Maintenance and Service Guide

HP Chromebook 14a

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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

⚠ **WARNING!** To reduce the possibility of heat-related injuries or of overheating the device, do not place the device directly on your lap or obstruct the device air vents. Use the device only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or rugs or clothing, to block airflow. Also, do not allow the AC adapter to contact the skin or a soft surface, such as pillows or rugs or clothing, during operation. The device and the AC adapter comply with the user-accessible surface temperature limits defined by applicable safety standards.

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1 Product description

Table 1-1 Product components and their descriptions

Category	Description
Product Name	**HP Chromebook™ 14a**
	Model numbers: 14a-na0000 ~ 14a-na0999
	CTO Model: 14at-na000
Processor	Intel® Pentium® Silver Processor N5030 (1.1 GHz, turbo up to 3.1 GHz, 2400 MHz FSB, 4 MB L2 cache, quad core, 6 W; Intel UHD 605 Graphics)
	Intel Pentium Silver Processor N5000 (1.1 GHz, turbo up to 2.7 GHz, 2400 MHz FSB, 4 MB L2 cache, quad core, 6 W; Intel UHD 605 Graphics)
	Intel Celeron® N4020 Processor (1.1 GHz, turbo up to 2.8 GHz, 2400 MHz FSB, 4 MB L2 cache, dual core, 6 W; Intel UHD 600 Graphics)
	Intel Celeron N4000 Processor (1.1 GHz, turbo up to 2.6 GHz, 2400 MHz FSB, 4 MB L2 cache, dual core, 6 W; Intel UHD 600 Graphics)
Graphics	**Internal graphics**
	Intel UHD 605 Graphics (Intel Pentium processors)
	Intel UHD 600 Graphics (Intel Celeron processors)
	Supports HD decode, DX12, and HDMI
Display panel	**35.6 cm (14.0 in), WLED, slim (3.0 mm), narrow bezel, 45% NTSC**
	High-definition (HD) (1366 × 768), antiglare, SVA, eDP 1.2, 220 nits
	HD, BrightView, SVA, eDP, 220 nits, Touch-on Panel (TOP)
	Full high-definition (FHD) (1920 × 1080), antiglare, UWVA, eDP 1.2, 250 nits
	FHD, antiglare, UWVA, eDP, 250 nits, Touch-on Panel (TOP)
Memory	Not customer accessible or upgradeable
	LPDDR4-2400 dual channel support (LPDDR4-4266 bridge to LPDDR4-3733 and LPDDR4-3733 downgrade to LPDDR4-2400)
	Supports up to 8 GB maximum system memory in the following configurations:
	• 8 GB
	• 4 GB
Storage	**eMMC v5.0 configurations**
	128 GB
	64 GB
	32 GB
Audio	Audio brand: B&O Audio
	Dual speakers

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

Category	Description
Video	**HP Wide Vision HD Camera**
	720p by 30 frames per second
	Dual-array digital microphone with appropriate software: echo cancellation, noise suppression, Google™ Assistant Support
Wireless networking	**Integrated wireless option with dual antennas (M.2/PCIe)**
	Realtek RTL8822CE 802.11ac 2 × 2 Wi-Fi + Bluetooth® 5.0 (MU-MIMO supported)
Ports	Audio-out (headphone)/Audio-in (microphone) combo jack
	USB 3.2 Type A port (right side)
	(2) USB 3.2 Type C ports (right and left side)
	Support power delivery, data transfer, DisplayPort 1.2 out up to 4096 × 2304 (60 Hz) and HDMI 1.4 out through adapter
Media card reader	Supports microSD™, SDHC™, SDXC™
	Push-push insertion and removal
Keyboard/pointing devices	**Google Keyboard**
	Full size, island style
	Full size, island style, textured, backlit
	Touchpad requirements
	Multitouch gestures enabled
	Taps enabled as default
Power requirements	**Battery**
	2 cell, 47 Whr long-life battery
	Supports battery fast charge (50% in 45 minutes, 90% in 90 minutes)
	AC adapter
	45 W, nPFC, USB Type-C, straight
	Power cord
	1 m. conventional, C5
Security	H1 Secure Microcontroller
Operating system	**Preinstalled**
	Google Chrome 64
Serviceability	**User replaceable part**
	AC adapter

2 Getting to know your computer

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

Right side

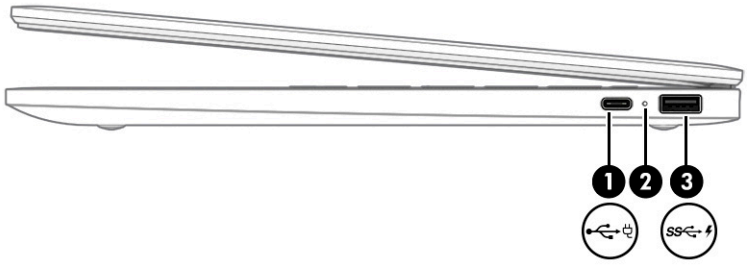


Table 2-1 Right-side components and their descriptions

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

Left side

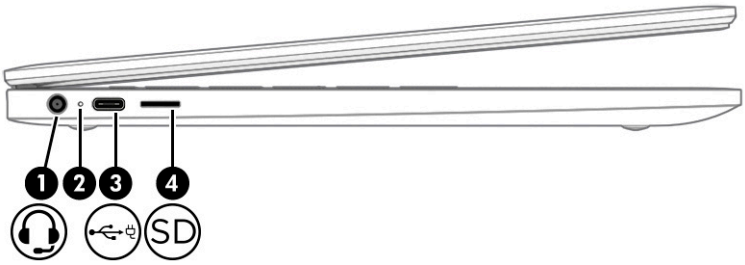


Table 2-2 Left-side components and their descriptions

Component		Description
(1)	Audio-out (headphone)/Audio-in (microphone) combo jack	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. **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 *Regulatory, Safety, and Environmental Notices*. **NOTE:** When a device is connected to the jack, the computer speakers are disabled.
(2)	AC adapter and battery light	• 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.
(3)	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, provides data transfer, and (for select products) charges small devices when the computer is on or in Sleep mode. – and – Connects a display device that has a USB Type-C connector, providing DisplayPort output. **NOTE:** Cables, adapters, or both (purchased separately) may be required.
(4)	microSD™ memory card reader	Reads optional memory cards that enable you to store, manage, share, or access information. To insert a card: 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. To remove a card: ▲ Press in on the card, and then remove it from the memory card reader.

Display

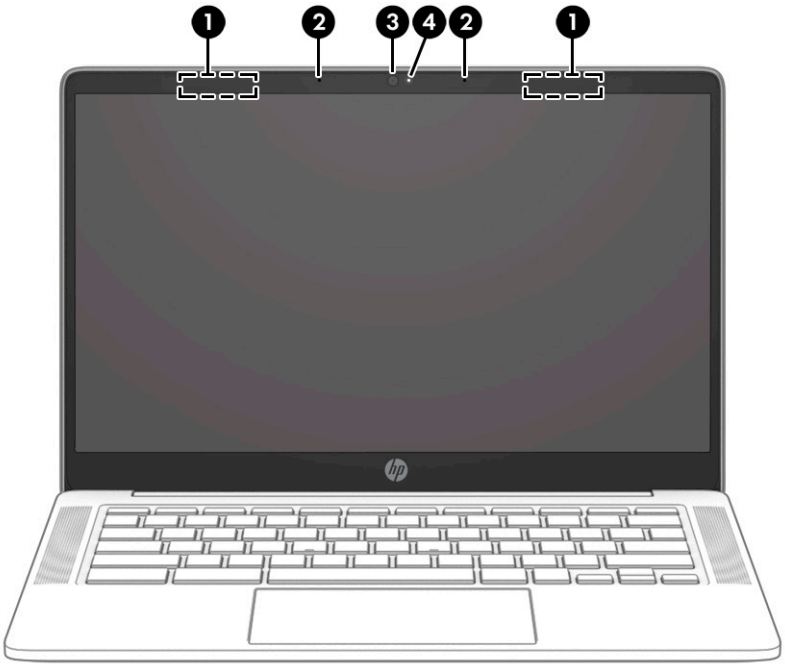


Table 2-3 Display components and their descriptions

Component		Description
(1)	WLAN antennas*	Send and receive wireless signals to communicate with wireless local area networks (WLANs).
(2)	Internal microphones	Record sound.
(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)	Camera light	On: The camera is in use.

*The antennas are not visible from the outside of the computer. 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.

Keyboard area

Touchpad

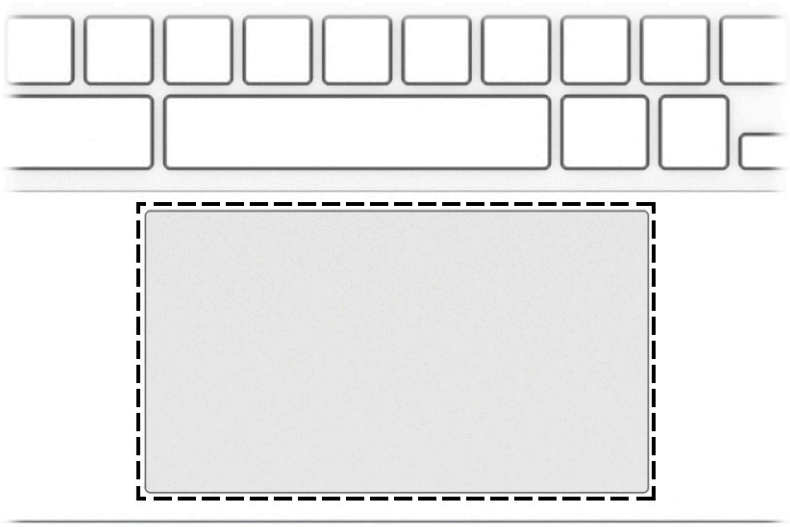


Table 2-4 Touchpad and its description

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

Speakers

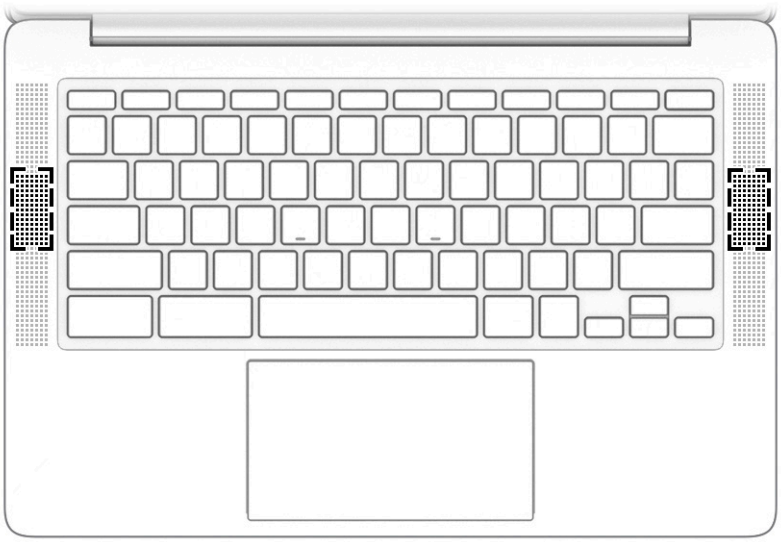


Table 2-5 Speakers and their description

Component	Description
Speakers (2)	Produce sound.

Special keys

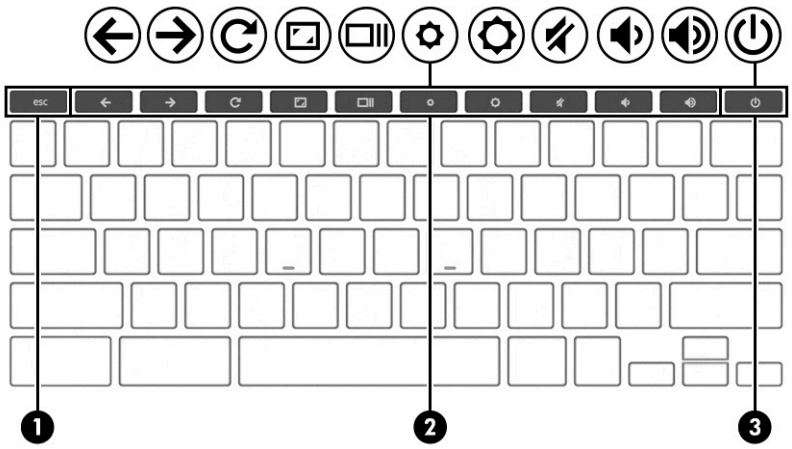


Table 2-6 Special keys and their descriptions

Component		Description
(1)	esc 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. See Action keys on page 8.
(3)	Power button	• 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). **IMPORTANT:** Pressing and holding down the power button results in the loss of unsaved information. 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.

Action keys

An action key performs the function indicated by the icon on the key. To determine which keys are on your product, see Special keys on page 7.

▲ To use an action key, press and hold the key.

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 2-7 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 ctrl takes a screenshot.
	Brightness down	Decreases the screen brightness incrementally as long as you hold down the key. Press simultaneously with ctrl to decrease the keyboard backlight (select products only) incrementally as long as you hold down the key.
	Brightness up	Increases the screen brightness incrementally as long as you hold down the key. Press simultaneously with ctrl to increase the keyboard backlight (select products only) 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.

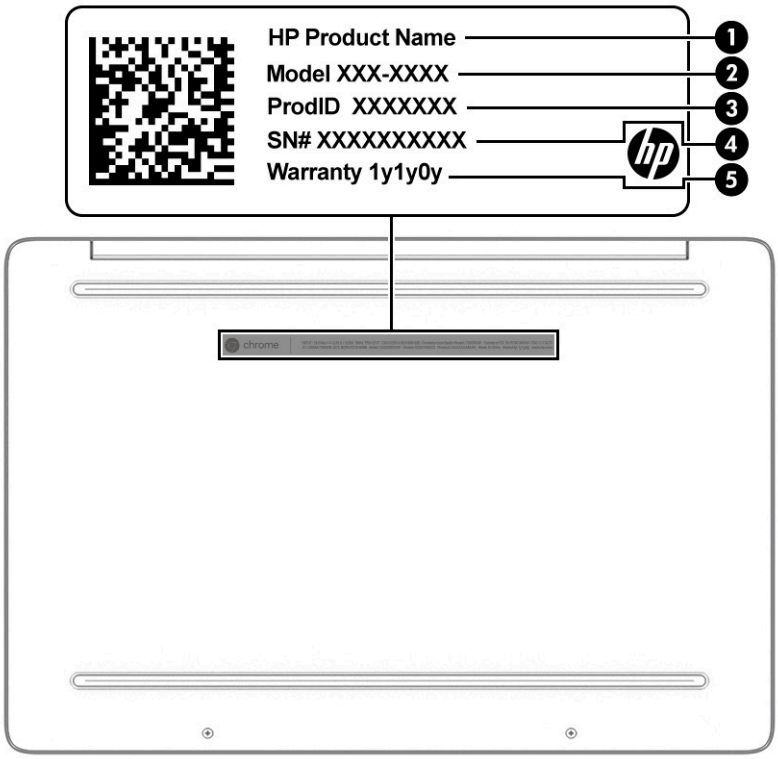


Table 2-8 Service label components

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

Computer major components

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. See Labels on page 9 for details.

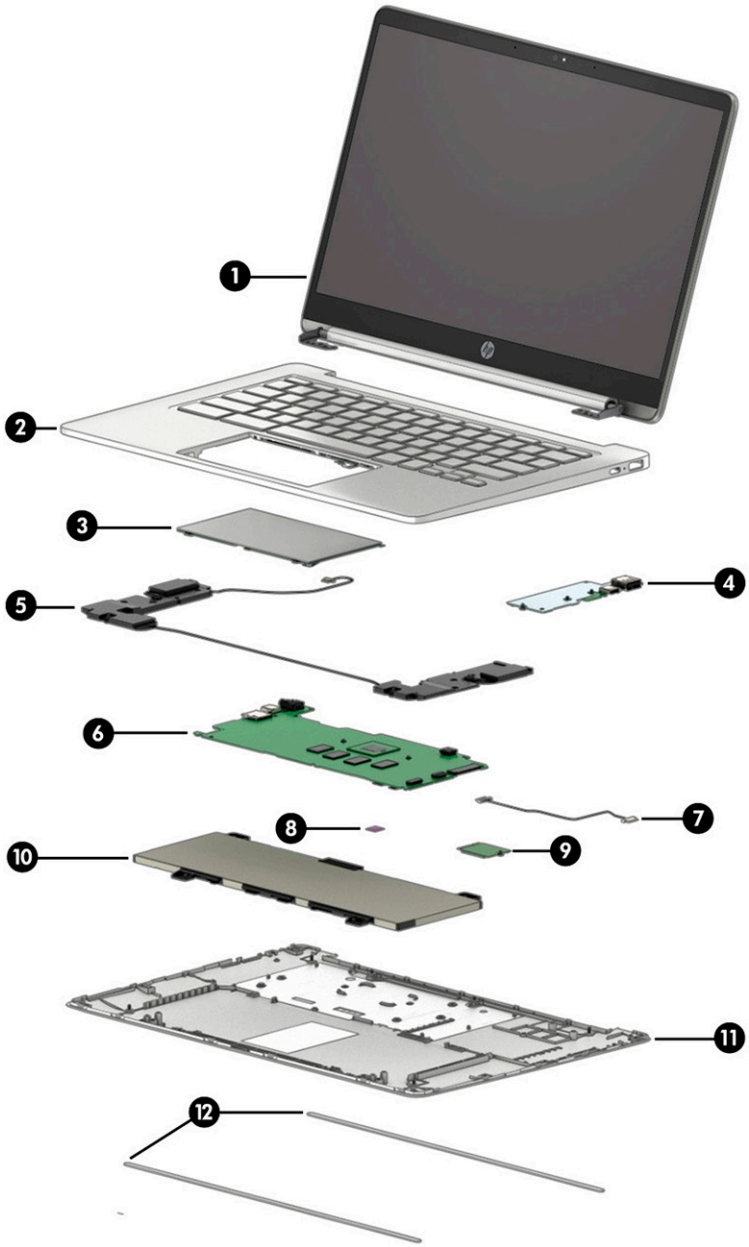


Table 3-1 Computer major components and their descriptions

Item	Component	Spare part number
(1)	**Display assembly** **NOTE:** Display assemblies are offered as spare parts only at a subcomponent level.	
(2)	**Keyboard with top cover** For a detailed list of country codes, see Keyboard with top cover on page 42.	
	Snow white; no backlight	L91515-xx1
	Snow white; backlit	L91516-xx1
	Ash silver; no backlight	L91511-xx1
	Ash silver; backlit	L91512-xx1
	Natural silver; no backlight	L91513-xx1
	Natural silver; backlit	L91514-xx1
(3)	**Touchpad** The touchpad cable is available as spare part number L91527-001.	L91526-001
(4)	**USB board**	L91522-001
(5)	**Speaker assembly**	L91528-001
(6)	**System board** (includes integrated processor and thermal material) **NOTE:** The system board thermal pad is available as spare part number L76600-001.	
	Intel Pentium Silver N5030 processor, 8 GB system memory, and 128 GB eMMC memory	L91521-001
	Intel Pentium Silver N5030 processor, 4 GB system memory, and 64 GB eMMC memory	L91520-001
	Intel Pentium Silver N5000 processor, 8 GB system memory, and 128 GB eMMC memory	M03106-001
	Intel Pentium Silver N5000 processor, 8 GB system memory, and 128 GB eMMC memory, models with a backlit keyboard	M03111-001
	Intel Pentium Silver N5000 processor, 4 GB system memory, and 64 GB eMMC memory	M00111-001
	Intel Pentium Silver N5000 processor, 4 GB system memory, and 64 GB eMMC memory, models with a backlit keyboard	M03109-001
	Intel Celeron N4020 processor, 8 GB system memory, and 128 GB eMMC memory	L91519-001
	Intel Celeron N4020 processor, 4 GB system memory, and 64 GB eMMC memory	L91518-001
	Intel Celeron N4020 processor, 4 GB system memory, and 32 GB eMMC memory	L91517-001
	Intel Celeron N4000 processor, 8 GB system memory, and 128 GB eMMC memory	M03105-001
	Intel Celeron N4000 processor, 8 GB system memory, and 128 GB eMMC memory, models with a backlit keyboard	M03110-001
	Intel Celeron N4000 processor, 4 GB system memory, and 64 GB eMMC memory	M00110-001
	Intel Celeron N4000 processor, 4 GB system memory, and 64 GB eMMC memory, models with a backlit keyboard	M03108-001
	Intel Celeron N4000 processor, 4 GB system memory, and 32 GB eMMC memory	M00109-001
	Intel Celeron N4000 processor, 4 GB system memory, and 32 GB eMMC memory, models with a backlit keyboard	M03107-001

Table 3-1 Computer major components and their descriptions (continued)

Item	Component	Spare part number
(7)	**Power connector cable**	L99191-001
(8)	**Thermal pad**	L76600-001
(9)	**WLAN module** (Realtek RTL8822CE 802.11ac 2 × 2 Wi-Fi + Bluetooth 5.0)	L44796-005
(10)	**Battery** (2 cell, 47 Whr)	L75783-005
(11)	**Bottom cover**	L91523-001
(12)	**Rubber feet**	L91524-001
	Screw covers (not illustrated)	L91525-001

Cables

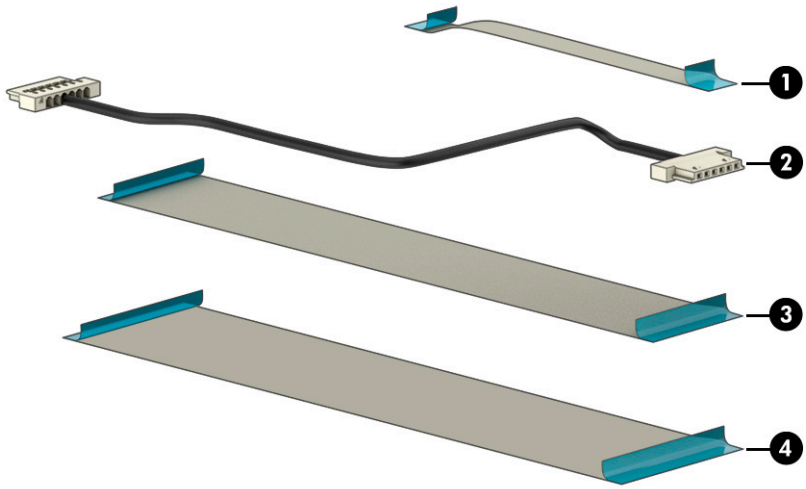


Table 3-2 Cables and their descriptions

Item	Component	Spare part number
(1)	**Touchpad cable**	L91527-001
(2)	**Power connector cable (DC in)**	L99191-001
(3)	**USB high speed cable**	L73309-001
(4)	**USB low speed cable**	L73310-001

Display assembly subcomponents

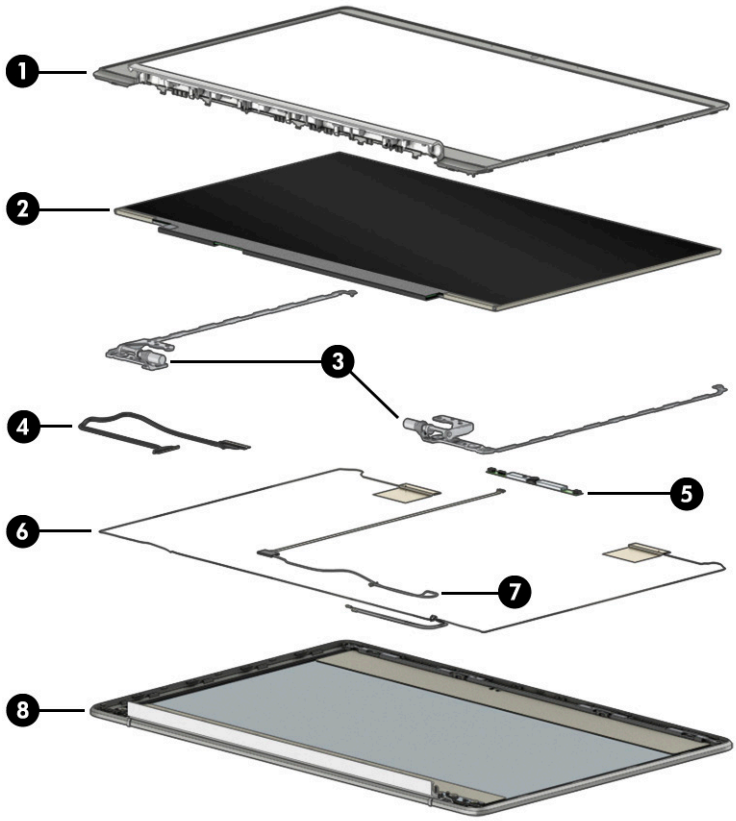


Table 3-3 Display components and their descriptions

Item	Component	Spare part number
(1)	**Display bezel**	
	Ash grey	L91534-001
	Mineral silver	L91535-001
(2)	**Display panel** (includes display tape and panel adhesive)	
	FHD, antiglare	L91591-001
	FHD, antiglare, Touch-on Panel (TOP)	L91592-001
	HD, antiglare	L91593-001
	HD, BrightView, Touch-on Panel (TOP)	L91594-001
(3)	**Display hinges (left and right)** (include display tape)	L91537-001
(4)	**Display panel cable** (includes display tape)	
	For use with touch displays	L91539-001
	For use with nontouch displays	L91538-001
(5)	**Webcam/microphone module**	L91540-001
(6)	**Wireless antennas (dual)** (includes display tape)	L91533-001
(7)	**Webcam cable** (includes display tape)	L91541-001

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

Item	Component	Spare part number
(8)	**Display back cover**	
	Mineral silver	L91530-001
	Forest teal	L91529-001
	Ceramic white	L91531-001

Miscellaneous parts

Table 3-4 Miscellaneous parts and their descriptions

Component	Spare part number
AC adapter (USB Type-C, 45 W, nPFC, 3 pin, 1.8 m)	L43407-001
Screw Kit	L91542-001
Screw protective tape	L91525-001
Power adapter for use in Japan (C5)	226768-001
Power cord (C5, 1.0 m)	
For use in Australia	L19358-001
For use in Denmark	L19360-001
For use in Europe	L19361-001
For use in India	L19363-001
For use in Japan	L19365-001
For use in North America	L19367-001
For use in South Korea	L19366-001
For use in Taiwan	L19372-001
For use in the United Kingdom	L19373-001

4 Removal and replacement procedures preliminary requirements

Tools required

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

- Nonmarking, nonconductive pry tool
- Magnetic Phillips P1 screwdriver
- Tweezers

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 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 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

	Relative humidity		
Event	**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 polystyrene foam	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 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

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

- **Wrist straps** are flexible straps with a maximum of 1 MΩ ±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 MΩ ±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, take 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 polystyrene foam.
- Use field service tools, such as cutters, screwdrivers, and vacuums, that are conductive.

Recommended materials and equipment

HP recommends the following 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 MΩ ±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 MΩ ±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.

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.

Component replacement procedures

There are as many as 45 screws that must be removed, replaced, and/or loosened when servicing the computer. Make special note of each screw size and location during removal and replacement.

Preparation for disassembly

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 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.

Bottom cover

Table 5-1 Bottom cover descriptions and part numbers

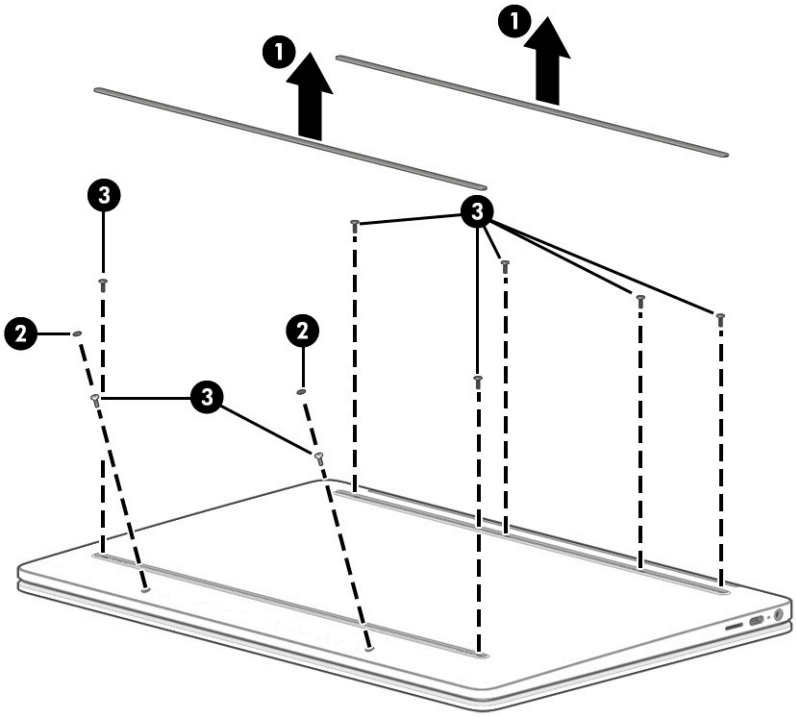
Description	Spare part number
Bottom cover	L91523-001
Rubber feet	L91524-001

Before removing the bottom cover, follow this step:

▲ Prepare the computer for disassembly (Preparation for disassembly on page 20).

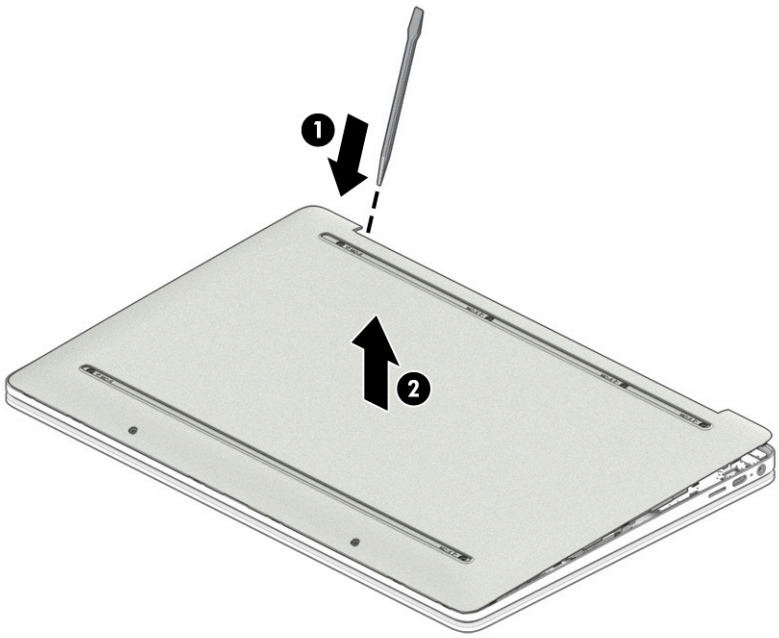
Remove the bottom cover:

1. Peel the two rubber strips **(1)** and remove the two screw covers **(2)** from the bottom cover **(1)**.
2. Remove the eight Phillips M2.0 × 5.0 screws **(3)** from the bottom cover.



3. Insert a nonmarking, nonconductive tool between the bottom cover and the computer chassis **(1)**, and then flex and lift the bottom cover enough to separate it from the computer.

4. Remove the bottom cover from the computer **(2)**.



Reverse this procedure to install the bottom cover.

Battery

Table 5-2 Battery description and part number

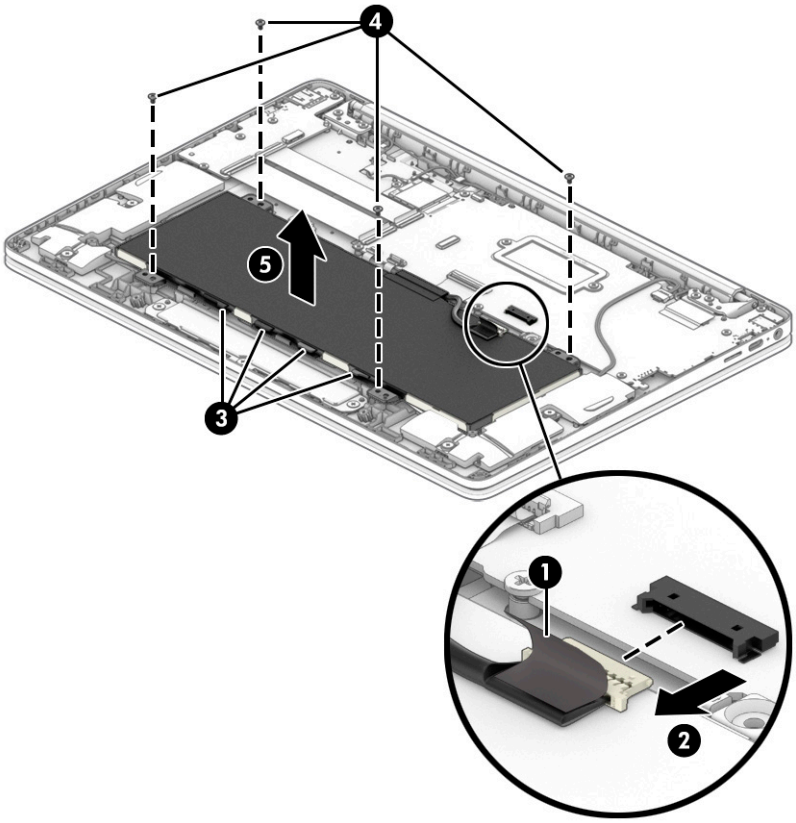
Description	Spare part number
Battery, 2 cell, 47 Whr	L75783-005

Before removing the battery, follow these steps:

1. Prepare the computer for disassembly (Preparation for disassembly on page 20).
2. Remove the bottom cover (see Bottom cover on page 21).

Remove the battery:

1. Lift the tape from the top of the battery connector **(1)**, and then the disconnect battery cable from the system board **(2)**.
2. Remove the speaker cable from the routing along the bottom of the battery **(3)**.
3. Remove the four Phillips M2.0 × 3.5 screws **(4)** that secure the battery to the computer.
4. Remove the battery from the computer **(5)**.



Reverse this procedure to install the battery.

WLAN module

Table 5-3 WLAN module description and part number

Description	Spare part number
Realtek RTL8822CE 802.11ac 2 × 2 Wi-Fi + Bluetooth 5.0	L44796-005

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:

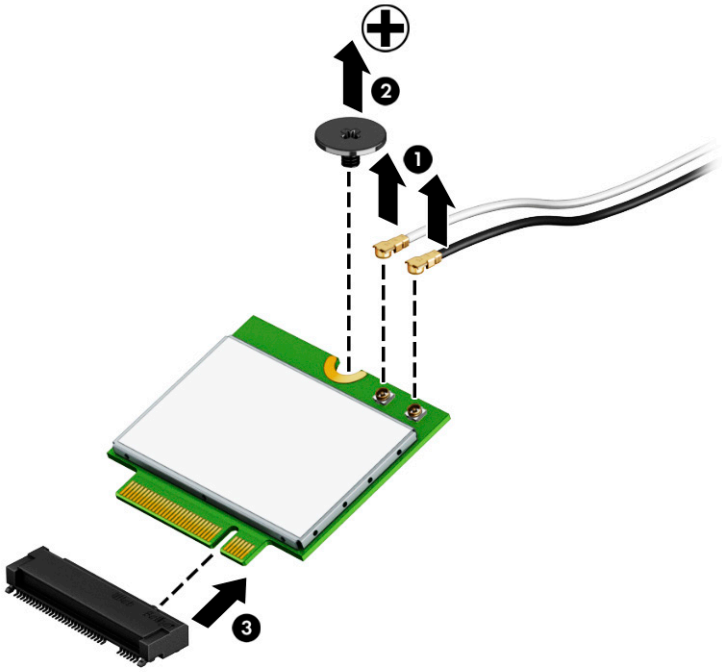
1. Prepare the computer for disassembly (Preparation for disassembly on page 20).
2. Remove the bottom cover (see Bottom cover on page 21).
3. Disconnect the battery (see Battery on page 23).

Remove the WLAN module:

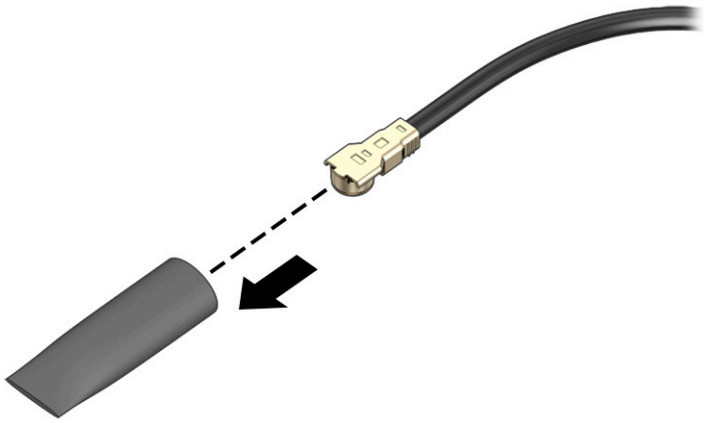
1. Disconnect the WLAN antenna cables **(1)** from the terminals on the WLAN module.

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

2. Remove the Phillips M2.0 × 2.0 screw **(2)** that secures the WLAN module to the bottom cover. (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 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.

Speaker

Table 5-4 Speaker description and part number

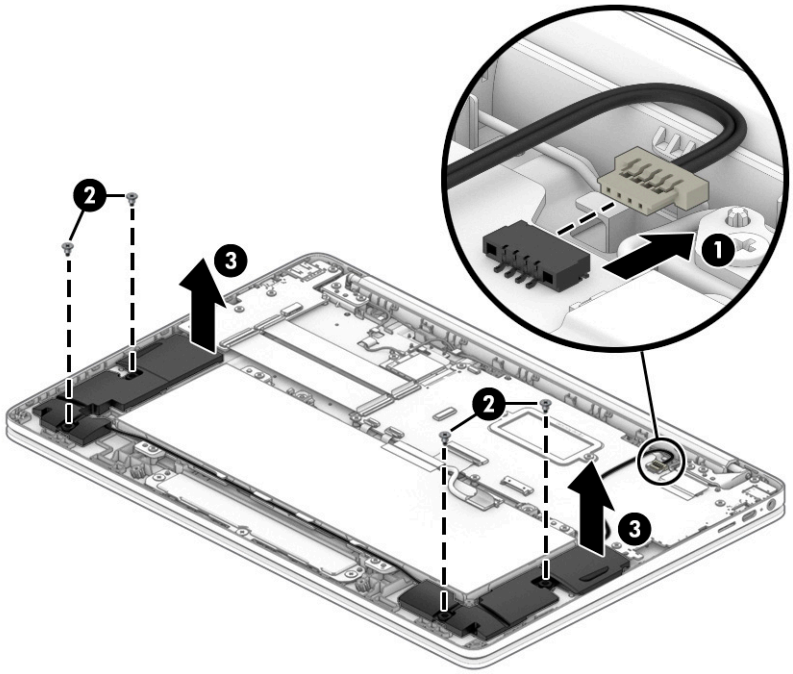
Description	Spare part number
Speaker	L91528-001

Before removing the speaker, follow these steps:

1. Prepare the computer for disassembly (Preparation for disassembly on page 20).
2. Remove the bottom cover (see Bottom cover on page 21).
3. Disconnect the battery (see Battery on page 23).

Remove the speaker:

1. Disconnect the speaker cable from the system board **(1)**.
2. Remove the four Phillips M2.0 × 4.8 screws **(2)** that secure the speakers to the computer.
3. Remove the speakers **(3)** while removing the cable from the routing along the bottom of the battery.



Reverse this procedure to install the speakers.

Touchpad

Table 5-5 Touchpad description and part number

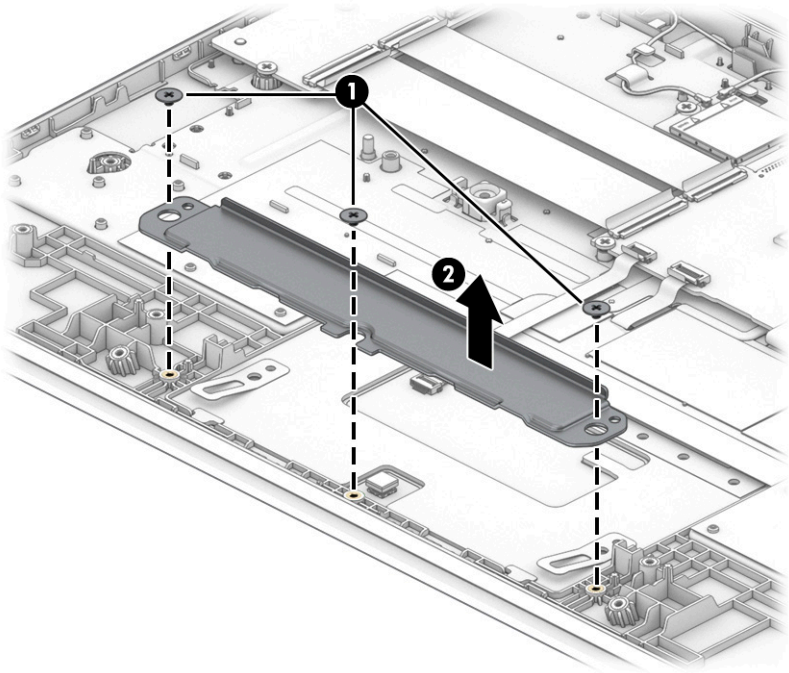
Description	Spare part number
Touchpad	L91526-001
NOTE: The touchpad spare part kit does not include the cable. The cable is available as spare part number L91527-001.	

Before removing the touchpad, follow these steps:

1. Prepare the computer for disassembly (Preparation for disassembly on page 20).
2. Remove the bottom cover (see Bottom cover on page 21).
3. Remove the battery (see Battery on page 23).

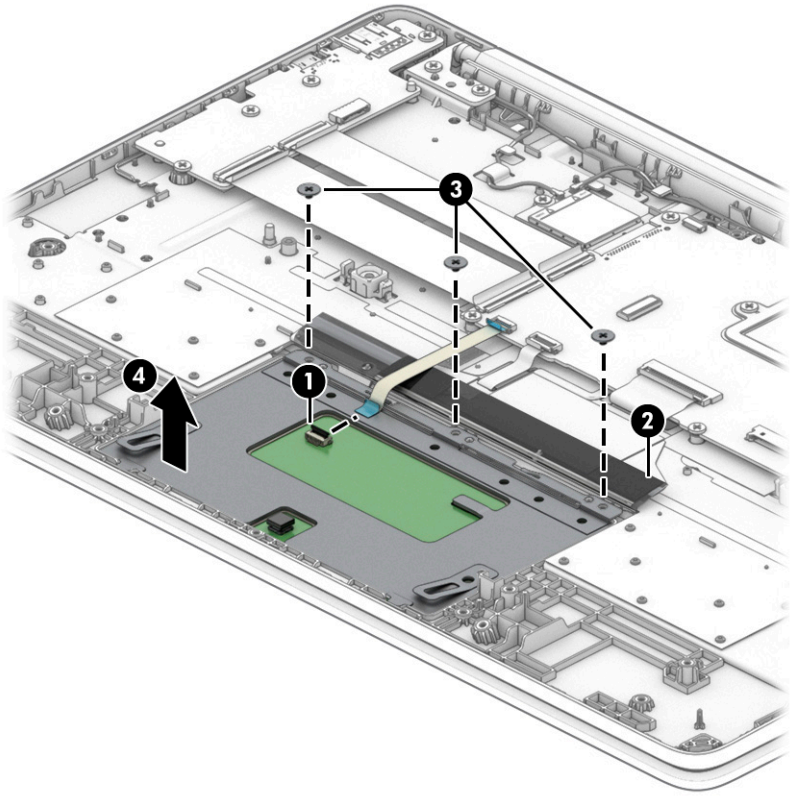
Remove the touchpad:

1. Remove the three Phillips M2.0 × 2.0 screws **(1)** that secure the touchpad bracket to the computer, and then remove the bracket **(2)**.



2. Disconnect the cable from the ZIF connector on the touchpad board **(1)**.
3. Lift the tape from the top of the touchpad **(2)**.

4. Remove the three Phillips M2.0 × 2.0 screws **(3)** that secure the touchpad to the computer, and then remove the touchpad **(4)**.



Reverse this procedure to install the touchpad.

USB board

Table 5-6 USB board description and part number

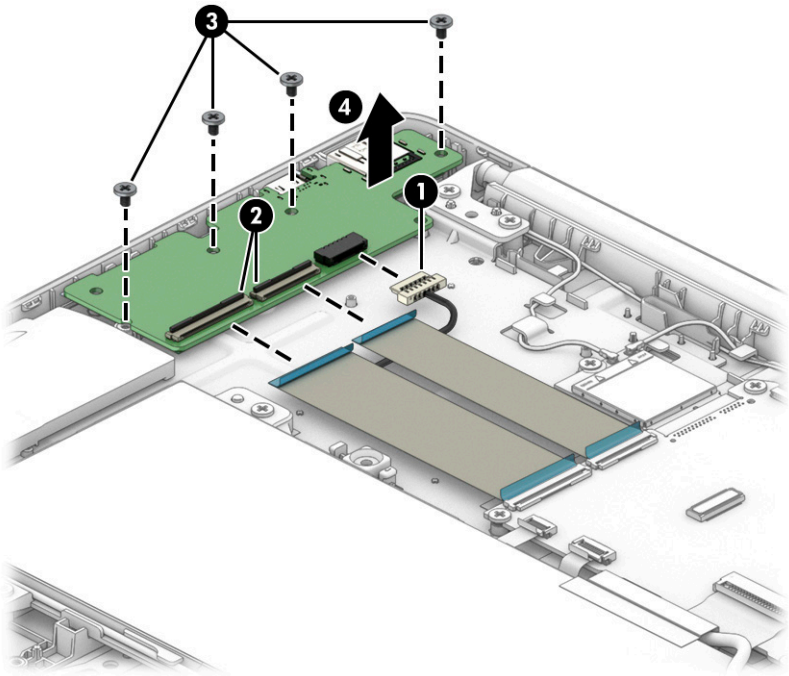
Description	Spare part number
USB board	L91522-001
NOTE: The USB board spare part kit does not include the cables. The high speed USB cable is available as spare part number L73309-001. The low speed USB cable is available as spare part number L73310-001.	

Before removing the USB board, follow these steps:

1. Prepare the computer for disassembly (Preparation for disassembly on page 20).
2. Remove the bottom cover (see Bottom cover on page 21).
3. Disconnect the battery (see Battery on page 23).

Remove the USB board:

1. Disconnect the top cable from the USB board **(1)**.
2. Disconnect the two flat ribbon cables from the two reverse ZIF connectors on the USB board **(2)**.
3. Remove the four Phillips M2.0 × 3.5 screws **(3)** that secure the USB board to the computer, and then remove the board **(4)**.



Reverse this procedure to install the USB board.

System board

Table 5-7 System board descriptions and part numbers

Description	Spare part number
Intel Pentium Silver N5030 processor, 8 GB system memory, and 128 GB eMMC memory	L91521-001
Intel Pentium Silver N5030 processor, 4 GB system memory, and 64 GB eMMC memory	L91520-001
Intel Pentium Silver N5000 processor, 8 GB system memory, and 128 GB eMMC memory	M03106-001
Intel Pentium Silver N5000 processor, 8 GB system memory, and 128 GB eMMC memory, models with a backlit keyboard	M03111-001
Intel Pentium Silver N5000 processor, 4 GB system memory, and 64 GB eMMC memory	M00111-001
Intel Pentium Silver N5000 processor, 4 GB system memory, and 64 GB eMMC memory, models with a backlit keyboard	M03109-001
Intel Celeron N4020 processor, 8 GB system memory, and 128 GB eMMC memory	L91519-001
Intel Celeron N4020 processor, 4 GB system memory, and 64 GB eMMC memory	L91518-001
Intel Celeron N4020 processor, 4 GB system memory, and 32 GB eMMC memory	L91517-001
Intel Celeron N4000 processor, 8 GB system memory, and 128 GB eMMC memory	M03105-001
Intel Celeron N4000 processor, 8 GB system memory, and 128 GB eMMC memory, models with a backlit keyboard	M03110-001
Intel Celeron N4000 processor, 4 GB system memory, and 64 GB eMMC memory	M00110-001
Intel Celeron N4000 processor, 4 GB system memory, and 64 GB eMMC memory, models with a backlit keyboard	M03108-001
Intel Celeron N4000 processor, 4 GB system memory, and 32 GB eMMC memory	M00109-001
Intel Celeron N4000 processor, 4 GB system memory, and 32 GB eMMC memory, models with a backlit keyboard	M03107-001
Thermal pad, system board	L76600-001

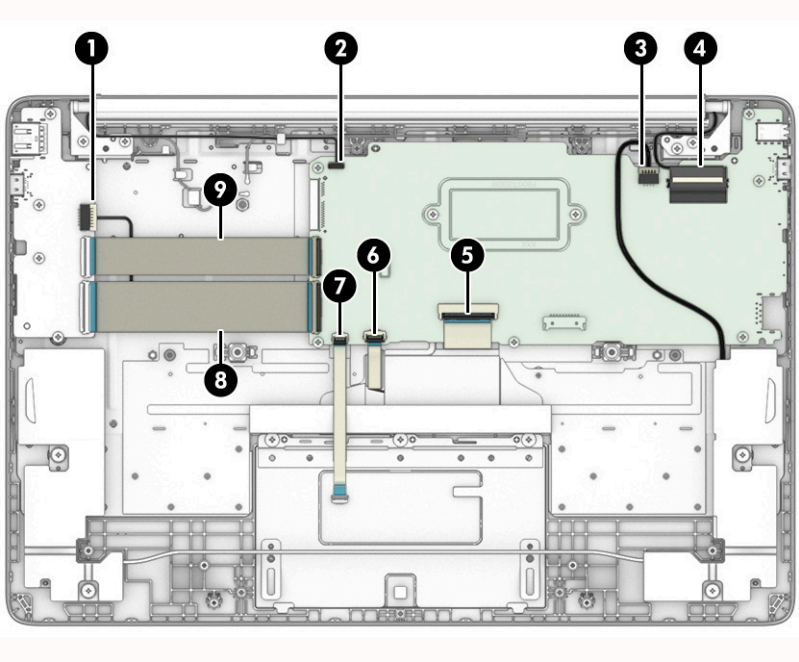
Before removing the system board, follow these steps:

1. Prepare the computer for disassembly (Preparation for disassembly on page 20).
2. Remove the bottom cover (see Bottom cover on page 21).
3. Remove the battery (see Battery on page 23).

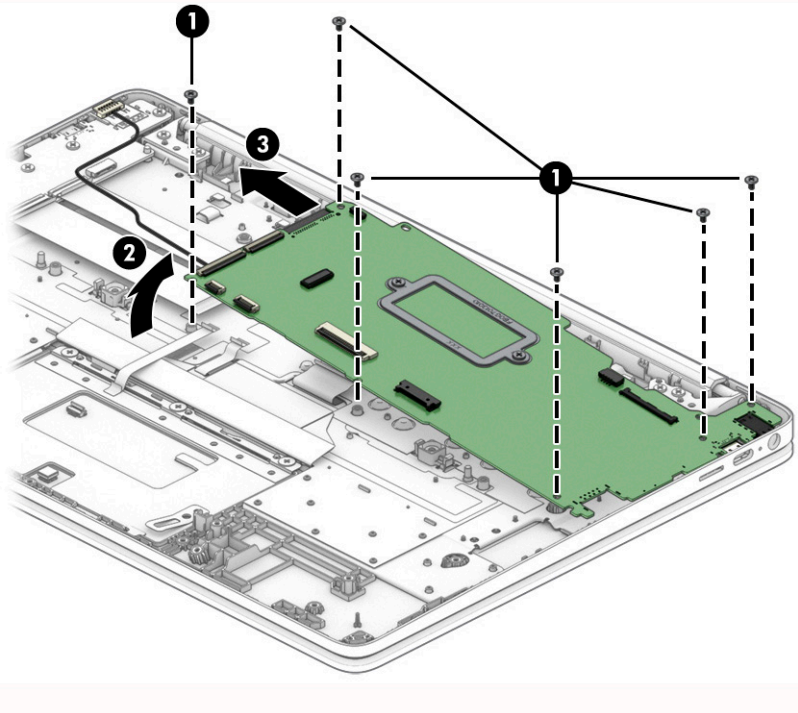
Remove the system board:

1. Disconnect the following cables from the system board:
   - USB board cable from USB board **(1)**
   - Webcam cable **(2)**
   - Speaker cable **(3)**
   - Display cable **(4)**
   - Keyboard backlight cable (ZIF) **(5)**
   - Keyboard cable (ZIF) **(6)**

- Touchpad cable (ZIF) **(7)**
- Flat USB board cable from bottom of system board (ZIF) **(8)**
- Flat USB board cable from bottom of system board (ZIF) **(9)**

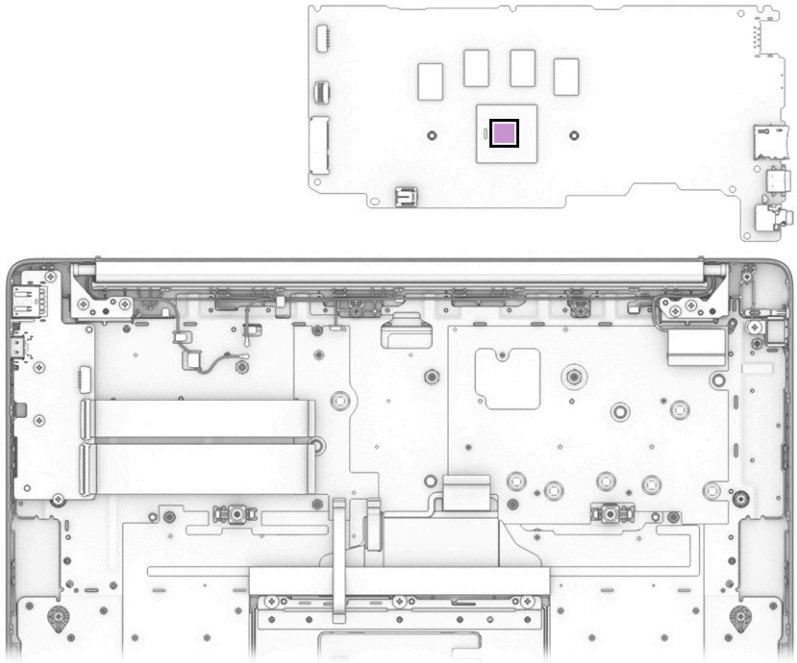


2. Remove the six Phillips M2.0 × 3.5 screws **(1)** that secure the system board to the computer.
3. Lift the left side of the system board upward **(2)**, and then pull the system board to the left to remove it from the computer **(3)**.



Reverse this procedure to install the system board.

When replacing the system board, be sure to replace the thermal pad in the location as shown in the following illustration.



Power connector (DC in) cable

Table 5-8 Power connector cable description and part number

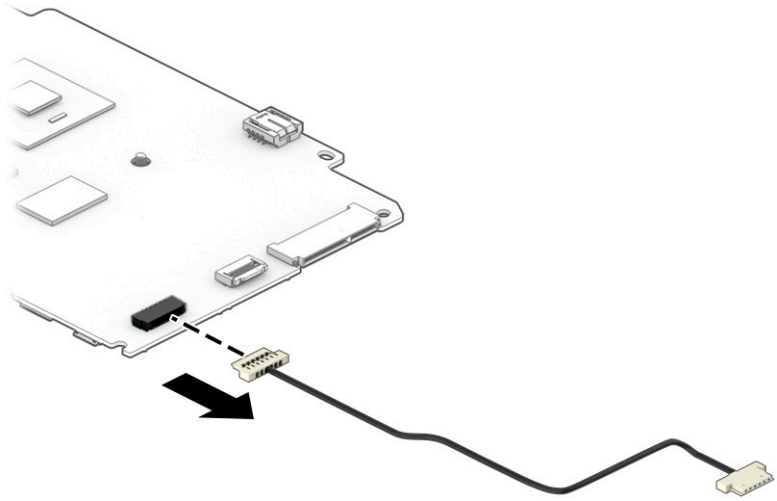
Description	Spare part number
Power connector cable	L99191-001

Before removing the power connector cable, follow these steps:

1. Prepare the computer for disassembly (Preparation for disassembly on page 20).
2. Remove the bottom cover (see Bottom cover on page 21).
3. Remove the battery (see Battery on page 23).
4. Remove the system board (see System board on page 30).

Remove the power connector cable:

▲ Disconnect the power connector cable from the system board.



Reverse this procedure to install the power connector cable.

Display assembly

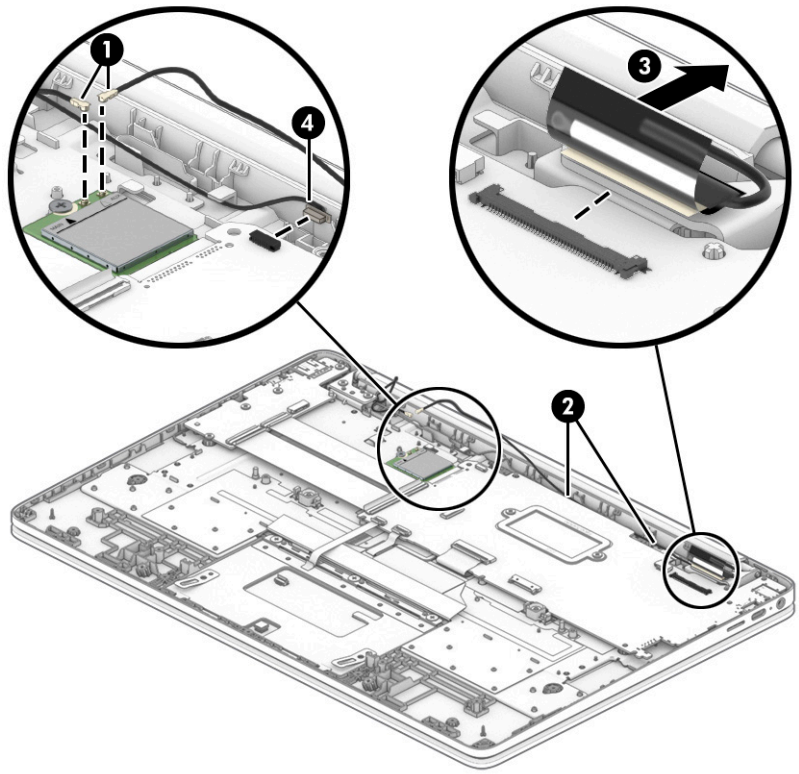
NOTE: Display assemblies are offered as spare parts only at a subcomponent level.

Before removing the display assembly, follow these steps:

1. Prepare the computer for disassembly (Preparation for disassembly on page 20).
2. Remove the bottom cover (see Bottom cover on page 21).
3. Disconnect the battery (see Battery on page 23).

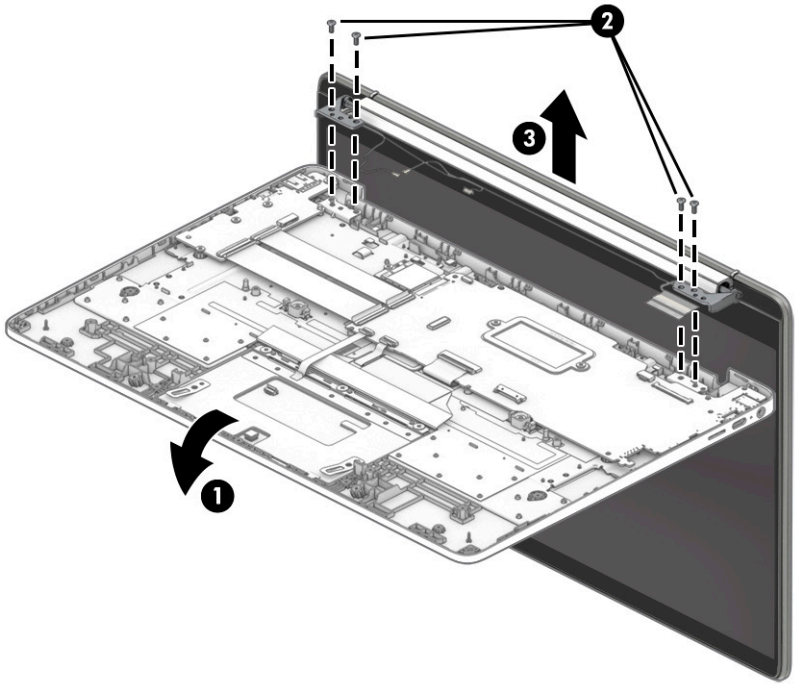
Remove the display assembly:

1. Disconnect the wireless antenna cables from the WLAN module and remove the cable from the clips in the computer **(2)**.
2. Disconnect the display cable **(3)** and the webcam cable **(4)** from the system board.



3. Open the display until the hinges are in the open position **(1)**.
4. Remove the four Phillips M2.5 × 5.5 screws **(2)** from the hinges.

5. Separate the display from the computer **(3)**.



6. If it is necessary to replace display assembly subcomponents:

IMPORTANT: Be careful not to bend or break the narrow sections of the bezel when removing.

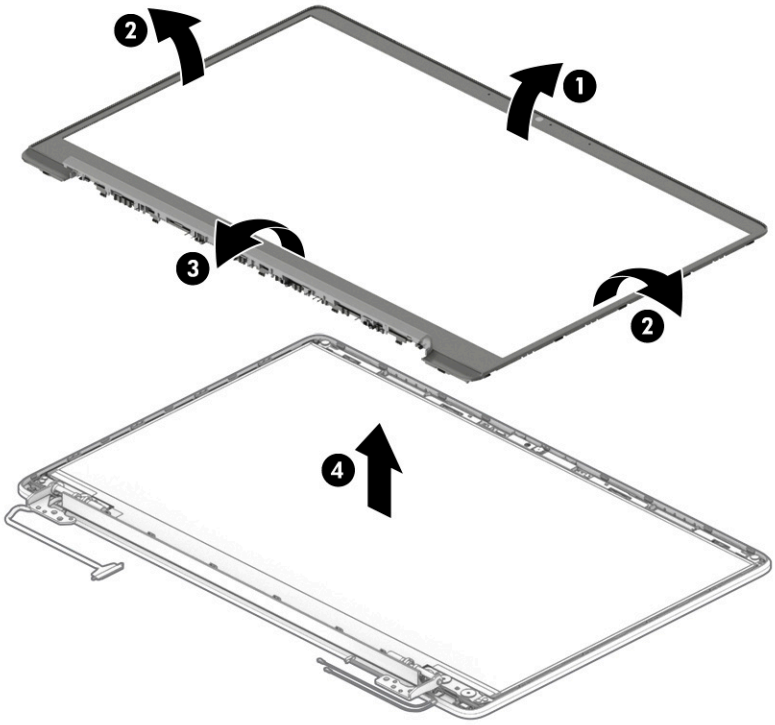
   a. Release the top edge of the display bezel **(1)** from the display assembly.

   b. Release the left and right edges of the display bezel **(2)** from the display assembly.

   c. Release the bottom of the display bezel **(3)** from the display assembly.

d. Remove the display bezel from the display **(4)**.

The display bezel is available as spare part number L91534-001 in ash grey and L91535-001 in mineral silver.

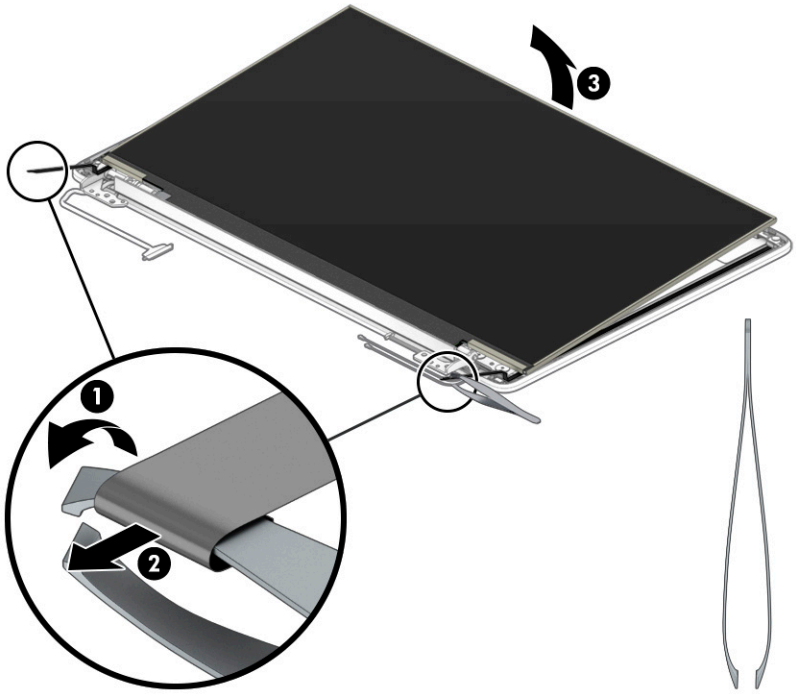


7. If it is necessary to remove the display panel:

a. Tape behind the left and right sides of the display panel secures the panel to the display. Use tweezers to grasp the tape, and then roll the tape around the tweezers **(1)** as you pull the tape from behind the panel **(2)**. Use the same procedure to remove both pieces of tape. You have to pull on the tape multiple times before it is completely removed.

TIP: Rolling the tape around the tweezers or the shaft of a screwdriver as you pull it can help to avoid pulling too hard and tearing the tape. To avoid tearing the tape, pull the tape evenly and carefully.

b. Rotate the display panel over and place it next to the display back cover **(3)**.



c. Lift the tape from the connector on the rear of the panel **(1)**, and then disconnect the cable from the panel **(2)**.

Display panels are available as the following spare part numbers:

L91591-001: FHD, antiglare

L91592-001: FHD, antiglare, Touch-on Panel (TOP)

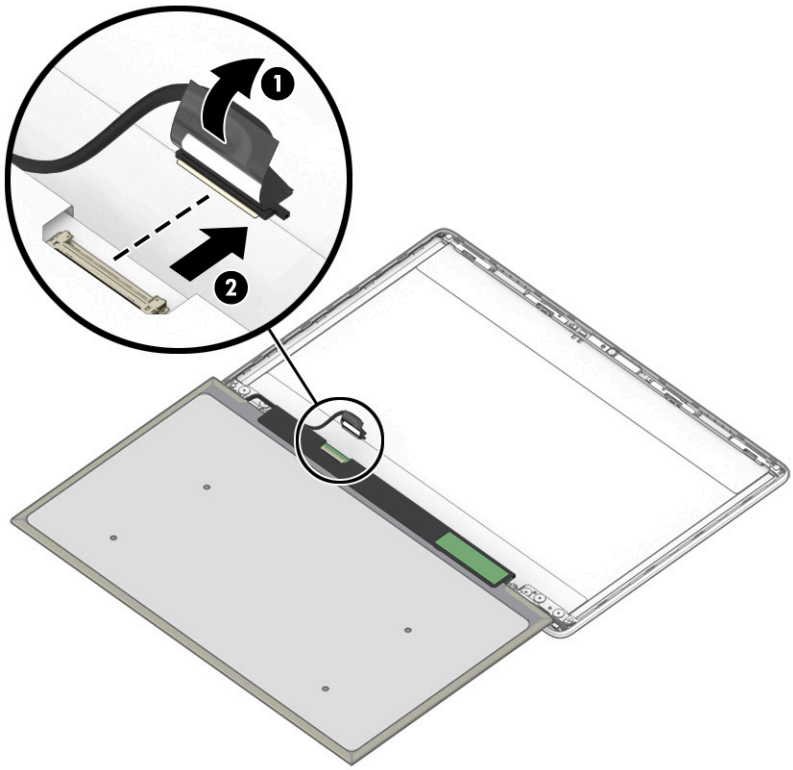
L91593-001: HD, antiglare

L91594-001: HD, BrightView, Touch-on Panel (TOP)

The display cable is available as the following spare part numbers:

L91539-001: Touch displays

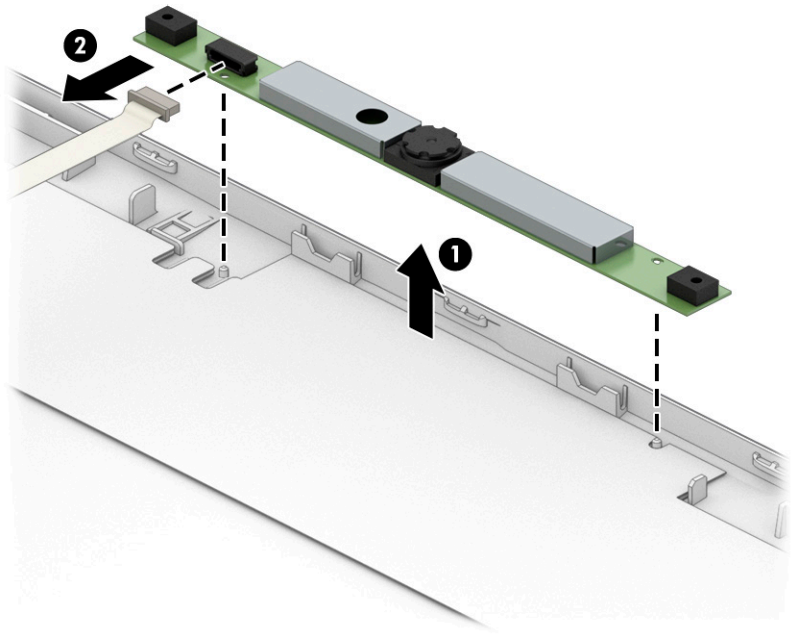
L91538-001: Nontouch displays



8. If it is necessary to remove the webcam module:

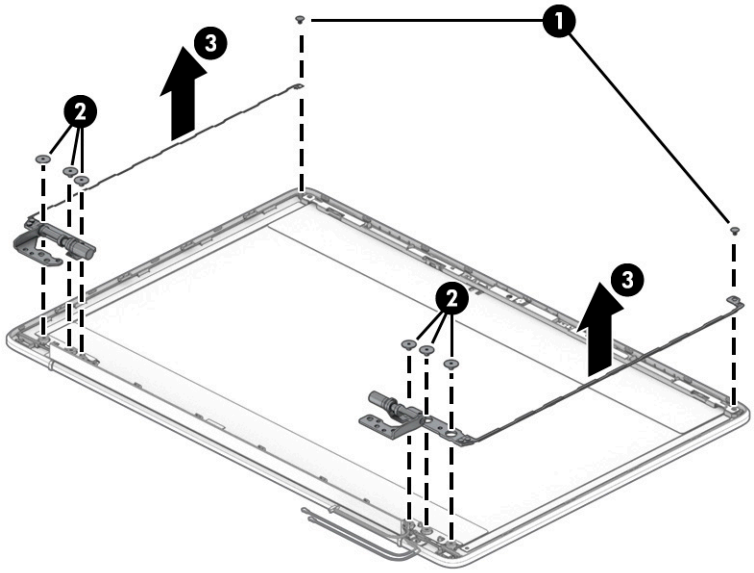
▲ Lift and release the webcam module from the display back cover **(1)**, and then disconnect the cable from the module **(2)**.

The webcam is available as spare part number L91540-001.

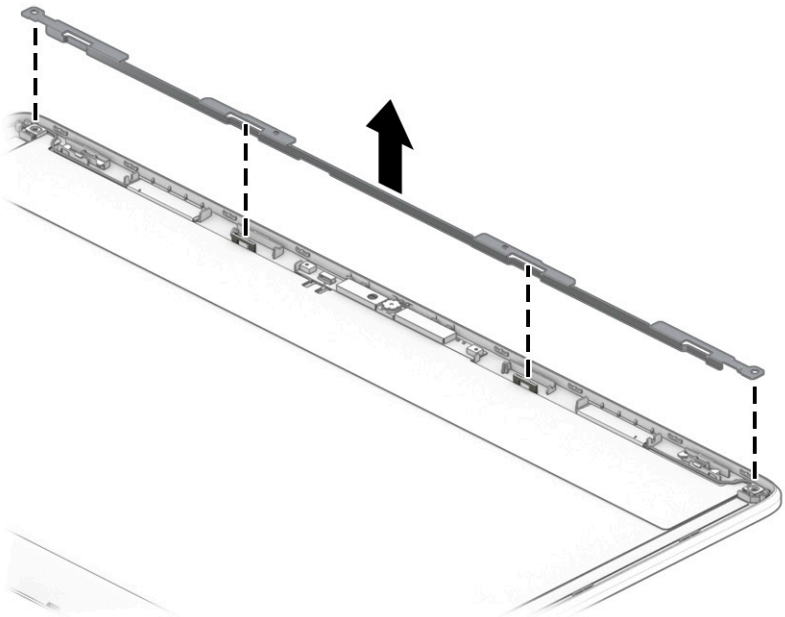


9. If it is necessary to remove the display hinges:
   a. Remove the Phillips M2.0 × 2.5 screw **(1)** from the top of each hinge.
   b. Remove the three Phillips M2.5 × 2.5 screws **(2)** from the bottom of each hinge.
   c. Remove the display hinges from the display back cover **(3)**.

      The display hinges are available as spare part number L91537-001.



d. If necessary, remove the top bracket from the display back cover.



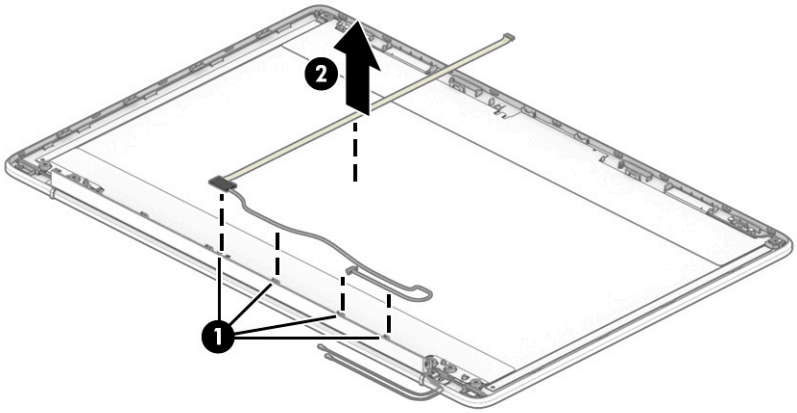
e. For installation, use the following illustration to determine proper cable routing around the hinge.

10. If it is necessary to remove the webcam cable:

a. Remove the cable from its routing path along the bottom of the display back cover **(1)**.

b. Peel the cable off the inside of the display back cover **(2)** to remove it.

The webcam cable is available as spare part number L91541-001.

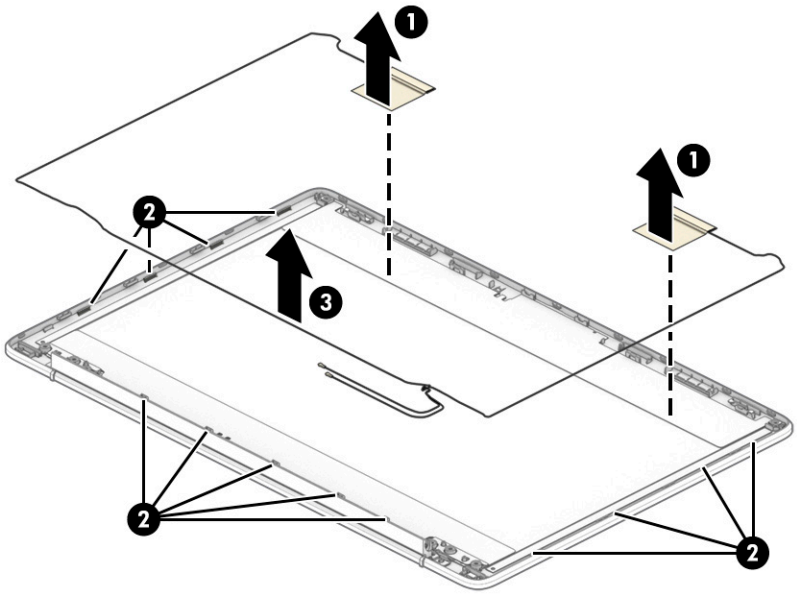


11. If it is necessary to remove the wireless antennas:

a. Peel the antennas off the top of the display back cover **(1)**.

b. Remove the antenna cables from the channels on the sides and bottom of the display back cover **(2)**, and then remove the antennas and cables **(3)**.

The wireless antennas are available as spare part number L91533-001.



The display back cover is available as the following spare part numbers:

L91530-001: Mineral silver

L91529-001: Forest teal

L91531-001: Ceramic white

Reverse these procedures to reassemble and install the display assembly.

Keyboard with top cover

The top cover with keyboard remains after removing all other spare parts from the computer.

In this section, the first table provides the main spare part number for the top cover. The second table provides the keyboard country codes.

Table 5-9 Keyboard/top cover description and part number

Description	Spare part number
Snow white; no backlight	L91515-xx1
Snow white; backlit	L91516-xx1
Ash silver; no backlight	L91511-xx1
Ash silver; backlit	L91512-xx1
Natural silver; no backlight	L91513-xx1
Natural silver; backlit	L91514-xx1

Table 5-10 Keyboard country codes

For use in country or region	Spare part number	For use in country or region	Spare part number	For use in country or region	Spare part number
Belgium	-A41	Italy	-061	Spain	-071
Denmark, Finland, and Norway	-DH1	Japan	-291	Taiwan	-AB1
France	-051	The Netherlands	-B31	United Kingdom	-031
French Canada	-DB1	Russia	-251	United States	-001
Germany	-041	South Korea	-AD1		

6 Specifications

Computer specifications

Table 6-1 Computer specifications

	Metric	U.S.
Computer dimensions		
Width	**325.5 mm**	12.8 in
Depth	**218.5 mm**	8.6 in
Height	**17.9 mm**	0.7 in
Weight (lowest configuration)	**1325 g**	2.9 lbs
Input power rating		
Operating voltage and current	18.5 V dc @ 3.5 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.

35.6 cm (14.0 in) display specifications

Table 6-2 Display specifications

	Metric	U.S.
Active diagonal size	35.6 cm	14.0 in
Resolution	FHD: 1920 × 1080 HD: 1366 × 768	
Surface treatment	Antiglare or BrightView	
Brightness	HD: 220 nits FHD: 250 nits	
Viewing angle	HD: SVA FHD: UWVA	
Backlight	LED	
Aspect ratio	16:9	
Display panel interface	eDP	

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 V ac, or from 220 to 240 V ac.

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

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

Requirements for all countries

The following requirements are applicable to all countries and regions:

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

Requirements for specific countries and regions

Table 7-1 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
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 HO5VV-F, 3-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.

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

Country/region	Accredited agency	Applicable note number

2. The flexible cord must be Type SVT/SJT or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V ac) or NEMA 6-15P (15 A, 250 V ac) configuration. CSA or C-UL mark. UL file number must be on each element.

3. The appliance coupler, flexible cord, and wall plug must bear a “T” mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCTF, 3-conductor, 0.75 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.

8 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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