



Maintenance and Service Guide

HP Chromebook 11A G6 Education Edition

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Product notice

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

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

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

Safety warning notice


 **CAUTION:** 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 60950-1).

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1 Product description

Table 1-1 Product components and their descriptions

Category	Description
Product Name	HP Chromebook 11A G6 Education Edition
Processor	AMD A4-9120C 2.20 GHz (turbo up to 2.50 GHz) quad core processor (2133 MHz, 1 MB L2 cache, 15 W)
Panel	11.6 inch, HD (1366 × 768), WLED, slim; 16:9 ultra wide aspect ratio BrightView, UWVA, touch-on panel (TOP) Anti glare, SVA, eDP Anti glare, UWVA, eDP
Memory	Integrated memory, non-upgradeable, non-replaceable Supports 4 GB of DDR4-2666 system memory
Storage	Supports 16 GB or 32 GB on-board embedded MultiMedia Controller (eMMC) storage
Audio and video	Fixed (no tilt) integrated HD 720p webcam 1280 × 720 by 30 frames per second Single microphone with appropriate software, echo cancellation, noise suppression Two speakers
Wireless	Integrated wireless local area network (WLAN) options by way of on-board wireless module Two built-in WLAN antennas Qualcomm Atheros QCA6174A-5ac 2 × 2 + Bluetooth 4.2
Ports	HDMI v1.4b supporting up to 1920 × 1080 @ 60 Hz via USB-C Hot plug/unplug and auto detect for correct output to wide-aspect vs. standard aspect video Headphone/microphone combo jack USB Type-A 2.0 ports (2) USB Type-C 3.1 ports (2); support charging, power delivery, video, data
Keyboard	Google Keyboard Non-backlit, island-style, spill-resistant TouchPad requirements Multitouch gestures enabled Taps enabled as default
Power requirements	Battery Supports a 2-cell, 47 Whr, Li-ion battery AC adapter

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

Category	Description
	45 W AC adapter (non-PFC, USB Type-C, 3-pin)
	Power cord
	3-wire (C5), 1.0 m, conventional
Operating system	Google Chrome (64-bit)
Serviceability	End user replaceable part: AC adapter

2 Getting to know your computer

Right side

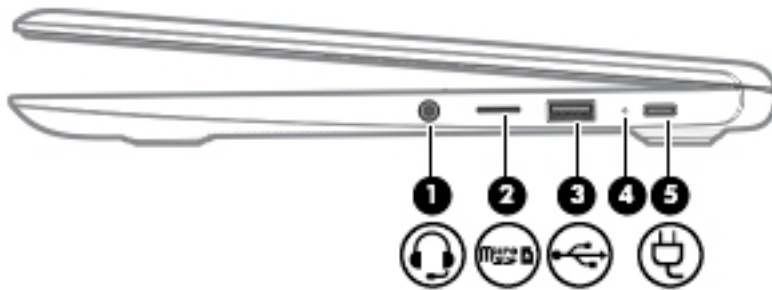


Table 2-1 Right-side components and their descriptions





Component	Description
(1)  Audio-out (headphone)/Audio-in (microphone) combo jack	<p>Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects an optional headset microphone. This jack does not support optional microphone-only devices.</p> <p>WARNING! To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, refer to the <i>Regulatory, Safety, and Environmental Notices</i>.</p> <p>This guide is provided in the box.</p> <p>NOTE: When a device is connected to the jack, the computer speakers are disabled.</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 port	<p>Connects a USB device, such as a cell phone, camera, activity tracker, or smartwatch, and provides 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.

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

Component	Description
(5)  USB Type-C power connector and port	<ul style="list-style-type: none">• Off: The computer is using battery power. <p>Connects an AC adapter that has a USB Type-C connector, supplying power to the computer and, if needed, charging the computer battery.</p> <p>– and –</p> <p>Connects a USB device that has a Type-C connector, such as a cell phone, camera, activity tracker, or smartwatch, and provides data transfer.</p> <p>– and –</p> <p>Connects a display device that has a USB Type-C connector, providing DisplayPort output.</p> <p>NOTE: Cables and/or adapters (purchased separately) may be required.</p>

Left side

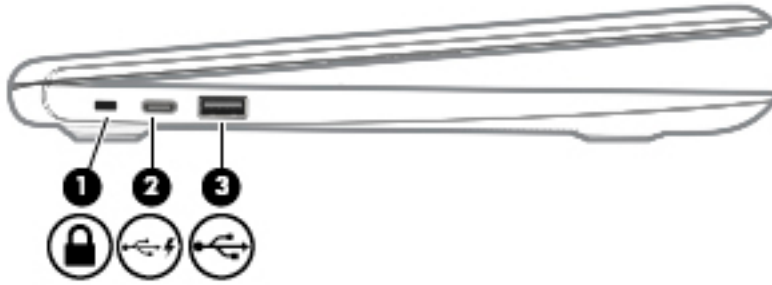




Table 2-2 Left-side components and their descriptions

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 port	Connects an AC adapter that has a USB Type-C connector, supplying power to the computer and, if needed, charging the computer battery. – and – Connects a USB device that has a Type-C connector, such as a cell phone, camera, activity tracker, or smartwatch, and provides data transfer. – and – Connects a display device that has a USB Type-C connector, providing DisplayPort output.
(3)  USB port	Connects a USB device, such as a cell phone, camera, activity tracker, or smartwatch, and provides data transfer.

Display

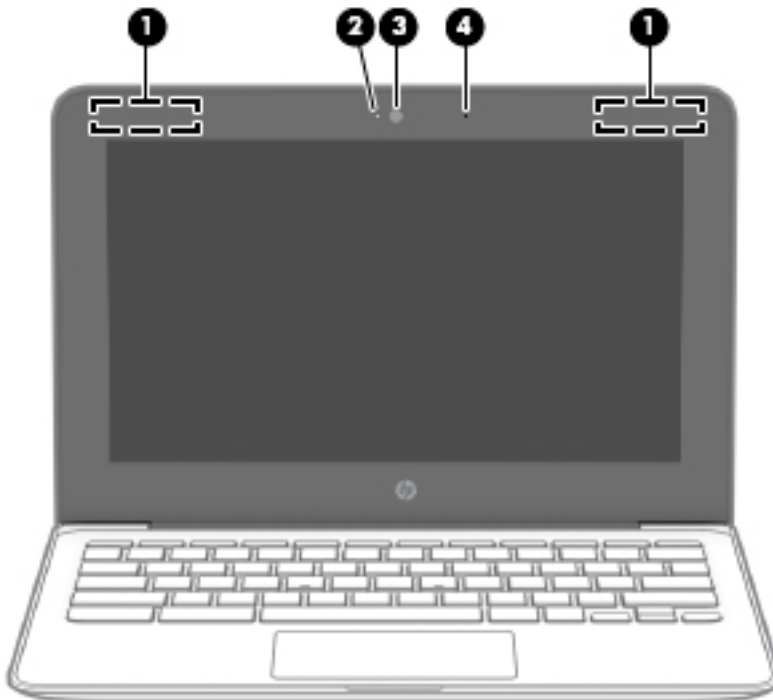


Table 2-3 Display components and their descriptions

Component	Description
(1) WLAN antennas*	Send and receive wireless signals to communicate with wireless local area networks (WLANs). NOTE: The position of the WLAN antennas may differ, depending on the product.
(2) Camera light	On: The camera is in use.
(3) Camera	Allows you to video chat, record video, and record still images. NOTE: Camera functions vary depending on the camera hardware and software installed on your product.
(4) Internal microphone	Records sound.

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

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

TouchPad

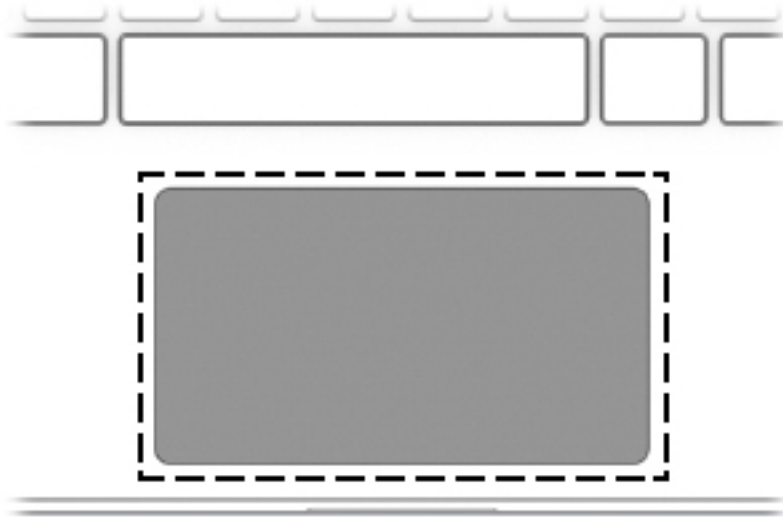


Table 2-4 TouchPad components and their descriptions

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

Button

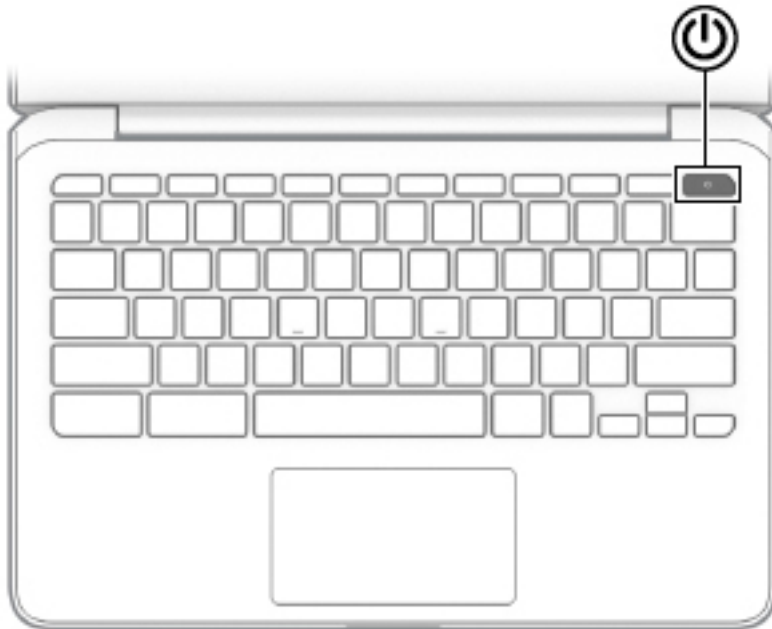



Table 2-5 Button and its description

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.

Bottom

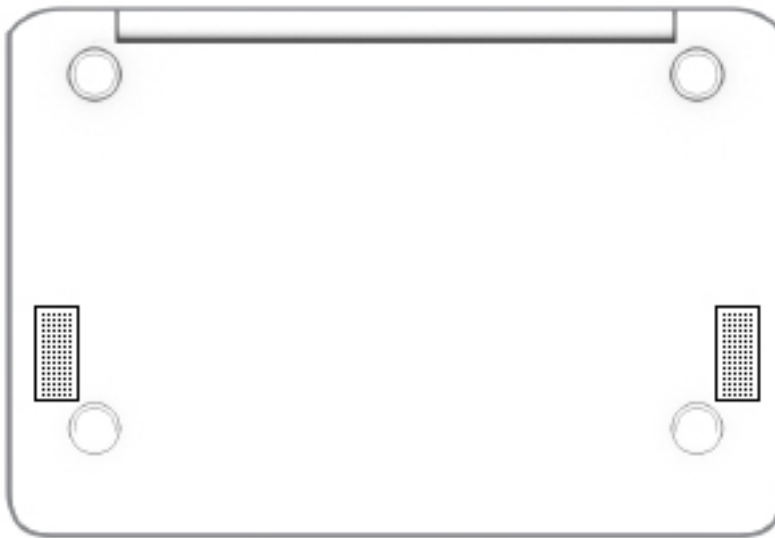


Table 2-6 Right-side component and its descriptions

Component	Description
Speakers (2)	Produce sound.

Special keys

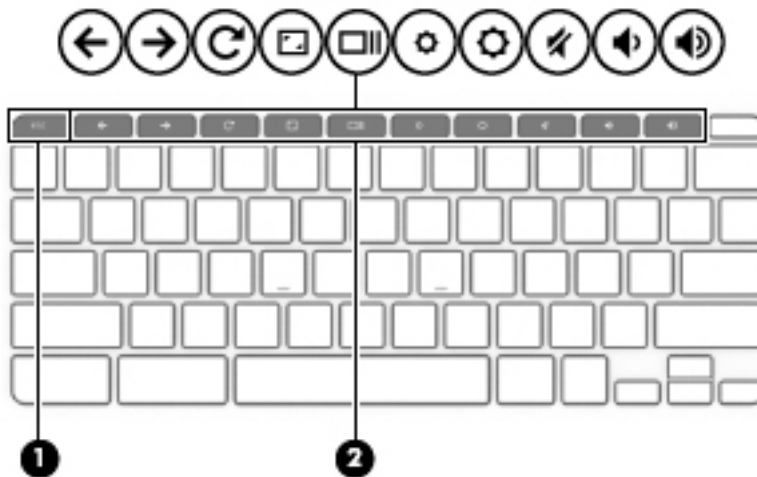












Table 2-7 Special keys and their descriptions

Component	Description
(1) <code>esc</code> key	Activates certain computer functions when pressed in combination with other keys, such as <code>Tab</code> or <code>Shift</code> .
(2) Action keys	Execute frequently used system functions.

Action keys


For more information on action keys and keyboard shortcuts, go to <https://support.google.com/chromebook/answer/183101>. Select your language at the bottom of the page.

Table 2-8 Action keys and their descriptions

Icon	Key	Description
	Back	Displays the previous page in your browser history.
	Forward	Displays the next page in your browser history.
	Reload	Reloads your current page.
	Full screen	Opens your page in full-screen mode.
	Display apps	Displays open apps. NOTE: Pressing this button in conjunction with <code>ctrl</code> takes a screenshot.
	Brightness down	Decreases the screen brightness incrementally as long as you hold down the key.
	Brightness up	Increases the screen brightness incrementally as long as you hold down the key.
	Mute	Mutes speaker sound.
	Volume down	Decreases speaker volume incrementally as long as you hold down the key.
	Volume up	Increases speaker volume incrementally as long as you hold down the key.

Labels

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

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

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

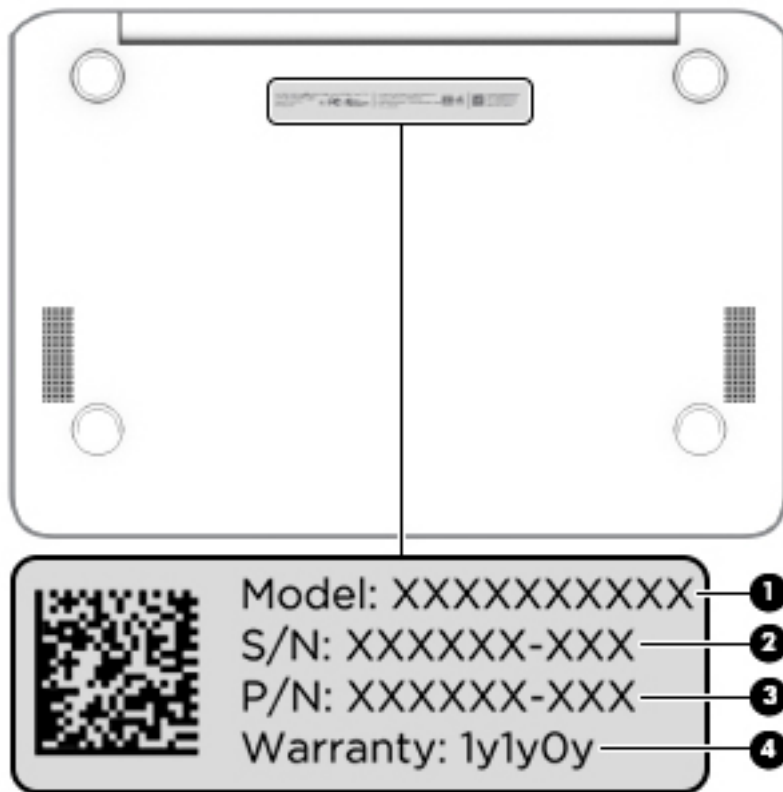


Table 2-9 Service label components

Component
(1) Model number
(2) Serial number
(3) Part number
(4) Warranty period

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

3 Illustrated parts catalog

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

Computer components

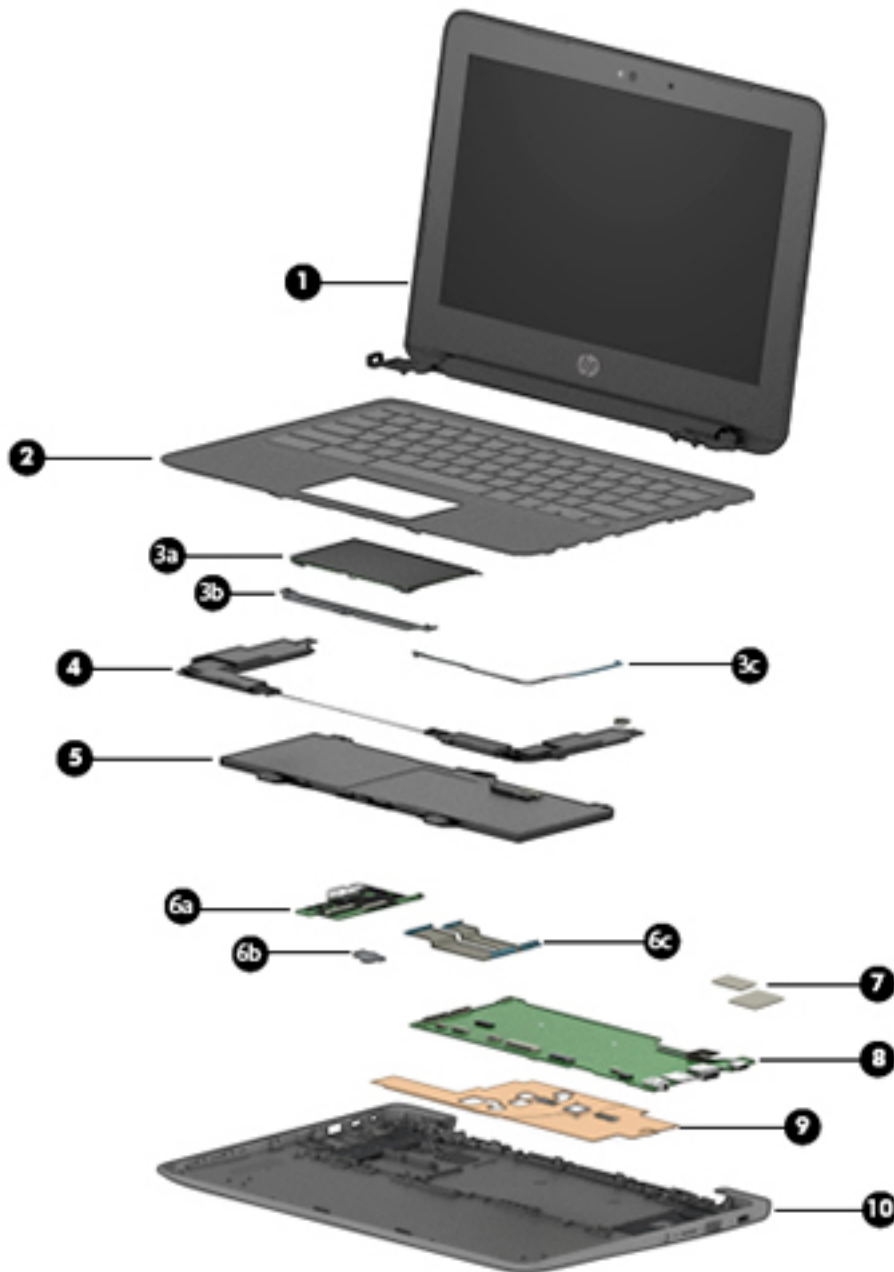


Table 3-1 Computer major components and their descriptions

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 14 .	
(2)	Keyboard/top cover (includes keyboard cable): NOTE: For a detailed list of keyboard country codes, see Keyboard/top cover on page 23 .	L52192-xx1
(3a)	TouchPad (does not include cable)	L51914-001
(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, Li-ion, includes cable)	917725-855
	Battery connector tape (not illustrated)	L14905-001
(6a)	USB port board (does not include cable)	L14923-001
(6b)	USB port board bracket	L14359-001
(6c)	USB port board cable (included in the Cable Kit, spare part number L14906-001, and includes double-sided adhesive)	
(7)	System board thermal pads	L48489-001
(8)	System board (includes processor, system memory, eMMC storage, the Google Chrome operating system, and replacement thermal material)	
	Equipped with an AMD A4-9120 processor, 4 GB of system memory, and 32 GB of eMMC storage	L51911-001
	Equipped with an AMD A4-9120 processor, 4 GB of system memory, and 16 GB of eMMC storage	L51910-001
(9)	Heat sink (includes replacement thermal material)	L46576-001
(10)	Bottom cover	
	In black finish	L51913-001
	In delicate orange finish	L51912-001
	WLAN module (Qualcomm Atheros QCA6174A-5ac 2 × 2 + Bluetooth 4.2; not illustrated)	L54597-001
	Rubber Foot Kit (includes bottom cover feet; not illustrated)	L20220-001

Display assembly subcomponents

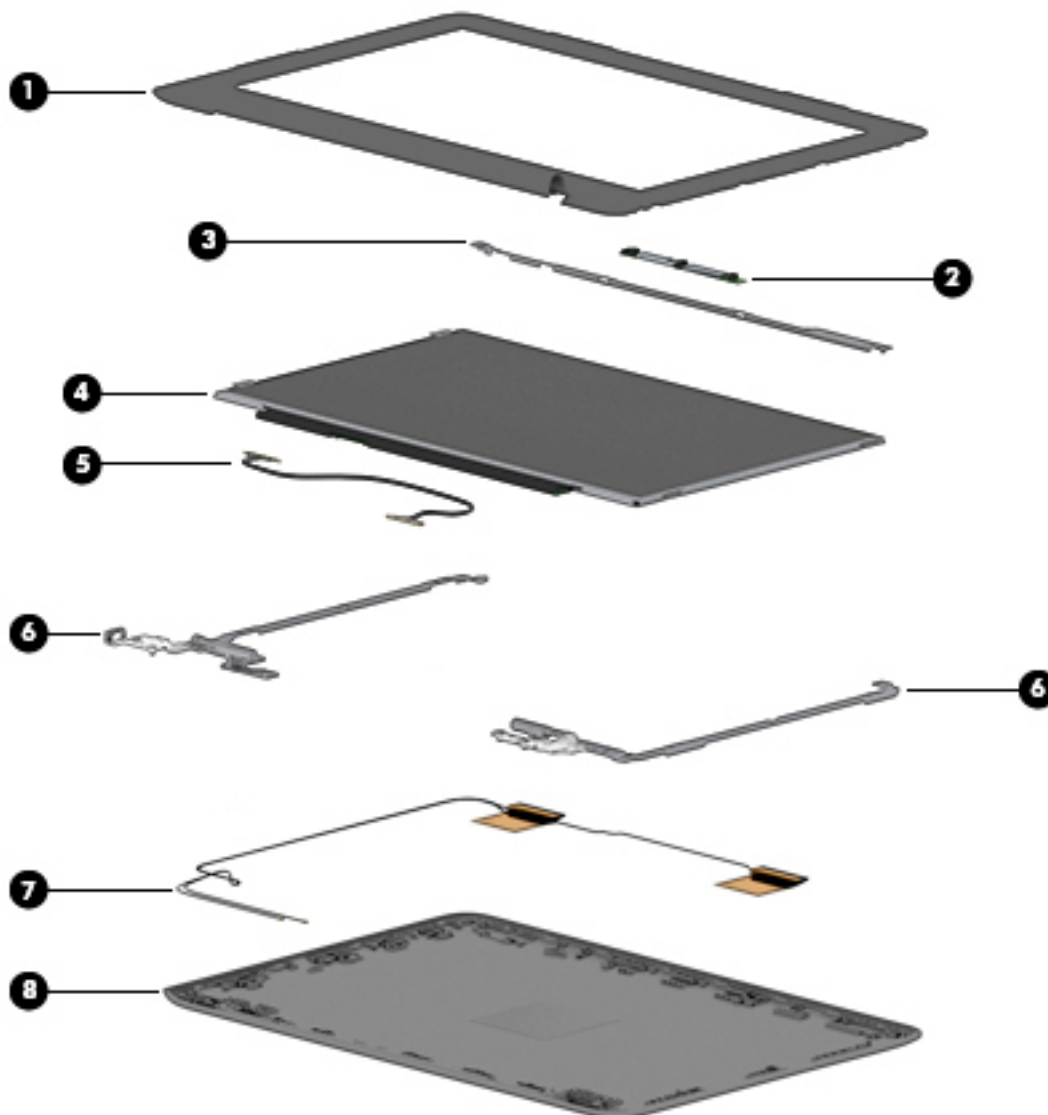


Table 3-2 Display components and their descriptions

Item	Component	Spare part number
(1)	Display bezel	L14912-001
(2)	Webcam/microphone module (includes double-sided adhesive)	L51916-001
(3)	Display panel bracket	L14913-001
(4)	Display panel (does not include display panel cable)	
	Anti glare, SVA, non-touch	L51917-001
	Anti glare, UWVA, non-touch	L51918-001
	BrightView, UWVA, touch	L51919-001
(5)	Display panel cable	

Table 3-2 Display components and their descriptions (continued)

Item	Component	Spare part number
	For use only on computer models equipped with a touch display assembly	L14915-001
	For use only on computer models equipped with a non-touch display assembly	L14914-001
(6)	Display hinges (2)	L14907-001
(7)	Wireless antennas	L52273-001
(8)	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

Table 3-3 Miscellaneous parts and their descriptions

Component	Spare part number
AC adapters	
90 W AC adapter (PFC, 4.5 mm)	710413-001
45 W AC adapter (non-PFC, USB Type-C, 3-pin)	934739-850
45 W AC adapter (non-PFC, USB-C, 1.8 m, 3 pin)	L43407-001
Screw Kit	L14919-001
Cable Kit (includes TouchPad cable and USB port board cable)	L14906-001
HP Comfort Grip Wireless Mouse	691922-001
HP USB Travel Mouse	757770-001
HP stereo 3.5 mm headset	840339-001
Essential backpack	679923-001
HP USB-C Dock G4	L16133-001
Kensington Nano Lock	918431-001
Adapters	
USB-C-to-USB 3.0 adapter	814618-001
USB-C-to-DisplayPort adapter	831753-001
USB-C-to-RJ-45 adapter	855560-001
USB-C-to-HDMI 2.0 adapter	935325-001
Power cord (C5 connector, 1.8-m)	
For use in North America	L19367-002
Power cord (C5 connector, 1.0-m)	
For use in Argentina	L19357-001
For use in Australia	L19358-001

Table 3-3 Miscellaneous parts and their descriptions (continued)

Component	Spare part number
	213356-008
For use in Brazil	L19359-001 438722-004
For use in Denmark	L19360-001
For use in Europe	L19361-001 213350-009
For use in India	L19363-001 404827-003
For use in Israel	L19362-001 398063-003
For use in Italy	L19364-001 213352-008
For use in North America	L19367-001 213349-009
For use in the People's Republic of China	L19368-001 286497-008
For use in South Africa	L19369-001 361240-002
For use in South Korea	L19366-001 267836-008
For use in Switzerland	L19370-001 213354-008
For use in Taiwan	L19372-001 393313-003
For use in Thailand	L19371-001
For use in the United Kingdom	L19373-001 213351-008

4 Removal and replacement procedures preliminary requirements


Tools required

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

- Non-marking, non-conductive pry tool
- Magnetic Phillips P1 screwdriver

Service considerations


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

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

Plastic parts

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

Cables and connectors

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

Cables must be handled with extreme care to avoid damage. Apply only the tension required to unseat or seat the cables during removal and insertion. Handle cables by the connector whenever possible. In all cases, avoid bending, twisting, or tearing cables. Be sure that cables are routed in such a way that they cannot be caught or snagged by parts being removed or replaced. Handle flex cables with extreme care; these cables tear easily.

Drive handling



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

Before removing or inserting a hard drive, shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.

Before handling a drive, be sure that you are discharged of static electricity. While handling a drive, avoid touching the connector.

Before removing an optical drive, be sure that a disc is not in the drive and be sure that the optical drive tray is closed.

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

Avoid dropping drives from any height onto any surface.

After removing a hard drive or an optical drive, place it in a static-proof bag.

Avoid exposing an internal hard drive to products that have magnetic fields, such as monitors or speakers.

Avoid exposing a drive to temperature extremes or liquids.

If a drive must be mailed, place the drive in a bubble pack mailer or other suitable form of protective packaging and label the package “FRAGILE.”

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.

Electrostatic discharge information

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

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



IMPORTANT: To prevent damage to the device when you 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.

Generating static electricity

Note the following:

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

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

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

Electronic components are then multi-packaged inside plastic tubes, trays, or Styrofoam.



NOTE: As little as 700 volts can degrade a product.

Preventing electrostatic damage to equipment

Many electronic components are sensitive to ESD. Circuitry design and structure determine the degree of sensitivity. The following packaging and grounding precautions are necessary to prevent static electricity damage to electronic components.

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

- Avoid contact with pins, leads, or circuitry.
- Place reusable electrostatic-sensitive parts from assemblies in protective packaging or conductive foam.

Personal grounding methods and equipment

Use the following equipment to prevent static electricity damage to electronic components:

- **Wrist straps** are flexible straps with a maximum of one-megohm \pm 10% resistance in the ground cords. To provide proper ground, a strap must be worn snug against bare skin. The ground cord must be connected and fit snugly into the banana plug connector on the grounding mat or workstation.
- **Heel straps/Toe straps/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 them on both feet with a maximum of one-megohm \pm 10% resistance between the operator and ground.

Table 4-2 Static shielding protection levels

Static shielding protection levels	
Method	Voltage
Antistatic plastic	1,500
Carbon-loaded plastic	7,500
Metallized laminate	15,000

Grounding the work area

To prevent static damage at the work area, use the following precautions:

- Cover the work surface with approved static-dissipative material. Provide a wrist strap connected to the work surface and properly grounded tools and equipment.
- Use static-dissipative mats, foot straps, or air ionizers to give added protection.
- Handle electrostatic sensitive components, parts, and assemblies by the case or PCB laminate. Handle them only at static-free work areas.
- Turn off power and input signals before inserting and removing connectors or test equipment.
- Use fixtures made of static-safe materials when fixtures must directly contact dissipative surfaces.
- Keep work area free of nonconductive materials such as ordinary plastic assembly aids and Styrofoam.
- Use field service tools, such as cutters, screwdrivers, and vacuums, that are conductive.

Recommended materials and equipment

Materials and equipment that are recommended for use in preventing static electricity include:

- Antistatic tape
- Antistatic smocks, aprons, or sleeve protectors
- Conductive bins and other assembly or soldering aids
- Conductive foam
- Conductive tabletop workstations with ground cord of one-megohm \pm 10% resistance
- Static-dissipative table or floor mats with hard tie to ground


- Field service kits
- Static awareness labels
- Wrist straps and footwear straps providing one-megohm +/- 10% resistance
- Material handling packages
- Conductive plastic bags
- Conductive plastic tubes
- Conductive tote boxes
- Opaque shielding bags
- Transparent metallized shielding bags
- Transparent shielding tubes

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.

5 Removal and replacement procedures for authorized service provider parts

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

IMPORTANT: This computer does not have user-replaceable parts. Only HP authorized service providers should perform the removal and replacement procedures described here. Accessing an 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 11](#) 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 45 screws that must be removed, replaced, and/or loosened when servicing the parts described in this chapter. Make special note of each screw size and location during removal and replacement.

Preparation for disassembly

See [Removal and replacement procedures preliminary requirements on page 17](#) for initial safety procedures.

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 unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.

Keyboard/top cover



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

Table 5-1 Keyboard/top cover description and part number

For use in country/region	Spare part number	For use in country/region	Spare part number
For use in Belgium	L52192-A41	For use in Romania	L52192-271
For use in Brazil	L52192-201	For use in Russia	L52192-251
For use in Canada	L52192-DB1	For use in Saudi Arabia	L52192-171
For use in the Czech Republic and Slovakia	L52192-FL1	For use in South Korea	L52192-AD1
For use in Denmark, Finland, and Norway	L52192-DH1	For use in Spain	L52192-071
For use in France	L52192-051	For use in Switzerland	L52192-BG1
For use in Germany	L52192-041	For use in Taiwan	L52192-AB1
For use in Israel	L52192-BB1	For use in Thailand	L52192-281
For use in Italy	L52192-061	For use in Turkey	L52192-141
For use in Latin America	L52192-161	For use in the United Kingdom	L52192-031
For use in the Netherlands	L52192-B31	For use in the United States	L52192-001
For use in Portugal	L52192-131		

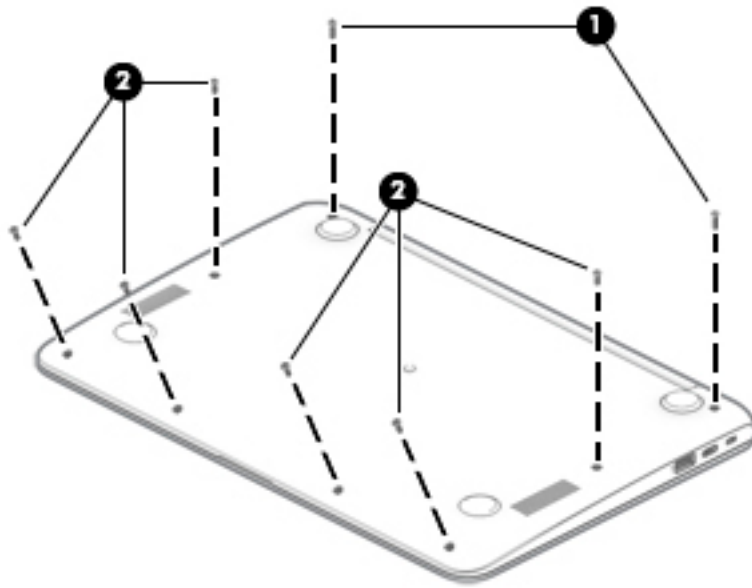
Before disassembling the computer, follow these steps:

- ▲ Prepare the computer for disassembly ([Preparation for disassembly on page 22](#)).

Remove the bottom cover:

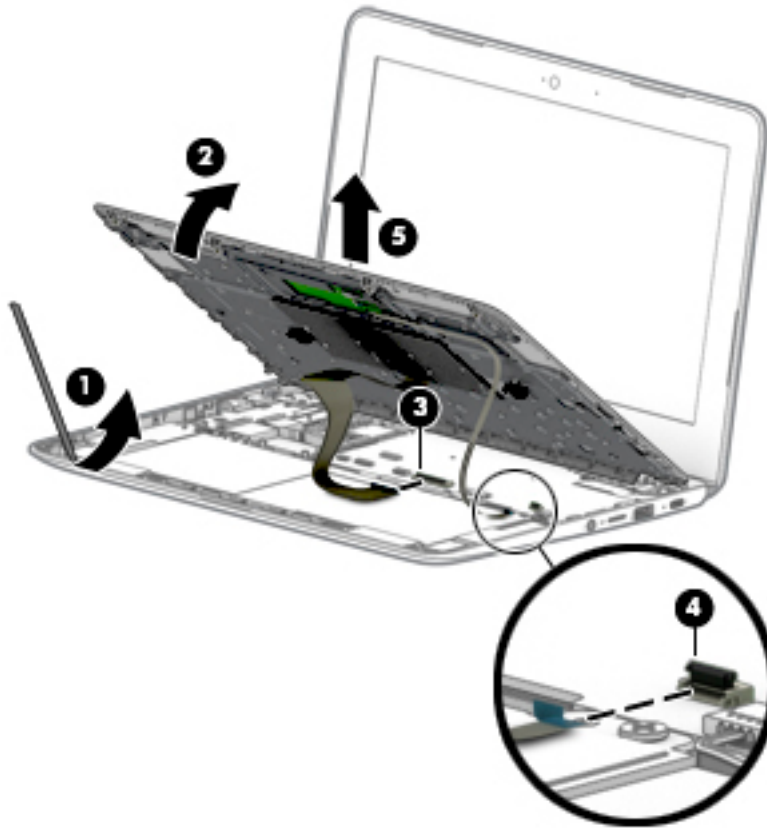
1. Position the computer upside down.
2. Remove the two Phillips M2.5 × 8.7 screws **(1)** that secure the bottom cover to the computer.

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




4. Open the computer.
5. Use a non-marking, non-conductive pry tool **(1)** 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

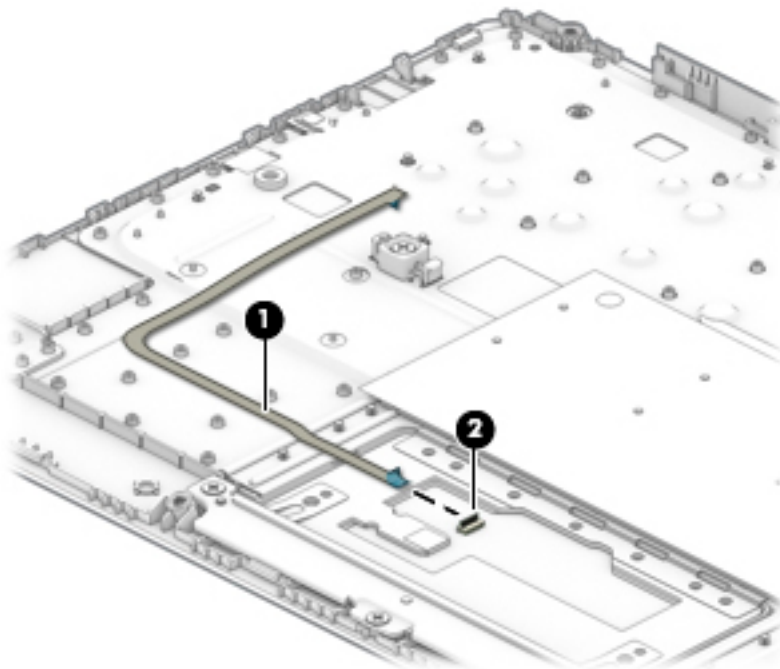
 **NOTE:** The TouchPad spare part kit does not include the TouchPad cable. The TouchPad cable is included in the Cable Kit, spare part number L14906-001, and includes double-sided adhesive.

Before removing the TouchPad cable, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 22](#)).
2. Remove the keyboard/top cover (see [Keyboard/top cover on page 23](#)).

Remove the TouchPad cable:

1. Detach the TouchPad cable **(1)** from the keyboard/top cover.
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.

Table 5-2 TouchPad description and part number

Description	Spare part number
TouchPad	L51914-001

Before removing the TouchPad, follow these steps:

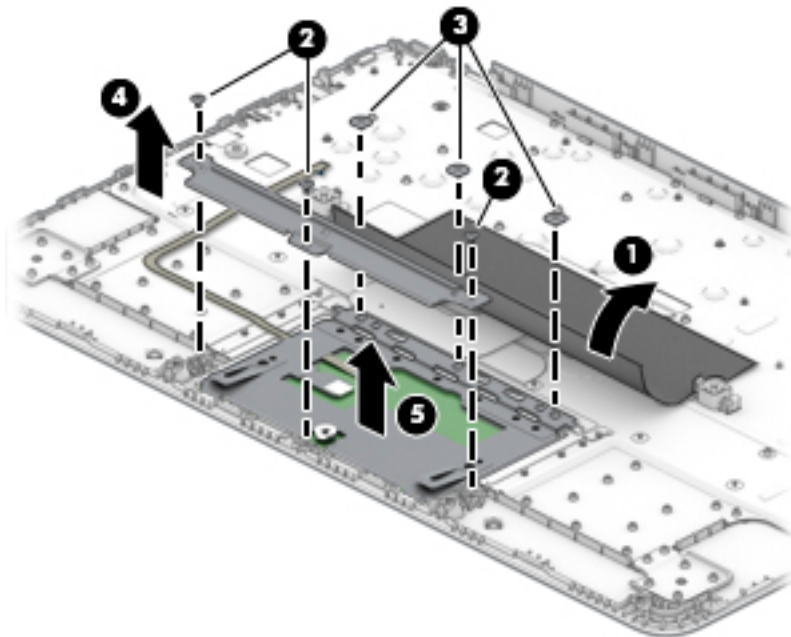
1. Prepare the computer for disassembly ([Preparation for disassembly on page 22](#)).
2. Remove the keyboard/top cover (see [Keyboard/top cover on page 23](#)).

Remove the TouchPad:

1. Disconnect the cable from the TouchPad ZIF connector ([TouchPad cable on page 26](#)).
2. Release the shielding material **(1)** that covers the top edge of the TouchPad.
3. Remove the three Phillips M2.0 × 2.5 screws **(2)** that secure the TouchPad and TouchPad bracket to the keyboard/top cover.
4. Remove the three Phillips M2.0 × 2.0 broadhead screws **(3)** that secure the TouchPad to the keyboard/top cover.
5. Remove the TouchPad bracket **(4)**.

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

6. Remove the TouchPad **(5)**.



Reverse this procedure to install the TouchPad.

Battery

Table 5-3 Battery description and part number

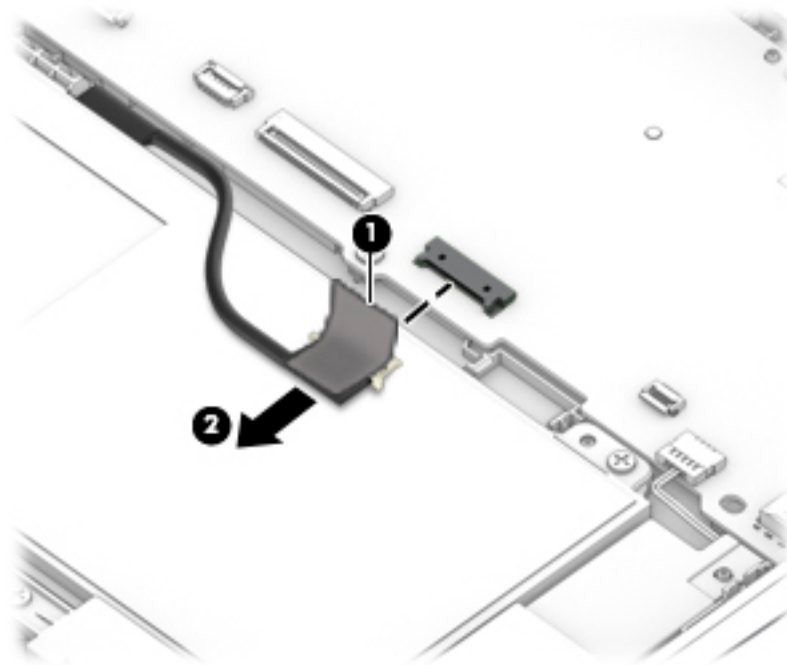
Description	Spare part number
2 cell, 47 Whr, Li-ion battery (includes cable)	917725-855

Before removing the battery, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 22](#)).
2. Remove the keyboard/top cover (see [Keyboard/top cover on page 23](#)).

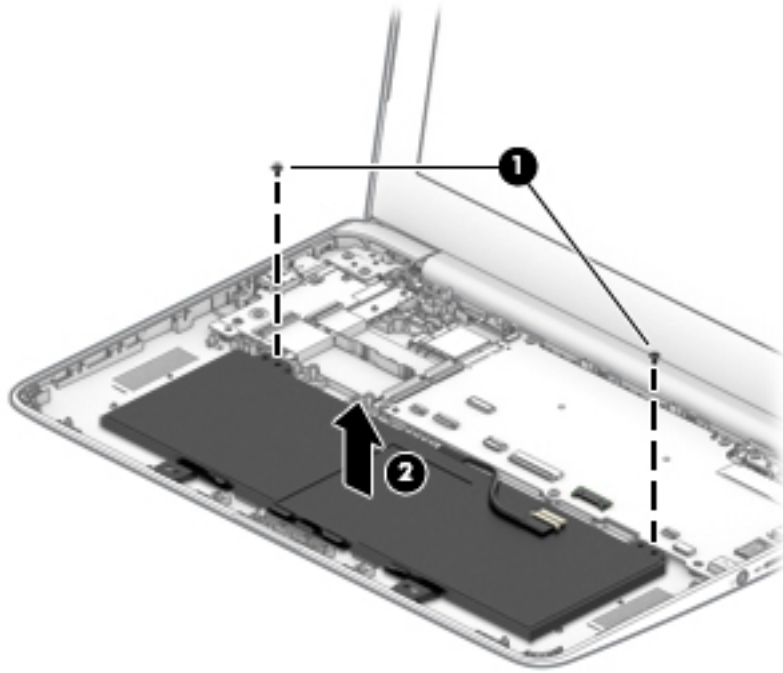
Remove the battery:

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 × 3.5 screws **(1)** that secure the battery to the bottom cover.

4. Remove the battery (2).



Reverse this procedure to install the battery.

WLAN module

Table 5-4 WLAN module description and part number

Description	Spare part number
Qualcomm Atheros QCA6174A-5ac 2 × 2 + Bluetooth 4.2	L54597-001

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

Before removing the WLAN module, follow these steps:

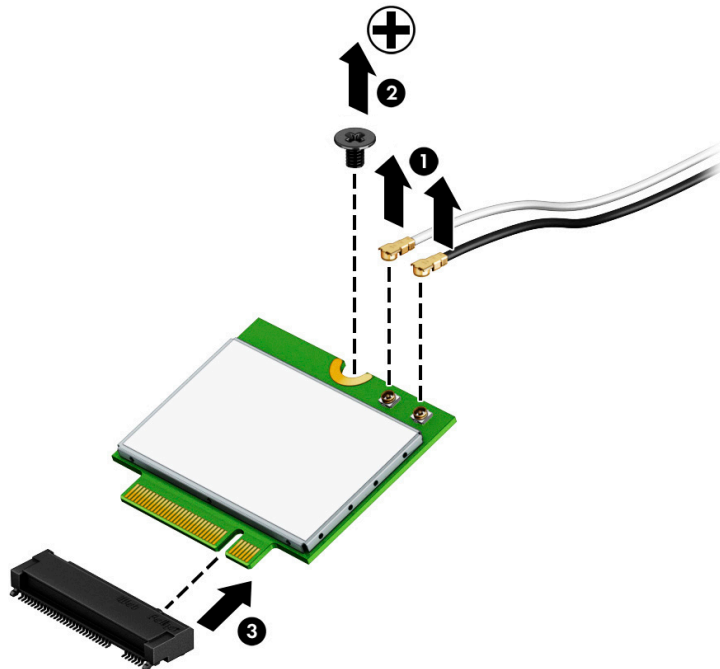
1. Prepare the computer for disassembly ([Preparation for disassembly on page 22](#)).
2. Remove the keyboard/top cover (see [Keyboard/top cover on page 23](#)).
3. Disconnect the battery (see [Battery on page 28](#)).


Remove the WLAN module:

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

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

2. Remove the Phillips M2.0 × 2.5 screw **(2)** that secures the WLAN module to the computer. (The WLAN module tilts up.)
3. Remove the WLAN module **(3)** by pulling the module away from the slot at an angle.



 **NOTE:** If the wireless antenna cables are not connected to the WLAN module terminal, the protective sleeves should be installed on the antenna connectors, as shown in the following illustration.



Reverse this procedure to install the WLAN module.

Speakers

Table 5-5 Speaker description and part number

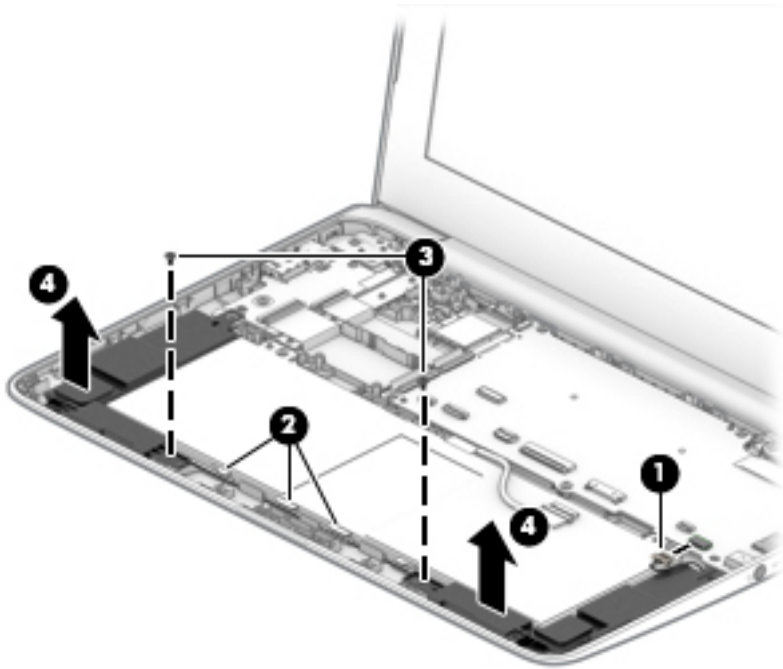
Description	Spare part number
Speaker (include cables)	L14920-001

Before removing the speakers, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 22](#)).
2. Remove the keyboard/top cover (see [Keyboard/top cover on page 23](#)).
3. Disconnect the battery cable from the system board (see [Battery on page 28](#)).


Remove the speakers:

1. If a protective tab covers the connector, lift the tab.
2. Disconnect the speaker cable **(1)** from the system board.
3. Release the speaker cable **(2)** from the retention channel/retention clips built into the bottom cover.
4. Remove the two Phillips M2.0 × 3.5 screws **(3)** that secure the speakers to the bottom cover.
5. Remove the speakers **(4)**.



Reverse this procedure to install the speakers.

USB port board cable

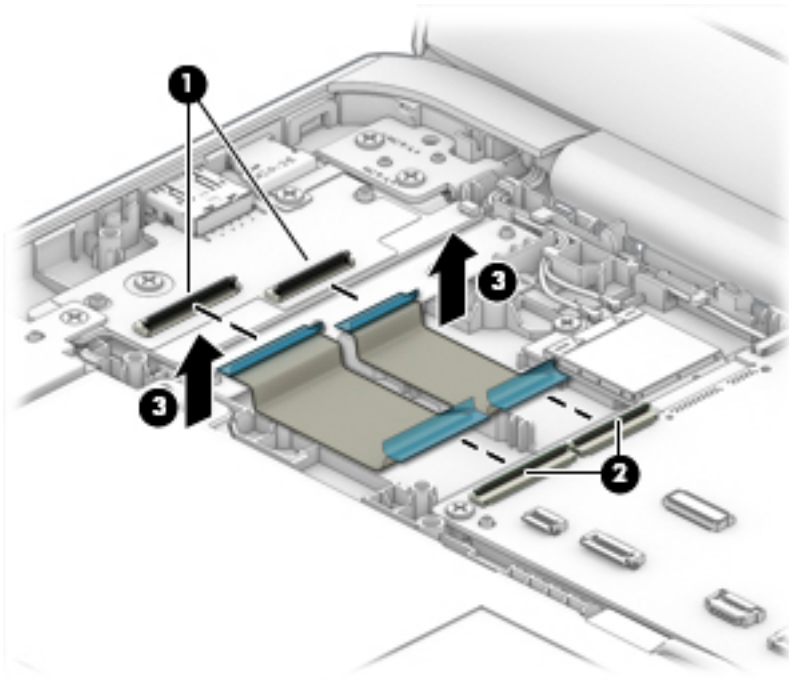
 **NOTE:** The USB port board spare part kit does not include the USB port board cable. The USB port board cable is included in the Cable Kit, spare part number L14906-001, and includes double-sided adhesive.

Before removing the USB port board cable, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 22](#)).
2. Remove the keyboard/top cover (see [Keyboard/top cover on page 23](#)).
3. Disconnect the battery cable from the system board (see [Battery on page 28](#)).

Remove the USB port board cables:

1. If a protective tab covers the connectors, lift the tab.
2. Release the two reverse 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.
3. Release the two reverse ZIF connectors **(2)** to which the USB port board cables are connected, and then disconnect the USB port board cables from the system board.
4. Remove the USB port board cables **(3)**.



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.

Table 5-6 USB port board description and part number

Description	Spare part number
USB port board	L14923-001

Before removing the USB port board, follow these steps:

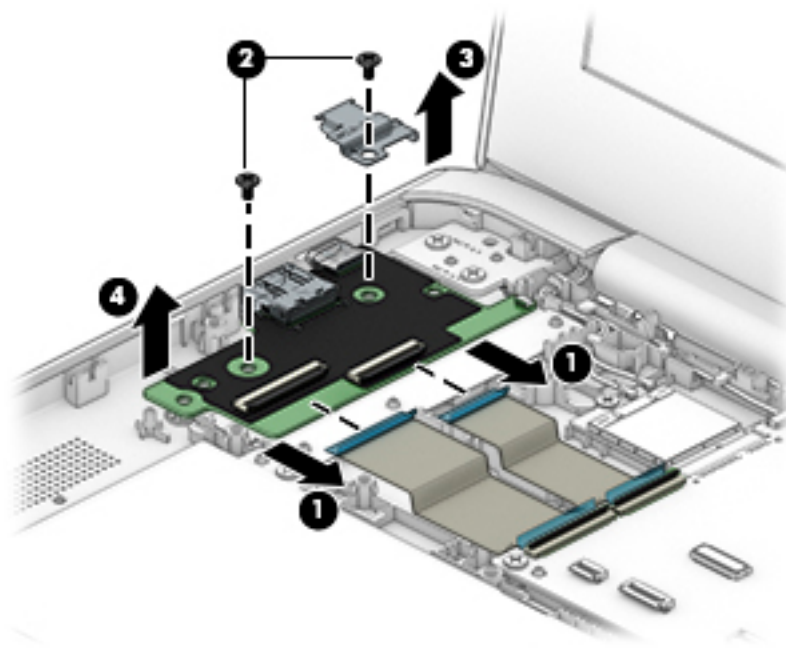
1. Prepare the computer for disassembly ([Preparation for disassembly on page 22](#)).
2. Remove the keyboard/top cover (see [Keyboard/top cover on page 23](#)).
3. Disconnect the battery cable from the system board (see [Battery on page 28](#)).
4. Remove the left speaker (see [Speakers on page 32](#)).

Remove the USB port board:

1. If a protective tab covers the connectors, lift the tab.
2. Release the two reverse 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.
3. Remove the two Phillips M2.0 × 3.5 screws (**2**) that secure the USB port board and bracket to the computer.
4. Remove the USB port board bracket (**3**).

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

5. Remove the USB port board (**4**).



Reverse this procedure to install the USB port 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.

Table 5-7 System board description and part number

Description	Spare part number
System board equipped with an AMD A4-9120 processor, 4 GB of system memory, and 32 GB of eMMC storage	L51911-001
System board equipped with an AMD A4-9120 processor, 4 GB of system memory, and 16 GB of eMMC storage	L51910-001

Before removing the system board, follow these steps:

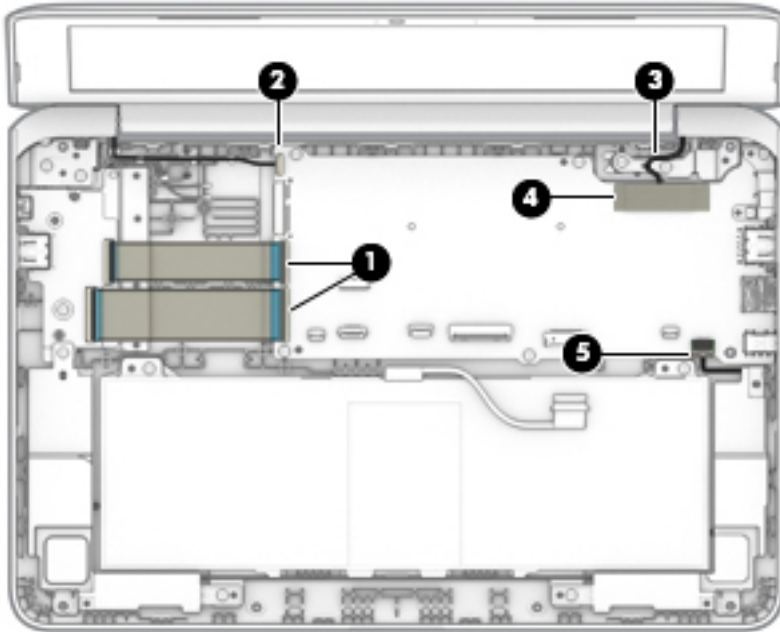
1. Prepare the computer for disassembly ([Preparation for disassembly on page 22](#)).
2. Remove the bottom cover (see [Keyboard/top cover on page 23](#)).
3. Remove the keyboard/top cover (see [Keyboard/top cover on page 23](#)).
4. Disconnect the battery cable from the system board (see [Battery on page 28](#)).
5. Remove the WLAN module (see [WLAN module on page 30](#)).

When replacing the system board, be sure to remove the heat sink (see [Heat sink on page 38](#)) from the defective system board and install it on the replacement system board.

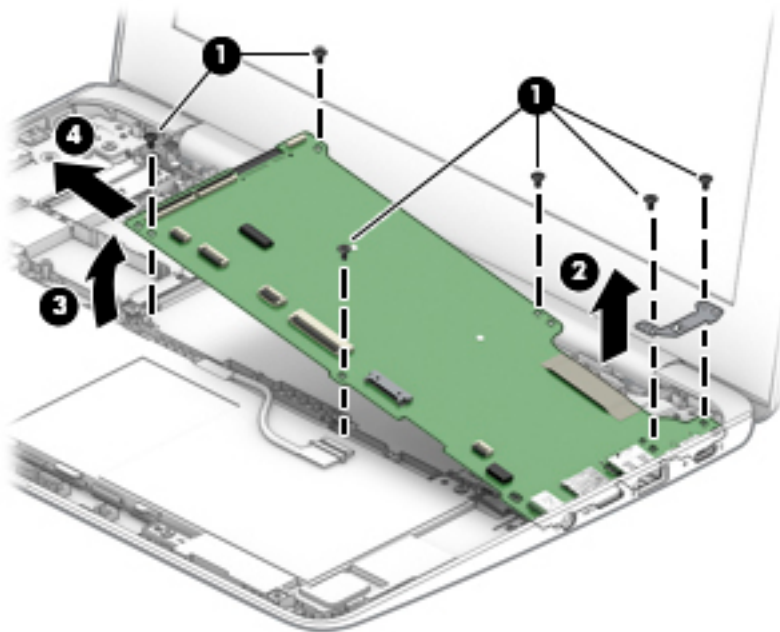
Remove the system board:

1. If a protective tab covers the connectors, lift the tab.
2. Release the two reverse ZIF connectors **(1)** to which the USB port board cables are connected, and then disconnect the USB port board cables from the system board.
3. Disconnect the display webcam/microphone cable **(2)** from the system board.
4. Release the adhesive strip **(3)** that secures the display panel cable to the system board.
5. Disconnect the display panel cable **(4)** from the system board.

6. Disconnect the speaker cable (5) from the system board.



7. Remove the six Phillips M2.0 × 3.5 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.

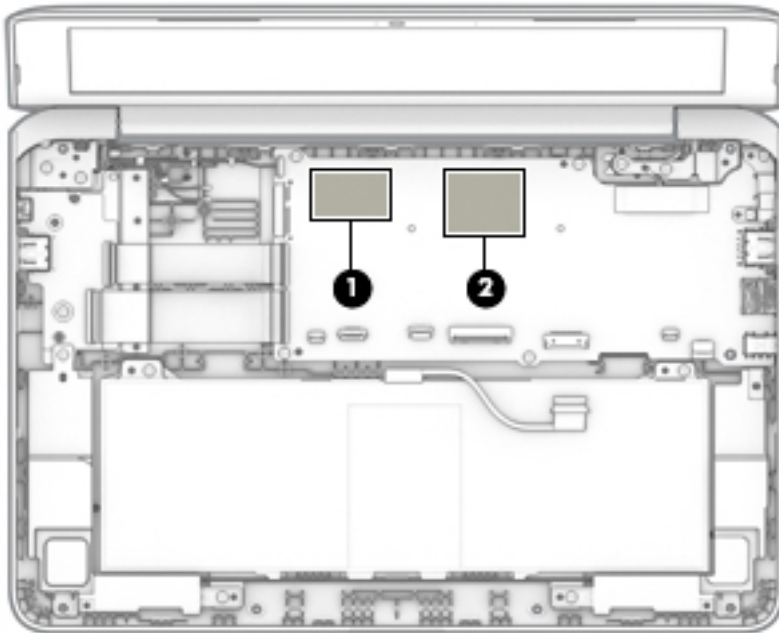
Reverse this procedure to install the system board.

When installing a system board, install thermal pads in the following locations on the system board:

(1) 29 mm × 22 mm

(2) 30 mm × 30 mm

Thermal pads are available using spare part number L48489-001.



Heat sink

Table 5-8 Heat sink description and part number

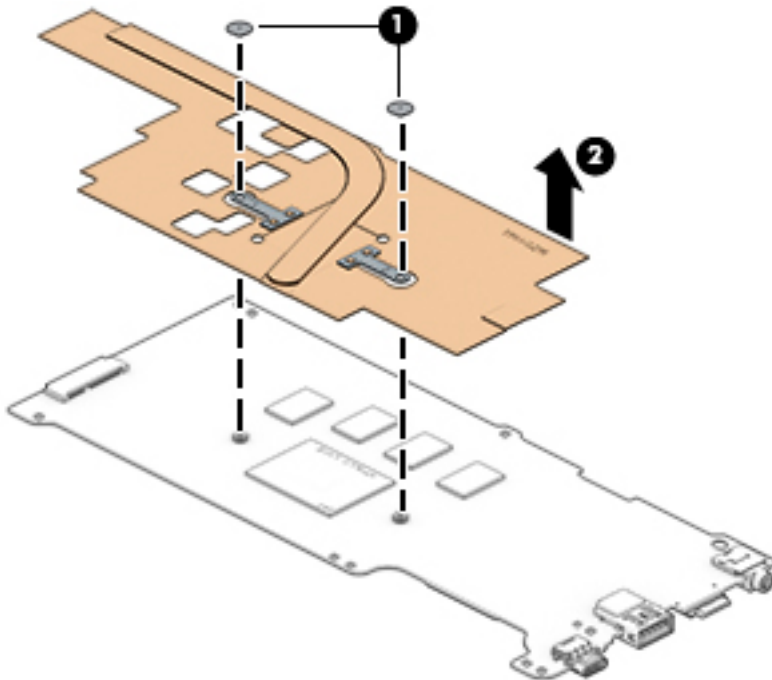
Description	Spare part number
Heat sink (includes replacement thermal material)	L46576-001

Before removing the heat sink, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 22](#)).
2. Remove the keyboard/top cover (see [Keyboard/top cover on page 23](#)).
3. Disconnect the battery cable from the system board (see [Battery on page 28](#)).
4. Remove the system board (see [System board on page 35](#)).

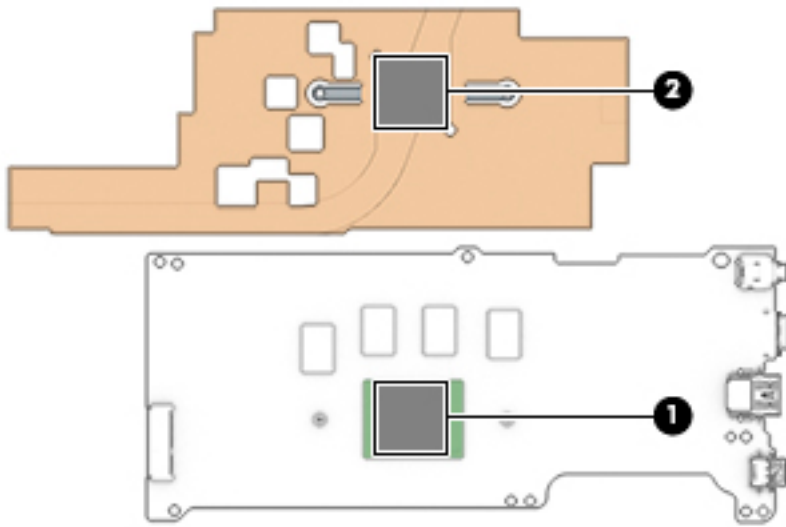
Remove the heat sink:

1. Turn the system board upside down with the front toward you.
2. Remove the two Phillips M2.0 × 2.0 broadhead 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. Prepare the computer for disassembly ([Preparation for disassembly on page 22](#)).
2. Remove the keyboard/top cover (see [Keyboard/top cover on page 23](#)).
3. Disconnect the battery cable from the system board (see [Battery on page 28](#)).

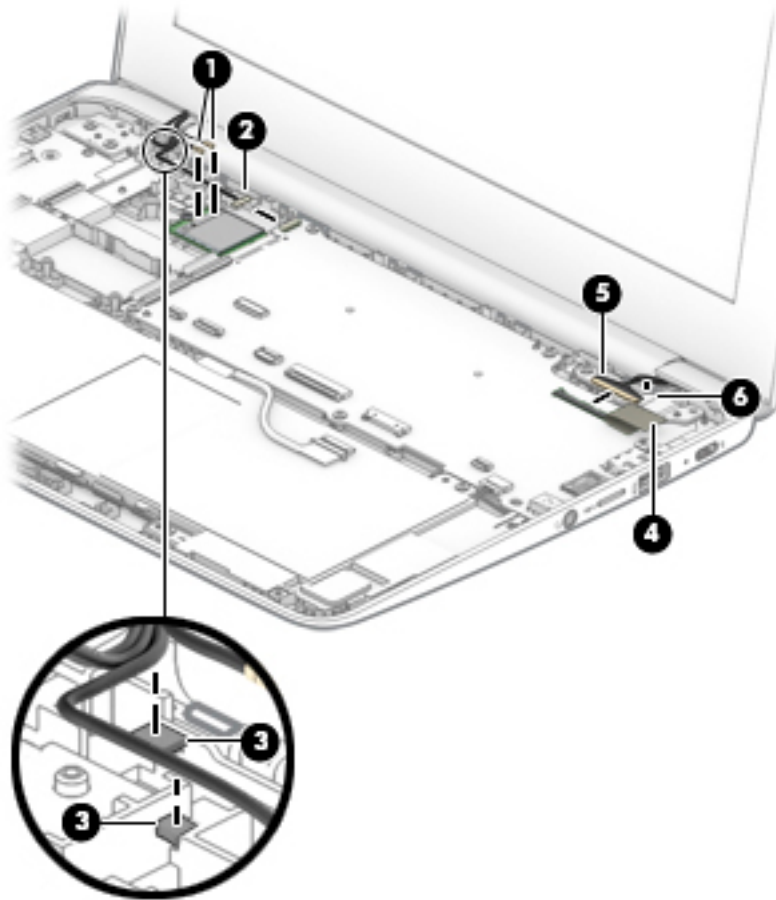
Remove the display assembly:

1. If a protective tab covers the connectors, lift the tab.
2. 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.

3. Disconnect the display webcam/microphone cable **(2)** from the system board.
4. Release the display webcam/microphone cable from the retention clips **(3)** and routing channels built into the bottom cover.
5. Release the adhesive strip **(4)** that secures the display panel cable to the system board.
6. Disconnect the display panel cable **(5)** from the system board.

7. Release the display panel cable from the retention clips **(6)** and routing channels built into the bottom cover.



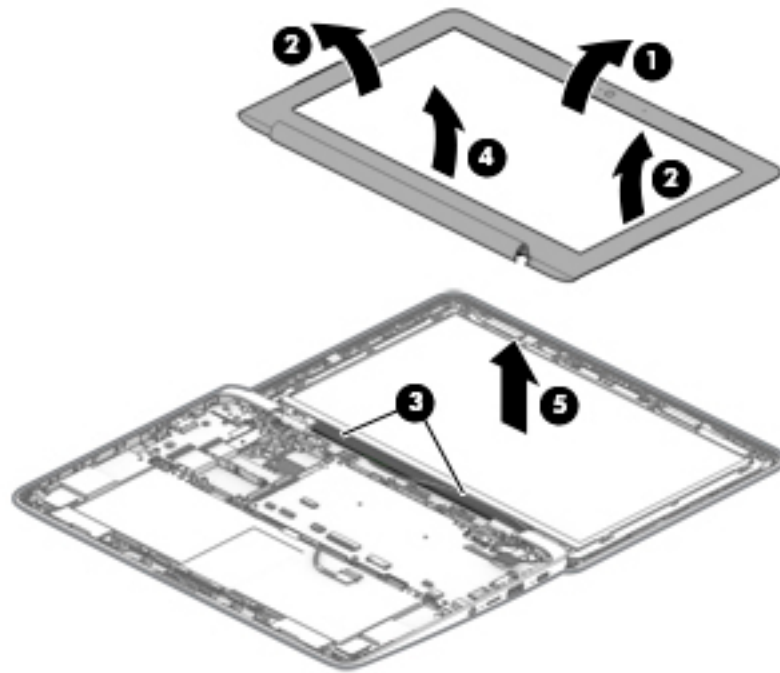
8. Open the computer as far as it will open.
9. If it is necessary to replace the display bezel or any of the display assembly subcomponents:
 - a. Release the top edge of the display bezel **(1)** from the display assembly.
 - b. Release the left and right edges of the display bezel **(2)** from the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

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

- d. Remove the display bezel (5).

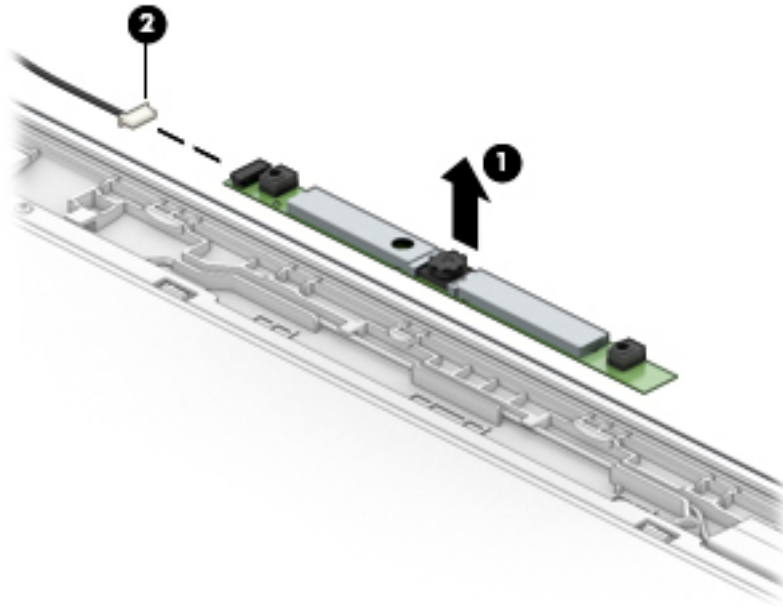
The display bezel is available using spare part number L14912-001.



10. If it is necessary to replace the webcam/microphone module:

- a. 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.)

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



- c. Remove the webcam/microphone module.

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

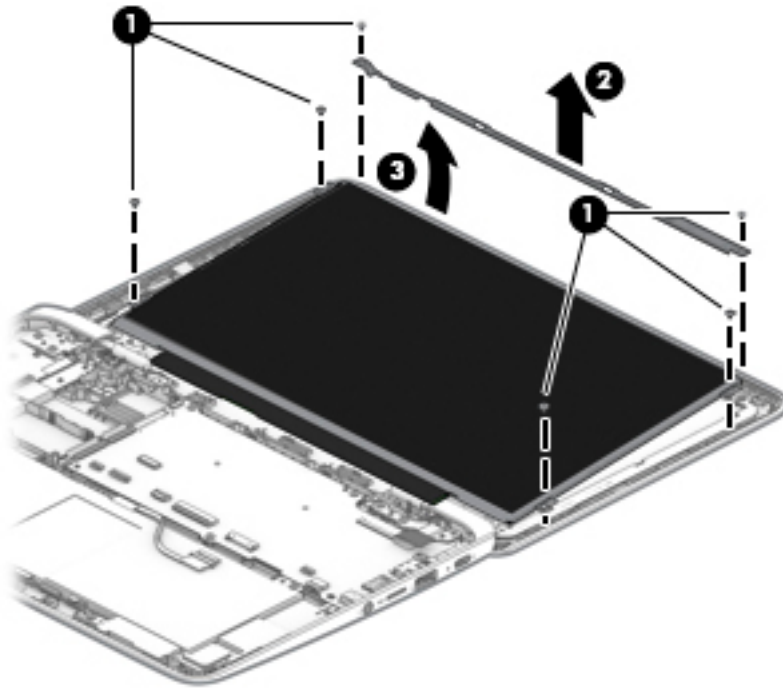
11. If it is necessary to replace the display panel:

- a. Remove the six Phillips M2.0 × 2.5 screws **(1)** that secure the display panel and display panel bracket to the display back cover.
- b. Remove the display panel bracket **(2)**.



NOTE: The display panel bracket is available using spare part number L14913-001.

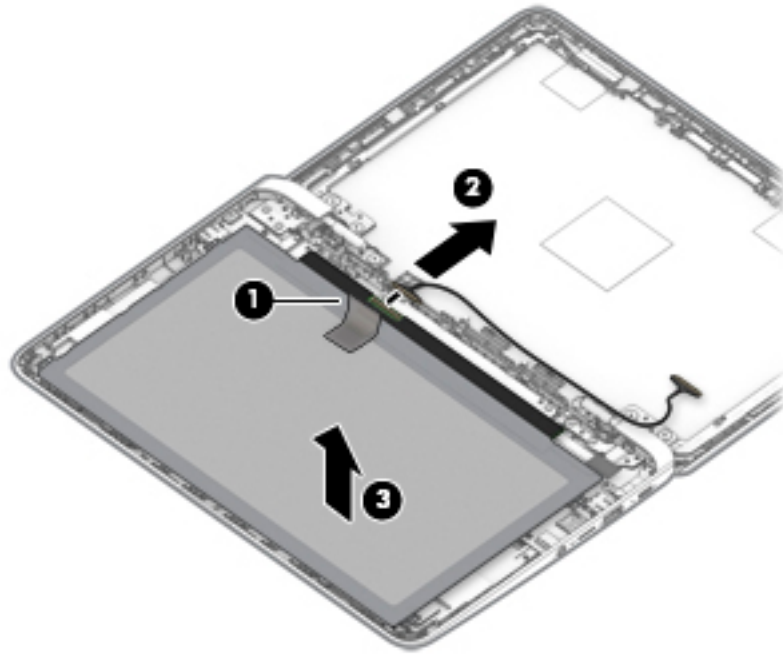
- c. Lift the top edge of the display panel **(3)** and swing it up and forward until it rests upside down on the computer.



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


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

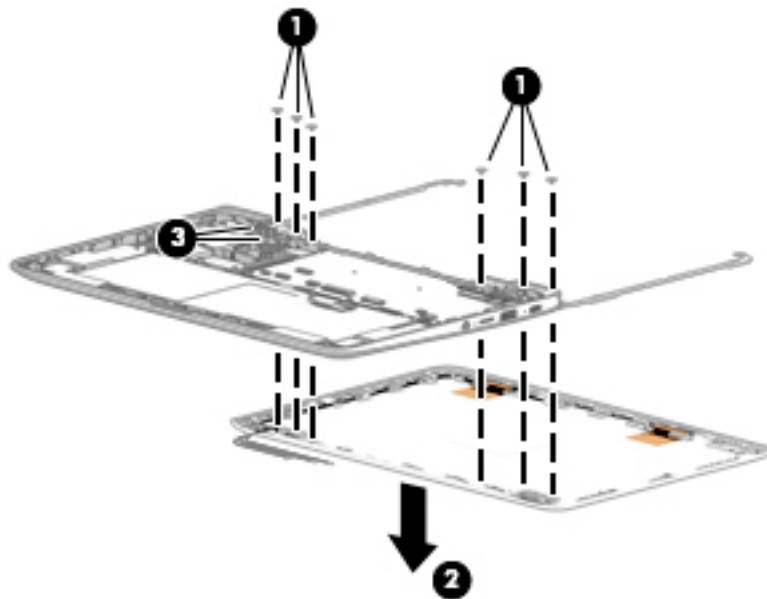
- L51917-001 – For use only on computer models equipped with an anti glare, SVA, non-touch display assembly
- L51918-001 – For use only on computer models equipped with an anti glare, UWVA, non-touch display assembly
- L51919-001 – For use only on computer models equipped with a BrightView, UWVA, touch display assembly



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

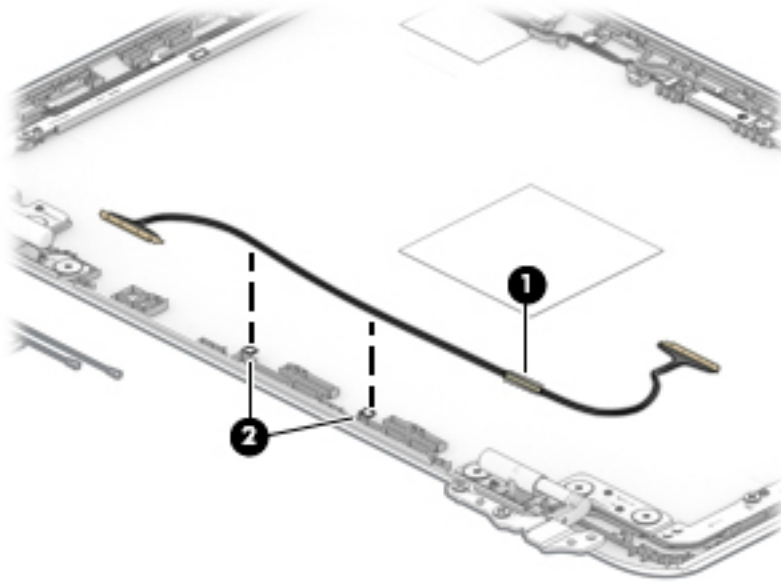
- a. Remove the six Phillips M2.5 × 3.0 broadhead screws **(1)** that secure the back cover to the display hinges.
- b. Remove the back cover **(2)**.
- c. Note the routing of the cables near the left hinge **(3)**.

 **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 antennas and cables.



13. If it is necessary to replace the display panel cable:

- a. 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.)
- b. Release the display panel cable from the retention clips (2) and routing channel built into the display back cover.



- c. Remove the display panel cable.

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

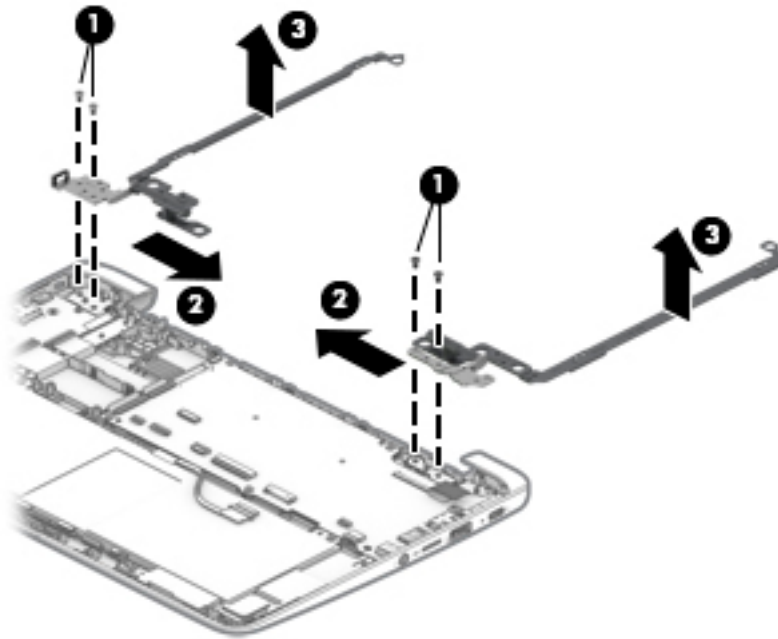
- L14915-001 – For use only on computer models equipped with a touch display assembly
- L14914-001 – For use only on computer models equipped with non-touch display assembly

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

- a. Remove the four Phillips M2.5 × 4.0 screws (1) that secure the hinges to the bottom cover.
- b. Release the hinges (2) by sliding them toward the inside of the computer.

- c. Remove the display hinges (3).

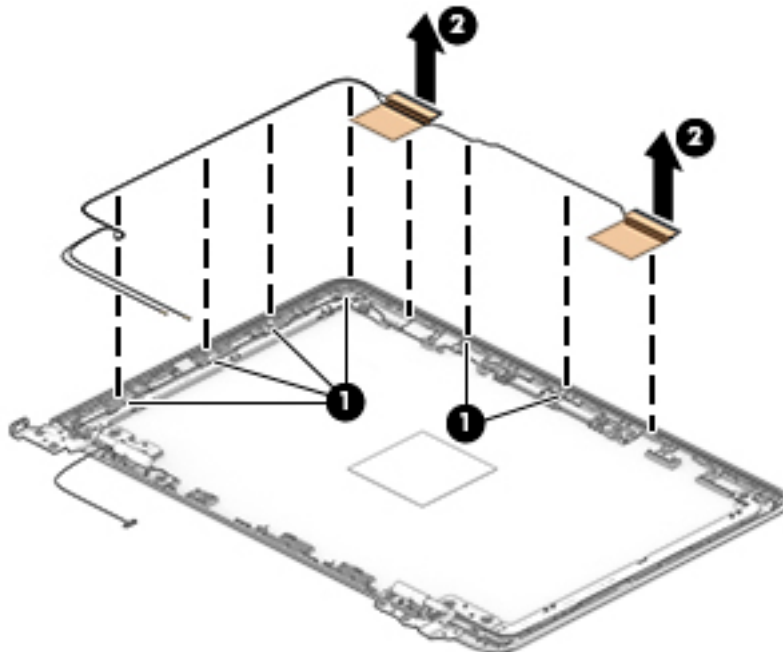
The display hinges are available using spare part number L14907-001.



- 15. If it is necessary to replace the wireless antennas:

- a. Remove the antenna cables from the clips on the left side and top of the display back cover (1).
- b. Peel the antennas off the top of the display back cover, and then remove the antennas (2).

The wireless antennas are available using spare part number L52273-001.



Reverse this procedure to reassemble and install the display assembly.

6 Specifications

Table 6-1 Computer specifications

	Metric	U.S.
Dimensions		
Depth	20.1 cm	8.2 in
Width	30.1 cm	12.0 in
Height	1.8 cm	0.7 in
Weight	1.29 kg	2.84 lbs
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

Table 7-1 Power cord 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

Table 7-1 Power cord requirements for specific countries and regions (continued)

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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