



# HP Pavilion 14 Notebook PC

## Maintenance and Service Guide

© Copyright 2014 Hewlett-Packard  
Development Company, L.P.

Intel, Core, and Pentium are trademarks of Intel Corporation in the U.S. and other countries. Microsoft and Windows are U.S. registered trademarks of the Microsoft group of companies.

**Product notice**

This 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 8. This computer may require upgraded and/or separately purchased hardware, drivers and/or software to take full advantage of Windows 8 functionality. See <http://www.microsoft.com> for details.

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

First Edition: November 2014

Document Part Number: 794141-001

## Important Notice about Customer Self-Repair Parts

---

 **CAUTION:** Your computer includes Customer Self-Repair parts and parts that should only be accessed by an authorized service provider. See Chapter 5, "Removal and replacement procedures for Customer Self-Repair parts," for details. Accessing parts described in Chapter 6, "Removal and replacement procedures for Authorized Service Provider only parts," can damage the computer or void your warranty.

---



## 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 External component identification .....</b>	<b>5</b>
Right side .....	5
Left side .....	6
Display .....	7
Top .....	8
TouchPad .....	8
Lights .....	9
Buttons and speakers .....	10
Keys .....	11
Bottom .....	12
Labels .....	13
<b>3 Illustrated parts catalog .....</b>	<b>14</b>
Computer major components .....	14
Display assembly subcomponents .....	20
Mass storage devices .....	22
Miscellaneous parts .....	23
Sequential part number listing .....	24
<b>4 Removal and replacement procedures preliminary requirements .....</b>	<b>31</b>
Tools required .....	31
Service considerations .....	31
Plastic parts .....	31
Cables and connectors .....	32
Drive handling .....	32
Grounding guidelines .....	33
Electrostatic discharge damage .....	33
Packaging and transporting guidelines .....	34
Workstation guidelines .....	34
Equipment guidelines .....	35
<b>5 Removal and replacement procedures for Customer Self-Repair parts .....</b>	<b>36</b>
Component replacement procedures .....	36
Battery .....	37

Service door .....	38
Memory module .....	39
Optical drive .....	40
<b>6 Removal and replacement procedures for Authorized Service Provider parts .....</b>	<b>42</b>
Component replacement procedures .....	42
Display subcomponents (bezel, webcam, panel) .....	43
Top cover .....	47
Hard drive .....	51
Power button board .....	53
TouchPad button board .....	54
WLAN module .....	55
System board .....	57
RTC battery .....	62
Fan .....	63
Heat sink assembly .....	64
Power connector cable .....	68
Speakers .....	69
Display assembly .....	70
<b>7 Using Setup Utility (BIOS) and HP PC Hardware Diagnostics (UEFI) .....</b>	<b>75</b>
Starting Setup Utility (BIOS) .....	75
Updating the BIOS .....	75
Determining the BIOS version .....	75
Downloading a BIOS update .....	76
Using HP PC Hardware Diagnostics (UEFI) .....	76
Downloading HP PC Hardware Diagnostics (UEFI) to a USB device .....	77
<b>8 Ubuntu Linux – Using Setup Utility (BIOS) and System Diagnostics .....</b>	<b>78</b>
Starting Setup Utility .....	78
Using Setup Utility .....	78
Changing the language of Setup Utility .....	78
Navigating and selecting in Setup Utility .....	78
Displaying system information .....	79
Restoring factory default settings in Setup Utility .....	79
Exiting Setup Utility .....	79
Using System Diagnostics .....	79
<b>9 Specifications .....</b>	<b>80</b>
Computer specifications .....	80

Display specifications .....	81
Hard drive specifications .....	81
DVD±RW SuperMulti Double-Layer Combination Drive specifications .....	82
<b>10 Backing up, restoring, and recovering .....</b>	<b>83</b>
Creating recovery media and backups .....	83
Creating HP Recovery media .....	83
Restore and recovery .....	84
Recovering using HP Recovery Manager .....	85
What you need to know .....	85
Using the HP Recovery partition (select models only) .....	85
Using HP Recovery media to recover .....	86
Changing the computer boot order .....	86
Removing the HP Recovery partition (select models only) .....	86
<b>11 Ubuntu Linux – Backing up, restoring, and recovering .....</b>	<b>87</b>
Performing a system recovery .....	87
Creating the restore DVDs .....	87
Creating a restore image on a USB device .....	87
Performing recovery using the restore DVD .....	88
Backing up your information .....	88
<b>12 Power cord set requirements .....</b>	<b>90</b>
Requirements for all countries .....	90
Requirements for specific countries and regions .....	91
<b>13 Recycling .....</b>	<b>93</b>
<b>Index .....</b>	<b>94</b>



# 1 Product description

Category	Description
<b>Product Name</b>	HP Pavilion 14 Notebook PC
<b>Processors</b>	<p>Processors are attached to the system board.</p> <p><b>Intel®</b></p> <p><b>5th generation processors:</b></p> <ul style="list-style-type: none"><li>• Intel Core™ i7-5500U 2.4 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W)</li><li>• Intel Core i5-5200U 2.2 GHz processor, SC turbo (3 MB L3 cache, dual core, 15 W)</li><li>• Intel Core i3-5010U 2.1 GHz processor, (3 MB L3 cache, dual core, 15 W)</li><li>• Intel Core i3-5005U 2.0 GHz processor, (3 MB L3 cache, dual core, 15 W)</li></ul> <p><b>4th generation processors:</b></p> <ul style="list-style-type: none"><li>• Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W)</li><li>• Intel Core i5-4210U 1.7 GHz processor, SC turbo (3 MB L3 cache, dual core, 15 W)</li><li>• Intel Core i3-4030U 1.9 GHz processor, 1600 MHz (3 MB L3 cache, dual core, 15 W)</li></ul> <p><b>Bay Trail-M processors:</b></p> <ul style="list-style-type: none"><li>• Intel Pentium N3540, 2.58 GHz, turbo up to 2.66 GHz (2 MB L2 cache, quad core, SDP 4.5 W)</li><li>• Intel Pentium N3530, turbo up to 2.58 GHz (2 MB L2 cache, quad core, SDP 4.5 W)</li></ul>
<b>Chipset</b>	<ul style="list-style-type: none"><li>• Intel Lynx Point-LP PCH, for use with 4th Generation Intel Core processors</li></ul>
<b>Graphics</b>	<p><b>Internal graphics:</b></p> <ul style="list-style-type: none"><li>• Intel HD Graphics 5500, for use with 5th Generation Intel Core processors</li><li>• Intel HD Graphics 4400, for use with 4th Generation Intel Core processors</li><li>• Intel HD Graphics, for use with Intel Bay Trail-M processors</li></ul> <p><b>Switchable discrete graphics:</b></p> <ul style="list-style-type: none"><li>• HD decode, DX11, and HDMI</li><li>• Optimus</li><li>• GPS (GPU Performance Scaling)</li><li>• NVIDIA GeForce 840M with up to 2048 MB of dedicated video memory (256 M x16 DDR3 900 MHz x 4 PCs, 1 GHz downgrade to 900 MHz), 64 bit</li><li>• NVIDIA GeForce 830M with up to 2048 MB of dedicated video memory (256 M x16 DDR3 900 MHz x 4 PCs, 1 GHz downgrade to 900 MHz), 64 bit</li></ul>
<b>Panel</b>	<ul style="list-style-type: none"><li>• <b>14 in</b> (35.56 cm), high-definition (HD), white light-emitting diode (WLED), BrightView (1366×768) flat display, 3.6 mm, SVA, typical brightness: 200 cd/m<sup>2</sup> (nits)</li><li>• <b>14 in</b> (35.56 cm), HD, WLED, Antiglare (1366×768) flat display, 3.6 mm, typical brightness: 200 cd/m<sup>2</sup> (nits) SVA (flush glass, Multitouch enabled)</li></ul> <p>16:9 Ultra Wide Aspect Ratio</p>

Category	Description
	Support LVDS (co-layout with eDP1.3+PSR)
<b>Memory</b>	<p>Supports up to 12 GB system memory in the following configurations:</p> <ul style="list-style-type: none"> <li>• 12288 MB (8192 MB×1 + 4096 MB×1; not supported on computer models with a 32-bit operating system or Windows 7 Home Basic)</li> <li>• 8192 MB (8192 MB×1 or 4096 MB×2; not supported on computer models equipped with a 32-bit operating system)</li> <li>• 6144 MB (4096 MB×1 + 2048 MB×1; not supported on computer models equipped with a 32-bit operating system)</li> <li>• 4096 MB (4096 MB×1 or 2048 MB×2)</li> </ul> <p>One SODIMM customer-accessible/upgradable memory module slots</p> <p>DDR3L-1600 MHz dual channel support</p> <p>DDR3L-1333 MHz dual channel support</p>
<b>Hard drive</b>	<p>Supports <b>6.35 cm</b> (2.5 in) hard drives in <b>9.5 mm</b> (.37 in) and <b>7.0 mm</b> (.28 in) thicknesses (all hard drives use the same bracket)</p> <p>Supports the following hard drives:</p> <ul style="list-style-type: none"> <li>• 1 TB, 5400 rpm, 9.5 mm</li> <li>• 750 GB, 5400 rpm, 9.5 mm</li> <li>• 500 GB, 5400 rpm, 7.0 mm or 9.5 mm</li> <li>• 320 GB, 5400 rpm, 7.0 mm or 9.5 mm</li> </ul> <p>Serial ATA</p> <p>Accelerometer/HP protect support</p> <p>Supports the following:</p> <ul style="list-style-type: none"> <li>• 500 GB, 5400 rpm, + 8 GB NAND Hybrid HDD; 7 mm</li> <li>• 750 GB, 5400 rpm, + 8 GB NAND Hybrid HDD; 9.5 mm</li> <li>• 1 TB, 5400 rpm, + 8 GB NAND Hybrid HDD; 9.5 mm</li> </ul>
<b>Optical drive</b>	<p>Fixed</p> <p>Serial ATA</p> <p>9.5 mm tray load</p> <p>Zero power optical drive</p> <p>Supports the following:</p> <ul style="list-style-type: none"> <li>• DVD±RW Double-Layer SuperMulti Drive</li> </ul>
<b>Audio and video</b>	<p>Supports:</p> <p>Beats Audio</p> <p>Dual speakers</p> <p>HP TrueVision HD webcam (fixed, no tilt with activity LED; 1280×720 by 30 frames per second, USB 2.0, M-jpeg)</p> <p>Two dual array, digital microphones with appropriate beam-forming, echo-cancellation, noise-reduction software</p> <p>Beats Audio</p>

Category	Description
<b>Ethernet</b>	Integrated 10/100 NIC
<b>Wireless</b>	<p>Integrated wireless local area network (WLAN) options by way of wireless module</p> <p>One half-size mini card/PCI Express (HMC/PCIe) slot</p> <p>Two WLAN antennas built into display assembly</p> <p>Compatible with Miracast-certified devices</p> <p>Support for the following WLAN formats:</p> <ul style="list-style-type: none"> <li>• Qualcomm Atheros AR9485 802.11 bgn 1x1 Wi-Fi adapter (with single antenna)</li> <li>• QCA 9565 802.11 bgn 1x1 Wi-Fi + BT4.0 combo adapter (with single antenna)</li> <li>• Realtek RTL8188EE 802.11 bgn 1x1 Wi-Fi adapter (with single antenna)</li> <li>• Broadcom BCM43142 802.11 bgn 1x1 Wi-Fi + BT4.0 HMC combo adapter (with single antenna)</li> <li>• Intel Dual Band Wireless-AC 3160 802.11 ac 1x1 WiFi + BT 4.0 combo adapter (with dual antennas)</li> </ul>
<b>External media cards</b>	<p>HP Multi-Format Memory Card Reader slot with push-push technology, supporting the following digital card formats:</p> <ul style="list-style-type: none"> <li>• Secure Digital (SD) Memory Card</li> <li>• Secure Digital High Capacity (SDHC) Memory Card</li> <li>• Secure Digital eXtended Capacity (SDXC) Memory Card</li> </ul>
<b>Ports</b>	<ul style="list-style-type: none"> <li>• AC Smart Pin adapter plug (4.5 mm barrel)</li> <li>• Combination audio-out (stereo headphone)/audio-in (mono microphone)</li> <li>• RJ-45 (Ethernet)</li> <li>• USB 3.0 (2 ports), USB 2.0 (1 port)</li> <li>• HDMI version 1.4 output supporting 1920 x 1080 @ 60 Hz Hot Plug / Unplug and auto detect for correct output to wide-aspect versus standard aspect video</li> </ul>
<b>Keyboard/ pointing devices</b>	<p>Full-size black textured island-style, with black keyboard frame</p> <p>Full-size white painted island-style, with white keyboard frame</p> <p>Multitouch gestures enabled</p> <p>Supports Windows® 8 Modern Trackpad Gestures</p>
<b>Power requirements</b>	<p>Supports the following AC adapters:</p> <ul style="list-style-type: none"> <li>• 65 W HP Smart AC adapter (nPFC, 3-wire, 4.5 mm)</li> <li>• 45 W HP Smart AC adapter (nPFC, 3-wire, 4.5 mm, nslim)</li> </ul> <p>Supports battery fast charge</p> <p>Supports the following batteries (battery is user-removable)</p> <ul style="list-style-type: none"> <li>• 4 cell battery - 41 Whr (2.8 AH)</li> </ul>
<b>Security</b>	<ul style="list-style-type: none"> <li>• Security cable lock</li> </ul>
<b>Operating system</b>	<p><b>Preinstalled:</b></p> <ul style="list-style-type: none"> <li>• Windows 8.1 Standard, 64 bit</li> <li>• Windows 8.1 Professional, 64 bit</li> <li>• FreeDOS 2.0, for Intel models only</li> </ul>

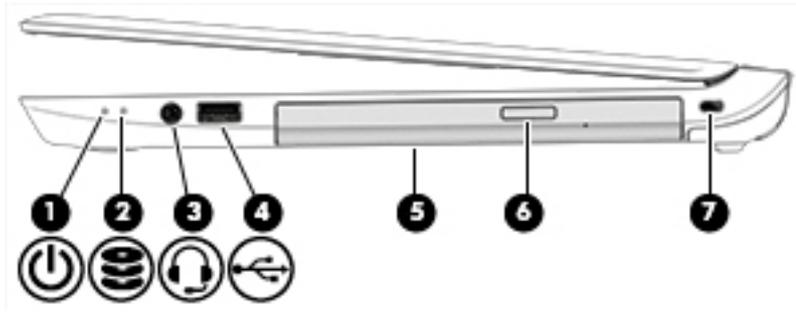
---

<b>Category</b>	<b>Description</b>
	<ul style="list-style-type: none"><li>• Ubuntu Linux</li></ul>
<b>Serviceability</b>	<b>End-user replaceable parts:</b> <ul style="list-style-type: none"><li>• AC adapter</li><li>• Battery</li><li>• Memory module</li><li>• Optical drive</li></ul>

---

## 2 External component identification

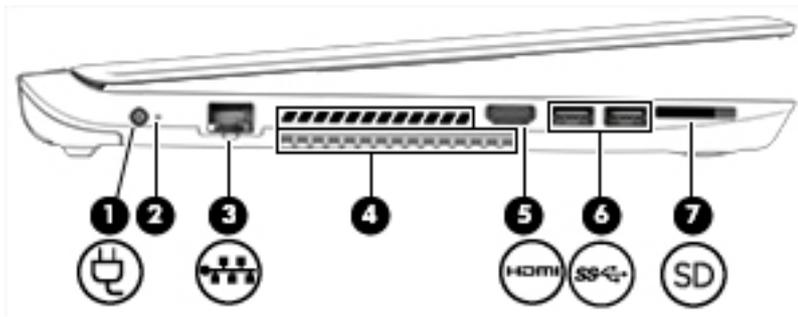
### Right side



Component	Description
(1)  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>
(2)  Hard drive light	<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>
(3)  Audio-out (headphone)/Audio-in (microphone) 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 microphone-only devices.</p> <p><b>WARNING!</b> To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, refer to the <i>Regulatory, Safety, and Environmental Notices</i>. To access this guide, from the Start screen, type <code>support</code>, and then select the <b>HP Support Assistant</b> app.</p> <p><b>NOTE:</b> When a device is connected to the jack, the computer speakers are disabled.</p> <p><b>NOTE:</b> Be sure that the device cable has a 4-conductor connector that supports both audio-out (headphone) and audio-in (microphone).</p>
(4)  USB 2.0 port	Connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub.
(5)  Optical drive	Depending on your computer model, reads an optical disc or reads and writes to an optical disc.

Component	Description
	<b>NOTE:</b> For disc compatibility information, go to the Help and Support web page. Follow the web page instructions to select your computer model. Select <b>Drivers &amp; Downloads</b> , and then follow the on-screen instructions.
(6)	Optical drive eject button Releases the disc tray.
(7) 	Security cable slot Attaches an optional security cable to the computer. <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.

## Left side



Component	Description
(1)	Power connector Connects an AC adapter.
(2)	AC adapter light <ul style="list-style-type: none"> <li>On: The AC adapter is connected and the battery is charged.</li> <li>Off: The computer is using battery power.</li> </ul>
(3) 	RJ-45 (network) jack Connects a network cable.
(4)	Vents (2) Enable airflow to cool internal components. <b>NOTE:</b> The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.
(5) 	HDMI port Connects an optional video or audio device, such as a high-definition television, any compatible digital or audio component, or a high-speed HDMI device.
(6) 	USB 3.0 ports (2) Connect an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub.
(7) 	Memory card reader Reads optional memory cards that store, manage, share, or access information. To insert a card: Hold the card label-side up, with connectors facing the slot, insert the card into the slot, and then push in on the card until it is firmly seated.

Component	Description
	To remove a card: Press in on the card it until it pops out.

## Display



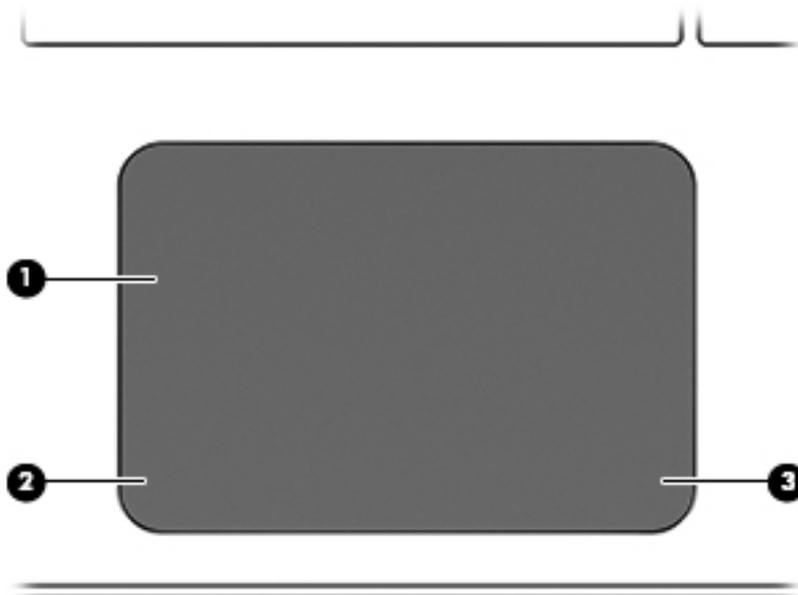
Component	Description
(1) Internal display switch	Turns off the display and initiates Sleep if the display is closed while the power is on.  <b>NOTE:</b> The internal display switch is not visible from the outside of the computer.
(2) WLAN antennas* (select models only)	Send and receive wireless signals to communicate with wireless local area networks (WLANs).
(3) WLAN antennas*	Send and receive wireless signals to communicate with wireless local area networks (WLANs).
(4) Internal microphones	Record sound.
(5) Webcam light	On: The webcam is in use.
(6) Webcam	Records video and captures photographs. Some models allow you to video conference and chat online using streaming video.  To use the webcam, from the Start screen, type <i>camera</i> , and then select <b>Camera</b> from the list of applications.

\*The antennas are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas free from obstructions. For wireless regulatory notices, see the section of the *Regulatory, Safety, and Environmental Notices*

Component	Description
	that applies to your country or region. To access this guide, from the Start screen, type <code>support</code> , and then select the <b>HP Support Assistant</b> app.

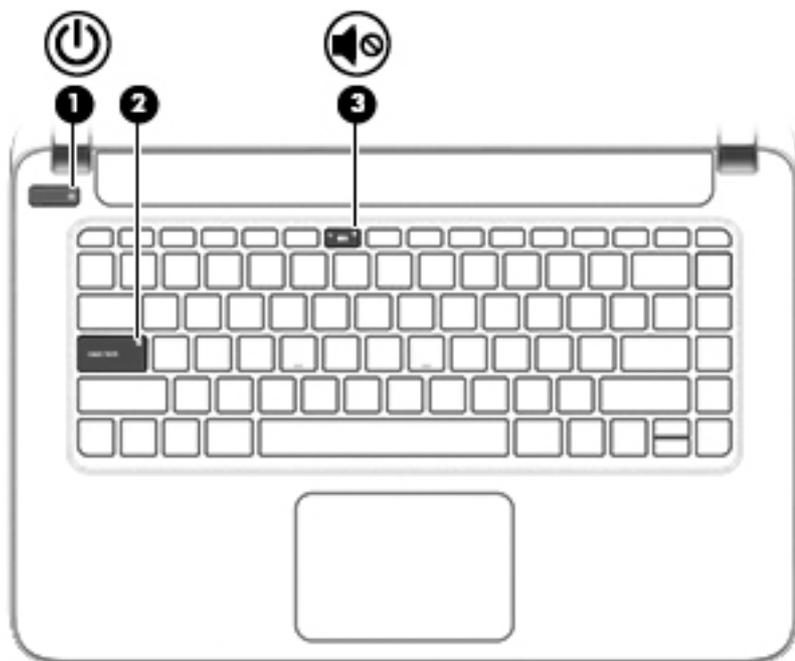
## Top

### TouchPad



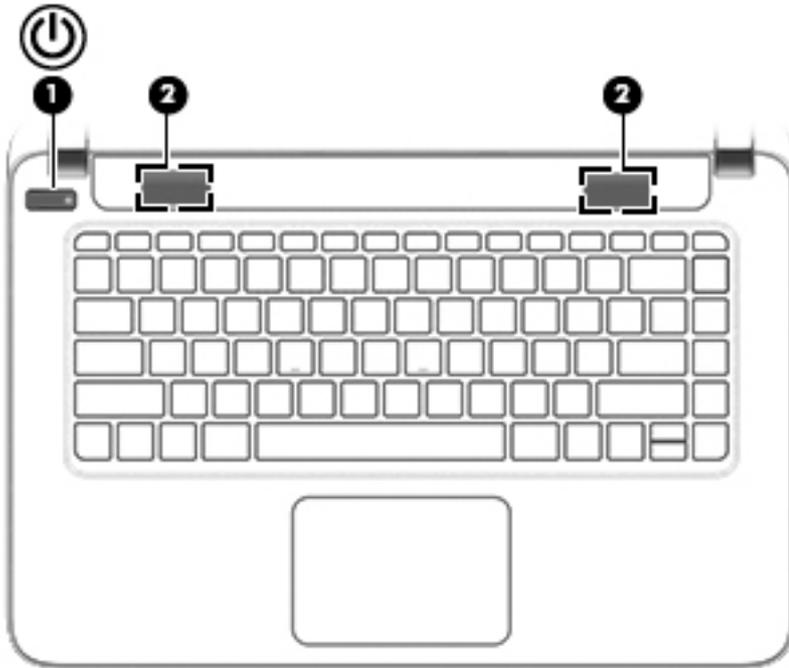
Component	Description
(1) TouchPad zone	Reads your finger gestures to move the pointer or activate items on the screen. <b>NOTE:</b> The TouchPad also supports edge-swipe gestures.
(2) Left TouchPad button	Functions like the left button on an external mouse.
(3) Right TouchPad button	Functions like the right button on an external mouse.

## Lights



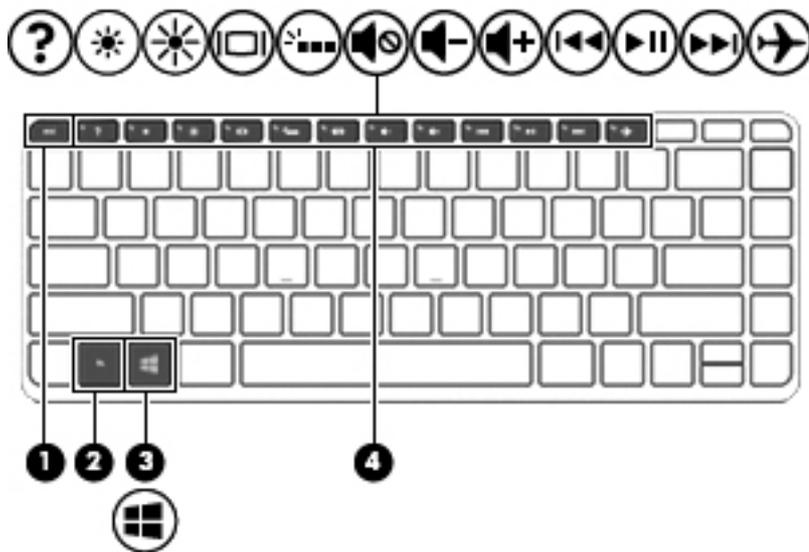
Component	Description
(1)  Power light	<ul style="list-style-type: none"><li>• On: The computer is on.</li><li>• Blinking: The computer is in the Sleep state, a power-saving state. The computer shuts off power to the display and other unneeded components.</li><li>• Off: The computer is off or in Hibernation. Hibernation is a power-saving state that uses the least amount of power.</li></ul>
(2) Caps lock light	On: Caps lock is on, which switches the keys to all capital letters.
(3)  Mute light	<ul style="list-style-type: none"><li>• Amber: Computer sound is off.</li><li>• Off: Computer sound is on.</li></ul>

## Buttons and speakers



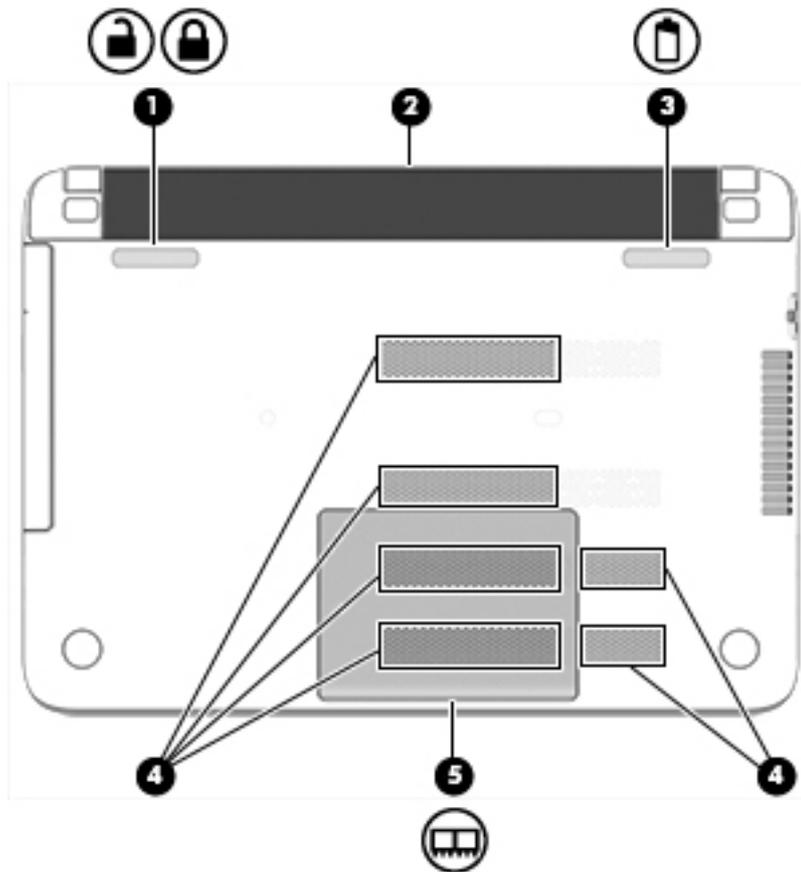
Component	Description
<p>(1)  Power button</p>	<ul style="list-style-type: none"><li>• When the computer is off, press the button to turn on the computer.</li><li>• When the computer is on, press the button briefly to initiate Sleep.</li><li>• When the computer is in the Sleep state, press the button briefly to exit Sleep.</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 will result in the loss of unsaved information.</p> <p>If the computer has stopped responding and Windows 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. From the Start screen, type <code>power</code>, select <b>Power and sleep settings</b>, and then select <b>Power and sleep</b> from the list of applications.</p>
<p>(2) Speakers</p>	<p>Produce sound.</p>

## Keys



Component	Description
(1) <a href="#">esc</a> key	Displays system information when pressed in combination with the <a href="#">fn</a> key.
(2) <a href="#">fn</a> key	Executes frequently used system functions when pressed in combination with the <a href="#">esc</a> key, or on select models, the <a href="#">b</a> key or the <a href="#">spacebar</a> .
(3)  Windows key	Returns you to the Start screen from an open app or the Windows desktop. <b>NOTE:</b> Pressing the Windows key again will return you to the previous screen.
(4) Action keys	Execute frequently used system functions. <b>NOTE:</b> On select models, the <a href="#">f5</a> action key turns the radiance backlight keyboard feature off or on.

## Bottom



Component	Description
(1) 	Battery lock Locks the battery in the battery bay.
	
(2)	Battery bay Holds the battery.
(3) 	Battery release latch Releases the battery.
(4)	Vents (6) Enable airflow to cool internal components. <b>NOTE:</b> The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.
(5) 	Service door Provides access to the memory module slots.

# Labels

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

 **IMPORTANT:** All labels described in this section will be located in one of 3 places depending on your computer model: affixed to the bottom of the computer, located in the battery bay, or under the service door.

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

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



---

## Component

---

- (1) Serial number
  - (2) Product number
  - (3) Warranty period
  - (4) Model number (select models only)
- 

- Microsoft® Certificate of Authenticity label (select models only prior to Windows 8)—Contains the Windows Product Key. You may need the Product Key to update or troubleshoot the operating system. HP platforms preinstalled with Windows 8 or Windows 8.1 do not have the physical label, but have a Digital Product Key electronically installed.

 **NOTE:** This Digital Product Key is automatically recognized and activated by Microsoft Operating Systems on a reinstall of the Windows 8 or Windows 8.1 operating system with HP approved recovery methods.

---

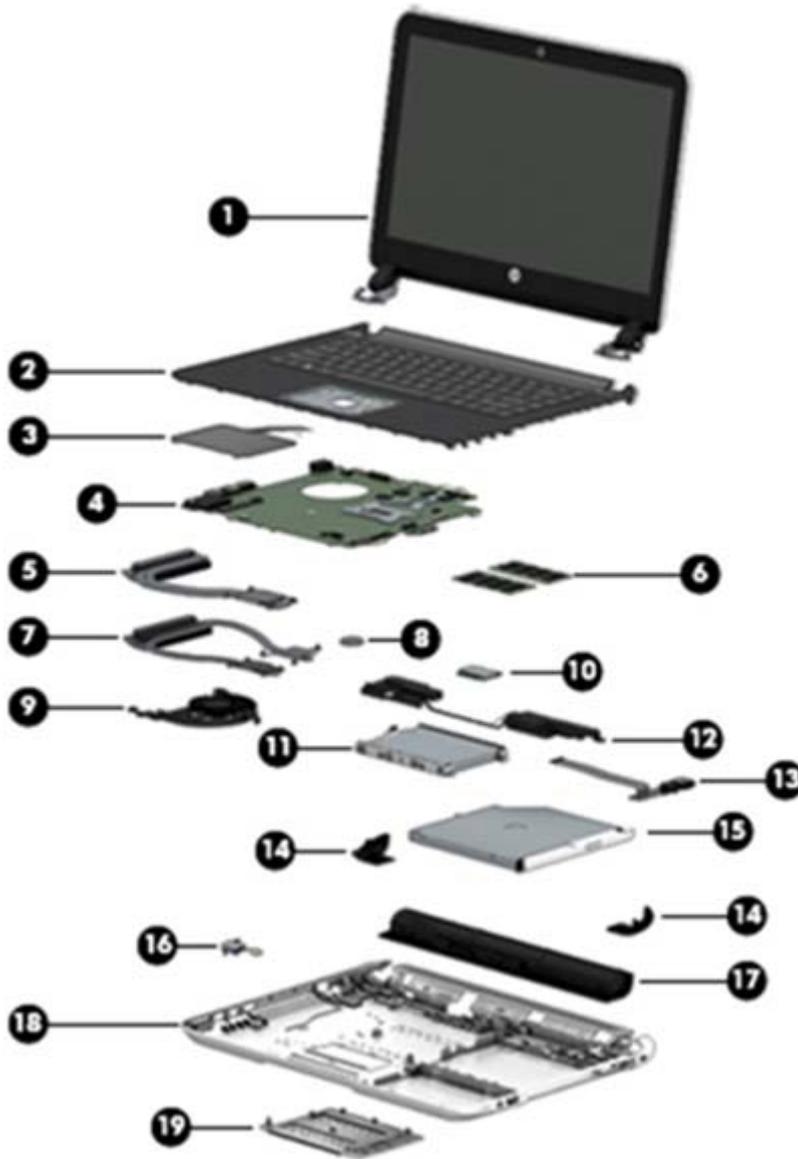
- Regulatory label(s)—Provide(s) regulatory information about the computer.
- Wireless certification label(s)—Provide(s) information about optional wireless devices and the approval markings for the countries or regions in which the devices have been approved for use.

# 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

 **NOTE:** Details about your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer. See [Labels on page 13](#) for details.



Item	Component	Spare part number	
<b>(1)</b>	<b>Display assembly, 14.0 in</b> (35.56 cm), high definition (HD), WLED, SVA BrightView		
	<b>Display assembly, 14.0 in</b> (35.56 cm), high definition (HD), WLED, SVA BrightView and touch		
	Flat display assembly for use with HP Pavilion Notebooks. This 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> and <a href="#">Display assembly on page 70</a> .		
<b>(2)</b>	<b>Top cover</b> (includes keyboard and cable):		
	Black finish for use in:		
	• Brazil	767263-201	
	• France and the United Kingdom	767263-DB1	
	• Latin America	767263-161	
	• South Korea	767263-AD1	
	• Taiwan	767263-AB1	
	• Thailand	767263-281	
	• United States	767263-001	
	White finish for use in:		
	• Brazil	767264-201	
	• France and the United Kingdom	767264-DB1	
	• Latin America	767264-161	
	• South Korea	767264-AD1	
	• Taiwan	767264-AB1	
	• Thailand	767264-281	
	• United States	767264-001	
	<b>(3)</b>	<b>TouchPad button board</b> (includes cable)	
		Ash silver finish	767256-001
		Ano silver finish	767257-001
<b>(4)</b>	<b>System board</b> (includes replacement thermal material):		
	<b>For computer models equipped with Intel processors and UMA graphics</b>		
	<b>5th generation</b>		
	Intel Core i7-5500U 2.4 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	798103-001	
	Intel Core i7-5500U 2.4 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Standard	798103-501	
	Intel Core i5-5200U 2.2 GHz processor, SC turbo up to 2.7 GHz (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	782293-001	
Intel Core i5-5200U 2.2 GHz processor, SC turbo up to 2.7 GHz (4 MB L3 cache, dual core, 15 W) for use with Windows Standard	782293-501		

Item	Component	Spare part number
	Intel Core i5-5200U 2.2 GHz processor, SC turbo up to 2.7 GHz (4 MB L3 cache, dual core, 15 W) for use with Windows Professional	782293-601
	Intel Core i3-5010U 2.1 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	802984-001
	Intel Core i3-5010U 2.1 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	802984-501
	Intel Core i3-5005U 2.0 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	782294-001
	Intel Core i3-5005U 2.0 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	782294-501
	Intel Core i3-5005U 2.0 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional	782294-601
	<b>4th generation</b>	
	Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	780205-001
	Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Standard	780205-501
	Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Professional	780205-601
	Intel Core i5-4210U 1.7 GHz processor, SC turbo (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	763734-001
	Intel Core i5-4210U 1.7 GHz processor, SC turbo (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	763734-501
	Intel Core i5-4210U 1.9 GHz processor, SC turbo (3 MB L3 cache, dual core, 15 W) for use with Windows Professional	763734-601
	Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	774568-001
	Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	774568-501
	Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (3 MB L3 cache, dual core, 15 W) for use with Windows Professional	774568-601
	Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	773143-001
	Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	773143-501
	Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional	773143-601
	Intel Core i3-4010U 1.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	763735-001
	Intel Core i3-4010U 1.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	763735-501
	Intel Core i3-4010U 1.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional	763735-601
	<b>Bay Trail-M</b>	

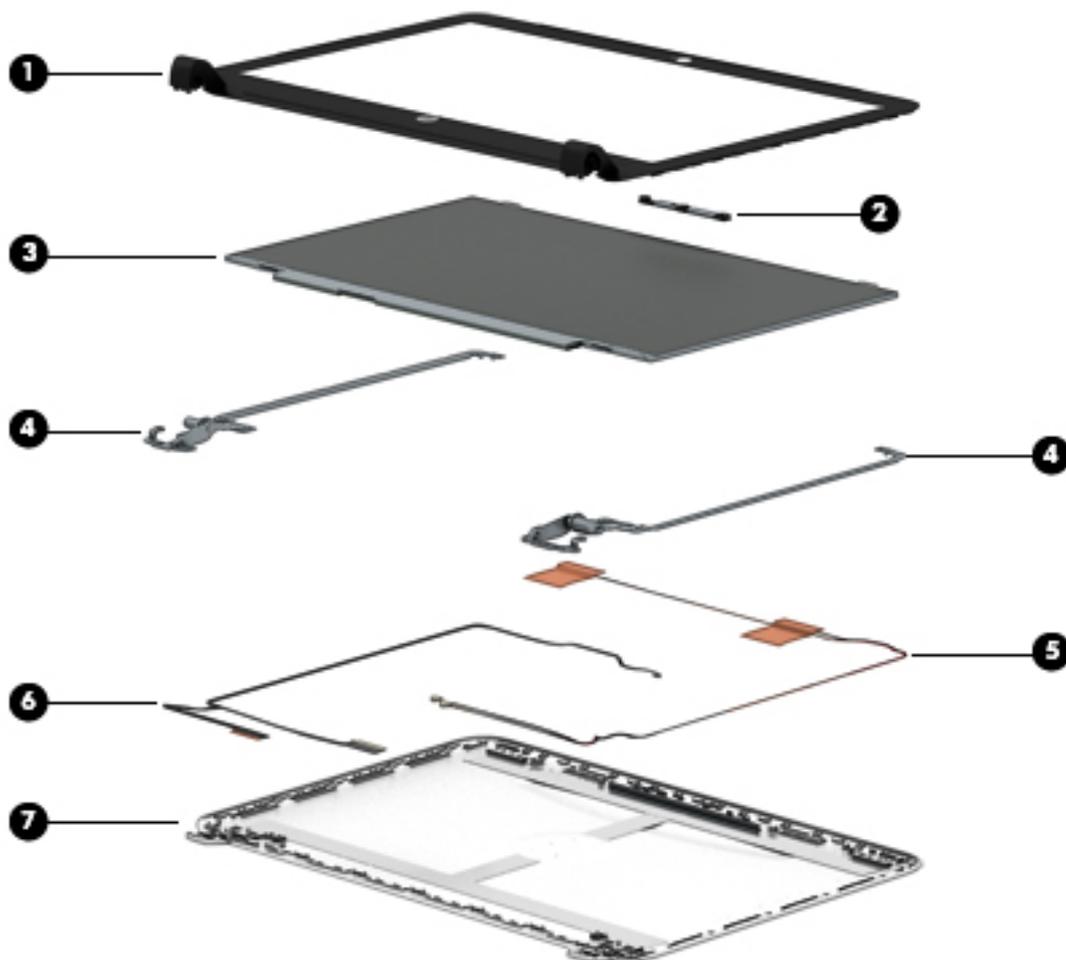
Item	Component	Spare part number
	Intel Pentium N3540 processor, turbo up to 2.66 GHz (2 MB L2 cache, quad core, SDP 4.5 W) for use with FreeDOS and Ubuntu Linux	787548-001
	Intel Pentium N3540 processor, turbo up to 2.66 GHz (2 MB L2 cache, quad core, SDP 4.5 W) for use with Windows Standard	787548-501
	Intel Pentium N3540 2.16 GHz processor, turbo up to 2.66 GHz (2 MB L2 cache, quad core, SDP 4.5 W) for use with Windows Professional	787548-601
	Intel Pentium N3530 2.17 GHz processor, turbo up to 2.58 GHz (2 MB L2 cache, quad core, SDP 4.5 W) for use with FreeDOS and Ubuntu Linux	766361-001
	Intel Pentium N3530 2.17 GHz processor, turbo up to 2.58 GHz (2 MB L2 cache, quad core, SDP 4.5 W) for use with Windows Standard	766361-501
	Intel Pentium N3530 2.17 GHz processor, turbo up to 2.58 GHz (2 MB L2 cache, quad core, SDP 4.5 W) for use with Windows Professional	766361-101
<b>For computer models equipped with Intel processors and discrete graphics</b>		
<b>5th generation</b>		
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-5500U 2.4 GHz, SC turbo to 3.0 GHz processor (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	782295-001
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-5500U 2.4 GHz, SC turbo to 3.0 GHz processor (4 MB L3 cache, dual core, 15 W) for use with Windows Standard	782295-501
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-5500U 2.4 GHz, SC turbo to 3.0 GHz processor (4 MB L3 cache, dual core, 15 W) for use with Windows Professional	782295-601
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	782296-001
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	782296-501
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional	782296-601
<b>4th generation</b>		
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	763736-001
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Standard	763736-501
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Professional	763736-601
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4500U 1.8 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	774569-001
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4500U 1.8 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Standard	774569-501
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4500U 1.8 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Professional	774569-601

Item	Component	Spare part number
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo GHz (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	763737-001
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	763737-501
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo (3 MB L3 cache, dual core, 15 W) for use with Windows Professional	763737-601
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	774570-001
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (4 MB L3 cache, dual core, 15 W) for use with Windows Standard	774570-501
	NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (4 MB L3 cache, dual core, 15 W) for use with Windows Professional	774570-601
	NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	763739-001
	NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	763739-501
	NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo (3 MB L3 cache, dual core, 15 W) for use with Windows Professional	763739-601
	NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	773144-001
	NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	773144-501
	NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional	773144-601
	NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4010U 1.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	763740-001
	NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4010U 1.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	763740-501
	NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4010U 1.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional	763740-601
<b>(5)</b>	<b>Heat sink assembly</b> for use only on computer models equipped with UMA graphics (includes replacement thermal material):	
	For use only on computer models equipped with Intel processors and UMA graphics 8.5 W	767341-001
	For use only on computer models equipped with Intel processors and UMA graphics 19 W	767339-001
<b>(6)</b>	<b>Memory modules (2), (PC3L, 12800, 1600 MHz):</b>	
	2 GB memory module	691739-001
	4 GB memory module	691740-001
	8 GB memory module	693374-001
<b>(7)</b>	<b>Heat sink assembly</b> for use only on computer models equipped with switchable discrete graphics (includes replacement thermal material):	

Item	Component	Spare part number
	For use only on computer models equipped with Intel processors and switchable discrete graphics 19 W	767340-001
<b>(8)</b>	<b>RTC battery</b>	697917-001
<b>(9)</b>	<b>Fan</b>	765788-001
<b>(10)</b>	<b>WLAN module:</b>	
	Realtek RTL8188EE 802.11 bgn 1x1 Wi-Fi adapter	709848-005
	Broadcom BCM43142 802.11 bgn 1x1 Wi-Fi + BT4.0 HMC combo adapter	753076-005
	Intel Dual Band Wireless-AC 3160 802.11 ac 1x1 Wi-Fi + BT 4.0 combo adapter	710662-005
	Intel Dual Band Wireless-AC 3160 802.11 ac 1x1 Wi-Fi + BT 4.0 +PCIe + USB combo adapter	784638-005
<b>(11)</b>	<b>Speakers</b> (include subwoofer, speaker cables, and rubber isolators)	767262-001
<b>(12)</b>	<b>Hard drive</b> (does not include the hard drive rubber bracket, hard drive connector cable, or screws)	
	1 TB, 5400 rpm, 9.5 mm	778192-005
	750 GB, 5400 rpm, 9.5 mm	778190-005
	500 GB 5400 rpm 9.5 mm	778188-005
	1 TB, 5400 rpm + 8 GB NAND hybrid, 9.5 mm	731999-005
	750 GB 5400 rpm + 8 GB NAND hybrid, 9.5 mm	732001-005
	500 GB 5400 rpm + 8 GB NAND hybrid, 7 mm	732000-005
	<b>Hard Drive Hardware Kit</b> , includes:	767247-001
	Hard drive rubber bracket, left and right	
	Hard drive connector cable	
<b>(13)</b>	<b>USB/audio board</b> (includes cable)	767255-001
<b>(14)</b>	<b>Rear corner covers</b> are available with the plastics kit, spare part number 767259-001.	
<b>(15)</b>	<b>Optical drive, DVD+/-RW DL SuperMulti</b> (includes optical drive hardware kit with optical drive bezel and bracket):	
	Aqua blue finish	767251-001
	Natural silver finish	767252-001
	Snow white finish	767250-001
	Tropical blue finish	790005-001
	Vibrant red finish	767253-001
<b>(16)</b>	<b>Power connector cable</b> (includes bracket)	767246-001
<b>(17)</b>	<b>Battery</b> 4 cell, 41 Whr, 2.8 Ah, Li-ion battery, for use with computer models with Intel processors	756743-001
<b>(18)</b>	<b>Base enclosure</b> (includes battery release latch mechanism, RJ45 cover, and screws)	
	Aqua blue finish	763559-001
	Natural silver finish	763560-001
	Snow white finish	763558-001

Item	Component	Spare part number
	Tropical blue finish	790004-001
	Vibrant red finish	763561-001
<b>(19)</b>	<b>Service door</b>	
	Aqua finish	767272-001
	Natural silver finish	767273-001
	Snow white finish	767258-001
	Tropical blue finish	790006-001
	Vibrant red finish	767274-001

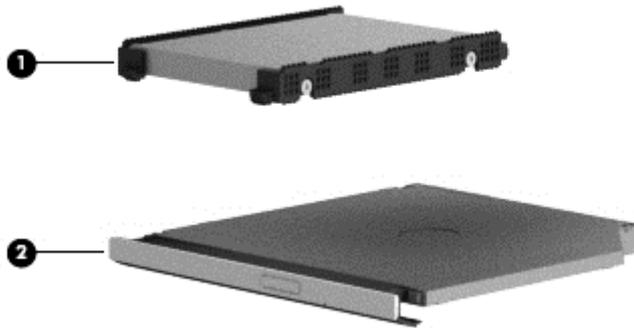
## Display assembly subcomponents



Item	Component	Spare part number
<b>(1)</b>	<b>Display bezel</b> (includes screws)	767243-001
<b>(2)</b>	<b>Webcamera/microphone module</b> (includes adhesive and screws)	762521-001

Item	Component	Spare part number
	<b>Webcamera/microphone module, touch models</b> (includes adhesive and screws)	762545-001
<b>(3)</b>	<b>14 in (35.56 cm), BrightView, HD, WLED, SVA flat display panel</b> (includes screws)	763566-001
	<b>14 in (35.56 cm), BrightView+, touch, HD, WLED, SVA flat display panel</b>	763567-001
<b>(4)</b>	<b>Display Hinge Kit</b> (includes left and right hinges and screws)	767248-001
	<b>Display Hinge Kit, touch models</b> (includes left and right hinges and screws)	767249-001
<b>(5)</b>	<b>Antenna Kit</b> (includes left and right wireless antenna cables and transceivers and screws)	767237-001
	<b>Antenna Kit, touch models</b> (includes left and right wireless antenna cables and transceivers and screws)	767238-001
<b>(6)</b>	<b>Display panel cable</b> (includes webcamera/microphone module cable and screws)	767244-001
	<b>Display panel cable, touch models</b> (includes webcamera/microphone module cable and screws)	767245-001
<b>(7)</b>	<b>Display back cover</b> (includes screws):	
	Aqua blue finish	763563-001
	Natural silver finish	763564-001
	Snow white finish	763562-001
	Tropical blue finish	790003-001
	Vibrant red finish	763565-001
	Aqua blue finish, touch models	767240-001
	Natural silver finish, touch models	767241-001
	Snow white finish, touch models	767239-001
	Vibrant red finish, touch models	767242-001

## Mass storage devices



Item	Component	Spare part number
<b>(1)</b>	<b>Hard drive</b> (does not include the hard drive rubber bracket, hard drive connector cable, or screws)	
	1 TB, 5400 rpm, 9.5 mm	778192-005
	750 GB, 5400 rpm, 9.5 mm	778190-005
	500 GB 5400 rpm 9.5 mm	778188-005
	1 TB, 5400 rpm + 8 GB NAND hybrid, 9.5 mm	731999-005
	750 GB 5400 rpm + 8 GB NAND hybrid, 9.5 mm	732001-005
	500 GB 5400 rpm + 8 GB NAND hybrid, 7 mm	732000-005
	<b>Hard Drive Hardware Kit</b> , includes:	767247-001
	Hard drive rubber bracket, left and right	
	Hard drive connector cable	
<b>(2)</b>	<b>Optical drive, DVD+/-RW DL SuperMulti</b> (includes optical drive hardware kit with optical drive bezel and bracket):	
	Aqua blue finish	767251-001
	Natural silver finish	767252-001
	Snow white finish	767250-001
	Tropical blue finish	790005-001
	Vibrant red finish	767253-001

## Miscellaneous parts

Component	Spare part number
<b>AC adapter:</b>	
45 W HP Smart AC adapter (nPFC, RC, 3-wire, 4.5 mm, nslim)	741727-001
65 W HP Smart AC adapter (nPFC, RC, 3-wire, 4.5 mm), select models only	714657-001
65 W HP Smart AC adapter (nPFC, RC, 3-wire, 4.5 mm)	710412-001
<b>Power cord (3 pin, black, 1.0 m):</b>	
For use in North America	755530-001
For use in Argentina	755530-D01
For use in Australia	755530-011
For use in Brazil	755530-202
For use in Europe	755530-021
For use in India	755530-D61
For use in Italy	755530-061
For use in the People's Republic of China	755530-AA1
For use in South Korea	755530-AD1
For use in Taiwan	755530-AB1
For use in Thailand	755530-201
For use in the United Kingdom and Singapore	755530-031
<b>Screw Kit</b>	767261-001
<b>HDMI to VGA Adapter</b>	701943-001

## Sequential part number listing

Spare part number	Description
691739-001	2 GB memory module (PC3, 12800, 1600 MHz)
691740-001	4 GB memory module (PC3, 12800, 1600 MHz)
693374-001	8 GB memory module (PC3, 12800, 1600 MHz)
697917-001	RTC battery
701943-001	HDMI to VGA adapter
709848-001	Realtek RTL8188EE 802.11 bgn Wi-Fi Adapter
710412-001	65 W HP Smart AC adapter (nPFC, RC, 3-wire, 4.5 mm), select models only
710662-001	Intel Dual Band Wireless-AC 3160 802.11 ac 1x1 WiFi + BT 4.0 combo adapter for use with computer models with Intel processors
714657-001	65 W HP Smart AC adapter (nPFC, RC, 3-wire, 4.5 mm), select models only
731999-005	Hard drive, 1 TB, 5400 rpm + 8 GB NAND hybrid, 9.5 mm
732000-005	Hard drive 500 GB 5400 rpm + 8 GB NAND hybrid, 7 mm
732001-005	Hard drive, 750 GB 5400 rpm + 8 GB NAND hybrid, 9.5 mm
741727-001	45 W HP Smart AC adapter (nPFC, RC, 3-wire, 4.5 mm), nslim
753076-001	Broadcom BCM43142 802.11 bgn 1x1 Wi-Fi + BT4.0 HMC combo adapter, for use only on computer models equipped with Intel processors
755530-001	Power cord for use in North America (3 pin, black, 1.0 m)
755530-011	Power cord for use in Australia (3 pin, black, 1.0 m)
755530-021	Power cord for use in Europe (3 pin, black, 1.0 m)
755530-031	Power cord for use in the United Kingdom and Singapore (3 pin, black, 1.0 m)
755530-061	Power cord for use in Italy (3 pin, black, 1.0 m)
755530-201	Power cord for use in Thailand (3 pin, black, 1.0 m)
755530-202	Power cord for use in Brazil (3 pin, black, 1.0 m)
755530-AA1	Power cord for use in People's Republic of China (3 pin, black, 1.0 m)
755530-AB1	Power cord for use in Taiwan (3 pin, black, 1.0 m)
755530-AD1	Power cord for use in South Korea (3 pin, black, 1.0 m)
755530-D01	Power cord for use in Argentina (3 pin, black, 1.0 m)
755530-D61	Power cord for use in India (3 pin, black, 1.0 m)
756743-001	4 cell, 41 Whr, 2.8 Ah, Li-ion battery
762521-001	Webcamera/microphone module (includes adhesive)
762545-001	Webcamera/microphone module, touch models (includes adhesive)
763558-001	Base enclosure, snow white (includes battery release latch mechanism, RJ-45 cover, and screws)
763559-001	Base enclosure, aqua blue (includes battery release latch mechanism, RJ-45 cover, and screws)

<b>Spare part number</b>	<b>Description</b>
763560-001	Base enclosure, natural silver (includes battery release latch mechanism, RJ-45 cover, and screws)
763561-001	Base enclosure, vibrant red (includes battery release latch mechanism, RJ-45 cover, and screws)
763562-001	Display back cover in snow white
763563-001	Display back cover in aqua blue
763564-001	Display back cover in natural silver
763565-001	Display back cover in vibrant red
763566-001	<b>14 in</b> (35.56 cm), WLED, HD, BrightView flat display panel
763567-001	<b>14 in</b> (35.56 cm), WLED, HD, BrightView, touch, flat display panel
763734-001	System board for use with computer models with UMA graphics, Intel Core i5-4210U 1.7 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
763734-501	System board for use with computer models with UMA graphics, Intel Core i5-4210U 1.7 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
763734-601	System board for use with computer models with UMA graphics, Intel Core i5-4210U 1.7 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
763735-001	System board for use with computer models with UMA graphics, Intel Core i3-4010U 1.7 GHz processor, 1600 MHz (3.0 MB L3 cache, dual core, 15W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
763735-501	System board for use with computer models with UMA graphics, Intel Core i3-4010U 1.7 GHz processor, 1600 MHz (3.0 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
763735-601	System board for use with computer models with UMA graphics, Intel Core i3-4010U 1.7 GHz processor, 1600 MHz (3.0 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
763736-001	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
763736-501	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
763736-601	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
763737-001	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
763737-501	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo GHz (3.0 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
763737-601	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo GHz (3.0 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)

<b>Spare part number</b>	<b>Description</b>
763739-001	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
763739-501	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
763739-601	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
763740-001	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4010U 1.7 GHz processor, 1600 MHz (3.0 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
763740-501	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4010U 1.7 GHz processor, 1600 MHz (3.0 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
763740-601	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4010U 1.7 GHz processor, 1600 MHz (3.0 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
765788-001	Fan
766361-001	System board for use with computer models with UMA graphics, Intel Pentium N3530 2.58 GHz processor, turbo up to 2.42 GHz (2.0 MB L2 cache, quad core, SDP 4.5 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
766361-501	System board for use with computer models with UMA graphics, Intel Pentium N3530 2.58 GHz processor, turbo up to 2.42 GHz (2.0 MB L2 cache, quad core, SDP 4.5 W) for use with Windows Standard (includes replacement thermal material)
766361-601	System board for use with computer models with UMA graphics, Intel Pentium N3530 2.58 GHz processor, turbo up to 2.42 GHz (2.0 MB L2 cache, quad core, SDP 4.5 W) for use with Windows Professional (includes replacement thermal material)
767237-001	Antenna Kit (includes left and right wireless antenna cables and transceivers and screws)
767238-001	Antenna Kit, touch models (includes left and right wireless antenna cables and transceivers and screws)
767239-001	Display back cover in snow white, touch models
767240-001	Display back cover in aqua blue, touch models
767241-001	Display back cover in natural silver, touch models
767242-001	Display back cover in vibrant red, touch models
767243-001	Display bezel (includes 2 rubber screw covers and rubber bumpers)
767244-001	Display panel cable (includes webcam/microphone module cable and screws)
767245-001	Display panel cable, touch models (includes webcam/microphone module cable and screws)
767246-001	Power connector cable (includes bracket)
767247-001	Hard Drive Hardware Kit (includes left and right hard drive rubber brackets and hard drive connector cable)
767248-001	Display Hinge Kit (includes left and right hinges and screws)
767249-001	Display Hinge Kit, touch models (includes left and right hinges and screws)
767250-001	Optical drive, DVD±RW Double-Layer SuperMulti Drive, snow white (includes bezel and bracket)

<b>Spare part number</b>	<b>Description</b>
767251-001	Optical drive, DVD±RW Double-Layer SuperMulti Drive, aqua blue (includes bezel and bracket)
767252-001	Optical drive, DVD±RW Double-Layer SuperMulti Drive, natural silver (includes bezel and bracket)
767253-001	Optical drive, DVD±RW Double-Layer SuperMulti Drive, vibrant red (includes bezel and bracket)
767254-001	Power button board (includes cable)
767255-001	USB/audio board (includes cable)
767256-001	TouchPad button board, ash silver (includes cable)
767257-001	TouchPad button board, ano silver (includes cable)
767258-001	Plastics Kit (includes service door, snow white)
767259-001	Plastics Kit (includes left and right rear corner covers)
767260-001	Rubber Kit (includes base rear rubber)
767261-001	Screw kit
767262-001	Speakers (include speaker cable)
767263-001	Top cover in black finish for use in the United States (includes keyboard and keyboard cable)
767263-161	Top cover in black finish for use in Latin America (includes keyboard and keyboard cable)
767263-201	Top cover in black finish for use in Brazil (includes keyboard and keyboard cable)
767263-281	Top cover in black finish for use in Thailand (includes keyboard and keyboard cable)
767263-AB1	Top cover in black finish for use in Taiwan (includes keyboard and keyboard cable)
767263-AD1	Top cover in black finish for use in South Korea (includes keyboard and keyboard cable)
767263-DB1	Top cover in black finish for use in the United Kingdom and France (includes keyboard and keyboard cable)
767264-001	Top cover in white finish for use in the United States (includes keyboard and keyboard cable)
767264-161	Top cover in white finish for use in Latin America (includes keyboard and keyboard cable)
767264-201	Top cover in white finish for use in Brazil (includes keyboard and keyboard cable)
767264-281	Top cover in white finish for use in Thailand (includes keyboard and keyboard cable)
767264-AB1	Top cover in white finish for use in Taiwan (includes keyboard and keyboard cable)
767264-AD1	Top cover in white finish for use in South Korea (includes keyboard and keyboard cable)
767264-DB1	Top cover in white finish for use in the United Kingdom and France (includes keyboard and keyboard cable)
767272-001	Plastics Kit (includes service door, aqua blue)
767273-001	Plastics Kit (includes service door, natural silver)
767274-001	Plastics Kit (includes service door, vibrant red)
767339-001	Heat sink for use only on computer models equipped with Intel processors and UMA graphics, 19 W
767340-001	Heat sink for use only on computer models equipped with Intel processors and switchable discrete graphics, 19 W
767341-001	Heat sink for use only on computer models equipped with Intel processors and UMA graphics, 8.5 W

Spare part number	Description
773143-001	System board for use with computer models with UMA graphics, Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
773143-501	System board for use with computer models with UMA graphics, Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
773143-601	System board for use with computer models with UMA graphics, Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
773144-001	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
773144-501	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
773144-601	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
774568-001	System board for use with computer models with UMA graphics, Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (3.0 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
774568-501	System board for use with computer models with UMA graphics, Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (3.0 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
774568-601	System board for use with computer models with UMA graphics, Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (3.0 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
774569-001	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4500U 1.8 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
774569-501	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4500U 1.8 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
774569-601	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4500U 1.8 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
774570-001	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
774570-501	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (4 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
774570-601	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (4 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
778188-005	500 GB, 5400 rpm hard drive (SATA, 9.5 mm, does not include hard drive rubber bracket, hard drive connector cable, or screws)
	<b>NOTE:</b> The hard drive rubber bracket, hard drive connector cable, and screws are included in the Hard Drive Hardware Kit, spare part number 767247-001.

Spare part number	Description
778190-005	750 GB, 5400 rpm hard drive (SATA, 9.5 mm, does not include hard drive rubber bracket, hard drive connector cable, or screws)  <b>NOTE:</b> The hard drive rubber bracket, hard drive connector cable, and screws are included in the Hard Drive Hardware Kit, spare part number 767247-001.
778192-005	1 TB, 5400 rpm hard drive (SATA, 9.5 mm, does not include hard drive rubber bracket, hard drive connector cable, or screws)  <b>NOTE:</b> The hard drive rubber bracket, hard drive connector cable, and screws are included in the Hard Drive Hardware Kit, spare part number 767247-001.
780205-001	System board for use with computer models with UMA graphics, Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
780205-501	System board for use with computer models with UMA graphics, Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
780205-601	System board for use with computer models with UMA graphics, Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
782293-001	System board for use with computer models with UMA graphics, Intel Core i5-5200U 2.2 GHz processor, SC turbo up to 2.7 GHz (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
782293-501	System board for use with computer models with UMA graphics, Intel Core i5-5200U 2.2 GHz processor, SC turbo up to 2.7 GHz (4 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
782293-601	System board for use with computer models with UMA graphics, Intel Core i5-5200U 2.2 GHz processor, SC turbo up to 2.7 GHz (4 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
782294-001	System board for use with computer models with UMA graphics, Intel Core i3-5005U 2.0 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
782294-501	System board for use with computer models with UMA graphics, Intel Core i3-5005U 2.0 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
782294-601	System board for use with computer models with UMA graphics, Intel Core i3-5005U 2.0 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
782295-001	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-5500U 2.4 GHz, SC turbo to 3.0 GHz processor (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
782295-501	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-5500U 2.4 GHz, SC turbo to 3.0 GHz processor (4 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
782295-601	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-5500U 2.4 GHz, SC turbo to 3.0 GHz processor (4 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
782296-001	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
782296-501	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)

<b>Spare part number</b>	<b>Description</b>
782296-601	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
782298-001	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
782298-501	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
802984-001	System board for use with computer models with UMA graphics, Intel Core i3-5010U 2.1 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
802984-501	System board for use with computer models with UMA graphics, Intel Core i3-5010U 2.1 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard (includes replacement thermal material)
782298-601	System board for use with computer models with switchable discrete graphics, NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional (includes replacement thermal material)
784638-005	Intel Dual Band Wireless-AC 3160 802.11 ac 1x1 Wi-Fi + BT 4.0 +PCIe + USB combo adapter
784982-001	Heat spreader
787548-001	System board for use with computer models with UMA graphics, Intel Pentium N3540 processor for use with FreeDOS and Ubuntu Linux (includes replacement thermal material)
787548-501	System board for use with computer models with UMA graphics, Intel Pentium N3540 processor for use with Windows Standard (includes replacement thermal material)
787548-601	System board for use with computer models with UMA graphics, Intel Pentium N3540 processor for use with Windows Professional (includes replacement thermal material)
790003-001	Display back cover in tropical blue
790004-001	Base enclosure, tropical blue (includes battery release latch mechanism, RJ-45 cover, and screws)
790005-001	Optical drive, DVD±RW Double-Layer SuperMulti Drive, tropical blue (includes bezel and bracket)
790006-001	Plastics Kit (includes service door, tropical blue)
798103-001	Intel Core i7-5500U 2.4 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux
798103-501	Intel Core i7-5500U 2.4 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Standard

---

## 4 Removal and replacement procedures preliminary requirements

### Tools required

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

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

### Service considerations

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

---

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

---

### Plastic parts

---

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

---

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

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

Before removing 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.

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

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

Avoid exposing a drive to temperature extremes or liquids.

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

---

# 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, screwdrivers, and vacuums.
- When fixtures must directly contact dissipative surfaces, use fixtures made only of staticsafe 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 tabletop 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 for Customer Self-Repair parts

---

 **NOTE:** The Customer Self-Repair program is not available in all locations. Installing a part not supported by the Customer Self-Repair program may void your warranty. Check your warranty to determine if Customer Self-Repair is supported in your location.

 **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:** Please read and follow the procedures described here to access and replace Customer Self-Repair parts successfully.

 **NOTE:** Details about your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer. See [Labels on page 13](#) for details.

---

This chapter provides removal and replacement procedures for Customer Self-Repair parts.

There may be as many as five screws that must be removed, replaced, and/or loosened when servicing Customer Self-Repair parts. Make special note of each screw size and location during removal and replacement.

## Battery

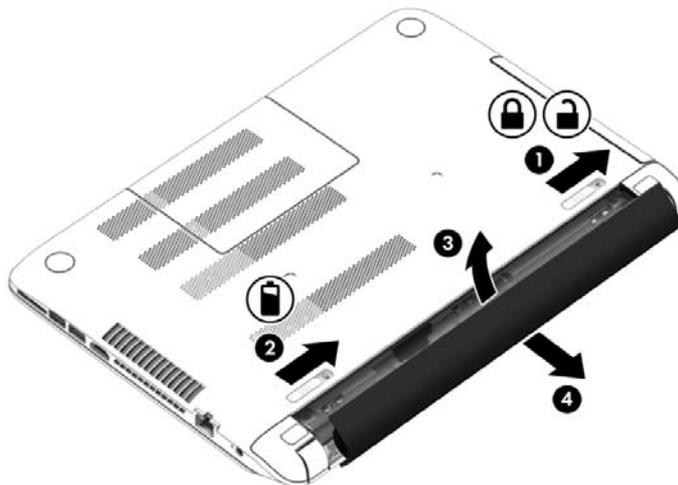
Description	Spare part number
4 cell, 41 Whr, 2.8 Ah, Li-ion battery	756743-001

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 battery:

1. Turn the computer upside down on a flat surface.
2. Firmly slide the battery lock latch **(1)** to unlock the battery and slide the battery release latch **(2)** to release the battery.
3. Slide the battery **(3)** up and then out from the middle **(4)** to remove it from the computer.



Reverse this procedure to insert the battery.

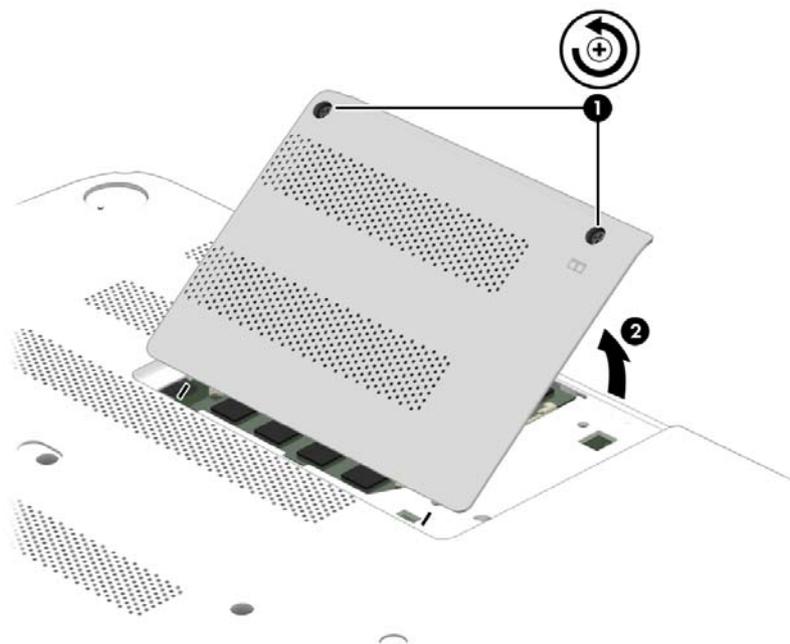
## Service door

Description	Spare part number
Service door is available with the Plastics Kit	
Aqua blue finish	767272-001
Natural silver finish	767273-001
Snow white finish	767258-001
Tropical blue finish	790006-001
Vibrant red finish	767274-001

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 battery (see [Battery on page 37](#)).

Remove the service door:

1. Using a small Phillips screwdriver, loosen the two service door captive screws **(1)**.
2. Lift the door **(2)**.
3. Slide the service door forward to remove.



## Memory module

Description	Spare part number
4 GB memory module (PC3, 12800, 1600 MHz)	691740-001
2 GB memory module (PC3, 12800, 1600 MHz)	691739-001
8 GB memory module (PC3, 12800, 1600 MHz)	693374-001

 **NOTE:** Before adding a memory module, make sure the computer has the most recent BIOS version, and update the BIOS if needed. For Windows operating systems, see [Updating the BIOS on page 75](#); for Ubuntu Linux, see [Ubuntu Linux – Using Setup Utility \(BIOS\) and System Diagnostics on page 78](#).

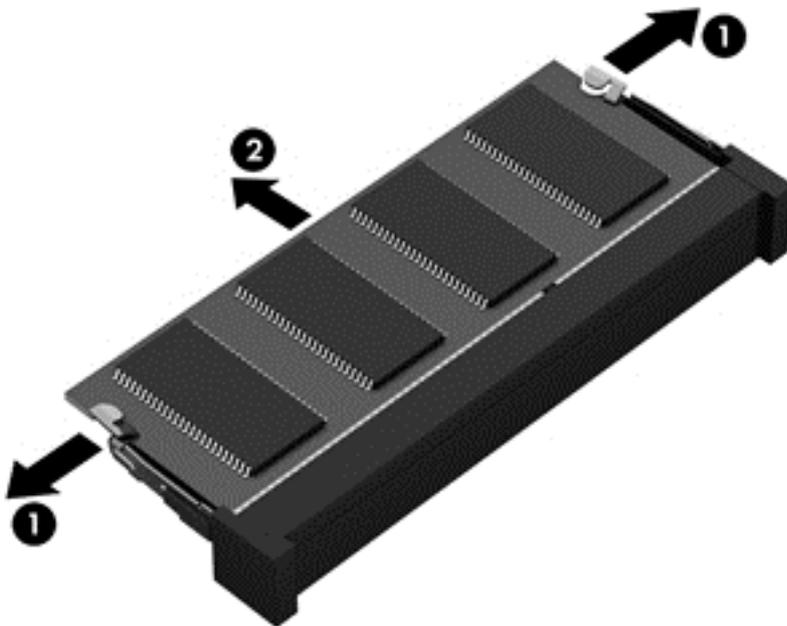
Before removing a memory module, follow these steps:

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 battery (see [Battery on page 37](#)).
5. Remove the service door (see [Service door on page 38](#)).

Remove the memory module:

 **NOTE:** Note the location of the memory module you are removing. If you are replacing it, install the new memory module in the same slot.

1. Spread the two retaining tabs **(1)** on each side of the memory module slot to release the memory module. (The memory module tilts up.)
2. Remove the memory module **(2)** by pulling it away from the slot at a 45 degree angle.



Reverse this procedure to install the memory module.

## Optical drive

 **NOTE:** The optical drive spare part kit includes a bezel and bracket.

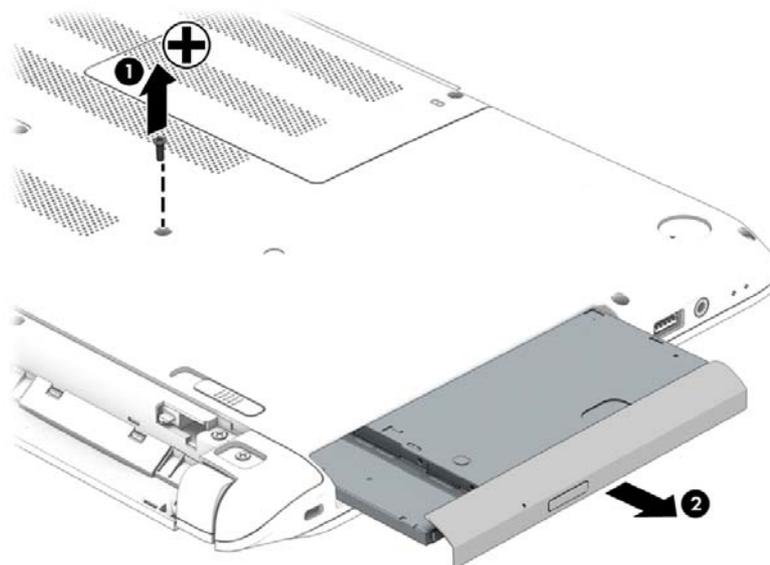
Description	Spare part number
SuperMulti DVD±R/RW Double-Layer Drive	
Aqua blue finish	767251-001
Natural silver finish	767252-001
Snow white finish	767250-001
Tropical blue finish	790005-001
Vibrant red finish	767253-001

Before removing the optical 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 battery (see [Battery on page 37](#)).

Remove the optical drive:

1. Using a small Phillips screwdriver, remove the Phillips M2.5×6.5 screw that secures the optical drive to the computer **(1)**.
2. Pull the tray **(2)** out from the front until the optical drive is completely removed from the computer.

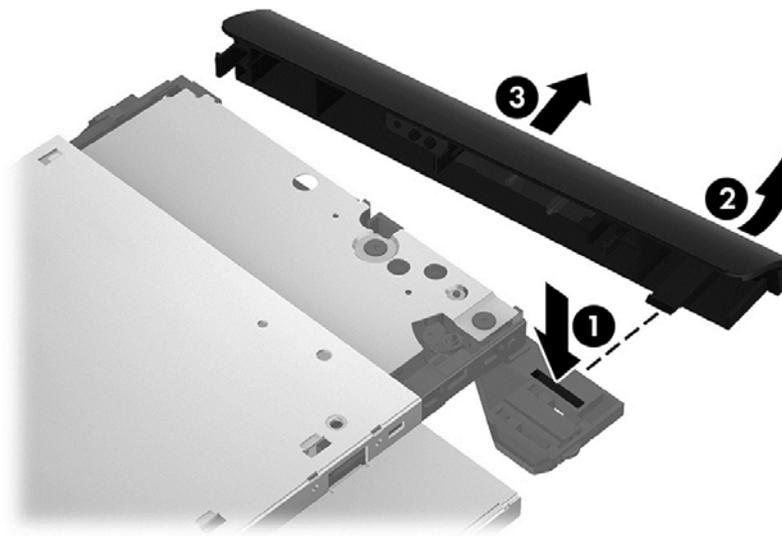


If it is necessary to replace the optical drive bracket and bezel, position the optical drive with the rear panel toward you.

1. Remove the two Phillips screws from the optical drive **(1)** and remove the bracket **(2)**.



2. Remove the tab from the drive **(1)**. Rotate the left side of the bezel outward **(2)**, and then remove the bezel **(3)**.



Reverse this procedure to reassemble and install the optical drive.

---

## 6 Removal and replacement procedures for Authorized Service Provider parts

---

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

 **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 your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer. See [Labels on page 13](#) for details.

---

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

There may be as many as 51 screws that must be removed, replaced, and/or loosened when servicing Authorized Service Provider only parts. Make special note of each screw size and location during removal and replacement.

## Display subcomponents (bezel, webcam, panel)

This section describes removing display subcomponents that do not require that you remove the entire display assembly from the computer. You can remove the display bezel, webcam/microphone module, and display panel while the display assembly is still attached to the computer.

To remove the remaining display subcomponents, you must remove the entire display assembly from the computer. See [Display assembly on page 70](#) for more information about removing the display assembly in its entirety.

Description	Spare part number
Display bezel (includes screws)	767243-001
Raw display panel, <b>14 in</b> (35.56 cm), WLED, HD, BrightView flat display panel	763566-001
Raw display panel, <b>14.0 in</b> (35.56 cm), high definition (HD), WLED, SVA BrightView touch, flat display panel	763567-001
Webcamera/microphone module	762521-001
Webcamera/microphone module, touch models	762545-001

 **IMPORTANT:** Make special note of each screw and screw lock size and location during removal and replacement

Before removing the display panel, follow these steps:

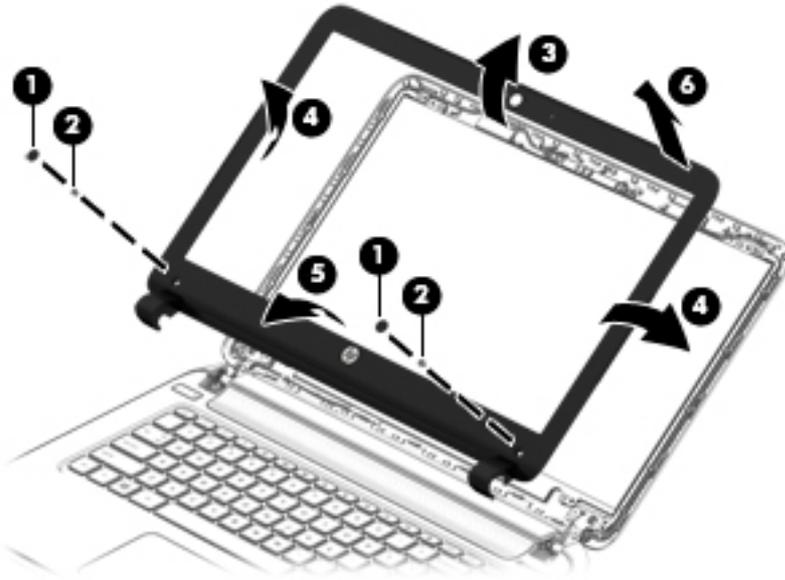
1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the battery (see [Battery on page 37](#)).

Remove the panel:

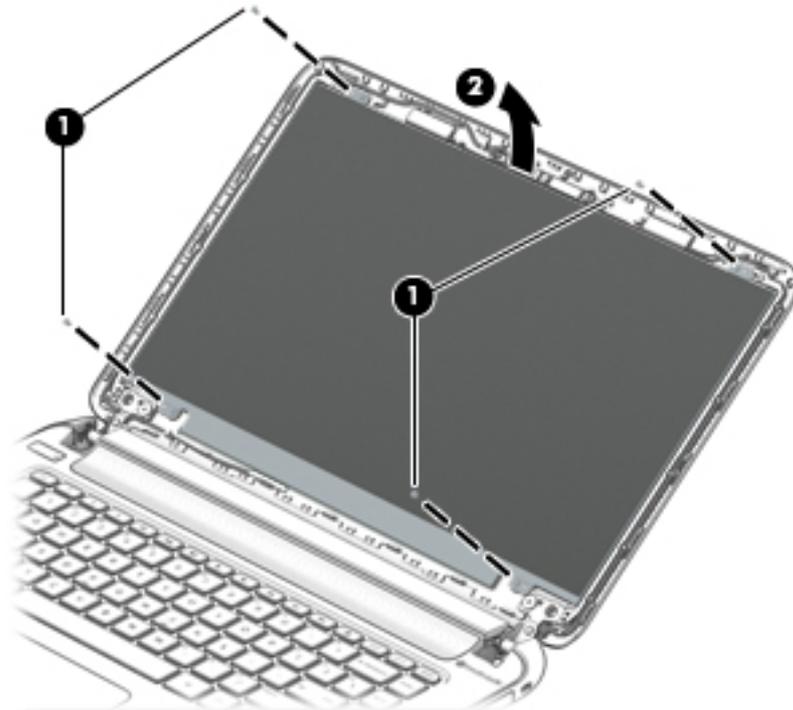
If it is necessary to replace the display bezel:

1. Remove the plastic screw covers **(1)** and the two Phillips M2.5×3.0 screws **(2)** that secure the display bezel to the display assembly.
2. If it is necessary to replace the display bezel or any of the display assembly subcomponents:
  - a. Flex the inside edges of the top edge **(3)**, the left and right sides **(4)**, and the bottom edge **(5)** of the display bezel until the bezel disengages from the display enclosure.

- b. Remove the display bezel (6).

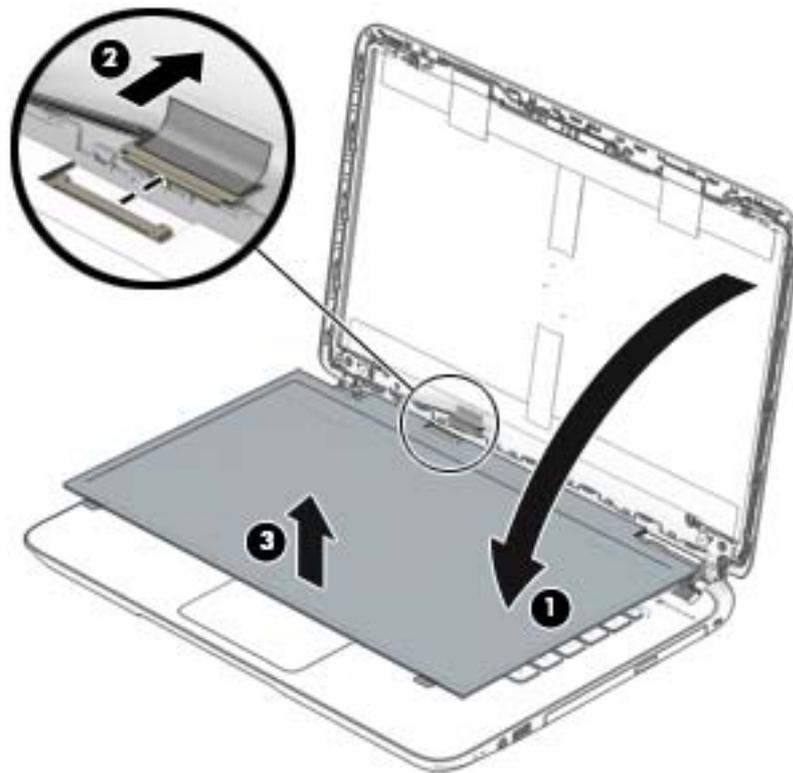


- c. Remove the four Phillips M2.0×2.5 screws **(1)** and lift the top edge of the display panel **(2)**.

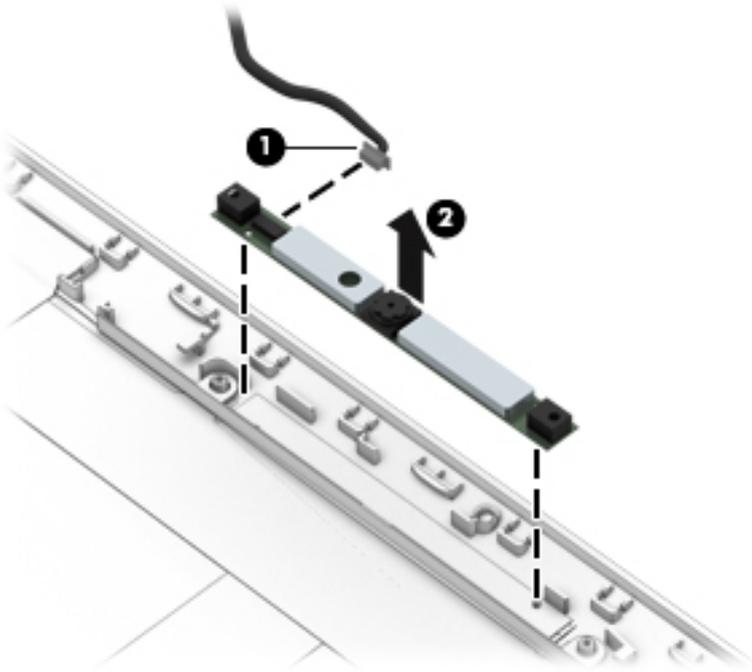


Carefully move the display panel **(1)** to the keyboard.

Release the tab and disconnect the display panel cable connector **(2)**. Lift the panel **(3)** to remove it.



3. To remove the webcam/microphone module:
  - a. Position the display assembly with the top edge toward you.
  - b. Disconnect the cable **(1)** from the module.
  - c. Lift to disengage the adhesive that secures the webcam/microphone module to the display **(2)**.



Reverse this procedure to replace the display assembly subcomponents.

## Top cover



**NOTE:** The top cover spare part kit includes the keyboard and cable.

Description	Spare part number
Black finish	767263-001
White finish	767264-001



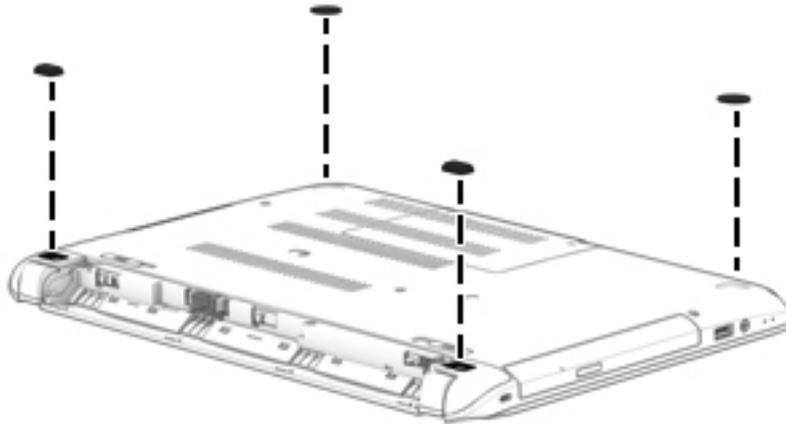
**IMPORTANT:** Make special note of each screw and screw lock size and location during removal and replacement

Before removing the top cover, follow these steps:

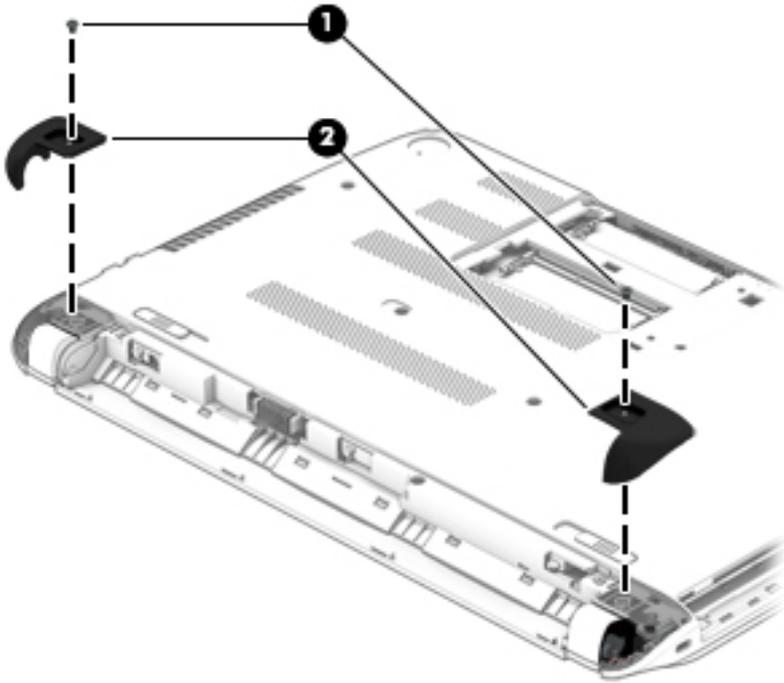
1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 37](#)), and then remove the following components:
  - a. Service door (see [Service door on page 38](#))
  - b. Optical drive (see [Optical drive on page 40](#))

Remove the top cover:

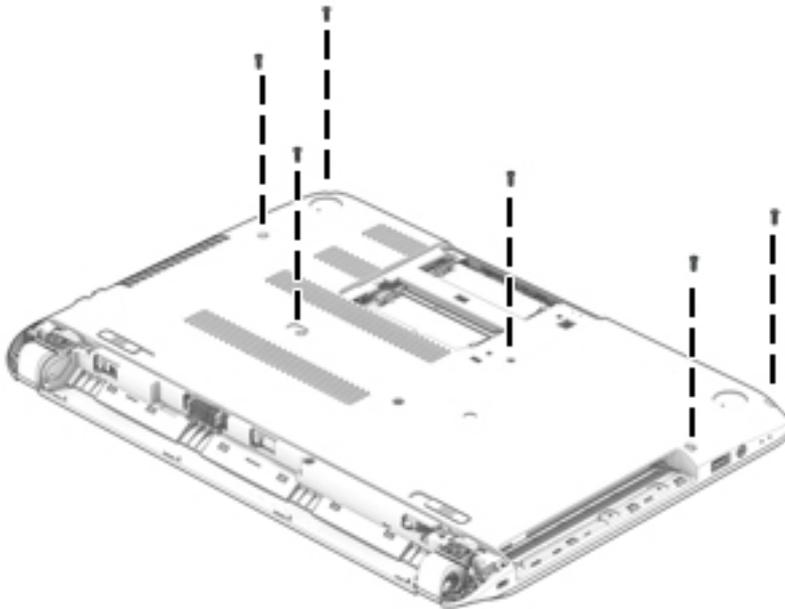
1. Close the display and turn the computer upside down.
2. Pry the feet up to remove the adhesive that secures them to the computer.



3. Remove the two Phillips M2.5x1.5 screws that secure the rear corner covers **(1)**. Remove the rear corner covers **(2)**. The rear corner covers are included in the Plastics Kit, spare part number 767259-001.

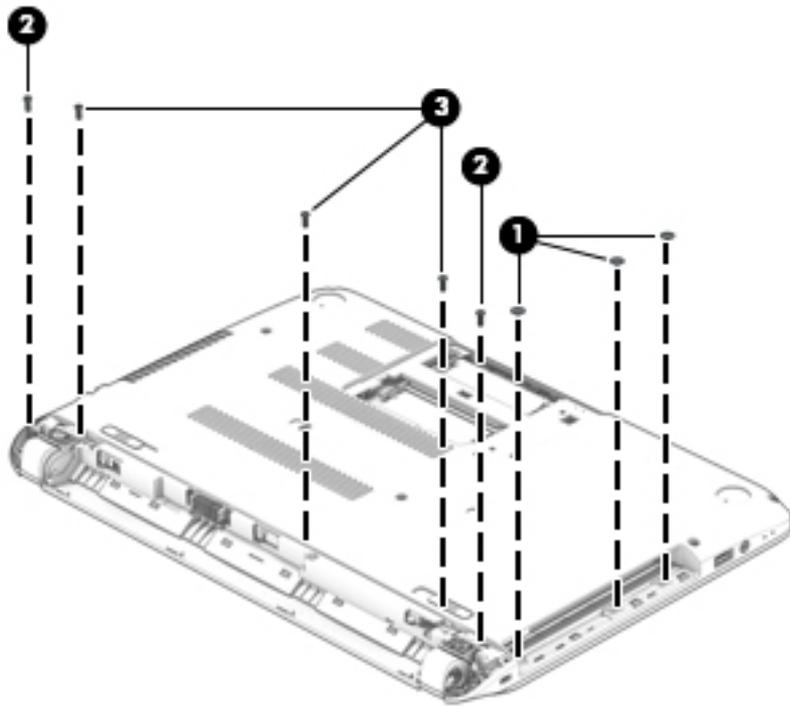


4. Remove the six Phillips M2.5x4.0 screws that secure the top cover to the base enclosure.



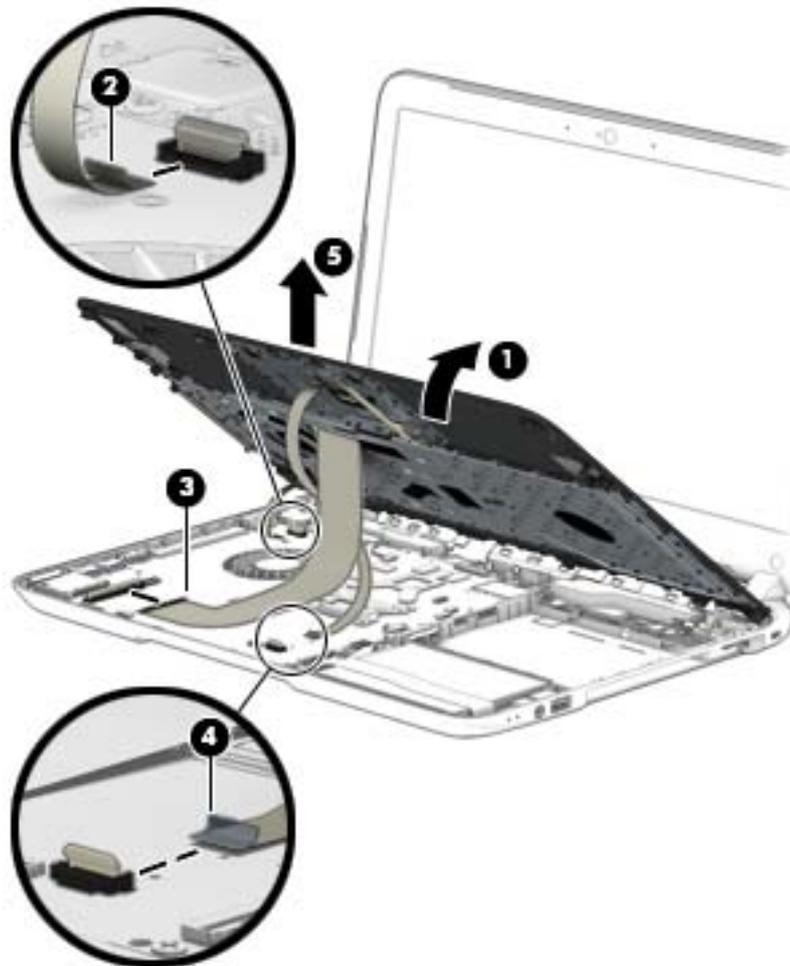
5. Remove the three Phillips PM4.5x2.0 broad head screws **(1)** in the optical drive bay that secure the top cover to the computer.
6. Remove the two Phillips M2.5x4.0 screws **(2)** in the corners that secure the top cover to the computer.

7. Remove the three Phillips PM2.5×4.0 screws **(3)** in the battery bay that secure the top cover to the computer.



8. Turn the computer over and open the display.
9. Gently pull on the lower left corner **(1)** and lift around the edges of the top cover.

10. Disconnect the power button cable (2), the keyboard cable (3) and the TouchPad cable (4). Lift to remove the top cover (5).



When replacing the top cover, be sure that the following components are removed from the defective top cover and installed on the replacement top cover:

- Power button board and cable (see [Power button board on page 53](#))
- Touchpad button board (includes cable and buttons), (see [TouchPad button board on page 54](#))

Reverse this procedure to install the top cover.

## Hard drive



**NOTE:** The hard drive spare part kit does not include the hard drive rubber bracket, hard drive connector cable, or screws. These components are included in the Hard Drive Hardware Kit, spare part number 767247-001.

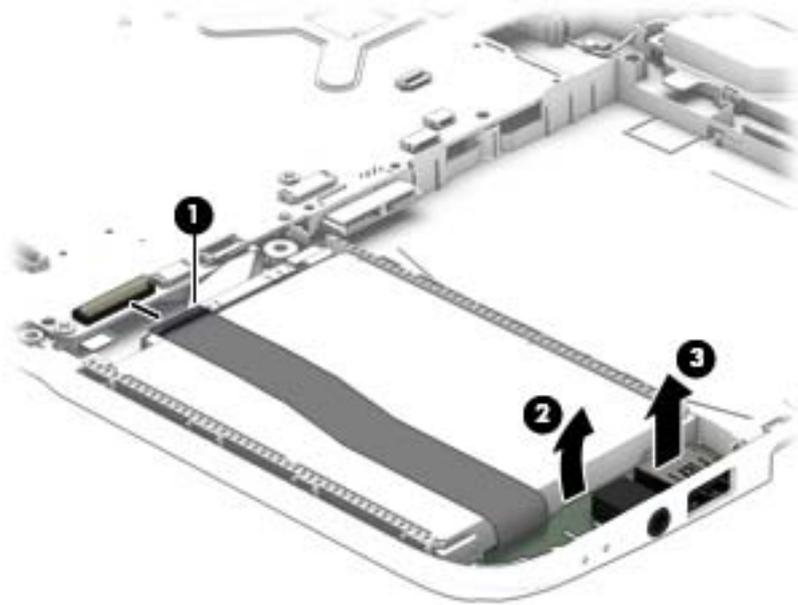
Description	Spare part number
500 GB, 5400 rpm, 9.5 mm	778188-005
750 GB, 5400 rpm, 9.5 mm	778190-005
1 TB, 5400 rpm, 9.5 mm	778192-005
1 TB, 5400 rpm + 8 GB NAND hybrid, 9.5 mm	731999-005
750 GB 5400 rpm + 8 GB NAND hybrid, 9.5 mm	732001-005
500 GB 5400 rpm + 8 GB NAND hybrid, 7 mm	732000-005

Before removing the hard drive, follow these steps:

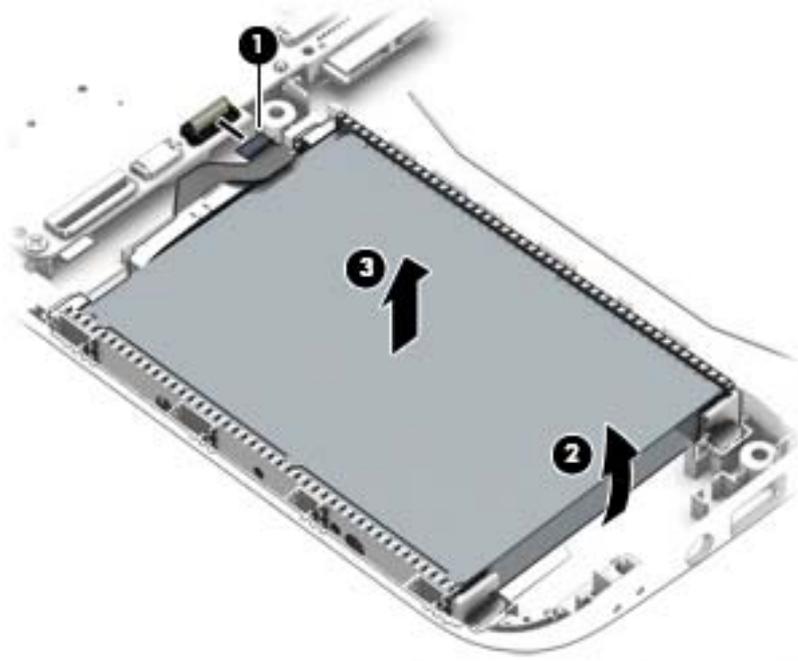
1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the battery (see [Battery on page 37](#)), and then remove the following components:
  - a. Service door (see [Service door on page 38](#))
  - b. Optical drive (see [Optical drive on page 40](#))
  - c. Top cover (see [Top cover on page 47](#))

Remove the hard drive:

1. Disconnect the USB/audio cable **(1)** by flipping open the connector and lifting the cable. Lift up front of the USB/audio board **(2)**, and then remove the USB/audio board **(3)**. The USB/audio board spare part number is 767255-001.



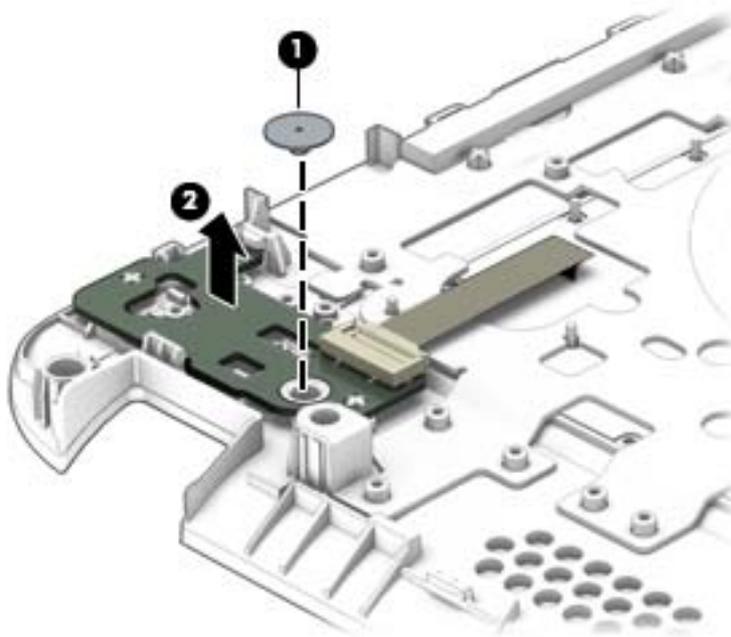
2. Disconnect the hard drive cable from the system board (1).
3. Lift up the front of the hard drive (2), and then remove the hard drive (3).



4. If it is necessary to disassemble the hard drive, perform the following steps:
  - a. Disconnect the hard drive cable connector from the hard drive (1).



3. Remove the power button board (2) with cable (the cable was disconnected from the system board when removing the top cover).



Reverse this procedure to install the power button board.

## TouchPad button board

Description	Spare part number
TouchPad button board (includes cable), Ash silver	767256-001
TouchPad button board (includes cable), Ano silver	767257-001

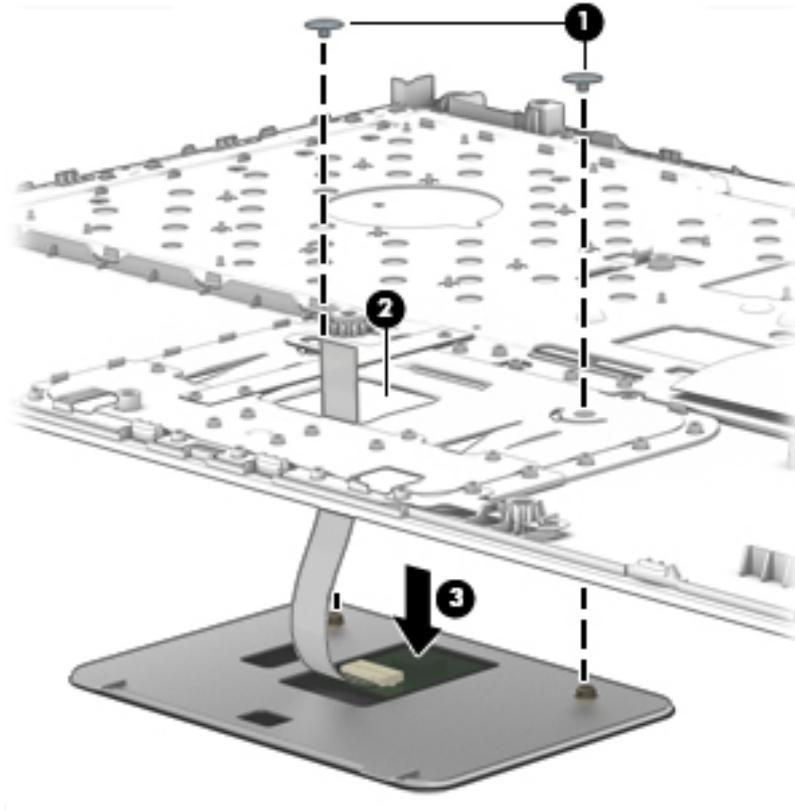
Before removing the TouchPad button board, follow these steps:

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 battery (see [Battery on page 37](#)), and then remove the following components:
  - a. Service door (see [Service door on page 38](#))
  - b. Optical drive (see [Optical drive on page 40](#))
  - c. Top cover (see [Top cover on page 47](#))

Remove the TouchPad button board:

1. Turn the top cover upside down, with the front toward you.
2. Remove the two Phillips PM4.5x2.0 broadhead screws (1) that secure the TouchPad button board bracket to the top cover.

3. Remove the TouchPad button board, carefully lifting the cable through the top cover **(2)** (the cable was disconnected from the system board when removing the top cover).
4. Remove the TouchPad button board **(3)**.



Reverse this procedure to install the TouchPad button board.

## WLAN module

Description	Spare part number
Realtek RTL8188EE 802.11 bgn 1x1 Wi-Fi adapter	709848-005
Broadcom BCM43142 802.11 bgn 1x1 Wi-Fi + BT4.0 HMC combo adapter	753076-005
Intel Dual Band Wireless-AC 3160 802.11 ac 1x1 WiFi + BT 4.0 combo adapter	710662-005
Intel Dual Band Wireless-AC 3160 802.11 ac 1x1 WiFi + BT 4.0 + PCIe + USB combo adapter	675794-005

Before removing the WLAN module, follow these steps:

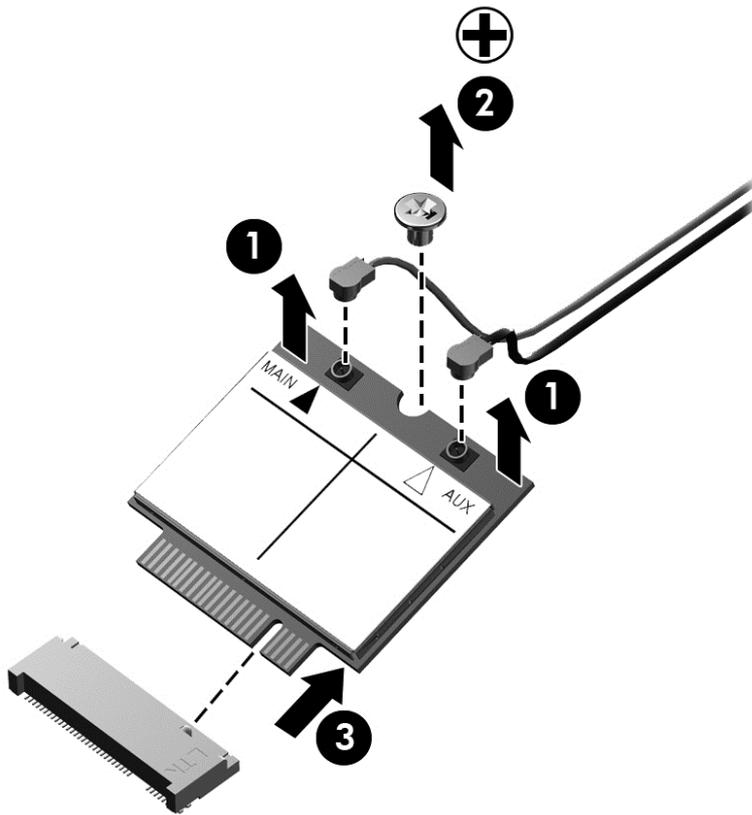
1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the battery (see [Battery on page 37](#)), and then remove the following components:

- a. Service door (see [Service door on page 38](#))
- b. Optical drive (see [Optical drive on page 40](#))
- c. Top cover (see [Top cover on page 47](#))

**⚠ 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.

Remove the WLAN module:

1. Remove the antenna cables from the WLAN module (1).
2. Remove the Phillips M2.5x4.0 screw (2).
3. Lift the WLAN module toward the display (3). Remove the WLAN module.



Reverse this procedure to install the WLAN module.

## System board



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

Description	Spare part number
<b>For computer models equipped with Intel processors and UMA graphics</b>	
<b>5th generation</b>	
Intel Core i7-5500U 2.4 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	798103-001
Intel Core i7-5500U 2.4 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Standard	798103-501
Intel Core i5-5200U 2.2 GHz processor, SC turbo up to 2.7 GHz (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	782293-001
Intel Core i5-5200U 2.2 GHz processor, SC turbo up to 2.7 GHz (4 MB L3 cache, dual core, 15 W) for use with Windows Standard	782293-501
Intel Core i5-5200U 2.2 GHz processor, SC turbo up to 2.7 GHz (4 MB L3 cache, dual core, 15 W) for use with Windows Professional	782293-601
Intel Core i3-5010U 2.1 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	802984-001
Intel Core i3-5010U 2.1 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	802984-501
Intel Core i3-5005U 2.0 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	782294-001
Intel Core i3-5005U 2.0 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	782294-501
Intel Core i3-5005U 2.0 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional	782294-601
<b>4th generation</b>	
Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	780205-001
Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Standard	780205-501
Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Professional	780205-601
Intel Core i5-4210U 1.7 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	763734-001
Intel Core i5-4210U 1.7 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with Windows Standard	763734-501
Intel Core i5-4210U 1.9 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with Windows Professional	763734-601
Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (3.0 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	774568-001
Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (3.0 MB L3 cache, dual core, 15 W) for use with Windows Standard	774568-501
Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (3.0 MB L3 cache, dual core, 15 W) for use with Windows Professional	774568-601

<b>Description</b>	<b>Spare part number</b>
Intel Core i3-4030U 1.9 GHz processor (3.0 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	773143-001
Intel Core i3-4030U 1.9 GHz processor (3.0 MB L3 cache, dual core, 15 W) for use with Windows Standard	773143-501
Intel Core i3-4030U 1.9 GHz processor (3.0 MB L3 cache, dual core, 15 W) for use with Windows Professional	773143-601
Intel Core i3-4010U 1.7 GHz processor, 1600 MHz (3.0 MB L3 cache, dual core, 15W) for use with FreeDOS and Ubuntu Linux	763735-001
Intel Core i3-4010U 1.7 GHz processor, 1600 MHz (3.0 MB L3 cache, dual core, 15 W) for use with Windows Standard	763735-501
Intel Core i3-4010U 1.7 GHz processor, 1600 MHz (3.0 MB L3 cache, dual core, 15 W) for use with Windows Professional	763735-601
<b>Bay Trail-M</b>	
Intel Pentium N3540 processor for use with FreeDOS and Ubuntu Linux	787548-001
Intel Pentium N3540 processor for use with Windows Standard	787548-501
Intel Pentium N3540 processor for use with Windows Professional	787548-601
Intel Pentium N3530 2.17 GHz processor, turbo up to 2.58 GHz (2.0 MB L2 cache, quad core, SDP 4.5 W) for use with FreeDOS and Ubuntu Linux	766361-001
Intel Pentium N3530 2.17 GHz processor, turbo up to 2.58 GHz (2.0 MB L2 cache, quad core, SDP 4.5 W) for use with Windows Standard	766361-501
Intel Pentium N3530 2.17 GHz processor, turbo up to 2.58 GHz (2.0 MB L2 cache, quad core, SDP 4.5 W) for use with Windows Professional	766361-101
<b>For computer models equipped with Intel processors and discrete graphics</b>	
<b>5th generation</b>	
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-5500U 2.4 GHz, SC turbo to 3.0 GHz processor (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	782295-001
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-5500U 2.4 GHz, SC turbo to 3.0 GHz processor (4 MB L3 cache, dual core, 15 W) for use with Windows Standard	782295-501
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-5500U 2.4 GHz, SC turbo to 3.0 GHz processor (4 MB L3 cache, dual core, 15 W) for use with Windows Professional	782295-601
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	782296-001
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	782296-501
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional	782296-601
NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	782298-001
NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	782298-501
NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-5200U 2.2 GHz, SC turbo to 2.7 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional	782298-601
<b>4th generation</b>	

<b>Description</b>	<b>Spare part number</b>
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	763736-001
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Standard	763736-501
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4510U 2.0 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Professional	763736-601
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4500U 1.8 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	774569-001
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4500U 1.8 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Standard	774569-501
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i7-4500U 1.8 GHz processor, SC turbo (4 MB L3 cache, dual core, 15 W) for use with Windows Professional	774569-601
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo GHz (3.0 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	763737-001
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with Windows Standard	763737-501
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with Windows Professional	763737-601
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (4 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	774570-001
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (4 MB L3 cache, dual core, 15 W) for use with Windows Standard	774570-501
NVIDIA GeForce 840M 2 GB dedicated video memory and Intel Core i5-4200U 1.6 GHz, SC turbo up to 2.6 GHz (4 MB L3 cache, dual core, 15 W) for use with Windows Professional	774570-601
NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	763739-001
NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with Windows Standard	763739-501
NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i5-4210U 1.7 GHz processor, SC turbo (3.0 MB L3 cache, dual core, 15 W) for use with Windows Professional	763739-601
NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	773144-001
NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Standard	773144-501
NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4030U 1.9 GHz processor (3 MB L3 cache, dual core, 15 W) for use with Windows Professional	773144-601
NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4010U 1.7 GHz processor, 1600 MHz (3.0 MB L3 cache, dual core, 15 W) for use with FreeDOS and Ubuntu Linux	763740-001
NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4010U 1.7 GHz processor, 1600 MHz (3.0 MB L3 cache, dual core, 15 W) for use with Windows Standard	763740-501
NVIDIA GeForce 830M 2 GB dedicated video memory and Intel Core i3-4010U 1.7 GHz processor, 1600 MHz (3.0 MB L3 cache, dual core, 15 W) for use with Windows Professional	763740-601

Before removing the system board, follow these steps:

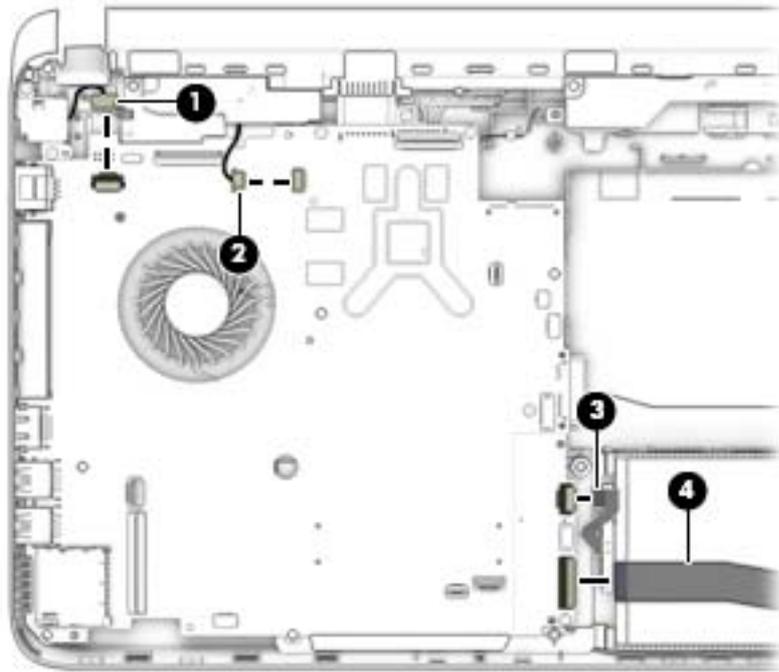
1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the battery (see [Battery on page 37](#)), and then remove the following components:
  - a. Service door (see [Service door on page 38](#))
  - b. Optical drive (see [Optical drive on page 40](#))
  - c. Top cover (see [Top cover on page 47](#))

When replacing the system board, be sure that the following components are removed from the defective system board and installed on the replacement system board:

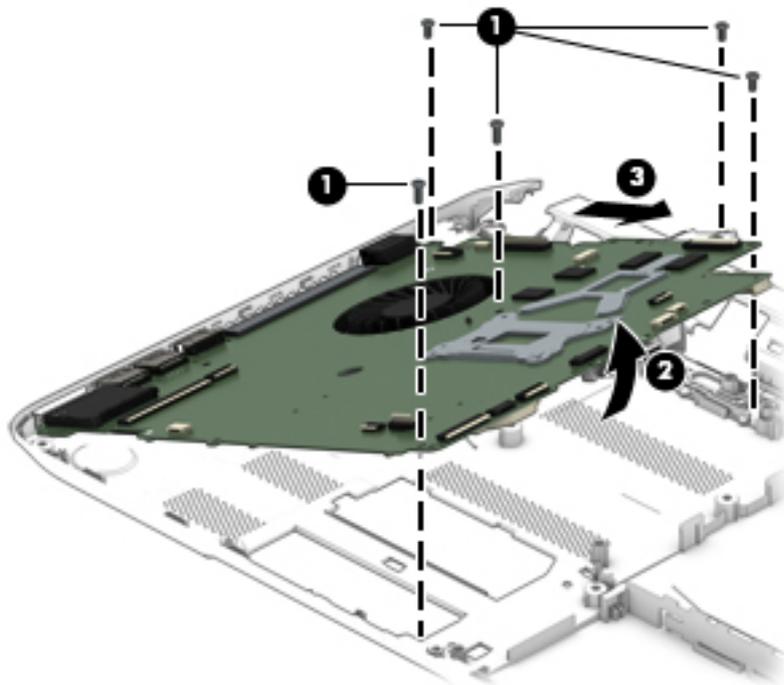
- Hard drive connector cable
- Power connector cable (see [Power connector cable on page 68](#))
- RTC battery (see [RTC battery on page 62](#))
- Fan (see [Fan on page 63](#))
- Heat sink assembly (see [Heat sink assembly on page 64](#))

Remove the system board:

1. Disconnect the following cables from the system board:
  - Display panel cable **(1)**
  - Speaker cable **(2)**
  - Hard drive cable **(3)**
  - USB/audio board cable **(4)**



2. Remove the five Phillips M2.5x4.0 screw **(1)** that secure the system board to the base enclosure.
3. Lift the right side of the system board **(2)** until it rests at an angle.
4. Remove the system board **(3)** by sliding it up and to the right at an angle.



Reverse this procedure to install the system board.

## RTC battery

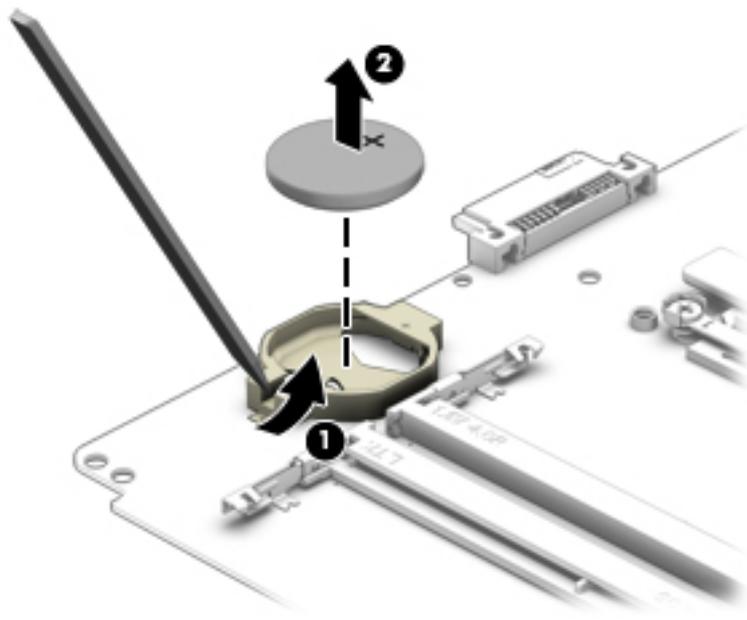
Description	Spare part number
RTC battery	697917-001

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 battery (see [Battery on page 37](#)), and then remove the following components:
  - a. Service door (see [Service door on page 38](#))
  - b. Optical drive (see [Optical drive on page 40](#))
  - c. Top cover (see [Top cover on page 47](#))
  - d. System board (see [System board on page 57](#))

Remove the RTC battery:

1. Turn the system board upside down, with the front toward you.
2. Use a flat-bladed, non-metallic tool **(1)** to release the RTC battery from the socket on the system board. The battery is spring loaded and will pop up.
3. Remove the RTC battery **(2)**.



Reverse this procedure to install the RTC battery. When installing the RTC battery, make sure the “+” sign faces up.

## Fan

Description	Spare part number
Fan	765788-001



**NOTE:** To properly ventilate the computer, allow at least 7.6 cm (3 in) of clearance on the left side of the computer. The computer uses an electric fan for ventilation. The fan is controlled by a temperature sensor and is designed to turn on automatically when high temperature conditions exist. These conditions are affected by high external temperatures, system power consumption, power management/battery conservation configurations, battery fast charging, and software requirements. Exhaust air is displaced through the ventilation grill located on the left side of the computer.

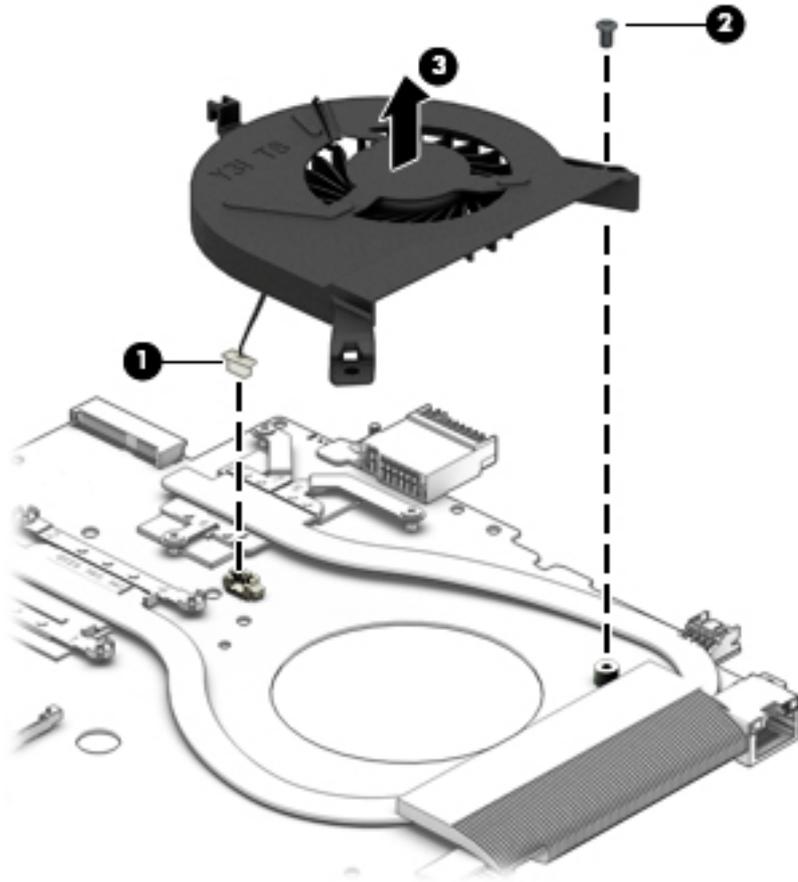
Before removing the fan, follow these steps:

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 battery (see [Battery on page 37](#)), and then remove the following components:
  - a. Service door (see [Service door on page 38](#))
  - b. Optical drive (see [Optical drive on page 40](#))
  - c. Top cover (see [Top cover on page 47](#))
  - d. System board (see [System board on page 57](#))

Remove the fan:

1. Turn the system board upside down, with the front toward you.
2. Disconnect the fan cable **(1)** from the system board.
3. Remove the Phillips P2.5x4.0 screw **(2)** that secures the fan to the system board.

4. Remove the fan **(3)** from the system board.



Reverse this procedure to install the fan.

## Heat sink assembly

Description	Spare part number
Heat sink for use only on computer models equipped with Intel processors and UMA graphics 8.5 W	767341-001
Heat sink for use only on computer models equipped with Intel processors and UMA graphics 19 W	767339-001
Heat sink for use only on computer models equipped with Intel processors and switchable discrete graphics 19 W	767340-001

Before removing the heat sink 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 battery (see [Battery on page 37](#)), and then remove the following components:

- a. Service door (see [Service door on page 38](#))
- b. Optical drive (see [Optical drive on page 40](#))
- c. Top cover (see [Top cover on page 47](#))
- d. System board (see [System board on page 57](#))
- e. Fan (see [Fan on page 63](#))

Remove the heat sink assembly:

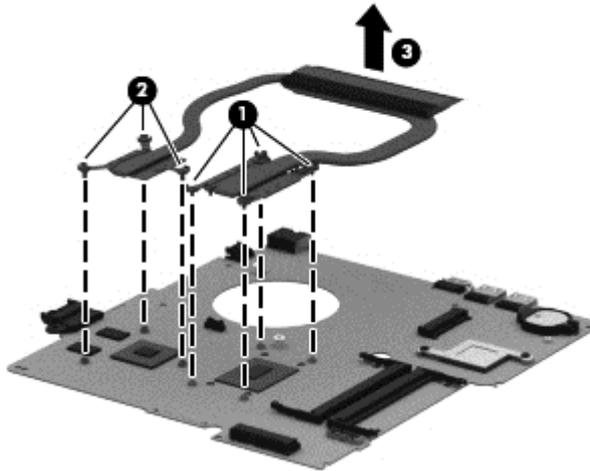
1. Turn the system board upside down, with the front toward you.

---

 **NOTE:** Steps 2 through 4 apply to computer models equipped with switchable discrete graphics. See steps 5 through 7 for heat sink assembly removal information for computer models equipped with UMA graphics.

---

2. Remove the four Phillips M2.5x4.0 screws **(1)** and the three Phillips PM2.5x4.0 screws **(2)** that secure the heat sink assembly to the system board.
3. Remove the heat sink assembly **(3)** from the system board.

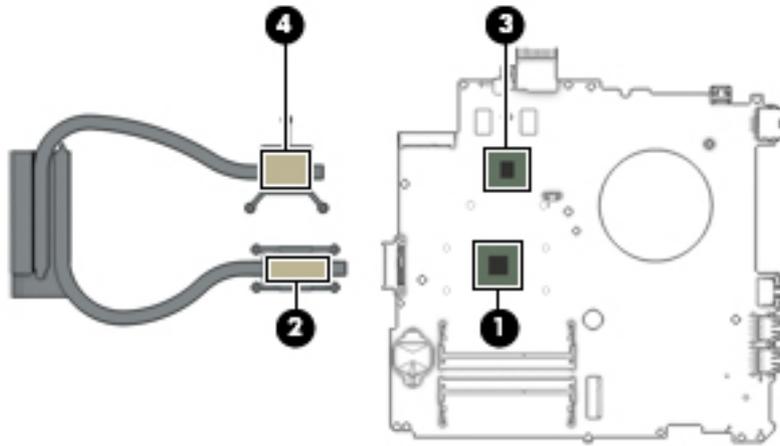


---

 **NOTE:** Due to the adhesive quality of the thermal material located between the heat sink assembly and the system board components, it may be necessary to move the heat sink assembly from side to side to detach it.

---

4. Remove the thermal material. The thermal material must be thoroughly cleaned from the surfaces of the heat sink assembly and the system board components each time the heat sink assembly is removed. Replacement thermal material is included with the heat sink assembly and system board spare part kits.
  - Thermal paste is used on the processor **(1)** and the heat sink assembly section **(2)** that services it
  - Thermal paste is used on the graphics subsystem chip **(3)** and the heat sink assembly section **(4)** that services it



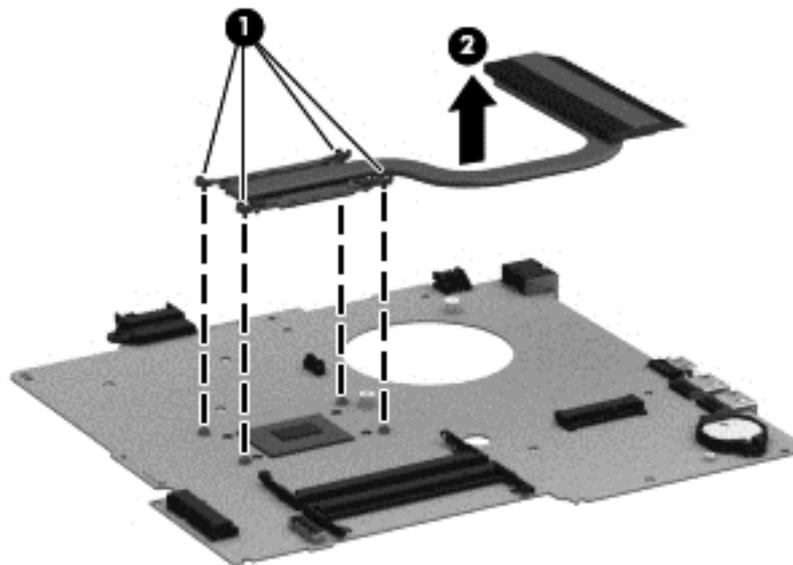
Reverse this procedure to install the heat sink assembly on computer models equipped with switchable discrete graphics.

5. Remove the four Phillips PM2.5x4.0 screws **(1)** that secure the heat sink assembly to the system board.
6. Remove the heat sink assembly **(2)**.

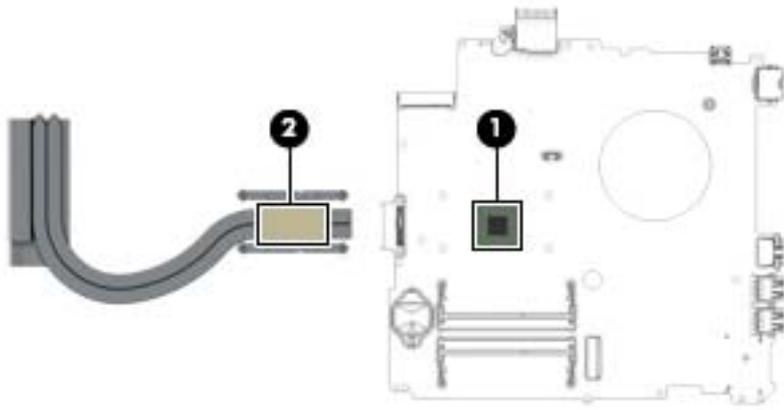
---

 **NOTE:** Due to the adhesive quality of the thermal material located between the heat sink assembly and system board components, it may be necessary to move the heat sink assembly from side to side to detach it.

---



7. Remove the thermal material. The thermal material must be thoroughly cleaned from the surfaces of the heat sink assembly and the system board components each time the heat sink assembly is removed. Replacement thermal material is included with the heat sink assembly and system board spare part kits. Thermal paste is used on the processor **(1)** and the heat sink assembly section **(2)** that services it.



Reverse this procedure to install the heat sink assembly on computer models equipped with UMA graphics.

## Power connector cable

Description	Spare part number
Power connector cable (includes bracket)	767246-001

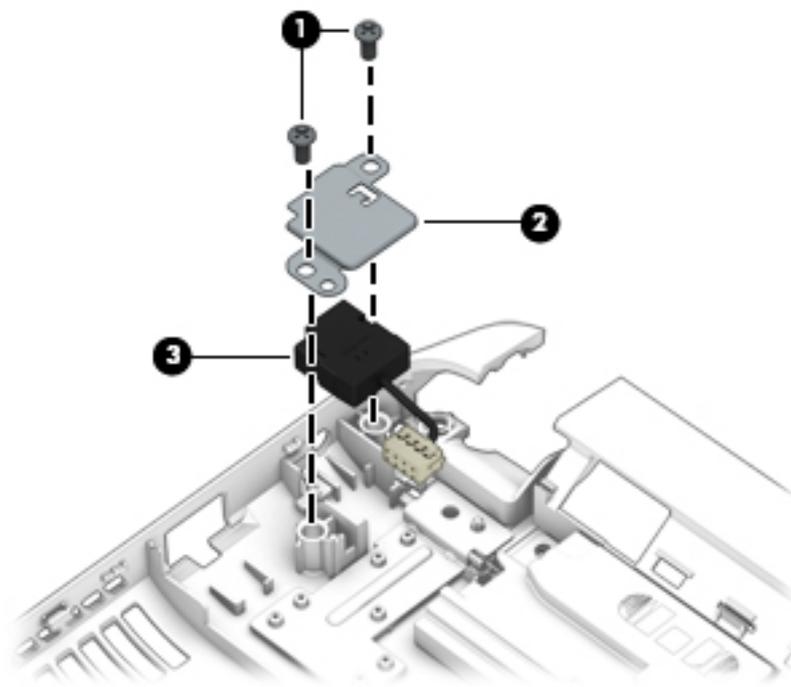
Before removing the power connector cable, follow these steps:

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 battery (see [Battery on page 37](#)), and then remove the following components:
  - a. Service door (see [Service door on page 38](#))
  - b. Optical drive (see [Optical drive on page 40](#))
  - c. Top cover (see [Top cover on page 47](#))
  - d. System board (see [System board on page 57](#))

Remove the power connector board:

 **NOTE:** One of the power connector bracket screws was removed when removing the system board.

1. Turn the system board upside down, with the front toward you.
2. Remove the Phillips P2.5x4.0 screw from the power bracket **(1)**.
3. Remove the power bracket **(2)**.
4. Release the power connector from the clip built into the system board **(3)**.



Reverse this procedure to install the power connector cable.

## Speakers

Description	Spare part number
Speakers	767262-001

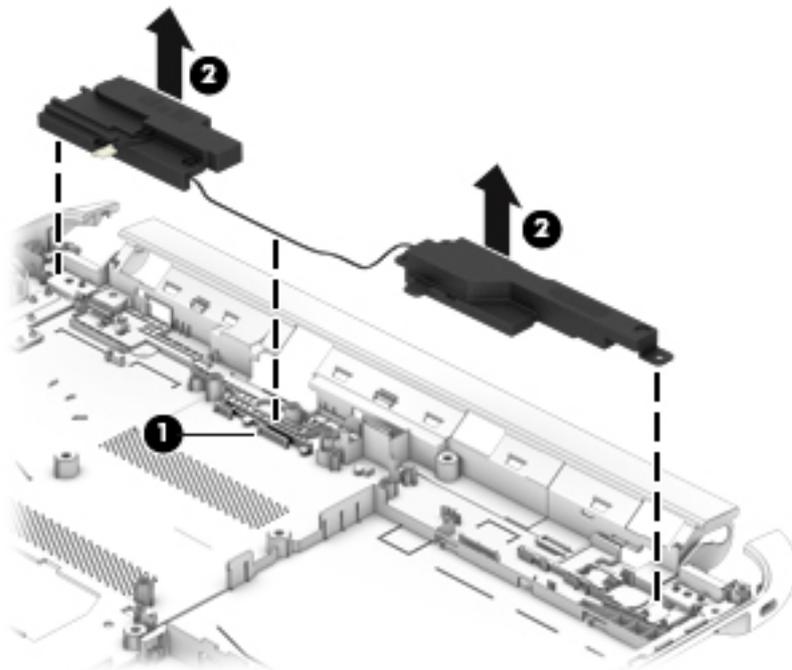
Before removing the speakers, follow these steps:

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 battery (see [Battery on page 37](#)), and then remove the following components:
  - a. Service door (see [Service door on page 38](#))
  - b. Optical drive (see [Optical drive on page 40](#))
  - c. Top cover (see [Top cover on page 47](#))
  - d. System board (see [System board on page 57](#))

Remove the speakers:

- ▲ Lift the speaker cable (1) and then remove the speakers (2)

 **NOTE:** The speaker connection cable was removed when removing the system board.



Reverse this procedure to install the speakers.

## Display assembly

This section describes removing the display assembly in its entirety and disassembling all the display subcomponents.

If you only need to remove the display bezel, webcamera/microphone module, or display panel, you do not need to remove the entire display assembly from the computer. See [Display subcomponents \(bezel, webcam, panel\)](#) on page 34 for more information about removing the display subcomponents that do not require that you remove the entire display assembly from the computer.

Description	Spare part number
Raw display panel, <b>14.0 in</b> (35.56 cm), high definition (HD), WLED, SVA BrightView flat display assembly	763566-001
Raw display panel, <b>14.0 in</b> (35.56 cm), high definition (HD), WLED, SVA BrightView, touch models, flat display assembly	763567-001
Antennas	767237-001
Antennas, touch models	767238-001
Display bezel	767243-001
Display cable	767244-001
Display cable, touch models	767245-001
Display enclosure, aqua blue	763563-001
Display enclosure, natural silver	763564-001
Display enclosure, snow white	763562-001
Display enclosure, tropical blue	790003-001
Display enclosure, vibrant red	763565-001
Display enclosure, aqua blue, touch models	767240-001
Display enclosure, natural silver, touch models	763564-001
Display enclosure, snow white, touch models	767239-001
Display enclosure, vibrant red, touch models	763565-001
Hinge	767248-001
Hinge, touch models	767249-001
Webcamera/microphone module	762521-001
Webcamera/microphone module, touch models	762545-001

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 battery (see [Battery on page 37](#)), and then remove the following components:

- a. Service door (see [Service door on page 38](#))
- b. Optical drive (see [Optical drive on page 40](#))
- c. Top cover (see [Top cover on page 47](#))

Remove the display assembly:

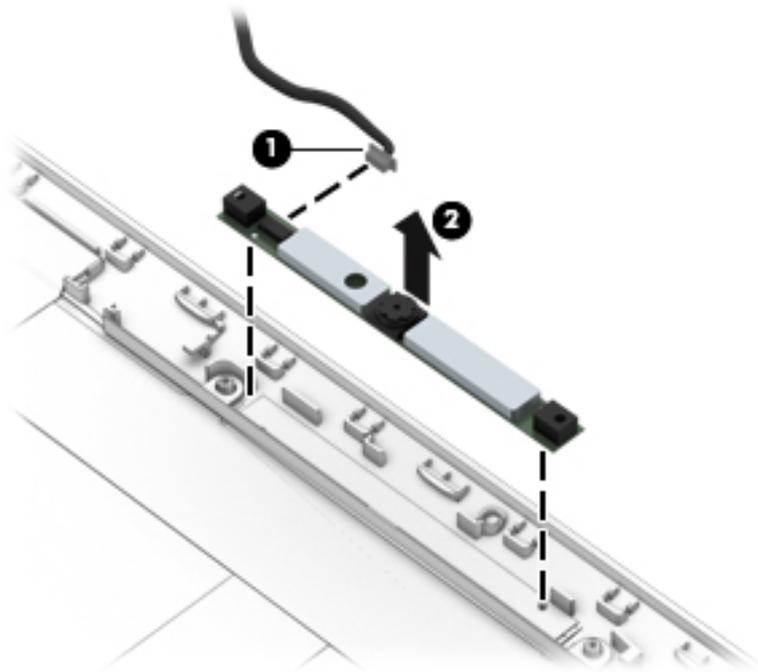
1. Disconnect the display cable **(1)** by flipping open the connector and lifting the cable.
2. Release the wireless antenna cables from the clips **(2)** built into the base enclosure.
3. Remove the three Phillips PM2.5×4.0 screws **(3)** that secure the display assembly to the base enclosure.
4. Remove the display assembly **(4)**.



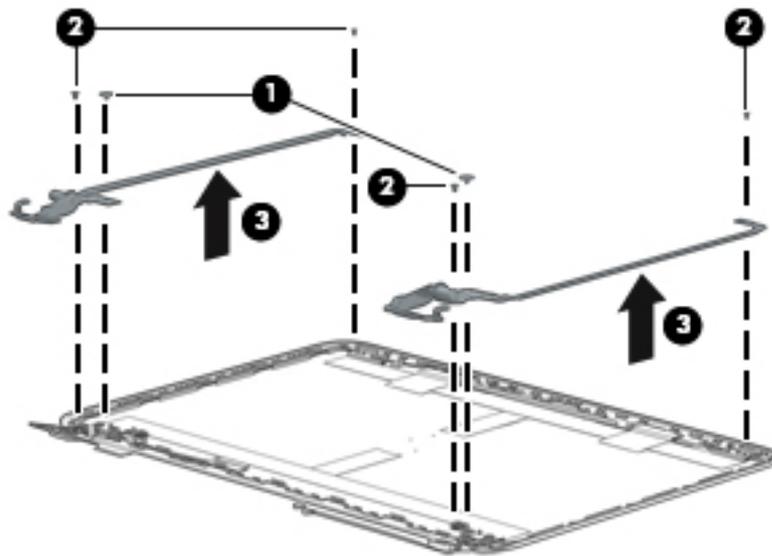
If it is necessary to replace any of the display assembly subcomponents:

1. If it is necessary to replace the webcam/microphone module:
  - a. Disconnect the webcam/microphone module cable **(1)** from the webcam/microphone module. (The webcam/microphone module cable is part of the display panel cable.)

- b. Detach the webcam/microphone module (2) from the display back cover.

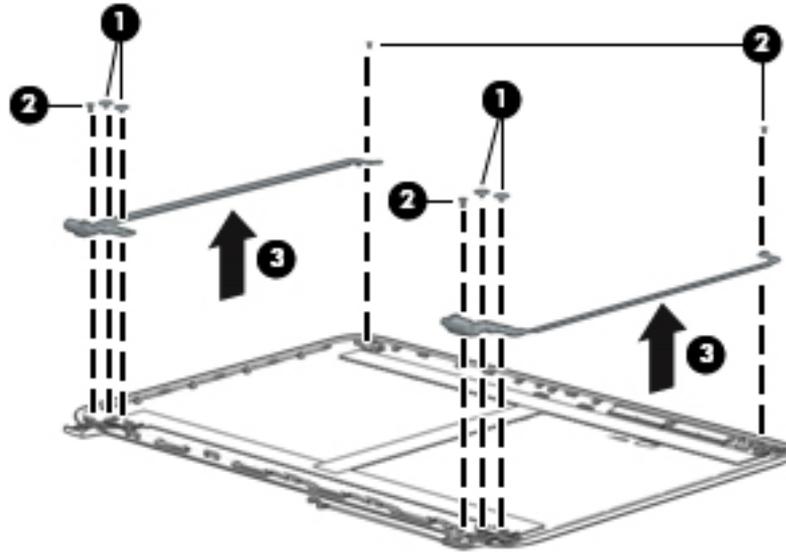


- 2. If it is necessary to replace the hinges:
  - a. Remove the two top screws (1) from the display hinges.
  - b. Remove the four bottom screws (2) from the display hinges.
  - c. Remove the hinges (3) from the display enclosure.

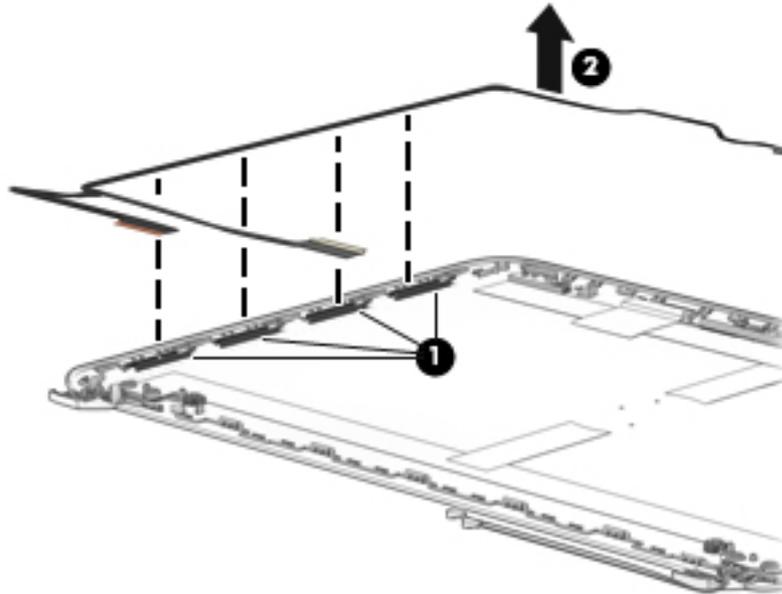


- 3. If it is necessary to replace the hinges on a touch panel:
  - a. Remove the four top screws (1) from the display hinges.
  - b. Remove the four bottom screws (2) from the display hinges.

- c. Remove the hinges (3) from the display enclosure.

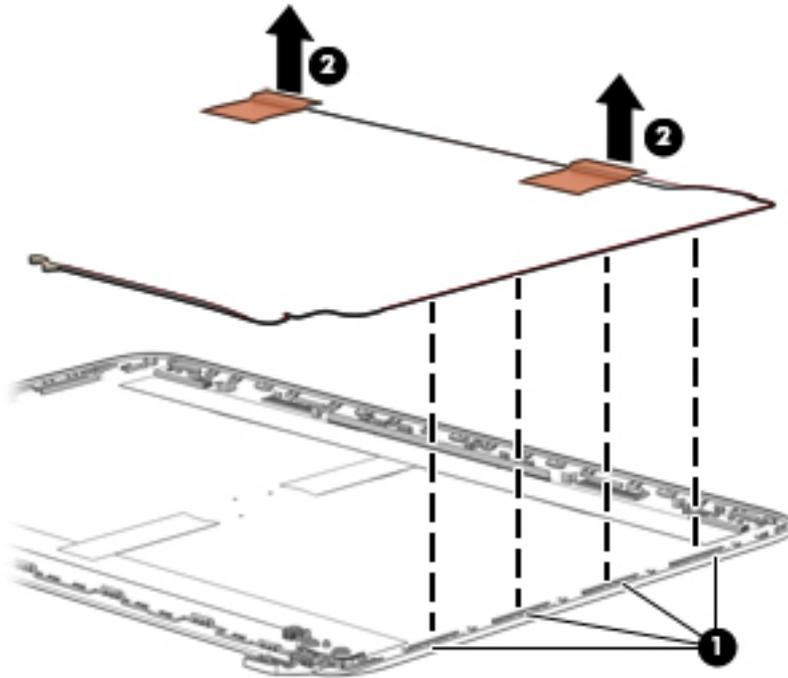


4. If it is necessary to replace the display panel cable:
- a. Release the display panel cable from the clips (1) and routing channel built into the display enclosure.
  - b. Carefully release the cable from the channel guides, and remove the display panel cable (2).

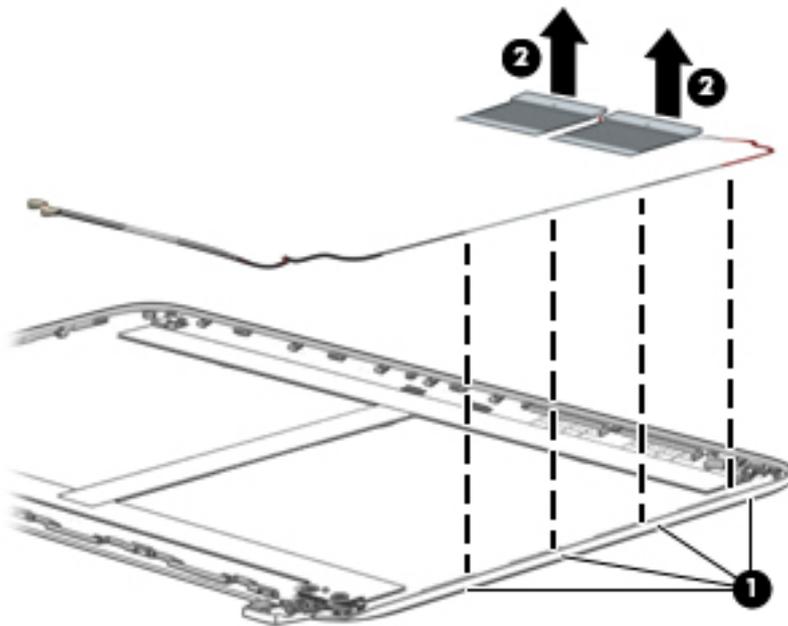


5. If it is necessary to replace the wireless antenna cables and transceivers:
- a. Release the wireless antenna transceivers (1) from the display back cover. (The wireless antenna transceivers are attached to the display back cover with double-sided tape.)

- b. Remove the wireless antenna cables and transceivers (2).



6. If it is necessary to replace the wireless antenna cables and transceivers on a touch panel:
- a. Release the wireless antenna transceivers (1) from the display back cover. (The wireless antenna transceivers are attached to the display back cover with double-sided tape.)
  - b. Remove the wireless antenna cables and transceivers (2).



Reverse this procedure to install the display assembly.

---

# 7 Using Setup Utility (BIOS) and HP PC Hardware Diagnostics (UEFI)

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.

## Starting Setup Utility (BIOS)

To start Setup Utility (BIOS), turn on or restart the computer, quickly press **esc**, and then press **f10**.

---

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

---

## Updating the BIOS

Updated versions of the 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 determine whether available BIOS updates contain later BIOS versions than those currently installed on the computer, you need to know the version of the system BIOS currently installed.

BIOS version information (also known as *ROM date* and *System BIOS*) can be revealed by pressing **fn+esc** (if you are already in Windows) or by using Setup Utility (BIOS).

1. Start Setup Utility (BIOS) (see [Starting Setup Utility \(BIOS\) on page 75](#)).
2. Use the arrow keys to select **Main**, and then make note of your current BIOS version.
3. To exit Setup Utility (BIOS) without saving your changes, use the arrow keys to select **Exit**, select **Exit Discarding Changes**, and then press **enter**.
4. Select **Yes**.

## 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.

1. From the Start screen, type `support`, and then select the **HP Support Assistant** app.
2. Click **Updates and tune-ups**, and then click **Check for HP updates now**.
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, 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.

If the update is more recent than your BIOS, 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.

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

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

1. From the Start screen, type `file`, 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 on your hard drive 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.

## Using HP PC Hardware Diagnostics (UEFI)

HP PC Hardware Diagnostics is a Unified Extensible Firmware Interface (UEFI) that 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.

To start HP PC Hardware Diagnostics UEFI:

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

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

- a. Connected USB drive



**NOTE:** To download the HP PC Hardware Diagnostics (UEFI) tool to a USB drive, see [Downloading HP PC Hardware Diagnostics \(UEFI\) to a USB device on page 77](#).

- b. Hard drive
- c. BIOS

2. When the diagnostic tool opens, use the keyboard arrow keys to 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, press [esc](#).

## Downloading HP PC Hardware Diagnostics (UEFI) to a USB device



**NOTE:** Instructions for downloading HP PC Hardware Diagnostics (UEFI) are provided in English only.

There are two options to download HP PC Hardware Diagnostics to a USB device:

**Option 1: HP PC Diagnostics homepage**— Provides access to the latest UEFI version

1. Go to <http://hp.com/go/techcenter/pcdiags>.
2. Click the **UEFI Download** link, and then select **Run**.

**Option 2: Support and Drivers page**—Provides downloads for a specific product for earlier and later versions

1. Go to <http://www.hp.com>.
2. Point to **Support**, located at the top of the page, and then click **Download Drivers**.
3. In the text box, enter the product name, and then click **Go**.

– or –

Click **Find Now** to let HP automatically detect your product.

4. Select your computer model, and then select your operating system.
5. In the **Diagnostic** section, click **HP UEFI Support Environment**.

– or –

Click **Download**, and then select **Run**.

---

# 8 Ubuntu Linux – Using Setup Utility (BIOS) and System Diagnostics

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 includes settings for the types of peripherals installed, the startup sequence of the computer, and the amount of system and extended memory.



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

---

## Starting Setup Utility

- ▲ Turn on or restart the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press `esc`. When the Startup Menu is displayed, press `f10`.

## Using Setup Utility

### Changing the language of Setup Utility

1. Start Setup Utility.
2. Use the arrow keys to select **System Configuration > Language**, and then press `enter`.
3. Use the arrow keys to select a language, and then press `enter`.
4. When a confirmation prompt with your language selected is displayed, press `enter`.
5. To save your change and exit Setup Utility, use the arrow keys to select **Exit > Exit Saving Changes**, and then press `enter`.

Your change takes effect immediately.

### Navigating and selecting in Setup Utility

Setup Utility does not support the TouchPad. Navigation and selection are by keystroke.

- To choose a menu or a menu item, use the arrow keys.
- To choose an item in a list or to toggle a field—for example an Enable/Disable field—use either the arrow keys or `f5` and `f6`.
- To select an item, press `enter`.
- To close a text box or return to the menu display, press `esc`.
- To display additional navigation and selection information while Setup Utility is open, press `f1`.

## Displaying system information

1. Start Setup Utility.
2. Select the **Main** menu. System information such as the system time and date, and identification information about the computer is displayed.
3. To exit Setup Utility without changing any settings, use the arrow keys to select **Exit > Exit Discarding Changes**, and then press [enter](#).

## Restoring factory default settings in Setup Utility

1. Start Setup Utility.
2. Use the arrow keys to select **Exit > Load Setup Defaults**, and then press [enter](#).
3. When the Setup Confirmation is displayed, press [enter](#).
4. To save your change and exit Setup Utility, use the arrow keys to select **Exit > Exit Saving Changes**, and then press [enter](#).

The Setup Utility factory settings take effect when the computer restarts.



---

**NOTE:** Your password, security, and language settings are not changed when you restore the factory settings.

---

## Exiting Setup Utility

- To exit Setup Utility and save your changes from the current session:  
If the Setup Utility menus are not visible, press [esc](#) to return to the menu display. Then use the arrow keys to select **Exit > Exit Saving Changes**, and then press [enter](#).
- To exit Setup Utility without saving your changes from the current session:  
If the Setup Utility menus are not visible, press [esc](#) to return to the menu display. Then use the arrow keys to select **Exit > Exit Discarding Changes**, and then press [enter](#).

## Using System Diagnostics

System Diagnostics allows you to run diagnostic tests to determine if the computer hardware is functioning properly.

To start System Diagnostics:

1. Turn on or restart the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press [esc](#). When the Startup Menu is displayed, press [f2](#).
2. Click the diagnostic test you want to run, and then follow the on-screen instructions.



---

**NOTE:** If you need to stop a diagnostics test while it is running, press [esc](#).

---

# 9 Specifications

## Computer specifications

	Metric	U.S.
<b>Dimensions:</b>		
Width	<b>34.60 cm</b>	13.62 in
Depth	<b>24.60 cm</b>	≤ 9.68 in
Height	<b>2.55 cm</b> (touch models), 2.445 cm (Non-touch)	≤ 1.00 in (touch models), 0.96 in (Non-touch)
<b>Weight:</b>		
For touch computer models with Intel processors	<b>2.10 kg</b>	4.61 lbs
For computer models with flat display panels and Intel processors	<b>2.03 kg</b>	4.48 lbs
<b>Input power</b>		
Operating voltage and current	19.5 V dc @ 2.31 A – 45 W	
	19.5 V dc @ 3.33 A – 65 W	
	19.5 V dc @ 2.31 A – 45 W	
<b>Temperature</b>		
Operating (writing to optical disc)	<b>5°C to 35°C</b>	41°F to 95°F
Nonoperating	<b>-20°C to 60°C</b>	-4°F to 140°F
<b>Relative humidity</b>		
Operating	10% to 90%	
Nonoperating	5% to 95%	
<b>Maximum altitude</b> (unpressurized)		
Operating (14.7 to 10.1 psia)	<b>-15 m to 3,048 m</b>	-50 ft to 10,000 ft
Nonoperating (14.7 to 4.4 psia)	<b>-15 m to 12,192 m</b>	-50 ft to 40,000 ft
<b>Shock</b>		
Operating	125 g, 2 ms, half-sine	
Nonoperating	200 g, 2 ms, half-sine	
<b>Random vibration</b>		
Operating	0.75 g zero-to-peak, 10 Hz to 500 Hz, 0.25 oct/min sweep rate	
Nonoperating	1.50 g zero-to-peak, 10 Hz to 500 Hz, 0.5 oct/min sweep rate	
<b>NOTE:</b> Applicable product safety standards specify thermal limits for plastic surfaces. The computer operates well within this range of temperatures.		

## Display specifications

	Metric	U.S.
<b>Dimensions</b>		
Width	32.4 cm	12.8 in
Height	19.3 cm	7.6 in
Diagonal	35.56 cm	14.0 in
<b>Number of colors</b>	262K (6 bit)	
<b>Contrast ratio</b>	500:1 (typical)	
<b>Brightness</b>	200 cd/m <sup>2</sup> (nits) (typical)	
<b>Backlight</b>	WLED	
<b>Total power consumption</b>	3.2 W (max)	
<b>Viewing angle</b>	±45° horizontal, +15° up & -35° down vertical (typical)	

## Hard drive specifications

	1 TB*	750 GB*	500 GB*
<b>Dimensions</b>			
Height	9.5 mm	9.5 mm	7 mm
Width	70 mm	70 mm	70 mm
Weight	107 g max	107 g max	107 g max
<b>Interface type</b>	SATA	SATA	SATA
<b>Transfer rate</b>	300 MB/sec	300 MB/sec	300 MB/sec
<b>Security</b>	ATA security	ATA security	ATA security
<b>Seek times</b> (typical read, including setting)			
Single track	1.5 ms	1.0 ms	1.5 ms
Average	11.0 ms	14.0 ms	12.0 ms
Maximum	22.0 ms	24.0 ms	22.0 ms
<b>Logical blocks</b>	1,953,525,168	1,465,128,359	976,752,240
<b>Disk rotational speed</b>	5400 rpm	7200 and 5400 rpm	7200 and 5400 rpm
<b>Operating temperature</b>	5°C to 55°C (41°F to 131°F)		
*Size refers to hard drive storage capacity. Actual accessible capacity is less. Actual drive specifications may differ slightly.			
<b>NOTE:</b> Certain restrictions and exclusions apply. Contact support for details.			

# DVD±RW SuperMulti Double-Layer Combination Drive specifications

<b>Applicable disc</b>	
Read	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM
Write	CD-R and CD-RW, DVD+R, DVD+RW, DVD-R, DVD-RW, DVD-RAM
<b>Random access time</b>	
DVD	< 230 ms
CD	< 175 ms
<b>Cache buffer</b>	2 MB
<b>Data transfer rate</b>	
24X CD-ROM	3,600 KB/sec
8X DVD-ROM	10,800 KB/sec
24X CD-R	3,600 KB/sec
16X CD-RW	2,400 KB/sec
8X DVD+R	10,800 KB/sec
4X DVD+RW	5,400 KB/sec
8X DVD-R	10,800 KB/sec
4X DVD-RW	5,400 KB/sec
2.4X DVD+R(9)	2,700 KB/sec
5X DVD-RAM	6,750 KB/sec
<b>Transfer mode</b>	Multiword DMA Mode

---

# 10 Backing up, restoring, and recovering

This chapter provides information about the following processes:

- Creating recovery media and backups
- Restoring and recovering your system

## Creating recovery media and backups

1. After you successfully set up the computer, create HP Recovery media. This step creates a backup of the HP Recovery partition on the computer. The backup can be used to reinstall the original operating system in cases where the hard drive is corrupted or has been replaced.

HP Recovery media you create will provide the following recovery options:

- **System Recovery**—Reinstalls the original operating system and the programs that were installed at the factory.
- **Minimized Image Recovery**—Reinstalls the operating system and all hardware-related drivers and software, but not other software applications.
- **Factory Reset**—Restores the computer to its original factory state by deleting all information from the hard drive and re-creating the partitions. Then it reinstalls the operating system and the software that was installed at the factory.

See [Creating HP Recovery media on page 83](#).

2. Use the Windows tools to create system restore points and create backups of personal information. For more information and steps, see Help and Support. From the Start screen, type `help`, and then select **Help and Support**.

## Creating HP Recovery media

HP Recovery Manager is a software program that offers a way to create recovery media after you successfully set up the computer. HP Recovery media can be used to perform system recovery if the hard drive becomes corrupted. System recovery reinstalls the original operating system and the software programs installed at the factory, and then configures the settings for the programs. HP Recovery media can also be used to customize the system or restore the factory image if you replace the hard drive.

- Only one set of HP 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 storage capacity for the blank USB flash drive or the number of blank DVD discs that will be required.
- To create recovery discs, your computer must have an optical drive with DVD writer capability, and you must 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; they are not compatible with HP Recovery Manager software. Or instead you can use a high-quality blank USB flash drive.
- If your computer does not include an integrated optical drive with DVD writer capability, but you would like to create DVD recovery media, you can use an external optical drive (purchased separately) to create recovery discs, or you can obtain recovery discs for your computer from support. See the

*Worldwide Telephone Numbers* booklet included with the computer. You can also find contact information from the HP website. Go to <http://www.hp.com/support>, select your country or region, and follow the on-screen instructions. If you use an external optical drive, it must be connected directly to a USB port on the computer; the drive cannot be connected to a USB port on an external device, such as a USB hub.

- Be sure that the computer is connected to AC power before you begin creating the recovery media.
- The creation process can take up to an hour or more. Do not interrupt the creation process.
- If necessary, you can exit the program before you have finished creating all of the recovery DVDs. HP Recovery Manager will finish burning the current DVD. The next time you start HP Recovery Manager, you will be prompted to continue, and the remaining discs will be burned.

To create HP Recovery media:



**IMPORTANT:** For tablets, connect to the keyboard dock before beginning these steps (select models only).

1. From the Start screen, type `recovery`, and then select **HP Recovery Manager**.
2. Select **Recovery Media Creation**, and then follow the on-screen instructions.

If you ever need to recover the system, see [Recovering using HP Recovery Manager on page 85](#).

## Restore and recovery

There are several options for recovering your system. Choose the method that best matches your situation and level of expertise:

- Windows offers several options for restoring from backup, refreshing the computer, and resetting the computer to its original state. For more information and steps, see Help and Support. From the Start screen, type `help`, and then select **Help and Support**.
- If you need to correct a problem with a preinstalled application or driver, use the Drivers and Applications Reinstall option of HP Recovery Manager to reinstall the individual application or driver.

From the Start screen, type `recovery`, select **HP Recovery Manager**, select **Drivers and Applications Reinstall**, and then follow the on-screen instructions.

- If you want to reset your computer using a minimized image, you can choose the HP Minimized Image Recovery option from the HP Recovery partition (select models only) or HP Recovery media. Minimized Image Recovery installs only drivers and hardware-enabling applications. Other applications included in the image continue to be available for installation through the Drivers and Applications Reinstall option in HP Recovery Manager.

For more information, see [Recovering using HP Recovery Manager on page 85](#).

- If you want to recover the computer's original factory partitioning and content, you can choose the System Recovery option from the HP Recovery partition (select models only) or use the HP Recovery media that you have created. For more information, see [Recovering using HP Recovery Manager on page 85](#). If you have not already created recovery media, see [Creating HP Recovery media on page 83](#).
- If you have replaced the hard drive, you can use the Factory Reset option of HP Recovery media to restore the factory image to the replacement drive. For more information, see [Recovering using HP Recovery Manager on page 85](#).
- If you wish to remove the recovery partition to reclaim hard drive space, HP Recovery Manager offers the Remove Recovery Partition option.

For more information, see [Removing the HP Recovery partition \(select models only\) on page 86](#).

## Recovering using HP Recovery Manager

HP Recovery Manager software allows you to recover the computer to its original factory state by using the HP Recovery media that you created or by using the HP Recovery partition (select models only). If you have not already created recovery media, see [Creating HP Recovery media on page 83](#).

Using HP Recovery media, you can choose from one of the following recovery options:

- **System Recovery**—Reinstalls the original operating system, and then configures the settings for the programs that were installed at the factory.
- **Minimized Image Recovery (select models only)**—Reinstalls the operating system and all hardware-related drivers and software, but not other software applications.
- **Factory Reset**—Restores the computer to its original factory state by deleting all information from the hard drive and re-creating the partitions. Then it reinstalls the operating system and the software that was installed at the factory.

The HP Recovery partition (select models only) allows System Recovery and Minimized Image Recovery.

### What you need to know

- 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.
- Recovery through HP Recovery Manager should be used as a final attempt to correct computer issues.
- HP Recovery media must be used if the computer hard drive fails. If you have not already created recovery media, see [Creating HP Recovery media on page 83](#).
- 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 on page 83](#).
- If the HP Recovery media does not work, you can obtain recovery media for your system from support. See the *Worldwide Telephone Numbers* booklet included with the computer. You can also find contact information from the HP website. Go to <http://www.hp.com/support>, select your country or region, and follow the on-screen instructions.



---

**IMPORTANT:** HP Recovery Manager does not automatically provide backups of your personal data. Before beginning recovery, back up any personal data you wish to retain.

---

### Using the HP Recovery partition (select models only)

The HP Recovery partition (select models only) allows you to perform a system recovery or minimized image recovery without the need for recovery discs or a recovery USB flash drive. This type of recovery can only be used if the hard drive is still working.

To start HP Recovery Manager from the HP Recovery partition:



---

**IMPORTANT:** For tablets, connect to the keyboard dock before beginning these steps (select models only).

---

1. Press **f11** while the computer boots.

– or –

Press and hold **f11** as you press the power button.

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

## Using HP Recovery media to recover

You can use HP Recovery media to recover the original system. This method can be used if your system does not have an HP Recovery partition or if the hard drive is not working properly.

1. If possible, back up all personal files.
2. Insert the HP Recovery media that you created, and then restart the computer.



---

**NOTE:** If the computer does not automatically restart in HP Recovery Manager, change the computer boot order. See [Changing the computer boot order on page 86](#).

---

3. Follow the on-screen instructions.

## Changing the computer boot order

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

To change the boot order:

1. Insert the HP Recovery media you created.
2. Restart the computer, quickly press **esc**, and then press **f9** for boot options.
3. Select the optical drive or USB flash drive you want to boot from.
4. Follow the on-screen instructions.

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

HP Recovery Manager software allows you to remove the HP Recovery partition to free up hard drive space.



---

**IMPORTANT:** After you remove the HP Recovery partition, you can no longer use the Windows Refresh option or the Windows option to remove everything and reinstall Windows. In addition, you will not be able to perform System Recovery or Minimized Image Recovery from the HP Recovery partition. So before you remove the Recovery partition, create HP Recovery media; see [Creating HP Recovery media on page 83](#).

---

Follow these steps to remove the HP Recovery partition:

1. From the Start screen, type `recovery`, and then select **HP Recovery Manager**.
2. Select **Remove Recovery Partition**, and then follow the on-screen instructions.

---

# 11 Ubuntu Linux – Backing up, restoring, and recovering

Recovery after a system failure is as good as your most recent backup. As you add new software and data files, you should continue to back up your system on a regular basis to maintain a reasonably current backup.

## Performing a system recovery

The Deja Dup Restore Tool allows you to repair or restore the computer to its original factory state. You can create an image restore DVD using a DVD±RW optical drive. You can also create a restore image on a USB storage device.

---

 **CAUTION:** Using Restore completely erases hard drive contents and reformats the hard drive. All files you have created and any software installed on the computer are permanently removed. The recovery tool reinstalls the original operating system and programs and drivers that were installed at the factory. Software, drivers, and updates not installed at the factory must be manually reinstalled. Personal files must be restored from a backup.

 **NOTE:** HP recommends that you create the image restore in the event of a system failure.

---

## Creating the restore DVDs

The restore creation software creates a set of system restore discs using blank, writable DVDs (DVD-R or DVD+R). HP recommends using blank DVD+R discs from a manufacturer you trust, because these recovery DVDs are so important. You need approximately 3 blank DVD+R discs. The program states how many discs are needed at the beginning of the process.

To create restore DVDs:

1. Click the **System menu** icon at the far right of the top panel, and then click **System Settings > Backup**.
2. Select **Storage** from the panel on the left side of the window, click the down-arrow next to **Backup Location**, and select the DVD from the drop-down list.
3. Select **Overview** from the panel on the left side of the window, and then click **Back Up Now**.
4. Follow the on-screen instructions.

## Creating a restore image on a USB device

---

 **NOTE:** Be sure AC power is connected to the computer you begin.

---

Verify the exact amount of free space on your storage device before you begin the creation process. For most models, you will need at least 8 GB of free space on the storage device. However, depending on the drivers and software installed on your computer, you may need slightly more than 8 GB of space. **HP recommends that you use a 16 GB device or above for best results.**

---

 **IMPORTANT:** Remember to insert your USB device into the USB port on the computer before starting this procedure.

---

To create the restore image:

1. Click the **System menu** icon at the far right of the top panel, and then click **System Settings > Backup**.
2. Select **Storage** from the panel on the left side of the window, click the down-arrow next to **Backup location**, and select the USB device from the drop-down list.

---

 **NOTE:** If the USB device is not listed in the drop-down list for Backup Location, select **Local Folder**, and then click the **Choose Folder** button. Select the USB device from the panel on the left side of the Choose Folder window, and click **OK**.

---

3. Select **Overview** from the panel on the left side of the window, and then click **Backup Now**.
4. Follow the on-screen instructions.

## Performing recovery using the restore DVD

---

 **NOTE:** The following procedure uses the F11 BIOS Recovery feature to perform the recovery.

---

1. If possible, back up all personal files.
2. Shut down the computer.
3. Be sure the restore DVD or USB device is connected to the computer.
4. Restart the computer.
5. Using the arrow keys, select **Recovery**, and then press **enter**.
6. Follow the on-screen instructions.

---

 **NOTE:** If you are unable to boot (start up) your computer, and you did not create a system recovery disc, you must purchase an *Ubuntu Operating System DVD* to reinstall the operating system. For additional information, refer to the *Worldwide Telephone Numbers* booklet.

---

## Backing up your information

You should back up your computer files on a regular schedule to maintain a current backup. You can manually back up your information to an optional external drive, a network drive, discs, or the Ubuntu One website. Back up your system at the following times:

- At regularly scheduled times
- Before the computer is repaired or restored
- Before you add or modify hardware or software

To back up your home directory files to the Ubuntu One website using the Deja Dup Backup Tool:

---

 **NOTE:** Before you back up your information, be sure you have designated a location to save the backup files.

---

1. Click the **System menu** icon at the far right of the top panel, and then click **System Settings > Backup** icon.
2. Select **Folders** from the panel on the left side of the window, and beneath **Folders to back up**, select the folders to back up.
3. Select **Storage** from the panel on the left side of the window, click the down-arrow next to **Backup Location**, and select **Ubuntu One** from the drop-down list.
4. Select **Overview** from the panel on the left side of the window, and then click **Back Up Now**.

---

 **NOTE:** The first time you back up your files to Ubuntu One, you will need to create an account to sign into Ubuntu One. Enter your email address and password into the account sign-in boxes and follow the on-screen instructions to complete the sign-in process.

---

To restore backup files:

1. Click the **System menu** icon at the far right of the top panel, and then click **System Settings > Backup** icon.
2. Click **Restore**, select the location of the backup files and the folder name, and then click **Forward**.
3. Under **Restore from When?**, select the date of the files to be restored, and then click **Forward**.
4. Select the location and folder where the files are to be restored, and then click **Forward**.
5. Follow the instructions on the screen.
6. Click **Restore** to start restoring the files, or click **Cancel** to cancel the operation.

---

 **NOTE:** You may also back up to cloud storage services provided by various companies. For a small fee, they will keep your backup for you. A cloud service is recommended, since it is an easy way to keep your backups off-site and safe.

---

---

# 12 Power cord set requirements

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

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

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

## Requirements for all countries

The following requirements are applicable to all countries and regions:

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

## Requirements for specific countries and regions

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

1. The flexible cord must be Type H05VV-F, 3-conductor, 0.75 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.

Country/region	Accredited agency	Applicable note number
		<p>2. The flexible cord must be Type SVT/SJT or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V ac) or NEMA 6-15P (15 A, 250 V ac) configuration. CSA or C-UL mark. UL file number must be on each element.</p>
		<p>3. The appliance coupler, flexible cord, and wall plug must bear a “T” mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCTF, 3-conductor, 0.75 mm<sup>2</sup> or 1.25 mm<sup>2</sup> conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V ac) configuration.</p>
		<p>4. The flexible cord must be Type RVV, 3-conductor, 0.75 mm<sup>2</sup> conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the CCC certification mark.</p>
		<p>5. The flexible cord must be Type H05VV-F 3-conductor, 0.75 mm<sup>2</sup> conductor size. KTL logo and individual approval number must be on each element. Corset approval number and logo must be printed on a flag label.</p>
		<p>6. The flexible cord must be Type HVCTF 3-conductor, 1.25 mm<sup>2</sup> conductor size. Power cord set fittings (appliance coupler, cable, and wall plug) must bear the BSMI certification mark.</p>
		<p>7. For 127 V ac, the flexible cord must be Type SVT or SJT 3-conductor, 18 AWG, with plug NEMA 5-15P (15 A, 125 V ac), with UL and CSA or C-UL marks. For 240 V ac, the flexible cord must be Type H05VV-F 3-conductor, 0.75 mm<sup>2</sup> or 1.00 mm<sup>2</sup> conductor size, with plug BS 1363/A with BSI or ASTA marks.</p>

---

## 13 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 6
  - spare part numbers 23, 24
  - support 3
- action keys
  - identifying 11
- adapter, HDMI to VGA 23, 24
- antenna
  - removal 73, 74
  - spare part number 21
- Antenna Kit, spare part number 21
- audio, product description 2
- audio-out (headphone)/audio-in (microphone) jack 5

## B

- backups 83
  - for Ubuntu Linux computer models 87
- base enclosure, spare part number 19
- battery
  - removal 37
  - spare part number 19, 37
- battery cover, identifying 12
- battery lock, identifying 12
- battery release latch 12
- BD combo drive
  - spare part number 40
- bezel
  - removal 43
  - spare part number 43
- BIOS
  - determining version 75
  - downloading an update 76
  - updating 75
- Bluetooth label 13
- boot order
  - changing HP Recovery Manager 86
- bottom 13
- buttons
  - left TouchPad 8
  - power 10
  - right TouchPad 8

## C

- caps lock light, identifying 9
- chipset, product description 1
- components
  - bottom 12
  - display 7
  - left side 6
  - right side 5
  - top 8
- computer major components 14
- computer specifications 80
- connector, power 6

## D

- default settings, restoring 79
- deleted files
  - restoring 84
- display assembly
  - removal 70
  - spare part numbers 70
  - subcomponents 20
- display back cover, spare part numbers 21
- display bezel
  - removal 43
  - spare part number 20, 44
- display hinge
  - removal 72
  - spare part number 21
- Display Hinge Kit, spare part number 21
- display panel
  - product description 1
  - removal 43
  - spare part number 21, 43
- display panel cable
  - removal 73
  - spare part number 21, 73
- display specifications 81
- DVD±RW and CD-RW SuperMulti Double-Layer Combination Drive, specifications 82

## E

- esc key, identifying 11

- Ethernet, product description 3

## F

- factory settings, restoring 79
- fan
  - removal 63
  - spare part numbers 63
- fn key, identifying 11

## G

- graphics, product description 1

## H

- hard drive
  - product description 2
  - removal 51
  - spare part numbers 19, 22, 24, 28, 29, 51
  - specifications 81
- Hard Drive Hardware Kit
  - contents 19, 22
  - spare part number 19, 22, 51
- hard drive light 5
- hard drive rubber bracket, removal 52
- HDMI port
  - identifying 6
- HDMI to VGA adapter, spare part number 23, 24
- heat sink assembly
  - removal 64
  - spare part numbers 18, 64
- HP PC Hardware Diagnostics (UEFI)
  - downloading 77
  - using 76
- HP Recovery Manager
  - correcting boot problems 86
  - starting 85
- HP Recovery media
  - creating 83
  - recovery 86
- HP Recovery partition
  - recovery 85
  - removing 86

- I**
- internal display switch, identifying 7
- internal microphones, identifying 7
- J**
- jacks
  - audio-out (headphone)/audio-in (microphone) 5
  - network 6
  - RJ-45 (network) 6
- K**
- keyboard
  - product description 3
- keys
  - action 11
  - esc 11
  - fn 11
  - Windows 11
- L**
- labels
  - Bluetooth 13
  - Microsoft Certificate of Authenticity 13
  - regulatory 13
  - serial number 13
  - service 13
  - wireless certification 13
  - WLAN 13
- latch, battery release 12
- lights
  - AC adapter 6
  - caps lock 9
  - hard drive 5
  - mute 9
  - power 5, 9
- M**
- memory card reader, identifying 6
- memory card, identifying 6
- memory module
  - identifying 12
  - product description 2
  - removal 39
  - spare part numbers 18, 24, 39
- microphone
  - product description 2
- minimized image
  - creating 85
- minimized image recovery 85
- model name 1
- mute light, identifying 9
- N**
- network jack, identifying 6
- O**
- operating system, product description 3
- optical drive
  - product description 2
  - removal 40
  - spare part numbers 19, 22, 40
  - specifications 82
- optical drive bracket
  - removal 40
- optical drive, identifying 5, 6
- original system recovery 85
- P**
- Plastics Kit, spare part number 38
- pointing device, product description 3
- ports
  - HDMI 6
  - product description 3
  - USB 2.0 5
  - USB 3.0 6
- power button board
  - removal 53
  - spare part number 53
- power button, identifying 10
- power connector cable
  - removal 68
  - spare part number 19, 68
- power connector, identifying 6
- power cord
  - requirements for all countries 90
  - requirements for specific countries and regions 91
  - set requirements 90
  - spare part numbers 23
- power lights, identifying 5, 9
- power requirements, product description 3
- processor, product description 1
- product description
  - audio 2
  - chipset 1
  - display panel 1
  - Ethernet 3
  - external media cards 3
  - graphics 1
  - hard drive 2
  - keyboard 3
  - memory module 2
  - microphone 2
  - operating system 3
  - optical drive 2
  - pointing device 3
  - ports 3
  - power requirements 3
  - processors 1
  - product name 1
  - security 3
  - serviceability 4
  - video 2
  - wireless 3
- product name 1
- product name and number, computer 13
- R**
- recovery
  - discs 83, 86
  - HP Recovery Manager 85
  - media 86
  - options 84
  - starting 85
  - supported discs 83
  - system 85
  - USB flash drive 86
  - using HP Recovery media 84
- recovery media
  - creating 83
  - creating using HP Recovery Manager 84
- recovery partition
  - removing 86
- regulatory information
  - regulatory label 13
  - wireless certification labels 13
- removal/replacement
  - procedures 36, 42
- restore
  - Windows File History 84
- RJ-45 (network) jack, identifying 6

RTC battery  
removal 62  
spare part number 19, 24, 62

## S

Screw Kit, spare part number 23  
security cable slot, identifying 6  
security, product description 3  
serial number 13  
serial number, computer 13  
service door  
removal 38  
spare part number 38  
service labels  
locating 13  
serviceability, product description 4  
Setup Utility  
changing the language 78  
displaying system information 79  
exiting 79  
navigating 78  
restoring default settings 79  
selecting 78  
starting 78  
slots  
memory card reader 6  
security cable 6  
speakers  
identifying 10  
removal 69  
spare part number 19, 69  
specifications  
computer 80  
display 81  
DVD±RW and CD-RW SuperMulti  
Double-Layer Combination  
Drive 82  
hard drive 81  
optical drive 82  
SuperMulti DVD±R/RW Double-Layer  
Drive  
spare part number 40  
supported discs  
recovery 83  
system board  
removal 57  
spare part numbers 15, 25, 26,  
28, 29, 30, 57  
system information, displaying 79

system recovery 85  
system restore point  
creating 83

## T

top cover  
removal 47  
spare part numbers 15, 47  
TouchPad  
buttons 8  
TouchPad button board  
removal 54  
spare part number 15, 54  
TouchPad zone, identifying 8  
traveling with the computer 13

## U

USB 2.0 port, identifying 5  
USB 3.0 port, identifying 6  
USB/audio board  
removing 51  
spare part number 19, 51

## V

vents, identifying 6, 12  
video, product description 2

## W

webcam  
identifying 7  
removal 43  
spare part number 43  
webcam light, identifying 7  
webcamera/microphone module  
removal 71  
spare part number 20, 72  
Windows  
File History 84  
restoring files 84  
system restore point 83  
Windows key, identifying 11  
wireless antenna  
removal 73, 74  
spare part number 21  
wireless certification label 13  
wireless, product description 3  
WLAN antennas, identifying 7  
WLAN device 13  
WLAN label 13  
WLAN module  
spare part numbers 24

WLAN module  
removal 55  
spare part numbers 19, 24, 55