



Maintenance and Service Guide

SUMMARY

This guide provides information about spare parts, removal and replacement of parts, security, backing up, and more.

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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 or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. Go to <http://www.microsoft.com> for details.

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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

Reduce the possibility of heat-related injuries or of overheating the computer by following the practices described.


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

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1 Product description

This table provides detailed product information.

Table 1-1 Product components and their descriptions

Category	Description
Product Name	HP Chromebook 11a Model number: 11a-nb0xxx CTO model number: 11at-nb000
Processor	Intel® Celeron® N3350 (1.1 GHz [turbo up to 2.4GHz], 2 MB L2 cache, dual core, 6 W)
Graphics	Internal graphics Intel HD Graphics 500
Display	29.5 cm (11.6 in), HD (1366 × 768), WLED, slim, 220 nits Antiglare, SVA, eDP, nontouch BrightView, UWVA, eDP 1.2, Touch-on Panel (TOP)
Memory	8 GB of on-board LPDDR4-4266 memory, nonupgradeable 8 GB of on-board LPDDR4-3733 memory, nonupgradeable
Primary storage	On-board embedded MultiMedia Controller (eMMC v5.0) configurations 32 GB 16 GB
Audio and video	HP Webcam - HD camera: indicator LED, USB 2.0, HD BSI sensor, f2.4 Dual speakers HD Audio 1280 × 720 by 30 frames per second Single microphone with appropriate software: echo cancellation, noise suppression
Wireless	Integrated Wireless options with dual antennas (M.2/PCIe) Intel Dual Band Wireless-AC 7265 802.11 AC 2 × 2 Wi-Fi + Bluetooth® 4.2 Combo Adapter (non-vPro, Non-UNII D1)
Media card reader	HP Multi-Format Digital Media Card Reader Supports microSD™ Push-push insertion/removal
Ports	Hot plug/unplug and autodetect for correct output to wide-aspect vs. standard aspect video Audio-out (headphone)/audio-in (microphone) combo jack USB 3.2 Gen 1 Type C (2) (supports charging, power delivery, video, data; 1 right., 1 left) USB 3.2 Gen 1 Type A (2) (supports HP Sleep & Charge; 1 right, 1 left)

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

Category	Description
Keyboard/pointing devices	Keyboard
	Full size, textured, island style, standard notebook keyboard
	Touchpad
	Clickpad Multitouch gestures enabled Taps enabled as default
Power requirements	Battery
	2 cell, 47 Whr, long life
	AC adapter
	45 W, USB Type-C straight type, nPFC
Security	Power cord
	C5, 1 m
	Kensington Nano Security Lock H1 Secure Microcontroller
Operating system	Google® Chrome™ 64
Serviceability	End user replaceable part
	AC adapter

2 Components

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

Right side

Use the illustration and table to identify the components on the right side of the computer.

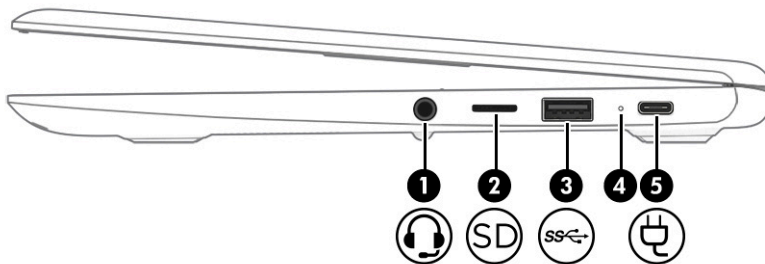


Table 2-1 Right-side components and their descriptions





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 standalone microphones.</p> <p>WARNING! To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, see the <i>Regulatory, Safety, and Environmental Notices</i>.</p> <p>NOTE: When a device is connected to the jack, the computer speakers are disabled.</p>
(2)  microSD™ memory card reader	<p>Reads optional memory cards that enable you to store, manage, share, or access information.</p> <p>To insert a card:</p> <ol style="list-style-type: none">1. Hold the card label-side up, with connectors facing the computer.2. Insert the card into the memory card reader, and then press in on the card until it is firmly seated. <p>To remove a card:</p> <ul style="list-style-type: none">▲ Press in on the card, and then remove it from the memory card reader.
(3)  USB SuperSpeed port	<p>Connects a USB device, provides high-speed data transfer, and (for select products) charges small devices when the computer is on or in Sleep mode.</p>

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

Component	Description
(4) AC adapter and battery light	<ul style="list-style-type: none"> White: The AC adapter is connected and the battery is fully charged. Amber: The AC adapter is connected and the battery is charging. Off: The battery is not charging.
(5)  USB Type-C power connector and 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> <p>- and -</p> <p>Connects a USB device, provides data transfer, and (for select products) charges small devices when the computer is on or in Sleep mode.</p> <p>- and -</p> <p>Connects a display device that has a USB Type-C connector, providing DisplayPort™ output.</p> <p>NOTE: Cables, adapters, or both (purchased separately) may be required.</p>

Left side

Use the illustration and table to identify the components on the left side of the computer.

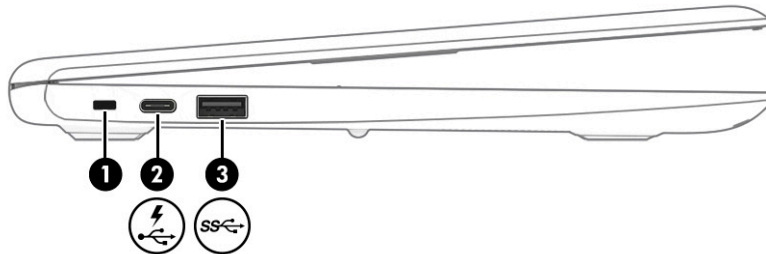


Table 2-2 Left-side components and their descriptions



Component	Description
(1) Nano security cable slot	<p>Attaches an optional security cable to the computer.</p> <p>NOTE: The security cable is designed to act as a deterrent, but it might not prevent the computer from being mishandled or stolen.</p>
(2)  USB Type-C power connector and 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> <p>- and -</p> <p>Connects a USB device, provides data transfer, and (for select products) charges small devices when the computer is on or in Sleep mode.</p> <p>- and -</p>

Table 2-2 Left-side components and their descriptions (continued)

Component	Description
	Connects a display device that has a USB Type-C connector, providing DisplayPort output. NOTE: Cables, adapters, or both (purchased separately) may be required.
(3)  USB SuperSpeed port	Connects a USB device, provides high-speed data transfer, and (for select products) charges small devices when the computer is on or in Sleep mode.

Display

The computer display can include essential components such as antennas, cameras, and microphones.

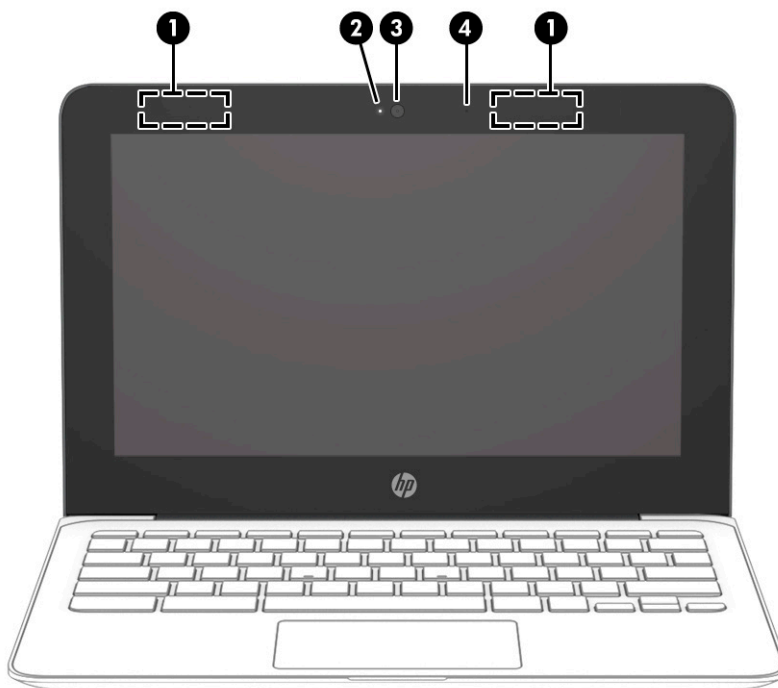


Table 2-3 Display components and their descriptions

Component	Description
(1) WLAN antennas*	Send and receive wireless signals to communicate with wireless local area networks (WLANs).
(2) Camera light	On: The camera is in use.
(3) Camera	Allows you to video chat, record video, and record still images. 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. For optimal transmission, keep the areas immediately around the antennas free from obstructions.

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

Component	Description
	For wireless regulatory notices, see the section of the <i>Regulatory, Safety, and Environmental Notices</i> that applies to your country or region.

Bottom

Identify the bottom component.

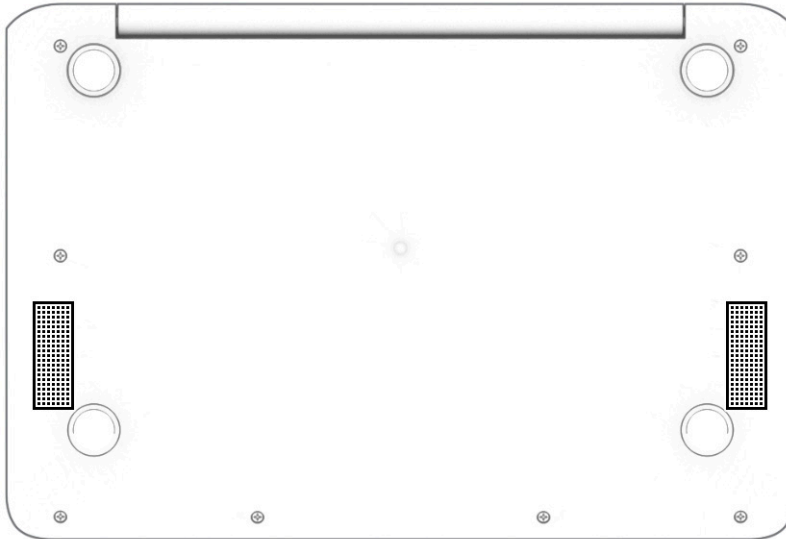


Table 2-4 Bottom component and its description

Component	Description
Speakers (2)	Produce sound

Keyboard area

Keyboards can vary by language.

Touchpad components

Identify the touchpad components.

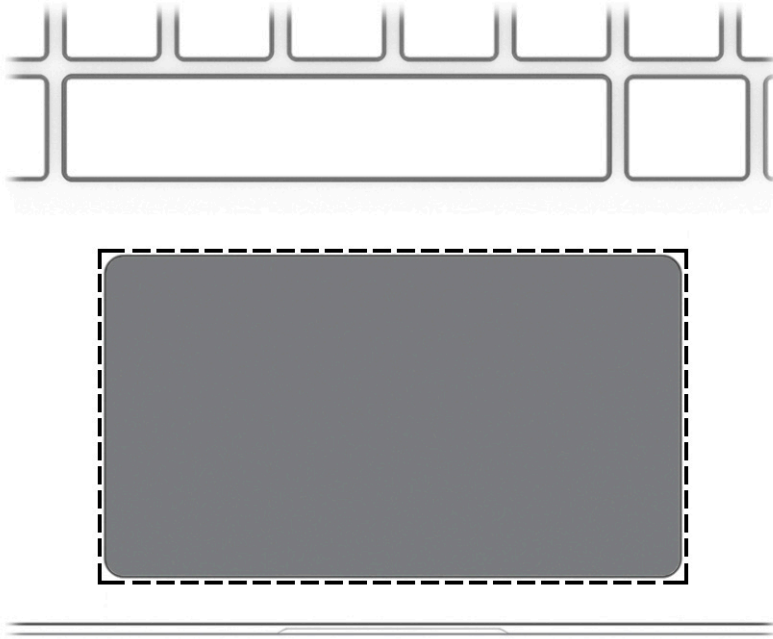


Table 2-5 Touchpad components and their descriptions

Component	Description
Touchpad zone	Reads your finger gestures to move the pointer or activate items on the screen.

Button

Identify the computer button.

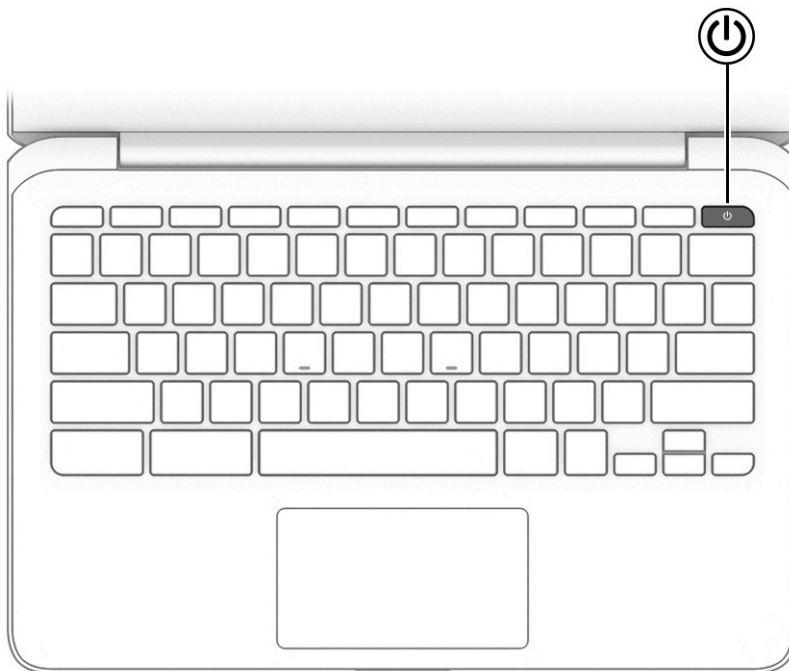


Table 2-6 Button and its description

Component	Description
Power button	<ul style="list-style-type: none"> When the computer is off, press the button briefly to turn on the computer. When the computer is on, press the button briefly to initiate Sleep. When the computer is in the Sleep state, press the button briefly to exit Sleep (select products only). <p>IMPORTANT: Pressing and holding down the power button results in the loss of unsaved information.</p> <p>If the computer has stopped responding and shutdown procedures are ineffective, press and hold the power button down for at least 10 seconds to turn off the computer.</p>

Special keys

Identify the special keys.

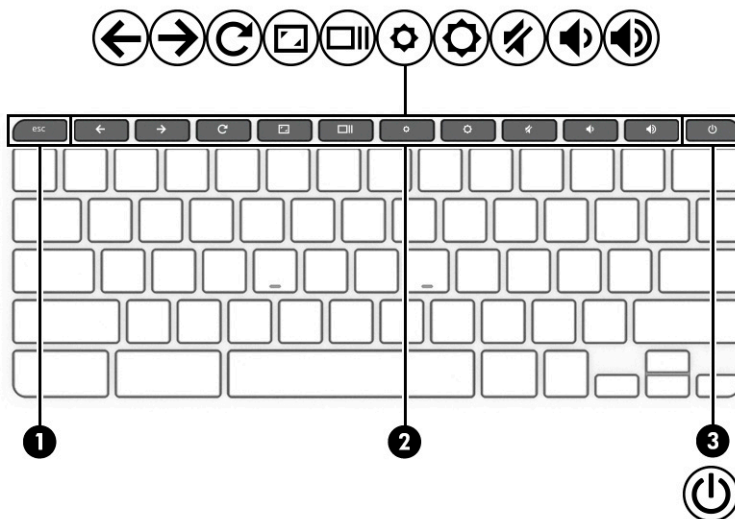


Table 2-7 Special keys and their descriptions

Component	Description
(1) <code>esc</code> key	Activates certain computer functions when pressed in combination with other keys, such as Tab or Shift.
(2) Action keys	Execute frequently used system functions.
(3) Power button	<ul style="list-style-type: none"> When the computer is off, press the button to turn on the computer When the computer is on, press the button briefly to initiate Sleep. When the computer is in the Sleep state, press the button briefly to exit Sleep (select products only). <p>IMPORTANT: Pressing and holding down the power button results in the loss of unsaved information.</p>

Table 2-7 Special keys and their descriptions (continued)

Component	Description
	If the computer has stopped responding and shutdown procedures are ineffective, ineffective, ineffective, press and hold the power button down for at least 10 seconds to turn off the computer.

Labels

The labels affixed to the computer provide information that you might need when you troubleshoot system problems or travel internationally with the computer. Labels can 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 might be asked for the serial number, the product number, or the model number. Locate this information before you contact support.

Your service label information order may vary by country and might not include the wording "Model" due to the country regulation.

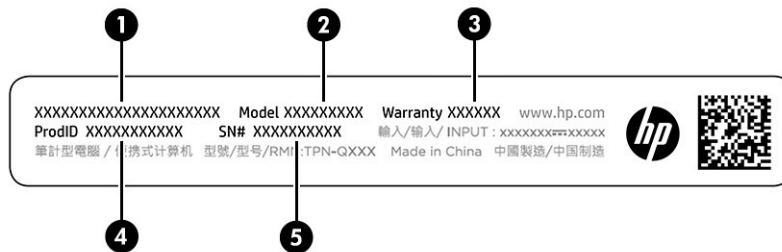


Table 2-8 Service label components

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


- 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

Use this table to determine the spare parts that are available for the computer.

Computer major components

To identify the computer major components, use this illustration and table.

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

 **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.

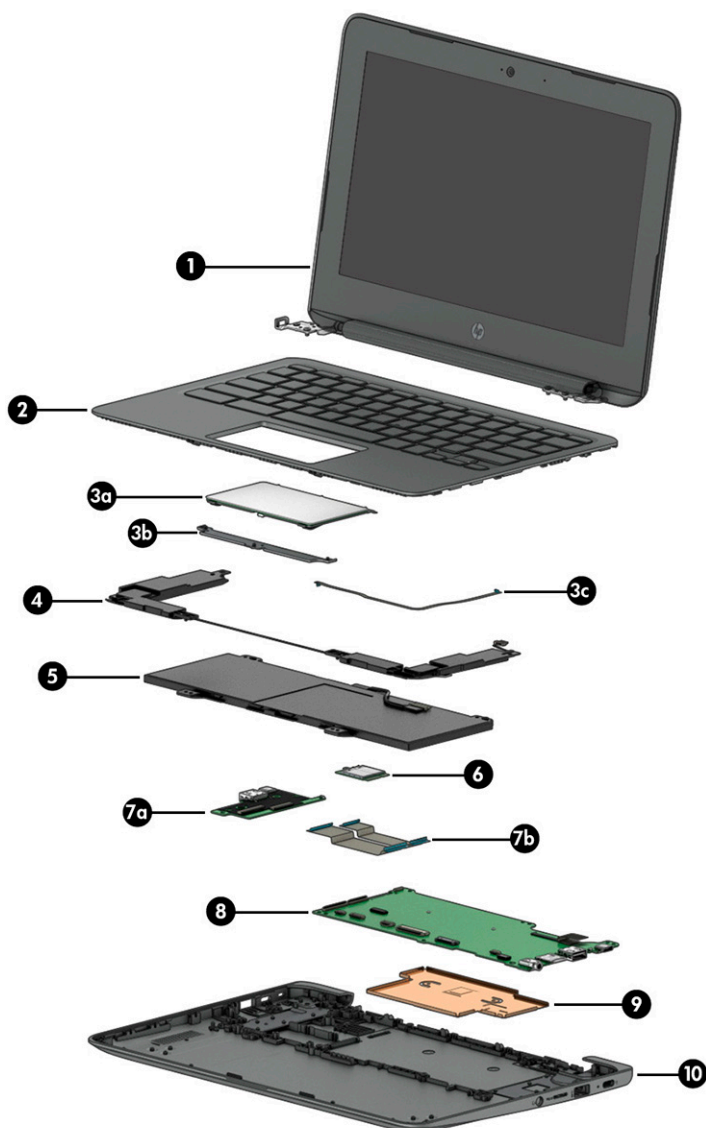


Table 3-1 Computer major component descriptions and part numbers

Item	Component	Spare part number
(1)	Display assembly NOTE: Display assemblies are available only at the subcomponent level.	not available as a spare part
(2)	Keyboard/top cover	L99855-xx1
(3a)	Touchpad (does not include cable)	M03968-001
(3b)	Touchpad bracket	not available as a spare part
(4)	Speakers	L14920-001
(5)	Battery	917725-855
(6)	WLAN module	901229-855
(7a)	USB board	L14923-001
(7b)	USB board cables (available in the Cable Kit)	L14906-001
(8)	System board (includes integrated processor and eMMC memory)	
	32 GB eMMC memory	L15851-001
	16 GB eMMC memory	L15850-001
(9)	Heat sink	not available as a spare part
(10)	Bottom cover	M01187-001

Display assembly subcomponents

To identify the display assembly subcomponents, use this illustration and table.

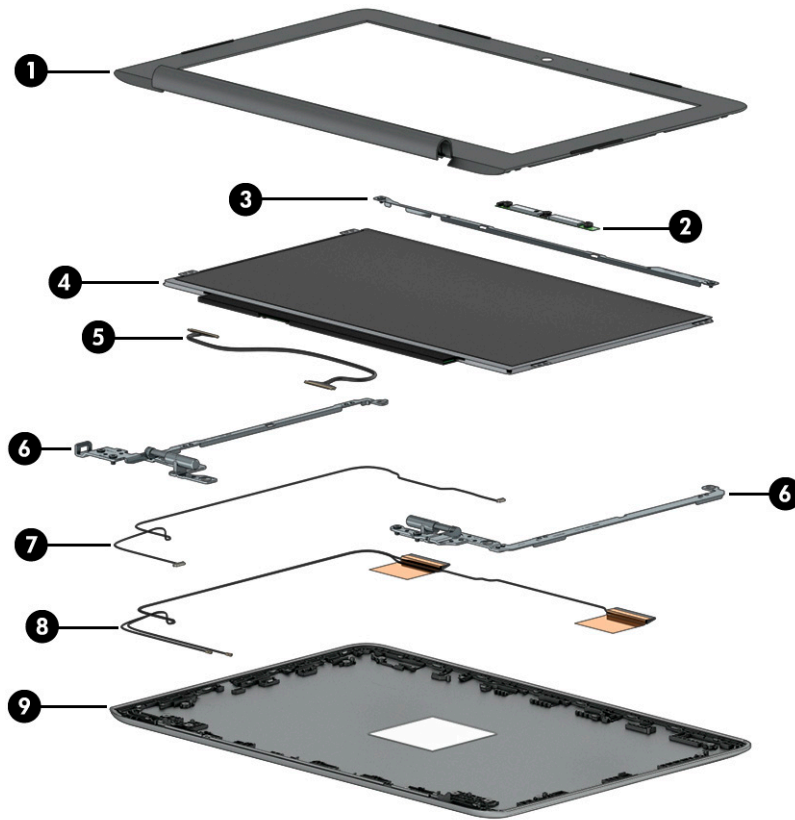


Table 3-2 Display component descriptions and part numbers

Item	Component	Spare part number
(1)	Display bezel	L99851-001
(2)	Camera module	M01189-001
(3)	Display panel bracket	not available as a spare part
(4)	Display panel	
	Nontouch	L99858-001
	Touch	L99859-001
(5)	Display cable	
	Nontouch	L99853-001
	Touch	L99852-001
(6)	Display hinges (right and left)	M01188-001
(7)	Camera cable (included in Cable Kit)	L14906-001
(8)	Antennas and cables	L52273-001
(9)	Display back cover (includes antennas)	L99850-001

Miscellaneous parts

To identify the miscellaneous parts, use this table.

Table 3-3 Miscellaneous part descriptions and part numbers

Component	Spare part number
AC adapters (45 W, nPFC, USB Type-C)	L43407-001
Screw Kit	L99854-001
Rubber Kit (includes camera module rubber and touchpad basket rubber)	L20220-001
Cable Kit (includes camera cable, touchpad cable, and USB board cables)	L14906-001
Power cords (C5, 1.0 m)	
Denmark	L19360-001
Europe	L19361-001
North America	L19367-001
United Kingdom	L19373-001

4 Removal and replacement procedures preliminary requirements

Use this information to properly prepare to disassemble and reassemble the computer.


Tools required

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

- Nonconductive, nonmarking 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

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

Cables and connectors

Handle cables with extreme care to avoid damage.

 **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.

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 so that they cannot be caught or snagged as you remove or replace parts. Handle flex cables with extreme care; these cables tear easily.

Drive handling

Note the following guidelines when handling drives.



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

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

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

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

Handle drives on surfaces covered with at least 2.54 cm (1 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 polystyrene foam.
- Handle ESD-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting or removing connectors or test equipment.

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) might not appear to be affected at all and can work perfectly throughout a normal cycle. The device might 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 remove or install 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 [Personal grounding methods and equipment on page 18](#).

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

Follow these static electricity guidelines.

- 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 (dual in-line packages) 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 polystyrene foam	3,500 V	5,000 V	14,500 V
Removing bubble pack from PCB (printed circuit board)	7,000 V	20,000 V	26,500 V
Packing PCBs in foam-lined box	5,000 V	11,000 V	21,000 V

Multiple electric components can be packaged together in plastic tubes, trays, or polystyrene foam.



NOTE: As little as 700 V 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

Using certain equipment can prevent static electricity damage to electronic components.

- **Wrist straps** are flexible straps with a maximum of $1\text{ M}\Omega \pm 10\%$ 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 $1\text{ M}\Omega \pm 10\%$ 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, follow these 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 polystyrene foam.
- Use field service tools, such as cutters, screwdrivers, and vacuums, that are conductive.

Recommended materials and equipment

HP recommends certain materials and equipment to prevent static electricity.

- 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 $1\text{ M}\Omega \pm 10\%$ resistance

- Static-dissipative table or floor mats with hard tie to ground
- Field service kits
- Static awareness labels
- Wrist straps and footwear straps providing $1\text{ M}\Omega \pm 10\%$ 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

This chapter provides 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.

 **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.

Component replacement procedures

To remove and replace computer components, use these procedures.

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

You must remove, replace, or loosen as many as 45 screws when you service the parts described in this chapter. Make special note of each screw size and location during removal and replacement.

Preparation for disassembly

To remove and replace computer components, use these procedures.

See [Removal and replacement procedures preliminary requirements on page 15](#) for initial safety procedures.

1. Turn off the computer. If you are unsure whether the computer is off or in Sleep, 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

To remove the keyboard/top cover, use this procedure and illustration.

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

Description	Spare part number
Keyboard/top cover for use in Belgium	L99855-A41
Keyboard/top cover for use in Denmark, Finland, and Norway	L99855-DH1
Keyboard/top cover for use in French Canada	L99855-DB1
Keyboard/top cover for use in France	L99855-051
Keyboard/top cover for use in Germany	L99855-041
Keyboard/top cover for use in Italy	L99855-061

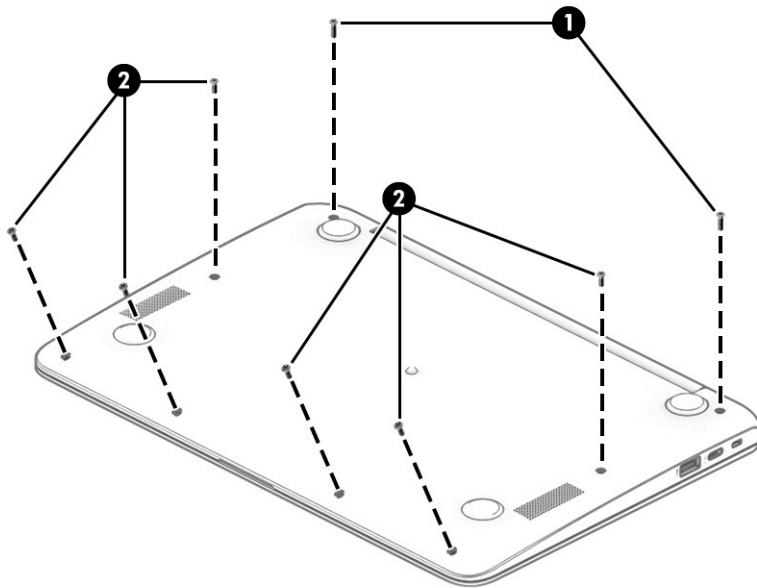
Table 5-1 Keyboard/top cover description and part number (continued)

Description	Spare part number
Keyboard/top cover for use internationally	L99855-B31
Keyboard/top cover for use in Russia	L99855-251
Keyboard/top cover for use in Spain	L99855-071
Keyboard/top cover for use in the United Kingdom	L99855-031
Keyboard/top cover for use in the United States	L99855-001

Before removing the keyboard/top cover, prepare the computer for disassembly ([Preparation for disassembly on page 21](#)).

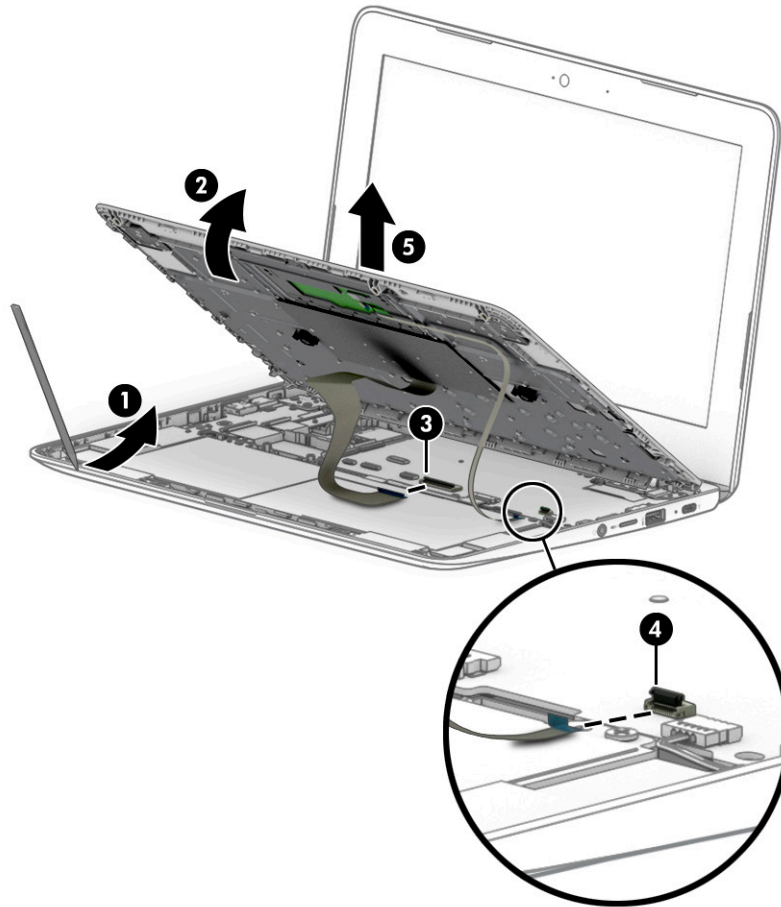
Remove the keyboard/top cover:

1. Remove the two Phillips M2.5 × 8.7 screws **(1)** that secure the bottom cover to the computer.
2. Remove the six Phillips M2.5 × 6.6 screws **(2)** that secure the bottom cover to the computer.



3. Turn the computer right side up with the front toward you, and then open the computer.
4. Use a nonmarking, nonconductive tool **(1)** to separate the front edge of the keyboard/top cover **(2)** from the bottom cover.
5. Disconnect the keyboard cable from the system board ZIF connector **(3)**.
6. Disconnect the touchpad cable from the system board ZIF connector **(4)**.

7. Remove the keyboard/top cover from the computer (5).



To replace the keyboard/top cover, reverse the removal procedures.

Touchpad cable

To remove the touchpad cable, use this procedure and illustration.


 **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 cable description and part number

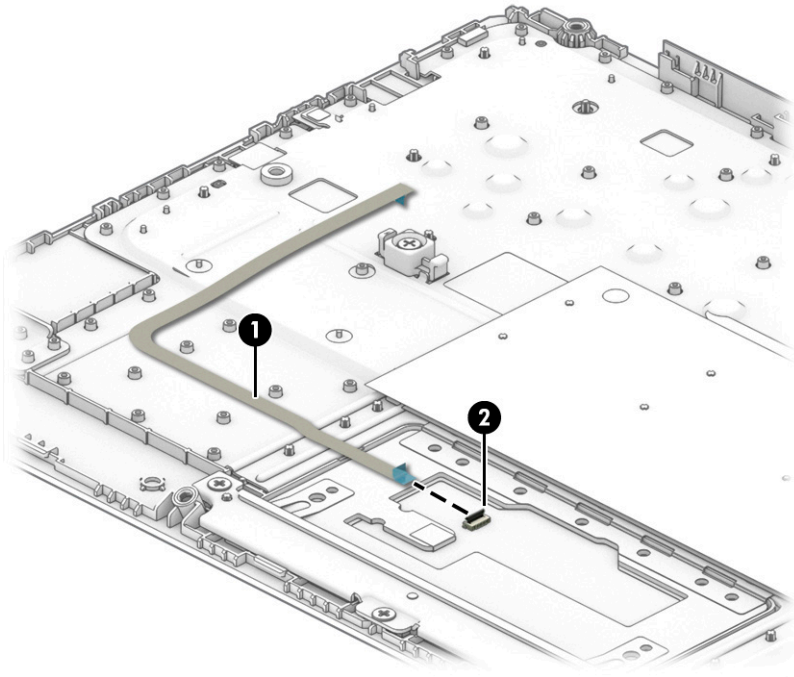
Description	Spare part number
Touchpad cable	L14906-001

Before removing the touchpad cable, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 21](#)).
2. Remove the keyboard/top cover ([Keyboard/top cover on page 21](#)).

Remove the touchpad cable:

1. Position the keyboard/top cover upside down with the front toward you.
2. Release the touchpad cable (1) from the adhesive that secures it to the keyboard/top cover.
3. Disconnect the touchpad cable from the ZIF connector on the touchpad (2).



Reverse this procedure to install the touchpad cable.

Touchpad

To remove the touchpad, use this procedure and illustration.



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 5-3 Touchpad description and part number

Description	Spare part number
Touchpad	M03968-001

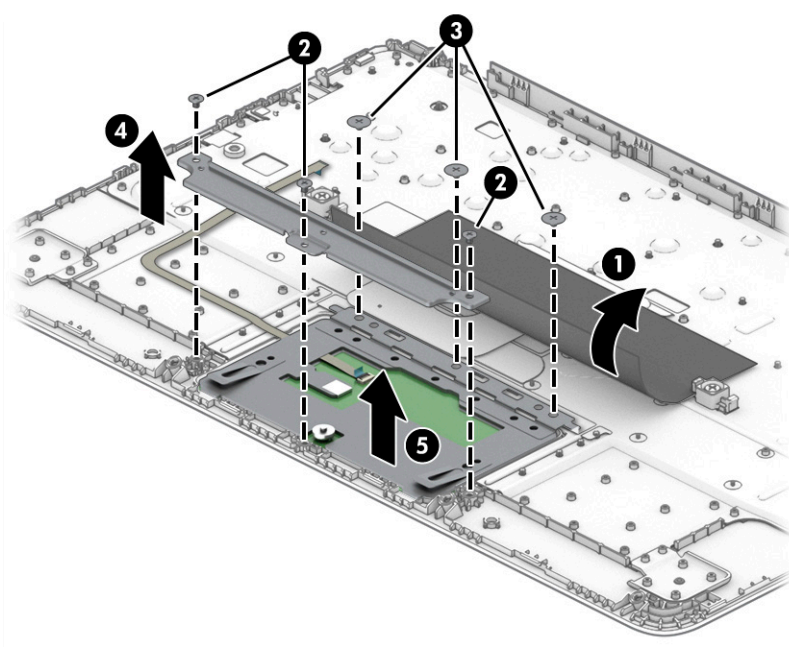
Before removing the touchpad, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 21](#)).
2. Remove the keyboard/top cover ([Keyboard/top cover on page 21](#)).

Remove the touchpad:

1. Position the keyboard/top cover upside down with the front toward you.
2. Release the shielding material (1) that covers the top edge of the touchpad.
3. Remove the three Phillips M2.0 × 2.7 screws (2) that secure the touchpad and touchpad bracket to the keyboard/top cover.

4. Remove the three Phillips M2.0 × 2.2 broad head screws (3) that secure the touchpad to the keyboard/top cover.
5. Remove the touchpad bracket (4), and then remove the touchpad from the keyboard/top cover (5).



Reverse this procedure to install the touchpad.

Battery

To remove the battery, use this procedure and illustration.

Table 5-4 Battery description and part number

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

⚠ WARNING! To avoid personal injury and damage to the product:

- Do *not* puncture, twist, or crack the battery.
- Do *not* cause an external puncture or rupture to the battery. They can cause a short inside the battery, which can result in battery thermal runaway.
- Do *not* handle or touch the battery enclosure with sharp objects such as tweezers or pliers, which might puncture the battery.
- Do *not* compress or squeeze the battery case with tools or heavy objects stacked on top of the case. These actions can apply undue force on the battery.
- Do *not* touch the connectors with any metallic surface or object, such as metal tools, screws, or coins, which can cause shorting across the connectors.

Before removing the battery, follow these steps:

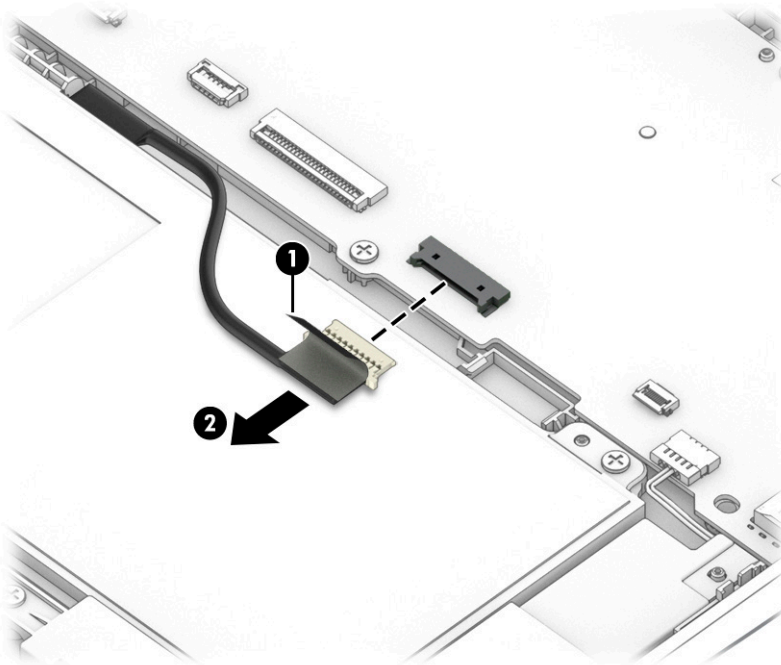
1. Prepare the computer for disassembly ([Preparation for disassembly on page 21](#)).
2. Remove the keyboard/top cover ([Keyboard/top cover on page 21](#)).

⚠ WARNING! To reduce potential safety issues, use only the user-replaceable battery provided with the computer, a replacement battery provided by HP, or a compatible battery purchased from HP.

📝 IMPORTANT: Removing a battery that is the sole power source for the computer can cause loss of information. To prevent loss of information, save your work or shut down the computer through Windows before you remove the battery.

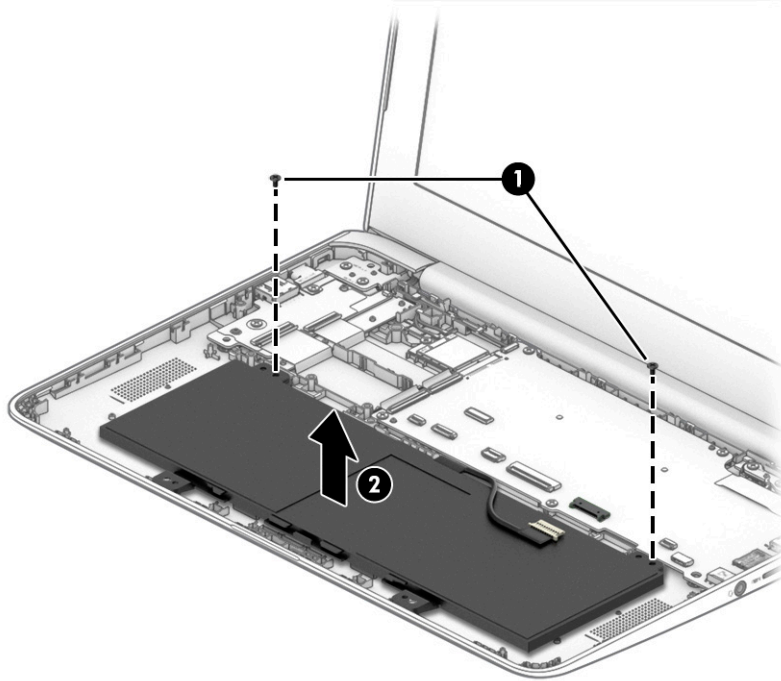
Remove the battery:

1. Release the tape **(1)** that secures the battery cable connector to the system board.
2. Disconnect the battery cable from the system board **(2)**.



3. Remove the two Phillips M2.0 × 4.1 screws **(1)** that secure the battery to the computer.

4. Remove the battery from the computer (2).



To install the battery, reverse the removal procedures.

WLAN module

To remove the WLAN module, use this procedure and illustration.

Table 5-5 WLAN module description and part number

Description	Spare part number
Intel Dual Band Wireless-AC 7265 802.11 AC 2 × 2 Wi-Fi + Bluetooth 4.2 Combo Adapter	901229-855

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

Before removing the WLAN module, follow these steps:

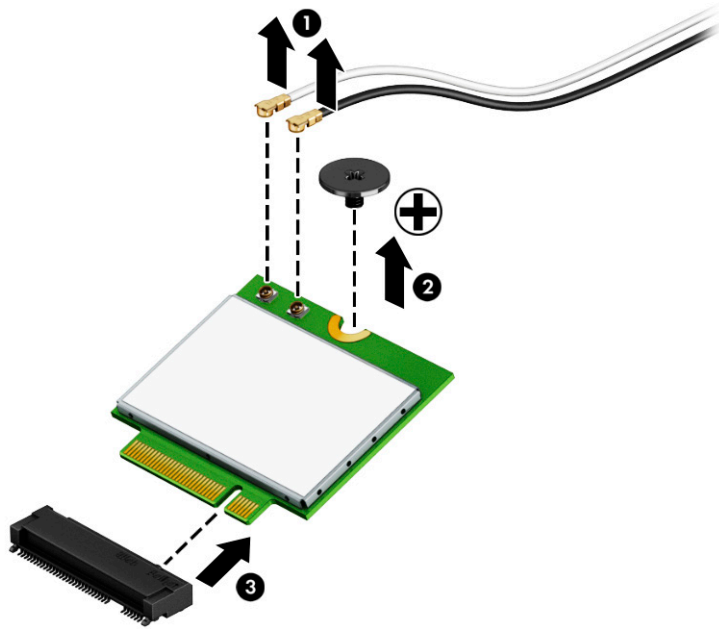
1. Prepare the computer for disassembly ([Preparation for disassembly on page 21](#)).
2. Remove the keyboard/top cover ([Keyboard/top cover on page 21](#)).
3. Remove the battery (see [Battery on page 25](#)).

Remove the WLAN module:

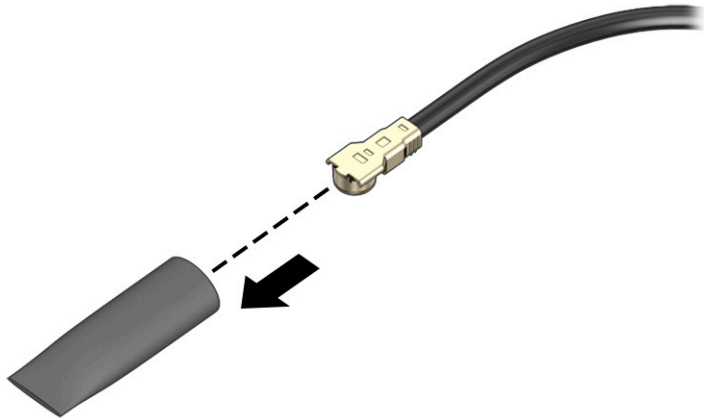
1. Carefully disconnect the two antenna cables from the module (1).

2. Remove the Phillips M2.0 × 2.5 screw (2), and then remove the WLAN module (3).

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



3. If the WLAN antenna is not connected to the terminal on the WLAN module, a protective sleeve must be installed on the antenna connector, as shown in the following illustration.



Reverse this procedure to install the WLAN module.

Speakers

To remove the speakers, use this procedure and illustration.

Table 5-6 Speaker description and part number

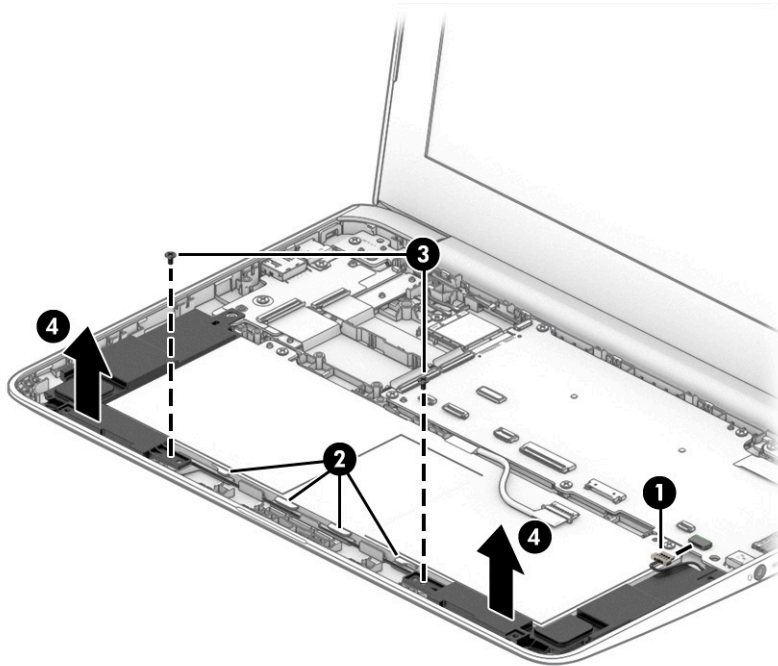
Description	Spare part number
Speaker Kit	L14920-001

Before removing the speakers, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 21](#)).
2. Remove the keyboard/top cover ([Keyboard/top cover on page 21](#)).
3. Disconnect the battery cable from the system board (see [Battery on page 25](#)).

Remove the speakers:

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



Reverse this procedure to install the speakers.

USB board

To remove the USB board, use this procedure and illustration.

Table 5-7 USB board description and part number

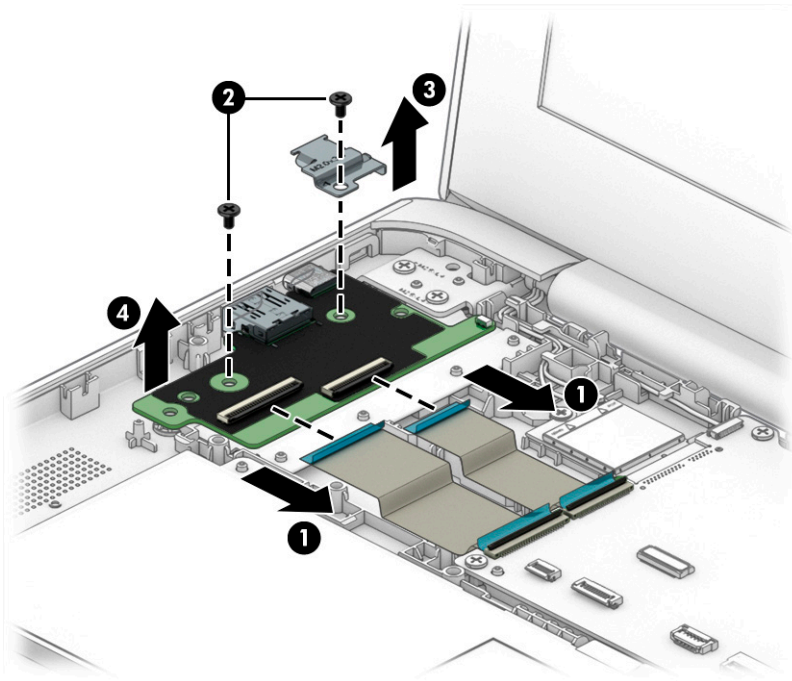
Description	Spare part number
USB board	L14923-001

Before removing the USB board, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 21](#)).
2. Remove the keyboard/top cover ([Keyboard/top cover on page 21](#)).
3. Disconnect the battery cable (see [Battery on page 25](#)).

Remove the USB board:

1. Disconnect the two cables from the ZIF connectors on the USB board (**1**).
2. Remove the two Phillips M2.0 × 4.1 screws (**2**) that secure the USB board to the computer.
3. Remove the bracket (**3**).
4. Remove the USB board (**4**).



Reverse this procedure to install the USB board.

System board

To remove the system board, use these procedures and illustrations.

Table 5-8 System board descriptions and part numbers

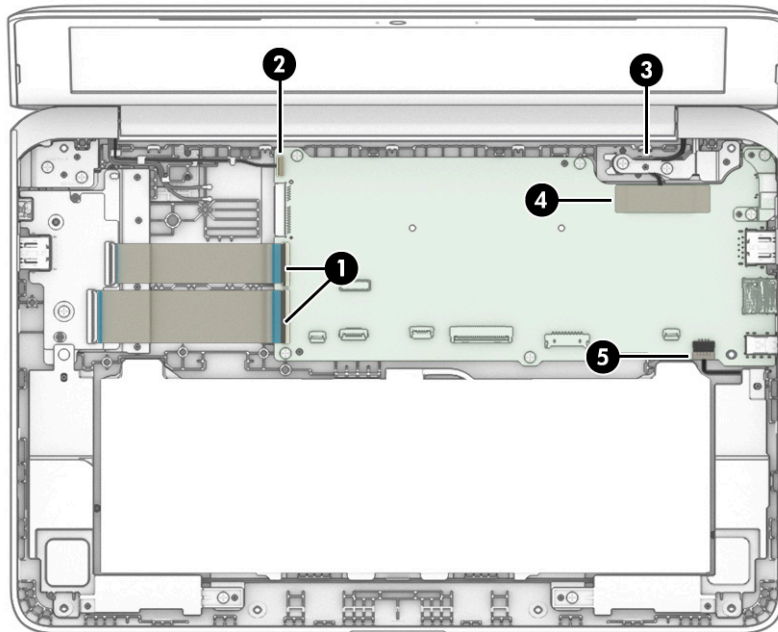
Description	Spare part number
System board (includes integrated Intel Celeron N3350 processor, 4 GB of system memory, and eMMC memory)	
32 GB eMMC memory	L15851-001
16 GB eMMC memory	L15850-001

Before removing the system board, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 21](#)).
2. Remove the keyboard/top cover ([Keyboard/top cover on page 21](#)).
3. Disconnect the battery cable from the system board (see [Battery on page 25](#)).
4. Remove the screws from the left hinge, and then rotate the hinge upward (see [Display assembly on page 33](#)). This step provides access to the tape under the hinge.


Remove the system board:

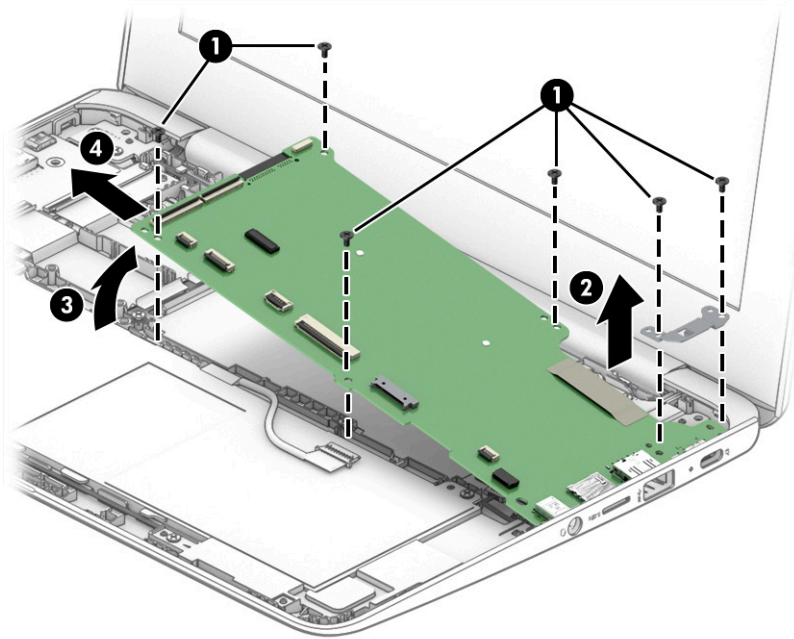
1. Disconnect the following cables from the system board:
 - Two USB cables (ZIF) **(1)**
 - Camera cable **(2)**
 - Adhesive strip **(3)** and display cable **(4)**
 - Speaker cable **(5)**



2. Remove the six Phillips M2.0 × 4.1 screws **(1)** that secure the system board to the computer.
3. Remove the system board bracket **(2)**.
4. Lift the left edge of the system board **(3)** until it rests at an angle.

5. Remove the system board **(4)** by sliding it up and to the left at an angle.

 **NOTE:** When replacing the system board, be sure to remove the heat sink from the defective system board and install it on the replacement system board.



Reverse this procedure to install the system board.

Heat sink

To remove the heat sink, use these procedures and illustrations.

Table 5-9 Heat sink description

Description	Spare part number
Heat sink	not available as a spare part

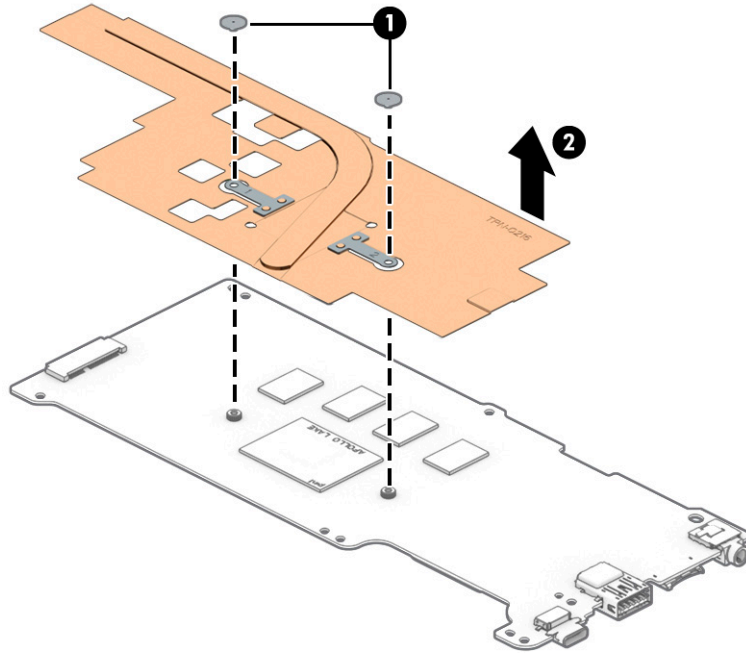
Before removing the heat sink, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 21](#)).
2. Remove the keyboard/top cover ([Keyboard/top cover on page 21](#)).
3. Disconnect the battery cable from the system board (see [Battery on page 25](#)).
4. Remove the system board ([System board on page 30](#)).

Remove the heat sink:

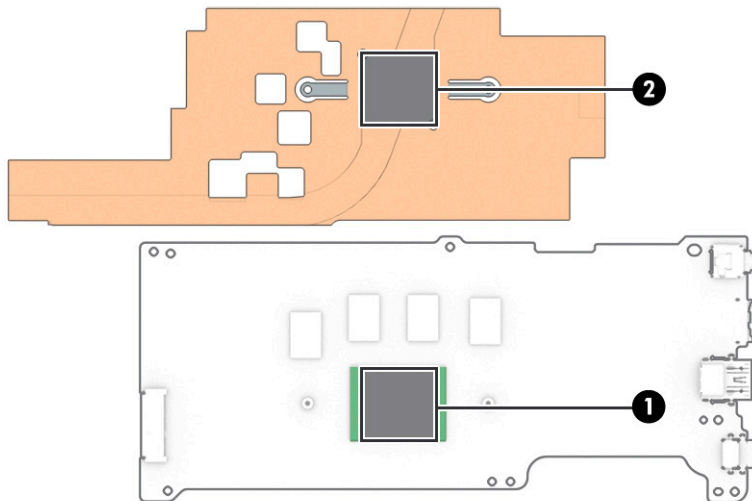
1. Position the system board upside down with the front toward you.
2. Remove the two Phillips M2.0 × 2.2 broad head screws **(1)** that secure the heat sink to the system board.

3. Remove heat sink **(2)**.



4. Thoroughly clean the thermal material from the surfaces of the heat sink and the system board components each time the heat sink is removed.

Thermal paste is used on the system board **(1)** and on the heat sink component that services it **(2)**.



Reverse this procedure to install the heat sink.

Display assembly

To remove and disassemble the display assembly, use these procedures and illustrations.

Before removing the display panel, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 21](#)).
2. Remove the keyboard/top cover ([Keyboard/top cover on page 21](#)).
3. Disconnect the battery cable from the system board (see [Battery on page 25](#)).

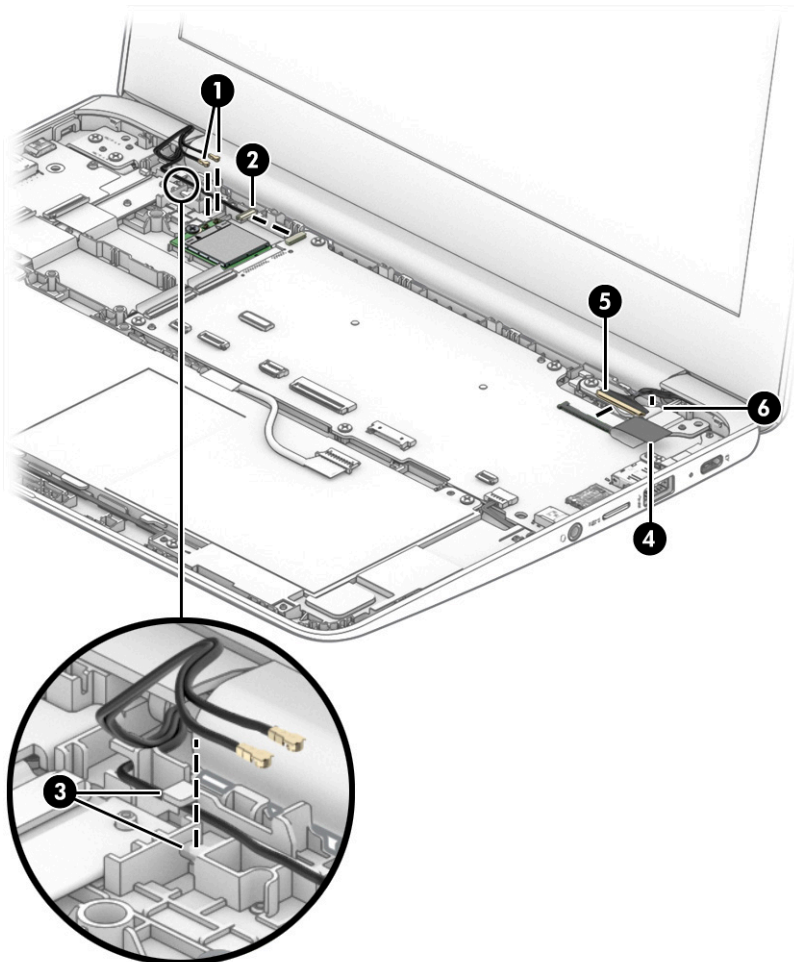
Remove the display assembly:

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



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

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

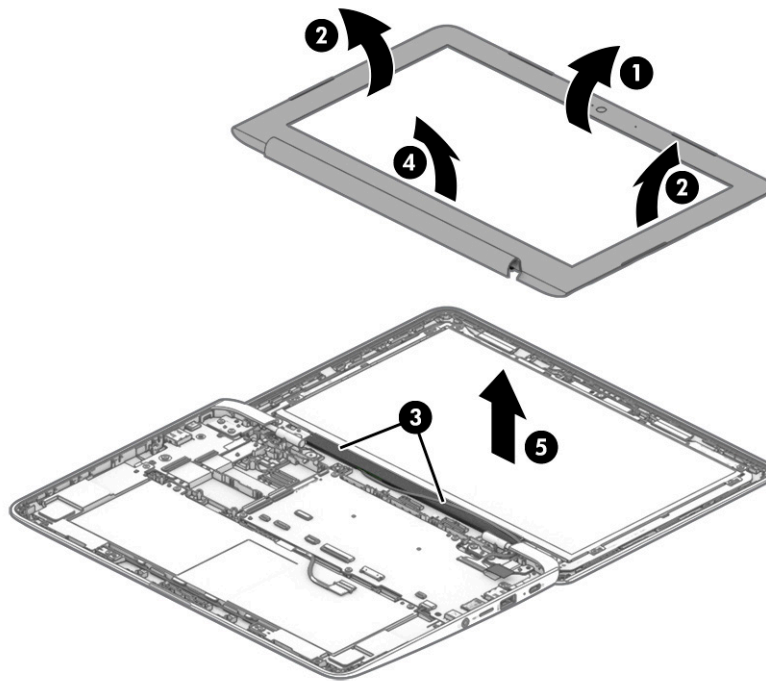


7. Open the computer as far as it will open.
8. If you need to replace display assembly subcomponents:

- 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.

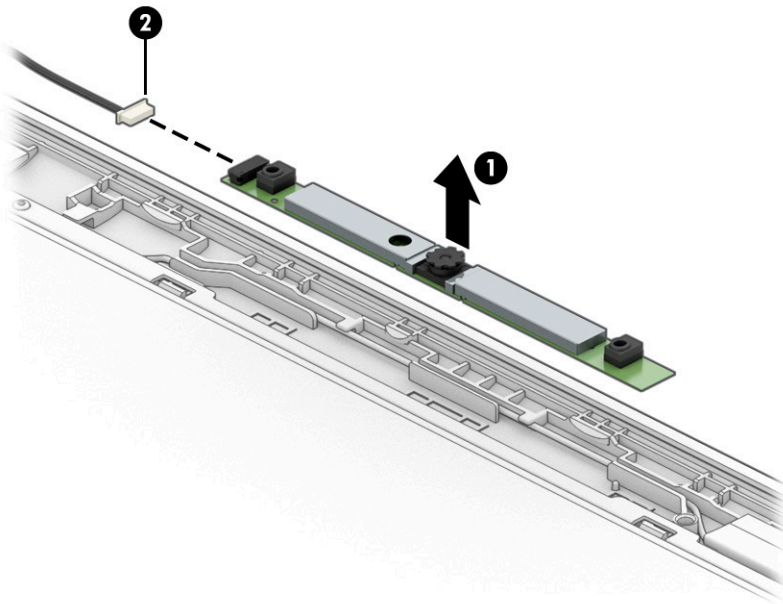
⚠ CAUTION: There is double-sided adhesive **(3)** on the inside edge of the display bezel bottom edge. Use caution when releasing the display bezel bottom edge. Failure to follow this caution can result in personal injury or damage to the display bezel.

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



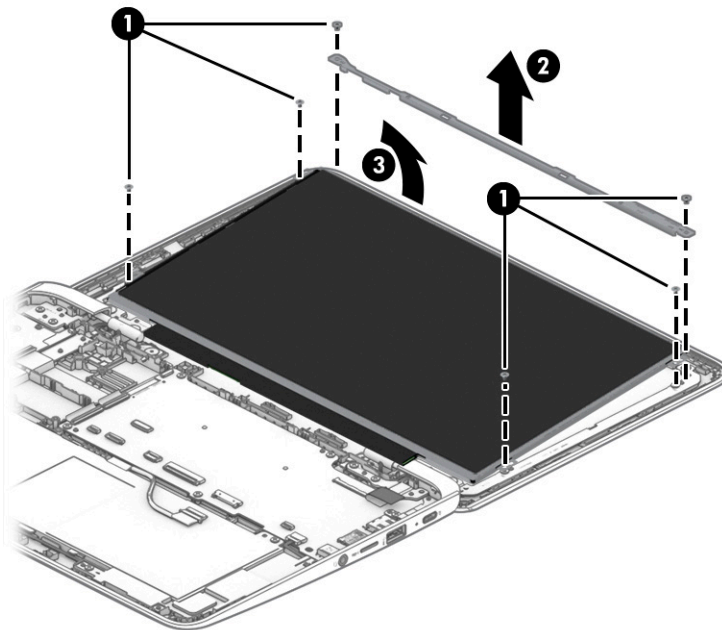
9. If you need to remove the camera module:
 - a. Release the camera module **(1)** from the adhesive that secures it to the display back cover.

- b. Disconnect the cable (2) from the camera module. The camera module is available as spare part number M01189-001.



10. If you need to remove the display panel:

- a. Remove the six Phillips M2.0 × 2.8 screws (1) that secure the display panel and display panel bracket to the display back cover.
- b. Remove the display panel bracket (2).
- c. Lift the top edge of the display panel (3) and swing it up and forward until it rests upside down on the computer.

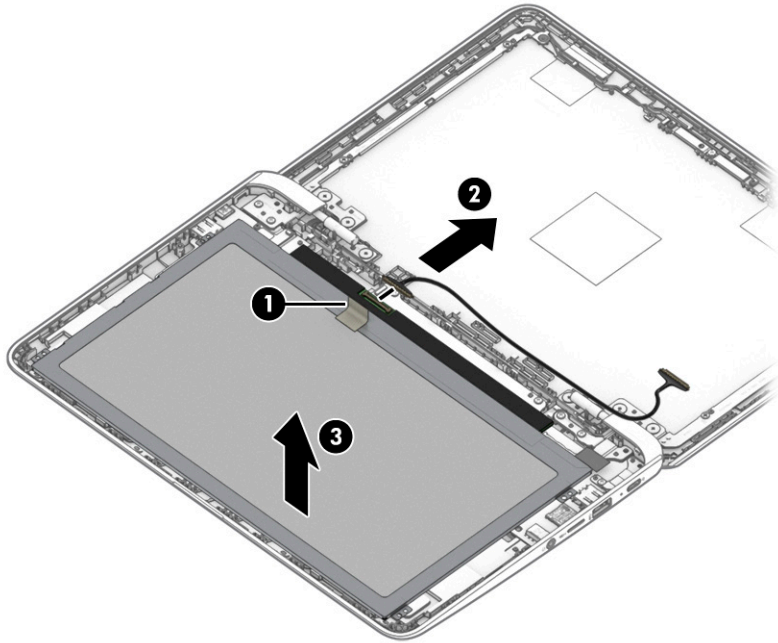


- d. Release the adhesive support strip **(1)** that secures the display panel cable connector to the display panel.
- e. Disconnect the display panel cable **(2)** from the display panel.
- f. Remove the display panel **(3)**.

Display panels are available as the following spare part numbers:

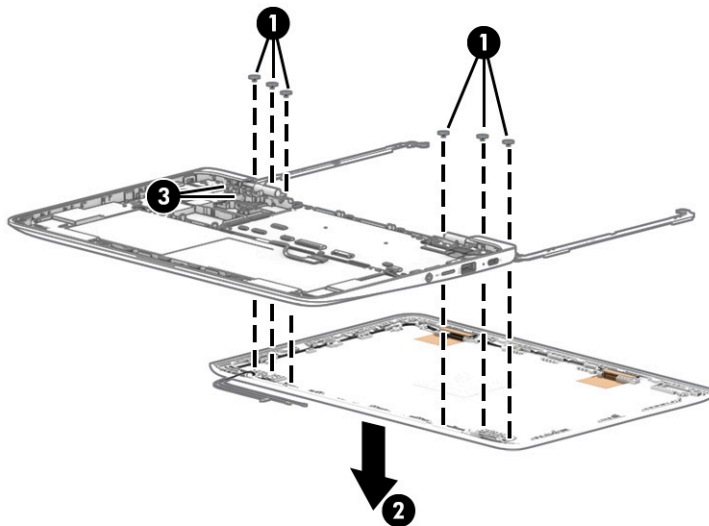
L99858-001: Nontouch panel

L99859-001: Touch panel



- 11. If you need to remove the display back cover, remove the six Phillips M2.0 × 2.9 broad head screws **(1)** that secure the back cover to the display hinges, and then remove the back cover **(2)**. Note the routing of the cables near the left hinge **(3)**.

The display back cover is available as spare part number L99850-001.

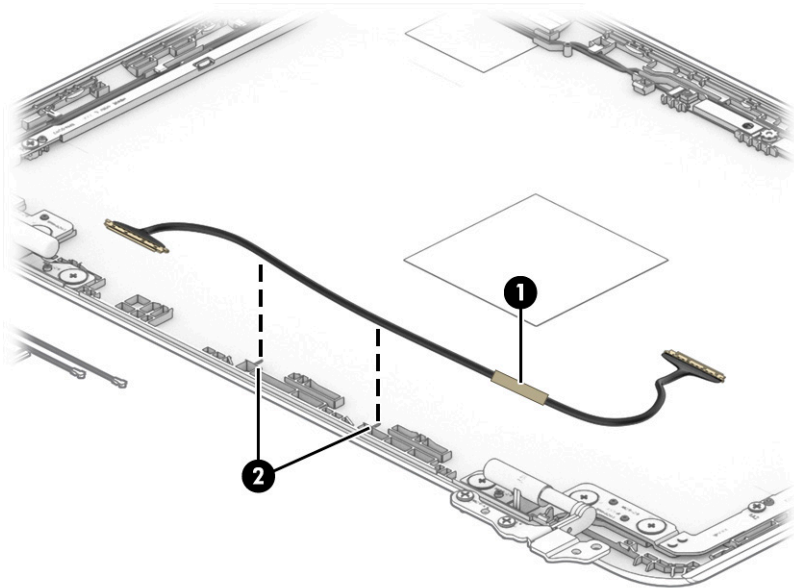


12. Remove the display cable **(1)** from the adhesive that secures it to the display back cover, and then release the display cable from the retention clips **(2)** and routing channel built into the display back cover.

Display cables are available as the following spare part numbers:

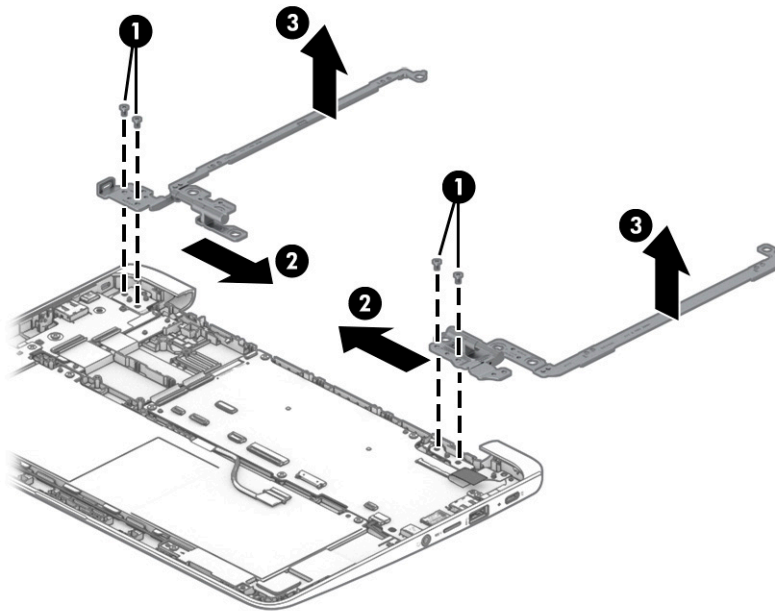
L99852-001: Touch panel

L99853-001: Nontouch panel



13. If you need to remove the hinges from the display back cover:
 - a. Remove the four Phillips M2.5 × 4.9 screws **(1)** that secure the hinges to the computer.
 - b. Release the hinges **(2)** by sliding them toward the inside of the computer.
 - c. Remove the display hinges **(3)**.

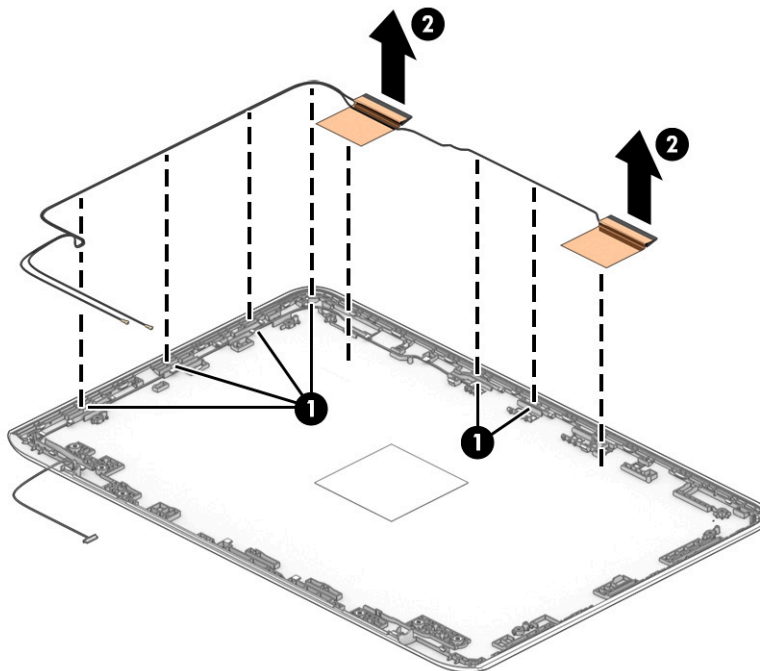
The display hinges are available as spare part number M01188-001.



14. If you need to remove the antennas from the display back cover:

- a.** Remove the antenna cables from the clips along the left and top of the display back cover **(1)**.
- b.** Peel the antennas from the cover to remove them **(2)**.

The antennas are available as spare part number L52273-001.



Reverse this procedure to reassemble and replace the display assembly.

6 Backing up, resetting, and recovering

This chapter provides information about processes that are standard procedure for most products.

Backing up

You can back up your data to an optional USB flash drive or SD memory card or through Google Drive.

For detailed information about creating a backup, go to <http://www.support.google.com>.

Resetting

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

Recovering

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



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

Before beginning the recovery process, you need the following:

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

Installing the Chromebook Recovery Utility

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

Creating recovery media

Recovery media is used to recover the original operating system and software programs that were installed at the factory.

Recovering the Chrome operating system

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

Setting up your computer after a reset or recovery

After a reset or recovery is complete, perform the initial setup process.

For details on setting up the computer, go to <http://www.support.google.com>.

Erase and reformat the recovery media

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

7 Specifications

This chapter provides specifications for your computer.

Computer specifications

This section provides specifications for your computer. When traveling with your computer, the computer dimensions and weights, as well as input power ratings and operating specifications, provide helpful information.

Table 7-1 Computer specifications

	Metric	U.S.
Dimensions		
Width	306 mm	12.1 in
Depth	208 mm	8.2 in
Height (front to back)	18.1 mm	0.7 in
Weight		
	1358 g	2.99 lb
Input power		
Operating voltage and current	19.5 V dc @ 2.31 A – 45 W	
Temperature		
Operating	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Relative humidity (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%	
Maximum altitude (unpressurized)		
Operating	-15 m to 3,048 m	-50 ft to 10,000 ft
Nonoperating	-15 m to 12,192 m	-50 ft to 40,000 ft

NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The device operates well within this range of temperatures.

29.5 cm (11.6 in) display specifications

This section provides specifications for your display.

Table 7-2 Display specifications

	Metric	U.S.
Active diagonal size	25.5 cm	11.6 in

Table 7-2 Display specifications (continued)

	Metric	U.S.
Resolution	1366 × 768 (HD)	
Surface treatment	Antiglare (nontouch) Brightview (touch)	
Brightness	220 nits	
Viewing angle	SVA (nontouch) UWVA (touch)	
Backlight	WLED	
Display panel interface	eDP	

8 Power cord set requirements

This chapter provides power cord requirements for countries and regions.

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

The 3-conductor power cord set included with the computer meets the requirements for use in the country or region where the equipment is purchased.

Power cord sets for use in other countries or regions must meet the requirements of the country and region where the computer is used.

Requirements for all countries

These power cord requirements are applicable to all countries and regions.

- The length of the power cord set must be at least **1.0 m** (3.3 ft) and no more than **2.0 m** (6.5 ft).
- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country or region where the power cord set will be used.
- The power cord sets must have a minimum current capacity of 10 A and a nominal voltage rating of 125 V ac or 250 V ac, as required by the power system of each country or region.
- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with the appliance inlet on the back of the computer.

Requirements for specific countries and regions

To determine power cord requirements for specific countries and regions, use this table.

Table 8-1 Power cord requirements for specific countries and regions

Country/region	Accredited agency	Applicable note number
Argentina	IRAM	1
Australia	SAA	1
Austria	OVE	1
Belgium	CEBEC	1
Brazil	ABNT	1
Canada	CSA	2
Chile	IMQ	1
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1

Table 8-1 Power cord requirements for specific countries and regions (continued)

Country/region	Accredited agency	Applicable note number
India	BIS	1
Israel	SII	1
Italy	IMQ	1
Japan	JIS	3
The Netherlands	KEMA	1
New Zealand	SANZ	1
Norway	NEMKO	1
The People's Republic of China	CCC	4
Saudi Arabia	SASO	7
Singapore	PSB	1
South Africa	SABS	1
South Korea	KTL	5
Sweden	SEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	6
Thailand	TISI	1
The United Kingdom	ASTA	1
The United States	UL	2

1. The flexible cord must be Type H05VV-F, 3-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
2. The flexible cord must be Type SVT/SJT or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V ac) or NEMA 6-15P (15 A, 250 V ac) configuration. CSA or C-UL mark. UL file number must be on each element.
3. The appliance coupler, flexible cord, and wall plug must bear a T mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCTF, 3-conductor, 0.75 mm² or 1.25 mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V ac) configuration.
4. The flexible cord must be Type RVV, 3-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the CCC certification mark.
5. The flexible cord must be Type H05VV-F 3-conductor, 0.75 mm² conductor size. KTL logo and individual approval number must be on each element. Approval number and logo must be printed on a flag label.
6. The flexible cord must be Type HVCTF 3-conductor, 1.25 mm² conductor size. Power cord set fittings (appliance coupler, cable, and wall plug) must bear the BSMI certification mark.
7. For 127 V ac, the flexible cord must be Type SVT or SJT 3-conductor, 18 AWG, with plug NEMA 5-15P (15 A, 125 V ac), with UL and CSA or C-UL marks. For 240 V ac, the flexible cord must be Type H05VV-F 3-conductor, 0.75 mm² or 1.00 mm² conductor size, with plug BS 1363/A with BSI or ASTA marks.

9 Recycling

When a nonrechargeable 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 website at <http://www.hp.com/recycle>.

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