



HP Pro x2 612 G1

Maintenance and Service Guide

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First Edition: June 2014

Document Part Number: 763868-001

### **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 for <http://www.microsoft.com> details.

## 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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# Table of contents

<b>1 Product description .....</b>	<b>1</b>
<b>2 External component identification .....</b>	<b>6</b>
Display .....	6
Tablet edge components .....	8
Keyboard base .....	11
Top .....	11
Keys .....	12
Lights .....	13
TouchPad .....	14
Left side .....	14
Right side .....	15
Rear .....	16
<b>3 Illustrated parts catalog .....</b>	<b>17</b>
Locating the serial number, product number, and model number .....	17
Tablet major components .....	19
Keyboard major components .....	24
Miscellaneous parts .....	27
Sequential part number listing .....	31
<b>4 Removal and replacement preliminary requirements .....</b>	<b>41</b>
Tools required .....	41
Service considerations .....	41
Plastic parts .....	41
Cables and connectors .....	42
Drive handling .....	42
Grounding guidelines .....	43
Electrostatic discharge damage .....	43
Packaging and transporting guidelines .....	44
Workstation guidelines .....	44

<b>5 Removal and replacement procedures .....</b>	<b>46</b>
Tablet replacement procedures .....	46
Back cover .....	46
Fingerprint reader board .....	48
Button board .....	49
Tablet battery .....	51
Solid-state drive .....	53
WLAN module .....	55
WWAN module .....	57
RTC battery .....	59
Fan .....	60
Card reader board .....	61
System board .....	63
Heat sink .....	66
Tablet I/O board .....	68
Power connector cable .....	70
Home button board .....	71
Speakers .....	72
Keyboard base replacement procedures .....	74
Bottom cover .....	74
Keyboard battery .....	75
Keyboard plate .....	77
TouchPad button board .....	78
Keyboard .....	79
Memory card reader board .....	82
Keyboard base I/O board .....	83
Keyboard base power connector cable .....	85
Hinge assembly .....	86
<b>6 Computer Setup (BIOS), MultiBoot, and HP PC Hardware Diagnostics (UEFI) .....</b>	<b>88</b>
Using Computer Setup .....	88
Starting Computer Setup .....	88
Navigating and selecting in Computer Setup .....	89
Restoring factory settings in Computer Setup .....	90
Updating the BIOS .....	90
Determining the BIOS version .....	90
Downloading a BIOS update .....	91
Using MultiBoot .....	92
About the boot device order .....	92
Choosing MultiBoot preferences .....	92
Setting a new boot order in Computer Setup .....	92

Dynamically choosing a boot device using the f9 prompt .....	93
Setting a MultiBoot Express prompt .....	93
Entering MultiBoot Express preferences .....	94
Using HP PC Hardware Diagnostics (UEFI) .....	94
Downloading HP PC Hardware Diagnostics (UEFI) to a USB device .....	95
<b>7 Specifications .....</b>	<b>96</b>
<b>8 Backup and recovery .....</b>	<b>98</b>
Backing up your information .....	98
Performing a system recovery .....	98
Using the Windows recovery tools .....	99
Using f11 recovery tools .....	99
Using Windows operating system media (purchased separately) .....	100
Using Windows Refresh or Windows Reset .....	101
Using HP Software Setup .....	101
<b>9 Power cord set requirements .....</b>	<b>102</b>
Requirements for all countries .....	102
Requirements for specific countries and regions .....	102
<b>10 Recycling .....</b>	<b>104</b>
<b>Index .....</b>	<b>105</b>





# 1 Product description

Category	Description
<b>Product Name</b>	Tablet: HP Pro x2 612 G1 Keyboard base: HP Pro x2 612 G1 Power Keyboard Tablet and keyboard base: HP Pro x2 612 G1 with Power Keyboard Tablet and travel keyboard: HP Pro x2 612 G1 with Travel Keyboard
<b>Processor</b>	<ul style="list-style-type: none"><li>• Intel® Core® i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W)</li><li>• Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W)</li><li>• Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W)</li><li>• Intel Celeron® 3560Y 1.20-GHz processor (2.00-MB L2 cache, 11.5 W)</li><li>• Intel Celeron 2961Y 1.10-GHz processor (2.00-MB L2 cache, 11.5 W)</li></ul>
<b>Chipset</b>	Intel processor controller hub (PCH), soldered on circuit (SoC)
<b>Graphics</b>	Intel HD Graphics 4200, universal memory architecture (UMA), shared video memory
<b>Panel</b>	<b>12.5-in, light-emitting diode, backlight, TouchScreen display assembly:</b> <ul style="list-style-type: none"><li>• 12.5-in, full high-definition (FHD), IPS 50%, CG 300 nits, eDP 1.3, ultra-slim (1920×1080), equipped with WLAN and WWAN antennas</li><li>• 12.5-in, high-definition (HD), IPS 50%, CG 300 nits, eDP 1.2, ultra-slim (1366×768), equipped with WLAN and WWAN antennas</li><li>• 12.5-in, FHD, IPS 50%, CG 300 nits, eDP 1.3, ultra-slim (1920×1080), equipped with WLAN antennas</li><li>• 12.5-in, HD, IPS 50%, CG 300 nits, eDP 1.2, ultra-slim (1366×768), equipped with WLAN antennas</li></ul>
<b>Memory</b>	Supports DDR3L-1600-MHz, 96-ball, integrated onto system board Supports up to 8096-MB maximum

Category	Description
<b>Storage</b>	<p><b>Supports M.2 solid-state drive SS 2280:</b></p> <ul style="list-style-type: none"> <li>• 256-GB, M2, SATA-3</li> <li>• 256-GB, M2, SATA-3, SED, OPAL2</li> <li>• 180-GB, M2, SATA-3</li> <li>• 180-GB, M2, SATA-3, SED, OPAL1</li> <li>• 128-GB, M2, SATA-3</li> <li>• 64-GB, M2, SATA-3</li> </ul>
<b>Audio and video</b>	<p>2-MP, 1080p front-facing webcam</p> <p>5-MP, 1080p rear-facing webcam</p> <p>Dual array microphone</p> <p>Stereo speakers (2)</p> <p>HD Audio with DTS Sound</p>
<b>Wireless</b>	<p>Integrated Bluetooth options by way of combination module</p> <p>Integrated wireless local area network (WLAN) options by way of wireless module</p> <p>Two built-in WLAN antennas</p> <p>Support for the following WLAN modules:</p> <ul style="list-style-type: none"> <li>• Broadcom BCM43142 802.11bgn 1×1 Wi-Fi + Bluetooth 4.0 M.2 Combo Adapter</li> <li>• Intel Dual Band Wireless-AC 3160 802.11ac 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter</li> <li>• Intel Dual Band Wireless-AC 7260 802.11ac 2×2 Wi-Fi + Bluetooth 4.0 Combo Adapter</li> <li>• Intel Dual Band Wireless-AC 7260 802.11ac 2×2 Wi-Fi + Bluetooth 4.0 Combo Adapter</li> <li>• Intel Dual Band Wireless-N 7260AN 802.11abgn 2×2 Wi-Fi + Bluetooth 4.0 Combo Adapter for use only in India</li> <li>• Intel Dual Band Wireless-N 7260AN 802.11abgn 2×2 Wi-Fi + Bluetooth 4.0 Combo Adapter for use in all countries and regions except India</li> </ul> <p>Integrated wireless wide area network (WWAN) options by way of wireless module (select models only)</p> <p>Two built-in WWAN antennas</p> <p>Support for the following WWAN modules:</p> <ul style="list-style-type: none"> <li>• HP hs3110 HSPA+ Mobile Broadband Module</li> <li>• HP lt4112 LTE/HSPA+ Mobile Broadband Module</li> <li>• HP lt4211 LTE/EV-DO/HSPA+ Gobi 4G Module</li> </ul>

Category	Description
<b>Ports</b>	<p data-bbox="603 226 679 254"><b>Tablet:</b></p> <ul data-bbox="603 281 954 625" style="list-style-type: none"> <li data-bbox="603 281 727 308">• Docking</li> <li data-bbox="603 333 954 361">• Headphone/microphone combo</li> <li data-bbox="603 386 740 413">• Micro SD</li> <li data-bbox="603 438 751 466">• Micro SIM</li> <li data-bbox="603 491 754 518">• Smart card</li> <li data-bbox="603 543 730 571">• USB 3.0</li> <li data-bbox="603 596 871 623">• 4.5-mm multi-pin power</li> </ul> <p data-bbox="603 651 783 678"><b>Keyboard base:</b></p> <ul data-bbox="603 705 954 1150" style="list-style-type: none"> <li data-bbox="603 705 794 732">• DisplayPort 1.2</li> <li data-bbox="603 758 727 785">• Docking</li> <li data-bbox="603 810 954 837">• Headphone/microphone combo</li> <li data-bbox="603 863 699 890">• RJ45</li> <li data-bbox="603 915 679 942">• SD</li> <li data-bbox="603 968 820 995">• USB 3.0 charging</li> <li data-bbox="603 1020 730 1047">• USB 3.0</li> <li data-bbox="603 1073 699 1100">• VGA</li> <li data-bbox="603 1125 871 1152">• 4.5-mm multi-pin power</li> </ul>
<b>Keyboard/pointing devices</b>	<p data-bbox="603 1178 1129 1205">Spill-resistant with drain, backlit and non-backlit versions</p> <p data-bbox="603 1232 874 1260"><b>Touchpad requirements:</b></p> <p data-bbox="603 1287 735 1314">On/off button</p> <p data-bbox="603 1341 820 1369">Support for 2-way scrol</p> <p data-bbox="603 1396 826 1423">Taps enabled as default</p> <p data-bbox="603 1451 871 1478">Gestures enabled by default:</p> <ul data-bbox="603 1505 852 1577" style="list-style-type: none"> <li data-bbox="603 1505 807 1533">• 2-finger scrolling</li> <li data-bbox="603 1558 852 1585">• 2-finger zoom (pinch)</li> </ul>

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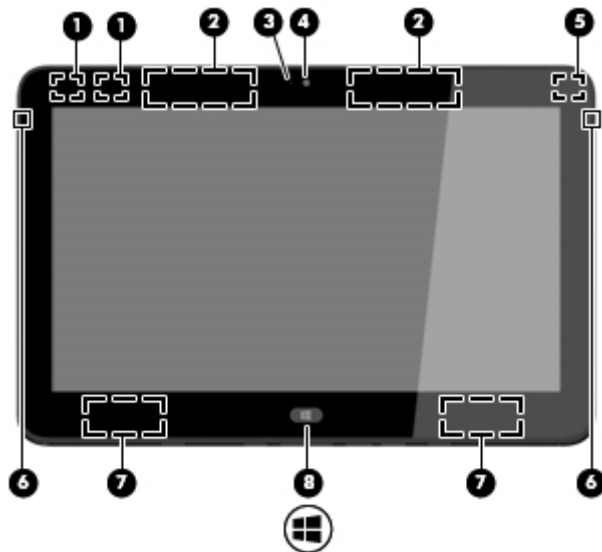
<b>Category</b>	<b>Description</b>
<b>Power requirements</b>	<b>Battery:</b>  Tablet supports a 4-cell, 29-WHr, 1.98-AHr, Li-ion battery  Keyboard base supports a 2-cell, 25-WHr, 3.38-AHr, Li-ion battery  The following AC adapters are supported: <ul style="list-style-type: none"><li>• 65-W HP Smart adapter (EM, RC/V, 4.5-mm)</li><li>• 65-W HP Smart adapter (EM, non-PFC, 4.5-mm)</li><li>• 65-W HP Smart adapter (non-PFC, 4.5-mm)</li><li>• 65-W HP Smart travel adapter (non-PFC, 4.5-mm)</li><li>• 45-W HP Smart adapter (RC, non-PFC, 4.5-mm)</li><li>• 45-W HP Smart adapter (RC, non-PFC, 4.5-mm, 2-prong)</li></ul>

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Category	Description
<b>Operating system</b>	<p><b>Preinstalled:</b></p> <ul style="list-style-type: none"> <li>• Microsoft Windows 8.1 Professional 64-bit DPK with Windows 7 Professional 64-bit image</li> <li>• Microsoft Windows 8.1 Professional 64-bit DPK with Windows 7 Professional 64-bit image - MSNA</li> <li>• Microsoft Windows 8.1 Chinese 64-bit</li> <li>• Microsoft Windows 8.1 Emerging Markets 64-bit</li> <li>• Microsoft Windows 8.1 Multilanguage 64-bit</li> <li>• Microsoft Windows 8.1 Professional 64-bit</li> <li>• Microsoft Windows 8.1 Professional 64-bit - MSNA</li> <li>• FreeDOS 2.0</li> </ul> <p><b>Restore media: DRDVD:</b></p> <ul style="list-style-type: none"> <li>• DRDVD Windows 8.1 (available with any Windows 8.1 localization required with any Windows 8.1 Professional downgrade operating system)</li> <li>• DRDVD Windows 7 (available with Windows 8.1 Professional downgrade localization)</li> </ul> <p><b>Restore media: OSDVD:</b></p> <ul style="list-style-type: none"> <li>• Microsoft Windows 8.1 64-bit (for service only)</li> <li>• Microsoft Windows 8.1 Country Specific 64-Bit (for service only)</li> <li>• Microsoft Windows 8.1 Emerging Market 64-Bit (for service only)</li> <li>• Microsoft Windows 8.1 Professional 64-bit (only available and required with Windows 8.1 downgrade operating system except in the People's Republic of China and Asia)</li> <li>• Microsoft Windows 7 Professional 64-bit (available with any Windows 7 Professional or Windows 8.1 Professional downgrade localization except in the People's Republic of China and Asia)</li> </ul> <p><b>Certified:</b> Microsoft WHQL</p> <p><b>Web-only support:</b></p> <ul style="list-style-type: none"> <li>• Microsoft Windows 8.1 Enterprise 64-bit</li> <li>• Microsoft Windows 7 Enterprise 64- and 32-bit</li> <li>• Microsoft Windows 7 Professional 32-bit</li> </ul>
<b>Serviceability</b>	<b>End user replaceable parts:</b> AC adapter

## 2 External component identification

### Display



Item	Component	Description
(1)	WLAN antennas (2)*	Send and receive wireless signals.
(2)	WWAN antennas (2, select models only)*	Send and receive wireless signals to communicate with WWANs.
(3)	Webcam light	On: The webcam is in use.
(4)	Webcam (front)	Records video and captures photographs. Some models may allow you to video conference and chat online using streaming video.  For information on using the webcam, access HP Support Assistant. To access HP Support Assistant, from the Start screen, select the <b>HP Support Assistant app</b> .
(5)	Ambient light sensor	Automatically adjusts the display brightness based on the lighting conditions in your environment.
(6)	Internal microphones (2)	Records sound.
(7)	Speakers (2)	Produce sound.

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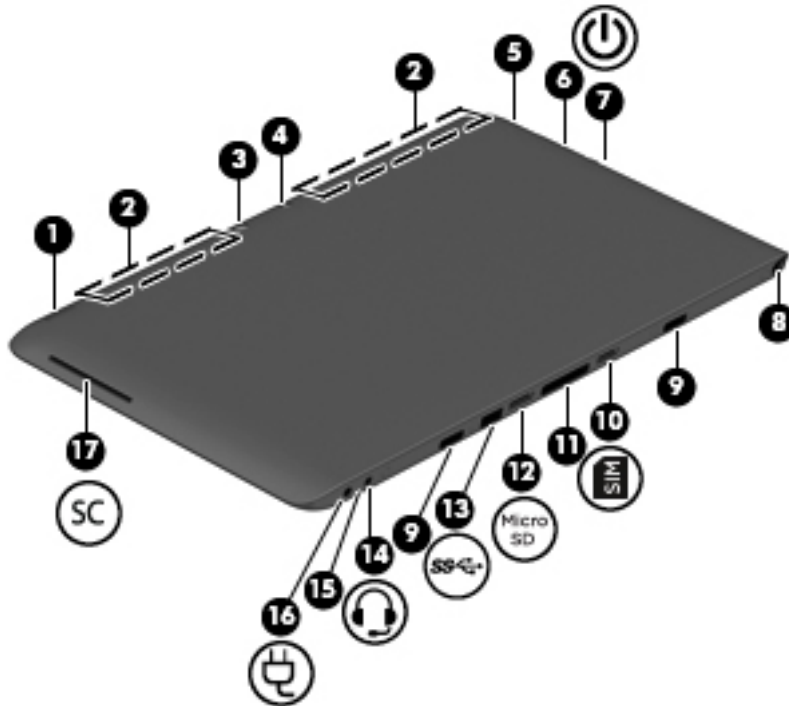
Item	Component	Description
(8)	Windows button	Returns you to the Start screen from an open app or the Windows desktop.  <b>NOTE:</b> Pressing the Windows button again returns you to the previous screen.

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\*The antenna is not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antenna free from obstructions. For wireless regulatory notices, see the section of the *Regulatory, Safety, and Environmental Notices* that applies to your country or region.

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# Tablet edge components



Item	Component	Description
(1)	Fingerprint reader (select models only)	Allows a fingerprint logon to Windows, instead of a password logon.
(2)	Vents (2)	Enable airflow to cool internal components.  <b>NOTE:</b> The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.
(3)	Webcam (rear)	Records video and captures photographs. Some models may allow you to video conference and chat online using streaming video.  For information on using the webcam, access HP Support Assistant. To access HP Support Assistant, from the Start screen, select the <b>HP Support Assistant app</b> .
(4)	Camera flash	Provides light for rear webcam photos.
(5)	Autorotate button	When the tablet is on, press the autorotate button to lock the autorotate feature of the display. To unlock the autorotate feature, press the button again.  – or –  Swipe from the right edge of the touch screen to display the charms, tap Settings, tap the screen icon, and then tap the autorotate icon. To unlock the autorotate feature, tap the autorotate icon again.

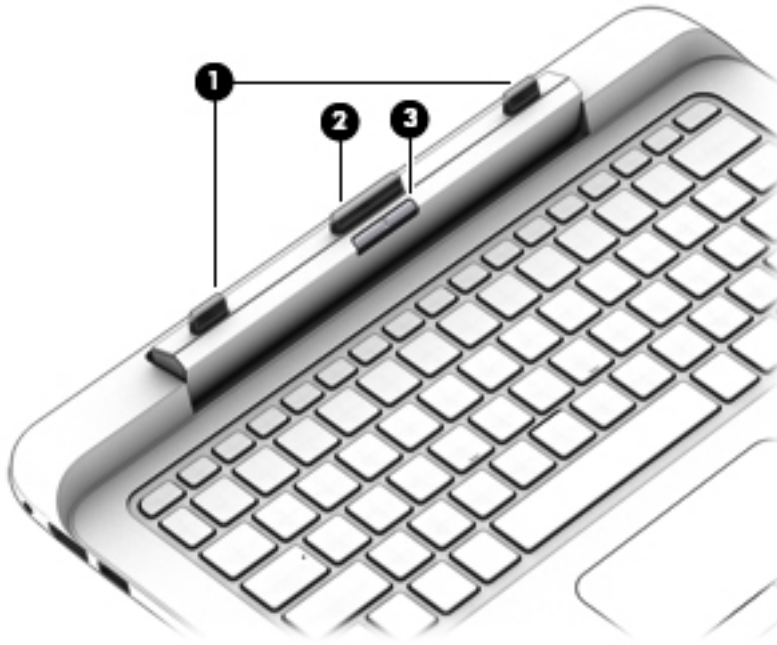


Item	Component	Description
(6)	Volume button	<p>Controls speaker volume on the tablet.</p> <ul style="list-style-type: none"> <li>To increase speaker volume, press the + edge of the button.</li> <li>To decrease speaker volume, press the – edge of the button.</li> </ul>
(7)	Power switch	<ul style="list-style-type: none"> <li>When the computer is off, slide the switch to turn on the tablet.</li> <li>When the computer is on, slide the switch to turn off the computer.</li> <li>When the computer is in the Sleep state or Hibernation, slide the switch briefly to exit Sleep or Hibernation.</li> </ul> <p><b>NOTE:</b> If the computer has stopped responding and Microsoft Windows shutdown procedures are ineffective, slide and hold the power switch for at least 5 seconds to turn off the tablet.</p> <p>Swipe from the right edge of the TouchPad or TouchScreen to display the charms, tap Search, and then tap the search box. In the search box, type <code>power</code>, tap <b>Power and sleep settings</b>, and then tap <b>Power and sleep</b> from the list of applications.</p> <p>– or –</p> <p>To learn more about your power settings, see the 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>
(8)	Pen holder (select models only)	Holds the digital pen.
(9)	Alignment post connectors (2)	Align and attach the tablet to the keyboard base.
(10)	Micro SIM slot	Supports a micro wireless subscriber identity module (SIM).
(11)	Docking port	Connects the tablet to the keyboard base.
(12)	Micro memory card reader	Reads optional micro memory cards that store, manage, share, or access information.
(13)	USB 3.0 port	Connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub.

Item	Component	Description
(14)	Audio-out (headphone)/Audio-in (microphone) jack	<p>Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable.</p> <p><b>WARNING!</b> To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, see the <i>Regulatory, Safety and Environmental Notices</i>.</p> <p><b>NOTE:</b> When a device is connected to the jack, the computer speakers are disabled.</p> <p><b>NOTE:</b> Be sure that the device cable has 4-conductor connector that supports both audio-out (headphone) and audio-in (microphone).</p> <p><b>NOTE:</b> Stand-alone microphones and headphones with separate microphone jacks are not supported.</p>
(15)	AC adapter/Battery light	<ul style="list-style-type: none"> <li>• White: The computer is connected to external power and the battery is charged from 90 to 99 percent.</li> <li>• Amber: The computer is connected to external power and the battery is charged from 0 to 90 percent.</li> <li>• Blinking amber: A battery that is the only available power source has reached a low battery level. When the battery reaches a critical battery level, the battery light begins blinking rapidly.</li> <li>• Off: The battery is fully charged.</li> </ul>
(16)	Power connector	Connects an AC adapter.
(17)	Smart card reader	Supports optional smart cards.

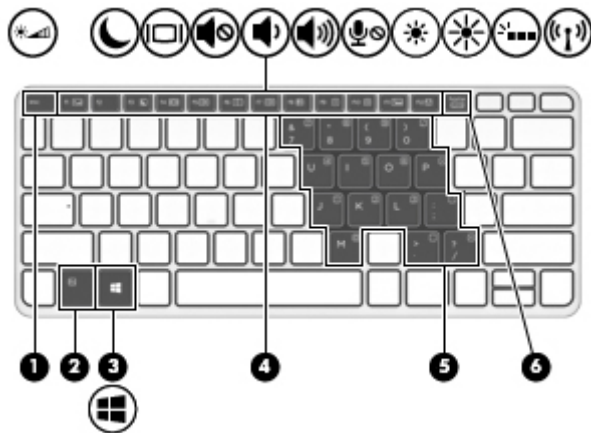
# Keyboard base

## Top



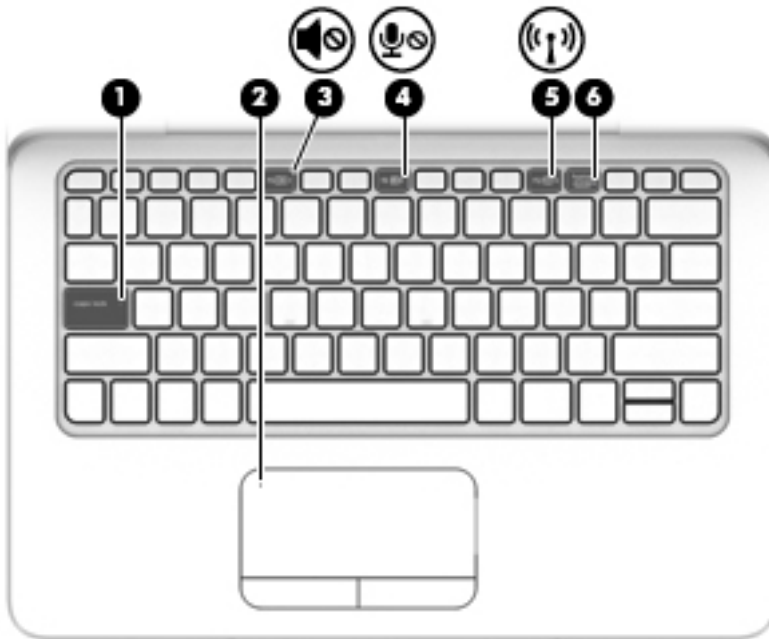
Item	Component	Description
(1)	Alignment posts (2)	Align and attach the tablet to the keyboard base.
(2)	Docking connector	Connects the tablet to the keyboard base. <b>CAUTION:</b> To prevent damage to the docking connector, do not touch the connector when the tablet is detached from the keyboard base.
(3)	Release latch	Releases the tablet from the keyboard base. To release the tablet, press the release latch.

## Keys



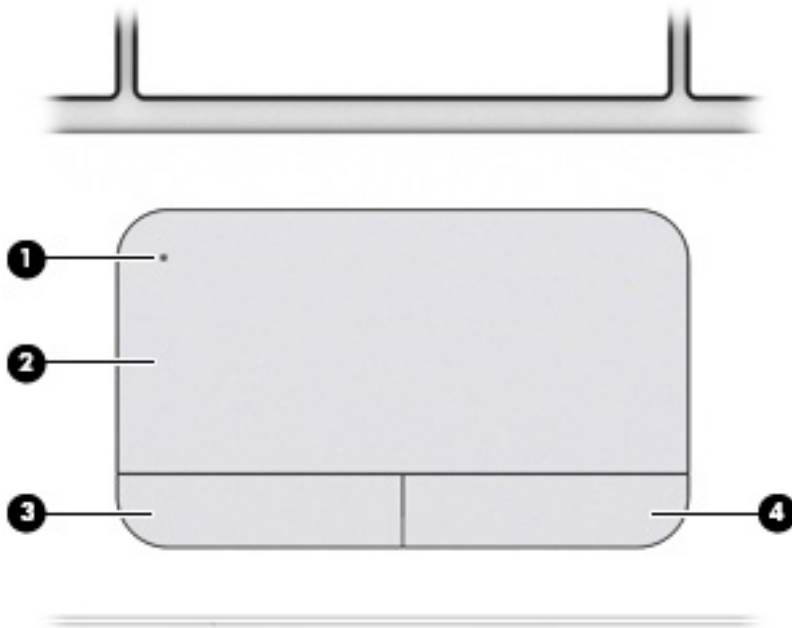
Item	Component	Description
(1)	esc key	Displays system information when pressed in combination with the <b>fn</b> key.
(2)	fn key	Executes frequently used system functions when pressed in combination with a function key, the <b>num lk</b> key, or the <b>esc</b> key.
(3)	Windows key	Returns you to the Start screen from an open app or the Windows desktop.  <b>NOTE:</b> Pressing the Windows key again returns you to the previous screen.
(4)	Function keys	Execute frequently used system functions.  <b>NOTE:</b> Function keys do not display or function from the on-screen tablet keyboard.
(5)	Embedded numeric keypad	When the keypad is turned on, it can be used like an external numeric keypad. Each key on the keypad performs the function indicated by the icon in the upper-right corner of the key.
(6)	num lk key	Turns the embedded numeric keypad on and off when pressed in combination with the <b>fn</b> key.

## Lights



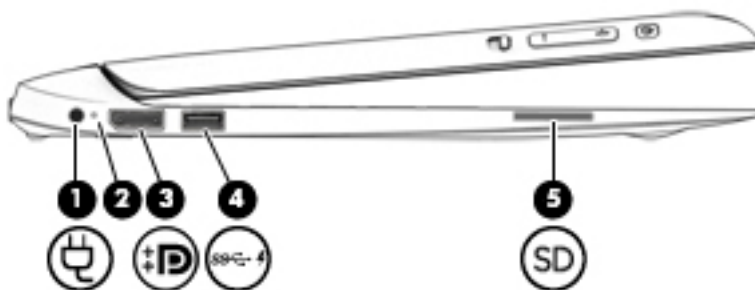
Item	Component	Description
(1)	Caps lock light	On: Caps lock is on, which switches the keys to all capital letters.
(2)	TouchPad light	<ul style="list-style-type: none"> <li>Amber: The TouchPad is off.</li> <li>Off: The TouchPad is on.</li> </ul>
(3)	Mute light	<ul style="list-style-type: none"> <li>Amber: Computer sound is off.</li> <li>Off: Computer sound is on.</li> </ul>
(4)	Microphone mute light	<ul style="list-style-type: none"> <li>Amber: microphone sound is off.</li> <li>Off: microphone sound is on.</li> </ul>
(5)	Wireless light	<ul style="list-style-type: none"> <li>Off: An integrated wireless device, such as a WLAN device and/or a Bluetooth device, is on.</li> <li>Amber: All wireless devices are off.</li> </ul>
(6)	Num lock light	On: Num lock is on.

## TouchPad



Item	Component	Description
(1)	TouchPad on/off button	Turns the TouchPad on and off.
(2)	TouchPad zone	Reads your finger gesture to move the pointer or activate items on the screen.
(3)	Left TouchPad button	Functions like the left button of an external mouse.
(4)	Right TouchPad button	Functions like the right button on an external mouse.

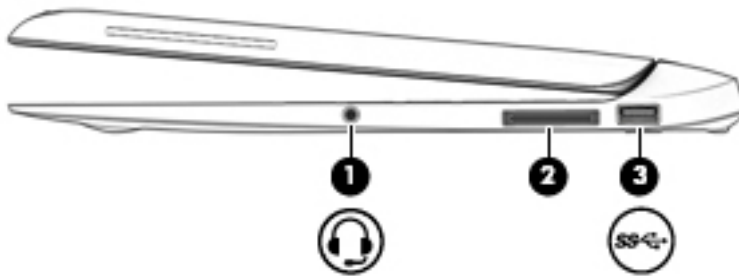
## Left side



Item	Component	Description
(1)	Power connector	Connects an AC adapter.

Item	Component	Description
(2)	AC adapter/Battery light	<ul style="list-style-type: none"> <li>White: The computer is connected to external power and the battery is charged from 90 to 99 percent.</li> <li>Amber: The computer is connected to external power and the battery is charged from 0 to 90 percent.</li> <li>Blinking amber: A battery that is the only available power source has reached a low battery level. When the battery reaches a critical battery level, the battery light begins blinking rapidly.</li> <li>Off: The battery is fully charged.</li> </ul>
(3)	DisplayPort	Connects an optional digital display device, such as a high-performance monitor or projector.
(4)	USB 3.0 charging (powered) port	<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>
(5)	Memory card reader	Reads data from and writes data to memory cards such as SD.

## Right side



Item	Component	Description
(1)	Audio-out (headphone)/Audio-in (microphone) jack	<p>Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable.</p> <p><b>WARNING!</b> To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, see the <i>Regulatory, Safety and Environmental Notices</i></p> <p><b>NOTE:</b> When a device is connected to the jack, the computer speakers are disabled.</p> <p><b>NOTE:</b> Be sure that the device cable has 4-conductor connector that supports both audio-out (headphone) and audio-in (microphone).</p> <p><b>NOTE:</b> Stand-alone microphones and headphones with separate microphone jacks are not supported.</p>
(2)	Docking connector	<p>Connects the tablet to the keyboard base.</p> <p><b>CAUTION:</b> To prevent damage to the docking connector, do not touch the connector when the tablet is detached from the keyboard base.</p>
(3)	USB 3.0 port	Connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub.

## Rear




Item	Component	Description
(1)	RJ-45 (network) jack/lights	<p>Connects a network cable.</p> <ul style="list-style-type: none"> <li>Green (left): The network is connected.</li> <li>Amber (right): Activity is occurring on the network.</li> </ul>
(2)	External monitor port	Connects an external VGA monitor or projector.



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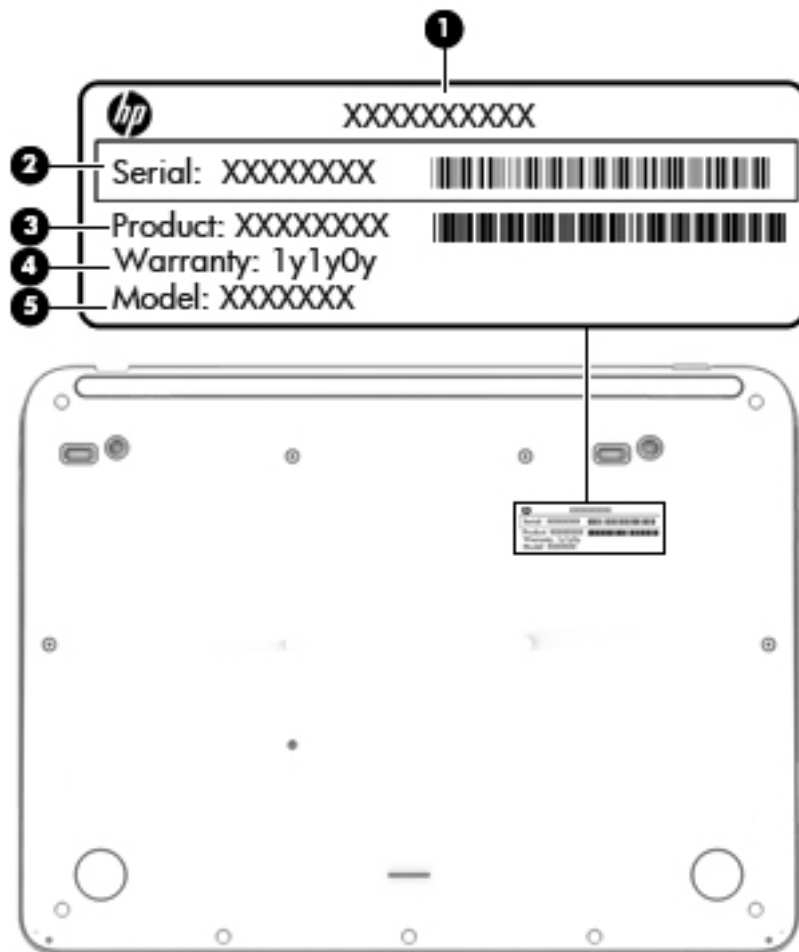
## 3 Illustrated parts catalog

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

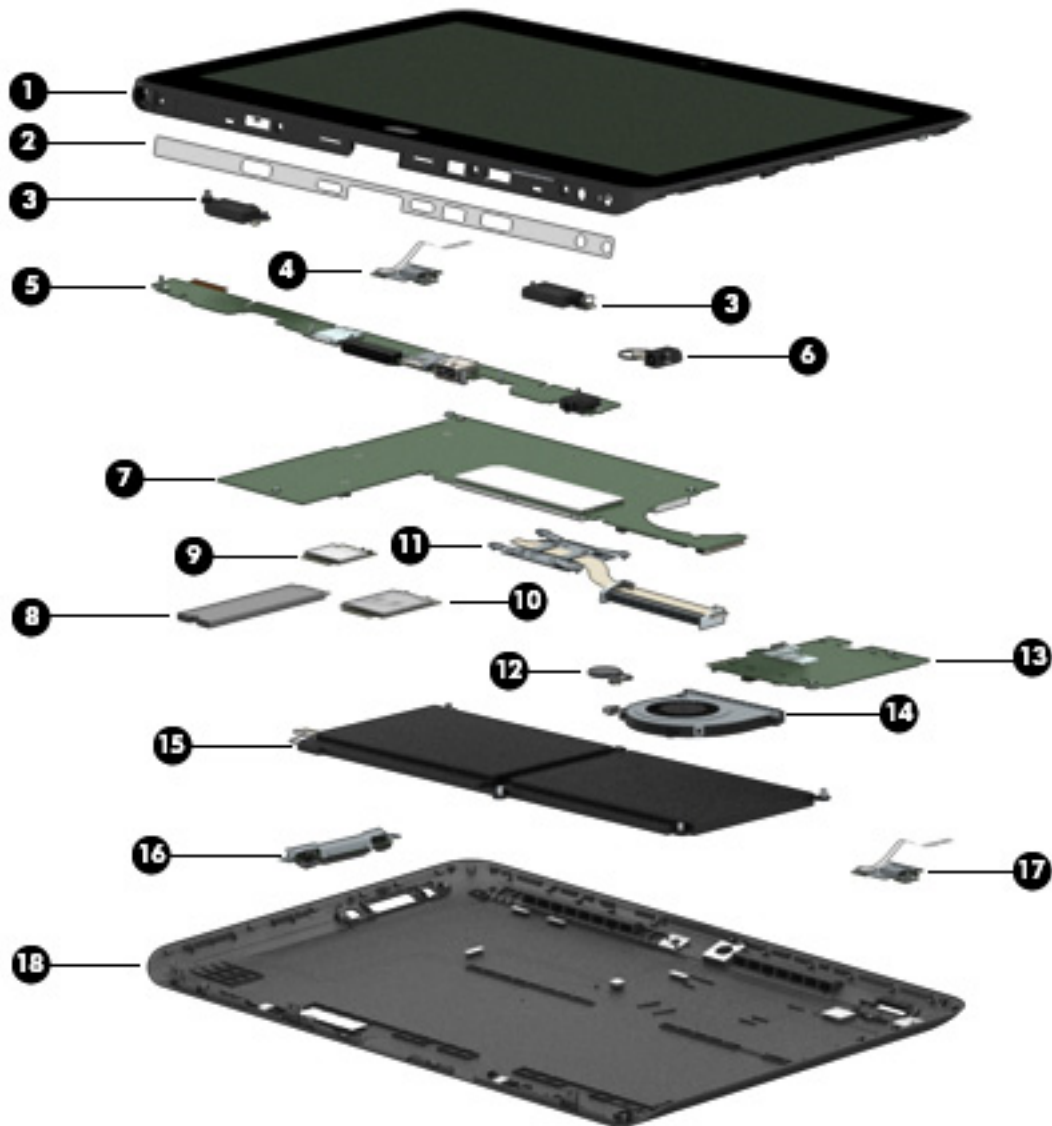
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### Locating the serial number, product number, and model number

The serial number and product number are located on the bottom of the tablet. You may need the information when you travel internationally or when you contact support.



## Tablet major components



Item	Component	Spare part number
(1)	<b>12.5-in, LED, TouchScreen display panel assembly</b> (includes the ambient light sensor board and cable, display bezel, display panel and display panel cable, front- and rear-facing webcams and cables, home button board bracket, tablet frame, TouchScreen glass, and WLAN antenna)	
	FHD display panel assembly equipped with a digitizer and WWAN antenna for use in North America	781426-001
	FHD display panel assembly equipped with a digitizer and WWAN antenna for worldwide use	781427-001
	FHD display panel assembly equipped with WWAN antenna for use in North America	781429-001
	FHD display panel assembly equipped with WWAN antenna for worldwide use	781430-001

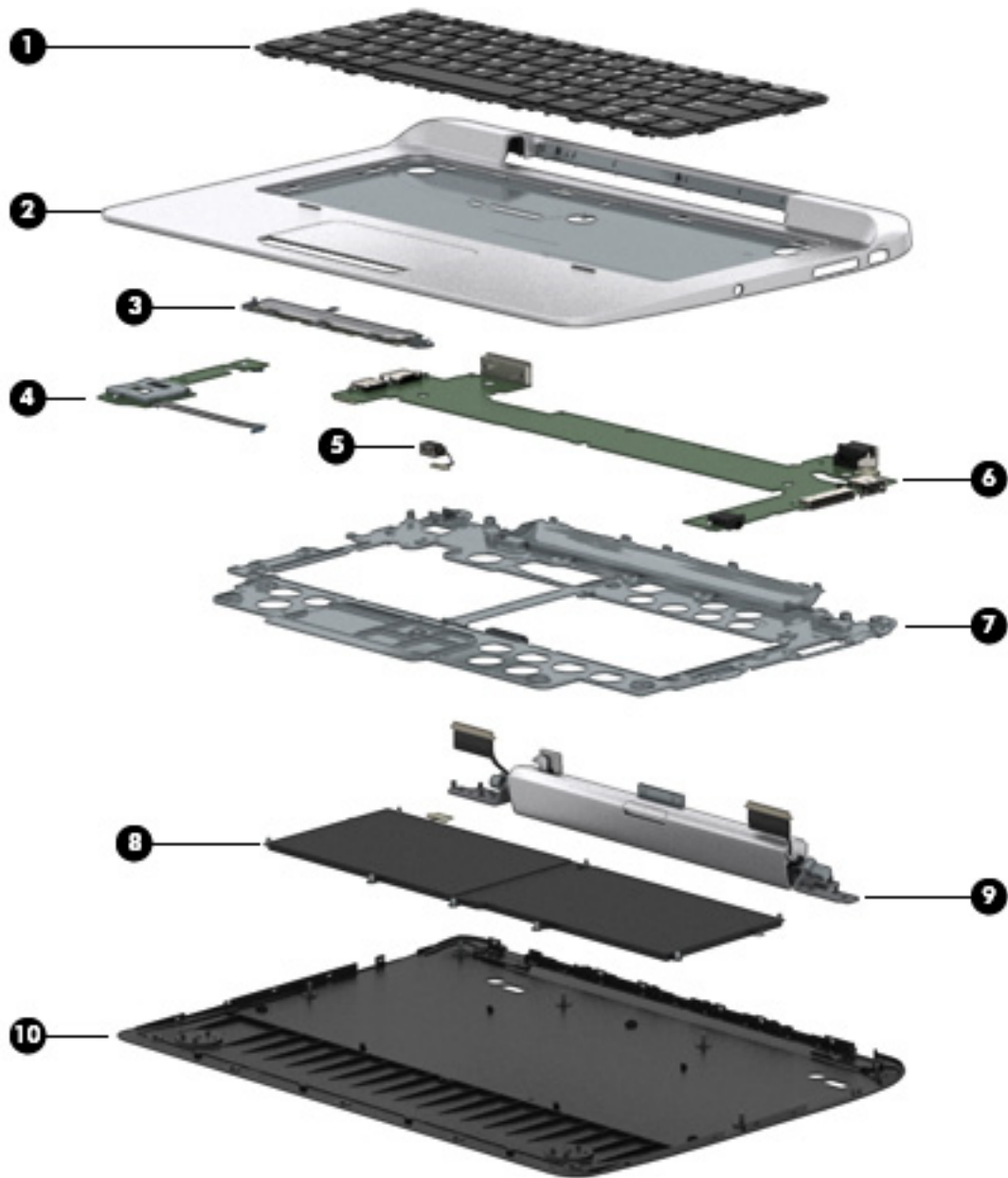
<b>Item</b>	<b>Component</b>	<b>Spare part number</b>
	FHD display panel assembly equipped with a digitizer for worldwide use	778484-001
	FHD display panel assembly for worldwide use	781428-001
	HD display panel assembly equipped with a digitizer and WWAN antenna for use in North America	781421-001
	HD display panel assembly equipped with a digitizer and WWAN antenna for worldwide use	781422-001
	HD display panel assembly equipped with WWAN antenna for use in North America	781424-001
	HD display panel assembly equipped with WWAN antenna for worldwide use	781425-001
	HD display panel assembly equipped with a digitizer for worldwide use	773214-001
	HD display panel assembly for worldwide use	781423-001
<b>(2)</b>	<b>I/O bezel</b> (includes double-sided adhesive)	
	For use in Australia and Asia Pacific countries and regions	789523-001
	For use in Europe, the Middle East, and Africa	789522-001
	For use in India	789525-001
	For use in North America	773218-001
	For use in the People's Republic of China	789524-001
	For use in South Korea	789526-001
	For use in Taiwan on computer models using a 65-W AC adapter	789527-001
	For use in Taiwan on computer models using a 45-W AC adapter	789528-001
<b>(3)</b>	<b>Speaker Kit</b> (includes left and right speakers and cables)	766617-001
<b>(4)</b>	<b>Home button board</b> (includes bracket and cable)	766620-001
<b>(5)</b>	<b>Tablet I/O board</b> (includes 2 cables, audio-in/audio-out jack, docking port, micro memory card reader, micro SIM slot, power connector, and USB port)	773223-001
<b>(6)</b>	<b>Power connector cable</b>	766608-001
<b>(7)</b>	<b>System board</b> (includes a graphics subsystem with UMA memory and replacement thermal material):	
	Equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and the Windows 8 Professional operating system	766626-601
	Equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and the Windows 8 Standard operating system	766626-501
	Equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and a non-Windows 8 operating system	766626-001

<b>Item</b>	<b>Component</b>	<b>Spare part number</b>
	Equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and the Windows 8 Professional operating system	766625-601
	Equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and the Windows 8 Standard operating system	766625-501
	Equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and a non-Windows 8 operating system	766625-001
	Equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and the Windows 8 Professional operating system	766624-601
	Equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and the Windows 8 Standard operating system	766624-501
	Equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and a non-Windows 8 operating system	766624-001
	Equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and the Windows 8 Professional operating system	766623-601
	Equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and the Windows 8 Standard operating system	766623-501
	Equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and a non-Windows 8 operating system	766623-001
	Equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and the Windows 8 Professional operating system	766622-601
	Equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and the Windows 8 Standard operating system	766622-501
	Equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and a non-Windows 8 operating system	766622-001
	Equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and the Windows 8 Professional operating system	766621-601
	Equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and the Windows 8 Standard operating system	766621-501
	Equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and a non-Windows 8 operating system	766621-001

<b>Item</b>	<b>Component</b>	<b>Spare part number</b>
	Equipped with an Intel Celeron 3560Y 1.20-GHz processor (2.00-MB L2 cache, 11.5 W), and the Windows 8 Professional operating system	766628-601
	Equipped with an Intel Celeron 3560Y 1.20-GHz processor (2.00-MB L2 cache, 11.5 W), and the Windows 8 Standard operating system	766628-501
	Equipped with an Intel Celeron 3560Y 1.20-GHz processor (2.00-MB L2 cache, 11.5 W), and a non-Windows 8 operating system	766628-001
	Equipped with an Intel Celeron 2961Y 1.10-GHz processor (2.00-MB L2 cache, 11.5 W), 4.0-GB of system memory, and the Windows 8 Professional operating system	766627-601
	Equipped with an Intel Celeron 2961Y 1.10-GHz processor (2.00-MB L2 cache, 11.5 W), 4.0-GB of system memory, and the Windows 8 Standard operating system	766627-501
	Equipped with an Intel Celeron 2961Y 1.10-GHz processor (2.00-MB L2 cache, 11.5 W), 4.0-GB of system memory, and a non-Windows 8 operating system	766627-001
<b>(8)</b>	<b>Solid-state drive:</b>	
	256-GB, M2, SATA-3, solid-state drive	766636-001
	256-GB, M2, SATA-3, SED, OPAL2, solid-state drive	766637-001
	180-GB, M2, SATA-3, solid-state drive	766634-001
	180-GB, M2, SATA-3, SED, OPAL1, solid-state drive	766635-001
	128-GB, M2, SATA-3, solid-state drive	766633-001
	64-GB, M2, SATA-3, solid-state drive	766632-001
<b>(9)</b>	<b>WLAN module:</b>	
	Broadcom BCM43142 802.11bgn 1×1 Wi-Fi + Bluetooth 4.0 M.2 Combo Adapter	753078-005
	Intel Dual Band Wireless-AC 3160 802.11ac 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter	751416-005
	Intel Dual Band Wireless-AC 7260 802.11ac 2×2 Wi-Fi + Bluetooth 4.0 Combo Adapter	710663-005
	Intel Dual Band Wireless-AC 7260 802.11ac 2×2 Wi-Fi + Bluetooth 4.0 Combo Adapter	756763-005
	Intel Dual Band Wireless-N 7260AN 802.11abgn 2×2 Wi-Fi + Bluetooth 4.0 Combo Adapter for use only in India	747833-005
	Intel Dual Band Wireless-N 7260AN 802.11abgn 2×2 Wi-Fi + Bluetooth 4.0 Combo Adapter for use in all countries and regions except India	717379-005
<b>(10)</b>	<b>WWAN module:</b>	
	HP hs3110 HSPA+ Mobile Broadband Module	748599-005
	HP lt4112 LTE/HSPA+ Mobile Broadband Module	740011-005
	HP lt4211 LTE/EV-DO/HSPA+ Gobi 4G Module	748021-005

<b>Item</b>	<b>Component</b>	<b>Spare part number</b>
(11)	<b>Heat sink</b> (includes 4 captive screws [secured by C-clips] and replacement thermal material)	766619-001
(12)	<b>RTC battery</b> (includes cable and double-sided adhesive)	766629-001
(13)	<b>Fan</b> (includes cable)	766618-001
(14)	<b>Card reader board</b> (includes cable)	766638-001
(15)	<b>4-cell, 29-WHr, 1.98-AHr, Li-ion battery</b> (includes cable)	753703-005
(16)	<b>Button board</b> (includes cable, power button, volume control buttons, and orientation switch)	766613-001
(17)	<b>Fingerprint reader board</b> (includes bracket and cable)	766612-001
(18)	<b>Back cover:</b>	
	For use on tablet models equipped with a fingerprint reader	766611-001
	For use on tablet models not equipped with a fingerprint reader	778695-001

## Keyboard major components



Item	Component	Spare part number
(1)	<b>Keyboard</b> with backlight and pointing stick (includes backlight, keyboard, and pointing stick cables)	
	For use in Belgium	766641-A41
	For use in Brazil	766641-201
	For use in Bulgaria	766641-261
	For use in Canada	766641-DB1



<b>Item</b>	<b>Component</b>	<b>Spare part number</b>
	For use in the Czech Republic and Slovakia	766641-FL1
	For use in Denmark	766641-081
	For use in France	766641-051
	For use in Germany	766641-041
	For use in Greece	766641-151
	For use in Hungary	766641-211
	For use in Iceland	766641-DD1
	For use in India	766641-D61
	For use in Israel	766641-BB1
	For use in Italy	766641-061
	For use in Japan	766641-291
	For use in Latin America	766641-161
	For use in the Netherlands	766641-B31
	For use in Northwest Africa	766641-FP1
	For use in Norway	766641-091
	For use in Portugal	766641-131
	For use in Romania	766641-271
	For use in Russia	766641-251
	For use in Saudi Arabia	766641-171
	For use in Slovenia	766641-BA1
	For use in South Korea	766641-AD1
	For use in Spain	766641-071
	For use in Sweden and Finland	766641-B71
	For use in Switzerland	766641-BG1
	For use in Taiwan	766641-AB1
	For use in Thailand	766641-281
	For use in Turkey	766641-141
	For use in the United Kingdom and Singapore	766641-031
	For use in the United States	766641-001
	Keyboard with pointing stick (includes keyboard and pointing stick cables)	
	For use in Belgium	766640-A41
	For use in Brazil	766640-201

<b>Item</b>	<b>Component</b>	<b>Spare part number</b>
	For use in Bulgaria	766640-261
	For use in Canada	766640-DB1
	For use in the Czech Republic and Slovakia	766640-FL1
	For use in Denmark	766640-081
	For use in France	766640-051
	For use in Germany	766640-041
	For use in Greece	766640-151
	For use in Hungary	766640-211
	For use in Iceland	766640-DD1
	For use in India	766640-D61
	For use in Israel	766640-BB1
	For use in Italy	766640-061
	For use in Japan	766640-291
	For use in Latin America	766640-161
	For use in the Netherlands	766640-B31
	For use in Northwest Africa	766640-FP1
	For use in Norway	766640-091
	For use in Portugal	766640-131
	For use in Romania	766640-271
	For use in Russia	766640-251
	For use in Saudi Arabia	766640-171
	For use in Slovenia	766640-BA1
	For use in South Korea	766640-AD1
	For use in Spain	766640-071
	For use in Sweden and Finland	766640-B71
	For use in Switzerland	766640-BG1
	For use in Taiwan	766640-AB1
	For use in Thailand	766640-281
	For use in Turkey	766640-141
	For use in the United Kingdom and Singapore	766640-031
	For use in the United States	766640-001
<b>(2)</b>	<b>Top cover</b> (includes TouchPad)	76docking board-001

Item	Component	Spare part number
(3)	<b>TouchPad button board</b> (includes cable)	778712-001
(4)	<b>Memory card reader board</b> (includes 2 cables)	766606-001
(5)	<b>Power connector cable</b>	766608-001
(6)	<b>Keyboard base I/O board</b> (includes 2 cables, audio-in/audio-out jack, DisplayPort, docking connector, power connector, and USB ports)	766607-001
(7)	<b>Keyboard plate</b>	766605-001
(8)	<b>2-cell, 25-WHr, 3.38-AHr, Li-ion battery</b> (includes cable)	753704-005
(9)	<b>Hinge assembly</b> (includes 2 alignment posts, 2 cables, docking connector, and release latch)	766610-001
(10)	<b>Bottom cover</b> (includes 2 round rubber feet and one oblong rubber foot)	766602-001

## Miscellaneous parts

Component	Spare part number
<b>AC adapter:</b>	
65-W HP Smart adapter for use in all countries and regions (EM, RC/V, 4.5-mm)	693710-001
65-W HP Smart adapter for use in all countries and regions (EM, non-PFC, 4.5-mm)	714657-001
65-W HP Smart adapter for use in all countries and regions (non-PFC, 4.5-mm)	693711-001
65-W HP Smart travel adapter for use in all countries and regions (non-PFC, 4.5-mm)	693716-001
45-W HP Smart adapter for use only in Taiwan (RC, non-PFC, 4.5-mm)	741727-001
45-W HP Smart adapter for use only in Taiwan (RC, non-PFC, 4.5-mm, 2-prong)	742436-001
<b>Backpack:</b>	
HP business backpack	718548-001
HP essential backpack	679923-001
HP slim UltraBook backpack	747079-001
<b>Bracket Kit</b> (includes docking connector bracket and USB port bracket)	766615-001
<b>Cable Kit</b> (includes TouchScreen board cable)	774623-001
<b>Carrying case:</b>	
HP essential top load carrying case	679921-001
HP slim UltraBook top load carrying case	747078-001
<b>HP 2013 UltraSlim Docking Station</b>	732252-001
<b>HP digital pen</b>	778485-001
<b>HP Mobile Connect SIM</b>	714749-001

<b>Component</b>	<b>Spare part number</b>
<b>HP RJ45-to-VGA adapter</b>	767076-001
<b>Mouse:</b>	
HP USB laser mouse	674318-001
HP USB optical travel mouse	434594-001
<b>Plastics Kit</b> (includes fingerprint reader bezel, orientation switch actuator, power button actuator, and volume button actuator)	773224-001
<b>Power cord</b> (3-pin, black, 1.83-m):	
For use in Argentina	755530-D01
For use in Australia	755530-011
For use in Brazil	755530-202
For use in Denmark	755530-081
For use in Europe	755530-021
For use in India	755530-D61
For use in Israel	755530-BB1
For use in Italy	755530-061
For use in Japan	755530-291
For use in North America	755530-001
For use in the People's Republic of China	755530-AA1
For use in South Africa	755530-AR1
For use in South Korea	755530-AD1
For use in Switzerland	755530-111
For use in Taiwan	755530-AB1
For use in Thailand	755530-201
For use in the United Kingdom and Singapore	755530-031
<b>Power cord</b> (3-pin, black, 1.83-m):	
For use in Argentina	490371-D01
For use in Australia	490371-011
For use in Brazil	490371-202
For use in Denmark	490371-081
For use in Europe	490371-021
For use in Israel	490371-BB1
For use in Japan	490371-291
For use in North America	490371-001

<b>Component</b>	<b>Spare part number</b>
For use in the People's Republic of China	490371-AA1
For use in South Africa	490371-AR1
For use in Switzerland	490371-111
For use in Taiwan	490371-AB1
For use in Thailand	490371-201
For use in the United Kingdom and Singapore	490371-031
<b>Power cord</b> halogen free for use in Japan (3-pin, black, 1.83-m)	753361-001
<b>Screw Kit</b>	766604-001
<b>Travel keyboard:</b>	
For use in Belgium	784194-A41
For use in Brazil	784194-201
For use in Bulgaria	784194-261
For use in the Czech Republic and Slovakia	784194-FL1
For use in Denmark	784194-081
For use in France	784194-051
For use in Germany	784194-041
For use in Greece	784194-151
For use in Hungary	784194-211
For use in Iceland	784194-DD1
For use in India	784194-D61
For use in Israel	784194-BB1
For use in Italy	784194-061
For use in Japan	784194-291
For use in Latin America	784194-161
For use in the Netherlands	784194-B31
For use in Northwest Africa	784194-FP1
For use in Norway	784194-091
For use in Portugal	784194-131
For use in Romania	784194-271
For use in Russia	784194-251
For use in Saudi Arabia	784194-171
For use in Slovenia	784194-BA1

<b>Component</b>	<b>Spare part number</b>
For use in South Korea	784194-AD1
For use in Spain	784194-071
For use in Sweden and Finland	784194-B71
For use in Switzerland	784194-BG1
For use in Taiwan	784194-AB1
For use in Thailand	784194-281
For use in Turkey	784194-141
For use in the United Kingdom and Singapore	784194-031
For use in the United States	784194-001

## Sequential part number listing

Spare part number	Description
434594-001	HP USB optical travel mouse
490371-001	Power cord for use in North America (3-pin, black, 1.83-m)
490371-011	Power cord for use in Australia (3-pin, black, 1.83-m)
490371-021	Power cord for use in Europe (3-pin, black, 1.83-m)
490371-031	Power cord for use in the United Kingdom and Singapore (3-pin, black, 1.83-m)
490371-081	Power cord for use in Denmark (3-pin, black, 1.83-m)
490371-111	Power cord for use in Switzerland (3-pin, black, 1.83-m)
490371-201	Power cord for use in Thailand (3-pin, black, 1.83-m)
490371-202	Power cord for use in Brazil (3-pin, black, 1.83-m)
490371-291	Power cord for use in Japan (3-pin, black, 1.83-m)
490371-AA1	Power cord for use in the People's Republic of China (3-pin, black, 1.83-m)
490371-AB1	Power cord for use in Taiwan (3-pin, black, 1.83-m)
490371-AR1	Power cord for use in South Africa (3-pin, black, 1.83-m)
490371-BB1	Power cord for use in Israel (3-pin, black, 1.83-m)
490371-D01	Power cord for use in Argentina (3-pin, black, 1.83-m)
674318-001	HP USB laser mouse
679921-001	HP essential top load carrying case
679923-001	HP essential backpack
693710-001	65-W HP Smart adapter for use in all countries and regions (EM, RC/V, 4.5-mm)
693711-001	65-W HP Smart adapter for use in all countries and regions (non-PFC, 4.5-mm)
693716-001	65-W HP Smart travel adapter for use in all countries and regions (non-PFC, 4.5-mm)
710663-005	Intel Dual Band Wireless-AC 7260 802.11ac 2x2 WiFi + Bluetooth 4.0 Combo Adapter
714657-001	65-W HP Smart adapter for use in all countries and regions (EM, non-PFC, 4.5-mm)
714749-001	HP Mobile Connect SIM
717379-005	Intel Dual Band Wireless-N 7260AN 802.11abgn 2x2 WiFi + Bluetooth 4.0 Combo Adapter for use in all countries and regions except India
718548-001	HP business backpack
732252-001	HP 2013 UltraSlim Docking Station
740011-005	HP lt41 12 LTE/HPSA+ Mobile Broadband Module
741727-001	45-W HP Smart adapter for use only in Taiwan (RC, non-PFC, 4.5-mm)
742436-001	45-W HP Smart adapter for use only in Taiwan (RC, non-PFC, 4.5-mm, 2-prong)

<b>Spare part number</b>	<b>Description</b>
747078-001	HP slim UltraBook top load carrying case
747079-001	HP slim UltraBook backpack
747833-005	Intel Dual Band Wireless-N 7260AN 802.11abgn 2x2 WiFi + Bluetooth 4.0 Combo Adapter for use only in India
748021-005	HP lt4211 LTE/EV-DO/HSPA+ Gobi 4G Module
748599-005	HP hs3110 HSPA+ Mobile Broadband Module
751416-005	Intel Dual Band Wireless-AC 3160 802.11ac 1x1 WiFi + Bluetooth 4.0 Combo Adapter
753078-005	Broadcom BCM43142 802.11bgn 1x1 Wi-Fi + Bluetooth 4.0 M.2 Combo Adapter
753361-001	Power cord halogen free for use in Japan (3-pin, black, 1.83-m)
753703-005	4-cell, 29-WHr, 1.98-AHr, Li-ion battery for use only on the tablet
753704-005	2-cell, 25-WHr, 3.38-AHr, Li-ion battery for use only on the keyboard
755530-001	Power cord for use in North America (3-pin, black, 1.00-m)
755530-011	Power cord for use in Australia (3-pin, black, 1.00-m)
755530-021	Power cord for use in Europe (3-pin, black, 1.00-m)
755530-031	Power cord for use in the United Kingdom and Singapore (3-pin, black, 1.00-m)
755530-061	Power cord for use in Italy (3-pin, black, 1.00-m)
755530-081	Power cord for use in Denmark (3-pin, black, 1.00-m)
755530-111	Power cord for use in Switzerland (3-pin, black, 1.00-m)
755530-201	Power cord for use in Thailand (3-pin, black, 1.00-m)
755530-202	Power cord for use in Brazil (3-pin, black, 1.00-m)
755530-291	Power cord for use in Japan (3-pin, black, 1.00-m)
755530-AA1	Power cord for use in the People's Republic of China (3-pin, black, 1.00-m)
755530-AB1	Power cord for use in Taiwan (3-pin, black, 1.00-m)
755530-AD1	Power cord for use in South Korea (3-pin, black, 1.00-m)
755530-AR1	Power cord for use in South Africa (3-pin, black, 1.00-m)
755530-BB1	Power cord for use in Israel (3-pin, black, 1.00-m)
755530-D01	Power cord for use in Argentina (3-pin, black, 1.00-m)
755530-D61	Power cord for use in India (3-pin, black, 1.00-m)
756763-005	Intel Dual Band Wireless-AC 7260 802.11ac 2x2 WiFi + Bluetooth 4.0 Combo Adapter
766602-001	Bottom cover (includes 2 round rubber feet and one oblong rubber foot)
766604-001	Screw Kit
766605-001	Keyboard plate
766606-001	Memory card reader board (includes 2 cables)



<b>Spare part number</b>	<b>Description</b>
766607-001	Keyboard base I/O board (includes 2 cables, audio-in/audio-out jack, DisplayPort, docking connector, power connector, and USB ports)
766608-001	Power connector cable
766609-001	Top cover (includes TouchPad)
766610-001	Hinge assembly (includes 2 alignment posts, 2 cables, docking connector, and release latch)
766611-001	Back cover for use on tablet models equipped with a fingerprint reader
766612-001	Fingerprint reader board (includes bracket and cable)
766613-001	Button board (includes cable, power button, volume control buttons, and orientation switch)
766615-001	Bracket Kit (includes docking connector bracket and USB port bracket)
766617-001	Speaker Kit (includes left and right speakers and cables)
766618-001	Fan (includes cable)
766619-001	Heat sink (includes 4 captive screws [secured by C-clips] and replacement thermal material)
766620-001	Home button board (includes bracket and cable)
766621-001	System board equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and a non-Windows 8 operating system (includes replacement thermal material)
766621-501	System board equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and the Windows 8 Standard operating system (includes replacement thermal material)
766621-601	System board equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and the Windows 8 Professional operating system (includes replacement thermal material)
766622-001	System board equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 8.0-GB of system memory, and a non-Windows 8 operating system (includes replacement thermal material)
766622-501	System board equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 8.0-GB of system memory, and the Windows 8 Standard operating system (includes replacement thermal material)
766622-601	System board equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 8.0-GB of system memory, and the Windows 8 Professional operating system (includes replacement thermal material)
766623-001	System board equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and a non-Windows 8 operating system (includes replacement thermal material)
766623-501	System board equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and the Windows 8 Standard operating system (includes replacement thermal material)

<b>Spare part number</b>	<b>Description</b>
766623-601	System board equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and the Windows 8 Professional operating system (includes replacement thermal material)
766624-001	System board equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 8.0-GB of system memory, and a non-Windows 8 operating system (includes replacement thermal material)
766624-501	System board equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 8.0-GB of system memory, and the Windows 8 Standard operating system (includes replacement thermal material)
766624-601	System board equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 8.0-GB of system memory, and the Windows 8 Professional operating system (includes replacement thermal material)
766625-001	System board equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and a non-Windows 8 operating system (includes replacement thermal material)
766625-501	System board equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and the Windows 8 Standard operating system (includes replacement thermal material)
766625-601	System board equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and the Windows 8 Professional operating system (includes replacement thermal material)
766626-001	System board equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 8.0-GB of system memory, and a non-Windows 8 operating system (includes replacement thermal material)
766626-501	System board equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 8.0-GB of system memory, and the Windows 8 Standard operating system (includes replacement thermal material)
766626-601	System board equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), a graphics subsystem with UMA memory, 8.0-GB of system memory, and the Windows 8 Professional operating system (includes replacement thermal material)
766627-001	System board equipped with an Intel Celeron 2961Y 1.10-GHz processor (2.00-MB L2 cache, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and a non-Windows 8 operating system (includes replacement thermal material)
766627-501	System board equipped with an Intel Celeron 2961Y 1.10-GHz processor (2.00-MB L2 cache, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and the Windows 8 Standard operating system (includes replacement thermal material)

<b>Spare part number</b>	<b>Description</b>
766627-601	System board equipped with an Intel Celeron 2961Y 1.10-GHz processor (2.00-MB L2 cache, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and the Windows 8 Professional operating system (includes replacement thermal material)
766628-001	System board equipped with an Intel Celeron 3560Y 1.20-GHz processor (2.00-MB L2 cache, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and a non-Windows 8 operating system (includes replacement thermal material)
766628-501	System board equipped with an Intel Celeron 3560Y 1.20-GHz processor (2.00-MB L2 cache, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and the Windows 8 Standard operating system (includes replacement thermal material)
766628-601	System board equipped with an Intel Celeron 3560Y 1.20-GHz processor (2.00-MB L2 cache, 11.5 W), a graphics subsystem with UMA memory, 4.0-GB of system memory, and the Windows 8 Professional operating system (includes replacement thermal material)
766629-001	RTC battery (includes cable and double-sided adhesive)
766632-001	64-GB, M2, SATA-3, solid-state drive
766633-001	128-GB, M2, SATA-3, solid-state drive
766634-001	180-GB, M2, SATA-3, solid-state drive
766635-001	180-GB, M2, SATA-3, SED, OPAL1, solid-state drive
766636-001	256-GB, M2, SATA-3, solid-state drive
766637-001	256-GB, M2, SATA-3, SED, OPAL2, solid-state drive
766638-001	Card reader board (includes cable)
766640-001	Keyboard with pointing stick for use in the United States (includes keyboard and pointing stick cables)
766640-031	Keyboard with pointing stick for use in the United Kingdom and Singapore (includes keyboard and pointing stick cables)
766640-041	Keyboard with pointing stick for use in Germany (includes keyboard and pointing stick cables)
766640-051	Keyboard with pointing stick for use in France (includes keyboard and pointing stick cables)
766640-061	Keyboard with pointing stick for use in Italy (includes keyboard and pointing stick cables)
766640-071	Keyboard with pointing stick for use in Spain (includes keyboard and pointing stick cables)
766640-081	Keyboard with pointing stick for use in Denmark (includes keyboard and pointing stick cables)
766640-091	Keyboard with pointing stick for use in Norway (includes keyboard and pointing stick cables)
766640-131	Keyboard with pointing stick for use in Portugal (includes keyboard and pointing stick cables)
766640-141	Keyboard with pointing stick for use in Turkey (includes keyboard and pointing stick cables)
766640-151	Keyboard with pointing stick for use in Greece (includes keyboard and pointing stick cables)
766640-161	Keyboard with pointing stick for use in Latin America (includes keyboard and pointing stick cables)
766640-171	Keyboard with pointing stick for use in Saudi Arabia (includes keyboard and pointing stick cables)
766640-201	Keyboard with pointing stick for use in Brazil (includes keyboard and pointing stick cables)
766640-211	Keyboard with pointing stick for use in Hungary (includes keyboard and pointing stick cables)

<b>Spare part number</b>	<b>Description</b>
766640-251	Keyboard with pointing stick for use in Russia (includes keyboard and pointing stick cables)
766640-261	Keyboard with pointing stick for use in Bulgaria (includes keyboard and pointing stick cables)
766640-271	Keyboard with pointing stick for use in Romania (includes keyboard and pointing stick cables)
766640-281	Keyboard with pointing stick for use in Thailand (includes keyboard and pointing stick cables)
766640-291	Keyboard with pointing stick for use in Japan (includes keyboard and pointing stick cables)
766640-A41	Keyboard with pointing stick for use in Belgium (includes keyboard and pointing stick cables)
766640-AB1	Keyboard with pointing stick for use in Taiwan (includes keyboard and pointing stick cables)
766640-AD1	Keyboard with pointing stick for use in South Korea (includes keyboard and pointing stick cables)
766640-B31	Keyboard with pointing stick for use in the Netherlands (includes keyboard and pointing stick cables)
766640-B71	Keyboard with pointing stick for use in Sweden and Finland (includes keyboard and pointing stick cables)
766640-BA1	Keyboard with pointing stick for use in Slovenia (includes keyboard and pointing stick cables)
766640-BB1	Keyboard with pointing stick for use in Israel (includes keyboard and pointing stick cables)
766640-BG1	Keyboard with pointing stick for use in Switzerland (includes keyboard and pointing stick cables)
766640-D61	Keyboard with pointing stick for use in India (includes keyboard and pointing stick cables)
766640-DB1	Keyboard with pointing stick for use in Canada (includes keyboard and pointing stick cables)
766640-DD1	Keyboard with pointing stick for use in Iceland (includes keyboard and pointing stick cables)
766640-FL1	Keyboard with pointing stick for use in the Czech Republic and Slovakia (includes keyboard and pointing stick cables)
766640-FP1	Keyboard with pointing stick for use in Northwest Africa (includes backlight, keyboard, and pointing stick cables)
766641-001	Keyboard with backlight and pointing stick for use in the United States (includes backlight, keyboard, and pointing stick cables)
766641-031	Keyboard with backlight and pointing stick for use in the United Kingdom and Singapore (includes backlight, keyboard, and pointing stick cables)
766641-041	Keyboard with backlight and pointing stick for use in Germany (includes backlight, keyboard, and pointing stick cables)
766641-051	Keyboard with backlight and pointing stick for use in France (includes backlight, keyboard, and pointing stick cables)
766641-061	Keyboard with backlight and pointing stick for use in Italy (includes backlight, keyboard, and pointing stick cables)
766641-071	Keyboard with backlight and pointing stick for use in Spain (includes backlight, keyboard, and pointing stick cables)
766641-081	Keyboard with backlight and pointing stick for use in Denmark (includes backlight, keyboard, and pointing stick cables)

<b>Spare part number</b>	<b>Description</b>
766641-091	Keyboard with backlight and pointing stick for use in Norway (includes backlight, keyboard, and pointing stick cables)
766641-131	Keyboard with backlight and pointing stick for use in Portugal (includes backlight, keyboard, and pointing stick cables)
766641-141	Keyboard with backlight and pointing stick for use in Turkey (includes backlight, keyboard, and pointing stick cables)
766641-151	Keyboard with backlight and pointing stick for use in Greece (includes backlight, keyboard, and pointing stick cables)
766641-161	Keyboard with backlight and pointing stick for use in Latin America (includes backlight, keyboard, and pointing stick cables)
766641-171	Keyboard with backlight and pointing stick for use in Saudi Arabia (includes backlight, keyboard, and pointing stick cables)
766641-201	Keyboard with backlight and pointing stick for use in Brazil (includes backlight, keyboard, and pointing stick cables)
766641-211	Keyboard with backlight and pointing stick for use in Hungary (includes backlight, keyboard, and pointing stick cables)
766641-251	Keyboard with backlight and pointing stick for use in Russia (includes backlight, keyboard, and pointing stick cables)
766641-261	Keyboard with backlight and pointing stick for use in Bulgaria (includes backlight, keyboard, and pointing stick cables)
766641-271	Keyboard with backlight and pointing stick for use in Romania (includes backlight, keyboard, and pointing stick cables)
766641-281	Keyboard with backlight and pointing stick for use in Thailand (includes backlight, keyboard, and pointing stick cables)
766641-291	Keyboard with backlight and pointing stick for use in Japan (includes backlight, keyboard, and pointing stick cables)
766641-A41	Keyboard with backlight and pointing stick for use in Belgium (includes backlight, keyboard, and pointing stick cables)
766641-AB1	Keyboard with backlight and pointing stick for use in Taiwan (includes backlight, keyboard, and pointing stick cables)
766641-AD1	Keyboard with backlight and pointing stick for use in South Korea (includes backlight, keyboard, and pointing stick cables)
766641-B31	Keyboard with backlight and pointing stick for use in the Netherlands (includes backlight, keyboard, and pointing stick cables)
766641-B71	Keyboard with backlight and pointing stick for use in Sweden and Finland (includes backlight, keyboard, and pointing stick cables)
766641-BA1	Keyboard with backlight and pointing stick for use in Slovenia (includes backlight, keyboard, and pointing stick cables)
766641-BB1	Keyboard with backlight and pointing stick for use in Israel (includes backlight, keyboard, and pointing stick cables)

<b>Spare part number</b>	<b>Description</b>
766641-BG1	Keyboard with backlight and pointing stick for use in Switzerland (includes backlight, keyboard, and pointing stick cables)
766641-D61	Keyboard with backlight and pointing stick for use in India (includes backlight, keyboard, and pointing stick cables)
766641-DB1	Keyboard with backlight and pointing stick for use in Canada (includes backlight, keyboard, and pointing stick cables)
766641-DD1	Keyboard with backlight and pointing stick for use in Iceland (includes backlight, keyboard, and pointing stick cables)
766641-FL1	Keyboard with backlight and pointing stick for use in the Czech Republic and Slovakia (includes backlight, keyboard, and pointing stick cables)
766641-FP1	Keyboard with backlight and pointing stick for use in Northwest Africa (includes backlight, keyboard, and pointing stick cables)
767076-001	HP RJ45-to-VGA adapter
773214-001	12.5-in, HD, LED, TouchScreen display panel assembly equipped with a digitizer for worldwide use (includes the ambient light sensor board and cable, display bezel, display panel and display panel cable, front- and rear-facing webcams and cables, home button board bracket, tablet frame, TouchScreen glass, and WLAN antenna)
773218-001	I/O bezel for use in North America (includes double-sided adhesive)
773223-001	Tablet I/O board (includes 2 cables, audio-in/audio-out jack, docking port, micro memory card reader, micro SIM slot, power connector, and USB port)
773224-001	Plastic Kit (includes fingerprint reader bezel, orientation switch actuator, power button actuator, and volume button actuator)
774623-001	Cable Kit (includes TouchScreen board cable)
778484-001	12.5-in, FHD, LED, TouchScreen display panel assembly equipped with a digitizer for worldwide use (includes the ambient light sensor board and cable, display bezel, display panel and display panel cable, front- and rear-facing webcams and cables, home button board bracket, tablet frame, TouchScreen glass, and WLAN antenna)
778485-001	HP digital pen
778695-001	Back cover for use on tablet models not equipped with a fingerprint reader
778712-001	TouchPad button board (includes cable)
781421-001	12.5-in, HD, LED, TouchScreen display panel assembly equipped with a digitizer and WWAN antenna for use in North America (includes the ambient light sensor board and cable, display bezel, display panel and display panel cable, front- and rear-facing webcams and cables, home button board bracket, tablet frame, TouchScreen glass, and WLAN antenna)
781422-001	12.5-in, HD, LED, TouchScreen display panel assembly equipped with a digitizer and WWAN antenna for worldwide use (includes the ambient light sensor board and cable, display bezel, display panel and display panel cable, front- and rear-facing webcams and cables, home button board bracket, tablet frame, TouchScreen glass, and WLAN antenna)
781423-001	12.5-in, HD, LED, TouchScreen display panel assembly for worldwide use (includes the ambient light sensor board and cable, display bezel, display panel and display panel cable, front- and rear-facing webcams and cables, home button board bracket, tablet frame, TouchScreen glass, and WLAN antenna)

<b>Spare part number</b>	<b>Description</b>
781424-001	12.5-in, HD, LED, TouchScreen display panel assembly with WWAN antenna for use in North America (includes the ambient light sensor board and cable, display bezel, display panel and display panel cable, front- and rear-facing webcams and cables, home button board bracket, tablet frame, TouchScreen glass, and WLAN antenna)
781425-001	12.5-in, HD, LED, TouchScreen display panel assembly with WWAN antenna for worldwide use (includes the ambient light sensor board and cable, display bezel, display panel and display panel cable, front- and rear-facing webcams and cables, home button board bracket, tablet frame, TouchScreen glass, and WLAN antenna)
781426-001	12.5-in, FHD, LED, TouchScreen display panel assembly equipped with a digitizer and WWAN antenna for use in North America (includes the ambient light sensor board and cable, display bezel, display panel and display panel cable, front- and rear-facing webcams and cables, home button board bracket, tablet frame, TouchScreen glass, and WLAN antenna)
781427-001	12.5-in, FHD, LED, TouchScreen display panel assembly equipped with a digitizer and WWAN antenna for worldwide use (includes the ambient light sensor board and cable, display bezel, display panel and display panel cable, front- and rear-facing webcams and cables, home button board bracket, tablet frame, TouchScreen glass, and WLAN antenna)
781428-001	12.5-in, FHD, LED, TouchScreen display panel assembly for worldwide use (includes the ambient light sensor board and cable, display bezel, display panel and display panel cable, front- and rear-facing webcams and cables, home button board bracket, tablet frame, TouchScreen glass, and WLAN antenna)
781429-001	12.5-in, FHD, LED, TouchScreen display panel assembly with WWAN antenna for use in North America (includes the ambient light sensor board and cable, display bezel, display panel and display panel cable, front- and rear-facing webcams and cables, home button board bracket, tablet frame, TouchScreen glass, and WLAN antenna)
781430-001	12.5-in, FHD, LED, TouchScreen display panel assembly with WWAN antenna for worldwide use (includes the ambient light sensor board and cable, display bezel, display panel and display panel cable, front- and rear-facing webcams and cables, home button board bracket, tablet frame, TouchScreen glass, and WLAN antenna)
784194-001	Travel keyboard for use in the United States
784194-031	Travel keyboard for use in the United Kingdom and Singapore
784194-041	Travel keyboard for use in Germany
784194-051	Travel keyboard for use in France
784194-061	Travel keyboard for use in Italy
784194-071	Travel keyboard for use in Spain
784194-081	Travel keyboard for use in Denmark
784194-091	Travel keyboard for use in Norway
784194-131	Travel keyboard for use in Portugal
784194-141	Travel keyboard for use in Turkey
784194-151	Travel keyboard for use in Greece
784194-161	Travel keyboard for use in Latin America
784194-171	Travel keyboard for use in Saudi Arabia

<b>Spare part number</b>	<b>Description</b>
784194-201	Travel keyboard for use in Brazil
784194-211	Travel keyboard for use in Hungary
784194-251	Travel keyboard for use in Russia
784194-261	Travel keyboard for use in Bulgaria
784194-271	Travel keyboard for use in Romania
784194-281	Travel keyboard for use in Thailand
784194-291	Travel keyboard for use in Japan
784194-A41	Travel keyboard for use in Belgium
784194-AB1	Travel keyboard for use in Taiwan
784194-AD1	Travel keyboard for use in South Korea
784194-B31	Travel keyboard for use in the Netherlands
784194-B71	Travel keyboard for use in Sweden and Finland
784194-BA1	Travel keyboard for use in Slovenia
784194-BB1	Travel keyboard for use in Israel
784194-BG1	Travel keyboard for use in Switzerland
784194-D61	Travel keyboard for use in India
784194-DD1	Travel keyboard for use in Canada
784194-FL1	Travel keyboard for use in Iceland
784194-FP1	Travel keyboard for use in the Czech Republic and Slovakia
789522-001	I/O bezel for use in Europe, the Middle East, and Africa (includes double-sided adhesive)
789523-001	I/O bezel for use in Australia and Asia Pacific countries and regions (includes double-sided adhesive)
789524-001	I/O bezel for use in the People's Republic of China (includes double-sided adhesive)
789525-001	I/O bezel for use in India (includes double-sided adhesive)
789526-001	I/O bezel for use in South Korea (includes double-sided adhesive)
789527-001	I/O bezel for use in Taiwan on computer models using a 65-W AC adapter (includes double-sided adhesive)
789528-001	I/O bezel for use in Taiwan on computer models using a 45-W AC adapter (includes double-sided adhesive)



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# 4 Removal and replacement preliminary requirements

## Tools required


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

- Flat-bladed screw driver
- Magnetic screw driver
- Phillips PO screw driver

## 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 parts. Apply pressure only at the points designated in the maintenance instructions.

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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:

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

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

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

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

Avoid dropping drives from any height onto any surface.

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

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

Avoid exposing a drive to temperature extremes or liquids.

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

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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, screw drivers, and vacuums.
- When fixtures must directly contact dissipative surfaces, use fixtures made only of static-safe materials.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and Styrofoam.
- Handle ESD-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting or removing connectors or test equipment.

## Equipment guidelines

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

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


The following grounding equipment is recommended to prevent electrostatic damage:

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

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

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

# 5 Removal and replacement procedures

 **CAUTION:** Tablet and keyboard components described in this chapter should only be accessed by an authorized service provider. Accessing these components can damage the tablet/keyboard or void the warranty.

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

## Tablet replacement procedures


There are as many as 37 screws that must be removed, replaced, and/or loosened when servicing the tablet. Make special note of each screw size and location during removal and replacement.

### Back cover

Description	Spare part number
For use on tablet models equipped with a fingerprint reader	766611-001
For use on tablet models not equipped with a fingerprint reader	778695-001

Before disassembling the tablet, follow these steps:

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

 **NOTE:** When replacing the back cover, be sure that the fingerprint reader board (see [Fingerprint reader board on page 48](#)) and button board (see [Button board on page 49](#)) are removed from the defective back cover and installed on the replacement back cover.

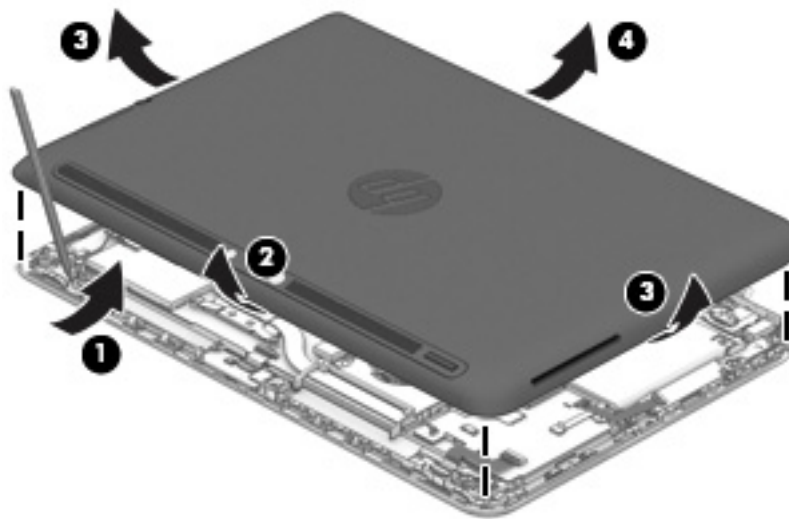
Remove the back cover:

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

1. Turn the tablet upside down with the top edge toward you.
2. Use a case utility tool **(1)** to separate the top edge of the back cover **(2)** from the display panel assembly.
3. Separate the left **(3)** and right sides of the back cover from the display panel assembly.

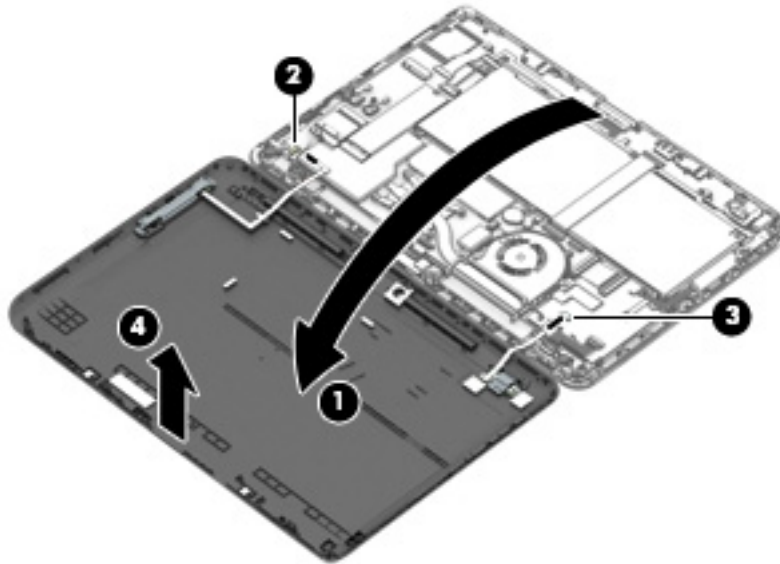
**⚠ CAUTION:** Do not completely separate the back cover from the display panel assembly in the next step. There are 2 ribbon cables that connect components installed on the back cover to the system board that can be damaged if too much separation is achieved.

4. Separate the bottom edge **(4)** of the back cover from the display panel assembly.



5. Lift the bottom edge of the back cover **(1)**, and then swing it up and to the left until it rests next to the tablet.
6. Release the zero insertion force (ZIF) connector **(2)** to which the button board cable is attached, and then disconnect the button board cable from the system board.
7. Release the ZIF connector **(3)** to which the fingerprint reader board cable is attached (if present), and then disconnect the fingerprint reader board cable from the system board.

8. Remove the back cover **(4)**.



Reverse this procedure to install the back cover.

## Fingerprint reader board

Description	Spare part number
Fingerprint reader board (includes bracket and cable)	766612-001

Before removing the fingerprint reader board, follow these steps:

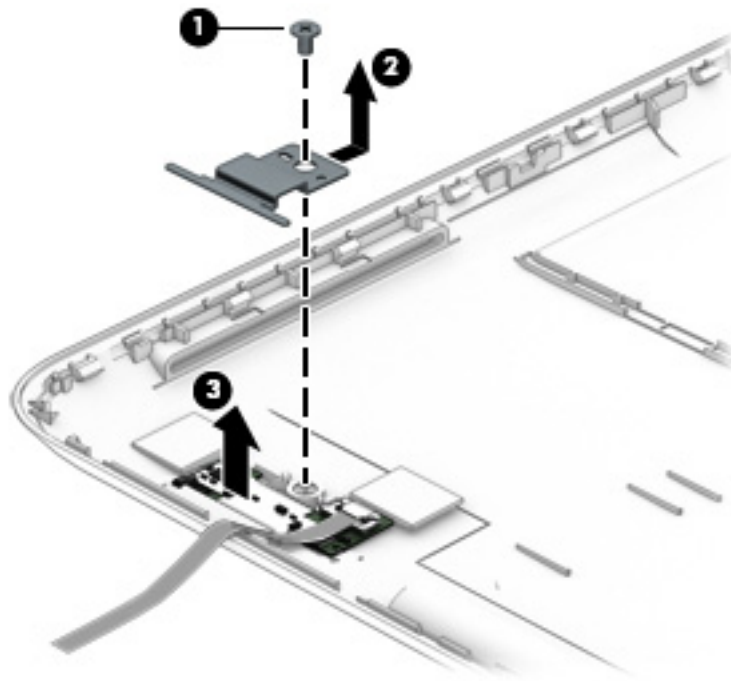
1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).

Remove the fingerprint reader board:

1. Remove the Phillips PM1.8×2.4 screw **(1)** that secures the fingerprint reader board and bracket to the back cover.
2. Slide the fingerprint reader board bracket away from the front edge of the back cover, and then remove the bracket **(2)**.



3. Remove the fingerprint reader board **(3)**.



Reverse this procedure to install the fingerprint reader board.

## Button board

Description	Spare part number
Button board (includes cable, power button, volume control buttons, and orientation switch)	766613-001

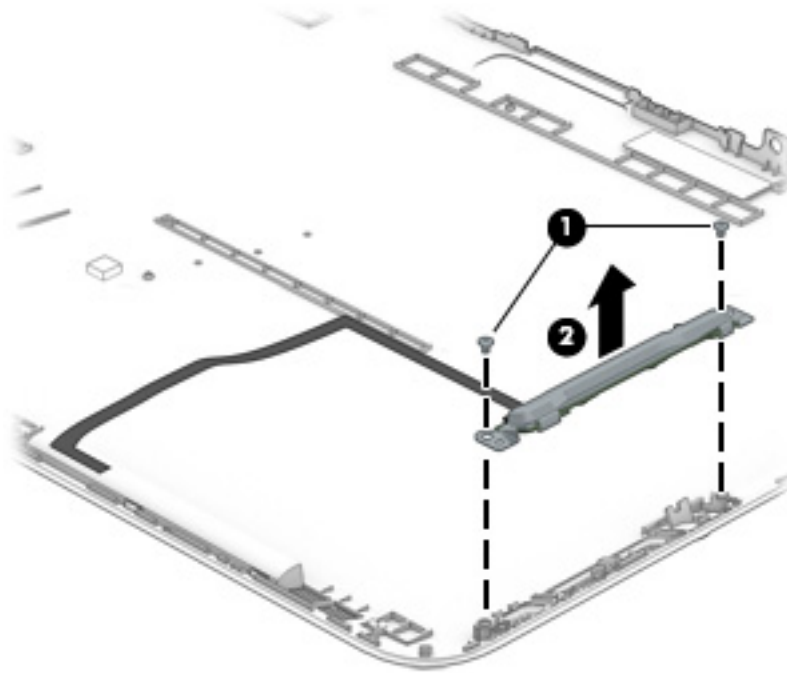
Before removing the button board, follow these steps:


1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).

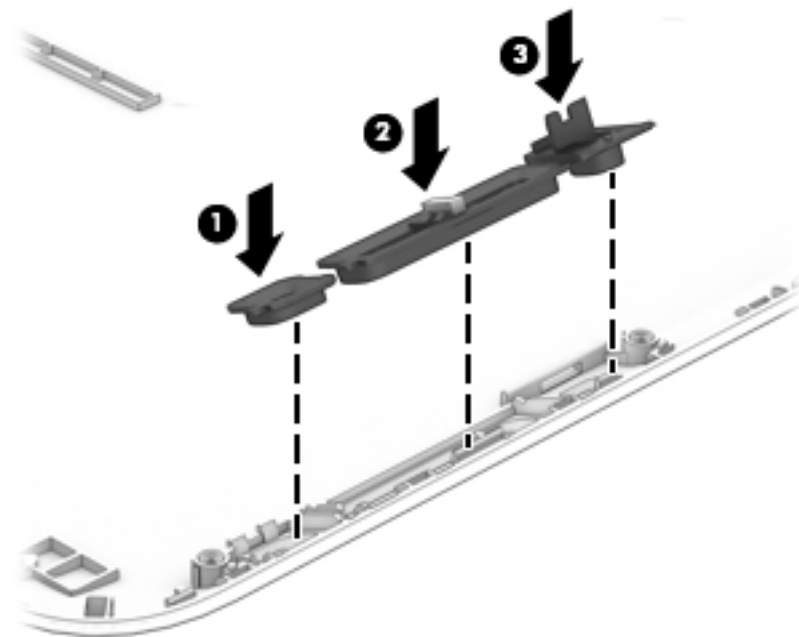
Remove the button board:

1. Remove the two Phillips PM1.5×2.4 screws **(1)** that secure the button board to the back cover.

2. Remove the button board (2).



 **NOTE:** If it is necessary to replace the power button actuator (1), volume button actuator (2), or orientation switch actuator (3), replace the plastic actuators in the locations indicated in the following illustration. These actuators are included in the Plastics Kit, spare part number 773224-001.




Reverse this procedure to install the button board.


## Tablet battery

Description	Spare part number
4-cell, 29-WHr, 1.98-AHr, Li-ion battery	753703-005

Before removing the tablet battery, follow these steps:

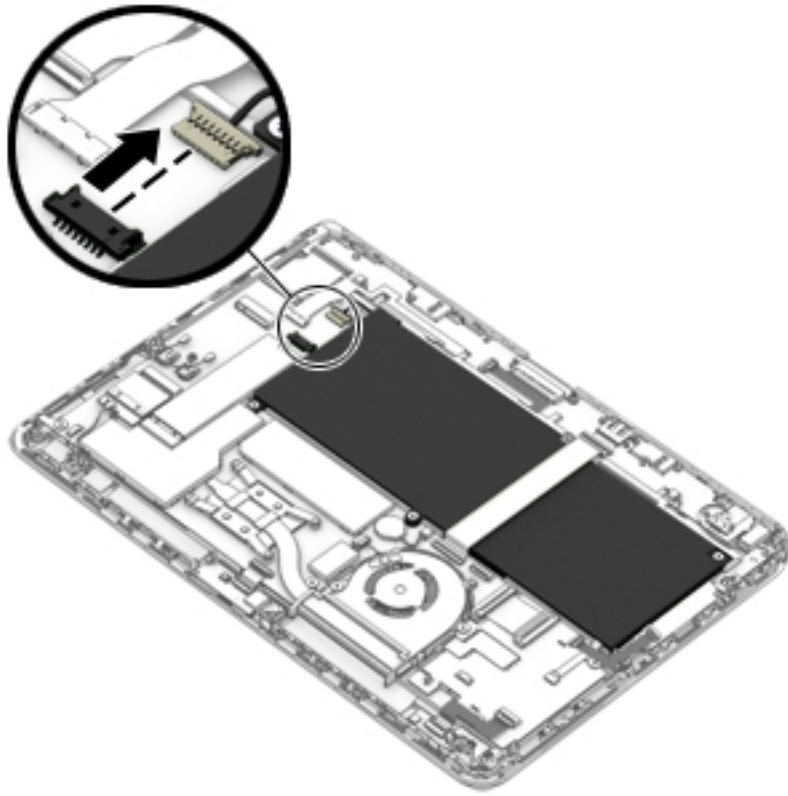
1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).

 **WARNING!** To reduce potential safety issues, use only the battery provided with the tablet, a replacement battery provided by HP, or a compatible battery purchased from HP.

 **CAUTION:** Removing a battery that is the sole power source for the tablet can cause loss of information. To prevent loss of information, save your work or shut down the tablet through Windows before removing the battery.

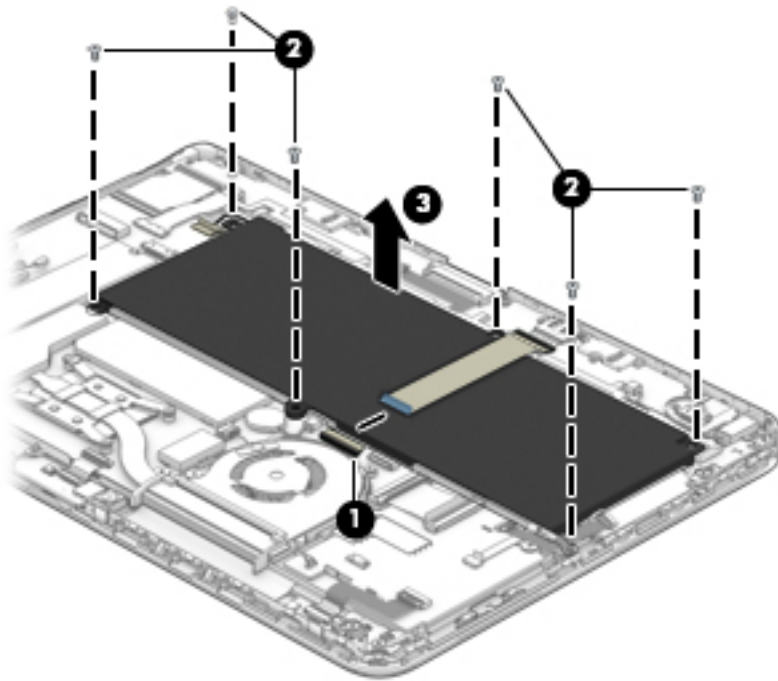
Remove the tablet battery:

1. Disconnect the tablet battery cable from the tablet system board.



2. Release the ZIF connector **(1)** to which the tablet I/O board cable is attached, and then disconnect the tablet I/O board cable from the system board.
3. Remove the five Phillips PM2.4×4.6 screws **(2)** that secure the tablet battery to the display panel assembly.

4. Remove the tablet battery (3).



Reverse this procedure to install the tablet battery.

## Solid-state drive

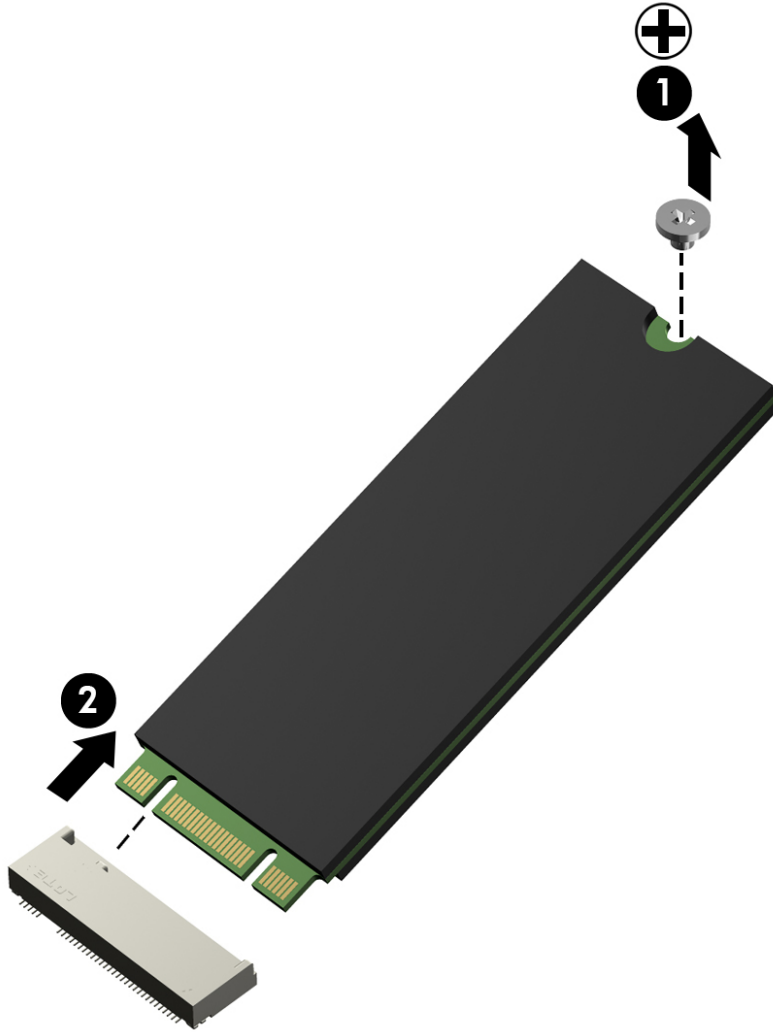
Description	Spare part number
256-GB, M2, SATA-3, solid-state drive	766636-001
256-GB, M2, SATA-3, SED, OPAL2, solid-state drive	766637-001
180-GB, M2, SATA-3, solid-state drive	766634-001
180-GB, M2, SATA-3, SED, OPAL1, solid-state drive	766635-001
128-GB, M2, SATA-3, solid-state drive	766633-001
64-GB, M2, SATA-3, solid-state drive	766632-001

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

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).
5. Disconnect the tablet battery cable from the system board (see [Tablet battery on page 51](#)).

Remove the solid-state drive:

1. Remove the Phillips PM1.9×2.5 screw **(1)** that secures the solid-state drive to the system board. (The solid-state drive tilts up.)
2. Remove the solid-state drive **(2)**.



Reverse this procedure to install the solid-state drive.

## WLAN module

Description	Spare part number
Broadcom BCM43142 802.11bgn 1×1 Wi-Fi + Bluetooth 4.0 M.2 Combo Adapter	753078-005
Intel Dual Band Wireless-AC 3160 802.11ac 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter	751416-005
Intel Dual Band Wireless-AC 7260 802.11ac 2×2 Wi-Fi + Bluetooth 4.0 Combo Adapter	710663-005
Intel Dual Band Wireless-AC 7260 802.11ac 2×2 Wi-Fi + Bluetooth 4.0 Combo Adapter	756763-005
Intel Dual Band Wireless-N 7260AN 802.11abgn 2×2 Wi-Fi + Bluetooth 4.0 Combo Adapter for use only in India	747833-005
Intel Dual Band Wireless-N 7260AN 802.11abgn 2×2 Wi-Fi + Bluetooth 4.0 Combo Adapter for use in all countries and regions except India	717379-005

Before removing the WLAN module, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).
5. Disconnect the tablet battery cable from the system board (see [Tablet battery on page 51](#)).

Remove the WLAN module:

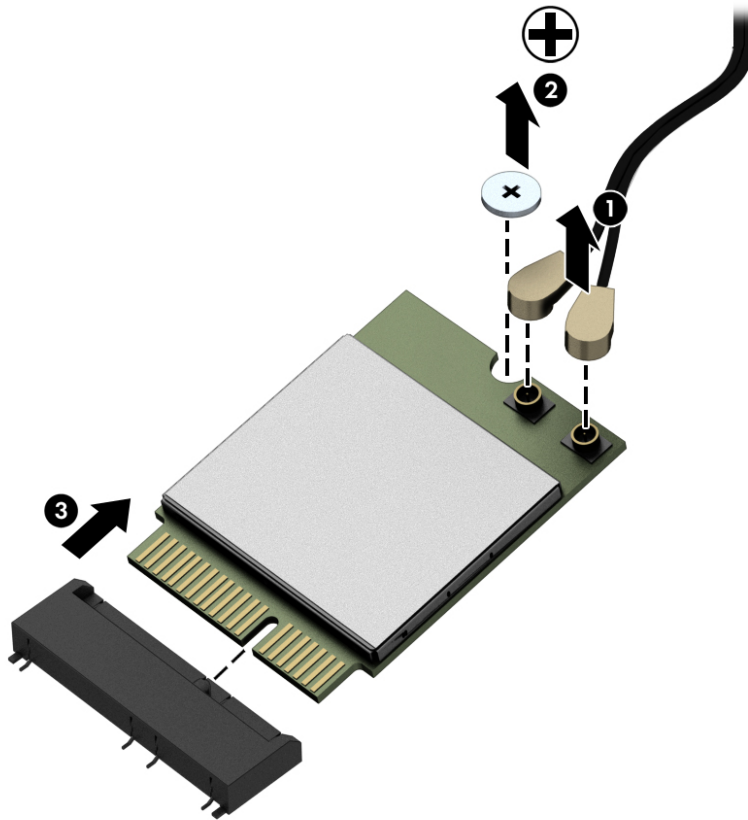
1. Disconnect the WLAN antenna cables **(1)** from the terminals on the WLAN module.




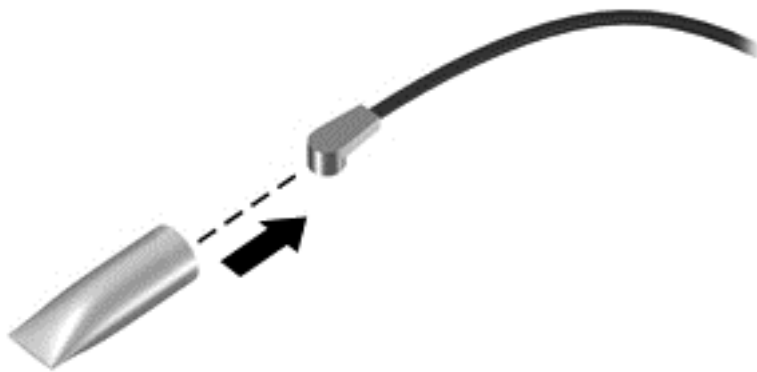
**NOTE:** The WLAN antenna cable labeled “1” connects to the WLAN module “Main” terminal labeled “1”. The WLAN antenna cable labeled “2” connects to the WLAN module “Aux” terminal labeled “2”.

2. Remove the Phillips PM1.9×2.5 broad head screw **(2)** that secures the WLAN module to the system board. (The WLAN module tilts up.)

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



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



Reverse this procedure to install the WLAN module.



## WWAN module

Description	Spare part number
HP hs3110 HSPA+ Mobile Broadband Module	748599-005
HP lt4112 LTE/HSPA+ Mobile Broadband Module	740011-005
HP lt4211 LTE/EV-DO/HSPA+ Gobi 4G Module	748021-005

Before removing the WWAN module, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).
5. Disconnect the tablet battery cable from the system board (see [Tablet battery on page 51](#)).

Remove the WWAN module:

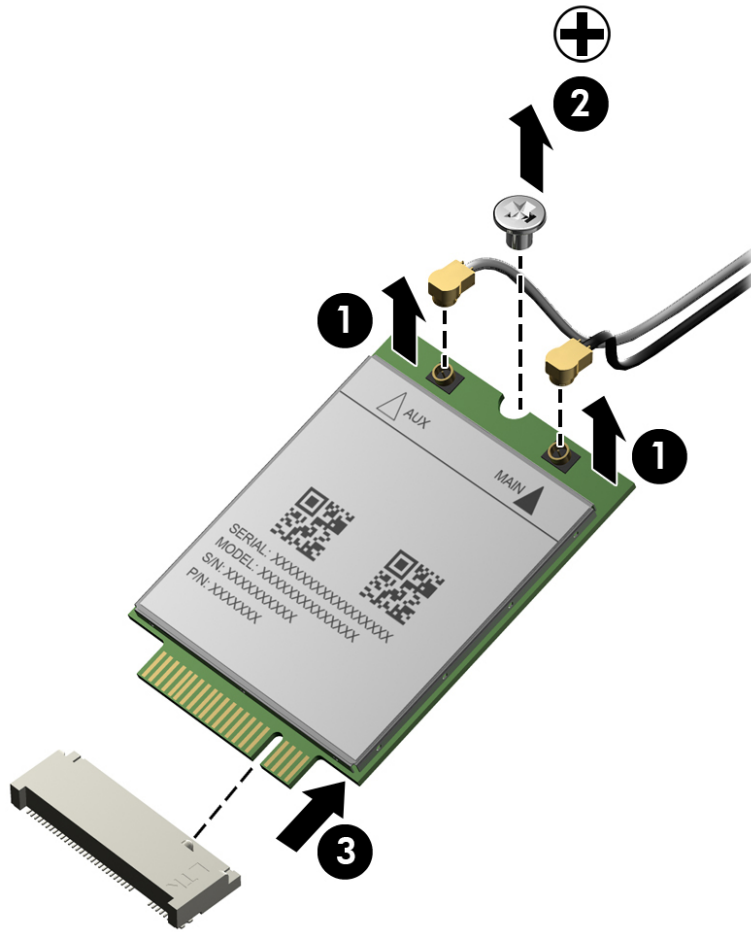
1. Disconnect the WWAN antenna cables **(1)** from the terminals on the WLAN module.



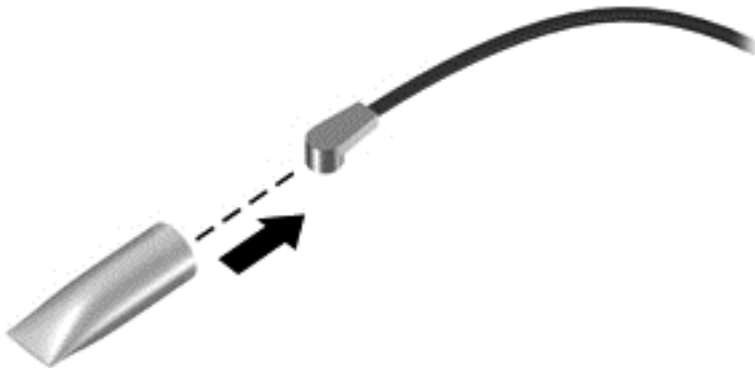
**NOTE:** The WWAN antenna cable labeled “5” connects to the WWAN module “Main” terminal labeled “5”. The WWAN antenna cable labeled “6” connects to the WWAN module “Aux/GPS” terminal labeled “6”.

2. Remove the Phillips PM1.9×2.5 broad head screw **(2)** that secures the WWAN module to the system board. (The WWAN module tilts up.)

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



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



Reverse this procedure to install the WWAN module.

## RTC battery

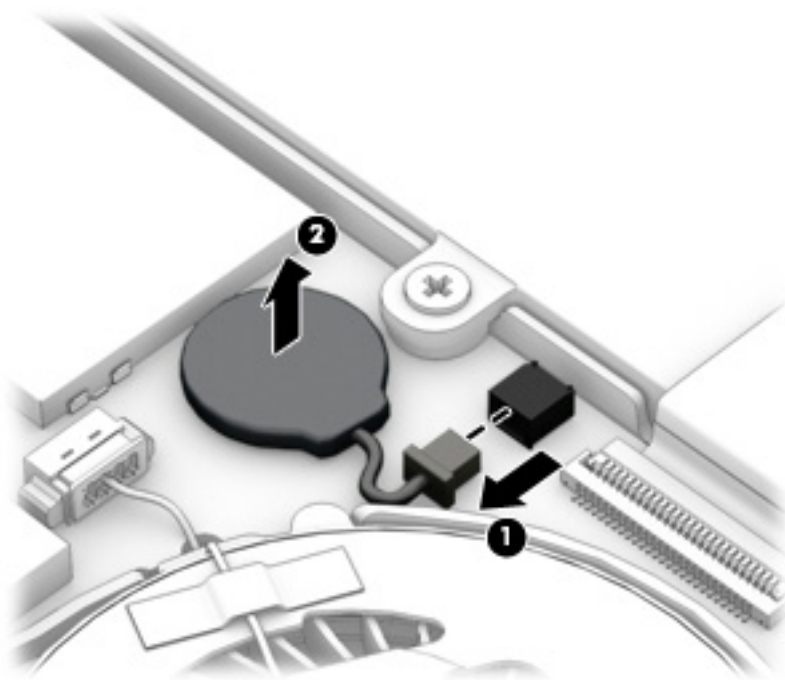
Description	Spare part number
RTC battery (includes cable and double-sided adhesive)	766629-001

Before removing the RTC battery, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).
5. Disconnect the tablet battery cable from the system board (see [Tablet battery on page 51](#)).

Remove the RTC battery:

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



3. Remove the RTC battery.

Reverse this procedure to install the RTC battery.

## Fan

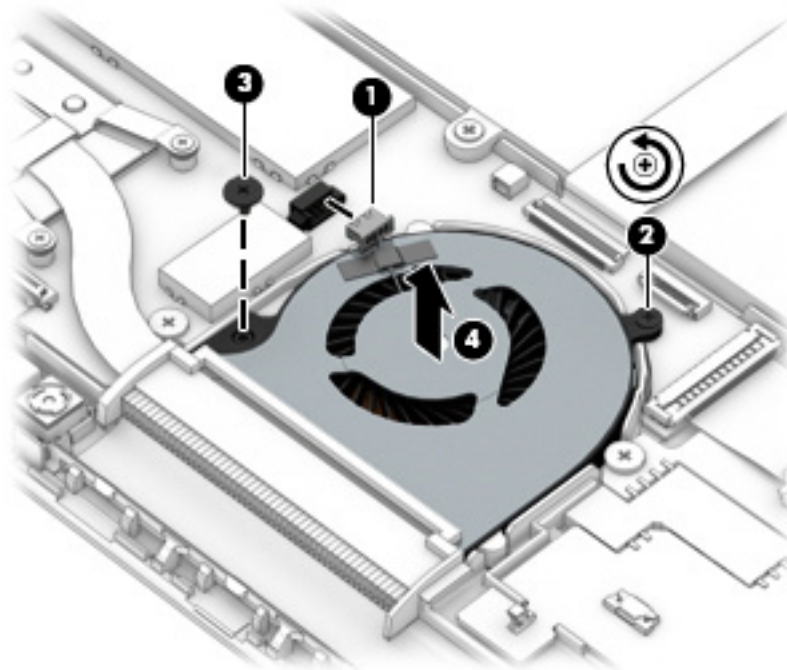
Description	Spare part number
Fan (includes cable)	766618-001

Before removing the fan, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).
5. Disconnect the tablet battery cable from the system board (see [Tablet battery on page 51](#)).

Remove the fan:

1. Disconnect the fan cable **(1)** from the system board.
2. Loosen the Phillips PM1.9×4.8 captive screw **(2)** that secures the fan to the tablet frame.
3. Remove the Phillips PM1.9×2.3 broad head screw **(3)** that secures the fan to the tablet frame.
4. Remove the fan **(4)**.



Reverse this procedure to install the fan.

## Card reader board

Description	Spare part number
Card reader board (includes cable)	766638-001

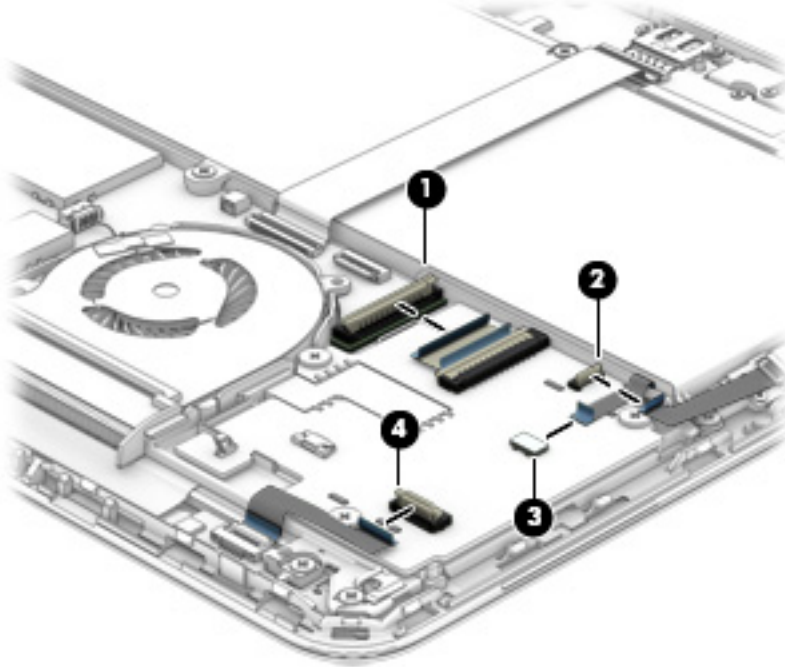
Before removing the card reader board, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).
5. Disconnect the tablet battery cable from the system board (see [Tablet battery on page 51](#)).

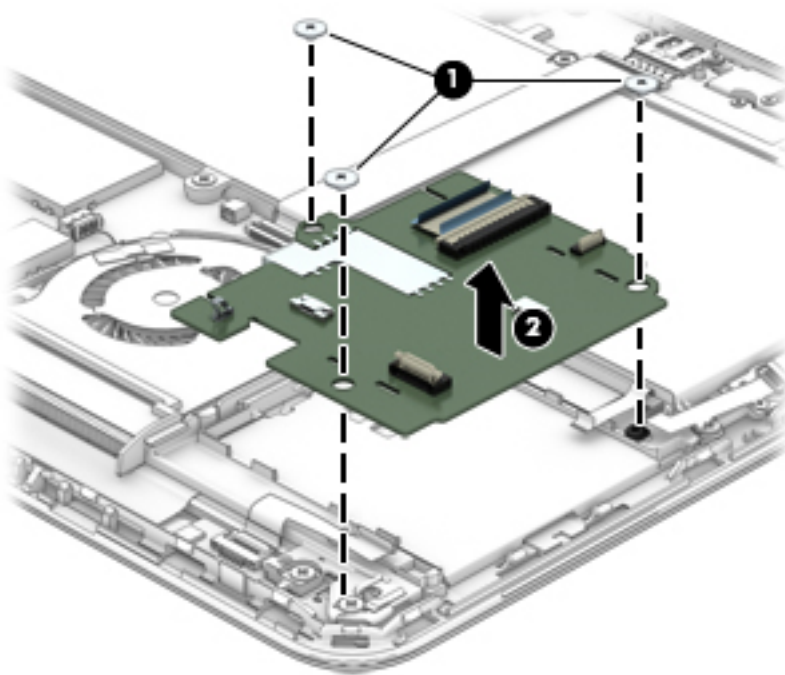
Remove the card reader board:

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

4. Release the ZIF connector **(4)** to which the card reader board cable is attached, and then disconnect the card reader board cable from the card reader board.



5. Remove the three Phillips PM1.9×2.3 broad head screw **(1)** that secure the card reader board to the tablet frame.
6. Remove the card reader board **(2)**.



Reverse this procedure to install the card reader board.

## System board

Description	Spare part number
Equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and the Windows 8 Professional operating system	766626-601
Equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and the Windows 8 Standard operating system	766626-501
Equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and a non-Windows 8 operating system	766626-001
Equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and the Windows 8 Professional operating system	766625-601
Equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and the Windows 8 Standard operating system	766625-501
Equipped with an Intel Core i5-4302Y 1.60-GHz (SC turbo up to 2.30-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and a non-Windows 8 operating system	766625-001
Equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and the Windows 8 Professional operating system	766624-601
Equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and the Windows 8 Standard operating system	766624-501
Equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and a non-Windows 8 operating system	766624-001
Equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and the Windows 8 Professional operating system	766623-601
Equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and the Windows 8 Standard operating system	766623-501
Equipped with an Intel Core i5-4202Y 1.60-GHz (SC turbo up to 2.00-GHz) processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and a non-Windows 8 operating system	766623-001
Equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and the Windows 8 Professional operating system	766622-601
Equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and the Windows 8 Standard operating system	766622-501
Equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), 8.0-GB of system memory, and a non-Windows 8 operating system	766622-001

Description	Spare part number
Equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and the Windows 8 Professional operating system	766621-601
Equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and the Windows 8 Standard operating system	766621-501
Equipped with an Intel Core i3-4012Y 1.50-GHz processor (3.00-MB L3 cache, dual core, 11.5 W), 4.0-GB of system memory, and a non-Windows 8 operating system	766621-001
Equipped with an Intel Celeron 3560Y 1.20-GHz processor (2.00-MB L2 cache, 11.5 W), and the Windows 8 Professional operating system	766628-601
Equipped with an Intel Celeron 3560Y 1.20-GHz processor (2.00-MB L2 cache, 11.5 W), and the Windows 8 Standard operating system	766628-501
Equipped with an Intel Celeron 3560Y 1.20-GHz processor (2.00-MB L2 cache, 11.5 W), and a non-Windows 8 operating system	766628-001
Equipped with an Intel Celeron 2961Y 1.10-GHz processor (2.00-MB L2 cache, 11.5 W), 4.0-GB of system memory, and the Windows 8 Professional operating system	766627-601
Equipped with an Intel Celeron 2961Y 1.10-GHz processor (2.00-MB L2 cache, 11.5 W), 4.0-GB of system memory, and the Windows 8 Standard operating system	766627-501
Equipped with an Intel Celeron 2961Y 1.10-GHz processor (2.00-MB L2 cache, 11.5 W), 4.0-GB of system memory, and a non-Windows 8 operating system	766627-001

Before removing the system board, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).
5. Disconnect the tablet battery cable from the system board (see [Tablet battery on page 51](#)).



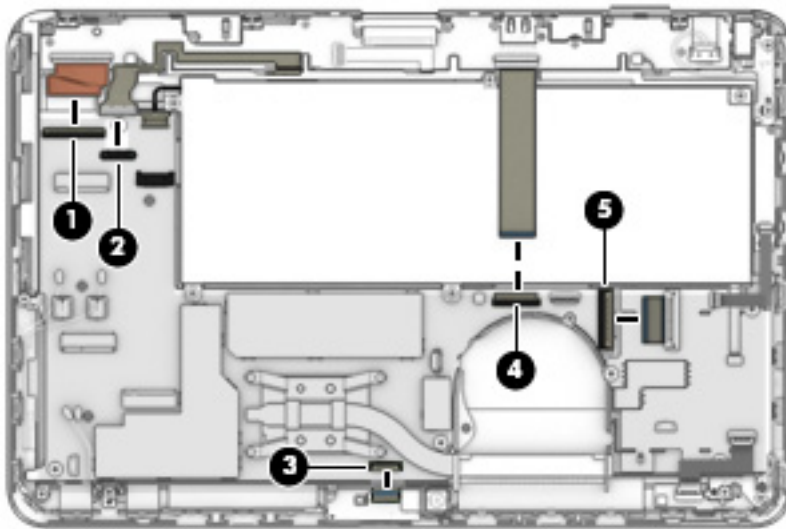
**NOTE:** When replacing the system board, be sure that the following components are removed from the defective system board and installed on the replacement system board:

- Solid-state drive (see [Solid-state drive on page 53](#))
- WLAN module (see [WLAN module on page 55](#))
- WLAN module (see [WWAN module on page 57](#))
- RTC battery (see [RTC battery on page 59](#))
- Heat sink (see [Heat sink on page 66](#))



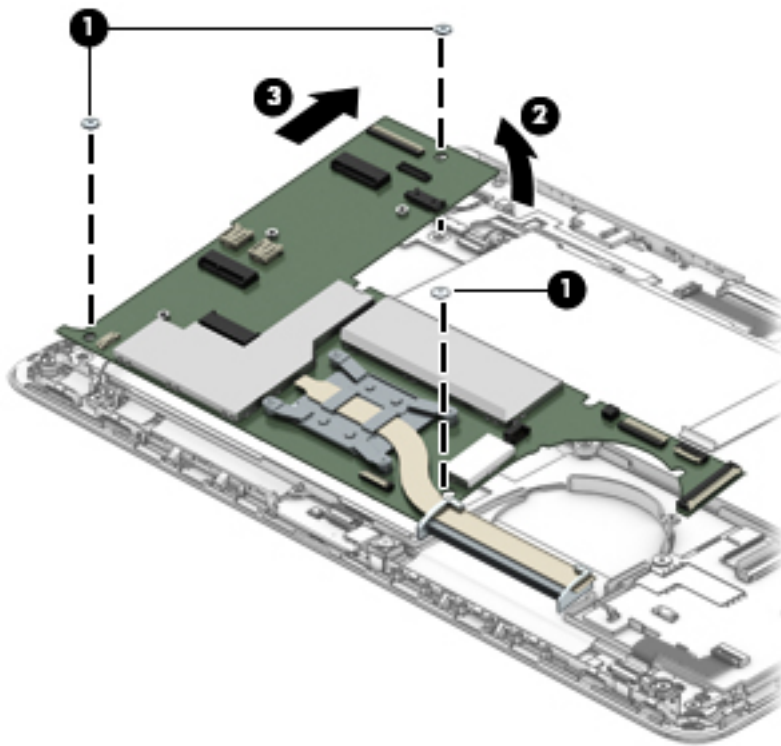
Remove the system board:

1. Release the ZIF connector **(1)** to which the tablet I/O board cable is attached, and then disconnect the tablet I/O board cable from the system board.
2. Disconnect the display panel cable **(2)** from the system board.
3. Release the ZIF connector **(3)** to which the front-facing webcam cable is attached, and then disconnect the front-facing webcam cable from the system board.
4. Release the ZIF connector **(4)** to which the tablet I/O board cable is attached, and then disconnect the tablet I/O board cable from the system board.
5. Release the ZIF connector **(5)** to which the card reader board cable is attached, and then disconnect the card reader board cable from the system board.



6. Remove the three Phillips PM1.9×2.5 broad head screws **(1)** that secure the system board to the tablet frame.
7. Lift the rear edge of the system board **(2)** until it rests at an angle.

8. Remove the system board **(3)** by sliding it up and back at an angle.



Reverse this procedure to install the system board.

## Heat sink

Description	Spare part number
Heat sink (includes 4 captive screws [secured by C-clips] and replacement thermal material)	766619-001


Before removing the heat sink, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).
5. Disconnect the tablet battery cable from the system board (see [Tablet battery on page 51](#)).
6. Remove the system board (see [System board on page 63](#)).

Remove the heat sink:

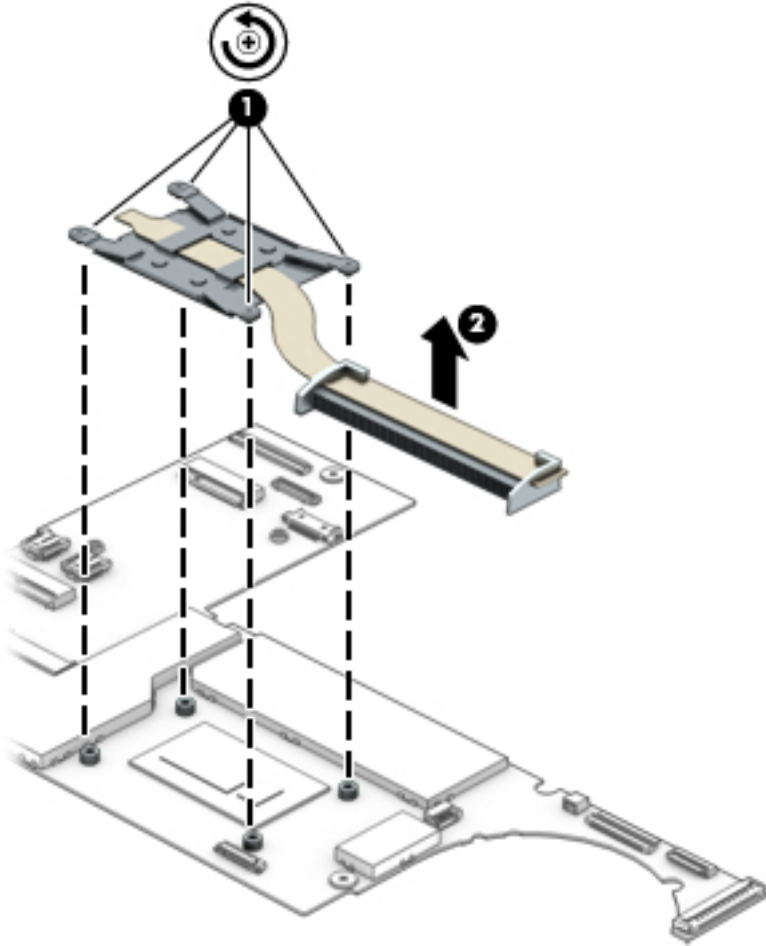
1. Loosen the four captive screws **(1)** that secure the heat sink to the system board.

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

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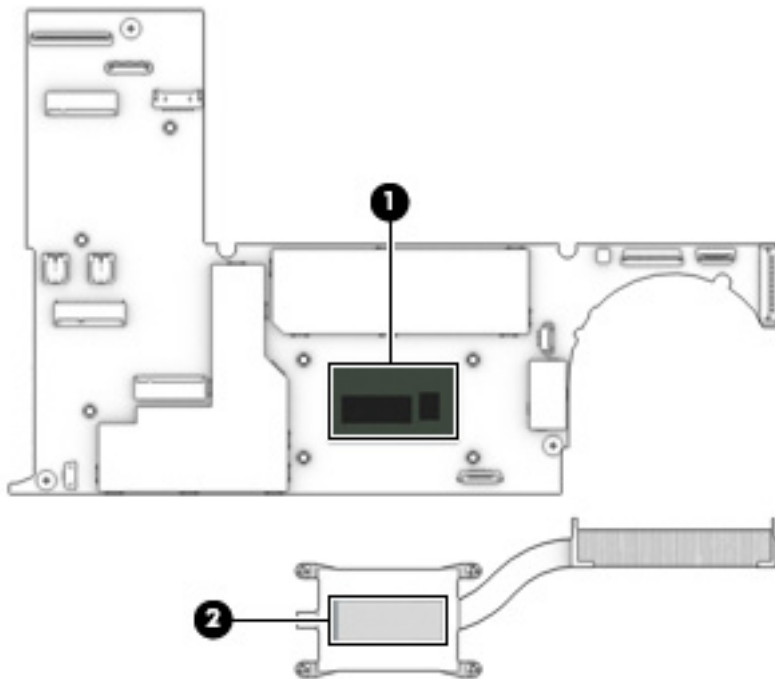
2. Remove the heat sink **(2)**.



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 **NOTE:** The thermal material must be thoroughly cleaned from the surfaces of the heat sink and the system board each time the heat sink is removed. Thermal paste is used on the processor **(1)** and the heat sink section **(2)** that services it.

---



Reverse this procedure to install the heat sink.

## Tablet I/O board

Description	Spare part number
Tablet I/O board (includes 2 cables, audio-in/audio-out jack, docking port, micro memory card reader, micro SIM slot, power connector, and USB port)	773223-001

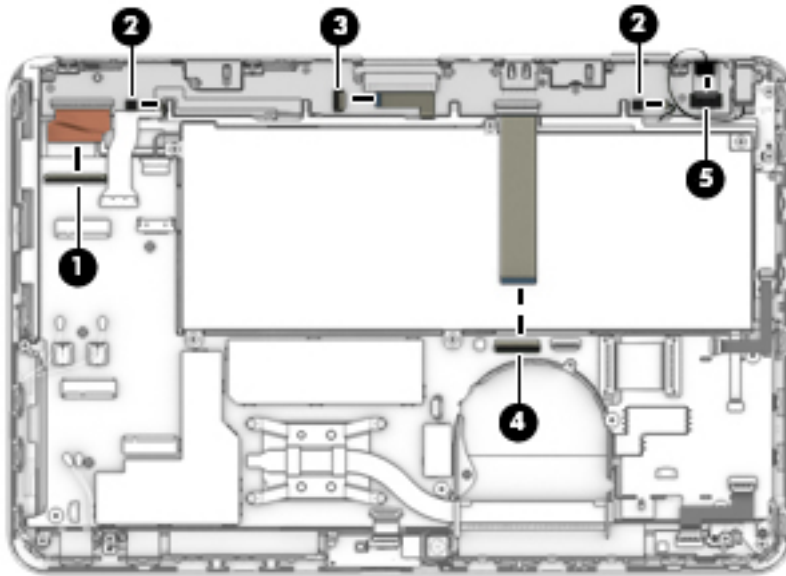
Before removing the tablet I/O board, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).
5. Disconnect the tablet battery cable from the system board (see [Tablet battery on page 51](#)).

Remove the tablet I/O board:

1. Release the ZIF connector **(1)** to which the tablet I/O board cable is attached, and then disconnect the tablet I/O board cable from the system board.
2. Disconnect the speaker cables **(2)** from the tablet I/O board.
3. Release the ZIF connector **(3)** to which the home button board cable is attached, and then disconnect the home button board cable from the tablet I/O board.

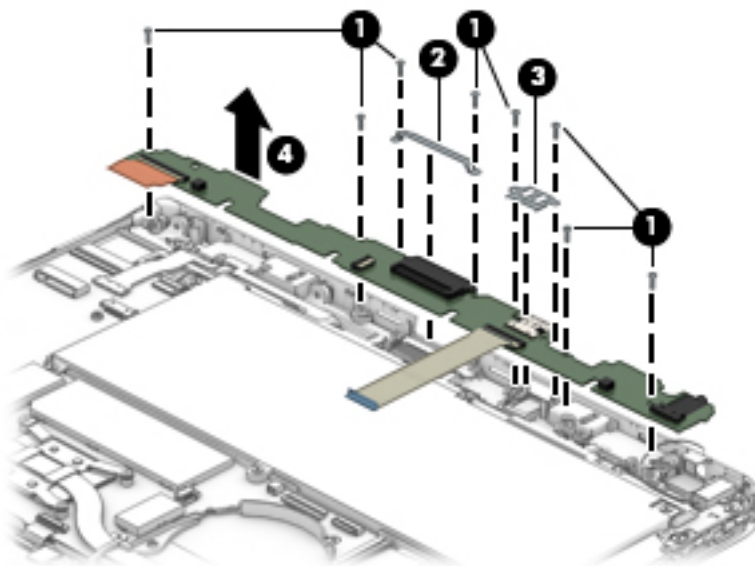
4. Release the ZIF connector **(4)** to which the tablet I/O board cable is attached, and then disconnect the tablet I/O board cable from the system board.
5. Disconnect the power connector cable **(5)** from the tablet I/O board.



6. Remove the eight Phillips PM1.5x5.5 screws **(1)** that secure the tablet I/O board and brackets to the tablet frame.
7. Remove the docking connector bracket **(2)**.
8. Remove the USB port bracket **(3)**.

The docking connector bracket and USB port bracket are included in the Bracket Kit, spare part number 766615-001.

9. Remove the tablet I/O board **(4)** and cables.



Reverse this procedure to install the tablet I/O board.

## Power connector cable

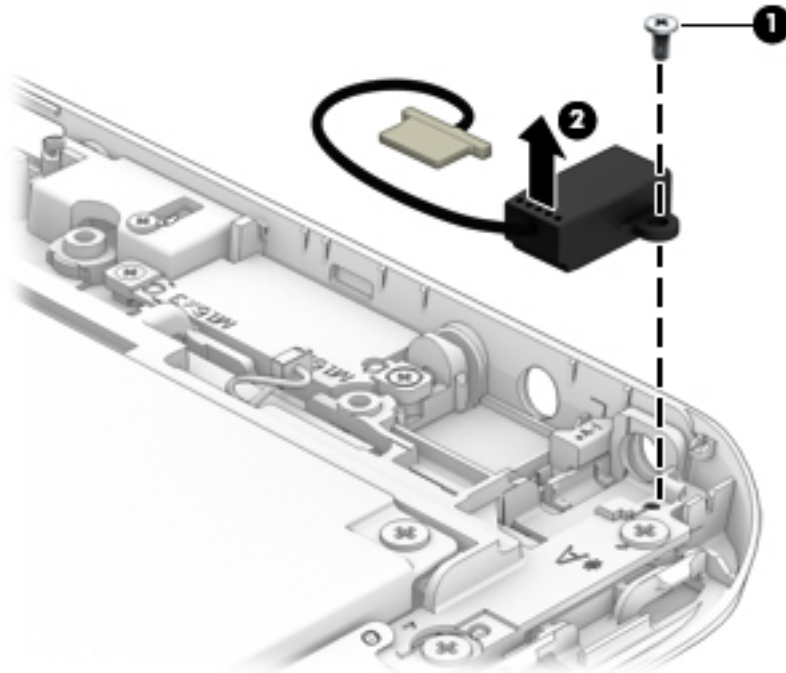
Description	Spare part number
Power connector cable	766608-001

Before removing the power connector cable, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).
5. Disconnect the tablet battery cable from the system board (see [Tablet battery on page 51](#)).
6. Remove the tablet I/O board (see [Tablet I/O board on page 68](#)).

Remove the power connector cable:

1. Remove the Phillips PM1.5×3.5 screw **(1)** that secures the power connector cable to the tablet frame.
2. Remove the power connector cable **(2)**.



Reverse this procedure to install the power connector cable.

## Home button board

Description	Spare part number
Home button board (includes cable)	766620-001

Before removing the home button board, follow these steps:

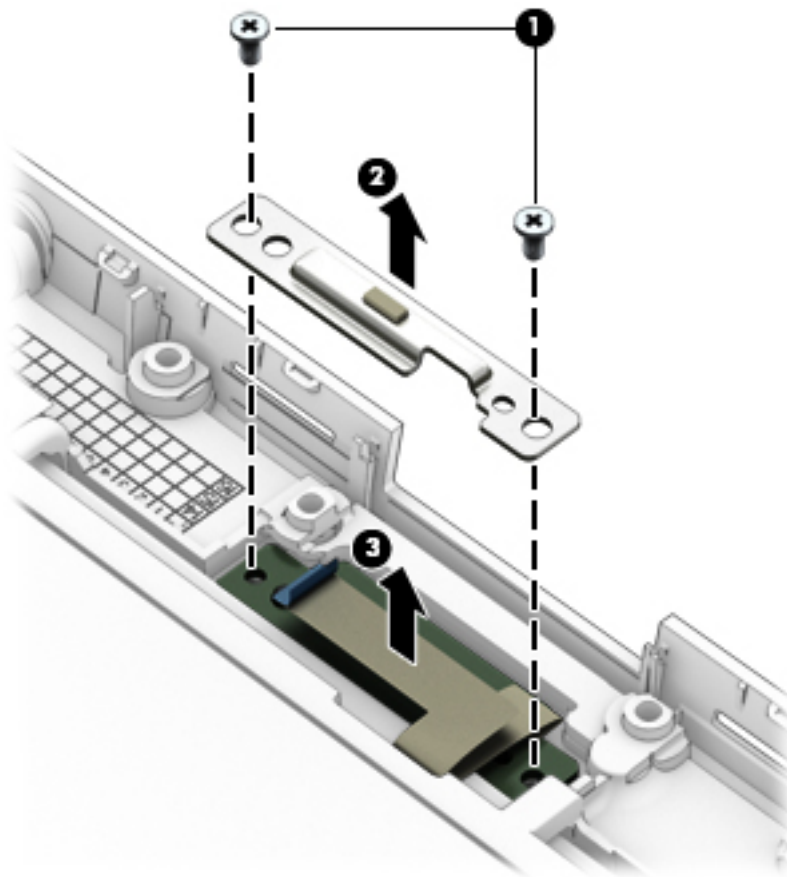
1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).
5. Disconnect the tablet battery cable from the system board (see [Tablet battery on page 51](#)).
6. Remove the tablet I/O board (see [Tablet I/O board on page 68](#)).

Remove the home button board:

1. Remove the two Phillips PM1 .5×3.5 screws **(1)** that secure the home button board and bracket to the tablet frame.
2. Remove the home button board bracket **(2)**.

The home button board bracket is included in the display assembly spare part kit.

3. Remove the home button board (3).



Reverse this procedure to install the home button board.

## Speakers

Description	Spare part number
Speaker Kit (includes left and right speakers and cables)	766617-001

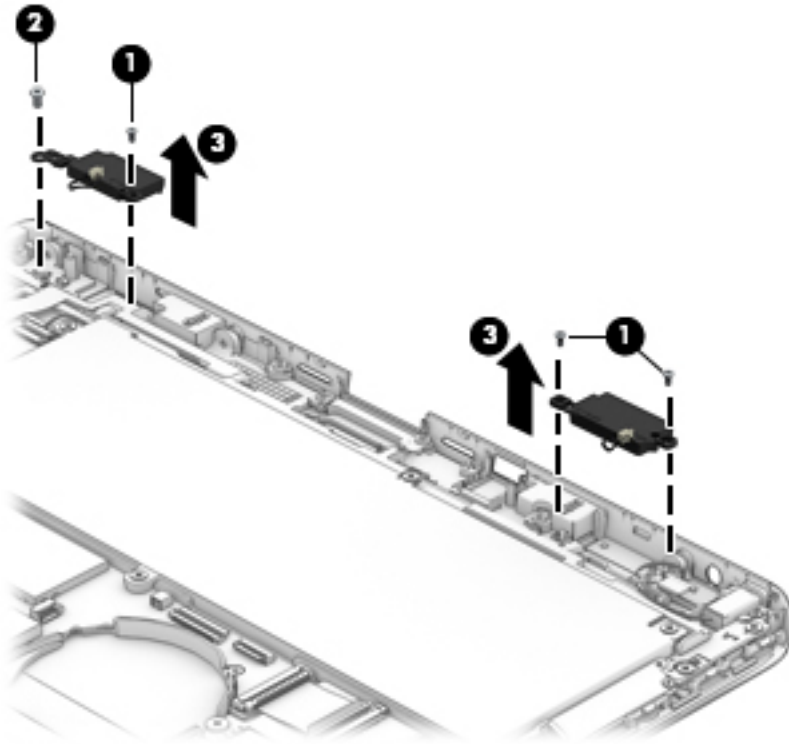
Before removing the speakers, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see [Back cover on page 46](#)).
5. Disconnect the tablet battery cable from the system board (see [Tablet battery on page 51](#)).
6. Remove the tablet I/O board (see [Tablet I/O board on page 68](#)).



Remove the speakers:

1. Remove the three Phillips PM1.5×3.5 screws **(1)** that secure the left and right speakers to the tablet frame.
2. Remove the Phillips PM2.4×4.4 screw **(2)** that secures the left speaker to the tablet frame.
3. Remove the speakers **(3)**.



Reverse this procedure to install the speakers.

# Keyboard base replacement procedures

There are as many as 58 screws that must be removed, replaced, and/or loosened when servicing the keyboard base. Make special note of each screw size and location during removal and replacement.

## Bottom cover

Description	Spare part number
Bottom cover (includes 2 round rubber feet and one oblong rubber foot)	766602-001

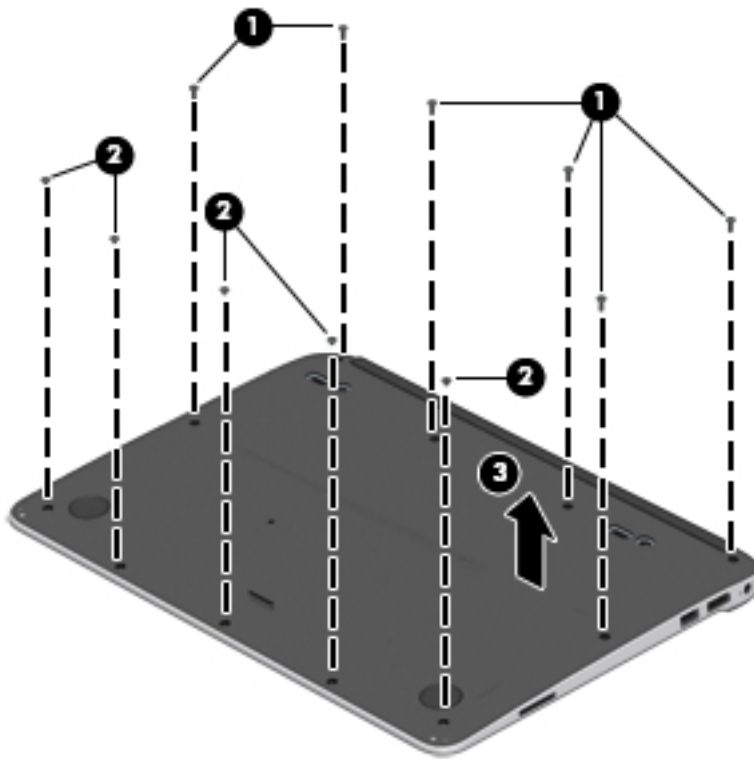
Before disassembling the keyboard base, follow these steps:

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

Remove the bottom cover:

1. Turn the keyboard upside down with the front edge toward you.
2. Remove the six Phillips PM1.9×6.6 screws **(1)** and the five Phillips PM1.9×2.4 screws **(2)** that secure the bottom cover to the top cover.

3. Remove the bottom cover (3).



Reverse this procedure to install the back cover.

## Keyboard battery

Description	Spare part number
2-cell, 25-WHr, 3.38-AHr, Li-ion battery (includes cable)	753704-005

Before removing the keyboard battery, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Disconnect the tablet from the keyboard base.
5. Remove the bottom cover (see [Bottom cover on page 74](#)).

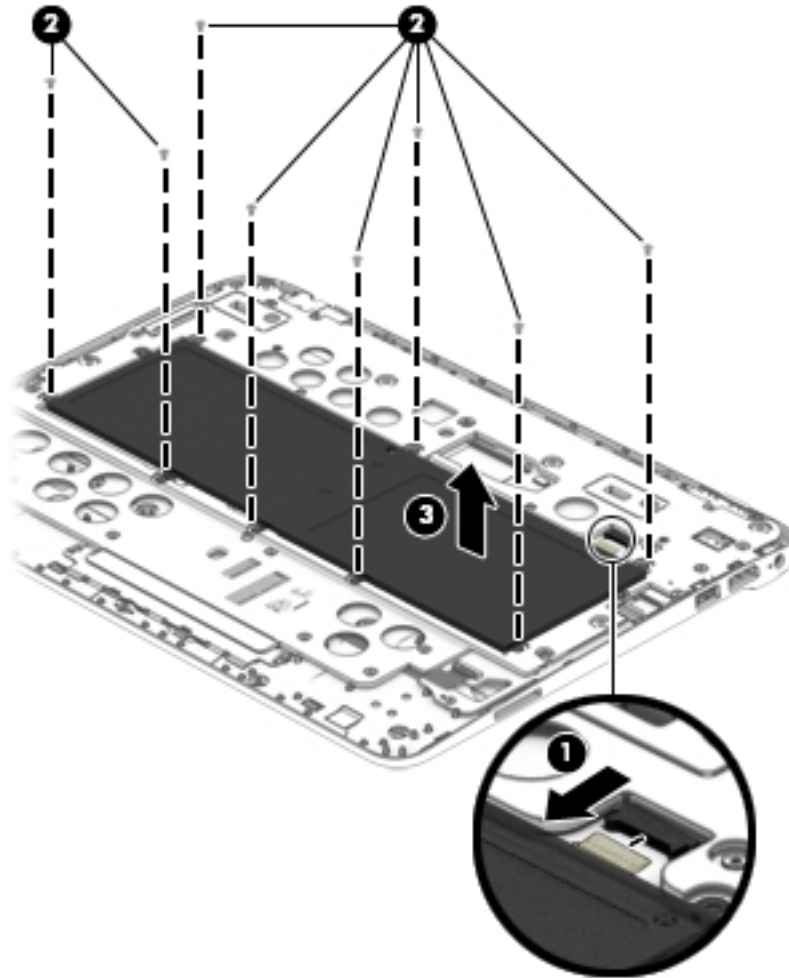
**⚠ WARNING!** To reduce potential safety issues, use only the battery provided with the keyboard, a replacement battery provided by HP, or a compatible battery purchased from HP.

**⚠ CAUTION:** Removing a battery that is the sole power source for the tablet can cause loss of information. To prevent loss of information, save your work or shut down the tablet through Windows before removing the battery.

---

Remove the keyboard battery:

1. Disconnect the keyboard battery cable **(1)** from the keyboard system board.
2. Remove the eight Phillips PM1.9×2.4 screws **(2)** that secure the keyboard battery to the top cover.
3. Remove the keyboard battery **(3)**.



Reverse this procedure to install the keyboard battery.

## Keyboard plate

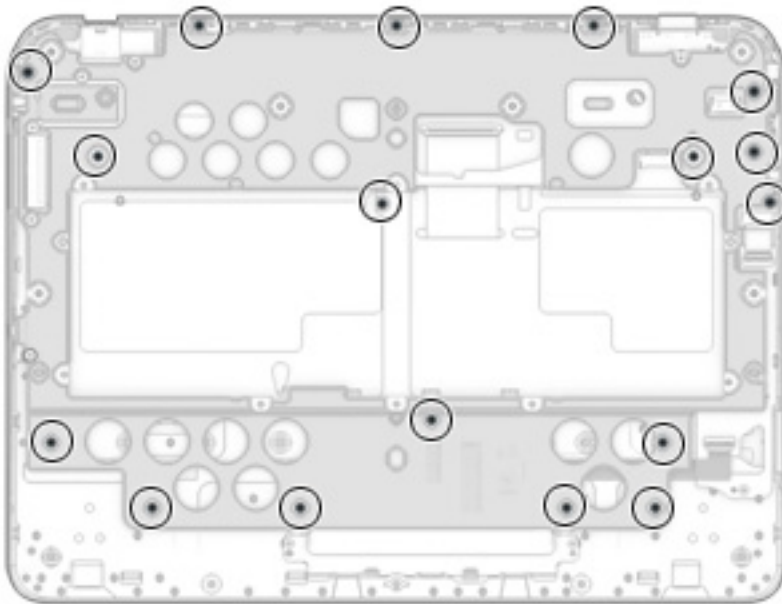
Description	Spare part number
Keyboard plate	766605-001

Before removing the keyboard plate, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Disconnect the tablet from the keyboard base.
5. Remove the bottom cover (see [Bottom cover on page 74](#)).
6. Remove the keyboard battery (see [Keyboard battery on page 75](#)).

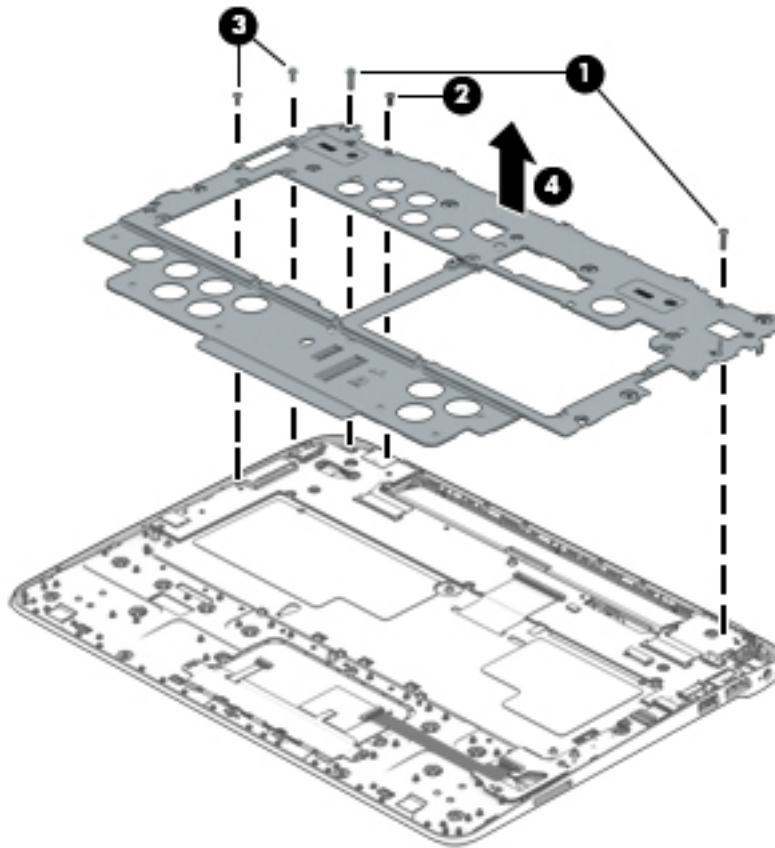
Remove the keyboard plate:

1. Remove the 17 Phillips PM1.9×2.4 screws that secure the keyboard plate to the top cover in the locations indicated in the following illustration.



2. Remove the following screws that secure the keyboard plate to the top cover:
  - (1) Two Phillips PM2.4×9.8 screws
  - (2) One Phillips PM2.4×5.8 screws
  - (3) Two Phillips PM1.9×5.4 screws

3. Remove the keyboard plate (4).



Reverse this procedure to install the keyboard plate.

## TouchPad button board

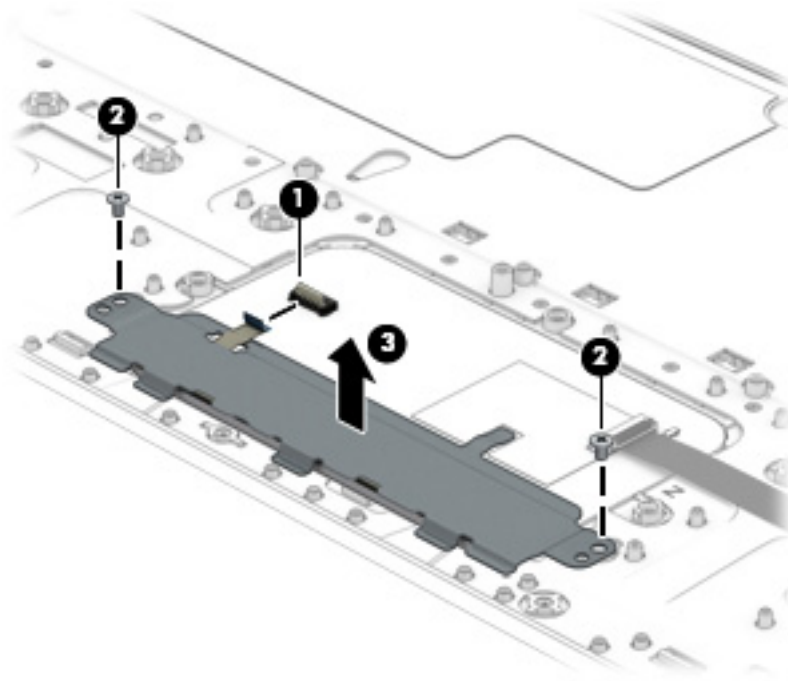
Description	Spare part number
TouchPad button board (includes cable)	778712-001

Before removing the TouchPad button board, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Disconnect the tablet from the keyboard base.
5. Remove the bottom cover (see [Bottom cover on page 74](#)).
6. Remove the keyboard battery (see [Keyboard battery on page 75](#)).
7. Remove the keyboard plate (see [Keyboard plate on page 77](#)).

Remove the TouchPad button board:

1. Release the ZIF connector **(1)** to which the TouchPad button board cable is attached, and then disconnect the TouchPad button board cable from the TouchPad.
2. Remove the two Phillips PM1.9×2.4 screws **(2)** that secure the TouchPad button board to the top cover.
3. Remove the TouchPad button board **(3)**.



Reverse this procedure to install the TouchPad button board.

## Keyboard

For use in country or region	Spare part number	For use in country or region	Spare part number
Keyboard with backlight and pointing stick (includes backlight, keyboard, and pointing stick cables)		For use in the Netherlands	766641-B31
For use in Belgium	766641-A41	For use in Northwest Africa	766641-FP1
For use in Brazil	766641-201	For use in Norway	766641-091
For use in Bulgaria	766641-261	For use in Portugal	766641-131
For use in Canada	766641-DB1	For use in Romania	766641-271
For use in the Czech Republic and Slovakia	766641-FL1	For use in Russia	766641-251
For use in Denmark	766641-081	For use in Saudi Arabia	766641-171
For use in France	766641-051	For use in Slovenia	766641-BA1
For use in Germany	766641-041	For use in South Korea	766641-AD1

<b>For use in country or region</b>	<b>Spare part number</b>	<b>For use in country or region</b>	<b>Spare part number</b>
For use in Greece	766641-151	For use in Spain	766641-071
For use in Hungary	766641-211	For use in Sweden and Finland	766641-B71
For use in Iceland	766641-DD1	For use in Switzerland	766641-BG1
For use in India	766641-D61	For use in Taiwan	766641-AB1
For use in Israel	766641-BB1	For use in Thailand	766641-281
For use in Italy	766641-061	For use in Turkey	766641-141
For use in Japan	766641-291	For use in the United Kingdom and Singapore	766641-031
For use in Latin America	766641-161	For use in the United States	766641-001
Keyboard with pointing stick (includes keyboard and pointing stick cables)		For use in the Netherlands	766640-B31
For use in Belgium	766640-A41	For use in Northwest Africa	766640-FP1
For use in Brazil	766640-201	For use in Norway	766640-091
For use in Bulgaria	766640-261	For use in Portugal	766640-131
For use in Canada	766640-DB1	For use in Romania	766640-271
For use in the Czech Republic and Slovakia	766640-FL1	For use in Russia	766640-251
For use in Denmark	766640-081	For use in Saudi Arabia	766640-171
For use in France	766640-051	For use in Slovenia	766640-BA1
For use in Germany	766640-041	For use in South Korea	766640-AD1
For use in Greece	766640-151	For use in Spain	766640-071
For use in Hungary	766640-211	For use in Sweden and Finland	766640-B71
For use in Iceland	766640-DD1	For use in Switzerland	766640-BG1
For use in India	766640-D61	For use in Taiwan	766640-AB1
For use in Israel	766640-BB1	For use in Thailand	766640-281
For use in Italy	766640-061	For use in Turkey	766640-141
For use in Japan	766640-291	For use in the United Kingdom and Singapore	766640-031
For use in Latin America	766640-161	For use in the United States	766640-001

Before removing the keyboard, follow these steps:

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



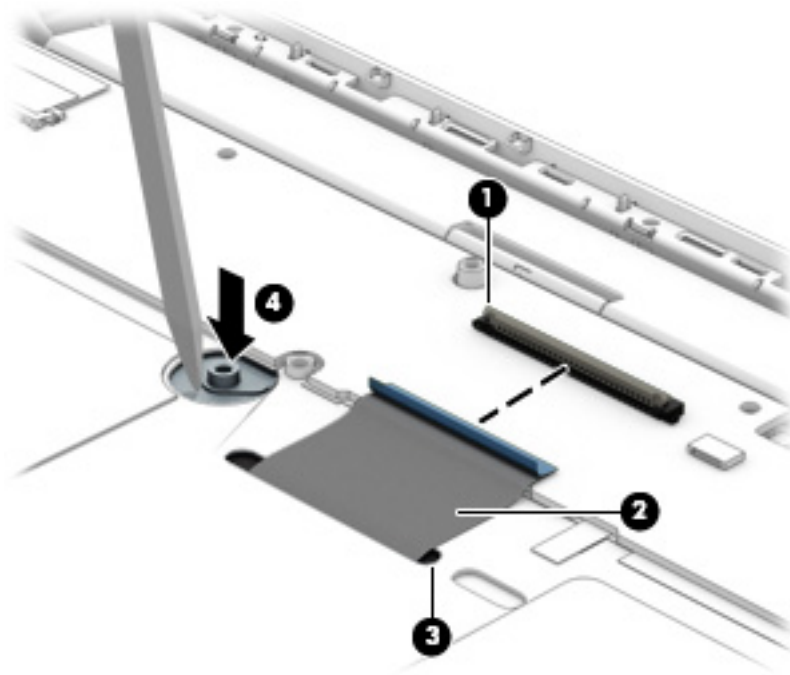
3. Disconnect all external devices from the tablet.
4. Disconnect the tablet from the keyboard base.
5. Remove the bottom cover (see [Bottom cover on page 74](#)).
6. Remove the keyboard battery (see [Keyboard battery on page 75](#)).
7. Remove the keyboard plate (see [Keyboard plate on page 77](#)).

Remove the keyboard:

1. Release the ZIF connector **(1)** to which the keyboard cable is attached, and then disconnect the keyboard cable from the docking board.
2. Detach the keyboard cable **(2)** from the top cover. (The keyboard cable is attached to the top cover with double-sided adhesive.)

**⚠ CAUTION:** Before carrying out the next step, make sure the keyboard cable will route cleanly through the opening **(3)** in the top cover. Failure to follow this caution can result in damage to the keyboard cable.

3. Release the keyboard by pressing on the back of the keyboard in the location **(4)** indicated in the following illustration.



4. Turn the top cover right side up with the front toward you.
5. Lift the rear edge of the keyboard **(1)** until it rests at an angle.

6. Remove the keyboard **(2)** by sliding it up and back at an angle.



Reverse this procedure to install the keyboard.

## Memory card reader board

Description	Spare part number
Memory card reader board (includes 2 cables)	766606-001

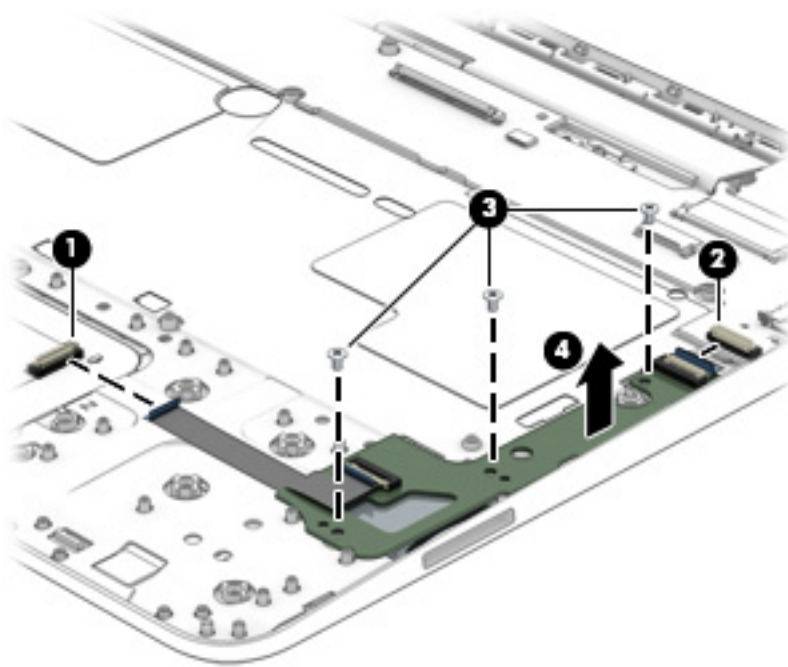
Before removing the memory card reader board, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Disconnect the tablet from the keyboard base.
5. Remove the bottom cover (see [Bottom cover on page 74](#)).
6. Remove the keyboard battery (see [Keyboard battery on page 75](#)).
7. Remove the keyboard plate (see [Keyboard plate on page 77](#)).

Remove the SD Card reader board:

1. Release the ZIF connector **(1)** to which the memory card reader board cable is attached, and then disconnect the memory card reader board cable from the TouchPad.
2. Release the ZIF connector **(2)** to which the memory card reader board cable is attached, and then disconnect the memory card reader board cable from the docking board.

3. Remove the three Phillips PM1.9×2.4 screws **(3)** that secure the memory card reader board to the top cover.
4. Remove the memory card reader board **(4)**.



Reverse this procedure to install the memory card reader board.

## Keyboard base I/O board

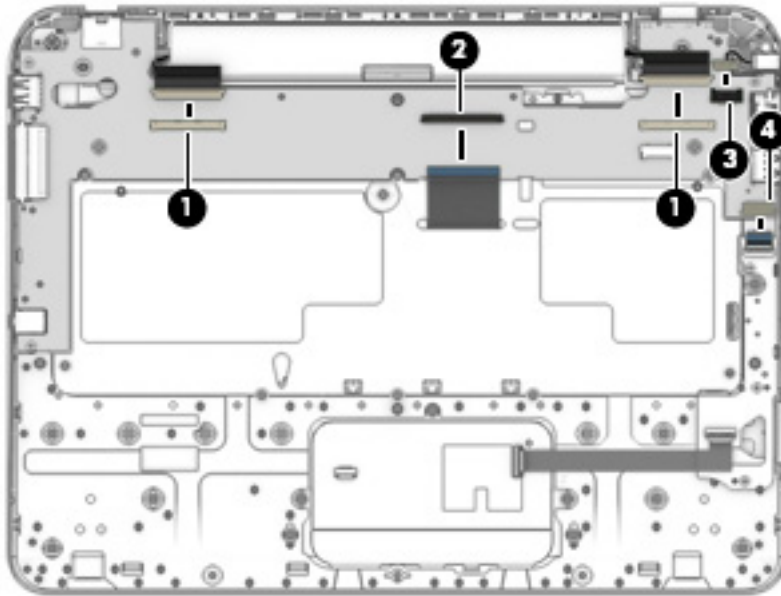
Description	Spare part number
Keyboard base I/O board (includes 2 cables, audio-in/audio-out jack, DisplayPort, docking connector, power connector, and USB ports)	766607-001

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

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Disconnect the tablet from the keyboard base.
5. Remove the bottom cover (see [Bottom cover on page 74](#)).
6. Remove the keyboard battery (see [Keyboard battery on page 75](#)).
7. Remove the keyboard plate (see [Keyboard plate on page 77](#)).

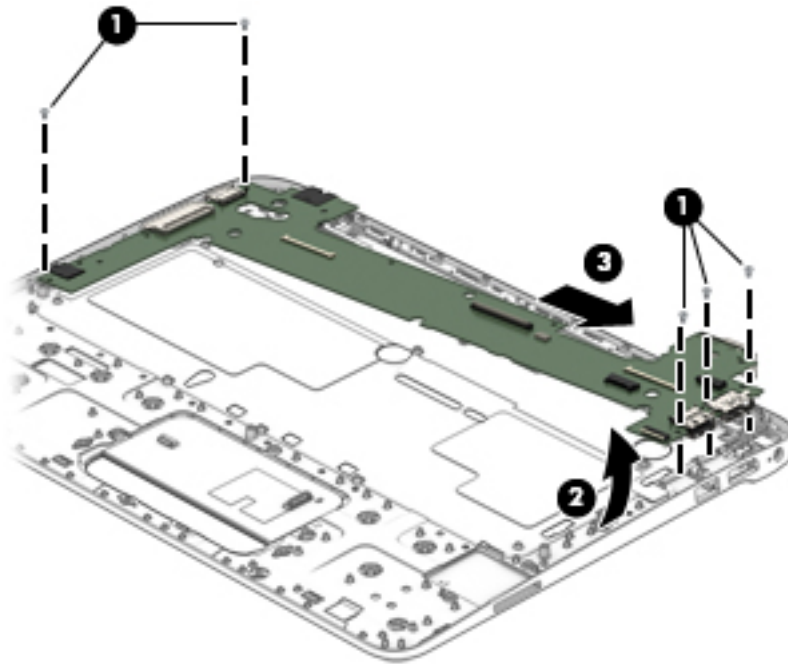
Remove the keyboard base I/O board:

1. Disconnect the hinge assembly cables **(1)** from the keyboard base I/O board.
2. Release the ZIF connector **(2)** to which the keyboard cable is attached, and then disconnect the keyboard cable from the keyboard base I/O board.
3. Disconnect the power connector cable **(3)** from the keyboard base I/O board.
4. Release the ZIF connector **(4)** to which the SD Card reader board cable is attached, and then disconnect the SD Card reader board cable from the keyboard base I/O board.



5. Remove the five Phillips PM1.9×2.4 screws **(1)** that secure the keyboard base I/O board to the top cover.
6. Lift the right side of the keyboard base I/O board **(2)** until it rests at an angle.

7. Remove the keyboard base I/O board (3) by sliding it up and to the right at an angle.



Reverse this procedure to install the keyboard base I/O board.

## Keyboard base power connector cable

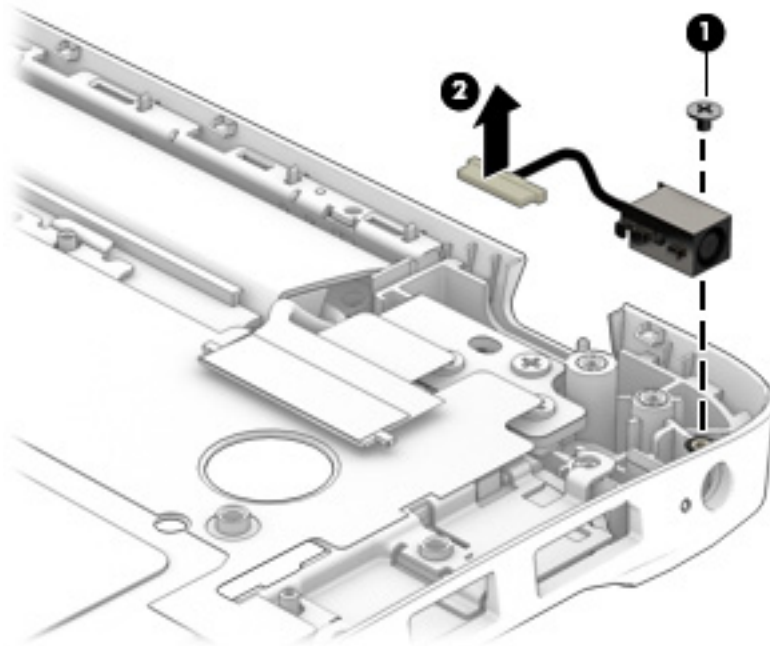
Description	Spare part number
Keyboard base power connector cable	766608-001

Before removing the keyboard base power connector cable, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Disconnect the tablet from the keyboard base.
5. Remove the bottom cover (see [Bottom cover on page 74](#)), and then remove the following components:
  - a. Keyboard battery (see [Keyboard battery on page 75](#))
  - b. Keyboard plate (see [Keyboard plate on page 77](#))
  - c. Keyboard I/O board (see [Keyboard base I/O board on page 83](#)).

Remove the keyboard base power connector cable:

1. Remove the Phillips PM1.5×3.5 screw **(1)** that secures the keyboard base power connector cable to the top cover.
2. Remove the keyboard base power connector cable **(2)**.



Reverse this procedure to install the keyboard base power connector cable.

## Hinge assembly

Description	Spare part number
Hinge assembly (includes 2 alignment posts, 2 cables, docking connector, and release latch)	766610-001

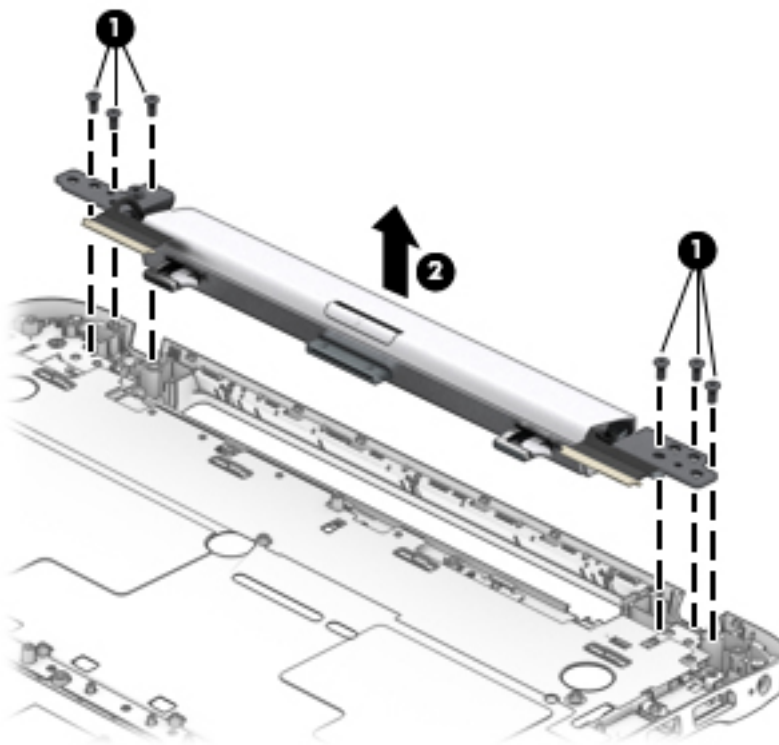
Before removing the hinge assembly, follow these steps:

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

4. Disconnect the tablet from the keyboard base.
5. Remove the bottom cover (see [Bottom cover on page 74](#)), and then remove the following components:
  - a. Keyboard battery (see [Keyboard battery on page 75](#))
  - b. Keyboard plate (see [Keyboard plate on page 77](#))
  - c. Keyboard I/O board (see [Keyboard base I/O board on page 83](#)).

Remove the hinge assembly:

1. Remove the six Phillips PM2.4×4.6 screws (1) that secure the hinge assembly to the top cover.
2. Remove the hinge assembly (2).



Reverse this procedure to install the hinge assembly.


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# 6 Computer Setup (BIOS), MultiBoot, and HP PC Hardware Diagnostics (UEFI)

## Using Computer Setup

Computer Setup, 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). Computer Setup includes settings for the types of devices installed, the startup sequence of the computer, and the amount of system and extended memory.


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

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## Starting Computer Setup

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 **NOTE:** An external keyboard or mouse connected to a USB port can be used with Computer Setup only if USB legacy support is enabled.

---

To start Computer Setup, follow these steps:

1. 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.
2. Press **f10** to enter Computer Setup.



## Navigating and selecting in Computer Setup

To navigate and select in Computer Setup, follow these steps:

1. 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.



**NOTE:** You can use either a pointing device (TouchPad, pointing stick, or USB mouse) or the keyboard to navigate and make selections in Computer Setup.

2. Press **f10** to enter Computer Setup.
  - To select a menu or a menu item, use the **tab** key and the keyboard arrow keys and then press **enter**, or use a pointing device to click the item.
  - To scroll up and down, click the up arrow or the down arrow in the upper-right corner of the screen, or use the up arrow key or the down arrow key on the keyboard.
  - To close open dialog boxes and return to the main Computer Setup screen, press **esc**, and then follow the on-screen instructions.

To exit Computer Setup menus, choose one of the following methods:

- To exit Computer Setup menus without saving your changes:

Click the **Exit** icon in the lower-right corner of the screen, and then follow the on-screen instructions.

– or –

Use the arrow keys to select **Main > Ignore Changes and Exit**, and then press **enter**.

- To save your changes and exit Computer Setup menus:


Click the **Save** icon in the lower-right corner of the screen, and then follow the on-screen instructions.

– or –

Use the arrow keys to select **Main > Save Changes and Exit**, and then press **enter**.

Your changes go into effect when the computer restarts.

## Restoring factory settings in Computer Setup

 **NOTE:** Restoring defaults will not change the hard drive mode.

---


To return all settings in Computer Setup to the values that were set at the factory, follow these steps:

1. 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.
2. Press **f10** to enter Computer Setup.
3. Use a pointing device or the arrow keys to select **Main > Restore Defaults**.
4. Follow the on-screen instructions.
5. To save your changes and exit, click the **Save** icon in the lower-right corner of the screen, and then follow the on-screen instructions.

– or –

Use the arrow keys to select **Main > Save Changes and Exit**, and then press **enter**.

Your changes go into effect when the computer restarts.

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

---

## 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 Computer Setup.

1. Start Computer Setup.
2. Use a pointing device or the arrow keys to select **Main > System Information** and make note of the BIOS version.
3. To exit Computer Setup without saving your changes, click the **Exit** icon in the lower-right corner of the screen, and then follow the on-screen instructions.

– or –

Use the arrow keys to select **Main > Ignore Changes and Exit**, and then press **enter**.

## 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 on the computer by unplugging the power cord from the AC outlet.

Do not shut down the computer or initiate Sleep.

Do not insert, remove, connect, or disconnect any device, cable, or cord.


1. From the Start screen, type `support`, and then select the **HP Support Assistant** app.
2. Click **Updates and tune-ups**, and then click **Check for HP updates now**.
3. Follow the on-screen instructions.
4. At the download area, follow these steps:
  - a. Identify the most recent BIOS update and compare it to the BIOS version currently installed on your computer. Make a note of the date, name, or other identifier. You may need this information to locate the update later, after it has been downloaded to your hard drive.
  - b. Follow the on-screen instructions to download your selection to the hard drive.

If the update is more recent than your BIOS, make a note of the path to the location on your hard drive where the BIOS update is downloaded. You will need to access this path when you are ready to install the update.

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

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

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

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

# Using MultiBoot

## About the boot device order

As the computer starts, the system attempts to boot from enabled devices. The MultiBoot utility, which is enabled at the factory, controls the order in which the system selects a boot device. Boot devices can include optical drives, diskette drives, a network interface card (NIC), hard drives, and USB devices. Boot devices contain bootable media or files that the computer needs to start and operate properly.



**NOTE:** Some boot devices must be enabled in Computer Setup before they can be included in the boot order.

You can change the order in which the computer searches for a boot device by changing the boot order in Computer Setup. You can also press **esc** while the “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen, and then press **f9**. Pressing **f9** displays a menu that shows the current boot devices and allows you to select a boot device. Or, you can use MultiBoot Express to set the computer to prompt you for a boot location each time the computer turns on or restarts.

## Choosing MultiBoot preferences

You can use MultiBoot in the following ways:

- To set a new boot order that the computer uses each time it is turned on, by changing the boot order in Computer Setup.
- To dynamically choose the boot device, by pressing **esc** while the “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen, and then pressing **f9** to enter the Boot Device Options menu.
- To use MultiBoot Express to set variable boot orders. This feature prompts you for a boot device each time the computer is turned on or restarted.

## Setting a new boot order in Computer Setup

To start Computer Setup and set a boot device order that the computer uses each time it is turned on or restarted, follow these steps:

1. 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.
2. Press **f10** to enter Computer Setup.
3. Use a pointing device or the arrow keys to select one of the following options:
  - **Advanced > Boot Options > UEFI Boot Order > UEFI Hybrid**
  - **Advanced > Boot Options > UEFI Boot Order > UEFI Native Boot mode**
  - **Advanced > Boot Options > Legacy Boot Order > Legacy Boot Mode**

Press **enter**.

4. To move the device up in the boot order, use a pointing device to click the up arrow, or press the **+** key.

– or –

To move the device down in the boot order, use a pointing device to click the down arrow, or press the **-** key.

5. To save your changes and exit Computer Setup, click the **Save** icon in the lower-left corner of the screen, and then follow the on-screen instructions.

– or –

Use the arrow keys to select **Main > Save Changes and Exit**, and then press [enter](#).

## Dynamically choosing a boot device using the f9 prompt

To dynamically choose a boot device for the current startup sequence, follow these steps:

1. Open the Select Boot Device menu by turning on or restarting the computer, and then pressing [esc](#) while the “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen.
2. Press [f9](#).
3. Use a pointing device or the arrow keys to select a boot device, then press [enter](#).

## Setting a MultiBoot Express prompt

To start Computer Setup and set the computer to display the MultiBoot startup location menu each time the computer is started or restarted, follow these steps:

1. 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.
2. Press [f10](#) to enter Computer Setup.
3. Use a pointing device or the arrow keys to select **Advanced > Boot Options > MultiBoot Express Boot Popup Delay (Sec)**, and then press [enter](#).
4. In the **MultiBoot Express Popup Delay (Sec)** field, enter the length of time in seconds that you want the computer to display the startup location menu before it defaults to the current MultiBoot setting. (When 0 is selected, the Express Boot startup location menu is not displayed.)
5. To save your changes and exit Computer Setup, click the **Save** icon in the lower-left corner of the screen, and then follow the on-screen instructions.

– or –

Use the arrow keys to select **Main > Save Changes and Exit**, and then press [enter](#).

Your changes go into effect when the computer restarts.

## Entering MultiBoot Express preferences

When the Express Boot menu is displayed during startup, you have the following choices:

- To specify a boot device from the Express Boot menu, select your preference within the allotted time, and then press [enter](#).
- To prevent the computer from defaulting to the current MultiBoot setting, press any key before the allotted time expires. The computer will not start until you select a boot device and press [enter](#).
- To allow the computer to start according to the current MultiBoot settings, wait for the allotted time to expire.

## 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 95](#).

---

- 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

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

---

### **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 pages—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**.

# 7 Specifications

	<b>Metric</b>	<b>U.S.</b>
<b>Tablet dimensions</b>		
Depth	<b>20.95 cm</b>	8.25 in
Width	<b>30.70 cm</b>	12.09 in
Height	<b>1.28 cm</b>	0.50 in
Weight	<b>1.01 kg</b>	2.20 lbs
<b>Keyboard base dimensions</b>		
Depth	<b>23.95 cm</b>	9.43 in
Width	<b>31.60 cm</b>	12.44 in
Height	<b>1.00 cm</b>	0.39 in
Weight	<b>0.84 kg</b>	1.87 lbs
<b>System dimensions (tablet docked in keyboard base)</b>		
Depth	<b>23.95 cm</b>	9.43 in
Width	<b>31.70 cm</b>	12.48 in
Height	<b>2.33 cm</b>	0.92 in
Weight	<b>1.86 kg</b>	4.09 lbs
Input Power	Rating	
Operating voltage and current	19.5 V dc @ 2.31 A – 45 W	
	19.5 V dc @ 3.33 A – 65 W	
	5 V dc @ 1.5 A – 65 W Travel	
<b>NOTE:</b> This product is designed for IT power systems in Norway with phase-to-phase voltage not exceeding 240 V rms.		
<b>NOTE:</b> The computer operating voltage and current can be found on the system regulatory label.		
<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>Metric</b>	<b>U.S.</b>
<b>Relative humidity</b> (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%	
<b>Maximum altitude</b> (unpressurized)		
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
<b>NOTE:</b> Applicable product safety standards specify thermal limits for plastic surfaces. The device operates well within this range of temperatures.		

---


## 8 Backup and recovery

To protect your information, use Windows backup and restore utilities to back up individual files and folders, back up your entire hard drive, create system repair media (select models only) by using the installed optical drive (select models only) or an optional external optical drive, or create system restore points. In case of system failure, you can use the backup files to restore the contents of your computer.

From the Start screen, type `restore`, click **Settings**, and then select from the list of displayed options.

 **NOTE:** For detailed instructions on various backup and restore options, perform a search for these topics in Windows Help and Support.

In case of system instability, HP recommends that you print the recovery procedures and save them for later use.

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

### Backing up your information

Recovery after a system failure is as good as your most recent backup. You should create system repair media and your initial backup immediately after initial system setup. 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.


For more information on the Windows backup features, see Windows Help and Support.

### Performing a system recovery

In case of system failure or instability, the computer provides the following tools to recover your files:

- Windows recovery tools: You can use Windows Backup and Restore to recover information you have previously backed up. You can also use Windows Automatic Repair to fix problems that might prevent Windows from starting correctly.
- **f11** recovery tools: You can use the **f11** recovery tools to recover your original hard drive image. The image includes the Windows operating system and software programs installed at the factory.

---


 **NOTE:** If you are unable to boot (start up) your computer and you cannot use the system repair media you previously created (select models only), you must purchase Windows operating system media to reboot the computer and repair the operating system. For additional information, see [Using Windows operating system media \(purchased separately\) on page 100](#)

---

## Using the Windows recovery tools

To recover information you previously backed up, see Windows Help and Support for steps on restoring files and folders.

To recover your information using Automatic Repair, follow these steps:

 **CAUTION:** Some Startup Repair options will completely erase and reformat the hard drive. All files you have created and any software installed on the computer are permanently removed. When reformatting is complete, the recovery process restores the operating system, as well as the drivers, software, and utilities from the backup used for recovery.


---

1. If possible, back up all personal files.
2. If possible, check for the presence of the Recovery Image partition and the Windows partition.

From the Start screen, type `file`, and then click **File Explorer**.


– or –

From the Start screen, type `pc`, and then select **This PC**.

 **NOTE:** If the Windows partition and the Recovery Image partition are not listed, you must recover your operating system and programs using the Windows operating system DVD and the Driver Recovery media (both purchased separately). For additional information, see [Using Windows operating system media \(purchased separately\) on page 100](#).


---

3. If the Windows partition and the Recovery Image partition are listed, restart the computer by pressing and holding the `shift` key while clicking **Restart**.
4. Select **Troubleshoot**, then select **Advanced Options**, and then select **Startup Repair**.
5. Follow the on-screen instructions.

 **NOTE:** For additional information on recovering information using the Windows tools, perform a search for these topics in Windows Help and Support.

---

## Using f11 recovery tools


 **CAUTION:** Using `f11` completely erases hard drive contents and reformats the hard drive. All files that you have created and any software that you have installed on the computer are permanently removed. The `f11` recovery tool reinstalls the operating system and HP programs and drivers that were installed at the factory. Software not installed at the factory must be reinstalled.

---

To recover the original hard drive image using **f11**:

1. If possible, back up all personal files.
2. If possible, check for the presence of the Recovery Image partition: From the Start screen, type **pc**, and then select **This PC**.

---

 **NOTE:** If the Recovery Image partition is not listed, you must recover your operating system and programs using the Windows operating system media and the *Driver Recovery* media (both purchased separately). For additional information, see [Using Windows operating system media \(purchased separately\) on page 100](#).


---

3. If the Recovery Image partition is listed, 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.
4. Press **f11** while the “Press <F11> for recovery” message is displayed on the screen.
5. Follow the on-screen instructions.

## Using Windows operating system media (purchased separately)

To order a Windows operating system DVD, contact support. See the *Worldwide Telephone Numbers* booklet included with the computer. You can also find contact information from the HP website. Go to <http://www.hp.com/support>, select your country or region, and follow the on-screen instructions.


---

 **CAUTION:** Using a Windows operating system media completely erases hard drive contents and reformats the hard drive. All files that you have created and any software that you have installed on the computer are permanently removed. When reformatting is complete, the recovery process helps you restore the operating system, as well as drivers, software, and utilities.

---

To initiate a full install of the operating system using a Windows operating system DVD:

---

 **NOTE:** This process takes several minutes.

---

1. If possible, back up all personal files.
2. Connect the tablet to a keyboard base.
3. Insert the Windows operating system DVD into an optional external optical drive, and then restart the computer.
4. When prompted, press any keyboard key.
5. Follow the on-screen instructions.

After the installation is completed:

1. Eject the Windows operating system media and then insert the *Driver Recovery* media.
2. Install the Hardware Enabling Drivers first, and then install Recommended Applications.

## Using Windows Refresh or Windows Reset

When your computer is not working properly and you need to regain system stability, the Windows Refresh option allows you to start fresh and keep what is important to you.

The Windows Reset option allows you to perform detailed reformatting of your computer, or remove personal information before you give away or recycle your computer. For more information on these features, see Windows Help and Support.

## Using HP Software Setup

HP Software Setup can be used to reinstall drivers or select software that has been corrupted or deleted from the system.

1. From the Start screen, type `HP Software Setup`.
2. Open **HP Software Setup**.
3. Follow the on-screen directions to reinstall drivers or select software.

## 9 Power cord set requirements

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

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

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

### Requirements for all countries

The following requirements are applicable to all countries and regions:

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

### Requirements for specific countries and regions

Country/region	Accredited agency	Applicable note number
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1

Country/region	Accredited agency	Applicable note number
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	METI	3
The Netherlands	KEMA	1
Norway	NEMKO	1
The People's Republic of China	COC	5
South Korea	EK	4
Sweden	CEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	4
The United Kingdom	BSI	1
The United States	UL	2

1. The flexible cord must be Type HO5VV-F, 3-conductor, 1.0-mm<sup>2</sup> conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.
3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00-mm<sup>2</sup> conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.
4. The flexible cord must be Type RVV, 3-conductor, 0.75-mm<sup>2</sup> conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
5. The flexible cord must be Type VCTF, 3-conductor, 0.75-mm<sup>2</sup> conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.

---

# 10 Recycling

When a non-rechargeable or rechargeable battery has reached the end of its useful life, do not dispose of the battery in general household waste. Follow the local laws and regulations in your area for battery disposal.

HP encourages customers to recycle used electronic hardware, HP original print cartridges, and rechargeable batteries. For more information about recycling programs, see the HP Web site at <http://www.hp.com/recycle>.



# Index

## A

AC adapter, spare part numbers 27, 31  
AC adapter/battery light 10, 15  
alignment post connectors 9  
alignment posts 11  
ambient light sensor 6  
antenna  
    location 6  
audio, product description 2  
audio-in jack 10, 16  
audio-out jack 10, 16  
autorotate button 8

## B

back cover  
    removal 46  
    spare part numbers 23, 33, 38, 46  
backpack, spare part numbers 27, 31, 32  
battery  
    removal 51, 75  
    spare part numbers 23, 27, 32, 51, 75  
bottom cover  
    removal 74  
    spare part number 27, 32, 74  
Bracket Kit  
    spare part number 33  
Bracket Kit, spare part number 27  
button board  
    removal 49  
    spare part number 23, 33, 49  
buttons  
    autorotate 8  
    TouchPad 14  
    TouchPad on/off 14

volume 9  
Windows 7

## C

Cable Kit  
    spare part number 38  
Cable Kit, spare part number 27  
cables, service considerations 42  
camera flash 8  
caps lock light 13  
card reader board  
    removal 61  
    spare part number 23, 35, 61  
carrying case, spare part numbers 31  
carrying case, spare part numbers 27, 28, 32  
chipset, product description 1  
components  
    display 6  
    keyboard base 11  
    keys 12  
    left side 14  
    lights 13  
    rear 16  
    right side 15  
    tablet edge 8  
    top 11  
    TouchPad 14  
connectors  
    docking 11, 16  
    power 14  
connectors, service considerations 42

## D

display components 6  
display panel  
    product description 1

display panel assembly  
    spare part numbers 38, 39  
display panel assembly, spare part numbers 19  
DisplayPort 15  
docking connector 11, 16  
docking port 9  
docking station, spare part number 27, 31  
drives  
    precautions 42  
    preventing damage 42

## E

electrostatic discharge 43  
equipment guidelines 45  
esc key 12  
external monitor port 16

## F

fan  
    removal 60  
    spare part number 23, 33, 60  
fingerprint reader 8  
fingerprint reader board  
    removal 48  
    spare part number 23, 33, 48  
fn key 12  
function key 12

## G

graphics, product description 1  
grounding guidelines 43  
guidelines  
    equipment 45  
    grounding 43  
    packaging 44  
    transporting 44  
    workstation 44

- H**
- headphone jack 10, 16
- heat sink
  - removal 66
  - spare part number 23, 33, 66
- Hinge assembly
  - spare part number 33
- hinge assembly
  - removal 86
  - spare part number 27, 86
- home button board
  - removal 71
  - spare part number 20, 33, 71
- HP RJ45-to-VGA adapter, spare part number 28, 38
- I**
- I/O bezel
  - spare part numbers 20, 38, 40
- I/O board
  - removal 68, 83
  - spare part numbers 20, 27, 33, 38, 68, 83
- J**
- jacks
  - audio-in 10, 16
  - audio-out 10, 16
  - headphone 10, 16
  - microphone 10, 16
  - network 16
  - RJ-45 16
- K**
- key components 12
- keyboard
  - removal 79
  - spare part numbers 24, 25, 29, 35, 36, 37, 38, 39, 40, 79
- keyboard base
  - components 11
- keyboard major components 24
- keyboard plate
  - removal 77
  - spare part number 27, 32, 77
- keys
  - esc 12
  - fn 12
  - function 12
- num lk 12
- Windows 12
- L**
- left-side components 14
- light components 13
- lights
  - AC adapter/battery 10, 15
  - caps lock 13
  - microphone mute 13
  - mute 13
  - network 16
  - num lock 13
  - RJ-45 16
  - TouchPad 13
  - webcam 6
  - wireless 13
- M**
- memory card reader 9, 15
- memory card reader board
  - removal 82
  - spare part number 27, 32, 82
- memory, product description 1
- microphone
  - location 6
  - product description 2
- microphone jack 10, 16
- microphone mute light 13
- model name 1
- monitor port 16
- mouse, spare part numbers 31
- mute light 13
- N**
- network jack 16
- network light 16
- num lk key 12
- num lock light 13
- numeric keypad 12
- O**
- operating system, product description 5
- P**
- packaging guidelines 44
- pen holder 9
- pen, spare part number 27, 38
- Plastic Kit
  - spare part number 38
- plastic parts, service considerations 41
- Plastics Kit, spare part number 28
- ports
  - DisplayPort 15
  - docking 9
  - external monitor 16
  - monitor 16
  - product description 3
  - USB 3.0 9, 16
  - USB 3.0 charging (powered) 15
- power connector 10, 14
- power connector cable
  - removal 70, 85
  - spare part number 20, 27, 33, 70, 85
- power cord
  - set requirements 102
  - spare part numbers 31, 32
- power requirements, product description 3, 4
- power switch 9
- processor, product description 1
- product description
  - audio 2
  - chipset 1
  - display panel 1
  - graphics 1
  - memory 1
  - microphone 2
  - operating system 5
  - ports 3
  - power requirements 3, 4
  - processors 1
  - product name 1
  - serviceability 5
  - storage 2
  - video 2
  - wireless 2
- product name 1
- R**
- rear components 16
- release latch 11
- right-side components 15
- RJ-45 jack 16
- RJ-45 light 16

RTC battery  
removal 59  
spare part number 23, 35, 59

## S

Screw Kit, spare part number 29, 32  
service considerations  
cables 42  
connectors 42  
plastic parts 41  
serviceability, product description 5  
SIM slot 9  
SIM, spare part number 27, 31  
smart card reader 10  
Solid-state drive  
spare part numbers 22  
solid-state drive  
removal 53  
spare part numbers 35, 53  
Speaker Kit, spare part number 20, 33, 72  
speakers  
location 6  
removal 72  
spare part number 20, 33, 72  
storage, product description 2  
system board  
removal 20, 63  
spare part numbers 33, 34, 35, 63

## T

tablet  
specifications 96  
tablet edge components 8  
tablet major components 19  
tools required 41  
top components 11  
top cover  
spare part number 26, 33  
TouchPad button 14  
TouchPad button board  
removal 78  
spare part number 27, 38, 78  
TouchPad components 14  
TouchPad light 13  
TouchPad on/off button 14  
TouchPad zone 14

transporting guidelines 44

## U

USB 3.0 charging (powered) 15  
USB 3.0 port 9, 16

## V

vents 8  
video, product description 2  
volume button 9

## W

webcam  
location 6, 8  
webcam light 6  
Windows button 7  
Windows key 12  
wireless antenna  
location 6  
wireless light 13  
wireless, product description 2  
WLAN antenna  
location 6  
WLAN module  
removal 55  
spare part numbers 22, 31, 32, 55  
workstation guidelines 44  
WWAN antenna  
location 6  
WWAN module  
removal 57  
spare part numbers 22, 31, 32, 57