



HP ENVY 17 Notebook PC  
HP ENVY 15 Notebook PC

Maintenance and Service Guide

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### **Product notice**

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

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.


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For any further information or to request a full refund of the computer, please contact your local point of sale (the seller).

## Important Notice about Customer Self-Repair Parts

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 **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.

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## Safety warning notice

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

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# 1 Product description



**NOTE:** This document contains Microsoft Windows 8.1 and Windows 7 content.

Category	Description
<b>Product Name</b>	HP ENVY 17 Notebook PC HP ENVY 15 Notebook PC
<b>Processors</b>	Processors are attached to the system board. <ul style="list-style-type: none"><li>• Intel® Quad Core i7-4710 HQ 2.50 GHz (SC turbo up to 3.50 GHz) processor (1600 MHz, 6.0- MB L3 cache, 47 W) for use with HP ENVY 15 and 17 Notebook PC models available for Windows 8.1 and Windows 7</li><li>• Intel Dual Core i7-4510U (2.0 GHz, SC turbo up to 3.1 GHz), processor (1600 MHz/4 MB L3, 15 W) for use with HP ENVY 15 and 17 Notebook PC models available for Windows 8.1 and Windows 7</li><li>• Intel Dual Core i7-4510U 850M 4 GB (2.0 GHz, SC turbo up to 3.1 GHz), processor (1600 MHz/4 MB L3, 15W) for use with HP ENVY 17 Notebook PC models only</li><li>• Intel Dual Core i5-4210U 840M 2 GB (1.7 GHz SC turbo up to 2.7 GHz) processor (1600 MHz, 3.0 MB L3 cache, 15 W) for use with HP ENVY 15 and 17 Notebook PC models</li><li>• Intel Dual Core i5-4210U (1.7 GHz SC turbo up to 2.7 GHz) processor (1600 MHz, 3.0 MB L3 cache, 15 W) for use with HP ENVY 15 and 17 Notebook PC models</li></ul>
<b>Chipset</b>	Intel HM87 Express Chipset Intel Lynx Point-LP PCH (integrated in MCP) Intel HM87 Express Chipset (for UMA non-touch computer models only)
<b>Graphics</b>	<b>Internal graphics:</b> <ul style="list-style-type: none"><li>• Intel HD Graphics 4600 internal graphics</li><li>• Intel HD Graphics 4400</li><li>• Supports HD Decode, DX11, and HDMI</li><li>• Supports Optimus</li><li>• Supports GPS (GPU Performance Scaling)</li></ul> <b>Switchable discrete graphics:</b> <ul style="list-style-type: none"><li>• NVIDIA N15P-GT (GeForce GTX 850M) with 4096 MB of dedicated video memory (256Mx16 DDR3 900 MHz x 8 PCs, 1 GHz downgraded to 900 MHz)</li><li>• NVIDIA N15S-GT (GeForce 840M) with 2048 MB of dedicated video memory (256Mx16 DDR3 900 MHz x 4 PCs, 1 GHz downgraded to 900 MHz)</li><li>• NVIDIA N15S-GT (GeForce 840M) with 4096 MB of dedicated video memory (256Mx16 DDR3 900 MHz x 8 PCs, 1 GHz downgraded to 900 MHz)</li></ul>
<b>Panel</b>	17.3" high-definition (HD) light-emitting diode (WLED) BrightView (1600x900) display, (wedge 6.0mm) SVA, Color Gamut 60%, supports LVDS, 200 nits non-touch only available for Windows 8.1 and Windows 7

Category	Description
	17.3" high-definition (HD) light-emitting diode (WLED) Antiglare (1600x900) display, (wedge 6.0mm) SVA, Color Gamut 60%, supports LVDS, 200 nits touch only available for Windows 8.1 and Windows 7
	17.3" high-definition (FHD) light-emitting diode (WLED) AntiGlare (1920x1080) (wedge 6.0mm) WVA, Color Gamut 72%, supports LVDS, 300 nits both touch and non-touch available for Windows 8.1 and Windows 7
	15.6" HD WLED BrightView (1366x768) flat (3.8mm) SVA 200 nits, LVDS, non-touch only available for Windows 8.1 and Windows 7
	15.6" HD WLED Antiglare (1366x768) flat (3.8mm) SVA 200 nits, LVDS, Touch only available for Windows 8.1 and Windows 7
	15.6" FHD WLED Antiglare (1920x1080) slim (3.2mm) SVA 300 nits, LVDS, both touch and non-touch available for Windows 8.1 and Windows 7
	All display assemblies include 2 wireless local area network (WLAN) antenna cables
	Touch solution with flush glass, multitouch enabled
	Support LVDS (co-layout with eDP1.3+PSR)
<b>Memory</b>	Two SODIMM slots DDR3L-1600 MHz Dual Channel Support Supports up to 16 GB of system RAM in the following configurations: <ul style="list-style-type: none"> <li>• 4096 MB total system memory (4096×1)</li> <li>• 8192 MB total system memory (4096×2)</li> <li>• 8192 MB total system memory (8192×1)</li> <li>• 12288 MB total system memory (8192×1 + 4096×1)</li> <li>• 16384 MB total system memory (8192×2)</li> </ul>
<b>Hard drives</b>	Supports 6.35-cm (2.5-in) hard drives in 9.5-mm (.37-in) and 7.0-mm (.28-in) thicknesses (all hard drives use the same bracket) Support M.2 SATA Storage (Port0) Accelerometer / HDD protection support Supports the following hard drives: <ul style="list-style-type: none"> <li>• 1.5 TB 5400-rpm, 9.5-mm</li> <li>• 1 TB 5400-rpm, 9.5-mm</li> <li>• 750 GB 5400-rpm 9.5-mm</li> <li>• 500 GB 5400-rpm 7mm/9.5mm for HP ENVY 15 Notebook PC only</li> </ul> Hybrid configurations <ul style="list-style-type: none"> <li>• 1 TB 5400 + 8 GB NAND Hybrid HDD 9.5mm</li> <li>• 750 GB 5400 + 8 GB NAND Hybrid HDD 9.5mm</li> </ul>
<b>Solid-state drive</b>	Only configured with system memory up to 8 GB: <ul style="list-style-type: none"> <li>• 256 GB M.2 SATA (MLC)</li> <li>• 256 GB M.2 SATA (TLC)</li> </ul>
<b>Optical drives</b>	Fixed

Category	Description
	<p>Serial ATA</p> <p>9.5-mm tray load</p> <p>Supports the following optical drives:</p> <ul style="list-style-type: none"> <li>• DVD+/-RW Double-Layer SuperMulti</li> <li>• Blu-ray Disc ROM DVD±R/RW with SuperMulti for use with HP ENVY 17 Notebook PC</li> <li>• Blu-ray Disc R/RW with SuperMulti for use with HP ENVY 15 Notebook PC</li> </ul> <p>Support Zero-Power ODD</p> <p>Support M-disc</p>
<b>External optical drives</b>	<p>External USB</p> <p>Serial ATA</p> <p>12.7-mm tray load</p> <p>Supports the following external optical drives:</p> <p>DVD+/-RW DL SuperMulti</p>
<b>Audio and video</b>	<p>Quad integrated stereo speakers and subwoofer</p> <p>HD Beats audio</p> <p>HP TrueVision high-definition webcam (fixed, no tilt + activity LED, 1PC, USB 2.0 M-JPEG, 1280×720 by 30 frames per second)</p> <p>Dual array digital microphones with appropriate software - beam forming, echo cancellation, noise suppression</p> <p>Subwoofer</p> <p>Support Dragon Assistant Voice Recognition</p>
<b>Ethernet</b>	<p>Integrated 10/100/1000 GB network interface card (NIC)</p>
<b>Wireless</b>	<p>Integrated wireless local area network (WLAN) options by way of wireless module</p> <p>Two WLAN antennas built into display assembly</p> <p>Supports Intel Wireless Display (WiDi)</p> <p>Antenna support for 802.11a/b/g/n with MIMO support 2×2</p> <p>Compatible with Miracast-certified devices</p> <p>Supports the following WLAN formats:</p> <ul style="list-style-type: none"> <li>• Realtek RTL8188EE 802.11 b/g/n 1x1 Wi-Fi Adapter available for Windows 8.1 and Windows 7</li> <li>• Qualcomm Atheros AR9485 802.11 b/g/n 1x1 Wi-Fi Adapter available for Windows 8.1 and Windows 7</li> <li>• QCA 9565 802.11bgn 1x1 Wi-Fi + BT4.0 Combo Adapter available for Windows 8.1 and Windows 7</li> <li>• Intel Dual Band Wireless-AC 7260 802.11 ac 2x2 WiFi + BT 4.0 Combo Adapter _NA - 7260 non-Vpro version w/ dual antennas for use with HP ENVY 17 Notebook PC models only</li> </ul>
<b>External memory card</b>	<p>Push-push insertion/removal</p> <p>Supports memory cards such as Secure Digital SD/SDHC/SDXC.</p>
<b>Internal card</b>	<ul style="list-style-type: none"> <li>• One half-size mini-card slot for WLAN</li> </ul>

Category	Description
	<ul style="list-style-type: none"> <li>One 2280 M.2 slot for SSD</li> </ul>
<b>Ports</b>	<ul style="list-style-type: none"> <li>HDMI version 1.4 supporting 1920 ×1200 @ 60Hz</li> <li>Combination audio-out/audio-in (stereo) port, supports jack detection</li> <li>USB 3.0 (3 ports)</li> <li>RJ-45 (Ethernet, includes link and activity lights)</li> <li>AC Smart Pin power adapter plug</li> <li>Fingerprint Reader for select HP ENVY 17 Notebook PC models only</li> </ul>
<b>Keyboard/pointing devices</b>	<p>Full-size keyboard with numeric keypad</p> <ul style="list-style-type: none"> <li>Backlit island-style keyboard in black finish</li> <li>Backlit island-style keyboard in black finish non-backlit (select models only)</li> </ul> <hr/> <p>HP Control Zone Trackpad</p> <p>Taps enabled as default</p> <p>Multitouch gestures enabled</p> <p>Support Windows Modern Trackpad Gestures</p>
<b>Power requirements</b>	<p><b>Supports the following HP AC adapters:</b></p> <ul style="list-style-type: none"> <li>45 W(4.5mm connector) (select models only)</li> <li>65 W (4.5mm connector) (select models only)</li> <li>65 W EM (4.5mm connector) (select models only)</li> <li>90 W (4.5mm connector) (select models only)</li> <li>90 W EM (4.5mm connector) (select models only)</li> <li>120 W (4.5mm connector) (select models only)</li> </ul> <p>1-M length power cord</p> <p>Battery life enhancement</p> <hr/> <p><b>Supports the following batteries:</b></p> <ul style="list-style-type: none"> <li>4-Cell battery - 41 Whr (2.8Ah), supports fast charge</li> <li>4-Cell battery - 48 Whr (2.3Ah), supports fast charge</li> </ul>
<b>Operating system</b>	<p><b>Preinstalled:</b></p> <ul style="list-style-type: none"> <li>Windows 8.1 (64-bit)</li> <li>Windows 7 Pro</li> <li>Linux Ubuntu</li> </ul>
<b>Serviceability</b>	<p><b>End-user replaceable parts</b></p> <ul style="list-style-type: none"> <li>Battery</li> <li>AC adapter</li> <li>Optical drive</li> </ul>
<b>In Box</b>	<p>HDMI-to-VGA adapter</p>

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## 2 External component identification

### Finding your hardware and software information

#### Locating hardware

To find out what hardware is installed on your computer:

1. From the Start screen, type `control panel`, and then select **Control Panel**.
2. Select **System and Security**, select **System**, and then click **Device Manager** in the left column.  
A list displays all the devices installed on your computer.

For Windows 7 Information:

1. Select **Start > Control Panel**.
2. Select **System and Security**, select **System**, and then click **Device Manager** in the left column.  
A list displays all the devices installed on your computer.

To find out information about system hardware components and the system BIOS version number, press `fn+esc`.

#### Locating software


To find out what software is installed on your computer:

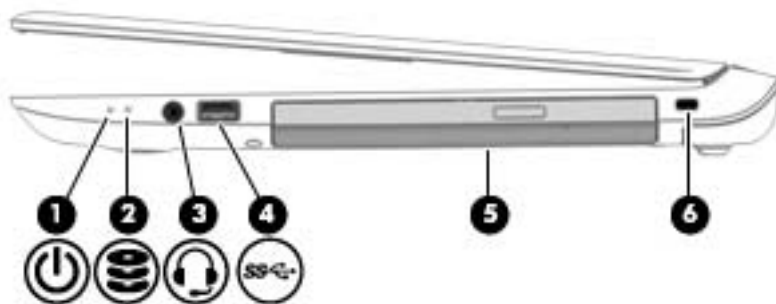
- ▲ From the Start screen, click the down arrow in the lower-left corner of the screen.






For Windows 7 Information:

- ▲ Select **Start > Control Panel > Programs and Features**.

## Right side


 **NOTE:** Refer to the illustration in this section that most closely matches your computer.

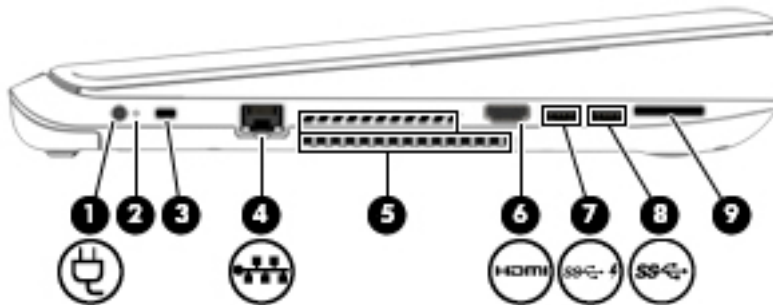








Component	Description
(1)  Power light	<ul style="list-style-type: none"> <li>On: The computer is on.</li> <li>Blinking: The computer is in the Sleep state, a power-saving state. The computer shuts off power to the display and other unneeded components.</li> <li>Off: The computer is off or in Hibernation. 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>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 3.0 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.
(6)  Security cable slot	<p>Attaches an optional security cable to the computer.</p> <p><b>NOTE:</b> On HP ENVY 17 Notebook PC models, the security cable slot is located on the left side.</p> <p><b>NOTE:</b> The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.</p>




## Left side

 **NOTE:** Refer to the illustration in this section that most closely matches your computer.



Component	Description
(1) 	<p>Power connector</p> <p>Connects an AC adapter.</p>
(2) 	<p>AC adapter light</p> <ul style="list-style-type: none"> <li>Amber: The battery is charging.</li> <li>White: The AC adapter is connected and the battery is charged.</li> <li>Off: The computer is using battery power.</li> </ul>
(3) 	<p>Security cable slot</p> <p><b>NOTE:</b> On HP ENVY 15 Notebook PC models, the security cable slot is located on the right side.</p> <p><b>NOTE:</b> The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.</p>
(4) 	<p>RJ-45 (network) jack/status lights</p> <p>Connects a network cable.</p> <ul style="list-style-type: none"> <li>White: The network is connected.</li> <li>Amber: Activity is occurring on the network.</li> </ul>
(5)	<p>Vents (2)</p> <p>Enable airflow to cool internal components.</p> <p><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.</p>
(6) 	<p>HDMI port</p> <p>Connects an optional video or audio device, such as a high-definition television, any compatible digital or audio component, or a high-speed HDMI device.</p>
(7) 	<p>USB 3.0 charging (powered) port</p> <p>Connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub. Standard USB ports will not charge all USB devices or will charge using a low current. Some USB devices require power and require you to use a powered port.</p> <p><b>NOTE:</b> USB charging ports can also charge select models of cell phones and MP3 players, even when the computer is off.</p>

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Component	Description
(8)  USB 3.0 port	Connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub.
(9) 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.  To remove a card:  Press in on the card it until it pops out.

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# Display



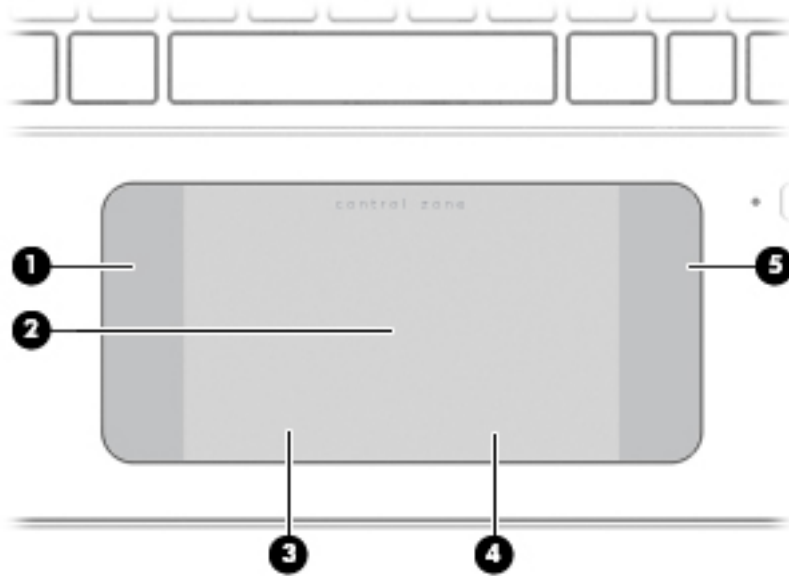
Component	Description
(1) Internal display switch	Turns off the display and initiates Sleep if the display is closed while the power is on. <b>NOTE:</b> The internal display switch is not visible from the outside of the computer.
(2) WLAN antennas (2)*	Send and receive wireless signals to communicate with wireless local area networks (WLANs). <b>NOTE:</b> Depending on your computer model, the number of antennas may vary.
(3) Internal microphones (2)	Record sound.
(4) Webcam light	On: The webcam is in use.
(5) 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. For Windows 7, select <b>Start &gt; All Programs &gt; Communication and Chat &gt; Cyberlink YouCam 5</b> .

\*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* that applies to your country or region. To access this guide, from the Start screen, type *support*, and then select the **HP Support Assistant** app.

To access the Windows 7 user guides, select **Start > Help and Support > User Guides**.

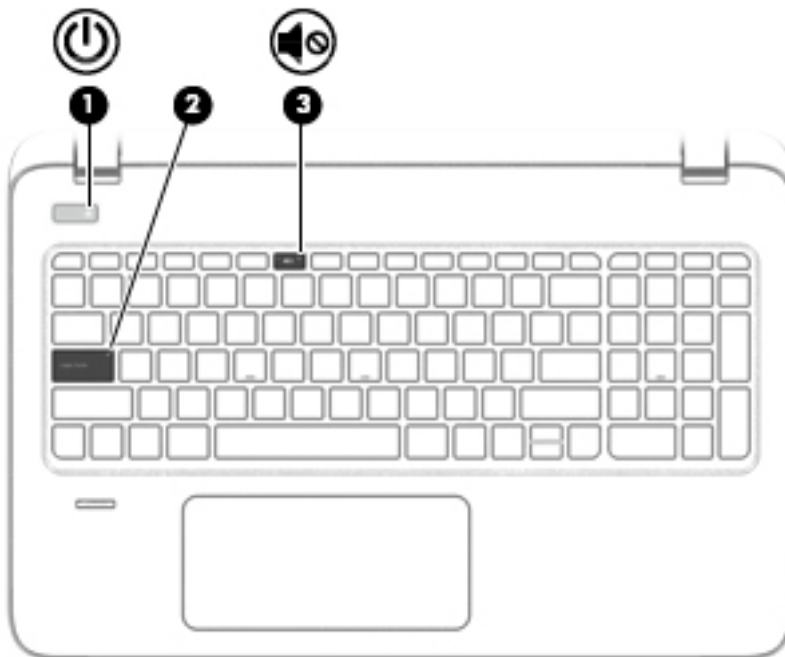
# Top



## TouchPad



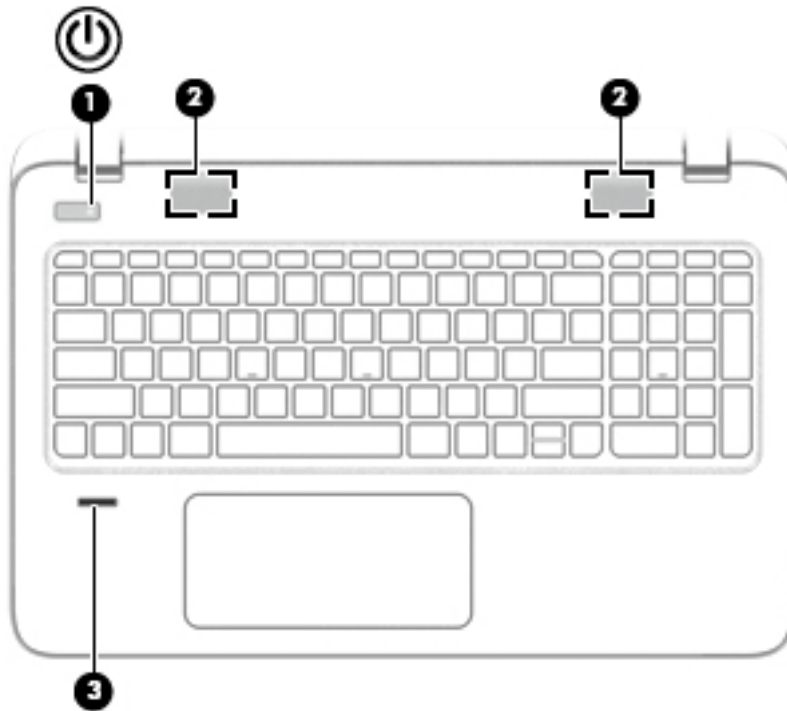
Component	Description
(1) Left control zone	Textured area that allows you to perform additional gestures.
(2) TouchPad zone	Reads your finger gestures to move the pointer or activate items on the screen. <b>NOTE:</b> The TouchPad also supports edge-swipe gestures.
(3) Left TouchPad button	Functions like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


## Lights



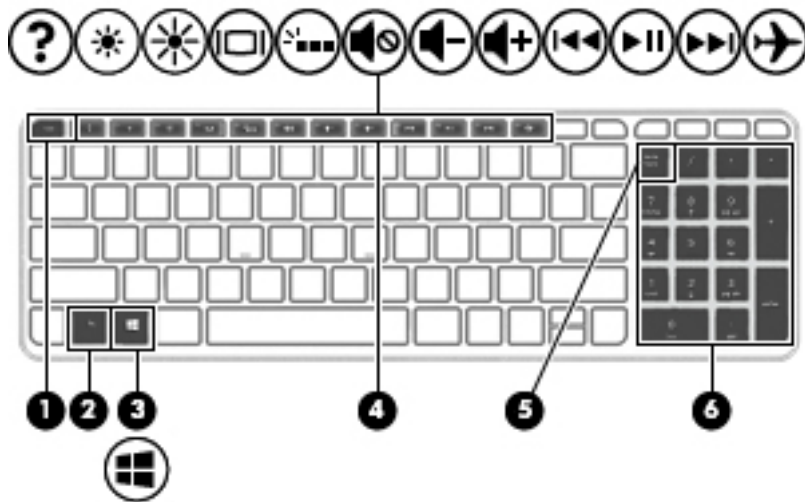
Component	Description
(1)  Power light	<ul style="list-style-type: none"><li>• When the computer is off, press the button to turn on the computer.</li><li>• When the computer is on, press the button briefly to initiate Sleep.</li><li>• When the computer is in the Sleep state, press the button briefly 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>To learn more about your power settings with Windows 7, select <b>Start &gt; Control Panel &gt; System and Security &gt; Power Options</b>.</p>
(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, speakers, and fingerprint reader




Component	Description
(1)  Power button	<ul style="list-style-type: none"><li>• When the computer is off, press the button to turn on the computer.</li><li>• When the computer is on, press the button briefly to initiate Sleep.</li><li>• When the computer is in the Sleep state, press the button briefly to exit Sleep.</li><li>• When the computer is in Hibernation, press the button briefly to exit Hibernation.</li></ul> <p><b>CAUTION:</b> Pressing and holding down the power button 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>To learn more about your power settings with Windows 7, select <b>Start &gt; Control Panel &gt; System and Security &gt; Power Options</b>.</p>
(2) Speakers (2)	Produce sound.
(3) Fingerprint reader (select models only)	Allows a fingerprint logon to Windows, instead of a password logon.

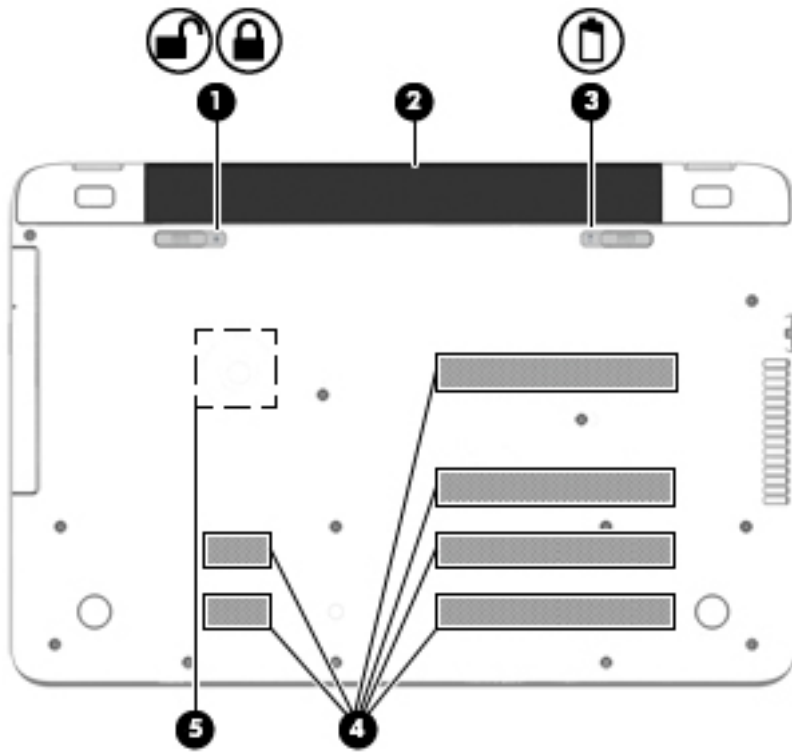
## Keys




Component	Description
(1) <span style="color: blue;">esc</span> key	Displays system information when pressed in combination with the <span style="color: blue;">fn</span> key.
(2) <span style="color: blue;">fn</span> key	Executes frequently used system functions when pressed in combination with the <span style="color: blue;">b</span> key the or the <span style="color: blue;">esc</span> key.
(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.  For Windows 7, Displays the Windows Start Menu.
(4) Action keys	Execute frequently used system functions.  <b>NOTE:</b> On select models, the <span style="color: blue;">f5</span> action key turns the keyboard backlight feature off or on.
(5) <span style="color: blue;">num lock</span> key	Controls the function of the integrated numeric keypad. Press the key to alternate between the standard numeric function found on an external keypad (this function is turned on at the factory) and the navigational function (indicated by the directional arrows on the keys).  <b>NOTE:</b> The keypad function that is active when the computer is turned off is reinstated when the computer is turned back on.
(6) Integrated numeric keypad	When <span style="color: blue;">num lock</span> is turned on, it can be used like an external numeric keypad.

# Bottom

 **NOTE:** Your computer may look slightly different from the illustration in this section.




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) <b>NOTE:</b> The number of vents vary by computer model.	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)	HP Triple Bass Reflex Subwoofer	Provides superior bass sound.



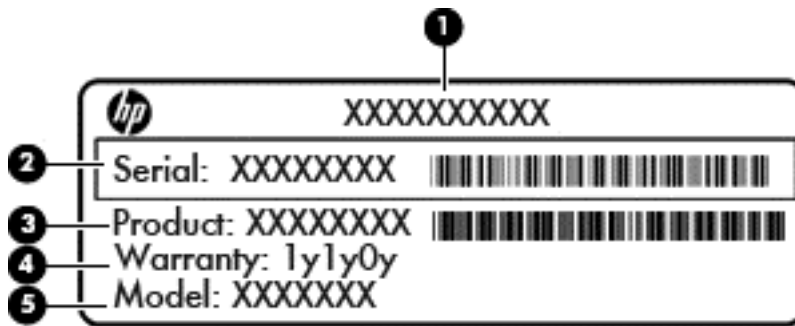
# Labels

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.



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#### Component

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

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- 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.

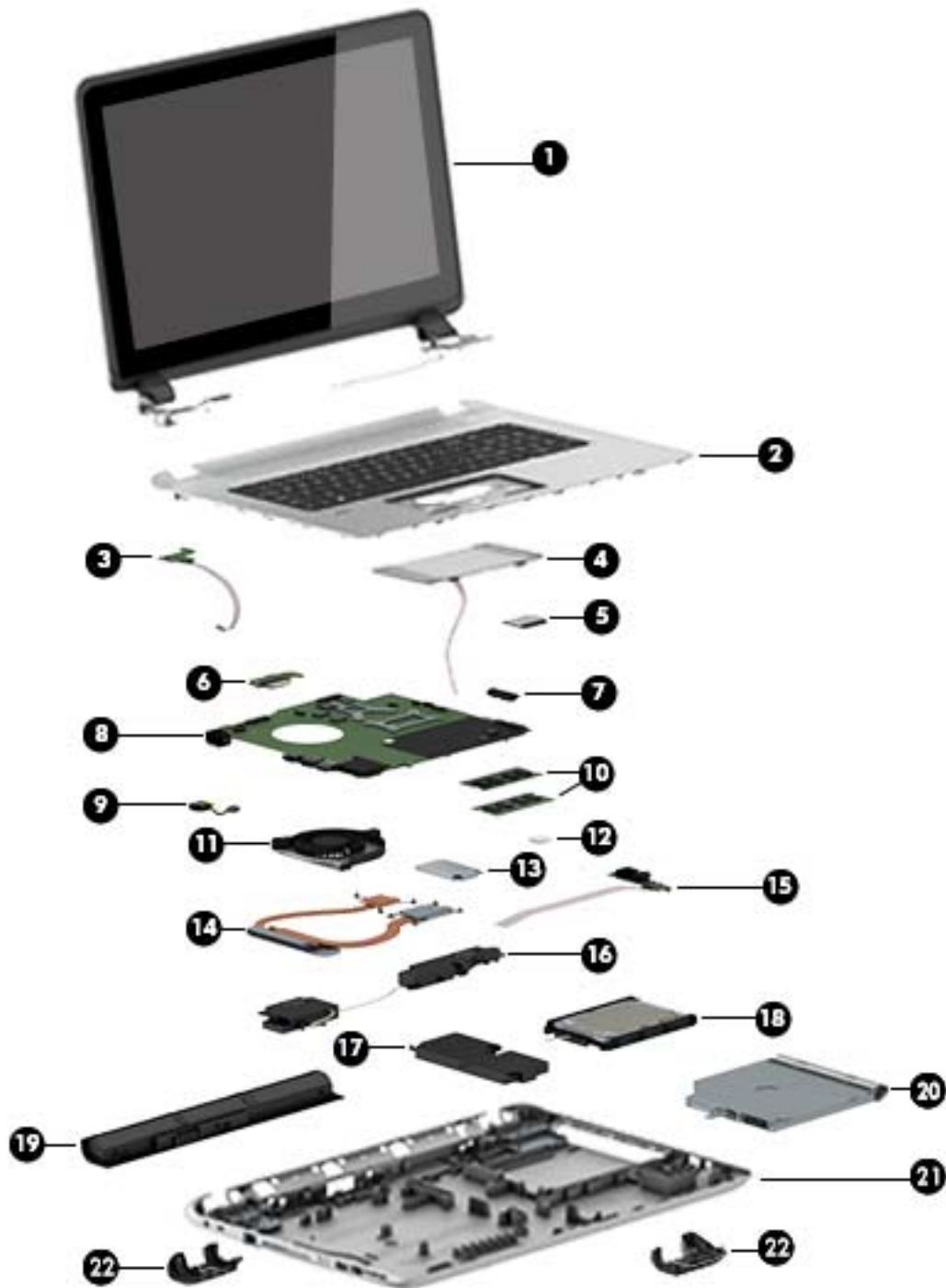
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## 3 Illustrated parts catalog

### 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 [Bottom on page 14](#) for details.



Item	Component	Spare part number
(1)	<b>Display assembly:</b> For details on the display components, see <a href="#">Display assembly subcomponents on page 23</a> .	
(2)	<b>Top cover:</b> includes the TouchPad and keyboard.	
	<b>Top cover for HP ENVY 15 Notebook PC computer models:</b>	
	For use only on HP ENVY 15 Notebook PC computer models in the United States	763577-001

<b>Item</b>	<b>Component</b>	<b>Spare part number</b>
	For use only on HP ENVY 15 Notebook PC computer models in the United States with backlit keyboard	763578-001
	For use only on HP ENVY 15 Notebook PC computer models in the United Kingdom with backlit keyboard.	763578-031
	For use only on HP ENVY 15 Notebook PC computer models in Germany with backlit keyboard	763578-041
	For use only on HP ENVY 15 Notebook PC computer models in France with TouchPad and backlit keyboard.	763578-051
	For use only on HP ENVY 15 Notebook PC computer models in Italy with backlit keyboard	763578-061
	For use only on HP ENVY 15 Notebook PC computer models in Spain with backlit keyboard	763578-071
	For use only on HP ENVY 15 Notebook PC computer models in Portugal with backlit keyboard	763578-131
	For use only on HP ENVY 15 Notebook PC computer models in Turkey with backlit keyboard	763578-141
	For use only on HP ENVY 15 Notebook PC computer models in Greece with TouchPad and backlit keyboard	763578-151
	For use only on HP ENVY 15 Notebook PC computer models in Latin America with backlit keyboard	763578-161
	For use only on HP ENVY 15 Notebook PC computer models in Saudi Arabia with backlit keyboard	763578-171
	For use only on HP ENVY 15 Notebook PC computer models in Hungary with backlit keyboard	763578-211
	For use only on HP ENVY 15 Notebook PC computer models in Russia with backlit keyboard.	763578-251
	For use only on HP ENVY 15 Notebook PC computer models in Bulgaria with backlit keyboard	763578-261
	For use only on HP ENVY 15 Notebook PC computer models in Romania with backlit keyboard	763578-271
	For use only on HP ENVY 15 Notebook PC computer models in Thailand with backlit keyboard	763578-281
	For use only on HP ENVY 15 Notebook PC computer models in Japan with backlit keyboard.	763578-291
	For use only on HP ENVY 15 Notebook PC computer models in Belgium with backlit keyboard	763578-A41
	For use only on HP ENVY 15 Notebook PC computer models in Taiwan with backlit keyboard	763578-AB1
	For use only on HP ENVY 15 Notebook PC computer models in South Korea with backlit keyboard	763578-AD1
	For use only on HP ENVY 15 Notebook PC computer models for International with TouchPad and backlit keyboard	763578-B31
	For use only on HP ENVY 15 Notebook PC computer models in Slovenia. with backlit keyboard	763578-BA1
	For use only on HP ENVY 15 Notebook PC computer models in Switzerland with backlit keyboard	763578-BG1

Item	Component	Spare part number
	For use only on HP ENVY 15 Notebook PC computer models in Canada with backlit keyboard	763578-DB1
	For use only on HP ENVY 15 Notebook PC computer models in Nordic regions with backlit keyboard	763578-DH1
	For use only on HP ENVY 15 Notebook PC computer models in Czech and Slovakia with backlit keyboard	763578-FL1
	<b>For use only on HP ENVY 17 Notebook PC computer models:</b>	
	For use only on HP ENVY 17 Notebook PC computer models in the United States with keyboard	763733-001
	For use only on HP ENVY 17 Notebook PC computer models in the United States with backlit keyboard	763935-001
	For use only on HP ENVY 17 Notebook PC computer models in Canada with backlit keyboard	763935-DB1
	For use only on HP ENVY 17 Notebook PC computer models for use in the United States with backlit keyboard	774556-001
<b>(3)</b>	<b>Power button board</b> (includes cable)	
	For HP ENVY 15 Notebook PC computer models	762496-001
	For HP ENVY 17 Notebook PC computer models	763708-001
<b>(4)</b>	<b>TouchPad board</b>	
	For HP ENVY 15 Notebook PC computer models	763790-001
	For HP ENVY 17 Notebook PC computer models	763712-001
<b>(5)</b>	<b>WLAN module</b>	
	Realtek RTL8188EE 802.11 b/g/n 1x1 Wi-Fi Adapter (for use only with HP ENVY 17 Computer models) available for Windows 8.1 and Windows 7	756753-005
	Qualcomm Atheros AR9565 802.11bgn 1x1 Wi-Fi + Blue Tooth 4.0 Combo Adapter (for use with HP ENVY 17 Computer models or HP ENVY 15 Computer models available for Windows 8.1 and Windows 7	675794-005
	Intel Dual Band Wireless-AC 3160 802.11 ac 1x1 WiFi + BT 4.0 combo adapter (for use only with HP ENVY 17 Computer models or HP ENVY 15 Computer models)	710662-005
<b>(6)</b>	<b>Battery Board</b> (For use only with HP ENVY 17 Computer models)	763710-001
<b>(7)</b>	<b>USB board</b>	
	For use with HP ENVY 17 Notebook PC computer models	763709-001
	For use with HP ENVY 15 Notebook PC computer models	763786-001
<b>(8)</b>	<b>System board</b> (includes processor and replacement thermal material):	
	<b>For use with HP ENVY 17 Computer models:</b>	
	System board Intel Dual Core i7-4510U (2.0–GHz, SC turbo up to 3.1–GHz), processor (1600MHz/4 MB L3, 15W) discrete memory, and the Linux Ubuntu and FreeDos operating system for HP ENVY 17 Notebook PC computer models	763721-001
	System board Intel Dual Core i7-4510U (2.0–GHz, SC turbo up to 3.1–GHz), processor (1600MHz/4 MB L3, 15W) discrete memory, and the Windows 8 Standard operating system for HP ENVY 17 Notebook PC computer models	763721-501

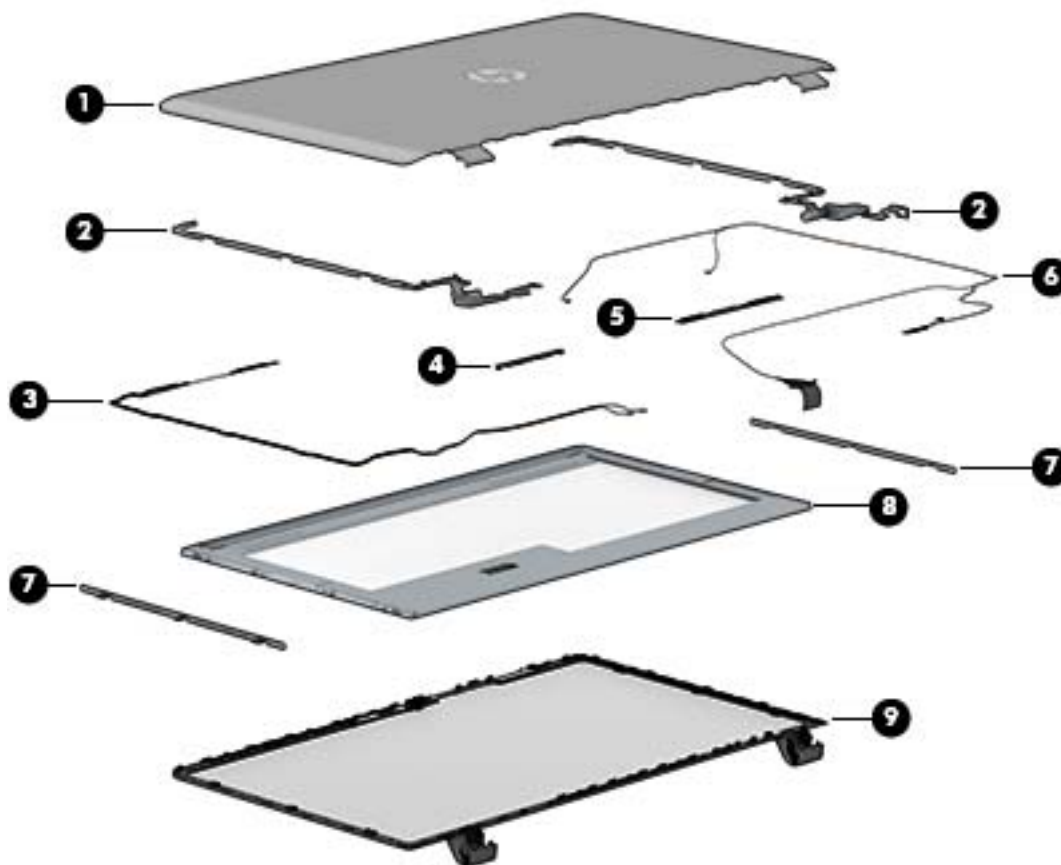
Item	Component	Spare part number
	Intel Dual Core i7-4510U (2.0 GHz, SC turbo up to 3.1 GHz), processor (1600 MHz/4 MB L3, 15 W) discrete memory, and the Windows 8 Professional operating system and Windows 7 pro	763721-601
	Intel Dual Core i5-4210U 840M 2 GB (1.7 GHz SC turbo up to 2.7 GHz) processor (1600 MHz, 3.0 MB L3 cache, 15 W) discrete memory, and the Windows 8 Standard operating system	763730-501
	Intel Dual Core i5-4210U 840M 2 GB (1.7 GHz SC turbo up to 2.7 GHz) processor 1600 MHz, 3.0 MB L3 cache, 15 W) discrete memory, and the Windows 8 Professional operating system	763730-601
	Intel Quad Core HM87 i7-4710HQ (2.50 GHz SC turbo up to 3.50 GHz) processor (1600-MHz, 6.0 MB L3 cache, 47 W) UMA memory, and the FreeDos or Linux Ubuntu operating system	773128-001
	Intel Quad Core HM87 i7-4710HQ (2.50 GHz SC turbo up to 3.50 GHz) processor (1600-MHz, 6.0 MB L3 cache, 47 W) UMA memory, and the Windows 8 Standard operating system	773128-501
	Intel Quad Core HM87 i7-4710HQ 2.50 GHz (SC turbo up to 3.50 GHz) processor (1600 MHz, 6.0- MB L3 cache, 47 W) UMA memory , and the Windows 8 Professional operating system and Windows 7 Pro	773128-601
	<b>For use with HP ENVY 15 Computer models:</b>	
	Intel Quad Core HM87 i7-4710HQ (2.50 GHz SC turbo up to 3.50 GHz) processor (1600 MHz, 6.0 MB L3 cache, 47 W) UMA memory	763585-001
	Intel Quad Core HM87 i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600-MHz, 6.0 MB L3 cache, 47 W) UMA memory, and the Windows 8 Standard operating system	763585-501
	Intel Quad Core HM87 i7-4710HQ (2.50 GHz SC turbo up to 3.50 GHz) processor (1600 MHz, 6.0 MB L3 cache, 47 W) UMA memory , and the Windows 8 Professional operating system and Windows 7 Pro	763585-601
	Intel Dual Core i5-4210U 840M 2 GB (1.7 GHz SC turbo up to 2.7 GHz) processor (160 - MHz, 3.0 MB L3 cache, 15 W) UMA memory	763586-001
	Intel Dual Core i5-4210U 840M 2 GB (1.7 GHz SC turbo up to 2.7 GHz) processor (1600 MHz, 3.0 MB L3 cache, 15 W) UMA memory, and the Windows 8 Standard operating system	763586-501
	Intel Dual Core i5-4210 U 840M 2 GB (1.7 GHz SC turbo up to 2.7 GHz) processor (1600 MHz, 3.0 MB L3 cache, 15 W) UMA memory, and the Windows 8 Professional operating system	763586-601
	Intel Dual Core i7-4510U (2.0 GHz, SC turbo up to 3.1 GHz), processor (1600 MHz/4 MB L3, 15 W) UMA memory	763587-001
	Intel Dual Core i7-4510U (2.0 GHz, SC turbo up to 3.1 GHz), processor (1600 MHz/4 MB L3, 15 W) UMA memory, and the Windows 8 Standard operating system	763587-501
	Intel Dual Core i7-4510U (2.0 GHz, SC turbo up to 3.1 GHz), processor (1600 MHz/4 MB L3, 15 W) UMA memory, and the Windows 8 Professional operating system and Windows 7 Pro	763587-601
	Intel Dual Core i5-4210U 840M 2 GB (1.7 GHz SC turbo up to 2.7 GHz) processor (1600 MHz, 3.0 MB L3 cache, 15 W) discrete memory	763588-001
	Intel Dual Core i5-4210U 840M 2 GB (1.7 GHz SC turbo up to 2.7 GHz) processor (1600 MHz, 3. MB L3 cache, 15 W) discrete memory, and the Windows 8 Standard operating system	763588-501

Item	Component	Spare part number
	Intel Dual Core i5-4210U 840M 2 GB (1.7 GHz SC turbo up to 2.7 GHz) processor (1600 MHz, 3.0 MB L3 cache, 15 W) discrete memory, and the Windows 8 Professional operating system	763588-601
	Intel Quad Core 840M i7-4710HQ (2.50 GHz SC turbo up to 3.50 GHz) processor (1600 MHz, 6.0 MB L3 cache, 47 W) discrete memory	766592-001
	Intel Quad Core 840M i7-4710HQ (2.50 GHz SC turbo up to 3.50 GHz) processor (1600 MHz, 6.0 MB L3 cache, 47 W) discrete memory, and the Windows 8 Standard operating system	766592-501
	Intel Quad Core 840M i7-4710HQ (2.50-GHz SC turbo up to 3.50-GHz) processor (1600-MHz, 6.0 MB L3 cache, 47 W) discrete memory, and the Windows 8 Professional operating system and Windows 7 Pro	766592-601
<b>(9)</b>	<b>Power Connector</b>	
	For use with HP ENVY 15 Notebook PC computer models	762507-001
	For use with HP ENVY 17 Notebook PC computer models	763699-001
<b>(10)</b>	<b>Memory module (PC3L, 12800, 1600-MHz, shared):</b>	
	4 GB	691740-005
	8 GB	693374-005
<b>(11)</b>	<b>Fan</b>	763700-001
<b>(12)</b>	<b>RTC battery</b>	697917-001
<b>(13)</b>	<b>256 GB mSATA solid-state drive MLC</b> (not pictured) available on select models	766593-001
	<b>256 GB mSATA solid-state drive TLC</b> (not pictured)	766594-001
<b>(14)</b>	<b>Heat sink</b> (includes replacement thermal material):	
	For use only on computer models with UMA memory 19 W	763701-001
	For use only on computer models with UMA memory 47 W	763702-001
	For use only on computer models with discrete memory 19 W	763703-001
	For use only on computer models with discrete memory 35 W	763704-001
<b>(15)</b>	<b>Display Cable</b>	
	For specific Cables, see <a href="#">Display assembly subcomponents on page 23</a> .	
<b>(16)</b>	<b>Speaker Kit</b> (includes left and right front speakers and cables)	
	For HP ENVY 17 Notebook PC computer models	763717-001
	For HP ENVY 15 Notebook PC computer models	762502-001
<b>(17)</b>	<b>Subwoofer</b>	
	For HP ENVY 17 Notebook PC computer models	763716-001
	For HP ENVY 15 Notebook PC computer models	763788-001
<b>(18)</b>	<b>Hard drive</b>	
	1.5 TB, 5400-RPM	747375-005
	1 TB, 5400-RPM	778192-005

Item	Component	Spare part number
	1 TB, 5400-RPM hybrid	731999-005
	750 GB, 5400-RPM	778190-005
	750 GB, 5400-RPM hybrid	732001-005
	500 GB, 5400-RPM for use with HP ENVY 15 Notebook PC computer models	778188-005
	<b>Hard Drive Hardware Kit</b> (not illustrated)	
	For use with HP ENVY 15 Notebook PC computer models	762504-001
	For use with HP ENVY 17 Notebook PC computer models	763705-001
<b>(19)</b>	<b>4-cell, 41 WHr, 2.8A H Li-ion battery</b>	756743-001
	<b>4-cell, 48 WHr, 2.3 AH Li-ion battery</b>	756745-001
<b>(20)</b>	<b>Optical drive:</b>	
	For use on HP ENVY 17 Notebook PC computer models equipped with a touch or a non-TouchScreen display assembly:	
	DVD+/-RW Double-Layer SuperMulti	763707-001
	DVD Disc with R/W Double-Layer SuperMulti drive NSV	776917-001
	Blu-ray Disc R/RW with SuperMulti	776919-001
	For use on HP ENVY 15 Notebook PC computer models and computer models equipped with a non-TouchScreen display assembly:	
	DVD Disc with R/W Double-Layer SuperMulti drive	763579-001
	Blu-ray Disc writer with SuperMulti R/RW Double-Layer	763580-001
<b>(21)</b>	<b>Base enclosure:</b>	
	For use on HP ENVY 17 Notebook PC computer models and computer models	763695-001
	For use on HP ENVY 17 Notebook PC computer models in natural silver	774554-001
	For use on HP ENVY 15 Notebook PC computer models	763570-001
<b>(22)</b>	<b>Base enclosure caps</b> (Included in the plastics kit)	
	For HP ENVY 17 Notebook PC computer models	763713-001
	For HP ENVY 17 Notebook PC computer models natural silver	776918-001
	For HP ENVY 15 Notebook PC computer models	763787-001



## Display assembly subcomponents



Item	Component	Spare part number
(1)	<b>Display back cover</b> (includes 2 rubber screw covers):	
	<b>For HP ENVY 17 Notebook PC computer models:</b>	
	For use with non-Touchscreen models	763693-001
	For use with Touchscreen models	763694-001
	For use with Touchscreen models in natural silver	774553-001
	<b>For HP ENVY 15 Notebook PC computer models:</b>	
	For use with non-Touchscreen models	763569-001
	For use with Touchscreen models	763573-001
(2)	<b>Display brackets</b>	
	<b>For HP ENVY 15 Notebook PC computer models:</b>	
	For use with non-Touchscreen models	762520-001
	For use with Touchscreen models	763105-001
	<b>For HP ENVY 17 Notebook PC computer models:</b>	
	For use with non-Touchscreen models	763706-001

Item	Component	Spare part number
	For use with Touchscreen models	765356-001
(3)	<b>WLAN Antenna Kit</b> for use with HP ENVY 17 Notebook PC computer non-touch models (includes left and right wireless antenna cables and transceivers)	763691-001
	<b>WLAN Antenna Kit</b> for use with HP ENVY 17 Notebook PC computer touch screen models (includes left and right wireless antenna cables and transceivers)	763692-001
	<b>WLAN Antenna Kit</b> for use with HP ENVY 15 Notebook PC computer non-touch models (includes left and right wireless antenna cables and transceivers)	762518-001
	<b>WLAN Antenna Kit</b> for use with HP ENVY 15 Notebook PC computer touch screen models (includes left and right wireless antenna cables and transceivers)	763568-001
(4)	<b>Webcamera/microphone module</b>	762521-001
(5)	<b>Webcamera/microphone module for Touchscreen models</b>	762545-001
(6)	<b>Display panel cable</b>	720238-001
	<b>For HP ENVY 17 Notebook PC computer models:</b>	
	SXGA cable for non-Touchscreen models	765785-001
	SXGA cable for Touchscreen models	765786-001
	<b>For HP ENVY 15 Notebook PC computer models:</b>	
	HD cable for non-Touchscreen models	762519-001
	HD cable for Touchscreen models	763572-001
	Full HD cable for non-Touchscreen models	762544-001
	Full HD cable for Touchscreen models	763590-001
(7)	<b>Panel Bracket</b> (included with the Display Brackets on select models)	
(8)	<b>Display bezel for use with Windows 8.1 and Windows 7 Pro</b> (includes 2 rubber screw covers)	
	For HP ENVY 15 Notebook PC computer models	763571-001
	For HP ENVY 17 Notebook PC computer models	763696-001
(9)	17.3-in, WLED, HD, BrightView display panel	720223-001
	17.3-in, AG, HD, WLED for Touchscreen computer models	763931-001
	17.3-in, BrightView, HD, LED for non-Touchscreen computer models	763932-001
	17.3-in, BV, Full HD, LED for non-Touchscreen computer models	763933-001
	17.3-in, AG, Full HD, WLED for Touchscreen computer models	763934-001
	15.6-in, AG, HD, WLED for Touchscreen computer models with bezel	763575-001
	15.6-in, BV, HD, LED for non-Touchscreen computer models	763581-001
	15.6-in, AG, Full HD, WLED for Touchscreen computer models with bezel.	763576-001
	15.6-in, BrightView, Full HD, LED for non-Touchscreen computer models with bezel	763582-001
	<b>Display hinges</b> (not illustrated)	
	For HP ENVY 15 Notebook PC computer models	

<b>Item</b>	<b>Component</b>	<b>Spare part number</b>
	For use with non-touchscreen computer models	762520-001
	For use with touchscreen computer models	763105-001
	For HP ENVY 17 Notebook PC computer models	
	For use with non-touchscreen computer models	763706-001
	For use with touchscreen computer models	765356-001

## Mass storage devices



Item	Component	Spare part number
(1)	<b>Optical drive:</b>	
	<b>For use on HP ENVY 17 Notebook PC computer models equipped with a touch or a non-TouchScreen display assembly:</b>	
	DVD+/-RW Double-Layer SuperMulti	763707-001
	DVD Disc with R/W Double-Layer SuperMulti drive in natural silver	776917-001
	Blu-ray Disc R/RW with SuperMulti	776919-001
	<b>For use on HP ENVY 15 Notebook PC computer models and computer models equipped with a non-TouchScreen display assembly:</b>	
	DVD Disc with R/W Double-Layer SuperMulti drive	763579-001
	Blu-ray Disc writer with SuperMulti R/RW Double-Layer	763580-001
(2)	<b>Hard drive</b>	
	1.5 TB, 5400-RPM	747375-005
	1 TB, 5400-RPM	778192-005
	1 TB, 5400-RPM hybrid	731999-005
	750 GB, 5400-RPM	778190-005
	750 GB, 5400-RPM hybrid	732001-005
	500 GB, 5400-RPM for use with HP ENVY 15 Notebook PC computer models	778188-005
	<b>Hard Drive Hardware Kit (not illustrated)</b>	
	For use with HP ENVY 15 Notebook PC computer models	762504-001
	For use with HP ENVY 17 Notebook PC computer models	763705-001
(3)	<b>256 GB mSATA solid-state drive MLC (not pictured)</b>	766593-001
	<b>256 GB mSATA solid-state drive TLC (not pictured)</b>	766594-001

## Miscellaneous parts

Component	Spare part number
<b>AC adapter:</b>	
45-W AC adapter (NPFC, RC 4, 3-wire, 4.5-mm NSlim)	741727-001
90-W AC adapter (EM, PFC, SMT, 3-wire, 4.5-mm) for use with HP ENVY 15 Notebook PC computer models only	710414-001
90-W AC adapter (PFC, S, 3-wire, 4.5-mm)	710413-001
65-W HP Smart AC adapter (non-PFC, EM, 3-wire, 4.5-mm) for use with HP ENVY 15 Notebook PC computer models only	714657-001
65-W AC adapter (non-PFC, S, 3-wire, 4.5-mm)	710412-001
<b>HP HDMI to VGA adapter</b>	701943-001
<b>Power cord</b> (3-pin, black, 1.0-m):	
For use in Australia	755530-011
For use in Denmark, Finland, Norway	755530-081
For use in Europe	755530-021
For use in India	755530-D61
For use in North America	755530-001
For use in the People's Republic of China	755530-AA1
For use in Switzerland	755530-111
For use in the United Kingdom and Singapore	755530-031
For use in Thailand	755530-201
For use in Japan	755530-291
For use in Taiwan	755530-AB1
For use in South Korea	755530-AD1
<b>Screw Kit</b> for HP ENVY 17 Notebook PC computer models	763715-001
<b>Screw Kit</b> for HP ENVY 15 Notebook PC computer models	763583-001
<b>Rubber Kit</b> for HP ENVY 17 Notebook PC computer models	763714-001
<b>Rubber Kit</b> for HP ENVY 15 Notebook PC computer models	763104-001
<b>Finger print reader board</b> with cable and bracket for HP ENVY 15 Notebook PC computer models	763789-001
<b>Finger print reader board</b> with cable and bracket for HP ENVY 17 Notebook PC computer models	763711-001

## Sequential part number listing

Spare part number	Description	Regulatory Model Numbers	
		TPN-Q141	TPN-Q140
675794-005	WLAN Qualcomm Atheros AR 9485GN 802.11b/g/n 1×1 Wi-Fi	✓	✓
691740-001	4-GB memory module	✓	✓
693374-005	8-GB memory module	✓	✓
697917-001	RTC battery	✓	✓
701943-001	HDMI to VGA adapter	✓	✓
710412-001	65-W AC adapter (non-PFC, S, 3-wire, 4.5-mm)	✓	✓
710413-001	90-W AC adapter (PFC, S, 3-wire, 4.5-mm)	✓	✓
710414-001	90-W AC adapter (EM, PFC, SMT, 3-wire, 4.5-mm) for use with HP ENVY 15 Notebook PC computer models only		✓
710662-005	Intel Dual Band Wireless-AC 3160 802.11 ac 1x1 WiFi + BT 4.0 combo adapter (For use only with HP ENVY 17 Computer models or HP ENVY 15 Computer models)	✓	✓
714657-001	65-W HP Smart AC adapter (non-PFC, EM, 3-wire, 4.5-mm) for use with HP ENVY 15 Notebook PC computer models only		✓
731999-005	Hard drive 1-TB, 5400-RPM	✓	✓
732001-001	Hard drive 750 GB, 5400-RPM hybrid	✓	✓
741727-001	45-W AC adapter (non-PFC, S, 3-wire, 4.5-mm)	✓	✓
747375-005	Hard drive 1.5 TB 5400RPM SATA RAW 9.5 mm	✓	✓
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)		✓
755530-081	Power cord for use in Denmark (3-pin, black, 1.0-m)		✓
755530-111	Power cord for use in Switzerland (3-pin, black, 1.0-m)		✓
755530-201	Power cord for use in Thailand (3-pin, black, 1.0-m)		✓
755530-291	Power cord for use in Japan (3-pin, black, 1.0-m)		✓
755530-AA1	Power cord for use in 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-D61	Power cord for use in India (3-pin, black, 1.0-m)		✓
756743-001	4-cell, 41 WHr, 2.8A H Li-ion battery	✓	✓
756745-001	4-cell, 48 WHr 2.3 AH Li-ion battery	✓	✓

Spare part number	Description	Regulatory Model Numbers	
		TPN-Q141	TPN-Q140
756753-005	WLAN 7620 11ac+BT4 2x2 NV HMC (NMA) (For use only with HP ENVY 17 Computer models)	√	
762496-001	Power Button board with cable for HP ENVY 15 Notebook PC computer models		√
762502-001	Speakers (2) for HP ENVY 15 Notebook PC computer models		√
762504-001	Hardware kit for HP ENVY 15 Notebook PC computer models		√
762507-001	Power Connector for use with HP ENVY 15 Notebook PC computer models		√
762518-001	WLAN dual antenna for use with HP ENVY 15 Notebook PC computer non-touch models (includes left and right wireless antenna cables and transceivers)		√
762519-001	HD cable for non-Touchscreen models.for HP ENVY 15 Computer models		√
762520-001	Display hinges for HP ENVY 15 Notebook PC computer models		√
762521-001	Webcamera/microphone module for non-touch computer models	√	√
762544-001	Full HD cable for non-Touchscreen models.for HP ENVY 15 Computer models		√
762545-001	Webcamera/microphone module for Touchscreen models	√	√
763104-001	Rubber kit for HP ENVY 15 Notebook PC computer models		√
763105-001	Display hinges for use with Touchscreen models for HP ENVY 15 Notebook PC computer models		√
763568-001	WLAN Antenna Kit for use with HP ENVY 17 Computer touch screen models (includes left and right wireless antenna cables and transceivers)		√
763569-001	Display back cover for use with non-Touchscreen models for HP ENVY 17 Computer models		√
763570-001	Base enclosure for use on HP ENVY 15 Notebook PC computer models and computer models equipped with a non-TouchScreen display assembly		√
763571-001	Display back cover for HP ENVY 15 Computer models		√
763572-001	HD cable for Touchscreen models for HP ENVY 17 Computer models		√
763573-001	Display back cover (includes 2 rubber screw covers) For use with HP ENVY 17 Touchscreen models		√
763575-001	Display panel 15.6-in, AG, HD, WLED for Touchscreen computer models with bezel.		√
763576-001	Display panel 15.6-in, AG, Full HD, WLED for Touchscreen computer models with bezel		√
763577-001	Top cover for HP ENVY 15 Computer model for use in the United States		√
763578-001	Top cover for use only on HP ENVY 15 Computer models in the United States with backlit keyboard		√
763578-031	Top cover for use only on HP ENVY 15 Computer models in the United Kingdom with backlit keyboard		√

Spare part number	Description	Regulatory Model Numbers	
		TPN-Q141	TPN-Q140
763578-041	Top cover for use only on HP ENVY 15 Computer models in Germany with backlit keyboard		✓
763578-051	Top cover for use only on HP ENVY 15 Computer models in France with backlit keyboard		✓
763578-061	Top cover for use only on HP ENVY 15 Computer models in Italy with backlit keyboard		✓
763578-071	Top cover for use only on HP ENVY 15 Computer models in Spain with backlit keyboard		✓
763578-131	Top cover for use only on HP ENVY 15 Computer models in Portugal with backlit keyboard		✓
763578-141	Top cover for use only on HP ENVY 15 Computer models in Turkey with backlit keyboard		✓
763578-151	Top cover for use only on HP ENVY 15 Computer models in Greece with backlit keyboard		✓
763578-161	Top cover for use only on HP ENVY 15 Computer models in Latin America with backlit keyboard		✓
763578-171	Top cover for use only on HP ENVY 15 Computer models in Saude Arabia with backlit keyboard		✓
763578-211	Top cover for use only on HP ENVY 15 Computer models in Hungary with backlit keyboard		✓
763578-251	Top cover for use only on HP ENVY 15 Computer models in Russia with backlit keyboard		✓
763578-261	Top cover for use only on HP ENVY 15 Computer models in Bulgaria with backlit keyboard		✓
763578-271	Top cover for use only on HP ENVY 15 Computer models in Romania with backlit keyboard		✓
763578-281	Top cover for use only on HP ENVY 15 Computer models in Thailand with backlit keyboard		✓
763578-291	Top cover for use only on HP ENVY 15 Computer models in Japan with backlit keyboard		✓
763578-A41	Top cover for use only on HP ENVY 15 Computer models in Belgium with backlit keyboard		✓
763578-AB1	Top cover for use only on HP ENVY 15 Computer models in Taiwan with backlit keyboard		✓
763578-AD1	Top cover for use only on HP ENVY 15 Computer models in South Korea with backlit keyboard		✓
763578-B31	Top cover for use only on HP ENVY 15 Computer models for International use with backlit keyboard		✓
763578-BA1	Top cover for use only on HP ENVY 15 Computer models in Slovenia with backlit keyboard		✓
763578-BG1	Top cover for use only on HP ENVY 15 Computer models in Switzerland with backlit keyboard		✓



Spare part number	Description	Regulatory Model Numbers	
		TPN-Q141	TPN-Q140
763578-DB1	Top cover for use only on HP ENVY 15 Computer models in Canada with backlit keyboard		√
763578-DH1	Top cover for use only on HP ENVY 15 Computer models in Nordic regions with backlit keyboard		√
763578-FL1	Top cover for use only on HP ENVY 15 Computer models in Czech and Slovakia with backlit keyboard		√
763579-001	Optical Drive for use only on HP ENVY 15 Notebook PC computer models DVD Disc with R/W Double-Layer SuperMulti drive		√
763580-001	Optical Drive for use only on HP ENVY 15 Notebook PC computer models Blu-ray Disc writer with SuperMulti R/RW Double-Layer		√
763581-001	Display panel 15.6-in, BV, HD, LED for non-Touchscreen computer models for Windows 8.1 and Windows 7 Pro		√
763582-001	Display panel 15.6-in, BV, Full HD, LED for non-Touchscreen computer models with bezel for Windows 8.1 and Windows 7 Pro		√
763583-001	Screw kit for use only on HP ENVY 15 Notebook PC computer models		√
763585-001	System board Intel Quad Core HM87 i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600-MHz, 6.0 MB L3 cache, 47 W) UMA memory for HP ENVY 15 Notebook PC computer models		√
763585-501	System board Intel Quad Core HM87 i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600-MHz, 6.0 MB L3 cache, 47 W) UMA memory, and the Windows 8 Standard operating system for HP ENVY 15 Notebook PC computer models		√
763585-601	System board Intel Quad Core HM87 i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600-MHz, 6.0 MB L3 cache, 47 W) UMA memory, and the Windows 8 Professional operating system for HP ENVY 15 Notebook PC computer models and the Windows 8 Professional operating system and Windows 7 Pro		√
763586-001	System board Intel Dual Core i5-4210 U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600-MHz, 3.0 MB L3 cache, 15 W) UMA memory for HP ENVY 15 Notebook PC computer models		√
763586-501	System board Intel Dual Core i5-4210 U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600-MHz, 3.0 MB L3 cache, 15 W) UMA memory, and the Windows 8 Standard operating system for HP ENVY 15 Notebook PC computer models		√
763586-601	System board Intel Dual Core i5-4210 U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600-MHz, 3.0 MB L3 cache, 15 W) UMA memory, and the Windows 8 Professional operating system for HP ENVY 15 Notebook PC computer models		√
763587-001	System board Intel Dual Core i7-4510U (2.0-GHz, SC turbo up to 3.1-GHz), processor (1600MHz/4 MB L3, 15W) UMA memory for HP ENVY 15 Notebook PC computer models		√
763587-501	System board Intel Dual Core i7-4510U (2.0-GHz, SC turbo up to 3.1-GHz), processor (1600MHz/4 MB L3, 15W) UMA memory, and the Windows 8 Standard operating system for HP ENVY 15 Notebook PC computer models		√

Spare part number	Description	Regulatory Model Numbers	
		TPN-Q141	TPN-Q140
763587-601	System board Intel Dual Core i7-4510U (2.0–GHz, SC turbo up to 3.1–GHz), processor (1600MHz/4 MB L3, 15W) UMA memory, and the Windows 8 Professional and Windows 7 Pro operating system for HP ENVY 15 Notebook PC computer models		✓
763588-001	System board Intel Dual Core i5-4210U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600-MHz, 3.0 MB L3 cache, 15 W) discrete memory for HP ENVY 15 Notebook PC computer models		✓
763588-501	System board Intel Dual Core i5-4210U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600-MHz, 3.0 MB L3 cache, 15 W) discrete memory, and the Windows 8 Standard operating system for HP ENVY 15 Notebook PC computer models		✓
763588-601	System board Intel Dual Core i5-4210U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600-MHz, 3.0 MB L3 cache, 15 W) discrete memory, and the Windows 8 Professional operating system for HP ENVY 15 Notebook PC computer models		✓
763590-001	Display cable Full HD cable for Touchscreen models for HP ENVY 15 Notebook PC computer models		✓
763691-001	WLAN Antenna Kit for use with HP ENVY 17 Notebook PC computer non-touch models (includes left and right wireless antenna cables and transceivers)	✓	
763692-001	WLAN Antenna Kit for use with HP ENVY 17 Notebook PC computer touch screen models (includes left and right wireless antenna cables and transceivers)	✓	
763693-001	Display back cover (includes 2 rubber screw covers) for use with non-Touchscreen models HP ENVY 17 Notebook PC computer models	✓	
763694-001	Display back cover (includes 2 rubber screw covers) for use with Touchscreen models. HP ENVY 17 Computer models	✓	
763695-001	Base enclosure for use on HP ENVY 17 Notebook PC computer models and computer models equipped with a non-TouchScreen display assembly	✓	
763696-001	Display bezel for HP ENVY 17 Computer models HP ENVY 17 Computer models	✓	
763699-001	Power Connector for use with HP ENVY 17 Notebook PC computer models	✓	
763700-001	Fan	✓	✓
763701-001	Heat sink (includes replacement thermal material) for use with HP ENVY 15 Notebook PC computer models	✓	✓
763702-001	Heat sink (includes replacement thermal material) for use with HP ENVY 15 Notebook PC computer models	✓	✓
763703-001	Heat sink (includes replacement thermal material) for use with HP ENVY 15 Notebook PC computer models	✓	✓
763704-001	Heat sink (includes replacement thermal material) for use with HP ENVY 15 Notebook PC computer models	✓	✓
763705-001	Hardware kit for use with HP ENVY 17 Notebook PC computer models	✓	

Spare part number	Description	Regulatory Model Numbers	
		TPN-Q141	TPN-Q140
763706-001	Display brackets (with hinges) for use with non-Touchscreen models HP ENVY 15 Notebook PC computer models	√	
763707-001	Optical drive DVD+/-RW Double-Layer SuperMulti for use on HP ENVY 17 Notebook PC computer models equipped with a touch or a non-TouchScreen	√	
763708-001	Power Board (with cable) for use on HP ENVY 17 Notebook PC computer models	√	
763709-001	USB Board (with cable) for use on HP ENVY 17 Notebook PC computer models	√	
763710-001	Battery Board (with cable) for use on HP ENVY 17 Notebook PC computer models	√	
763711-001	Fingerprint Reader Board (with cable) for use on HP ENVY 17 Notebook PC computer models	√	
763712-001	TouchPad Board (with cable) for use on HP ENVY 17 Notebook PC computer models	√	
763713-001	Base enclosure caps for use on HP ENVY 17 Notebook PC computer models	√	
763714-001	Rubber kit for use on HP ENVY 17 Notebook PC computer models	√	
763715-001	Screw kit for use on HP ENVY 17 Notebook PC computer models	√	
763716-001	Subwoofer for use on HP ENVY 17 Notebook PC computer models	√	
763717-001	Speakers for use on HP ENVY 17 Notebook PC computer models	√	
763721-001	System board Intel Dual Core i7-4510U (2.0–GHz, SC turbo up to 3.1–GHz), processor (1600MHz/4 MB L3, 15W) discrete memory, and the Linux Ubuntu and FreeDos operating system for HP ENVY 17 Notebook PC computer models	√	
763721-501	System board Intel Dual Core i7-4510U (2.0–GHz, SC turbo up to 3.1–GHz), processor (1600MHz/4 MB L3, 15W) discrete memory, and the Windows 8 Standard operating system for HP ENVY 17 Notebook PC computer models	√	
763721-601	System board Intel Dual Core i7-4510U (2.0–GHz, SC turbo up to 3.1–GHz), processor (1600MHz/4 MB L3, 15W) discrete memory, and the Windows 8 Professional and Windows 7 pro operating system for HP ENVY 17 Notebook PC computer models	√	
763730-501	System board Intel Dual Core i5-4210U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600-MHz, 3.0 MB L3 cache, 15 W) discrete memory, and the Windows 8 Standard operating system for HP ENVY 17 Notebook PC computer models	√	
763730-601	System board Intel Dual Core i5-4210U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600-MHz, 3.0 MB L3 cache, 15 W) discrete memory, and the Windows 8 Professional operating system for HP ENVY 17 Notebook PC computer models	√	
763733-001	Top Cover for use only on HP ENVY 17 Notebook PC computer models in the United States with TouchPad and keyboard.	√	
763786-001	USB Board (with cable) for use on HP ENVY 15 Notebook PC computer models		√

Spare part number	Description	Regulatory Model Numbers	
		TPN-Q141	TPN-Q140
763787-001	Base enclosure caps for use on HP ENVY 15 Notebook PC computer models		✓
763788-001	Subwoofer for use on HP ENVY 15 Notebook PC computer models		✓
763789-001	Fingerprint Reader board for use on HP ENVY 15 Notebook PC computer models		✓
763790-001	TouchPad board for use on HP ENVY 15 Notebook PC computer models		✓
763931-001	Display Panel 17.3-in, AG, HD, WLED for Touchscreen computer models and the Windows 8 Professional operating system and Windows 7 pro	✓	
763932-001	Display Panel 17.3-in, BV, HD, LED for non-Touchscreen computer models and the Windows 8 Professional operating system and Windows 7 pro	✓	
763933-001	Display Panel 17.3-in, BV, Full HD, LED for non-Touchscreen computer models and the Windows 8 Professional operating system and Windows 7 pro	✓	
763934-001	Display Panel 17.3-in, BV, Full HD, LED for non-Touchscreen computer models and the Windows 8 Professional operating system and Windows 7 pro	✓	
763935-001	Top Cover For use only on HP ENVY 17 Notebook PC computer models in the United States with backlit keyboard.	✓	
763935-DB1	Top Cover for use only on HP ENVY 17 Notebook PC computer models in Canada with backlit keyboard	✓	
765356-001	Display brackets (with hinges) for use with Touchscreen models for HP ENVY 17 Notebook computer models	✓	
765785-001	Display Cable SXGA for non-Touchscreen models for HP ENVY 17 Notebook PC computer models	✓	
765786-001	Display Cable SXGA for Touchscreen models for HP ENVY 17 Notebook PC computer models	✓	
766592-001	System board Intel Quad Core 840M i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600-MHz, 6.0 MB L3 cache, 47 W) discrete memory for HP ENVY 15 Notebook models		✓
766592-501	System board Intel Quad Core 840M i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600-MHz, 6.0 MB L3 cache, 47 W) discrete memory, and the Windows 8 Standard operating system for HP ENVY 15 Notebook models		✓
766592-601	System board Intel Quad Core 840M i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600-MHz, 6.0 MB L3 cache, 47 W) discrete memory, and the Windows 8 Professional and Windows 7 Pro operating system for HP ENVY 15 Notebook models		✓
766593-001	Solid-State drive 256GB M2 SATA-3 MLC		✓
766594-001	Solid-State drive 256GB M2 SATA-3 TLC	✓	✓
773128-001	System board Intel Quad Core i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600-MHz, 6.0- MB L3 cache, 47 W) UMA memory , and the Ubuntu Linux and FreeDos operating system for HP ENVY 17 Notebook PC computer models	✓	

Spare part number	Description	Regulatory Model Numbers	
		TPN-Q141	TPN-Q140
773128-501	System board Intel Quad Core i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600-MHz, 6.0- MB L3 cache, 47 W) UMA memory , and the Windows 8 Standard operating system for HP ENVY 17 Notebook PC computer models	√	
773128-601	System board Intel Quad Core i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600-MHz, 6.0- MB L3 cache, 47 W) UMA memory , and the Windows 8 Professional and Windows 7 Pro operating system for HP ENVY 17 Notebook PC computer models	√	
774553-001	Display back cover in natural silver for HP ENVY 17 Notebook PC computer models	√	
774554-001	Base enclosure for HP ENVY 17 Notebook PC computer models	√	
774556-001	Top Cover for use only on HP ENVY 17 Notebook PC computer models for use in the United States with TouchPad and backlit keyboard	√	
776917-001	Optical drive DVD Disc with R/W Double-Layer SuperMulti drive in natural silver	√	
776918-001	Base enclosure caps for HP ENVY 17 Notebook PC computer models in natural silver	√	
776919-001	Optical drive Blu-ray Disc R/RW with SuperMulti for use with HP ENVY 17 Notebook PC models	√	
778188-005	Hard drive 500 GB, 5400-RPM for use with HP ENVY 15 Notebook PC computer models		√
778190-005	Hard drive 750 GB 5400-RPM	√	√
778192-005	Hard drive 1 TB 5400-RPM	√	√
786430-001	Intel Dual Core i7-4510U 840M (2.0 GHz, SC turbo up to 3.1 GHz), processor (1600 MHz/4 MB L3, 15 W) discrete memory, and the Linux Ubuntu and FreeDos operating system and Windows 7 pro	√	
786430-501	Intel Dual Core i7-4510U (2.0 GHz, SC turbo up to 3.1 GHz), processor (1600 MHz/4 MB L3, 15 W) discrete memory, and the Windows Standard operating system	√	

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# 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.



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

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## Plastic parts



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

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## Cables and connectors

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**⚠ 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.

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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

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**⚠ 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:

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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."

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# 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

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## 5 Removal and replacement procedures for Customer Self-Repair parts


 **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.

 **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.

---

### 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 [Bottom on page 14](#) for details.

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

There are several 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 2.8AH Li-ion battery	756743-001
4-cell, 48 WHr 2.3AH Li-ion battery	756745-001

Before removing the battery, follow these steps:

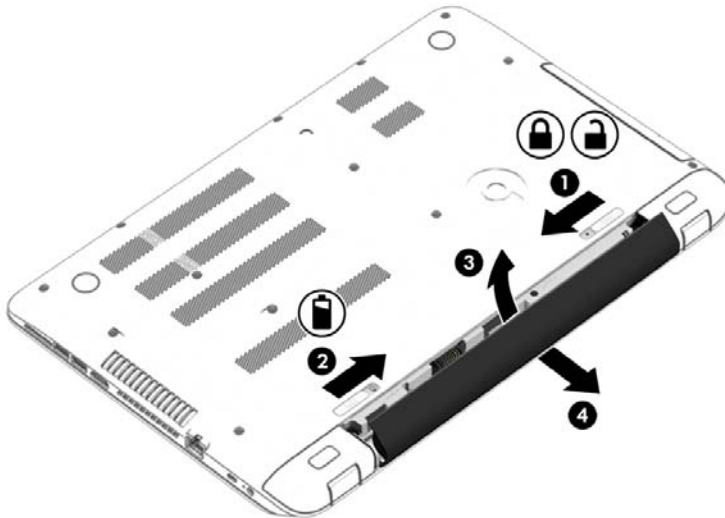
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord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

Remove the battery:

1. Turn the computer upside down on a flat surface.
2. Slide the battery lock latch (1) and then slide the battery release latch (2) to release the battery.

 **NOTE:** The battery release latch automatically returns to its original position.

3. Pivot the battery upward (3), and then remove the battery from the computer (4).



Reverse this procedure to install the battery.

## Optical drive



**NOTE:** The optical drive spare part kit includes the optical drive connector board and cable. The optical drive connector board and cable are removed when removing the system board and not part of the customer replacement procedure of the optical drive.

Description	Spare part number
<b>For use on HP ENVY 15 Notebook PC computer models equipped with a touch or a non-TouchScreen display assembly:</b>	
DVD Disc with R/W Double-Layer SuperMulti drive	763579-001
Blu-ray Disc writer with SuperMulti R/RW Double-Layer	763580-001
<b>For use on HP ENVY 17 Notebook PC computer models equipped with a touch or a non-TouchScreen display assembly:</b>	
DVD+/-RW Double-Layer SuperMulti	763707-001
DVD Disc with R/W Double-Layer SuperMulti drive in natural silver	776917-001
Blu-ray Disc R/RW with SuperMulti	776919-001

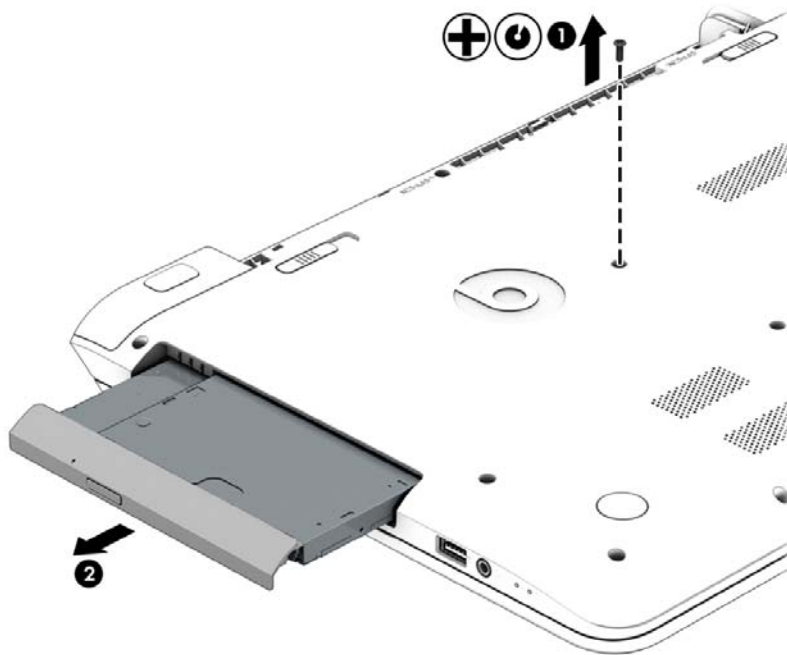
Before removing the optical drive, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)).

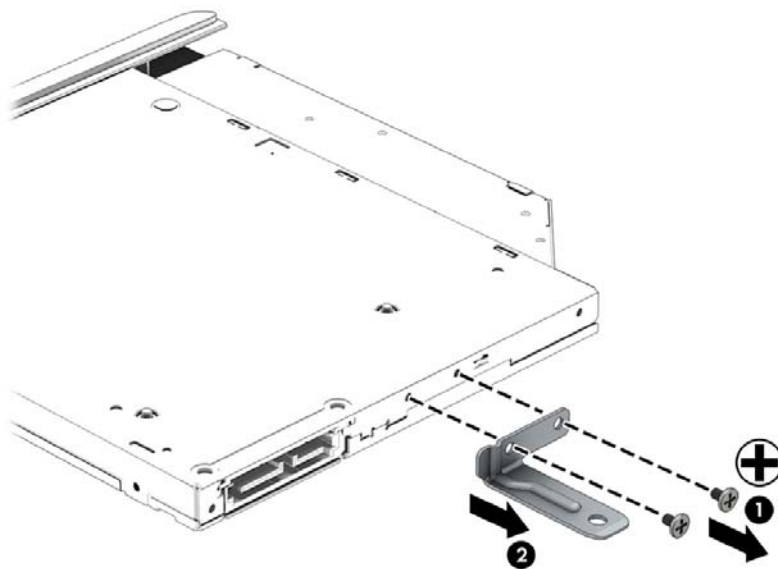
Remove the optical drive:

1. Remove the Phillips screw **(1)** that secures the optical drive to the computer.
2. Use a flat tool to press on the optical drive bracket tab **(2)** to release the optical drive.

3. Remove the optical drive from the computer.




4. If it is necessary to replace the optical drive bracket, position the optical drive with the rear panel toward you.
5. Remove the two Phillips screws (1) that secure the optical drive bracket to the optical drive.
6. Remove the optical drive bracket (2).




Reverse this procedure to reassemble and install the optical drive.

---


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

 **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.

 **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.

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### 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 [Bottom on page 14](#) for details.

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

There are as many as 83 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.

## Base enclosure

Description	Spare part number
For use on HP ENVY 15 Notebook PC computer models	763570-001
For use on HP ENVY 17 Notebook PC computer models	763695-001
For use on HP ENVY 17 Notebook PC computer models in natural silver	774554-001
<b>Base enclosure caps (Included in the plastics kit):</b>	
For HP ENVY 17 Notebook PC computer models	763713-001
For HP ENVY 17 Notebook PC computer models in natural silver	776918-001
For HP ENVY 15 Notebook PC computer models	763787-001
<b>Top cover</b>	
<b>NOTE:</b> The top cover is removed with the base enclosure. The top cover spare parts are listed below. The HP Envy 17 Notebook PC computer models have the TouchPad spared with the top cover.	
<b>Top cover for HP ENVY 15 Notebook PC computer models</b>	
For use only on HP ENVY 15 Notebook PC computer models in the United States	763577-001
For use only on HP ENVY 15 Notebook PC computer models in the United States with backlit keyboard	763578-001
For use only on HP ENVY 15 Notebook PC computer models in the United Kingdom with backlit keyboard	763578-031
For use only on HP ENVY 15 Notebook PC computer models in Germany with backlit keyboard	763578-041
For use only on HP ENVY 15 Notebook PC computer models in France with backlit keyboard	763578-051
For use only on HP ENVY 15 Notebook PC computer models in Italy with backlit keyboard	763578-061
For use only on HP ENVY 15 Notebook PC computer models in Spain with backlit keyboard	763578-071
For use only on HP ENVY 15 Notebook PC computer models in Portugal with backlit keyboard	763578-131
For use only on HP ENVY 15 Notebook PC computer models in Turkey with backlit keyboard	763578-141
For use only on HP ENVY 15 Notebook PC computer models in Greece with backlit keyboard	763578-151
For use only on HP ENVY 15 Notebook PC computer models in Latin America with backlit keyboard	763578-161
For use only on HP ENVY 15 Notebook PC computer models in Saudi Arabia with backlit keyboard	763578-171
For use only on HP ENVY 15 Notebook PC computer models in Hungary with backlit keyboard	763578-211
For use only on HP ENVY 15 Notebook PC computer models in Russia with backlit keyboard	763578-251
For use only on HP ENVY 15 Notebook PC computer models in Bulgaria with backlit keyboard	763578-261
For use only on HP ENVY 15 Notebook PC computer models in Romania with backlit keyboard	763578-271
For use only on HP ENVY 15 Notebook PC computer models in Thailand with backlit keyboard	763578-281
For use only on HP ENVY 15 Notebook PC computer models in Japan with backlit keyboard	763578-291
For use only on HP ENVY 15 Notebook PC computer models in Belgium with backlit keyboard	763578-A41
For use only on HP ENVY 15 Notebook PC computer models in Taiwan with backlit keyboard.	763578-AB1



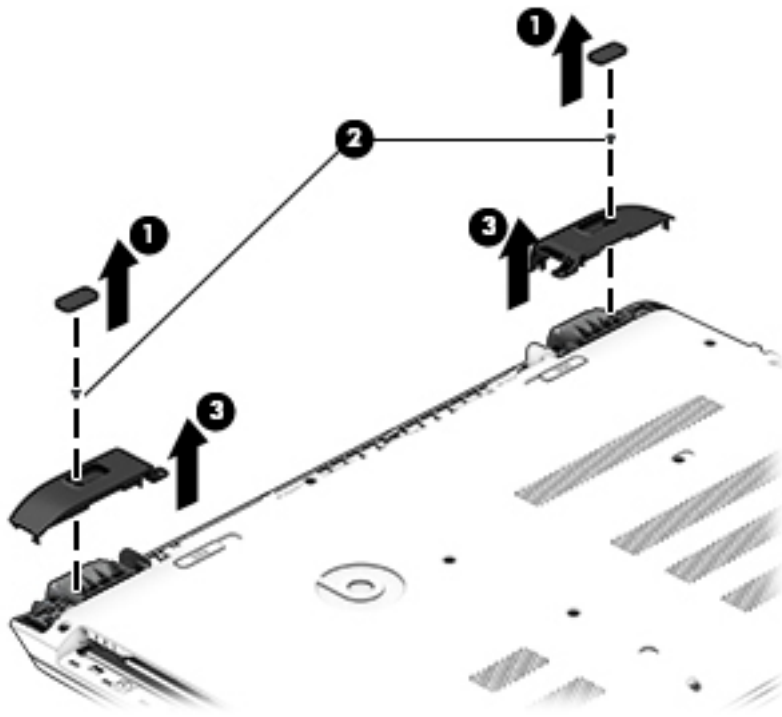
Description	Spare part number
For use only on HP ENVY 15 Notebook PC computer models in South Korea with backlit keyboard	763578-AD1
For use only on HP ENVY 15 Notebook PC computer models for International with backlit keyboard	763578-B31
For use only on HP ENVY 15 Notebook PC computer models in Slovenia. with backlit keyboard	763578-BA1
For use only on HP ENVY 15 Notebook PC computer models in Switzerland with backlit keyboard	763578-BG1
For use only on HP ENVY 15 Notebook PC computer models in Canada with backlit keyboard	763578-DB1
For use only on HP ENVY 15 Notebook PC computer models in Nordic regions with backlit keyboard	763578-DH1
For use only on HP ENVY 15 Notebook PC computer models in Czech and Slovakia with backlit keyboard	763578-FL1
<b>For use only on HP ENVY 17 Notebook PC computer models</b>	
For use only on HP ENVY 17 Notebook PC computer models in the United States with keyboard and TouchPad	763733-001
For use only on HP ENVY 17 Notebook PC computer models in the United States with backlit keyboard	763935-001
For use only on HP ENVY 17 Notebook PC computer models in Canada with backlit keyboard and TouchPad	763935-DB1
For use only on HP ENVY 17 Notebook PC computer models for use in the United States with backlit keyboard and TouchPad	774556-001

Before disassembling the computer, follow these steps:

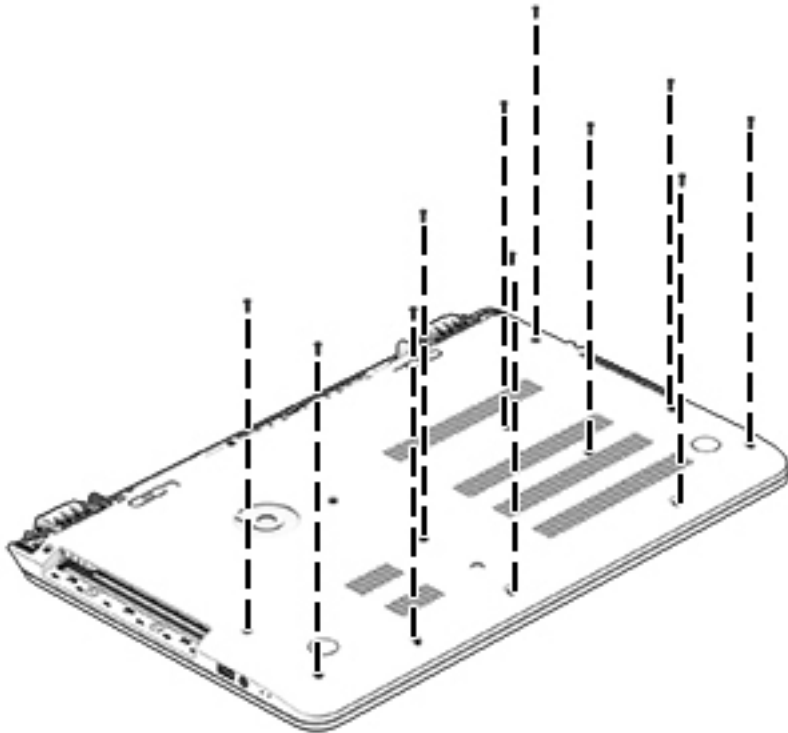
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)).
5. Remove the optical drive (see [Optical drive on page 43](#)).

Remove the base enclosure:


1. Turn the computer face down, and remove the rubber feet (1), the two Phillips screws (2) and lift the end caps (3).

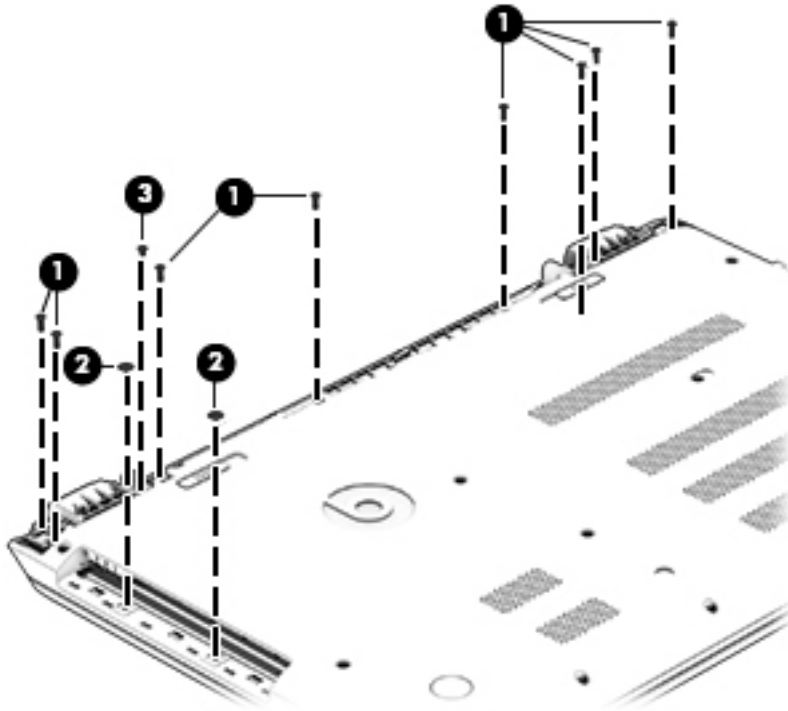


2. Remove eleven Phillips screws (1).




3. Remove eight Phillips screws (1) around the battery area, two broadhead screws (2) in the optical drive bay and one screw (3) near the display hinge.

 **NOTE:** Some models may have three screws in the optical drive bay (2).



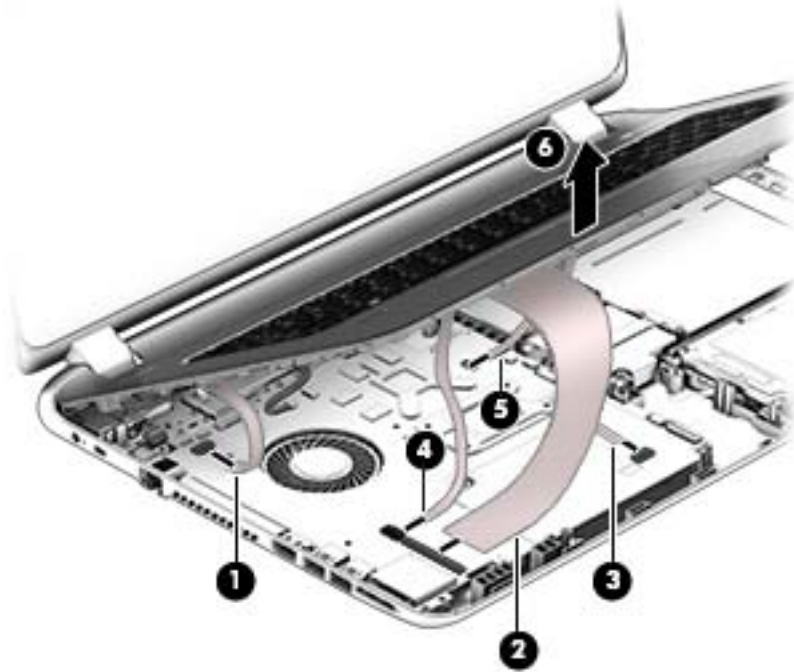
4. Turn the computer right side up and carefully remove the top cover.



 **NOTE:** Use a thin, non-conductive tool to lift the top cover..

5. Carefully disconnect the following cables:
  - Power button cable (1)
  - Keyboard cable (2)

- TouchPad cable (3)
  - Fingerprint reader cable (4) (select models only)
  - Backlit keyboard cable (5) (select models only)
6. Lift the topcover (6) to remove it from the computer.



## Display panel

Component	Spare part number
<b>Display back cover</b> (includes 2 rubber screw covers):	
<b>For HP ENVY 17 Notebook PC computer models:</b>	
For use with non-Touchscreen models	763693-001
For use with Touchscreen models	763694-001
For use with Touchscreen models in natural silver	774553-001
<b>For HP ENVY 15 Notebook PC computer models:</b>	
For use with non-Touchscreen models	763569-001
For use with Touchscreen models	763573-001
<b>Display brackets</b>	
<b>For HP ENVY 15 Notebook PC computer models:</b>	
For use with non-Touchscreen models	762520-001
For use with Touchscreen models	763105-001
<b>For HP ENVY 17 Notebook PC computer models:</b>	
For use with non-Touchscreen models	763706-001
For use with Touchscreen models	765356-001
<b>WLAN Antenna Kit</b> for use with HP ENVY 17 Notebook PC computer non-touch models (includes left and right wireless antenna cables and transceivers)	763691-001
<b>WLAN Antenna Kit</b> for use with HP ENVY 17 Notebook PC computer touch screen models (includes left and right wireless antenna cables and transceivers)	763692-001
<b>WLAN Antenna Kit</b> for use with HP ENVY 15 Notebook PC computer non-touch models (includes left and right wireless antenna cables and transceivers)	762518-001
<b>WLAN Antenna Kit</b> for use with HP ENVY 15 Notebook PC computer touch screen models (includes left and right wireless antenna cables and transceivers)	763568-001
<b>Display panel cable</b>	720238-001
<b>For HP ENVY 17 Notebook PC computer models:</b>	
SXGA cable for non-Touchscreen models	765785-001
SXGA cable for Touchscreen models	765786-001
<b>For HP ENVY 15 Notebook PC computer models:</b>	
HD cable for non-Touchscreen models.	762519-001
HD cable for Touchscreen models	763572-001
Full HD cable for non-Touchscreen models	762544-001
Full HD cable for Touchscreen models	763590-001
<b>Panel Bracket</b> (included with the Display Brackets on select models)	
<b>Display bezel Windows 8.1 and Windows 7 Pro</b> (includes 2 rubber screw covers)	
For HP ENVY 15 Notebook PC computer models	763571-001

Component	Spare part number
For HP ENVY 17 Notebook PC computer models	763696-001
17.3-in, WLED, HD, BrightView display panel	720223-001
17.3-in, AG, HD, WLED for Touchscreen computer models	763931-001
17.3-in, BV, HD, LED for non-Touchscreen computer models	763932-001
17.3-in, BV, Full HD, LED for non-Touchscreen computer models	763933-001
17.3-in, AG, Full HD, WLED for Touchscreen computer models	763934-001
15.6-in, AG, HD, WLED for Touchscreen computer models with bezel	763575-001
15.6-in, BV, HD, LED for non-Touchscreen computer models	763581-001
15.6-in, AG, Full HD, WLED for Touchscreen computer models with bezel	763576-001
15.6-in, BV, Full HD, LED for non-Touchscreen computer models with bezel	763582-001
<b>Webcamera/microphone</b>	
Webcamera/microphone module for non-touchscreens	762521-001
Webcamera/microphone module cable for Touchscreen models	762545-001
<b>Display hinges (not illustrated)</b>	
For HP ENVY 15 Notebook PC computer models	
For use with non-touchscreen computer models	762520-001
For use with touchscreen computer models	763105-001
For HP ENVY 17 Notebook PC computer models	
For use with non-touchscreen computer models	763706-001
For use with touchscreen computer models	765356-001

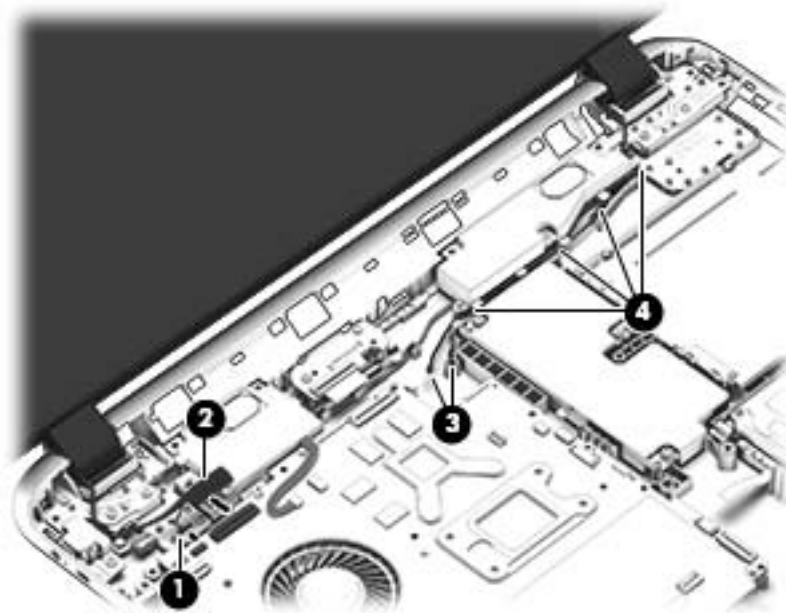
Before removing the display panel, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)).
5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the top cover from the base enclosure (see [Base enclosure on page 46](#)).


Remove the display panel:


1. Open the computer.
2. Disengage the display cable **(1)** and disconnect the display connector **(2)** on the left side base of the display panel.

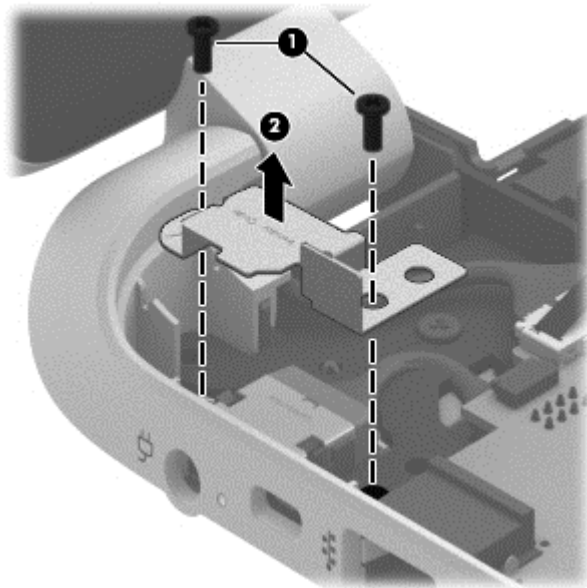
3. On the right side, disconnect the WLAN cable (3) and carefully remove the cable from the retaining tabs (4).




4. Remove the power connector cover by removing the Phillips screw (1) and lifting the cover (2).

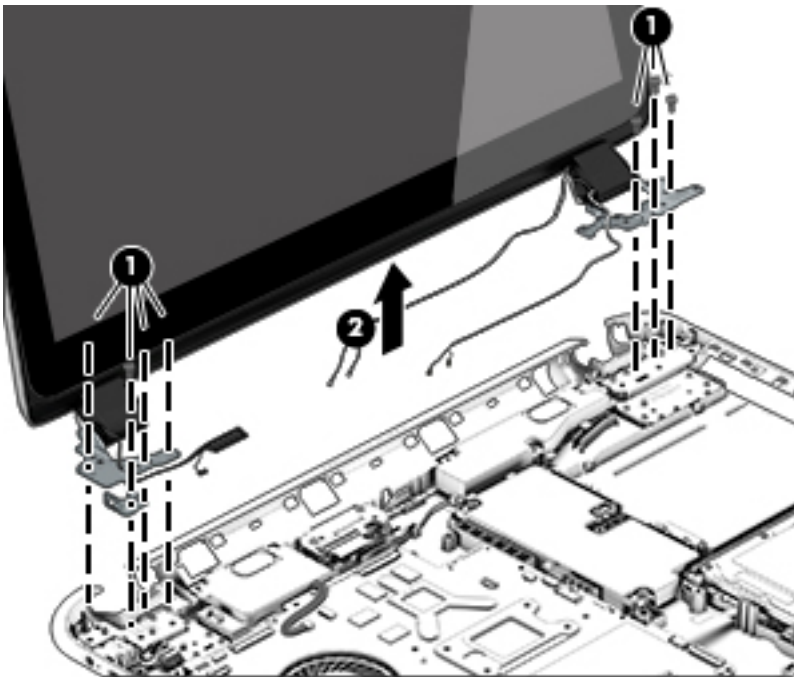
 **NOTE:** The power connector cover has two screws, however, the screw on the left is removed during the base enclosure and top cover removal process. Removing the cover is required for the display panel removal.

 **NOTE:** You will remove the power connector after you have removed the system board. This procedure is to remove the power connector cover.

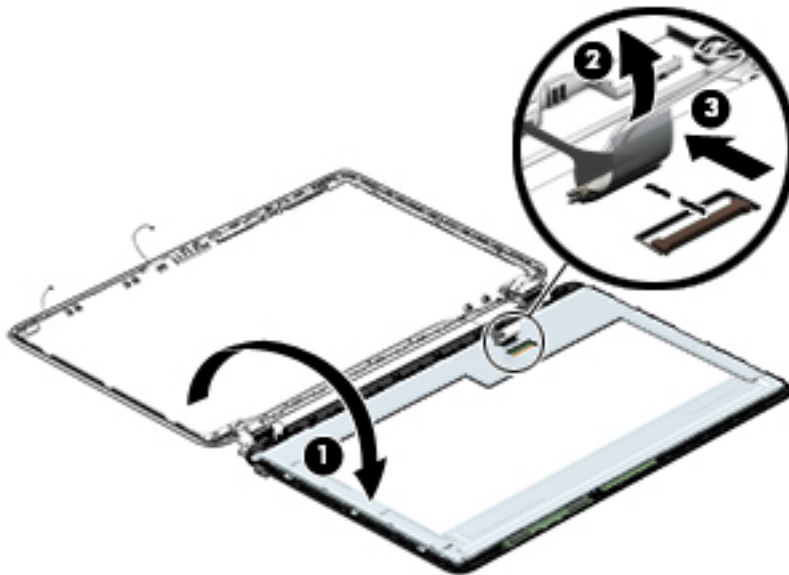


5. Remove the seven Phillips screws (1) on the left and right side base of the display panel and lift the panel up (2).

 **NOTE:** Support the display panel as you are removing the screws.




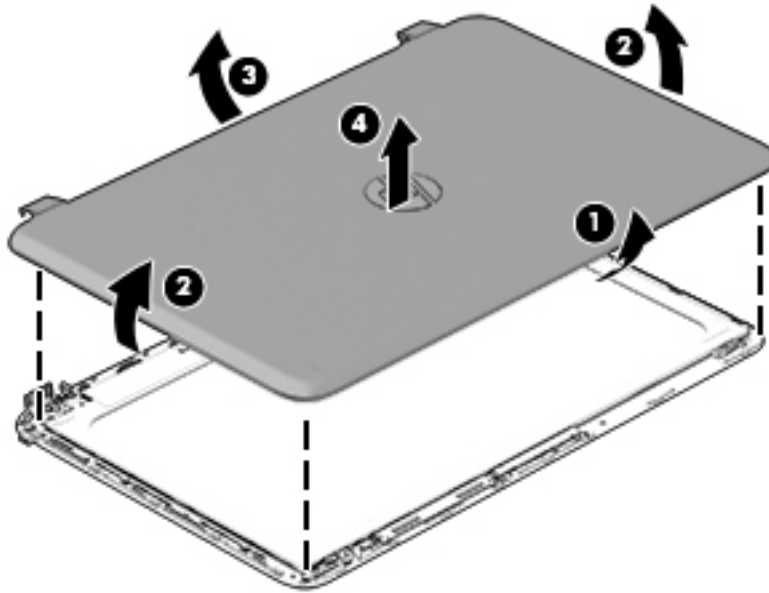
6. Open the panel cover (1), swivel the display panel hinges (2) on both sides and then tilt up the display panel hinge (3) to release it.






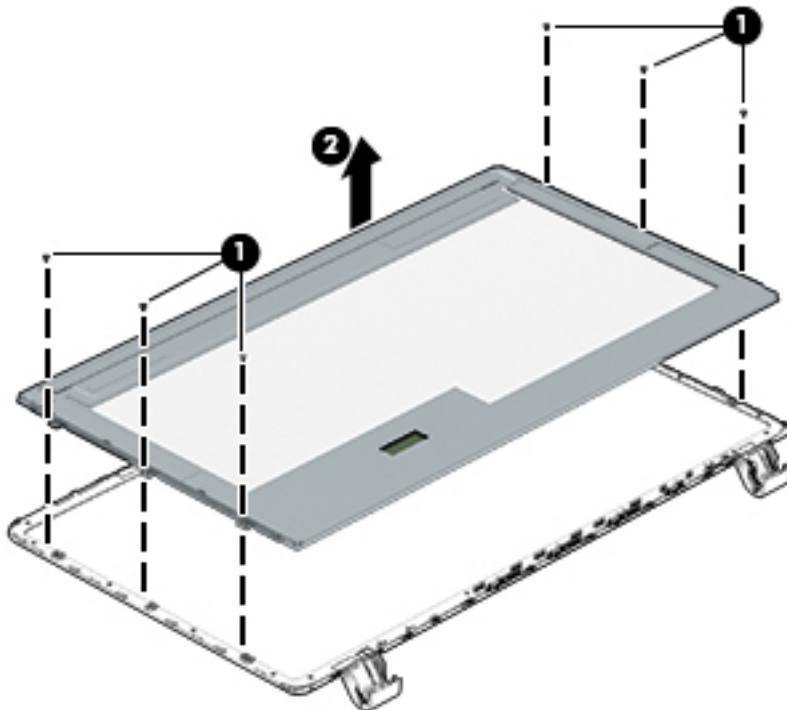
7. Loosen the edges of the back cover (1), (2), and (3) from all four sides of the display bezel and lift the display panel (4).

 **NOTE:** Use a sharp probe to pop the covers out to avoid scratching the bezel.




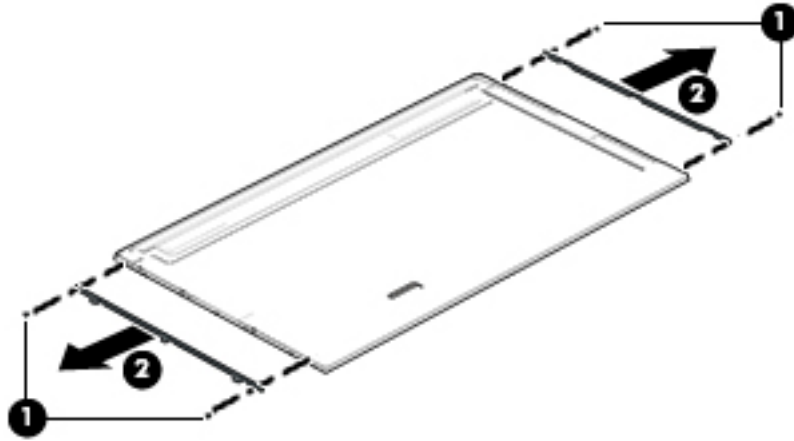
8. If you need to remove the panel, the display cable or the webcam, follow these procedures. To remove the raw panel, remove the six Phillips screws (1) and any adhesive that secures the display panel to the back cover and lift the display panel (2) carefully.

 **NOTE:** Depending on your specific model, some computers only have four display panel screws.



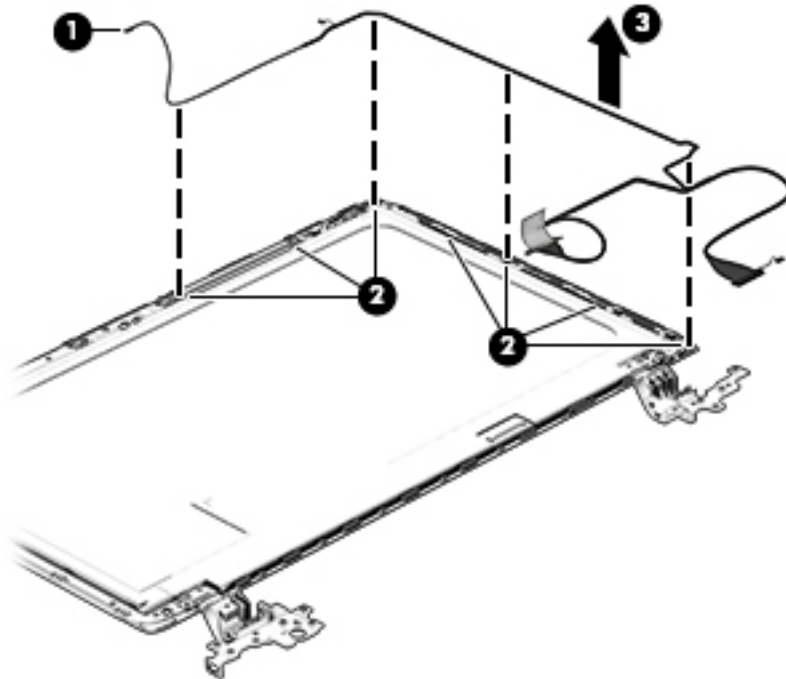
9. Remove the display panel side bracket (select models only) by removing the four Phillips screws (1) and releasing the side bracket (2).

 **NOTE:** If your computer model does not have side brackets, skip to the next step.

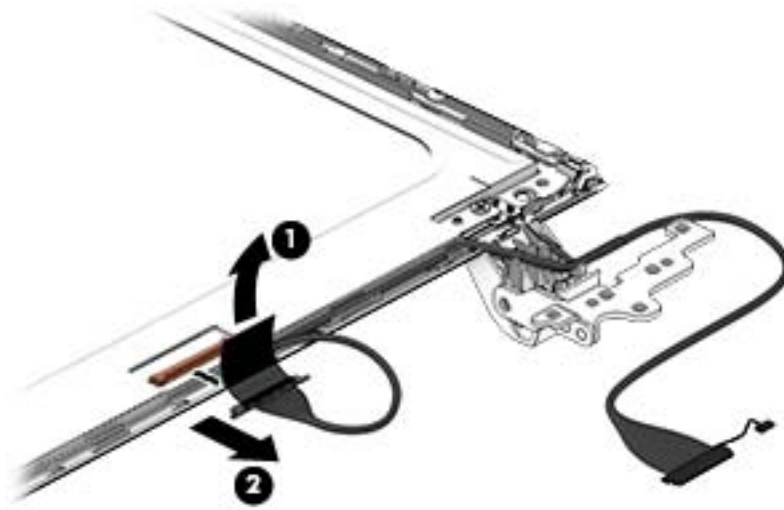


10. If it is necessary to remove the display panel cable or access the webcam and microphone, follow these steps. With the display bezel upside down, disconnect the cable from the webcam/microphone (1) and from the routing channel built into the back cover.

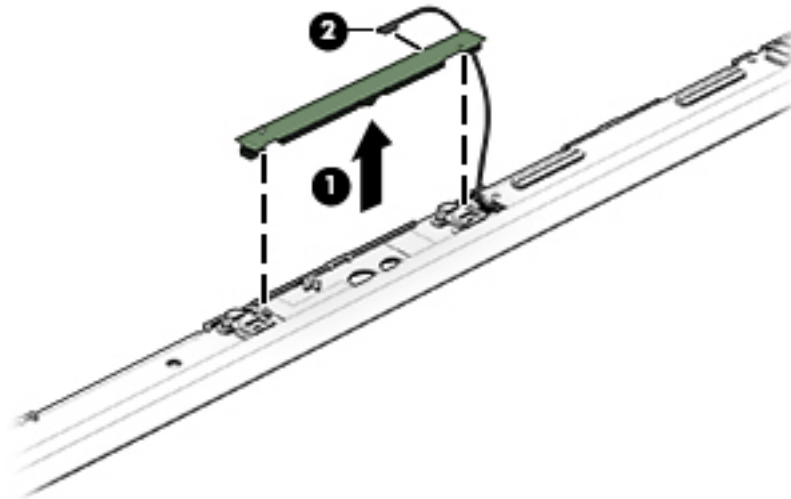
Carefully release the cable from the channel guides, the guides in the display hinge, and remove the display panel cable (2). Lift the cable (3) to remove it.



11. On select models, removing the cable also requires disengaging it from the channels in the hinges and disconnecting from the display panel. To disconnect the cable from the display panel, carefully remove the foil tape at the bottom of the display panel and then carefully lift the display cable connector (1) and remove the display connector (2).

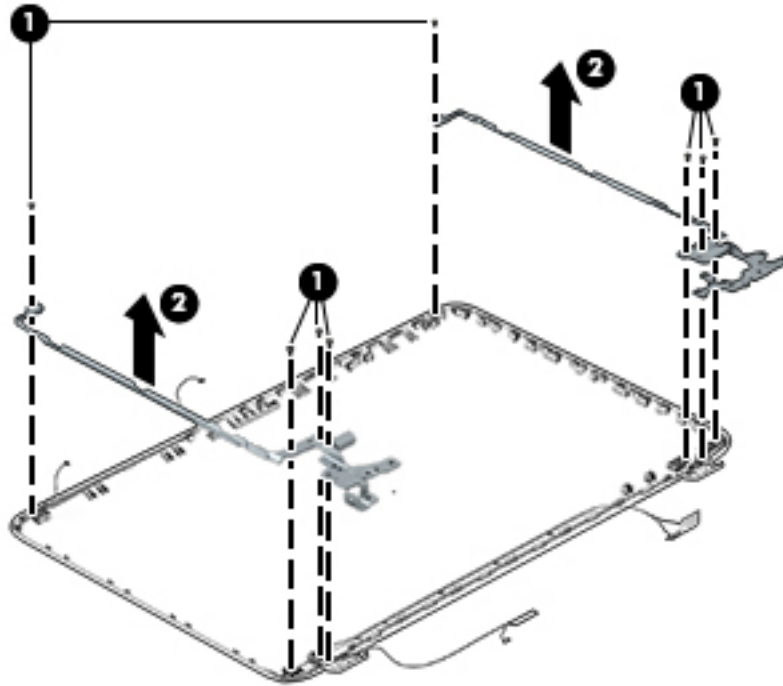


12. If it is necessary to replace the webcam/microphone perform the following: Lift the module (1) from the adhesive holding it in place on the display bezel and disconnect the module connector (2) if you have not already done so when removing the display cable.

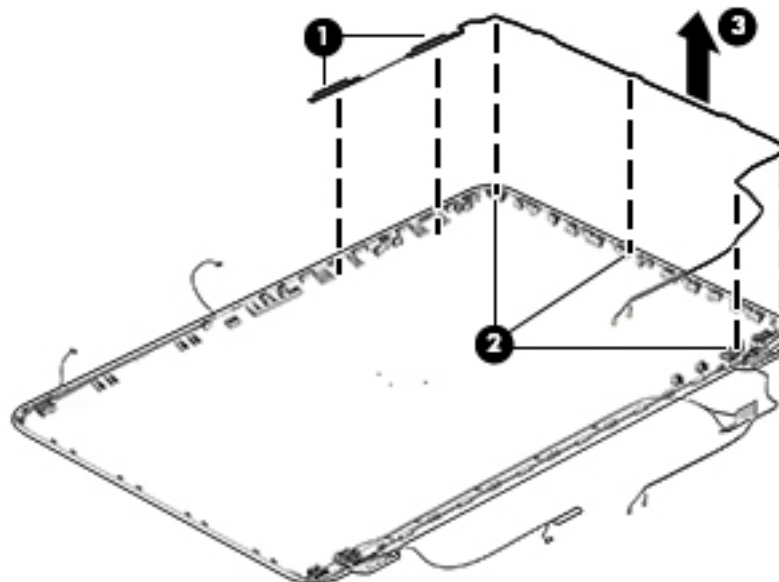


13. If it is necessary to replace the WLAN antenna cable, follow these procedures:
  - a. Position the display back cover face up.

- b. Remove the display brackets by removing the eight Phillips and broadhead screws (1) securing the hinge brackets to the back cover, and then lift the brackets (2) to remove them.




- c. Release the wireless antenna transceivers (1) from the display bezel. (The wireless antenna transceivers are attached to the display bezel with double-sided tape.)
- d. Remove the wireless antenna from the retaining channels (2), and lift the antenna (3).



Reverse this procedure to install the display panel.

## WLAN module

Description	Spare part number
Intel Dual Band Wireless-AC 3160 802.11 ac 1x1 WiFi + BT 4.0 combo adapter for use only with HP ENVY 17 Notebook PC computer models or HP ENVY 15 Notebook PC computer models	710662-005
Qualcomm Atheros AR9485 802.11 bgn 1x1 Wi-Fi adapter for use only with HP ENVY 17 Notebook PC computer models or HP ENVY 15 Notebook PC computer models available for Windows 8.1 and Windows 7	675794-005
Intel Dual Band Wireless-AC 7260 802.11 ac 2x2 WiFi + BT 4.0 Combo Adapter non-Vpro version w/ dual antennas for use with HP ENVY 17 Notebook PC computer models only for Windows 8.1 and Windows 7	756753-005


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


Before removing the WLAN module, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)).
5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the base enclosure and top cover (see [Base enclosure on page 46](#)).

Remove the WLAN module:

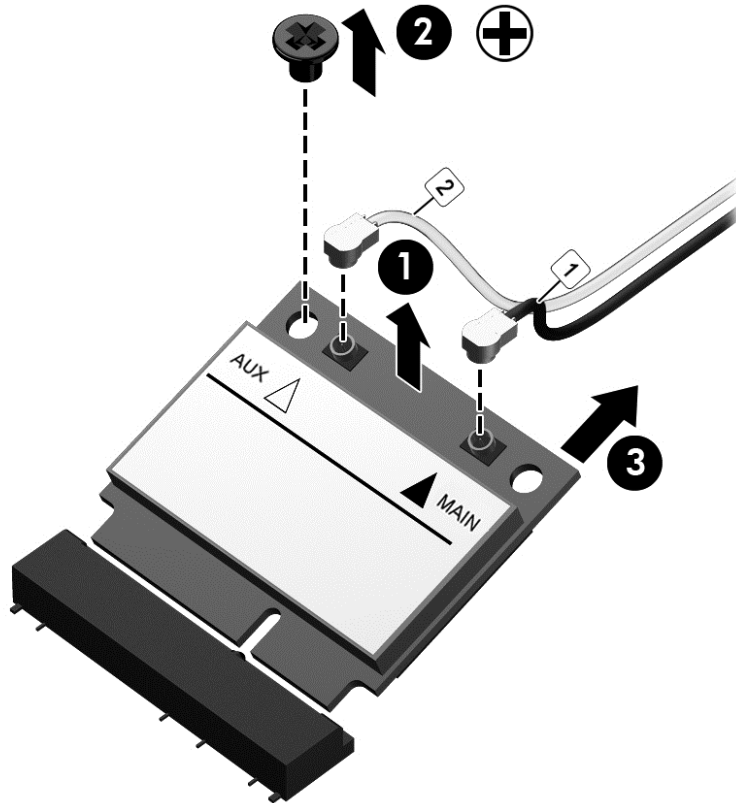
1. Disconnect the #1 and #2 WLAN antenna cables from the WLAN module (1) if you have not already done so to remove the display panel..


 **NOTE:** The WLAN module may have two screws depending on the model.

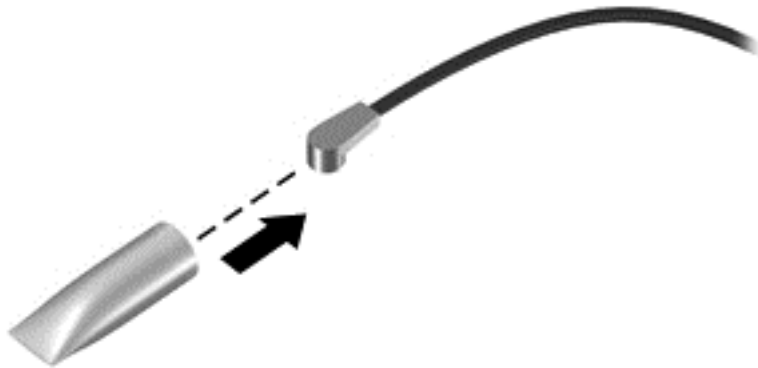
 **NOTE:** The #1 WLAN antenna cable is connected to the WLAN module #1 main terminal. The #2 WLAN antenna cable is connected to the WLAN module #2 auxiliary terminal.

2. Remove the Phillips screw(s) (2) that secure the WLAN module to the system board. (The WLAN module tilts up.)

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



 **NOTE:** If the WLAN antennas are not connected to the terminals on the WLAN module, the protective sleeves must be installed on the antenna connectors, as shown in the following illustration.



## TouchPad button board


Description	Spare part number
<b>NOTE:</b> Some models have the touchpad button board spared with the top cover. Removal is only required on select models.	
TouchPad button board (includes cable) for use with HP ENVY 15 Notebook PC computer models	763790-001
TouchPad button board (includes cable) for use with HP ENVY 17 Notebook PC computer models	763712-001

Before removing the TouchPad button board, follow these steps:

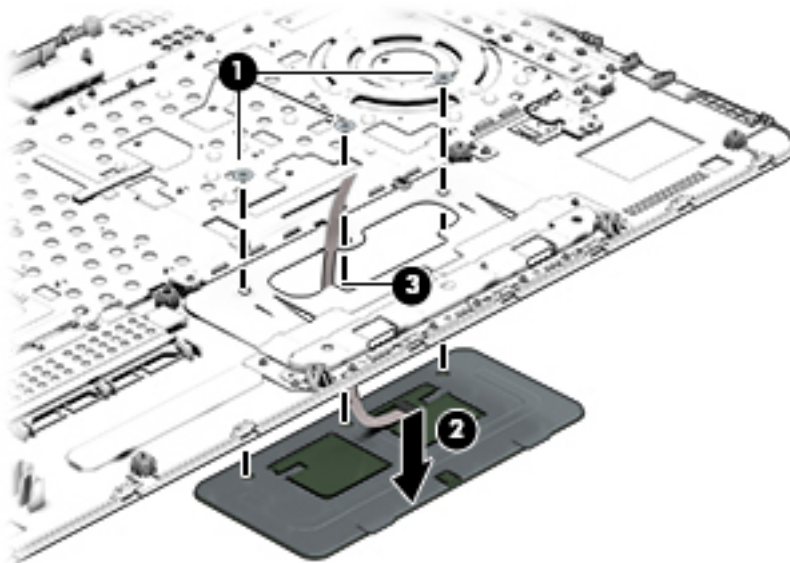
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)).
5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the top cover from the base enclosure (see [Base enclosure on page 46](#)).

Remove the TouchPad button board:

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

 **NOTE:** Some models may have three broadhead screws for the TouchPad button board (1).

3. Remove the TouchPad board by carefully pushing the TouchPad down (2) and routing the cable through the opening (3) (the cable was disconnected earlier from the top cover).



Reverse this procedure to install the TouchPad button board.

## Battery Board (select models only)

Description	Spare part number
Battery board for HP ENVY 17 Notebook PC	763710-001

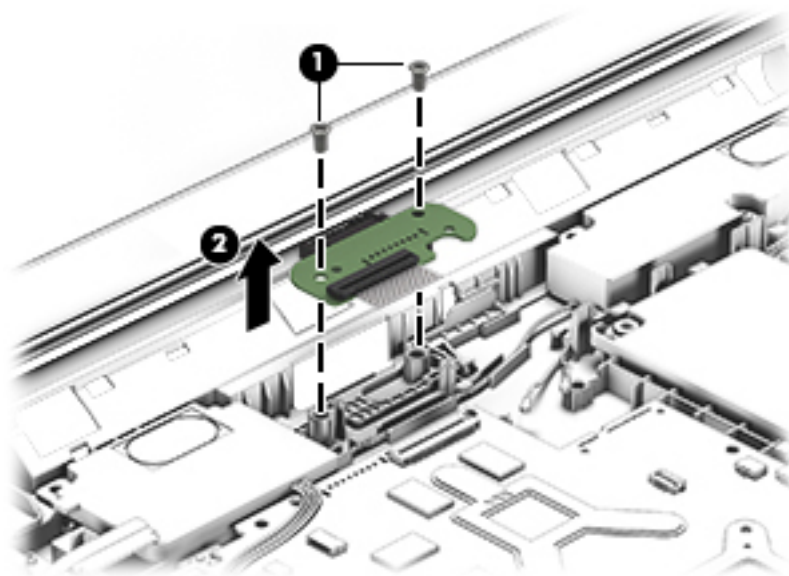
The battery board is for select HP ENVY 17 Notebook PC computer models.

Before removing the battery board, follow these steps:

1. Disconnect all external devices connected to the computer.
2. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
3. Remove the battery (see [Battery on page 42](#)).
4. Remove the optical drive (see [Optical drive on page 43](#)).
5. Remove the base enclosure and top cover (see [Base enclosure on page 46](#)).


Remove the battery board:

1. Turn the computer, with the front edge toward you.
2. Remove the two Phillips screws (1).
3. Lift the battery board (2) to remove it.



Reverse this procedure to install the battery board.

## Optical drive connector

 **NOTE:** The optical drive connector and cable are included in the optical drive spare part kit. (See [Optical drive on page 43](#) for the spare part kit information.)

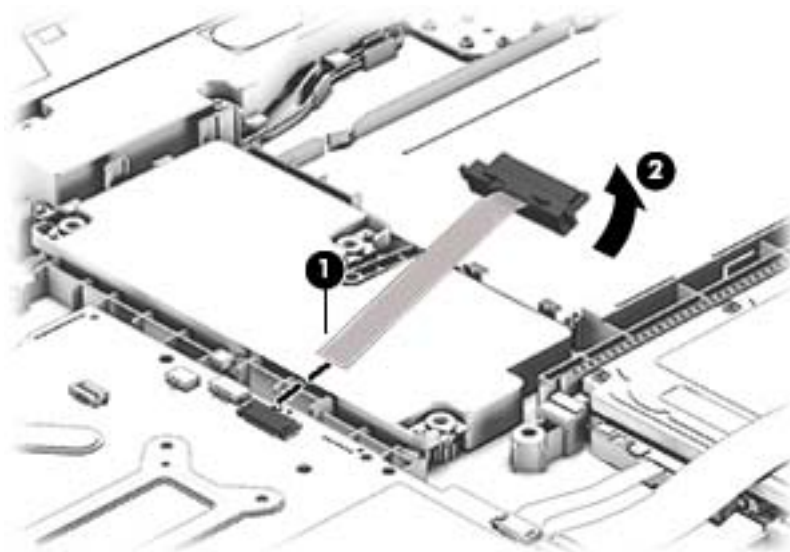
Before removing the optical drive connector board, follow these steps:



1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)).
5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the base enclosure and top cover (see [Base enclosure on page 46](#)).

Remove the optical drive connector board:

- ▲ Disconnect the cable from the ZIF connector (1), and then disconnect the optical drive connector (2) from the tabs to remove it.



Reverse this procedure to install the optical drive connector board.

## Subwoofer

Description	Spare part number
Subwoofer for HP ENVY 17 Notebook PC computer models	763716-001
Subwoofer for HP ENVY 15 Notebook PC computer models	763788-001


Before removing the subwoofer, follow these steps:

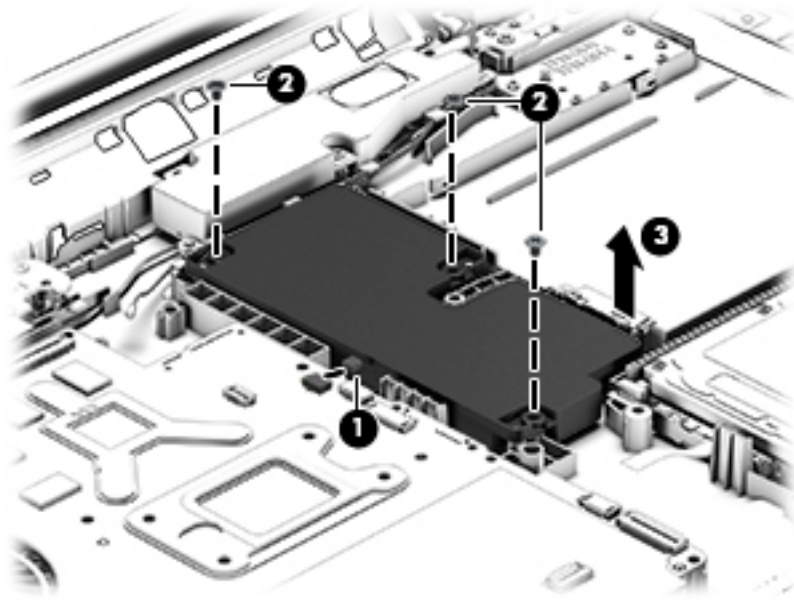
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)).

5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the base enclosure and top cover (see [Base enclosure on page 46](#)).

Remove the subwoofer:

- ▲ Disconnect the subwoofer cable (1) from the system board, remove the three Phillips screws (2), and then remove the subwoofer (3) by lifting it straight up.

 **NOTE:** Carefully disconnect the cable by grasping the sides of the connector. Do not pull from the cables.



Reverse this procedure to install the subwoofer.

## USB board

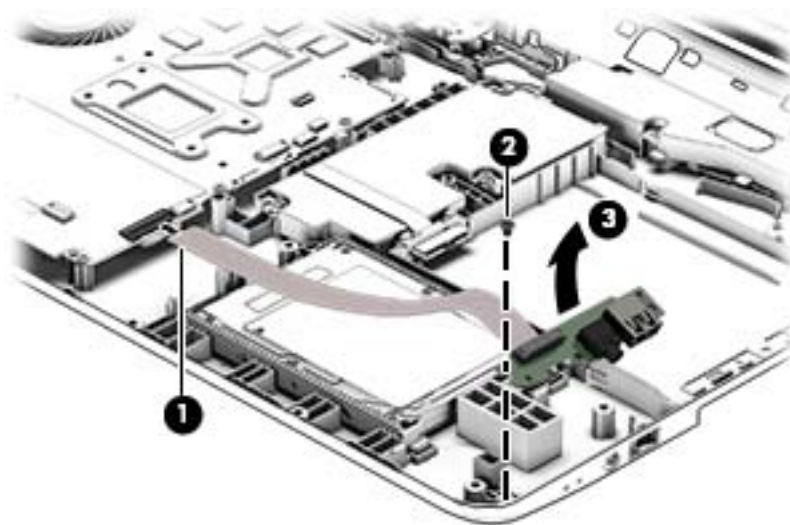
Description	Spare part number
USB board for use with HP ENVY 17 Notebook PC computer models	763709-001
USB board for use with HP ENVY 15 Notebook PC computer models	763786-001

Before removing the USB board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)).
5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the base enclosure and top cover (see [Base enclosure on page 46](#)).

Remove the USB board and cables:

1. Disconnect the USB cable from the ZIF connector (1).
2. Remove the Phillips screw securing the USB board (2), and lift the USB board (3) to remove it.



Reverse this procedure to install the USB board and cables.

## Hard drive

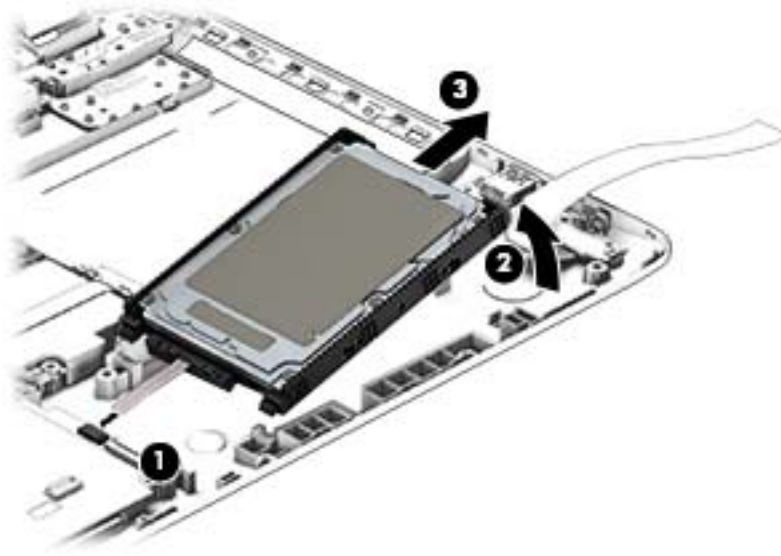
Description	Spare part number
1.5 TB 5400-RPM SATA RAW 9.5 mm	747375-005
1-TB, 5400-RPM	778192-005
1-TB, 5400-RPM hybrid	731999-005
750-GB, 5400-RPM	778190-005
750-GB, 5400-RPM hybrid	732001-005
500 GB, 5400-RPM for use with HP ENVY 15 Notebook PC computer models	778188-005
Hard Drive Hardware Kit for use with HP ENVY 15 Notebook PC computer models	762504-001
Hard Drive Hardware Kit for use with HP ENVY 17 Notebook PC computer models	763705-001

Before removing the primary hard drive or secondary hard drive (select models only), follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)).
5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the base enclosure and top cover (see [Base enclosure on page 46](#)).
7. Remove the USB connector board (see [USB board on page 65](#)).

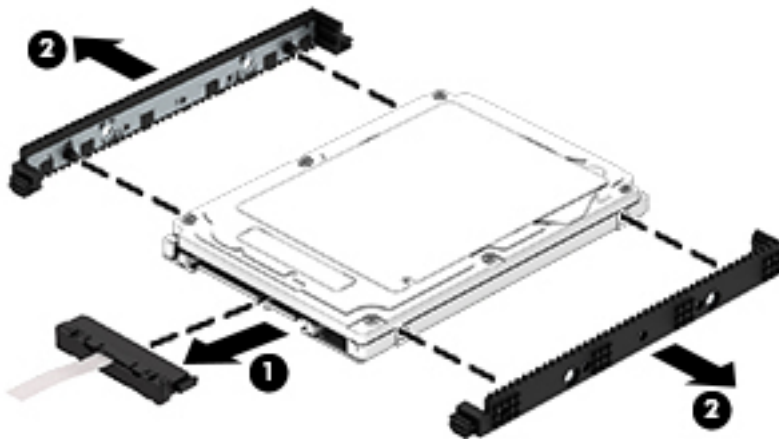
Remove the primary hard drive:

- ▲ Disconnect the hard drive cable from the system board **(1)**, and then tilt the hard drive **(2)** and lift to remove it **(3)**.




If it is necessary to disassemble the hard drive:

- ▲ Remove the hard drive cable (1), and then remove the hard drive bracket (2).



Reverse these procedures to reassemble and install the hard drive.

## System board

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

Description	Spare part number
<b>For use with HP ENVY 17 Computer models:</b>	
System board Intel Dual Core i7-4510U (2.0–GHz, SC turbo up to 3.1–GHz), processor (1600MHz/4 MB L3, 15W) discrete memory, and the Linux Ubuntu and FreeDos operating system for HP ENVY 17 Notebook PC computer models	763721-001
Intel Dual Core i7-4510U (2.0–GHz, SC turbo up to 3.1–GHz), processor (1600MHz/4 MB L3, 15W) discrete memory, and the Windows 8 Standard operating system	763721-501
Intel Dual Core i7-4510U (2.0–GHz, SC turbo up to 3.1–GHz), processor (1600MHz/4 MB L3, 15W) discrete memory, and the Windows 8 Professional operating system	763721-601

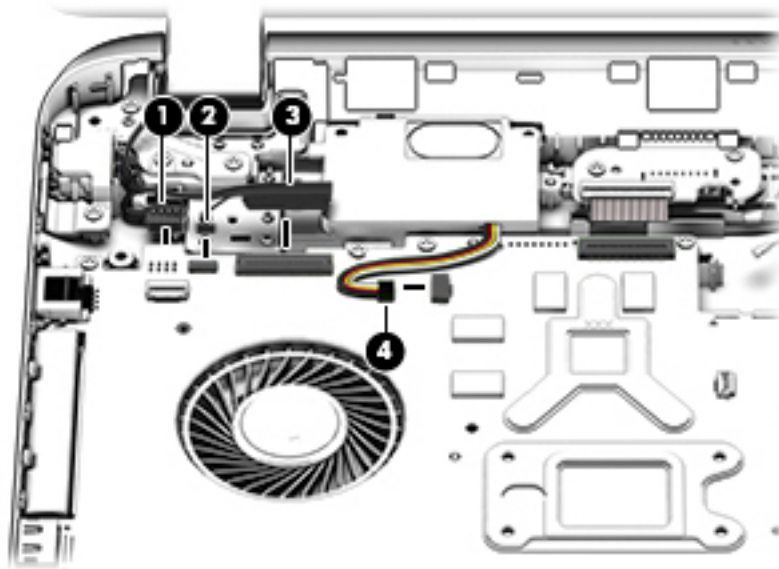
Description	Spare part number
Intel Dual Core i7-4510U 850M 4 GB (2.0–GHz, SC turbo up to 3.1–GHz), processor (1600MHz/4 MB L3, 15W) discrete memory, and the Windows 8 Professional operating system	763727-501
Intel Dual Core i7-4510U 850M 4GB (2.0–GHz, SC turbo up to 3.1–GHz), processor (1600MHz/4 MB L3, 15W) discrete memory, and the Windows 8 Professional operating system	763727-601
Intel Dual Core i5-4210U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600- MHz, 3.0 MB L3 cache, 15 W) discrete memory, and the Windows 8 Standard operating system	763730-501
Intel Dual Core i5-4210U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600- MHz, 3.0 MB L3 cache, 15 W) discrete memory, and the Windows 8 Professional operating system	763730-601
Intel Quad Core i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600-MHz, 6.0 MB L3 cache, 47 W) UMA memory, and the Windows 8 Standard operating system	773128-501
Intel Quad Core i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600-MHz, 6.0- MB L3 cache, 47 W) UMA memory, and the Windows 8 Professional operating system	773128-601
<b>For use with HP ENVY 15 Computer models:</b>	
Intel Quad Core HM87 i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600- MHz, 6.0 MB L3 cache, 47 W) UMA memory	763585-001
Intel Quad Core HM87 i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600- MHz, 6.0 MB L3 cache, 47 W) UMA memory, and the Windows 8 Standard operating system.	763585-501
Intel Quad Core HM87 i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600- MHz, 6.0 MB L3 cache, 47 W) UMA memory , and the Windows 8 Professional and Windows 7 Pro operating system	763585-601
Intel Dual Core i5-4210U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600- MHz, 3.0 MB L3 cache, 15 W) UMA memory	763586-001
Intel Dual Core i5-4210U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600- MHz, 3.0 MB L3 cache, 15 W) UMA memory, and the Windows 8 Standard operating system	763586-501
Intel Dual Core i5-4210 U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600- MHz, 3.0 MB L3 cache, 15 W) UMA memory, and the Windows 8 Professional operating system	763586-601
Intel Dual Core i7-4510U (2.0–GHz, SC turbo up to 3.1–GHz), processor (1600MHz/4 MB L3, 15W) UMA memory	763587-001
Intel Dual Core i7-4510U (2.0–GHz, SC turbo up to 3.1–GHz), processor (1600MHz/4 MB L3, 15W) UMA memory, and the Windows 8 Standard operating system	763587-501
Intel Dual Core i7-4510U (2.0–GHz, SC turbo up to 3.1–GHz), processor (1600MHz/4 MB L3, 15W) UMA memory, and the Windows 8 Professional operating system and Windows 7 Pro	763587-601
Intel Dual Core i5-4210U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600- MHz, 3.0 MB L3 cache, 15 W) discrete memory	763588-001
Intel Dual Core i5-4210U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600- MHz, 3. MB L3 cache, 15 W) discrete memory, and the Windows 8 Standard operating system	763588-501
Intel Dual Core i5-4210U 840M 2 GB 1.7-GHz (SC turbo up to 2.7-GHz) processor (1600- MHz, 3.0 MB L3 cache, 15 W) discrete memory, and the Windows 8 Professional operating system	763588-601
Intel Quad Core 840M i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600- MHz, 6.0 MB L3 cache, 47 W) discrete memory	766592-001
Intel Quad Core 840M i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600- MHz, 6.0 MB L3 cache, 47 W) discrete memory, and the Windows 8 Standard operating system	766592-501
Intel Quad Core 840M i7-4710HQ 2.50-GHz (SC turbo up to 3.50-GHz) processor (1600- MHz, 6.0 MB L3 cache, 47 W) discrete memory, and the Windows 8 Professional and Windows 7 Pro operating system	766592-601

Before removing the system board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)),
5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the top cover from the base enclosure (see [Base enclosure on page 46](#)).
7. Remove the WLAN module (see [WLAN module on page 59](#)).
8. Remove the subwoofer (see [Subwoofer on page 63](#)).

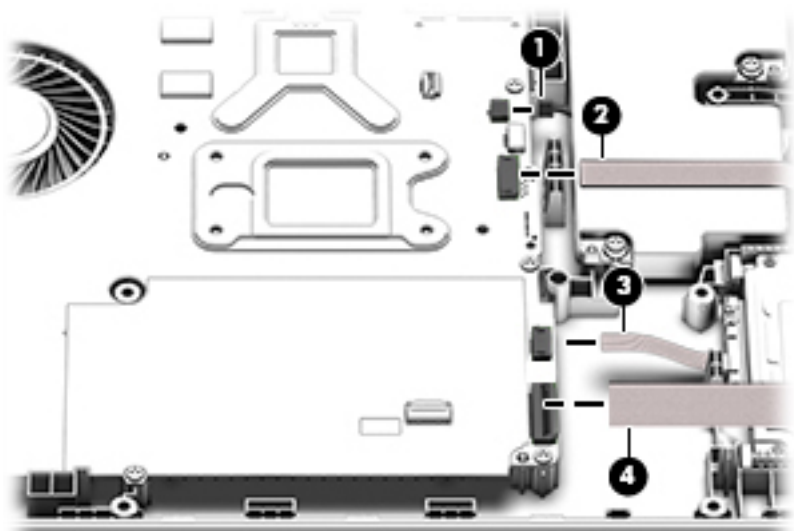
Remove the system board:

1. Remove the following cables if you have not already done so:
  - Power connector board cable (1)
  - Display cables (2), and (3)
  - Speaker cable (4)





2. Disconnect the following cables if you have not already done so:
  - Subwoofer cable (1)
  - Optical drive cable (2)
  - Hard drive cable (3)
  - USB connector cable (4)

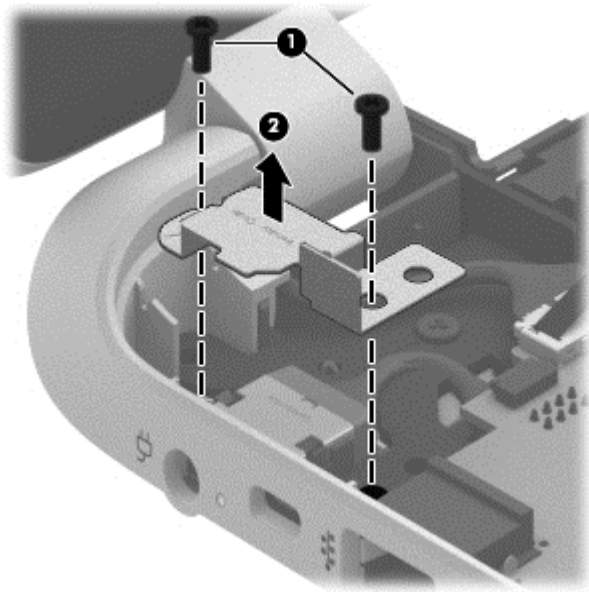




3. Remove the power connector cover by removing the screw (1) and lifting the cover (2).

 **NOTE:** The power connector cover has two Phillips screws, however, the screw on the left is removed during the base enclosure and top cover removal process.

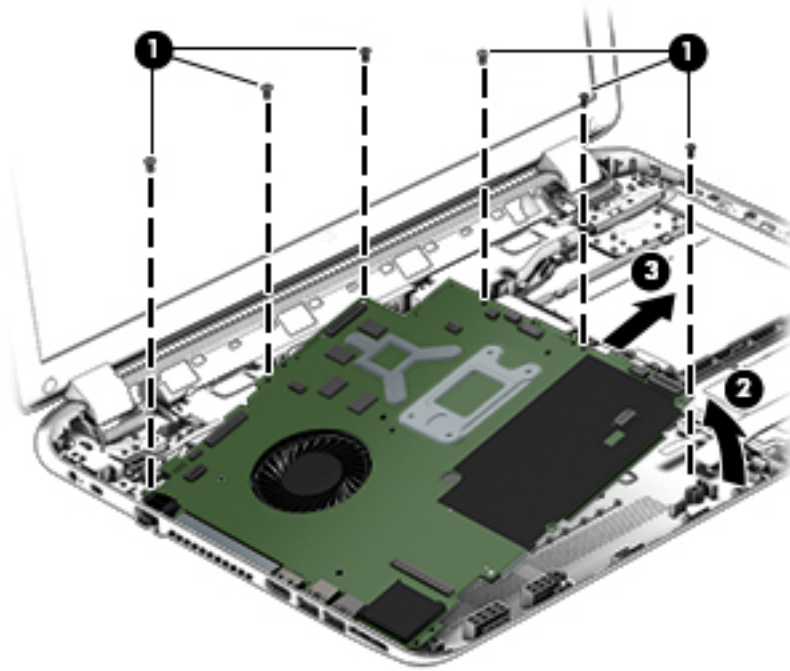
 **NOTE:** You will remove the power connector after you have removed the system board. This procedure is to remove the power connector cover if you did not remove it when removing the display panel.



4. Remove the six Phillips screws (1).



- Lift the system board (2), and then remove the system board (3) by sliding it up and to the right at an angle.



Reverse this procedure to install the system board.

## Speakers

Description	Spare part number
Speaker Kit (includes left and right front speakers and cables) for HP ENVY 17 Notebook PC computer models	763717-001
Speaker Kit (includes left and right front speakers and cables) for HP ENVY 15 Notebook PC computer models	762502-001

Before removing the speakers, follow these steps:

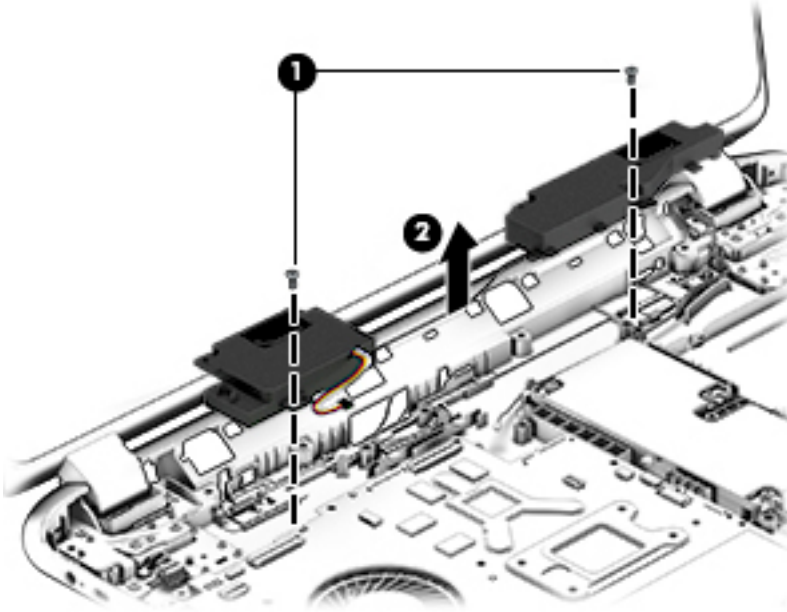
Before removing the Speakers, follow these steps:

- 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.
- Disconnect all external devices connected to the computer.
- Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
- Remove the battery (see [Battery on page 42](#)),
- Remove the optical drive (see [Optical drive on page 43](#)).
- Remove the top cover from the base enclosure (see [Base enclosure on page 46](#)).
- Remove the WLAN module (see [WLAN module on page 59](#)).

8. Remove the subwoofer (see [Subwoofer on page 63](#)).
9. Remove the system board (see [System board on page 67](#)).

Remove the speakers:

1. Turn the computer, with the front edge toward you.
2. Remove the two Phillips screws (1).
3. Disengage the cables, and then remove the front speakers (2).



Reverse this procedure to install the speakers.

## Memory modules

Description	Spare part number
4-GB memory module (PC3L, 12800, 1600-MHz)	691740-005
8-GB memory module (PC3L, 12800, 1600-MHz)	693374-005

Before removing a memory module, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)),
5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the top cover from the base enclosure (see [Base enclosure on page 46](#)).
7. Remove the WLAN module (see [WLAN module on page 59](#)).

8. Remove the subwoofer (see [Subwoofer on page 63](#)).
9. Remove the system board (see [System board on page 67](#)).

Remove the memory module:

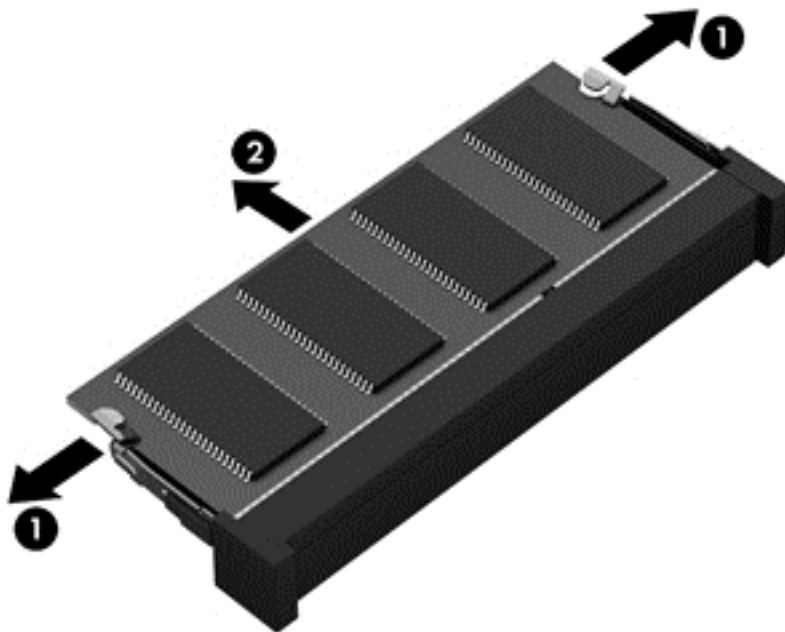
1. Turn the system board over.
2. Spread the retaining tabs (1) on each side of the memory module slot to release the memory module. (The memory module tilts up.)

---

**⚠ CAUTION:** To prevent damage to the memory module, hold it by the edges only. Do not touch the components on the memory module.

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3. Slide the memory module forward (2) to remove it.



Reverse this procedure to install a memory module.

## RTC battery

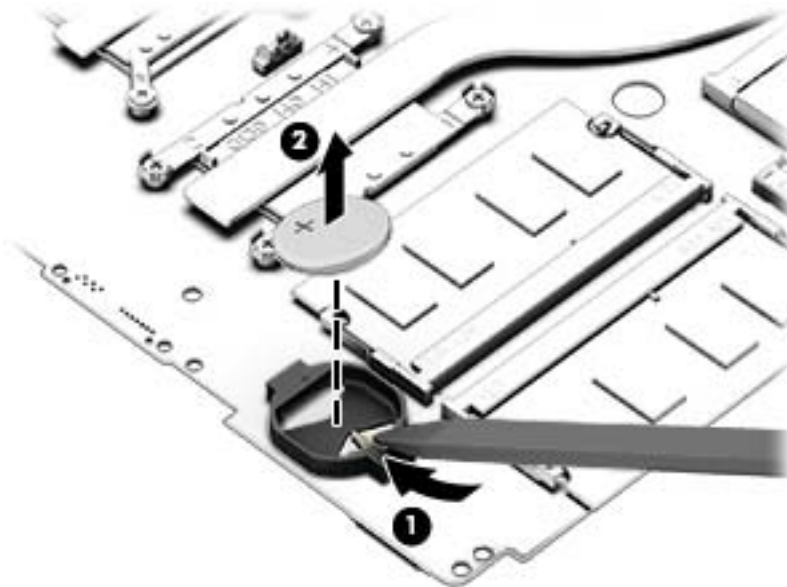
Description	Spare part number
RTC battery	697917-001

Before removing the RTC battery, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)),
5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the top cover from the base enclosure (see [Base enclosure on page 46](#)).
7. Remove the WLAN module (see [WLAN module on page 59](#)).
8. Remove the subwoofer (see [Subwoofer on page 63](#)).
9. Remove the system board (see [System board on page 67](#)).

Remove the RTC battery:

- ▲ Use a thin, non-conductive tool to remove the RTC battery (1) from the socket on the system board.



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

## Fingerprint reader board (select models only)

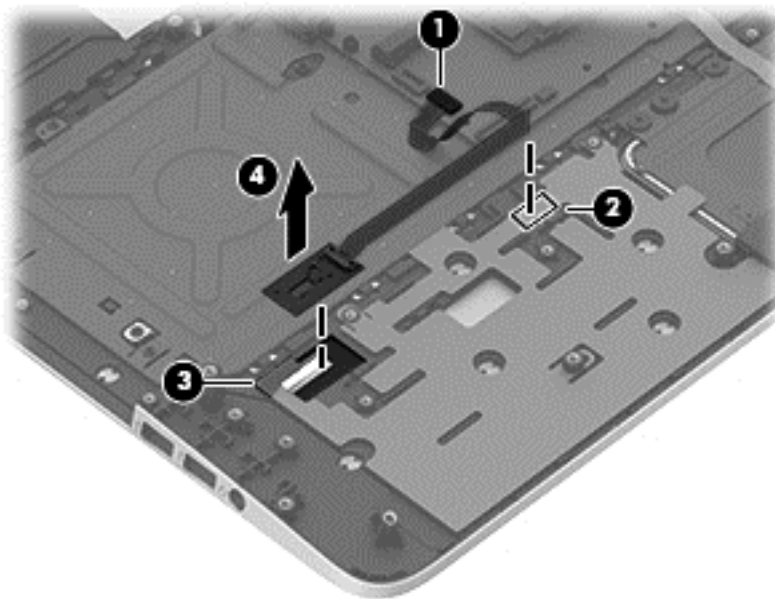
Description	Spare part number
Fingerprint reader board for use only on select HP ENVY 15 Computer Notebooks models	763789-001
Fingerprint reader board for use only on select HP ENVY 17 Computer Notebooks models	763711-001

Before removing the Fingerprint reader board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)),
5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the top cover from the base enclosure (see [Base enclosure on page 46](#)).
7. Remove the WLAN module (see [WLAN module on page 59](#)).
8. Remove the subwoofer (see [Subwoofer on page 63](#)).
9. Remove the system board (see [System board on page 67](#)).

Remove the fingerprint reader board and cable:

1. Disconnect the ZIF connector cable (1) that secures the fingerprint reader to the top cover.
2. Release the top cover shield (2) and (3), and then remove the fingerprint reader board (4) by lifting the board.



Reverse this procedure to install the fingerprint reader board and cable.

## Power connector cable

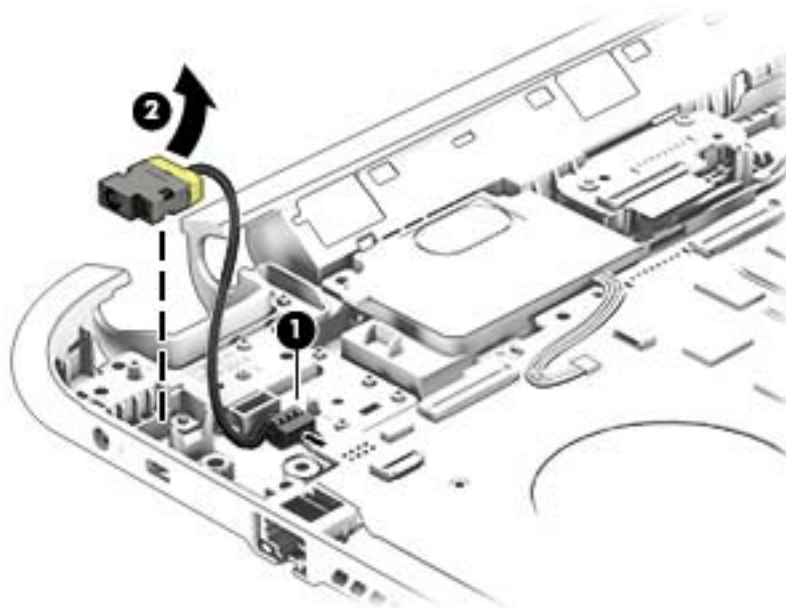
Description	Spare part number
For use only on computer models equipped with a graphics subsystem with discrete memory	720240-001
For use only on computer models equipped with a graphics subsystem with UMA memory	720241-001

Before removing the power connector, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)),
5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the top cover from the base enclosure (see [Base enclosure on page 46](#)).
7. Remove the WLAN module (see [WLAN module on page 59](#)).
8. Remove the subwoofer (see [Subwoofer on page 63](#)).
9. Remove the system board (see [System board on page 67](#)).

Remove the power connector cable:

1. Release the metal clip to disconnect the power connector cable (1) from the system board.
2. Disengage the cable from the clips (2).
3. Release the clips (3), and then remove the power connector cable (4).



Reverse this procedure to install the power connector cable and bracket.

# Fan

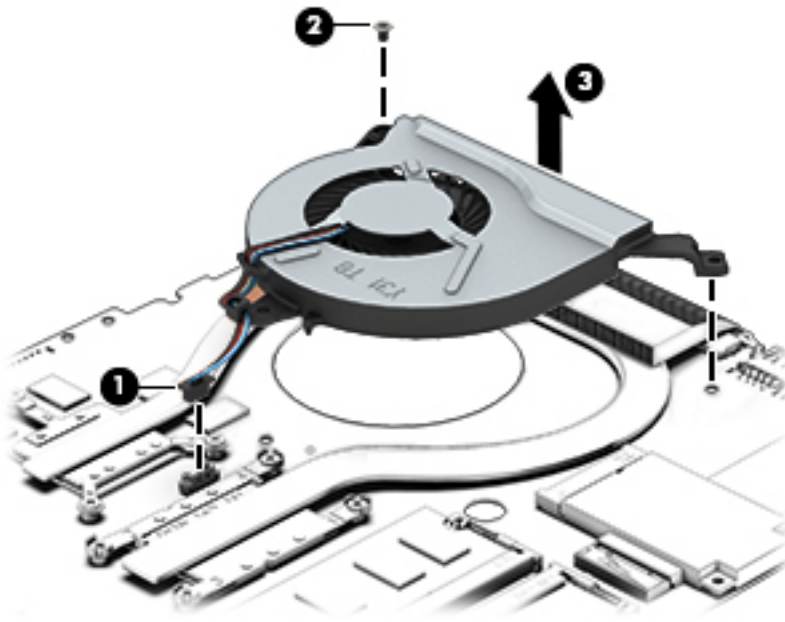
Description	Spare part number
Fan (with foil)	720235-001

Before removing the fan, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)),
5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the top cover from the base enclosure (see [Base enclosure on page 46](#)).
7. Remove the WLAN module (see [WLAN module on page 59](#)).
8. Remove the subwoofer (see [Subwoofer on page 63](#)).
9. Remove the system board (see [System board on page 67](#)).

Remove the fan:

1. Disconnect the fan cable from the system board, and then remove the piece of tape that secures the fan to the heat sink (1).
2. Remove the three Phillips screws securing the fan to the unit (2) and (3).
3. Lift the fan (4) to remove it.




Reverse this procedure to install the fan.



## Heat sink

Description	Spare part number
<b>For use with HP ENVY 15 Notebook PC computer models:</b>	
For use only on computer models with UMA memory 19 W	763701-001
For use only on computer models with UMA memory 47 W	763702-001
For use only on computer models with discrete memory 19 W	763703-001
For use only on computer models with discrete memory 35 W	763704-001
<b>For use with HP ENVY 17 Notebook PC computer models:</b>	
For use only on computer models with UMA memory 19 W	763701-001
For use only on computer models with UMA memory 47 W	763702-001
For use only on computer models with discrete memory 19 W	763703-001
For use only on computer models with discrete memory 35 W	763704-001


 **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 heat sink, follow these steps:

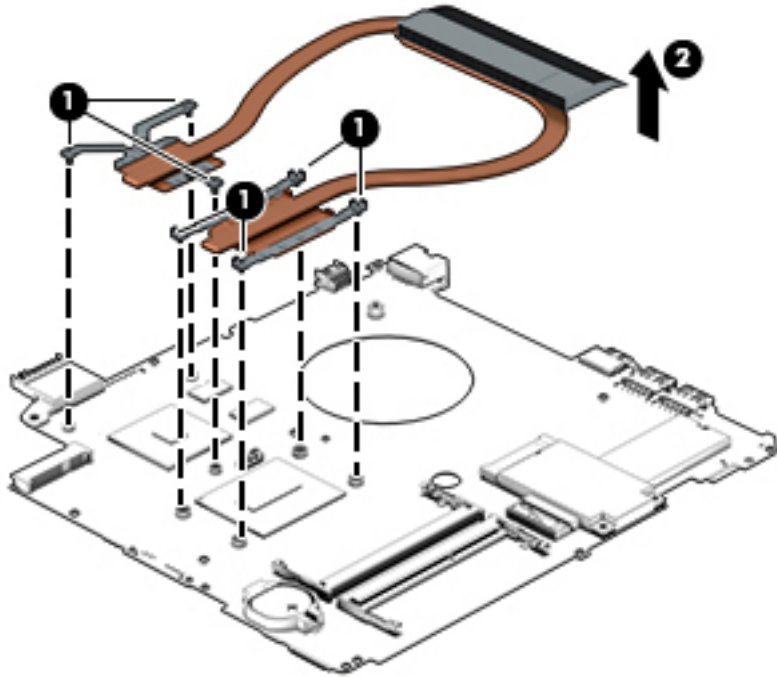
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)),
5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the top cover from the base enclosure (see [Base enclosure on page 46](#)).
7. Remove the WLAN module (see [WLAN module on page 59](#)).
8. Remove the subwoofer (see [Subwoofer on page 63](#)).
9. Remove the system board (see [System board on page 67](#)).
10. Remove the fan (see [Fan on page 77](#)).

Remove the heat sink:


- ▲ Loosen the seven captive screws in the order listed on the heat sink (1), and then remove the heat sink (2).

 **NOTE:** The heat sink may vary by computer model and may have a different number of screws. The heat sink is marked with the order the screws should be removed in. Follow the order shown.





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 **NOTE:** There is thermal paste between the heat sink and the processor.

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Reverse this procedure to install the heat sink.

## Power button board

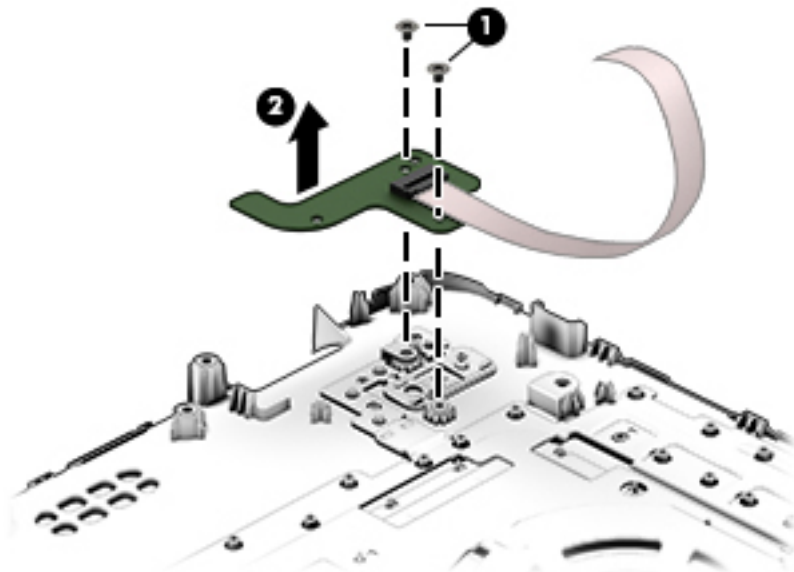
Description	Spare part number
Power button board (includes cable) For HP ENVY 15 Notebook PC computer models	762496-001
Power button board (includes cable) For HP ENVY 17 Notebook PC computer models	763708-001

Before removing the Power button board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 42](#)),
5. Remove the optical drive (see [Optical drive on page 43](#)).
6. Remove the top cover from the base enclosure (see [Base enclosure on page 46](#)).
7. Remove the WLAN module (see [WLAN module on page 59](#)).
8. Remove the subwoofer (see [Subwoofer on page 63](#)).
9. Remove the system board (see [System board on page 67](#)).

Remove the Power button board and cable:

1. Turn the top cover upside down, with the back edge toward you.
2. Remove the two Phillips screws securing the Power button board to the base enclosure (1).
3. Remove the Power button board (2).



Reverse this procedure to install the Power button board.

---

# 7 Windows – 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 81](#)).
2. Use the arrow keys to select **Main**.
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 `hp support assistant`, and then select the **HP Support Assistant** app.

For Windows 7, select **Start > Help and Support > Maintain** and go to Step 3 below.

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**.

For Windows 7, open Windows Explorer by selecting **Start > Computer**.
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 83](#).

- 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 Windows 7 Backing up, restoring, and recovering

Your computer includes tools provided by the operating system and HP to help you safeguard your information and retrieve it if ever needed.

## Creating backups

1. Use HP Recovery Manager to create recovery media immediately after you set up the working computer.
2. As you add hardware and software programs, create system restore points.
3. As you add photos, video, music, and other personal files, create a backup of your system and personal information.

## Creating recovery media to recover the original system

After you successfully set up the computer, you should create recovery discs or a recovery flash drive using HP Recovery Manager. You will need these recovery discs or recovery flash drive to perform a system recovery should the hard drive become corrupted. A system recovery reinstalls the original operating system, and then configures the settings for the default programs.

### What you need to know

- Only one set of recovery media can be created. Handle these recovery tools carefully, and keep them in a safe place.
- HP Recovery Manager examines the computer and determines the required storage capacity for the flash drive or the number of blank DVD discs that will be required.  
  
Use DVD-R, DVD+R, DVD-R DL, DVD+R DL discs or a flash drive. Do not use rewriteable discs such as CD±RW, DVD±RW, double-layer DVD±RW, and BD-RE (rewritable Blu-ray) discs; they are not compatible with HP Recovery Manager software.
- If your computer does not include an integrated optical drive, you can use an optional external optical drive (purchased separately) to create recovery discs, or you can obtain recovery discs for your computer from the HP website. If you use an external optical drive, it must be connected directly to a USB port on the computer, not 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.
- Store the recovery media in a safe location, separate from the computer.
- If necessary, you can exit the program before you have finished creating the recovery media. The next time you open HP Recovery Manager, you will be prompted to continue the process.

## Creating the recovery media

1. Select **Start** and type `recovery` in the search field. Select **Recovery Manager** from the list. Allow the action to continue, if prompted.
2. Click **Recovery Media Creation**.
3. Follow the on-screen instructions to continue.

To recover, see [Recovering the original system using HP Recovery Manager on page 87](#).

## Creating system restore points

A system restore point is a snapshot of certain hard drive contents saved by Windows System Restore at a specific time. A restore point contains information such as registry settings that Windows uses. Restoring to a previous restore point allows you to reverse changes that have been made to the system since the restore point was created.

Restoring to an earlier system restore point does not affect data files saved or emails created since the last restore point, but it does affect software you may have installed.

For example, if you download a photo from a digital camera and then restore the computer to the state it was on the previous day, the photo remains on the computer.

However, if you install photo viewing software and then restore your computer to the state it was on the previous day, the software will be uninstalled, and you won't be able to use it.

## What you need to know

- If you restore to a restore point and then change your mind, you can undo the restoration.
- You should create system restore points:
  - Before you add or change software or hardware
  - Periodically, whenever the computer is running normally
- System Restore also saves shadow copies of files that have been changed since the last restore point was created. For more information about using shadow copies to restore, see Help and Support.

## Creating a system restore point

1. Select **Start > Control Panel > System and Security > System**.
2. In the left pane, click **System Protection**.
3. Click the **System Protection** tab.
4. Click **Create**, and follow the on-screen instructions.

To restore, see [Restoring to a previous system restore point on page 87](#).

## Backing up system and personal information

Your computer stores information that is important to you, such as files, emails, and photos, and you will want to keep that information even if you download a virus or the system stops working properly. How completely you are able to recover your files depends on how recent your backup is. As you add new software and data files, you should create backups on a regular basis.

## Tips for a successful backup

- Number backup discs before inserting them into the optical drive.
- Store personal files in the Documents, Music, Pictures, and Videos libraries, and back up these folders periodically.
- Save customized settings in a window, toolbar, or menu bar by taking a screen shot of your settings. The screen shot can be a time-saver if you have to re-enter your preferences.

To create a screen shot:

1. Display the screen you want to save.
2. Copy the screen image:  
To copy only the active window, press **alt+prt sc**.  
To copy the entire screen, press **prt sc**.
3. Open a word-processing document or graphics editing program, and then select **Edit > Paste**. The screen image is added to the document.
4. Save and print the document.

## What you need to know

- You can back up your information to an optional external hard drive, a flash drive, a network drive, or discs.
- Connect the computer to AC power during backups.
- Allow enough time for the backup. Depending on files sizes, it may take more than an hour.
- Verify the amount of free space on your backup storage device before you back up.
- You should back up:
  - Before adding or changing software or hardware.
  - Before the computer is repaired or restored.
  - On a regular schedule to be sure you have recent copies of personal information.
  - After you add many files—for example, if you saved videos from a birthday party.
  - Before using antivirus software to remove a malicious program.
  - After adding information that is hard to replace, such as pictures, videos, music, project files, or data records.

## Creating a backup using Windows Backup and Restore

Windows allows you to back up files using Windows Backup and Restore. You can select the level you want to back up, from individual folders to drives. The backups are compressed to save space. To back up:

1. Select **Start > Control Panel > System and Security > Backup and Restore**.
2. Follow the on-screen instructions to schedule and create a backup.



**NOTE:** Windows includes the User Account Control feature to improve the security of the computer. You may be prompted for your permission or password for tasks such as installing software, running utilities, or changing Windows settings. See Help and Support for more information.



To restore, see [Restoring specific files using Windows Backup and Restore on page 87](#).

## Restore and recovery

### Restoring to a previous system restore point

Sometimes installing a software program causes your computer or Windows to behave unpredictably. Usually uninstalling the software fixes the problems. If uninstalling does not fix the problems, you can restore the computer to a previous system restore point (created at an earlier date and time).

To restore to a previous system restore point, when the computer was running correctly:

1. Select **Start > Control Panel > System and Security > System**.
2. In the left pane, click **System Protection**.
3. Click the **System Protection** tab.
4. Click **System Restore**, and follow the on-screen instructions.

### Restoring specific files

If files are accidentally deleted from the hard disk and they can no longer be restored from the Recycle Bin, or if files become corrupt, restoring specific files is useful. Restoring specific files is also useful if you ever choose to recover the original system using HP Recovery Manager. You can only restore specific files that you have backed up before.

### Restoring specific files using Windows Backup and Restore

Windows allows you to restore files that were backed up using Windows Backup and Restore:

1. Select **Start > Control Panel > System and Security > Backup and Restore**.
2. Follow the on-screen instructions to restore your backup.



**NOTE:** Windows includes the User Account Control feature to improve the security of the computer. You may be prompted for your permission or password for tasks such as installing software, running utilities, or changing Windows settings. See Help and Support for more information.

### Recovering the original system using HP Recovery Manager

HP Recovery Manager software allows you to repair or recover the computer to its original factory state.

#### 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 disc provided by the manufacturer.
- A system recovery should be used as a final attempt to correct computer issues. If you have not already tried restore points (see [Restoring to a previous system restore point on page 87](#)) and partial restores (see [Restoring specific files on page 87](#)), try them before using HP Recovery Manager to recover your system.
- A system recovery must be performed if the computer hard drive fails or if all attempts to correct any functional computer issues fail.


- If the recovery media do not work, you can obtain recovery discs for your system from the HP website.
- The Minimized Image Recovery option is recommended for advanced users only. All hardware-related drivers and software are re-installed, but other software applications are not. Do not interrupt the process until it is complete, otherwise the recovery will fail.

## Recovering using HP Recovery partition (select models only)

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

To check for the presence of a recovery partition, select **Start**, right-click **Computer** then select **Manage > Disk Management**. If the recovery partition is present, a Recovery drive is listed in the window.

---

 **NOTE:** Recovery discs have been included if your computer did not ship with a recovery partition.

---

1. Access HP Recovery Manager in either of the following ways:
  - Select **Start** and type `recovery` in the search field. Select **Recovery Manager** from the list.
  - or –
  - Turn on or restart the computer, and then press `esc` while the “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen. Then press `f11` while the “F11 (System Recovery)” message is displayed on the screen.
2. Click **System Recovery** in the **HP Recovery Manager** window.
3. Follow the on-screen instructions.


## Recovering using the recovery media

1. If possible, back up all personal files.
2. Insert the first recovery disc into the optical drive on your computer or an optional external optical drive, and then restart the computer.

– or –

Insert the recovery flash drive into a USB port on your computer, 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 88](#).

---

3. Press `f9` at system bootup.
4. Select the optical drive or the flash drive.
5. Follow the on-screen instructions.

## Changing the computer boot order

To change the boot order for recovery discs:

1. Restart the computer.
2. Press `esc` while the computer is restarting, and then press `f9` for boot options.
3. Select **Internal CD/DVD ROM Drive** from the boot options window.

To change the boot order for a recovery flash drive:

1. Insert the flash drive into a USB port.
2. Restart the computer.
3. Press `esc` while the computer is restarting, and then press `f9` for boot options.
4. Select the flash drive from the boot options window.

---


## 9 Windows 8.1 Backing up, restoring, and recovering

Your computer includes tools provided by HP and Windows to help you safeguard your information and retrieve it if you ever need to. These tools will help you return your computer to a proper working state or even back to the original factory state, all with simple steps.

This chapter provides information about the following processes:

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

---

 **NOTE:** This chapter describes an overview of backing up, restoring and recovering options. For more details about the tools provided, see Help and Support. From the Start screen, type [help](#), and then select **Help and Support**.

---

### 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 the state 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 90](#).

2. Use the Windows tools to create system restore points and create backups of personal information. For more information and steps, see Windows 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, 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 the HP website. For U.S. support, go to <http://www.hp.com/go/contactHP>. For worldwide support, go to [http://welcome.hp.com/country/us/en/wwwcontact\\_us.html](http://welcome.hp.com/country/us/en/wwwcontact_us.html). 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:

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

If you ever need to recover the system, see [Recovering using HP Recovery Manager on page 92](#).

## 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**, and then select **Drivers and Applications Reinstall**, and 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 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 92](#).

- If you want to recover the computer's original factory partitioning and content, you can choose the System Recovery option from the HP Recovery media. For more information, see [Recovering using HP Recovery Manager on page 92](#).
- 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 92](#).
- 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 on page 93](#).

## Recovering using HP Recovery Manager

HP Recovery Manager software allows you to recover the computer to its original factory state. Using the HP Recovery media you created, 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 the state 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 (on Windows 8.1 models) 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.
- To use the Factory Reset or System Recovery options, you must use HP Recovery media.
- If the HP Recovery media do not work, you can obtain recovery media for your system from the HP website. For U.S. support, go to <http://www.hp.com/go/contactHP>. For worldwide support, go to [http://welcome.hp.com/country/us/en/wwcontact\\_us.html](http://welcome.hp.com/country/us/en/wwcontact_us.html).




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**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 allows you to perform a system recovery (on Windows 8.1 models) or a 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:

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 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 first HP Recovery disc you created into the optical drive on your computer or into an optional external optical drive, and then restart the computer.

– or –

Insert the HP Recovery USB flash drive you created into a USB port on your computer, 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 93](#).

---

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.
3. Press and hold **esc** while the computer is restarting, and then press **f9** for boot options.
4. Select the optical drive or USB flash drive you want to boot from.
5. Follow the on-screen instructions.

## Removing the HP Recovery partition

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

---

 **IMPORTANT:** Removing the HP Recovery partition means you can no longer use Windows Refresh, the Windows Remove everything and reinstall Windows option, or the HP Recovery Manager option for minimized image recovery. Create HP Recovery media before removing the Recovery partition to ensure you have recovery options; see [Creating HP Recovery media on page 90](#).

---

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 follow the on-screen instructions to continue.




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# 10 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 an optional external 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 media


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

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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 with the primary operating system, 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 for more information.

---


## 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 website using the Deja Dup Backup Tool:

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 **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 backup 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 click **Forward**.
4. Select the location and folder where the files are to be restored and click **Forward**.
5. Follow the on-line instructions.
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 from any disaster.

---

# 11 Specifications

## Computer specifications

	Metric	U.S.
<b>Dimensions (non-touch)</b>		
Width for HP Envy 17 Notebook PC	<b>41.95 cm</b>	16.5 in
Width for HP Envy 15 Notebook PC	<b>38.45 cm</b>	15.9 in
Depth for HP Envy 17 Notebook PC	<b>27.9 cm</b>	10.7 in
Depth for HP Envy 15 Notebook PC	<b>26.09 cm</b>	10.3 in
Height (front to back) for HP Envy 17 Notebook PC	<b>2.67 cm</b>	1.1 in
Height (front to back) for HP Envy 15 Notebook PC	<b>2.49 cm</b>	1 in
<b>Weight</b>		
With 4-cell battery for HP Envy 17 Notebook PC	<b>2.87 kg</b>	6.33 lbs
With 4-cell battery for HP Envy 15 Notebook PC	<b>2.34 kg</b>	5.16 lbs
<b>Input power</b>		
Operating voltage and current	19.5 V dc @ 3.33 A – 65 W	
	19.5 V dc @ 4.62 A – 90 W	
	19.5 V dc @ 2.31 A – 45 W	
<b>Temperature</b>		
Operating	<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 (noncondensing)</b>		
Operating	10% to 90%	
Nonoperating	5% to 95%	
<b>Maximum altitude (unpressurized)</b>		
Operating	<b>-15 m to 3,048 m</b>	-50 ft to 10,000 ft
Nonoperating	<b>-15 m to 12,192 m</b>	-50 ft to 40,000 ft

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

## 43.9-cm (17.3-in), HD+ display specifications

	<b>Metric</b>	<b>U.S.</b>
Active diagonal size	43.9-cm	17.3-in
Resolution	1600x900 (HD+)	
Active area	382.08x214.92	
PPI	106	
Surface treatment	Anti-glare or BrightView	
Contrast ratio	300:1 (typical) – Anti-glare 500:1 – BrightView	
Response time	16 ms	
Brightness	200 nits (typical)	
Viewing angle	SVA	
Backlight	LED	
Luminance uniformity @ 13 points	1.4 (typ), 1.6 (max)	
Lifetime (1/2 luminance)	12,000 hours	
Color coordinate (white)	(0.313, 0.329)	
Color tolerance (White)	+/- 0.02	
Color tolerance (W, R, G, B)	+/- 0.03	
Color gamut	60% NTSC @ CIE 1931	

## 39.6-cm (15.6-in) display specifications

	Metric	U.S.
Active diagonal size	39.6-cm	15.6-in
Resolution	1600x900 (HD+)	
Active area	309.399x173.952	
PPI	112	
Surface treatment	Anti-glare	
Contrast ratio	300:1 (typical)	
Response time	8 ms	
Brightness	200 nits (typical)	
Viewing angle	SVA	
Backlight	LED	
Luminance uniformity @ 13 points	1.4 (typ), 1.6 (max)	
Lifetime (1/2 luminance)	12,000 hours	
Color coordinate (white)	(0.313, 0.329)	
Color tolerance (White)	+/- 0.02	
Color tolerance (W, R, G, B)	+/- 0.03	
Color gamut	45% typical	

## Hard drive specifications

	1.5 TB, 5400 rpm*	1-TB*	750-GB*	500-GB*
<b>Dimensions</b>				
Height	9.5 mm	9.5 mm	9.5 mm	9.5 mm
Width	70 mm	70 mm	70 mm	70 mm
Weight	107 g	107 g	115 g	101 g
<b>Interface type</b>	SATA	SATA	SATA	SATA
<b>Transfer rate</b>	145 MB/sec	145 MB/sec	100 MB/sec	100 MB/sec
<b>Security</b>	ATA security	ATA security	ATA security	ATA security
<b>Seek times</b> (typical read, including setting)				
Single track	2.0 ms	2.0 ms	1.5 ms	3 ms
Average	12 ms	12 ms	11 ms	13 ms
Maximum	22ms	22ms	14 ms	24 ms
<b>Logical blocks</b>	2,930,277,168	1,953,525,168	1,465,149,168	1,048,576,000
<b>Disc rotational speed</b>		5400 rpm		

	1.5 TB, 5400 rpm*	1-TB*	750-GB*	500-GB*
<b>Operating temperature</b>	5°C to 55°C (41°F to 131°F)			
*1 TB = 1 trillion bytes and 1 GB = 1 billion bytes when referring 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 technical 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

# 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 volts AC, or from 220 to 240 volts AC.

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

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

## Requirements for all countries

The following requirements are applicable to all countries and regions:

- The length of the power cord set must be at least **1.0 m** (3.3 ft) and no more than **2.0 m** (6.5 ft).
- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country or region where the power cord set will be used.
- The power cord sets must have a minimum current capacity of 10 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



Country/region	Accredited agency	Applicable note number
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 HO5VV-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.
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) or NEMA 6-15P (15 A, 250 V ac) configuration. CSA or C-UL mark. UL file number must be on each element.
3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCTF, 3-conductor, 0.75-mm<sup>2</sup> or 1.25-mm<sup>2</sup> conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V ac) configuration.
4. The flexible cord must be Type RVV, 3-conductor, 0.75-mm<sup>2</sup> conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the CCC certification mark.
5. The flexible cord must be Type H05VV-F 3X0.75-mm<sup>2</sup> conductor size. KTL logo and individual approval number must be on each element. Corset approval number and logo must be printed on a flag label.
6. The flexible cord must be Type HVCTF 3×1.25-mm<sup>2</sup> conductor size. Power cord set fittings (appliance coupler, cable, and wall plug) must bear the BSMI certification mark.
7. For 127 V ac, the flexible cord must be Type SVT or SJT 3 x 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 3×0.75-/1.00-mm<sup>2</sup> conductor size, with plug BS 1363/A with BSI or ASTA marks.

---

# 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>.

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