



Maintenance and Service Guide

HP Chromebook x360 14 G1

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

© Copyright 2019 HP Development Company, L.P.

Bluetooth is a trademark owned by its proprietor and used by HP Inc. under license. Chrome is a trademark of Google LLC. Intel Core and Pentium are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries. SD Logo is a trademark of its proprietor.

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: February 2019

Document Part Number: L60583-001

Product notice

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

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

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 your seller.

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

Safety warning notice


 **WARNING!** To reduce the possibility of heat-related injuries or of overheating the device, do not place the device directly on your lap or obstruct the device air vents. Use the device only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or rugs or clothing, to block airflow. Also, do not allow the AC adapter to contact the skin or a soft surface, such as pillows or rugs or clothing, during operation. The device and the AC adapter comply with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC 60950-1).

Table of contents

1 Product description	1
2 Getting to know your computer	3
Right side	3
Left side	4
Display	5
Speakers	6
Keyboard area	6
TouchPad	6
Special keys	7
Action keys	8
Bottom	9
Labels	9
3 Illustrated parts catalog	11
Computer major components	11
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
Workstation guidelines	16
Electrostatic discharge information	16
Generating static electricity	17
Preventing electrostatic damage to equipment	17
Personal grounding methods and equipment	18
Grounding the work area	18
Recommended materials and equipment	18
Packaging and transporting guidelines	19
5 Removal and replacement procedures for authorized service providers	20
Component replacement procedures	20
Preparation for disassembly	20

Computer feet and bottom cover	20
Battery	22
WLAN module	23
Fan	25
Heat sink	26
TouchPad board	28
Display assembly	30
I/O board	32
USB bracket, I/O board	34
Lock bracket	35
System board	36
USB bracket, system board	39
Speakers	40
Keyboard/top cover	41
6 Backing up, resetting, and recovering	42
Backing up	42
Resetting	42
Recovering	42
Installing the Chromebook Recovery Utility	43
Creating recovery media	43
Recovering the Chrome operating system	43
Setting up your computer after a reset or recovery	44
Erase and reformat the recovery media	44
7 Specifications	45
8 Power cord set requirements	46
Requirements for all countries	46
Requirements for specific countries and regions	47
9 Recycling	49
Index	50

1 Product description

Table 1-1 Product components and their descriptions

Category	Description
Product Name	HP Chromebook x360 14 G1
Processor	8th-generation Intel® Core™ processors i7-8650U 1.9 GHz (SC turbo up to 4.2 GHz) quad core processor (8.0 MB L3 cache, 2400 MHz FSB, 15 W) i5-8350U 1.7 GHz (SC turbo up to 3.6 GHz) quad core processor (6.0 MB L3 cache, 2400 MHz FSB, 15 W) i3-8130U 2.2 GHz (SC turbo up to 3.4 GHz) dual core processor (6.0 MB L3 cache, 2400 MHz FSB, 15 W) 7th-generation Intel Pentium™ processor Pentium 4415U 2.3 GHz dual core processor (2.0 MB L3 cache, 2133 MHz FSB, 15 W)
Graphics	Internal graphics Intel HD Graphics 620 (Intel Core processors) Intel HD Graphics 610 (Intel Pentium processor)
Panel	14.0 inch, full high-definition (FHD) (1920 × 1080), BrightView, UWVA, WLED, eDP, slim, narrow bezel; typical brightness: 220 nits
Memory	Supports DDR4-2666, non-upgradeable, on-board system memory in the following configurations: 16 GB 8 GB
Storage	Embedded Multimedia Controller (eMMC) v 5.0 64 GB 32 GB
Audio and video	HD Camera - HD WFOV 1280 × 720 by 30 frames per second Dual microphones with appropriate echo-cancellation, noise-suppression software Dual speakers HD audio by B&O Play
Security	Nano security cable slot H1 secure microcontroller
Wireless	Integrated wireless local area network (WLAN) with two built-in antennas (M.2/PCIe) Intel Dual Band Wireless-AC 7265 802.11ac 2 × 2 Wi-Fi + Bluetooth® 4.2 Combo Adapter (non-vPro, non-UNII D1)
Media card reader	Supports SD/SDHC/SDXC up to UHS-104 Push-push insertion/removal

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

Category	Description
Ports	(2) USB 3.1 Gen 1 Type-C ports (support charging, power delivery, video, data)
	HDMI v1.4b supporting up to 1920 × 1080 @ 60 Hz via USB Type-C
	USB 3.1 Gen 1 Type-A port
	Headphone/microphone combo jack
	Internal: USB 2.0 allocation; 1 for WLAN module, 1 for camera
Keyboard/pointing devices	Google® Assistant Keyboard
	Full-sized, textured, island-style, backlit keyboard
	TouchPad
	Multitouch gestures enabled Taps enabled as default
Power requirements	Supports a 3 cell, 60 Whr, long-life battery
	Supports a 45 W nPFC, USB Type-C Straight Type AC adapter
	1 meter power cord (C5)
Operating system	Preinstalled: Google Chrome64® operating system
Serviceability	End user replaceable parts: AC adapter

2 Getting to know your computer

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

Right side

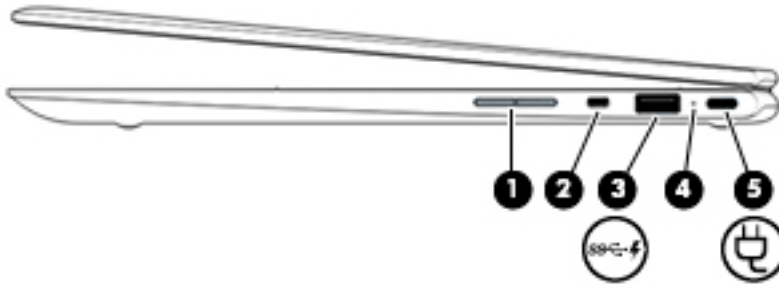




Table 2-1 Right-side components and their descriptions

Component	Description
(1)	Volume button Controls speaker volume on the computer.
(2)	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.
(3)	 USB SuperSpeed port with HP Sleep and Charge Connects a USB device, provides high-speed data transfer, and, even when the computer is off, charges most products such as a cell phone, camera, activity tracker, or smartwatch.
(4)	AC adapter and battery light <ul style="list-style-type: none"> White: The AC adapter is connected and the battery is fully charged. Amber: The AC adapter is connected and the battery is charging. Blinking amber: The battery has an error. Off: The battery is not charging.
(5)	 USB Type-C power connector and port Connects an AC adapter that has a USB Type-C connector, supplying power to the computer and, if needed, charging the computer battery. – and – Connects a USB device that has a Type-C connector, such as a cell phone, camera, activity tracker, or smartwatch, and provides data transfer. – and – Connects a display device that has a USB Type-C connector, providing DisplayPort output. NOTE: Cables and/or adapters (purchased separately) may be required.

Left side

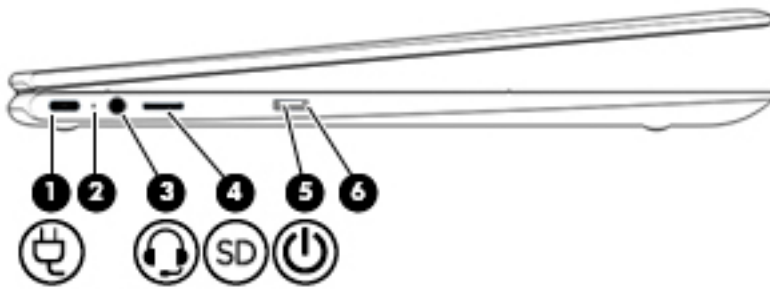


Table 2-2 Left-side components and their descriptions





Component	Description
(1) 	<p>USB Type-C power connector and port</p> <p>Connects an AC adapter that has a USB Type-C connector, supplying power to the computer and, if needed, charging the computer battery.</p> <p>– and –</p> <p>Connects a USB device that has a Type-C connector, such as a cell phone, camera, activity tracker, or smartwatch, and provides data transfer.</p> <p>– and –</p> <p>Connects a display device that has a USB Type-C connector, providing DisplayPort output.</p> <p>NOTE: Cables and/or adapters (purchased separately) may be required.</p>
(2)	<p>AC adapter and battery light</p> <ul style="list-style-type: none"> • White: The AC adapter is connected and the battery is fully charged. • Amber: The AC adapter is connected and the battery is charging. • Blinking amber: The battery has an error. • Off: The battery is not charging.
(3) 	<p>Audio-out (headphone)/ Audio-in (microphone) combo jack</p> <p>Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects an optional headset microphone. This jack does not support optional standalone microphones.</p> <p>WARNING! To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, refer to the <i>Regulatory, Safety, and Environmental Notices</i>.</p> <p>NOTE: When a device is connected to the jack, the computer speakers are disabled.</p>
(4) 	<p>MicroSD memory card reader</p> <p>Reads optional memory cards that enable you to store, manage, share, or access information.</p> <p>To insert a card:</p> <ol style="list-style-type: none"> 1. Hold the card label-side up, with connectors facing the computer. 2. Insert the card into the memory card reader, and then press in on the card until it is firmly seated. <p>To remove a card:</p> <ul style="list-style-type: none"> ▲ Press in on the card, and then remove it from the memory card reader.
(5) 	<p>Power button</p> <ul style="list-style-type: none"> • When the computer is off, press the button to turn on the computer. • When the computer is in the Sleep state, press the button briefly to exit Sleep.

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

Component	Description
(6)	Power light

- When the computer is on and you want to turn it off, press and hold the button to lock the screen, and then continue to press the button until the computer turns off.
- On: The computer is on.
- Blinking: The computer is in the Sleep state, a power saving state. The computer shuts off power to the display and other unneeded components.
- Off: The computer is off.

Display

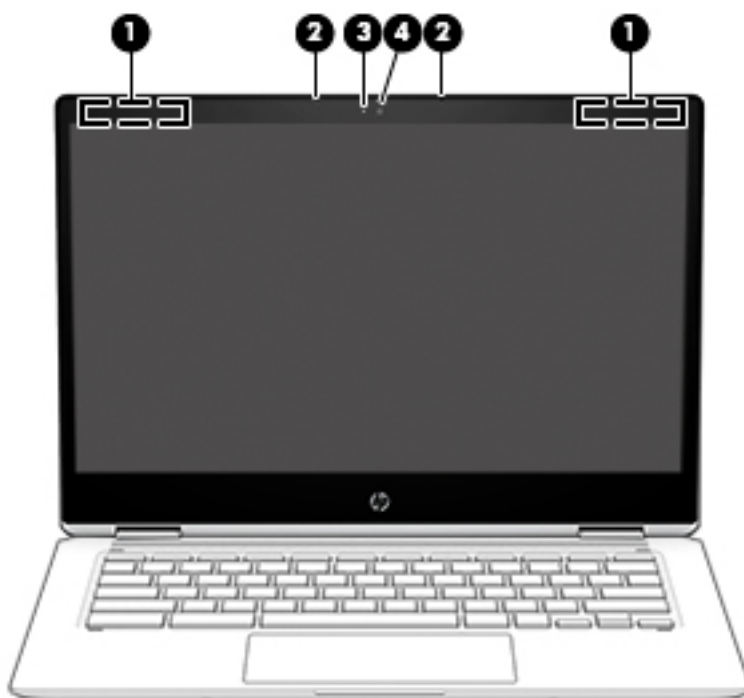


Table 2-3 Display components and their descriptions

Component	Description
(1)	WLAN antennas*

- Send and receive wireless signals to communicate with wireless local area networks (WLANs).

(2)	Internal microphones (2)
-----	--------------------------

- Record sound.

(3)	Camera light
-----	--------------

- On: The camera is in use.

(4)	Camera
-----	--------

- Allows you to video chat, record video, and record still images.

*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.

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

Speakers



Table 2-4 Speakers and their description

Components	Description
Speakers (2)	Produce sound.

Keyboard area

TouchPad

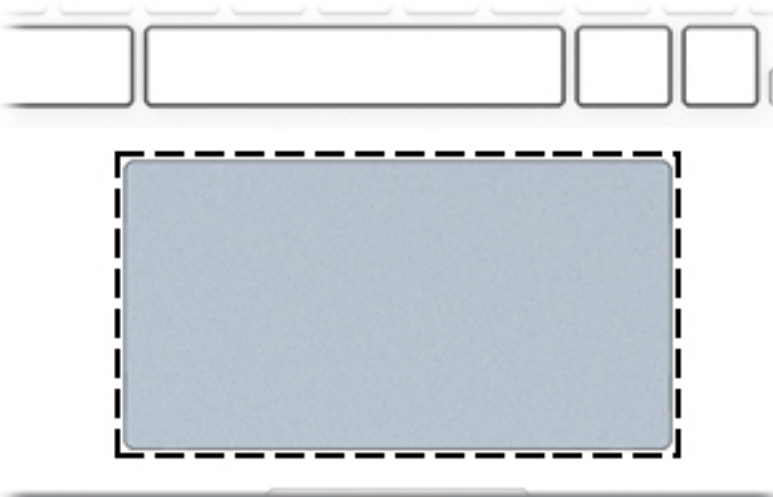


Table 2-5 TouchPad and its description

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

Special keys

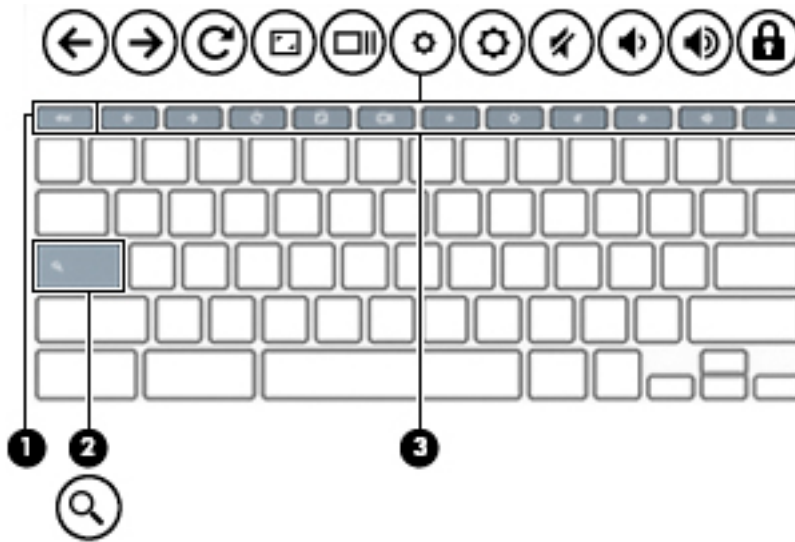



Table 2-6 Special keys and their descriptions

Component	Description
(1) <code>esc</code> key	Activates certain computer functions when pressed in combination with other keys, such as tab or shift.
(2)  Search key	Searches your apps and the Web from your apps list.
(3) Action keys	Execute frequently used system functions.














Action keys

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

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

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

Table 2-7 Action keys and their descriptions

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

Bottom

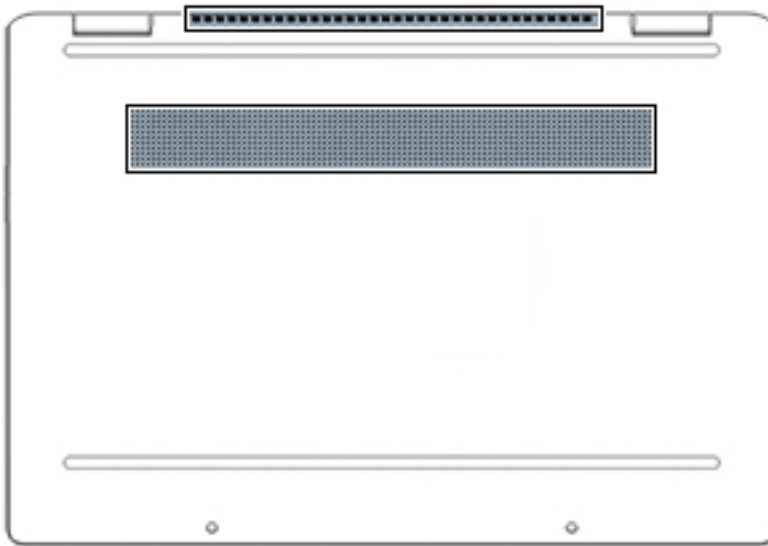



Table 2-8 Bottom component and its description

Components	Description
Vents (2)	Enable airflow to cool internal components. NOTE: The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.

Labels

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

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

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

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

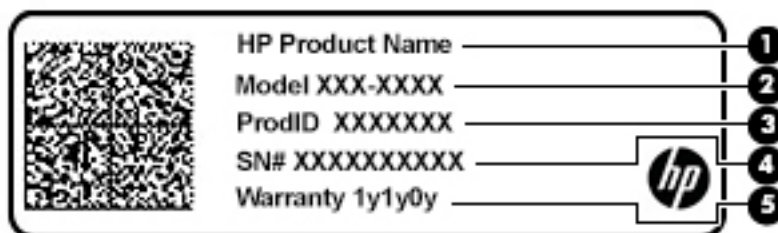


Table 2-9 Service label components

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

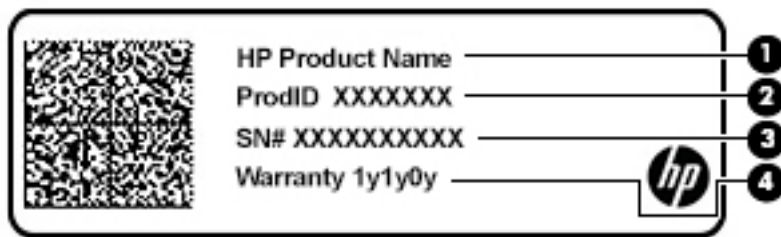


Table 2-10 Service label components

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 on supported parts for your computer, go to <http://partsurfer.hp.com>, select your country or region, and then follow the on-screen instructions.

Computer major components

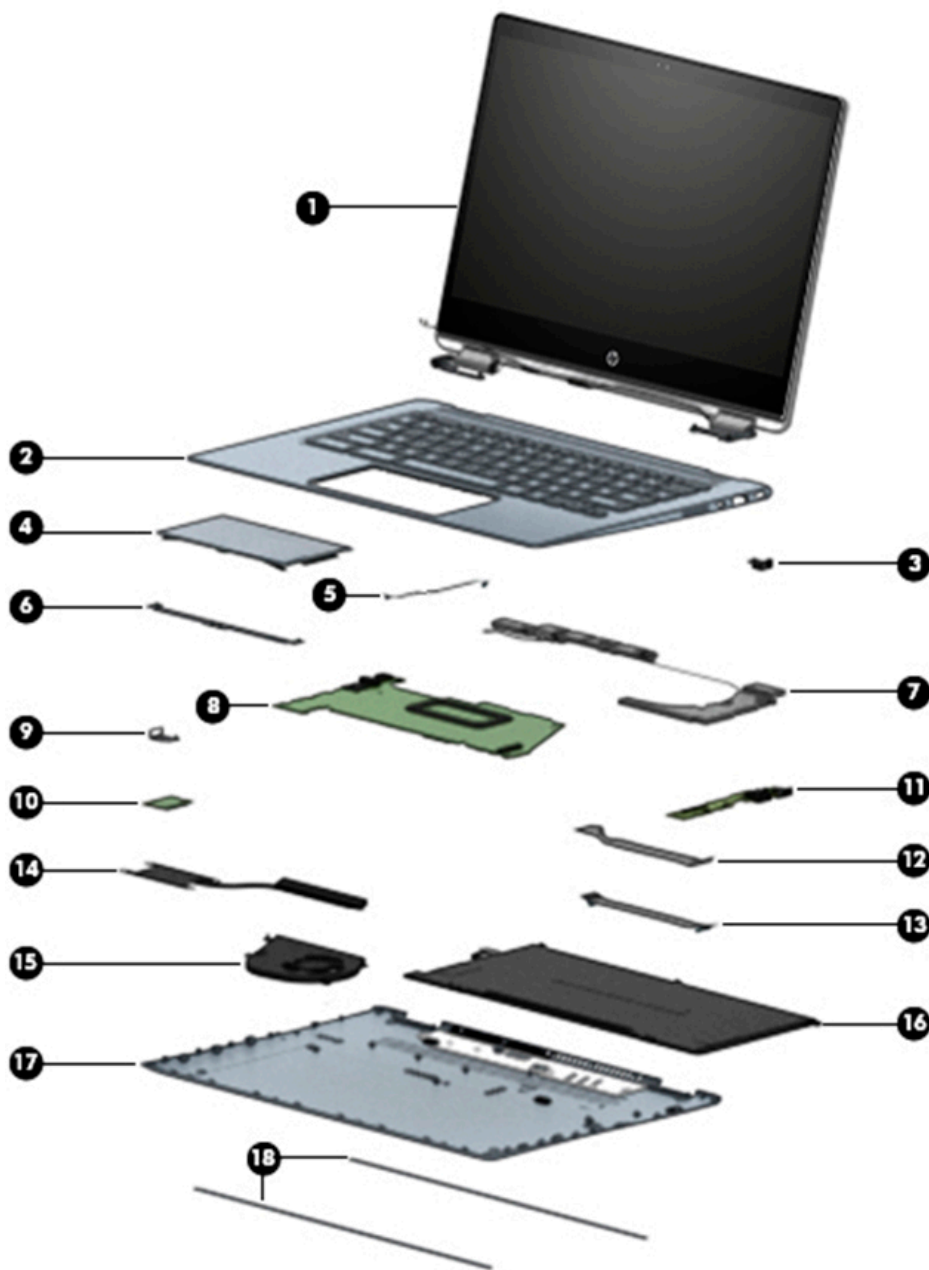


Table 3-1 Computer major components and their descriptions

Item	Component	Spare part number
(1)	Display assembly	L50833-001
(2)	Keyboard/top cover (includes keyboard cable):	
	For use in Belgium	L50840-A41
	For use in Brazil	L50840-201
	For use in Canada (French)	L50840-DB1
	For use in the Czech Republic/Slovakia	L50840-FL1
	For use in Denmark, Finland, and Norway	L50840-DH1
	For use in France	L50840-051
	For use in Germany	L50840-041
	For use in Iceland	L50840-DD1
	For use in India	L50840-D61
	For use in Israel	L50840-BB1
	For use in Italy	L50840-061
	For use in Latin America	L50840-161
	For use in the Netherlands	L50840-B31
	For use in Portugal	L50840-131
	For use in Romania	L50840-271
	For use in Russia	L50840-251
	For use in Saudi Arabia	L50840-171
	For use in South Korea	L50840-AD1
	For use in Spain	L50840-071
	For use in Switzerland	L50840-BG1
	For use in Taiwan	L50840-AB1
	For use in Thailand	L50840-281
	For use in Turkey	L50840-141
	For use in the United Kingdom	L50840-031
	For use in the United States	L50840-001
(3)	USB bracket	L36909-001
(4)	TouchPad board	L50832-001
(5)	TouchPad cable	L36898-001
(6)	TouchPad bracket	L36910-001
(7)	Speaker Kit (includes speaker tape)	L36896-001
(8)	System board (includes replacement thermal material):	

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

Item	Component	Spare part number
	Equipped with an Intel Core i7-8650U processor, 16 GB of system memory, and 64 GB of eMMC system storage	L50838-001
	Equipped with an Intel Core i5-8350U processor, 8 GB of system memory, and 64 GB of eMMC system storage	L50837-001
	Equipped with an Intel Core i3-8130U processor, 8 GB of system memory, and 64 GB of eMMC system storage	L50836-001
	Equipped with an Intel Pentium 4415U processor, 8 GB of system memory, and 32 GB of eMMC system storage	L50839-001
(9)	Lock bracket	L36911-001
(10)	WLAN module (Intel Dual Band Wireless-AC 7265 802.11ac 2 × 2 Wi-Fi + Bluetooth 4.2 Combo Adapter)	901229-855
(11)	I/O board	L36895-001
(12)	I/O cable, 30P	L36892-001
(13)	I/O cable, 40P	L36893-001
(14)	Heat sink (includes replacement thermal material)	L36894-001
(15)	Fan	L36913-001
(16)	Battery (3 cell, 60 Whr)	L29959-005
(17)	Bottom cover	L50830-001
(18)	Rubber Kit	L50835-001

Miscellaneous parts

Table 3-2 Miscellaneous parts and their descriptions

Component	Spare part number
AC adapter (45 W HP Smart AC adapter, non-PFC, USB Type-C)	934739-850
Power cord	
For use in Argentina	L19357-001
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 Israel	L19362-001
For use in India	L19363-001
For use in Italy	L19364-001
For use in Japan	L19365-001
For use in North America	L19367-001
For use in the People's Republic of China	L19368-001
For use in South Africa	L19369-001
For use in South Korea	L19366-001
For use in Switzerland	L19370-001
For use in Thailand	L19371-001
For use in Taiwan	L19372-001
For use in the United Kingdom	L19373-001
Miscellaneous Parts Kit , includes WLAN protective tape, WLAN tape, I/O board bottom protective tape, speaker tape, and screw cap	L50831-001
Screw Kit	L36914-001

4 Removal and replacement procedures preliminary requirements


Tools required

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

- Plastic, nonmarking pry tool
- Phillips P1 magnetic 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

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

Cables and connectors

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

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

Drive handling



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

- Before removing or inserting a hard drive, shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
- Before handling a drive, be sure that you are discharged of static electricity. While handling a drive, avoid touching the connector.
- Before removing an optical drive, be sure that a disc is not in the drive and be sure that the optical drive tray is closed.
- Handle drives on surfaces covered with at least one inch of shock-proof foam.
- Avoid dropping drives from any height onto any surface.
- After removing a hard drive or an optical drive, place it in a static-proof bag.
- Avoid exposing an internal hard drive to products that have magnetic fields, such as monitors or speakers.
- Avoid exposing a drive to temperature extremes or liquids.
- If a drive must be mailed, place the drive in a bubble pack mailer or other suitable form of protective packaging and label the package “FRAGILE.”

Workstation guidelines

Follow these grounding workstation guidelines:

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

Electrostatic discharge information

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

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



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

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

Generating static electricity

Note the following:

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

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

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

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



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

Preventing electrostatic damage to equipment

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

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

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

Personal grounding methods and equipment

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

- **Wrist straps** are flexible straps with a maximum of one-megohm \pm 10% resistance in the ground cords. To provide proper ground, a strap must be worn snug against bare skin. The ground cord must be connected and fit snugly into the banana plug connector on the grounding mat or workstation.
- **Heel straps/Toe straps/Boot straps** can be used at standing workstations and are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use them on both feet with a maximum of one-megohm \pm 10% resistance between the operator and ground.

Table 4-2 Static shielding protection levels

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

Grounding the work area

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

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

Recommended materials and equipment

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

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


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

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

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

5 Removal and replacement procedures for authorized service providers

 **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.

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

Component replacement procedures

There are as many as 40 screws that must be removed, replaced, and/or loosened when servicing the computer. Make special note of each screw size and location during removal and replacement.

Preparation for disassembly

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

1. Turn off the computer. If you are unsure whether the computer is off or in Sleep state, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer

Computer feet and bottom cover

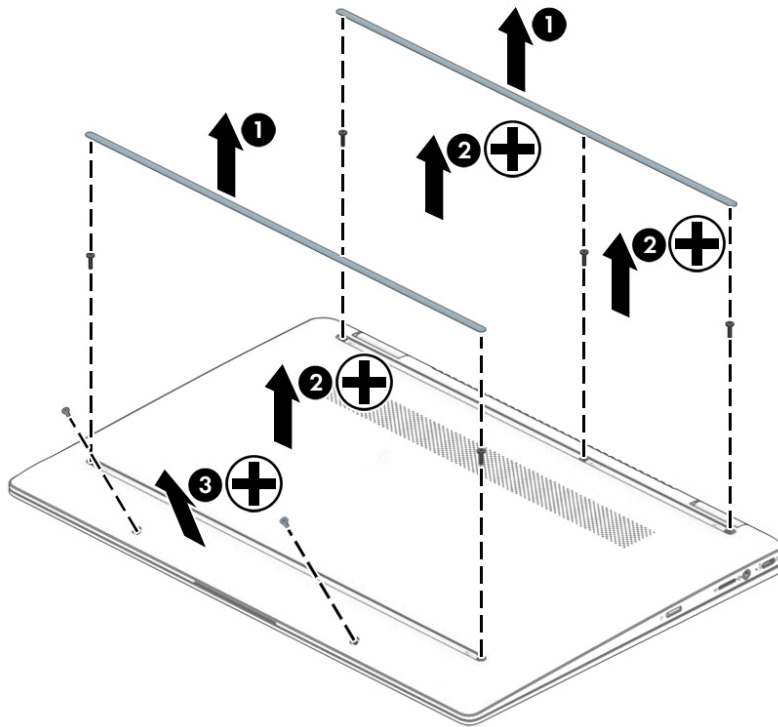
Table 5-1 Computer feet and bottom cover descriptions and part numbers

Description	Spare part number
Computer feet (included in the rubber kit)	L50835-001
Bottom cover	L50830-001

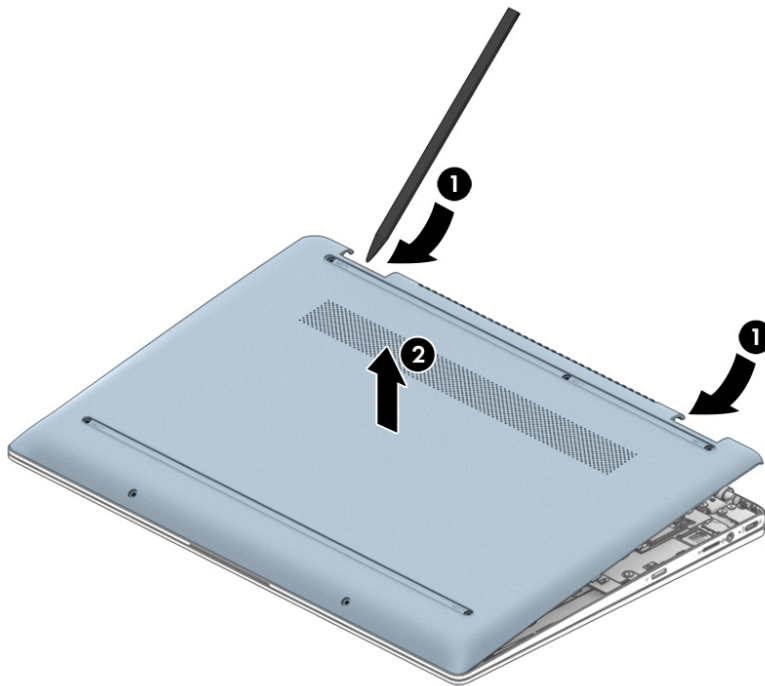
Remove the computer feet and bottom cover:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 20](#)).
2. Close the computer and position it upside down.
3. Peel the two rubber feet off the computer **(1)**.
4. Remove the five Phillips M2.5 × 8.0 screws **(2)** from under the feet.

5. Remove the two Phillips M2.0 × 3.5 screws (3) from along the bottom edge of the computer.



6. Starting near the bottom corner, use a tool to disengage the bottom cover (1), and then remove the cover (2).



Reverse the procedure to install the bottom cover and rubber feet.

Battery

Table 5-2 Battery description and part number

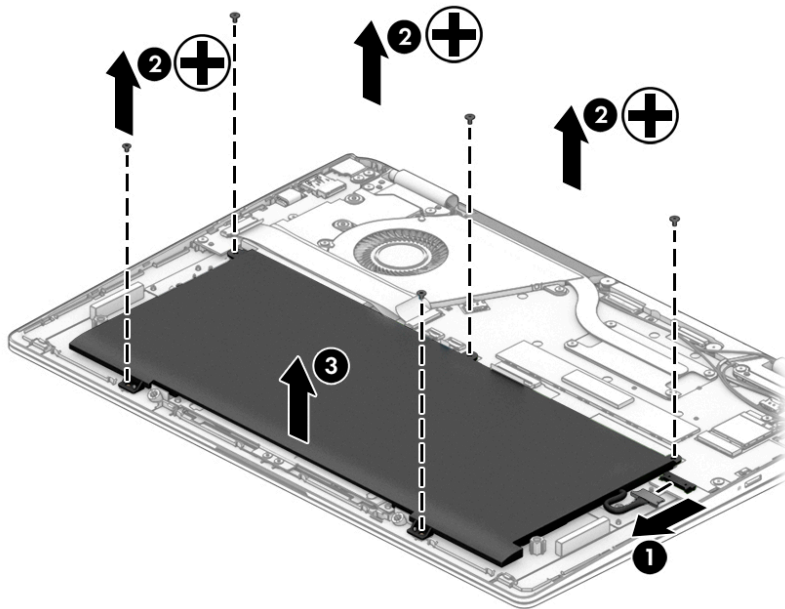
Description	Spare part number
Battery (3 cell, 60 Whr)	L29959-005

Before removing the battery, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 20](#)).
2. Remove the bottom cover (see [Computer feet and bottom cover on page 20](#)).

Remove the battery:

1. Disconnect the battery cable **(1)** from the system board.
2. Remove the five Phillips M2.0 × 3.0 screws **(2)** that secure the battery to the computer.
3. Remove the battery **(3)**.





Reverse this procedure to install the battery.

WLAN module

Table 5-3 WLAN module description and part number

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

 **NOTE:** WLAN module protective tape is included in the Miscellaneous Parts Kit, spare part number L50831-001.


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

Before removing the WLAN module, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 20](#)).
2. Remove the bottom cover (see [Computer feet and bottom cover on page 20](#)).
3. Disconnect the battery (see [Battery on page 22](#)).

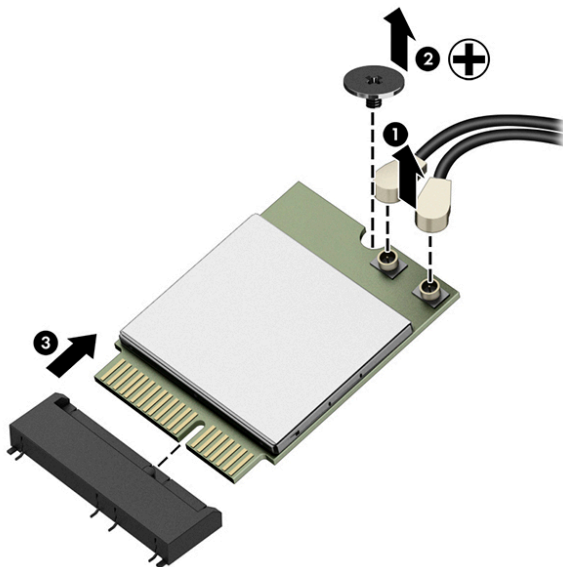
Remove the WLAN module:


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

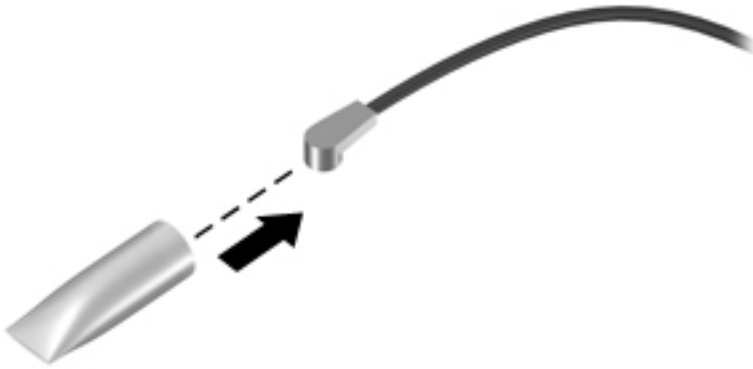
 **NOTE:** The WLAN antenna cable labeled "1" connects to the WLAN module "Main" terminal labeled "1." The WLAN antenna cable labeled "2" connects to the WLAN module "Aux" terminal labeled "2".

2. Remove the Phillips M2.0 × 3.0 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.



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



Reverse this procedure to install the WLAN module.

Fan

Table 5-4 Fan description and part number

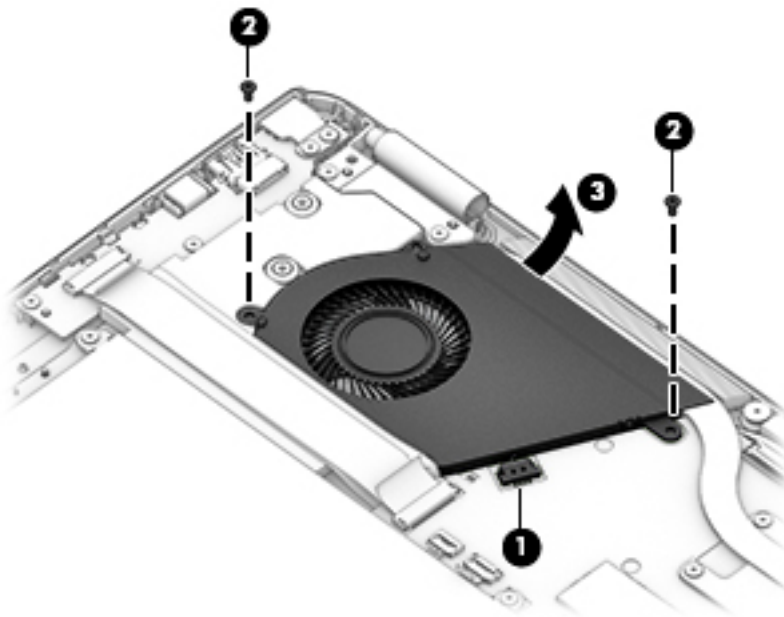
Description	Spare part number
Fan	L36913-001

Before removing the fan, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 20](#)).
2. Remove the bottom cover (see [Computer feet and bottom cover on page 20](#)).
3. Disconnect the battery (see [Battery on page 22](#)).

Remove the fan:

1. Disconnect the fan cable from the system board **(1)**.
2. Remove the two Phillips M2.0 × 4.0 screws **(2)** that secure the fan to the system board.
3. Remove the fan from the computer **(3)**.



Reverse this procedure to install the fan.

Heat sink

Table 5-5 Heat sink description and part number

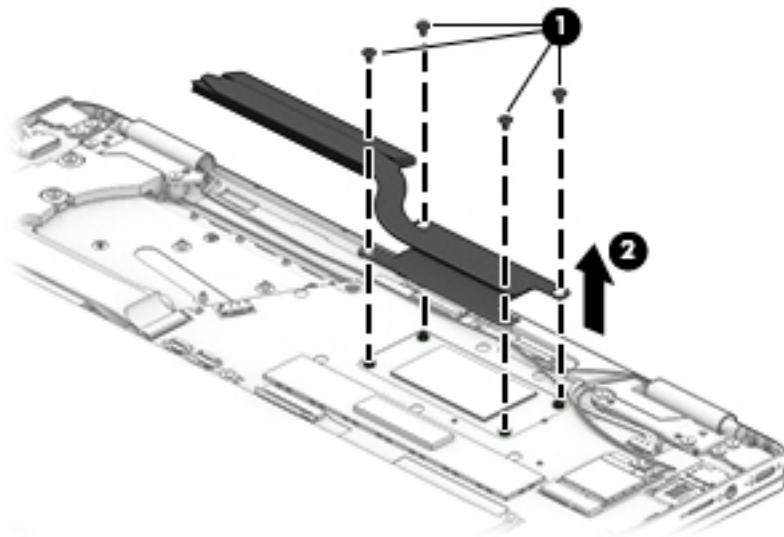
Description	Spare part number
Heat sink (includes replacement thermal material)	L36894-001

Before removing the heat sink, follow these steps:

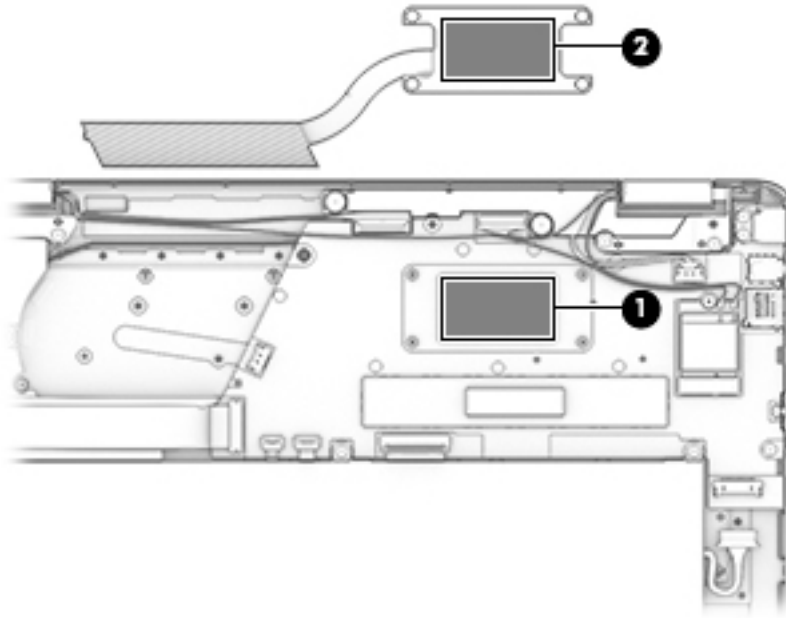
1. Prepare the computer for disassembly ([Preparation for disassembly on page 20](#)).
2. Remove the bottom cover (see [Computer feet and bottom cover on page 20](#)).
3. Disconnect the battery (see [Battery on page 22](#)).
4. Remove the fan (see [Fan on page 25](#)).

Remove the heat sink:

1. Remove the four Phillips M2.0 × 3.0 screws **(1)** that secure the heat sink to the system board.
2. Remove the heat sink **(2)**.



- Each time the heat sink is removed, thoroughly clean the thermal material from the processor component **(1)** and the surface of the heat sink **(2)**. Replacement thermal material is included with the heat sink and system board spare part kits.



Reverse this procedure to install the heat sink.

TouchPad board

Table 5-6 TouchPad board, bracket, and cable descriptions and part numbers

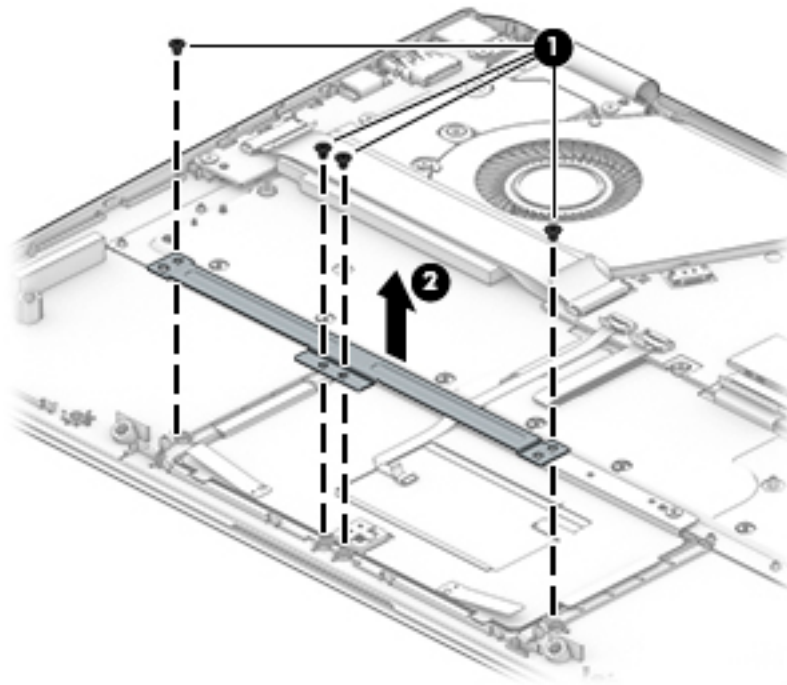
Description	Spare part number
TouchPad board	L50832-001
TouchPad bracket	L36910-001
TouchPad cable	L36898-001

Before removing the TouchPad board, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 20](#)).
2. Remove the bottom cover (see [Computer feet and bottom cover on page 20](#)).
3. Remove the battery (see [Battery on page 22](#)).

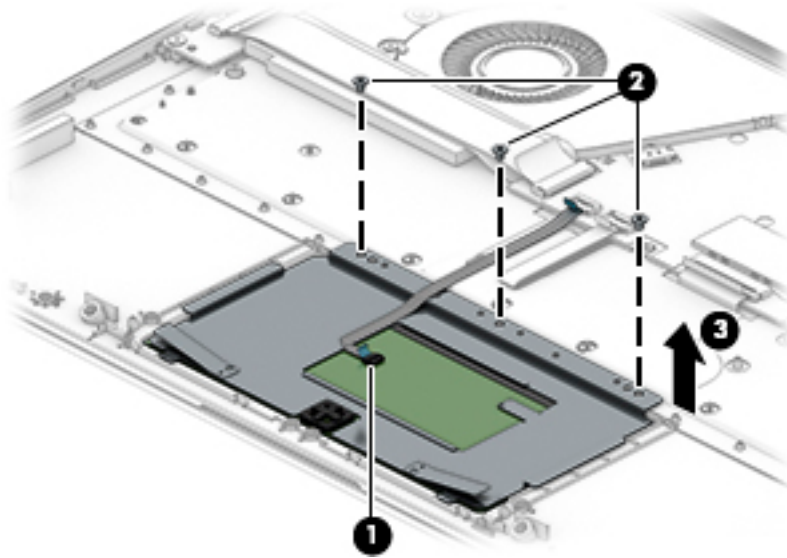
Remove the TouchPad board:

1. Remove the four Phillips M2.0 × 2.5 screws **(1)** that secure the TouchPad bracket to the TouchPad, and then remove the TouchPad bracket **(2)**.



2. Disconnect the cable from the TouchPad board ZIF connector **(1)**.
3. Remove the three Phillips M2.0 × 2.5 screws **(2)** that secure the TouchPad to the computer.

4. Remove the TouchPad board from the computer (3).



Reverse this procedure to install the TouchPad board.

Display assembly

Table 5-7 Display assembly description and part number

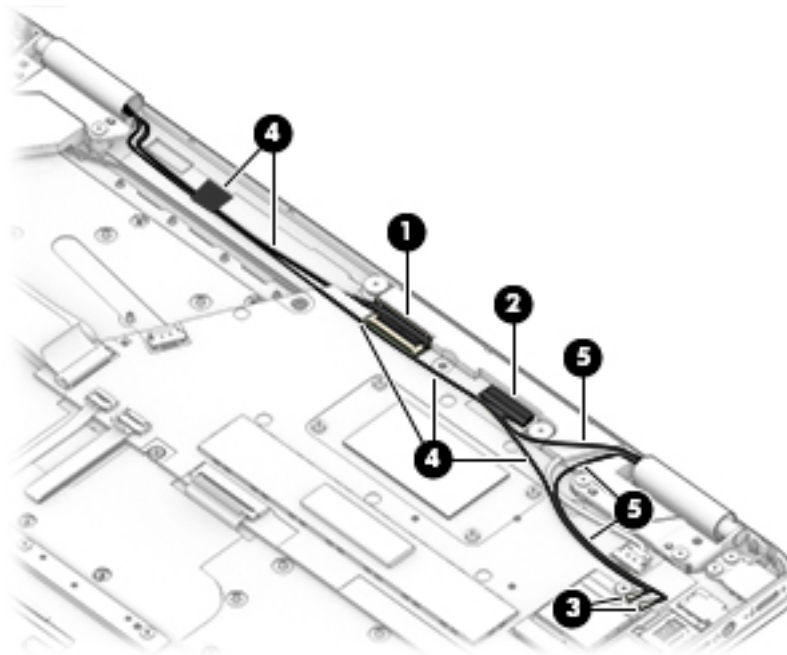
Description	Spare part number
Display assembly	L50833-001

Before removing the display assembly, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 20](#)).
2. Remove the bottom cover (see [Computer feet and bottom cover on page 20](#)).
3. Disconnect the battery (see [Battery on page 22](#)).

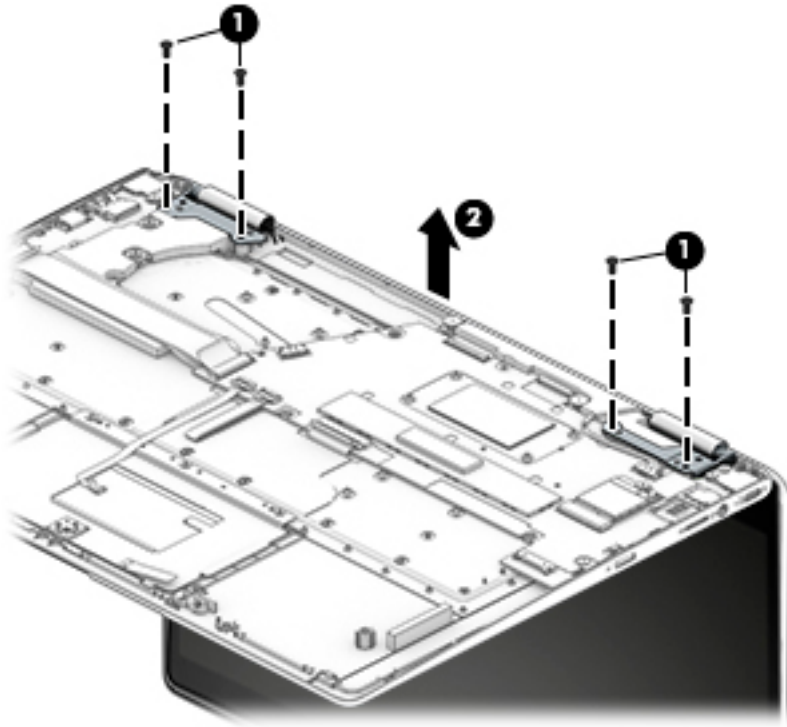
Remove the display assembly:

1. Disconnect the display cable **(1)** and the touch control cable **(2)** from the system board.
2. Disconnect the antenna cables from the WLAN module **(3)**.
3. Remove the display cable from the routing channel in the computer **(4)**.
4. Remove the antenna cables from the routing channel in the computer **(5)**.



5. Position the computer with the keyboard facing downward and the display open 90 degrees and hanging over the edge of a table.
6. Remove the four Phillips M2.5 × 6.0 screws **(1)** that secure the display to the computer.

7. Separate the display from the computer (2).



Reverse this procedure to install the display assembly.

I/O board

Table 5-8 I/O board and cable descriptions and part numbers

Description	Spare part number
I/O board	L36895-001
I/O cable, 30P	L36892-001
I/O cable, 40P	L36893-001



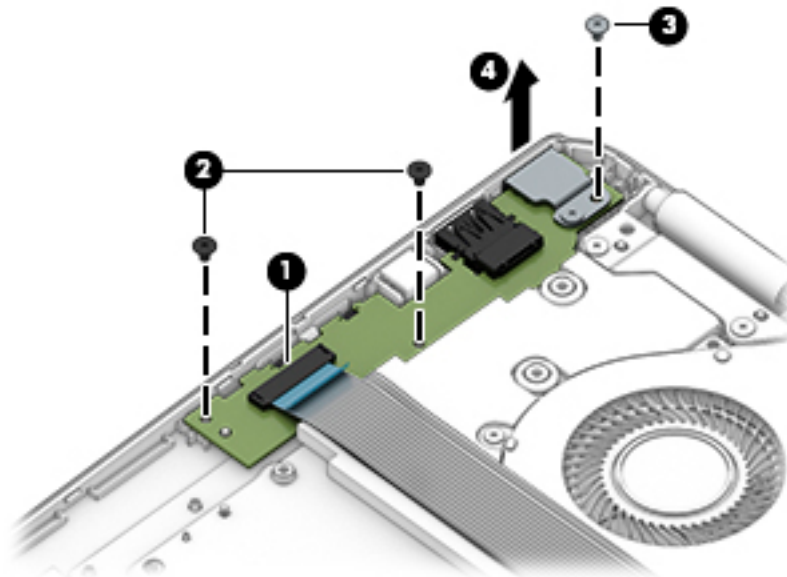
NOTE: I/O board bottom protective tape is included in the Miscellaneous Parts Kit, spare part number L50831-001.

Before removing the I/O board, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 20](#)).
2. Remove the bottom cover (see [Computer feet and bottom cover on page 20](#)).
3. Remove the battery (see [Battery on page 22](#)).

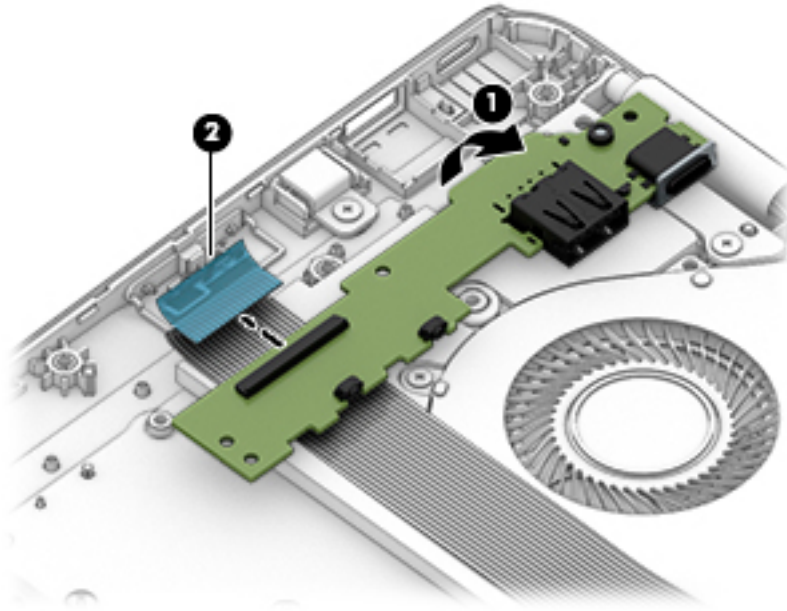
Remove the I/O board:

1. Disconnect the cable from the ZIF connector on the I/O board **(1)**.
2. Remove the two Phillips M2.0 × 3.0 screws **(2)** that secure the I/O board to the computer.
3. Remove the Phillips M2.0 × 4.0 screw **(3)** from the USB bracket.
4. Lift the I/O board **(4)**.



5. Rotate the board upside down **(1)**.

6. Disconnect the cable from the ZIF connector on the bottom of the I/O board (2).



Reverse this procedure to install the I/O board.

USB bracket, I/O board

Table 5-9 USB bracket description and part number

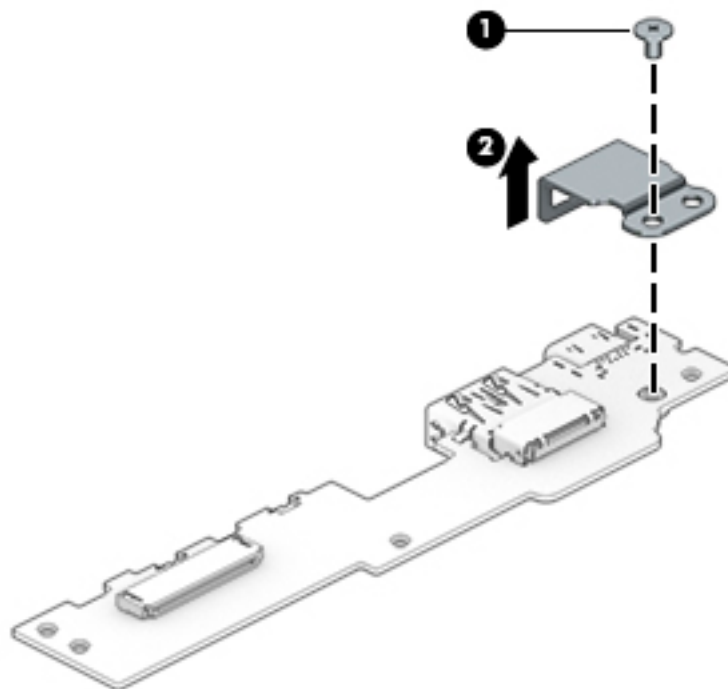
Description	Spare part number
USB bracket	L36909-001

Before removing the USB bracket from the I/O board, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 20](#)).
2. Remove the bottom cover (see [Computer feet and bottom cover on page 20](#)).
3. Remove the battery (see [Battery on page 22](#)).
4. Remove the I/O board (see [USB bracket, I/O board on page 34](#)).

Remove the USB bracket from the I/O board:

1. Remove the Phillips M2.0 × 4.0 screw **(1)** that secures the USB bracket to the I/O board.
2. Remove the bracket from the I/O board **(2)**.



Reverse this procedure to install the USB bracket onto the I/O board.

Lock bracket

Table 5-10 Lock bracket description and part number

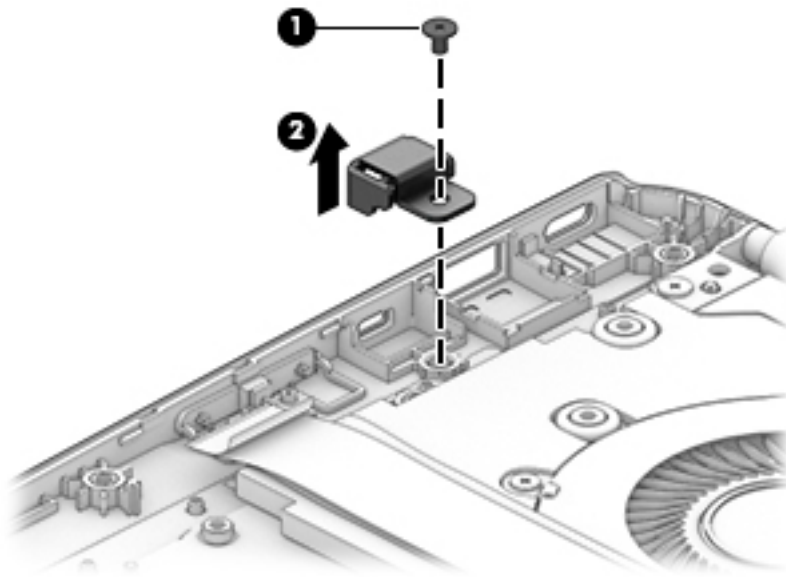
Description	Spare part number
Lock bracket	L36911-001

Before removing the lock bracket, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 20](#)).
2. Remove the bottom cover (see [Computer feet and bottom cover on page 20](#)).
3. Remove the battery (see [Battery on page 22](#)).
4. Remove the I/O board (see [USB bracket, I/O board on page 34](#)).

Remove the lock bracket:

1. Remove the Phillips M2.5 × 3.0 screw **(1)** that secures the lock bracket to the computer.
2. Remove the lock bracket **(2)**.



Reverse this procedure to install the lock bracket.

System board



NOTE: The system board spare part kit includes replacement thermal material.

Table 5-11 System board descriptions and part numbers

Description	Spare part number
System board equipped with an Intel Core i7-8650U processor, 16 GB of system memory, and 64 GB of eMMC system storage	L50838-001
System board equipped with an Intel Core i5-8350U processor, 8 GB of system memory, and 64 GB of eMMC system storage	L50837-001
System board equipped with an Intel Core i3-8130U processor, 8 GB of system memory, and 64 GB of eMMC system storage	L50836-001
System board equipped with an Intel Pentium 4415U processor, 8 GB of system memory, and 32 GB of eMMC system storage	L50839-001

Before removing the system board, follow these steps:

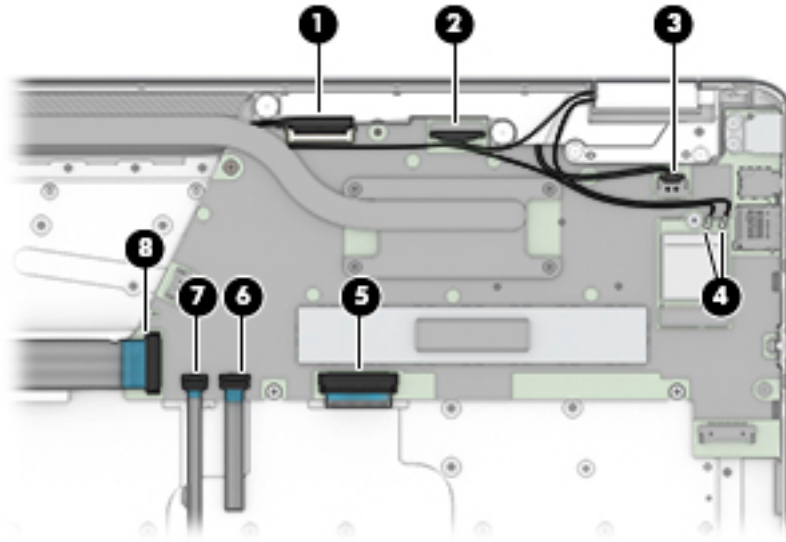
1. Prepare the computer for disassembly ([Preparation for disassembly on page 20](#)).
2. Remove the bottom cover (see [Computer feet and bottom cover on page 20](#)).
3. Remove the battery (see [Battery on page 22](#)).
4. Remove the fan (see [Fan on page 25](#)).

When replacing the system board, be sure to remove the following component (if applicable) from the defective system board and install it on the replacement system board:


- WLAN module (see [WLAN module on page 23](#))

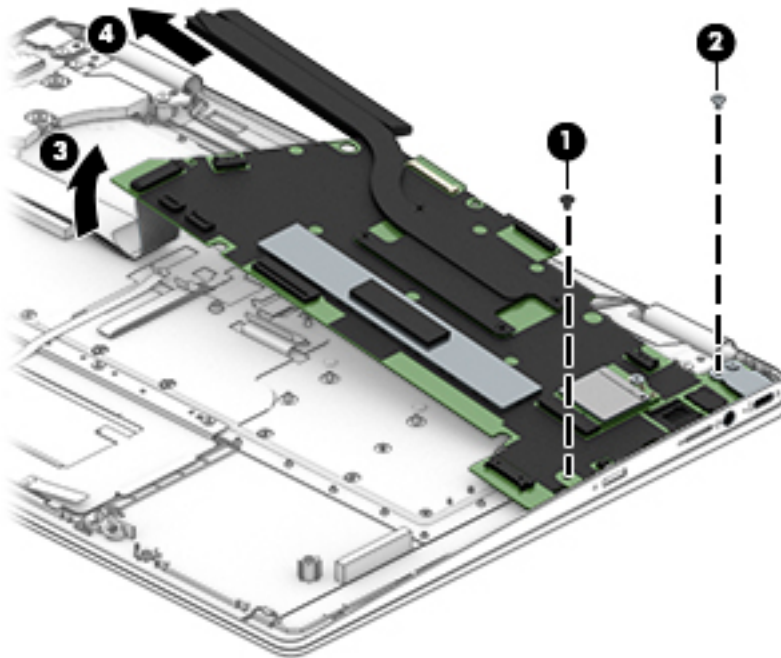
Remove the system board:

1. Disconnect the following cables from the system board:
 - (1) Display cable
 - (2) Touch control cable
 - (3) Speaker cable
 - (4) Antenna cables from the WLAN module
 - (5) Keyboard cable
 - (6) Backlight cable
 - (7) TouchPad cable
 - (8) I/O board cable

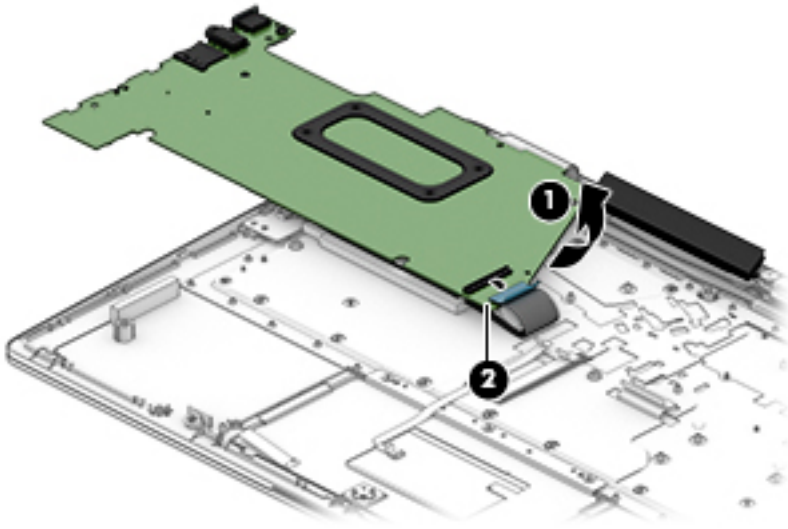


2. Remove the Phillips M2.0 × 3.0 screw **(1)** that secures the system board to the computer.
3. Remove the Phillips M2.0 × 4.0 screw **(2)** from the USB bracket.
4. Lift the side up the system board **(3)**, and then pull the system board away from the computer **(4)**.

 **TIP:** A cable connects to the bottom of the system board. Make sure not to accidentally disconnect the cable when removing the system board.



5. Turn the system board upside down (1), and then disconnect the I/O board cable from the bottom of the board (2).



Reverse this procedure to install the system board.

USB bracket, system board

Table 5-12 USB bracket description and part number

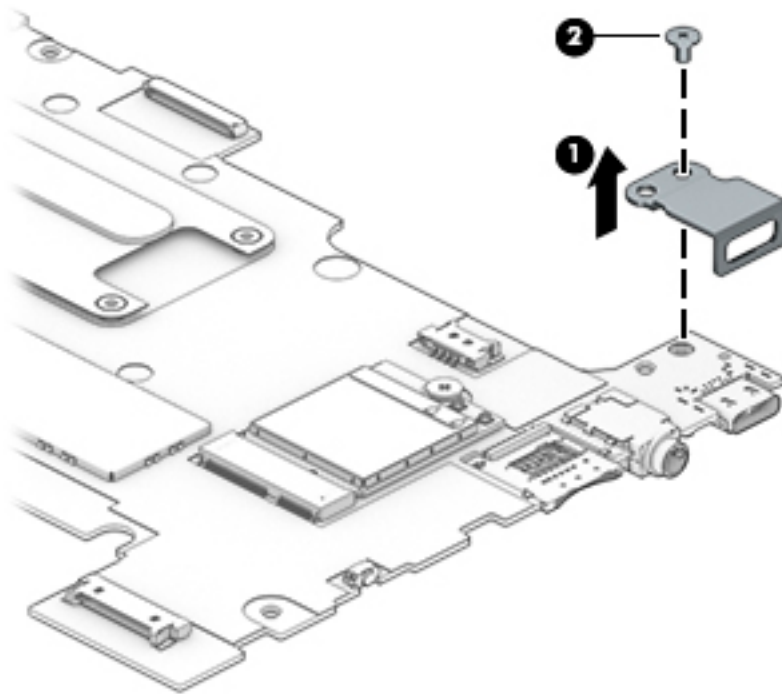
Description	Spare part number
USB bracket	L36909-001

Before removing the USB bracket from the system board, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 20](#)).
2. Remove the bottom cover (see [Computer feet and bottom cover on page 20](#)).
3. Remove the battery (see [Battery on page 22](#)).
4. Remove the fan (see [Fan on page 25](#)).
5. Remove the system board (see [System board on page 36](#)).

Remove the USB bracket from the system board:

1. Remove the Phillips M2.0 × 4.0 screw **(1)** that secures the USB bracket to the system board.
2. Remove the bracket from the system board **(2)**.



Reverse this procedure to install the USB bracket onto the system board.

Speakers

Table 5-13 Speaker description and part number

Description	Spare part number
Speaker Kit (includes speaker tape)	L36896-001

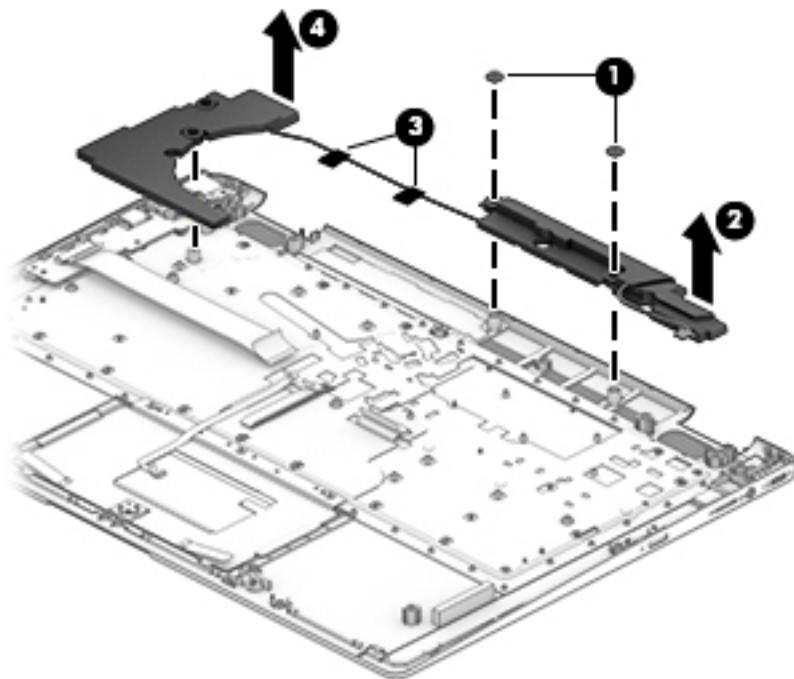
 **NOTE:** Speaker tape is included in the Miscellaneous Parts Kit, spare part number L50831-001.

Before removing the speakers, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 20](#)).
2. Remove the bottom cover (see [Computer feet and bottom cover on page 20](#)).
3. Remove the battery (see [Battery on page 22](#)).
4. Remove the fan (see [Fan on page 25](#)).
5. Remove the display (see [Display assembly on page 30](#)).
6. Remove the system board (see [System board on page 36](#)).

Remove the speakers:

1. Remove the two Phillips M2.0 × 3.0 screws **(1)** that secure the left speaker to the computer.
2. Remove the left speaker from the computer **(2)**.
3. Remove the speaker cable from the clips **(3)**, and then remove the right speaker from the computer **(4)**.



Reverse this procedure to install the speakers.

Keyboard/top cover

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



NOTE: The keyboard/top cover spare part kit does not include the TouchPad or the TouchPad cable. The TouchPad spare part number is L50832-001. The TouchPad cable spare part number is L36898-001.

Table 5-14 Keyboard/top cover descriptions and part numbers

Description	Spare part number
Keyboard for use in Belgium	L50840-A41
Keyboard for use in Brazil	L50840-201
Keyboard for use in Canada (French)	L50840-DB1
Keyboard for use in the Czech Republic/Slovakia	L50840-FL1
Keyboard for use in Denmark, Finland, and Norway	L50840-DH1
Keyboard for use in France	L50840-051
Keyboard for use in Germany	L50840-041
Keyboard for use in Iceland	L50840-DD1
Keyboard for use in India	L50840-D61
Keyboard for use in Israel	L50840-BB1
Keyboard for use in Italy	L50840-061
Keyboard for use in Latin America	L50840-161
Keyboard for use in the Netherlands	L50840-B31
Keyboard for use in Portugal	L50840-131
Keyboard for use in Romania	L50840-271
Keyboard for use in Russia	L50840-251
Keyboard for use in Saudi Arabia	L50840-171
Keyboard for use in South Korea	L50840-AD1
Keyboard for use in Spain	L50840-071
Keyboard for use in Switzerland	L50840-BG1
Keyboard for use in Taiwan	L50840-AB1
Keyboard for use in Thailand	L50840-281
Keyboard for use in Turkey	L50840-141
For use in the United Kingdom	L50840-031
For use in the United States	L50840-001


6 Backing up, resetting, and recovering

Backing up

You can back up your data to an optional USB flash drive or SD memory card or through Google Drive. For detailed information about creating a backup, go to <http://www.support.google.com>.

Resetting

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


 **IMPORTANT:** Resetting permanently erases everything on your computer hard drive, including your downloaded files. If possible, back up your files before you reset your computer.

You might want to reset your computer in the following circumstances:

- You see the message "Reset this Chrome device."
- You are having problems with your user profile or settings.
- You have tried restarting your computer, and it is still not working properly.
- You want to change the owner of your computer.

To reset your computer:


1. Under the **Settings** menu, click **Advanced**.
2. In the **Powerwash** section, click **Powerwash**.
3. Click **Restart**, and then sign in with your Google Account.


 **NOTE:** The account you sign in with after you reset your computer will be recognized as the owner account.

4. Follow the on-screen instructions to reset your computer.
5. Once you complete the reset, you can set up your computer and check to see whether the problem is fixed.

Recovering

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

 **IMPORTANT:** Recovery permanently erases everything on your computer hard drive, including your downloaded files. If possible, back up your files before you recover your computer.

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

Before beginning the recovery process, you need the following:

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

Installing the Chromebook Recovery Utility

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

To install the Chromebook Recovery Utility:


- ▲ Open the Chrome Web Store, search for `chrome recovery`, click **Chromebook Recovery Utility** from the Apps list, and follow the on-screen instructions.

Creating recovery media

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

To create recovery media:

1. Turn on a computer with Internet access.
-
2. Click the **Launcher** icon, and then click **All Apps**.
 3. In the Apps window, click **Recovery**, and then click **Get started**.
 4. Follow the on-screen instructions to create the recovery media.

 **NOTE:** All data and partitions on your recovery media will be deleted. Do not remove the USB flash drive or SD memory card until the process is complete.

Recovering the Chrome operating system

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

1. Disconnect any external devices connected to your computer, plug in the power cord, and then turn on the computer.
2. To enter recovery mode, press and hold **esc+f3**, and then press the power button. When the “Chrome OS is missing or damaged” screen displays, insert the recovery media into your computer. The recovery process begins immediately.

3. Wait while Chrome verifies the integrity of the recovery media.



NOTE: If you need to cancel the recovery during the verification process, press and hold the power button until the computer turns off. Do not disrupt the system recovery process after the verification step is complete.



NOTE: If an error message displays, you might need to run the Chrome Recovery Utility again, or use a different USB flash drive or SD memory card.

4. When the “System Recovery is complete” message displays, remove the recovery media.
The computer restarts with Chrome OS reinstalled.

Setting up your computer after a reset or recovery

After a reset or recovery is complete, perform the initial setup process. For details on setting up the computer, go to <http://www.support.google.com>.

Erase and reformat the recovery media

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

1. Click the **Launcher** icon, and then click **All Apps**.
2. In the apps window, click **Recovery**.
3. Click the **Settings** icon, and then click **Erase recovery media**.
4. Select the USB flash drive or SD memory card you inserted, click **Continue**, and then click **Erase now**.
5. After the recovery media is erased, click **Done** to close the Chromebook Recovery Utility, and then remove the USB flash drive or SD memory card.

The media is ready to be formatted using a formatting tool provided by your operating system.

7 Specifications

Table 7-1 Specifications

	Metric	U.S.
Dimensions		
Width	325.5 mm	12.81 in
Depth	227.0 mm	8.93 in
Height	16.1 mm	0.63 in
Weight	1680 g	3.70 lb
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.

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

Country/region	Accredited agency	Applicable note number
Argentina	IRAM	1
Australia	SAA	1
Austria	OVE	1
Belgium	CEBEC	1
Brazil	ABNT	1
Canada	CSA	2
Chile	IMQ	1
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
India	ISI	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 8-1 Power cord requirements for specific countries and regions (continued)

Country/region	Accredited agency	Applicable note number
		2. The flexible cord must be Type SVT/SJT or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V AC) or NEMA 6-15P (15 A, 250 V AC) configuration. CSA or C-UL mark. UL file number must be on each element.
		3. The appliance coupler, flexible cord, and wall plug must bear a “T” mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCR, 3-conductor, 0.75 mm ² or 1.25 mm ² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard c/o (7 A, 125 V AC) configuration.
		4. The flexible cord must be Type REV, 3-conductor, 0.75 mm ² 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 mm ² 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 mm ² 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 mm ² or 1.00 mm ² conductor size, with plug BS 1363/A with BSI or ASTA marks.

9 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, 4
- AC adapter, spare part numbers 14
- action keys 8
 - back 8
 - brightness down 8
 - brightness up 8
 - forward 8
 - full screen 8
 - identifying 7
 - mute 8
 - next window 8
 - reload 8
 - volume down 8
 - volume up 8
- audio, product description 1
- audio-in (microphone) jack, identifying 4
- audio-out (headphone) jack, identifying 4

B

- back action key 8
- backing up 42
- battery
 - light 3, 4
 - removal 22
 - spare part number 13, 22
- Bluetooth label 10
- bottom cover, spare part numbers 13
- brightness down action key 8
- brightness up action key 8
- buttons
 - power 4
 - volume 3

C

- camera light, identifying 5
- camera, identifying 5
- cautions
 - electrostatic discharge 16
- Chromebook Recovery Utility, installing 43

components

- bottom 9
- display 5
- left side 4
- right side 3
- speakers 6
- computer major components 11
- connector, power 3, 4

D

- display assembly
 - removal 30
- display panel
 - product description 1

E

- electrostatic discharge (ESD) 16
 - preventing damage 17
- esc key, identifying 7

F

- fan
 - spare part number 13
- feet
 - removal 20
 - spare part numbers 20
- forward action key 8
- full screen action key 8

G

- graphics, product description 1
- grounding methods 18
- guidelines
 - packaging 19
 - transporting 19
 - workstation 16

H

- headphone (audio-out) jack 4
- heat sink
 - removal 25, 26
 - spare part number 13, 25, 26

I

- I/O board
 - removal 32
 - spare part number 13
 - spare part numbers 32
- I/O cable, 30P
 - spare part number 13
- I/O cable, 40P
 - spare part number 13
- internal microphone, identifying 5

J

- jacks
 - audio-in (microphone) 4
 - audio-out (headphone) 4

K

- keyboard backlight, identifying 8
- keyboard/top cover
 - removal 41
 - spare part numbers 12, 41
- keys
 - esc 7
 - search 7

L

- labels
 - Bluetooth 10
 - regulatory 10
 - serial number 9
 - service 9
 - wireless certification 10
 - WLAN 10
- lights
 - AC adapter and battery 3, 4
 - camera 5
 - lights, power 5
- lock bracket
 - removal 35
 - spare part number 13
 - spare part numbers 35
- lock screen, identifying 8

- M**
- media card reader, product description 1
- memory, product description 1
- microphone
 - product description 1
- microphone (audio-in) jack, identifying 4
- microSD memory card reader, identifying 4
- Miscellaneous Parts Kit, spare part number 14
- model name 1
- mute action key 8
- N**
- next window action key 8
- O**
- operating system, product description 2
- P**
- packaging guidelines 19
- ports
 - product description 2
 - USB SuperSpeed port with HP Sleep and Charge 3
 - USB Type-C power connector and port 3, 4
- power button, identifying 4
- power connector, identifying 3, 4
- power cord
 - requirements for all countries 46
 - requirements for specific countries and regions 47
 - set requirements 46
- power light, identifying 5
- power requirements, product description 2
- processor, product description 1
- product description
 - audio 1
 - display panel 1
 - graphics 1
 - media card reader 1
 - memory 1
 - microphone 1
 - operating system 2
 - ports 2
 - power requirements 2
 - processors 1
 - product name 1
 - security 1
 - serviceability 2
 - storage 1
 - video 1
 - wireless 1
- product name 1
- product name and number, computer 9
- R**
- recovery media
 - creating 43
 - erase 44
- recovery, performing 42
- regulatory information
 - regulatory label 10
 - wireless certification labels 10
- reload action key 8
- removal/replacement procedures 20
- resetting 42
- Rubber Kit, spare part numbers 13
- S**
- Screw Kit, spare part number 14
- search key, identifying 7
- security cable slot, identifying 3
- security, product description 1
- serial number, computer 9
- service labels, locating 9
- serviceability, product description 2
- slots, microSD memory card reader 4
- Speaker Kit, spare part number 12, 40
- speakers
 - removal 40
 - spare part number 12, 40
- speakers, identifying 6
- static electricity 17
- storage, product description 1
- system board
 - removal 36
 - spare part numbers 12, 36
- system recovery
 - Chrome operating system 43
 - Chromebook Recovery Utility 43
 - recovery media 43
- T**
- tools required 15
- TouchPad board
 - removal 28
 - spare part numbers 12, 28
- TouchPad cable
 - spare part numbers 12
- TouchPad zone, identifying 6
- transporting guidelines 19
- traveling with the computer 10
- U**
- USB bracket
 - removal 34, 39
 - spare part number 12
 - spare part numbers 34, 39
- USB SuperSpeed port with HP Sleep and Charge 3
- USB Type-C power connector and port, identifying 3, 4
- V**
- vents, identifying 9
- video, product description 1
- volume button, identifying 3
- volume down action key 8
- volume up action key 8
- W**
- wireless certification label 10
- wireless, product description 1
- WLAN antennas, identifying 5
- WLAN device 10
- WLAN label 10
- WLAN module
 - removal 23
 - spare part numbers 13, 23
- workstation guidelines 16