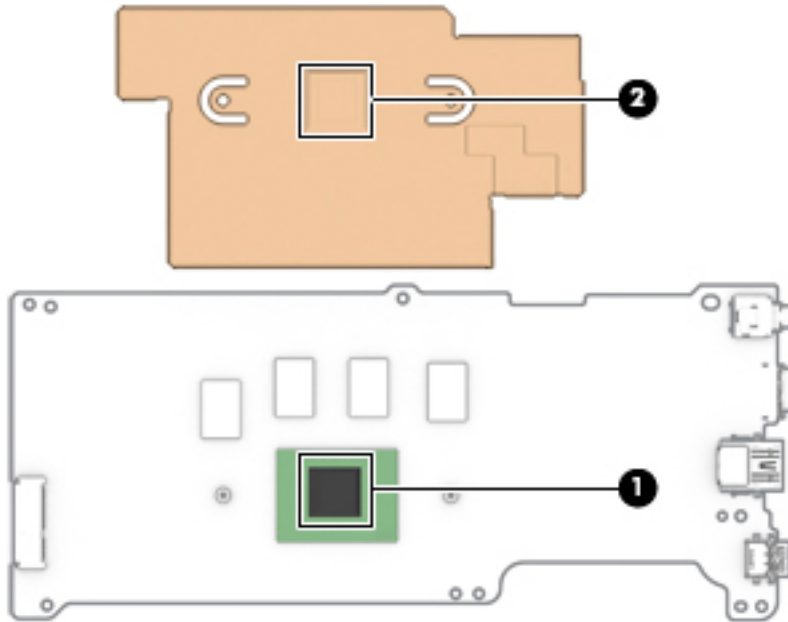
Remove the heat sink:

1. Turn the system board upside down with the front toward you.
2. Remove the two Phillips M2.0×2.2 broad head screws (1) that secure the heat sink to the system board.
3. Remove the heat sink (2).




 **NOTE:** The thermal material must be thoroughly cleaned from the surfaces of the heat sink and the system board components each time the heat sink is removed. Replacement thermal material is included with the heat sink and system board spare part kits.

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



Reverse this procedure to install the heat sink.

Display assembly


 **NOTE:** The display assembly is spared at the subcomponent level. For display assembly spare part information, see the individual removal subsections.

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 20](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 25](#)).

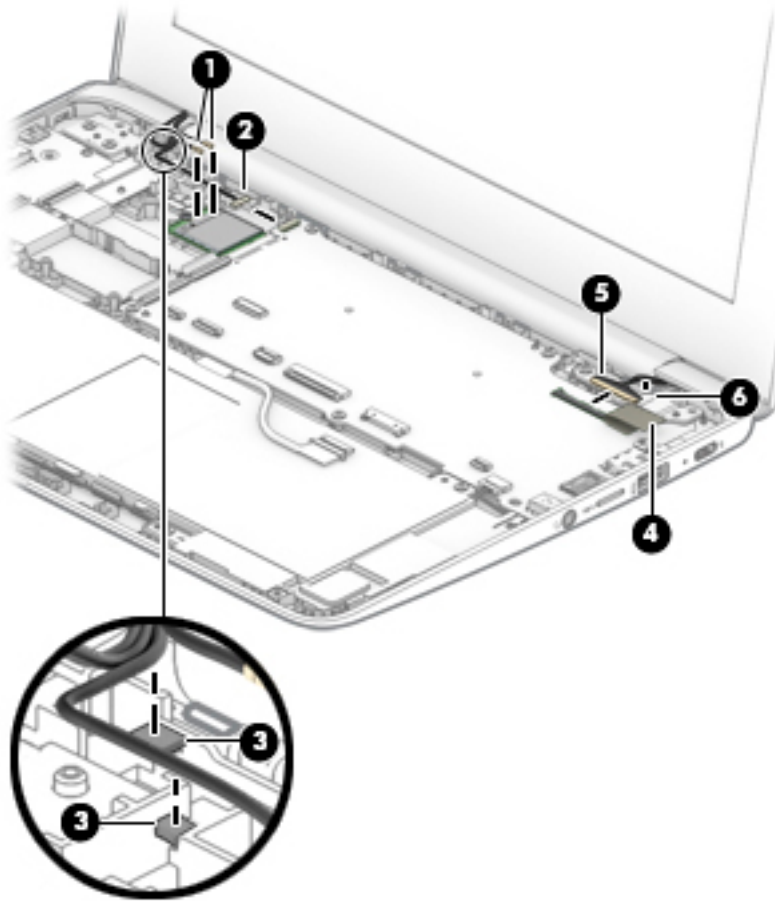
Remove the display assembly:

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

 **NOTE:** The WLAN antenna cable labeled "1/MAIN" connects to the WLAN module "Main" terminal. The WLAN antenna cable labeled "2/AUX" connects to the WLAN module "Aux" terminal.

2. Disconnect the display webcam/microphone cable **(2)** from the system board.
3. Release the display webcam/microphone cable from the retention clips **(3)** and routing channels built into the bottom cover.

4. Release the adhesive strip (4) that secures the display panel cable to the system board.
5. Disconnect the display panel cable (5) from the system board.
6. Release the display panel cable from the retention clips (6) and routing channels built into the bottom cover.



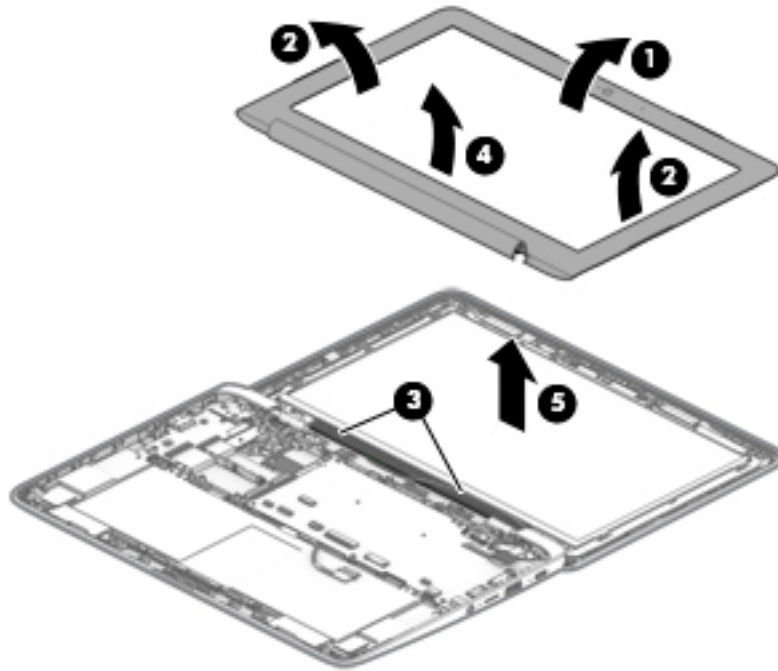
7. Open the computer as far as it will open.
8. If it is necessary to replace the display bezel or any of the display assembly subcomponents:
 - a. Release the top edge of the display bezel (1) from the display assembly.
 - b. Release the left and right edges of the display bezel (2) from the display assembly.

⚠ CAUTION: There is double-sided adhesive (3) on the inside edge of the display bezel bottom edge. Use caution when releasing the display bezel bottom edge. Failure to follow this caution can result in personal injury or damage to the display bezel.

- c. Release the bottom edge of the display bezel (4) from the display assembly.

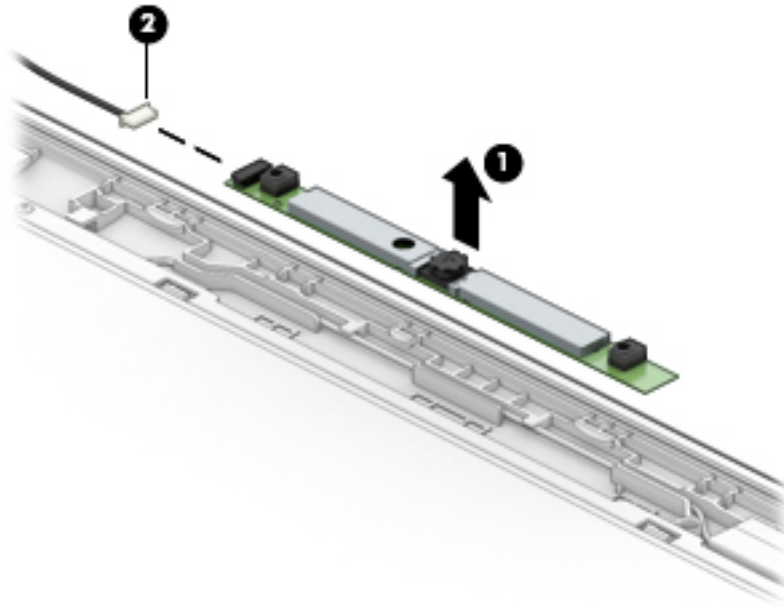
- d. Remove the display bezel (5).

The display bezel is available using spare part number L14912-001.



9. If it is necessary to replace the webcam/microphone module:
 - a. Remove the display bezel.
 - b. Detach the webcam/microphone module (1) from the display back cover. (The webcam/microphone module is attached to the display back cover with double-sided adhesive.)

- c. Disconnect the webcam/microphone module cable (2) from the webcam/microphone module.




- d. Remove the webcam/microphone module.

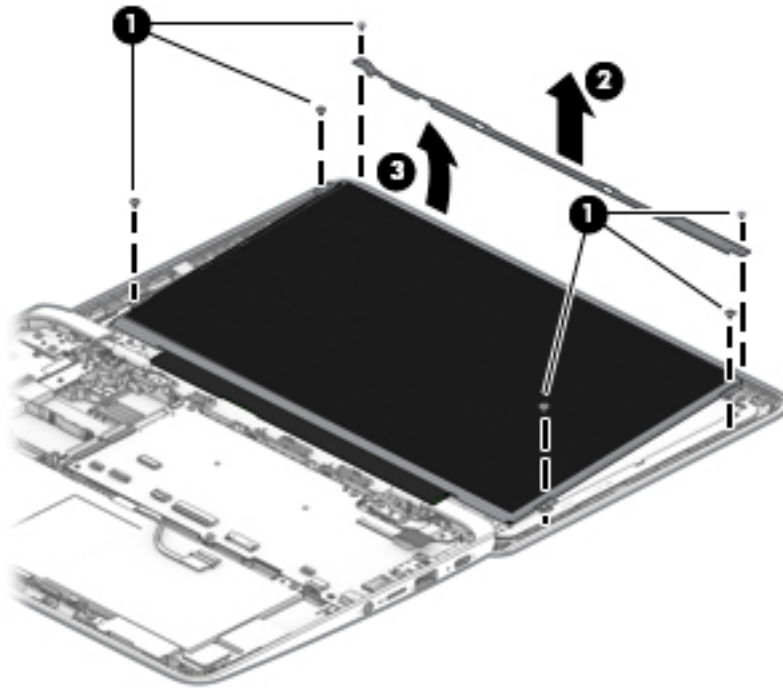
The webcam/microphone module is available using spare part number L07235-001.

10. If it is necessary to replace the display panel:

- a. Remove the display bezel.
- b. Remove the six Phillips PM2.0×2.8 screws (1) that secure the display panel and display panel bracket to the display back cover.
- c. Remove the display panel bracket (2).

 **NOTE:** The display panel bracket is available using spare part number .

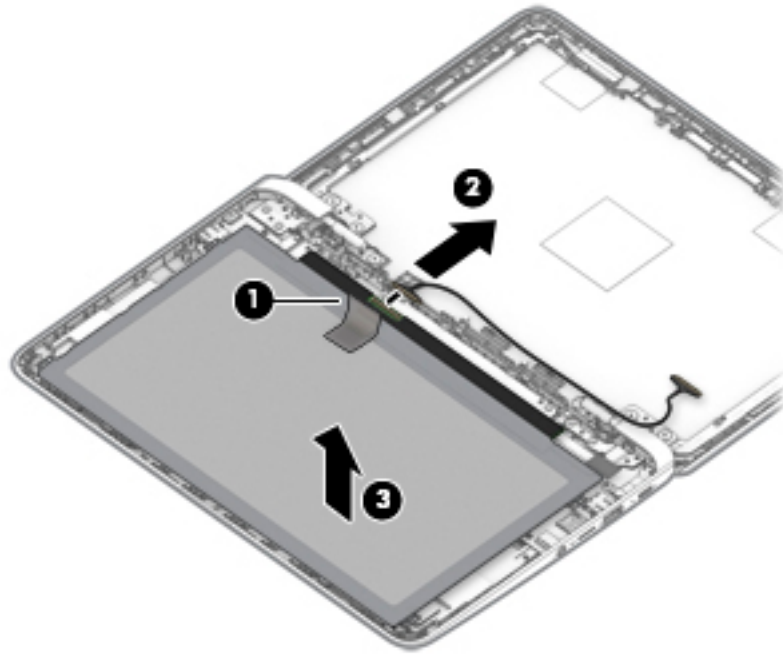
- d. Lift the top edge of the display panel **(3)** and swing it up and forward until it rests upside down on the computer.



- e. Release the adhesive support strip **(1)** that secures the display panel cable connector to the display panel.
- f. Disconnect the display panel cable **(2)** from the display panel.
- g. Remove the display panel **(3)**.


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

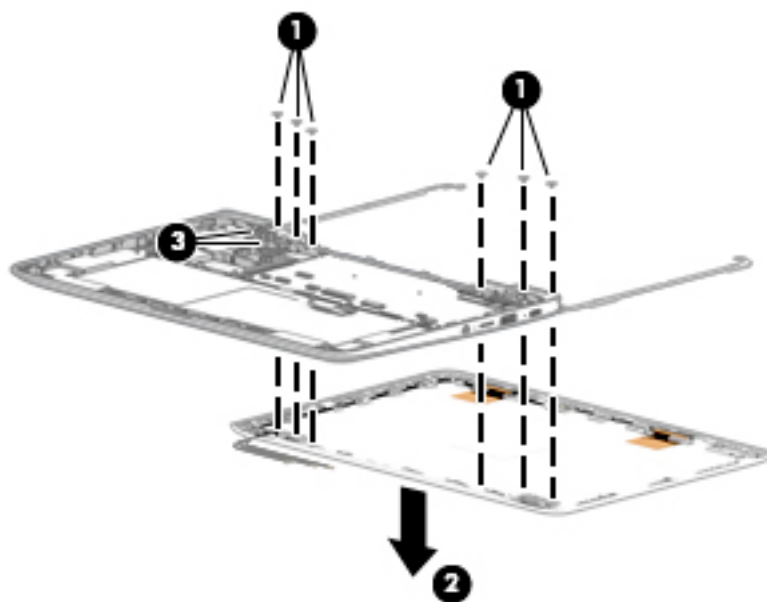
- L14918-001 – For use only on computer models equipped with an HD BrightView TouchScreen display assembly
- L22362-001 – For use only on computer models equipped with an AntiGlare TouchScreen display assembly
- L14917-001 – For use only on computer models equipped with non-TouchScreen display assembly



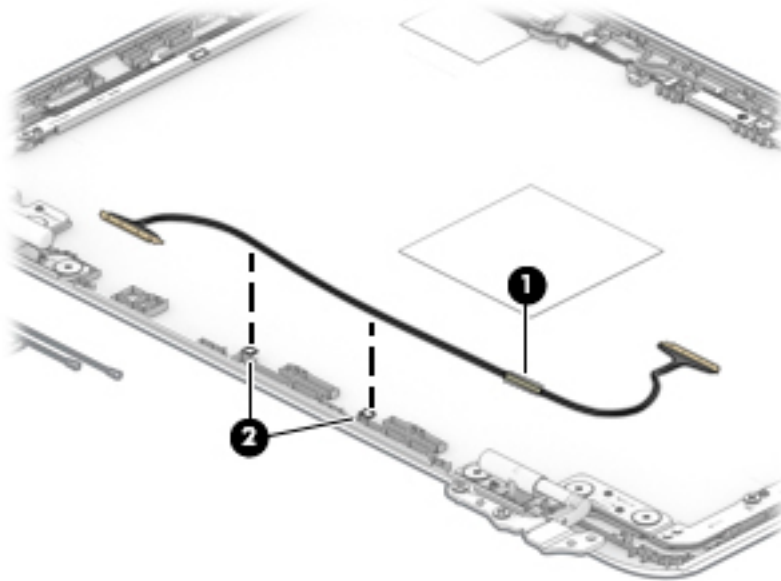
11. If it is necessary to replace the display back cover:

- a. Remove the display bezel.
- b. Remove the display panel.
- c. Remove the six Phillips PM2.0×2.9 broad head screws (1) that secure the back cover to the display hinges.
- d. Remove the back cover (2).

 **NOTE:** The back cover is available using spare part numbers L14908-001 (in chalkboard gray finish) and L14911-001 (in delicate orange finish), and includes the webcam/microphone module cable and wireless antenna cables and transceivers.



12. If it is necessary to replace the display panel cable:
- Remove the display bezel.
 - Remove the display panel.
 - Remove the display back cover.
 - Detach the display panel cable (1) from the display back cover. (The display panel cable is attached to the display back cover with double-sided adhesive.)
 - Release the display panel cable from the retention clips (2) and routing channel built into the display back cover.



- f. Remove the display panel cable.

The display panel cable is available using the following spare part numbers, and includes double-sided adhesive.

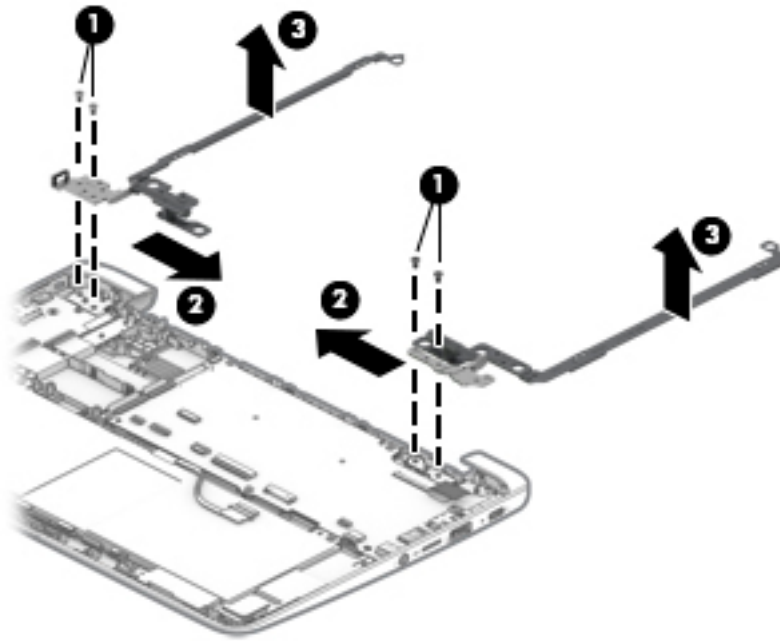
- L14916-001 – For use only on computer models equipped with an HD BrightView TouchScreen display assembly
- L14915-001 – For use only on computer models equipped with an AntiGlare TouchScreen display assembly
- L14914-001 – For use only on computer models equipped with non-TouchScreen display assembly

13. If it is necessary to replace the display hinges:

- Remove the display bezel.
- Remove the display panel.
- Remove the display back cover.
- Remove the four Phillips PM2.5×4.9 screws (1) that secure the hinges to the bottom cover.
- Release the hinges (2) by sliding them toward the inside of the computer.

- f. Remove the display hinges (3).

The display hinges are available using spare part number L14907-001.



Reverse this procedure to reassemble and install the display assembly.

6 Specifications

	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 Power cord set requirements

The wide-range input feature of the computer permits it to operate from any line voltage from 100 to 120 volts AC, or from 220 to 240 volts 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 and regions must meet the requirements of the country or 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 amps 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 all countries 113

Requirements for specific countries and regions

Country/region	Accredited agency	Applicable note number
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	METI	3
The Netherlands	KEMA	1
Norway	NEMKO	1
The People's Republic of China	COC	5

Country/region	Accredited agency	Applicable note number
South Korea	EK	4
Sweden	CEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	4
The United Kingdom	BSI	1
The United States	UL	2

1. The flexible cord must be Type H05VV-F, 3-conductor, 1.0-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
2. The flexible cord must be Type SPT-3 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) or NEMA 6-15P (15 A, 250 V) configuration.
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 VCT or VCTF, 3-conductor, 1.00-mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.
4. The flexible cord must be Type RVV, 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.
5. The flexible cord must be Type VCTF, 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.

8 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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