



## HP Stream x360 Convertible PC

Maintenance and Service Guide

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

© Copyright 2016, 2018 HP Development Company, L.P.

Bluetooth is a trademark owned by its proprietor and used by HP Inc. under license. Intel, Celeron, and Pentium are U.S. registered trademarks of Intel Corporation. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States 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.

Second Edition: April 2018

First Edition: September 2016

Document Part Number: 905789-002

## **Product notice**

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

Not all features are available in all editions of Windows. This computer may require upgraded and/or separately purchased hardware, drivers and/or software to take full advantage of Windows functionality. Go to <http://www.microsoft.com> for details.


## **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).

---



---

# Table of contents

<b>1 Product description .....</b>	<b>1</b>
<b>2 Getting to know your computer .....</b>	<b>6</b>
Right side .....	6
Left side .....	7
Display .....	8
Keyboard area .....	9
TouchPad .....	9
Lights .....	10
Speakers .....	11
Special keys .....	12
Action keys .....	13
Labels .....	14
<b>3 Illustrated parts catalog .....</b>	<b>16</b>
Computer major components .....	16
Display assembly subcomponents .....	20
Miscellaneous parts .....	22
<b>4 Removal and replacement preliminary requirements .....</b>	<b>23</b>
Tools required .....	23
Service considerations .....	23
Plastic parts .....	23
Cables and connectors .....	24
Drive handling .....	24
Grounding guidelines .....	25
Electrostatic discharge damage .....	25
Packaging and transporting guidelines .....	26
Workstation guidelines .....	26
<b>5 Removal and replacement procedures .....</b>	<b>28</b>
Component replacement procedures .....	28
Bottom cover .....	28
Battery .....	30
Hard drive .....	31
Memory module .....	33

Solid-state drive and hardware .....	35
RTC battery .....	37
WLAN module .....	38
Power connector cable .....	40
Speakers .....	42
Power button board cable .....	43
Power button board .....	45
System board .....	47
Heat sink .....	50
TouchPad cable .....	52
TouchPad .....	53
Connector board cable .....	55
Connector board .....	56
Display assembly .....	57
Top cover with keyboard .....	67

## **6 Using Setup Utility (BIOS) ..... 68**

Starting Setup Utility (BIOS) .....	68
Updating Setup Utility (BIOS) .....	68
Determining the BIOS version .....	68
Downloading a BIOS update .....	69

## **7 Using HP PC Hardware Diagnostics ..... 70**

Using HP PC Hardware Diagnostics Windows .....	70
Downloading HP PC Hardware Diagnostics Windows .....	70
Downloading the latest HP PC Hardware Diagnostics Windows version .....	71
Downloading HP Hardware Diagnostics Windows by product name or number (select products only) .....	71
Installing HP PC Hardware Diagnostics Windows .....	71
Using HP PC Hardware Diagnostics UEFI .....	71
Starting HP PC Hardware Diagnostics UEFI .....	72
Downloading HP PC Hardware Diagnostics UEFI to a USB flash drive .....	72
Downloading the latest HP PC Hardware Diagnostics UEFI version .....	72
Downloading HP PC Hardware Diagnostics UEFI by product name (select products only) .....	72
Using Remote HP PC Hardware Diagnostics UEFI settings (select products only) .....	73
Downloading Remote HP PC Hardware Diagnostics UEFI .....	73
Downloading the latest Remote HP PC Hardware Diagnostics UEFI version .....	73
Downloading Remote HP PC Hardware Diagnostics UEFI by product name .....	73
Customizing Remote HP PC Hardware Diagnostics UEFI settings .....	73

<b>8 Specifications .....</b>	<b>75</b>
Computer specifications .....	75
<b>9 Backing up, restoring, and recovering .....</b>	<b>77</b>
Using Windows tools .....	77
Creating HP Recovery media (select products only) .....	77
Using HP Recovery Manager to create recovery media .....	78
Before you begin .....	78
Creating the recovery media .....	78
Using the HP Cloud Recovery Download Tool to create recovery media .....	79
Restoring and recovery .....	79
Restoring, resetting, and refreshing using Windows tools .....	79
Restoring using HP Recovery Manager and the HP Recovery partition .....	79
Recovering using HP Recovery Manager .....	79
Recovering using the HP Recovery partition (select products only) .....	80
Recovering using HP Recovery media .....	80
Changing the computer boot order .....	81
Removing the HP Recovery partition (select products only) .....	81
<b>10 Power cord set requirements .....</b>	<b>82</b>
Requirements for all countries .....	82
Requirements for specific countries and regions .....	82
<b>11 Recycling .....</b>	<b>84</b>
<b>Index .....</b>	<b>85</b>



# 1 Product description

Category	Description	Stream x360 (11-aa0XX)		Stream x360 (11-aa1XX)		x360 (11-ab0XX)	
		On-board memory	eMMC	eMMC	HDD/SSD	HDD/SSD	eMMC
Product Name	HP Stream x360 Convertible PC (model number 11-aa0XX)	✓	✓				
	HP x360 Convertible PC (model number 11-ab0XX)					✓	✓
	HP x360 Convertible PC (model number 11-aa1XX)			✓	✓		
Processor	Intel® Pentium™ N3710 (1.60-GHz, turbo up to 2.56-GHz, quad core) processor		✓			✓	✓
	Intel Celeron™ N3060 (1.60-GHz, turbo up to 2.48-GHz, dual core) processor	✓	✓			✓	✓
	Intel Celeron N3050 (1.60-GHz, turbo up to 2.16-GHz, dual core) processor	✓					
	Intel Celeron N4000 (1.1-GHz, turbo up to 2.6-GHz), dual core processor			✓	✓		
	Intel Pentium Silver N5000 (1.1-GHz, turbo up to 2.7-GHz, quad core) processor				✓		
Chet	Integrated soldered-on-circuit (SoC)	✓	✓	✓	✓	✓	✓
Graphics	<b>Internal Graphics:</b>	✓	✓	✓	✓	✓	✓
	Intel HD Graphics 405 (Pentium N3710 processor)		✓			✓	✓
	Intel HD Graphics 400 (Celeron N3060 processor)	✓	✓			✓	✓
	Intel HD Graphics (Celeron N3050 processor)	✓					
	Intel UHD Graphics 600 (Celeron N4000 processor)			✓	✓		
	Intel UHD Graphics 605 (Pentium N5000 processor)			✓	✓		
	Support for HD decode, DX12, and high-definition multimedia interface (HDMI)	✓	✓	✓	✓	✓	✓
Panel	11.6-in, high-definition (HD), white light-emitting diode (WLED), AntiGlare, (1366×768), slim (3.0-mm), SVA, eDP, 16:9 ultra wide aspect ratio; typical brightness: 220 nits	✓	✓	✓	✓	✓	✓
	11.6-in, HD, WLED, AntiGlare, (1366×768), slim (3.0-mm), UWVA, eDP, 16:9 ultra wide aspect ratio; typical brightness: 220 nits	✓	✓	✓	✓	✓	✓

Category	Description	Stream x360 (11-aa0XX)		Stream x360 (11-aa1XX)		x360 (11-ab0XX)	
		On-board memory	eMMC	eMMC	HDD/SSD	HDD/SSD	eMMC
Memory	TouchScreen solution with flush glass, MultiTouch enabled	√	√	√	√	√	√
	One memory slot (non-accessible/non-upgradeable)		√	√	√	√	√
	Support for DDR3L-1600 single channel		√			√	√
	Support for DDR4-2400 single channel			√	√		
	Support for up to 4096-MB system memory (4096-MB × 1)		√	√	√	√	√
	Support for up to 8192-MB system memory (8192-MB × 1)				√	√	
	Support for up to 2048-MB on-board system memory	√		√	√		
	Support for DDR3L-1600 single channel	√					
Storage	<b>Single hard drive configurations</b>	√	√		√	√	
	Support for 500 GB, 5400-rpm, 7.0 mm, 2.5-inch hard drive				√	√	
	Support for Accelerometer hard drive protection				√	√	
	<b>Embedded MultiMedia Controller (eMMC) configurations</b>	√	√	√			√
	32 GB	√	√	√			√
	64 GB (Celeron N3060 only)		√				√
	<b>Single solid-state drive configurations:</b>				√	√	
	128 GB, SATA Value (DRAM-less) TLC, M.2 (Pentium N3710 only)					√	
	128 GB, SATA, TLC, M.2				√	√	
Audio and video	Integrated VGA webcam with indicator light, 640×480 by 24 frames per second	√	√	√	√	√	√
	Single digital microphone	√	√	√	√	√	√
	Enable HP Noise Cancellation	√	√	√	√	√	√
	Two speakers	√	√	√	√	√	√
	DTS Studio Sound	√	√			√	√
Sensors	Accelerometer (Invensense MPU-6500)	√	√	√	√	√	√
	Accelerometer (for hard drive protection: ST HP2DCTR)	√	√	√	√	√	√
	Accelerometer (for display panel rotation detection and to lock keyboard and TouchPad function: BSW: SensorTek STK8313)	√	√	√	√	√	√
	E-compass (E-compass: AKM AK09911C)	√	√	√	√	√	√

Category	Description	Stream x360 (11-aa0XX)		Stream x360 (11-aa1XX)		x360 (11-ab0XX)	
		On-board memory	eMMC	eMMC	HDD/SSD	HDD/SSD	eMMC
Wireless	Gyroscope (Invensense MPU-6500)	✓	✓	✓	✓	✓	✓
	Sensor hub (BSW: Discrete Sensor Hub - ITEIT8353)	✓	✓	✓	✓	✓	✓
	Integrated wireless local area network (WLAN) options by way of wireless module	✓	✓	✓	✓	✓	✓
	Integrated wireless options with dual antennas (M.2/PCIe):	✓	✓		✓	✓	✓
	<ul style="list-style-type: none"> <li>Intel Dual Band Wireless-AC 7265 802.11 AC 2×2 WiFi + Bluetooth 4.2 Combo Adapter (non vPro)</li> </ul>	✓	✓				✓
	<ul style="list-style-type: none"> <li>Intel Dual Band Wireless-AC 3168 802.11 AC 1×1 WiFi + Bluetooth 4.2 Combo Adapter (non vPro)</li> </ul>					✓	✓
	<ul style="list-style-type: none"> <li>Realtek RTL8822BE 802.11 ac 2x2 WiFi + BT 4.2 Combo Adapter (MU-MIMO supported)</li> </ul>	✓	✓		✓		✓
	Integrated wireless options with single antenna (M.2/PCIe):				✓		✓
	<ul style="list-style-type: none"> <li>Realtek RTL8723BE-VB 802.11b/g/n 1×1 WiFi + Bluetooth 4.0 Combo Adapter</li> </ul>					✓	✓
	<ul style="list-style-type: none"> <li>Realtek RTL8723BE 802.11b/g/n 1x1 Wi-Fi + BT4.0 Combo Adapter</li> </ul>						✓
External card expansion	Realtek RTL8723DE 802.11 bgn 1x1 WiFi + Bluetooth 4.2 Combo Adapter				✓		
	Realtek RTL8821CE 802.11 ac 1x1 WiFi + BT 4.2 Combo Adapter (MU-MIMO supported)				✓		
	Compatible with Miracast-certified devices	✓	✓	✓	✓	✓	✓
Internal card expansion	Standard HP Multi-Format Digital Media Card Reader	✓	✓	✓	✓	✓	✓
	Supports SD/SDHC/SDXC	✓	✓	✓	✓	✓	✓
	Push-push insertion/removal	✓	✓	✓	✓	✓	✓
Ports	One M.2 slot for WLAN	✓	✓	✓	✓	✓	✓
Ports	HP Smart Plug AC adapter	✓	✓	✓	✓	✓	✓
	Headphone/microphone combo jack	✓	✓	✓	✓	✓	✓
	High-definition multimedia interface (HDMI) v. 1.4, supporting up to 1920×1080 at 60 Hz	✓	✓	✓	✓	✓	✓
	USB 3.0 port	✓	✓	✓	✓	✓	✓
	USB 2.0 ports (2)	✓	✓	✓	✓	✓	✓

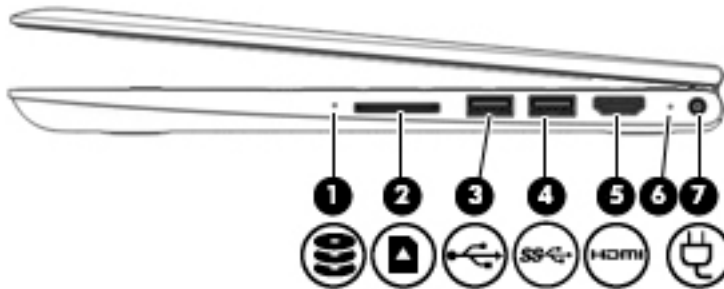
Category	Description	Stream x360 (11-aa0XX)	Stream x360 (11-aa1XX)		x360 (11-ab0XX)		
		On-board memory	eMMC	eMMC	HDD/SSD	HDD/SSD	eMMC
<b>Keyboard/pointing devices</b>	Full-sized, textured, island-style keyboard	✓	✓	✓	✓	✓	✓
	<b>Touchpad requirements:</b>	✓	✓	✓	✓	✓	✓
	TouchPad with image sensor	✓	✓	✓	✓	✓	✓
	Multitouch gestures enabled	✓	✓	✓	✓	✓	✓
	Supports Modern Trackpad Gestures	✓	✓	✓	✓	✓	✓
	Taps enabled as default	✓	✓	✓	✓	✓	✓
<b>Power requirements</b>	<b>Battery</b>	✓	✓	✓	✓	✓	✓
	Support for a 3-cell, 41-WHr, Li-ion battery	✓	✓	✓	✓	✓	✓
	<b>AC adapter</b>	✓	✓	✓	✓	✓	✓
	65-W HP Smart AC adapter (non-PFC, EM, 4.5-mm)				✓	✓	
	45-W HP Smart AC adapter (non-PFC, RC, 4.5-mm, non-slim)	✓	✓	✓	✓	✓	✓
	<b>Power cord</b>	✓	✓	✓	✓	✓	✓
	1 meter power cord	✓	✓	✓	✓	✓	✓
	1 meter conventional power cord with sticker label (C5)				✓	✓	
<b>Security</b>	Trusted platform module (TPM) 2.0 (firmware based)	✓	✓	✓	✓	✓	✓
	Security cable lock						
<b>Operating system</b>	<b>Preinstalled:</b>	✓	✓	✓	✓	✓	
	Windows 10	✓	✓	✓	✓	✓	
	Windows 10 Home in S Mode (Entry)(only available for eMMC models)		✓	✓			✓
	<b>For developed market (ML):</b>	✓	✓	✓		✓	✓
	Stream Windows 10 Home Entry ML 64 Compact 2-in-1	✓	✓	✓			
	Stream Windows 10 Home Value ML 2-in-1 Compact		✓				
	Windows 10 Home Value ML 64-bit 2-in-1)					✓	
	Windows 10 Home ML 64-bit			✓	✓	✓	
	Windows 10 Home Entry ML 64-bit Compact 2-in-1						✓
	HP Windows 10 Home Value ML 2-in-1 Compact						✓
	<b>For Emerging Market (EM/SL):</b>	✓	✓			✓	







Category	Description	Stream x360 (11-aa0XX)		Stream x360 (11-aa1XX)		x360 (11-ab0XX)	
		On-board memory	eMMC	eMMC	HDD/SSD	HDD/SSD	eMMC
	Stream Windows 10 Home Entry EM/SL 64 Compact 2-in-1	✓					
	Windows 10 Home Entry EM/SL 64-bit Compact 2-in-1	✓					
	Windows 10 Home EM/SL 64-bit				✓	✓	
	Windows 10 Home EM/SL 64 SEAP (APJ)					✓	
	Windows 10 Home SL(EM) INDONESIA PPP 64				✓	✓	
	Windows 10 Home SL(EM) APAC PPP 64				✓	✓	
	Windows 10 Home SL(EM) India PPP 64				✓		
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're located, and how they work.

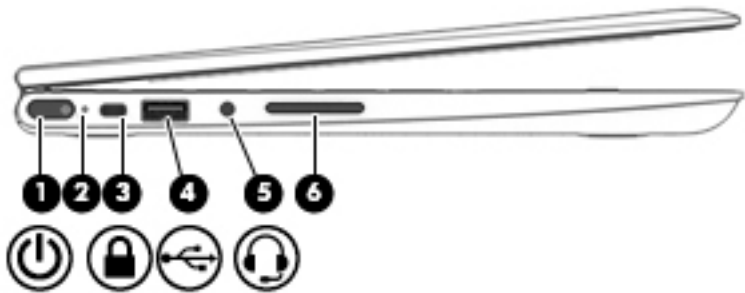
### Right side








Component	Description
(1) 	<p>Drive light</p> <ul style="list-style-type: none"><li>Blinking white: The hard drive is being accessed.</li><li>Amber: HP 3D DriveGuard has temporarily parked the hard drive.</li></ul> <p><b>NOTE:</b> The drive light functions on select products only.</p>
(2) 	<p>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>Hold the card label-side up, with connectors facing the computer.</li><li>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>
(3) 	<p>USB port</p> <p>Connects a USB device, such as a cell phone, camera, activity tracker, or smartwatch, and provides data transfer.</p>
(4) 	<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>
(5) 	<p>HDMI port</p> <p>Connects an optional video or audio device, such as a high-definition television, any compatible digital or audio component, or a high-speed High-Definition Multimedia Interface (HDMI) device.</p>
(6) 	<p>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>Blinking white: The AC adapter is disconnected and the battery has reached a low battery level.</li><li>Amber: The AC adapter is connected and the battery is charging.</li></ul>

Component		Description
		<ul style="list-style-type: none"> <li>Off: The battery is not charging.</li> </ul>
(7)		Power connector Connects an AC adapter.

# Left side



Component		Description
(1)		Power button <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.</li> <li>When the computer is in Hibernation, press the button briefly to exit Hibernation.</li> </ul> <p><b>CAUTION:</b> Pressing and holding down the power button results in the loss of unsaved information.</p> <p>If the computer has stopped responding and shutdown procedures are ineffective, press and hold the power button down for at least 5 seconds to turn off the computer.</p> <p>To learn more about your power settings, see your power options:</p> <p>▲ Right-click the <b>Power</b> icon , and then select <b>Power Options</b>.</p>
(2)		Power light <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> <li>Off: The computer is off or in Hibernation. Hibernation is a power-saving state that uses the least amount of power.</li> </ul>
(3)		Security cable slot <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>
(4)		USB port <p>Connects a USB device, such as a cell phone, camera, activity tracker, or smartwatch, and provides data transfer.</p>
(5)		Audio-out (headphone)/ Audio-in (microphone) combo jack <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>

Component		Description
		<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, refer to the <i>Regulatory, Safety, and Environmental Notices</i>.</p> <p>To access this guide:</p> <ul style="list-style-type: none"> <li>▲ Select the <b>Start</b> button, select <b>HP Help and Support</b>, and then select <b>HP Documentation</b>.</li> </ul> <p><b>NOTE:</b> When a device is connected to the jack, the computer speakers are disabled.</p>
(6)	Volume button	Controls speaker volume on the computer.

# Display



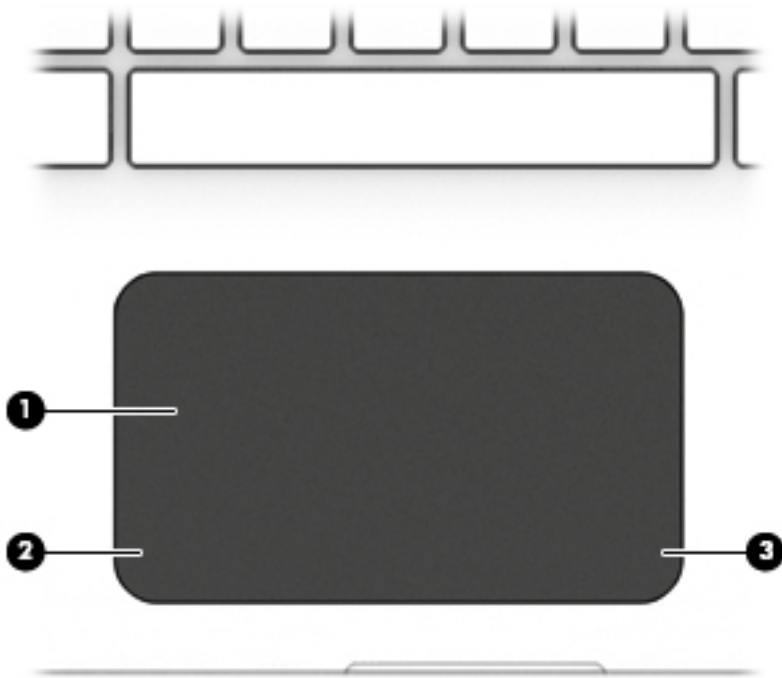
Component		Description
(1)	WLAN antennas (one or two depending on model)*	Send and receive wireless signals to communicate with wireless local area networks (WLANs).
(2)	Camera light	On: One or more cameras are in use.
(3)	Camera	Allows you to video chat, record video, and record still images. Some cameras also allow a facial recognition logon to Windows, instead of a password logon.  <b>NOTE:</b> Camera functions vary depending on the camera hardware and software installed on your product.
(4)	Internal microphone	Records sound.

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

Component	Description
For wireless regulatory notices, see the section of the <i>Regulatory, Safety, and Environmental Notices</i> that applies to your country or region.	
To access this guide:	
1.	Type <code>support</code> in the taskbar search box, and then select the <b>HP Support Assistant</b> app.
– or –	
Click the question mark icon in the taskbar.	
2.	Select <b>My PC</b> , select the <b>Specifications</b> tab, and then select <b>User Guides</b> .

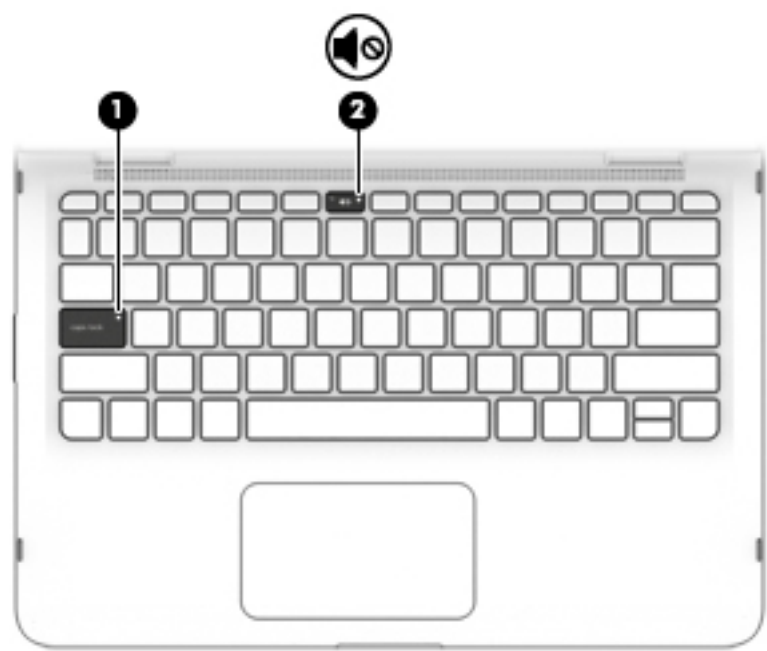
# Keyboard area


## TouchPad



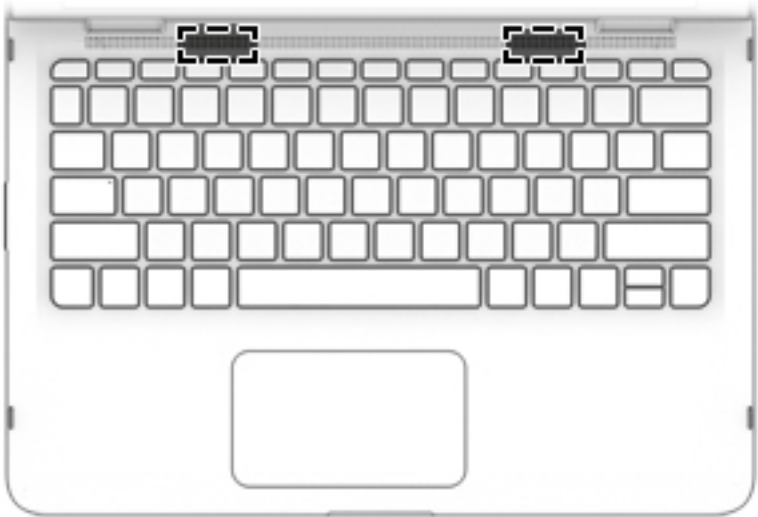
Component		Description
(1)	TouchPad zone	Reads your finger gestures to move the pointer or activate items on the screen.
(2)	Left TouchPad button	Functions like the left button on an external mouse.
(3)	Right TouchPad button	Functions like the right button on an external mouse.

# Lights



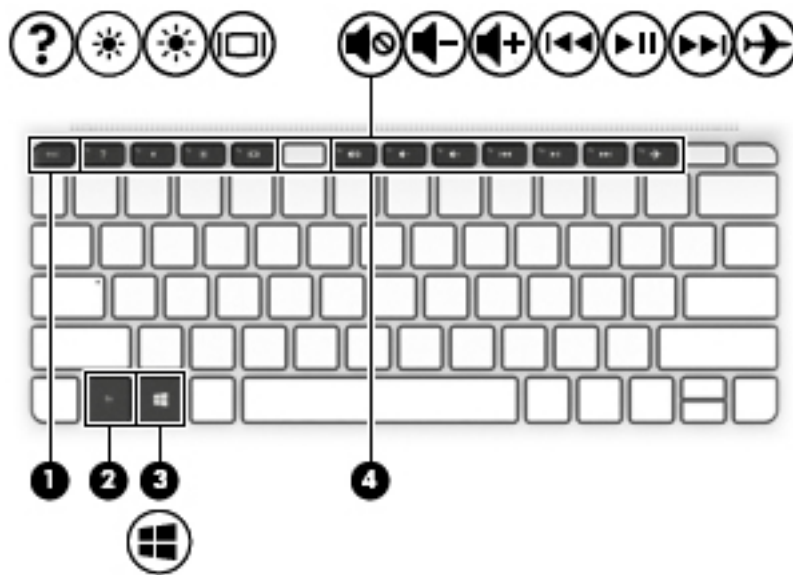
Component		Description
(1)	Caps lock light	On: Caps lock is on, which switches the key input to all capital letters.
(2)	 Mute light	<ul style="list-style-type: none"><li>On: Computer sound is off.</li><li>Off: Computer sound is on.</li></ul>


Speakers



Component	Description
Speakers	Produce sound.

## Special keys














Component		Description
(1)	esc key	Displays system information when pressed in combination with the <b>fn</b> key.
(2)	fn key	Executes specific functions when pressed in combination with another key.
(3)	 Windows key	Opens the <b>Start</b> menu. <b>NOTE:</b> Pressing the Windows key again will close the <b>Start</b> menu.
(4)	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 12](#).

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

Icon	Description
	Opens the “How to get help in Windows 10” webpage.
	Decreases the screen brightness incrementally as long as you hold down the key.
	Increases the screen brightness incrementally as long as you hold down the key.
	Switches the screen image between display devices connected to the system. For example, if a monitor is connected to the computer, repeatedly pressing this key alternates the screen image from the computer display to the monitor display to a simultaneous display on both the computer and the monitor.
	Mutes or restores speaker sound.
	Decreases speaker volume incrementally while you hold down the key.
	Increases speaker volume incrementally while you hold down the key.
	Plays the previous track of an audio CD or the previous section of a DVD or a Blu-ray Disc (BD).
	Starts, pauses, or resumes playback of an audio CD, a DVD, or a BD.
	Plays the next track of an audio CD or the next section of a DVD or a BD.
	Turns the airplane mode and wireless feature on or off. <b>NOTE:</b> The airplane mode key is also referred to as the wireless button. <b>NOTE:</b> A wireless network must be set up before a wireless connection is possible.

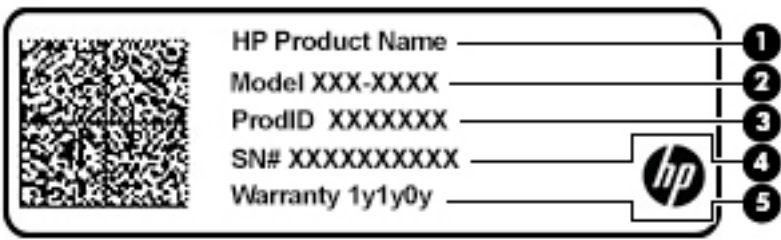
# Labels

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.

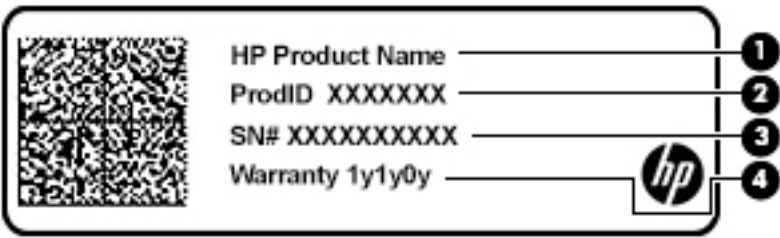
 **IMPORTANT:** Check the following locations for the labels described in this section: the bottom of the computer, inside the battery bay, under the service door, on the back of the display, or on the bottom of a tablet kickstand.

- **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.



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



Component	
(1)	HP product name (select products only)
(2)	Product ID

Component	
(3)	Serial number
(4)	Warranty period

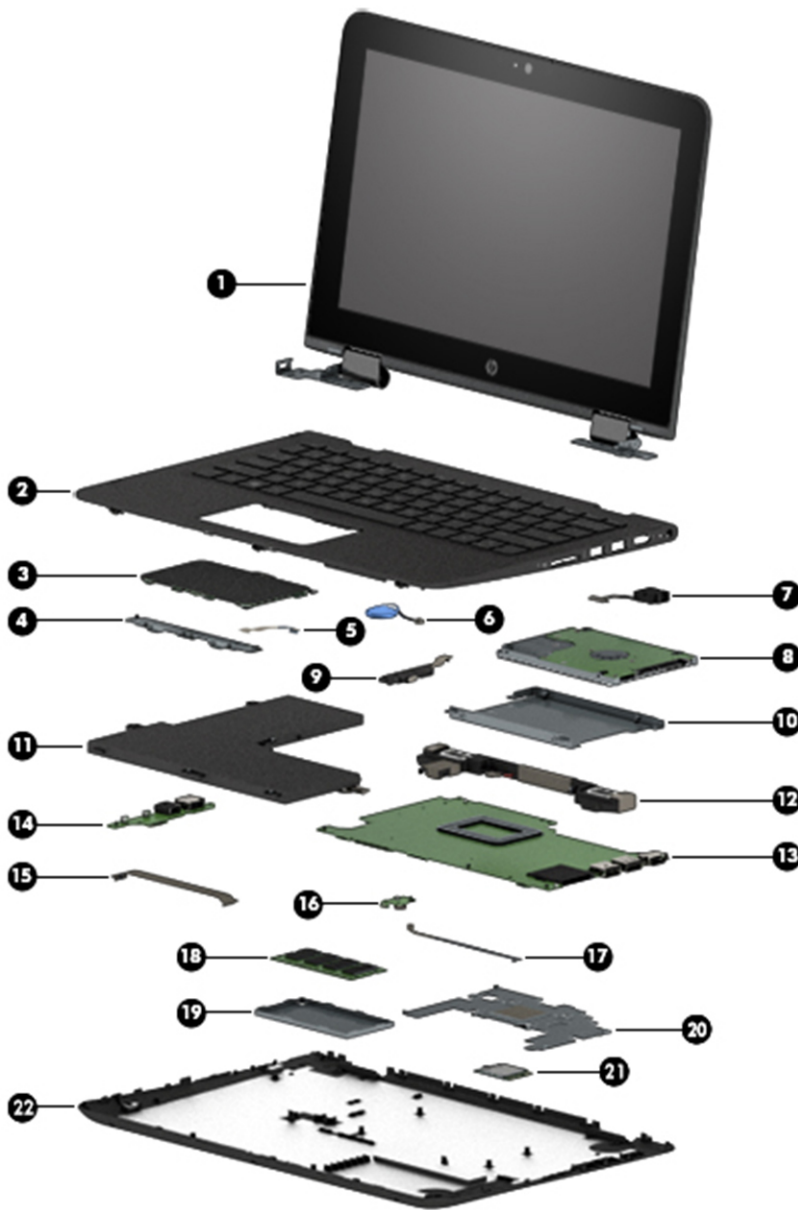
- Regulatory label(s)—Provide(s) regulatory information about the computer.
- Wireless certification label(s)—Provide(s) information about optional wireless devices and the approval markings for the countries or regions in which the devices have been approved for use.

## 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

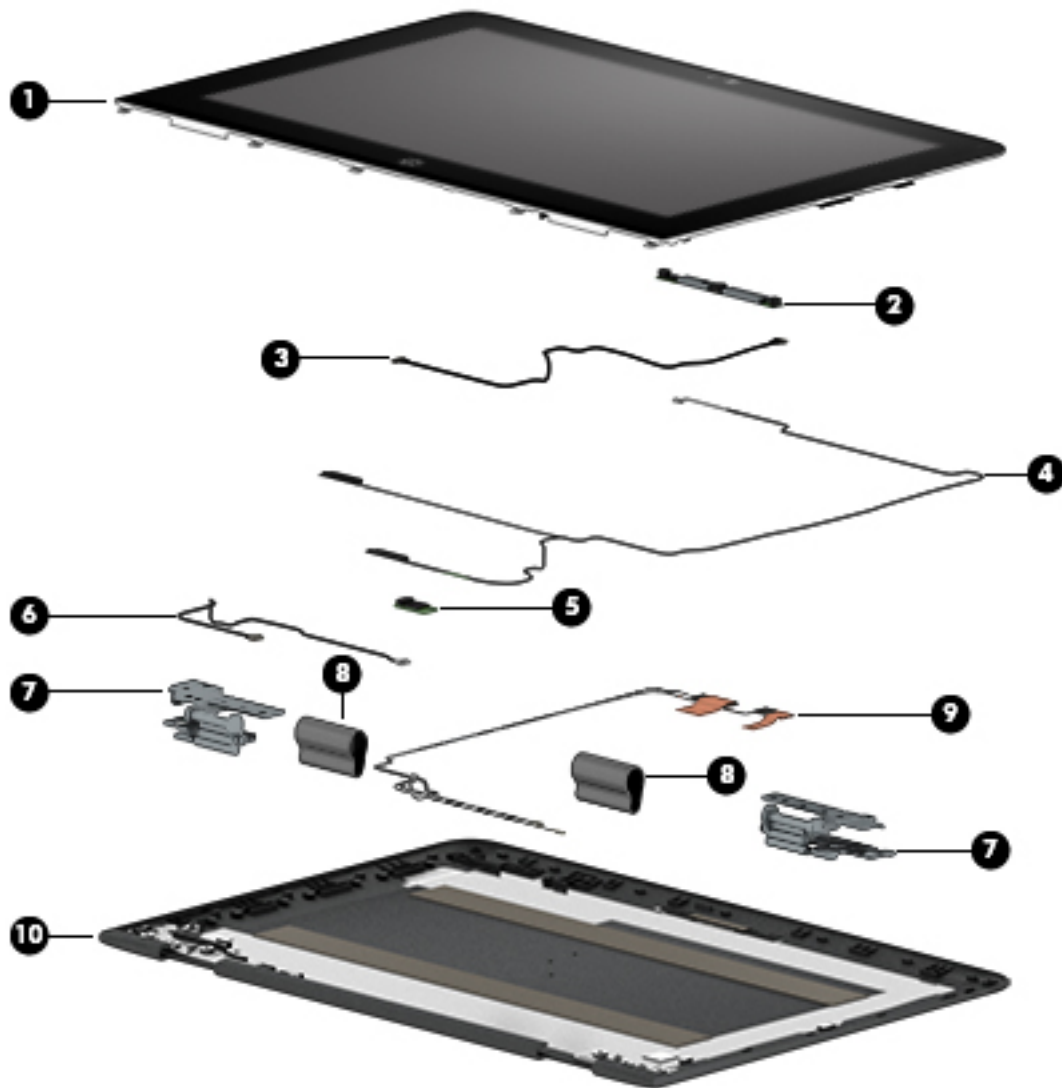


Item	Component	Spare part number
(1)	<b>Display assembly:</b> The display assembly is spared at the subcomponent level only. For more display assembly spare part information, see <a href="#">Display assembly subcomponents on page 20</a> .	
(2)	<b>Top cover with keyboard</b> (includes keyboard cable):  For a list of keyboard country codes, see <a href="#">Top cover with keyboard on page 67</a> .	
	In aqua blue finish	917042-xx1
	In jet black finish	917040-xx1
	In snow white finish	912834-xx1
	In violet purple finish	917041-xx1
	In infinity purple finish	L21645-xx1
(3)	<b>TouchPad</b> (includes bracket and double-sided adhesive):  <b>NOTE:</b> The TouchPad spare part kit does not include the TouchPad cable. The TouchPad cable is available using spare part number 906781-001.	
	In aqua blue finish	911119-001
	In jet black finish	911118-001
	In snow white finish	912835-001
	In violet purple finish	906786-001
	In infinity purple finish	L21648-001
(4)	<b>TouchPad bracket</b> (included in the TouchPad spare part kit)	
(5)	<b>TouchPad cable</b> (includes double-sided adhesive)	906781-001
(6)	<b>RTC battery</b> (includes cable and double-sided adhesive)	818125-001
(7)	<b>Power connector cable</b>	913730-001
(8)	<b>Hard drive</b> (500-GB, 5400-rpm, SATA, 7.0-mm)  <b>NOTE:</b> The hard drive spare part kit does not include the hard drive bracket, hard drive cable, or screws. The hard drive bracket, hard drive cable, and screws are included in the Hard Drive Hardware Kit, spare part number 906770-001.	778186-005
	<b>Hard Drive Hardware Kit</b> , includes:	906770-001
(9)	Hard drive bracket	
(10)	Hard drive cable  Hard drive bracket screws (not illustrated)	
(11)	<b>Battery</b> (3-cell, 40-WHr, 3.615-AHr, Li-ion; includes cable)	844201-856
(12)	<b>Speakers</b> (includes left and right speakers and cables)	906785-001
(13)	<b>System board</b> (includes replacement thermal material and equipped with the following processors):  All system boards use the following part numbers:  xxxxxx-001: Non-Windows operating systems  xxxxxx-601: Windows operating system	
	Intel Pentium N3710 processor, 32-GB of eMMC system storage	910147-xx1

Item	Component	Spare part number
	Intel Pentium N3710 processor	906724-xx1
	Intel Celeron N3060 processor, 2.0-GB of onboard system memory, 32-GB of eMMC system storage	908424-xx1
	Intel Celeron N3060 processor, 32-GB of eMMC system storage	908423-xx1
	Intel Celeron N3060 processor	906723-xx1
	Intel Celeron N3050 processor, 2.0-GB of onboard system memory, 32-GB of eMMC system storage	906725-xx1
	Intel Pentium N5000 processor	L16636-xx1
	Intel Celeron N4000 processor, 32-GB of eMMC system storage	L17290-xx1
	Intel Celeron N4000 processor	L16635-xx1
	Intel Celeron N3060 processor, 64-GB of eMMC system storage	L04400-xx1
(14)	<b>Connector board</b> (includes volume button actuators, audio combo jack, and USB 2.0 port) <b>NOTE:</b> The connector board spare part kit does not include the connector board cable. The connector board cable is available using spare part number 906784-001.	906783-001
(15)	<b>Connector board cable</b>	906784-001
(16)	<b>Power button board</b> <b>NOTE:</b> The power button board spare part kit does not include the power button cable. The power button cable is available using spare part number 906777-001.	910162-001
(17)	<b>Power button board cable</b>	906777-001
(18)	<b>Memory modules</b>	
	For use with Celeron N3050, Celeron N3060, and Pentium N3710 processors	
	• 4 GB (PC3L-1600)	691740-005
	• 8 GB (PC3L-1600)	693374-005
	For use in models with Celeron N4000 and Pentium N5000 processors	
	• 4 GB (PC4-2400)	862397-855
	• 8 GB (PC4-2400)	862398-855
(19)	<b>Memory module shield</b>	910157-001
(20)	<b>Heat sink</b> (includes replacement thermal material)	
	For use in models with on-board system memory	910302-001
	For use in models with SODIMMs	910158-001
(21)	<b>WLAN module:</b>	
	Intel Dual Band Wireless-AC 7265 802.11 AC 2×2 WiFi + Bluetooth 4.2 Combo Adapter (non vPro)	793840-005
	Intel Dual Band Wireless-AC 3168 802.11 AC 1×1 WiFi + Bluetooth 4.2 Combo Adapter (non vPro)	863934-855
	Realtek RTL8723BE-VB 802.11b/g/n 1×1 WiFi + Bluetooth 4.0 Combo Adapter	855106-855
	Realtek RTL8822BE 802.11 ac 2x2 WiFi + BT 4.2 Combo Adapter	924813-855

Item	Component	Spare part number
	Realtek RTL8821CE 802.11 ac 1x1 WiFi + BT 4.2 Combo Adapter	L17365-005
	Realtek RTL8723DE 802.11 bgn 1x1 WiFi + BT 4.2 Combo Adapter	L21480-005
<b>(22)</b>	<b>Base enclosure:</b>	
	In aqua blue finish	908296-001
	In jet black finish	906782-001
	In snow white finish	912833-001
	In violet purple finish	908295-001
	In infinity purple finish	L21647-001
	<b>Solid-state drives:</b> (not illustrated)	
	128-GB, SATA-3, TLC	L17297-001
	128-GB, SATA-3	918858-001
	<b>Solid-state drive hardware kit</b> (includes bracket, cable, Mylar, and screws; not illustrated)	918701-001
	<b>Solid-state drive board</b> (not illustrated)	918702-001
	<b>Rubber Kit</b> (not illustrated, includes 2 rubber feet, grounding pads, hard drive pads, and shielding):	
	In aqua blue finish	910166-001
	In jet black finish	910164-001
	In snow white finish	912836-001
	In violet purple finish	910165-001
	In infinity purple finish	L21649-001

## Display assembly subcomponents



Item	Component	Spare part number
(1)	<b>Display panel assembly</b> (includes bezel, panel, and TouchScreen board):	
	11.6-in, HD, WLED, AntiGlare (1366×768), slim (3.0-mm), SVA, eDP	906791-001
	11.6-in, HD, WLED, AntiGlare (1366×768), slim (3.0-mm), IPS/UWA, eDP	906792-001
(2)	<b>Webcam/microphone module</b> (includes double-sided adhesive)	907345-001
(3)	<b>TouchScreen board cable</b>	910163-001
(4)	<b>Display panel cable</b> (includes webcam/microphone module cable):	906776-001
(5)	<b>G-sensor module</b> (includes double-sided adhesive)	906774-001
(6)	<b>G-sensor module cable</b>	906778-001
(7)	<b>Display hinges</b> (2, include left and right display hinges)	906771-001
(8)	<b>Display hinge covers</b> (2, include left and right display covers)	

Item	Component	Spare part number
	For use in jet black, violet purple, and aqua blue models	906772-001
	For use in snow white models	917184-001
	For use in infinity purple models	L21709-001
<b>(9)</b>	<b>Wireless antenna</b> (includes left and right wireless cables and transceivers)	906780-001
<b>(10)</b>	<b>Display back cover</b> (includes rubber padding and shielding):	
	In aqua blue finish	908294-001
	In jet black finish	906775-001
	In snow white finish	912832-001
	In violet purple finish	908293-001
	In infinity purple finish	L21646-001

## Miscellaneous parts

Component	Spare part number
<b>AC adapter:</b>	
65-W HP Smart AC adapter (non-PFC, EM, 4.5-mm)	714635-850
45-W HP Smart AC adapter (non-PFC, RC, 4.5-mm, non-slim)	741553-850
<b>HP HDMI-to-VGA adapter</b>	701943-001
<b>HP USB external DVD±RW DL SuperMulti Drive</b>	747080-001
<b>HP USB-to-Gigabit RJ45 adapter</b>	829941-001
<b>Power cord</b> (C5 receptacle, 1.0-m (3.2-ft), 3-wire conductor):	
For use in Argentina	401300-007
For use in Australia	213356-008
For use in Brazil	438722-004
For use in Denmark	213353-008
For use in Europe	213350-009
For use in India	404827-003
For use in Israel	398063-003
For use in Italy	213352-008
For use in Japan	349756-002
	226768-001
For use in North America	213349-009
For use in Switzerland	213354-008
For use in Taiwan	393313-003
For use in Thailand	285096-006
For use in the United Kingdom and Singapore	213351-008
<b>Power cord</b> (Option-917, 3-cord, 1.00-m, ROHS)	361240-002
<b>Rubber Kit</b> (includes 2 rubber feet, grounding pads, hard drive pads, and shielding):	
In aqua blue finish	910166-001
In jet black finish	910164-001
In snow white finish	912836-001
In violet purple finish	910165-001
In infinity purple finish	L21649-001
<b>Screw Kit</b>	906773-001

---

## 4 Removal and replacement preliminary requirements

### Tools required


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

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

### Service considerations

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


---

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

---

### Plastic parts


---

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

---

## Cables and connectors

---


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

---

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

## Drive handling

---

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

---

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

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

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

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

Avoid dropping drives from any height onto any surface.

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

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

Avoid exposing a drive to temperature extremes or liquids.

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

---


# Grounding guidelines

## Electrostatic discharge damage

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

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

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

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


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

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

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

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

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

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

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

## Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

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

## Workstation guidelines

Follow these grounding workstation guidelines:

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

## Equipment guidelines

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

- When seated, wear a wrist strap connected to a grounded system. Wrist straps are flexible straps with a minimum of one megohm  $\pm 10\%$  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 one megohm resistance between the operator and ground. To be effective, the conductive must be worn in contact with the skin.


The following grounding equipment is recommended to prevent electrostatic damage:

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

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


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

## 5 Removal and replacement procedures

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


### Component replacement procedures

 **NOTE:** Details about the computer, including model, serial number, product key, and length of warranty, are on the service tag on the back of the computer. See [Labels on page 14](#) for details.

This chapter provides removal and replacement procedures.

There are as many as 56 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.

#### Bottom cover

 **NOTE:** The bottom cover spare part kit includes 4 rubber feet, grounding pads, hard drive pads, and shielding.

Description	Spare part number
Bottom cover in aqua blue finish	908296-001
Bottom cover in jet black finish	906782-001
Bottom cover in snow white finish	912833-001
Bottom cover in violet purple finish	908295-001
Bottom cover in infinity purple finish	L21647-001

Before disassembling the computer, follow these steps:

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

Remove the bottom cover:

1. Close the computer.
2. Turn the computer upside down with the front toward you.
3. Detach the two rear rubber feet **(1)**.

The rubber feet are available in the Rubber Kit, using the following spare part numbers:

910166-001 – For use on computer models in aqua blue finish

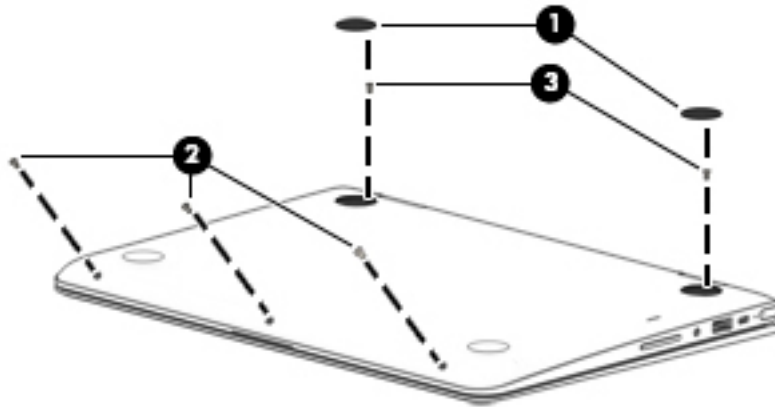
910164-001 – For use on computer models in jet black finish

912836-001 – For use on computer models in snow white finish

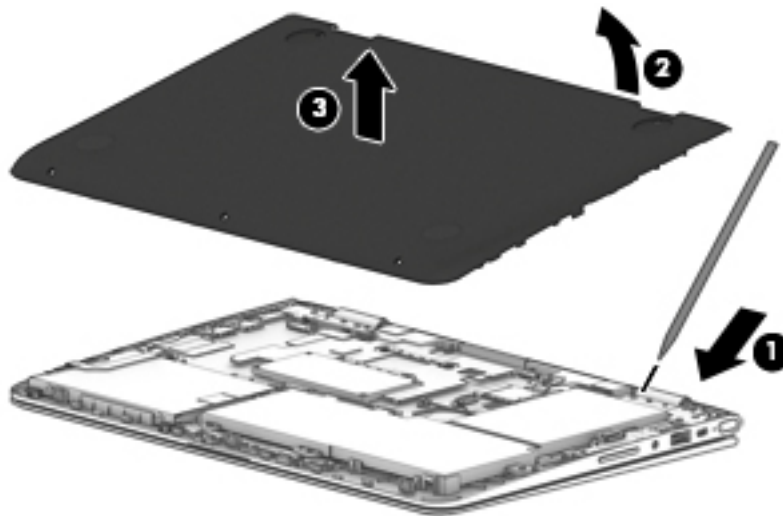
910165-001 – For use on computer models in violet purple finish

L21649-001 – For use on computer models in infinity purple finish

4. Remove the three Phillips M2.5×4.3 screws **(2)** and the two Phillips M2.5×6.3 screws **(3)** that secure the bottom cover to the computer.



5. Insert a case utility tool **(1)** or similar plastic, flat-edged tool between the bottom cover and the computer near the display hinge area.
6. Release the bottom cover **(2)** by swinging the rear edge up and forward until it releases.
7. Remove the bottom cover **(3)**.



Reverse this procedure to install the bottom cover.

## Battery

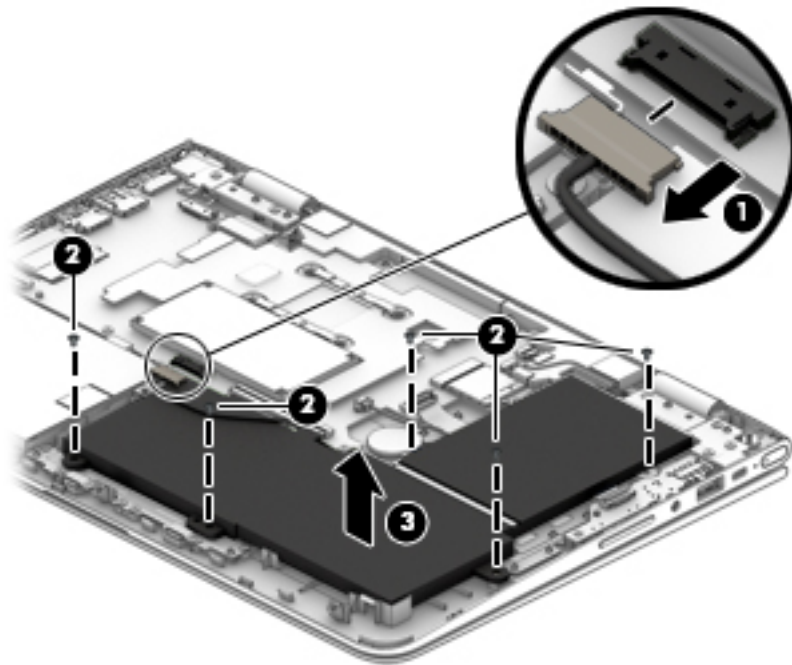
Description	Spare part number
Battery (3-cell, 40-WHr, 3.615-AHr, Li-ion; includes cable)	844201-856

Before removing the battery, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 28](#)).

Remove the battery:

1. Disconnect the battery cable (1) from the system board.
2. Remove the five Phillips PM2.0×3.3 screws (2) that secure the battery to the keyboard/top cover.
3. Remove the battery (3).



Reverse this procedure to install the battery.

## Hard drive



**NOTE:** The hard drive spare part kit does not include the hard drive bracket, hard drive cable, or screws. The hard drive bracket, hard drive cable, and screws are included in the Hard Drive Hardware Kit, spare part number 906770-001.

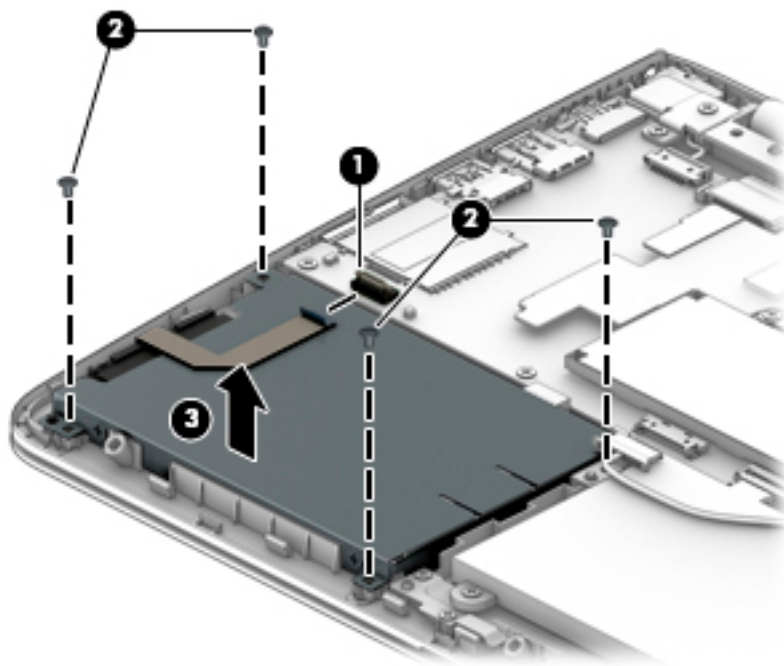
Description	Spare part number
500-GB, 5400-rpm, SATA, 7.0-mm hard drive	778186-005

Before removing the hard drive, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 28](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 30](#)).

Remove the hard drive:

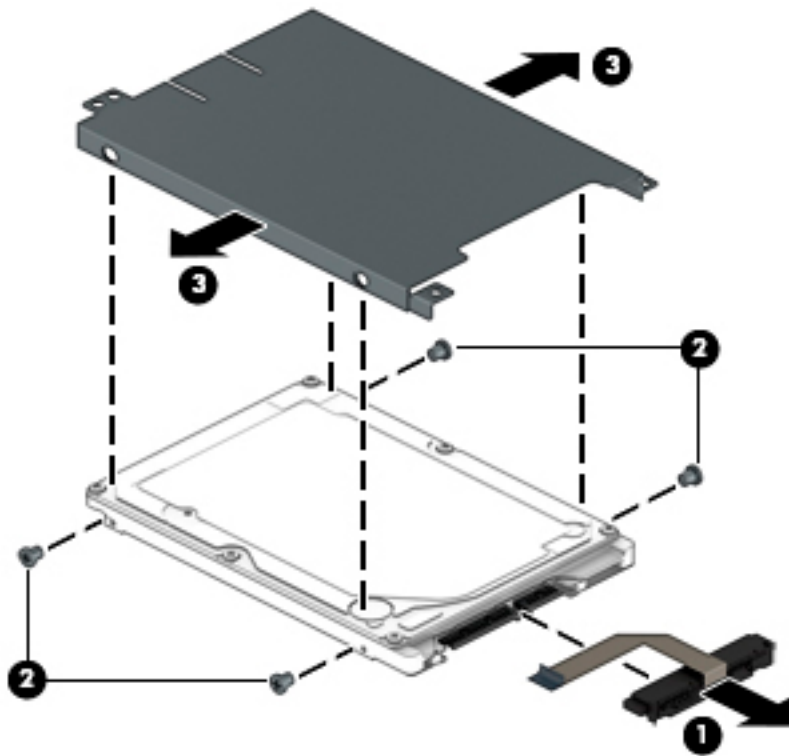
1. Release the zero insertion force (ZIF) connector **(1)** to which the hard drive cable is connected, and then disconnect the hard drive cable from the system board.
2. Remove the four Phillips PM2.0×3.3 screws **(2)** that secure the hard drive to the keyboard/top cover.
3. Remove the hard drive **(3)**.



4. If it is necessary to replace the hard drive cable, disconnect the cable **(1)** from the hard drive.

5. If it is necessary to replace the hard drive bracket, remove the four Phillips PM3.0×3.7 screws **(2)** that secure the hard drive bracket to the hard drive, and then remove the bracket **(3)**.

The hard drive bracket, hard drive cable, and screws are included in the Hard Drive Hardware Kit, spare part number 906770-001.



Reverse this procedure to reassemble and install the hard drive.

## Memory module

Description	Spare part number
Memory module, 4 GB (PC3L-1600) for use with Celeron N3050, Celeron N3060, and Pentium N3710 processors	691740-005
Memory module, 8 GB (PC3L-1600) for use with Celeron N3050, Celeron N3060, and Pentium N3710 processors	693374-005
Memory module, 4 GB (PC4-2400) for use in models with Celeron N4000 and Pentium N5000 processors	862397-855
Memory module, 8 GB (PC4-2400) for use in models with Celeron N4000 and Pentium N5000 processors	862398-855

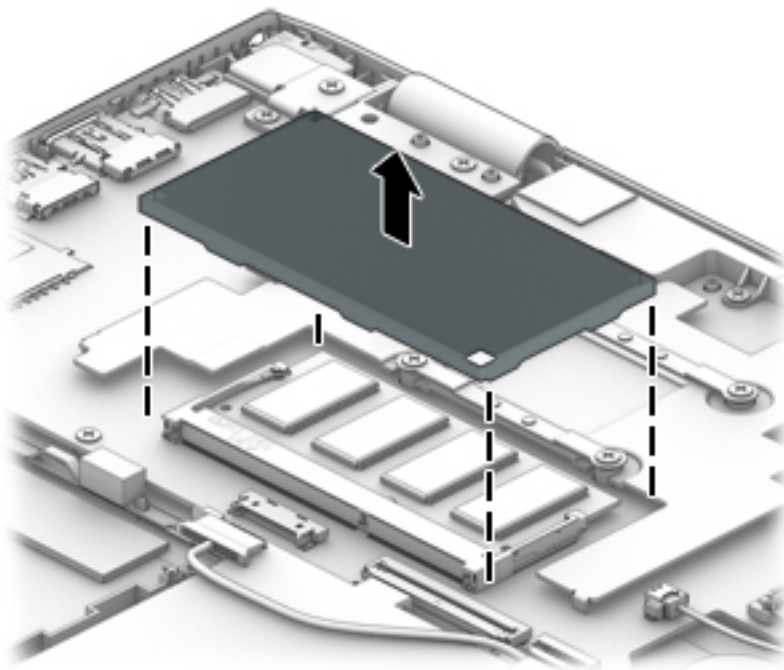
Before removing the memory module, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 28](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 30](#)).

Remove the memory module:

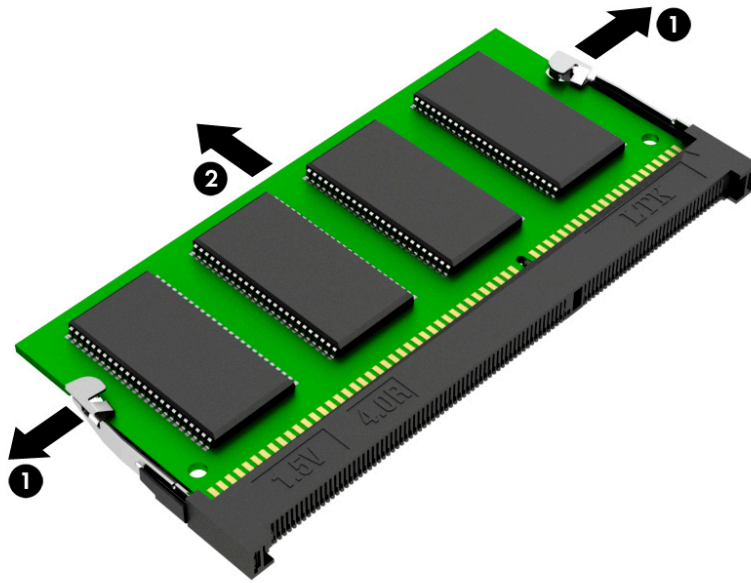
1. Remove the memory module shield.

The memory module shield is available using spare part number 910157-001.



2. Spread the retaining tabs **(1)** on each side of the memory module slot to release the memory module. (The memory module tilts up.)

3. Remove the memory module **(2)** by pulling it away from the slot at an angle.



Reverse this procedure to install the memory module.

## Solid-state drive and hardware

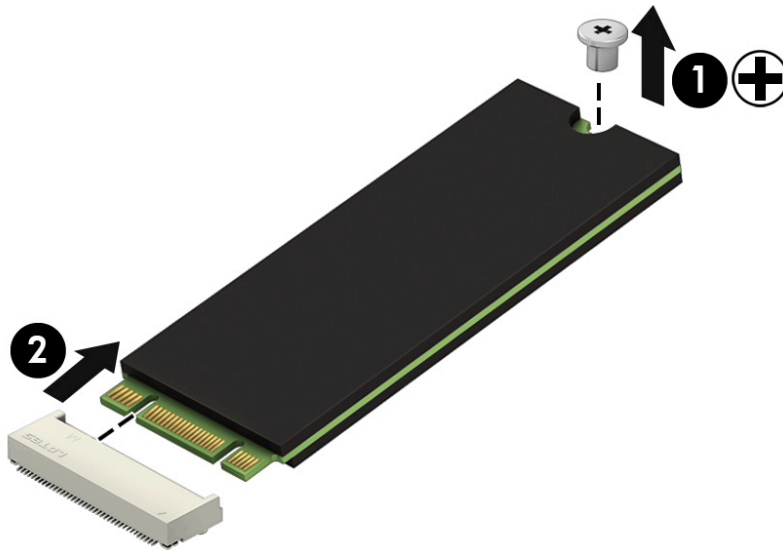
Description	Spare part number
128-GB, SATA-3, TLC	L17297-001
128-GB, SATA-3	918858-001
Solid-state drive hardware kit (includes bracket, cable, Mylar, and screws)	918701-001
Solid-state drive board	918702-001

Before removing the solid-state drive, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 28](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 30](#)).

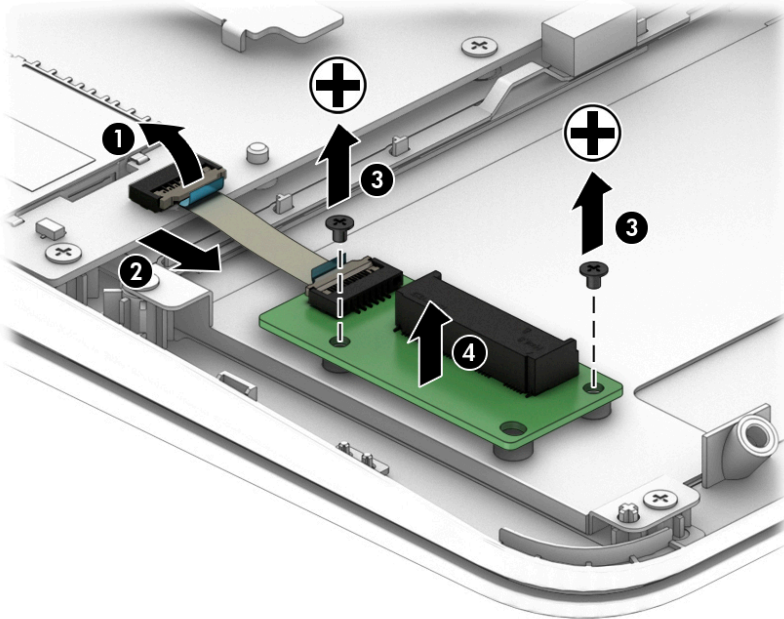
Remove the solid-state drive:

1. Remove the Phillips M2.0×3.0 screw **(1)**, and then pull the solid-state drive module from the socket **(2)**.

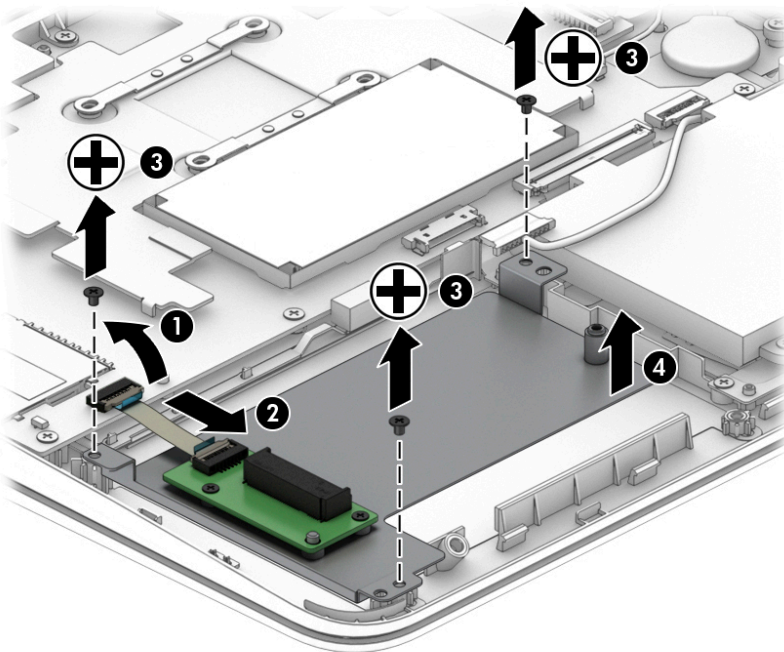


2. If you need to remove solid-state drive board, lift the system board ZIF connector **(1)** and disconnect the cable **(2)**.

3. Remove the two Phillips M2.0×3.0 screws (3), and then remove the board from the holder (4).



4. If you need to remove solid-state drive holder, lift the system board ZIF connector (1) and disconnect the solid-state drive board cable (2).
5. Remove the three Phillips M2.0×3.0 screws (3), and then remove the holder from the computer (4).



Reverse this procedure to install the solid-state drive and hardware.

## RTC battery

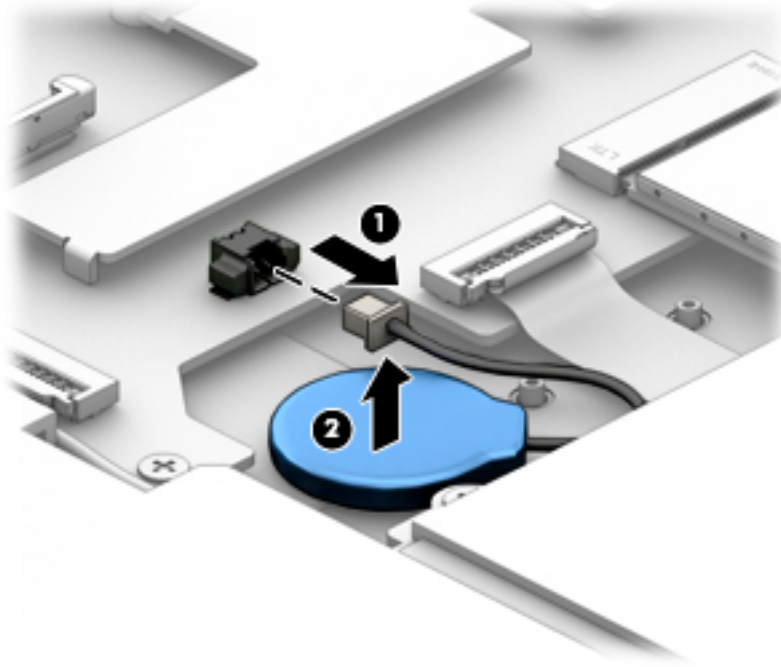
Description	Spare part number
RTC battery (includes cable and double-sided adhesive)	818125-001

Before removing the RTC battery, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 28](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 30](#)).

Remove the RTC battery:

1. Disconnect the RTC battery cable **(1)** from the system board.
2. Detach the RTC battery **(2)** from the keyboard/top cover. (The RTC battery is attached to the keyboard/top cover with double-sided adhesive.)




3. Remove the RTC battery.

Reverse this procedure to install the RTC battery.

## WLAN module

Description	Spare part number
Intel Dual Band Wireless-AC 7265 802.11 AC 2×2 WiFi + Bluetooth 4.2 Combo Adapter (non vPro)	793840-005
Intel Dual Band Wireless-AC 3168 802.11 AC 1×1 WiFi + Bluetooth 4.2 Combo Adapter (non vPro)	863934-855
Realtek RTL8723BE-VB 802.11b/g/n 1×1 WiFi + Bluetooth 4.0 Combo Adapter	855106-855
Realtek RTL8822BE 802.11 ac 2x2 WiFi + BT 4.2 Combo Adapter	924813-855
Realtek RTL8821CE 802.11 ac 1x1 WiFi + BT 4.2 Combo Adapter	L17365-005
Realtek RTL8723DE 802.11 bgn 1x1 WiFi + BT 4.2 Combo Adapter	L21480-005

 **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. 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 bottom cover (see [Bottom cover on page 28](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 30](#)).

Remove the WLAN module:

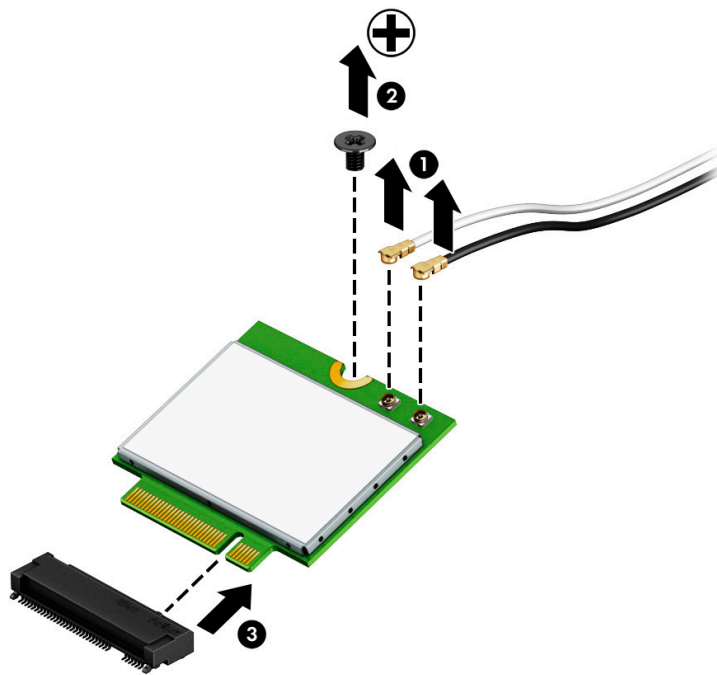
1. Disconnect the WLAN antenna cables **(1)** from the terminals on the WLAN module.




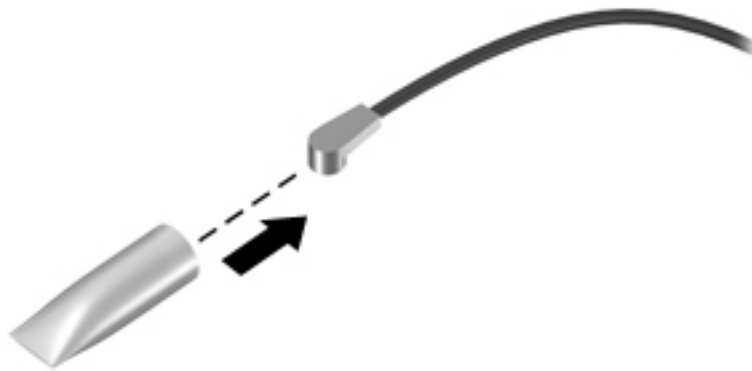
**NOTE:** The #1/white WLAN antenna cable connects to the WLAN module #1/Main terminal. The #2/black WLAN antenna cable connects to the WLAN module #1/Aux terminal.

2. Remove the Phillips PM2.0×3.3 screw **(2)** that secures the WLAN module to the keyboard/top cover. (The WLAN module tilts up.)

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



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



Reverse this procedure to install the WLAN module.

## Power connector cable

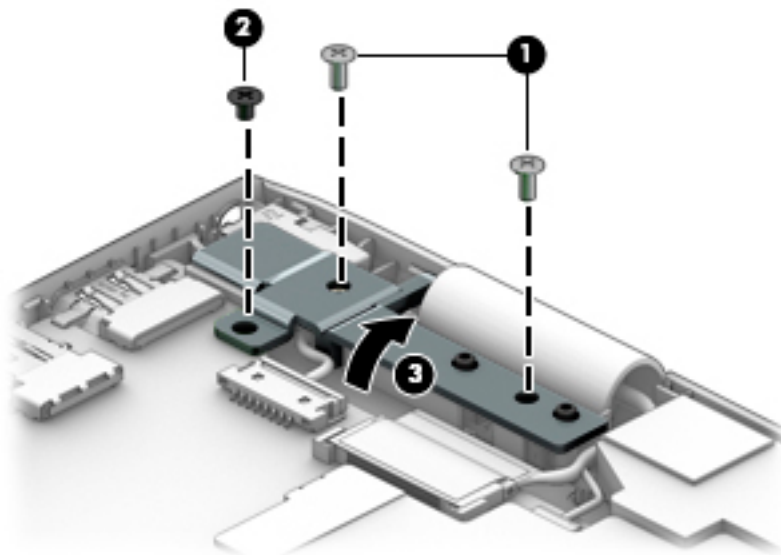
Description	Spare part number
Power connector cable	913730-001

Before removing the power connector 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 bottom cover (see [Bottom cover on page 28](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 30](#)).

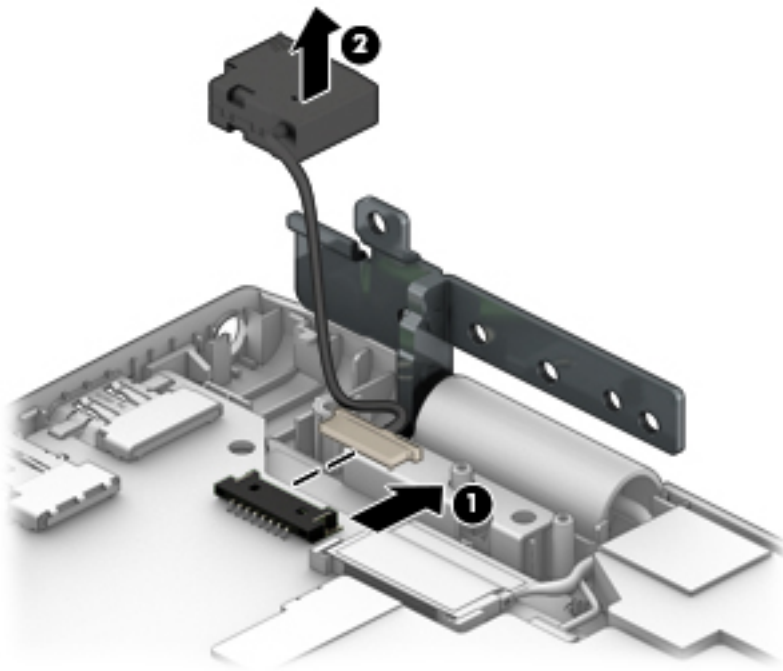
Remove the power connector cable:

1. Remove the two Phillips PM2.5×6.3 screws **(1)** that secure the display right hinge to the keyboard/top cover.
2. Remove the Phillips PM2.5×4.3 screw **(2)** that secures the display right hinge to the keyboard/top cover.
3. Swing the display right hinge **(3)** up and back until the power connector is accessible.



4. Disconnect the power connector cable **(1)** from the system board.

5. Release the power connector **(2)** from the retention molding built into the keyboard/top cover.



6. Remove the power connector cable.

Reverse this procedure to install the power connector cable.

## Speakers

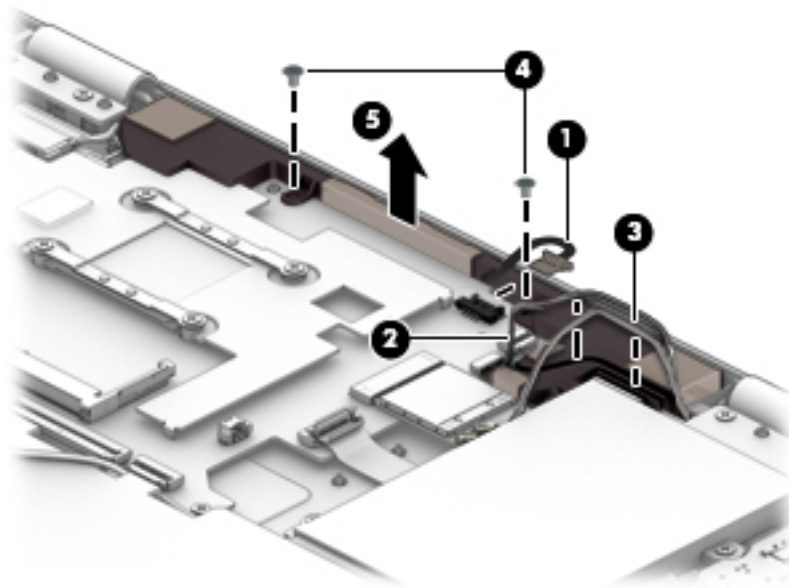
Description	Spare part number
Speakers (includes left and right speakers and cables)	906785-001

Before removing the speakers, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 28](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 30](#)).

Remove the speakers:

1. Disconnect the speaker cable **(1)** from the system board.
2. Release the TouchScreen board cable **(2)** from the routing channel built into the speaker.
3. Release the wireless antenna cables from the retention clips **(3)** and routing channel built into the speaker.
4. Remove the two Phillips PM2.5×4.3 screws **(4)** that secure the speakers to the keyboard/top cover.
5. Remove the speakers **(5)**.



Reverse this procedure to install the speakers.

## Power button board cable

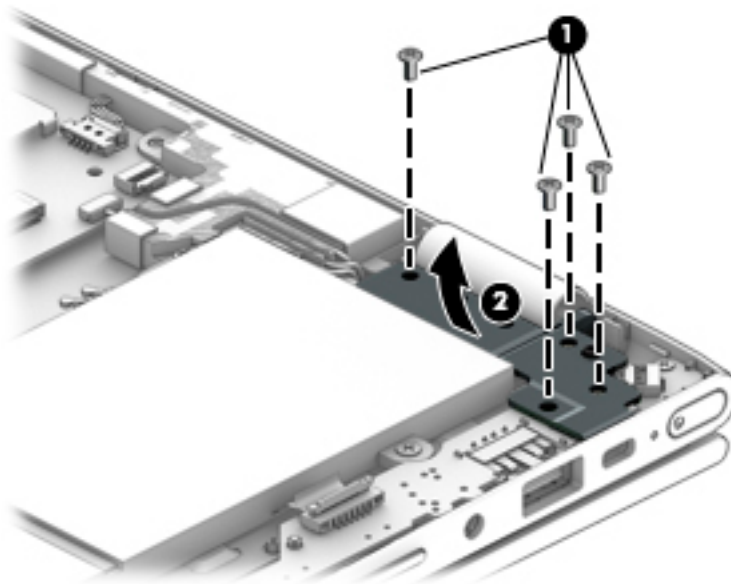
Description	Spare part number
Power button board cable	906777-001

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

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 28](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 30](#)).

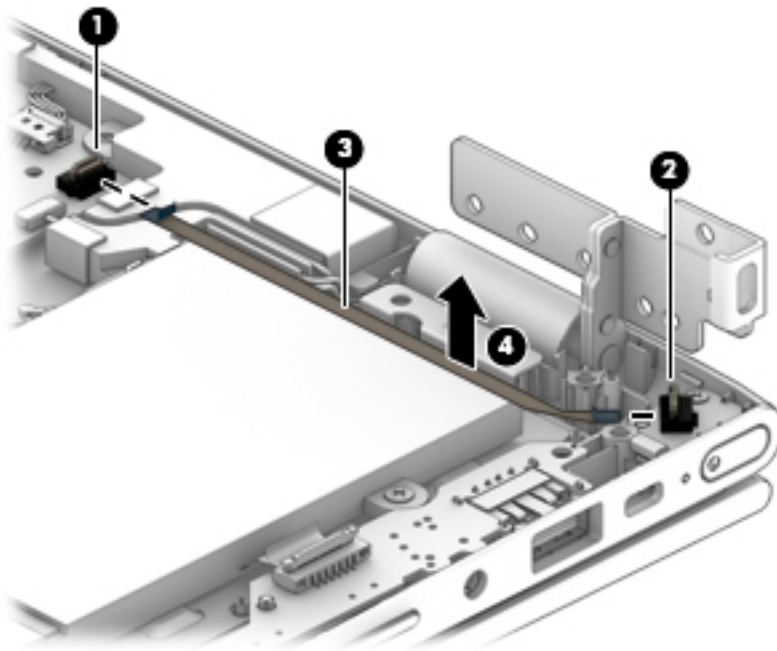
Remove the power button board cable:

1. Remove the four Phillips PM2.5×6.3 screws **(1)** that secure the display left hinge to the keyboard/top cover.
2. Swing the display left hinge up and back until the power button board cable is accessible **(2)**.



3. Release the ZIF connector **(1)** to which the power button board cable is connected, and then disconnect the power button board cable from the system board.
4. Release the ZIF connector **(2)** to which the power button board cable is connected, and then disconnect the power button board cable from the power button board.
5. Detach the power button board cable **(3)** from the keyboard/top cover. (The power button board cable is attached to the keyboard/top cover with double-sided adhesive.)

6. Remove the power button board cable (4).



Reverse this procedure to install the power button board cable.

## Power button board



**NOTE:** The power button board spare part kit does not include the power button board cable. See [Power button board cable on page 43](#) for connector board cable removal instructions. The power button board cable is available using spare part number 906777-001.

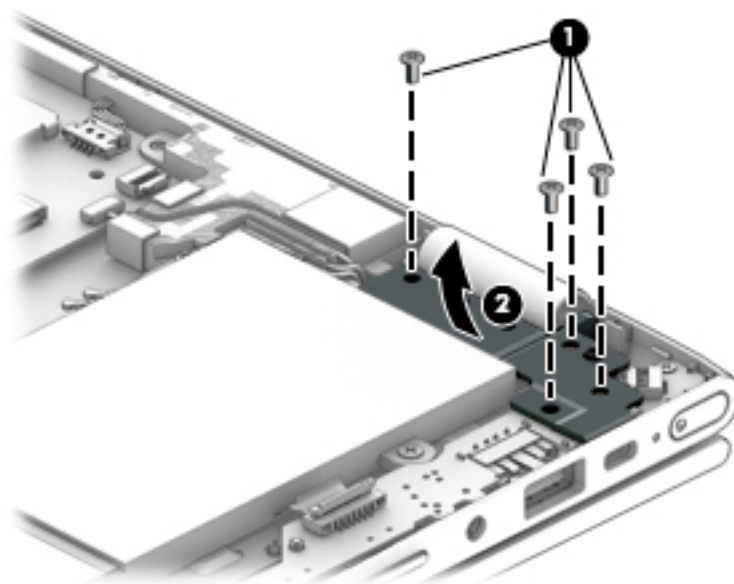
Description	Spare part number
Power button board	910162-001

Before removing the power button board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the bottom cover (see [Bottom cover on page 28](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 30](#)).

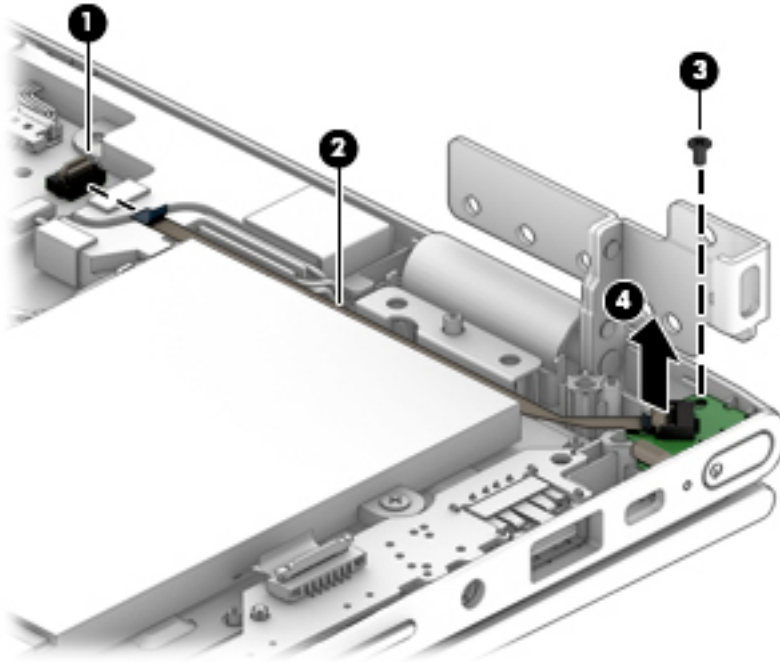
Remove the power button board:

1. Remove the four Phillips PM2.5×6.3 screws **(1)** that secure the display left hinge to the keyboard/top cover.
2. Swing the display left hinge **(2)** up and back until the power button board is accessible.



3. Release the ZIF connector **(1)** to which the power button board cable is connected, and then disconnect the power button board cable from the system board.
4. Detach the power button board cable **(2)** from the keyboard/top cover. (The power button board cable is attached to the keyboard/top cover with double-sided adhesive.)

5. Remove the Phillips PM2.0×3.3 screw **(3)** that secures the power button board to the keyboard/top cover.
6. Remove the power button board **(4)**.



Reverse this procedure to install the power button board.

## System board



**NOTE:** The system board spare part kit includes a graphics subsystem with UMA memory and replacement thermal material.

Description	Spare part number
<b>System board equipped with an integrated processor:</b>	
All system boards use the following part numbers:	
xxxxxx-001: Non-Windows operating systems	
xxxxxx-601: Windows operating system	
Intel Pentium N3710 processor, 32-GB of eMMC system storage	910147-xx1
Intel Pentium N3710 processor	906724-xx1
Intel Celeron N3060 processor, 2.0-GB of onboard system memory, 32-GB of eMMC system storage	908424-xx1
Intel Celeron N3060 processor, 32-GB of eMMC system storage	908423-xx1
Intel Celeron N3060 processor	906723-xx1
Intel Celeron N3050 processor, 2.0-GB of onboard system memory, 32-GB of eMMC system storage	906725-xx1
Intel Pentium N5000 processor	L16636-xx1
Intel Celeron N4000 processor, 32-GB of eMMC system storage	L17290-xx1
Intel Celeron N4000 processor	L16635-xx1
Intel Celeron N3060 processor, 64-GB of eMMC system storage	L04400-xx1

Before removing the system board, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 28](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 30](#)).
6. Remove the WLAN module (see [WLAN module on page 38](#)).
7. Remove the speakers (see [Speakers on page 42](#)).

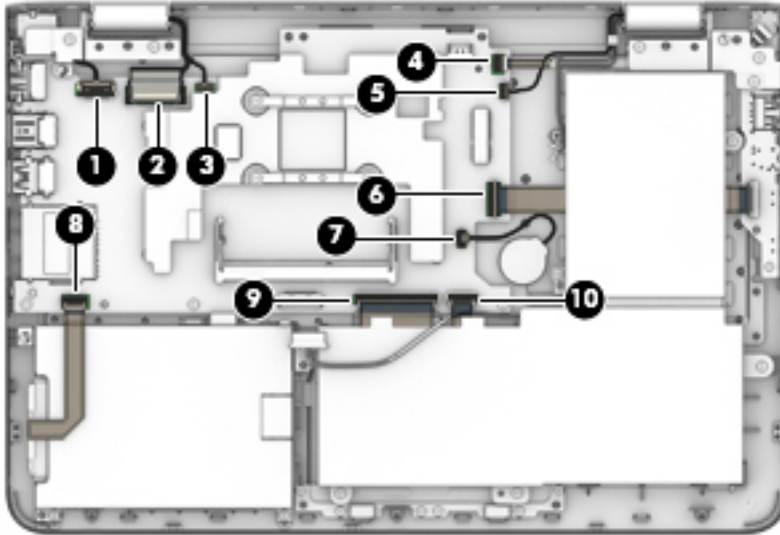


**NOTE:** When replacing the system board, be sure that the memory module (see [Memory module on page 33](#)) and the heat sink (see [Heat sink on page 50](#)) are removed from the defective system board and installed on the replacement system board.

Remove the system board:

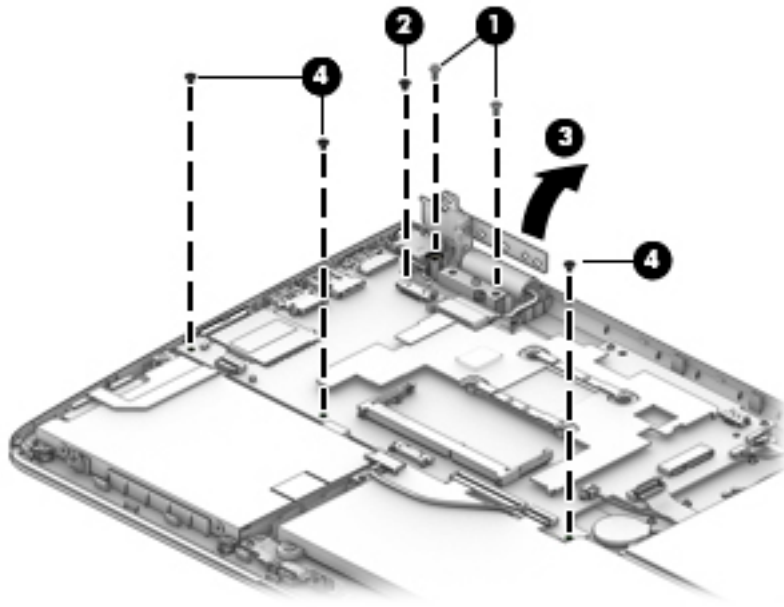
1. Disconnect the following cables from the system board:
  - (1) Power connector cable
  - (2) Display panel cable
  - (3) TouchScreen board cable

- (4) Power button board ZIF connector cable
- (5) G-sensor module ZIF connector cable
- (6) Connector board ZIF connector cable
- (7) RTC battery cable
- (8) Hard drive ZIF connector cable
- (9) Keyboard ZIF connector cable
- (10) TouchPad ZIF connector cable

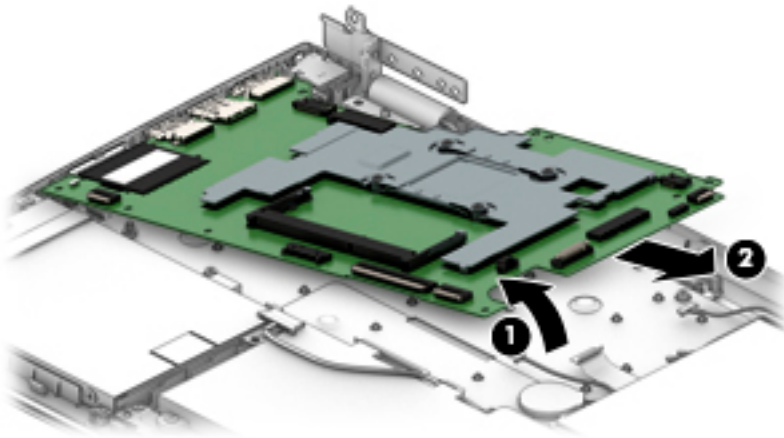


- 2. Remove the two Phillips PM2.5×6.3 screws **(1)** that secure the display right hinge to the keyboard/top cover.
- 3. Remove the Phillips PM2.5×4.3 screw **(2)** that secures the display right hinge to the keyboard/top cover.
- 4. Swing the display right hinge up and back until the system board is accessible **(3)**.

5. Remove the three Phillips PM2.0×3.3 screws **(4)** that secure the system board to the keyboard/top cover.



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



Reverse this procedure to install the system board.

## Heat sink

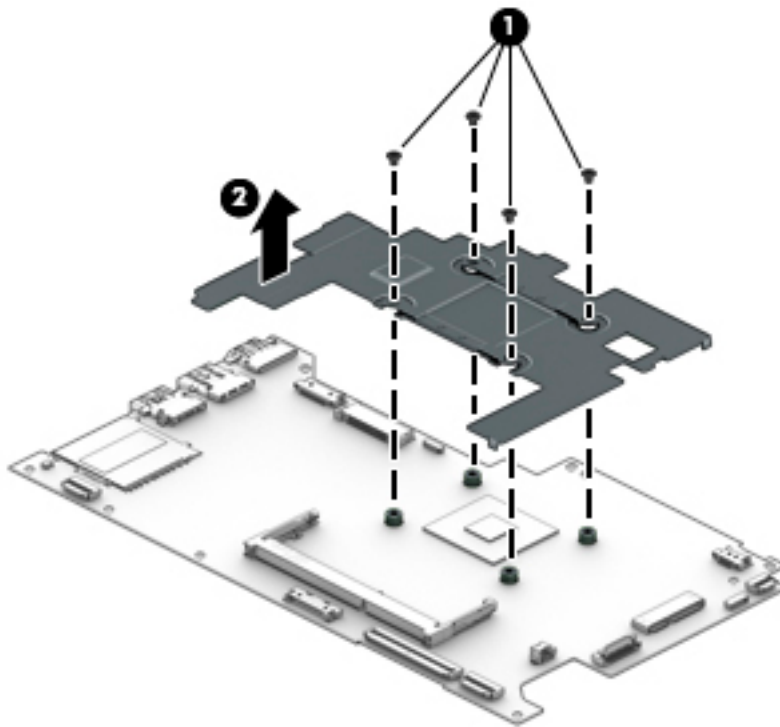
Description	Spare part number
Heat sink for use in models with on-board system memory (includes replacement thermal material)	910302-001
Heat sink for use in models with SODIMMs (includes replacement thermal material)	910158-001

Before removing the heat sink, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 28](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 30](#)).

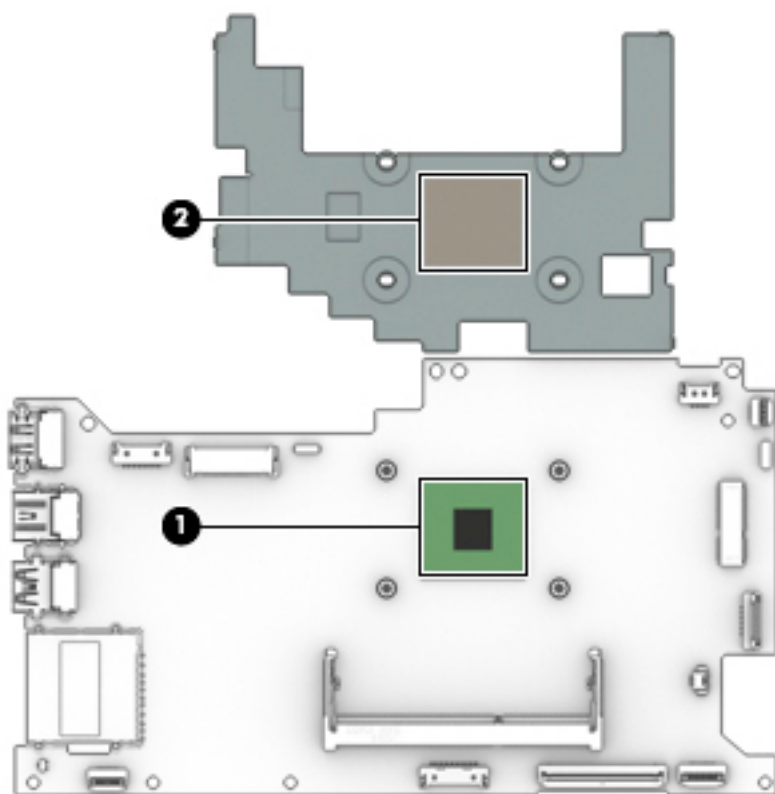
Remove the heat sink:

1. Remove the four Phillips PM2.0×3.3 screws **(1)** that secure the heat sink to the system board.
2. Remove the heat sink **(2)**.



**NOTE:** The thermal material must be thoroughly cleaned from the surfaces of the heat sink and the system board each time the heat sink is removed.

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



Reverse this procedure to install the heat sink.

## TouchPad cable

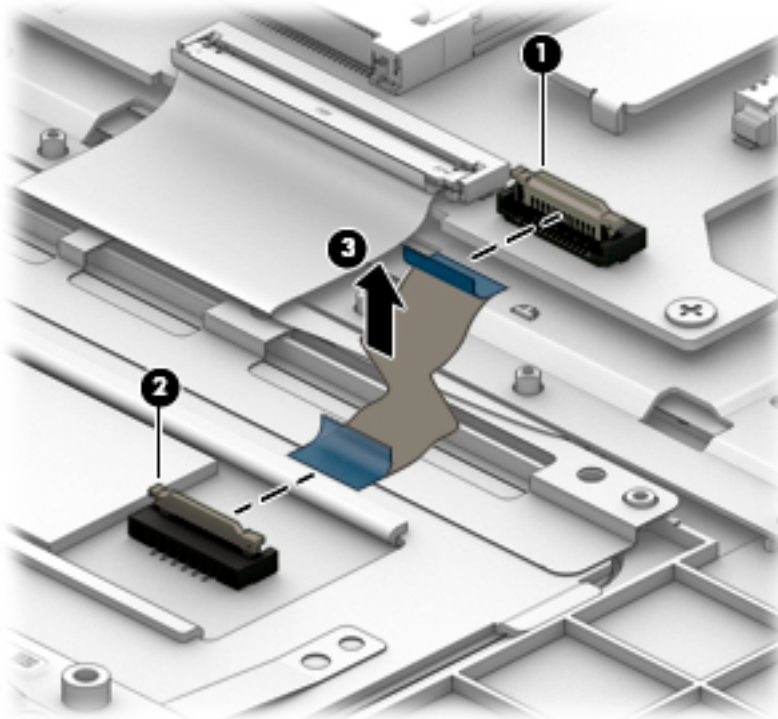
Description	Spare part number
TouchPad cable (includes double-sided adhesive)	906781-001

Before removing the TouchPad cable, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 28](#)).
5. Remove the battery (see [Battery on page 30](#)).

Remove the TouchPad cable:

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



Reverse this procedure to install the TouchPad cable.

## TouchPad



**NOTE:** The TouchPad spare part kit includes the TouchPad bracket.



**NOTE:** The TouchPad spare part kit does not include the TouchPad cable. Refer to [TouchPad cable on page 52](#) for TouchPad cable removal instructions. The TouchPad cable is available using spare part number 906781-001.

Description	Spare part number
TouchPad in aqua blue finish	911119-001
TouchPad in jet black finish	911118-001
TouchPad in snow white finish	912835-001
TouchPad in violet purple finish	906786-001
TouchPad in infinity purple finish	L21648-001

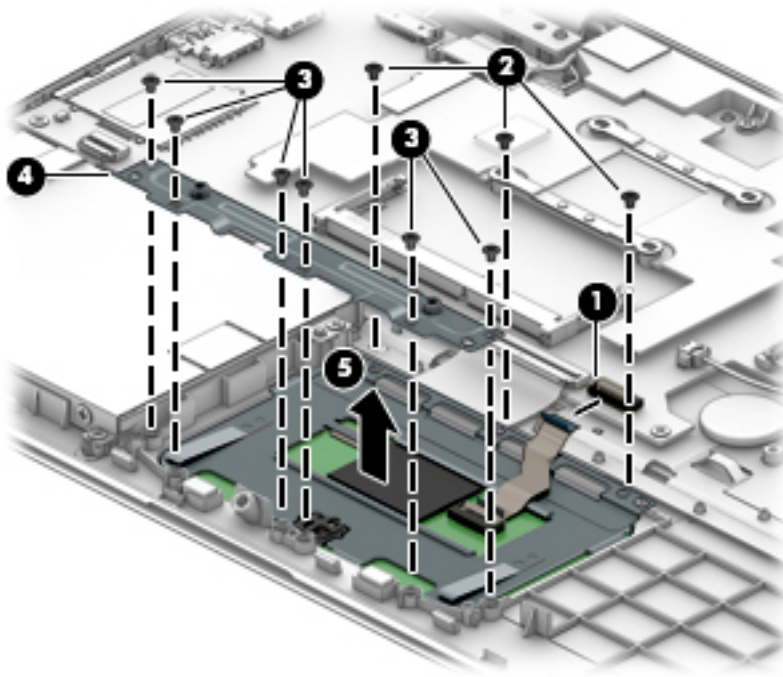
Before removing the TouchPad, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 28](#)).
5. Remove the battery (see [Battery on page 30](#)).

Remove the TouchPad:

1. Release the ZIF connector **(1)** to which the TouchPad cable is attached, and then disconnect the TouchPad cable from the system board.
2. Remove the three Phillips PM2.0×2.3 screws **(2)** that secure the TouchPad to the keyboard/top cover.
3. Remove the six Phillips PM2.0×3.3 screws **(3)** that secure the TouchPad and the TouchPad bracket to the keyboard/top cover.
4. Remove the TouchPad bracket **(4)**.

5. Remove the TouchPad (5).



Reverse this procedure to install the TouchPad.

## Connector board cable

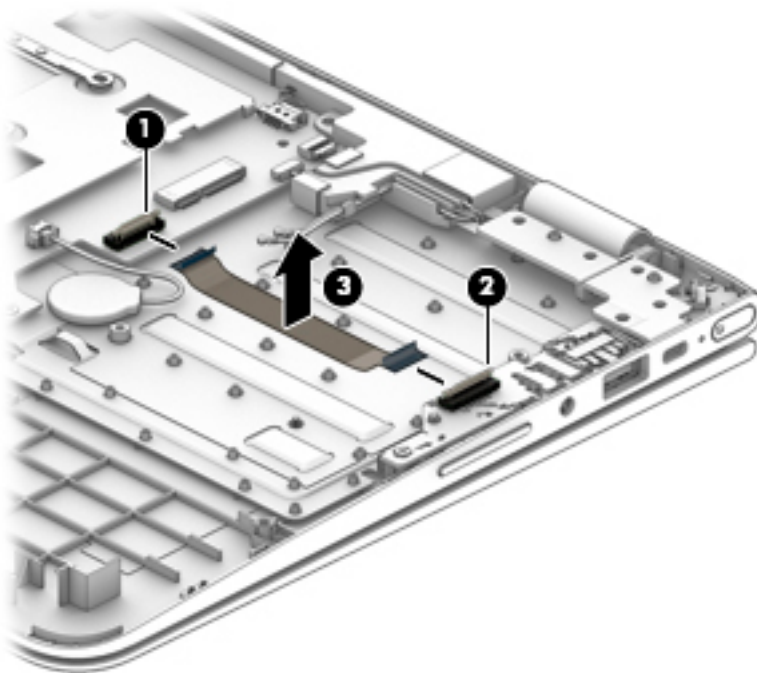
Description	Spare part number
Connector board cable	906784-001

Before removing the connector board cable, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 28](#)).
5. Remove the battery (see [Battery on page 30](#)).

Remove the connector board cable:

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



Reverse this procedure to install the connector board cable.

## Connector board



**NOTE:** The connector board spare part kit does not include the connector board cable. See [Connector board cable on page 55](#) for connector board cable removal instructions. The connector board cable is available using spare part number 906784-001.

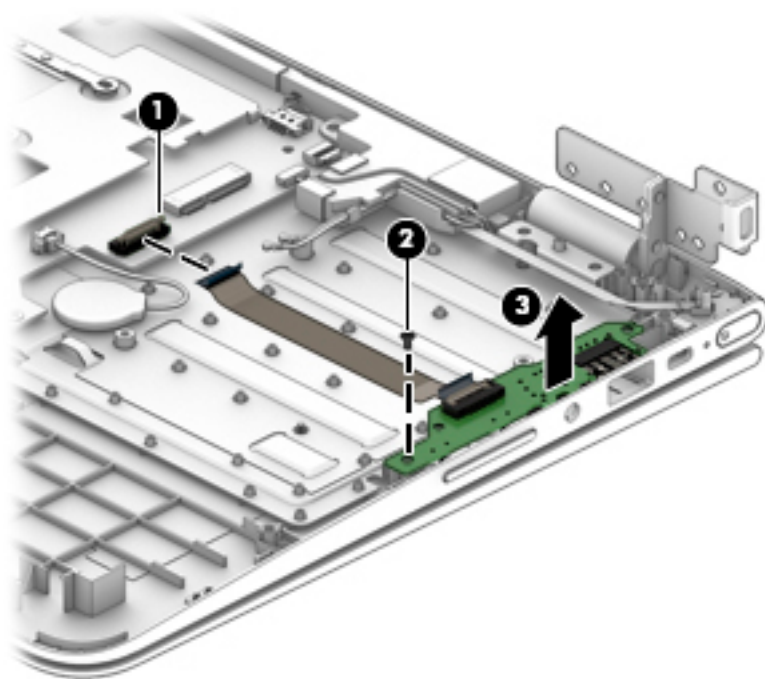
Description	Spare part number
Connector board (includes volume button actuators, audio combo jack, and USB 2.0 port)	906783-001

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 bottom cover (see [Bottom cover on page 28](#)).
5. Remove the battery (see [Battery on page 30](#)).


Remove the connector board:

1. Release the ZIF connector **(1)** to which the connector board cable is attached, and then disconnect the connector board cable from the system board.
2. Remove the Phillips PM2.0×3.3 screw **(2)** that secures the connector board to the keyboard/top cover.
3. Remove the connector board **(3)**.



Reverse this procedure to install the connector board.

## Display assembly

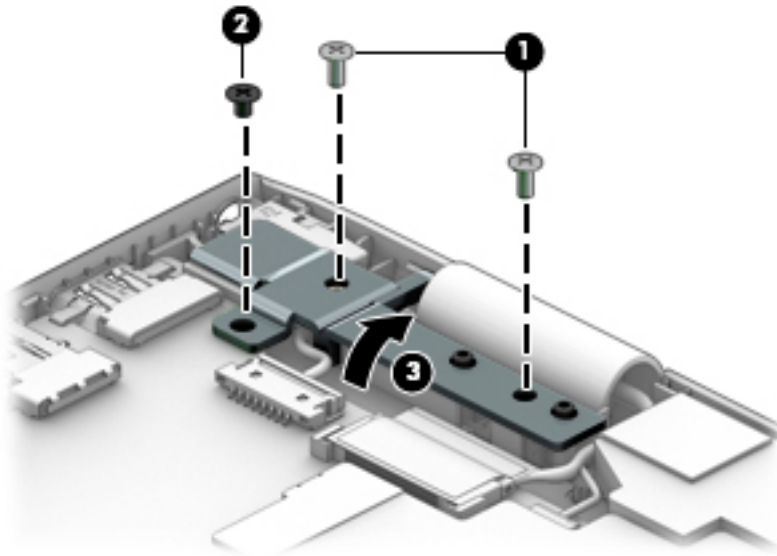
 **NOTE:** The display assembly is spared at the subcomponent level only. For more display assembly spare part information, see the individual removal subsections.

Before removing the display assembly, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the bottom cover (see [Bottom cover on page 28](#)).
5. Remove the battery (see [Battery on page 30](#)).

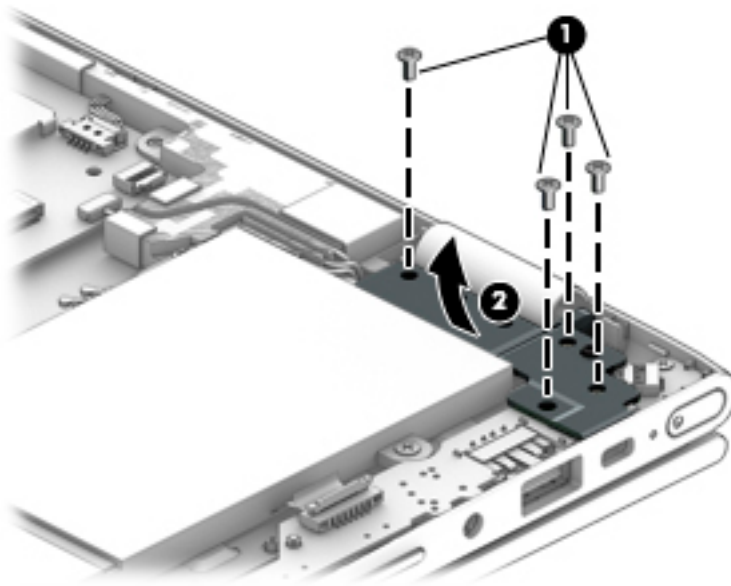
Remove the display assembly:

1. Remove the two Phillips PM2.5×6.3 screws **(1)** that secure the display right hinge to the keyboard/top cover.
2. Remove the Phillips PM2.5×4.3 screw **(2)** that secures the display right hinge to the keyboard/top cover.
3. Swing the display right hinge up and back as far as it will go **(3)**.

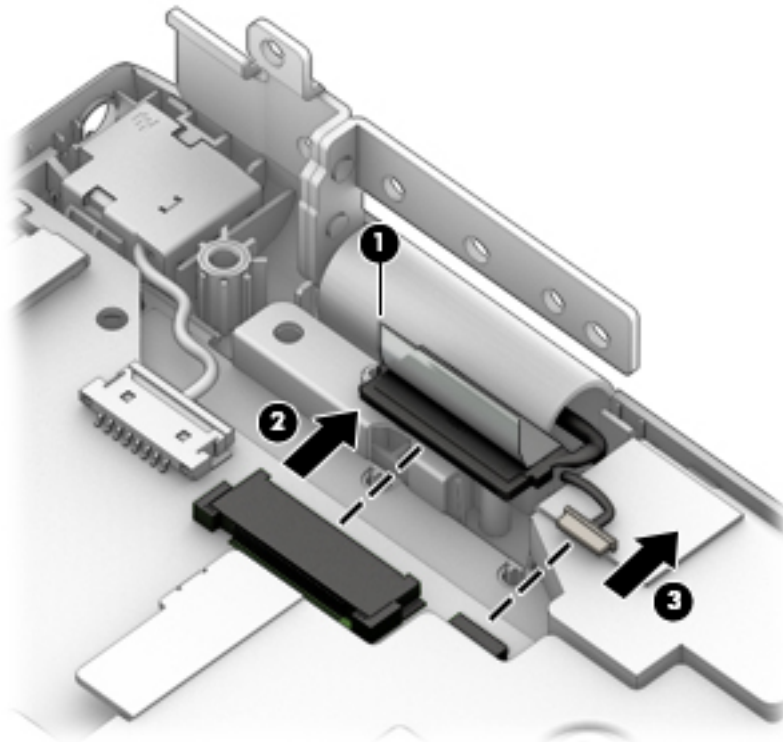


4. Remove the four Phillips PM2.5×6.3 screws **(1)** that secure the display left hinge to the keyboard/top cover.

5. Swing the display left hinge up and back as far as it will go **(2)**.



6. Release the adhesive support strip **(1)** that secures the display panel cable to the system board.
7. Disconnect the display panel cable **(2)** from the system board.
8. Disconnect the TouchScreen board cable **(3)** from the system board.

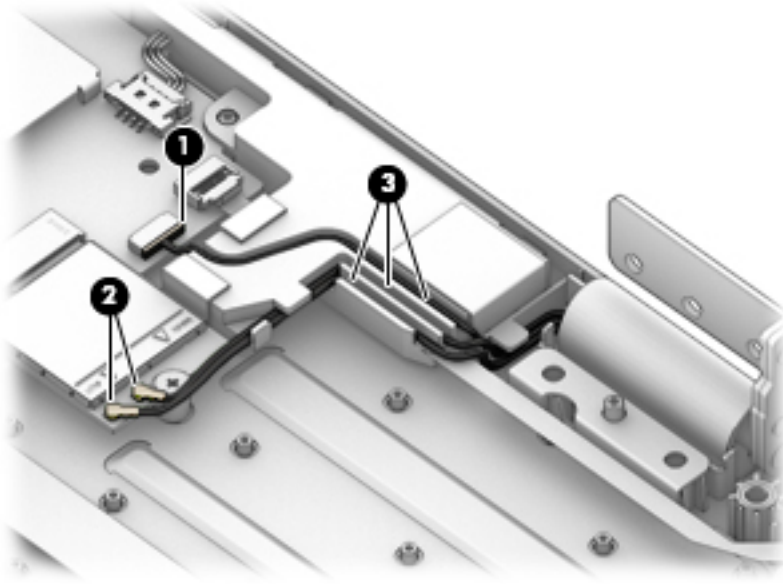


9. Release the ZIF connector **(1)** to which the G-sensor module cable is attached, and then disconnect the G-sensor module cable from the system board.
10. Disconnect the wireless antenna cables **(2)** from the terminals on the WLAN module.

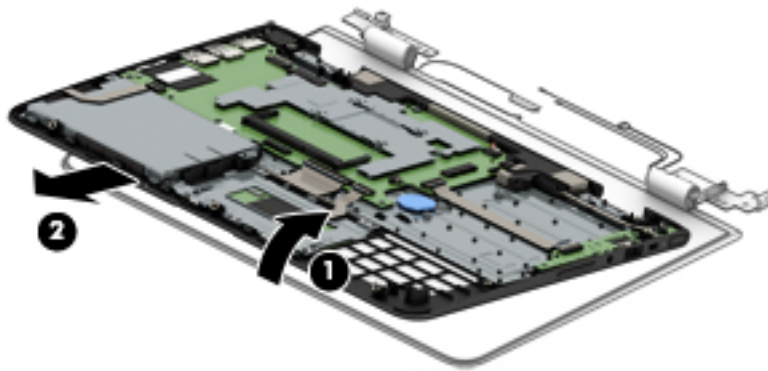


**NOTE:** The #1/white wireless antenna cable connects to the WLAN module #1/Main terminal. The #2/black wireless antenna cable connects to the WLAN module #2/Aux terminal.

11. Release the G-sensor module cable and the wireless antenna cables from the retention clips **(3)** and routing channel built into the speaker.



12. Swing the keyboard/top cover **(1)** up and away from the display assembly.
13. Slide the keyboard/top cover **(2)** up and forward at an angle and separate it from the display assembly.



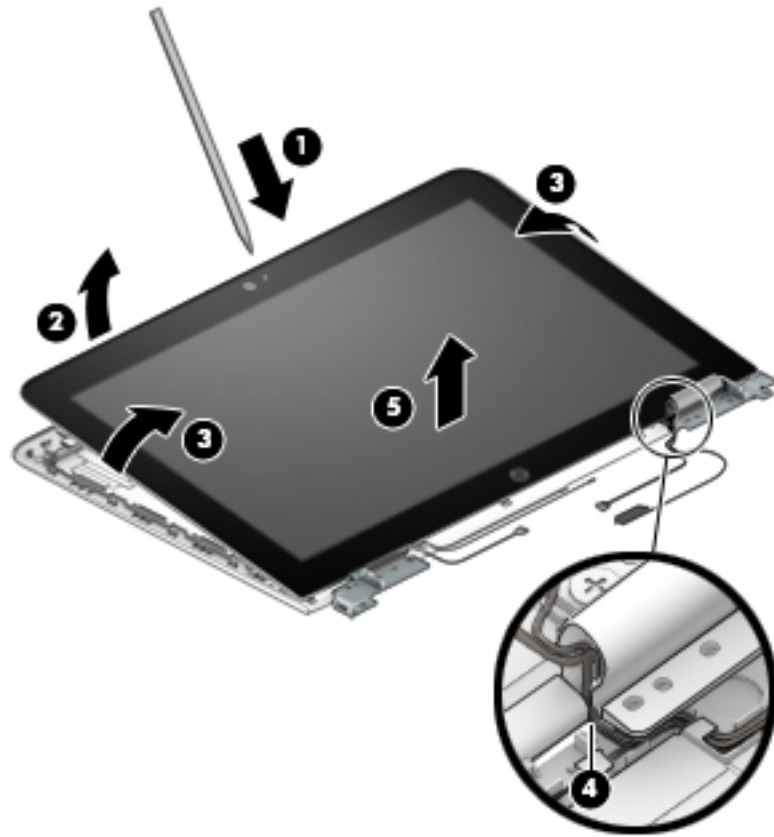
14. If it is necessary to replace the display panel assembly or any of the display assembly subcomponents:
  - a. Use a case utility tool **(1)** or similar plastic, flat-edged tool to separate the top edge **(2)** of the display panel assembly from the display back cover.
  - b. Separate the left **(3)** and right sides of the display panel assembly from the display back cover.



**CAUTION:** As you prepare to remove the display panel assembly, carefully remove the display panel cable and the G-sensor board cable from the opening **(4)** in the display right hinge. Failure to follow this caution can result in damage to the display panel cable and the G-sensor board cable.

- c. Remove the display panel assembly **(5)**.

The display panel assembly is available using spare part numbers 906791-001 (11.6-in, HD, WLED, AntiGlare (1366×768), slim (3.0-mm), SVA, eDP) and 906792-001 (11.6-in, HD, WLED, AntiGlare (1366×768), slim (3.0-mm), IPS/UWA, eDP).



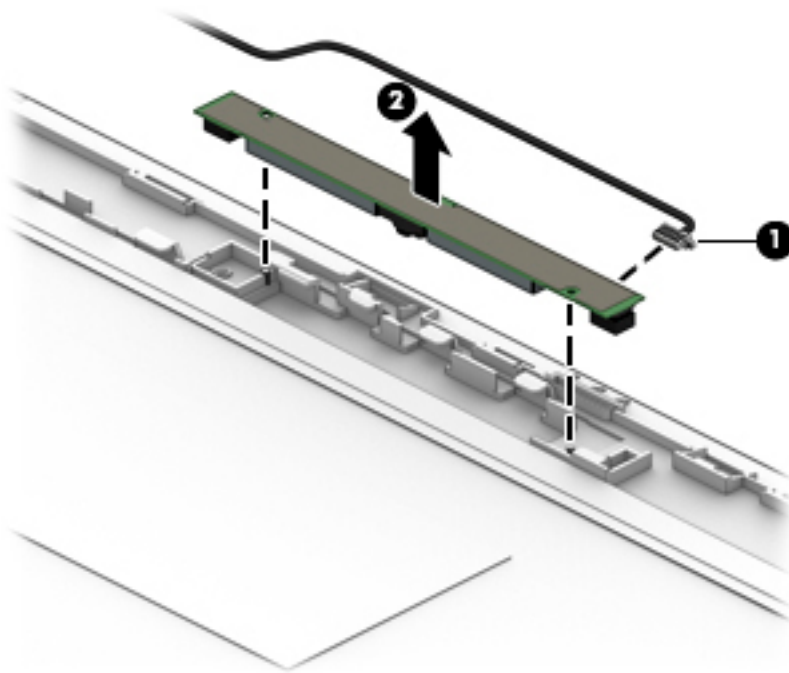
- 15. If it is necessary to replace the webcam/microphone module:

- a. Remove the display panel assembly.

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

- b. Turn the display panel assembly upside down.
- c. Disconnect the webcam/microphone module cable **(1)** from the webcam/microphone module.

- d. Detach the webcam/microphone module **(2)** from the display bezel. (The webcam/microphone module is attached to the display bezel with double-sided adhesive.)



- e. Remove the webcam/microphone module.

The webcam/microphone module is available using spare part number 907345-001.

**16.** If it is necessary to replace the display panel cable:

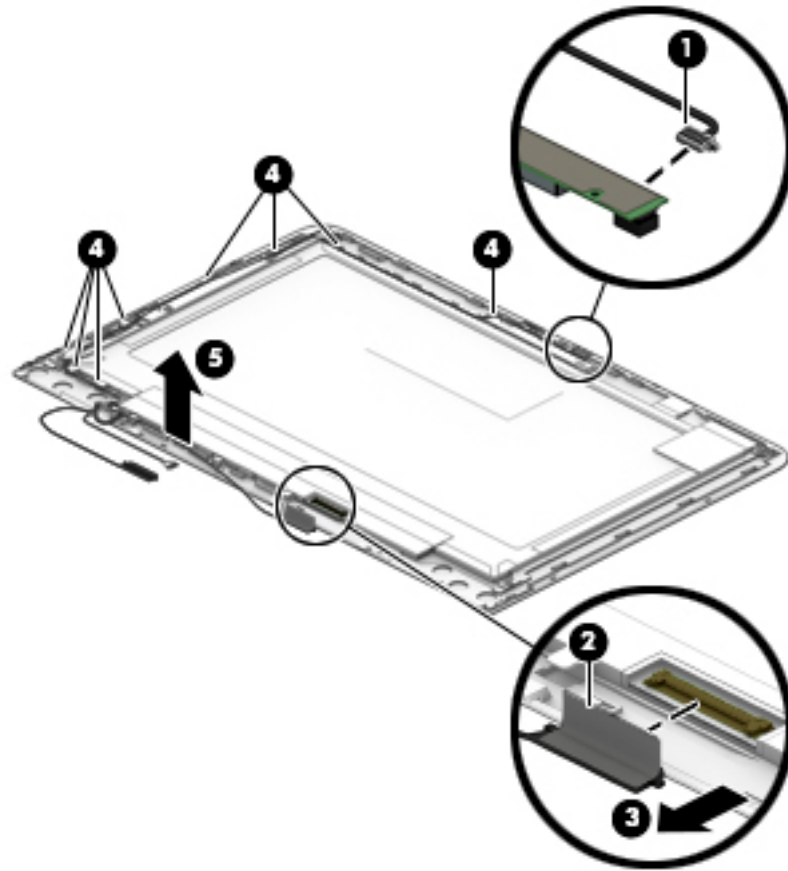
- a. Remove the display panel assembly.

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

- b. Disconnect the webcam/microphone module cable **(1)** from the webcam/microphone module.
- c. Release the adhesive support strip **(2)** that secures the display panel cable to the display panel.
- d. Disconnect the display panel cable **(3)** from the display panel.
- e. Release the display panel cable from the retention clips **(4)** and routing channel built into the display panel assembly.

- f. Remove the display panel cable (5).

The display panel cable includes the webcam/microphone module cable and is available using spare part number 906776-001.



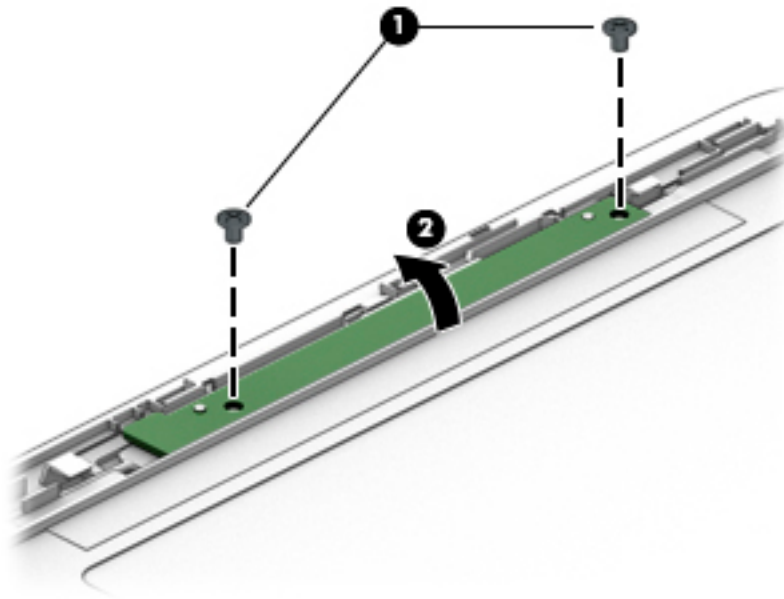
17. If it is necessary to replace the TouchScreen board cable:

- a. Remove the display panel assembly.

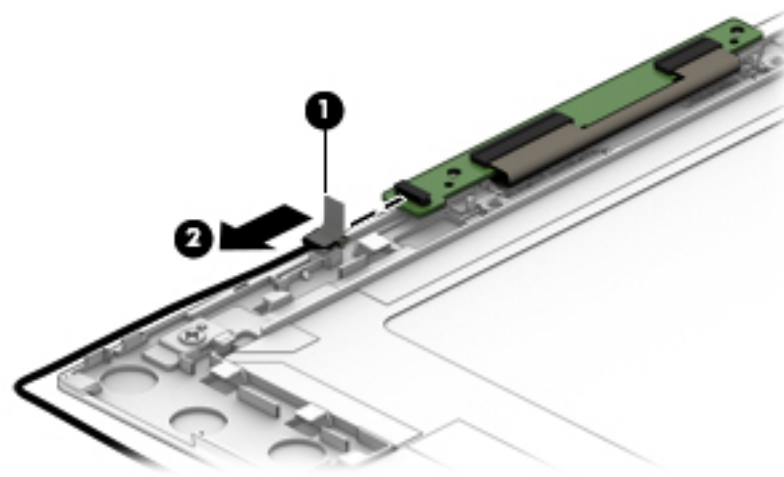
**CAUTION:** Before turning the display panel assembly upside down, make sure the work surface is clear of tools, screws, and any other foreign objects. Failure to follow this caution can result in damage to the display panel assembly.

- b. Remove the two Phillips PM2.0×2.9 screws (1) that secure the TouchScreen board to the display panel assembly.

- c. Release the TouchScreen board **(2)** by lifting the right side of the board and swinging it up and to the left.



- d. Release the adhesive support strip **(1)** that secures the TouchScreen board cable to the TouchScreen board.
- e. Disconnect the TouchScreen board cable **(2)** from the TouchScreen board.

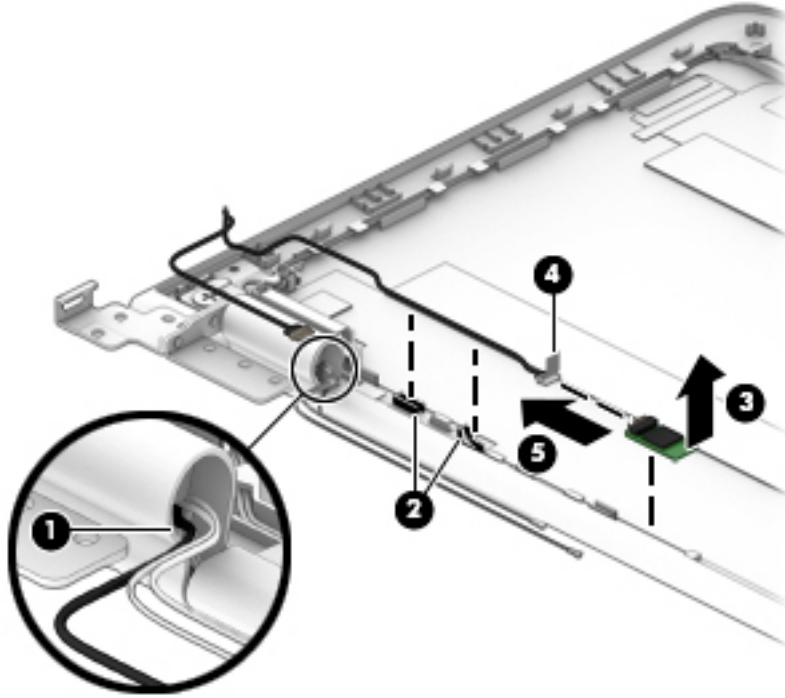


- f. Remove the TouchScreen board cable.  
The TouchScreen board cable is available using spare part number 910163-001.

**18.** If it is necessary to replace the G-sensor module and G-sensor module cable:

- a. Remove the display panel assembly.
- b. Release the G-sensor module cable **(1)** from the gap between the display left hinge and the display back cover.
- c. Release the G-sensor module cable from the retention clips **(2)** and routing channel built into the display back cover.

- d. Detach the G-sensor module **(3)** from the display back cover. (The G-sensor module is attached to the display back cover with double-sided adhesive.)
- e. Release the adhesive support strip **(4)** that secures the G-sensor module cable to the G-sensor module.
- f. Disconnect the G-sensor module cable **(5)** from the G-sensor module.



- g. Remove the G-sensor module and G-sensor module cable.

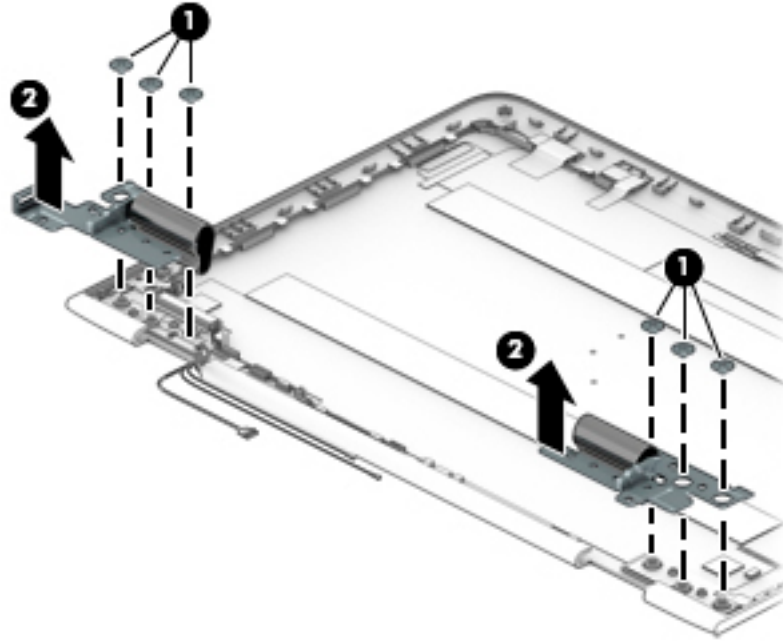
The G-sensor module is available using spare part number 906774-001. The G-sensor module is available using spare part number 906778-001.

**19.** If it is necessary to replace the display hinges:

- a. Remove the display panel assembly.
- b. Remove the six Phillips PM2.5×3.0 broad head screws **(1)** that secure the display hinges to the display back cover.

- c. Remove the display hinges **(2)**.

The display hinges are available using spare part number 906771-001.



**20.** If it is necessary to replace the display hinge covers:

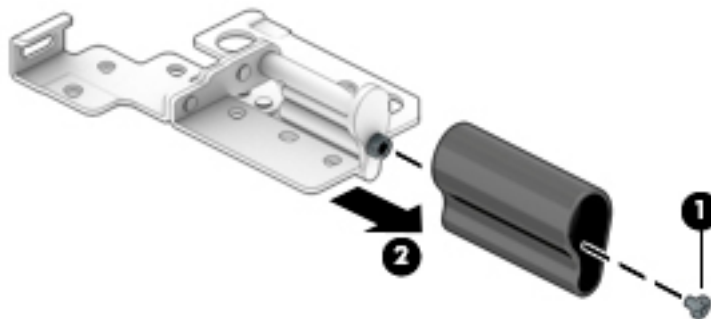
- a. Remove the display panel assembly.
- b. Remove the display hinges.
- c. Remove the Phillips PM2.0×2.9 screw **(1)** that secures the display hinge cover to the display hinge.
- d. Remove the display hinge cover **(2)**.

The display hinge covers are available using the following spare part numbers:

Jet black, violet purple, and aqua blue models: 906772-001

Snow white models: 917184-001

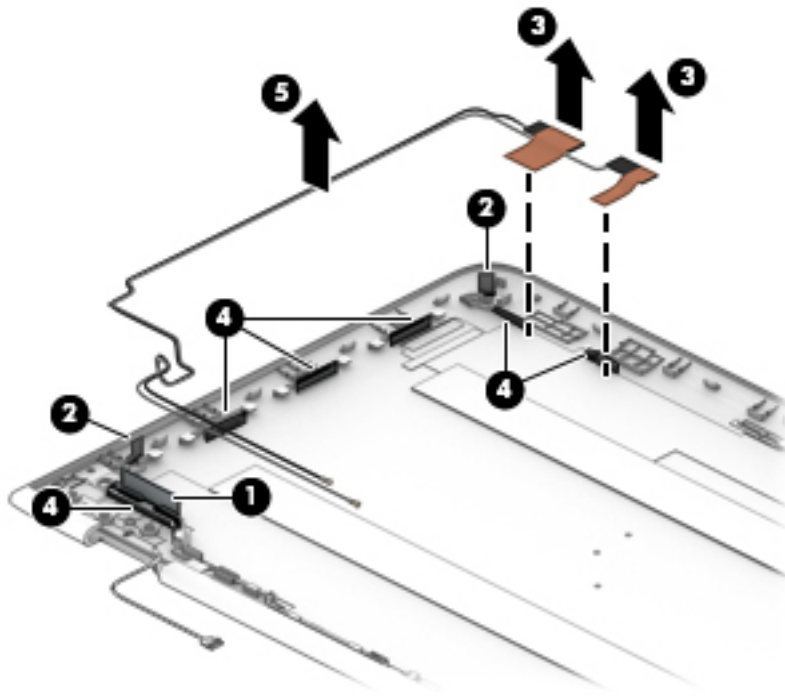
Infinity purple models: L21709-001



**21.** If it is necessary to replace the wireless antenna cables and transceivers:

- a. Remove the display panel assembly.
- b. Remove the display left hinge.
- c. Release the shielding material **(1)** that secures the wireless antenna cables to the display back cover near the display left hinge area.
- d. Detach the grounding tape **(2)** that secures the wireless antenna cable to the display back cover.
- e. Detach the wireless antenna transceivers **(3)** from the display back cover. (The wireless antenna transceivers are attached to the display back cover with double-sided adhesive.)
- f. Release the wireless antenna cables from the retention clips **(4)** and routing channel built into the top, left, and bottom edges of the display back cover.
- g. Remove the wireless antenna cables and transceivers **(5)**.

The wireless antenna cables and transceivers are available using spare part number 906780-001.



Reverse this procedure to reassemble install the display assembly.

## Top cover with keyboard

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

The first table provides the main spare part numbers for the keyboard. The second table provides the country codes.

Description	Spare part number
Top cover with keyboard in aqua blue finish	917042-xx1
Top cover with keyboard in jet black finish	917040-xx1
Top cover with keyboard in snow white finish	912834-xx1
Top cover with keyboard in violet purple finish	917041-xx1
Top cover with keyboard in infinity purple finish	L21645-xx1

For use in country or region	Spare part number	For use in country or region	Spare part number	For use in country or region	Spare part number
Belgium	-A41	Italy	-061	Slovenia	-BA1
Brazil	-201	Japan	-291	Spain	-071
Bulgaria	-261	Latin America	-161	Switzerland	-BG1
Czech Republic and Slovakia	-FL1	The Netherlands	-B31	Taiwan	-AB1
France	-051	Nordic	-DH1	Thailand	-281
Germany	-041	Portugal	-131	Turkey	-141
Greece	-151	Romania	-271	United Kingdom	-031
Hungary	-211	Russia	-251	United States	-001
Israel	-BB1	Saudi Arabia	-171		

## 6 Using Setup Utility (BIOS)

Setup Utility, or Basic Input/Output System (BIOS), controls communication between all the input and output devices on the system (such as disk drives, display, keyboard, mouse, and printer). Setup Utility (BIOS) includes settings for the types of devices installed, the startup sequence of the computer, and the amount of system and extended memory.



**NOTE:** To start Setup Utility on convertible computers, your computer must be in notebook mode and you must use the keyboard attached to your notebook.

### Starting Setup Utility (BIOS)



**CAUTION:** Use extreme care when making changes in Setup Utility (BIOS). Errors can prevent the computer from operating properly.

- ▲ Turn on or restart the computer, quickly press **esc**, and then press **f10**.

### Updating Setup Utility (BIOS)

Updated versions of Setup Utility (BIOS) may be available on the HP website.

Most BIOS updates on the HP website are packaged in compressed files called *SoftPaqs*.

Some download packages contain a file named *Readme.txt*, which contains information regarding installing and troubleshooting the file.

### Determining the BIOS version


To decide whether you need to update Setup Utility (BIOS), first determine the BIOS version on your computer.

To reveal the BIOS version information (also known as *ROM date* and *System BIOS*), use one of these options.


- HP Support Assistant
  1. Type **support** in the taskbar search box, and then select the **HP Support Assistant** app.  
– or –  
Click the question mark icon in the taskbar.
  2. Select **My PC**, and then select **Specifications**.
- Setup Utility (BIOS)
  1. Start Setup Utility (BIOS) (see [Starting Setup Utility \(BIOS\) on page 68](#)).
  2. Select **Main**, select **System Information**, and then make note of the BIOS version.
  3. Select **Exit**, select **No**, and then follow the on-screen instructions.

To check for later BIOS versions, see [Downloading a BIOS update on page 69](#).

## Downloading a BIOS update

 **CAUTION:** To reduce the risk of damage to the computer or an unsuccessful installation, download and install a BIOS update only when the computer is connected to reliable external power using the AC adapter. Do not download or install a BIOS update while the computer is running on battery power, docked in an optional docking device, or connected to an optional power source. During the download and installation, follow these instructions:


- Do not disconnect power from the computer by unplugging the power cord from the AC outlet.
- Do not shut down the computer or initiate Sleep.
- Do not insert, remove, connect, or disconnect any device, cable, or cord.

 **NOTE:** If your computer is connected to a network, consult the network administrator before installing any software updates, especially system BIOS updates.

1. Type `support` in the taskbar search box, and then select the **HP Support Assistant** app.  
– or –  
Click the question mark icon in the taskbar.
2. Click **Updates**, and then click **Check for updates and messages**.
3. Follow the on-screen instructions.
4. At the download area, follow these steps:
  - a. Identify the most recent BIOS update and compare it to the BIOS version currently installed on your computer. If the update is more recent than your BIOS version, make a note of the date, name, or other identifier. You may need this information to locate the update later, after it has been downloaded to your hard drive.
  - b. Follow the on-screen instructions to download your selection to the hard drive.  
  
Make a note of the path to the location on your hard drive where the BIOS update is downloaded. You will need to access this path when you are ready to install the update.

BIOS installation procedures vary. Follow any instructions that appear on the screen after the download is complete. If no instructions appear, follow these steps:

1. Type `file` in the taskbar search box, and then select **File Explorer**.
2. Click your hard drive designation. The hard drive designation is typically Local Disk (C:).
3. Using the hard drive path you recorded earlier, open the folder that contains the update.
4. Double-click the file that has an `.exe` extension (for example, *filename.exe*).  
  
The BIOS installation begins.
5. Complete the installation by following the on-screen instructions.

 **NOTE:** After a message on the screen reports a successful installation, you can delete the downloaded file from your hard drive.

## 7 Using HP PC Hardware Diagnostics

### Using HP PC Hardware Diagnostics Windows

HP PC Hardware Diagnostics Windows is a Windows-based utility that allows you to run diagnostic tests to determine whether the computer hardware is functioning properly. The tool runs within the Windows operating system in order to diagnose hardware failures.

If HP PC Hardware Diagnostics Windows is not installed on your computer, first you must download and install it. To download HP PC Hardware Diagnostics Windows, see [Downloading HP PC Hardware Diagnostics Windows on page 70](#).

After HP PC Hardware Diagnostics Windows is installed, follow these steps to access it from HP Help and Support or HP Support Assistant.

1. To access HP PC Hardware Diagnostics Windows from HP Help and Support:
  - a. Select the **Start** button, and then select **HP Help and Support**.
  - b. Right-click **HP PC Hardware Diagnostics Windows**, select **More**, and then select **Run as administrator**.

– or –

To access HP PC Hardware Diagnostics Windows from HP Support Assistant:

- a. Type `support` in the taskbar search box, and then select the **HP Support Assistant** app.
- or –
- Select the question mark icon in the taskbar.
- b. Select **Troubleshooting and fixes**.
  - c. Select **Diagnostics**, and then select **HP PC Hardware Diagnostics Windows**.

2. When the tool opens, select the type of diagnostic test you want to run, and then follow the on-screen instructions.



**NOTE:** If you need to stop a diagnostic test at any time, select **Cancel**.

3. When HP PC Hardware Diagnostics Windows detects a failure that requires hardware replacement, a 24-digit Failure ID code is generated. For assistance in correcting the problem, contact support, and then provide the Failure ID code.

### Downloading HP PC Hardware Diagnostics Windows

- The HP PC Hardware Diagnostics Windows download instructions are provided in English only.
- You must use a Windows computer to download this tool because only .exe files are provided.

## Downloading the latest HP PC Hardware Diagnostics Windows version

To download HP PC Hardware Diagnostics Windows, follow these steps:

1. Go to <http://www.hp.com/go/techcenter/pcdiags>. The HP PC Diagnostics home page is displayed.
2. In the **HP PC Hardware Diagnostics** section, select **Download**, and then select the installation location:  
To run the tool on your computer, download it to the computer desktop.  
– or –  
To run the tool from a USB flash drive, download it to a USB flash drive.
3. Select **Run**.

## Downloading HP Hardware Diagnostics Windows by product name or number (select products only)



**NOTE:** For some products, it may be necessary to download the software to a USB flash drive by using the product name or number.

To download HP PC Hardware Diagnostics Windows by product name or number (select products only), follow these steps:

1. Go to <http://www.hp.com/support>.
2. Select **Get software and drivers**, and then enter the product name or number.
3. In the **HP PC Hardware Diagnostics** section, select **Download**, and then select the installation location:  
To run the tool on your computer, download it to the computer desktop.  
– or –  
To run the tool from a USB flash drive, download it to a USB flash drive.
4. Select **Run**.

## Installing HP PC Hardware Diagnostics Windows

To install HP PC Hardware Diagnostics Windows, follow these steps:

- ▲ Navigate to the folder on your computer or the flash drive where the .exe file was downloaded, double-click the .exe file, and then follow the on-screen instructions.

## Using HP PC Hardware Diagnostics UEFI

HP PC Hardware Diagnostics UEFI (Unified Extensible Firmware Interface) allows you to run diagnostic tests to determine whether the computer hardware is functioning properly. The tool runs outside the operating system so that it can isolate hardware failures from issues that are caused by the operating system or other software components.

If your PC will not boot into Windows, you can use HP PC Hardware Diagnostics UEFI to diagnose hardware issues.

When HP PC Hardware Diagnostics UEFI detects a failure that requires hardware replacement, a 24-digit Failure ID code is generated. For assistance in correcting the problem, contact support, and provide the Failure ID code.



**NOTE:** To start diagnostics on a convertible computer, your computer must be in notebook mode, and you must use the attached keyboard.

 **NOTE:** If you need to stop a diagnostic test, press [esc](#).

---

## Starting HP PC Hardware Diagnostics UEFI

To start HP PC Hardware Diagnostics UEFI, follow these steps:

1. Turn on or restart the computer, and quickly press [esc](#).
2. Press [f2](#).

The BIOS searches three places for the diagnostic tools, in the following order:

- a. Connected USB flash drive



**NOTE:** To download the HP PC Hardware Diagnostics UEFI tool to a USB flash drive, see [Downloading the latest HP PC Hardware Diagnostics UEFI version on page 72](#).

---

- b. Hard drive
- c. BIOS

3. When the diagnostic tool opens, select the type of diagnostic test you want to run, and then follow the on-screen instructions.

## Downloading HP PC Hardware Diagnostics UEFI to a USB flash drive

Downloading HP PC Hardware Diagnostics UEFI to a USB flash drive can be useful in the following situations:

- HP PC Hardware Diagnostics UEFI is not included in the preinstall image.
- HP PC Hardware Diagnostics UEFI is not included in the HP Tool partition.
- The hard drive is damaged.



**NOTE:** The HP PC Hardware Diagnostics UEFI download instructions are provided in English only, and you must use a Windows computer to download and create the HP UEFI support environment because only .exe files are provided.

---

## Downloading the latest HP PC Hardware Diagnostics UEFI version

To download the latest HP PC Hardware Diagnostics UEFI version to a USB flash drive:

1. Go to <http://www.hp.com/go/techcenter/pcdiags>. The HP PC Diagnostics home page is displayed.
2. In the **HP PC Hardware Diagnostics UEFI** section, select **Download UEFI Diagnostics**, and then select **Run**.

## Downloading HP PC Hardware Diagnostics UEFI by product name (select products only)



**NOTE:** For some products, it may be necessary to download the software to a USB flash drive by using the product name.

---


To download HP PC Hardware Diagnostics UEFI by product name (select products only) to a USB flash drive:

1. Go to <http://www.hp.com/support>.
2. Select **Software and drivers**, enter the product name, select your computer, and then select your operating system.
3. Under **Diagnostics**, follow the on-screen instructions to select and download the **HP PC Hardware Diagnostics UEFI** version for the product.

# Using Remote HP PC Hardware Diagnostics UEFI settings (select products only)

Remote HP PC Hardware Diagnostics UEFI is a firmware (BIOS) feature that downloads HP PC Hardware Diagnostics UEFI to your computer. It can then execute the diagnostics on your computer, and it may upload results to a preconfigured server. For more information on Remote HP PC Hardware Diagnostics UEFI, go to <http://www.hp.com/go/techcenter/pcdiags>, and then select **Find out more**.

## Downloading Remote HP PC Hardware Diagnostics UEFI


 **NOTE:** HP Remote PC Hardware Diagnostics UEFI is also available as a Softpaq that can be downloaded to a server.

## Downloading the latest Remote HP PC Hardware Diagnostics UEFI version

To download the latest Remote HP PC Hardware Diagnostics UEFI version, follow these steps:

1. Go to <http://www.hp.com/go/techcenter/pcdiags>. The HP PC Diagnostics home page is displayed.
2. In the **HP PC Hardware Diagnostics UEFI** section, select **Download Remote Diagnostics**, and then select **Run**.

## Downloading Remote HP PC Hardware Diagnostics UEFI by product name

 **NOTE:** For some products, it may be necessary to download the software by using the product name.

To download HP Remote PC Hardware Diagnostics UEFI by product name or number, follow these steps:

1. Go to <http://www.hp.com/support>.
2. Select **Software and drivers**, enter the product name, select your computer, and then select your operating system.
3. Under **Diagnostics**, follow the on-screen instructions to select and download the **Remote UEFI** version for the product.

## Customizing Remote HP PC Hardware Diagnostics UEFI settings

Using the Remote HP PC Hardware Diagnostics setting in Computer Setup (BIOS), you can perform the following customizations:

- Set a schedule for running diagnostics unattended. You can also start diagnostics immediately in interactive mode by selecting **Execute Remote HP PC Hardware Diagnostics**.
- Set the location for downloading the diagnostic tools. This feature provides access to the tools from the HP website or from a server that has been preconfigured for use. Your computer does not require the traditional local storage (such as a disk drive or USB flash drive) to run remote diagnostics.
- Set a location for storing the test results. You can also set the user name and password settings used for uploads.
- Display status information about the diagnostics run previously.

To customize Remote HP PC Hardware Diagnostics UEFI settings, follow these steps:

1. Turn on or restart the computer, and when the HP logo appears, press **F10** to enter Computer Setup.
2. Select **Advanced**, and then select **Settings**.

3. Make your customization selections.
4. Select **Main**, and then **Save Changes and Exit** to save your settings.

Your changes take effect when the computer restarts.

## 8 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 100–240 V, 50–60 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.

	Metric	U.S.
Dimensions		
Width	30.6 cm	12.05 in
Depth	20.8 cm	8.19 in
Height	1.98 cm	0.78 in
Weight (eMMC models)	1.35 kg	2.98 lbs
Weight (HDD models)	1.45 kg	3.20 lbs
Input power		
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 / 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 / 10 V dc @ 5.0 A / 12 V dc @ 5.0 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 @ 5.0 A / 12 V dc @ 5.0 A / 15 V dc @ 5.0 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 @ 7.70 A – 150 W	
	19.5 V dc @ 10.3 A – 200 W	
NOTE: This product is designed for IT power systems in Norway with phase-to-phase voltage not exceeding 240 V rms.		
Temperature		
Operating	5°C to 35°C	41°F to 95°F
Non-operating	-20°C to 60°C	-4°F to 140°F
Relative humidity (non-condensing)		

	<b>Metric</b>	<b>U.S.</b>
Operating	10% to 90%	
Non-operating	5% to 95%	
<b>Maximum altitude</b> (unpressurized)		
Operating	<b>-15 m to 3,048 m</b>	-50 ft to 10,000 ft
Non-operating	<b>-15 m to 12,192 m</b>	-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.		

## 9 Backing up, restoring, and recovering

This chapter provides information about the following processes, which are standard procedure for most products:

- **Backing up your personal information**—You can use Windows tools to back up your personal information (see [Using Windows tools on page 77](#)).
- **Creating a restore point**—You can use Windows tools to create a restore point (see [Using Windows tools on page 77](#)).
- **Creating recovery media** (select products only)—You can use HP Recovery Manager or HP Cloud Recovery Download Tool (select products only) to create recovery media (see [Creating HP Recovery media \(select products only\) on page 77](#)).
- **Restoring and recovery**—Windows offers several options for restoring from backup, refreshing the computer, and resetting the computer to its original state (see [Using Windows tools on page 77](#)).
- **Removing the Recovery Partition**—To remove the Recovery partition to reclaim hard drive space (select products only), select the **Remove Recovery Partition** option of HP Recovery Manager. For more information, see [Removing the HP Recovery partition \(select products only\) on page 81](#).

### Using Windows tools



**IMPORTANT:** Windows is the only option that allows you to back up your personal information. Schedule regular backups to avoid information loss.

You can use Windows tools to back up personal information and create system restore points and recovery media, allowing you to restore from backup, refresh the computer, and reset the computer to its original state.



**NOTE:** If computer storage is 32 GB or less, Microsoft System Restore is disabled by default.

For more information and steps, see the Get Help app.

- ▲ Select the **Start** button, and then select the **Get Help** app.



**NOTE:** You must be connected to the Internet to access the Get Help app.

### Creating HP Recovery media (select products only)

After you have successfully set up the computer, use HP Recovery Manager to create a backup of the HP Recovery partition on the computer. This backup is called HP Recovery media. In cases where the hard drive is corrupted or has been replaced, the HP Recovery media can be used to reinstall the original operating system.

To check for the presence of the Recovery partition in addition to the Windows partition, right-click the **Start** button, select **File Explorer**, and then select **This PC**.



**NOTE:** If your computer does not list the Recovery partition in addition to the Windows partition, contact support to obtain recovery discs. Go to <http://www.hp.com/support>, select your country or region, and then follow the on-screen instructions.

On select products, you can use the HP Cloud Recovery Download Tool to create HP Recovery media on a bootable USB flash drive. For more information, see [Using the HP Cloud Recovery Download Tool to create recovery media on page 79](#).

## Using HP Recovery Manager to create recovery media



**NOTE:** If you cannot create recovery media yourself, contact support to obtain recovery discs. Go to <http://www.hp.com/support>, select your country or region, and then follow the on-screen instructions.

### Before you begin

Before you begin, note the following:

- Only one set of recovery media can be created. Handle these recovery tools carefully, and keep them in a safe place.
- HP Recovery Manager examines the computer and determines the required media storage capacity.
- To create recovery media, use one of the following options:



**NOTE:** If the computer does not have a recovery partition, HP Recovery Manager displays the Windows Create a Recovery Drive feature. Follow the on-screen instructions to create a recovery image on a blank USB flash drive or hard drive.

- If your computer has an optical drive with DVD writer capability, be sure to use only high-quality blank DVD-R, DVD+R, DVD-R DL, or DVD+R DL discs. Do not use rewritable discs such as CD±RW, DVD±RW, double-layer DVD±RW, or BD-RE (rewritable Blu-ray) discs, which are not compatible with HP Recovery Manager software.
- If your computer does not include an integrated optical drive with DVD writer capability, you can use an external optical drive (purchased separately) to create recovery discs, as described above. If an external optical drive is used, you must connect it directly to a USB port on the computer. It cannot be connected to a USB port on an external device, such as a USB hub.
- To create a recovery flash drive, use a high-quality blank USB flash drive.
- Be sure that the computer is connected to AC power before you begin creating the recovery media.
- The creation process can take an hour or more. Do not interrupt this process.
- If necessary, you can exit the program before you have finished creating all of the recovery media. HP Recovery Manager will finish the current DVD or flash drive. The next time you start HP Recovery Manager, you will be prompted to continue.

### Creating the recovery media

To create HP Recovery media using HP Recovery Manager:



**IMPORTANT:** For a tablet with a detachable keyboard, connect the tablet to the keyboard base before beginning these steps.

1. Type `recovery` in the taskbar search box, and then select **HP Recovery Manager**.
2. Select **Create recovery media**, and then follow the on-screen instructions.

If you need to recover the system, see [Recovering using HP Recovery Manager on page 79](#).

## Using the HP Cloud Recovery Download Tool to create recovery media


To create HP Recovery media using the HP Cloud Recovery Download Tool:

1. Go to <http://www.hp.com/support>.
2. Select **Software and Drivers**, and then follow the on-screen instructions.

## Restoring and recovery

Restoring and recovery can be performed using one or more of the following options: Windows tools, HP Recovery Manager, or the HP Recovery partition.

---

 **IMPORTANT:** Not all methods are available on all products.

---

### Restoring, resetting, and refreshing using Windows tools


Windows offers several options for restoring, resetting, and refreshing the computer. For details, see [Using Windows tools on page 77](#).

### Restoring using HP Recovery Manager and the HP Recovery partition

You can use HP Recovery Manager and the HP Recovery partition (select products only) to restore the computer to the original factory state:

- **Resolving problems with preinstalled applications or drivers**—To correct a problem with a preinstalled application or driver:
  1. Type `recovery` in the taskbar search box, and then select **HP Recovery Manager**.
  2. Select **Reinstall drivers and/or applications**, and then follow the on-screen instructions.
- **Using System Recovery**—To recover the Windows partition to original factory content, select the **System Recovery** option from the HP Recovery partition (select products only) or use the HP Recovery media. For more information, see [Recovering using HP Recovery Manager on page 79](#). If you have not already created recovery media, see [Creating HP Recovery media \(select products only\) on page 77](#).
- **Using Factory Reset** (select products only)—Restores the computer to its original factory state by deleting all information from the hard drive and recreating the partitions and then reinstalling the operating system and the software that was installed at the factory (select products only). To use the **Factory Reset** option, you must use HP Recovery media. If you have not already created recovery media, see [Creating HP Recovery media \(select products only\) on page 77](#).

---

 **NOTE:** If you have replaced the hard drive in the computer, you can use the Factory Reset option to install the operating system and the software that was installed at the factory.


---

### Recovering using HP Recovery Manager

You can use HP Recovery Manager software to recover the computer to its original factory state by using the HP Recovery media that you either created or that you obtained from HP, or by using the HP Recovery partition (select products only).


If you have not already created HP Recovery media, see [Creating HP Recovery media \(select products only\) on page 77](#).

---

 **IMPORTANT:** HP Recovery Manager does not automatically provide backups of your personal data. Before beginning recovery, back up any personal data that you want to retain. See [Using Windows tools on page 77](#).

---

**IMPORTANT:** Recovery through HP Recovery Manager should be used as a final attempt to correct computer issues.

 **NOTE:** When you start the recovery process, only the options available for your computer are displayed.

---

Before you begin, note the following:


- HP Recovery Manager recovers only software that was installed at the factory. For software not provided with this computer, you must either download the software from the manufacturer's website or reinstall the software from the media provided by the manufacturer.
- If the computer hard drive fails, HP Recovery media must be used. This media is created using HP Recovery Manager. See [Creating HP Recovery media \(select products only\) on page 77](#).
- If your computer does not allow the creation of HP Recovery media or if the HP Recovery media does not work, contact support to obtain recovery media. Go to <http://www.hp.com/support>, select your country or region, and then follow the on-screen instructions.

## Recovering using the HP Recovery partition (select products only)

The HP Recovery partition allows you to perform a system recovery without recovery discs or a recovery USB flash drive. This type of recovery can be used only if the hard drive is still working.

The HP Recovery partition (select products only) allows System Recovery only.

To start HP Recovery Manager from the HP Recovery partition:

 **IMPORTANT:** For a tablet with a detachable keyboard, connect the tablet to the keyboard base before beginning these steps (select products only).

---

1. Type `recovery` in the taskbar search box, select **HP Recovery Manager**, and then select **Windows Recovery Environment**.

– or –


For computers or tablets with keyboards attached:

- ▲ Press **f11** while the computer boots, or press and hold **f11** as you press the power button.

For tablets without keyboards:

- ▲ Turn on or restart the tablet, quickly hold down the volume up button, and then select **f11**.

2. Select **Troubleshoot** from the boot options menu.
3. Select **Recovery Manager**, and then follow the on-screen instructions.

 **NOTE:** If your computer does not automatically restart in HP Recovery Manager, change the computer boot order, and then follow the on-screen instructions. See [Changing the computer boot order on page 81](#).

---

## Recovering using HP Recovery media

If your computer does not have an HP Recovery partition or if the hard drive is not working properly, you can use HP Recovery media to recover the original operating system and software programs that were installed at the factory.

- ▲ Insert the HP Recovery media, and then restart the computer.



**NOTE:** If your computer does not automatically restart in HP Recovery Manager, change the computer boot order, and then follow the on-screen instructions. See [Changing the computer boot order on page 81](#).

## Changing the computer boot order

If your computer does not restart in HP Recovery Manager, you can change the computer boot order. This is the order of devices listed in BIOS where the computer looks for startup information. You can change the selection to an optical drive or a USB flash drive, depending on the location of your HP Recovery media.

To change the boot order:



**IMPORTANT:** For a tablet with a detachable keyboard, connect the tablet to the keyboard base before beginning these steps.

1. Insert the HP Recovery media.
2. Access the system **Startup** menu.

For computers or tablets with keyboards attached:

- ▲ Turn on or restart the computer or tablet, quickly press **esc**, and then press **f9** for boot options.

For tablets without keyboards:

- ▲ Turn on or restart the tablet, quickly hold down the volume up button, and then select **f9**.

– or –

Turn on or restart the tablet, quickly hold down the volume down button, and then select **f9**.

3. Select the optical drive or USB flash drive from which you want to boot, and then follow the on-screen instructions.

## Removing the HP Recovery partition (select products only)

HP Recovery Manager software allows you to remove the HP Recovery partition (select products only) to free up hard drive space.



**IMPORTANT:** After you remove the HP Recovery partition, you will not be able to perform System Recovery or create HP Recovery media. Before removing the Recovery partition, create HP Recovery media. See [Creating HP Recovery media \(select products only\) on page 77](#).

Follow these steps to remove the HP Recovery partition:

1. Type `recovery` in the taskbar search box, and then select **HP Recovery Manager**.
2. Select **Remove Recovery Partition**, and then follow the on-screen instructions.

## 10 Power cord set requirements

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

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

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

### Requirements for all countries

The following requirements are applicable to all countries and regions:

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

### Requirements for specific countries and regions

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

Country/region	Accredited agency	Applicable note number
South Korea	EK	4
Sweden	CEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	4
The United Kingdom	BSI	1
The United States	UL	2
<ol style="list-style-type: none"> <li>1. The flexible cord must be Type H05VV-F, 3-conductor, 1.0-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.</li> <li>2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.</li> <li>3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00-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) configuration.</li> <li>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 certification mark of the agency responsible for evaluation in the country or region where it will be used.</li> <li>5. The flexible cord must be Type VCTF, 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.</li> </ol>		

---

# 11 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 and battery light, identifying 6
- AC adapter, spare part numbers 22
- action keys
  - airplane mode 13
  - help 13
  - identifying 12, 13
  - mute 13
  - next track 13
  - pause 13
  - play 13
  - screen brightness 13
  - speaker volume 13
  - switch screen image 13
  - using 13
- airplane mode key 13
- antenna
  - removal 65
  - spare part number 21, 66
- audio
  - adjusting volume 13
- audio, product description 2
- audio-out (headphone)/audio-in (microphone) combo jack, identifying 7

## B

- backup, creating 77
- backups 77
- base enclosure, spare part numbers 19
- battery
  - removal 30
  - spare part number 17, 30
- BIOS
  - determining version 68
  - downloading an update 69
  - starting the Setup Utility 68
  - updating 68
- Bluetooth label 15
- boot order, changing 81
- bottom cover
  - removal 28
  - spare part numbers 28

- buttons
  - left TouchPad 9
  - power 7
  - right TouchPad 9

## C

- cables, service considerations 24
- camera
  - identifying 8
- camera light, identifying 8
- caps lock light, identifying 10
- chet, product description 1
- components
  - display 8
  - keyboard area 9
  - left side 7
  - right side 6
- computer
  - major components 16
  - specifications 75
- connector board
  - removal 56
  - spare part number 18, 56
- connector board cable
  - removal 55
  - spare part number 18, 55
- connector, power 7
- connectors, service considerations 24

## D

- display assembly
  - removal 57
  - subcomponents 20
- display back cover, spare part numbers 21
- display components 8
- display panel assembly
  - removal 59
  - spare part numbers 20, 60
- display panel cable
  - removal 61
  - spare part number 20, 62
- display panel, product description 1
- drive light, identifying 6

- drives
  - precautions 24
  - preventing damage 24

## E

- electrostatic discharge 25
- equipment guidelines 27
- esc key, identifying 12

## F

- feet
  - removal 28
  - spare part numbers 19, 22, 28
- fn key, identifying 12

## G

- G-sensor module
  - removal 63
  - spare part number 20, 64
- G-sensor module cable
  - removal 63
  - spare part number 20, 64
- Get Help in Windows 10 action key 13
- graphics, product description 1
- grounding guidelines 25
- guidelines
  - equipment 27
  - grounding 25
  - packaging 26
  - transporting 26
  - workstation 26

## H

- hard drive
  - product description 2
  - removal 31
  - spare part number 17, 31
- hard drive bracket
  - removal 32
  - spare part number 31, 32
- hard drive cable
  - removal 31
  - spare part number 31, 32

- Hard Drive Hardware Kit, spare part number 17, 32
- HDMI port
  - identifying 6
- HDMI-to-VGA adapter, spare part number 22
- heat sink
  - removal 50
  - spare part number 18, 50
- hinge
  - removal 64
  - spare part number 20, 65
- hinge cover
  - removal 65
  - spare part number 20, 65
- HP PC Hardware Diagnostics UEFI
  - downloading 72
  - starting 72
  - using 71
- HP PC Hardware Diagnostics Windows
  - downloading 70
  - installing 71
  - using 70
- HP Recovery Manager
  - correcting boot problems 81
  - starting 80
- HP Recovery media
  - recovery 80
  - using 78
- HP Recovery partition
  - recovery 80
  - removing 81

**I**  
internal microphones, identifying 8

**J**  
jacks
 

- audio-out (headphone)/audio-in (microphone) 7

**K**  
keyboard
 

- removal 67
- spare part number 67

keyboard, spare part numbers 17

keyboard/pointing devices, product description 4

keys
 

- action 12
- airplane mode 13

- esc 12
- fn 12
- Windows 12

**L**  
labels
 

- Bluetooth 15
- regulatory 15
- serial number 14
- service 14
- wireless certification 15
- WLAN 15

left side components 7

lights
 

- AC adapter and battery 6
- camera 8
- caps lock 10
- drive 6
- mute 10
- power 7

**M**  
memory module
 

- removal 33
- spare part number 18, 33

memory module shield
 

- removal 33
- spare part number 18, 33

memory, product description 2

microphone
 

- product description 2

MicroSD memory card reader, identifying 6

minimized image recovery 80

minimized image, creating 79

model name 1

mute light, identifying 10

mute volume action key 13

**N**  
next track action key 13

**O**  
operating system, product description 4

optical drive, spare part number 22

original system recovery 79

**P**  
packaging guidelines 26

pause action key 13

plastic parts, service considerations 23

play action key 13

ports
 

- HDMI 6
- product description 3
- USB 6, 7
- USB SuperSpeed 6

power button board
 

- removal 45
- spare part number 18, 45

power button board cable
 

- removal 43
- spare part number 18, 43

power button, identifying 7

power connector
 

- identifying 7

power connector cable
 

- removal 40
- spare part number 17, 40

power cord
 

- set requirements 82
- spare part numbers 22

power lights, identifying 7

power requirements, product description 4

processor, product description 1

product description
 

- audio 2
- chert 1
- display panel 1
- external media cards 3
- graphics 1
- hard drive 2
- internal card expansion 3
- keyboard/pointing devices 4
- memory 2
- microphone 2
- operating system 4
- ports 3
- power requirements 4
- processors 1
- product name 1
- security 4
- sensors 2
- serviceability 5
- video 2
- wireless 3

product name 1

product name and number,  
computer 14

## R

recovery 77  
discs 78, 80  
HP Recovery Manager 79  
HP Recovery partition 79  
media 80  
starting 80  
supported discs 78  
system 79  
USB flash drive 80  
using HP Recovery media 78  
recovery media  
creating using HP Cloud Recovery  
Download Tool 79  
creating using HP Recovery  
Manager 78  
creating using Windows tools 77  
discs 78  
HP Recovery partition 77  
USB flash drive 78  
using 78  
recovery partition, removing 81  
regulatory information  
regulatory label 15  
wireless certification labels 15  
Remote HP PC Hardware Diagnostics  
UEFI settings  
customizing 73  
using 73  
removal/replacement procedures  
28  
restoring 77  
right side components 6  
RTC battery  
removal 37  
spare part number 17, 37  
Rubber Kit, spare part numbers 19,  
22

## S

screen brightness action keys 13  
Screw Kit, spare part number 22  
security cable slot, identifying 7  
security, product description 4  
sensors, product description 2  
serial number, computer 14

service considerations  
cables 24  
connectors 24  
plastic parts 23  
service labels, locating 14  
serviceability, product description 5  
slots  
memory card reader 6  
security cable 7  
solid-state drive  
removal 35  
spare part numbers 35  
solid-state drive hardware  
removal 35  
spare part numbers 35  
speaker volume action keys 13  
speakers  
identifying 11  
removal 42  
spare part number 17, 42  
special keys, using 12  
specifications 75  
supported discs, recovery 78  
switch screen image action key 13  
system board  
removal 47  
spare part numbers 17, 47  
system recovery 79  
system restore point, creating 77

## T

tools required 23  
top cover  
removal 67  
spare part number 67  
top cover with keyboard, spare part  
numbers 17  
TouchPad  
removal 53  
spare part numbers 17, 53  
TouchPad buttons  
identifying 9  
TouchPad cable  
removal 52  
spare part number 17, 52  
TouchPad zone, identifying 9  
TouchScreen board cable  
removal 62  
spare part number 20, 63  
transporting guidelines 26

traveling with the computer 15

## U

USB port, identifying 6, 7  
USB SuperSpeed port, identifying 6  
USB-to-Gigabit RJ45 adapter, spare  
part number 22

## V

video, product description 2  
volume  
adjusting 13  
mute 13  
volume button, identifying 8

## W

webcam/microphone module  
removal 60  
spare part number 20, 61  
Windows  
backup 77  
recovery media 77  
system restore point 77  
Windows key, identifying 12  
Windows tools, using 77  
wireless antenna  
removal 65  
spare part number 21, 66  
wireless certification label 15  
wireless, product description 3  
WLAN antenna  
removal 65  
spare part number 21, 66  
WLAN antennas, identifying 8  
WLAN device 15  
WLAN label 15  
WLAN module  
removal 38  
spare part numbers 18, 38  
workstation guidelines 26