



## Maintenance and Service Guide

HP Chromebook x360 11 G3 Education Edition  
IMPORTANT! This document is intended for  
HP authorized service providers only.

© Copyright 2020 HP Development Company, L.P.

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

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

First Edition: January 2020

Document Part Number: L89291-001

### **Product notice**

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

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


### **Software terms**

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

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

## Safety warning notice

---

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

---



---

# Table of contents

<b>1 Product description .....</b>	<b>1</b>
<b>2 Components .....</b>	<b>3</b>
Right side .....	3
Left side .....	5
Display .....	7
Keyboard area .....	8
Touchpad .....	8
Bottom .....	9
Labels .....	10
<b>3 Illustrated parts catalog .....</b>	<b>12</b>
Computer major components .....	12
Display components .....	17
Miscellaneous parts .....	18
<b>4 Removal and replacement procedures preliminary requirements .....</b>	<b>19</b>
Tools required .....	19
Service considerations .....	19
Plastic parts .....	19
Cables and connectors .....	19
Drive handling .....	20
Electrostatic discharge information .....	20
Packaging and transporting guidelines .....	21
Workstation guidelines .....	22
Equipment guidelines .....	22
<b>5 Removal and replacement procedures .....</b>	<b>24</b>
Component replacement procedures .....	24
Keyboard/top cover .....	24
Touchpad cable .....	29
Touchpad .....	30
Keyboard camera .....	32
Keyboard camera cable .....	33
Speakers .....	34
Battery .....	35

WLAN module .....	37
Connector board cables .....	39
Connector board .....	40
System board .....	42
Power cable .....	45
Display assembly .....	46
<b>6 Specifications .....</b>	<b>53</b>
Computer specifications .....	53
<b>7 Backing up, resetting, and recovering .....</b>	<b>55</b>
Backing up .....	55
Resetting .....	55
Recovering .....	55
Installing the Chromebook Recovery Utility .....	56
Creating recovery media .....	56
Recovering the Chrome operating system .....	56
Setting up your computer after a reset or recovery .....	57
Erase and reformat the recovery media .....	57
<b>8 Power cord set requirements .....</b>	<b>58</b>
Requirements for all countries .....	58
Requirements for specific countries and regions .....	59
<b>9 Recycling .....</b>	<b>61</b>
<b>Index .....</b>	<b>62</b>

# 1 Product description

Table 1-1 Product description

Category	Description
Product Name	HP Chromebook™ x360 11 G3 Education Edition
Processor	<ul style="list-style-type: none"><li>• Intel® Celeron™ N4120 1.1 GHz (SC turbo up to 2.6 GHz) quad core processor (4.0 MB L2 cache, 2400 MHz FSB, 6 W)</li><li>• Intel Celeron N4100 1.1 GHz (SC turbo up to 2.6 GHz) quad core processor (4.0 MB L2 cache, 2400 MHz FSB, 6 W)</li><li>• Intel Celeron N4020 1.1 GHz (SC turbo up to 2.8 GHz) dual core processor (4.0 MB L2 cache, 2400 MHz FSB, 6 W)</li><li>• Intel Celeron N4000 1.1 GHz (SC turbo up to 2.6 GHz) dual core processor (4.0 MB L2 cache, 2400 MHz FSB, 6 W)</li></ul>
Chipset	Intel integrated with soldered-on-circuit (SoC) processor
Panel	<ul style="list-style-type: none"><li>• 11.6 in, high-definition (HD) (1366×768) , UWVA, touch on panel (TOP)+, touch with Digitizer, 220nits, TOP+ with Corning Gorilla Glass (GG3), touch and bonding included in panel, Chicony digitizer, available with pen; 16:9 Ultra Wide Aspect Ratio</li><li>• 11.6 in, HD (1366×768) , UWVA, TOP+, touch, 220nits, TOP+ with Corning Gorilla Glass (GG3), touch and bonding included in panel, Chicony digitizer, not available with pen; 16:9 Ultra Wide Aspect Ratio</li></ul>
Memory	Support for the following:  LPDDR4-4266, 0.6 V, nonupgradeable, on-board system memory in 16-GB configuration  LPDDR4-3733, 1.1 V, nonupgradeable, on-board system memory in 16-GB and 8-GB configurations
Storage	<b>Embedded Multimedia Controller (eMMC):</b> Supports M0-276 MMC v 5.0 in 64 GB and 32 GB configurations
Audio and video	Fixed (no tilt), 720p HD camera integrated into display assembly  Single microphone with appropriate echo-cancellation, noise-suppression software  Dual speakers
Wireless	Integrated wireless local area network (WLAN) with two built-in antennas  Support for the Intel 9560 ac 2×2 +Bluetooth 5.0® MU-MIMO M.2 2230 non-vPro MIPI +BRI WW WLAN module
Keyboard/pointing devices	<ul style="list-style-type: none"><li>• Full-size Google textured island-style keyboard in chalkboard gray/pebble gray finish, spill-resistant, pick-proof/skirt-anchored keycaps, IPX1 (only available and required when keyboard camera is not selected and chalkboard gray/pebble gray finish is selected)</li><li>• Full-size Google textured island-style keyboard in chalkboard gray/pebble gray finish, spill-resistant, pick-proof/skirt-anchored keycaps for keyboard camera, IPX1 (only available and required when keyboard camera and chalkboard gray/pebble gray finish are selected)</li><li>• Full-size Google textured island-style keyboard in dark dusk green/dusk green finish, spill-resistant, pick-proof/skirt-anchored keycaps, IPX1 (only available and required when keyboard camera is not selected and dark dusk green/dusk green finish is selected)</li></ul>

Table 1-1 Product description (continued)

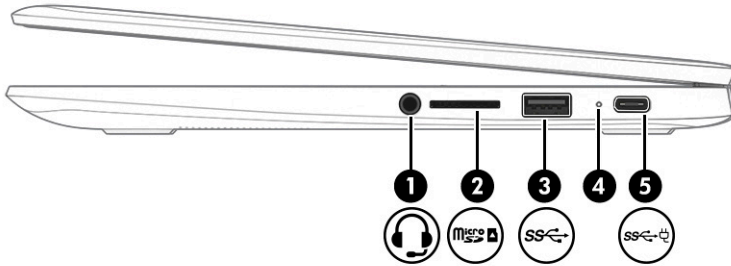
Category	Description
	<ul style="list-style-type: none"><li>• Full-size Google textured island-style keyboard in dark dusk green/dusk green finish, spill-resistant, pick-proof/skirt-anchored keycaps for keyboard camera, IPX1 (only available and required when keyboard camera and dark dusk green/dusk green finish are selected)</li></ul>
	Touchpad requirements: Multitouch gestures enables and Taps enabled as default
Power requirements	Supports a 2-cell, 47-WHr, 6.15-AHr, Li-ion battery
	Supports a 45-W, AC adapter (non-PFC, standard USB Type-C, straight connector)
	Supports a C5, 1.0-m, sticker conventional power cord
Operating system	<b>Preinstalled:</b> Chrome64
Serviceability	<b>End user replaceable parts:</b> AC adapter



# 2 Components

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

## Right side



**Table 2-1** Right-side components and their descriptions





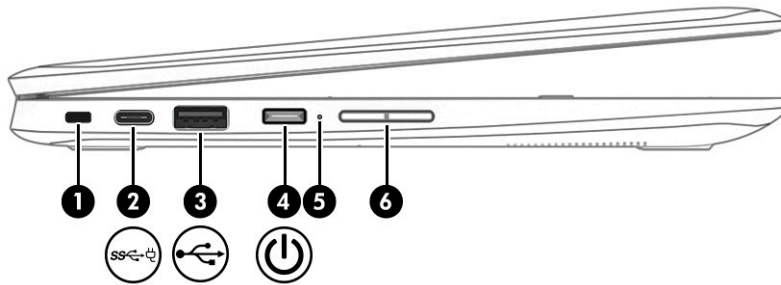
Component	Description
<p>(1)  Audio-out (headphone)/Audio-in (microphone) combo jack</p>	<p>Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects an optional headset microphone. This jack does not support optional standalone microphones.</p> <p><b>WARNING!</b> To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, see the <i>Regulatory, Safety, and Environmental Notices</i>.</p> <p><b>NOTE:</b> When a device is connected to the jack, the computer speakers are disabled.</p>
<p>(2)  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"> <li>1. Hold the card label-side up, with connectors facing the computer.</li> <li>2. Insert the card into the memory card reader, and then press in on the card until it is firmly seated.</li> </ol> <p>To remove a card:</p> <ul style="list-style-type: none"> <li>▲ Press in on the card, and then remove it from the memory card reader.</li> </ul>
<p>(3)  USB SuperSpeed port</p>	<p>Connects a USB device, such as a cell phone, camera, activity tracker, or smartwatch, and provides high-speed data transfer.</p>
<p>(4) AC adapter and battery light</p>	<ul style="list-style-type: none"> <li>• White: The AC adapter is connected and the battery is fully charged.</li> <li>• Amber: The AC adapter is connected and the battery is charging.</li> </ul>

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

Component	Description
(5)  USB Type-C power connector and super speed port	<ul style="list-style-type: none"><li>• Blinking amber: The battery has an error.</li><li>• Off: The battery is not charging.</li></ul> <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><b>NOTE:</b> Cables, adapters, or both (purchased separately) may be required.</p>

## Left side



**Table 2-2** Left-side components and their descriptions




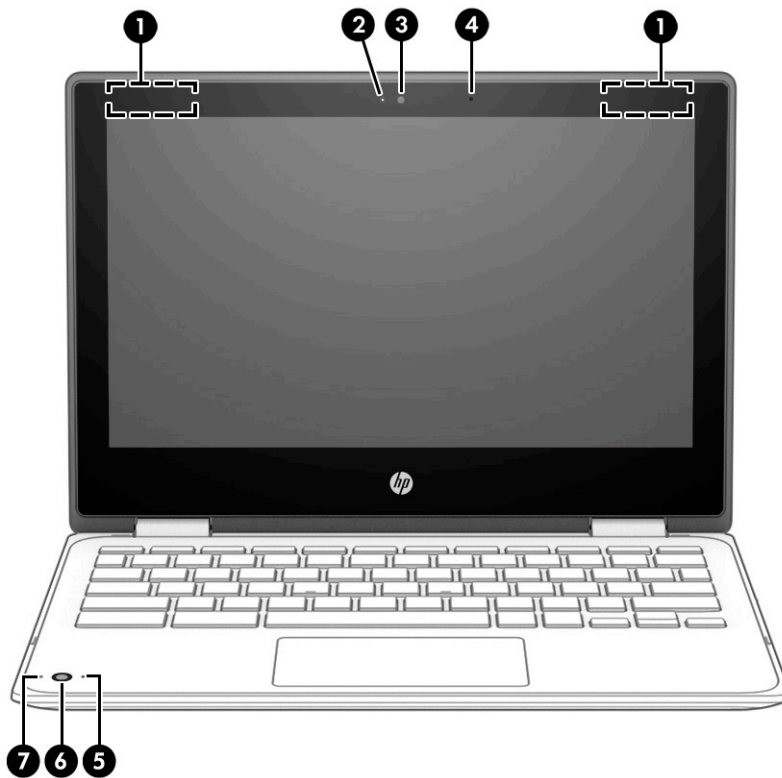
Component	Description
(1)	<p>Nano security cable slot</p> <p>Attaches an optional security cable to the computer.</p> <p><b>NOTE:</b> The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.</p>
(2)	<p> USB Type-C Power Connector and Super Speed 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><b>NOTE:</b> Cables, adapters, or both (purchased separately) may be required.</p>
(3)	<p> USB SuperSpeed port</p> <p>Connects a USB device, such as a cell phone, camera, activity tracker, or smartwatch, and provides high-speed data transfer.</p>
(4)	<p> Power button</p> <ul style="list-style-type: none"> <li>• When the computer is off, press the button to turn on the computer.</li> <li>• When the computer is on, press the button briefly to initiate Sleep.</li> <li>• When the computer is in the Sleep state, press the button briefly to exit Sleep (select products only).</li> </ul> <p><b>CAUTION:</b> Pressing and holding down the power button results in the loss of unsaved information. If the computer has stopped responding and shutdown procedures are ineffective, press and hold the power button for at least 5 seconds to turn off the computer.</p>
(5)	<p>Power light</p> <ul style="list-style-type: none"> <li>• On: The computer is on.</li> <li>• Blinking: The computer is in the Sleep state, a power-saving state. The computer shuts off power to the display and other unneeded components.</li> </ul>

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

Component	Description
(6)	<ul style="list-style-type: none"><li>• Off: The computer is off or in Hibernation. Hibernation is a power-saving state that uses the least amount of power.</li></ul>
Volume buttons	Control speaker volume on the computer.

# Display



**Table 2-3** Display components and their descriptions

Component	Description
(1) WLAN antennas*	Send and receive wireless signals to communicate with WLANs.
(2) Camera light	On: The camera is in use.
(3) Camera	Allows you to video chat, record video, and record still images.
(4) Internal microphone	Records sound.
(5) Camera light (select products only)	On: The camera is in use.
(6) Camera	Allows you to video chat, record video, and record still images.
(7) Internal microphone (select products only)	Records sound.

\*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>, type HP Documentation in the taskbar search box, and then select **HP Documentation**.

# Keyboard area

## Touchpad



**Table 2-4** Touchpad component and its description

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

## Bottom




**Table 2-5** Bottom component and its description

Components	Description
Vents	Enable airflow to cool internal components. <b>NOTE:</b> 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.

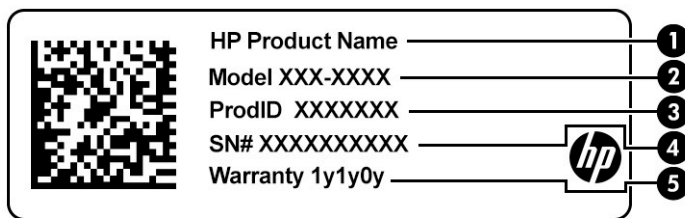
# Labels

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.

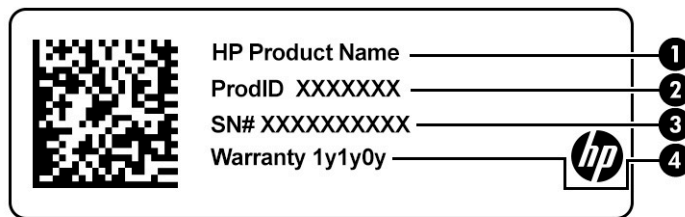
- Service label—Provides important information to identify your computer. When contacting support, you may be asked for the serial number, the product number, or the model number. Locate this information before you contact support.

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



**Table 2-6** Service label components

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



**Table 2-7** Service label components

Component
(1) HP product name
(2) Product ID




**Table 2-7** Service label components (continued)

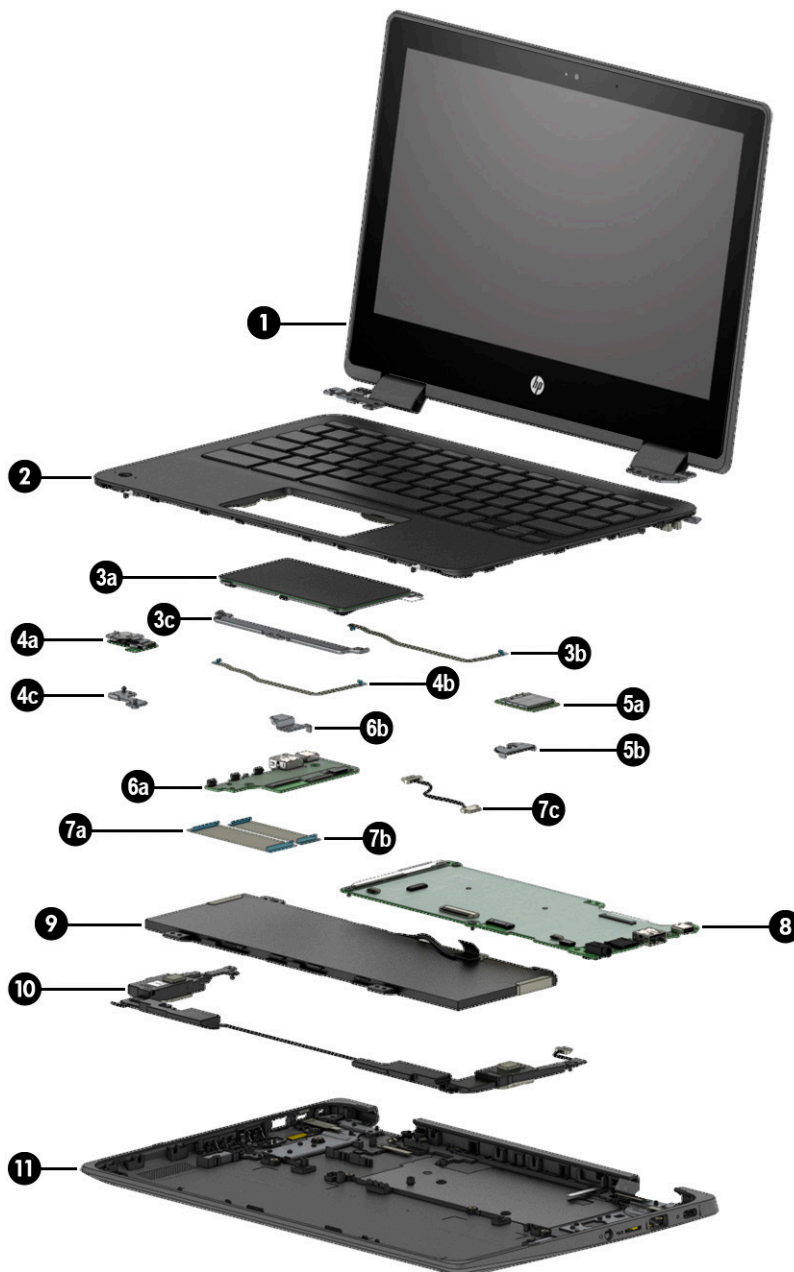
Component	
(3)	Serial number
(4)	Warranty period

- 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 Major component spare part information**

Item	Component	Spare part number
(1)	<b>Display assembly:</b> The display assembly is available at the subcomponent level only. For more display assembly spare part information, see <a href="#">Display components on page 17</a> .	
(2)	<b>Keyboard/top cover</b> in blue finish for use with computer models equipped with a keyboard camera (includes keyboard cable):	
	For use in Belgium	L92217-A41
	For use in Brazil	L92217-201
	For use in Canada	L92217-DB1
	For use in the Czech Republic and Slovakia	L92217-FL1
	For use in Denmark, Finland, and Norway	L92217-DH1
	For use in France	L92217-051
	For use in Germany	L92217-041
	For use in Israel	L92217-BB1
	For use in Italy	L92217-061
	For use in Latin America	L92217-161
	For use in the Netherlands	L92217-B31
	For use in Portugal	L92217-131
	For use in Romania	L92217-271
	For use in Russia	L92217-251
	For use in Saudi Arabia	L92217-171
	For use in South Korea	L92217-AD1
	For use in Spain	L92217-071
	For use in Switzerland	L92217-BG1
	For use in Taiwan	L92217-AB1
	For use in Thailand	L92217-281
	For use in Turkey	L92217-141
	For use in the United Kingdom	L92217-031
	For use in the United States	L92217-001
	<b>Keyboard/top cover</b> in blue finish for use with computer models not equipped with a keyboard camera (includes keyboard cable):	
	For use in Belgium	L92216-A41
	For use in Brazil	L92216-201
	For use in Canada	L92216-DB1
	For use in the Czech Republic and Slovakia	L92216-FL1
	For use in Denmark, Finland, and Norway	L92216-DH1
	For use in France	L92216-051

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

<b>Item</b>	<b>Component</b>	<b>Spare part number</b>
	For use in Germany	L92216-041
	For use in Israel	L92216-BB1
	For use in Italy	L92216-061
	For use in Latin America	L92216-161
	For use in the Netherlands	L92216-B31
	For use in Portugal	L92216-131
	For use in Romania	L92216-271
	For use in Russia	L92216-251
	For use in Saudi Arabia	L92216-171
	For use in South Korea	L92216-AD1
	For use in Spain	L92216-071
	For use in Switzerland	L92216-BG1
	For use in Taiwan	L92216-AB1
	For use in Thailand	L92216-281
	For use in Turkey	L92216-141
	For use in the United Kingdom	L92216-031
	For use in the United States	L92216-001
	<b>Keyboard/top cover</b> in gray finish for use with computer models equipped with a keyboard camera (includes keyboard cable):	
	For use in Belgium	L92215-A41
	For use in Brazil	L92215-201
	For use in Canada	L92215-DB1
	For use in the Czech Republic and Slovakia	L92215-FL1
	For use in Denmark, Finland, and Norway	L92215-DH1
	For use in France	L92215-051
	For use in Germany	L92215-041
	For use in Israel	L92215-BB1
	For use in Italy	L92215-061
	For use in Latin America	L92215-161
	For use in the Netherlands	L92215-B31
	For use in Portugal	L92215-131
	For use in Romania	L92215-271
	For use in Russia	L92215-251
	For use in Saudi Arabia	L92215-171

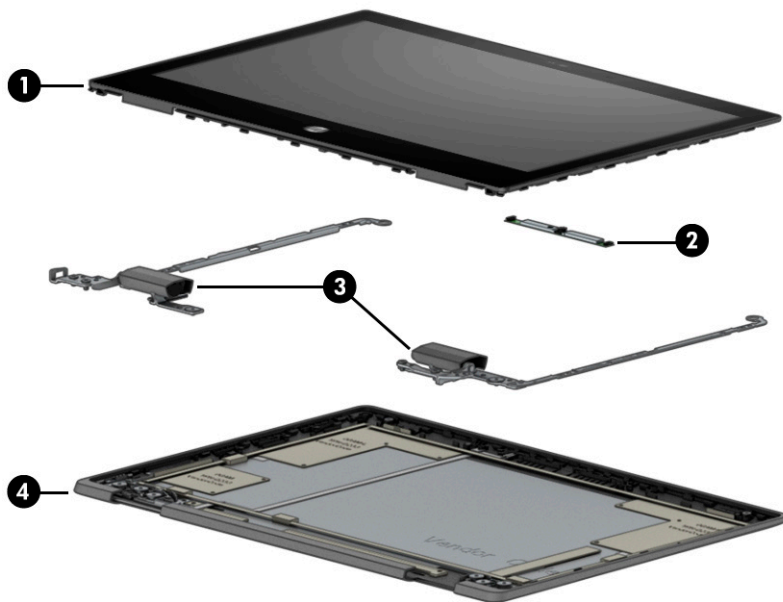
**Table 3-1 Major component spare part information (continued)**

Item	Component	Spare part number
	For use in South Korea	L92215-AD1
	For use in Spain	L92215-071
	For use in Switzerland	L92215-BG1
	For use in Taiwan	L92215-AB1
	For use in Thailand	L92215-281
	For use in Turkey	L92215-141
	For use in the United Kingdom	L92215-031
	For use in the United States	L92215-001
	<b>Keyboard/top cover</b> in gray finish for use with computer models equipped not with a keyboard camera (includes keyboard cable):	
	For use in Belgium	L92214-A41
	For use in Brazil	L92214-201
	For use in Canada	L92214-DB1
	For use in the Czech Republic and Slovakia	L92214-FL1
	For use in Denmark, Finland, and Norway	L92214-DH1
	For use in France	L92214-051
	For use in Germany	L92214-041
	For use in Israel	L92214-BB1
	For use in Italy	L92214-061
	For use in Latin America	L92214-161
	For use in the Netherlands	L92214-B31
	For use in Portugal	L92214-131
	For use in Romania	L92214-271
	For use in Russia	L92214-251
	For use in Saudi Arabia	L92214-171
	For use in South Korea	L92214-AD1
	For use in Spain	L92214-071
	For use in Switzerland	L92214-BG1
	For use in Taiwan	L92214-AB1
	For use in Thailand	L92214-281
	For use in Turkey	L92214-141
	For use in the United Kingdom	L92214-031
	For use in the United States	L92214-001
<b>(3a)</b>	<b>Touchpad:</b>	

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

Item	Component	Spare part number
	In blue finish	L92193-001
	In gray finish	L92192-001
<b>(3b)</b>	<b>Touchpad cable</b> (included in the Cable Kit, spare part number L92200-001)	
<b>(3c)</b>	<b>Touchpad bracket</b> (included in the Bracket Kit, spare part number L92206-001)	
<b>(4a)</b>	<b>Keyboard camera module</b>	L92211-001
<b>(4b)</b>	<b>Keyboard camera module cable</b> (included in the Cable Kit, spare part number L92200-001)	
<b>(4c)</b>	<b>Keyboard camera module bracket</b> (included in the Bracket Kit, spare part number L92206-001)	
<b>(5a)</b>	<b>Intel 9560 ac 2x2 + Bluetooth 5.0 MU-MIMO M.2 2230 non-vPro WLAN module</b>	L22634-005
<b>(5b)</b>	<b>WLAN bracket</b> (included in the Bracket Kit, spare part number L92206-001)	
<b>(6a)</b>	<b>Connector board</b> (includes audio jack and USB port)	L92212-001
<b>(6b)</b>	<b>Connector board bracket</b> (included in the Bracket Kit, spare part number L92206-001)	
<b>(7a)</b>	<b>Connector board high-power cable</b> (included in the Cable Kit, spare part number L92200-001)	
<b>(7b)</b>	<b>Connector board low-power cable</b> (included in the Cable Kit, spare part number L92200-001)	
<b>(7c)</b>	<b>Power cable</b> (included in the Cable Kit, spare part number L92200-001)	
<b>(8)</b>	<b>System board</b> (includes processor, heat sink, and replacement thermal material):	
	Equipped with an Intel Celeron N4120 processor, 8 GB of system memory, 64 GB of eMMC system storage, and the Google™ Chrome® OS	L92190-001
	Equipped with an Intel Celeron N4120 processor, 4 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome® OS	L92189-001
	Equipped with an Intel Celeron N4020 processor, 8 GB of system memory, 64 GB of eMMC system storage, and the Google Chrome® OS	L92188-001
	Equipped with an Intel Celeron N4020 processor, 8 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome® OS	L92187-001
	Equipped with an Intel Celeron N4020 processor, 4 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome® OS	L92186-001
<b>(9)</b>	<b>Battery</b> (2-cell, 47-WHr, 6.15-AHr, Li-ion; includes cable)	L75783-005
	<b>Battery Mylar</b> (not illustrated)	L89766-001
<b>(10)</b>	<b>Speakers</b> (include left and right speakers, cables, and 2 rubber isolators)	L92194-001
<b>(11)</b>	<b>Bottom cover:</b>	
	In blue finish for use only on computer models equipped with a digitizer	L92198-001
	In gray finish for use only on computer models equipped with a digitizer	L92197-001
	In blue finish for use only on computer models not equipped with a digitizer	L92196-001
	In gray finish for use only on computer models not equipped with a digitizer	L92195-001

## Display components



**Table 3-2** Display component spare part information

Item	Component	Spare part number
(1)	<b>Display panel assembly</b> (includes bezel and display panel cable):	
	11.6-in, HD, brightview, LED, UWVA, touchscreen display panel with digitizer	L92338-001
	11.6-in, HD, brightview, LED, UWVA, touchscreen display panel without digitizer	L92337-001
(2)	<b>Webcam module</b> (includes double-sided adhesive)	L92213-001
(3)	<b>Display hinges</b> (2)	L92207-001
	<b>Webcam module cable</b> (not illustrated, included in the Cable Kit, spare part number L92200-001)	
(4)	<b>Display back cover</b> (includes the webcam module cable and the wireless antenna cables and transceivers):	
	In blue finish for use only on computer models equipped with a digitizer	L92202-001
	In gray finish for use only on computer models equipped with a digitizer	L92201-001
	In blue finish for use only on computer models not equipped with a digitizer	L92204-001
	In gray finish for use only on computer models not equipped with a digitizer	L92203-001

## Miscellaneous parts

Table 3-3 Miscellaneous spare part information

Component	Spare part number
<b>45-W, AC Adapter (non-PFC, USB Type-C, 1.8-m, 3-pin)</b>	L43407-001
<b>Bracket Kit</b> (includes the connector board bracket , keyboard camera bracket, touchpad bracket, and WLAN module bracket)	L92206-001
<b>Cable Kit</b> (includes connector board high-speed cable, connector board low-speed cable, keyboard camera cable, power cable, touchpad cable, and webcam module cable)	L92200-001
<b>Digitizer pen</b>	928519-001
<b>Essential backpack</b>	679923-001
<b>HP comfort grip wireless mouse</b>	691922-001
<b>HP nano security lock</b>	918431-001
<b>HP USB laser mouse</b>	674318-001
<b>Power cord</b> (C5, 1.0-m, sticker conventional):	
For use in Argentina	L19357-001
For use in Australia	L19358-001
For use in Belgium	L19361-001
For use in Brazil	L19359-001
For use in India	L19363-001
For use in Italy	L19364-001
For use in North America	L19367-001
For use in South Africa	L19369-001
For use in South Korea	L19366-001
For use in Switzerland	L19370-001
For use in Taiwan	L19372-001
For use in Thailand	L19371-001
For use in the United Kingdom	L19373-001
<b>Rubber Kit</b>	L89786-001
<b>Screw Kit</b>	L92199-001



---

## 4 Removal and replacement procedures preliminary requirements

### Tools required


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

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

### Service considerations

The following sections include some of the considerations that you must keep in mind during disassembly and assembly procedures.


---

 **NOTE:** As you remove each subassembly from the computer, place the subassembly (and all accompanying screws) away from the work area to prevent damage.

---

### Plastic parts


---

 **IMPORTANT:** Using excessive force during disassembly and reassembly can damage plastic parts. Use care when handling the plastic.

---

### Cables and connectors

---


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

---

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

## Drive handling

---

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


- Before removing or inserting a hard drive, shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
  - Before handling a drive, be sure that you are discharged of static electricity. While handling a drive, avoid touching the connector.
  - Before removing an optical drive, be sure that a disc is not in the drive and be sure that the optical drive tray is closed.
  - Handle drives on surfaces covered with at least 2.54 cm (1 in.) of shock-proof foam.
  - Avoid dropping drives from any height onto any surface.
  - After removing a hard drive or an optical drive, place it in a static-proof bag.
  - Avoid exposing an internal hard drive to products that have magnetic fields, such as monitors or speakers.
  - Avoid exposing a drive to temperature extremes or liquids.
  - If a drive must be mailed, place the drive in a bubble pack mailer or other suitable form of protective packaging and label the package “FRAGILE.”
- 

## Electrostatic discharge information

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

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


---

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

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

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

---

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

---

**Table 4-1** Typical electrostatic voltage levels

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

## Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

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

## Workstation guidelines

Follow these grounding workstation guidelines:

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

## Equipment guidelines

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

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

The following grounding equipment is recommended to prevent electrostatic damage:


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

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

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

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

# 5 Removal and replacement procedures

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

 **NOTE:** HP continually improves and changes product parts. For complete and current information 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 44 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.

### Keyboard/top cover

Table 5-1 Keyboard/top cover spare part information

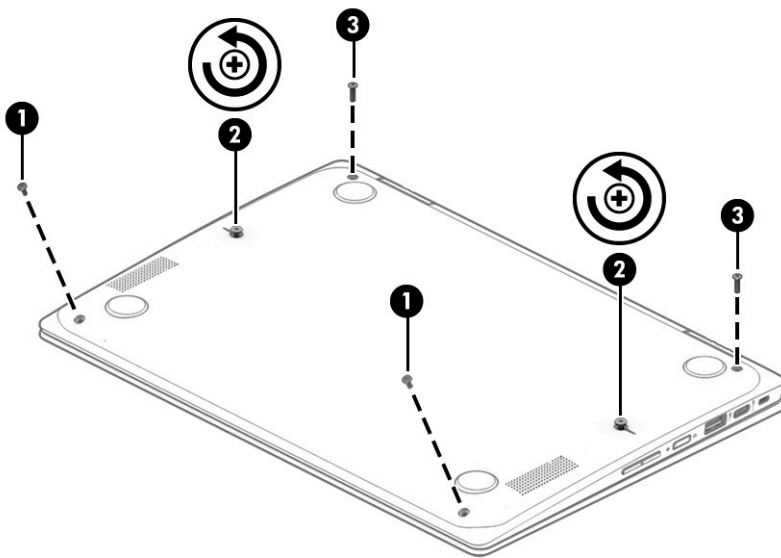
For use in country or region	Spare part number	For use in country or region	Spare part number	For use in country or region	Spare part number
Keyboard/top cover in blue finish for use with computer models equipped with a keyboard camera (includes keyboard cable):		For use in Israel	L92217-BB1	For use in South Korea	L92217-AD1
For use in Belgium	L92217-A41	For use in Italy	L92217-061	For use in Spain	L92217-071
For use in Brazil	L92217-201	For use in Latin America	L92217-161	For use in Switzerland	L92217-BG1
For use in Canada	L92217-DB1	For use in the Netherlands	L92217-B31	For use in Taiwan	L92217-AB1
For use in the Czech Republic and Slovakia	L92217-FL1	For use in Portugal	L92217-131	For use in Thailand	L92217-281
For use in Denmark, Finland, and Norway	L92217-DH1	For use in Romania	L92217-271	For use in Turkey	L92217-141
For use in France	L92217-051	For use in Russia	L92217-251	For use in the United Kingdom	L92217-031
For use in Germany	L92217-041	For use in Saudi Arabia	L92217-171	For use in the United States	L92217-001
Keyboard/top cover in blue finish for use with computer models not equipped with a keyboard camera (includes keyboard cable):		For use in Israel	L92216-BB1	For use in South Korea	L92216-AD1
For use in Belgium	L92216-A41	For use in Italy	L92216-061	For use in Spain	L92216-071
For use in Brazil	L92216-201	For use in Latin America	L92216-161	For use in Switzerland	L92216-BG1
For use in Canada	L92216-DB1	For use in the Netherlands	L92216-B31	For use in Taiwan	L92216-AB1

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

For use in country or region	Spare part number	For use in country or region	Spare part number	For use in country or region	Spare part number
For use in the Czech Republic and Slovakia	L92216-FL1	For use in Portugal	L92216-131	For use in Thailand	L92216-281
For use in Denmark, Finland, and Norway	L92216-DH1	For use in Romania	L92216-271	For use in Turkey	L92216-141
For use in France	L92216-051	For use in Russia	L92216-251	For use in the United Kingdom	L92216-031
For use in Germany	L92216-041	For use in Saudi Arabia	L92216-171	For use in the United States	L92216-001
Keyboard/top cover in blue finish for use with computer models equipped with a keyboard camera (includes keyboard cable):		For use in Israel	L92215-BB1	For use in South Korea	L92215-AD1
For use in Belgium	L92215-A41	For use in Italy	L92215-061	For use in Spain	L92215-071
For use in Brazil	L92215-201	For use in Latin America	L92215-161	For use in Switzerland	L92215-BG1
For use in Canada	L92215-DB1	For use in the Netherlands	L92215-B31	For use in Taiwan	L92215-AB1
For use in the Czech Republic and Slovakia	L92215-FL1	For use in Portugal	L92215-131	For use in Thailand	L92215-281
For use in Denmark, Finland, and Norway	L92215-DH1	For use in Romania	L92215-271	For use in Turkey	L92215-141
For use in France	L92215-051	For use in Russia	L92215-251	For use in the United Kingdom	L92215-031
For use in Germany	L92215-041	For use in Saudi Arabia	L92215-171	For use in the United States	L92215-001
Keyboard/top cover in blue finish for use with computer models not equipped with a keyboard camera (includes keyboard cable):		For use in Israel	L92214-BB1	For use in South Korea	L92214-AD1
For use in Belgium	L92214-A41	For use in Italy	L92214-061	For use in Spain	L92214-071
For use in Brazil	L92214-201	For use in Latin America	L92214-161	For use in Switzerland	L92214-BG1
For use in Canada	L92214-DB1	For use in the Netherlands	L92214-B31	For use in Taiwan	L92214-AB1
For use in the Czech Republic and Slovakia	L92214-FL1	For use in Portugal	L92214-131	For use in Thailand	L92214-281
For use in Denmark, Finland, and Norway	L92214-DH1	For use in Romania	L92214-271	For use in Turkey	L92214-141
For use in France	L92214-051	For use in Russia	L92214-251	For use in the United Kingdom	L92214-031
For use in Germany	L92214-041	For use in Saudi Arabia	L92214-171	For use in the United States	L92214-001

Remove the keyboard/top cover:

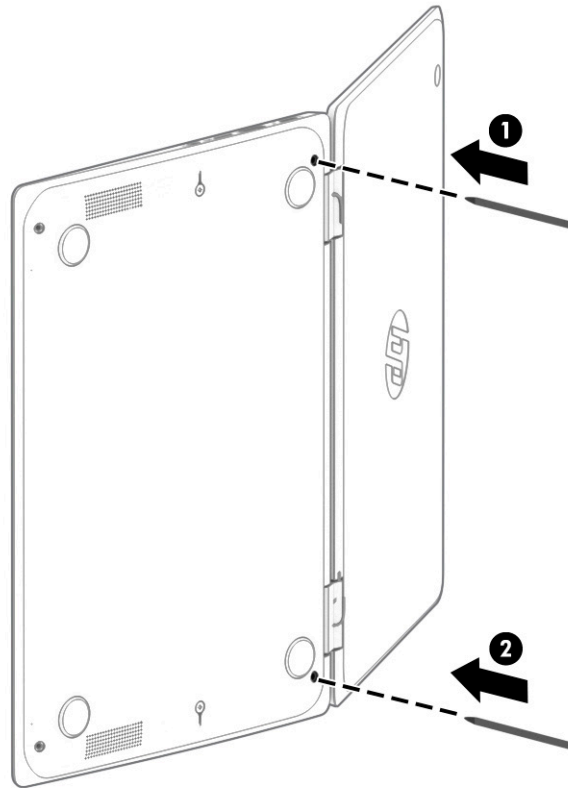
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Close the computer and position it upside down with the front toward you.
5. Remove or loosen the following screws that secure the keyboard/top cover to the bottom cover:
  - (1) Two Phillips M2.0×5.7 screws
  - (2) Two Phillips M2.0×5.7 captive screws
  - (3) Two Phillips M2.5×8.7 screws



6. Open the computer and rest it on its right side with the rear toward you.

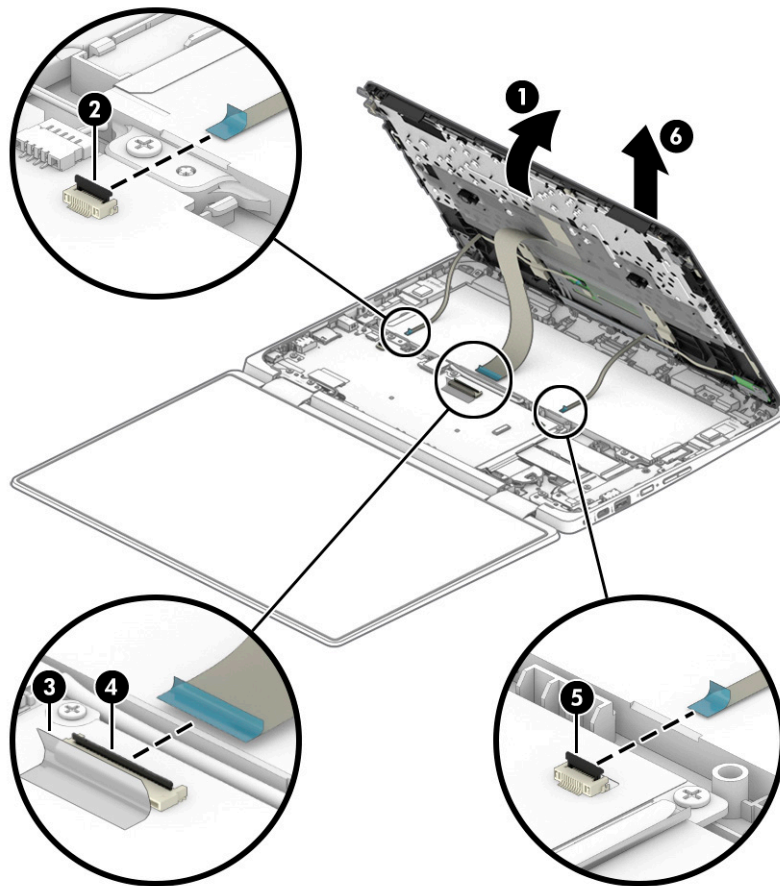


7. Use a thin plastic tool **(1)** to separate the rear edge of the keyboard/top cover **(2)** from the bottom cover.




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

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



Reverse this procedure to install the keyboard/top cover.

## Touchpad cable

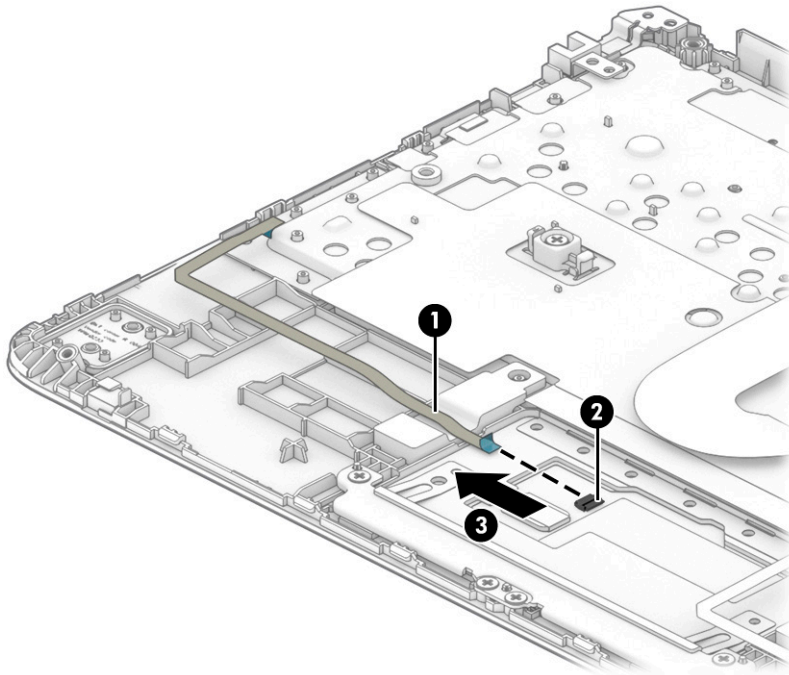
 **NOTE:** The touchpad cable is included in the Cable Kit, spare part number L92200-001.

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 24](#)).

Remove the touchpad cable:

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



Reverse this procedure to install the touchpad cable.

## Touchpad

**Table 5-2 Touchpad spare part information**

Description	Spare part number
In blue finish	L92193-001
In gray finish	L92192-001

Before removing the touchpad, follow these steps:

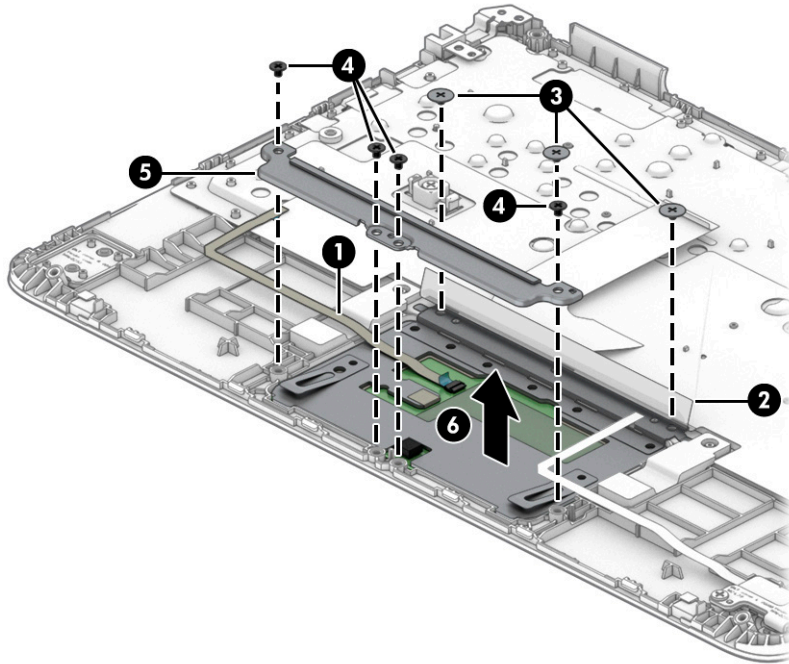
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord 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 24](#)).

Remove the touchpad:

1. Turn the keyboard/top cover upside down with the front toward you.
2. Detach the touchpad cable **(1)** from the keyboard/top cover. (The touchpad cable is attached to the keyboard/top cover with double-sided adhesive.)
3. Release the shielding **(2)** that covers the touchpad screws.
4. Remove the three Phillips M2.0×2.2 broad head screws **(3)** that secure the touchpad to the keyboard/top cover.
5. Remove the four Phillips M2.0×2.9 screws **(4)** that secure the touchpad and touchpad bracket to the keyboard/top cover.
6. Remove the touchpad bracket **(5)**.

The touchpad bracket is included in the Bracket Kit, spare part number L92206-001.

7. Remove the touchpad (6) and cable.



Reverse this procedure to install the touchpad.

## Keyboard camera

Table 5-3 Keyboard camera spare part information

Description	Spare part number
Keyboard camera	L92211-001

Before removing the keyboard camera, follow these steps:

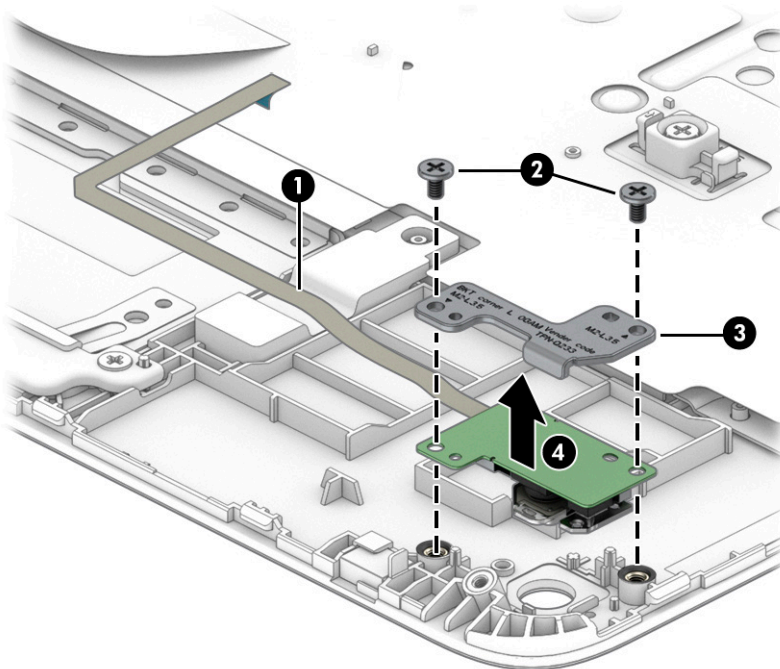
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord 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 24](#)).

Remove the keyboard camera:

1. Turn the keyboard/top cover upside down with the front toward you.
2. Detach the keyboard camera cable (1) from the keyboard/top cover. (The keyboard camera cable is attached to the keyboard/top cover with double-sided adhesive.)
3. Remove the two Phillips M2.0×4.1 screws (2) that secure the keyboard camera and keyboard camera bracket to the keyboard/top cover.
4. Remove the keyboard camera bracket (3).


The keyboard camera bracket is included in the Bracket Kit, spare part number L92206-001.

5. Remove the keyboard camera (4) and cable.



Reverse this procedure to install the keyboard camera.

## Keyboard camera cable

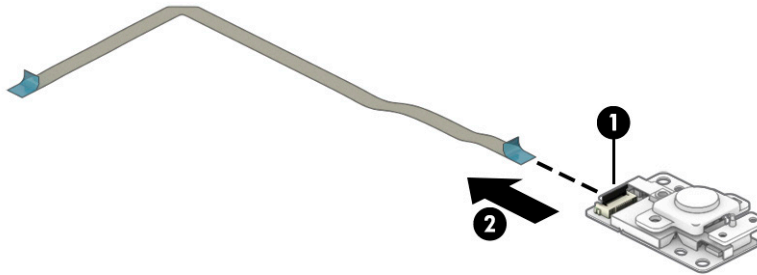
 **NOTE:** The keyboard camera cable is included in the Cable Kit, spare part number L92200-001.

Before removing the keyboard 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 24](#)).
5. Remove the keyboard camera (see [Keyboard camera on page 32](#)).

Remove the keyboard camera cable:

1. Turn the keyboard camera upside down with the rear toward you.
2. Release the ZIF connector (**1**) to which the keyboard camera cable is connected, and then disconnect the keyboard camera cable from the keyboard camera.
3. Remove the keyboard camera cable (**2**).



Reverse this procedure to install the keyboard camera cable.

## Speakers

Table 5-4 Speaker spare part information

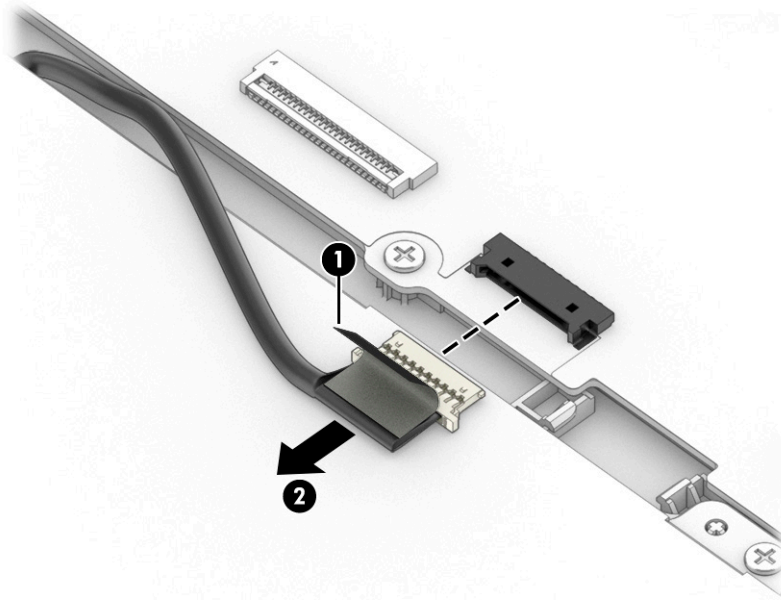
Description	Spare part number
Speakers (include left and right speakers and cables)	L92194-001

Before removing the speakers, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 24](#)).

Remove the speakers:

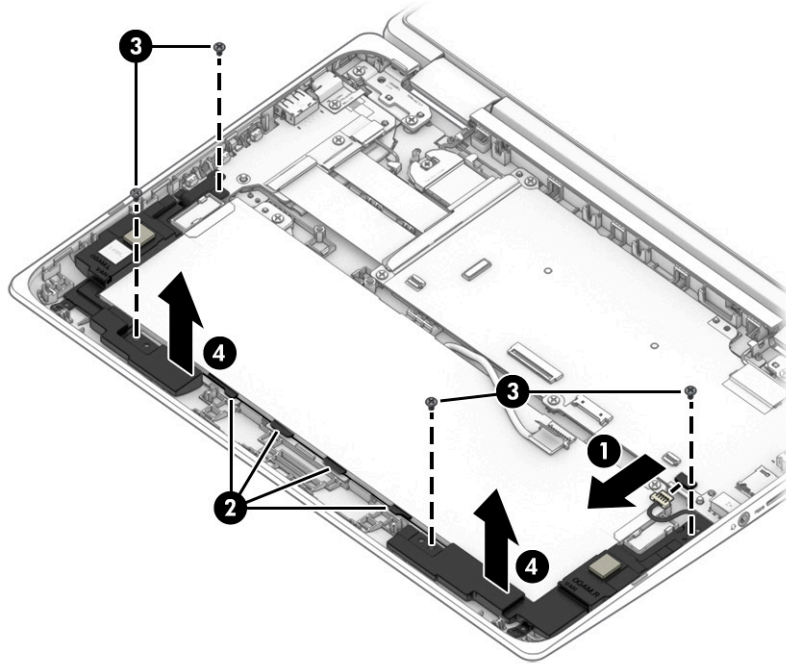
1. Release the shielding (1) that covers the battery cable and connector.
2. Disconnect the battery cable (2) from the system board.



3. Disconnect the speaker cable (1) from the system board.
4. Release the speaker cable from the routing clips (2) and channel that is built into the battery.
5. Remove the four Phillips M2.0×4.2 screws (3) that secure the speakers to the bottom cover.



6. Remove the speakers (4).



Reverse this procedure to install the speakers.

## Battery

**Table 5-5** Battery spare part information

Description	Spare part number
Battery (2-cell, 47-WHr, 6.15-AHr, Li-ion; includes cable)	L75783-005
Battery Mylar	L89766-001

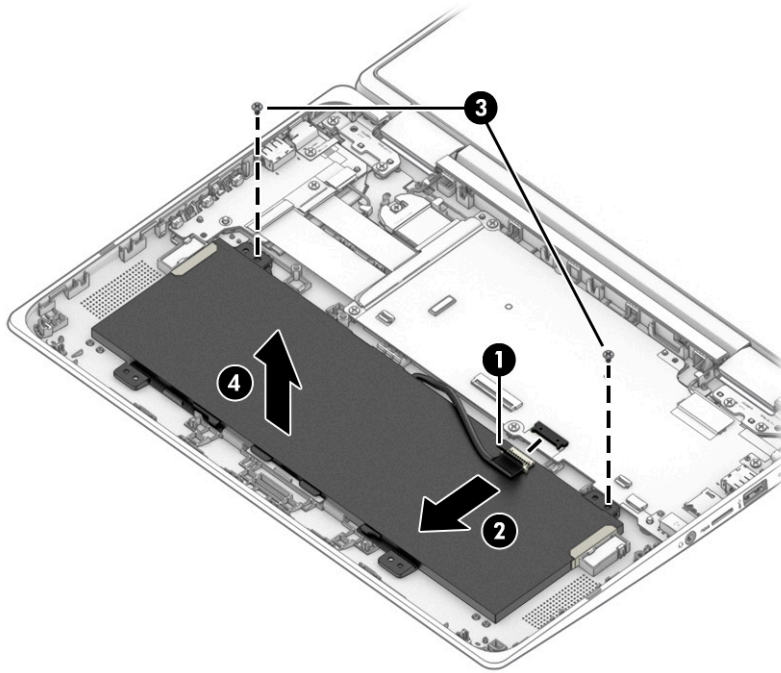
Before removing the battery, follow these steps:

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 24](#)).
5. Remove the speakers (see [Speakers on page 34](#)).

Remove the battery:

1. Release the shielding (1) that covers the battery cable and connector.
2. Disconnect the battery cable (2) from the system board.
3. Remove the two Phillips M2.0×4.2 screws (3) that secure the battery to the bottom cover.

4. Remove the battery (4).




Reverse this procedure to install the battery.

## WLAN module

Table 5-6 WLAN module spare part information

Description	Spare part number
Intel 9560 ac 2x2 + Bluetooth 5.0 MU-MIMO M.2 2230 non-vPro WLAN module	L22634-005
WLAN bracket (included in the Bracket Kit, spare part number L92206-001)	


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

Before removing the WLAN module, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 24](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 35](#)).

Remove the WLAN module:

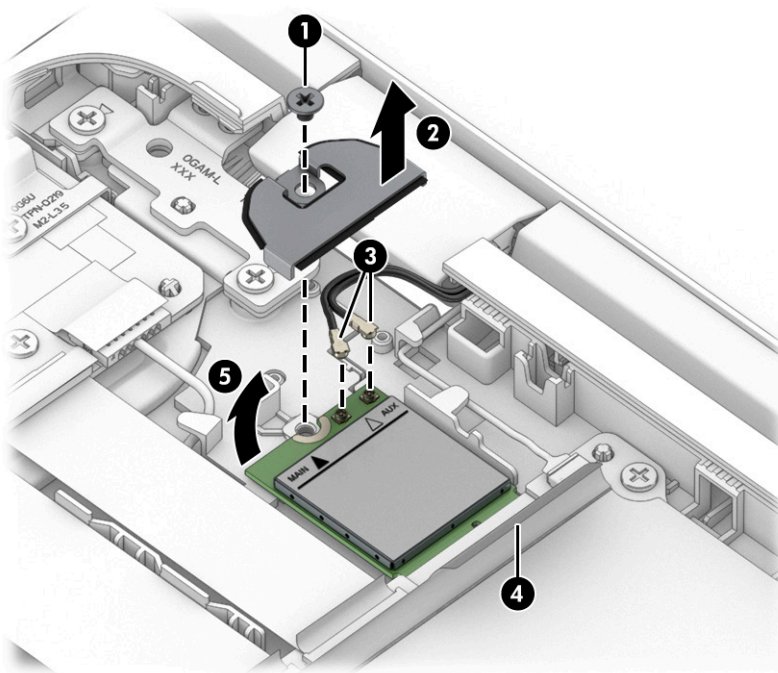
1. Remove the Phillips M2.0×2.9 screw **(1)** that secures the WLAN module to the system board. (The WLAN module tilts up.)
2. Remove the WLAN bracket **(2)**.  
The WLAN bracket is included in the Bracket Kit, spare part number L92206-001.
3. Disconnect the WLAN antenna cables **(3)** from the terminals on the WLAN module.

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

4. Release the shielding **(4)** that secures the WLAN module to the slot.

5. Remove the WLAN module (5) by pulling the module away from the slot at an angle.

 **NOTE:** WLAN modules are notched to prevent incorrect installation.



Reverse this procedure to install the WLAN module.

## Connector board cables

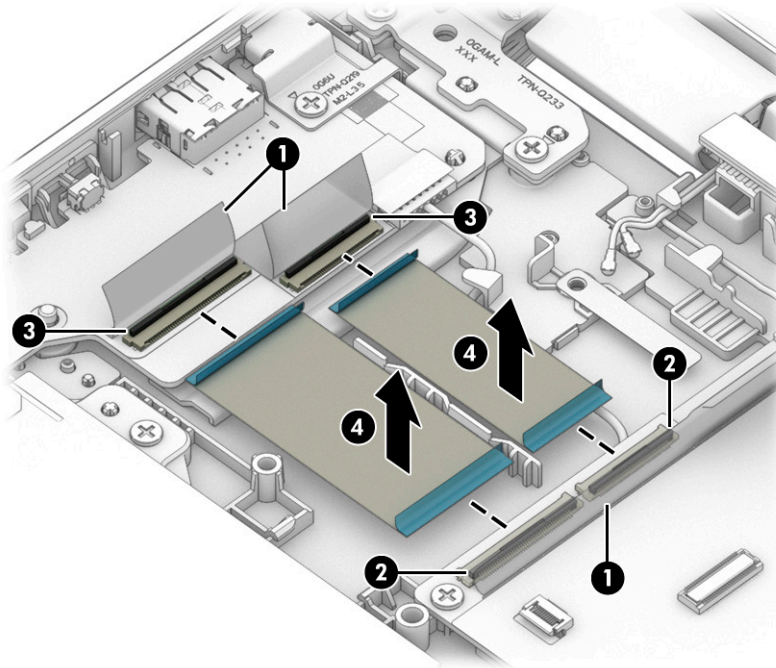
 **NOTE:** The connector board cables are included in the Cable Kit, spare part number L92200-001.

Before removing the connector board cables, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 24](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 35](#)).

Remove the connector board cables:

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



Reverse this procedure to install the connector board cables.

## Connector board

Table 5-7 Connector board spare part information

Description	Spare part number
Connector board (includes audio jack and USB port)	L92212-001

Before removing the connector board, follow these steps:

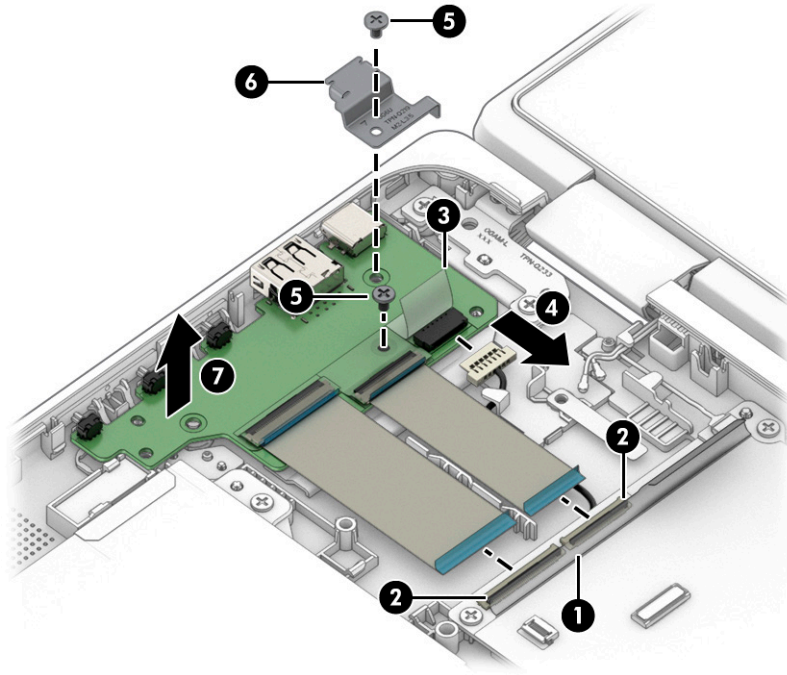
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 24](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 35](#)).

Remove the connector board:

1. Release the shielding **(1)** that covers the connector board cable ZIF connectors on the system board.
2. Release the ZIF connectors **(2)** to which the connector board cables are connected, and then disconnect the connector board cables from the system board.
3. Release the shielding **(3)** that covers the power cable connector.
4. Disconnect the power cable **(4)** from the connector board.
5. Remove the two Phillips M2.0×4.2 screws **(5)** that secure the connector board to the bottom cover.
6. Remove the connector board bracket **(6)**.

The connector board bracket is included in the Bracket Kit, spare part number L92206-001.

7. Remove the connector board (7) and cables.



Reverse this procedure to install the connector board.

## System board



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

**Table 5-8 System board spare part information**

Description	Spare part number
Equipped with an Intel Celeron N4120 processor, 8 GB of system memory, 64 GB of eMMC system storage, and the Google Chrome® OS	L92190-001
Equipped with an Intel Celeron N4120 processor, 4 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome® OS	L92189-001
Equipped with an Intel Celeron N4020 processor, 8 GB of system memory, 64 GB of eMMC system storage, and the Google Chrome® OS	L92188-001
Equipped with an Intel Celeron N4020 processor, 8 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome® OS	L92187-001
Equipped with an Intel Celeron N4020 processor, 4 GB of system memory, 32 GB of eMMC system storage, and the Google Chrome® OS	L92186-001

Before removing the system board, follow these steps:

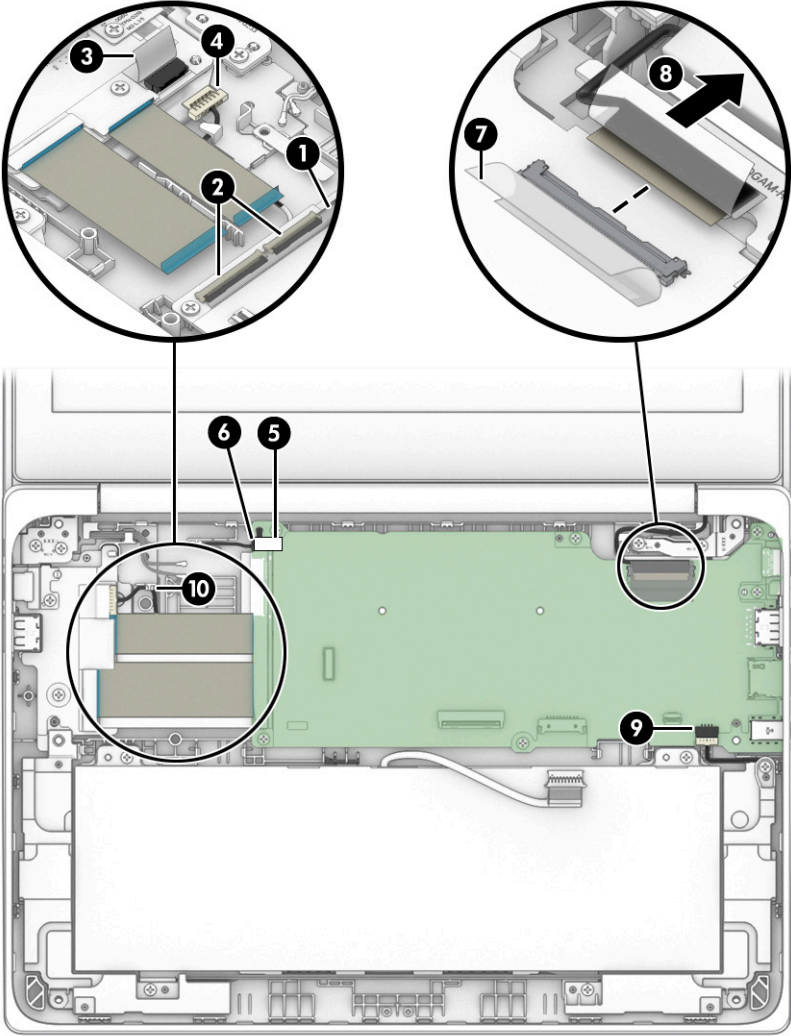
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord 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 24](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 35](#)).
6. Remove the WLAN module (see [WLAN module on page 37](#)).

Remove the system board:

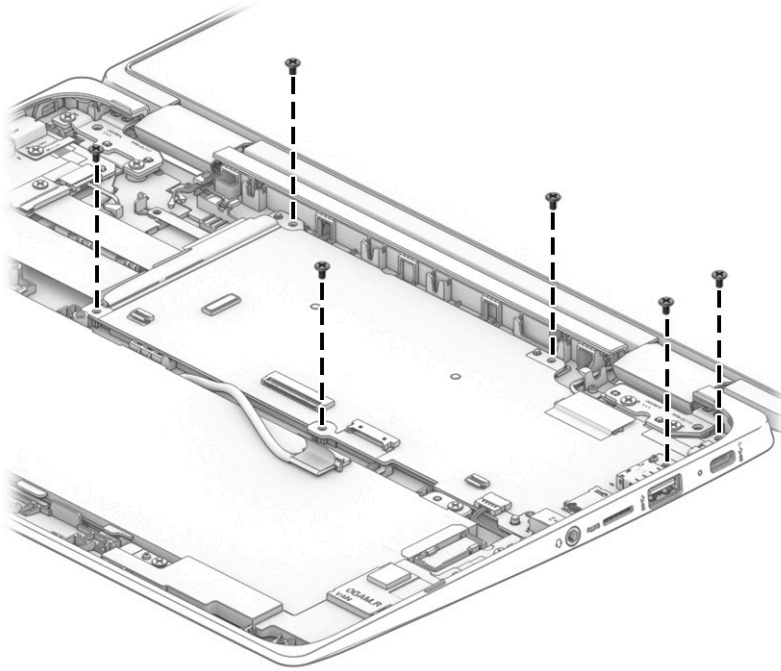
1. Release the shielding **(1)** that covers the connector board cable ZIF connectors on the system board.
2. Release the ZIF connectors **(2)** to which the connector board cables are connected, and then disconnect the connector board cables from the system board.
3. Release the shielding **(3)** that covers the power cable connector.
4. Disconnect the power cable **(4)** from the connector board.
5. Release the shielding **(5)** that covers the webcam module cable connector.
6. Disconnect the webcam module cable **(6)** from the system board.
7. Release the shielding **(7)** that covers the display panel cable connector.
8. Disconnect the display panel cable **(8)** from the system board.
9. Disconnect the speaker cable **(9)** from the system board.



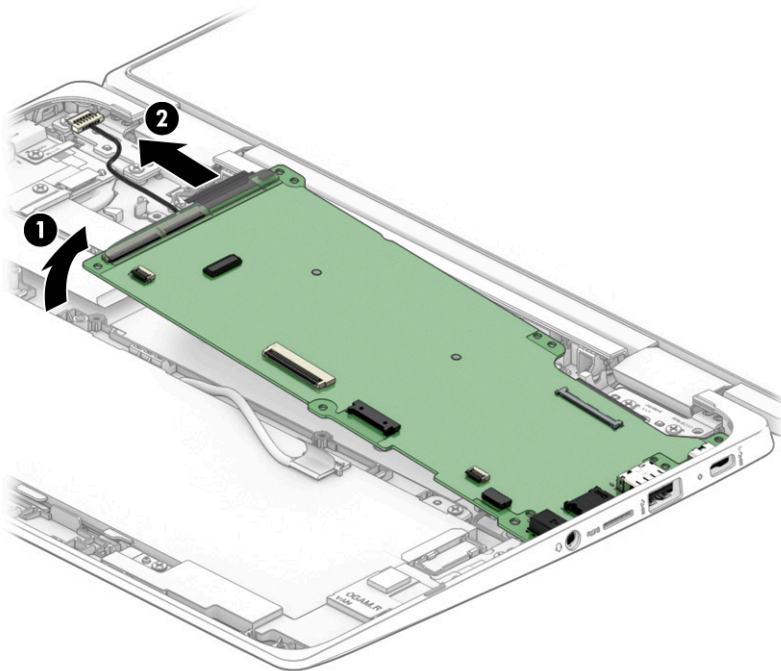
10. Release the power cable from the retention clip (10) built into the bottom cover.



11. Remove the six Phillips M2.0×4.2 screws (1) that secure the system board to the bottom cover.



12. Lift the left side the system board (1) until it rests at an angle.
13. Remove the system board (2) by sliding it up and to the left at an angle.



Reverse this procedure to install the system board.

## Power cable



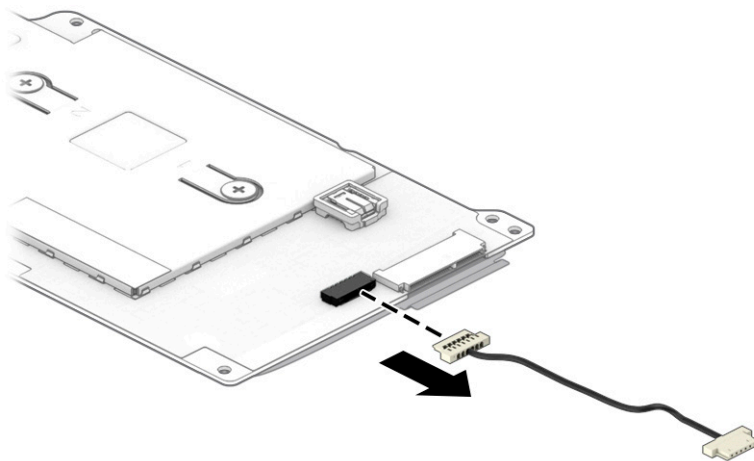
**NOTE:** The power cable is included in the Cable Kit, spare part number L92200-001.

Before removing the power 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 24](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 35](#)).
6. Remove the WLAN module (see [WLAN module on page 37](#)).
7. Remove the system board (see [System board on page 42](#)).

Remove the power cable:


1. Turn the system board upside down with the rear toward you.
2. Disconnect the power cable from the system board.



Reverse this procedure to install the power cable.

## Display assembly

---

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

---


Before removing the display assembly, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 24](#)).
5. Disconnect the battery from the system board (see [Battery on page 35](#)).

Remove the display assembly:

1. Disconnect the webcam module cable **(1)** from the system board.
2. Remove the Phillips M2.0×2.9 screw **(2)** that secures the WLAN module and bracket to the system board. (The WLAN module tilts up.)
3. Remove the WLAN bracket **(3)**.  
The WLAN bracket is included in the Bracket Kit, spare part number L92206-001.
4. Disconnect the WLAN antenna cables **(4)** from the terminals on the WLAN module.

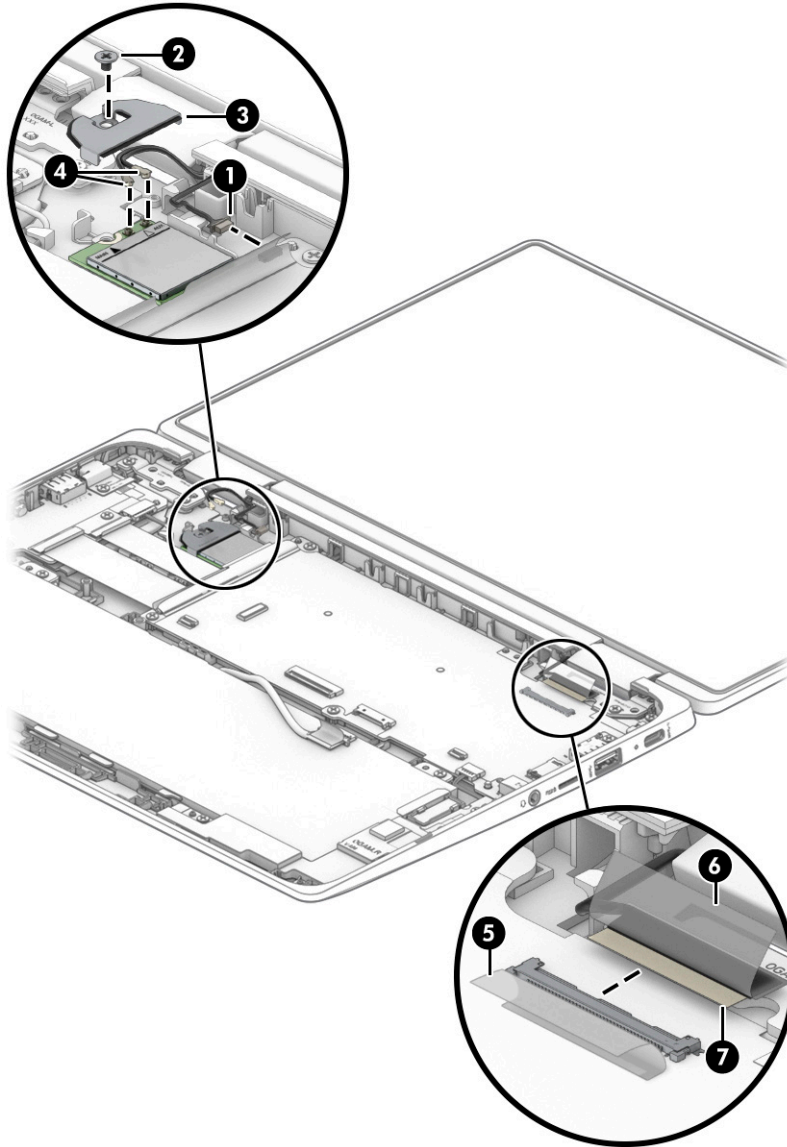
---

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

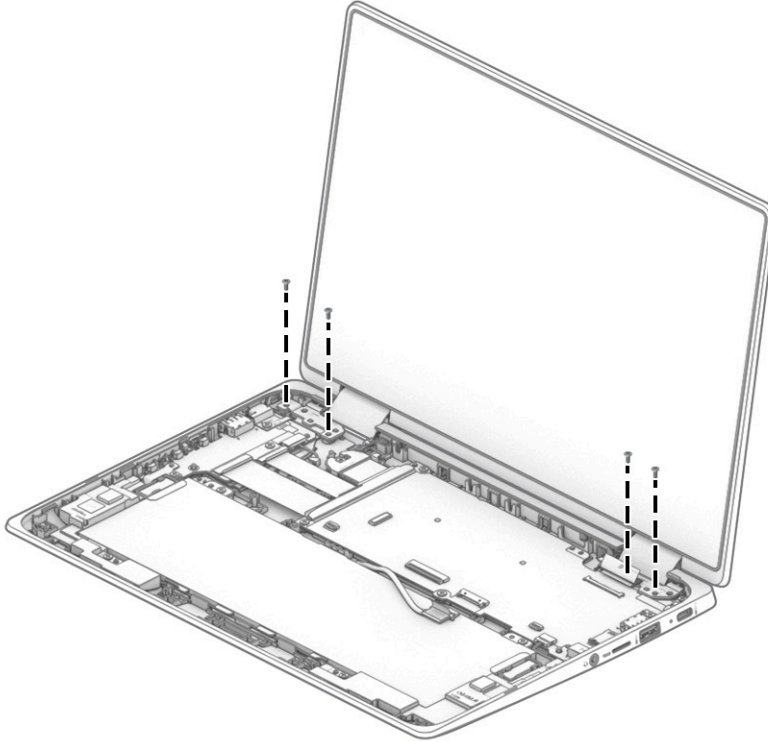
---

5. Release the shielding **(5)** that covers the display panel cable connector.
6. Release the adhesive strip **(6)** that secures the display panel cable to the system board.

7. Disconnect the display panel cable (7) from the system board.

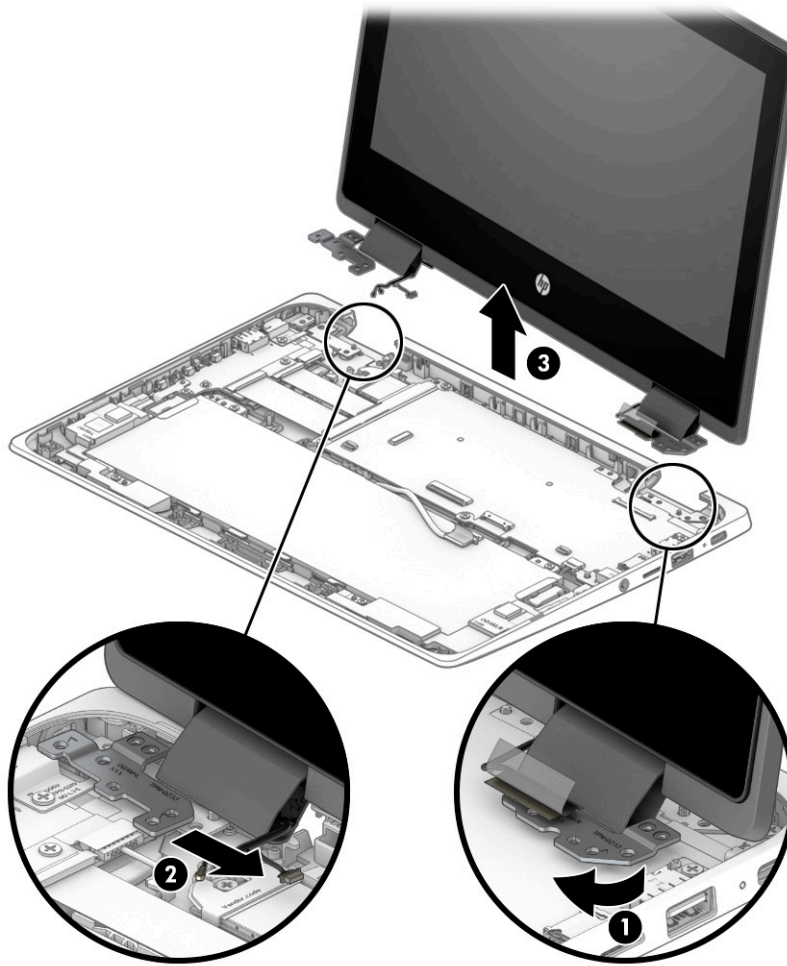


8. Remove the four Phillips M2.5×4.7 screws that secure the display assembly to the keyboard/top cover.



9. Rotate the display assembly **(1)** clockwise to release the right hinge from the keyboard/top cover.

10. Slide the display assembly (2) to the right at an angle to release the left hinge from the keyboard/top cover.



11. Remove the display assembly.
12. Remove the display panel assembly by following these steps:
  - a. Use a case utility tool (1) or a similar thin plastic tool to separate the top edge of the display panel assembly from the display back cover.

- b. Swing the top edge of the display panel assembly (2) up and away from the display back cover until it rests upside down in front of the display back cover.

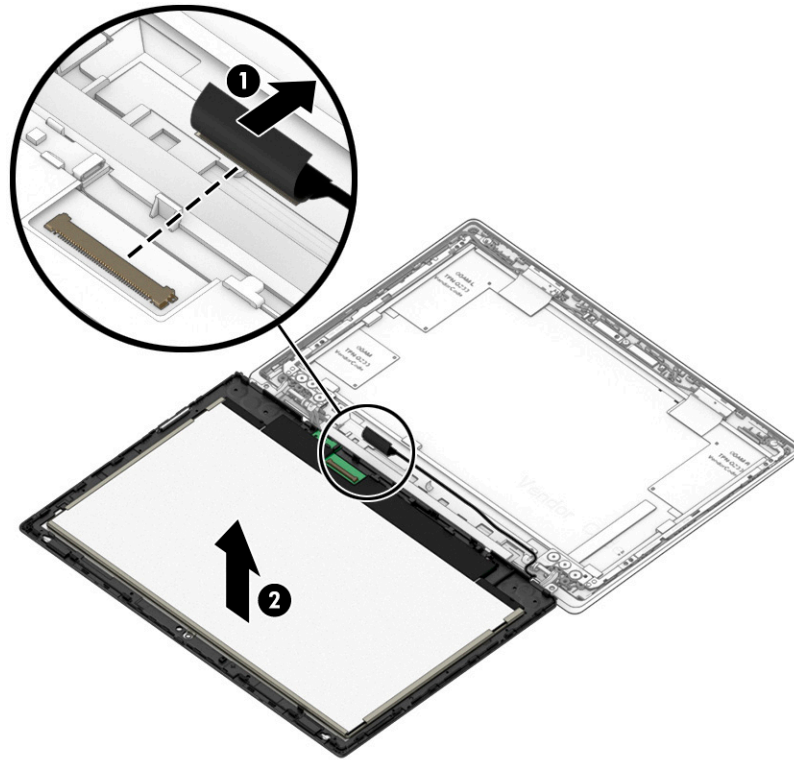


- c. Disconnect the display panel cable (1) from the display panel assembly.



- d. Remove the display panel assembly (2).

The display panel assembly is available using spare part numbers L92338-001 (for use with computer models equipped with a digitizer) and L92337-001 (for use with computer models not equipped with a digitizer).

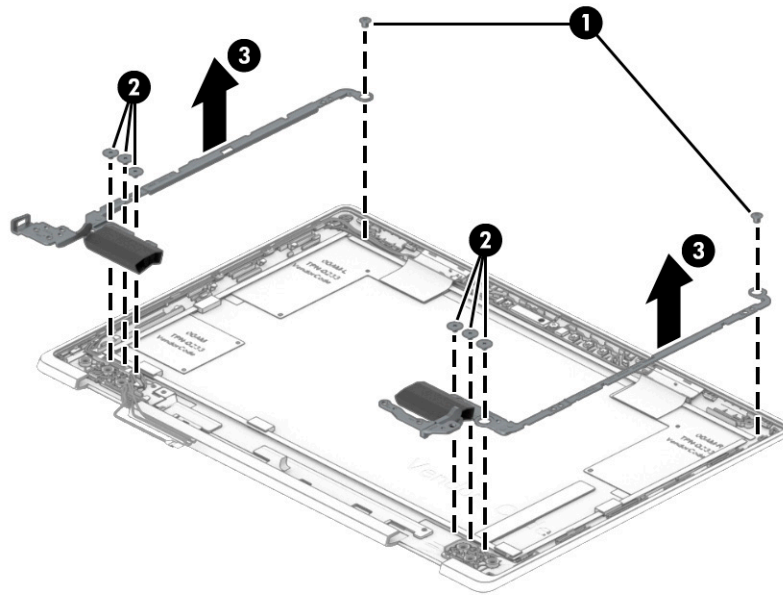


13. Remove the display back cover by following these steps:

- a. Remove the six Phillips M2.5×3.0 broad head screws (1) that secure the display back cover to the display hinges.
- b. Remove the display back cover (2).

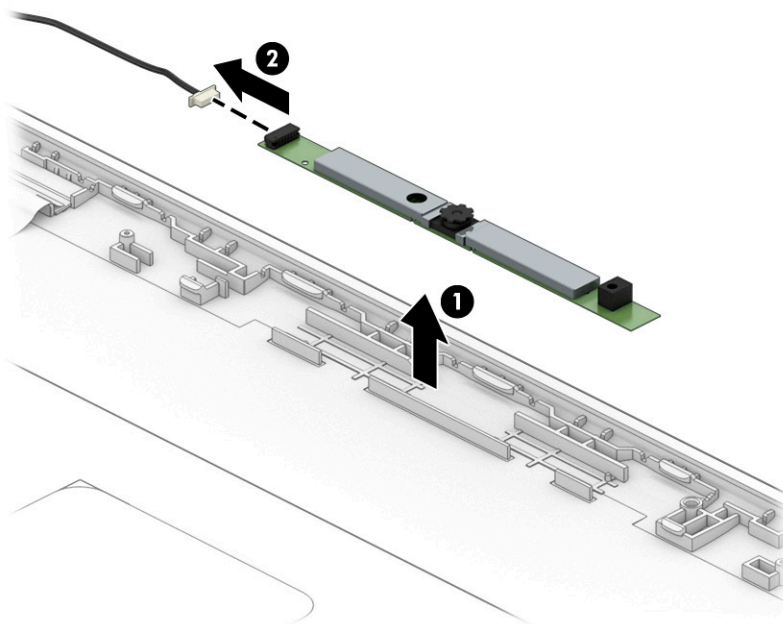
The display back cover is available using the following spare part numbers:

- L92202-001 – In blue finish for use only on computer models equipped with a digitizer
- L92201-001 – In gray finish for use only on computer models equipped with a digitizer
- L92204-001 – In blue finish for use only on computer models not equipped with a digitizer
- L92203-001 – In gray finish for use only on computer models not equipped with a digitizer



14. Remove the webcam module by following these steps:

- a. Detach the webcam module (1) from the display back cover. (The webcam module is attached to the display back cover with double-sided adhesive.)
- b. Release the ZIF connector (2) to which the webcam module cable is connected, and then disconnect the webcam module cable from the webcam module.



c. Remove the webcam module.

The webcam module is available using spare part number L92213-001.

Reverse this procedure to reassemble and install the display assembly.

# 6 Specifications

## Computer specifications

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

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

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

**Table 6-1 Computer specifications**

	Metric	U.S.
<b>Dimensions:</b>		
Width	29.5 cm	11.6 in
Depth	20.5 cm	8.1 in
Height	2.1 cm	0.8 in
<b>Weight</b>	1.5 kg	3.2 lbs
<b>Input power</b>	<b>Rating</b>	
Operating voltage and current	5 V dc @ 2 A / 12 V dc @ 3 A / 15 V dc @ 3 A – 45 W USB-C	
	5 V dc @ 3 A / 9 V dc @ 3 A / 12 V dc @ 3.75 A / 15 V dc @ 3 A – 45 W USB-C	
	5 V dc @ 3 A / 9 V dc @ 3 A / 10 V dc @ 3.75 A / 12 V dc @ 3.75 A / 15 V dc @ 3 A / 20 V dc @ 2.25 A – 45 W USB-C	
	5 V dc @ 3 A / 9 V dc @ 3 A / 12 V dc @ 5 A / 15 V dc @ 4.33 A / 20 V dc @ 3.25 A – 65 W USB-C	
	5 V dc @ 3 A / 9 V dc @ 3 A / 10 V dc @ 5 A / 12 V dc @ 5 A / 15 V dc @ 4.33 A / 20 V dc @ 3.25 A – 65 W USB-C	
	5 V dc @ 3 A / 9 V dc @ 3 A / 10 V dc @ 5 A / 12 V dc @ 5 A / 15 V dc @ 5 A / 20 V dc @ 4.5 A – 90 W USB-C	
	19.5 V dc @ 2.31 A – 45 W	
	19.5 V dc @ 3.33 A – 65 W	
	19.5 V dc @ 4.62 A – 90 W	
	19.5 V dc @ 6.15 A – 120 W	
	19.5 V dc @ 6.9 A – 135 W	
	19.5 V dc @ 7.70 A – 150 W	
	19.5 V dc @ 10.3 A – 200 W	
19.5 V dc @ 11.8 A – 230 W		
19.5 V dc @ 16.92 A – 330 W		

**Table 6-1** Computer specifications (continued)

	Metric	U.S.
<b>Temperature</b>		
Operating	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
<b>Relative humidity</b> (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%	
<b>Maximum altitude</b> (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
<b>NOTE:</b> Applicable product safety standards specify thermal limits for plastic surfaces. The device operates well within this range of temperatures.		

---

# 7 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, be sure to back up your files to an optional USB flash drive, to an SD memory card, or through Google Drive. The factory reset won't 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 restarted your computer, and it still doesn't work 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. After you complete the reset, you can set up your computer and check to see whether the problem is fixed.

## Recovering

When your Chrome OS™ (operating system) isn't 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. Because all data is erased from this storage device when the recovery media is created, 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.
- Your computer displaying 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 that recovers 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

Use recovery media to recover the original operating system and software programs that were installed at the factory.

To create recovery media:

1. Turn on a computer that has 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 that 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 is displayed, 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 is displayed, 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 is displayed, 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 about 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 as a recovery tool. After you recover your computer, you must 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 that 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.

---

## 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

Country/region	Accredited agency	Applicable note number
Argentina	IRAM	1
Australia	SAA	1
Austria	OVE	1
Belgium	CEBEC	1
Brazil	ABNT	1
Canada	CSA	2
Chile	IMQ	1
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
India	BIS	1
Israel	SII	1
Italy	IMQ	1
Japan	JIS	3
The Netherlands	KEMA	1
New Zealand	SANZ	1
Norway	NEMKO	1
The People's Republic of China	CCC	4
Saudi Arabia	SASO	7
Singapore	PSB	1
South Africa	SABS	1
South Korea	KTL	5
Sweden	SEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	6
Thailand	TISI	1
The United Kingdom	ASTA	1
The United States	UL	2

1. The flexible cord must be Type H05VV-F, 3-conductor, 0.75 mm<sup>2</sup> 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 (continued)**

Country/region	Accredited agency	Applicable note number
		2. The flexible cord must be Type SVT/SJT or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V ac) or NEMA 6-15P (15 A, 250 V ac) configuration. CSA or C-UL mark. UL file number must be on each element.
		3. The appliance coupler, flexible cord, and wall plug must bear a “T” mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCTF, 3-conductor, 0.75 mm <sup>2</sup> or 1.25 mm <sup>2</sup> conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V ac) configuration.
		4. The flexible cord must be Type RVV, 3-conductor, 0.75 mm <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> or 1.00 mm <sup>2</sup> 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
  - AC adapter, spare part number 18
  - audio, product description 1
  - audio-in jack 3
  - audio-out jack 3
- B**
  - backing up 55
  - backpack, spare part number 18
  - battery
    - removal 35
    - spare part number 16, 35
  - battery light 3
  - battery Mylar
    - spare part number 16, 35
  - Bluetooth label 11
  - bottom cover
    - spare part number 16
  - Bracket Kit, spare part number 18
- C**
  - Cable, spare part number 18
  - camera 7
  - camera light 7
  - chipset, product description 1
  - Chromebook Recovery Utility, installing 56
  - components
    - bottom 9
    - display 7
    - left side 5
    - right side 3
  - computer major components 12
  - computer specifications 53
  - connector board
    - removal 40
    - spare part number 16, 40
  - connector board bracket
    - removal 40
    - spare part number 16, 40
  - connector board cable
    - spare part number 16
  - connector board high-speed cable
    - removal 39
    - spare part number 39
  - connector board low-speed cable
    - removal 39
    - spare part number 39
  - connector, power 4, 5
- D**
  - display assembly
    - removal 46
    - spare part numbers 46
  - display back cover
    - removal 51
    - spare part numbers 17, 51
  - display components 17
  - display panel
    - product description 1
  - display panel assembly
    - removal 49
    - spare part numbers 17, 51
- E**
  - electrostatic discharge 20
  - equipment guidelines 22
- G**
  - grounding guidelines 20
  - guidelines
    - equipment 22
    - grounding 20
    - packaging 21
    - transporting 21
    - workstation 22
- H**
  - headphone jack 3
  - hinge
    - spare part number 17
- I**
  - internal microphone 7
- J**
  - jacks
    - audio-in 3
    - audio-out 3
    - headphone 3
    - microphone 3
- K**
  - keyboard camera 7
    - removal 32
    - spare part numbers 32
  - keyboard camera bracket
    - removal 32
    - spare part number 32
  - keyboard camera cable
    - removal 33
    - spare part number 33
  - keyboard camera module
    - spare part number 16
  - keyboard camera module bracket
    - spare part number 16
  - keyboard camera module cable
    - spare part number 16
  - keyboard/top cover
    - removal 24
    - spare part numbers 13, 14, 15, 24
- L**
  - labels
    - Bluetooth 11
    - regulatory 11
    - serial number 10
    - service 10
    - wireless certification 11
    - WLAN 11
  - lights
    - AC adapter 3
    - battery 3
    - camera 7
    - power 5
  - lock, spare part number 18
- M**
  - memory, product description 1

- microphone 7
  - jack 3
  - product description 1
- microSD memory card reader 3
- model name 1
- mouse, spare part numbers 18

## N

- nano security cable slot 5

## O

- operating system, product description 2

## P

- packaging guidelines 21
- pen, digitizer, spare part number 18
- ports
  - USB SuperSpeed 3, 5
  - USB Type-C power connector and port 4, 5
- power button 5
- power cable
  - removal 45
  - spare part number 16, 45
- power connector 4, 5
- power cord
  - requirements for all countries 58
  - requirements for specific countries and regions 59
  - set requirements 58
  - spare part numbers 18
- power light 5
- power requirements, product description 1, 2
- processor, product description 1
- product description
  - audio 1
  - chipset 1
  - display panel 1
  - memory 1
  - microphone 1
  - operating system 2
  - power requirements 1, 2
  - processors 1
  - product name 1
  - serviceability 2
  - storage 1
  - video 1
  - wireless 1
- product name 1

- product name and number, computer 10

## R

- recovery media
  - creating 56
  - erase 57
- recovery, performing 55
- regulatory information
  - regulatory label 11
  - wireless certification labels 11
- removal/replacement procedures 24
- resetting 55
- Rubber Kit, spare part number 18

## S

- Screw Kit, spare part number 18
- serial number, computer 10
- service labels, locating 10
- serviceability, product description 2
- slots
  - nano security cable 5
- slots, microSD memory card reader 3
- Speaker Kit, spare part number 34
- speakers
  - removal 34
  - spare part number 16, 34
- specifications
  - computer 53
- storage, product description 1
- system board
  - removal 42
  - spare part numbers 16, 42
- system recovery
  - Chrome operating system 56
  - Chromebook Recovery Utility 56
  - recovery media 56

## T

- touchpad
  - removal 30
  - spare part numbers 15, 30
- touchpad bracket
  - removal 30
  - spare part number 16, 30
- touchpad cable
  - removal 29
  - spare part number 16, 29
- TouchPad zone 8
- transporting guidelines 21

- traveling with the computer 11

## U

- USB SuperSpeed port 3, 5
- USB Type-C power connector and port 5
- USB Type-C power connector and super speed port 4

## V

- vents 9
- video, product description 1
- volume buttons 6

## W

- webcam module
  - removal 52
  - spare part number 17, 52
- webcam module cable
  - spare part number 17
- wireless certification label 11
- wireless, product description 1
- WLAN antennas 7
- WLAN bracket
  - removal 37, 46
  - spare part number 16, 37, 46
- WLAN device 11
- WLAN label 11
- WLAN module
  - removal 37
  - spare part number 16, 37
- workstation guidelines 22