



HP Pavilion x360 m3 (model numbers m3-u100 through m3-u199, m13-u100 through m13-u199, m3-u000 through m3-u099, and m13-u000 through m13-u099)

Maintenance and Service Guide
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Product notice

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

Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. See <http://www.microsoft.com>.

To access the latest user guides or manuals for your product, go to <http://www.hp.com/support>, and select your country. Select **Find your product**, and then follow the on-screen instructions.

Safety warning notice

 **WARNING!** To reduce the possibility of heat-related injuries or of overheating the device, do not place the device directly on your lap or obstruct the device air vents. Use the device only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or rugs or clothing, to block airflow. Also, do not allow the AC adapter to contact the skin or a soft surface, such as pillows or rugs or clothing, during operation. The device and the AC adapter comply with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC 60950-1).

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1 Product description

Category	Description	HP Pavilion x360 m3 Convertible PC (model numbers m3-u100 through m3-u199 and m13-u100 through m13-u199)	HP Pavilion x360 m3 Convertible PC (model numbers m3-u000 through m3-u099 and m13-u000 through m13-u099)
Product Name	HP Pavilion x360 m3 Convertible PC (model numbers m3-u100 through m3-u199 and m13-u100 through m13-u199)	√	
	HP Pavilion x360 m3 Convertible PC (model numbers m3-u000 through m3-u099 and m13-u000 through m13-u099)		√
Processors	<ul style="list-style-type: none"> Intel® Core™ i7-7500U 2.70-GHz (SC turbo up to 3.50-GHz) processor (2133-MHz FSB, 4.0-MB L3 cache, dual core, 15 W) 	√	
	<ul style="list-style-type: none"> Intel Core™ i5-7200U 2.50-GHz (SC turbo up to 3.10-GHz) processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) 		
	<ul style="list-style-type: none"> Intel Core i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) 		
	<ul style="list-style-type: none"> Intel Pentium™ N3710 1.60-GHz processor (SC turbo up to 2.56-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, quad core, 6 W) 		
	<ul style="list-style-type: none"> Intel Core i5-6200U 2.30-GHz (SC turbo up to 2.80-GHz) processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) 	√	√
	<ul style="list-style-type: none"> Intel Core i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) 		
Chipset	Integrated soldered-on-circuit (SoC)	√	√
Graphics	Internal graphics: Intel HD Graphics 620 on computer models equipped with an Intel Core processor	√	

Category	Description	HP Pavilion x360 m3 Convertible PC (model numbers m3-u100 through m3-u199 and m13-u100 through m13-u199)	HP Pavilion x360 m3 Convertible PC (model numbers m3-u000 through m3-u099 and m13-u000 through m13-u099)
Graphics <i>(continued)</i>	Intel HD Graphics on computer models equipped with an Intel Pentium processor Support for HD decode, DX12, and HDMI		√
	Internal graphics: Intel HD Graphics 520 Support for HD decode, DX12, and HDMI	√	√
Panel	13.3-in, full high-definition (FHD), AntiGlare (AG) (1920×1280), in-plane switching (IPS), UWVA, white light-emitting diode (WLED), ultra-slim-bent (2.85-mm), TouchScreen display panel with flush glass and Multi-Touch enabled; 16:9 ultra wide aspect ratio; support for eDP 13.3-in, HD, AG (1366×768), IPS, UWVA, WLED, ultra-slim-bent (2.85-mm), TouchScreen display panel with flush glass and Multi-Touch enabled; 16:9 ultra wide aspect ratio; support for eDP	√	√
Memory module	On computer models equipped with an Intel Core processor: Support DDR4-2133 Dual Channel Support for up to 16-GB maximum on-board system memory DDR4-2133 Dual Channel Support <ul style="list-style-type: none"> • 16384 MB (8192 MB × 2 pieces) • 12288 MB (8192 MB + 4096 MB) • 8192 MB (4096 MB × 2 pieces) • 8192 MB (8192 MB × 1 piece) • 6144 MB (2048 MB + 4096 MB) • 4096 MB (4096 MB × 1 piece) 	√	

Category	Description	HP Pavilion x360 m3 Convertible PC (model numbers m3-u100 through m3-u199 and m13-u100 through m13- u199)	HP Pavilion x360 m3 Convertible PC (model numbers m3-u000 through m3-u099 and m13-u000 through m13- u099)
Memory module <i>(continued)</i>	<p>On computer models equipped with an Intel Pentium processor:</p> <p>Support for PCL3-1600 Single Channel</p> <p>Support for up to 8-GB maximum on-board system memory</p>	√	
	<p>Support DDR4-2133 Dual Channel</p> <p>Support for up to 16-GB maximum on-board system memory</p> <p>DDR4-2133 Dual Channel Support</p> <ul style="list-style-type: none"> • 16384 MB (8192 MB × 2 pieces) • 12288 MB (8192 MB + 4096 MB) • 8192 MB (4096 MB × 2 pieces) • 8192 MB (8192 MB × 1 piece) • 6144 MB (2048 MB + 4096 MB) • 4096 MB (4096 MB × 1 piece) 	√	√
Storage	<p>Support for M.2 SATA</p> <p>Support for optional SATA 2.5-in hard drives (7.0- and 7.2-mm)</p> <p>Single solid-state drive configuration: 128-GB, M.2 SATA, DRAM-less</p> <p>Single hard drive/solid-state hard drive configurations:</p> <ul style="list-style-type: none"> • 500-GB, 5400-rpm, 7.2-mm • 500-GB, 5400-rpm, 7.0-mm solid-state hard drive with 8-GB NAND 	√	√
	<ul style="list-style-type: none"> • 1-TB, 5400-rpm, 7.2-mm 		√
Optical drive	HP external DVD±RW DL SuperMulti Drive	√	√

Category	Description	HP Pavilion x360 m3 Convertible PC (model numbers m3-u100 through m3-u199 and m13-u100 through m13-u199)	HP Pavilion x360 m3 Convertible PC (model numbers m3-u000 through m3-u099 and m13-u000 through m13-u099)
Audio and video	<p>Fixed integrated HP TrueVision high-definition (HD) webcam, 720p×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>B&O Play audio</p>	√	√
Sensors	<p>Accelerometer</p> <p>ECompass</p> <p>Gyroscope</p> <p>Sensor hub</p>	√	√
Wireless	<ul style="list-style-type: none"> Intel Dual Band Wireless-AC 7265 802.11 ac 2×2 WiFi + Bluetooth 4.0 Combo Adapter Intel Dual Band Wireless-AC 3165 802.11 ac 1×1 WiFi + Bluetooth 4.2 Combo Adapter (non vPRO) 	√	
	<ul style="list-style-type: none"> Intel Dual Band Wireless-AC 3165 802.11 ac 1×1 + Bluetooth 4.2 LE Combo Adapter Realtek RTL8723BE 802.11b/g/n 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter 	√	√
	<p>Compatible with MiraCast-certified devices</p> <p>Support for Intel WiDi</p>	√	√
External media cards	Support for SD/SDHC/SDXC digital media cards with push-push insertion/removal	√	√
Ports	<ul style="list-style-type: none"> Headphone/microphone combo jack HDMI v 1.4 supporting up to 1920×1080 @ 60Hz USB 3.0 ports USB 2.0 port 	√	√
Keyboard/pointing devices	Full-sized, island-style, thin cover with backlit keyboard	√	√

Category	Description	HP Pavilion x360 m3 Convertible PC (model numbers m3-u100 through m3-u199 and m13-u100 through m13- u199)	HP Pavilion x360 m3 Convertible PC (model numbers m3-u000 through m3-u099 and m13-u000 through m13- u099)
Keyboard/pointing devices <i>(continued)</i>	(backlight available on select models only) Clickpad with image sensor Multitouch gestures enabled Support for Windows® 10 Modern Trackpad Gestures	√	√
Power requirements	Support for a 3-cell, 41-WHr, Li-Ion battery Support for 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	√	√
Security	Trusted platform module (TPM) 2.0 (firmware-based support) Kensington Security Lock port (cable not included)	√	√
Operating system	Preinstalled: Windows 10 Professional For Developed Market (ML): Windows 10 Home ML and Windows 10 Home High End ML For Emerging Market (EM/SL): Windows 10 EM/SL and Windows 10 Home High End ML For APJ SEAP Market (EM/SL): SAEP Windows 10 EM/SL and SAEP Windows 10 Home High End ML	√	√
Serviceability	End user replaceable parts: AC adapter	√	√

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

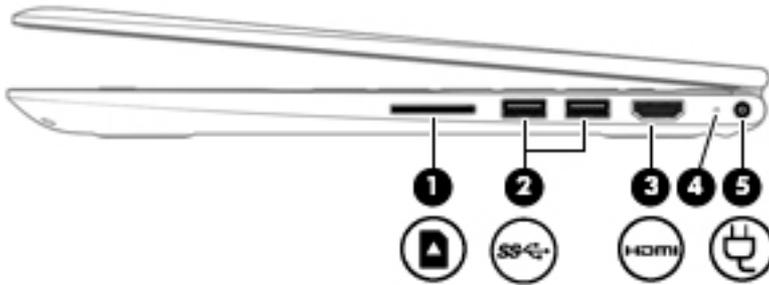
To find out what software is installed on the slate:

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

– or –

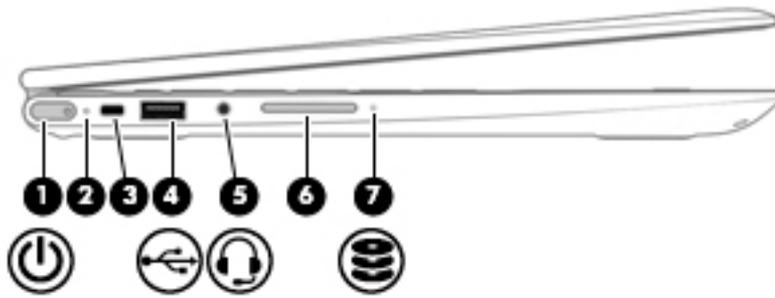
Right-click the **Start** button, and then select **Programs and Features**.

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"> 1. Hold the card label-side up, with connectors facing the computer. 2. Insert the card into the memory card reader, and then press in on the card until it is firmly seated. <p>To remove a card:</p> <ul style="list-style-type: none"> ▲ Press in on the card, and then remove it from the memory card reader.
(2)  USB 3.0 ports (2)	<p>Connect optional USB devices, such as a keyboard, mouse, external drive, printer, scanner or USB hub.</p>
(3)  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>
(4) AC adapter and battery light	<ul style="list-style-type: none"> • White: The AC adapter is connected and the battery is fully charged. • Blinking white: The AC adapter is disconnected and the battery has reached a low battery level. • Amber: The AC adapter is connected and the battery is charging. • Off: The battery is not charging.
(5)  Power connector	<p>Connects an AC adapter.</p>

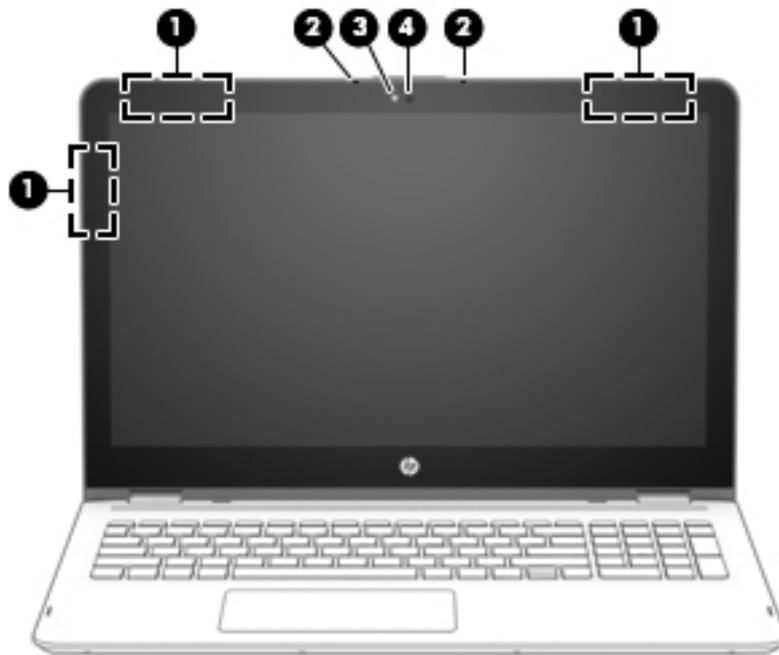
Left side



Component	Description
<p>(1)  Power button</p>	<ul style="list-style-type: none"> • When the computer is off, press the button to turn on the computer. • When the computer is on, press the button briefly to initiate Sleep. • When the computer is in the Sleep state, press the button briefly to exit Sleep. • When the computer is in Hibernation, press the button briefly to exit Hibernation. <p>CAUTION: Pressing and holding down the power button results in the loss of unsaved information.</p> <p>If the computer has stopped responding and shutdown procedures are ineffective, press and hold the power button down for at least 5 seconds to turn off the computer.</p> <p>To learn more about your power settings, see your power options.</p> <p>▲ Type <code>power</code> in the taskbar search box, and then select Power and sleep settings.</p> <p>– or –</p> <p>Right-click the Start button, and then select Power Options.</p>
<p>(2) Power light</p>	<ul style="list-style-type: none"> • On: The computer is on. • Blinking: The computer is in the Sleep state, a power-saving state. The computer shuts off power to the display and other unneeded components. • Off: The computer is off or in Hibernation. Hibernation is a power-saving state that uses the least amount of power.
<p>(3)  Security cable slot</p>	<p>Attaches an optional security cable to the computer.</p> <p>NOTE: The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.</p>
<p>(4)  USB 2.0 port</p>	<p>Connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner, or USB hub.</p>
<p>(5)  Audio-out (headphone)/Audio-in (microphone) combo jack</p>	<p>Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects an optional headset microphone. This jack does not support optional standalone microphones.</p>

Component	Description
(6) Volume button	<p>WARNING! To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, refer to the <i>Regulatory, Safety, and Environmental Notices</i>.</p> <p>To access this guide:</p> <ul style="list-style-type: none"> ▲ Select the Start button, select All apps, select HP Help and Support, and then select HP Documentation. <p>NOTE: When a device is connected to the jack, the computer speakers are disabled.</p>
(7)  Drive light	<p>Control speaker volume on the computer.</p> <ol style="list-style-type: none"> 1. To increase speaker volume, press the back edge of the button. 2. To decrease speaker volume, press the front edge of the button. <ul style="list-style-type: none"> • Blinking white: The hard drive is being accessed. • Amber: HP 3D DriveGuard has temporarily parked the hard drive. <p>NOTE: On select products, the drive light will always remain off.</p>

Display



Component	Description
(1) WLAN antennas*	Send and receive wireless signals to communicate with wireless local area networks (WLANs).
(2) Internal microphones	Record sound.
(3) Webcam light	On: The webcam is in use.
(4) 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): <ul style="list-style-type: none">▲ Type camera in the taskbar search box, and then select Camera.

*The antennas are not visible from the outside of the computer, and the antenna location may vary. 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**.

Changing your notebook position (select products only)

Your computer can function as a classic notebook, and in addition, the display can be rotated so that the computer transforms into an entertainment stand, an interactive stand, or a tablet.



NOTE: The TouchPad and keyboard functions are locked during the entertainment and tablet modes.



Changing your notebook to an entertainment stand (select products only)

To change your notebook to an entertainment stand, raise the display, and then rotate the display backward to a stand position (about 315 degrees).



Changing your notebook to an interactive stand (select products only)

To change your notebook to an interactive stand, raise the display, and then rotate the display backward to a stand position (about 315 degrees). Position the notebook on its edges.



Changing your notebook to a tablet (select products only)

To change your notebook to a tablet, raise the display, and then rotate the display backward until it is flush with the computer bottom (360 degrees).

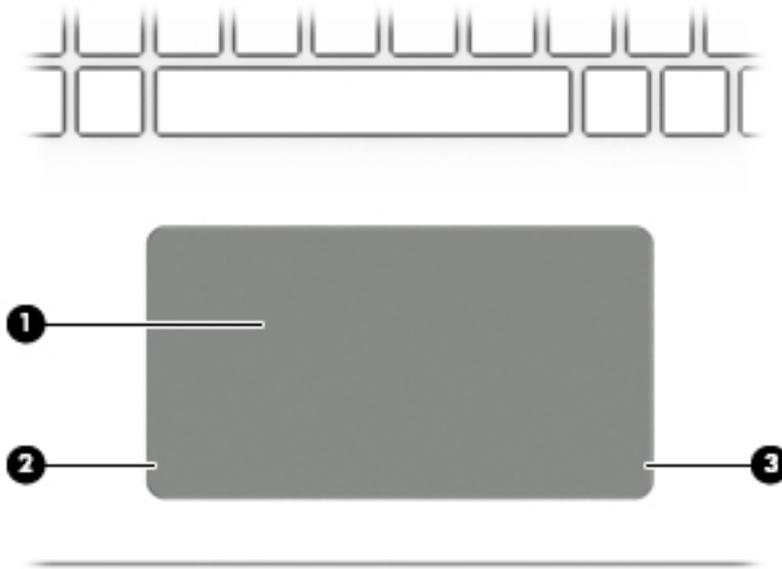


NOTE: When the computer is in tablet mode, you can use the on-screen keyboard.



Top

TouchPad

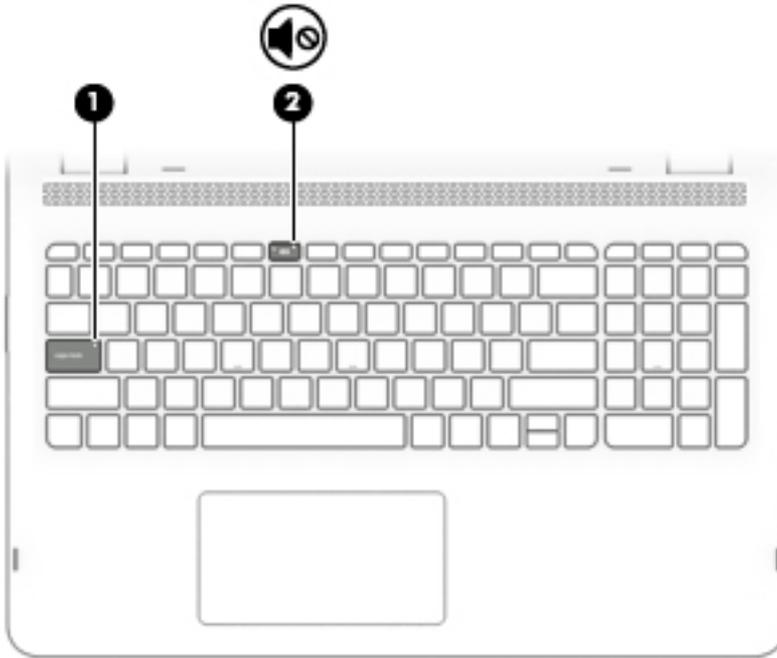


Component	Description
(1) TouchPad zone	Reads your finger gestures to move the pointer or activate items on the screen.
(2) Left TouchPad button	Functions like the left button on an external mouse.
(3) Right TouchPad button	Functions like the right button on an external mouse.

Lights



NOTE: Your computer may look slightly different from the illustration below.

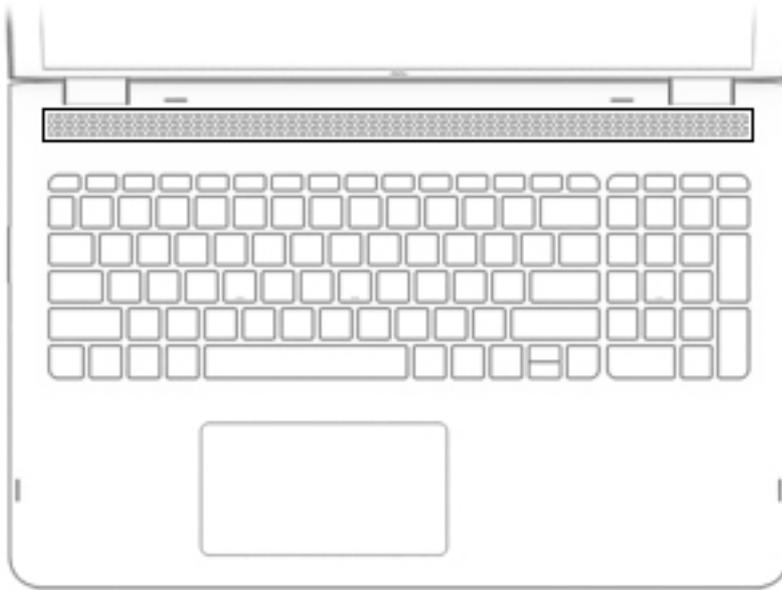


Component		Description
(1)	Caps lock light	On: Caps lock is on, which switches the key input to all capital letters.
(2)	 Mute light	<ul style="list-style-type: none">• Amber: Computer sound is off.• Off: Computer sound is on.

Speakers



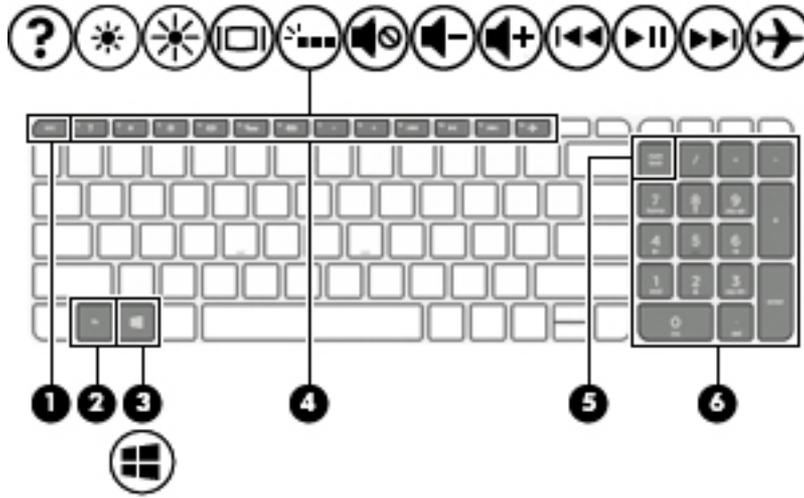
NOTE: Your computer may look slightly different from the illustration below.



Component	Description
Speakers	Produce sound.

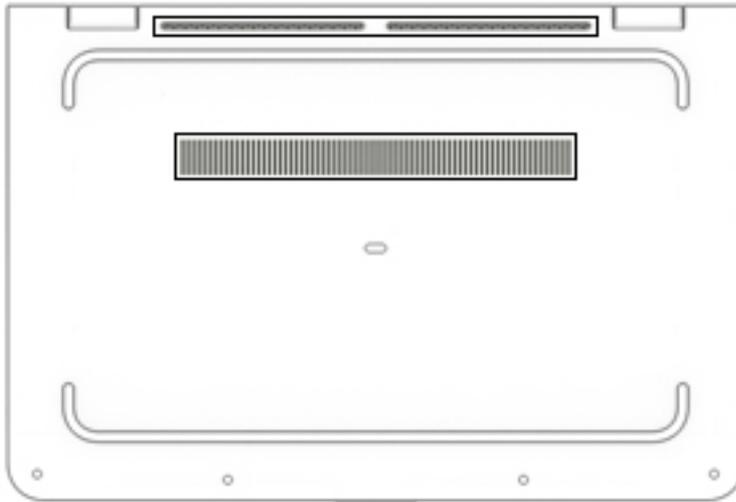
Keys

 **NOTE:** Your computer may look slightly different from the illustration below.



Component	Description
(1) esc key	Displays system information when pressed in combination with the fn key.
(2) fn key	Displays system information when pressed in combination with the esc key.
(3)  Windows key	Opens the Start menu. NOTE: Pressing the Windows key again will close the Start menu.
(4) Action keys	Execute frequently used system functions. NOTE: On select products, the f5 action key turns the keyboard backlight feature off or on.
(5) num lock key (select products only)	Alternates between the navigational and numeric functions on the integrated numeric keypad.
(6) Integrated numeric keypad (select products only)	When num lock is on, the keypad can be used like an external numeric keypad.

Bottom



Component	Description
Vents (3)	Enable airflow to cool internal components. NOTE: The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.

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

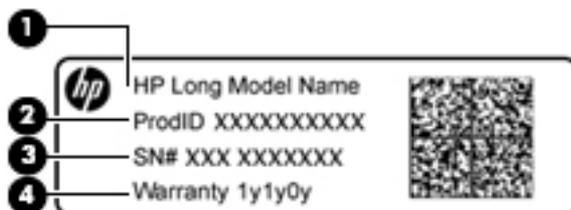
IMPORTANT: The labels described in this location are located on the bottom of the computer.

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

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



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



Component

(1) Model name (select products only)

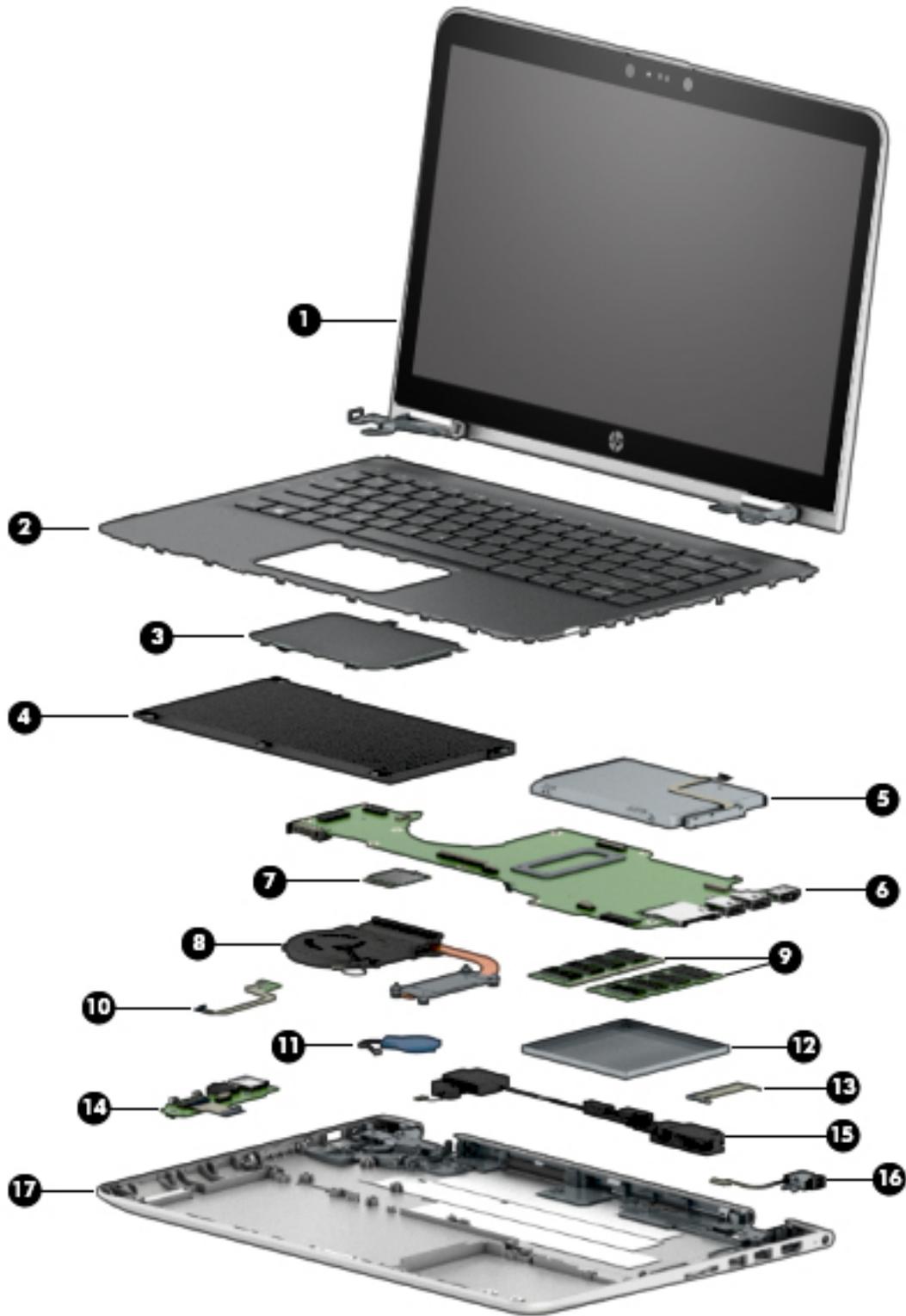
(2) Product number

(3) Serial number

(4) Warranty period

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

Computer major components



Item	Component	Spare part number
(1)	Display assembly: The display assembly is spared at the subcomponent level only. For more display assembly spare part information, see Display assembly subcomponents on page 27 .	
(2)	Keyboard/top cover (includes keyboard cable):	
	In modern gold finish (for use on all computer models):	
	For use in Belgium	856038-A41
	For use in Bulgaria	856038-261
	For use in Canada	856038-DB1
	For use in the Czech Republic and Slovakia	856038-FL1
	For use in Denmark, Finland, and Norway	856038-DH1
	For use in France	856038-051
	For use in Germany	856038-041
	For use in Greece	856038-151
	For use in Hungary	856038-211
	For use in Israel	856038-BB1
	For use in Italy	856038-061
	For use in Latin America	856038-161
	For use in the Netherlands	856038-B31
	For use in Portugal	856038-131
	For use in Romania	856038-271
	For use in Russia	856038-251
	For use in Saudi Arabia	856038-171
	For use in Slovenia	856038-BA1
	For use in Spain	856038-071
	For use in Switzerland	856038-BG1
	For use in Thailand	856038-281
	For use in Turkey	856038-141
	For use in the United Kingdom	856038-031
	For use in the United States	856038-001
	In natural silver finish (for use on all computer models):	
	For use in Belgium	856037-A41
	For use in Bulgaria	856037-261
	For use in Canada	856037-DB1
	For use in the Czech Republic and Slovakia	856037-FL1
	For use in Denmark, Finland, and Norway	856037-DH1

Item	Component	Spare part number
	For use in France	856037-051
	For use in Germany	856037-041
	For use in Greece	856037-151
	For use in Hungary	856037-211
	For use in Israel	856037-BB1
	For use in Italy	856037-061
	For use in Latin America	856037-161
	For use in the Netherlands	856037-B31
	For use in Portugal	856037-131
	For use in Romania	856037-271
	For use in Russia	856037-251
	For use in Saudi Arabia	856037-171
	For use in Slovenia	856037-BA1
	For use in Spain	856037-071
	For use in Switzerland	856037-BG1
	For use in Thailand	856037-281
	For use in Turkey	856037-141
	For use in the United Kingdom	856037-031
	For use in the United States	856037-001
	In natural silver finish for use in Japan (includes keyboard cable; for use only on computer models with model numbers m3-u100 through m3-u199 and m13-u100 through m13-u199)	856037-291
(2)	Keyboard/top cover with backlight (includes keyboard cable and backlight cable; for use on all computer models):	
	In modern gold finish:	
	For use in Belgium	856045-A41
	For use in Bulgaria	856045-261
	For use in Canada	856045-DB1
	For use in the Czech Republic and Slovakia	856045-FL1
	For use in Denmark, Finland, and Norway	856045-DH1
	For use in France	856045-051
	For use in Germany	856045-041
	For use in Greece	856045-151
	For use in Hungary	856045-211
	For use in Israel	856045-BB1
	For use in Italy	856045-061
	For use in Latin America	856045-161

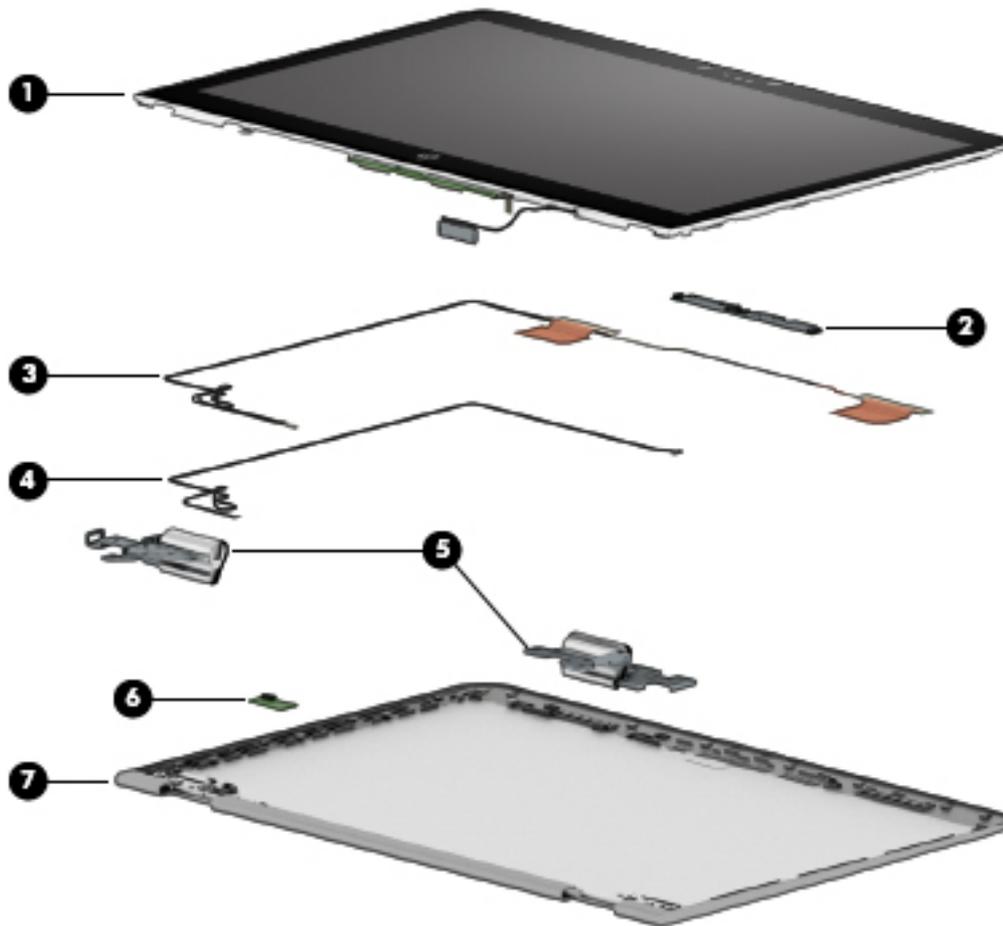
Item	Component	Spare part number
	For use in the Netherlands	856045-B31
	For use in Portugal	856045-131
	For use in Romania	856045-271
	For use in Russia	856045-251
	For use in Saudi Arabia	856045-171
	For use in Slovenia	856045-BA1
	For use in Spain	856045-071
	For use in Switzerland	856045-BG1
	For use in Thailand	856045-281
	For use in Turkey	856045-141
	For use in the United Kingdom	856045-031
	For use in the United States	856045-001
	In modern gold finish with linear wood pattern (for use only on computer models with model numbers m3-u100 through m3-u199 and m13-u100 through m13-u199):	
	For use in the United Kingdom and Singapore	856047-031
	For use in the United States	856047-001
	In natural silver finish:	
	For use in Belgium	856039-A41
	For use in Bulgaria	856039-261
	For use in Canada	856039-DB1
	For use in the Czech Republic and Slovakia	856039-FL1
	For use in Denmark, Finland, and Norway	856039-DH1
	For use in France	856039-051
	For use in Germany	856039-041
	For use in Greece	856039-151
	For use in Hungary	856039-211
	For use in Israel	856039-BB1
	For use in Italy	856039-061
	For use in Japan (for use only on computer models with model numbers m3-u100 through m3-u199 and m13-u100 through m13-u199)	856039-291
	For use in Latin America	856039-161
	For use in the Netherlands	856039-B31
	For use in Portugal	856039-131
	For use in Romania	856039-271
	For use in Russia	856039-251

Item	Component	Spare part number
	For use in Saudi Arabia	856039-171
	For use in Slovenia	856039-BA1
	For use in Spain	856039-071
	For use in Switzerland	856039-BG1
	For use in Thailand	856039-281
	For use in Turkey	856039-141
	For use in the United Kingdom	856039-031
	For use in the United States	856039-001
(3)	TouchPad	858844-001
	NOTE: The TouchPad spare part kit does not include the TouchPad cable. The TouchPad cable is available using spare part number 856008-001.	
(4)	Battery (3-cell, 41-WHr, 3.615-AHr, Li-ion)	844203-850
(5)	Mass storage device:	
	NOTE: The mounting brackets and the hard drive/solid-state drive cable are not included in the drive spare part kit. The hard drive/solid-state drive cable is available using spare part number 856011-001. The hard drive mounting bracket is available using spare part number 856012-001. The solid-state drive mounting bracket is available using spare part number 856013-001.	
	1-TB, 5400-rpm, 7.2-mm hard drive (for use only on computer models with model numbers m3-u000 through m3-u099 and m13-u000 through m13-u099)	832077-005
	500-GB, 5400-rpm, 7.2-mm hard drive (for use on all computer models)	778186-005
	500-GB, 5400-rpm, 7.0-mm SSHD with 8-GB NAND hard drive (for use on all computer models)	732000-005
	128-GB, M2, SATA, DRAM-less solid-state drive	827560-011
(6)	System board (includes graphic subsystem with UMA memory):	
	For use only on computer models with model numbers m3-u100 through m3-u199 and m13-u100 through m13-u199:	
	Equipped with an Intel Core™ i7-7500U 2.70-GHz (SC turbo up to 3.50-GHz) processor (2133-MHz FSB, 4.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system for use with a solid-state drive	903240-601
	Equipped with an Intel Core™ i7-7500U 2.70-GHz (SC turbo up to 3.50-GHz) processor (2133-MHz FSB, 4.0-MB L3 cache, dual core, 15 W) and a non-Windows operating system for use with a solid-state drive	903240-001
	Equipped with an Intel Core™ i5-7200U 2.50-GHz (SC turbo up to 3.10-GHz) processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system for use with a solid-state drive	903237-601
	Equipped with an Intel Core™ i5-7200U 2.50-GHz (SC turbo up to 3.10-GHz) processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and a non-Windows operating system for use with a solid-state drive	903237-001
	Equipped with an Intel Core™ i5-7200U 2.50-GHz (SC turbo up to 3.10-GHz) processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system	903238-601
	Equipped with an Intel Core™ i5-7200U 2.50-GHz (SC turbo up to 3.10-GHz) processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and a non-Windows operating system	903238-001
	Equipped with an Intel Core™ i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system for use with a solid-state drive	903239-601

Item	Component	Spare part number
	Equipped with an Intel Core i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and a non-Windows operating system for use with a solid-state drive	903239-001
	Equipped with an Intel Core i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system	903236-601
	Equipped with an Intel Core i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and a non-Windows operating system	903236-001
	Equipped with an Intel Pentium N3710 1.60-GHz processor (SC turbo up to 2.56-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, quad core, 6 W) and the Windows 10 operating system	903241-601
	Equipped with an Intel Pentium N3710 1.60-GHz processor (SC turbo up to 2.56-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, quad core, 6 W) and a non-Windows 10 operating system	903241-001
	For use on all computer models:	
	Equipped with an Intel Core i5-6200U 2.30-GHz (SC turbo up to 2.80-GHz) processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system for use with a solid-state drive	855963-601
	Equipped with an Intel Core i5-6200U 2.30-GHz (SC turbo up to 2.80-GHz) processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and a non-Windows operating system for use with a solid-state drive	855963-001
	Equipped with an Intel Core i5-6200U 2.30-GHz (SC turbo up to 2.80-GHz) processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system	855964-601
	Equipped with an Intel Core i5-6200U 2.30-GHz (SC turbo up to 2.80-GHz) processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system	855964-601
	Equipped with an Intel Core i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system, for use with a solid-state drive	855965-601
	Equipped with an Intel Core i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and a non-Windows operating system, for use with a solid-state drive	855965-001
	Equipped with an Intel Core i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system	855962-601
	Equipped with an Intel Core i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system	855962-001
(7)	WLAN module:	
	For for use only on computer models with model numbers m3-u100 through m3-u199 and m13-u100 through m13-u199:	
	Intel Dual Band Wireless-AC 7265 802.11 ac 2×2 WiFi + Bluetooth 4.0 Combo Adapter (for use only in North America and Europe)	793840-005
	Intel Dual Band Wireless-AC 3165 802.11 ac 1×1 WiFi + Bluetooth 4.2 Combo Adapter (non vPRO)	863934-855
	For use on all computer models:	
	Intel Dual Band Wireless-AC 3165 802.11 ac 1×1 + Bluetooth 4.2 LE Combo Adapter	806723-005
	Realtek RTL8723BE 802.11b/g/n 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter	855106-855
(8)	Fan/heat sink assembly (includes thermal material):	
	For use only on computer models equipped with an Intel CoreT or Intel Core processor	855966-001
	For use only on computer models equipped with an Intel Pentium processor	903298-001

Item	Component	Spare part number
(9)	Memory module:	
	For use only on computer models with model numbers m3-u100 through m3-u199:	
	8.0-GB PCL3 12800 1600	691740-005
	4.0-GB PCL3 12800 1600	693374-005
	For use only on computer models with model numbers m3-u000 through m3-u099:	
	8.0-GB 2133 DDR4	820570-005
	4.0-GB 2133 DDR4	820569-005
	2.0-GB 2133 DDR4	851379-005
(10)	Power button board (includes cable)	856017-001
(11)	RTC battery (includes cable and double-sided adhesive)	691572-001
	Shielding Kit includes:	856014-001
(12)	Memory module shield	
(13)	USB port shield	
(14)	Audio/USB board	856016-001
	NOTE: The audio/USB board cable is not included in the audio/USB board spare part kit. The audio/USB board cable is available using spare part number 856007-001.	
(15)	Speakers (include left and right speakers and cables)	856024-001
(16)	Power connector cable	808155-005
(17)	Base enclosure:	
	In modern gold finish	856006-001
	In natural silver finish	856005-001

Display assembly subcomponents



Item	Component	Spare part number
(1)	Display panel assembly (includes the display bezel, display panel, display panel cable, and the TouchScreen board):	
	13.3-in, (1920×1080), FHD, UWVA/IPS, WLED, 16:9 ultra wide aspect ratio, AntiGlare, ultra-slim-bent (2.85-mm), TouchScreen, MultiTouch-enabled, eDP)	856019-001
	13.3-in, (1366×768), HD, UWVA/IPS, WLED, 16:9 ultra wide aspect ratio, AntiGlare, ultra-slim-bent (2.85-mm), TouchScreen, MultiTouch-enabled, eDP)	856018-001
(2)	Webcam/microphone module (includes 2 microphone rubber isolators and double-sided adhesive)	833962-005
	NOTE: The webcam/microphone module does not include the webcam/microphone module cable. The webcam/microphone module cable is available using spare part number 856010-001.	
(3)	Wireless antenna (includes auxiliary and main wireless antenna cable and transceivers)	856025-001
(4)	Webcam/microphone module cable	856010-001
(5)	Display hinges (2, include left and right display hinge covers)	856316-001
(6)	G-sensor board (includes double-sided adhesive)	856015-001
(7)	Display back cover	

Item	Component	Spare part number
	In modern gold finish	856004-001
	In natural silver finish	856003-001

Miscellaneous parts

Component	Spare part number
AC adapter:	
65-W HP Smart AC adapter (non-PFC, EM, 4.5-mm)	714635-850
45-W HP Smart AC adapter (non-PFC, EM, RC, slim, 4.5-mm)	741553-850
HP 14.0-in value sleeve	781917-001
HP HDMI-to-VGA adapter	701943-001
HP RJ45-to-USB adapter dongle	539614-001
HP USB-to-GigaBit RJ45 adapter	829941-001
HP USB external DVD-RW drive	747080-001
Power cord (C5 receptacle, 1.0-m (3.2-ft), 3-wire conductor):	
For use in Argentina	401300-007
For use in Australia	213356-008
For use in Denmark	213353-008
For use in Europe	213350-009
For use in India	404827-003
For use in Israel	398063-003
For use in Italy	213352-008
For use in Japan	349756-002
For use in North America	213349-009
For use in the People's Republic of China	286497-008
For use in Switzerland	213354-008
For use in Thailand	285096-006
For use in the United Kingdom and Singapore	213351-008
Power cord (Option-917, 3-cord, 1.0-m (3.2-ft), ROHS):	361240-002
Rubber Kit (Exterior) (includes rear rubber foot strip, 4 rubber screw plugs, and one oblong screw cover):	
In modern gold finish	856021-001
In natural silver finish	856020-001
Rubber Kit (Interior) (includes solid-state supports)	856022-001
Screw Kit	856023-001

4 Removal and replacement procedures preliminary requirements

Tools required

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

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

Service considerations

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

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

Plastic parts

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

Cables and connectors

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

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

Drive handling

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

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

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

Before removing an optical drive, be sure that a 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 a hard drive or an optical drive, place it in a static-proof bag.

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

Avoid exposing a drive to temperature extremes or liquids.

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

Grounding guidelines

Electrostatic discharge damage

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

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

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

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

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

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

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

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

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

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

Typical electrostatic voltage levels			
Event	Relative humidity		
	10%	40%	55%
Walking across carpet	35,000 V	15,000 V	7,500 V
Walking across vinyl floor	12,000 V	5,000 V	3,000 V
Motions of bench worker	6,000 V	800 V	400 V
Removing DIPS from plastic tube	2,000 V	700 V	400 V
Removing DIPS from vinyl tray	11,500 V	4,000 V	2,000 V
Removing DIPS from plastic foam	14,500 V	5,000 V	3,500 V
Removing bubble pack from PCB	26,500 V	20,000 V	7,000 V
Packing PCBs in foam-lined box	21,000 V	11,000 V	5,000 V

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

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

Workstation guidelines

Follow these grounding workstation guidelines:

- Cover the workstation with approved static-shielding material.
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use conductive field service tools, such as cutters, screwdrivers, and vacuums.
- When fixtures must directly contact dissipative surfaces, use fixtures made only of static safe materials.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and plastic foam.
- 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 equipment must be worn in contact with the skin.

The following grounding equipment is recommended to prevent electrostatic damage:

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

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

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

5 Removal and replacement procedures for authorized service provider parts

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

CAUTION: This computer does not have user-replaceable parts. Only HP authorized service providers should perform the removal and replacement procedures described here. Accessing the internal part could damage the computer or void the warranty.

Component replacement procedures

NOTE: Details about your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer. See [Locating the serial number, model number, product number, and warranty information on page 18](#) for details.

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

There are as many as 62 screws that must be removed, replaced, and/or loosened when servicing the parts described in this chapter. Make special note of each screw size and location during removal and replacement.

Keyboard/top cover

For use in country or region	Spare part number	For use in country or region	Spare part number
Keyboard/top cover in modern gold finish (includes keyboard cable; for use on all computer models):			
For use in Belgium	856038-A41	For use in the Netherlands	856038-B31
For use in Bulgaria	856038-261	For use in Portugal	856038-131
For use in Canada	856038-DB1	For use in Romania	856038-271
For use in the Czech Republic and Slovakia	856038-FL1	For use in Russia	856038-251
For use in Denmark, Finland, and Norway	856038-DH1	For use in Saudi Arabia	856038-171
For use in France	856038-051	For use in Slovenia	856038-BA1
For use in Germany	856038-041	For use in Spain	856038-071
For use in Greece	856038-151	For use in Switzerland	856038-BG1
For use in Hungary	856038-211	For use in Thailand	856038-281
For use in Israel	856038-BB1	For use in Turkey	856038-141
For use in Italy	856038-061	For use in the United Kingdom	856038-031
For use in Latin America	856038-161	For use in the United States	856038-001

For use in country or region	Spare part number	For use in country or region	Spare part number
Keyboard/top cover in natural silver finish (includes keyboard cable; for use on all computer models):			
For use in Belgium	856037-A41	For use in the Netherlands	856037-B31
For use in Bulgaria	856037-261	For use in Portugal	856037-131
For use in Canada	856037-DB1	For use in Romania	856037-271
For use in the Czech Republic and Slovakia	856037-FL1	For use in Russia	856037-251
For use in Denmark, Finland, and Norway	856037-DH1	For use in Saudi Arabia	856037-171
For use in France	856037-051	For use in Slovenia	856037-BA1
For use in Germany	856037-041	For use in Spain	856037-071
For use in Greece	856037-151	For use in Switzerland	856037-BG1
For use in Hungary	856037-211	For use in Thailand	856037-281
For use in Israel	856037-BB1	For use in Turkey	856037-141
For use in Italy	856037-061	For use in the United Kingdom	856037-031
For use in Latin America	856037-161	For use in the United States	856037-001
Keyboard/top cover in natural silver finish for use in Japan (includes keyboard cable; for use only on computer models with model numbers m3-u100 through m3-u199 and m13-u100 through m13-u199)			856037-291
Keyboard/top cover with backlight in modern gold finish (includes keyboard cable and backlight cable; for use on all computer models):			
For use in Belgium	856045-A41	For use in the Netherlands	856045-B31
For use in Bulgaria	856045-261	For use in Portugal	856045-131
For use in Canada	856045-DB1	For use in Romania	856045-271
For use in the Czech Republic and Slovakia	856045-FL1	For use in Russia	856045-251
For use in Denmark, Finland, and Norway	856045-DH1	For use in Saudi Arabia	856045-171
For use in France	856045-051	For use in Slovenia	856045-BA1
For use in Germany	856045-041	For use in Spain	856045-071
For use in Greece	856045-151	For use in Switzerland	856045-BG1
For use in Hungary	856045-211	For use in Thailand	856045-281
For use in Israel	856045-BB1	For use in Turkey	856045-141
For use in Italy	856045-061	For use in the United Kingdom	856045-031
For use in Latin America	856045-161	For use in the United States	856045-001
Keyboard/top cover with backlight in modern gold finish with linear wood pattern (includes keyboard cable and backlight cable; for use only on computer models with model numbers m3-u100 through m3-u199 and m13-u100 through m13-u199):			
For use in the United Kingdom	856047-031	For use in the United States	856047-001
Keyboard/top cover with backlight in natural silver finish (includes keyboard cable and backlight cable; for use on all computer models):			

For use in country or region	Spare part number	For use in country or region	Spare part number
For use in Belgium	856039-A41	For use in Latin America	856039-161
For use in Bulgaria	856039-261	For use in the Netherlands	856039-B31
For use in Canada	856039-DB1	For use in Portugal	856039-131
For use in the Czech Republic and Slovakia	856039-FL1	For use in Romania	856039-271
For use in Denmark, Finland, and Norway	856039-DH1	For use in Russia	856039-251
For use in France	856039-051	For use in Saudi Arabia	856039-171
For use in Germany	856039-041	For use in Slovenia	856039-BA1
For use in Greece	856039-151	For use in Spain	856039-071
For use in Hungary	856039-211	For use in Switzerland	856039-BG1
For use in Israel	856039-BB1	For use in Thailand	856039-281
For use in Italy	856039-061	For use in Turkey	856039-141
Keyboard/top cover with backlight in natural silver finish for use in Japan (includes keyboard cable and backlight cable; for use only on computer models with model numbers m3-u100 through m3-u199 and m13-u100 through m13-u199)			856039-291

Before disassembling the computer, follow these steps:

1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.



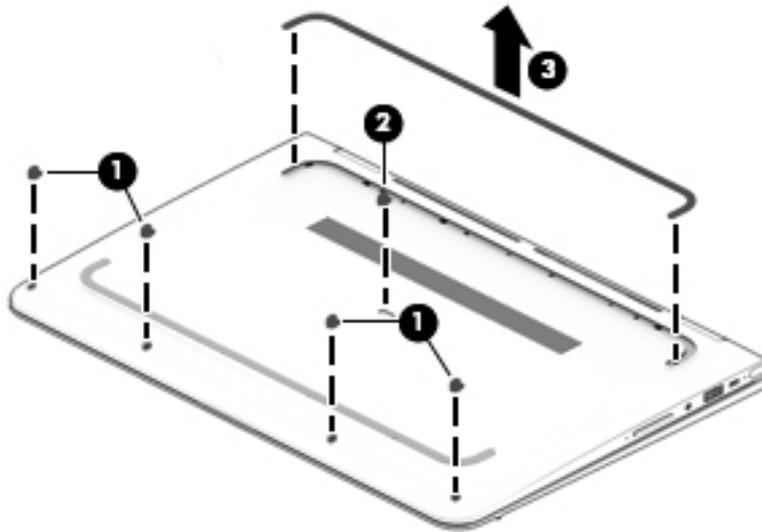
NOTE: When replacing the keyboard/top cover, be sure that the TouchPad ([TouchPad on page 40](#)) and TouchPad cable ([TouchPad cable on page 39](#)) are removed from the defective keyboard/top cover and installed on the replacement keyboard/top cover.

Remove the keyboard/top cover:

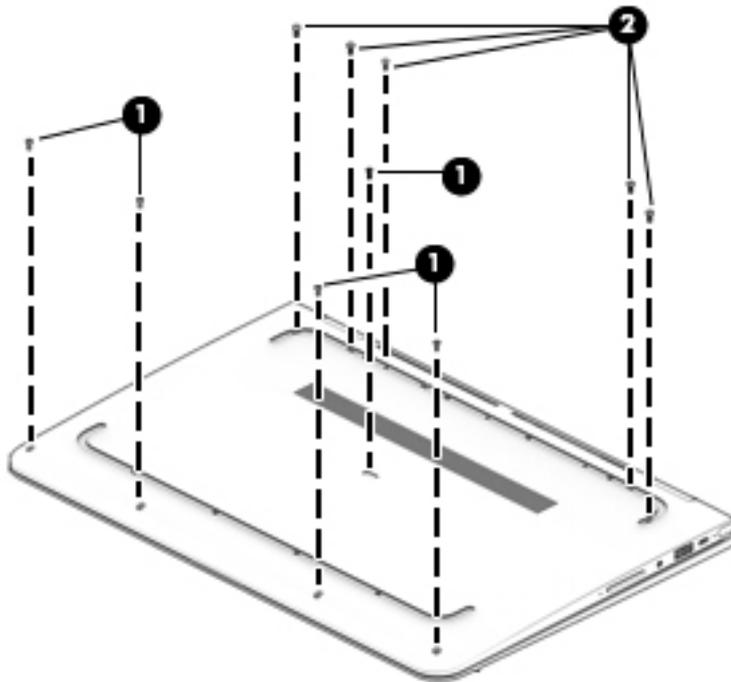
1. Close the computer.
2. Turn the computer upside down with the front toward you.

3. Remove the following:
 - (1) Rubber screw plugs on the front edge of the base enclosure
 - (2) Oblong screw cover in the middle of the base enclosure
 - (3) Rear rubber foot strip

The rubber screw plugs, oblong screw cover, and the rear rubber foot strip are available in the Rubber Kits, spare part numbers 856021-001 (for use on computers models in modern gold finish) and 856020-001 (for use on computers models in natural silver finish).



4. Remove the five Phillips PM2.0×5.0 screws (1) and the five Phillips PM2.4×5.7 screws (2) that secure the keyboard/top cover to the base enclosure.

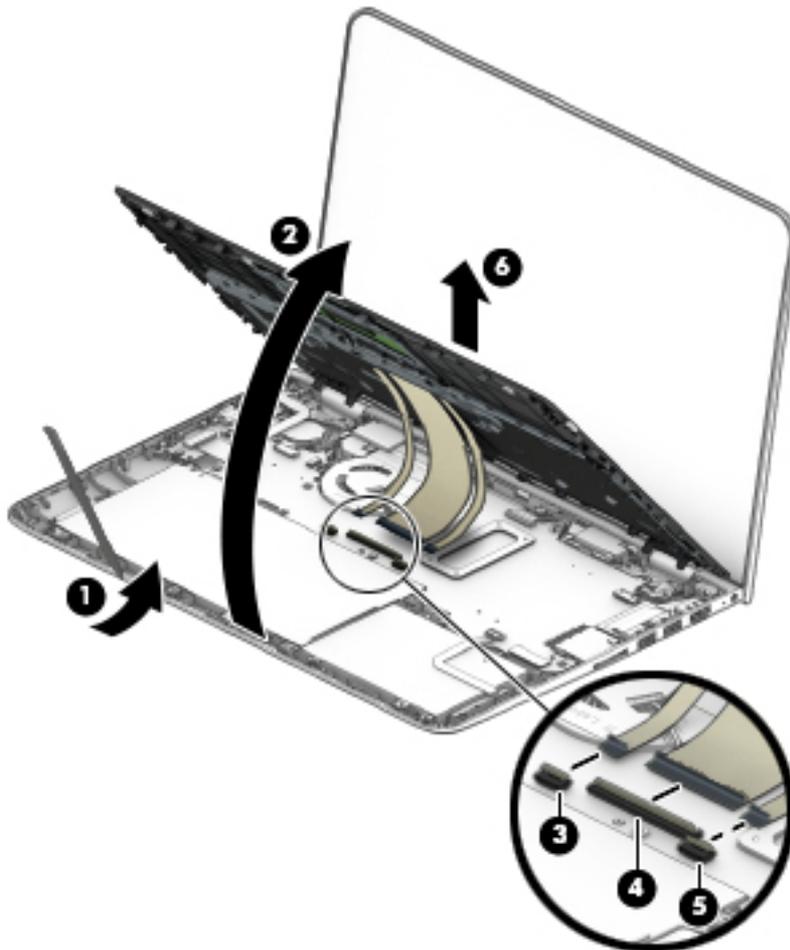


5. Turn the computer right side up with the front toward you.

6. Open the computer.
7. Use a case utility tool to separate the keyboard/top cover from the base enclosure **(1)**.

⚠ CAUTION: Releasing the keyboard/top cover too far or with too much force can damage the TouchPad, keyboard, and keyboard backlight cables or their connectors.

8. Release the keyboard/top cover **(2)** by swinging it up and back until the TouchPad, keyboard, and keyboard backlight cables are accessible.
9. Release the ZIF (zero insertion force) connector **(3)** to which the TouchPad cable is attached, and then disconnect the TouchPad cable from the system board.
10. Release the ZIF connector **(4)** to which the keyboard cable is attached, and then disconnect the keyboard cable from the system board.
11. On select models, release the ZIF connector **(5)** to which the keyboard backlight cable is attached, and then disconnect the keyboard backlight cable from the system board.
12. Remove the keyboard/top cover **(6)**.



Reverse this procedure to install the keyboard/top cover.

TouchPad cable

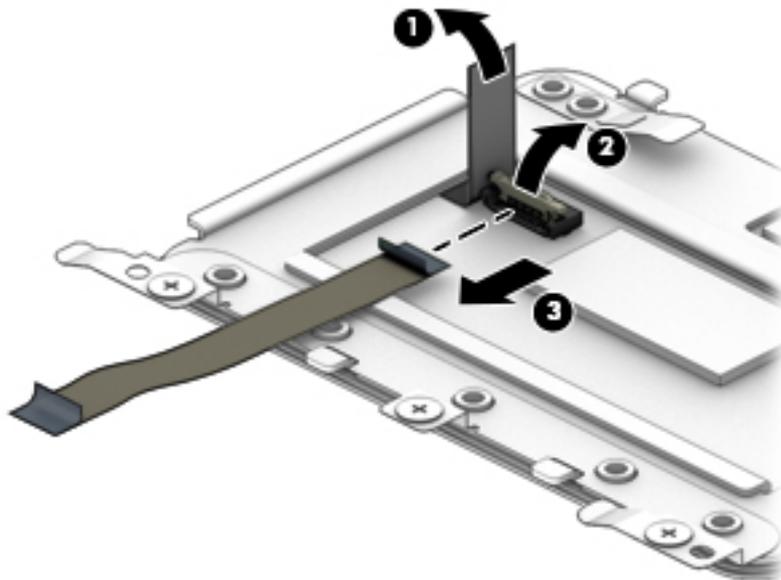
Description	Spare part number
TouchPad cable	856008-001

Before removing the TouchPad cable, follow these steps:

1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)).

Remove the TouchPad cable:

1. Turn the keyboard/top cover upside down with the front toward you.
2. Release the tape **(1)** that secures the TouchPad cable ZIF connector.
3. Release the ZIF connector **(2)** to which the TouchPad cable is attached, and then disconnect the TouchPad cable **(3)** from the TouchPad.



4. Remove the TouchPad cable.

Reverse this procedure to install the TouchPad cable.

TouchPad

Description	Spare part number
TouchPad	858844-001

NOTE: The TouchPad spare part kit does not include the TouchPad cable. The TouchPad cable is available using spare part number 856008-001. See [TouchPad cable on page 39](#) for information on replacing the TouchPad cable.

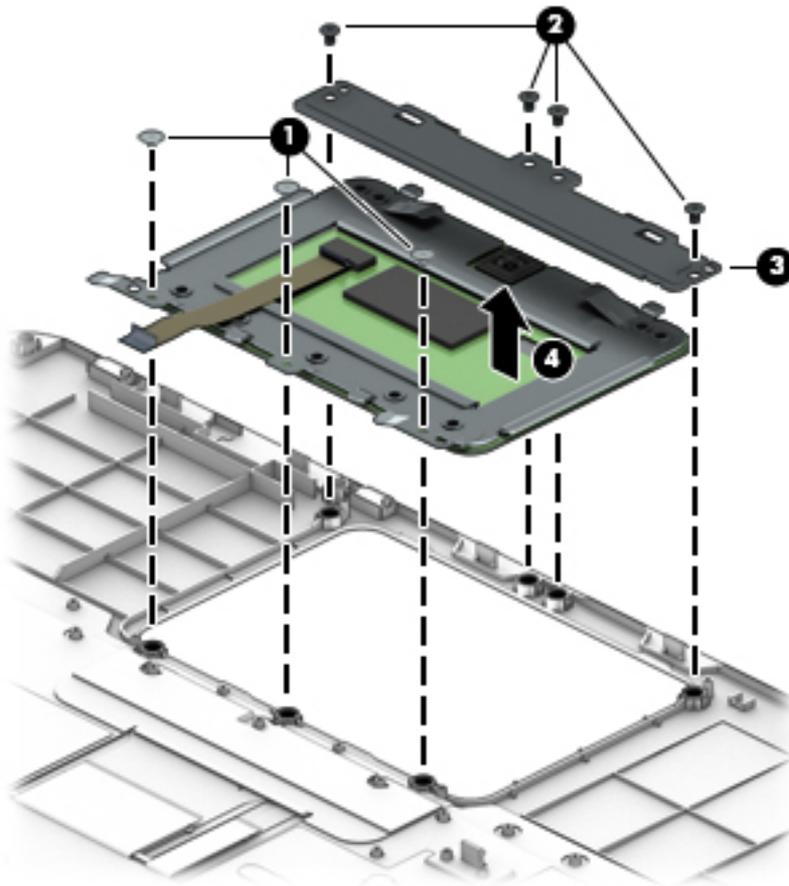
Before removing the TouchPad, follow these steps:

1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)).

Remove the TouchPad:

1. Turn the keyboard/top cover upside down with the rear toward you.
2. Remove the three Phillips PM2.0×2.2 broad head screws **(1)** that secure the TouchPad to the keyboard/top cover.
3. Remove the four Phillips PM2.0×3.3 screws **(2)** that secure TouchPad and the TouchPad bracket to the keyboard/top cover.
4. Remove the TouchPad bracket **(3)**.

5. Remove the TouchPad (4).



Reverse this procedure to install the TouchPad.

Battery

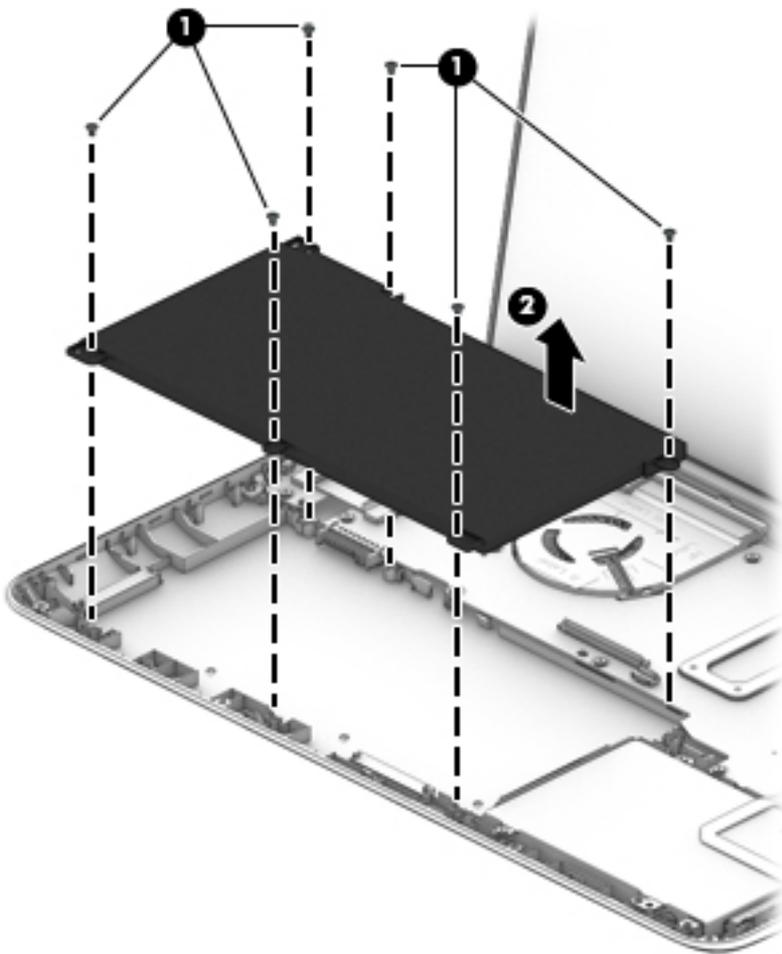
Description	Spare part number
3-cell, 41-WHr, 3.615-AHr, Li-ion battery	844203-850

Before removing the battery, follow these steps:

1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)).

Remove the battery:

1. Disconnect the battery cable **(1)** from the system board.
2. Remove the six Phillips PM2.0×4.6 screws **(2)** that secure the battery to the base enclosure.
3. Remove the battery **(3)**.



Reverse this procedure to install the battery.

Hard drive or solid-state hard drive



NOTE: The mounting brackets and the hard drive/solid-state drive cable are not included in the drive spare part kit. The hard drive/solid-state drive cable is available using spare part number 856011-001. The hard drive mounting bracket is available using spare part number 856012-001. The solid-state drive mounting bracket is available using spare part number 856013-001.

Description	Spare part number
Solid-state drive (128-GB, M.2 SATA, DRAM-less)	827560-011
Hard drives:	
1-TB, 5400-rpm, 7.2-mm hard drive (for use only on computer models with model numbers m3-u000 through m3-u099 and m13-u000 through m13-u099)	832077-005
500-GB, 5400-rpm, 7.2-mm hard drive (for use on all computer models)	778186-005
500-GB, 5400-rpm, 7.0-mm solid-state hard drive with 8-GB NAND (for use on all computer models)	732000-005

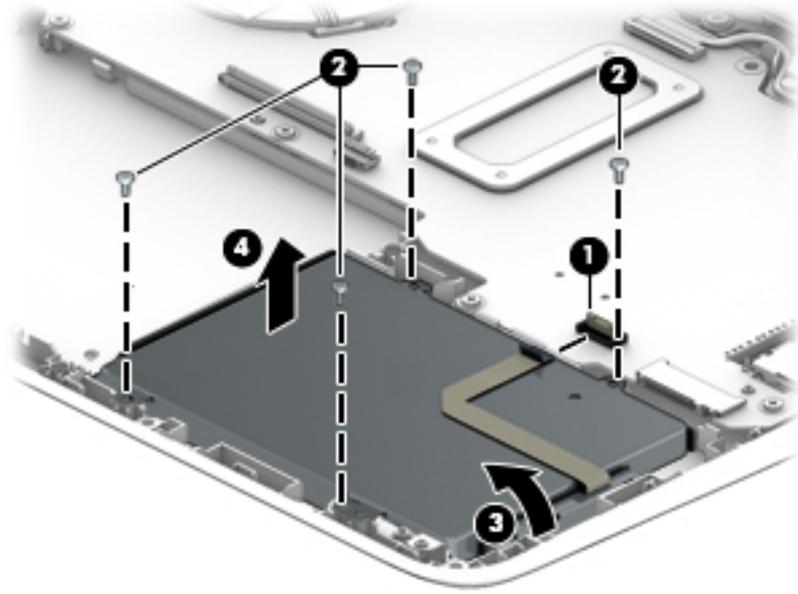
Before removing the hard drive or solid-state drive, follow these steps:

1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)).
5. Remove the battery (see [Battery on page 42](#)).

Remove the mass storage device:

1. Release the ZIF connector **(1)** to which the mass storage device cable is attached, and then disconnect the mass storage device cable from the system board.
2. Remove the four Phillips PM2.0×4.6 screws **(2)** that secure the mass storage device to the base enclosure.
3. Lift the right edge of the mass storage device **(3)** until it rests at an angle.

4. Remove the mass storage device (4).



Reverse this procedure to install the mass storage device.

Mass storage device mounting bracket

Description	Spare part number
Mounting bracket, solid-state drive	856013-001
Mounting bracket, hard disk drive	856012-001

Before disassembling the hard drive or solid-state drive, follow these steps:

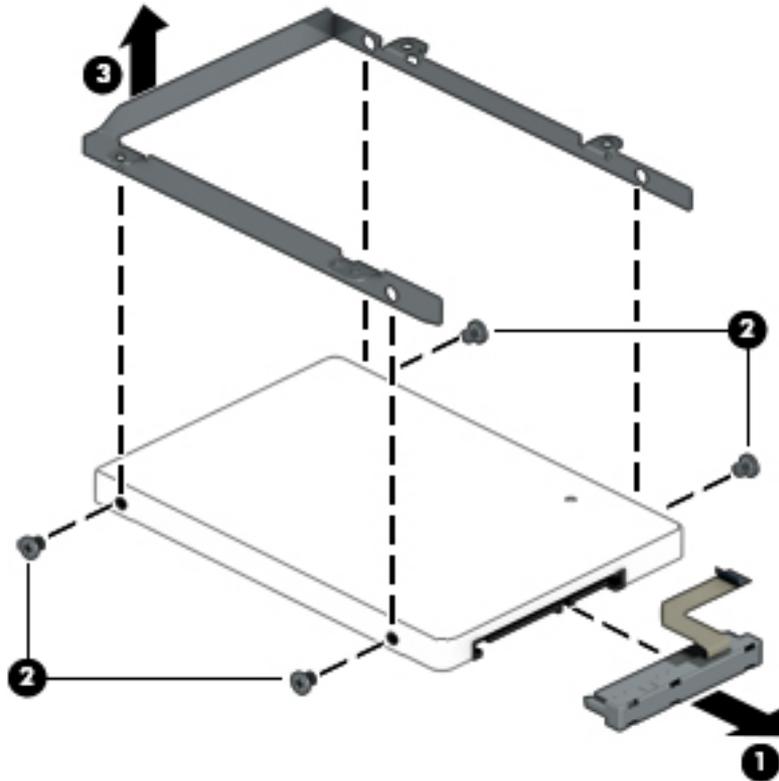
1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)).
5. Remove the battery (see [Battery on page 42](#)).
6. Remove the hard drive or solid-state drive (see [Hard drive or solid-state hard drive on page 43](#)).

If it is necessary to replace the mass storage device cable or mounting bracket:

1. Remove the mass storage device cable from the device **(1)**.
2. Remove the four Phillips PM3.0×3.7 screws **(2)** that secure the mounting bracket to the mass storage device.

3. Remove the mounting bracket (3).

The mass storage device cable is available using spare part number 856011-001. The hard drive mounting bracket is available using spare part number 856012-001. The solid-state drive mounting bracket is available using spare part number 856013-001.



Reverse this procedure to reassemble and install the mass storage device.

Audio/USB board



NOTE: The audio/USB board spare part kit does not include the cable. The audio/USB board cable is available using spare part number 856007-001.

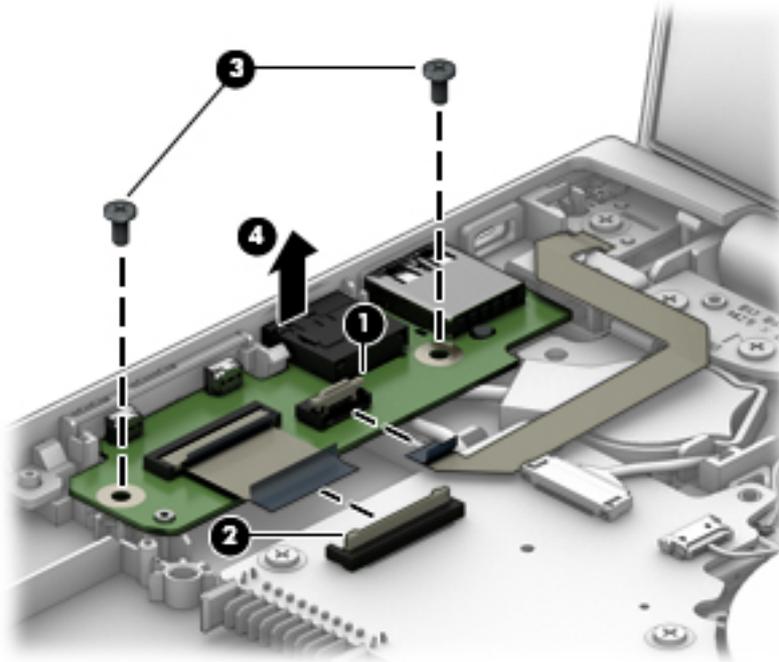
Description	Spare part number
Audio/USB board	856016-001

Before removing the audio/USB board, follow these steps:

1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)).
5. Remove the battery (see [Battery on page 42](#)).

Remove the audio/USB board:

1. Release the ZIF connector **(1)** to which the power connector cable is attached, then disconnect the power connector cable from the audio/USB board.
2. Release the ZIF connector **(2)** to which the audio/USB board cable is attached, then disconnect the audio/USB board cable from the system board.
3. Remove the two Phillips PM2.0×4.7 screws **(3)** that secure the audio/USB board to the base enclosure.
4. Remove the audio/USB board **(4)**.



Reverse this procedure to install the audio/USB board.

Power button board

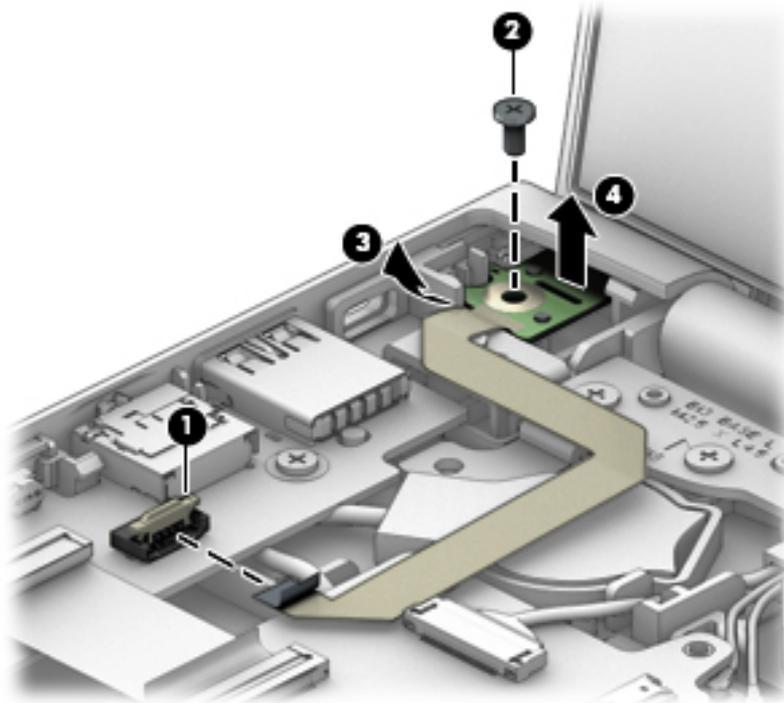
Description	Spare part number
Power button board (includes cable)	856017-001

Before removing the power button board, follow these steps:

1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)).
5. Remove the battery (see [Battery on page 42](#)).

Remove the power button board:

1. Release the ZIF connector **(1)** to which the power button board cable is attached, then disconnect the power button board cable from the audio/USB board.
2. Remove the Phillips PM2.0×4.6 screw **(2)** that secures the power button board to the base enclosure.
3. Release the power button board **(3)** by sliding it forward.
4. Remove the power button board **(4)**.



Reverse this procedure to install the power button board.

RTC battery

Description	Spare part number
RTC battery (includes cable and double-sided adhesive)	691572-001

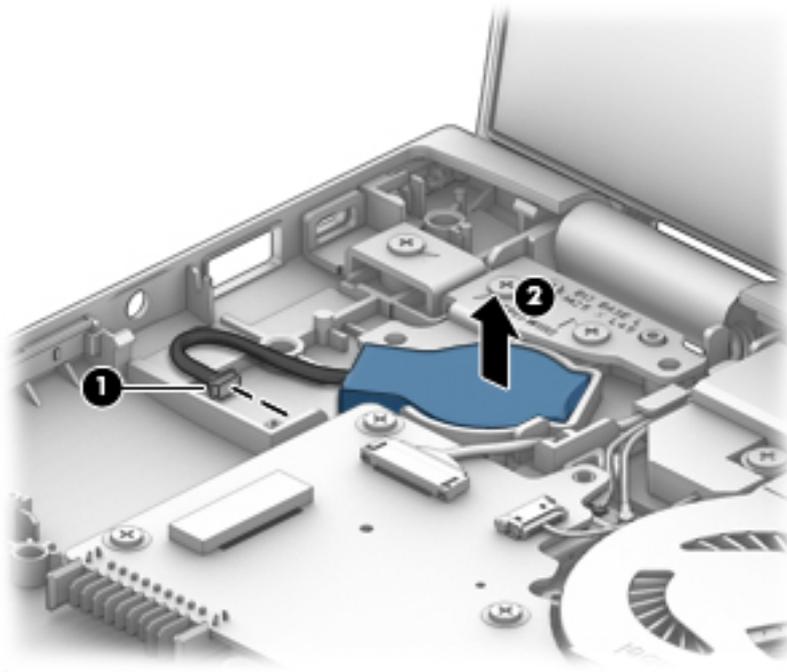
Before removing the RTC battery, follow these steps:

1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)).
5. Remove the battery (see [Battery on page 42](#)).
6. Remove the audio/USB board (see [Audio/USB board on page 46](#)).

Remove the RTC battery:

1. Disconnect the RTC battery cable **(1)** from the system board.

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



3. Remove the RTC battery.

Reverse this procedure to install the RTC battery.

USB port shield

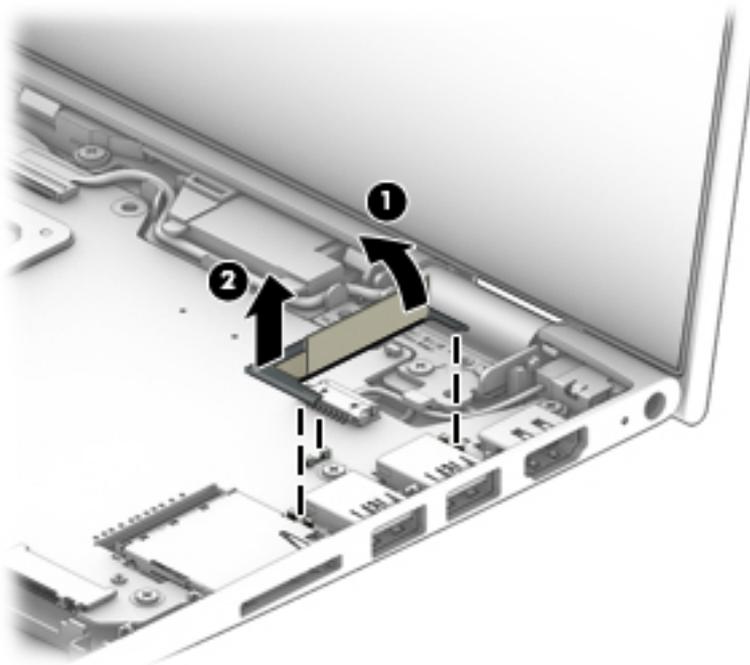
Description	Spare part number
Shielding Kit (includes memory module shield and USB port shield)	856014-001

Before removing the USB port shield, follow these steps:

1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)).
5. Remove the battery (see [Battery on page 42](#)).

Remove the USB port shield:

1. Remove the adhesive strip **(1)** that secures the USB port shield to the base enclosure.
2. Remove the USB port shield **(2)**.



Reverse this procedure to install the USB port shield.

System board



NOTE: The system board spare part kit includes a graphic subsystem with UMA memory.

Description	Spare part number
For use only on computer models with model numbers m3-u100 through m3-u199 and m13-u100 through m13-u199:	
Equipped with an Intel Core™ i7-7500U 2.70-GHz (SC turbo up to 3.50-GHz) processor (2133-MHz FSB, 4.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system for use with a solid-state drive	903240-601
Equipped with an Intel Core™ i7-7500U 2.70-GHz (SC turbo up to 3.50-GHz) processor (2133-MHz FSB, 4.0-MB L3 cache, dual core, 15 W) and a non-Windows operating system for use with a solid-state drive	903240-001
Equipped with an Intel Core™ i5-7200U 2.50-GHz (SC turbo up to 3.10-GHz) processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system for use with a solid-state drive	903237-601
Equipped with an Intel Core™ i5-7200U 2.50-GHz (SC turbo up to 3.10-GHz) processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and a non-Windows operating system for use with a solid-state drive	903237-001
Equipped with an Intel Core™ i5-7200U 2.50-GHz (SC turbo up to 3.10-GHz) processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system	903238-601
Equipped with an Intel Core™ i5-7200U 2.50-GHz (SC turbo up to 3.10-GHz) processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and a non-Windows operating system	903238-001
Equipped with an Intel Core™ i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system for use with a solid-state drive	903239-601
Equipped with an Intel Core™ i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and a non-Windows operating system for use with a solid-state drive	903239-001
Equipped with an Intel Core™ i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system	903236-601
Equipped with an Intel Core™ i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and a non-Windows operating system	903236-001
Equipped with an Intel Pentium® N3710 1.60-GHz processor (SC turbo up to 2.56-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, quad core, 6 W) and the Windows 10 operating system	903241-601
Equipped with an Intel Pentium® N3710 1.60-GHz processor (SC turbo up to 2.56-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, quad core, 6 W) and a non-Windows 10 operating system	903241-001
For use on all computer models:	
Equipped with an Intel Core™ i5-6200U 2.30-GHz (SC turbo up to 2.80-GHz) processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system	855964-601
Equipped with an Intel Core™ i5-6200U 2.30-GHz (SC turbo up to 2.80-GHz) processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system	855964-601
Equipped with an Intel Core™ i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system, for use with the solid-state drive configuration	855965-601
Equipped with an Intel Core™ i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and a non-Windows operating system, for use with the solid-state drive configuration	855965-001
Equipped with an Intel Core™ i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system	855962-601
Equipped with an Intel Core™ i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15 W) and the Windows 10 operating system	855962-001

Before removing the system board, follow these steps:

1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)).
5. Remove the battery (see [Battery on page 42](#)).
6. Remove the USB port shield (see [USB port shield on page 50](#)).

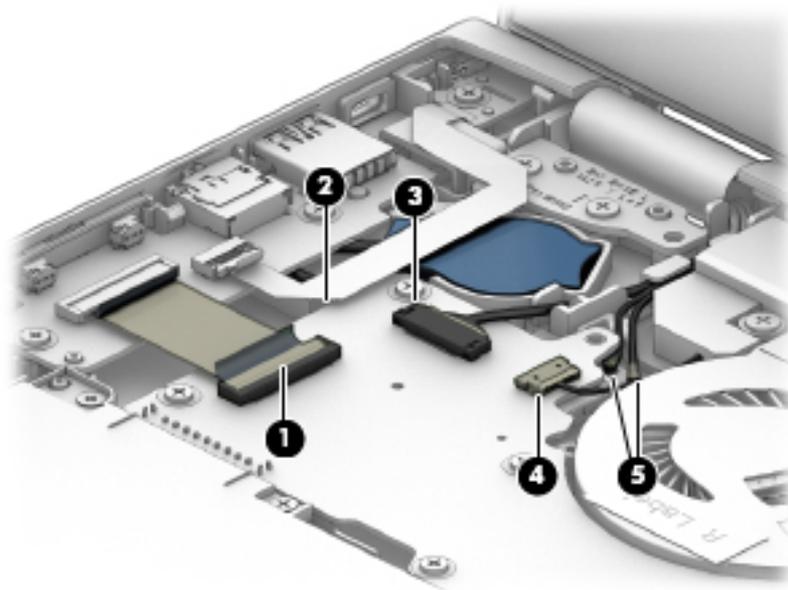


NOTE: When replacing the system board, be sure that the following components are removed from the defective system board and installed on the replacement system board.

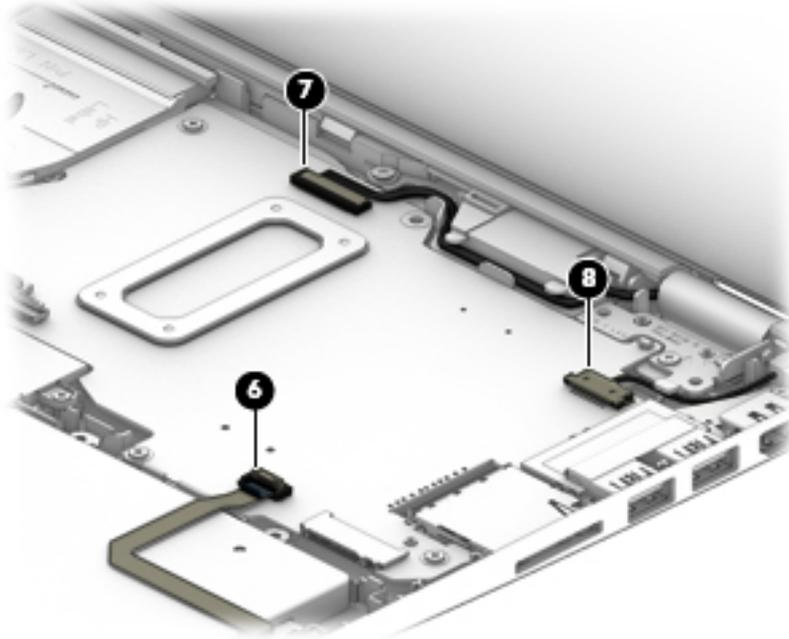
- WLAN module (see [WLAN module on page 54](#))
- Fan/heat sink assembly (see [Fan/heat sink assembly on page 56](#))
- Memory modules (see [Memory module on page 58](#))

Remove the system board:

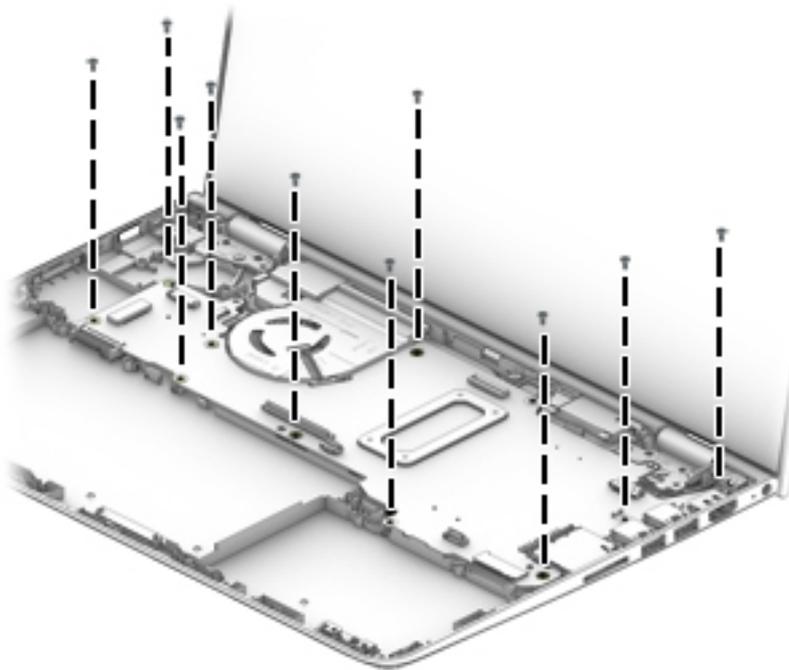
1. Disconnect the following cables from the system board:
 - (1) Audio/USB board ZIF connector cable
 - (2) RTC battery cable
 - (3) Webcam/microphone module cable
 - (4) Speaker cable
 - (5) WLAN antenna cables



2. Disconnect the following cables from the system board:
 - (6) Mass storage device ZIF connector cable
 - (7) Display panel cable
 - (8) Power connector cable

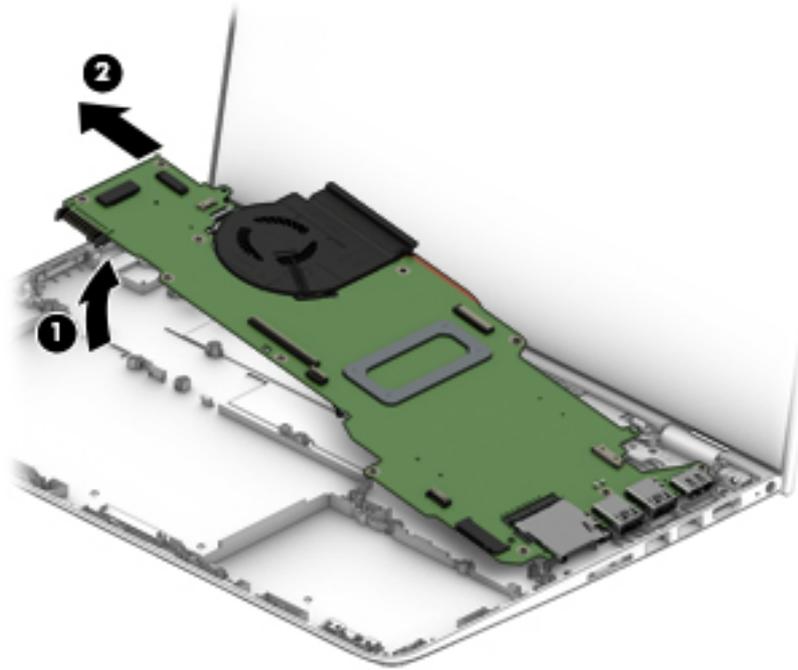


3. Remove the ten Phillips PM2.0×4.7 screws that secure the system board to the base enclosure.



4. Lift the left side of the system board (1) until it rests at an angle.

- Remove the system board (2) by sliding it up and to the left at an angle.



Reverse this procedure to install the system board.

WLAN module

Description	Spare part number
For for use only on computer models with model numbers m3-u100 through m3-u199 and m13-u100 through m13-u199:	
Intel Dual Band Wireless-AC 7265 802.11 ac 2×2 WiFi + Bluetooth 4.0 Combo Adapter (for use only in North America and Europe)	793840-005
Intel Dual Band Wireless-AC 3165 802.11 ac 1×1 WiFi + Bluetooth 4.2 Combo Adapter (non vPRO)	863934-855
For use on all computer models:	
Intel Dual Band Wireless-AC 3165 802.11 ac 1×1 + Bluetooth 4.2 LE Combo Adapter	806723-005
Realtek RTL8723BE 802.11b/g/n 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter	855106-855

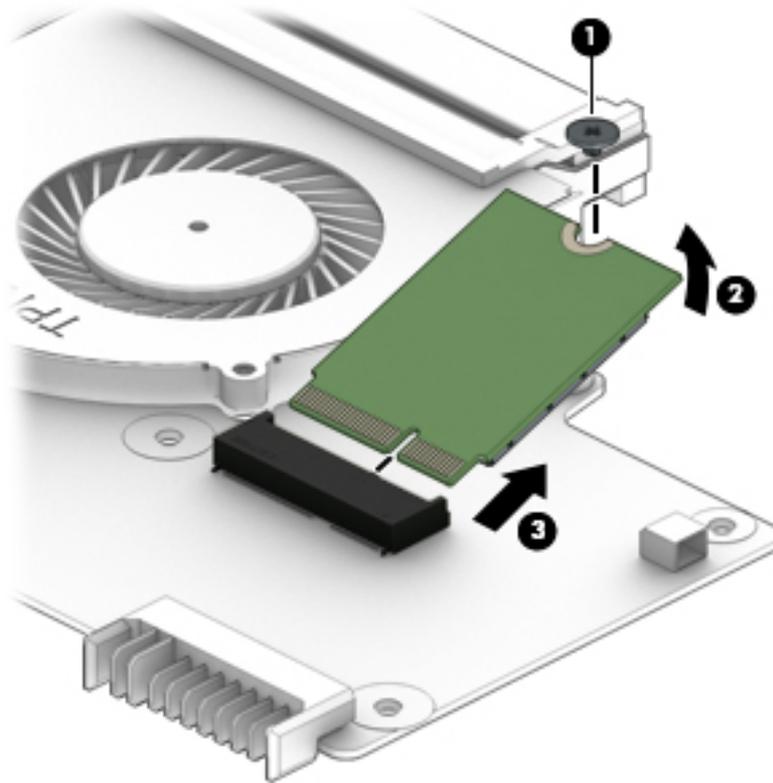
Before removing the WLAN module, follow these steps:

- Shut down the computer.
- Disconnect all external devices connected to the computer.
- Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
- Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)), and then remove the following components:

- a. Battery (see [Battery on page 42](#)).
- b. USB port shield (see [USB port shield on page 50](#)).
- c. System board (see [System board on page 51](#)).

Remove the WLAN module:

1. Turn the system board upside down with the front toward you.
2. Remove the Phillips PM2.0×2.3 screw **(1)** that secures the WLAN module to the system board. (The WLAN module tilts up **(2)**.)
3. Remove the WLAN module **(3)** by pulling the module away from the slot at an angle.



Reverse this procedure to install the WLAN module.

Fan/heat sink assembly

 **NOTE:** The fan/heat sink assembly spare part kit includes thermal material.

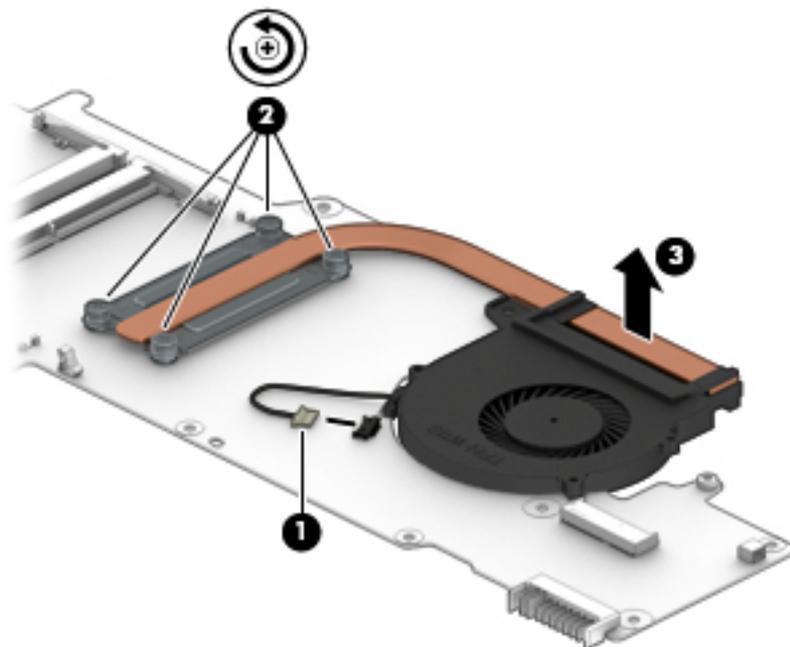
Description	Spare part number
For use only on computer models equipped with an Intel Core™ or Intel Core processor	855966-001
For use only on computer models equipped with an Intel Pentium processor	903298-001

Before removing the fan/heat sink assembly, follow these steps:

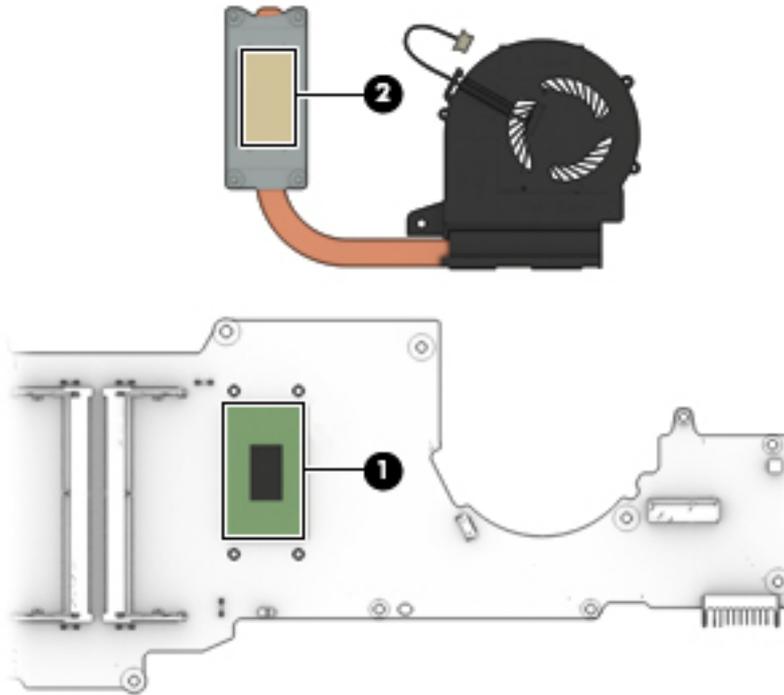
1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)), and then remove the following components:
 - a. Battery (see [Battery on page 42](#)).
 - b. USB port shield (see [USB port shield on page 50](#)).
 - c. System board (see [System board on page 51](#)).

Remove the fan/heat sink assembly:

1. Turn the system board upside down with the front toward you.
2. Disconnect the fan cable (1) from the system board.
3. Loosen the four captive screws (2) that secure the fan/heat sink assembly to the system board.
4. Remove the fan/heat sink assembly (3).



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



Reverse this procedure to install the fan/heat sink assembly.

Memory module

Description	Spare part number
For use only on computer models with model numbers m3-u100 through m3-u199):	
8.0-GB PCL3 12800 1600	691740-005
4.0-GB PCL3 12800 1600	693374-005
For use only on computer models with model numbers m3-u000 through m3-u099):	
8.0-GB 2133 DDR4	820570-005
4.0-GB 2133 DDR4	820569-005
2.0-GB 2133 DDR4	851379-005

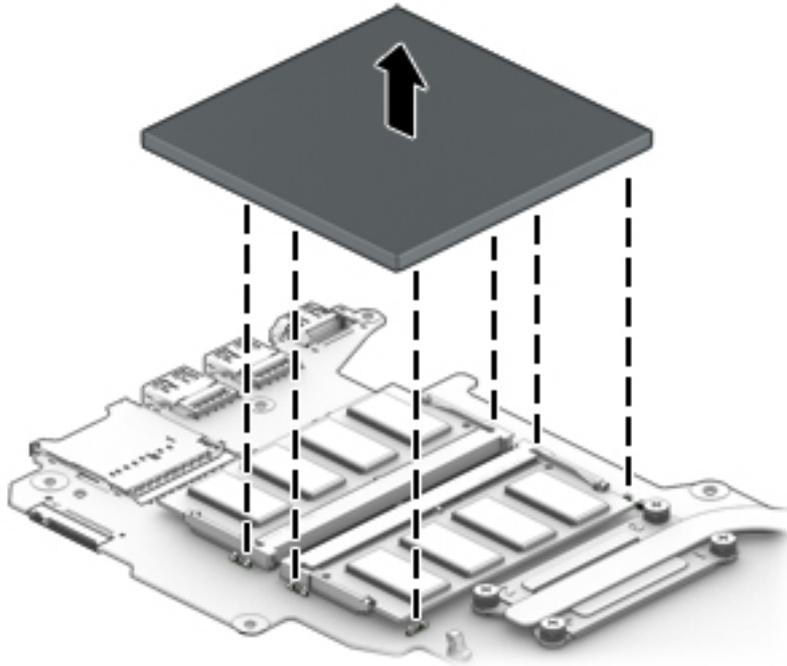
Before removing the memory module, follow these steps:

1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)), and then remove the following components:
 - a. Battery (see [Battery on page 42](#)).
 - b. USB port shield (see [USB port shield on page 50](#)).
 - c. System board (see [System board on page 51](#)).

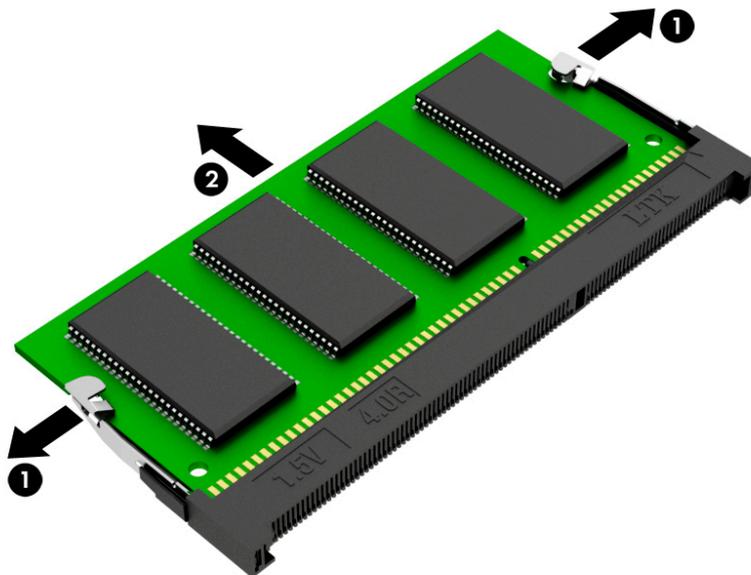
Remove the memory module(s):

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

2. Remove the memory module shield that covers the memory module slots.
The memory module shield is included in the Shielding Kit, spare part number 856014-001.



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



Reverse this procedure to install the memory module.

Speakers

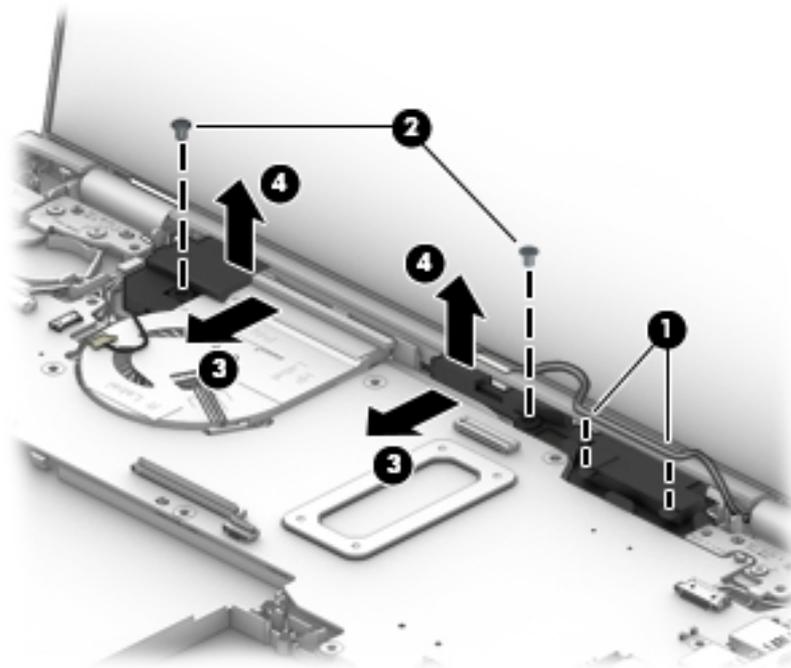
Description	Spare part number
Speakers (include left and right speakers and cables)	856024-001

Before removing the speakers, follow these steps:

1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)), and then remove the following components:
 - a. Battery (see [Battery on page 42](#)).
 - b. USB port shield (see [USB port shield on page 50](#)).
 - c. System board (see [System board on page 51](#)).

Remove the speakers:

1. Release the speaker cable from the routing channel **(1)**.
2. Remove the two Phillips PM3.0×5.6 screws **(2)** that secure the speakers to the base enclosure.
3. Release the shielding **(3)** that secures the speaker cable to the base enclosure.
4. Remove the speakers **(4)**.



Reverse this procedure to install the speakers.

Power connector cable

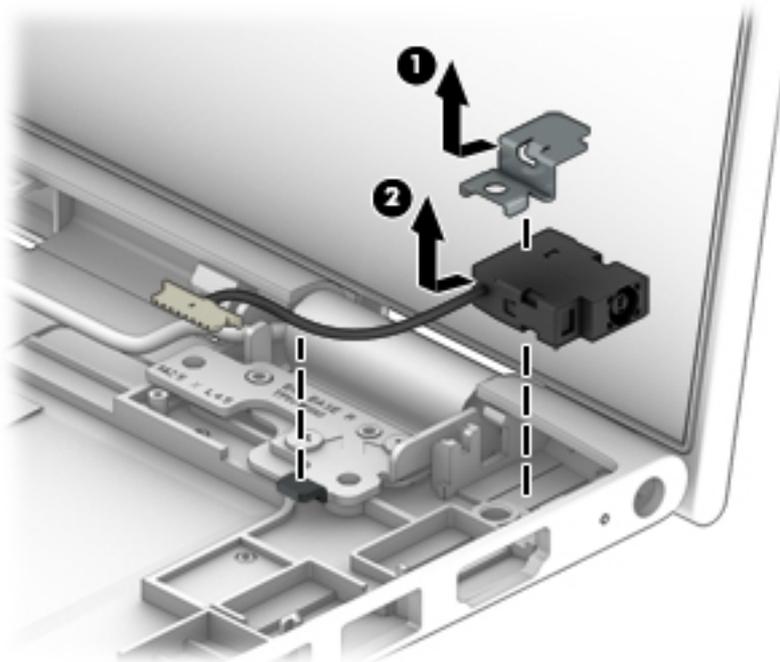
Description	Spare part number
Power connector cable	808155-005

Before removing the power connector cable, follow these steps:

1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)), and then remove the following components:
 - a. Battery (see [Battery on page 42](#)).
 - b. USB port shield (see [USB port shield on page 50](#)).
 - c. System board (see [System board on page 51](#)).

Remove the power connector cable:

1. Slide the power connector cable bracket forward, and then remove it **(1)**.
2. Slide the power connector cable forward, and then remove it **(2)**.



Reverse this procedure to install the power connector cable.

Display assembly

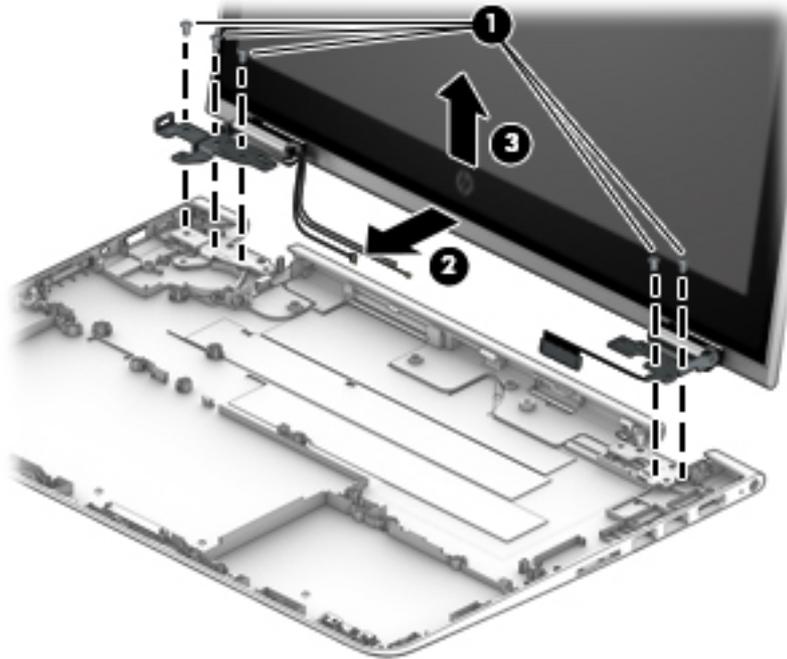
 **NOTE:** The display assembly is spared at the subcomponent level only. For display assembly spare part information, see the individual removal subsections.

Before removing the display assembly, follow these steps:

1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 34](#)), and then remove the following components:
 - a. Battery (see [Battery on page 42](#)).
 - b. USB port shield (see [USB port shield on page 50](#)).
 - c. System board (see [System board on page 51](#)).

Remove the display assembly:

1. Remove the five Phillips PM2.5×4.2 screws **(1)** that secure the display assembly to the base enclosure.
2. Release the display assembly **(2)** by sliding it forward.
3. Remove the display assembly **(3)**.



4. If it is necessary to replace the display panel assembly:

 **NOTE:** The display panel assembly spare part kit includes the display bezel, display panel, display panel cable, and the TouchScreen board.

⚠ CAUTION: When separating the display panel assembly from the display back cover, do not apply pressure at the middle bottom portion of the display panel. Applying pressure at this section of the panel can lead to damage to the TouchScreen board.

- a. Use a case utility tool to separate the display panel assembly **(1)** from the display back cover.
- b. Lift the top edge of the display panel assembly **(2)** and swing it up and forward until it rests at an angle.



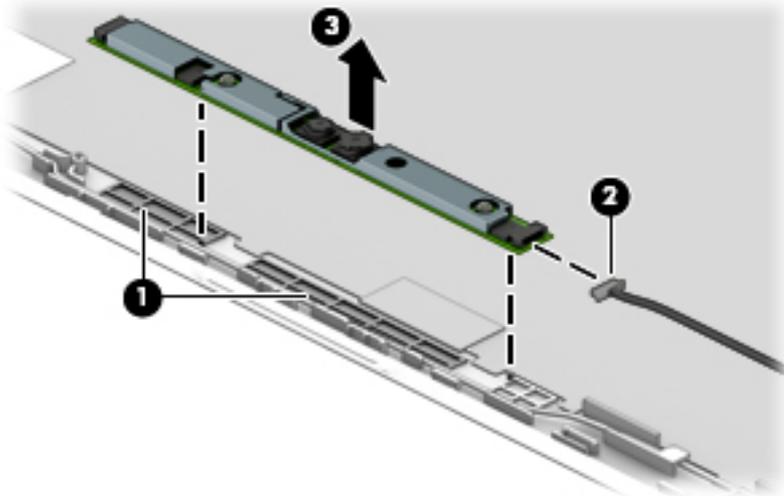
- c. Remove the display panel assembly.
The display panel assembly is available using spare part numbers 856019-001 (13.3-in, (1920×1080), FHD, UWVA/IPS, WLED, 16:9 ultra wide aspect ratio, AntiGlare, ultra-slim-bent (2.85-mm), TouchScreen, MultiTouch-enabled, eDP)) and 856018-001 (13.3-in, (1366×768), HD, UWVA/IPS, WLED, 16:9 ultra wide aspect ratio, AntiGlare, ultra-slim-bent (2.85-mm), TouchScreen, MultiTouch-enabled, eDP)).

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

- a. Remove the display panel assembly.
- b. Detach the webcam/microphone module **(1)** from the display back cover. (The webcam/microphone module is secured to the display back cover with double-sided adhesive.)
- c. Disconnect the webcam/microphone module cable **(2)** from the webcam/microphone module.

- d. Remove the webcam/microphone module **(3)**.

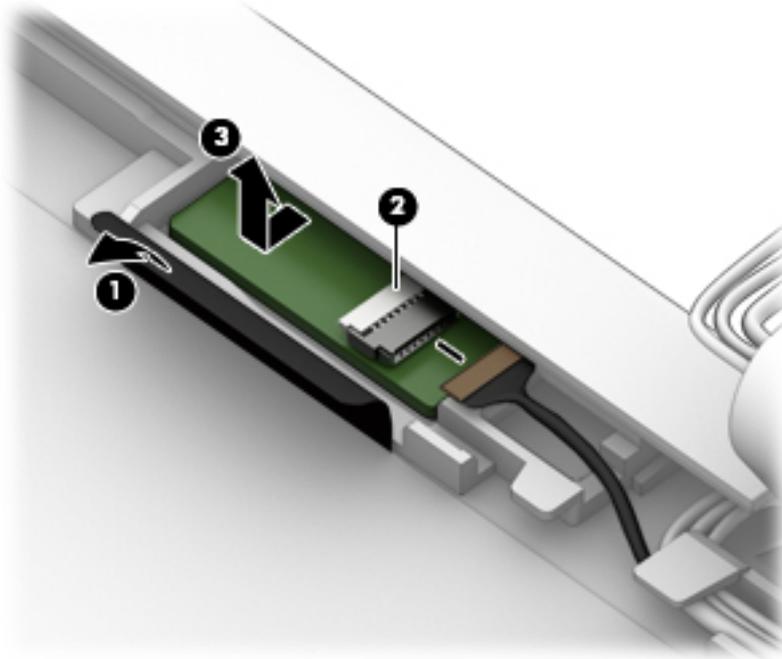
The webcam/microphone module is available using spare part number 833962-005. The webcam/microphone module spare part kit includes 2 microphone rubber isolators and double-sided adhesive but does not include the webcam/microphone module cable. The webcam/microphone module cable is available using spare part number 856010-001.



6. If it is necessary to replace the G-sensor board:
 - a. Remove the display panel assembly.
 - b. Release the shielding **(1)** that covers the G-sensor board.
 - c. Release the ZIF connector **(2)** to which the display panel cable is attached, then disconnect the display panel cable from the G-sensor board.

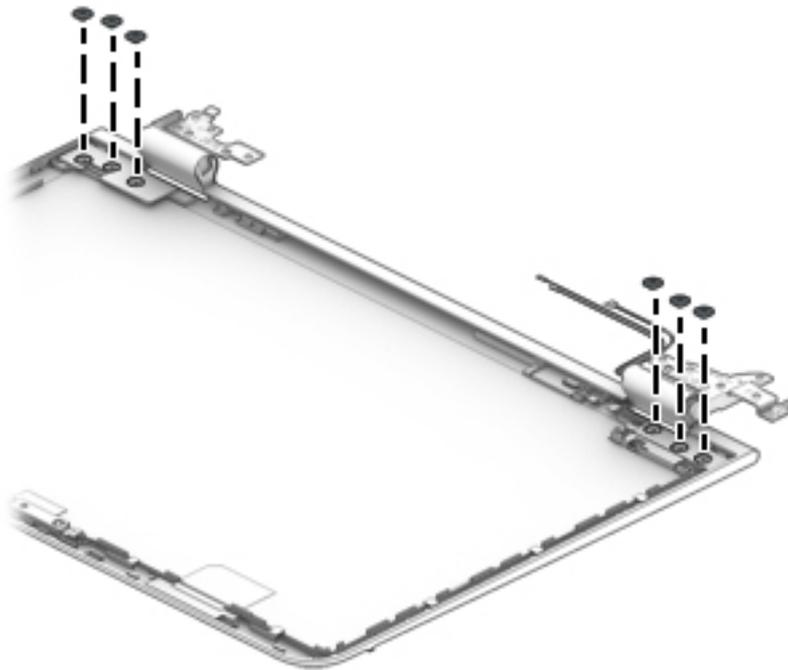
- d. Slide the G-sensor board **(3)** away from the display enclosure, and then remove the G-sensor board.

The G-sensor board is available using spare part number 856015-001.



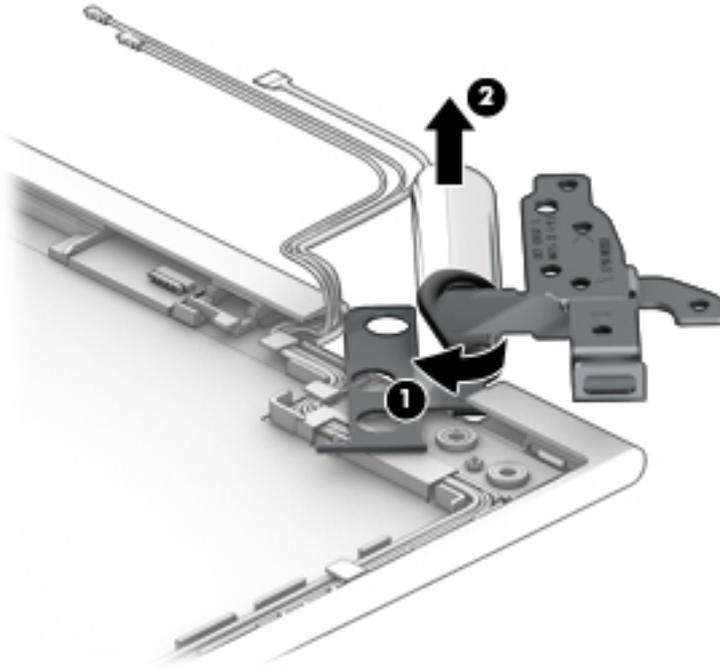
7. If it is necessary to replace the display hinges:

- a. Remove the display panel assembly.
- b. Remove the six Phillips PM2.4×3.0 broad head screws that secure the display hinges to the display back cover.



- c. Release the display hinge **(1)** by rotating it away from the display enclosure.
- d. Remove the display hinge **(2)**.

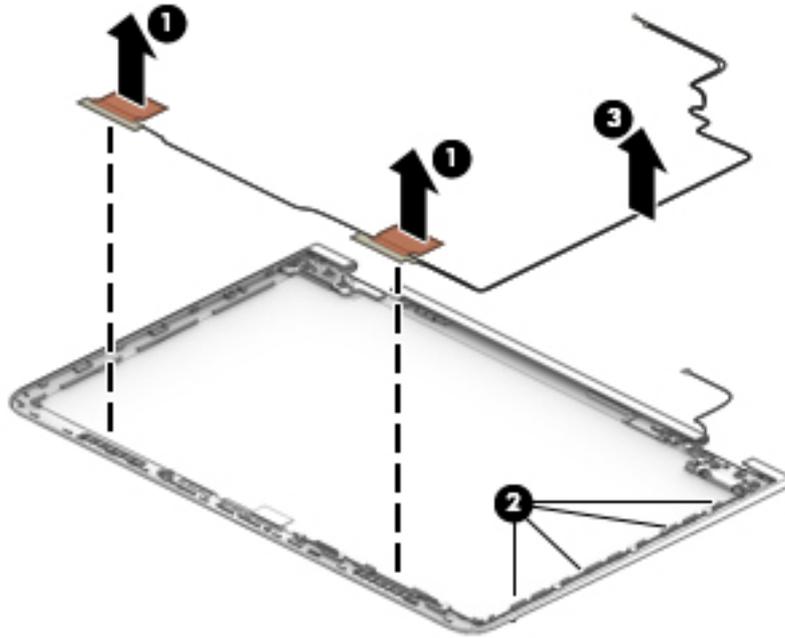
The display hinges are available using spare part number 856316-001 and include the hinge covers.



- 8. If it is necessary to replace the wireless antenna:
 - a. Remove the display panel assembly.
 - b. Remove the display hinges.
 - c. Detach the wireless antenna transceivers **(1)** from the display back cover. (The wireless antenna transceivers are secured to the display back cover with double-sided adhesive.)
 - d. Release the wireless antenna cables from the routing clips **(2)** and channel built into the display back cover.

- e. Remove the wireless antenna cables and transceivers **(3)**.

The wireless antenna cables and transceivers are available using spare part number 856025-001.

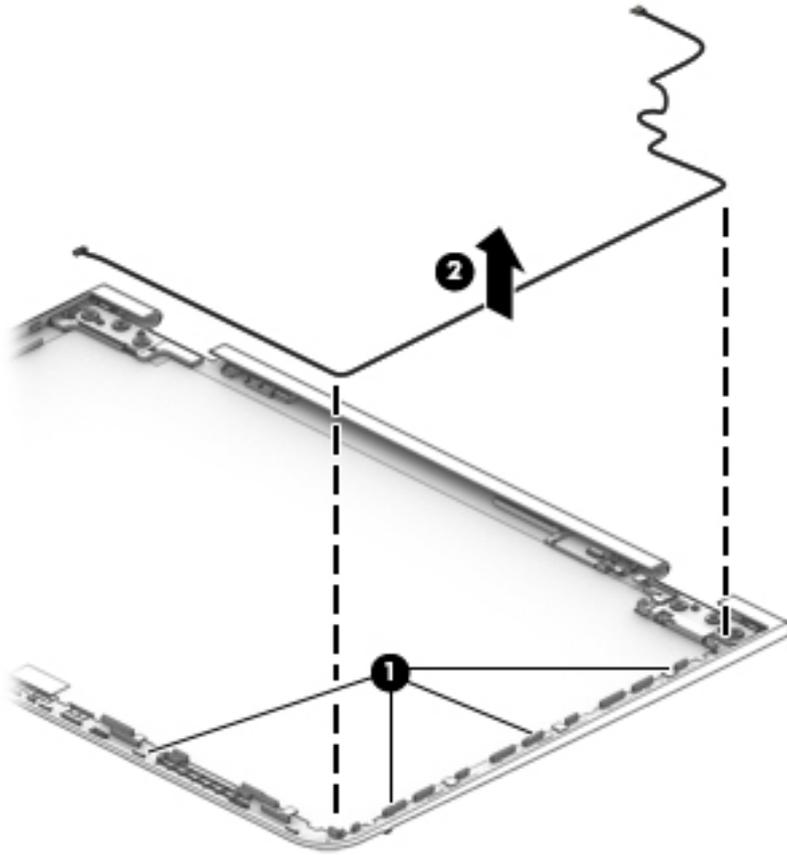


- 9. If it is necessary to replace the webcam/microphone module cable:

- a. Remove the display panel assembly.
- b. Remove the webcam/microphone module.
- c. Remove the display hinges.
- d. Remove the wireless antenna.
- e. Release the webcam/microphone module cable from the routing clips **(1)** and channel built into the display back cover.

- f. Remove the webcam/microphone module cable (2).

The webcam/microphone module cable is available using spare part number 856010-001.



Reverse this procedure to reassemble and install the display assembly.

6 Using Setup Utility (BIOS)

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

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

Starting Setup Utility (BIOS)

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

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

Updating Setup Utility (BIOS)

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

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

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

Determining the BIOS version

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

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

- HP Support Assistant
 1. Type `support` in the taskbar search box, and then select the **HP Support Assistant** app.
– or –
Click the question mark icon in the taskbar.
 2. Select **My PC**, and then select **Specifications**.
- Setup Utility (BIOS)
 1. Start Setup Utility (BIOS) (see [Starting Setup Utility \(BIOS\) on page 69](#)).
 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 70](#).

Downloading a BIOS update

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

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

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

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

Make a note of the path to the location on your hard drive where the BIOS update is downloaded. You will need to access this path when you are ready to install the update.

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

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

The BIOS installation begins.
5. Complete the installation by following the on-screen instructions.

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

7 Using HP PC Hardware Diagnostics (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.

 **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 71](#).

- 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, select the **Download** link, and then select **Run**.

Download any version of UEFI for a specific product

1. Go to <http://www.hp.com/support>.
2. Select **Get software and drivers**.

3. Enter the product name or number.

- or -

Select **Identify 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.

8 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 73](#). For information on the recovery options that are available using the recovery media, see [Using Windows tools on page 74](#).
- 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 75](#).

 **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 74](#).

- 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 75](#).

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 75](#). If you have not already created recovery media, see [Creating HP Recovery media \(select products only\) on page 73](#).
- 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 75](#).
- 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 78](#).

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 73](#).

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 73](#).
- 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 73](#).
- 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 77](#).

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 73](#).



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.

9 Specifications

Input power

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

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

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

Input power	Rating
Operating voltage and current	5 V dc @ 2 A / 12 V dc @ 3 A / 15 V dc @ 3 A - 45 W USB-C
	5 V dc @ 3 A / 9 V dc @ 3 A / 10 V dc @ 3.75 A / 12 V dc @ 3.75 A / 15 V dc @ 3 A / 20 V dc @ 2.25 A - 45 W USB-C
	5 V dc @ 3 A / 9 V dc @ 3 A / 10 V dc @ 5.0 A / 12 V dc @ 5.0 A / 15 V dc @ 4.33 A / 20 V dc @ 3.25 A - 65 W USB-C
	5 V dc @ 3 A / 9 V dc @ 3 A / 10 V dc @ 5.0 A / 12 V dc @ 5.0 A / 15 V dc @ 5.0 A / 20 V dc @ 4.5 A - 90 W USB-C
	19.5 V dc @ 2.31 A - 45 W
	19.5 V dc @ 3.33 A - 65 W
	19.5 V dc @ 4.62 A - 90 W
	19.5 V dc @ 6.15 A - 120 W
19.5 V dc @ 7.70 A - 150 W	
19.5 V dc @ 10.3A - 200 W	

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

Operating environment

Factor	Metric	U.S.
Temperature		
Operating	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Relative humidity (noncondensing)		
Operating	10% to 90%	10% to 90%
Nonoperating	5% to 95%	5% to 95%

Maximum altitude (unpressurized)		
Operating	-15 m to 3,048 m	-50 ft to 10,000 ft
Nonoperating	-15 m to 12,192 m	-50 ft to 40,000 ft

10 Power cord set requirements

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

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

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

Requirements for all countries

The following requirements are applicable to all countries and regions:

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

Requirements for 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
South Korea	EK	4

Country/region	Accredited agency	Applicable note number
Sweden	SEMKO	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-mm² 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-mm² 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-mm² 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-mm² 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.

11 Recycling

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

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

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