Maintenance and Service Guide

HP Chromebook 14 G6
IMPORTANT! This document is intended for
HP authorized service providers only.

© Copyright 2020 HP Development Company, L.P.

Bluetooth is a trademark owned by its proprietor and used by HP Inc. under license. Google, Chrome OS, and Chromebook are registered trademarks of Google LLC. Intel and Celeron are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries. microSD is a trademark or registered trademark of SD-3C in the United States, other countries or both.

The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

First Edition: January 2020

Document Part Number: L89294-001

Product notice

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

Software terms

By installing, copying, downloading, or otherwise using any software product preinstalled on this computer, you agree to be bound by the terms of the HP End User License Agreement (EULA). If you do not accept these license terms, your sole remedy is to return the entire unused product (hardware and software) within 14 days for a full refund subject to the refund policy of the seller.

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

Table of contents

1 Product description 1

2 Components 3

Right side 3

Left side 4

Display 5

Touchpad 6

Speakers 7

Labels 7

3 Illustrated parts catalog 9

Computer major components 9

Display components 13

Miscellaneous parts 14

4 Removal and replacement procedures preliminary requirements 15

Tools required 15

Service considerations 15

Plastic parts 15

Cables and connectors 15

Drive handling 16

Electrostatic discharge damage 16

Packaging and transporting guidelines 17

Workstation guidelines 18

Equipment guidelines 18

5 Removal and replacement procedures 20

Component replacement procedures 20

Keyboard/top cover 20

Touchpad cable 24

Touchpad 25

Battery 26

WLAN module 27

Connector board cables 29

Connector board 30

Sensor board cable 31

Speakers 32
Sensor board 33
System board 34
Display assembly 37

6 Specifications 49
Computer specifications 49

7 Power cord set requirements 51
Requirements for all countries 51
Requirements for specific countries and regions 52

8 Recycling 54

Index 55

1 Product description

Table 1-1 Product description

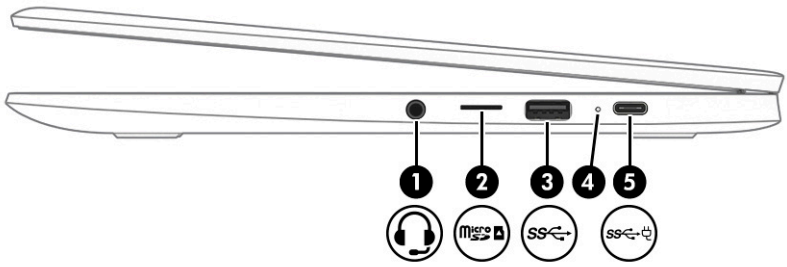
Category	Description
Product Name	HP Chromebook™ 14 G6
Processor	• Intel® Celeron™ N4120 1.1 GHz (SC turbo up to 2.6 GHz) quad core processor (4.0 MB L2 cache, 2400 MHz FSB, 6 W) • Intel Celeron N4100 1.1 GHz (SC turbo up to 2.6 GHz) quad core processor (4.0 MB L2 cache, 2400 MHz FSB, 6 W) • Intel Celeron N4020 1.1 GHz (SC turbo up to 2.8 GHz) dual core processor (4.0 MB L2 cache, 2400 MHz FSB, 6 W) • Intel Celeron N4000 1.1 GHz (SC turbo up to 2.6 GHz) dual core processor (4.0 MB L2 cache, 2400 MHz FSB, 6 W)
Chipset	Intel integrated with processor
Panel	• 14.0 in, full high-definition (FHD) (1920×1080), antiglare, white light emitting diode (WLED), UWVA, liquid crystal display (LCD), eDP, slim touchscreen display with narrow bezel and privacy shutter; typical brightness: 250 nits • 14.0 in, FHD (1920×1080), antiglare, WLED, UWVA, LCD, eDP, slim touchscreen display with narrow bezel; typical brightness: 250 nits • 14.0 in, FHD (1920×1080), antiglare, WLED, UWVA, LCD, eDP, slim non-touchscreen display with narrow bezel and privacy shutter; typical brightness: 250 nits • 14.0 in, FHD (1920×1080), antiglare, WLED, UWVA, LCD, eDP, slim non-touchscreen display with narrow bezel; typical brightness: 250 nits • 14.0 in, high-definition (HD) (1366×768), brightview, WLED, SVA, LCD, slim touchscreen display with narrow bezel and privacy shutter; typical brightness: 220 nits • 14.0 in, HD (1366×768), brightview, WLED, SVA, LCD, slim touchscreen display with narrow bezel; typical brightness: 220 nits • 14.0 in, HD (1366×768), antiglare, WLED, SVA, LCD, slim non-touchscreen display with narrow bezel and privacy shutter; typical brightness: 220 nits • 14.0 in, HD (1366×768), antiglare, WLED, SVA, LCD, slim non-touchscreen display with narrow bezel; typical brightness: 220 nits
Memory	Support for the following: LPDDR4-4266, 0.6 V,nonupgradeable, on-board system memory in 16-GB configuration LPDDR4-3733, 1.1 V,nonupgradeable, on-board system memory in 16-GB and 8-GB configurations
Storage	**Embedded Multimedia Controller (eMMC):** Supports MO-276 MMC v 5.0 in 128 GB, 64 GB, 32 GB, and 16 GB configurations **Solid-state drive:** Supports a 256 GB PCIE, NVME, value solid-state drive and a 128 GB M2, SATA-3, solid-state drive with triple level cell (TLC)
Audio and video	Fixed (no tilt), 720p HD camera with integrated into display assembly
	Dual-array microphones with appropriate echo-cancellation, noise-suppression software
	Dual speakers

Table 1-1 Product description (continued)

Category	Description
Wireless	Integrated wireless local area network (WLAN) with two built-in antennas
	Support for the Intel 9560 ac 2×2 +Bluetooth® 5.0 MU-MIMO M.2 2230 non-vPro MIPI +BRI WW WLAN module
Keyboard/pointing devices	Backlit, island-style, spill-resistant, standard notebook keyboard in chalkboard gray finish
	Touchpad
Power requirements	Supports a 2-cell, 47.36-WHr, 6.15-AHr, Li-ion battery
	Supports a 45-W, AC adapter (non-PFC, standard USB Type-C, straight connector)
	Supports a 1-meter C5 power cord
Operating system	**Preinstalled:** Chrome64
Serviceability	**End user replaceable parts:** AC adapter

2 Components

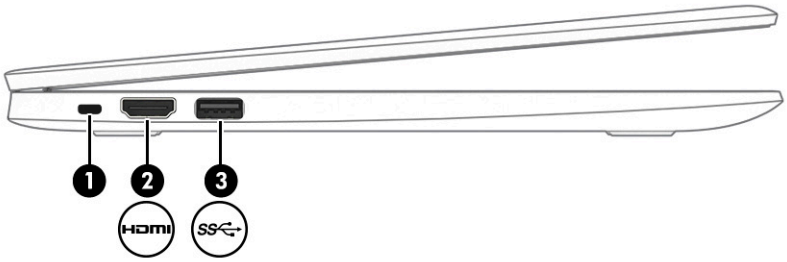
Right side



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 microphone-only devices. 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*. This guide is provided in the box. NOTE: When a device is connected to the jack, the computer speakers are disabled.
(2)		microSD™ memory card reader	Reads optional memory cards that 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: ▲ Push the card to remove it.
(3)		USB 3.1 Type A generation 1 SuperSpeed port	Connects a USB device, such as a cell phone, camera, activity tracker, or smartwatch, and provides high-speed data transfer.
(4)		AC adapter and battery light	• White: the AC adapter is connected and the battery is charged. • Amber: the AC adapter is connected and the battery is charging.

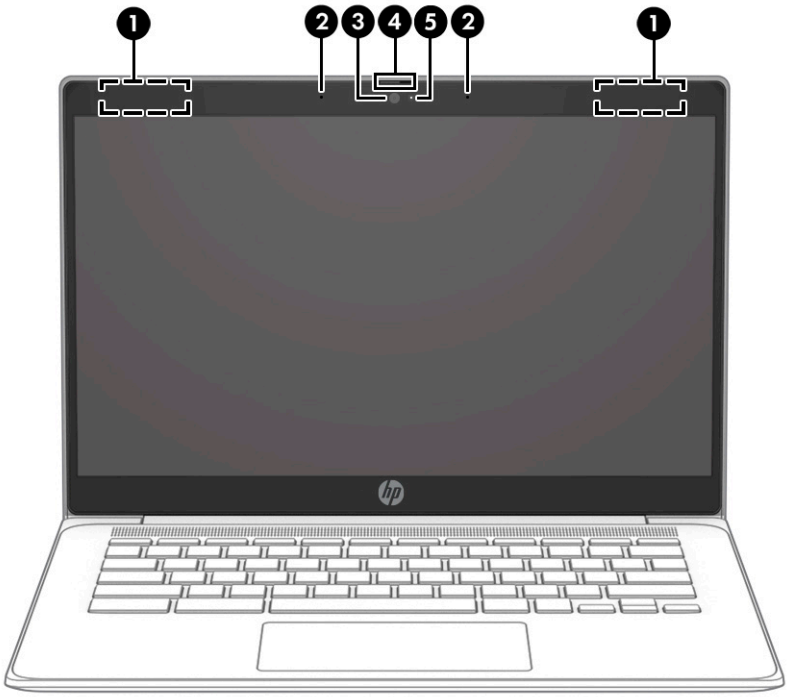
Component			Description
			• Off: the computer is using battery power.
(5)		USB Type-C generation 1 power connector and SuperSpeed port	Connects an AC adapter that has a USB Type-C connector, supplying power to the computer and, if needed, charging the computer battery.

Left side



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

Display



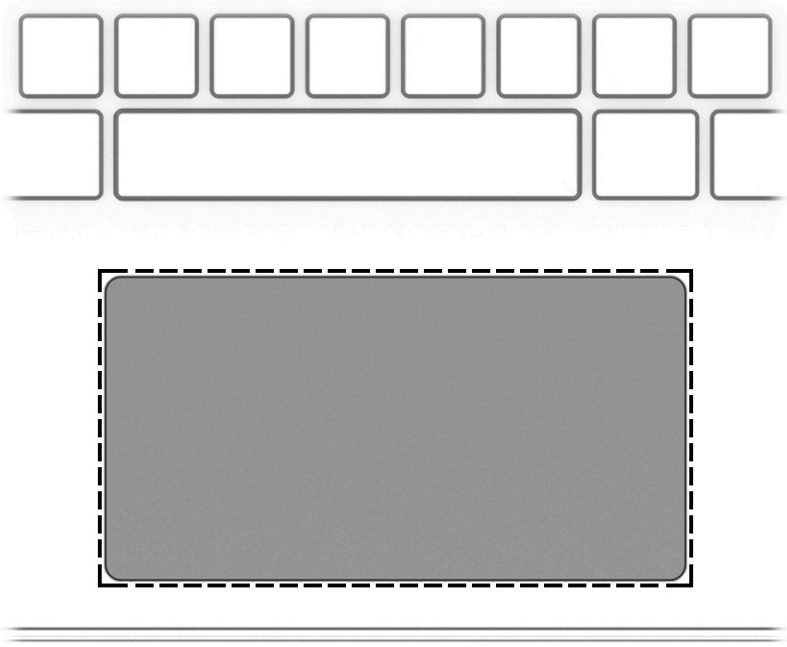
Component		Description
(1)	WLAN antennas*	Send and receive wireless signals to communicate with WLANs. NOTE: the position of the WLAN antennas may differ, depending on the product.
(2)	Internal microphones (2)	Record sound.
(3)	Camera	Records video, captures still photographs, and allows video conferences and online chat by means of streaming video.
(4)	Privacy shutter	Covers the camera for privacy.
(5)	Camera light	On: the camera is in use.

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

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

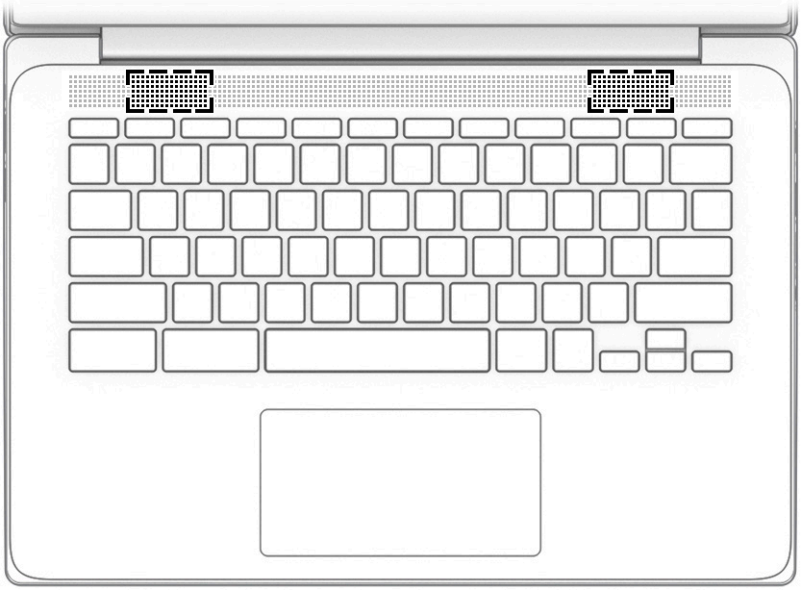
This guide is provided in the box.

Touchpad



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

Speakers



Component	Description
Speakers	Produce sound.

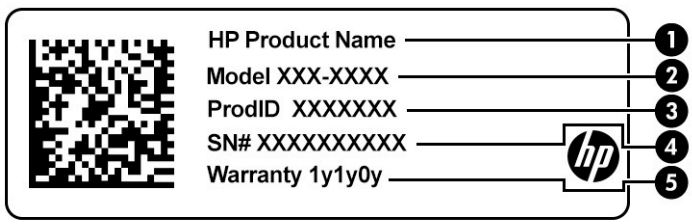
Labels

The labels affixed to the computer provide information you may need when you troubleshoot system problems or travel internationally with the computer.

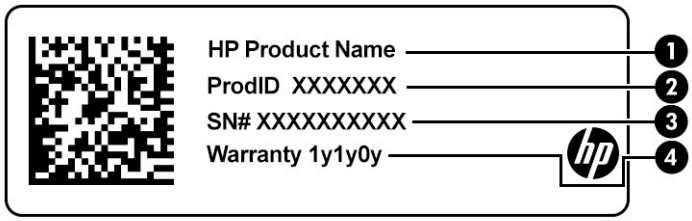
IMPORTANT: All labels described in this section will be affixed to the bottom of the computer.

- Service label—Provides important information to identify your computer. When contacting support, you will probably be asked for the serial number, and possibly for the product number or the model number. Locate these numbers before you contact support.

  Your service label will resemble one of the following examples. Refer to the illustration that most closely matches the service label on your computer.



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



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

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

3 Illustrated parts catalog

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

Computer major components

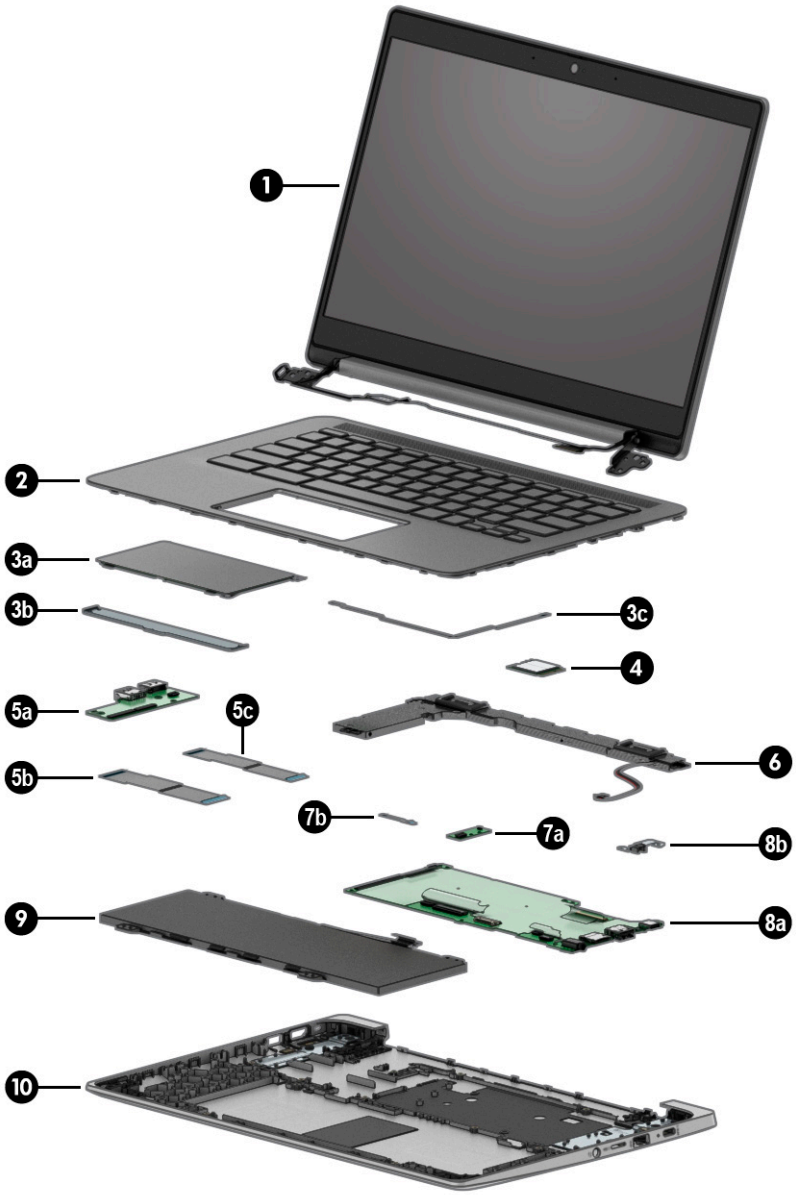


Table 3-1 Major component spare part information

Item	Component	Spare part number
(1)	**Display assembly:** The display assembly is available at the subcomponent level only. For more display assembly spare part information, see Display components on page 13.	
(2)	**Keyboard/top cover** with backlight (includes backlight cable and keyboard cable):	
	For use in Belgium	L90460-A41
	For use in Brazil	L90460-201
	For use in Canada	L90460-DB1
	For use in the Czech Republic and Slovakia	L90460-FL1
	For use in Denmark, Finland, and Norway	L90460-DH1
	For use in France	L90460-051
	For use in Germany	L90460-041
	For use in Israel	L90460-BB1
	For use in Italy	L90460-061
	For use in Latin America	L90460-161
	For use in the Netherlands	L90460-B31
	For use in Portugal	L90460-131
	For use in Romania	L90460-271
	For use in Russia	L90460-251
	For use in Saudi Arabia	L90460-171
	For use in South Korea	L90460-AD1
	For use in Spain	L90460-071
	For use in Switzerland	L90460-BG1
	For use in Taiwan	L90460-AB1
	For use in Thailand	L90460-281
	For use in Turkey	L90460-141
	For use in the United Kingdom	L90460-031
	For use in the United States	L90460-001
	Keyboard/top cover without backlight (includes keyboard cable):	
	For use in Belgium	L90459-A41
	For use in Brazil	L90459-261
	For use in Canada	L90459-DB1
	For use in the Czech Republic and Slovakia	L90459-FL1
	For use in Denmark, Finland, and Norway	L90459-DH1
	For use in France	L90459-051
	For use in Germany	L90459-041

Table 3-1 Major component spare part information (continued)

Item	Component	Spare part number
	For use in Israel	L90459-BB1
	For use in Italy	L90459-061
	For use in Latin America	L90459-161
	For use in the Netherlands	L90459-B31
	For use in Portugal	L90459-131
	For use in Romania	L90459-271
	For use in Russia	L90459-251
	For use in Saudi Arabia	L90459-171
	For use in South Korea	L90459-AD1
	For use in Spain	L90459-071
	For use in Switzerland	L90459-BG1
	For use in Taiwan	L90459-AB1
	For use in Thailand	L90459-281
	For use in Turkey	L90459-141
	For use in the United Kingdom	L90459-031
	For use in the United States	L90459-001
(3a)	**Touchpad**	L90435-001
(3b)	**Touchpad bracket**	L90436-001
(3c)	**Touchpad cable** (included in the Cable Kit, spare part number L904129-001)	
(4)	**Intel 9560 ac 2×2 + Bluetooth 5.0 MU-MIMO M.2 2230 non-vPro WLAN module**	L41693-005
(5a)	**Connector board** (includes HDMI port and USB port)	L90437-001
(5b)	**Connector board high-speed cable** (included in the Cable Kit, spare part number L90412-001)	
(5c)	**Connector board low-speed cable** (included in the Cable Kit, spare part number L90412-001)	
(6)	**Speakers** (include left and right speakers and cables)	L90434-001
(7a)	**Sensor board**	L90433-001
(7b)	**Sensor board cable** (included in the Cable Kit, spare part number L90412-001)	
(8a)	**System board** (includes processor, heat sink, and replacement thermal material):	
	Equipped with an Intel Celeron N4120 processor, 8 GB of system memory, 64 GB of eMMC system storage, and the Google® Chrome® operating system	L90427-001
	Equipped with an Intel Celeron N4120 processor, 8 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome operating system	L90426-001
	Equipped with an Intel Celeron N4120 processor, 4 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome operating system	L90425-001
	Equipped with an Intel Celeron N4020 processor, 8 GB of system memory, 128 GB of eMMC system storage, and the Google Chrome operating system	L90422-001

Table 3-1 Major component spare part information (continued)

Item	Component	Spare part number
	Equipped with an Intel Celeron N4020 processor, 8 GB of system memory, 64 GB of eMMC system storage, and the Google Chrome operating system	L90424-001
	Equipped with an Intel Celeron N4020 processor, 8 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome operating system	L90423-001
	Equipped with an Intel Celeron N4020 processor, 4 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome operating system	L90421-001
	Equipped with an Intel Celeron N4020 processor, 4 GB of system memory, 16 GB of eMMC system storage, and the Google Chrome operating system	L90420-001
(8b)	I/O bracket	L90438-001
(9)	**Battery** (2-cell, 47.36-WHr, 6.15-AHr, Li-ion; includes cable)	L75783-005
(10)	Bottom cover	L90411-001

Display components

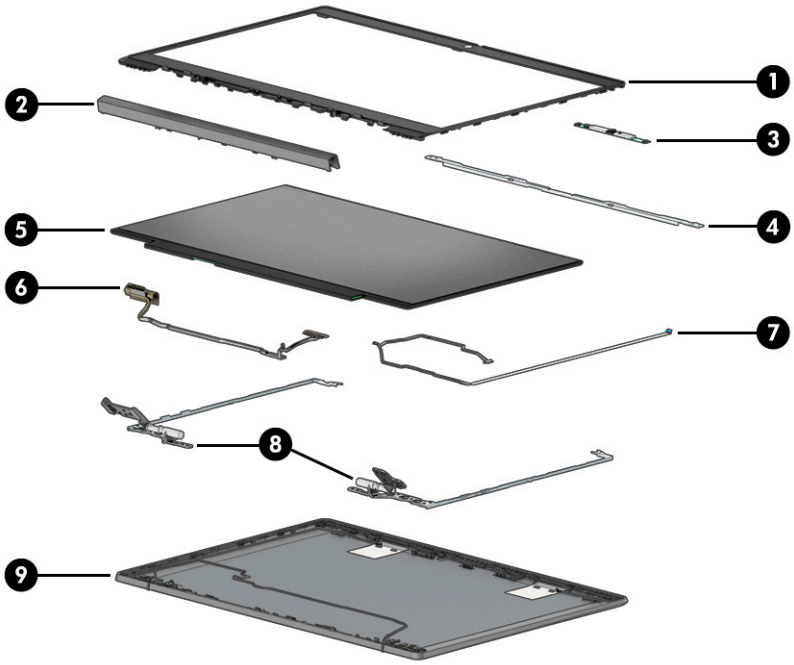


Table 3-2 Display component spare part information

Item	Component	Spare part number
(1)	**Display bezel**	L90416-001
(2)	**Display hinge cover**	L90414-001
(3)	**Webcam module** (includes double-sided adhesive)	L90439-001
(4)	**Display bracket**	L90417-001
(5)	**Display panel:**	
	14.0-in, FHD, antiglare, LED, UWVA, touchscreen display panel	L90429-001
	14.0-in, FHD, antiglare, LED, UWVA, non-touchscreen display panel	L90428-001
	14.0-in, HD, brightview, LED, SVA, touchscreen display panel	L90431-001
	14.0-in, HD, antiglare, LED, SVA, non-touchscreen display panel	L90430-001
(6)	**Display panel cable:**	
	For use only on computers equipped with a touchscreen display assembly	L90419-001
	For use only on computers equipped with a non-touchscreen display assembly	L90418-001
(7)	**Webcam module cable** (included in the Cable Kit, spare part number L90412-001)	
(8)	**Display hinges** (2)	L90413-001
(9)	**Display back cover** (includes the wireless antenna cables and transceivers)	L90415-001

Miscellaneous parts

Table 3-3 Miscellaneous spare part information

Component	Spare part number
45-W, AC Adapter (non-PFC, USB Type-C, 1.8-m, 3-pin)	L43407-001
Cable Kit (includes sensor board cable, touchpad cable, connector board high-speed cable, connector board low-speed cable, and webcam module cable)	L90412-001
Power cord (C5, 1.0-m, conventional with sticker):	
For use in Australia	L19358-001
For use in Brazil	L19359-001
For use in Denmark	L19360-001
For use in Europe	L19361-001
For use in India	L19363-001
For use in Israel	L19362-001
For use in Italy	L19364-001
For use in North America	L19367-001
For use in South Africa	L19369-001
For use in South Korea	L19366-001
For use in Switzerland	L19370-001
For use in Taiwan	L19372-001
For use in Thailand	L19371-001
For use in the United Kingdom	L19373-001
Screw Kit	L90432-001

4 Removal and replacement procedures preliminary requirements

Tools required

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

- Flat-bladed screwdriver
- Magnetic screwdriver
- Phillips P0 and P1 screwdrivers

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. Use care when handling the plastic.

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 in.) 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.”

Electrostatic discharge damage

Electronic components are sensitive to electrostatic discharge (ESD). Circuitry design and structure determine the degree of sensitivity. Networks built into many integrated circuits provide some protection, but in many cases, ESD contains enough power to alter device parameters or melt silicon junctions.

A discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Even if the spark is neither felt nor heard, damage may have occurred.

An electronic device exposed to ESD may not be affected at all and can work perfectly throughout a normal cycle. Or the device may function normally for a while, then degrade in the internal layers, reducing its life expectancy.

IMPORTANT: To prevent damage to the tablet when you are removing or installing internal components, observe these precautions:

- Keep components in their electrostatic-safe containers until you are ready to install them.
- Before touching an electronic component, discharge static electricity by using the guidelines described in this section.
- Avoid touching pins, leads, and circuitry. Handle electronic components as little as possible.
- If you remove a component, place it in an electrostatic-safe container.

The following table shows how humidity affects the electrostatic voltage levels generated by different activities.

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

Table 4-1 Typical electrostatic voltage levels

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

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

- To avoid hand contact, transport products in static-safe tubes, bags, or boxes.
- Protect ESD-sensitive parts and assemblies with conductive or approved containers or packaging.
- Keep ESD-sensitive parts in their containers until the parts arrive at static-free workstations.
- Place items on a grounded surface before removing items from their containers.
- Always be properly grounded when touching a component or assembly.
- Store reusable ESD-sensitive parts from assemblies in protective packaging or nonconductive foam.
- Use transporters and conveyors made of antistatic belts and roller bushings. Be sure that mechanized equipment used for moving materials is wired to ground and that proper materials are selected to avoid static charging. When grounding is not possible, use an ionizer to dissipate electric charges.

Workstation guidelines

Follow these grounding workstation guidelines:

- Cover the workstation with approved static-shielding material.
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use conductive field service tools, such as cutters, screw drivers, and vacuums.
- When fixtures must directly contact dissipative surfaces, use fixtures made only of static-safe materials.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and 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.

Equipment guidelines

Grounding equipment must include either a wrist strap or a foot strap at a grounded workstation.

- When seated, wear a wrist strap connected to a grounded system. Wrist straps are flexible straps with a minimum of 1 MΩ ±10% resistance in the ground cords. To provide proper ground, wear a strap snugly against the skin at all times. On grounded mats with banana-plug connectors, use alligator clips to connect a wrist strap.
- When standing, use foot straps and a grounded floor mat. Foot straps (heel, toe, or boot straps) can be used at standing workstations and are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use foot straps on both feet with a minimum of 1 MΩ ±10% resistance between the operator and ground. To be effective, the conductive must be worn in contact with the skin.

The following grounding equipment is recommended to prevent electrostatic damage:

- Antistatic tape
- Antistatic smocks, aprons, and sleeve protectors
- Conductive bins and other assembly or soldering aids
- Nonconductive foam
- Conductive tabletop workstations with ground cords of 1 MΩ ±10% resistance
- Static-dissipative tables or floor mats with hard ties to the ground
- Field service kits
- Static awareness labels
- Material-handling packages
- Nonconductive plastic bags, tubes, or boxes
- Metal tote boxes
- Electrostatic voltage levels and protective materials

The following table lists the shielding protection provided by antistatic bags and floor mats.

Table 4-2 Shielding protection provided by antistatic bags and floor mats

Material	Use	Voltage protection level
Antistatic plastics	Bags	1,500 V
Carbon-loaded plastic	Floor mats	7,500 V
Metallized laminate	Floor mats	5,000 V

5 Removal and replacement procedures

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 this 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 49 screws that must be removed, replaced, or loosened when servicing the computer. Make special note of each screw size and location during removal and replacement.

Keyboard/top cover

Table 5-1 Keyboard/top cover spare part information

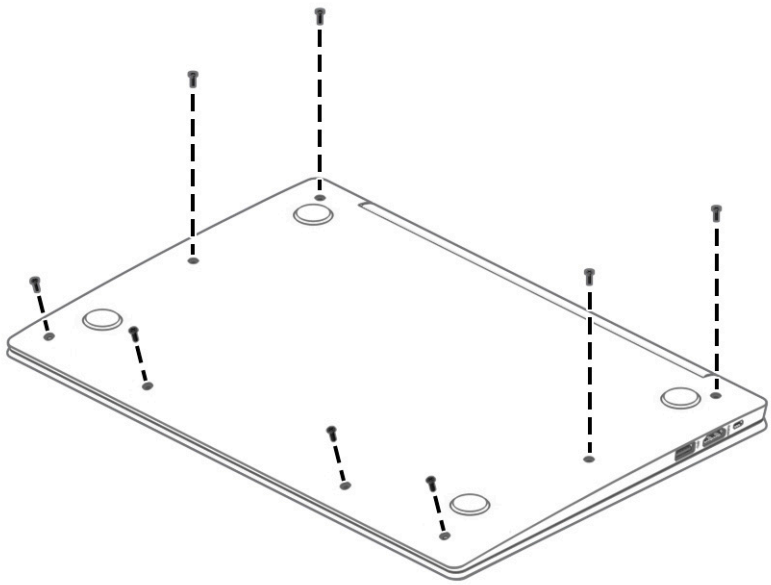
For use in country or region	Spare part number	For use in country or region	Spare part number	For use in country or region	Spare part number
Keyboard/top cover with backlight (includes backlight cable and keyboard cable):		For use in Israel	L90460-BB1	For use in South Korea	L90460-AD1
For use in Belgium	L90460-A41	For use in Italy	L90460-061	For use in Spain	L90460-071
For use in Brazil	L90460-201	For use in Latin America	L90460-161	For use in Switzerland	L90460-BG1
For use in Canada	L90460-DB1	For use in the Netherlands	L90460-B31	For use in Taiwan	L90460-AB1
For use in the Czech Republic and Slovakia	L90460-FL1	For use in Portugal	L90460-131	For use in Thailand	L90460-281
For use in Denmark, Finland, and Norway	L90460-DH1	For use in Romania	L90460-271	For use in Turkey	L90460-141
For use in France	L90460-051	For use in Russia	L90460-251	For use in the United Kingdom	L90460-031
For use in Germany	L90460-041	For use in Saudi Arabia	L90460-171	For use in the United States	L90460-001
Keyboard/top cover without backlight (includes keyboard cable):		For use in Israel	L90459-BB1	For use in South Korea	L90459-AD1
For use in Belgium	L90459-A41	For use in Italy	L90459-061	For use in Spain	L90459-071
For use in Brazil	L90459-201	For use in Latin America	L90459-161	For use in Switzerland	L90459-BG1
For use in Canada	L90459-DB1	For use in the Netherlands	L90459-B31	For use in Taiwan	L90459-AB1

Table 5-1 Keyboard/top cover spare part information (continued)

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
For use in the Czech Republic and Slovakia	L90459-FL1	For use in Portugal	L90459-131	For use in Thailand	L90459-281
For use in Denmark, Finland, and Norway	L90459-DH1	For use in Romania	L90459-271	For use in Turkey	L90459-141
For use in France	L90459-051	For use in Russia	L90459-251	For use in the United Kingdom	L90459-031
For use in Germany	L90459-041	For use in Saudi Arabia	L90459-171	For use in the United States	L90459-001

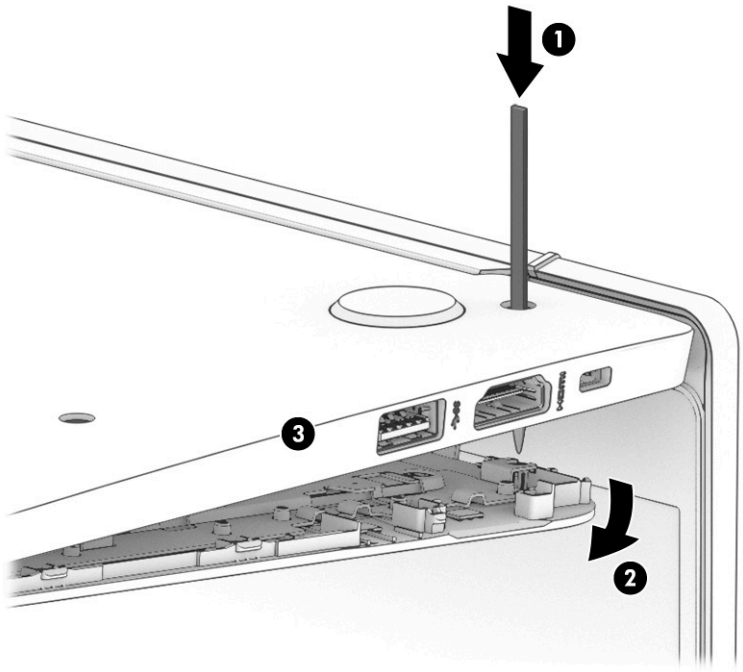
Remove the keyboard/top cover:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Close the computer and position it upside down.
5. Remove the eight Phillips M2.5×7.2 screws that secure the keyboard/top cover to the bottom cover.



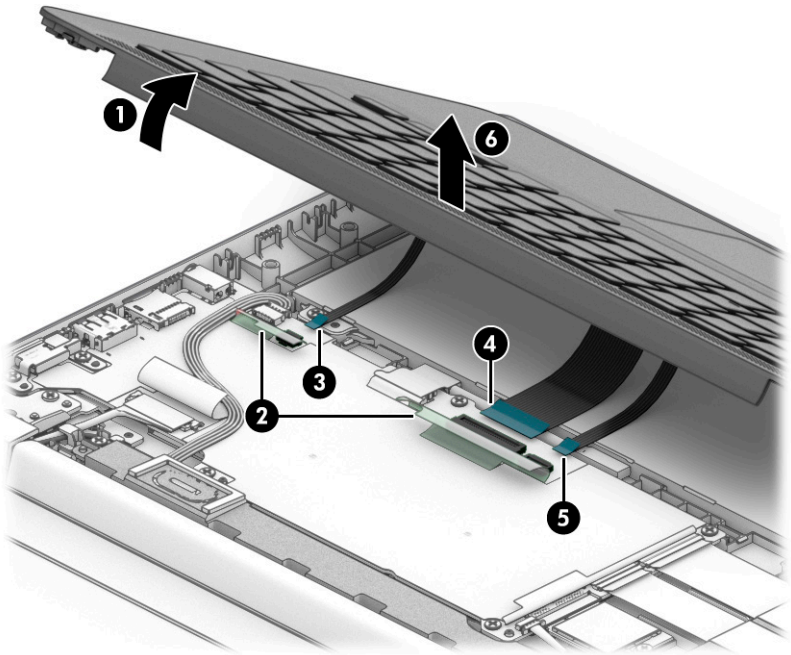
6. Open the computer.

7. Use a thin plastic tool **(1)** to separate the rear edge of the keyboard/top cover **(2)** from the bottom cover.



8. Position the computer right side up with the rear toward you.
9. Open the computer as far as it will open.
10. Lift the rear edge of the keyboard/top cover **(1)** as far as the backlight cable, keyboard cable, sensor board cable, and touchpad cable allow.
11. Release the shielding **(2)** that covers the touchpad cable zero insertion force (ZIF) connector, the keyboard cable ZIF connector, and the backlight cable ZIF connector.
12. Release the ZIF connector **(3)** to which the touchpad cable is connected, and then disconnect the touchpad cable from the system board.
13. Release the ZIF connector **(4)** to which the keyboard cable is connected, and then disconnect the keyboard cable from the system board.
14. Release the ZIF connector **(5)** to which the backlight cable is connected, and then disconnect the backlight cable from the system board.

15. Remove the keyboard/top cover (6).



Reverse this procedure to install the keyboard/top cover.

Touchpad cable

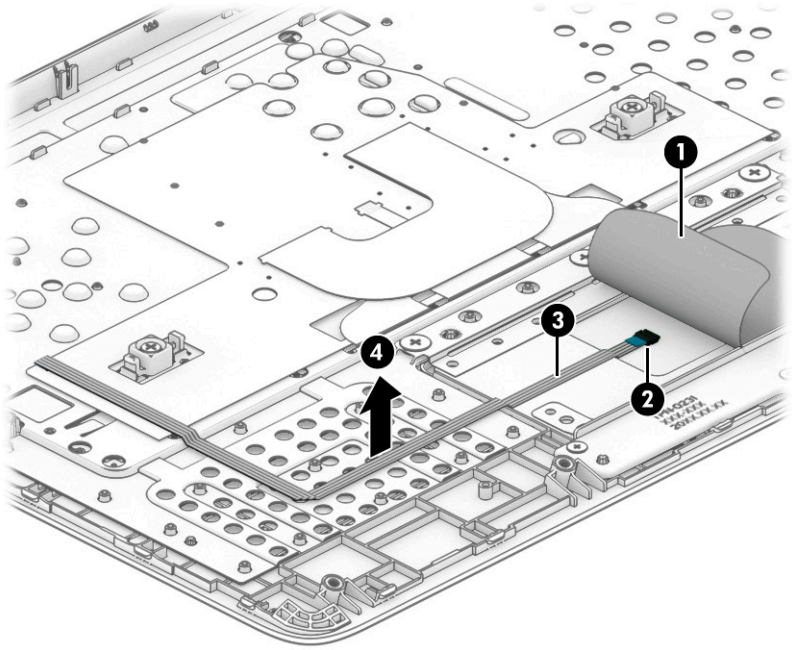
NOTE: The touchpad cable is included in the Cable Kit, spare part number L90412-001.

Before removing the touchpad cable, follow these steps:

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

Remove the touchpad cable:

1. Turn the keyboard/top cover upside down with the front toward you.
2. Release the shielding **(1)** that covers the touchpad cable ZIF connector.
3. Release the ZIF connector **(2)** to which the touchpad cable is connected, and then disconnect the touchpad cable from the touchpad.
4. Detach the touchpad cable **(3)** from the keyboard/top cover. (The touchpad cable is attached to the keyboard/top cover with double-sided adhesive.)
5. Remove the touchpad cable **(4)**.



Reverse this procedure to install the touchpad cable.

Touchpad

Table 5-2 Touchpad spare part information

Description	Spare part number
Touchpad	L90435-001

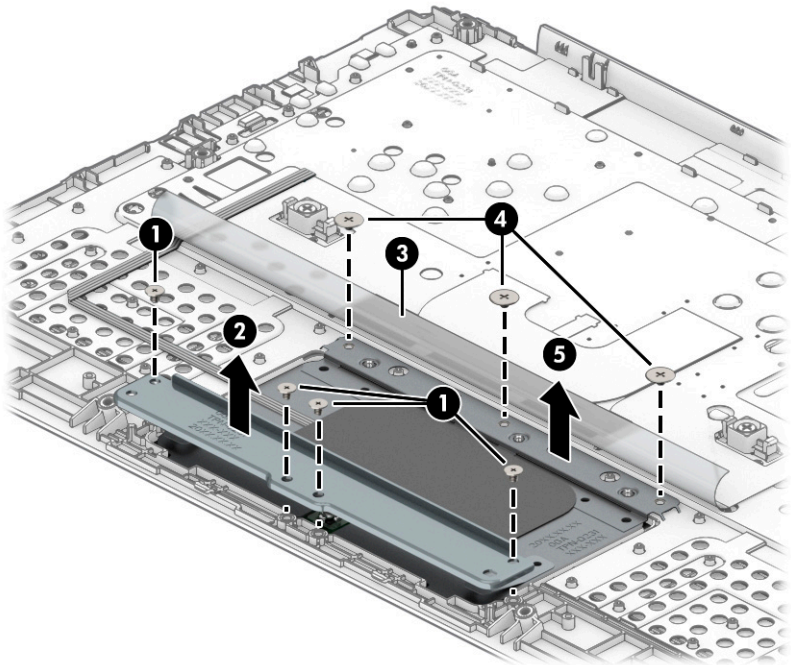
Before removing the touchpad, follow these steps:

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

Remove the touchpad:

1. Turn the keyboard/top cover upside down with the front toward you.
2. Remove the four Phillips M2.0×2.9 screws **(1)** that secure the touchpad and touchpad bracket to the keyboard/top cover.
3. Remove the touchpad bracket **(2)**.

   The touchpad bracket is available using spare part number L90436-001.
4. Release the shielding **(3)** that covers the touchpad screws.
5. Remove the three Phillips M2.0×2.2 broad head screws **(4)** that secure the touchpad to the keyboard/top cover.
6. Remove the touchpad **(5)** and cable.



Reverse this procedure to install the touchpad.

Battery

Table 5-3 Battery spare part information

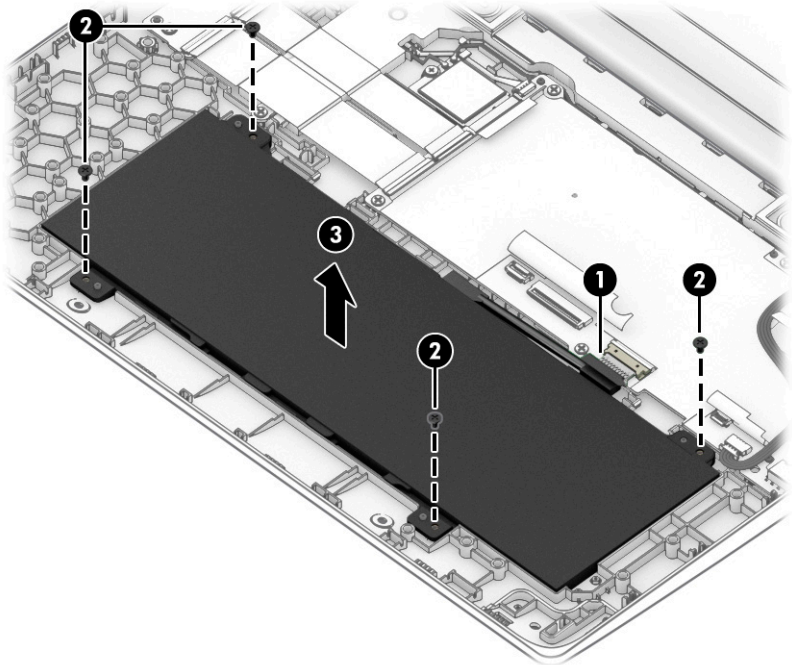
Description	Spare part number
Battery (2-cell, 47.36-WHr, 6.15-AHr, Li-ion; includes cable)	L75783-005

Before removing the battery, follow these steps:

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

Remove the battery:

1. Release the support tape **(1)** that secures the battery cable to the system board.
2. Disconnect the battery cable **(2)** from the system board.
3. Remove the four Phillips M2.0×4.2 screws **(3)** that secure the battery to the bottom cover.
4. Remove the battery **(4)**.



Reverse this procedure to install the battery.

WLAN module

Table 5-4 WLAN module spare part information

Description	Spare part number
Intel 9560 ac 2×2 + Bluetooth 5.0 MU-MIMO M.2 2230 non-vPro WLAN module	L41693-005

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. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see Keyboard/top cover on page 20).
5. Disconnect the battery cable from the system board (see Battery on page 26).

Remove the WLAN module:

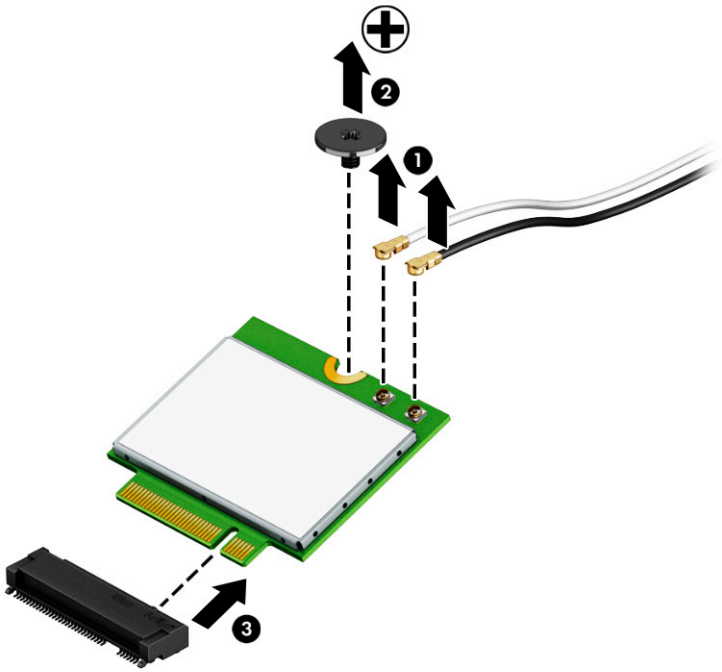
1. Disconnect the WLAN antenna cables **(1)** from the terminals on the WLAN module.

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 **#2/Aux** terminal.

2. Remove the Phillips M2.0×4.4 screw **(2)** that secures the WLAN module to the system board. (The WLAN module tilts up.)

3. Remove the WLAN module **(3)** by pulling the module away from the slot at an angle.

NOTE: WLAN modules are notched to prevent incorrect installation.



Reverse this procedure to install the WLAN module.

Connector board cables

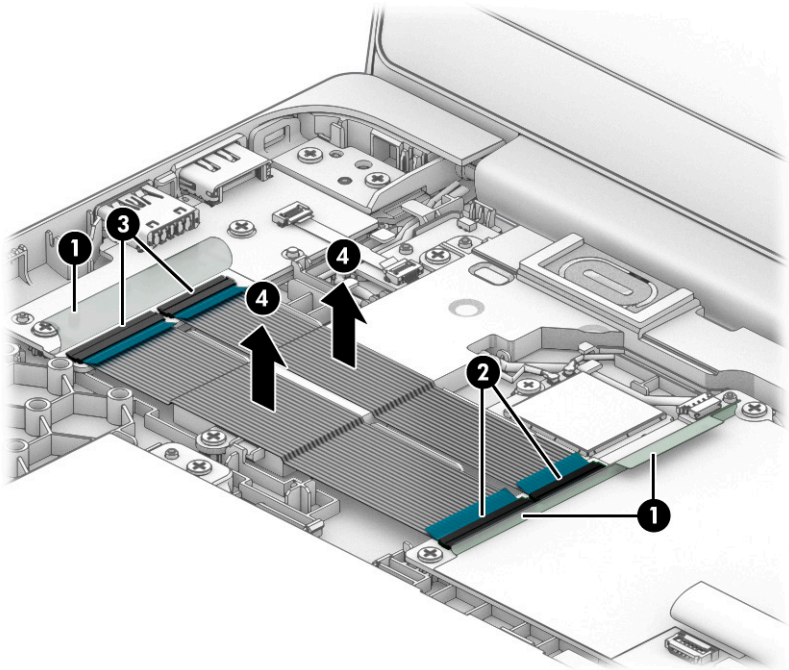
NOTE: The connector board cables are included in the Cable Kit, spare part number L90412-001.

Before removing the connector board cables, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see Keyboard/top cover on page 20).
5. Disconnect the battery cable from the system board (see Battery on page 26).

Remove the connector board cables:

1. Release the shielding **(1)** that covers the connector board cable ZIF connectors.
2. Release the ZIF connectors **(2)** to which the connector board cables are connected, and then disconnect the connector board cables from the system board.
3. Release the ZIF connectors **(3)** to which the connector board cables are connected, and then disconnect the connector board cables from the connector board.
4. Remove the connector board cables **(4)**.



Reverse this procedure to install the connector board cables.

Connector board

Table 5-5 Connector board spare part information

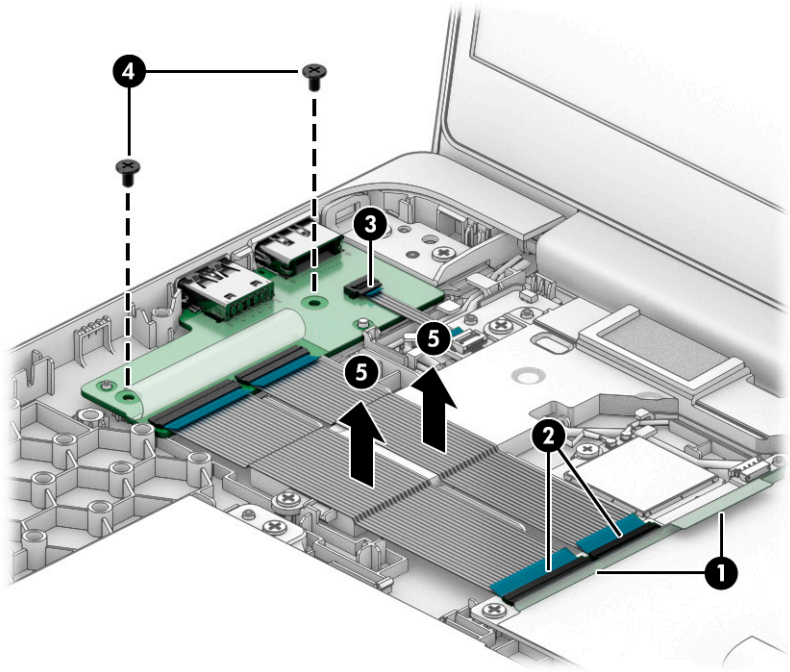
Description	Spare part number
Connector board (includes HDMI jack and USB port)	L90437-001

Before removing the connector board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see Keyboard/top cover on page 20).
5. Disconnect the battery cable from the system board (see Battery on page 26).

Remove the connector board:

1. Release the shielding **(1)** that covers the connector board cable ZIF connectors.
2. Release the ZIF connectors **(2)** to which the connector board cables are connected, and then disconnect the connector board cables from the system board.
3. Release the ZIF connector **(3)** to which the sensor board cable is connected, and then disconnect the sensor board cable from the connector board.
4. Remove the two Phillips M2.0×4.2 screws **(4)** that secure the connector board to the bottom cover.
5. Remove the connector board **(5)** and cables.



Reverse this procedure to install the connector board.

Sensor board cable

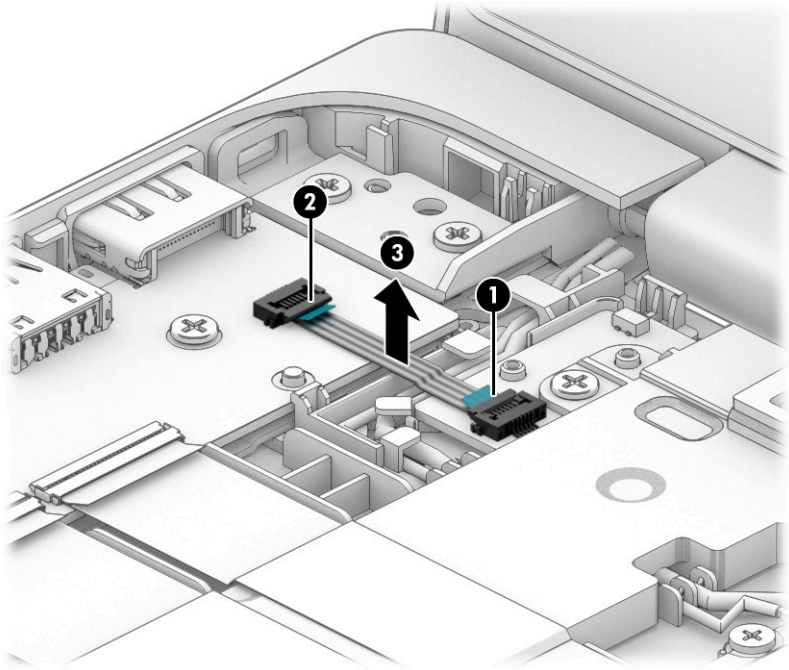
NOTE: The sensor board cable is included in the Cable Kit, spare part number L90412-001.

Before removing the sensor board cable, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see Keyboard/top cover on page 20).
5. Disconnect the battery cable from the system board (see Battery on page 26).

Remove the sensor board cable:

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



Reverse this procedure to install the sensor board cable.

Speakers

Table 5-6 Speaker spare part information

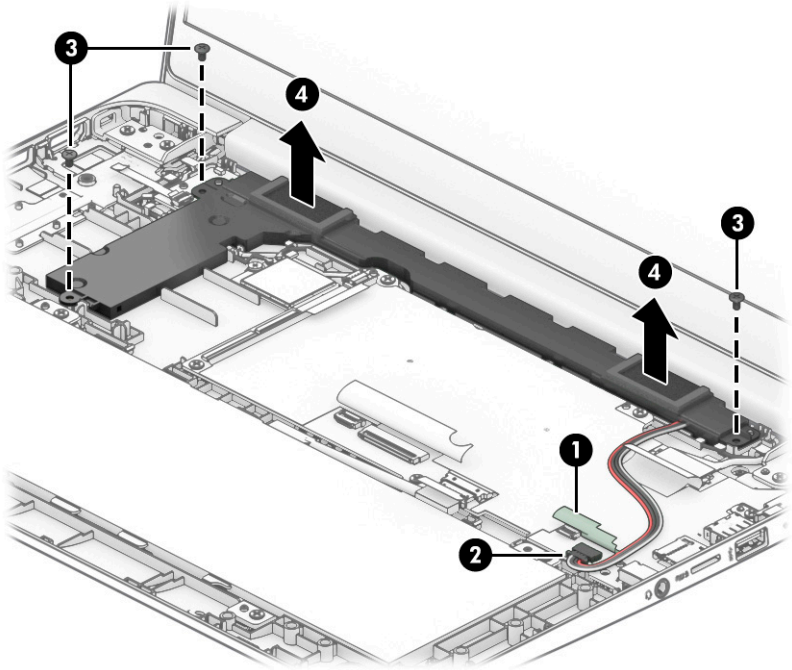
Description	Spare part number
Speakers (include left and right speakers, cables, and four rubber isolators)	L90434-001

Before removing the speakers, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see Keyboard/top cover on page 20).
5. Disconnect the battery cable from the system board (see Battery on page 26).

Remove the speakers:

1. Release the shielding **(1)** that secures the speaker cable to the system board and covers the speaker cable connector.
2. Disconnect the speaker cable **(2)** from the system board.
3. Remove the three Phillips M2.0×4.2 screws **(3)** that secure the speakers to the bottom cover.
4. Remove the speakers **(4)**.



Reverse this procedure to install the speakers.

Sensor board

Table 5-7 Sensor board spare part information

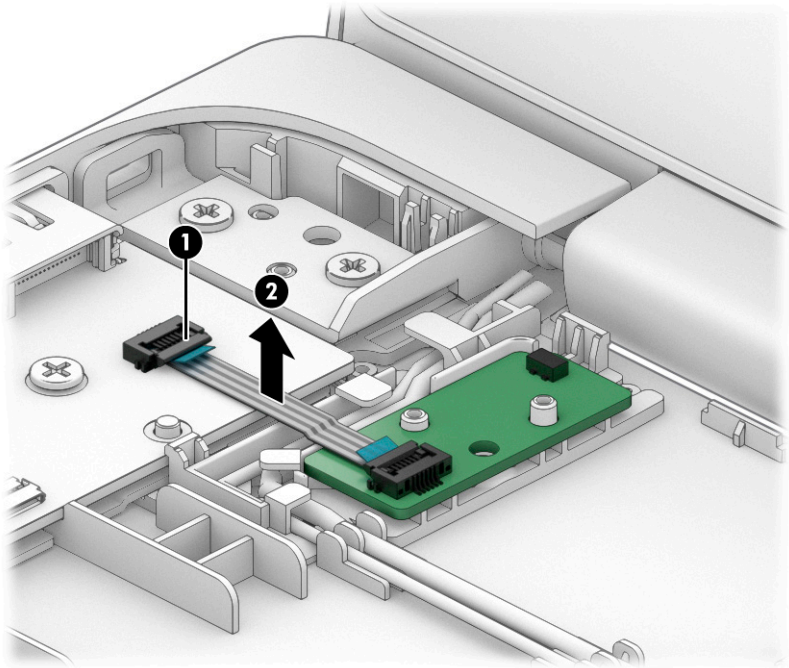
Description	Spare part number
RTC battery (includes cable and double-sided adhesive)	L90433-001

Before removing the sensor board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see Keyboard/top cover on page 20).
5. Disconnect the battery cable from the system board (see Battery on page 26).
6. Remove the speakers (see Speakers on page 32).

Remove the sensor board:

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



Reverse this procedure to install the sensor board.

System board

NOTE: The system board spare part kit includes the processor, heat sink, and replacement thermal material.

Table 5-8 System board spare part information

Description	Spare part number
Equipped with an Intel Celeron N4120 processor, 8 GB of system memory, 64 GB of eMMC system storage, and the Google Chrome operating system	L90427-001
Equipped with an Intel Celeron N4120 processor, 8 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome operating system	L90426-001
Equipped with an Intel Celeron N4120 processor, 4 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome operating system	L90425-001
Equipped with an Intel Celeron N4020 processor, 8 GB of system memory, 128 GB of eMMC system storage, and the Google Chrome operating system	L90422-001
Equipped with an Intel Celeron N4020 processor, 8 GB of system memory, 64 GB of eMMC system storage, and the Google Chrome operating system	L90424-001
Equipped with an Intel Celeron N4020 processor, 8 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome operating system	L90423-001
Equipped with an Intel Celeron N4020 processor, 4 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome operating system	L90421-001
Equipped with an Intel Celeron N4020 processor, 4 GB of system memory, 16 GB of eMMC system storage, and the Google Chrome operating system	L90420-001

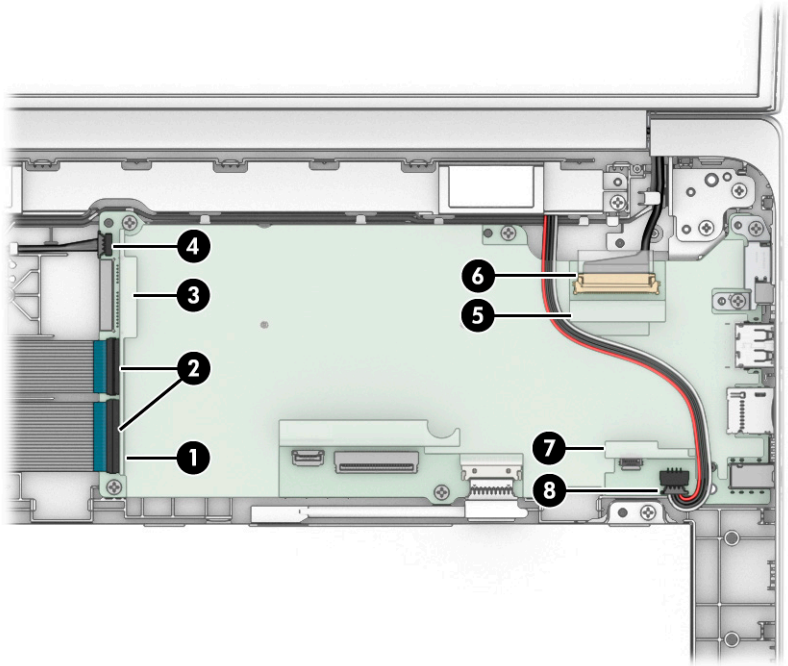
Before removing the system board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see Keyboard/top cover on page 20).
5. Disconnect the battery cable from the system board (see Battery on page 26).
6. Remove the WLAN module (see WLAN module on page 27).

Remove the system board:

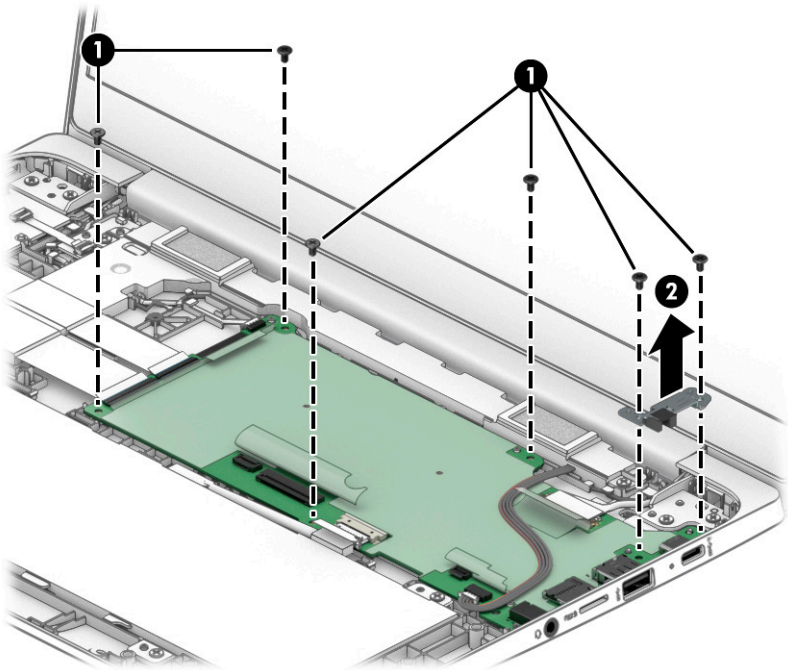
1. Release the shielding **(1)** that covers the connector board cable ZIF connectors.
2. Release the ZIF connectors **(2)** to which the connector board cables are connected, and then disconnect the connector board cables from the system board.
3. Release the shielding **(3)** that covers the webcam cable connector.
4. Disconnect the webcam cable **(4)** from the system board.
5. Release the shielding **(5)** that covers the display panel cable connector.
6. Disconnect the display panel cable **(6)** from the system board.
7. Release the shielding **(7)** that covers the speaker cable connector.

8. Disconnect the speaker cable (8) from the system board.



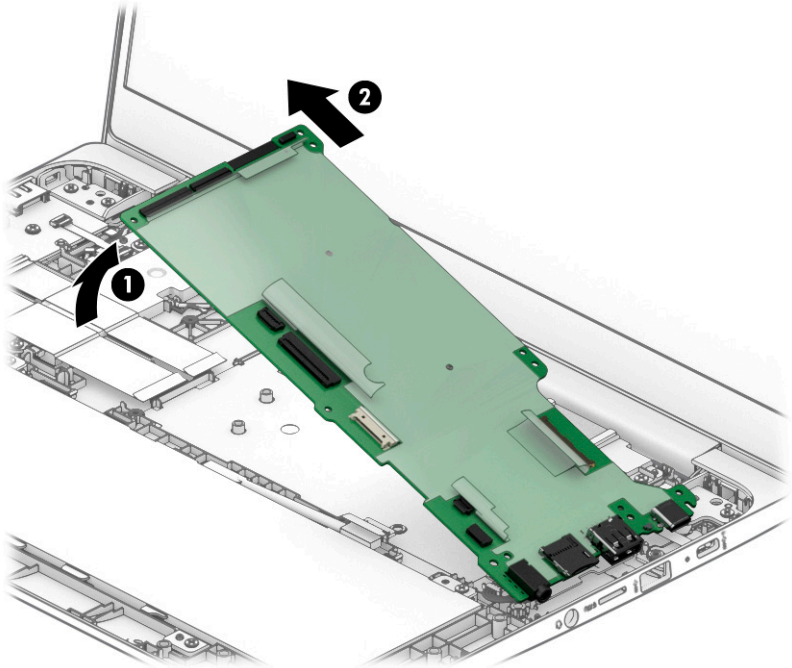
9. Remove the six Phillips M2.0×4.2 screws (1) that secure the system board to the bottom cover.
10. Remove the I/O bracket (2).

    The I/O bracket is available using spare part number L90438-001.



11. Lift the left side the system board (1) until it rests at an angle.

12. Remove the system board **(2)** by sliding it up and to the left at an angle.



Reverse this procedure to install the system board.

Display assembly

NOTE: The display assembly is available at the subcomponent level only. See the removal section for each component for information.

Before removing the display assembly, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see Keyboard/top cover on page 20).
5. Disconnect the battery from the system board (see Battery on page 26).

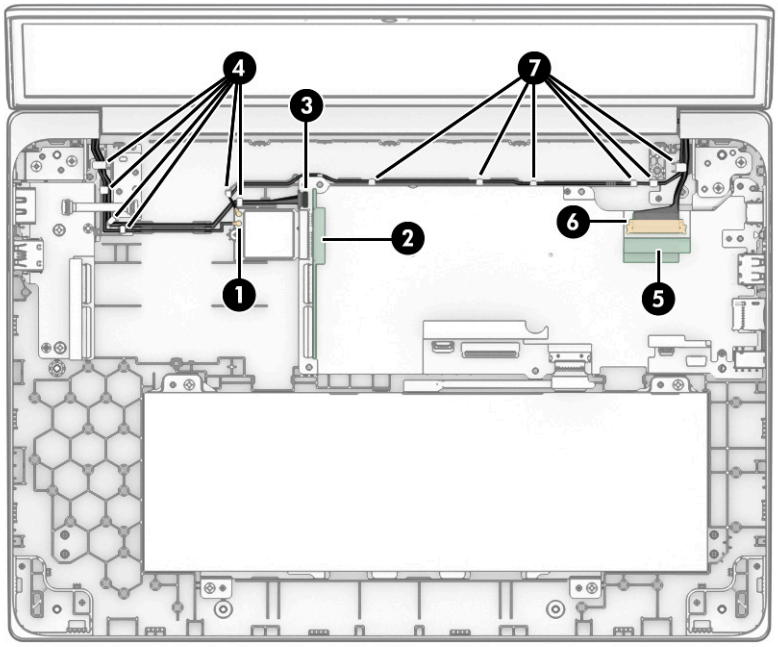
Remove the display assembly:

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

   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 **#2/Aux** terminal.

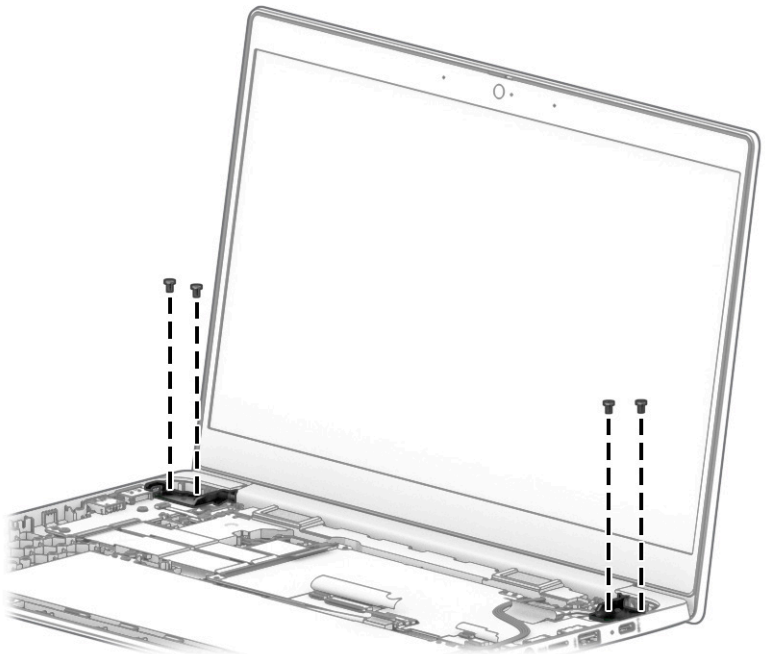
2. Release the shielding **(2)** that covers the webcam cable connector.
3. Disconnect the webcam cable **(3)** from the system board.
4. Release the wireless antenna cable and the webcam cable from the retention clips **(4)** built into the bottom cover.
5. Release the shielding **(5)** that covers the display panel cable connector.
6. Disconnect the display panel cable **(6)** from the system board.

7. Release the wireless antenna cable and the display panel cable from the retention clips (7) and routing channel built into the bottom cover.



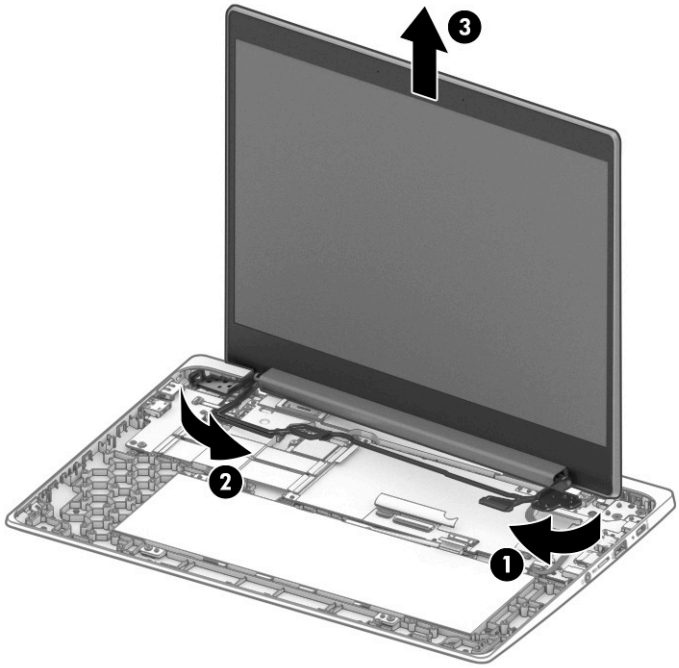
NOTE: Steps 8 through 11 apply only to computer models equipped with a touchscreen display assembly. See steps 12 through 19 for display assembly removal instructions for computer models equipped with a non-touchscreen display assembly.

8. Remove the four Phillips M2.5×4.7 screws that secure the display assembly to the bottom cover.



9. Release the display assembly by swinging the right hinge (1) clockwise away from the bottom cover.
10. Release the display assembly by sliding the left hinge (2) away from the bottom cover at an angle.

11. Remove the display assembly (3).



NOTE: Steps 12 through 19 apply only to computer models equipped with a non-touchscreen display assembly. See steps 8 through 11 for display assembly removal instructions for computer models equipped with a touchscreen display assembly.

12. If it is necessary to replace the display assembly or any of the display assembly internal components, remove the hinge cover by following these steps:

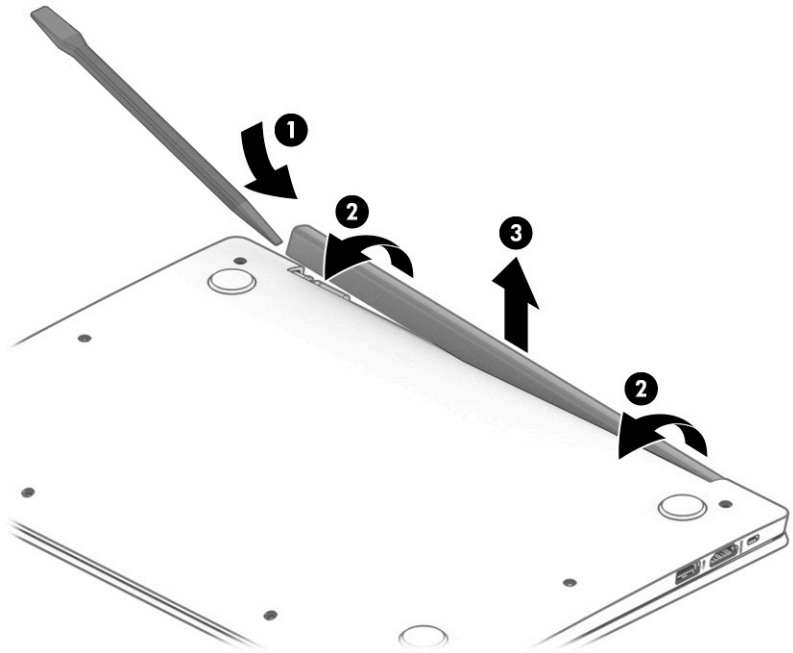
    a. Close the computer.

    b. Turn the computer upside down with the front toward you.

    c. Use a case utility tool (1) or similar thin, plastic tool to separate the left (2) and right edges of the hinge cover from the display assembly.

d. Remove the hinge cover (3).

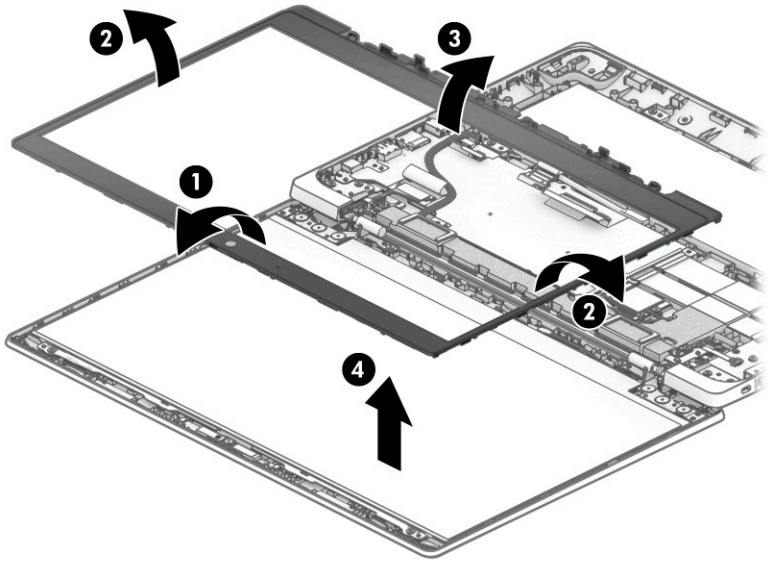
The hinge cover is available using spare part number L90414-001.



13. Remove the display bezel by following these steps:
    a. Turn the computer right side up with the rear toward you.
    b. Open the computer as far as it will open.
    c. Release the top edge of the display bezel (1) from the display assembly.
    d. Release the left and right edges of the display bezel (2) from the display assembly.
    e. Release the bottom edge of the display bezel (3) from the display assembly.

f. Remove the display bezel (4).

The display bezel is available using spare part number L90414-001.

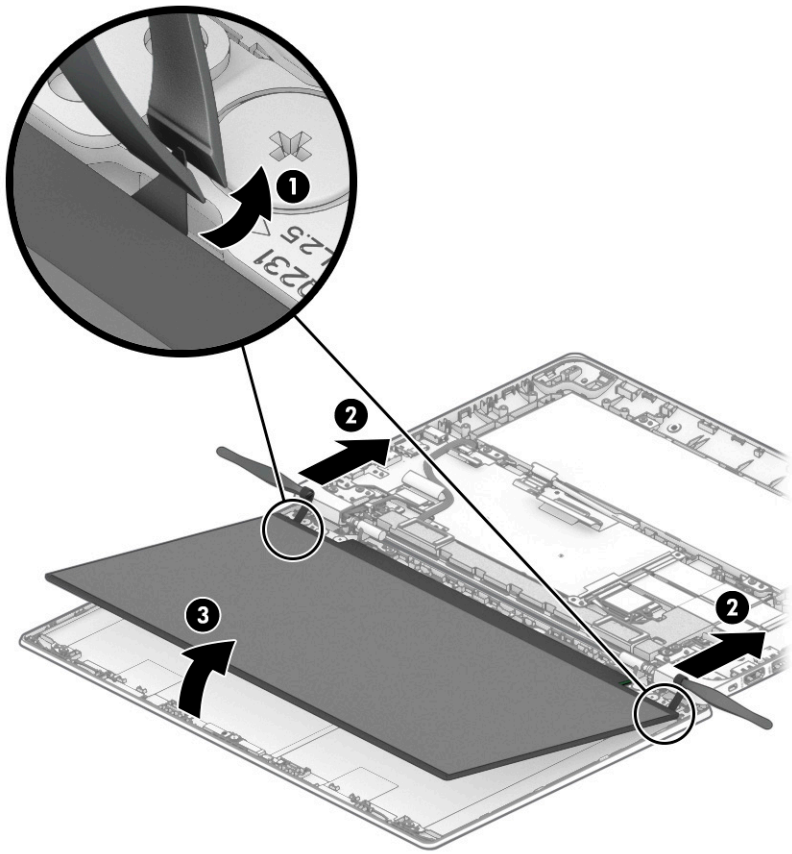


14. Remove the display panel by following these steps:

a. Use a pair of forceps (1) to grasp the pull-to-release adhesive tabs in the lower corners of the display back cover.

b. Use steady pressure to pull the adhesive tabs (2) as far as they can be pulled.

c. Swing the top edge (3) of the display panel up and forward until the display panel cable is accessible.



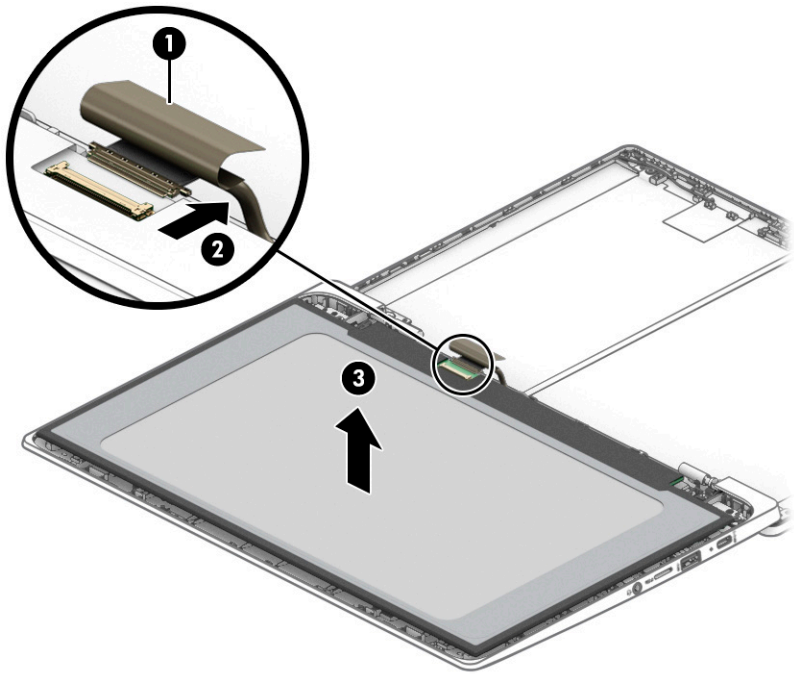
d. Release the adhesive support strip (1) that secures the display panel cable connector to the display panel.

e. Disconnect the display panel cable (2) from the display panel.

f. Remove the display panel (3).

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

- L90429-001 – 14.0-in, FHD, antiglare, LED, UWVA, touchscreen display panel
- L90428-001 – 14.0-in, FHD, antiglare, LED, UWVA, non-touchscreen display panel
- L90431-001 – 14.0-in, HD, brightview, LED, SVA, touchscreen display panel
- L90430-001 – 14.0-in, HD, antiglare, LED, SVA, non-touchscreen display panel



15. Remove the display back cover by following these steps:

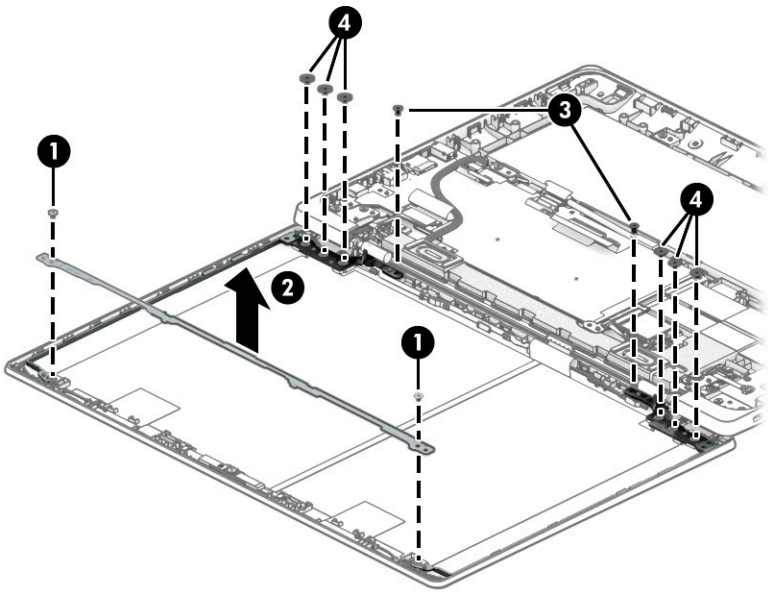
    a. Remove the two Phillips M2.0×2.5 screws **(1)** that secure the display bracket to the display back cover.

    b. Remove the display bracket **(2)** from the display back cover.

       The display bracket is available using spare part number L90417-001.

    c. Remove the two Phillips M2.0×3.8 screws **(3)** that secure the display back cover to the display hinges.

    d. Remove the six Phillips M2.5×3.0 broad head screws **(4)** that secure the display back cover to the display hinges.

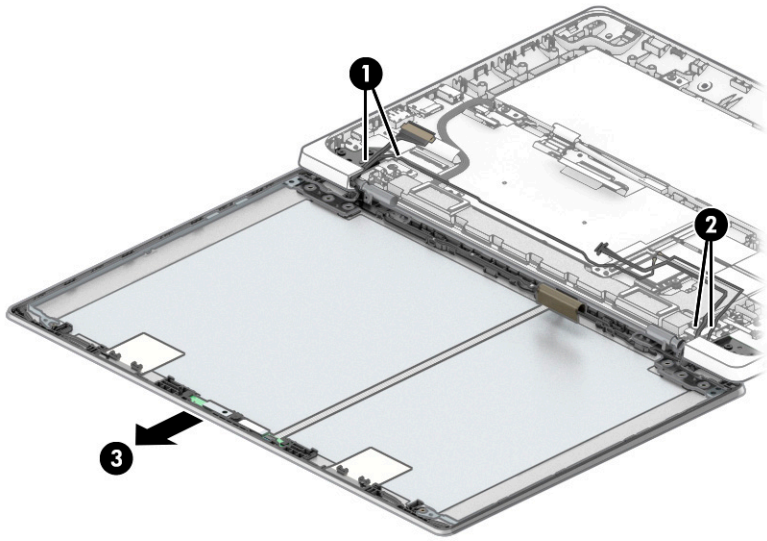


e. Release the display panel cable and the wireless antenna cable from the routing channel in the right display hinge area.

f. Release the webcam cable and the wireless antenna cable from the routing channel in the left display hinge area.

g. Remove the display back cover by sliding it away from the bottom cover.

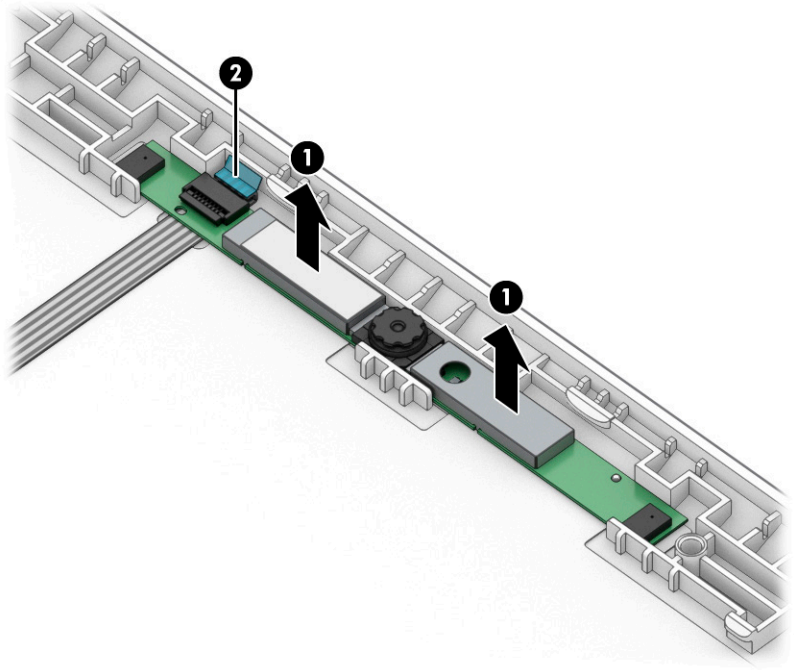
The display back cover is available using spare part number L90415-001.



16. Remove the webcam module by following these steps:

a. Detach the webcam module **(1)** from the display back cover. (The webcam module is attached to the display back cover with double-sided adhesive.)

b. Release the ZIF connector (2) to which the webcam module cable is connected, and then disconnect the webcam module cable from the webcam module.



c. Remove the webcam module.

The webcam module is available using spare part number L90439-001.

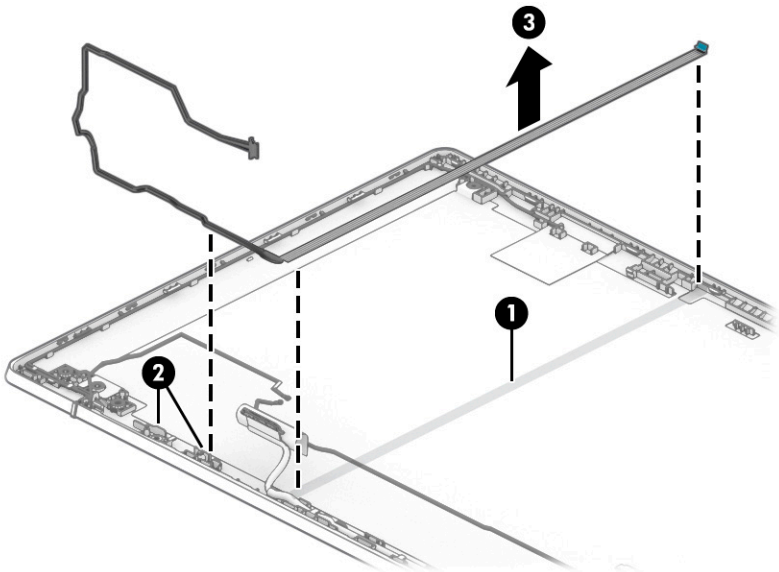
17. Remove the webcam module cable by following these steps:

a. Detach the webcam module cable (1) from the display back cover. (The webcam module cable is attached to the display back cover with double-sided adhesive.)

b. Release the webcam module cable from the retaining clips (2) built into the left hinge area of the display back cover.

c. Remove the webcam module cable (3).

The webcam module cable is included in the Cable Kit, spare part number L90412-001.

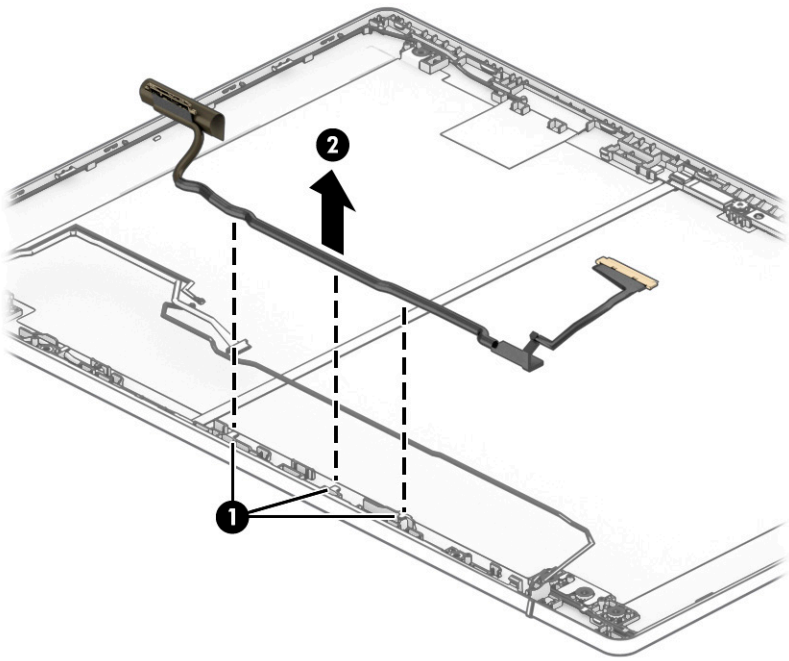


18. Remove the display panel cable by following these steps:

a. Release the display panel cable from the retaining clips (1) built into the bottom edge of the display back cover.

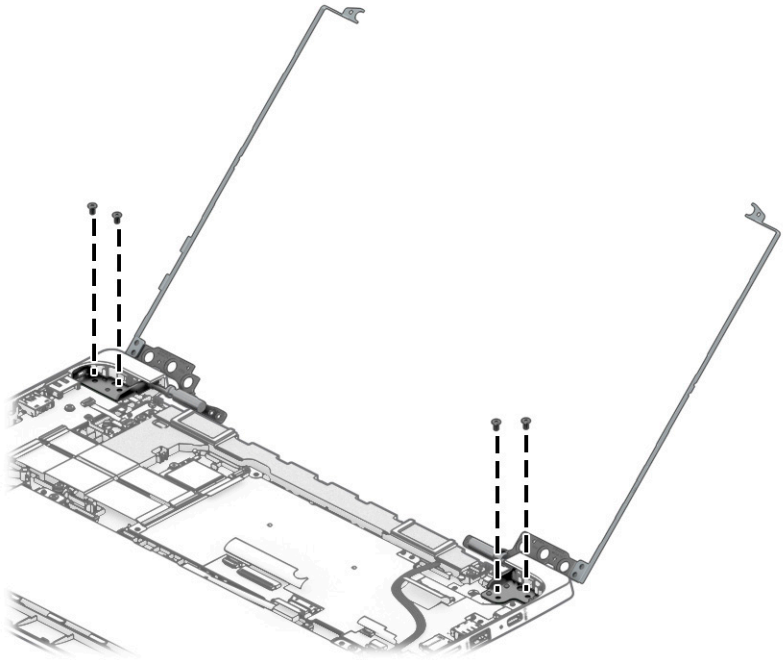
b. Remove the display panel cable (2).

The display panel cable is available using spare part numbers L90419-001 (for use only on computers equipped with a touchscreen display assembly) and L90418-001 (for use only on computers equipped with a non-touchscreen display assembly).



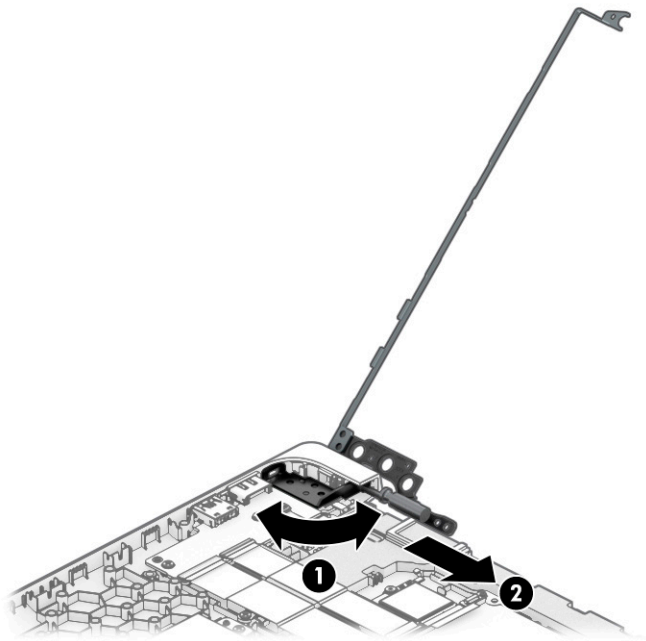
19. Remove the display hinges by following these steps:

    a. Remove the four Phillips M2.5×4.7 screws that secure the display hinges to the bottom cover.



    b. Rock the left hinge **(1)** back and forth until it releases from the bottom cover.

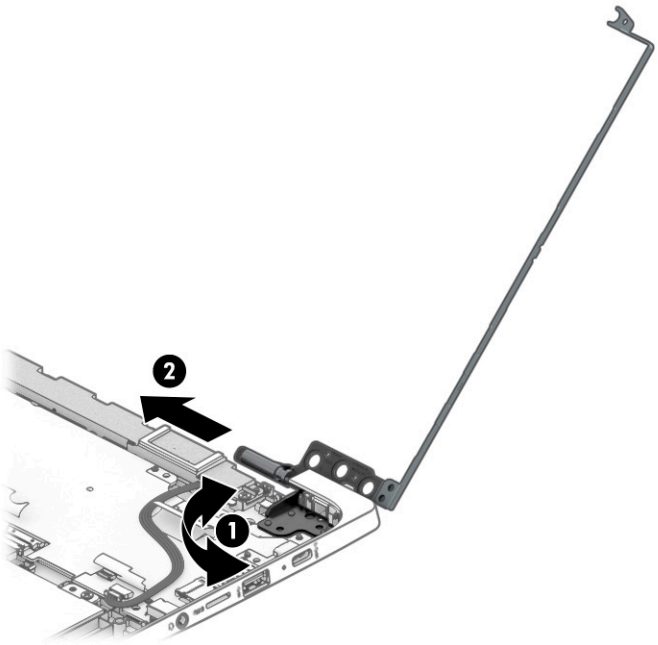
    c. Remove the left hinge **(2)**.



    d. Rock the right hinge **(1)** back and forth until it releases from the bottom cover.

e. Remove the right hinge (2).

The display hinges are available using spare part number L90413-001.



Reverse this procedure to reassemble and install the display assembly.

6 Specifications

Computer specifications

The power information in this section may be helpful if you plan to travel internationally with the computer.

The computer operates on DC power, which can be supplied by an AC or a DC power source. The AC power source must be rated at 100 V–240 V, 50 Hz–60 Hz. Although the computer can be powered from a standalone DC power source, it should be powered only with an AC adapter or a DC power source that is supplied and approved by HP for use with this computer.

The computer can operate on DC power within the following specifications. Operating voltage and current varies by platform. The voltage and current for your computer is located on the regulatory label.

Table 6-1 Computer specifications

	Metric	U.S.
Dimensions:		
Width	32.7 cm	12.9 in
Depth	22.7 cm	8.9 in
Height	1.8 cm	0.7 in
Weight	1.5 kg	3.4 lbs
Input power	**Rating**	
Operating voltage and current	5 V dc @ 2 A / 12 V dc @ 3 A /15 V dc @ 3 A – 45 W USB-C 5 V dc @ 3 A / 9 V dc @ 3 A / 12 V dc @ 3.75 A /15 V dc @ 3 A – 45 W USB-C 5 V dc @ 3 A / 9 V dc @ 3 A / 10 V dc @ 3.75 A / 12 V dc @ 3.75 A / 15 V dc @ 3 A / 20 V dc @ 2.25 A – 45 W USB-C 5 V dc @ 3 A / 9 V dc @ 3 A / 12 V dc @ 5 A / 15 V dc @ 4.33 A / 20 V dc @ 3.25 A – 65 W USB-C 5 V dc @ 3 A / 9 V dc @ 3A / 10 V dc @ 5 A / 12 V dc @ 5 A / 15 V dc @ 4.33 A / 20 V dc @ 3.25 A – 65 W USB-C 5 V dc @ 3 A / 9 V dc @ 3 A / 10 V dc @ 5 A / 12 V dc @ 5 A / 15 V dc @ 5 A / 20 V dc @ 4.5 A – 90 W USB-C 19.5 V dc @ 2.31 A – 45 W 19.5 V dc @ 3.33 A – 65 W 19.5 V dc @ 4.62 A – 90 W 19.5 V dc @ 6.15 A – 120 W 19.5 V dc @ 6.9 A – 135 W 19.5 V dc @ 7.70 A – 150 W 19.5 V dc @ 10.3 A – 200 W 19.5 V dc @ 11.8 A – 230 W 19.5 V dc @ 16.92 A – 330 W	

Table 6-1 Computer specifications (continued)

	Metric	U.S.
Temperature		
Operating	**5°C to 35°C**	41°F to 95°F
Nonoperating	**–20°C to 60°C**	–4°F to 140°F
Relative humidity (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%	
Maximum altitude (unpressurized)		
Operating	**–15 m to 3,048 m**	–50 ft to 10,000 ft
Nonoperating	**–15 m to 12,192 m**	–50 ft to 40,000 ft
NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The device operates well within this range of temperatures.		

7 Power cord set requirements

The wide-range input feature of the computer permits it to operate from any line voltage from 100 to 120 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

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 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.

Table 7-1 Power cord requirements (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. Corset 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 non-rechargeable or rechargeable battery has reached the end of its useful life, do not dispose of the battery in general household waste. Follow the local laws and regulations in your area for battery disposal.

HP encourages customers to recycle used electronic hardware, HP original print cartridges, and rechargeable batteries. For more information about recycling programs, see the HP Web site at http://www.hp.com/recycle.

Index

A
AC adapter light 3
AC adapter, spare part number 14
antennas 5
audio, product description 1
audio-in jack 3
audio-out jack 3

B
back cover
  removal 43
  spare part number 13, 44
battery
  light 3
  removal 26
  spare part number 12, 26
bezel
  removal 40
  spare part number 13, 41
Bluetooth label 8
bottom 8
bottom cover, spare part number 12

C
Cable Kit, spare part number 14
camera 5
camera light 5
chipset, product description 1
components
  display 5
  left side 4
  right side 3
  speakers 7
computer major components 9
computer specifications 49
connector board
  removal 30
  spare part number 11, 30
connector board high-speed cable
  removal 29
  spare part number 11, 29
connector board low-speed cable
  removal 29
  spare part number 11, 29
connector, power 4

D
display assembly
  removal 37
  spare part numbers 37
display bracket
  removal 43
  spare part number 13, 43
display components 13
display panel
  product description 1
  removal 41
  spare part numbers 13, 42
display panel cable
  removal 46
  spare part numbers 13, 46

E
electrostatic discharge 16
equipment guidelines 18

G
grounding guidelines 16
guidelines
  equipment 18
  grounding 16
  packaging 17
  transporting 17
  workstation 18

H
HDMI port 4
headphone jack 3
hinge
  removal 47
  spare part number 13, 48
hinge cover
  removal 39
  spare part number 13, 40

I
I/O bracket
  removal 35
  spare part number 12, 35
internal microphones 5

J
jacks
  audio-in 3
  audio-out 3
  headphone 3
  microphone 3

K
keyboard/top cover
  removal 20
  spare part numbers 10, 20

L
labels
  Bluetooth 8
  regulatory 8
  serial number 7
  service 7
  wireless certification 8
  WLAN 8
lights
  AC adapter 3
  battery 3
  camera 5

M
memory card 3
memory, product description 1
microphone
  jack 3
  locations 5
  product description 1
microSD memory card reader 3
model name 1

O
operating system, product description 2

P
packaging guidelines 17
ports
  HDMI port 4

USB 3.x SuperSpeed port 3, 4
USB Type-C power connector and charging 4
power connector 4
power cord
requirements for all countries 51
requirements for specific countries and regions 52
set requirements 51
spare part numbers 14
power requirements, product description 2
privacy shutter 5
processor, product description 1
product description
audio 1
chipset 1
display panel 1
memory 1
microphone 1
operating system 2
power requirements 2
processors 1
product name 1
serviceability 2
storage 1
video 1
wireless 2
product name 1
product name and number, computer 7

R
regulatory information
regulatory label 8
wireless certification labels 8
removal/replacement procedures 20

S
Screw Kit, spare part number 14
security lock slot 4
sensor board
removal 33
spare part number 11, 33
sensor board cable
removal 31
spare part number 11, 31
serial number 7
serial number, computer 7
service labels, locating 7
serviceability, product description 2
slots
microSD memory card reader 3
security lock 4
speakers
location 7
removal 32
spare part number 11, 32
specifications
computer 49
storage, product description 1
system board
removal 34
spare part numbers 11, 34

T
touchpad
removal 25
spare part number 11, 25
touchpad bracket
removal 25
spare part number 11, 25
touchpad cable
removal 24
spare part number 11, 24
TouchPad zone 6
transporting guidelines 17
traveling with the computer 8

U
USB 3.x SuperSpeed 3
USB 3.x SuperSpeed port 4
USB Type-C power connector and charging port 4

V
video, product description 1

W
webcam module
removal 44
spare part number 13, 45
webcam module cable
removal 45
spare part number 13, 46
wireless antennas 5
wireless certification label 8
wireless, product description 2
WLAN antennas 5
WLAN device 8
WLAN label 8
WLAN module
removal 27
spare part number 11, 27
workstation guidelines 18