



## HP Chromebook 14

Maintenance and Service Guide  
IMPORTANT! This document is intended for  
HP authorized service providers only.

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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

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 **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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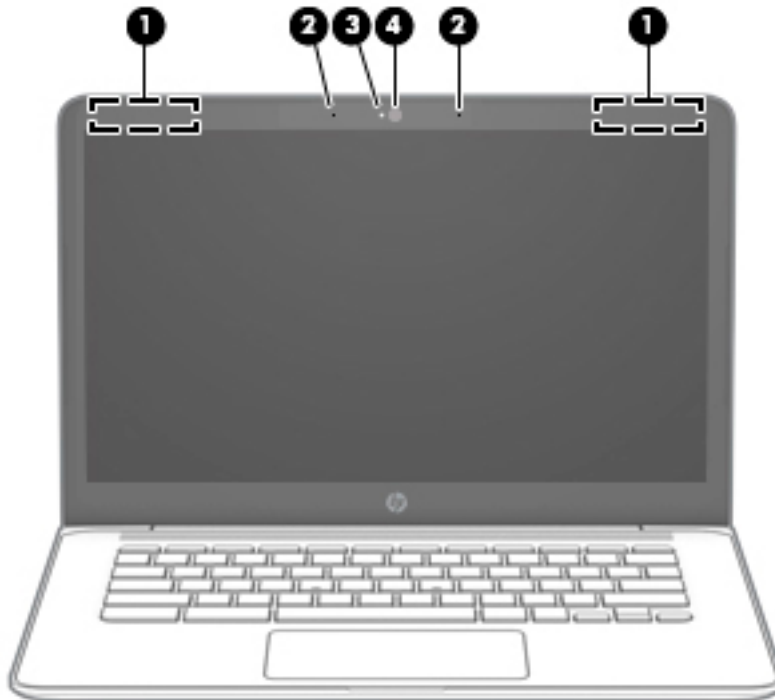
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# 1 Product description

Category	Description
Product Name	HP Chromebook 14 (model number 14-ca0xx)
Processor	Intel® Celeron™ N3350 1.10-GHz dual core processor (2400-MHz, 2.0-MB L2 cache, 6-W)
Graphics	Intel HD Graphics 500 universal memory architecture (UMA) internal graphics Support for HD Decode, DX12, and high-definition multimedia interface (HDMI)
Chipset	Intel integrated soldered-on-circuit (SoC)
Panel	<ul style="list-style-type: none"><li>• 14.0-in, full high-definition (FHD), BrightView (1920×1080), white light-emitting diode (WLED), UWVA 45 220, eDP, slim, TouchScreen display assembly</li><li>• 14.0-in, HD, BrightView (1366×768), WLED, SVA 45 220, eDP, slim, TouchScreen display assembly</li><li>• 14.0-in, FHD, AntiGlare (1920×1080), WLED, UWVA 45 220, eDP, slim, non-TouchScreen display assembly</li><li>• 14.0-in, HD, AntiGlare (1366×768), WLED, SVA 220, eDP, slim, non-TouchScreen display assembly</li></ul>
Memory	Supports LPDDR4-2400 1.1-v IC memory (256-MB×32×4 pieces) Supports 8-GB or 16-GB on-board system memory
Storage	Supports 32-GB or 16-GB on-board embedded MultiMedia Controller (eMMC) storage
Audio and video	One-piece, fixed (no tilt) integrated HD webcam, 720p, VSEB with LED Dual digital microphones with appropriate echo-cancellation, noise-suppression software 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"><li>• Headphone/microphone combo jack</li><li>• MicroSD memory card reader</li><li>• USB ports (4)</li></ul>
Power requirements	Supports a 2-cell, 47-WWhr, 6.15-WWhr, Li-Ion battery Supports a 45-W AC adapter (non-PFC, USB Type-C, 3-pin)
Security	Security hardware: H1 secure microcontroller Security cable lock
Operating system	<b>Preinstalled:</b> Google Chrome operating system
Serviceability	<b>End user replaceable parts:</b> AC adapter

## 2 External component identification

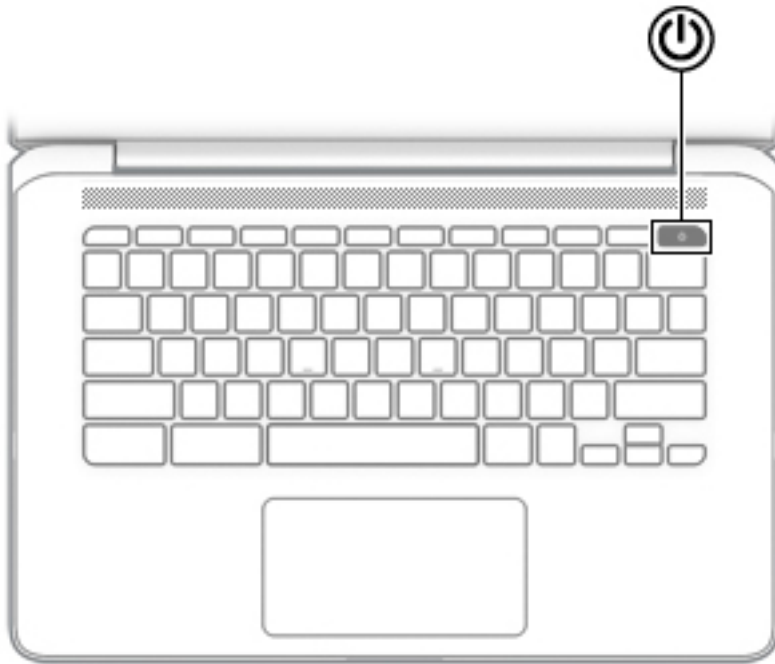
### Display




Item	Component	Description
(1)	WLAN antennas (2)*	Send and receive wireless signals to communicate with WLANs. <b>NOTE:</b> 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.

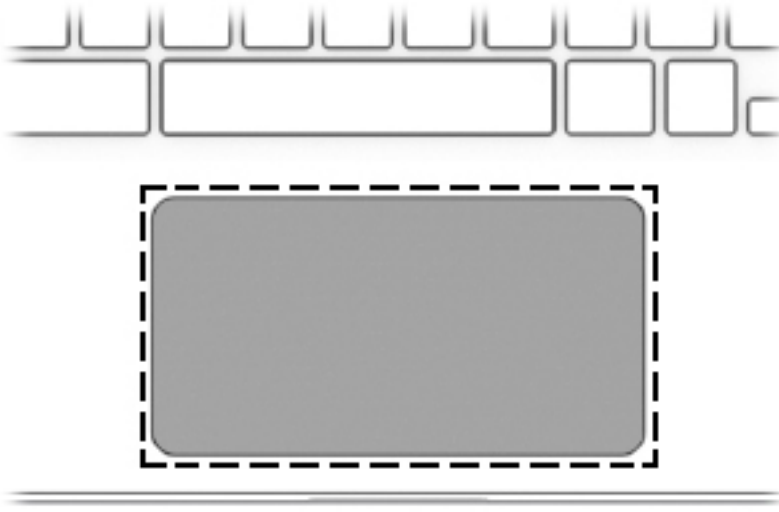
\*The antennas, IR emitters (select models only), and sensors are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas, IR emitters, and sensors free from obstructions. For wireless regulatory notices, see the section of the *Regulatory,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

# Button



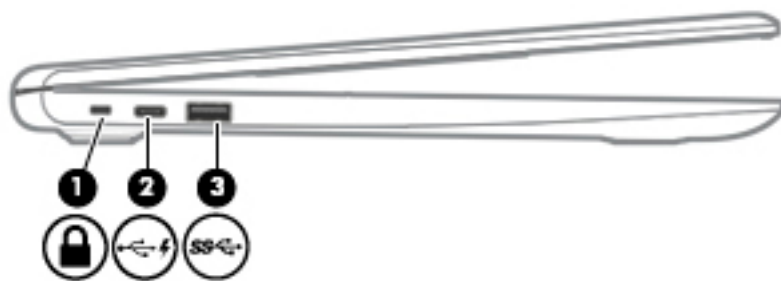
Component	Description
 Power button	<ul style="list-style-type: none"><li>• When the computer is off, press the button to turn on the computer.</li><li>• When the computer is in the Sleep state, press the button briefly to exit Sleep.</li><li>• When the computer is on and you want to lock the screen,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




## TouchPad



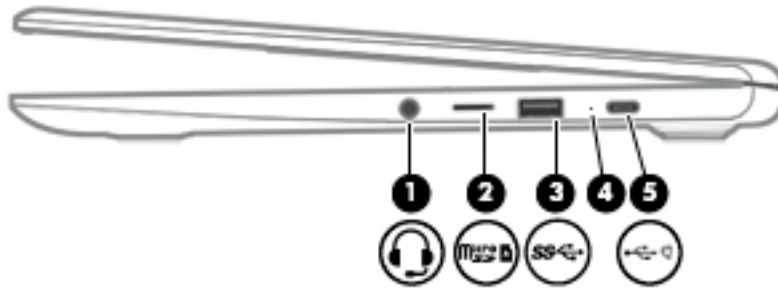
Component	Description
TouchPad zone	Moves the on-screen pointer and selects or activates items on the screen.





## Left side



Item	Component	Description
(1)	 Nano security cable slot	Attaches an optional security cable to the computer. <b>NOTE:</b> 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><b>WARNING!</b> To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset.</p> <p><b>NOTE:</b> When a device is connected to the jack, the computer speakers are disabled.</p> <p><b>NOTE:</b> 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"><li>1. Hold the card label-side up, with connectors facing the computer.</li><li>2. Insert the card into the memory card reader, and then press in on the card until it is firmly seated.</li></ol> <p>To remove a card:</p> <ul style="list-style-type: none"><li>▲ Pull out the card.</li></ul>
(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"><li>• White: The AC adapter is connected and the battery is charged.</li><li>• Amber: The AC adapter is connected and the battery is charging.</li><li>• Off: The computer is using battery power.</li></ul>
(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>




# 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.

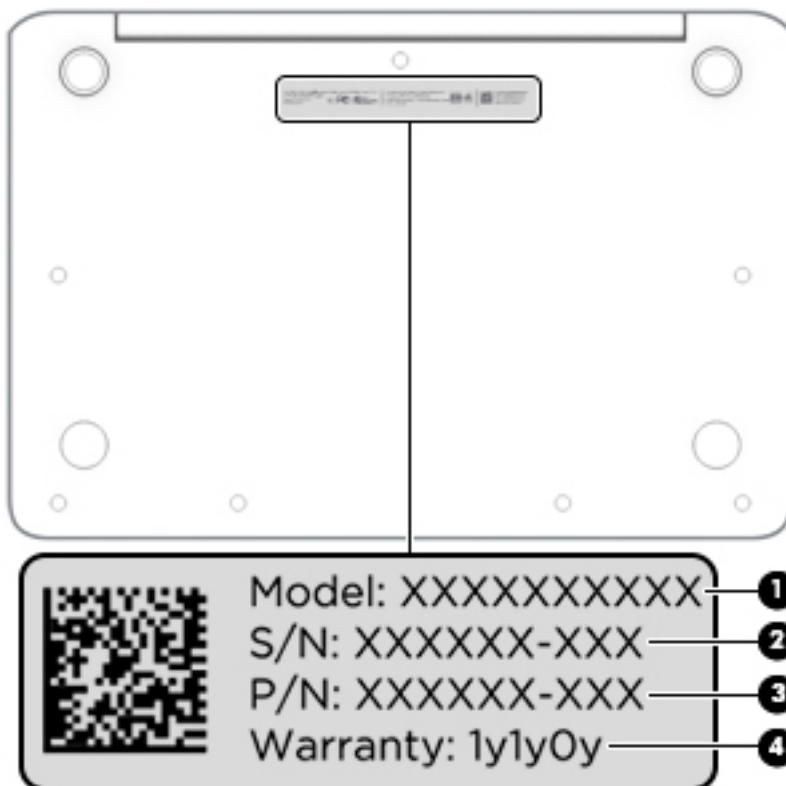
## Labels

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.



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### Component

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(1) Model number

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**Component**

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(2) Serial number

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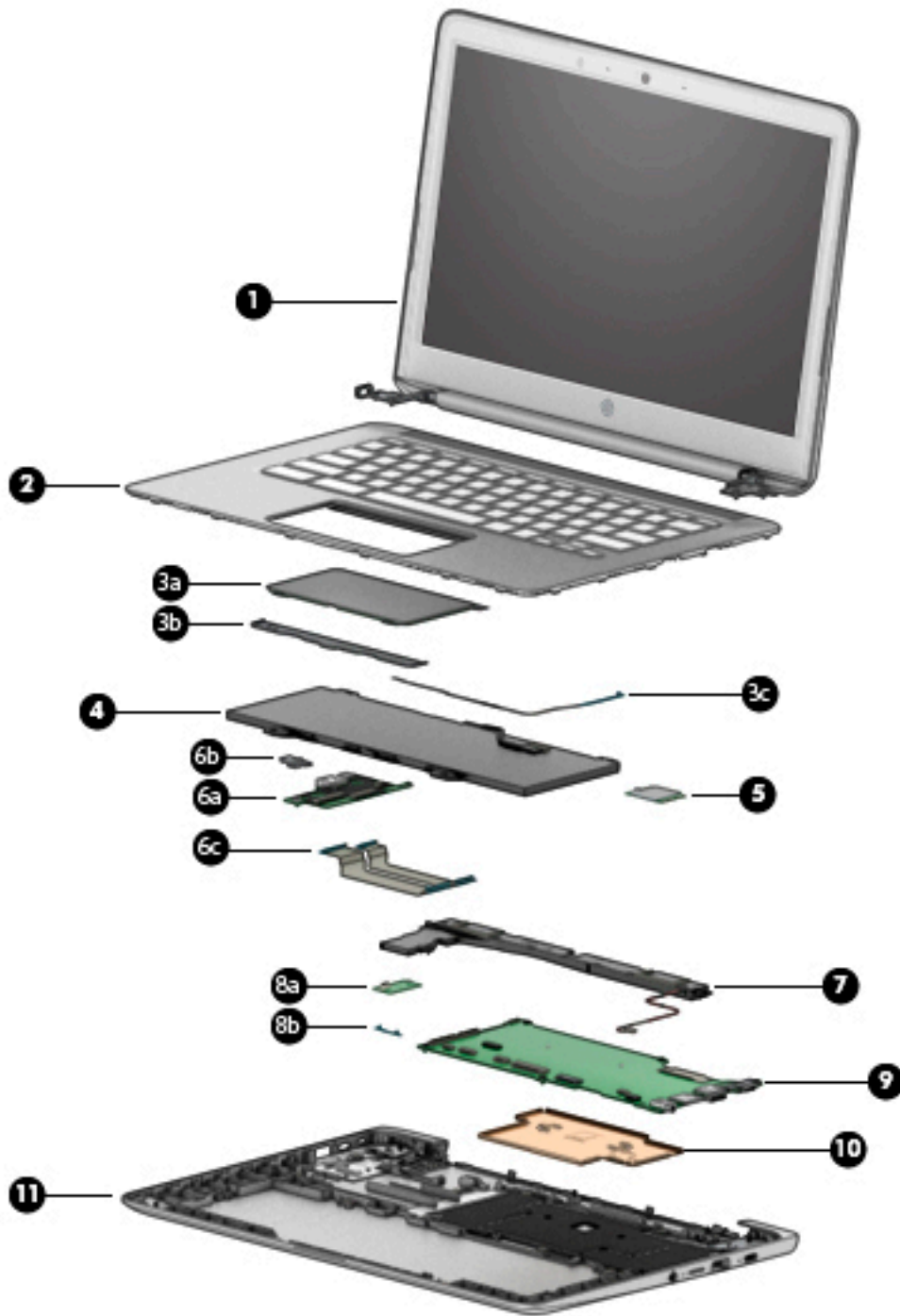
(3) Product number

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(4) Warranty period

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# Computer components

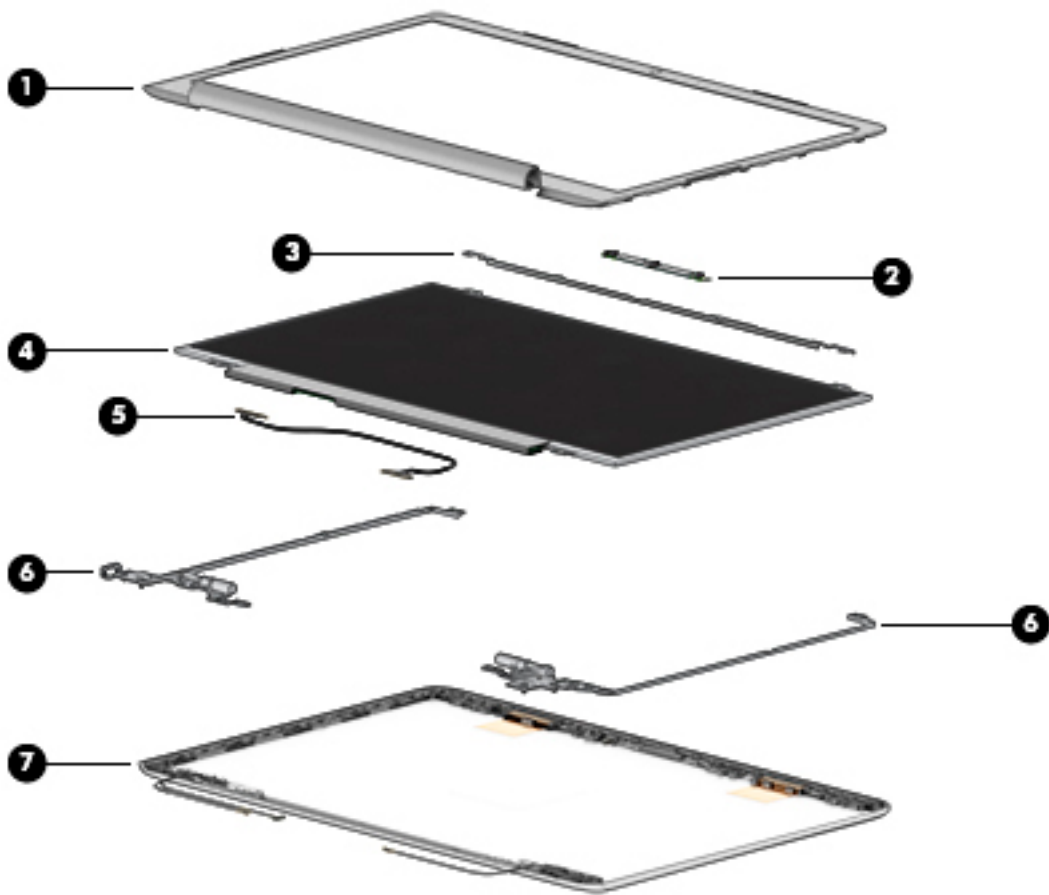


Item	Component	Spare part number
(1)	<b>14.0-in. display assembly:</b> The display assembly is spared at the subcomponent level only. For more display assembly spare part information, see <a href="#">Display assembly subcomponents on page 11</a> .	
(2)	<b>Keyboard/top cover</b> with backlight in chalkboard white finish (includes backlight cable and keyboard cable):  For use in Belgium	  L17093-A41

Item	Component	Spare part number
	For use in Canada	L17093-DB1
	For use in Denmark, Finland, and Norway	L17093-DH1
	For use in France	L17093-051
	For use in Germany	L17093-041
	For use in the Netherlands	L17093-B31
	For use in the United Kingdom	L17093-031
	For use in the United States	L17093-001
	<b>Keyboard</b> with backlight in snow white finish (includes backlight cable and keyboard cable):	
	For use in Belgium	L17094-A41
	For use in Canada	L17094-DB1
	For use in Denmark, Finland, and Norway	L17094-DH1
	For use in France	L17094-051
	For use in Germany	L17094-041
	For use in the Netherlands	L17094-B31
	For use in the United Kingdom	L17094-031
	For use in the United States	L17094-001
<b>(3a)</b>	<b>TouchPad</b> (does not include cable)	
	In chalkboard gray finish	L14356-001
	In snow white finish	L17769-001
<b>(3b)</b>	<b>TouchPad bracket</b>	L18436-001
<b>(3c)</b>	<b>TouchPad cable</b> (included in the Cable Kit, spare part number L14330-001, and includes double-sided adhesive)	
<b>(4)</b>	<b>Battery</b> (2-cell, 47-WHr, 6.15-AHr, Li-ion, includes cable)	917725-855
<b>(5)</b>	<b>Intel 7265NV M.2 11ac + Bluetooth 4.2 Combo Adapter</b>	901229-855
<b>(6a)</b>	<b>USB port board</b> (does not include cable)	L14358-001
<b>(6b)</b>	<b>USB port board cable</b> (included in the Cable Kit, spare part number L14330-001, and includes double-sided adhesive)	
<b>(6c)</b>	<b>USB port board bracket</b>	L14359-001
<b>(7)</b>	<b>Speakers</b> (include cables)	L14353-001
<b>(8a)</b>	<b>Sensor board</b>	L14331-001
<b>(8b)</b>	<b>Sensor board cable</b> (included in the Cable Kit, spare part number L14330-001)	
<b>(9)</b>	<b>System board</b> (includes processor, an Intel HD Graphics 500 UMA internal graphics subsystem, system memory, eMMC storage, the Google Chrome operating system, and replacement thermal material):	
	Equipped with an Intel Celeron N3350 1.10-GHz dual core processor (2400-MHz, 2.0-MB L2 cache, 6-W), 4-GB of system memory, and 32-GB of eMMC storage	L15340-001
	Equipped with an Intel Celeron N3350 1.10-GHz dual core processor (2400-MHz, 2.0-MB L2 cache, 6-W), 4-GB of system memory, and 16-GB of eMMC storage	L15339-001

Item	Component	Spare part number
(10)	Heat sink (includes replacement thermal material)	928840-001
(11)	<b>Bottom cover:</b>	
	In chalkboard gray finish	L14329-001
	In snow white finish	L17096-001
	<b>Rubber Kit</b> (not illustrated, includes bottom cover feet and rubber screw covers):	
	In chalkboard gray finish	L14351-001
	In snow white finish	L18446-001

## Display assembly subcomponents



Item	Component	Spare part number
(1)	<b>Display bezel:</b>	
	In chalkboard gray finish	L14335-001
	In snow white finish	L19051-001
(2)	<b>Webcam/microphone module</b> (does not include cable; includes double-sided adhesive)	L07235-001
(3)	<b>Display panel bracket</b>	L14337-001

Item	Component	Spare part number
<b>(4)</b>	<b>Display panel</b> (does not include display panel cable):	
	For use only on computer models equipped with an FHD BrightView TouchScreen display assembly	L14347-001
	For use only on computer models equipped with an HD BrightView TouchScreen display assembly	L14348-001
	For use only on computer models equipped with an FHD AntiGlare non-TouchScreen display assembly	L14349-001
	For use only on computer models equipped with an HD AntiGlare non-TouchScreen display assembly	L14350-001
<b>(5)</b>	<b>Display panel cable:</b>	
	For use only on computer models equipped with a TouchScreen display assembly	L15395-001
	For use only on computer models equipped with a non-TouchScreen display assembly	L14338-001
<b>(6)</b>	<b>Display hinges (2)</b>	L14332-001
<b>(7)</b>	<b>Display back cover</b> (includes the webcam/microphone module cable and wireless antenna cables and transceivers):	
	In chalkboard gray finish	L14333-001
	In snow white finish	L17095-001

## Miscellaneous parts

Component	Spare part number
<b>45-W AC adapter (non-PFC, USB Type-C, 3-pin)</b>	934739-850
<b>Cable Kit</b> (includes TouchPad cable and USB port board cable)	L14330-001
<b>Power cord</b> (C5 connector, 1.00-m):	
For use in Denmark	L19360-001
For use in Europe	L19361-001
For use in North America	L19367-001
For use in the United Kingdom	L19373-001
<b>Rubber Kit</b> (includes bottom cover rubber feet and rubber screw covers):	
In chalkboard gray finish	L14351-001
In snow white finish	L18446-001
<b>Screw Kit</b>	L18112-001

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## 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.


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

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### Plastic parts

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 **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.

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## Cables and connectors

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**⚠ 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.

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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

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**⚠ 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."

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# 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

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## 5 Removal and replacement procedures

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

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 **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.

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### Component replacement procedures

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 **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 7](#) 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.

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There are as many as 47 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 a backlight, backlight cable, and keyboard cable.

For use in country/region	Spare part number	For use in country/region	Spare part number
Keyboard/top cover in chalkboard gray finish:			
For use in Belgium	L17093-A41	For use in Germany	L17093-041
For use in Canada	L17093-DB1	For use in the Netherlands	L17093-B31
For use in Denmark, Finland, and Norway	L17093-DH1	For use in the United Kingdom	L17093-031
For use in France	L17093-051	For use in the United States	L17093-001
Keyboard/top cover in snow white finish:			
For use in Belgium	L17094-A41	For use in Germany	L17094-041
For use in Canada	L17094-DB1	For use in the Netherlands	L17094-B31
For use in Denmark, Finland, and Norway	L17094-DH1	For use in the United Kingdom	L17094-031
For use in France	L17094-051	For use in the United States	L17094-001

Before disassembling the computer, follow these steps:

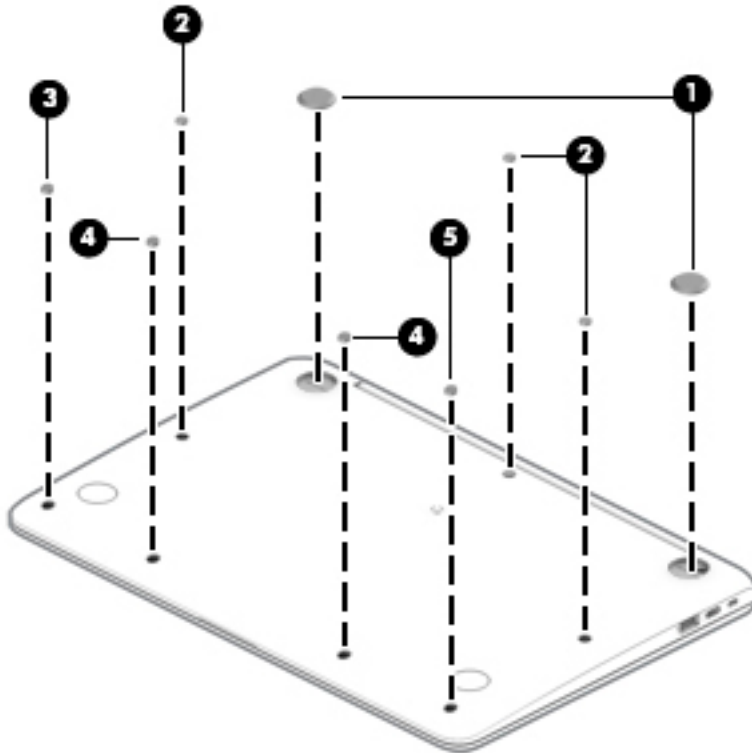
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord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

Remove the bottom cover:

1. Remove the two rear rubber feet **(1)**.

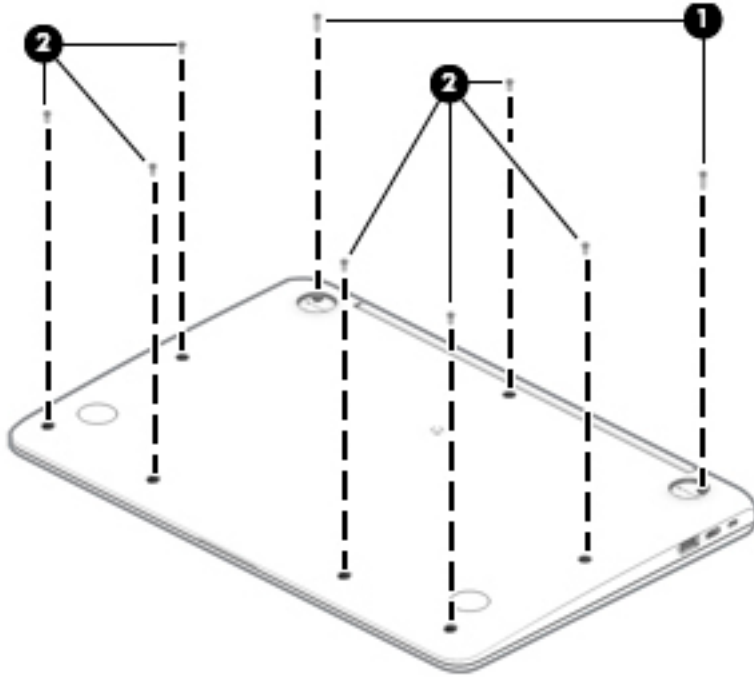
2. Remove the following rubber screw covers:
  - (2) Three rubber screw covers marked "OG3A"
  - (3) One rubber screw cover marked "FL-OG3A"
  - (4) Two rubber screw covers marked "FM-OG3A"
  - (5) One rubber screw cover marked "FR-OG3A"

The rubber feet and the rubber screw covers are included in the Rubber Kit, spare part numbers L14351-001 (for use only on computer models in chalkboard gray finish) and L17769-001 (for use only on computer models in snow white finish).



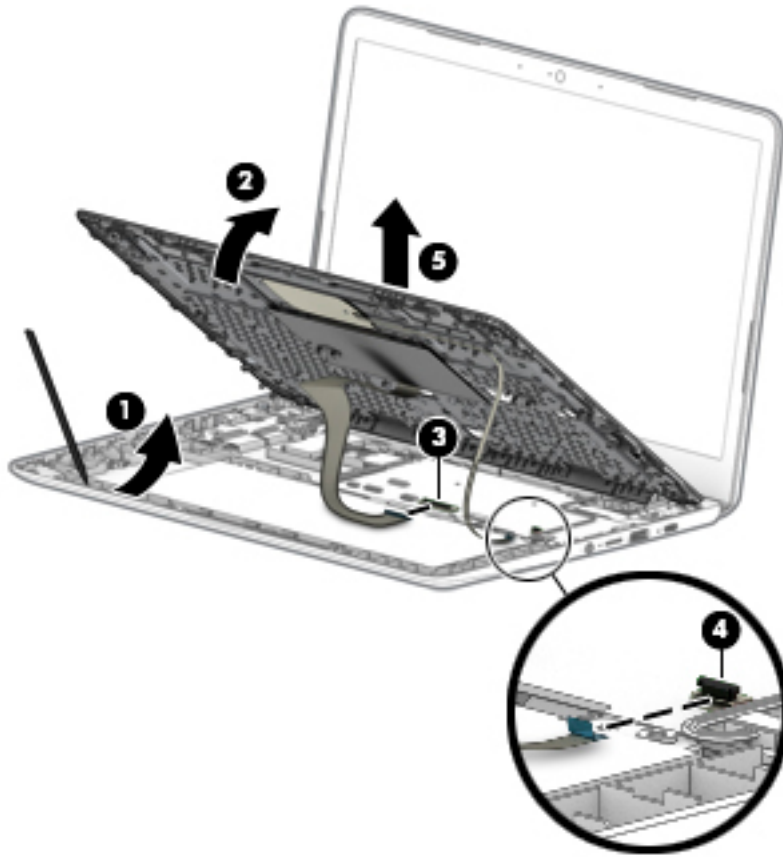
3. Remove the two Phillips M2.5×9.3 screws (1) that secure the bottom cover to the computer.

4. Remove the seven Phillips M2.5×8.5 screws (2) that secure the bottom cover to the computer.



5. Turn the computer right side with the front toward you.
6. Open the computer.
7. 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.
8. 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.
9. Release the ZIF connector (4) to which the TouchPad cable is connected, and then disconnect the TouchPad cable from the system board.


10. 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 L14330-001, and includes double-sided adhesive.

Before removing the TouchPad cable, follow these steps:

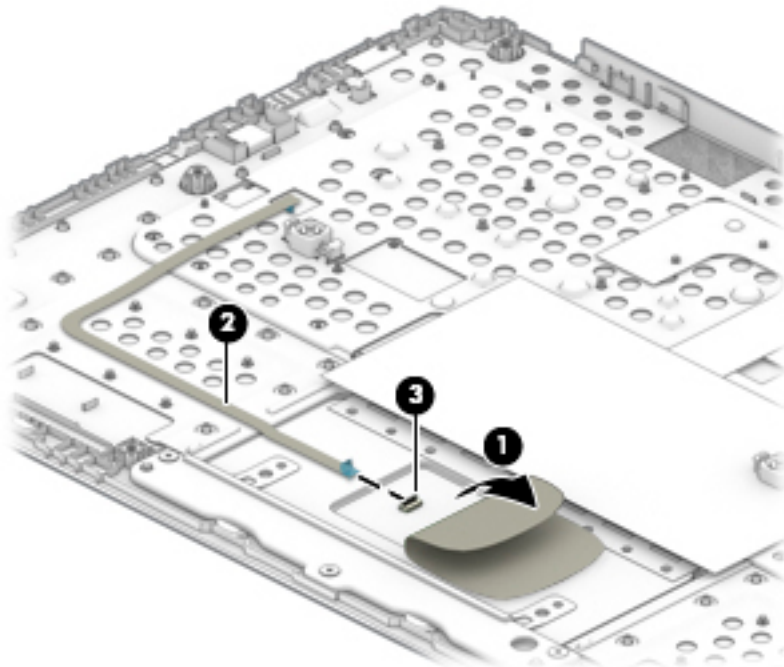
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord 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 19](#)).

Remove the TouchPad cable:

1. Release the shielding material **(1)** that covers the TouchPad ZIF connector.

 **NOTE:** The TouchPad shielding material is included in the Mylar Kit, spare part number L14346-001.


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. Release the ZIF connector **(3)** to which TouchPad cable is connected, and then disconnect the TouchPad cable from the TouchPad.



4. 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 L14330-001, and includes double-sided adhesive.

Description	Spare part number
For use only on computer models in chalkboard gray finish	L14356-001
For use only on computer models in snow white finish	L17769-001

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 19](#)).

Remove the TouchPad:

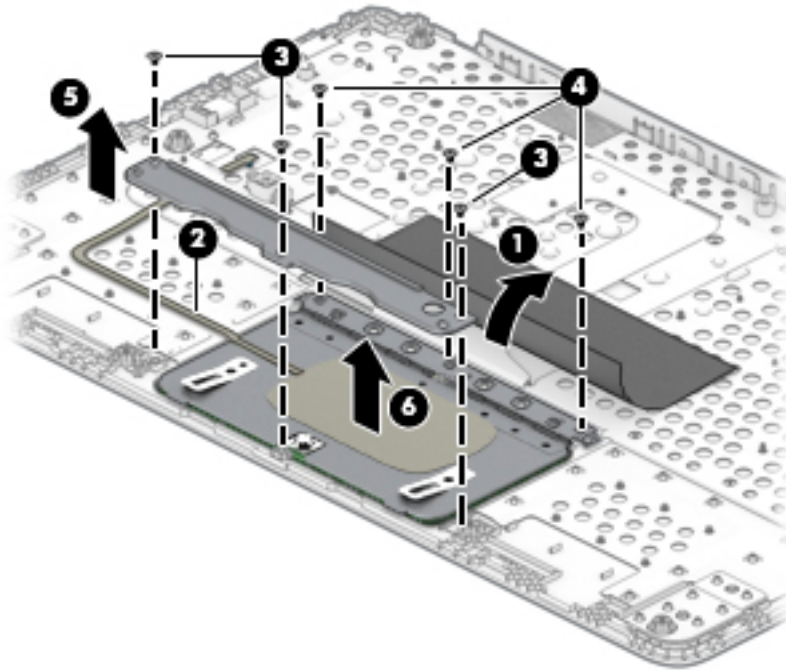
1. Release the shielding material **(1)** that covers the top edge of the TouchPad.

 **NOTE:** The TouchPad shielding material is included in the Mylar Kit, spare part number L14346-001.

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 L18436-001.

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

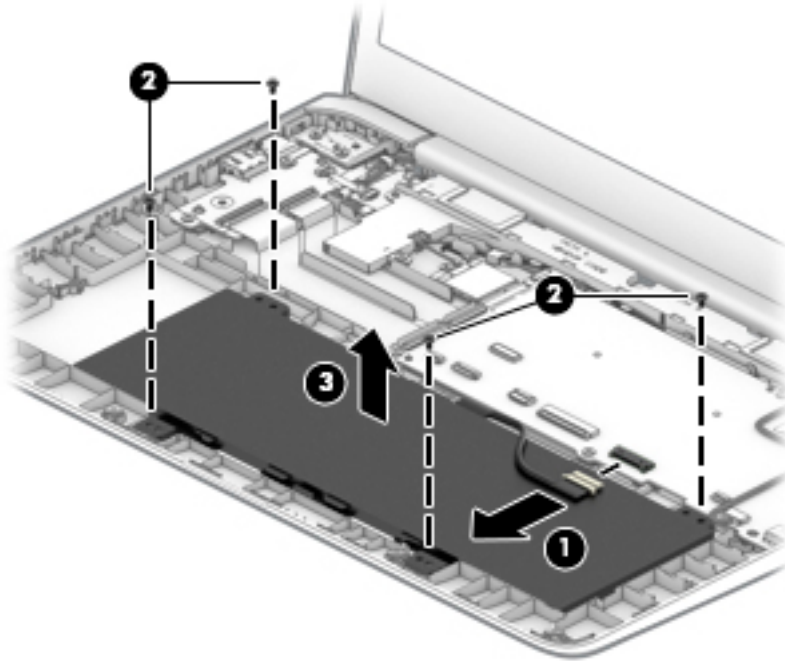
Before removing the battery, follow these steps:

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 19](#)).

Remove the battery:

1. Disconnect the battery cable (1) from the system board.
2. Remove the four Phillips M2.0×4.1 screws (2) that secure the battery to the bottom cover.

3. Remove the battery (3).



Reverse this procedure to install the battery.

## WLAN module

Description	Spare part number
Intel 7265NV M.2 11ac + Bluetooth 4.2 Combo Adapter	901229-855

**⚠ 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. 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 19](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 25](#)).

Remove the WLAN module:

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. Remove the Phillips PM2.0×2.9 screw (2) that secures the WLAN module to the computer. (The WLAN module tilts up.)

3. Release the shielding material (3) that secures the WLAN module to the slot.

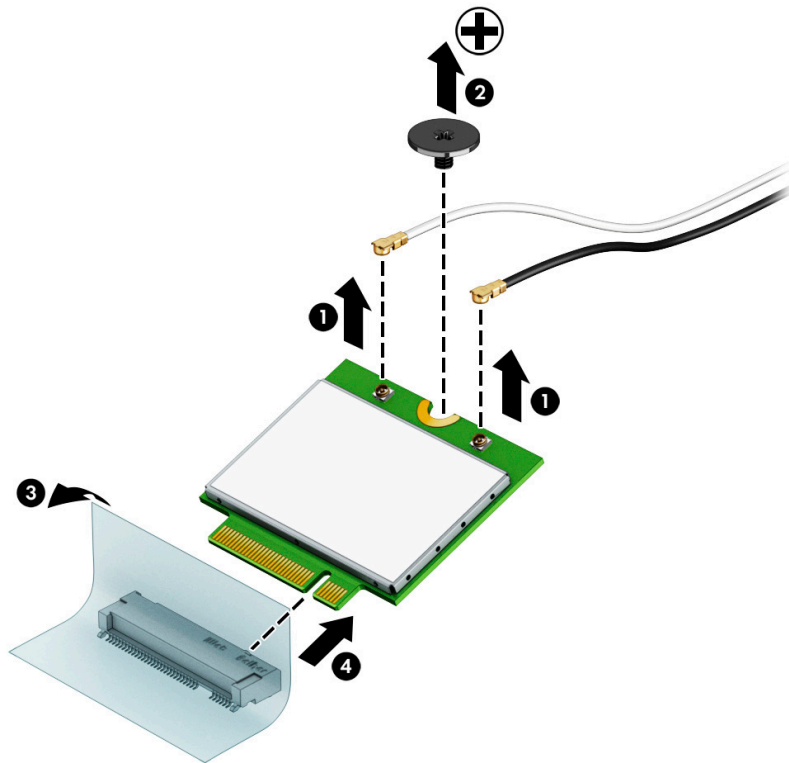
 **NOTE:** The WLAN module shielding material is included in the Mylar Kit, spare part number L14346-001.

---

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


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

---



Reverse this procedure to install the WLAN module.

## USB port board cable

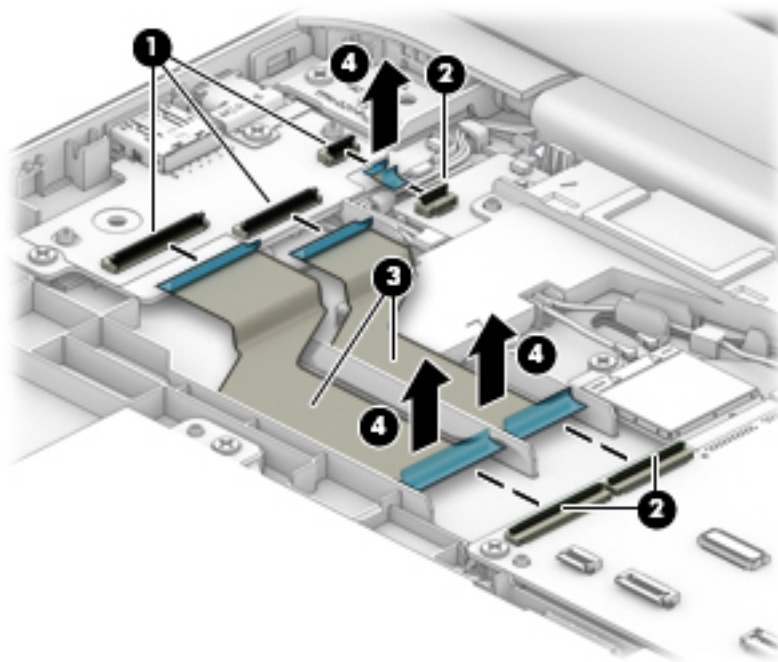
 **NOTE:** The USB port board spare part kit does not include the USB port board cable. The USB port board cable is included in the Cable Kit, spare part number L14330-001, and includes double-sided adhesive.

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 19](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 25](#)).

Remove the USB port board cables:

1. Release the three ZIF connectors (1) to which the USB port board cables are connected, and then disconnect the USB port board cables from the USB port 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 system 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 cables (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 L14330-001, and includes double-sided adhesive.

Description	Spare part number
USB port board	L14358-001

Before removing the USB port board, follow these steps:

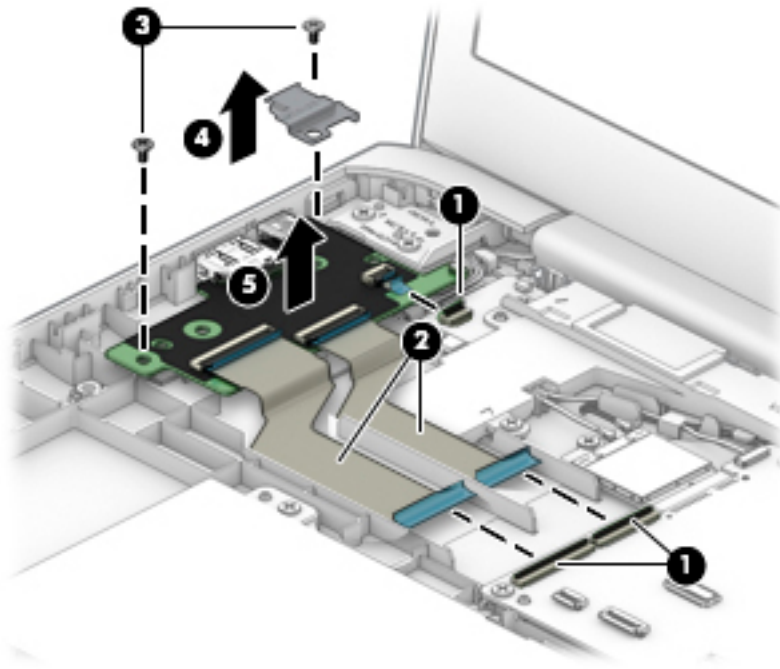
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord 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 19](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 25](#)).

Remove the USB port board:

1. Release the three 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 two Phillips M2.0×4.1 screws **(3)** that secure the USB port board to the bottom 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.



## Speakers

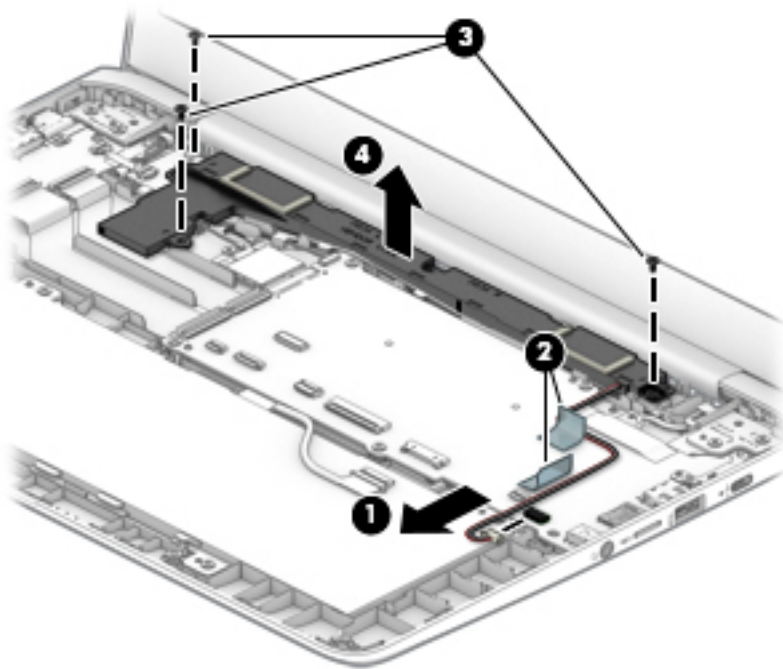
Description	Spare part number
Speakers (include cables)	L14353-001

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 19](#)).
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 tape (2) that secures the speaker cable to the system board.
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.

## Sensor board cable

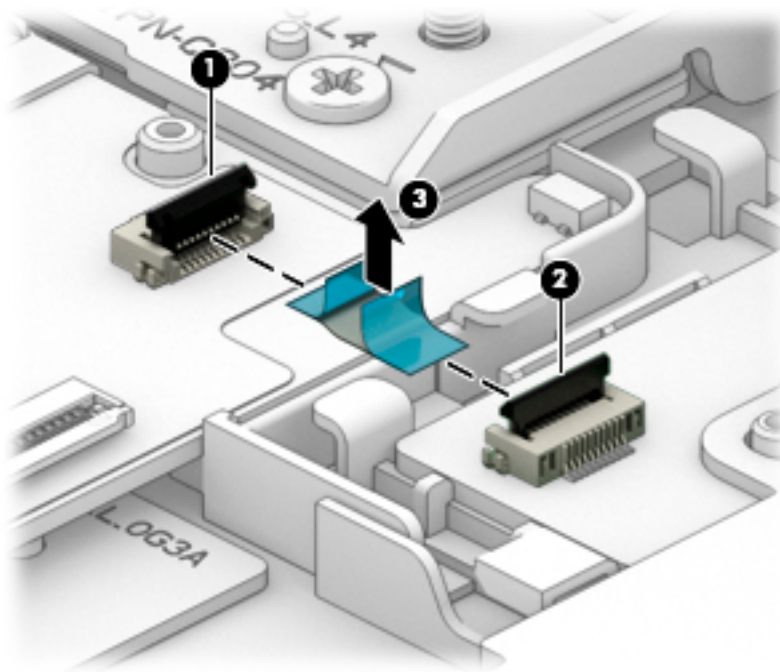
 **NOTE:** The sensor board spare part kit does not include the sensor board cable. The sensor board cable is included in the Cable Kit, spare part number L14330-001.

Before removing the sensor board cable, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 19](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 25](#)).

Remove the sensor board cables:

1. Release the ZIF connector (1) to which the sensor board cable is connected, and then disconnect the sensor board cable from the sensor board.
2. Release the ZIF connector (2) to which the sensor board cable is connected, and then disconnect the sensor board cable from the system board.
3. Remove the sensor board cable (3).



Reverse this procedure to install the sensor board cable.

## Sensor board



**NOTE:** The sensor board spare part kit does not include the sensor board cable. The sensor board cable is included in the Cable Kit, spare part number L14330-001, and includes double-sided adhesive.

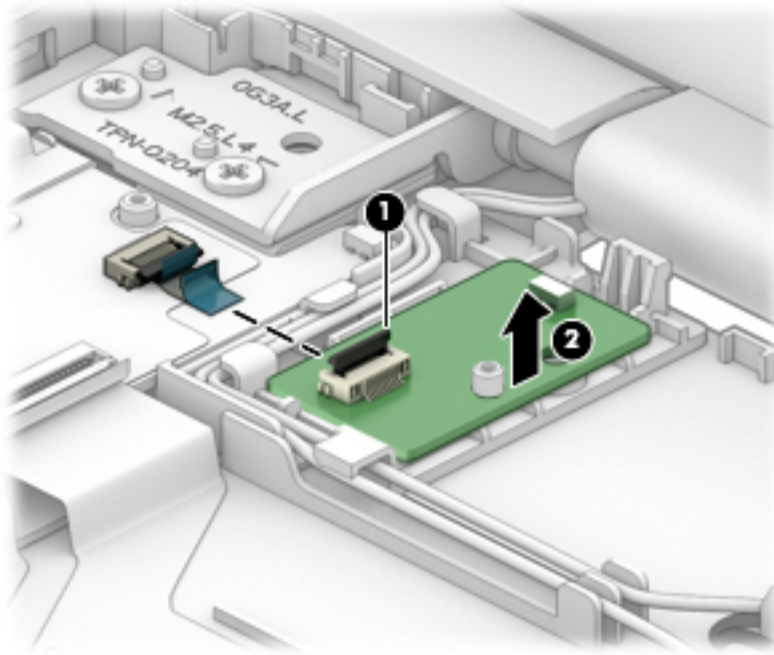
Description	Spare part number
Sensor board	L14331-001

Before removing the sensor board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 19](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 25](#)).

Remove the sensor board:

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



Reverse this procedure to install the sensor board.

## System board



**NOTE:** All system board spare part kits include a processor, system memory, eMMC storage, the Google Chrome operating system, and replacement thermal material.

Description	Spare part number
Equipped with an Intel Celeron N3350 1.10-GHz dual core processor (2400-MHz, 2.0-MB L2 cache, 6-W), an Intel HD Graphics 500 UMA internal graphics subsystem, 4-GB of system memory, and 32-GB of eMMC storage	L15340-001
Equipped with an Intel Celeron N3350 1.10-GHz dual core processor (2400-MHz, 2.0-MB L2 cache, 6-W), an Intel HD Graphics 500 UMA internal graphics subsystem, 4-GB of system memory, and 16-GB of eMMC storage	L15339-001

Before removing the system board, follow these steps:

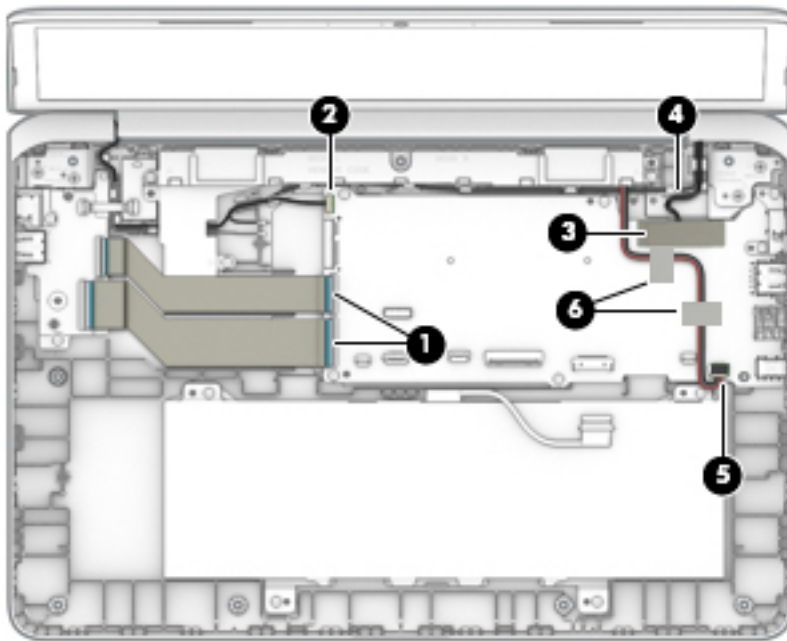
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Keyboard/top cover on page 19](#)).
5. Remove the keyboard/top cover (see [Keyboard/top cover on page 19](#)).
6. Disconnect the battery cable from the system board (see [Battery on page 25](#)).
7. Remove the WLAN module (see [Battery on page 25](#)).

When replacing the system board, be sure to remove the heat sink (see [Heat sink on page 36](#)) from the defective system board and install it on the replacement system board.

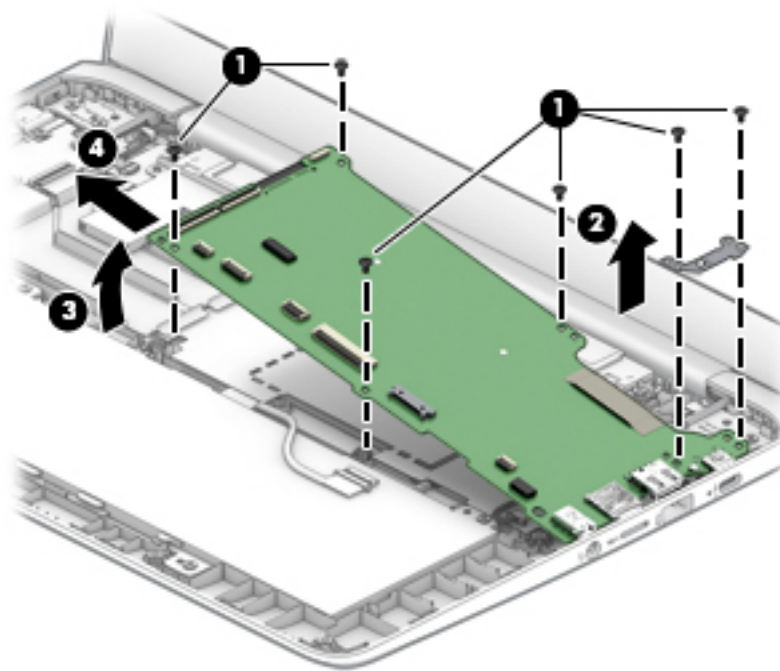
Remove the system board:

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. Release the tape (6) that secures the speaker cable to the system board.



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



11. Remove the system board.

Reverse this procedure to install the system board.

## Heat sink

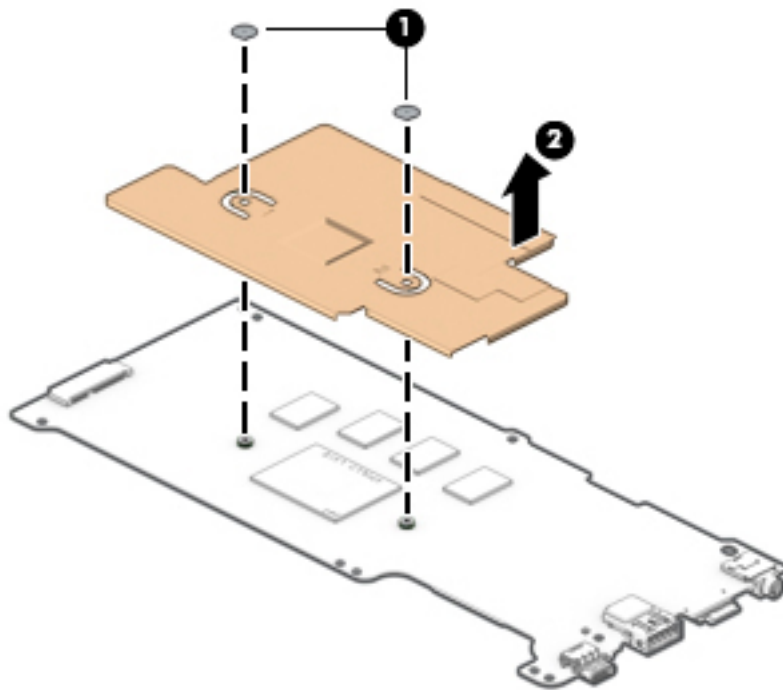
Description	Spare part number
Heat sink (includes replacement thermal material)	928840-001

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 19](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 25](#)).
6. Remove the WLAN module (see [Battery on page 25](#)).
7. Remove the system board (see [System board on page 34](#)).

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).

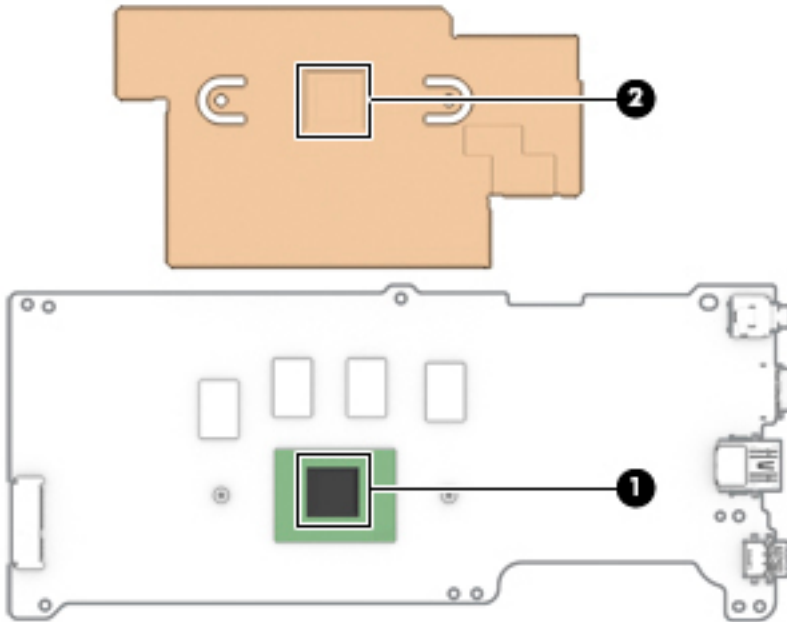


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 **NOTE:** The thermal material must be thoroughly cleaned from the surfaces of the heat sink and the system board components each time the heat sink is removed. Replacement thermal material is included with the heat sink and system board spare part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

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


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Reverse this procedure to install the heat sink.

## Display assembly

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 **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 19](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 25](#)).

Remove the display assembly:


1. Release the ZIF connector **(1)** to which the sensor board cable is connected, and then disconnect the sensor board cable from the system board.

---

 **NOTE:** Make sure the sensor board cable (2) is moved away from the routing channel through which the wireless auxiliary antenna cable is routed.

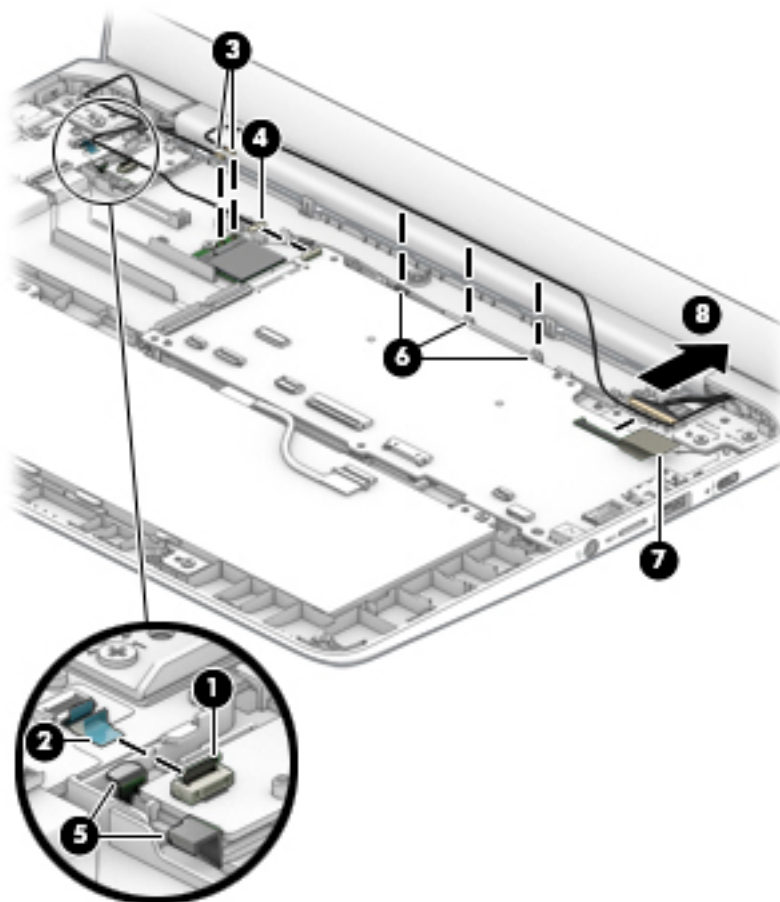
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2. Disconnect the WLAN antenna cables (3) from the terminals on the WLAN module.

 **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.


---

3. Disconnect the display webcam/microphone cable (4) from the system board.
4. Release the wireless auxiliary antenna cable from the retention clips (5) built into the bottom cover.
5. Release the wireless main antenna cable from the retention clips (6) built into the bottom cover.
6. Release the adhesive strip (7) that secures the display panel cable to the system board.
7. Disconnect the display panel cable (8) from the system board.



8. Open the computer as far as it will open.
9. 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.

---

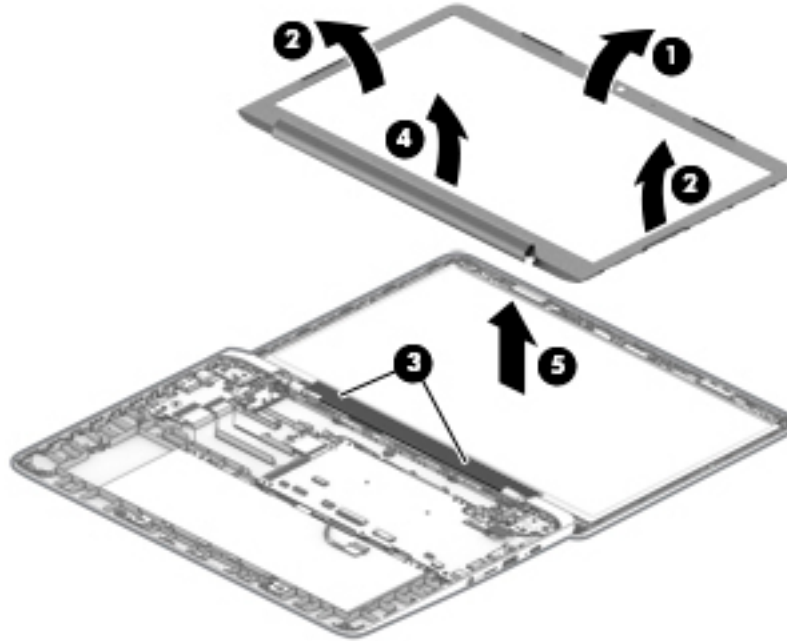
 **CAUTION:** There is double-sided adhesive (3) on the inside edge of the display bezel bottom edge. Use caution when releasing the display bezel bottom edge. Failure to follow this caution can result in personal injury or damage to the display bezel.

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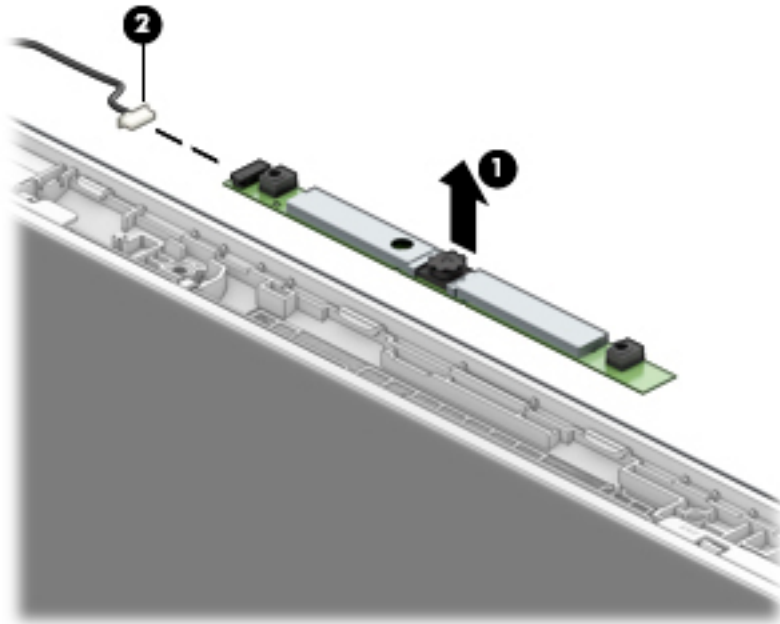
- c. Release the bottom edge of the display bezel **(4)** from the display assembly.
- d. Remove the display bezel **(5)**.

The display bezel is available using spare part numbers L14335-001 (for use only on computer models in chalkboard gray finish) and L19051-001 (for use only on computer models in snow white finish).



10. 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.

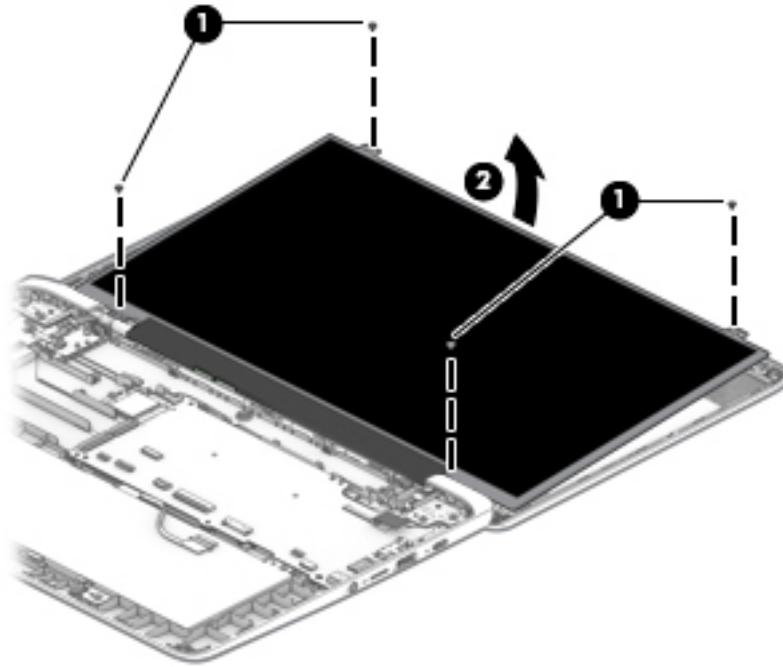


- d. Remove the webcam/microphone module.

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

- 11. If it is necessary to replace the display panel:
  - a. Remove the display bezel.
  - b. Remove the four Phillips PM2.0×2.8 screws (1) that secure the display panel to the display back cover.

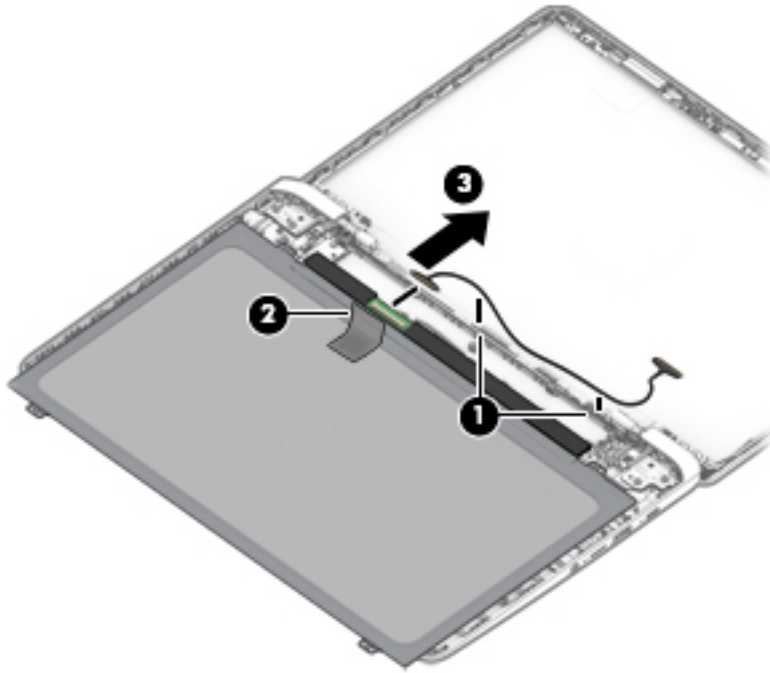
- c. Lift the top edge of the display panel (2) and swing it up and forward until it rests upside down on the computer.



- d. Release the display panel cable (1) from the retention clips and routing channel built into the display back cover bottom edge.
- e. Release the adhesive support strip (2) that secures the display panel cable connector to the display panel.

- f. Disconnect the display panel cable (3) from the display panel.

The display panel cable is available using the following spare part numbers L15395-001 (for use only on computer models equipped with a TouchScreen display assembly) and L14338-001 (for use only on computer models equipped with a non-TouchScreen display assembly):

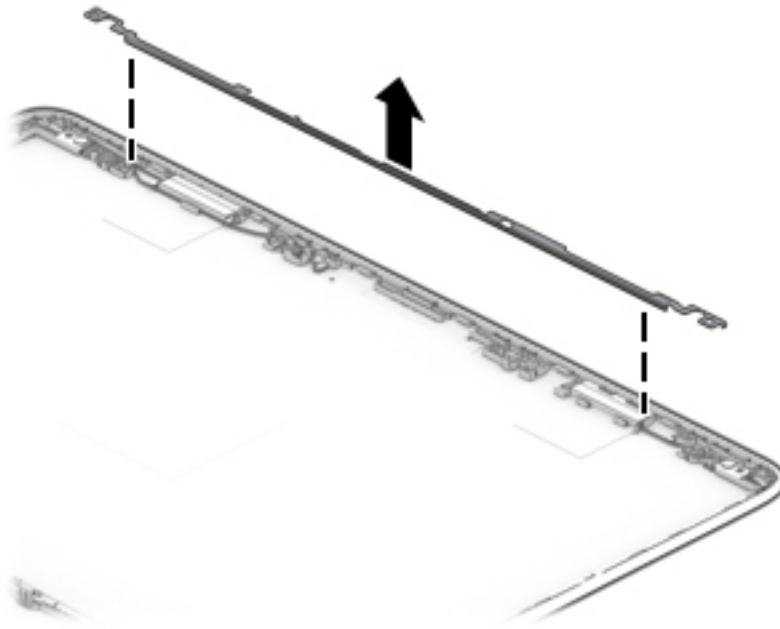


- g. Remove the display panel.

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

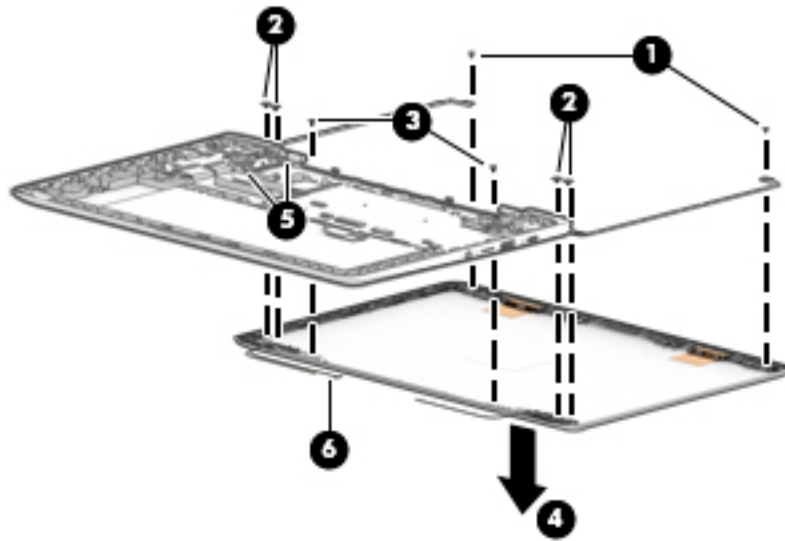
- L14347-001 – For use only on computer models equipped with an FHD BrightView TouchScreen display assembly
- L14348-001 – For use only on computer models equipped with an HD BrightView TouchScreen display assembly
- L14349-001 – For use only on computer models equipped with an FHD AntiGlare non-TouchScreen display assembly
- L14350-001 – For use only on computer models equipped with an HD AntiGlare non-TouchScreen display assembly

- h. If it is necessary to replace the display panel bracket, remove the bracket.  
The display panel bracket is available using spare part number L14337-001.



12. If it is necessary to replace the display back cover:
- a. Remove the display bezel.
  - b. Remove the display panel.
  - c. Remove the following screws that secure the back cover to the display hinges:
    - (1) Two Phillips M2.0×2.8 screws on the back cover top edge
    - (2) Four Phillips M2.0×3.0 broad head screws on the display hinge outside edges
    - (3) Two Phillips M2.5×4.7 screws on the display hinge inside edges
  - d. Release the display panel (4) as far as the webcam/microphone module cable allows.
  - e. Release the webcam/microphone module cable (5) from the retention clips and routing channel built into the display back cover.

- f. Release the tape that secures the webcam/microphone module cable (6) to the back cover.



- g. Remove the back cover.

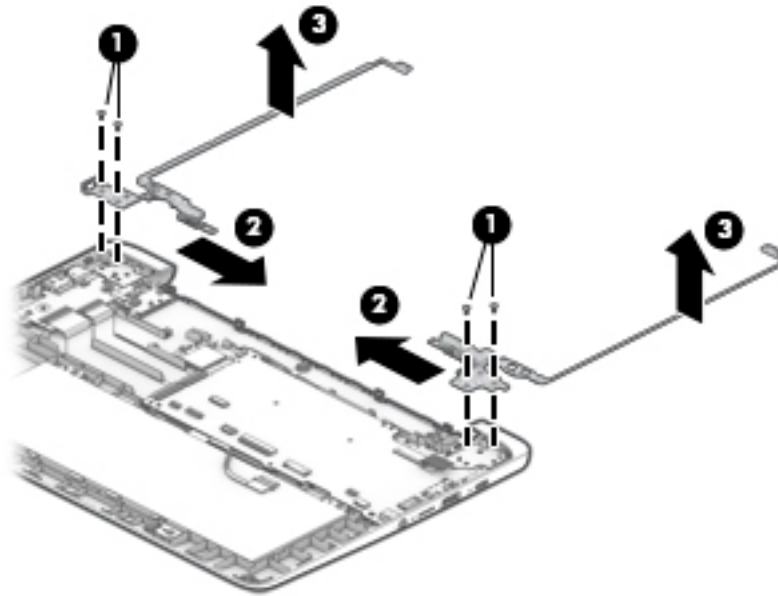


**NOTE:** The display back cover is available using spare part numbers L14333-001 (for use only on computer models in chalkboard gray finish) and L17095-001 (for use only on computer models in snow white finish) and includes the webcam/microphone module cable and wireless antenna cables and transceivers.

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 PM2.5×4.7 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 L14332-001.



Reverse this procedure to reassemble and install the display assembly.

## 6 Specifications

	Metric	U.S.
<b>Computer dimensions</b>		
Width	22.7 cm	8.9 in
Depth	33.7 cm	13.3 in
Height	1.8 cm	0.7 in
Weight	1.5 kg	3.4 lbs
<b>Temperature</b>		
Operating	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
<b>Relative humidity</b> (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%	
<b>Maximum altitude</b> (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-mm<sup>2</sup> 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-mm<sup>2</sup> 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-mm<sup>2</sup> 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-mm<sup>2</sup> 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.

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## 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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