



**HP Pavilion x2 Detachable PC (model numbers 12-b0XX and 12-b100 through 12-b199)**

**Maintenance and Service Guide**  
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#### Product notice

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

Not all features are available in all editions of Windows 10. This slate may require upgraded and/or separately purchased hardware, drivers, and/or software to take full advantage of Windows 10 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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# 1 Product description

Category	Description
<b>Product Name</b>	HP Pavilion x2 Detachable PC (model numbers 12-b100 through 12-b199) HP Pavilion x2 Detachable PC (model number 12-b0XX)
<b>Processor</b>	<b>For use only on slates with model numbers 12-b100 through 12-b199:</b> Intel® Atom™ x5-Z8550 1.44-GHz (SC turbo up to 2.24-GHz) processor (1600-MHz front side bus (FSB), 2.0-MB L2 cache, quad core, 2.0 W) <b>For use only on slates with model number 12-b0XX:</b> <ul style="list-style-type: none"><li>• Intel Core™ m3 6Y30 0.90-GHz (SC turbo up to 2.20-GHz) processor (1866-MHz FSB, 4.0-MB L3 cache, dual core, 4.5 W)</li><li>• Intel Atom x7-Z8700 processor (up to 2.40-GHz) processor (1600-MHz FSB, 2.0-MB L3 cache, quad core, 2.0 W SDP)</li><li>• Intel Atom x5-Z8500 processor (up to 2.24-GHz) processor (1600-MHz FSB, 2.0-MB L3 cache, quad core, 2.0 W SDP)</li></ul>
<b>Chipset</b>	Integrated soldered-on-circuit (SoC)
<b>Graphics</b>	<b>Internal Graphics:</b> <ul style="list-style-type: none"><li>• Intel HD Graphics 515 (on slate models equipped with an Intel Core processor)</li><li>• Intel HD Graphics x5-Z8500 (on slate models equipped with an Intel Atom x7-Z8700 and x7-Z8500 processor)</li><li>• Intel HD Graphics 400 x5-Z8550 (on slate models equipped with an Intel Atom x7-Z8500 processor)</li></ul> Supports HD decode, DX12, and HDMI
<b>Panel</b>	12.0-in, (1920×1280), UWVA, WUXGA+white light-emitting diode (WLED), BrightView, 3:2 ultra wide aspect ratio, typical brightness: 340 nits; ultra-slim-bent (2.4 mm), TouchScreen, MultiTouch-enabled, eDP+PSR; Supports low-voltage differential signaling (LVDS)
<b>Memory</b>	Supports LPDDR3-1866 Dual Channel Supports up to 8-MB maximum on-board system memory <b>LPDDR3-1866 Dual Channel Support</b> <ul style="list-style-type: none"><li>• 8192 MB (256 MB × 32 × 4 × 2 pieces; only on slate models equipped with an Intel Atom processor)</li><li>• 4096 MB (128 MB × 32 × 4 × 2 pieces; only on slate models equipped with an Intel Atom processor)</li></ul> Supports up to 8-MB maximum on-board system memory <b>LPDDR3-1600 Dual Channel Support</b> <ul style="list-style-type: none"><li>• 4096 MB (128 MB × 32 × 4 × 2 pieces; 1866 bridge to 1600; only on slate models equipped with an Intel Core processor)</li><li>• 2048 MB (128 MB × 32 × 2 × 2 pieces; only on slate models equipped with an Intel Core processor)</li></ul>

Category	Description
<b>Storage</b>	<p>Supports M.2 SATA-3 next generation form factor (NGFF)</p> <ul style="list-style-type: none"> <li>M.2 SATA triple level cell (TLC): 256 GB (only on slate models equipped with an Intel Core processor)</li> <li>M.2 SATA DRAM-less: 128 GB (only on slate models equipped with an Intel Core processor)</li> </ul> <p>Supports embedded MultiMediaCard configurations (eMMC): 128 GB TLC and 64 GB (only on slate models equipped with an Intel Atom processor)</p>
<b>Audio and video</b>	<p>Fixed integrated HP TrueVision high-definition (HD) webcam, 1080p×30 frames per second</p> <p>Two digital microphones with beam-forming, echo-cancellation, noise-suppression, and voice recognition software</p> <p>Two speakers</p> <p>Bang &amp; Olufsen Play audio</p>
<b>Sensors</b>	<p>Accelerometer</p> <p>ECompass</p> <p>Gyroscope</p> <p>Sensor hub</p>
<b>Wireless</b>	<p>Integrated wireless local area network (WLAN) options by way of wireless module</p> <p>Two built-in WLAN antennas (M.2 / PCIe)</p> <p>Supports the following WLAN modules:</p> <ul style="list-style-type: none"> <li>Intel 3165NGWG ac 1×1 + Bluetooth® 4.0 LE PCIe+USB NGFF 2230 Combo Adapter</li> <li>Realtek RTL8723BE 802.11b/g/n 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter</li> </ul> <p>Compatible with MiraCast-certified devices</p> <p>Supports Intel WiDi</p> <p>Supports Connected Standby</p>
<b>Security</b>	<p>Trusted platform module (TPM) 2.0 (firmware-based support)</p>
<b>Ports</b>	<ul style="list-style-type: none"> <li>Headphone/microphone combo jack</li> <li>micro-HDMI v 1.4 supporting up to 1920×1080 @ 60Hz</li> <li>Pogo-pin (10-pin) docking connector (present on slate and keyboard base)</li> <li>USB type C 3.1 port Gen 1 supporting charging and data transfer</li> <li>USB 2.0 port</li> </ul>
<b>Keyboard/pointing devices</b>	<p>Detachable, hardcase, keyboard base cover</p> <p>Full-sized, island-style, thin cover with non-backlit keyboard</p> <p>Clickpad with image sensor</p> <p>Multitouch gestures enabled</p> <p>Supports Windows® 10 Modern Trackpad Gestures</p>
<b>Power requirements</b>	<p>Supports a 3-cell, 36-WHr, 3.25-WHr, Li-Ion battery</p> <p>Supports a 65-W HP Smart AC adapter (non-PFC, EM, 4.5-mm) and 45-W HP Smart AC adapter (non-PFC, RC, 4.5-mm) AC adapter</p>
<b>Operating system</b>	<p><b>Preinstalled:</b> Windows 10 Professional</p>

<b>Category</b>	<b>Description</b>
<b>Operating system</b> <i>(continued)</i>	<b>For Developed Market (ML):</b> Windows 10 Home ML and Windows 10 Home Value 2-in-1 (Compact) <b>For Emerging Market (EM/SL):</b> Windows 10 EM/SL
<b>Serviceability</b>	<b>End user replaceable parts:</b> AC adapter

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## 2 External component identification

### Locating hardware

To find out what hardware is installed on the slate:

- ▲ Type `device manager` in the taskbar search box, and then select the **Device Manager** app.

A list displays all the devices installed on the slate.

For information about system hardware components and the system BIOS version number, press `fn+esc` (select products only).

### Locating software

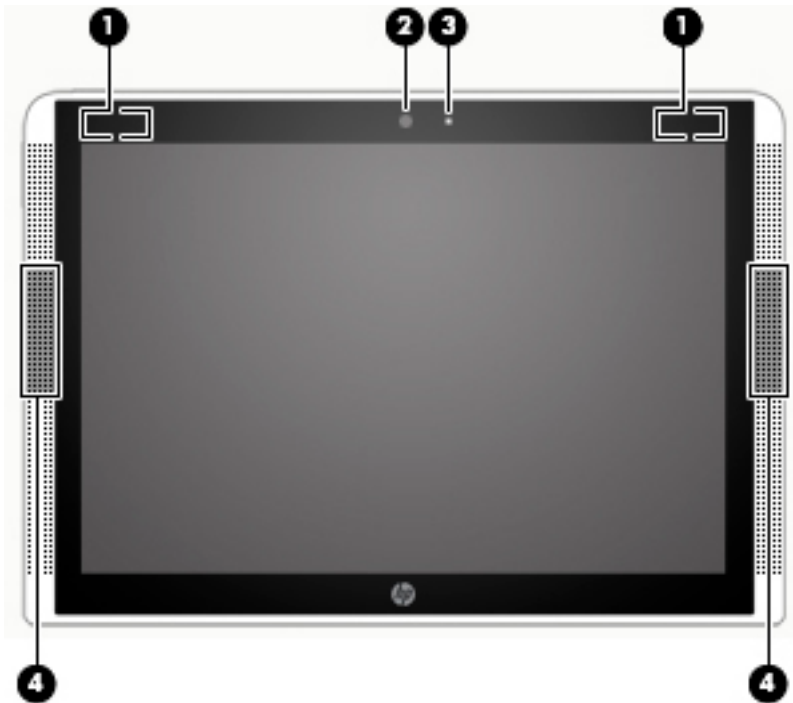
To find out what software is installed on the slate:

- ▲ Select the **Start** button, and then select **All apps**.

– or –

Right-click the **Start** button, and then select **Programs and Features**.

# Display



Item	Component	Description
(1)	WLAN antennas (2)*	Send and receive wireless signals to communicate with WLANs.
(2)	Webcam	Records video and captures photographs. Some products allow you to video conference and chat online using streaming video.  To use a webcam (integrated camera): ▲ Type <i>camera</i> in the taskbar search box, and then select <b>Camera</b> .
(3)	Webcam light	On: The webcam is in use.
(4)	Speakers (2)	Produce sound.

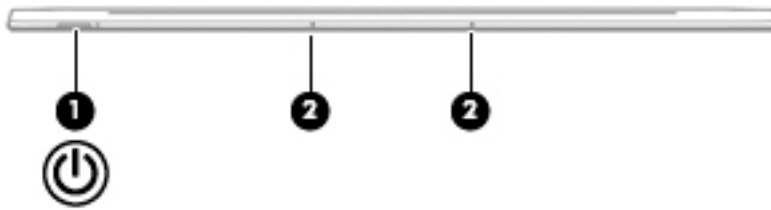
\*The antennas are not visible from the outside of the slate. For optimal transmission, keep the areas immediately around the antennas free from obstructions.

For wireless regulatory notices, see the section of the *Regulatory, Safety, and Environmental Notices* that applies to your country or region.

To access this guide:

- ▲ Select the **Start** button, select **All apps**, select **HP Help and Support**, and then select **HP Documentation**.

## Top edge



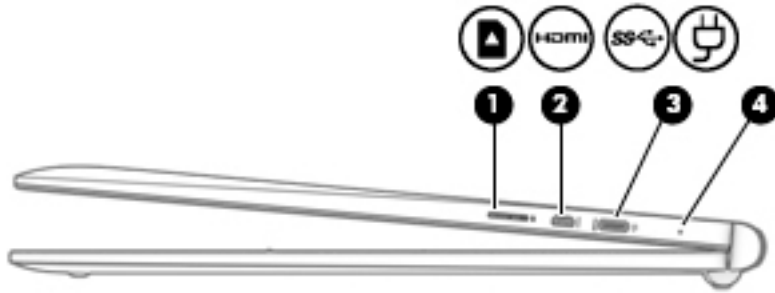
Component	Description
<b>(1)</b> Power button	<ul style="list-style-type: none"><li>• When the slate is off, press the button to turn on the slate. <b>NOTE:</b> After pressing power button, the Caps lock light flashes for one second to indicate the slate is on.</li><li>• When the slate is on, press the button briefly to initiate Sleep.</li><li>• When the slate is in the Sleep state, press the button briefly to exit Sleep.</li><li>• When the slate is in Hibernation, press the button briefly to exit Hibernation.</li></ul> <p><b>CAUTION:</b> Pressing and holding down the power button will result in the loss of unsaved information.</p> <p>If the slate has stopped responding and Windows shutdown procedures are ineffective, press and hold the power button down for at least 10 seconds to turn off the slate.</p> <p>To learn more about your power settings, see your power options. Type <code>power</code> in the taskbar search box, select <b>Power and sleep settings</b>, and then select <b>Power and sleep</b>.</p>
<b>(2)</b> Internal microphones (2)	Record sound.

## Left side



Component	Description
(1) USB 2.0 port	Connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner, or USB hub.
(2) Audio-out (headphone)/Audio-in (microphone) jack	Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects an optional headset microphone. This jack does not support optional microphone-only devices.  <b>WARNING!</b> To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, refer to the <i>Regulatory, Safety, and Environmental Notices</i> .  To access this guide: <ul style="list-style-type: none"><li>▲ Select the <b>Start</b> button, select <b>All apps</b>, select <b>HP Help and Support</b>, and then select <b>HP Documentation</b>.</li></ul> <b>NOTE:</b> When a device is connected to the jack, the slate speakers are disabled.
(3) Volume buttons	Control speaker volume on the slate. <ol style="list-style-type: none"><li>1. To increase speaker volume, press the + edge of the button.</li><li>2. To decrease speaker volume, press the – edge of the button.</li></ol>

## Right side



Component	Description
(1) Memory card reader	<p>Reads optional memory cards that enable you to store, manage, share, or access information.</p> <p>To insert a card:</p> <ol style="list-style-type: none"><li>1. Hold the card label-side up, with connectors facing the slate.</li><li>2. Insert the card into the memory card reader, and then press in on the card until it is firmly seated.</li></ol> <p>To remove a card:</p> <ul style="list-style-type: none"><li>▲ Press in on the card, and then remove it from the memory card reader.</li></ul>
(2) micro-HDMI port	<p>Connects an optional video or audio device, such as a high-definition television, any compatible digital or audio component, or a high-speed High-Definition Multimedia Interface (HDMI) device.</p>
(3) USB Type-C (charging) port	<p>Connects any USB device with a Type-C connector.</p> <p><b>NOTE:</b> USB Type-C ports charge other HP Type C products such as cell phones, laptops, slates, and MP3 players when the slate is on. Also, some USB Type-C ports connect DisplayPort, VGA, HDMI, and other video devices to provide video output.</p> <p><b>NOTE:</b> Adapters (purchased separately) may be required.</p>
(4) AC adapter and battery light	<ul style="list-style-type: none"><li>• White: The AC adapter is connected and the battery is fully charged.</li><li>• Blinking white: The AC adapter is disconnected and the battery has reached a low battery level.</li><li>• Amber: The AC adapter is connected and the battery is charging.</li><li>• Off: The battery is not charging.</li></ul>




## Bottom edge



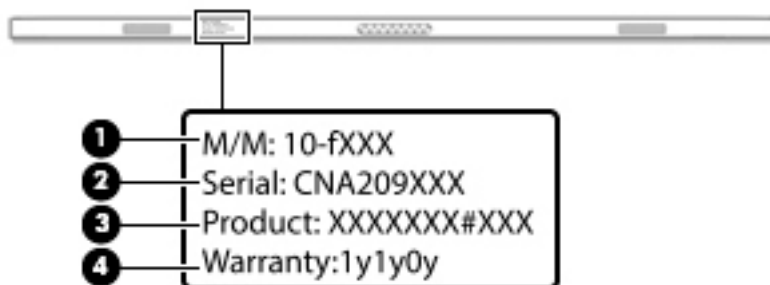
Component	Description
(1) Alignment posts (2)	Allow the display to open and close.
(2) Docking port	Connects the slate to the keyboard base.

## 3 Illustrated parts catalog

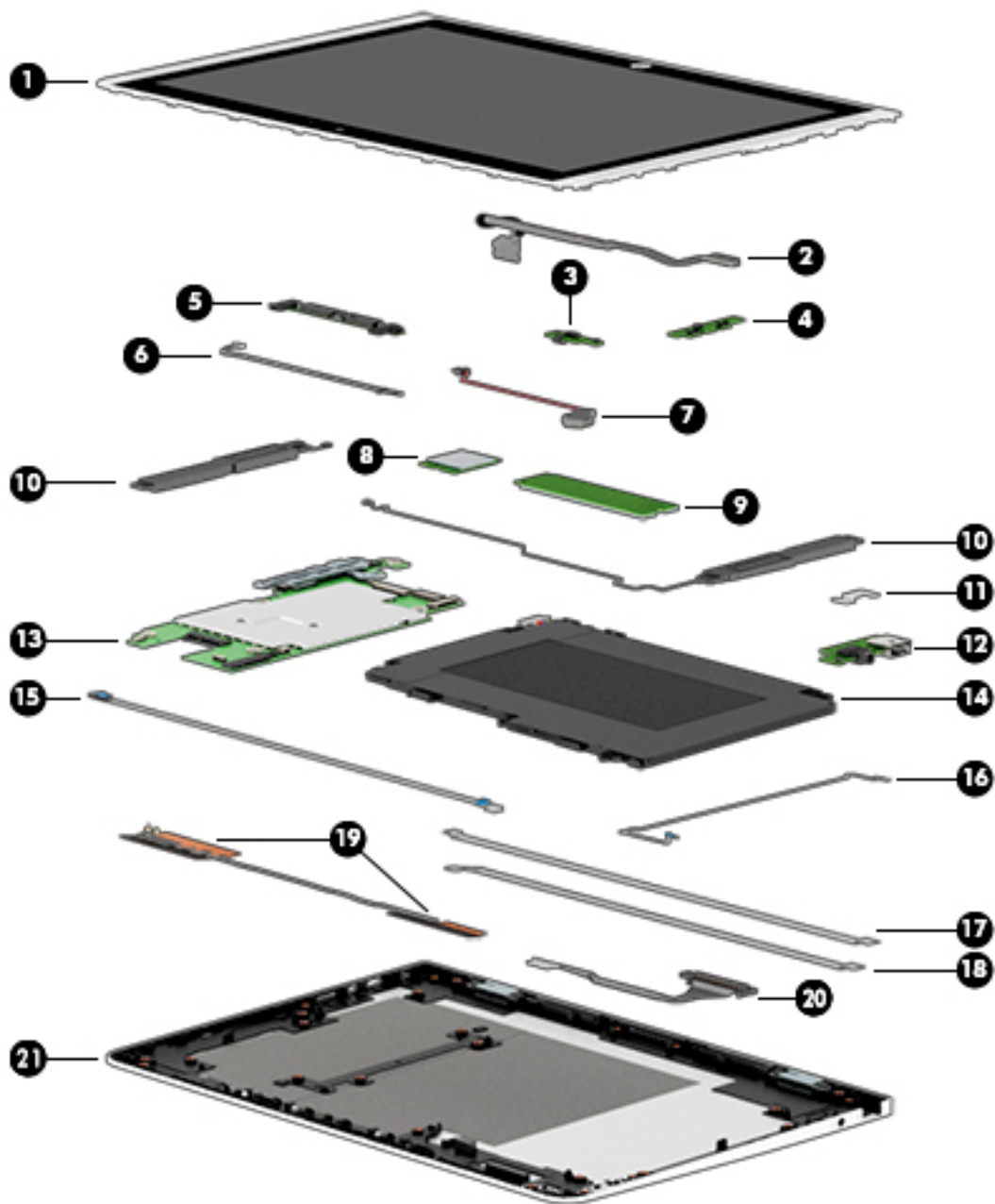
 **NOTE:** HP continually improves and changes product parts. For complete and current information on supported parts for your slate, go to <http://partsurfer.hp.com>, select your country or region, and then follow the on-screen instructions.

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

The model number **(1)**, serial number **(2)**, product number **(3)**, and warranty information **(4)** are located on the bottom edge of the slate. This information may be needed when travelling internationally or when contacting support.



## Slate major components



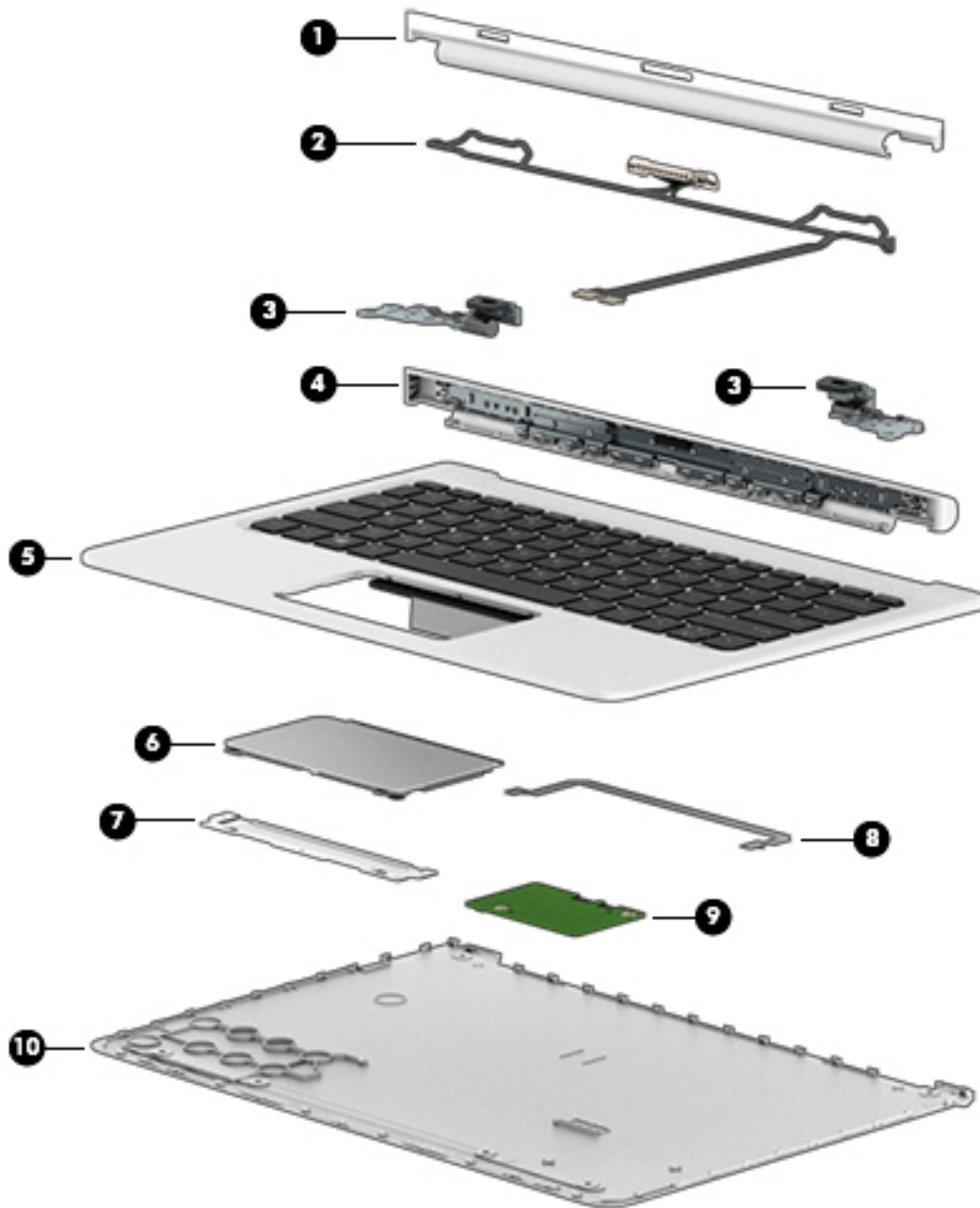
Item	Component	Spare part number
(1)	<b>Display panel assembly</b> (12.0-in, (1920×1280), UWVA, WUXGA+white light-emitting diode (WLED), BrightView, 3:2 ultra wide aspect ratio, typical brightness: 340 nits; ultra-slim-bent (2.4 mm), TouchScreen, MultiTouch-enabled, eDP+PSR)	841564-001
(2)	<b>Display panel cable</b> (includes double-sided adhesive)	841551-001
(3)	<b>Power button board</b>	841557-001

**NOTE:** The power button board spare part kit does not include the power button board cable. The power button board cable is available using spare part number 841545-001.

Item	Component	Spare part number
(4)	<b>Volume control board</b>	841559-001
	<b>NOTE:</b> The volume control board spare part kit does not include the volume control board cable. The volume control board cable is available using spare part number 841546-001.	
(5)	<b>Webcam/microphone module</b> (includes 2 microphone rubber isolators and double-sided adhesive)	841773-001
	<b>NOTE:</b> The webcam/microphone module spare part kit does not include the webcam/microphone module cable. The webcam/microphone module cable is available using spare part number 841550-001.	
(6)	<b>Webcam/microphone module cable</b> (includes double-sided adhesive)	841550-001
(7)	<b>RTC battery</b> (includes cable and double-sided adhesive)	841565-001
(8)	<b>WLAN module:</b>	
	Intel 3165NGWG ac 1×1 + Bluetooth 4.0 LE PCIe+USB NGFF 2230 Combo Adapter	806723-005
	Realtek RTL8723BE 802.11b/g/n 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter	792610-005
(9)	<b>Solid-state drive:</b>	
	256-GB, 2280, M2, SATA-3 solid-state drive supporting TLC	760615-018
	128-GB, 2280, M2, SATA-3 solid-state drive	827560-007
(10)	<b>Speaker Kit</b> (includes left and right speakers and cables)	841570-001
(11)	<b>Connector board bracket</b>	841555-001
(12)	<b>Connector board</b> (includes audio jack and USB port)	841558-001
	<b>NOTE:</b> The connector board spare part kit does not include the audio jack cable or the USB port cable. The audio jack cable is available using spare part number 841547-001. The USB port cable is available using spare part number 841548-001.	
(13)	<b>System board</b> (includes graphic subsystem with UMA memory, heat sink, and replacement thermal material):	
	<b>For use only on slates with model numbers 12-b100 through 12-b199:</b>	
	Equipped with an Intel Atom x5-Z8550 1.44-GHz (SC turbo up to 2.24-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, quad core, 2.0 W), 8.0-GB of system memory, and the Windows 10 operating system	854321-601
	Equipped with an Intel Atom x5-Z8550 1.44-GHz (SC turbo up to 2.24-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, quad core, 2.0 W), 8.0-GB of system memory, and a non-Windows operating system	854321-001
	<b>For use only on slates with model number 12-b0XX:</b>	
	Equipped with an Intel Core m3 6Y30 0.90-GHz (SC turbo up to 2.20-GHz) processor (1866-MHz FSB, 4.0-MB L3 cache, dual core, 4.5 W), 8.0-GB of system memory, and the Windows 10 operating system	841771-601
	Equipped with an Intel Core m3 6Y30 0.90-GHz (SC turbo up to 2.20-GHz) processor (1866-MHz FSB, 4.0-MB L3 cache, dual core, 4.5 W), 8.0-GB of system memory, and a non-Windows operating system	841771-001
	Equipped with an Intel Core m3 6Y30 0.90-GHz (SC turbo up to 2.20-GHz) processor (1866-MHz FSB, 4.0-MB L3 cache, dual core, 4.5 W), 4.0-GB of system memory, and the Windows 10 operating system	841770-601
	Equipped with an Intel Core m3 6Y30 0.90-GHz (SC turbo up to 2.20-GHz) processor (1866-MHz FSB, 4.0-MB L3 cache, dual core, 4.5 W), 4.0-GB of system memory, and a non-Windows operating system	841770-001

<b>Item</b>	<b>Component</b>	<b>Spare part number</b>
	Equipped with an Intel Atom x7-Z8700 processor (up to 2.40-GHz) processor (1600-MHz FSB, 2.0-MB L3 cache, quad core, 2.0 W SDP), 4.0-GB of system memory, a 128-GB solid-state drive, and a non-Windows operating system	841769-601
	Equipped with an Intel Atom x7-Z8700 processor (up to 2.40-GHz) processor (1600-MHz FSB, 2.0-MB L3 cache, quad core, 2.0 W SDP), 4.0-GB of system memory, a 128-GB solid-state drive, and the Windows 10 operating system	841769-001
	Equipped with an Intel Atom x5-Z8500 processor (up to 2.24-GHz) processor (1600-MHz FSB, 2.0-MB L3 cache, quad core, 2.0 W SDP), 2.0-GB of system memory, a 64-GB solid-state drive, and the Windows 10 operating system	841768-601
	Equipped with an Intel Atom x5-Z8500 processor (up to 2.24-GHz) processor (1600-MHz FSB, 2.0-MB L3 cache, quad core, 2.0 W SDP), 2.0-GB of system memory, a 64-GB solid-state drive, and a non-Windows operating system	841768-001
<b>(14)</b>	<b>Battery</b> (2-cell, 33-WHr, 4.39-AHr, Li-ion; includes cable)	833535-850
<b>(15)</b>	<b>Power button board cable</b> (includes double-sided adhesive)	841545-001
<b>(16)</b>	<b>Volume control board cable</b> (includes double-sided adhesive)	841546-001
<b>(17)</b>	<b>Audio jack cable</b> (includes double-sided adhesive)	841547-001
<b>(18)</b>	<b>USB port cable</b> (includes double-sided adhesive)	841548-001
<b>(19)</b>	<b>Wireless antenna</b> (includes cables, transceivers, and double-sided adhesive)	841542-001
<b>(20)</b>	<b>Slate docking cable</b>	841549-001
<b>(21)</b>	<b>Display back cover</b>	841543-001

## Keyboard base components



Item	Component	Spare part number
(1)	Hinge bezel	841563-001
(2)	Keyboard/base docking cable	841553-001
(3)	Hinges (2, includes left and right hinges)	841567-001
(4)	Hinge cover	841562-001
(5)	Keyboard/top cover (includes keyboard cable):	
	For use in Belgium	841556-A41

<b>Item</b>	<b>Component</b>	<b>Spare part number</b>
	For use in Canada	841556-DB1
	For use in the Czech Republic and Slovakia	841556-FL1
	For use in Denmark, Finland, and Norway	841556-DH1
	For use in France	841556-051
	For use in Germany	841556-041
	For use in Greece	841556-151
	For use in Hungary	841556-211
	For use in Israel	841556-BB1
	For use in Italy	841556-061
	For use in Latin America	841556-161
	For use in the Netherlands	841556-B31
	For use in Portugal	841556-131
	For use in Romania	841556-271
	For use in Russia	841556-251
	For use in Saudi Arabia	841556-171
	For use in Slovenia	841556-BA1
	For use in Spain	841556-071
	For use in Switzerland	841556-BG1
	For use in Turkey	841556-141
	For use in the United Kingdom	841556-031
	For use in the United States	841556-001
<b>(6)</b>	<b>TouchPad board</b>	841561-001
	<b>NOTE:</b> The TouchPad board spare part kit does not include the TouchPad board cable. The TouchPad board cable is available using spare part number 841552-001.	
<b>(7)</b>	<b>TouchPad board bracket:</b> included in the TouchPad board spare part kit, spare part 841561-001.	
<b>(8)</b>	<b>TouchPad board cable</b> (includes double-sided adhesive)	841552-001
<b>(9)</b>	<b>Docking board</b>	841560-001
<b>(10)</b>	<b>Bottom cover</b>	841544-001

## Miscellaneous parts

Component	Spare part number
<b>45-W HP Smart AC adapter</b> (non-PFC, USB-C)	844205-850
<b>HP active stylus pen</b>	834590-001
<b>HP RJ45-to-USB adapter dongle</b>	539614-001
<b>HP USB external DVD-RW Drive</b>	747080-001
<b>Power cord</b> (C5 receptacle, 1.0-m (3.2-ft), 3-wire conductor; for use only on slates with model numbers 12-b100 through 12-b199):	
For use in Australia	213356-008
For use in Denmark	213353-008
For use in Europe	213350-009
For use in India	404827-003
For use in Israel	398063-003
For use in North America	213349-009
For use in Switzerland	213354-008
For use in the United Kingdom and Singapore	213351-008
<b>Power cord</b> (Option-917, 3-cord, 1.0-m, ROHS; for use only on slates with model numbers 12-b100 through 12-b199):	
<b>Power cord</b> (C5 receptacle, 1.0-m (3.2-ft), 3-wire conductor, 18 AWG; for use only on slates with model number 12-b0XX):	
For use in Australia	755530-011
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 North America	755530-001
For use in South Africa	755530-AR1
For use in Switzerland	755530-111
For use in the United Kingdom and Singapore	755530-031
<b>Rubber Kit</b> (includes keyboard/base rubber foot strip and 2 screw covers)	841568-001
<b>Screw Kit</b>	841569-001



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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 P0 screw driver

### Service considerations

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


---

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

---

### Plastic parts

---

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

---

## Cables and connectors

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

---

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

## Drive handling

---

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

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

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

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

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

Avoid dropping drives from any height onto any surface.

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

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

Avoid exposing a drive to temperature extremes or liquids.

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

---

# Grounding guidelines

## Electrostatic discharge damage

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

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

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

**⚠ CAUTION:** To prevent damage to the slate 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 slateop workstations with ground cords of one megohm resistance
- Static-dissipative tables or floor mats with hard ties to the ground
- Field service kits
- Static awareness labels
- Material-handling packages
- Nonconductive plastic bags, tubes, or boxes
- Metal tote boxes
- Electrostatic voltage levels and protective materials

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

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

# 5 Slate removal and replacement procedures

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

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

## Component replacement procedures

There are as many as 27 screws that must be removed, replaced, and/or loosened when servicing the slate. Make special note of each screw size and location during removal and replacement.


### Display panel assembly

Description	Spare part number
Display panel assembly (12.0-in, (1920×1280), UWVA, WUXGA+white light-emitting diode (WLED), BrightView, 3:2 ultra wide aspect ratio, typical brightness: 340 nits; ultra-slim-bent (2.4 mm), TouchScreen, MultiTouch-enabled, eDP+PSR)	841564-001


Before disassembling the slate, follow these steps:

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

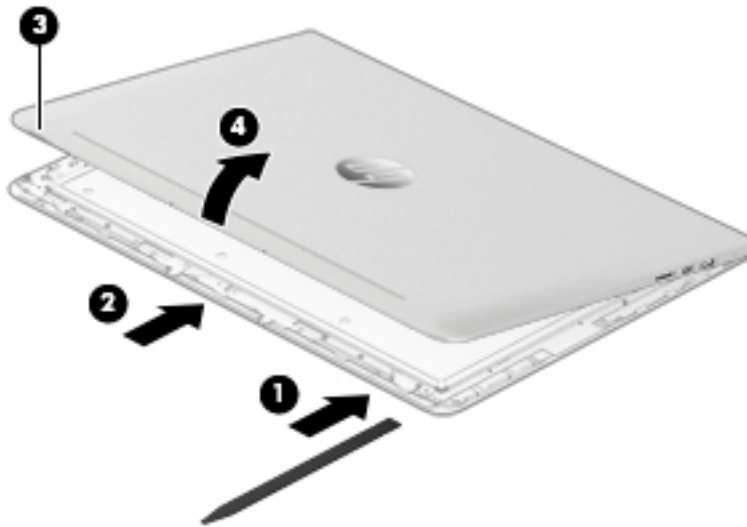
Remove the display panel assembly:

 **CAUTION:** Before positioning the slate with the 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.

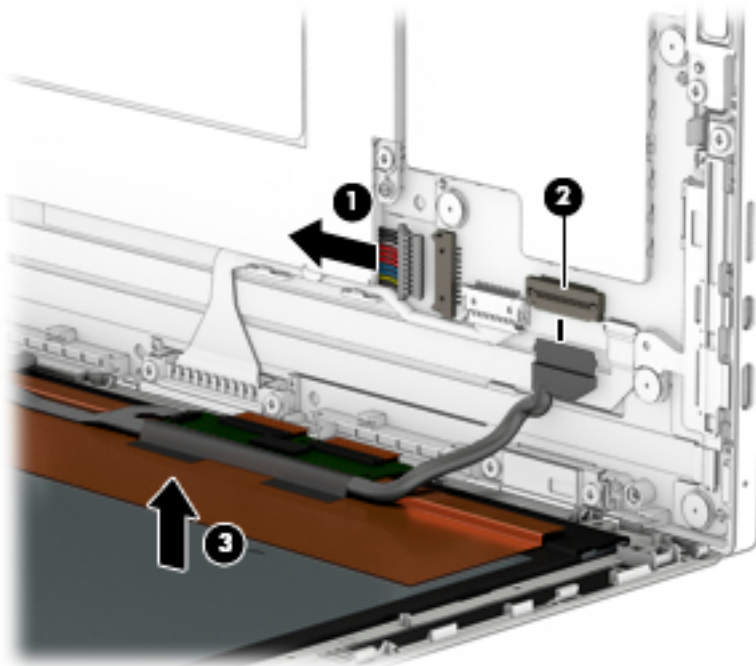
1. Position the slate with the display panel facing down and the power button facing toward you.
2. Insert a case utility tool **(1)** or similar thin, plastic tool between the display back cover and the display panel assembly.
3. Use the case utility tool to separate the display back cover **(2)** from the display panel assembly.

 **CAUTION:** When using the case utility tool to separate the display back cover from the display panel assembly, do not insert the tool in the area near the power button **(3)**. Failure to follow this caution can result in damage to the power button board and the power button board cable.

4. Swing the front edge of the display back cover **(4)** up and back until the display back cover rests at a 90-degree angle.



5. Disconnect the battery cable **(1)** from the system board.
6. Release the zero insertion force (ZIF) connector **(2)** to which the display panel cable is attached, and then disconnect the display panel cable from the system board.
7. Remove the display panel assembly **(3)**.

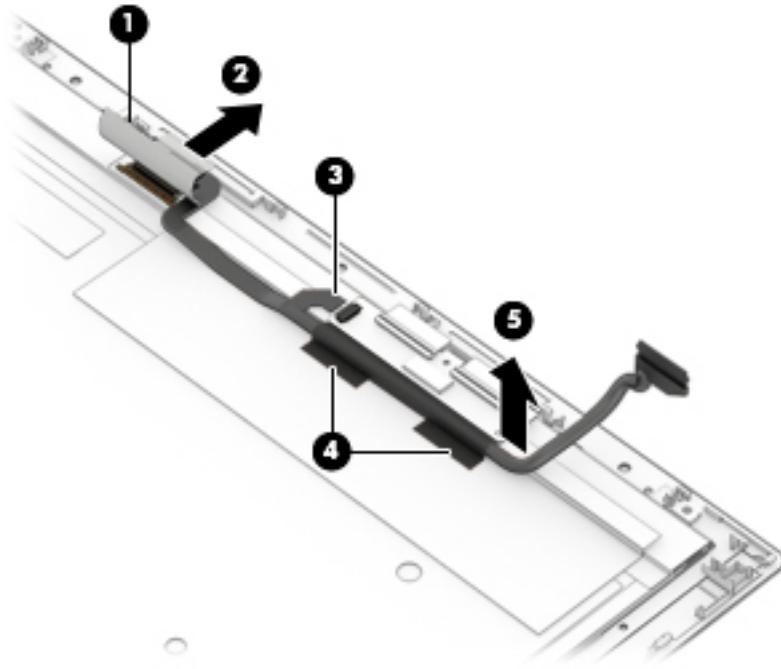


If it is necessary to replace the display panel cable:

1. Release the adhesive support strip **(1)** that secures the display panel cable connector to the display panel assembly.
2. Disconnect the display panel cable **(2)** from the display panel assembly.

3. Release the ZIF connector **(3)** to which the TouchScreen board cable is attached, and then disconnect the TouchScreen board cable from the TouchScreen board.
4. Release the adhesive support strips **(4)** that secure the display panel cable to the display panel assembly
5. Remove the display panel cable **(5)**.

The display panel cable is available using spare part number 841551-001.



Reverse this procedure to reassemble and install the display panel assembly.



## Power button board

Description	Spare part number
Power button board	841557-001

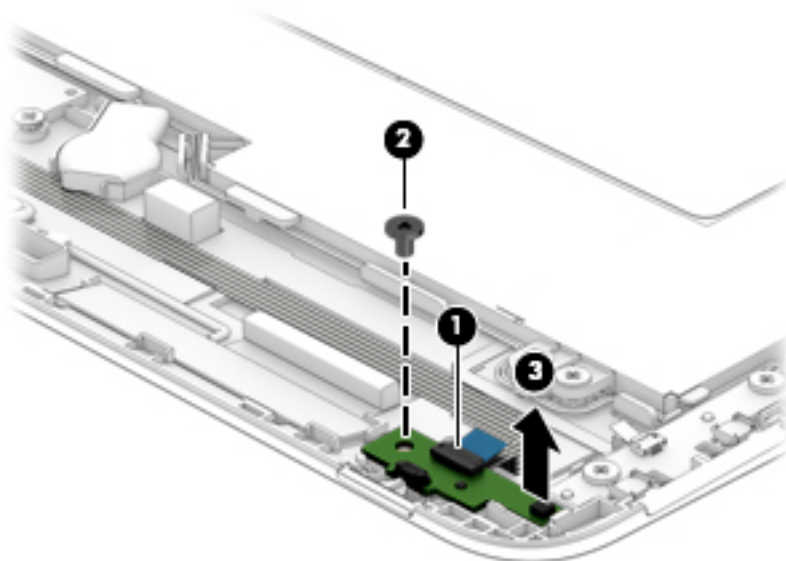
**NOTE:** The power button board spare part kit does not include the power button board cable. The power button board cable is available using spare part number 841545-001.

Before removing the power button board, follow these steps:

1. Shut down the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the slate.
3. Disconnect the power from the slate by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the slate.
4. Disconnect the slate from the keyboard/base.
5. Remove the display panel assembly (see [Display panel assembly on page 22](#)).

Remove the power button board:

1. Release the ZIF connector **(1)** to which the power button board cable is attached, and then disconnect the power button board cable from the power button board board.
2. Remove the Phillips PM2.0×3.8 screw **(2)** that secures the power button board to the display back cover.
3. Remove the power button board **(3)**.



Reverse this procedure to install the power button board.

## Volume control board

Description	Spare part number
Volume control board	841559-001

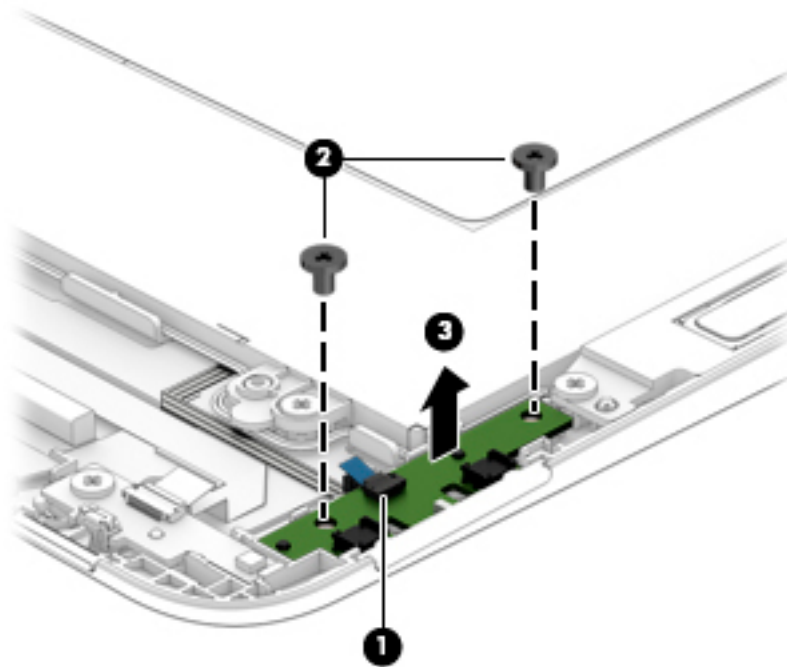
**NOTE:** The volume control board spare part kit does not include the volume control board cable. The volume control board cable is available using spare part number 841546-001.

Before removing the volume control board, follow these steps:

1. Shut down the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the slate.
3. Disconnect the power from the slate by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the slate.
4. Disconnect the slate from the keyboard/base.
5. Remove the display panel assembly (see [Display panel assembly on page 22](#)).

Remove the volume control board:

1. Release the ZIF connector (1) to which the volume control board cable is attached, and then disconnect the volume control board cable from the volume control board.
2. Remove the two Phillips PM2.0×3.8 screws (2) that secure the volume control board to the display back cover.
3. Remove the volume control board (3).



Reverse this procedure to install the volume control board.

## Webcam/microphone module

Description	Spare part number
Webcam/microphone module (includes 2 microphone rubber isolators and double-sided adhesive)	841773-001
<b>NOTE:</b> The webcam/microphone module spare part kit does not include the webcam/microphone module cable. The webcam/microphone module cable is available using spare part number 841550-001.	

Before removing the webcam/microphone module, follow these steps:

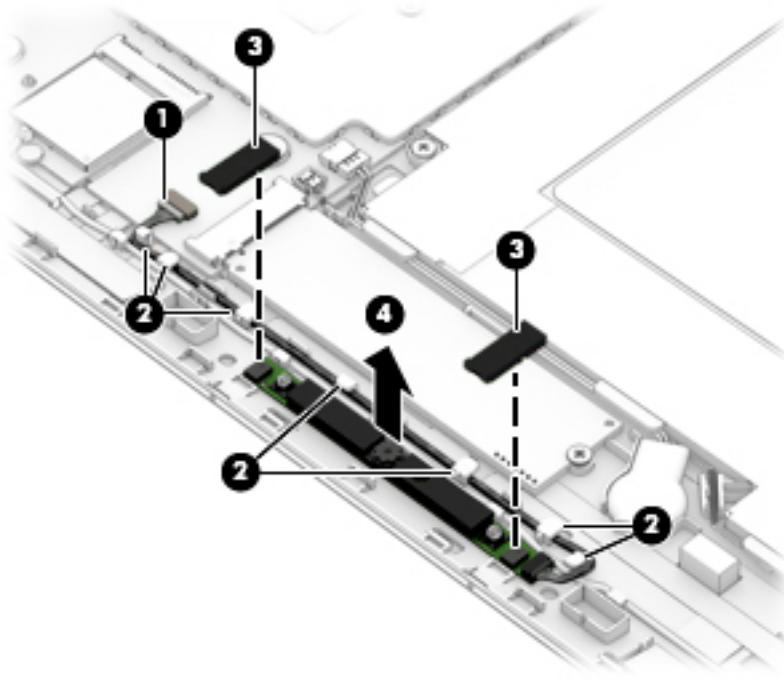
1. Shut down the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the slate.
3. Disconnect the power from the slate by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the slate.
4. Disconnect the slate from the keyboard/base.
5. Remove the display panel assembly (see [Display panel assembly on page 22](#)).

Remove the webcam/microphone module:

1. Disconnect the webcam/microphone module cable **(1)** from the system board.
2. Release the webcam/microphone module cable from the retention clips **(2)** built into the display back cover.
3. Remove the microphone rubber isolators **(3)**.

The rubber isolators are included in the webcam/microphone module spare part kit.

4. Detach the webcam/microphone module (4) from the display back cover. (The webcam/microphone module is attached to the display back cover with double-sided adhesive.)



5. Remove the webcam/microphone module.

If it is necessary to replace the webcam/microphone module cable, disconnect the cable from the webcam/microphone module.



Reverse this procedure to install the webcam/microphone module.

## RTC battery

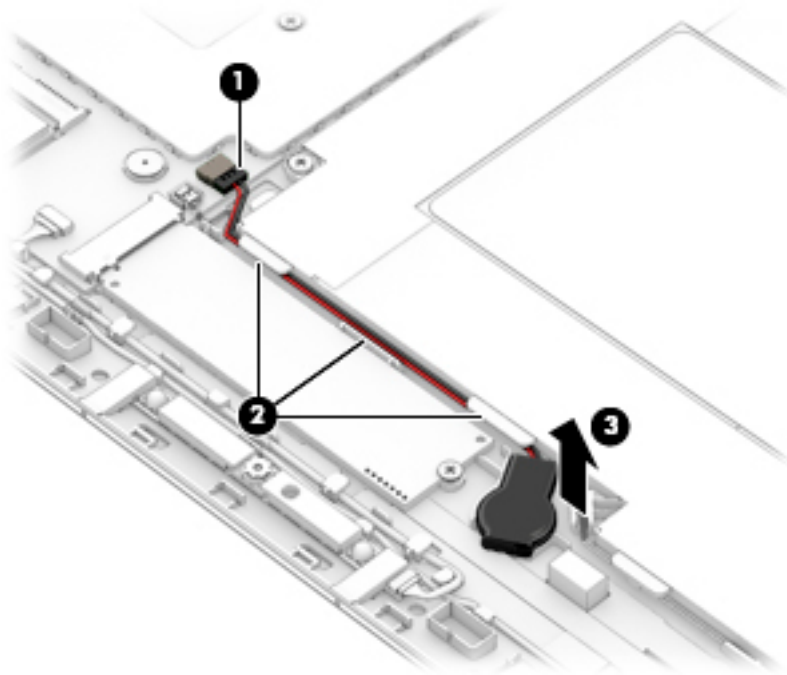
Description	Spare part number
RTC battery (includes cable and double-sided adhesive)	841565-001

Before removing the RTC battery, follow these steps:

1. Shut down the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the slate.
3. Disconnect the power from the slate by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the slate.
4. Disconnect the slate from the keyboard/base.
5. Remove the display panel assembly (see [Display panel assembly on page 22](#)).

Remove the RTC battery:

1. Disconnect the RTC battery cable **(1)** from the system board.
2. Release the RTC battery cable from the retention clips **(2)** built into the battery.
3. Detach the RTC battery **(3)** from the display back cover. (The RTC battery is attached to the display back cover with double-sided adhesive.)




4. Remove the RTC battery.

Reverse this procedure to install the RTC battery.

## WLAN module

Description	Spare part number
Intel 3165NGWG ac 1×1 + Bluetooth 4.0 LE PCIe+USB NGFF 2230 Combo Adapter	806723-005
Realtek RTL8723BE 802.11b/g/n 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter	792610-005

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

Before removing the WLAN module, follow these steps:

1. Shut down the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the slate.
3. Disconnect the power from the slate by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the slate.
4. Disconnect the slate from the keyboard/base.
5. Remove the display panel assembly (see [Display panel assembly on page 22](#)).

Remove the WLAN module:

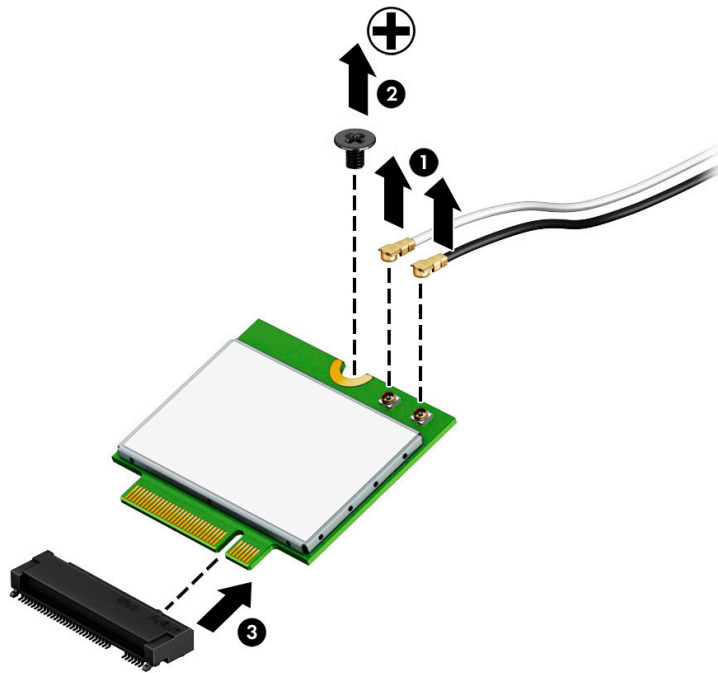
1. Disconnect the WLAN antenna cables **(1)** from the terminals on the WLAN module.




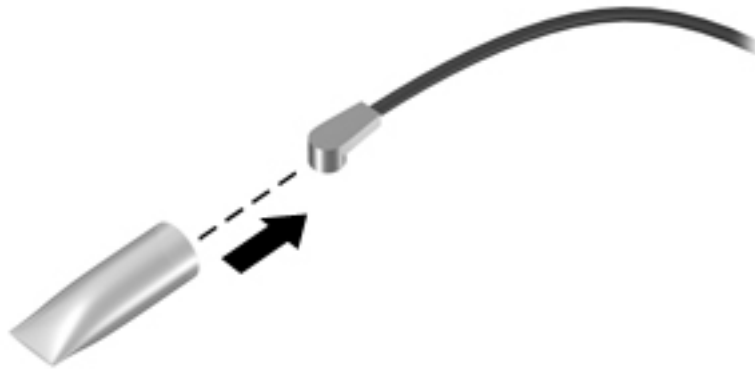
**NOTE:** The #1/white WLAN antenna cable connects to the WLAN module #1/Main terminal. The #2/black WLAN antenna cable connects to the WLAN module #1/Aux terminal.

2. Remove the Phillips PM2.0×2.9 screw **(2)** that secures the WLAN module to the display back cover. (The WLAN module tilts up.)

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



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



Reverse this procedure to install the WLAN module.

## Solid-state drive



**NOTE:** This section applies only to slate models equipped with an Intel Atom x7-Z8700 processor.

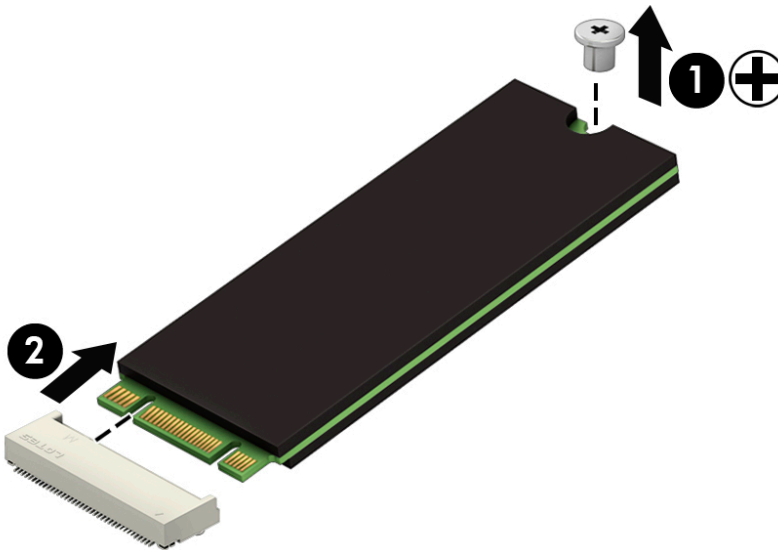
Description	Spare part number
256-GB, 2280, M2, SATA-3 solid-state drive supporting TLC	760615-018
128-GB, 2280, M2, SATA-3 solid-state drive	827560-007

Before removing the WLAN module, follow these steps:

1. Shut down the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the slate.
3. Disconnect the power from the slate by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the slate.
4. Disconnect the slate from the keyboard/base.
5. Remove the display panel assembly (see [Display panel assembly on page 22](#)).

Remove the solid-state drive:

1. Remove the Phillips PM2.0×2.9 screw **(1)** that secures the solid-state drive to the display back cover. (The solid-state drive tilts up.)
2. Remove the solid-state drive **(2)** by pulling the drive away from the slot at an angle.



Reverse this procedure to install the solid-state drive.



## Speakers

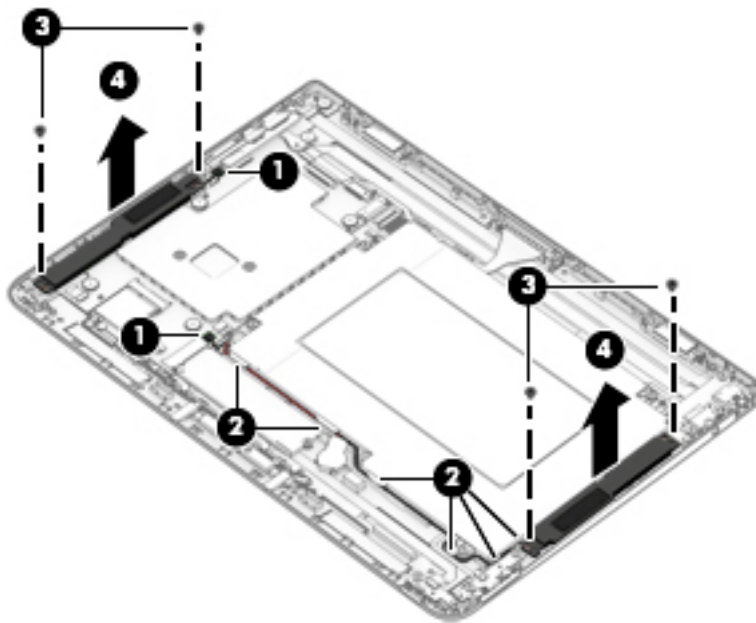
Description	Spare part number
Speaker Kit (includes left and right speakers and cables)	841570-001

Before removing the speakers, follow these steps:

1. Turn off the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect the power from the slate by unplugging the power cord from the slate.
3. Disconnect all external devices from the slate.
4. Disconnect the slate from the keyboard/base.
5. Remove the display panel assembly (see [Display panel assembly on page 22](#)).

Remove the speakers:

1. Disconnect the left and right speaker cables **(1)** from the speaker connectors on the system board.
2. Release the right speaker cable from the routing clips **(2)** built into the battery.
3. Remove the four Phillips PM2.0×3.8 screws **(3)** that secure the speakers to the display back cover.
4. Remove the speakers **(4)**.



Reverse this procedure to install the speakers.

## Connector board

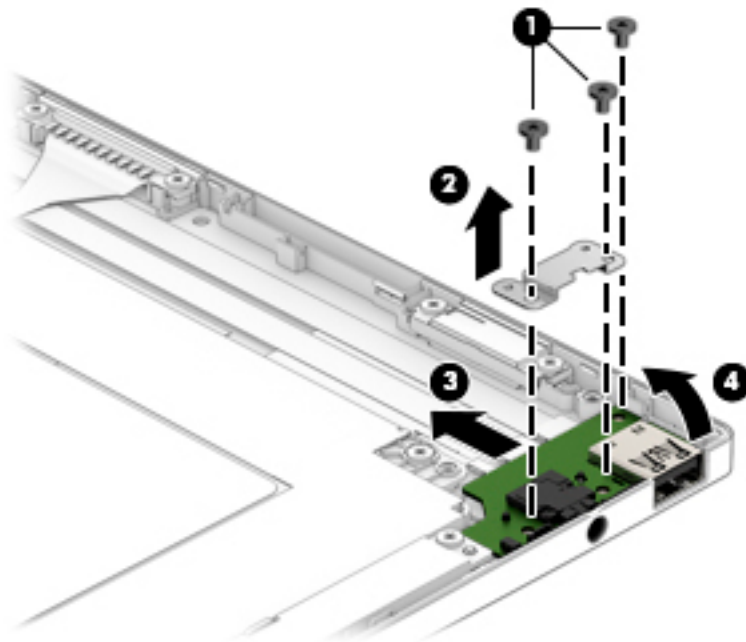
Description	Spare part number
Connector board (includes audio jack and USB port)	841558-001
<b>NOTE:</b> The connector board spare part kit does not include the audio jack cable or the USB port cable. The audio jack cable is available using spare part number 841547-001. The USB port cable is available using spare part number 841548-001.	

Before removing the connector board, follow these steps:

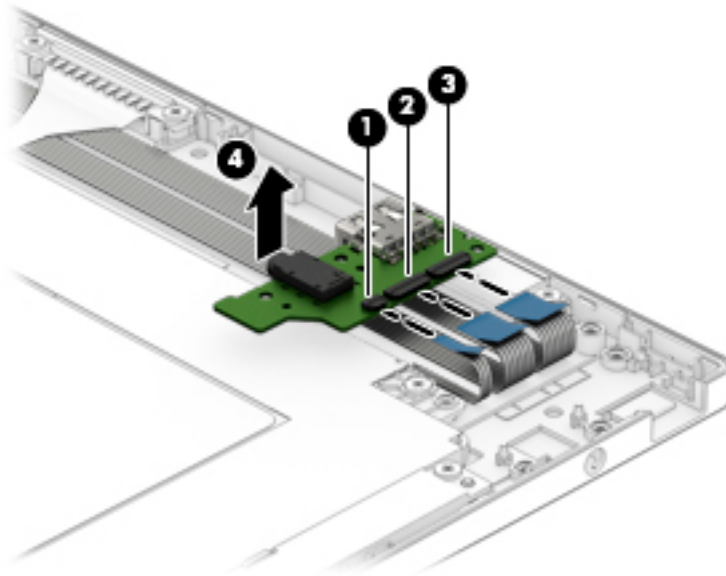
1. Shut down the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the slate.
3. Disconnect the power from the slate by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the slate.
4. Disconnect the slate from the keyboard/base.
5. Remove the display panel assembly (see [Display panel assembly on page 22](#)).

Remove the connector board:

1. Remove the three Phillips PM2.0×3.8 screws **(1)** that secure the connector board to the display back cover.
2. Remove the connector board bracket **(2)**.  
The connector board bracket is available using spare part number 841558-001.
3. Release the connector board **(3)** by sliding the board to the left.
4. Swing the connector board **(4)** up and to the left until the bottom of the board is accessible.



5. Release the ZIF connector **(1)** to which the volume control board cable is attached, and then disconnect the volume control board cable from the connector board.
6. Release the ZIF connector **(2)** to which the audio jack cable is attached, and then disconnect the audio jack cable from the connector board.
7. Release the ZIF connector **(3)** to which the USB port cable is attached, and then disconnect the USB port cable from the connector board.
8. Remove the connector board **(4)**.



Reverse this procedure to install the connector board.

## System board



**NOTE:** The system board spare part kit includes a graphic subsystem with UMA memory, the heat sink, and replacement thermal material.

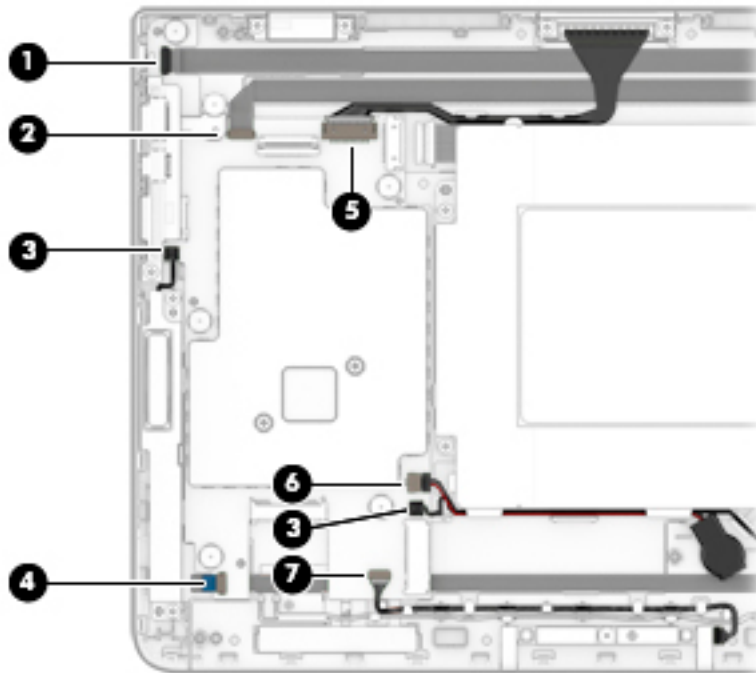
Description	Spare part number
<b>For use only on slates with model numbers 12-b100 through 12-b199:</b>	
Equipped with an Intel Atom x5-Z8550 1.44-GHz (SC turbo up to 2.24-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, quad core, 2.0 W), 8.0-GB of system memory, and the Windows 10 operating system	854321-601
Equipped with an Intel Atom x5-Z8550 1.44-GHz (SC turbo up to 2.24-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, quad core, 2.0 W), 8.0-GB of system memory, and a non-Windows operating system	854321-001
<b>For use only on slates with model number 12-b0XX:</b>	
Equipped with an Intel Core m3 6Y30 0.90-GHz (SC turbo up to 2.20-GHz) processor (1866-MHz FSB, 4.0-MB L3 cache, dual core, 4.5 W), 8.0-GB of system memory, and the Windows 10 operating system	841771-601
Equipped with an Intel Core m3 6Y30 0.90-GHz (SC turbo up to 2.20-GHz) processor (1866-MHz FSB, 4.0-MB L3 cache, dual core, 4.5 W), 8.0-GB of system memory, and a non-Windows operating system	841771-001
Equipped with an Intel Core m3 6Y30 0.90-GHz (SC turbo up to 2.20-GHz) processor (1866-MHz FSB, 4.0-MB L3 cache, dual core, 4.5 W), 4.0-GB of system memory, and the Windows 10 operating system	841770-601
Equipped with an Intel Core m3 6Y30 0.90-GHz (SC turbo up to 2.20-GHz) processor (1866-MHz FSB, 4.0-MB L3 cache, dual core, 4.5 W), 4.0-GB of system memory, and a non-Windows operating system	841770-001
Equipped with an Intel Atom x7-Z8700 processor (up to 2.40-GHz) processor (1600-MHz FSB, 2.0-MB L3 cache, quad core, 2.0 W SDP), 4.0-GB of system memory, a 128-GB solid-state drive, and a non-Windows operating system	841769-601
Equipped with an Intel Atom x7-Z8700 processor (up to 2.40-GHz) processor (1600-MHz FSB, 2.0-MB L3 cache, quad core, 2.0 W SDP), 4.0-GB of system memory, a 128-GB solid-state drive, and the Windows 10 operating system	841769-001
Equipped with an Intel Atom x5-Z8500 processor (up to 2.24-GHz) processor (1600-MHz FSB, 2.0-MB L3 cache, quad core, 2.0 W SDP), 2.0-GB of system memory, a 64-GB solid-state drive, and the Windows 10 operating system	841768-601
Equipped with an Intel Atom x5-Z8500 processor (up to 2.24-GHz) processor (1600-MHz FSB, 2.0-MB L3 cache, quad core, 2.0 W SDP), 2.0-GB of system memory, a 64-GB solid-state drive, and a non-Windows operating system	841768-001

Before removing the system board, follow these steps:

1. Turn off the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect the power from the slate by unplugging the power cord from the slate.
3. Disconnect all external devices from the slate.
4. Disconnect the slate from the keyboard/base.
5. Remove the display panel assembly (see [Display panel assembly on page 22](#)).
6. Remove the WLAN module (see [WLAN module on page 30](#)).
7. Remove the solid-state drive (see [Solid-state drive on page 32](#), select models only).

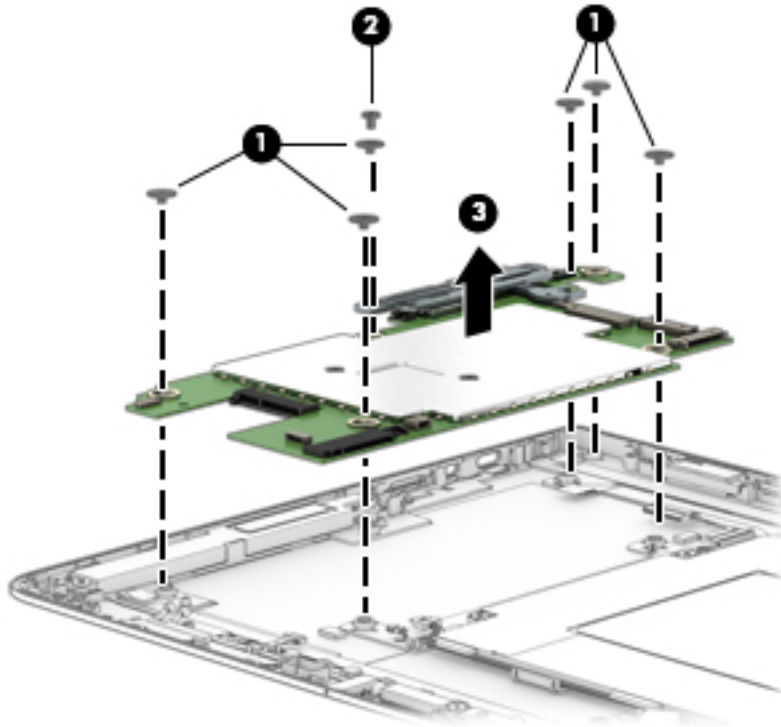
Remove the system board:

1. Release the ZIF connector **(1)** to which the USB port cable is attached, and then disconnect the USB port cable from the system board.
2. Release the ZIF connector **(2)** to which the audio jack cable is attached, and then disconnect the audio jack cable from the system board.
3. Disconnect the left and right speaker cables **(3)** from the speaker connectors on the system board.
4. Release the ZIF connector **(4)** to which the power button board cable is attached, and then disconnect the power button board cable from the system board.
5. Disconnect the display panel cable **(5)** from the system board.
6. Disconnect the RTC battery cable **(6)** from the system board.
7. Disconnect the webcam/microphone module cable **(7)** from the system board.



8. Remove the six Phillips PM2.0×2.2 broadhead screws **(1)** that secure the system board to the display back cover.
9. Remove the Phillips PM2.0×3.8 screw **(2)** that secures the system board to the display back cover.

10. Remove the system board (3).



Reverse this procedure to install the system board.

## Battery

Description	Spare part number
Battery (2-cell, 33-WHr, 4.39-AHr, Li-ion; includes cable)	833535-850

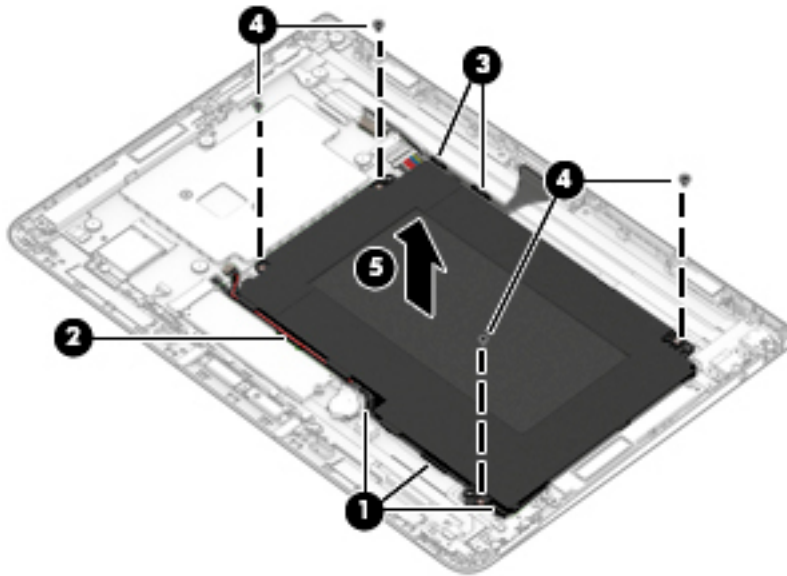
Before removing the battery, follow these steps:

1. Turn off the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect the power from the slate by unplugging the power cord from the slate.
3. Disconnect all external devices from the slate.
4. Disconnect the slate from the keyboard/base.
5. Remove the display panel assembly (see [Display panel assembly on page 22](#)).

Remove the battery:

1. Release the right speaker cable from the routing clips (1) built into the battery.
2. Release the RTC battery cable from the retention clips (2) built into the battery.
3. Release the docking connector cable from the retention clips (3) built into the battery.
4. Remove the six Phillips PM2.0×3.8 screws (4) that secure the battery to the display back cover.

5. Remove the battery (5).



Reverse this procedure to install the battery.

## Cables

Description	Spare part number
Audio jack cable (includes double-sided adhesive)	841547-001
Power button board cable (includes double-sided adhesive)	841545-001
USB port cable (includes double-sided adhesive)	841548-001
Volume control board cable (includes double-sided adhesive)	841546-001

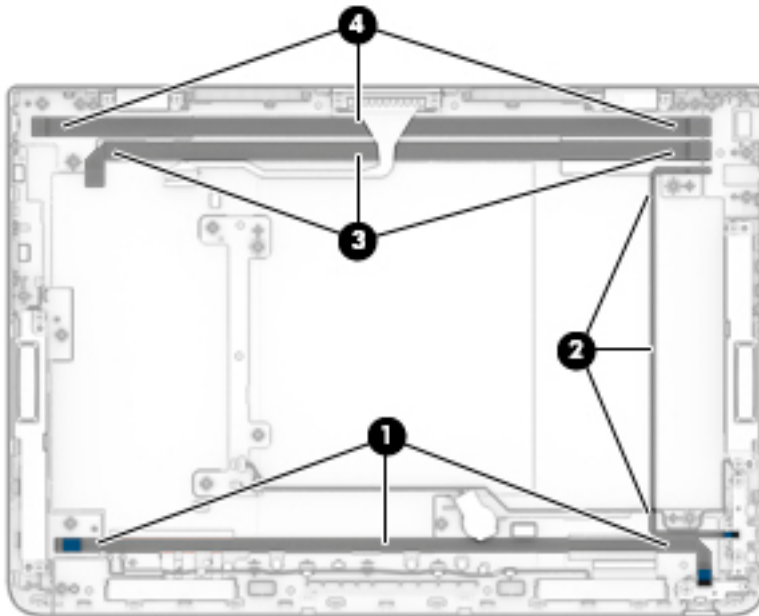
Before removing the cables, follow these steps:

1. Turn off the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect the power from the slate by unplugging the power cord from the slate.
3. Disconnect all external devices from the slate.
4. Disconnect the slate from the keyboard/base.
5. Remove the display panel assembly (see [Display panel assembly on page 22](#)), and then remove the following components:
  - a. Power button board (see [Power button board on page 25](#))
  - b. Volume control board (see [Volume control board on page 26](#))
  - c. Webcam/microphone module (see [Webcam/microphone module on page 27](#))
  - d. WLAN module (see [WLAN module on page 30](#))

- e. Solid-state drive (see [Solid-state drive on page 32](#), select models only)
- f. Connector board (see [Connector board on page 34](#))
- g. System board (see [System board on page 36](#))
- h. Battery (see [Battery on page 38](#))

Remove the cables:

1. Detach the power button board cable **(1)** from the display back cover. (The power button board cable is attached to the display back cover with double-sided adhesive at the locations shown in the following illustration.)
2. Detach the volume control board cable **(2)** from the display back cover. (The volume control board cable is attached to the display back cover with double-sided adhesive at the locations shown in the following illustration.)
3. Detach the USB port cable **(3)** from the display back cover. (The USB port cable is attached to the display back cover with double-sided adhesive at the locations shown in the following illustration.)
4. Detach the audio jack cable **(4)** from the display back cover. (The audio jack cable is attached to the display back cover with double-sided adhesive at the locations shown in the following illustration.)



Reverse this procedure to install the cables.



## Slate docking cable

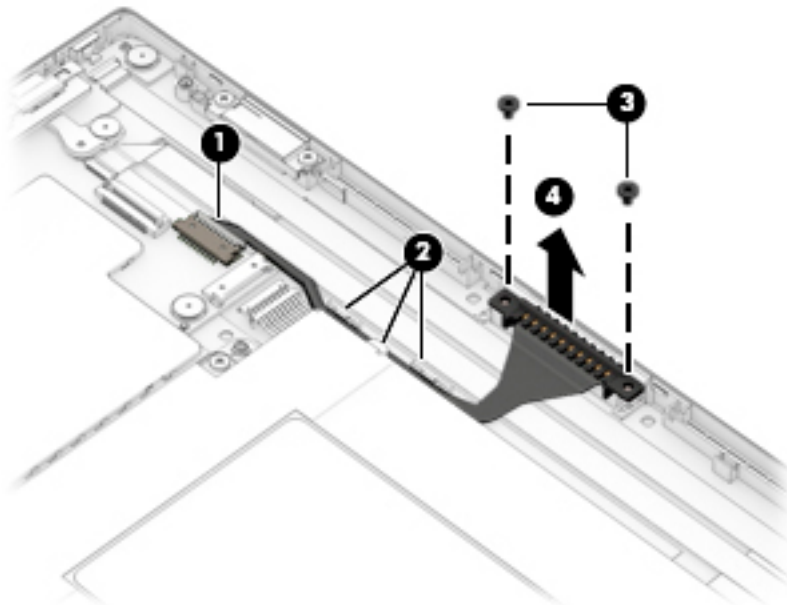
Description	Spare part number
Slate docking cable (includes connector and double-sided adhesive)	841549-001

Before removing the slate docking cable, follow these steps:

1. Turn off the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect the power from the slate by unplugging the power cord from the slate.
3. Disconnect all external devices from the slate.
4. Disconnect the slate from the keyboard/base.
5. Remove the display panel assembly (see [Display panel assembly on page 22](#)).

Remove the slate docking cable:

1. Disconnect the slate docking cable **(1)** from the system board.
2. Release the slate docking cable from the retention clips **(2)** built into the battery.
3. Remove the two Phillips PM2.0×3.8 screws **(3)** that secure the slate docking cable to the display back cover.
4. Remove the slate docking cable **(4)**.



Reverse this procedure to install the slate docking cable.

## Wireless antenna

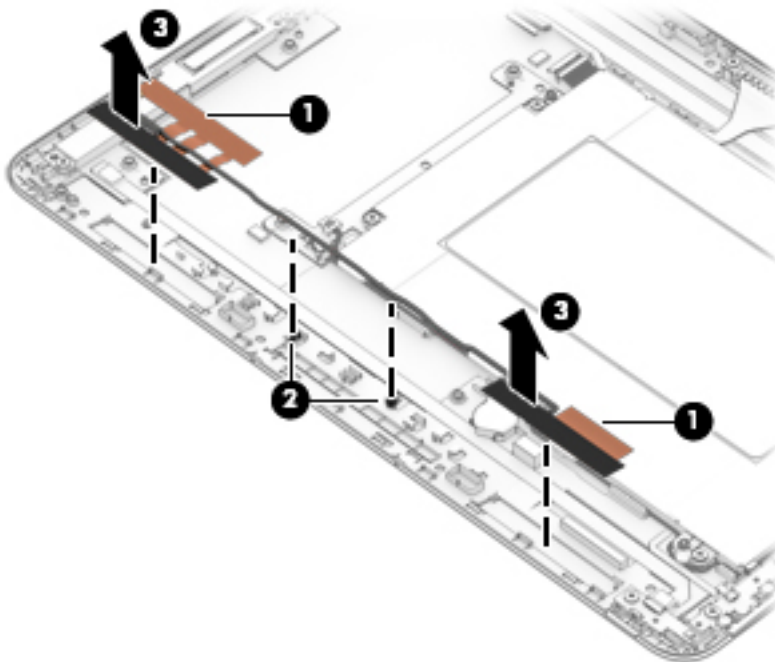
Description	Spare part number
Wireless antenna (includes left and right cables and transceivers and double-sided adhesive)	841542-001

Before removing the wireless antenna, follow these steps:

1. Shut down the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the slate.
3. Disconnect the power from the slate by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the slate.
4. Disconnect the slate from the keyboard/base.
5. Remove the display panel assembly (see [Display panel assembly on page 22](#)), and then remove the following components:
  - a. WLAN module (see [WLAN module on page 30](#))
  - b. Solid-state drive (see [Solid-state drive on page 32](#), select models only)
  - c. System board (see [System board on page 36](#))


Remove the wireless antenna:


1. Detach the wireless antenna transceivers **(1)** from the display back cover. (The wireless antenna transceivers are attached to the display back cover with double-sided adhesive.)
2. Release the wireless antenna cables from the retention clips **(2)** built into the display back cover.
3. Remove the wireless antenna **(3)**.



Reverse this procedure to install the wireless antenna.

## 6 Keyboard/base removal and replacement procedures

 **CAUTION:** Keyboard/base components described in this chapter should only be accessed by an authorized service provider. Users accessing these parts can damage the keyboard/base or void the warranty.

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

### Keyboard/base component replacement procedures

There are as many as 24 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	841544-001

Before disassembling the keyboard/base, follow these steps:

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

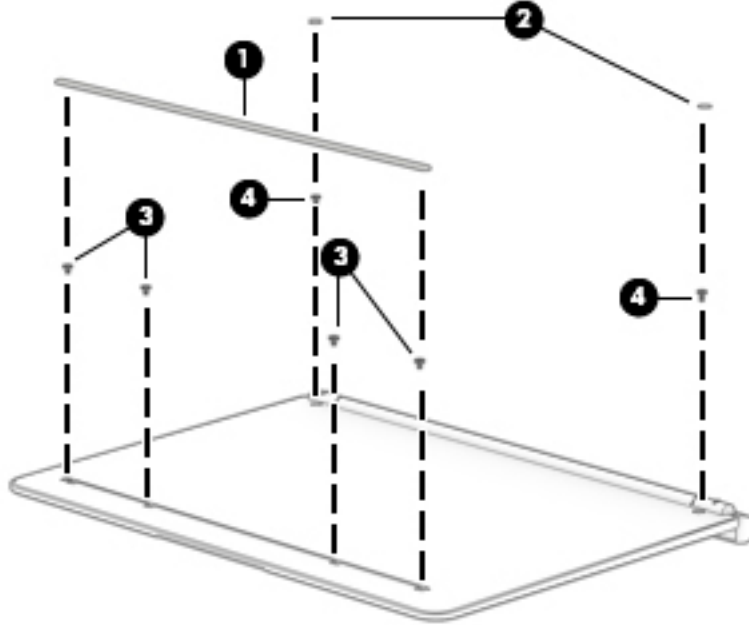
Remove the bottom cover:

1. Turn the keyboard/base upside down with the front toward you.
2. Remove the keyboard/base rubber foot strip **(1)**.
3. Remove the keyboard/base screw covers **(2)**.

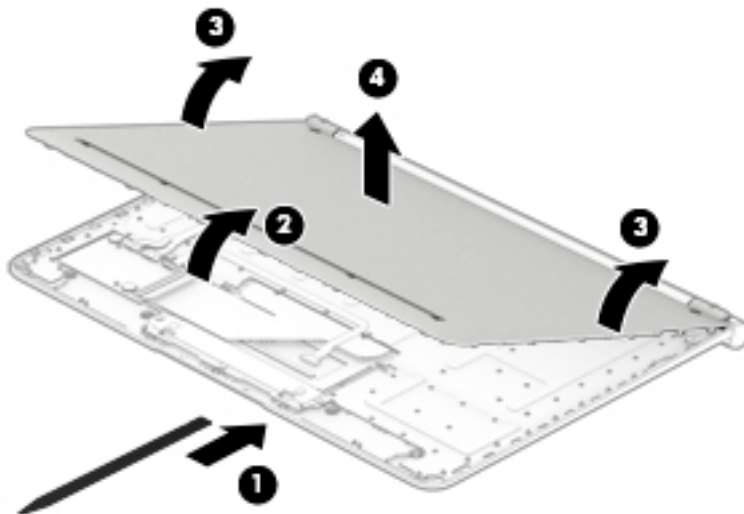
The keyboard/base rubber foot strip and the screw covers are available in the Rubber Kit, spare part number 841568-001.

4. Remove the four Phillips PM2.0×3.8 screws **(3)** that secure the bottom cover to the keyboard/top cover.

5. Remove the two Phillips PM2.0×4.7 screws (4) that secure the bottom cover to the keyboard/top cover.



6. Insert a case utility tool (1) or similar thin, plastic tool between the bottom cover and the keyboard/top cover.
7. Separate the front edge of the bottom cover (2) from the keyboard/top cover.
8. Swing the front edge of the bottom cover (3) up and away from the keyboard/top cover until the bottom cover is released.
9. Remove the bottom cover (4).



Reverse this procedure to install the bottom cover.

## Docking board

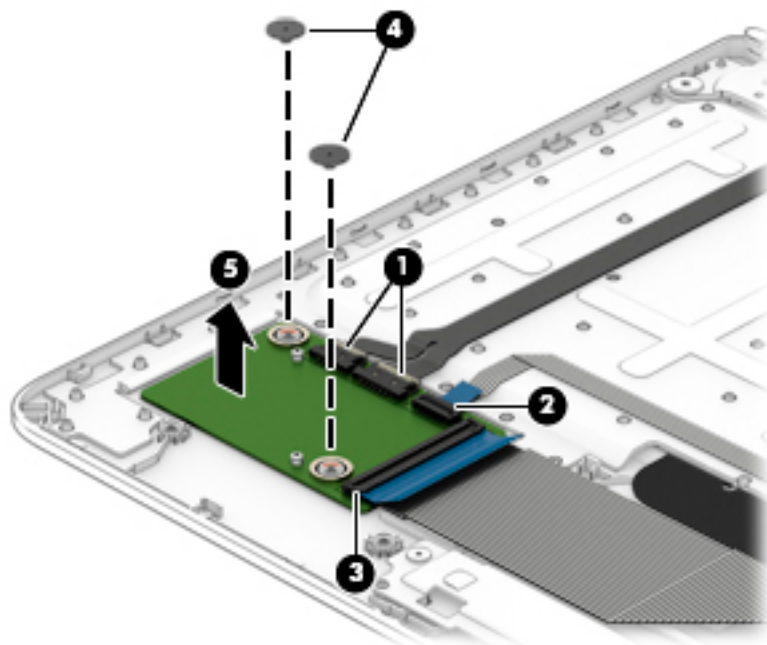
Description	Spare part number
Docking board	841560-001

Before removing the docking board, follow these steps:

1. Turn off the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect the power from the slate by unplugging the power cord from the slate.
3. Disconnect all external devices from the slate.
4. Remove the bottom cover (see [Bottom cover on page 44](#)).

Remove the docking board:

1. Disconnect the keyboard/base docking cables **(1)** from the docking board.
2. Release the zero insertion force (ZIF) connector **(2)** to which the TouchPad board cable is attached, and then disconnect the TouchPad board cable from the docking board.
3. Release the ZIF connector **(3)** to which the keyboard cable is attached, and then disconnect the keyboard cable from the docking board.
4. Remove the two Phillips PM2.0×2.4 broadhead screws **(4)** that secure the docking board to the keyboard/top cover.
5. Remove the docking board **(5)**.



Reverse this procedure to install the docking board.

## TouchPad board

Description	Spare part number
TouchPad board	841561-001
TouchPad board cable (includes double-sided adhesive)	841552-001
TouchPad board bracket (included with the TouchPad board spare part kit, spare part number 841561-001)	

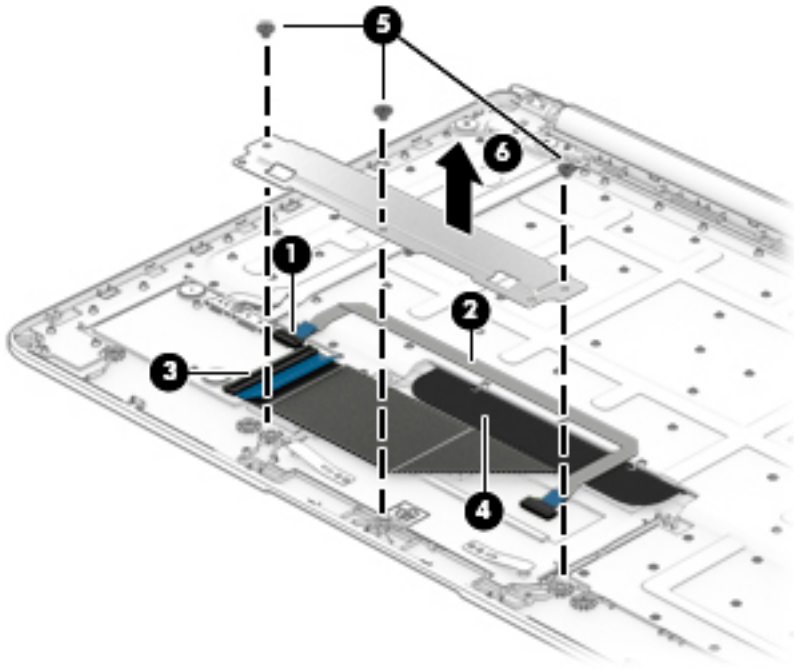
Before removing the TouchPad board, follow these steps:

1. Turn off the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect the power from the slate by unplugging the power cord from the slate.
3. Disconnect all external devices from the slate.
4. Remove the bottom cover (see [Bottom cover on page 44](#)).

Remove the TouchPad board:

1. Release the ZIF connector **(1)** to which the TouchPad board cable is attached, and then disconnect the TouchPad board cable from the docking board.
2. Detach the TouchPad board cable **(2)** from the keyboard/top cover. (The TouchPad board cable is attached to the keyboard/top cover with double-sided adhesive.)
3. Release the ZIF connector **(3)** to which the keyboard cable is attached, and then disconnect the keyboard cable from the docking board.
4. Detach the keyboard cable **(4)** from the keyboard/top cover. (The keyboard cable is attached to the keyboard/top cover with double-sided adhesive.)
5. Remove the three Phillips PM2.0×2.5 screws **(5)** that secure the TouchPad board bracket to the keyboard/top cover.

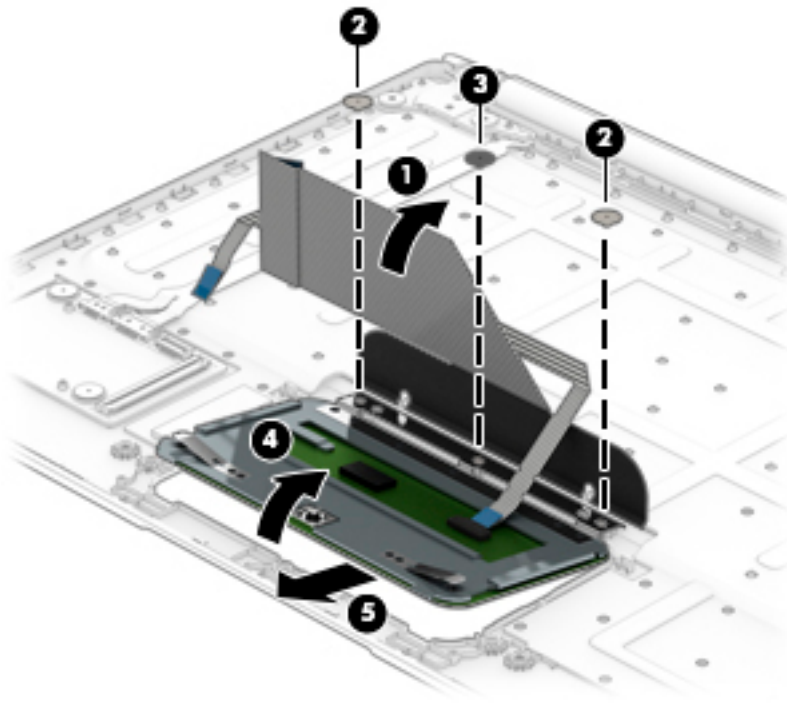
6. Remove the TouchPad board bracket (6).



7. Swing the keyboard cable (1) up and back to access the TouchPad board.
8. Remove the two silver Phillips PM2.0×2.4 broadhead screws (2) that secure the TouchPad board to the keyboard/top cover.
9. Remove the black Phillips PM2.0×2.4 broadhead screw (3) that secures the TouchPad board to the keyboard/top cover.
10. Lift the front edge of the TouchPad board (4) until it rests at an angle.



11. Remove the TouchPad board (5) by sliding it up and forward at an angle.



Reverse this procedure to install the TouchPad board.

## Hinge assembly

Description	Spare part number
Hinge bezel	841563-001
Keyboard/base docking cable (includes double-sided adhesive)	841553-001
Hinges (2, includes left and right hinges)	841567-001
Hinge cover	841562-001

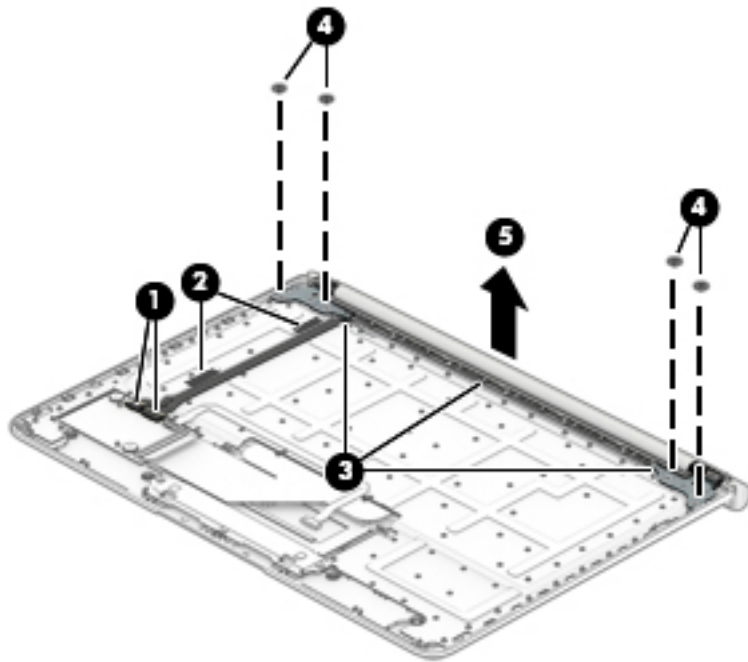
Before removing the hinge assembly, follow these steps:

1. Turn off the slate. If you are unsure whether the slate is off or in Hibernation, turn the slate on, and then shut it down through the operating system.
2. Disconnect the power from the slate by unplugging the power cord from the slate.
3. Disconnect all external devices from the slate.
4. Remove the bottom cover (see [Bottom cover on page 44](#)).

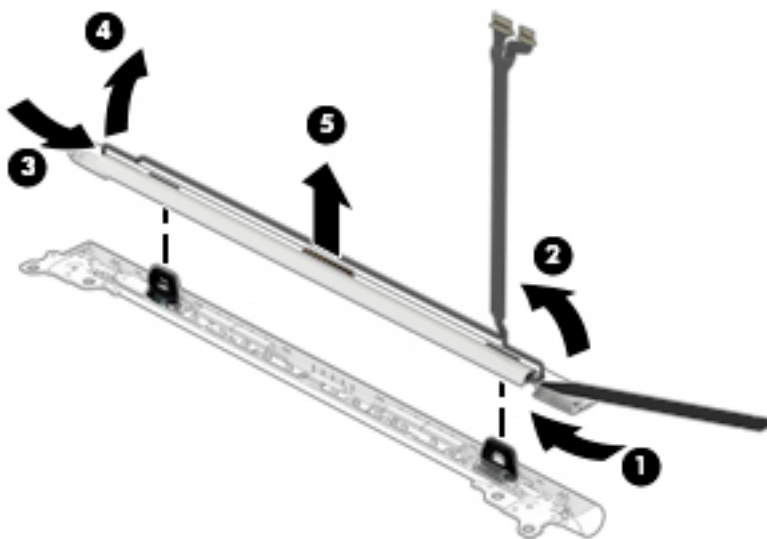
Remove the hinge assembly:

1. Disconnect the keyboard/base docking cables **(1)** from the docking board.
2. Detach the keyboard/base docking cables **(2)** from the keyboard/top cover. (The keyboard/base docking cables are attached to the keyboard/top cover with double-sided adhesive.)
3. Release the keyboard/base docking cables **(3)** from retention clips and routing channel built into the keyboard/top cover.
4. Remove the four Phillips PM2.0×2.4 broadhead screws **(4)** that secure the hinge assembly to the keyboard/top cover.

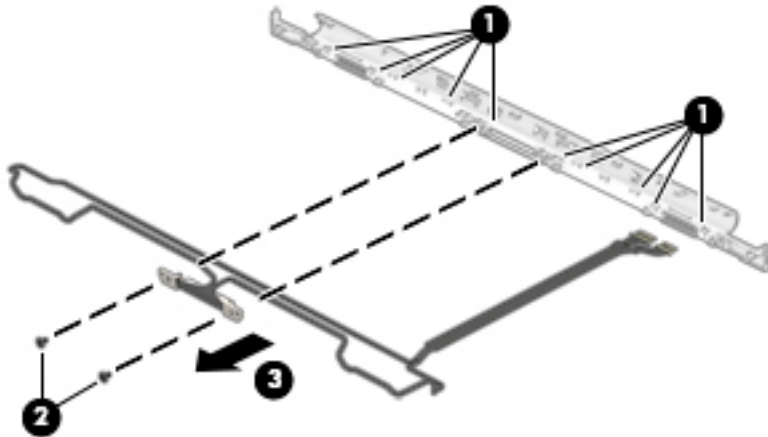
5. Remove the hinge assembly (5).



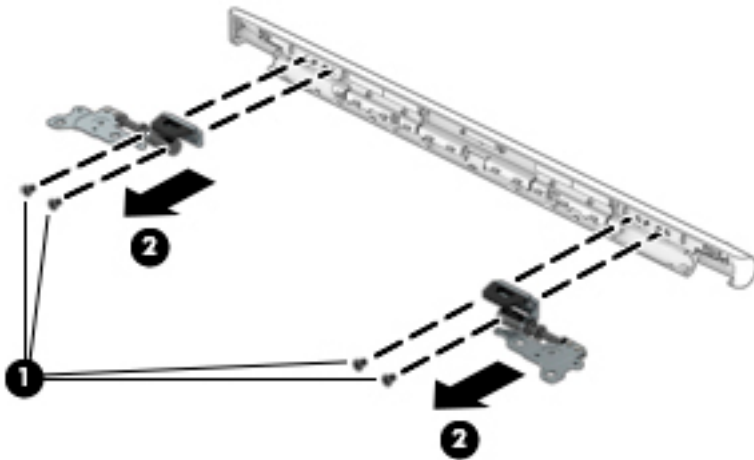
6. Insert a case utility tool (1) or a similar thin, plastic tool into the opening on the right end of the hinge assembly.
7. Separate the right end of the hinge bezel (2) from the right end of the hinge cover.
8. Insert a case utility tool (3) or a similar thin, plastic tool into the opening on the left end of the hinge assembly.
9. Separate the left end of the hinge bezel (4) from the left end of the hinge cover.
10. Remove the hinge bezel (5).



11. Release the keyboard/base docking cable from retention clips **(1)** and routing channel built into the hinge bezel.
12. Remove the two Phillips PM2.0×3.8 screws **(2)** that secure the keyboard/base docking cable to the hinge bezel.
13. Remove the keyboard/base docking cable **(3)**.



14. Remove the four Phillips PM2.5×4.2 screws **(1)** that secure the hinges to the hinge cover.
15. Remove the hinges **(2)**.




Reverse this procedure to reassemble and install the hinge assembly.

---

# 7 Using Setup Utility (BIOS)

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


---

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

---

## Starting Setup Utility (BIOS)

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

---

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

## Updating Setup Utility (BIOS)

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

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

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

## Determining the BIOS version

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


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

- HP Support Assistant
  1. Type `support` in the taskbar search box, and then select the **HP Support Assistant** app.  
– or –  
Click the question mark icon in the taskbar.
  2. Select **My PC**, and then select **Specifications**.
- Setup Utility (BIOS)
  1. Start Setup Utility (BIOS) (see [Starting Setup Utility \(BIOS\) on page 53](#)).
  2. Select **Main**, select **System Information**, and then make note of the BIOS version.
  3. Select **Exit**, select **No**, and then follow the on-screen instructions.


To check for later BIOS versions, see [Downloading a BIOS update on page 54](#).

## Downloading a BIOS update

---

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

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

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


---

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

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

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

---

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


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## 8 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.

When HP PC Hardware Diagnostics (UEFI) detects a failure that requires hardware replacement, a 24-digit Failure ID code is generated. This ID code can then be provided to support to help determine how to correct the problem.

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


---

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

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

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

- a. Connected USB 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 55](#).

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- b. Hard drive
- c. BIOS


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

---

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

---

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

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

---

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

#### Download the latest UEFI version

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

#### Download any version of UEFI for a specific product

1. Go to <http://www.hp.com/support>, and then select your country. The HP Support page is displayed.
2. Click **Drivers & Downloads**.

3. Use the categories listed to find your product.

– or –

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

4. Select your computer, and then select your operating system.
5. In the **Diagnostic** section, follow the on-screen instructions to select and download the UEFI version you want.



# 9 Specifications

## Dimensions

	Metric	U.S.
<b>Slate dimensions</b>		
Width	<b>30.0 cm</b>	11.81 in
Depth	<b>21.0 cm</b>	8.27 in
Height	<b>8.4 cm</b>	0.33 in
Weight	<b>0.75 kg</b>	1.65 lbs
<b>Keyboard/base dimensions</b>		
Width	<b>30.0 cm</b>	11.81 in
Depth	<b>22.0 cm</b>	8.66 in
Height (front to rear)	<b>6.9 to 19.0 cm</b>	0.27 to 0.75 in
Weight	<b>0.71 kg</b>	1.57 lbs

## Operating environment

Factor	Metric	U.S.
<b>Temperature</b>		
Operating	<b>5°C to 35°C</b>	41°F to 95°F
Nonoperating	<b>-20°C to 60°C</b>	-4°F to 140°F
<b>Relative humidity</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

## Input power

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

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

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

Input power	Rating
Operatng voltage and current	19.5 dc @ 2.31 A – 45 W
	19.5 dc @ 3.33 A – 65 W
	19.5 dc @ 4.62 A – 90 W
	19.5 dc @ 6.15 A – 120 W
	19.5 dc @ 7.69 A – 150 W



**NOTE:** This product is designed for IT power systems in Norway with phase-to-phase voltage not exceeding 240 V rms.

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# 10 Backing up, restoring, and recovering

This chapter provides information about the following processes. The information in the chapter is standard procedure for most products.

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


For additional information, refer to the HP support assistant app.

▲ Type `support` in the taskbar search box, and then select the **HP Support Assistant** app.

– or –

Click the question mark icon in the taskbar.

---

 **IMPORTANT:** If you will be performing recovery procedures on a tablet, the tablet battery must be at least 70% charged before you start the recovery process.

**IMPORTANT:** For a tablet with a detachable keyboard, connect the keyboard to the keyboard dock before beginning any recovery process.

---


## Creating recovery media and backups

The following methods of creating recovery media and backups are available on select products only. Choose the available method according to your computer model.

- Use HP Recovery Manager to create HP Recovery media after you successfully set up the computer. This step creates a backup of the HP Recovery partition on the computer. The backup can be used to reinstall the original operating system in cases where the hard drive is corrupted or has been replaced. For information on creating recovery media, see [Creating HP Recovery media \(select products only\) on page 59](#). For information on the recovery options that are available using the recovery media, see [Using Windows tools on page 60](#).
- Use Windows tools to create system restore points and create backups of personal information.

For more information, see [Recovering using HP Recovery Manager on page 61](#).

---

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

---

## Creating HP Recovery media (select products only)

If possible, check for the presence of the Recovery partition and the Windows partition. From the **Start** menu, select **File Explorer**, and then select **This PC**.

- If your computer does not list the Windows partition and the Recovery partition, you can obtain recovery media for your system from support. See the *Worldwide Telephone Numbers* booklet included with the computer. You can also find contact information on the HP website. Go to <http://www.hp.com/support>, select your country or region, and follow the on-screen instructions.

You can use Windows tools to create system restore points and create backups of personal information, see [Using Windows tools on page 60](#).

- If your computer does list the Recovery partition and the Windows partition, you can use HP Recovery Manager to create recovery media after you successfully set up the computer. HP Recovery media can be used to perform system recovery if the hard drive becomes corrupted. System recovery reinstalls the original operating system and software programs that were installed at the factory and then configures the settings for the programs. HP Recovery media can also be used to customize the system or restore the factory image if you replace the hard drive.
  - Only one set of recovery media can be created. Handle these recovery tools carefully, and keep them in a safe place.
  - HP Recovery Manager examines the computer and determines the required storage capacity for the media that will be required.
  - To create recovery discs, your computer must have an optical drive with DVD writer capability, and you must use only high-quality blank DVD-R, DVD+R, DVD-R DL, or DVD+R DL discs. Do not use rewritable discs such as CD±RW, DVD±RW, double-layer DVD±RW, or BD-RE (rewritable Blu-ray) discs; they are not compatible with HP Recovery Manager software. Or, instead, you can use a high-quality blank USB flash drive.
  - If your computer does not include an integrated optical drive with DVD writer capability, but you would like to create DVD recovery media, you can use an external optical drive (purchased separately) to create recovery discs. If you use an external optical drive, it must be connected directly to a USB port on the computer; the drive cannot be connected to a USB port on an external device, such as a USB hub. If you cannot create DVD media yourself, you can obtain recovery discs for your computer from HP. See the *Worldwide Telephone Numbers* booklet included with the computer. You can also find contact information on the HP website. Go to <http://www.hp.com/support>, select your country or region, and follow the on-screen instructions.
  - Be sure that the computer is connected to AC power before you begin creating the recovery media.
  - The creation process can take an hour or more. Do not interrupt the creation process.
  - If necessary, you can exit the program before you have finished creating all of the recovery DVDs. HP Recovery Manager will finish burning the current DVD. The next time you start HP Recovery Manager, you will be prompted to continue.

To create HP Recovery media:



---

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

---

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

If you ever need to recover the system, see [Recovering using HP Recovery Manager on page 61](#).

## Using Windows tools

You can create recovery media, system restore points, and backups of personal information using Windows tools.



---

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

---


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

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

# Restore and recovery

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

---

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

---

- Windows offers several options for restoring from backup, refreshing the computer, and resetting the computer to its original state. For more information see the Get started app.
  - ▲ Select the **Start** button, and then select the **Get started** app.
- If you need to correct a problem with a preinstalled application or driver, use the Reinstall drivers and/or applications option (select products only) of HP Recovery Manager to reinstall the individual application or driver.
  - ▲ Type `recovery` in the taskbar search box, select **HP Recovery Manager**, select **Reinstall drivers and/or applications**, and then follow the on-screen instructions.
- If you want to recover the Windows partition to original factory content, you can choose the System Recovery option from the HP Recovery partition (select products only) or use the HP Recovery media. For more information, see [Recovering using HP Recovery Manager on page 61](#). If you have not already created recovery media, see [Creating HP Recovery media \(select products only\) on page 59](#).
- On select products, if you want to recover the computer's original factory partition and content, or if you have replaced the hard drive, you can use the Factory Reset option of HP Recovery media. For more information, see [Recovering using HP Recovery Manager on page 61](#).
- On select products, if you want to remove the recovery partition to reclaim hard drive space, HP Recovery Manager offers the Remove Recovery Partition option.

For more information, see [Removing the HP Recovery partition \(select products only\) on page 64](#).


## Recovering using HP Recovery Manager

HP Recovery Manager software allows you to recover the computer to its original factory state by using the HP Recovery media that you either created or that you obtained from HP, or by using the HP Recovery partition (select products only). If you have not already created recovery media, see [Creating HP Recovery media \(select products only\) on page 59](#).

### What you need to know before you get started

- HP Recovery Manager recovers only software that was installed at the factory. For software not provided with this computer, you must either download the software from the manufacturer's website or reinstall the software from the media provided by the manufacturer.

---


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

---

- HP Recovery media must be used if the computer hard drive fails. If you have not already created recovery media, see [Creating HP Recovery media \(select products only\) on page 59](#).
- To use the Factory Reset option (select products only), you must use HP Recovery media. If you have not already created recovery media, see [Creating HP Recovery media \(select products only\) on page 59](#).
- If your computer does not allow the creation of HP Recovery media or if the HP Recovery media does not work, you can obtain recovery media for your system from support. See the *Worldwide Telephone Numbers* booklet included with the computer. You can also find contact information from the HP

website. Go to <http://www.hp.com/support>, select your country or region, and follow the on-screen instructions.


---

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

---

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

---

 **NOTE:** Only the options available for your computer display when you start the recovery process.

---

- System Recovery—Reinstalls the original operating system, and then configures the settings for the programs that were installed at the factory.
- Factory Reset—Restores the computer to its original factory state by deleting all information from the hard drive and re-creating the partitions. Then it reinstalls the operating system and the software that was installed at the factory.


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

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

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

To start HP Recovery Manager from the HP Recovery partition:

---

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

---

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

- or -

For computers or tablets with keyboards attached, press **f11** while the computer boots, or press and hold **f11** as you press the power button.

For tablets without keyboards:

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

- or -

Turn on or restart the tablet, and then quickly hold down the Windows button; then select **f11**.


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

## Using HP Recovery media to recover

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

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

---

 **NOTE:** If the computer does not automatically restart in HP Recovery Manager, change the computer boot order. See [Changing the computer boot order on page 63](#).

---

3. Follow the on-screen instructions.

## Changing the computer boot order

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

To change the boot order:



---

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

---

1. Insert the HP Recovery media.
2. Access BIOS:

For computers or tablets with keyboards attached:

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

For tablets without keyboards:

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

- or -

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

3. Select the optical drive or USB flash drive from which you want to boot.
4. Follow the on-screen instructions.

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

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



**IMPORTANT:** After you remove the HP Recovery partition, you will not be able to perform System Recovery or create HP recovery media from the HP Recovery partition. So before you remove the Recovery partition, create HP Recovery media; see [Creating HP Recovery media \(select products only\) on page 59](#).



**NOTE:** The Remove Recovery Partition option is only available on products that support this function.

Follow these steps to remove the HP Recovery partition:

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



# 11 Power cord set requirements

The wide-range input feature of the slate 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 slate 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 slate 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 slate. Requirements for all countries 113

## Requirements for specific countries and regions

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

Country/region	Accredited agency	Applicable note number
South Korea	EK	4
Sweden	CEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	4
The United Kingdom	BSI	1
The United States	UL	2

1. The flexible cord must be Type H05VV-F, 3-conductor, 1.0-mm<sup>2</sup> conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
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.

---

## 12 Recycling

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

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

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