HP Chromebook x360 11 G1 Education Edition

Maintenance and Service Guide
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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.

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 the International Standard for Safety of Information Technology Equipment (IEC 60950).

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1 Product description

Category	Description
Product Name	HP Chromebook x360 11 G1 Education Edition
Processors	Intel® Celeron™ N3350 1.10-GHz (turbo up to 2.40-GHz) dual core processor (2.0-GB L2 cache, 650-MHz FSB, 6-W)
Chipset	Integrated soldered-on-circuit (SoC)
Graphics	**Internal graphics**: Intel HD Graphics 500 Support for HD decode, DX12, and high-definition multimedia interface (HDMI)
Panel	11.6-in, high-definition (HD), light-emitting diode (LED), BrightView (1366×7680), 220 nits, 16:9 ultra wide aspect ratio TouchScreen display assembly with digitizer, only available with stylus pen 11.6-in, HD, LED, BrightView (1366×7680), 220 nits, 16:9 ultra wide aspect ratio TouchScreen display assembly without digitizer, not available with stylus pen
Memory	System memory soldered onto system board, non-customer-accessible/non-upgradable Support for up to 8-GB of system memory LPDDR4-3733 dual channel support (DDR4-3733 downgrade to LPDDR4-2400) Supports the following configurations: 8192-MB (16-GB, 512-MB × 32FBGA200 × 4 pieces); 4096-MB (8-GB, 512-MB × 32FBGA200 × 4 pieces);
Storage	**embedded Multi-Media Controller (eMMC) V.5.0:** 64- and 32-GB
Audio and video	Support for front-facing HD, fixed-focus camera, 720p, M-JPEG Support for optional rear-facing FHD camera with indicator light, USB 2.0, FHD BSI sensor, fixed-focus, f2.2, 88° wide field of vision, 1080p by 30 frames per second Support for single array microphone with appropriate beam-forming, echo-cancelling, noise-suppressing software Support for HD Audio Support for dual speakers
Wireless	Integrated wireless local area network (WLAN) options by way of wireless module Two M.2/PCIe WLAN antennas built into display assembly Support for the Intel Dual Band Wireless-AC 7265 802.11 AC 2×2 WiFi + Bluetooth 4.2 Combo Adapter (non-vPro) WLAN module Integrated wireless personal area network (PAN) supported by Bluetooth® 4.2 combo card
External media cards	Micro-Secure Digital (SD®) media reader slot
Ports	• Audio-out (headphone)/audio-in (microphone) combo jack • USB 3.1 ports (2) • USB Type-C ports (2)
Keyboard/pointing devices	Full-sized, textured, island-style Google keyboard (spill-resistant)

Category	Description
Keyboard/pointing devices *(continued)*	TouchPad requirements: MultiTouch gestures enabled and Taps enabled as default
Power requirements	Support for a 2-cell, 47-WHr, 6.15-AHr, Li-ion battery Support for 45-W AC adapter USB Type-C straight (non-PFC, 3-pin) AC adapter Support for a 1.00-m power cord with a C5 connector in 10 countries/regions.
Security	Security cable lock slot
Operating system	**Preinstalled:** Google Chrome operating system
Serviceability	**End user replaceable part:** AC adapter

2 External component identification

Locating hardware

To find out what hardware is installed on the computer:

- Type `device manager` in the taskbar search box, and then select the **Device Manager** app.

  A list displays all the devices installed on the computer.

For information about system hardware components and the system BIOS version number, press fn+esc (select products only).

Locating software

To find out what software is installed on your computer:

- Select the **Start** button.

  – or –

  Right-click the **Start** button, and then select **Programs and Features**.

Display

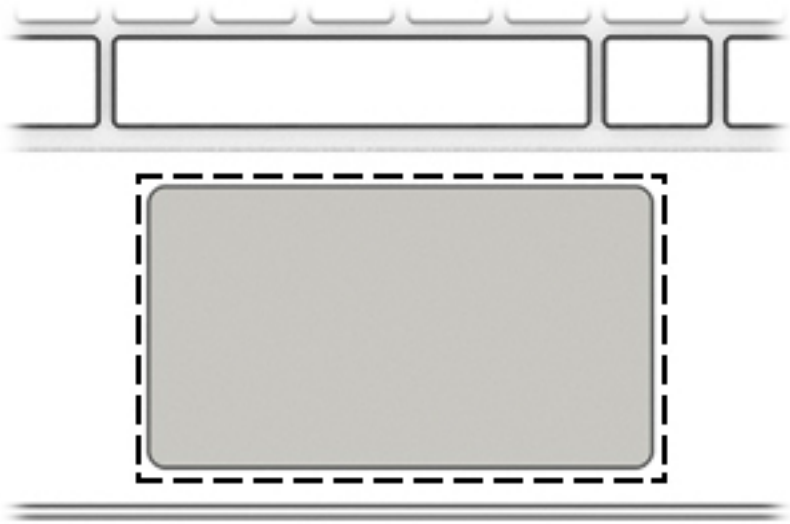
Item	Component	Description
(1)	WLAN antennas (2)*	Send and receive wireless signals to communicate with WLANs. **NOTE:** The position of the WLAN antennas may differ, depending on product.
(2)	Camera light	On: The camera is in use.
(3)	Camera	Records video, captures still photographs, and allows video conferences and online chat by means of streaming video.
(4)	Internal microphone	Records sound.
(5)	Camera light (select products only)	On: The camera is in use.
(6)	Camera (select products only)	Records video, captures still photographs, and allows video conferences and online chat by means of streaming video.
(7)	Internal microphone (select products only)	Records sound.

*The antennas, IR emitters (select models only), and sensors are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas, IR emitters, and sensors free from obstructions.

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

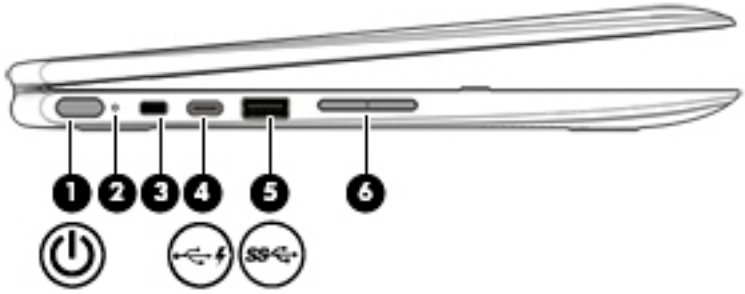
This guide is provided in the box.

TouchPad



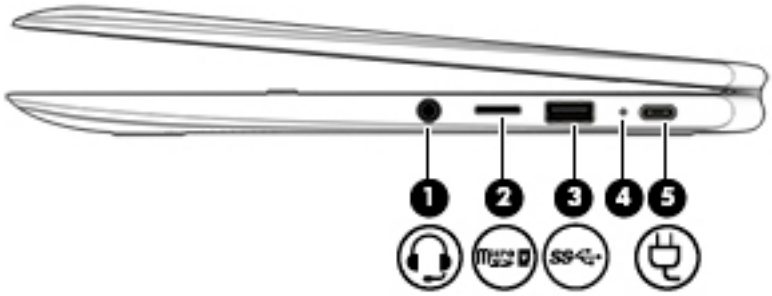
Component	Description
TouchPad zone	Moves the on-screen pointer and selects or activates items on the screen.

Left side



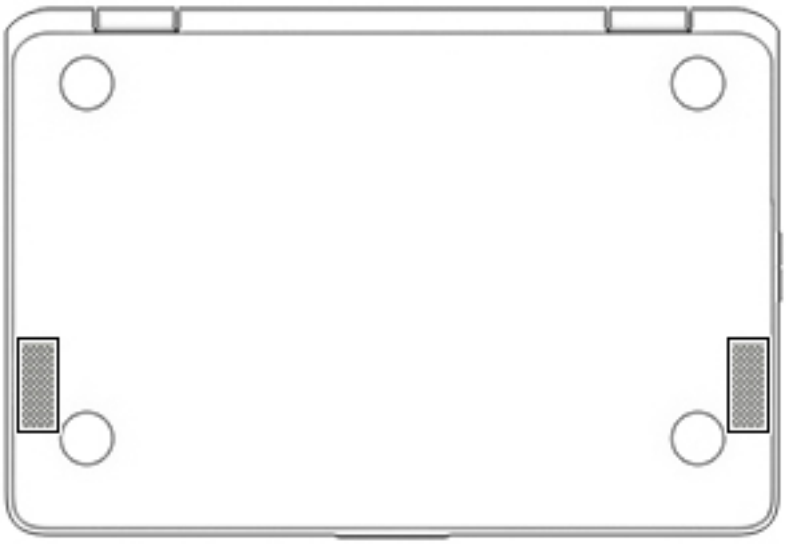
Item	Icon	Component	Description
(1)		Power button	• When the computer is off, press the button to turn on the computer. • When the computer is in the Sleep state, press the button briefly to exit Sleep. • When the computer is on and you want to lock the screen, press the button until you see the sign-in screen appear. Pressing the power button during screen-lock mode turns off the computer. • When the computer is on and you want to turn it off, press and hold the button to lock the screen, and then continue to press the button until the computer powers off.
(2)		Power light	• On: Power is on. • Pulsing white: Computer is in the Sleep state. • Off: Computer is off and backlight is off.
(3)		Security cable slot	Attaches an optional security cable to the computer. **NOTE:** The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.
(4)		USB Type-C charging port	Connects a USB device with a Type-C connector and can charge products such as cell phones, laptops, tablets, and MP3 players, even when the computer is off.
(5)		USB 3.1 port with HP Sleep and Charge	Connects a USB device.
(6)		Volume button	Controls speaker volume on the computer.

Right side



Item	Icon	Component	Description
(1)		Audio-out (headphone)/Audio-in (microphone) 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, refer to 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: ▲ Pull out the card.
(3)		USB 3.1 port with HP Sleep and Charge	Connects a USB device.
(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. • Off: The computer is using battery power.
(5)		USB Type-C power connector and charging port	Connects an AC adapter that has a USB Type-C connector, supplying power to the computer, and, if needed, charging the computer battery.

Bottom



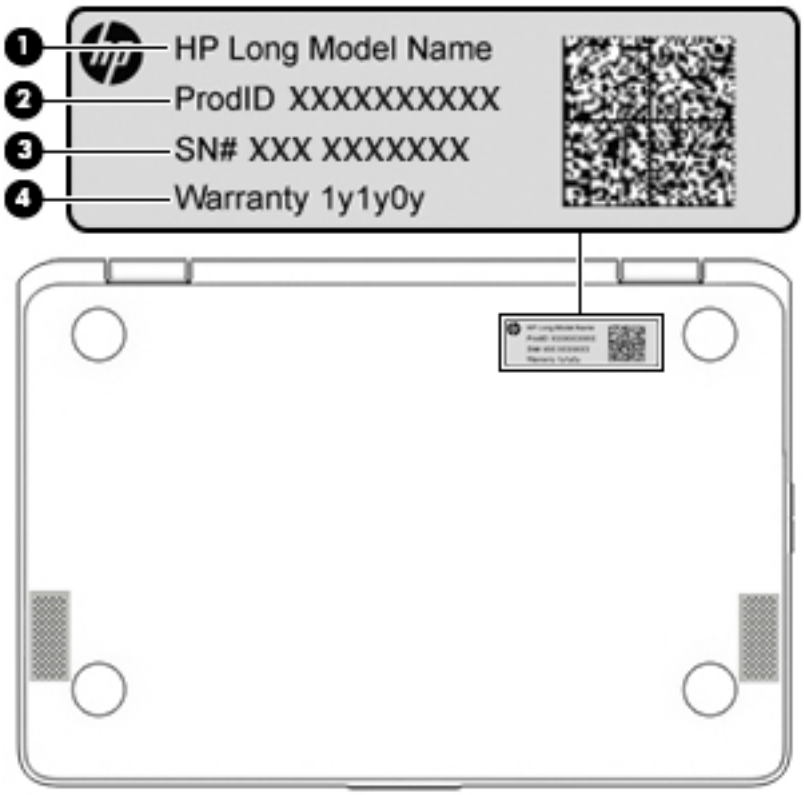
Component	Description
Speakers (2)	Produce sound.

3 Illustrated parts catalog

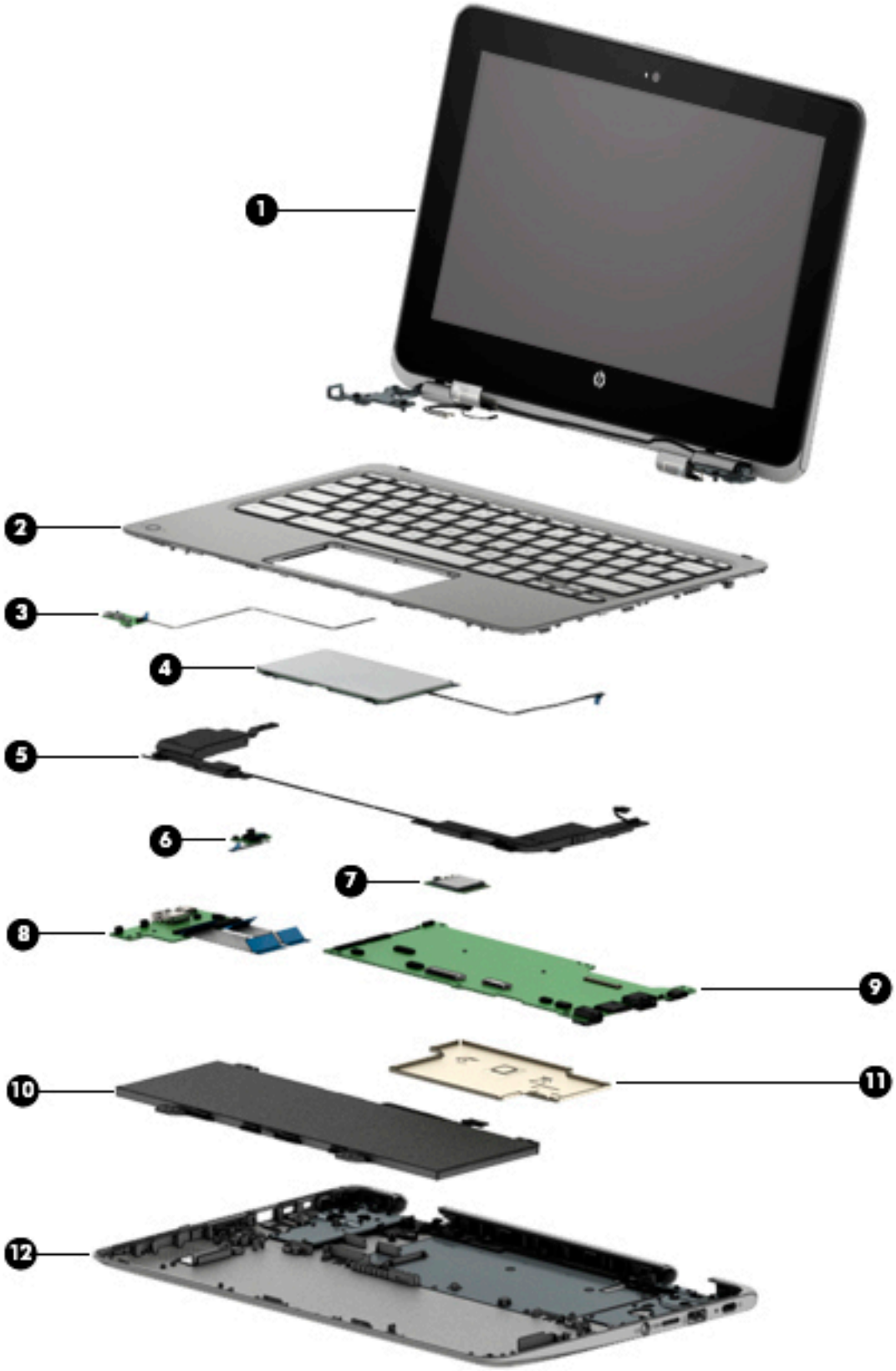
NOTE: HP continually improves and changes product parts. For complete and current information on supported parts for your computer, go to http://partsurfer.hp.com, select your country or region, and then follow the on-screen instructions.

Locating the model number, product number, serial number, and warranty information

The model number **(1)**, product number **(2)**, serial number **(3)**, and warranty information **(4)** are located on the bottom of the computer. This information may be needed when travelling internationally or when contacting support.



Computer major components



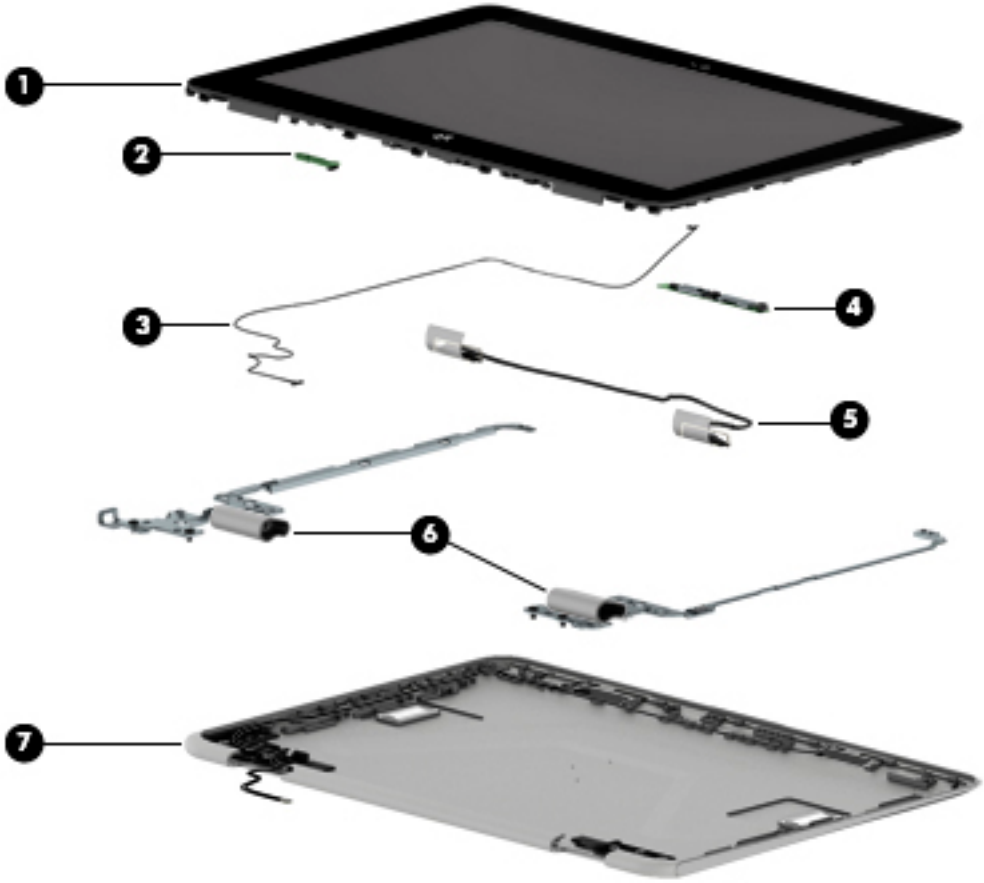
Item	Component	Spare part number
(1)	**Display assembly**: The display assembly is spared at the subcomponent level only. For more display assembly spare part information, see Display assembly subcomponents on page 15.	
(2)	**Keyboard/top cover** (includes keyboard cable):	
	In bon bon blue finish equipped with top cover camera and digitizer (includes top cover camera cable and digitizer cable):	
	For use in Belgium	937248-A41
	For use in Brazil	937248-201
	For use in Canada	937248-DB1
	For use in the Czech Republic and Slovakia	937248-FL1
	For use in Denmark, Finland, and Norway	937248-DH1
	For use in France	937248-051
	For use in Germany	937248-041
	For use in India	937248-D61
	For use in Israel	937248-BB1
	For use in Italy	937248-061
	For use in Latin America	937248-161
	For use in the Netherlands	937248-B31
	For use in Romania	937248-271
	For use in Russia	937248-251
	For use in Saudi Arabia	937248-171
	For use in Spain	937248-071
	For use in Switzerland	937248-BG1
	For use in Taiwan	937248-AB1
	For use in Thailand	937248-281
	For use in the United Kingdom	937248-031
	For use in the United States	937248-001
	Keyboard/top cover (includes keyboard cable):	
	In bon bon blue finish not equipped with top cover camera or digitizer (includes top cover camera hole blank):	
	For use in Belgium	936859-A41
	For use in Brazil	936859-201
	For use in Canada	936859-DB1
	For use in the Czech Republic and Slovakia	936859-FL1
	For use in Denmark, Finland, and Norway	936859-DH1
	For use in France	936859-051
	For use in Germany	936859-041

Item	Component	Spare part number
	For use in India	936859-D61
	For use in Israel	936859-BB1
	For use in Italy	936859-061
	For use in Latin America	936859-161
	For use in the Netherlands	936859-B31
	For use in Romania	936859-271
	For use in Russia	936859-251
	For use in Saudi Arabia	936859-171
	For use in Spain	936859-071
	For use in Switzerland	936859-BG1
	For use in Taiwan	936859-AB1
	For use in Thailand	936859-281
	For use in the United Kingdom	936859-031
	For use in the United States	936859-001
	Keyboard/top cover (includes keyboard cable):	
	In grey finish equipped with top cover camera and digitizer (includes top cover camera cable and digitizer cable):	
	For use in Belgium	937247-A41
	For use in Brazil	937247-201
	For use in Canada	937247-DB1
	For use in the Czech Republic and Slovakia	937247-FL1
	For use in Denmark, Finland, and Norway	937247-DH1
	For use in France	937247-051
	For use in Germany	937247-041
	For use in India	937247-D61
	For use in Israel	937247-BB1
	For use in Italy	937247-061
	For use in Latin America	937247-161
	For use in the Netherlands	937247-B31
	For use in Romania	937247-271
	For use in Russia	937247-251
	For use in Saudi Arabia	937247-171
	For use in Spain	937247-071
	For use in Switzerland	937247-BG1
	For use in Taiwan	937247-AB1

Item	Component	Spare part number
	For use in Thailand	937247-281
	For use in the United Kingdom	937247-031
	For use in the United States	937247-001
	Keyboard/top cover (includes keyboard cable):	
	In grey finish not equipped with top cover camera or digitizer (includes top cover camera hole blank):	
	For use in Belgium	927658-A41
	For use in Brazil	927658-201
	For use in Canada	927658-DB1
	For use in the Czech Republic and Slovakia	927658-FL1
	For use in Denmark, Finland, and Norway	927658-DH1
	For use in France	927658-051
	For use in Germany	927658-041
	For use in India	927658-D61
	For use in Israel	927658-BB1
	For use in Italy	927658-061
	For use in Latin America	927658-161
	For use in the Netherlands	927658-B31
	For use in Romania	927658-271
	For use in Russia	927658-251
	For use in Saudi Arabia	927658-171
	For use in Spain	927658-071
	For use in Switzerland	927658-BG1
	For use in Taiwan	927658-AB1
	For use in Thailand	927658-281
	For use in the United Kingdom	927658-031
	For use in the United States	927658-001
(3)	**Top cover camera** (does not include bracket or cable)	928088-001
	NOTE: The top cover camera bracket is included in the Bracket Kit, spare part number 928089-001.	
	NOTE: The top cover camera cable is included in the Cable Kit, spare part number 928086-001.	
(4)	**TouchPad** (does not include bracket or cable):	
	In bon bon blue finish	937159-001
	In grey finish	928084-001
	NOTE: The TouchPad bracket is included in the Bracket Kit, spare part number 928089-001.	
	NOTE: The TouchPad cable is included in the Cable Kit, spare part number 928086-001.	

Item	Component	Spare part number
(5)	**Speakers** (include cables)	928081-001
(6)	**Power button board** (does not include cable)	928083-001
	NOTE: The power button board cable is included in the Cable Kit, spare part number 928086-001.	
(7)	**Intel Dual Band Wireless-AC 7265 802.11 AC 2×2 WiFi + Bluetooth 4.2 Combo Adapter (non-vPro) WLAN module**	860883-855
(8)	**USB port board** (does not include cable)	928082-001
	NOTE: The USB port board cable is included in the Cable Kit, spare part number 928086-001.	
(9)	**System board** (includes processor and replacement thermal material):	
	Equipped with an Intel Celeron N3350 1.10-GHz (turbo up to 2.40-GHz) dual core processor (2.0-GB L2 cache, 650-MHz FSB, 6-W), a graphics subsystem with UMA video memory, 8-GB of system memory, and 64-GB of eMMC storage	927657-001
	Equipped with an Intel Celeron N3350 1.10-GHz (turbo up to 2.40-GHz) dual core processor (2.0-GB L2 cache, 650-MHz FSB, 6-W), a graphics subsystem with UMA video memory, 8-GB of system memory, and 32-GB of eMMC storage	927656-001
	Equipped with an Intel Celeron N3350 1.10-GHz (turbo up to 2.40-GHz) dual core processor (2.0-GB L2 cache, 650-MHz FSB, 6-W), a graphics subsystem with UMA video memory, 4-GB of system memory, and 64-GB of eMMC storage	927655-001
	Equipped with an Intel Celeron N3350 1.10-GHz (turbo up to 2.40-GHz) dual core processor (2.0-GB L2 cache, 650-MHz FSB, 6-W), a graphics subsystem with UMA video memory, 4-GB of system memory, and 32-GB of eMMC storage	927654-001
(10)	**Battery** (2-cell, 47-WHr, 6.15-AHr, Li-ion, includes cable)	917725-855
(11)	**Heat sink** (includes replacement thermal material)	928840-001
(12)	**Base enclosure:**	
	In bon bon blue finish	936782-001
	In grey finish	928079-001

Display assembly subcomponents



Item	Component	Spare part number
(1)	**Display panel assembly:**	
	11.6-in, HD, LED, BrightView, TouchScreen panel equipped with a digitizer	928587-001
	11.6-in, HD, LED, BrightView, TouchScreen panel	928588-001
(2)	**G-sensor board** (includes double-sided adhesive)	928081-001
(3)	**Webcam/microphone module cable** (included in the Cable Kit, spare part number 928086-001)	
(4)	**Webcam/microphone module** (includes double-sided adhesive):	929212-001
(5)	**Display panel cable** (includes G-sensor board cable; included in the Cable Kit, spare part number 928086-001)	
(6)	**Hinges** (2, includes left and right display hinges and left and right display hinge covers):	928087-001
(7)	**Display enclosure** (includes wireless antenna, rubber padding, and shielding):	
	In bon bon blue finish	936871-001
	In grey finish	928078-001

Miscellaneous parts

Component	Spare part number
AC adapter:	
65-W AC adapter (non-PFC, S-3P, 4.5-mm)	710412-001
45-W AC adapter USB Type-C straight (non-PFC, 3-pin)	920068-850
Adapters:	
HP USB Type-C–to–DisplayPort adapter	831753-001
HP USB Type-C–to–HDMI adapter	831752-001
HP USB Type-C–to–RJ45 adapter	855560-001
HP USB-C–to–USB 3.0 adapter	814618-001
HP Elite USB Type-C docking station	844549-001
HP Essential Backpack	679923-001
HP keyed cable lock (10-mm)	840158-001
Mouse:	
HP comfort grip mouse	691922-001
HP USB laser mouse	674318-001
HP USB travel mouse	757770-001
Power cord (C5 connector, 1.83-m):	
For use in Australia	213356-001
For use in Brazil	438722-001
For use in Europe	213350-001
For use in India	404287-001
For use in Israel	398063-001
For use in Italy	213352-001
For use in North America	213349-001
For use in Switzerland	213354-001
For use in Taiwan	393313-001
For use in the United Kingdom and Singapore	213351-001
Power cord (C5 connector, 1.00-m):	
For use in Australia	213356-008
For use in Brazil	438722-004
For use in Europe	213350-009
For use in India	404287-003
For use in Israel	398063-003
For use in Italy	213352-008

Component	Spare part number
For use in North America	213349-009
For use in Switzerland	213354-008
For use in Taiwan	393313-003
For use in Thailand	285096-006
For use in the United Kingdom and Singapore	213351-008
Power cord (Option-917, 3-cord, RoHS):	
1.83-m	361240-002
1.00-m	361240-001
Power cord, C5 connector, 1.83-m, 5-15 for use only in Thailand	285096-001
Miscellaneous Kit	928092-001
Screw Kit	928090-001
Stylus (active digitizer pen)	928519-001

4 Removal and replacement preliminary requirements

Tools required

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

- Flat-bladed screw driver
- Magnetic screw driver
- Phillips P0 screw driver

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

CAUTION: Using excessive force during disassembly and reassembly can damage plastic parts. Use care when handling the plastic parts. Apply pressure only at the points designated in the maintenance instructions.

Cables and connectors

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

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

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

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

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

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

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

Avoid dropping drives from any height onto any surface.

After removing drive, place it in a static-proof bag.

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

Avoid exposing a drive to temperature extremes or liquids.

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

Grounding guidelines

Electrostatic discharge damage

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

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

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

⚠ **CAUTION:** To prevent damage to the computer when you are removing or installing internal components, observe these precautions:

Keep components in their electrostatic-safe containers until you are ready to install them.

Before touching an electronic component, discharge static electricity by using the guidelines described in this section.

Avoid touching pins, leads, and circuitry. Handle electronic components as little as possible.

If you remove a component, place it in an electrostatic-safe container.

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

⚠ **CAUTION:** A product can be degraded by as little as 700 V.

Typical electrostatic voltage levels

	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 Styrofoam	14,500 V	5,000 V	3,500 V
Removing bubble pack from PCB	26,500 V	20,000 V	7,000 V
Packing PCBs in foam-lined box	21,000 V	11,000 V	5,000 V

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

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

Workstation guidelines

Follow these grounding workstation guidelines:

- Cover the workstation with approved static-shielding material.
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use conductive field service tools, such as cutters, screw drivers, and vacuums.
- When fixtures must directly contact dissipative surfaces, use fixtures made only of static-safe materials.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and Styrofoam.
- Handle ESD-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting or removing connectors or test equipment.

Equipment guidelines

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

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

The following grounding equipment is recommended to prevent electrostatic damage:

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

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

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

5 Removal and replacement procedures

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

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

CAUTION: This computer does not have user-replaceable parts. Only HP authorized service providers should perform the removal and replacement procedures described here. Accessing the internal part could damage the computer or void the warranty.

Component replacement procedures

NOTE: Details about your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer. See Locating the model number, product number, serial number, and warranty information on page 9 for details.

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

There are as many as 46 screws that must be removed, replaced, and/or loosened when servicing Authorized Service Provider only parts. Make special note of each screw size and location during removal and replacement.

Keyboard/top cover

For use in country or region	Spare part number	For use in country or region	Spare part number
In bon bon blue finish equipped with top cover camera and digitizer (includes keyboard cable, top cover camera cable, and digitizer cable):		For use in Latin America	937248-161
For use in Belgium	937248-A41	For use in the Netherlands	937248-B31
For use in Brazil	937248-201	For use in Romania	937248-271
For use in Canada	937248-DB1	For use in Russia	937248-251
For use in the Czech Republic and Slovakia	937248-FL1	For use in Saudi Arabia	937248-171
For use in Denmark, Finland, and Norway	937248-DH1	For use in Spain	937248-071
For use in France	937248-051	For use in Switzerland	937248-BG1
For use in Germany	937248-041	For use in Taiwan	937248-AB1
For use in India	937248-D61	For use in Thailand	937248-281
For use in Israel	937248-BB1	For use in the United Kingdom	937248-031
For use in Italy	937248-061	For use in the United States	937248-001

For use in country or region	Spare part number	For use in country or region	Spare part number
In bon bon blue finish not equipped with top cover camera or digitizer (includes keyboard cable):		For use in Latin America	936859-161
For use in Belgium	936859-A41	For use in the Netherlands	936859-B31
For use in Brazil	936859-201	For use in Romania	936859-271
For use in Canada	936859-DB1	For use in Russia	936859-251
For use in the Czech Republic and Slovakia	936859-FL1	For use in Saudi Arabia	936859-171
For use in Denmark, Finland, and Norway	936859-DH1	For use in Spain	936859-071
For use in France	936859-051	For use in Switzerland	936859-BG1
For use in Germany	936859-041	For use in Taiwan	936859-AB1
For use in India	936859-D61	For use in Thailand	936859-281
For use in Israel	936859-BB1	For use in the United Kingdom	936859-031
For use in Italy	936859-061	For use in the United States	936859-001
In grey finish equipped with top cover camera and digitizer (includes keyboard cable, top cover camera cable, and digitizer cable):		For use in Latin America	937247-161
For use in Belgium	937247-A41	For use in the Netherlands	937247-B31
For use in Brazil	937247-201	For use in Romania	937247-271
For use in Canada	937247-DB1	For use in Russia	937247-251
For use in the Czech Republic and Slovakia	937247-FL1	For use in Saudi Arabia	937247-171
For use in Denmark, Finland, and Norway	937247-DH1	For use in Spain	937247-071
For use in France	937247-051	For use in Switzerland	937247-BG1
For use in Germany	937247-041	For use in Taiwan	937247-AB1
For use in India	937247-D61	For use in Thailand	937247-281
For use in Israel	937247-BB1	For use in the United Kingdom	937247-031
For use in Italy	937247-061	For use in the United States	937247-001
In grey finish not equipped with top cover camera or digitizer (includes keyboard cable):		For use in Latin America	927658-161
For use in Belgium	927658-A41	For use in the Netherlands	927658-B31
For use in Brazil	927658-201	For use in Romania	927658-271
For use in Canada	927658-DB1	For use in Russia	927658-251
For use in the Czech Republic and Slovakia	927658-FL1	For use in Saudi Arabia	927658-171
For use in Denmark, Finland, and Norway	927658-DH1	For use in Spain	927658-071
For use in France	927658-051	For use in Switzerland	927658-BG1

For use in country or region	Spare part number	For use in country or region	Spare part number
For use in Germany	927658-041	For use in Taiwan	927658-AB1
For use in India	927658-D61	For use in Thailand	927658-281
For use in Israel	927658-BB1	For use in the United Kingdom	927658-031
For use in Italy	927658-061	For use in the United States	927658-001

Before disassembling the computer, follow these steps:

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

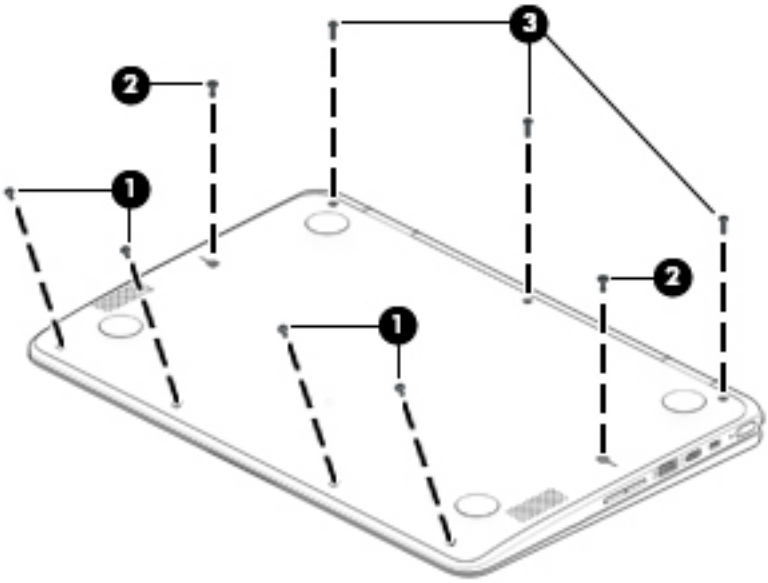
Remove the keyboard/top cover:

1. Turn the computer upside down on a flat surface.
2. Position the computer with the front toward you.
3. Remove the following screws that secure the keyboard/top cover to the base enclosure:

   (1) Four Phillips PM2.0×5.7 screws

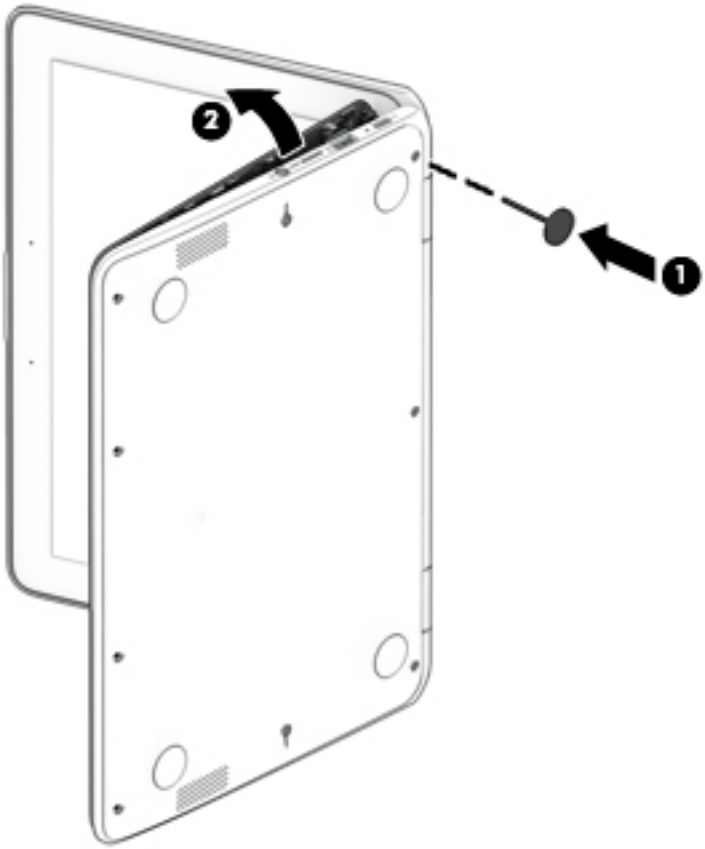
   (2) Two Phillips PM2.5×7.3 screws

   (3) Three Phillips PM2.5×8.7 screws



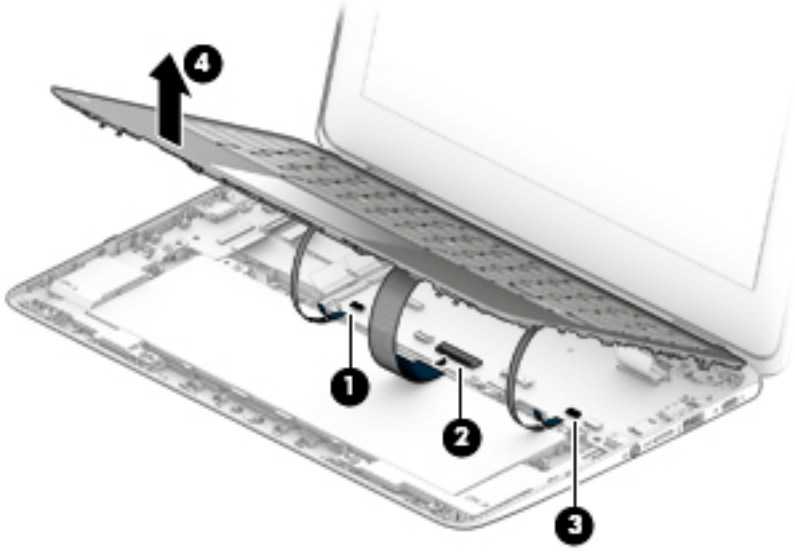
4. Turn the computer right side up.
5. Open the computer and position it on its left side with the bottom toward you.
6. Insert a keyboard release tool **(1)** into the empty screw holes.

7. Press on the keyboard release tool until the keyboard/top cover **(2)** releases from the computer.



8. Release the zero insertion force (ZIF) connector **(1)** to which keyboard cable is connected, and then disconnect the keyboard cable from the system board.
9. Release the ZIF connector **(2)** to which TouchPad cable is connected, and then disconnect the TouchPad cable from the system board.
10. Release the ZIF connector **(3)** to which backlight cable is connected, and then disconnect the backlight cable from the system board.

11. Remove the keyboard/top cover **(4)**.



Reverse this procedure to install the keyboard/top cover.

TouchPad cable

NOTE: The TouchPad cable is included in the Cable Kit, spare part number 928086-001.

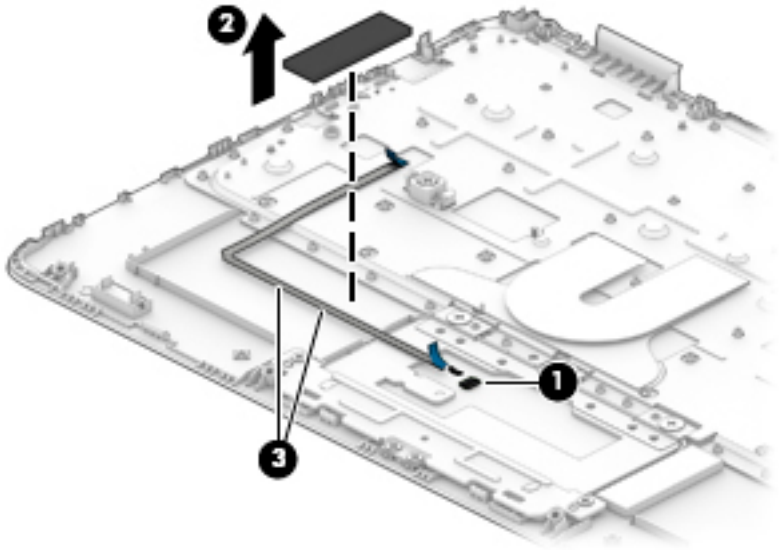
Before removing the TouchPad cable, follow these steps:

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 23).

Remove the TouchPad cable:

1. Turn the keyboard/top cover upside down with the front toward you.
2. Release the ZIF connector **(1)** to which TouchPad cable is connected, and then disconnect the TouchPad cable from the TouchPad.
3. Detach the adhesive pad **(2)** that secures the TouchPad cable to the keyboard/top cover.

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.

Reverse this procedure to install the TouchPad cable.

TouchPad

NOTE: The TouchPad spare part kit does not include the TouchPad bracket of the TouchPad cable. The TouchPad bracket is included in the Bracket Kit, spare part number 928089-001. The TouchPad cable is included in the Cable Kit, spare part number 928086-001.

Description	Spare part number
In grey finish	928084-001
In bon bon blue finish	937159-001

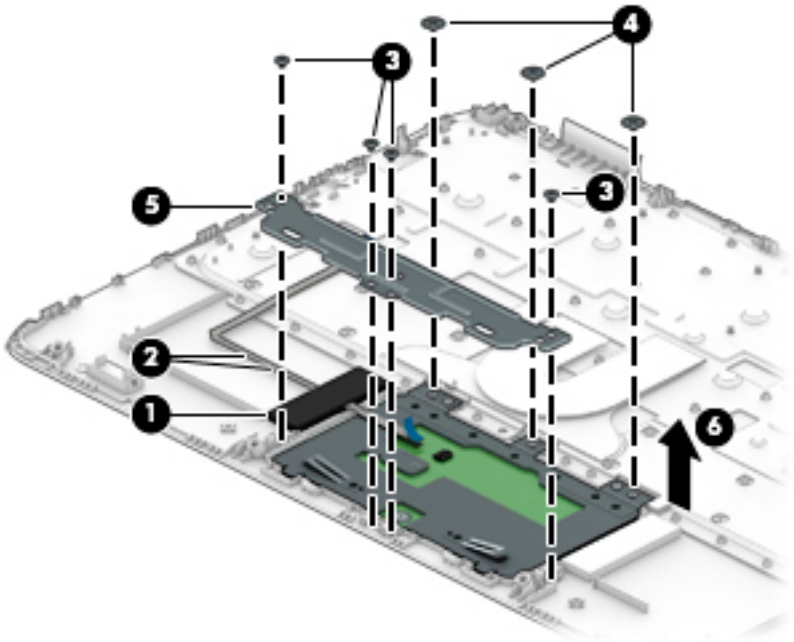
Before removing the TouchPad, follow these steps:

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 23).

Remove the TouchPad:

1. Turn the keyboard/top cover upside down with the front toward you.
2. Detach the adhesive pad **(1)** that secures the TouchPad cable to the keyboard/top cover.
3. Detach the TouchPad cable **(2)** from the keyboard/top cover. (The TouchPad cable is attached to the keyboard/top cover with double-sided adhesive.)

4. Remove the four Phillips PM2.0×2.9 screws **(3)** that secure the TouchPad bracket to the keyboard/top cover.
5. Remove the three Phillips PM2.0×2.2 broad head screws **(4)** that secure the TouchPad to the keyboard/top cover.
6. Remove the TouchPad bracket **(5)**.
7. Remove the TouchPad **(6)**.



Reverse this procedure to install the TouchPad.

Top cover camera

Description	Spare part number
Top cover camera (does not include bracket or cable)	928088-001

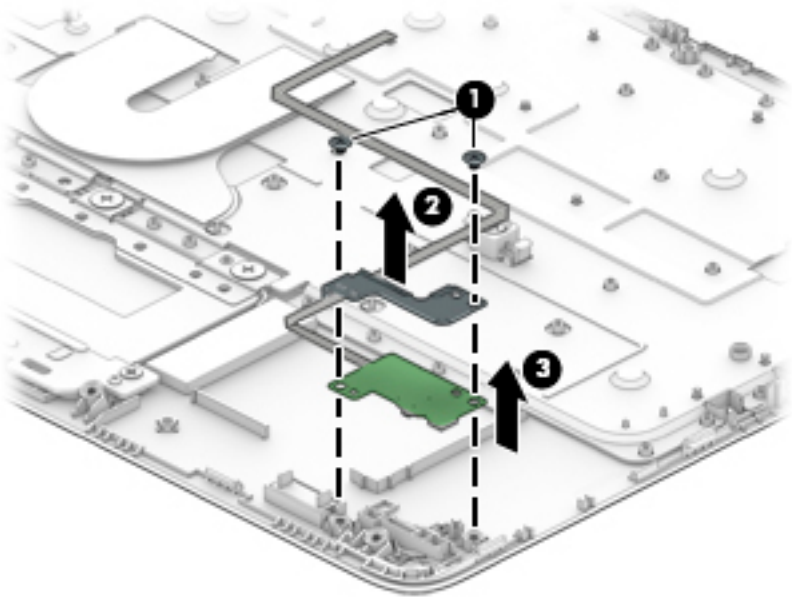
NOTE: The top cover camera bracket is included in the Bracket Kit, spare part number 928089-001. The top cover camera cable is included in the Cable Kit, spare part number 928086-001.

Before removing the top cover camera, 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 23).

Remove the top cover camera:

1. Turn the keyboard/top cover upside down with the front toward you.
2. Remove the two Phillips PM2.0×2.9 screws **(1)** that secure the top cover camera and bracket to the keyboard/top cover.
3. Remove the top cover camera bracket **(2)**.
4. Remove the top cover camera **(3)**.



Reverse this procedure to install the top cover camera.

Top cover camera cable

NOTE: The top cover camera cable is included in the Cable Kit, spare part number 928086-001.

Before removing the top cover camera 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 23).
5. Remove the top cover camera (see Top cover camera on page 29).

Remove the top cover camera cable:

1. Turn the top cover camera upside down with the front toward you.

2. Disconnect the top cover camera cable from the low-insertion force (LIF) connector on the top cover camera.

3. Remove the top cover camera cable.

Reverse this procedure to install the top cover camera cable.

Battery

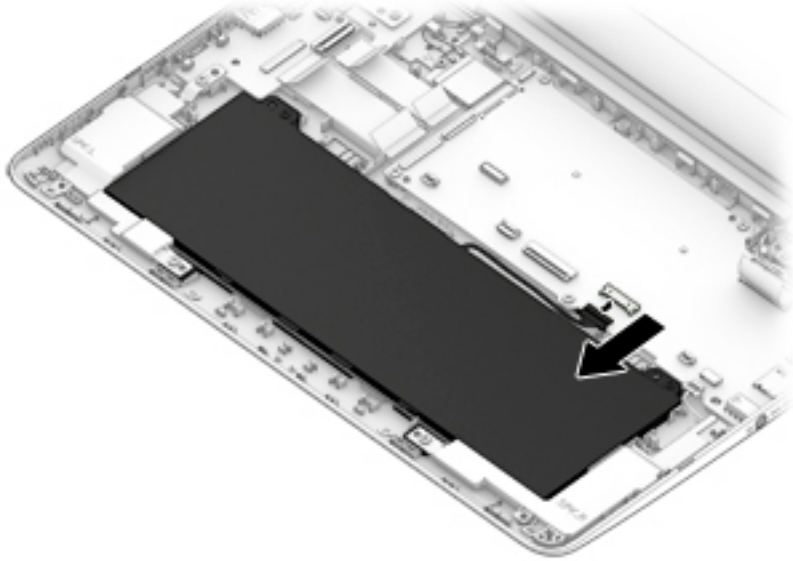
Description	Spare part number
2-cell, 47-WHr, 6.15-AHr, Li-ion battery (includes cable)	917725-855

Before removing the battery, follow these steps:

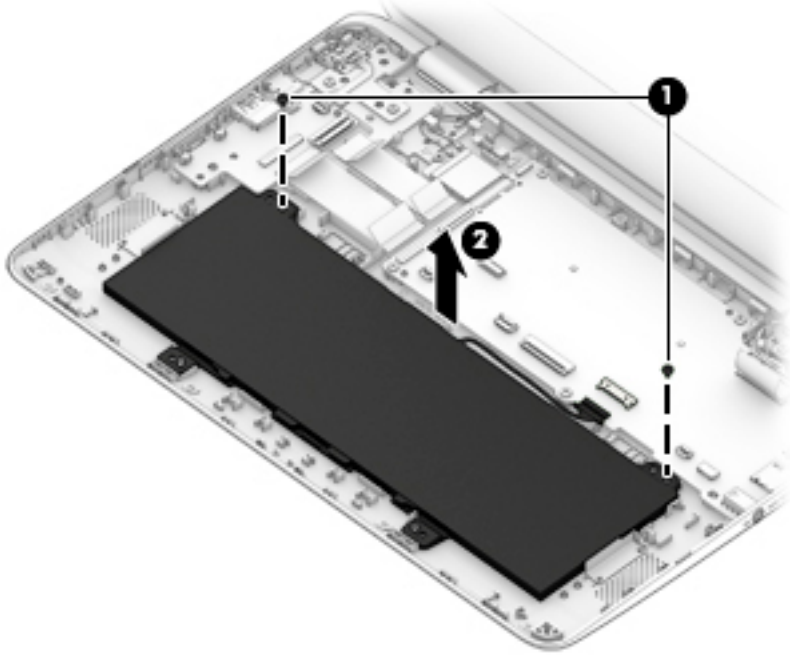
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see Keyboard/top cover on page 23).

Remove the battery:

1. Disconnect the battery cable from the system board.



2. Remove the two Phillips PM2.0×4.2 screws **(1)** that secure the battery to the base enclosure.
3. Remove the battery **(2)**.



Reverse this procedure to install the battery.

Speakers

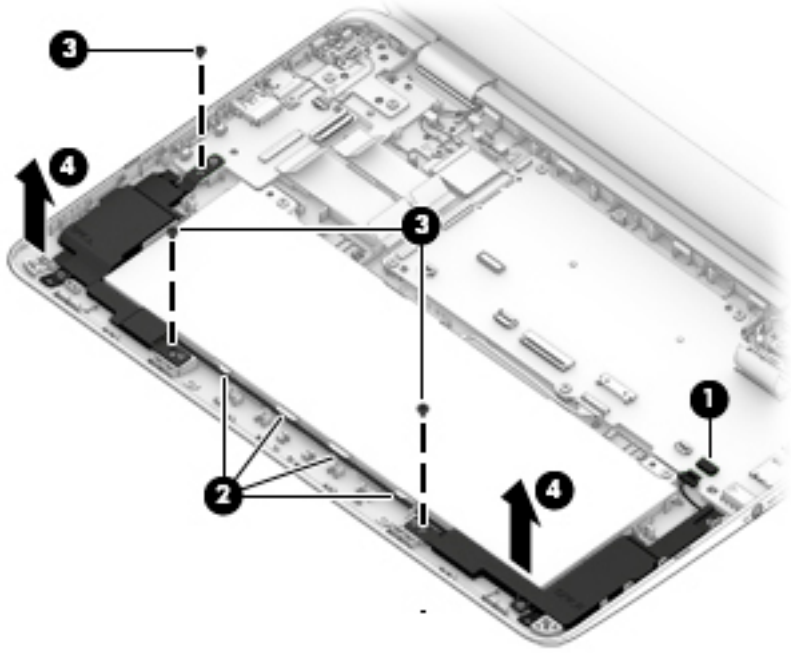
Description	Spare part number
Speakers (include cables)	928081-001

Before removing the speakers, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see Keyboard/top cover on page 23).
5. Disconnect the battery cable from the system board (see Battery on page 31).

Remove the speakers:

1. Disconnect the speaker cable **(1)** from the system board.
2. Release the speaker cable from the retention clips **(2)** and routing channel built into the base enclosure.
3. Remove the three Phillips PM2.0×4.2 screws **(3)** that secure the speakers to the base enclosure.
4. Remove the speakers **(4)**.



Reverse this procedure to install the speakers.

WLAN module

Description	Spare part number
Intel Dual Band Wireless-AC 7265 802.11 AC 2×2 WiFi + Bluetooth 4.2 Combo Adapter (non-vPro) WLAN module	860883-855

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

Before removing the WLAN module, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see Keyboard/top cover on page 23).
5. Disconnect the battery cable from the system board (see Battery on page 31).

Remove the WLAN module:

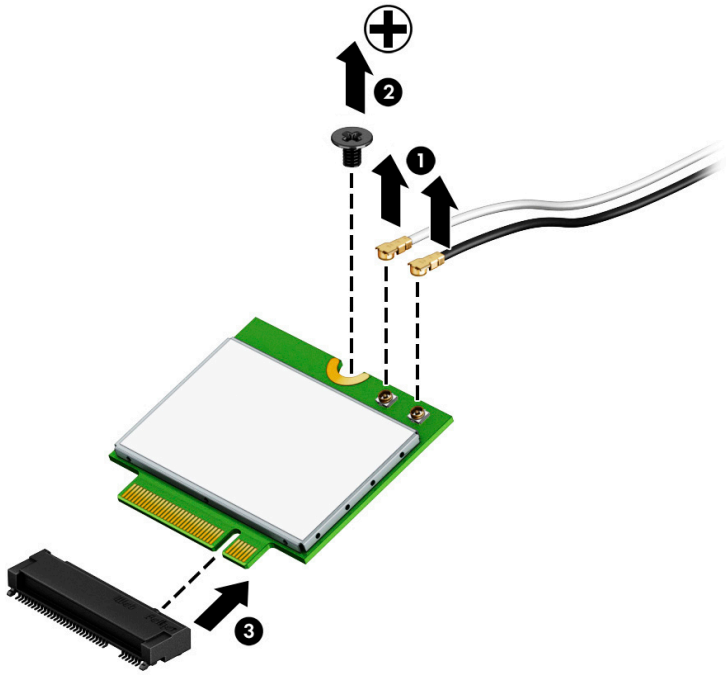
1. Disconnect the WLAN antenna cables **(1)** from the terminals on the WLAN module.

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

2. Remove the Phillips PM2.0×2.2 screw **(2)** that secures the WLAN module to the computer. (The WLAN module tilts up.)

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

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



Reverse this procedure to install the WLAN module.

USB port board cable

NOTE: The USB port board cables are included in the Cable Kit, spare part number 928086-001.

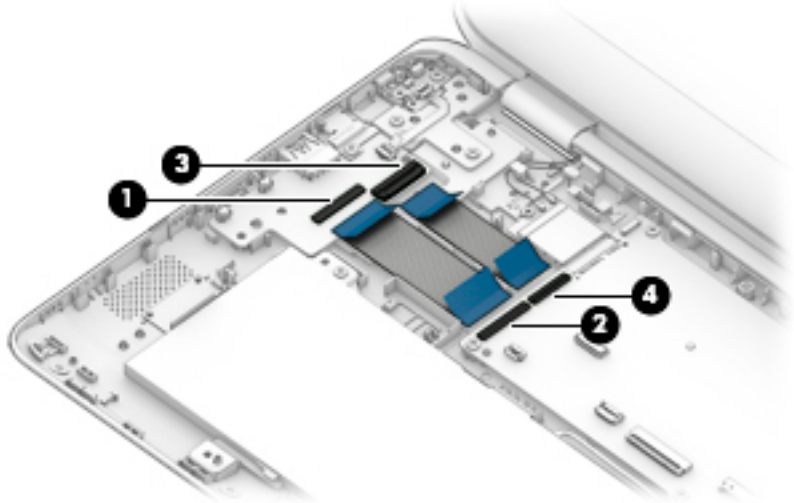
Before removing the USB port board cables, follow these steps:

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 23).
5. Disconnect the battery cable from the system board (see Battery on page 31).

Remove the USB port board cables:

1. Release the ZIF connector **(1)** to which the USB port cable is connected, and then disconnect the USB port cable from the USB port board.
2. Release the ZIF connector **(2)** to which the USB port cable is connected, and then disconnect the USB port cable from the system board.
3. Release the ZIF connector **(3)** to which the USB Type-C port cable is connected, and then disconnect the USB Type-C port cable from the USB port board.

4. Release the ZIF connector **(4)** to which the USB Type-C port cable is connected, and then disconnect the USB Type-C port cable from the system board.



5. Remove the USB port board cables.

Reverse this procedure to install the USB port board cables.

USB port board

Description	Spare part number
USB port board (includes USB port, volume control actuators, and hard drive activity light; does not include cables)	928082-001
NOTE: The USB port board cables are included in the Cable Kit, spare part number 928086-001.	

Before removing the USB port board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see Keyboard/top cover on page 23).
5. Disconnect the battery cable from the system board (see Battery on page 31).

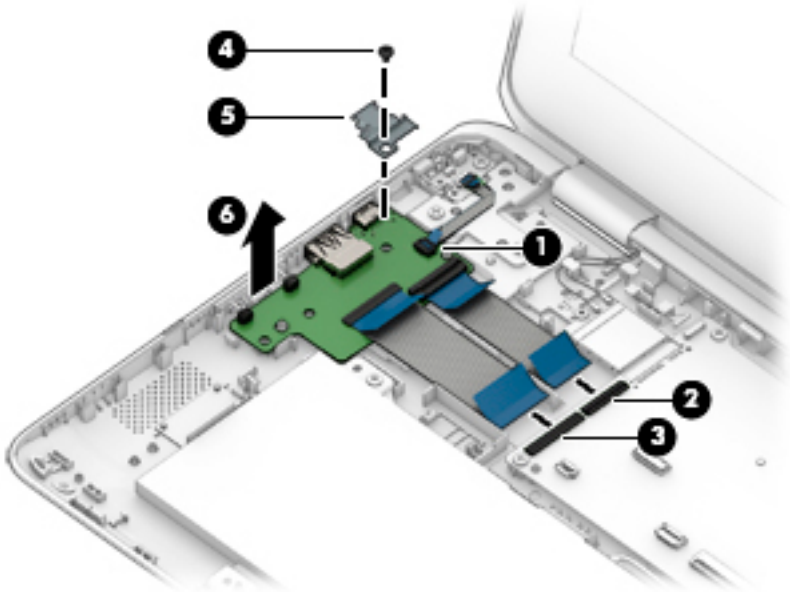
Remove the USB port board:

1. Release the ZIF connector **(1)** to which the power button board cable is connected, and then disconnect the power button board cable from the USB port board.
2. Release the ZIF connector **(2)** to which the USB Type-C port cable is connected, and then disconnect the USB Type-C port cable from the system board.
3. Release the ZIF connector **(3)** to which the USB port cable is connected, and then disconnect the USB port cable from the system board.
4. Remove the Phillips PM2.0×4.2 screw **(4)** that secures the USB port board to the base enclosure.

5. Remove the USB Type-C bracket **(5)**.

NOTE: The USB Type-C bracket is included in the Bracket Kit, spare part number 928089-001.

6. Remove the USB port board **(6)**.



Reverse this procedure to install the USB port board.

Power button board cable

NOTE: The power button board cable is included in the Cable Kit, spare part number 928086-001.

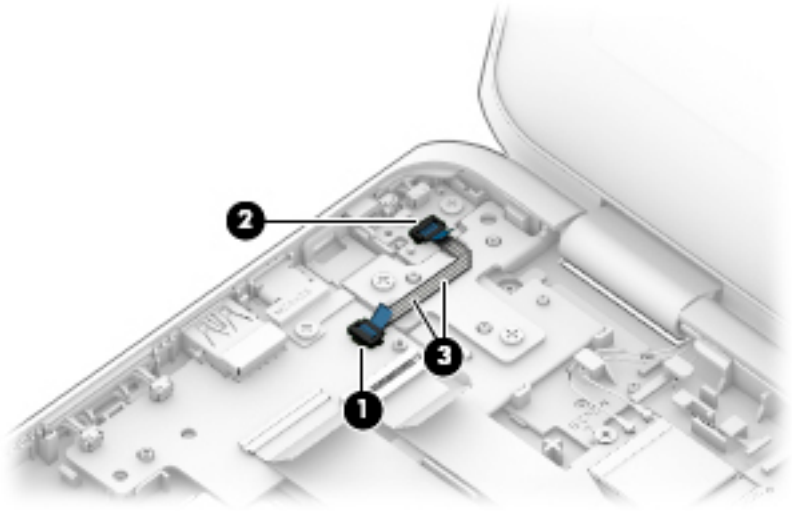
Before removing the power button board cable, follow these steps:

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 23).
5. Disconnect the battery cable from the system board (see Battery on page 31).

Remove the power button board cable:

1. Release the ZIF connector **(1)** to which power button board cable is connected, and then disconnect the power button board cable from the USB port board.
2. Release the ZIF connector **(2)** to which power button board cable is connected, and then disconnect the power button board cable from the power button board.

3. Detach the power button board cable **(3)** from the display hinge. (The power button board cable is attached to the display hinge with double-sided adhesive.)



4. Remove the power button board cable.

Reverse this procedure to install the power button board cable.

Power button board

Description	Spare part number
Power button board (does not include cable)	928083-001
NOTE: The power button board is included in the Cable Kit, spare part number 928086-001.	

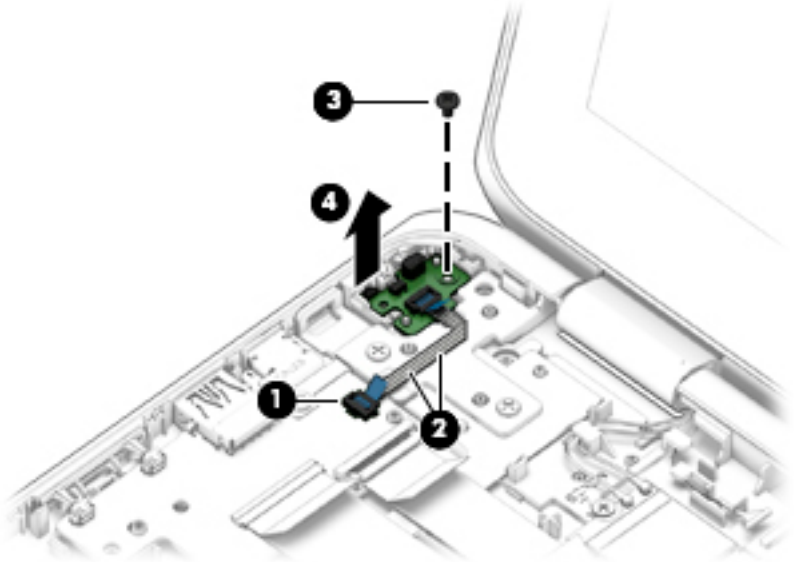
Before removing the power button board, follow these steps:

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 23).
5. Disconnect the battery cable from the system board (see Battery on page 31).

Remove the power button board:

1. Release the ZIF connector **(1)** to which power button board cable is connected, and then disconnect the power button board cable from the USB port board.
2. Detach the power button board cable **(2)** from the display hinge. (The power button board cable is attached to the display hinge with double-sided adhesive.)
3. Remove the Phillips PM2.0×4.2 screw **(3)** that secures the power button board to the base enclosure.

4. Remove the power button board **(4)**.



Reverse this procedure to install the power button board.

System board

NOTE: All system board spare part kits include a processor and replacement thermal material.

Description	Spare part number
Equipped with an Intel Celeron N3350 1.10-GHz (turbo up to 2.40-GHz) dual core processor (2.0-GB L2 cache, 650-MHz FSB, 6-W), a graphics subsystem with UMA video memory, 8-GB of system memory, and 64-GB of eMMC storage	927657-001
Equipped with an Intel Celeron N3350 1.10-GHz (turbo up to 2.40-GHz) dual core processor (2.0-GB L2 cache, 650-MHz FSB, 6-W), a graphics subsystem with UMA video memory, 8-GB of system memory, and 32-GB of eMMC storage	927656-001
Equipped with an Intel Celeron N3350 1.10-GHz (turbo up to 2.40-GHz) dual core processor (2.0-GB L2 cache, 650-MHz FSB, 6-W), a graphics subsystem with UMA video memory, 4-GB of system memory, and 64-GB of eMMC storage	927655-001
Equipped with an Intel Celeron N3350 1.10-GHz (turbo up to 2.40-GHz) dual core processor (2.0-GB L2 cache, 650-MHz FSB, 6-W), a graphics subsystem with UMA video memory, 4-GB of system memory, and 32-GB of eMMC storage	927654-001

Before removing the system board, follow these steps:

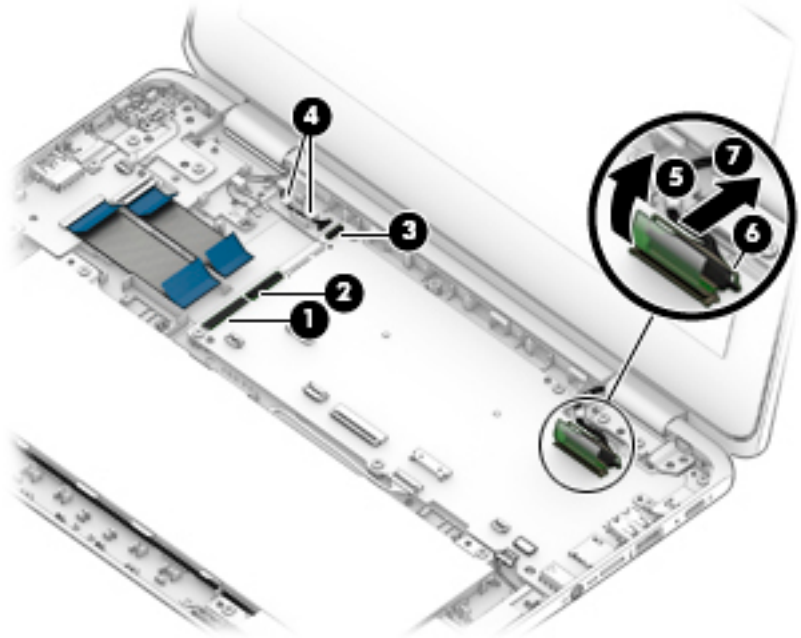
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord 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 23).

5. Disconnect the battery cable from the system board (see Battery on page 31).
6. Remove the WLAN module (see WLAN module on page 34).

When replacing the system board, be sure to remove the heat sink (see Heat sink on page 42) from the defective system board and install it on the replacement system board.

Remove the system board:

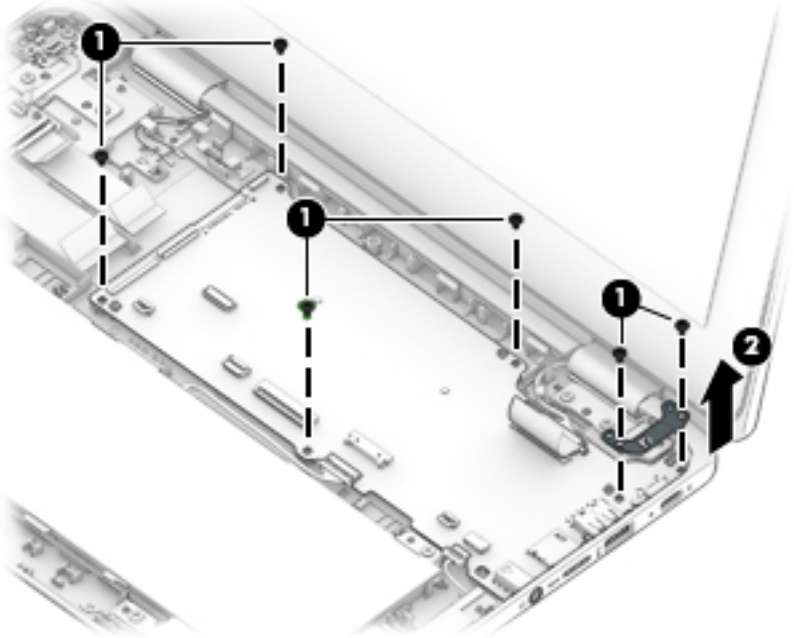
1. Release the ZIF connector **(1)** to which the USB port cable is connected, and then disconnect the USB port cable from the system board
2. Release the ZIF connector **(2)** to which the USB Type-C port cable is connected, and then disconnect the USB Type-C port cable from the system board.
3. Disconnect the camera cable **(3)** from the system board.
4. Release the camera cable from the retention clips **(4)** and routing channel built into the base enclosure.
5. Release the adhesive support strip **(5)** the secures the display panel cable to the system board.
6. Release the retention handle **(6)** the secures the display panel cable to the system board.
7. Disconnect the display panel cable **(7)** from the system board.



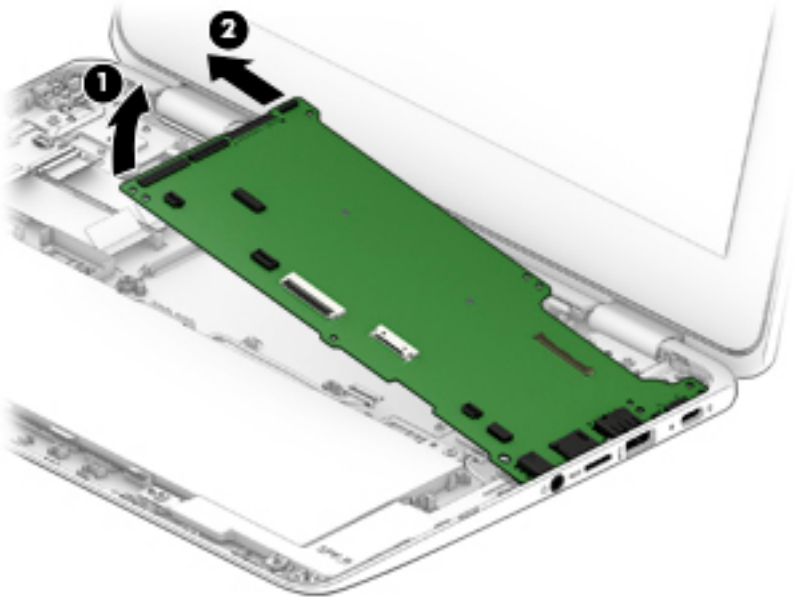
8. Remove the six Phillips PM2.0×4.2 screws **(1)** that secure the system board to the base enclosure.

9. Remove the USB Type-C bracket **(2)**.

NOTE: The USB Type-C bracket is included in the Bracket Kit, spare part number 928089-001.



10. Lift the left side of the system board **(1)** until it rests at an angle.
11. Remove the system board **(2)** by sliding it up and to the left at an angle.



Reverse this procedure to install the system board.

Heat sink

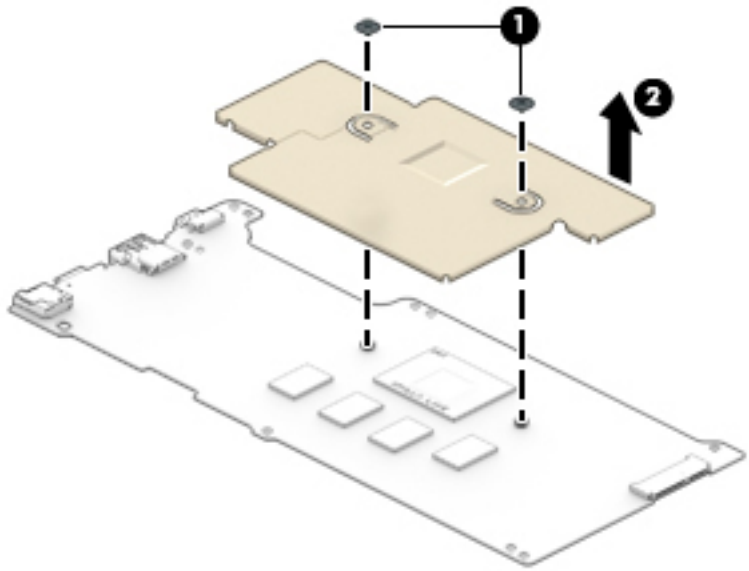
Description	Spare part number
Heat sink (includes replacement thermal material)	928840-001

Before removing the heat sink, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see Keyboard/top cover on page 23).
5. Disconnect the battery cable from the system board (see Battery on page 31).
6. Remove the WLAN module (see WLAN module on page 34).
7. Remove the system board (see System board on page 39).

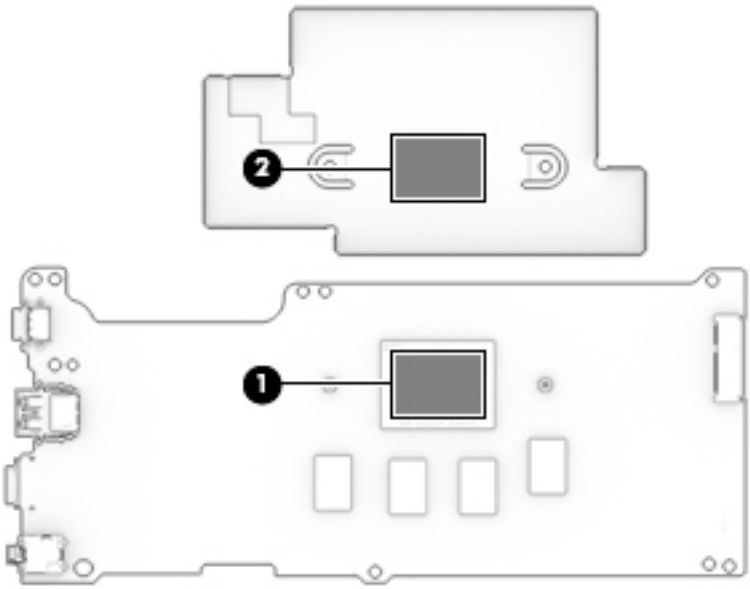
Remove the heat sink:

1. Turn the system board upside down with the front toward you.
2. Remove the two Phillips PM2.0×2.2 broad head screws **(1)** that secure the heat sink to the system board.
3. Remove the heat sink **(2)**.



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

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



Reverse this procedure to install the heat sink.

Display assembly

NOTE: The display assembly is spared at the subcomponent level. For display assembly spare part information, see the individual removal subsections.

Before removing the display assembly, follow these steps:

1. 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 23).
5. Disconnect the battery cable from the system board (see Battery on page 31).

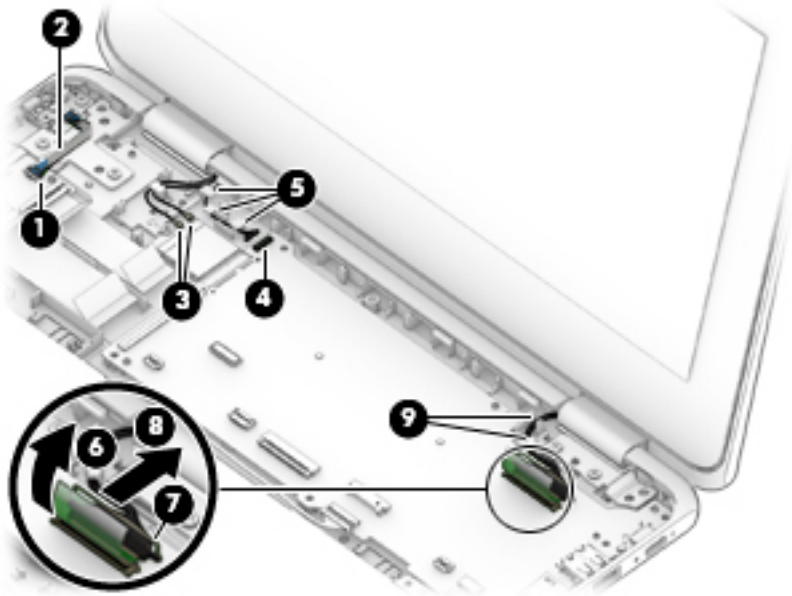
Remove the display assembly:

1. Release the ZIF connector **(1)** to which power button board cable is connected, and then disconnect the power button board cable from the USB port board.
2. Detach the power button board cable **(2)** from the display hinge. (The power button board cable is attached to the display hinge with double-sided adhesive.)
3. Disconnect the WLAN antenna cables **(3)** from the terminals on the WLAN module.

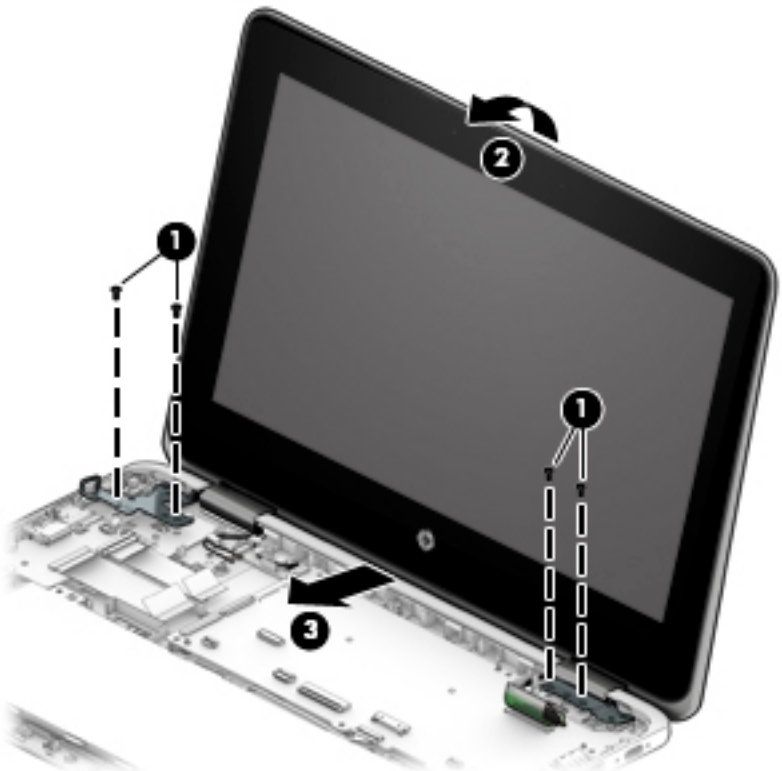
NOTE: The WLAN antenna cable labeled "1/MAIN" connects to the WLAN module "Main" terminal. The WLAN antenna cable labeled "2/AUX" connects to the WLAN module "Aux" terminal.

4. Disconnect the camera cable **(4)** from the system board.
5. Release the camera cable from the retention clips **(5)** and routing channel built into the base enclosure.
6. Release the adhesive support strip **(6)** the secures the display panel cable to the system board.
7. Release the retention handle **(7)** the secures the display panel cable to the system board.

8. Disconnect the display panel cable **(8)** from the system board.
9. Release the display panel cable from the retention clips **(9)** and routing channel built into the base enclosure.



10. Remove the four Phillips PM2.5×6.7 screws **(1)** that secure the display assembly to the base enclosure.
11. Tilt the top edge of the display assembly **(2)** slightly forward to release the hinges from the base enclosure.
12. Slide the display assembly **(3)** forward and remove it.



13. If it is necessary to replace the display panel assembly or any of the display assembly subcomponents:

NOTE: The display panel assembly can be removed and replaced without removing the display assembly from the base enclosure.

a. Insert a case utility tool **(1)** or similar thin, plastic tool between the top edges of the display panel assembly and the display back cover.

CAUTION: Before turning the display panel upside down, make sure the work surface is clear of tools, screws, and any other foreign objects. Failure to follow this caution can result in damage to the display panel.

b. Swing the display panel assembly **(2)** down until it rests on the keyboard.

c. Release the adhesive support strip **(1)** the secures the G-sensor board cable to the G-sensor board.

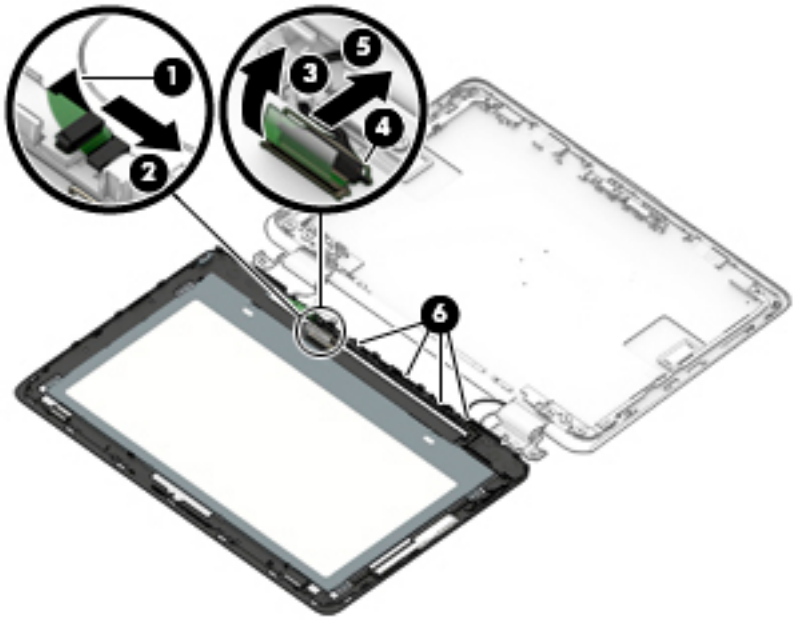
d. Disconnect the G-sensor board cable **(2)** from the G-sensor board.

e. Release the adhesive support strip **(3)** the secures the display panel cable to the system board.

f. Release the retention handle **(4)** the secures the display panel cable to the system board.

g. Disconnect the display panel cable **(5)** from the system board.

h. Release the display panel cable from the routing channel **(6)** built into the display panel assembly.



i. Remove the display panel assembly.

The display panel assembly is available using spare part numbers 928587-001 (11.6-in, HD, LED, BrightView, TouchScreen panel equipped with a digitizer) and 928588-001 (11.6-in, HD, LED, BrightView, TouchScreen panel).

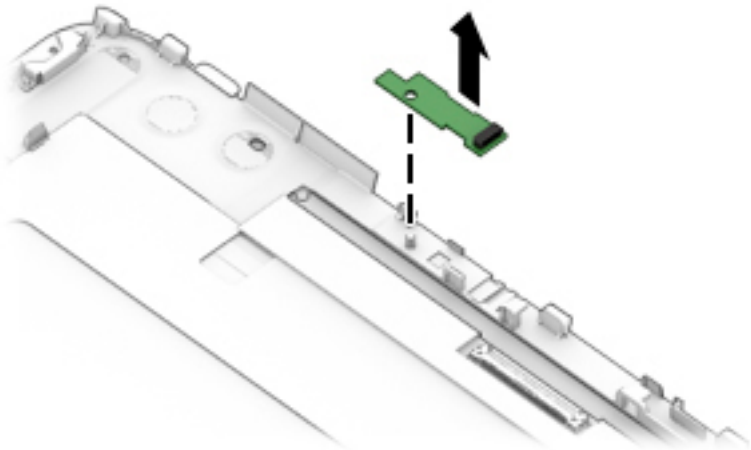
14. If it is necessary to replace the G-sensor board:

NOTE: The G-sensor board can be removed and replaced without removing the display assembly from the base enclosure.

a. Remove the display panel assembly.

b. Detach the G-sensor board from the display panel assembly. (The G-sensor board is attached to the display panel assembly with double-sided adhesive.)

The G-sensor board is available using spare part number 928081-001.



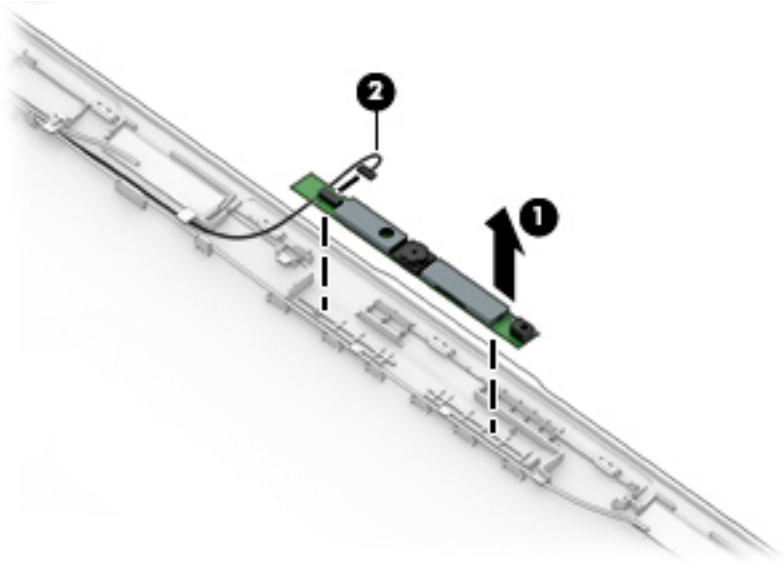
15. If it is necessary to replace the webcam/microphone module:

NOTE: The webcam/microphone module can be removed and replaced without removing the display assembly from the base enclosure.

a. Remove the display panel assembly.

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

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



d. Remove the webcam/microphone module.

The webcam/microphone module is available using spare part number 929212-001.

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

NOTE: It is necessary to remove the display assembly to remove and replace the display hinge.

a. Remove the display panel assembly.

b. Remove the rubber inserts **(1)** that secure the display panel cable, camera cable, and wireless antenna cables inside the display hinges.

c. Release the wireless antenna cables **(2)** and camera cable and the display panel cable **(3)** from the cavities inside the display hinges.

NOTE: At this point, the display panel cable can be removed and replaced, if necessary.

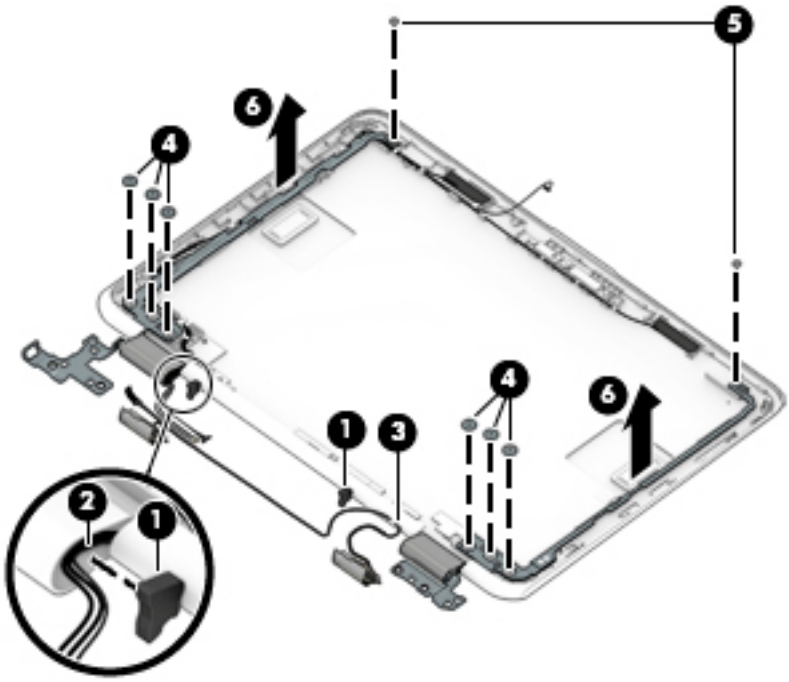
The display panel cable is included in the Cable Kit, spare part number 928086-001, and includes the G-Sensor board cable.

d. Remove the six Phillips PM2.5×3.6 broad head screws **(4)** that secure the hinges to the display back cover.

e. Remove the two Phillips PM2.0×2.7 screws **(5)** that secure the hinges to the display back cover.

f. Remove the display hinges **(6)**.

The display hinges are available using spare part numbers 928087-001 and include the hinge covers.



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

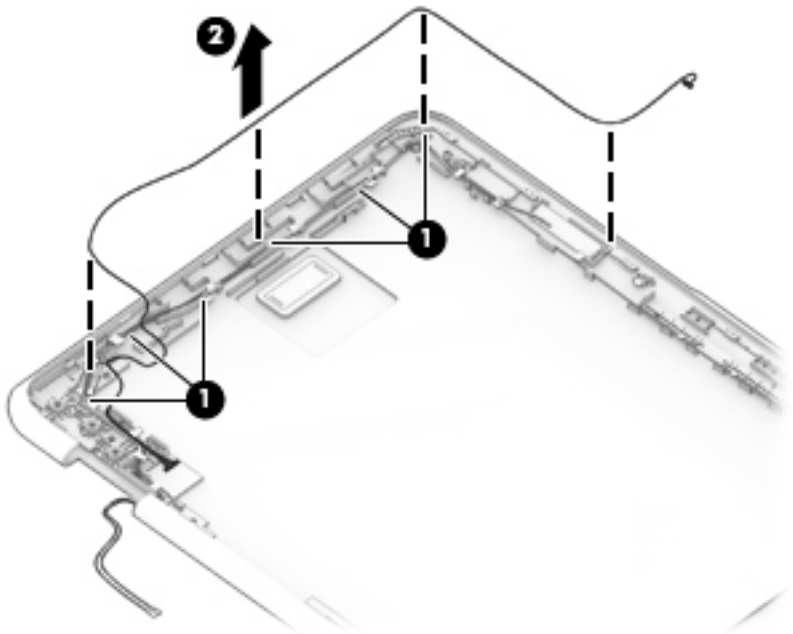
a. Remove the display panel assembly.

b. Remove the webcam/microphone module.

c. Release the webcam/microphone module cable from the retention clips **(1)** and routing channel built into the top, left, and bottom edges of the display back cover.

d. Remove the webcam/microphone module **(2)**.

The webcam/microphone module cable is included in the Cable Kit, spare part number 928086-001.



Reverse this procedure to reassemble and install the display assembly.

6 Specifications

	Metric	U.S.
Computer dimensions		
Width	**30.6 cm**	12.1 in
Depth	**20.8 cm**	8.2 in
Height	**1.9 cm**	0.8 in
Weight	**1.4 kg**	3.1 lbs
Temperature		
Operating	**5°C to 35°C**	41°F to 95°F
Nonoperating	**-20°C to 60°C**	-4°F to 140°F
Relative humidity (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%	
Maximum altitude (unpressurized)		
Operating	**-15 m to 3,048 m**	-50 ft to 10,000 ft
Nonoperating	**-15 m to 12,192 m**	-50 ft to 40,000 ft

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

7 Power cord set requirements

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

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

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

Requirements for all countries

The following requirements are applicable to all countries and regions:

- The length of the power cord set must be at least 1.0 m (3.3 ft) and no more than 2.0 m (6.5 ft).
- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country or region where the power cord set will be used.
- The power cord sets must have a minimum current capacity of 10 amps and a nominal voltage rating of 125 or 250 V AC, as required by the power system of each country or region.
- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with the appliance inlet on the back of the computer. Requirements for all countries 113

Requirements for specific countries and regions

Country/region	Accredited agency	Applicable note number
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	METI	3
The Netherlands	KEMA	1
Norway	NEMKO	1
The People's Republic of China	COC	5

Country/region	Accredited agency	Applicable note number
South Korea	EK	4
Sweden	CEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	4
The United Kingdom	BSI	1
The United States	UL	2

1. The flexible cord must be Type HO5VV-F, 3-conductor, 1.0-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.
3. The appliance coupler, flexible cord, and wall plug must bear a “T” mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00-mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.
4. The flexible cord must be Type RVV, 3-conductor, 0.75-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
5. The flexible cord must be Type VCTF, 3-conductor, 0.75-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.

8 Recycling

When a non-rechargeable or rechargeable battery has reached the end of its useful life, do not dispose of the battery in general household waste. Follow the local laws and regulations in your area for battery disposal.

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

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