



**HP Pavilion x360 m1 Convertible PC
(model numbers m1-u100 through m1-
u199 and m1-u000 through m1-u099)**

**Maintenance and Service Guide
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HP authorized service providers only.**

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Second Edition: July 2016

First Edition: April 2016

Document Part Number: 854267-002

Product notice

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

Not all features are available in all editions of Windows 10. This computer may require upgraded and/or separately purchased hardware, drivers, and/or software to take full advantage of Windows 10 functionality. See for <http://www.microsoft.com> details.

Safety warning notice


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

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1 Product description

Category	Description	HP Pavilion x360 m1 Convertible PC (model numbers used m1-u100 through m1-1099)	HP Pavilion x360 m1 Convertible PC (model numbers used m1-u000 through m1- u099)
Product Name	HP Pavilion x360 m1 Convertible PC (model numbers used m1-u100 through m1-1099)	√	
	HP Pavilion x360 m1 Convertible PC (model numbers used m1-u000 through m1-u099)		√
Processors	<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™ N4200 1.1-GHz (turbo up to 2.5-GHz) processor (1866-MHz FSB, 2.0-MB L2 cache, quad core, 6-W) 		
	<ul style="list-style-type: none"> Intel Celeron™ N3350 1.1-GHz (turbo up to 2.4-GHz) processor (1866-MHz FSB, 2.0-MB L2 cache, dual core, 6-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) 	√	√
	<ul style="list-style-type: none"> Intel Pentium N3710 1.60-GHz (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 Celeron N3060 1.60-GHz (turbo up to 2.48-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, dual core, 6-W) 		
Chipset	Integrated soldered-on-circuit (SoC)	√	√
Graphics	Internal graphics: Intel HD Graphics 620 on computer models equipped with an Intel Core i3-7100U	√	
	Intel HD Graphics 520 on computer models equipped with an Intel Pentium or Intel Celeron processor	√	√

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Graphics <i>(continued)</i>	Support for HD decode, DX12, and high-definition multimedia interface (HDMI) v1.4	√	√
Panel	11.6-in, high-definition (HD), AntiGlare (AG) (1366×768), in-plane switching (IPS)/UWVA, white light-emitting (WLED), slim (3.0-mm), TouchScreen display panel with flush glass and MultiTouch enabled; typical brightness: 340 nits; Support for eDP	√	√
Memory module	One memory slot, non-customer accessible Support for DDR4-2133 Single Channel (only on computer models equipped with an Intel Core processor) Support for DDR3L-1600 Single Channel (only on computer models equipped with an Intel Pentium or Intel Celeron processor) Support for up to 2.0-GB onboard system memory (only on computer models equipped with an Intel Celeron processor) Support for up to 8-GB maximum on-board system memory: <ul style="list-style-type: none"> • 8192-GB (8192-GB × 1) • 4096-GB (4096-GB × 1) 	√	√
Storage	Hard drive: Support for all SATA, 2.5-in hard drives Support for Accelerometer hard drive protection (HP2DCTR) Support for the following hard drives: <ul style="list-style-type: none"> • 1-TB, 5400-rpm, SATA, 7.2-mm hard drive • 500-GB, 5400-rpm, SATA, 7.2-mm hard drive • 500-GB, 5400-rpm, SATA, 7.0-mm, 8.0-GB NAND hybrid solid-state hard drive 	√	√

Category	Description	HP Pavilion x360 m1 Convertible PC (model numbers used m1-u100 through m1-1099)	HP Pavilion x360 m1 Convertible PC (model numbers used m1-u000 through m1-u099)
Storage <i>(continued)</i>	<p>Solid-state drive: only available on computer models equipped with an Intel Core processor</p> <p>Support for PCIe, SATA co-layout, M.2 solid-state drives</p> <p>Support for a 128-MB, M2.2280 solid-state drive (DRAM-less)</p> <p>embedded MultiMediaCard (eMMC): 32 GB (available only on computer models equipped with an Intel Celeron processor)</p>	√	√
Optical drive	HP external DVD±RW DL SuperMulti Drive	√	√
Audio and video	<p>HP Wide Vision HD webcam with indicator light, 720p by 30 frames per second, BSI sensor, f2.0, 88° wide field of vision</p> <p>Dual array digital microphones with beam-forming, echo-cancellation, noise-suppression, and voice recognition software</p> <p>Two speakers</p> <p>Bang & Olufsen Play audio</p> <p>Support for Realtek Smart Amp (audio codec: ALC3258-CG)</p> <p>Support for voice recognition</p> <p>Enable HP Noise Cancellation</p>	√	√
Sensors	<p>Accelerometer (HP2DCTR)</p> <p>ECompass (HP9DS1TR)</p> <p>Gyroscope (HP9DS1TR)</p> <p>Sensor hub (Integrated sensor hub on computer models equipped with an Intel Core processor; Discrete sensor hub STM32F102CBT6 on computer models equipped with an Intel Pentium or Intel Celeron processor)</p>	√	√
Wireless	<p>Integrated wireless local area network (WLAN) options by way of wireless module</p> <p>Two built-in M.2 WLAN antennas</p> <p>Support for the following WLAN modules:</p> <ul style="list-style-type: none"> Intel 3165NGWG 1 ac 1×1 + Bluetooth® 4.0 LE PCIe 	√	√

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Wireless <i>(continued)</i>	<ul style="list-style-type: none"> +USB NGFF 2230 Combo Adapter for use in all countries and regions Realtek RTL8723BE 802.11b/g/n 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter for use in all countries and regions except Brazil 	√	√	
	<ul style="list-style-type: none"> Realtek RTL8723BE 802.11b/g/n 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter for use only in Brazil 		√	
	<p>Compatible with MiraCast-certified devices</p> <p>Support for Intel WiDi</p>	√	√	
External media cards	Micro-Secure Digital (SD®) media reader slot	√	√	
Ports	<ul style="list-style-type: none"> Headphone/microphone combo jack HDMI v 1.4 supporting up to 1920×1080 @ 60Hz USB type C 3.1 port Gen 1 supporting charging and data transfer USB 2.0 port 	√	√	
	Keyboard/pointing devices	Full-sized, standard, island-style, backlit keyboard	√	√
		Clickpad with image sensor		
		Multitouch gestures enabled		
Power requirements	Support for Windows® 10 Modern Trackpad Gestures	√	√	
Security	Trusted platform module (TPM) 2.0	√	√	
	Support for Security cable lock			
Operating system	For APJ SEAP Market (EM/SL #UUF/#AKL/AR6):	√	√	
	<ul style="list-style-type: none"> SEAP Windows 10 Home EM/SL SEAP Windows 10 Home China Language Edition CPPP Windows 10 Step Up 2-in-1 EM/SL 			

Category	Description	HP Pavilion x360 m1 Convertible PC (model numbers used m1-u100 through m1-1099)	HP Pavilion x360 m1 Convertible PC (model numbers used m1-u000 through m1- u099)
Operating system <i>(continued)</i>	<p data-bbox="544 306 799 329">For Developed Market (ML):</p> <ul data-bbox="544 350 815 489" style="list-style-type: none"> <li data-bbox="544 350 815 401">• Windows 10 Entry 2-in-1 ML <li data-bbox="544 422 788 445">• Windows 10 Home ML <li data-bbox="544 466 815 489">• Windows 10 Value 2-in-1 <p data-bbox="544 510 815 533">For Emerging Market (EM/SL):</p> <ul data-bbox="544 554 815 720" style="list-style-type: none"> <li data-bbox="544 554 815 604">• Windows 10 Entry 2-in-1 EM/SL <li data-bbox="544 625 815 648">• Windows 10 Home EM/SL <li data-bbox="544 669 815 720">• Windows 10 Step Up 2-in-1 EM/SL 	√	√
Serviceability	End user replaceable part: AC adapter	√	√

2 External component identification

Locating hardware

To find out what hardware is installed on your computer:

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

A list displays all the devices installed on your computer.

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

Locating software

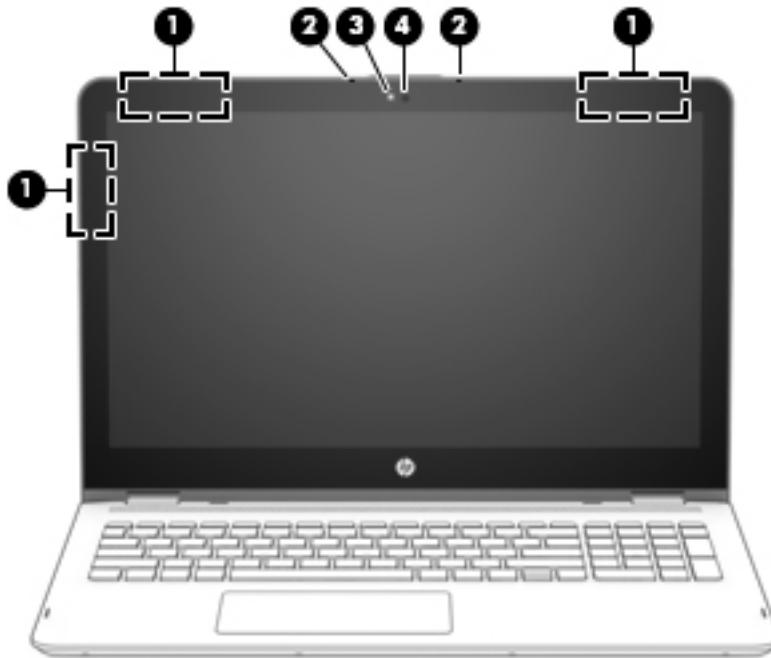
To find out what software is installed on your computer:

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

– or –

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

Display



Item	Component	Description
(1)	WLAN antennas*	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 <code>camera</code> 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.

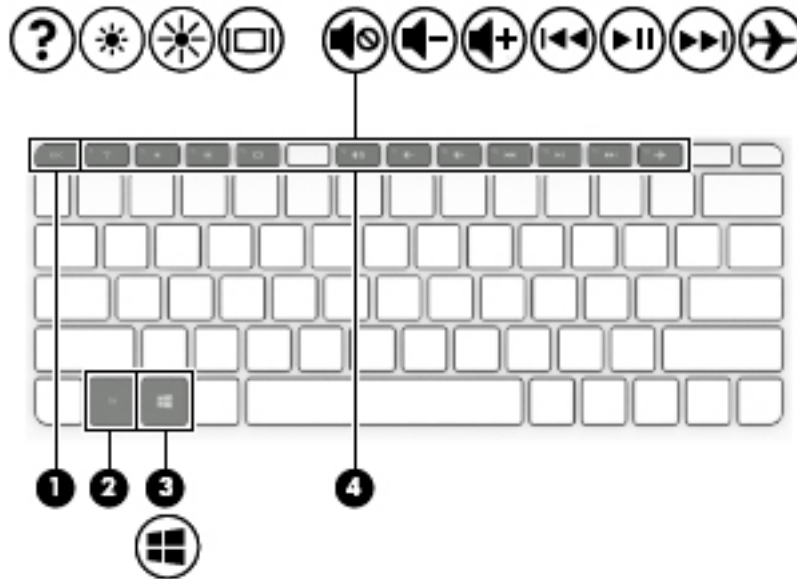
For wireless regulatory notices, see the section of the *Regulatory, Safety, and Environmental Notices* that applies to your country or region.

To access this guide:

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


Keys

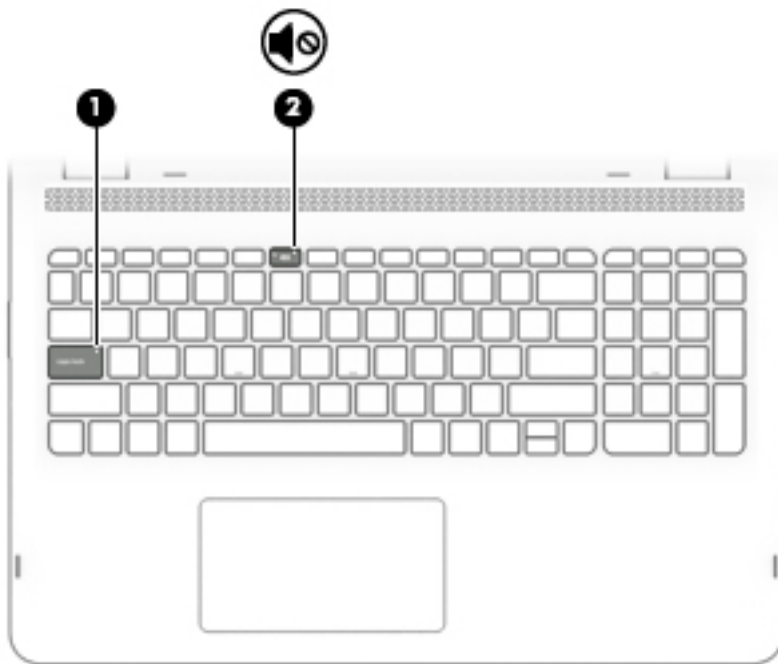
 **NOTE:** Your computer may look slightly different from the illustration below.



Item	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.

Lights

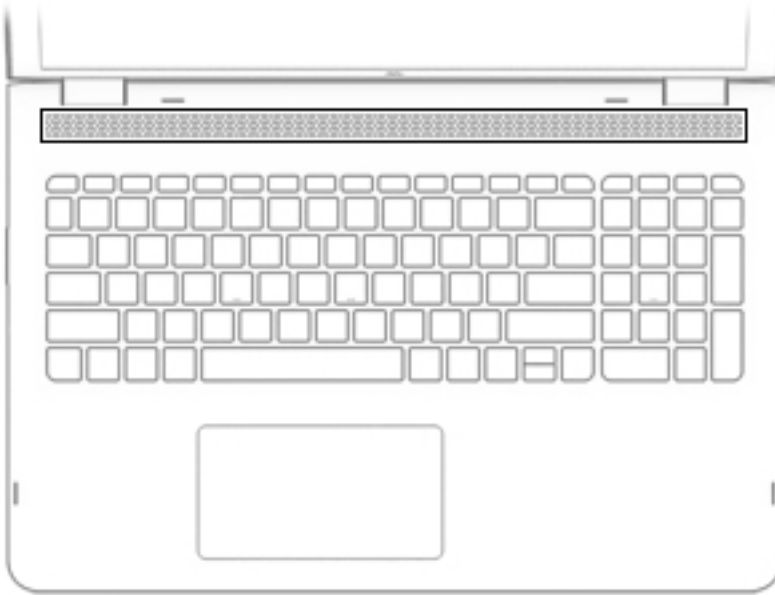
 **NOTE:** Your computer may look slightly different from the illustration below.



Item	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.

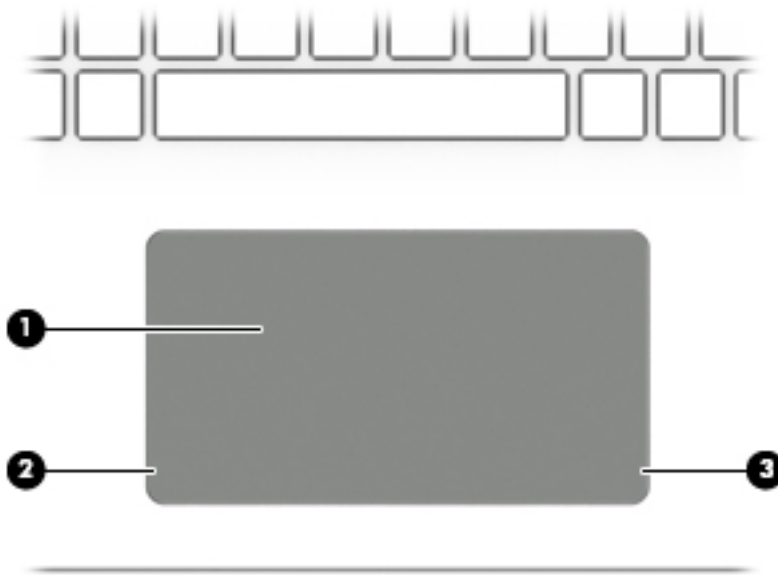
Speakers

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



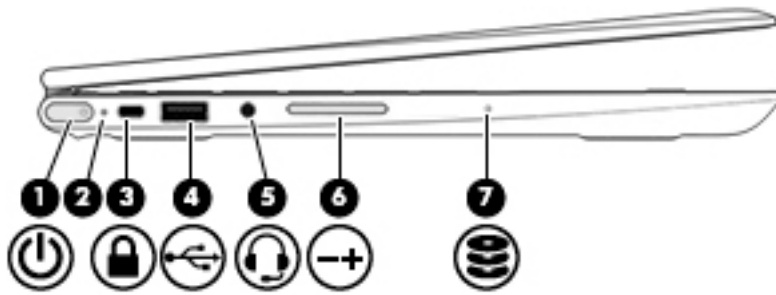
Component	Description
Speakers	Produce sound.

TouchPad



Item	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.

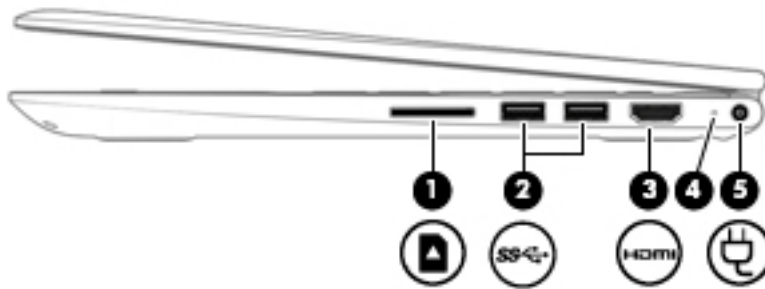
Left side



Item	Component	Description
(1)	Power button	<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>
(2)	Power light	<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.
(3)	Security cable slot	<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>
(4)	USB 2.0 port	<p>Connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner, or USB hub.</p>
(5)	Audio-out (headphone)/Audio-in (microphone) combo jack	<p>Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects</p>

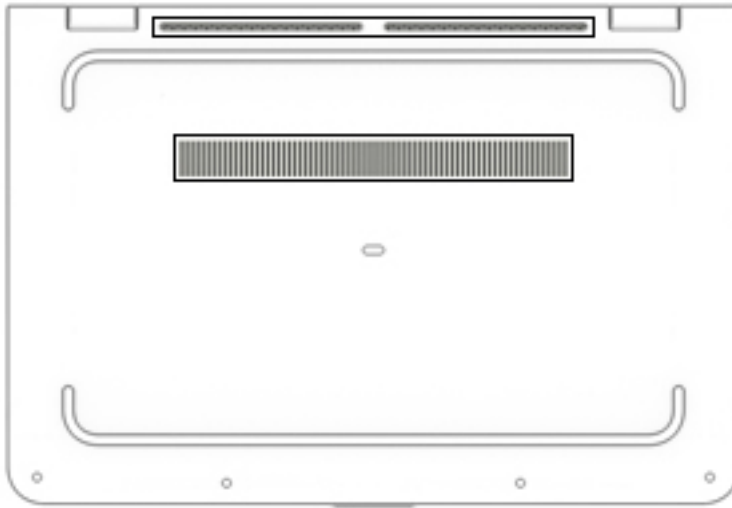
Item	Component	Description
(5)	Audio-out (headphone)/Audio-in (microphone) combo jack <i>(continued)</i>	<p>an optional headset microphone. This jack does not support optional standalone microphones.</p> <p>WARNING! To reduce the risk of personal injury, adjust the volume before putting on headphones, 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> <p>▲ Select the Start button, select All apps, select HP Help and Support, and then select HP Documentation.</p> <p>NOTE: When a device is connected to the jack, the computer speakers are disabled.</p>
(6)	Volume button	<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.
(7)	Drive light	<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>

Right side




Item	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 charging (powered) ports (3)	<p>Connect optional USB devices, such as a keyboard, mouse, external drive, printer, scanner, or USB hub. Standard USB ports will not charge all USB devices or will charge using a low current. Some USB devices require power and require you to use a powered port.</p> <p>NOTE: USB charging ports can also charge select models of cell phones and MP3 players, even when the computer is off.</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>

Bottom



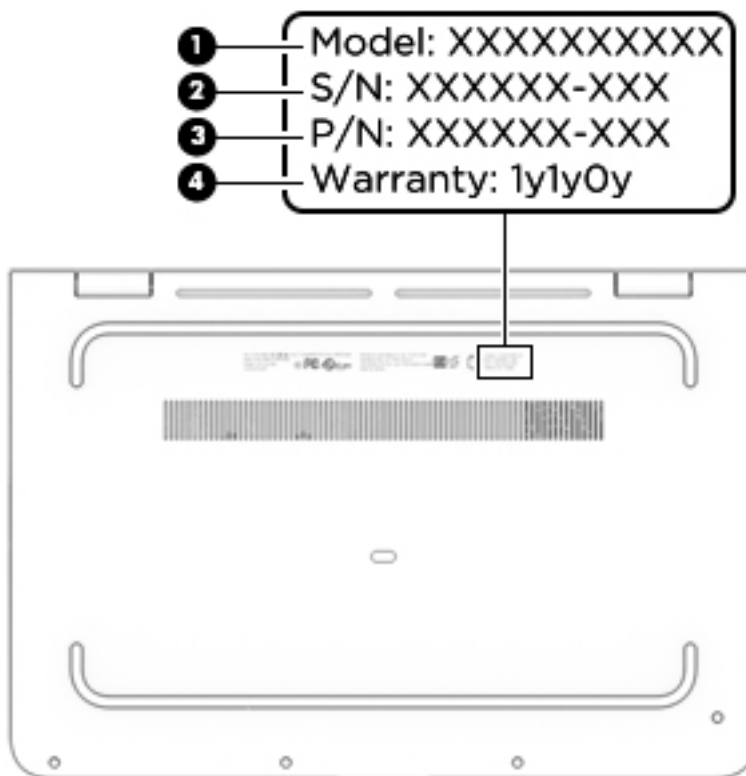
Component	Description
Vents (2)	Enable airflow to cool internal components. NOTE: The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.

3 Illustrated parts catalog

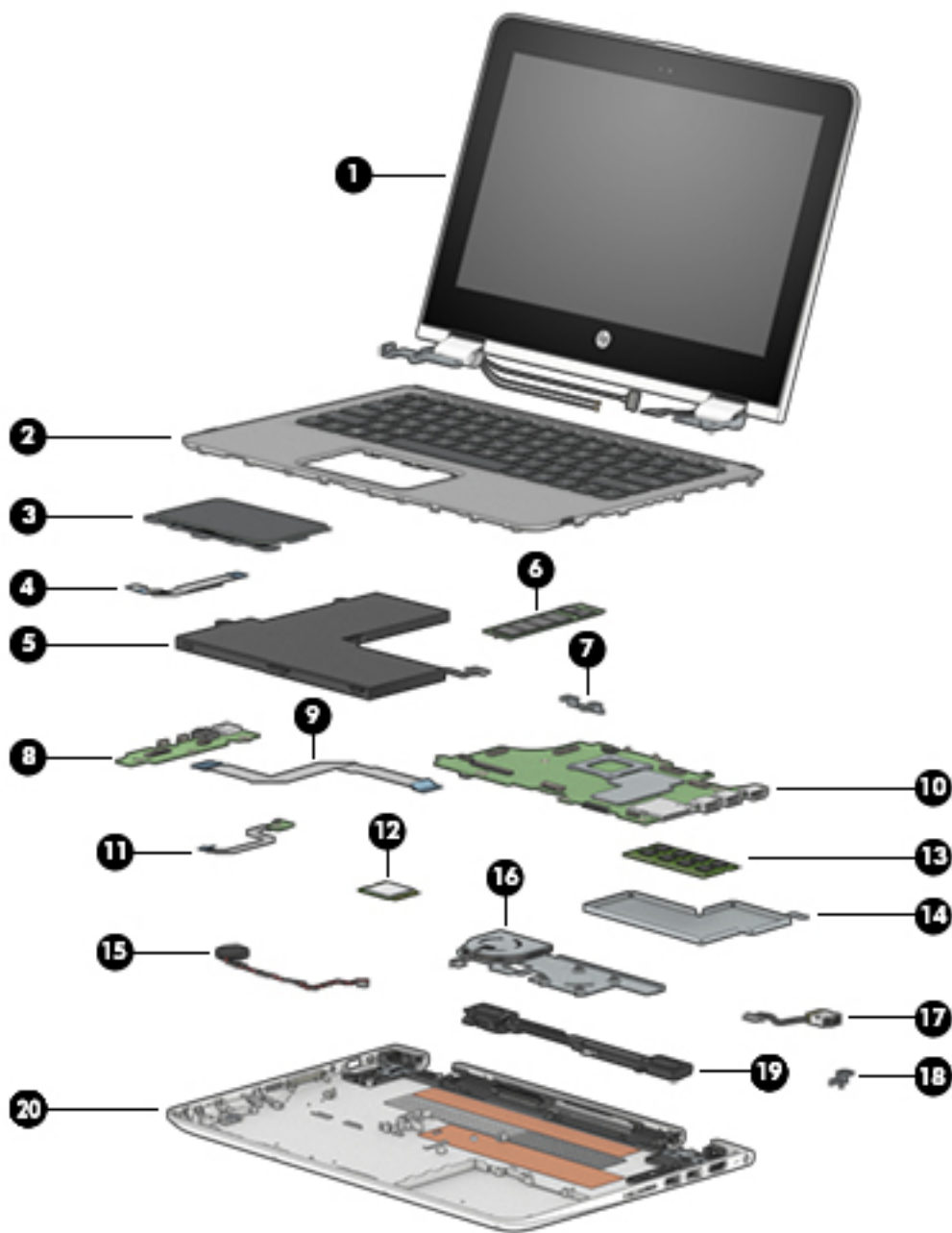
 **NOTE:** HP continually improves and changes product parts. For complete and current information on supported parts for your computer, go to <http://partsurfer.hp.com>, select your country or region, and then follow the on-screen instructions.

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

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



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 components on page 24 .	
(2)	Keyboard/top cover (includes backlight cable and keyboard cable):	
	In dragonfly blue finish:	
	For use in Belgium	856177-A41
	For use in Bulgaria	856177-261

Item	Component	Spare part number
	For use in Canada	856177-DB1
	For use in the Czech Republic and Slovakia	856177-FL1
	For use in Denmark, Finland, and Norway	856177-DH1
	For use in France	856177-051
	For use in Germany	856177-041
	For use in Greece	856177-151
	For use in Hungary	856177-211
	For use in Israel	856177-BB1
	For use in Italy	856177-061
	For use in Japan	856177-291
	For use in Latin America	856177-161
	For use in the Netherlands	856177-B31
	For use in Portugal	856177-131
	For use in Romania	856177-271
	For use in Russia	856177-251
	For use in Saudi Arabia	856177-171
	For use in South Korea	856177-AD1
	For use in Spain	856177-071
	For use in Switzerland	856177-BG1
	For use in Taiwan	856177-AB1
	For use in Thailand	856177-281
	For use in Turkey	856177-141
	For use in the United Kingdom	856177-031
	For use in the United States	856177-001
	In modern gold finish:	
	For use in Belgium	856175-A41
	For use in Bulgaria	856175-261
	For use in Canada	856175-DB1
	For use in the Czech Republic and Slovakia	856175-FL1
	For use in Denmark, Finland, and Norway	856175-DH1
	For use in France	856175-051
	For use in Germany	856175-041
	For use in Greece	856175-151
	For use in Hungary	856175-211

Item	Component	Spare part number
	For use in Israel	856175-BB1
	For use in Italy	856175-061
	For use in Japan	856175-291
	For use in Latin America	856175-161
	For use in the Netherlands	856175-B31
	For use in Portugal	856175-131
	For use in Romania	856175-271
	For use in Russia	856175-251
	For use in Saudi Arabia	856175-171
	For use in South Korea	856175-AD1
	For use in Spain	856175-071
	For use in Switzerland	856175-BG1
	For use in Taiwan	856175-AB1
	For use in Thailand	856175-281
	For use in Turkey	856175-141
	For use in the United Kingdom	856175-031
	For use in the United States	856175-001
	In natural silver finish:	
	For use in Belgium	856071-A41
	For use in Bulgaria	856071-261
	For use in Canada	856071-DB1
	For use in the Czech Republic and Slovakia	856071-FL1
	For use in Denmark, Finland, and Norway	856071-DH1
	For use in France	856071-051
	For use in Germany	856071-041
	For use in Greece	856071-151
	For use in Hungary	856071-211
	For use in Israel	856071-BB1
	For use in Italy	856071-061
	For use in Japan	856071-291
	For use in Latin America	856071-161
	For use in the Netherlands	856071-B31
	For use in Portugal	856071-131
	For use in Romania	856071-271

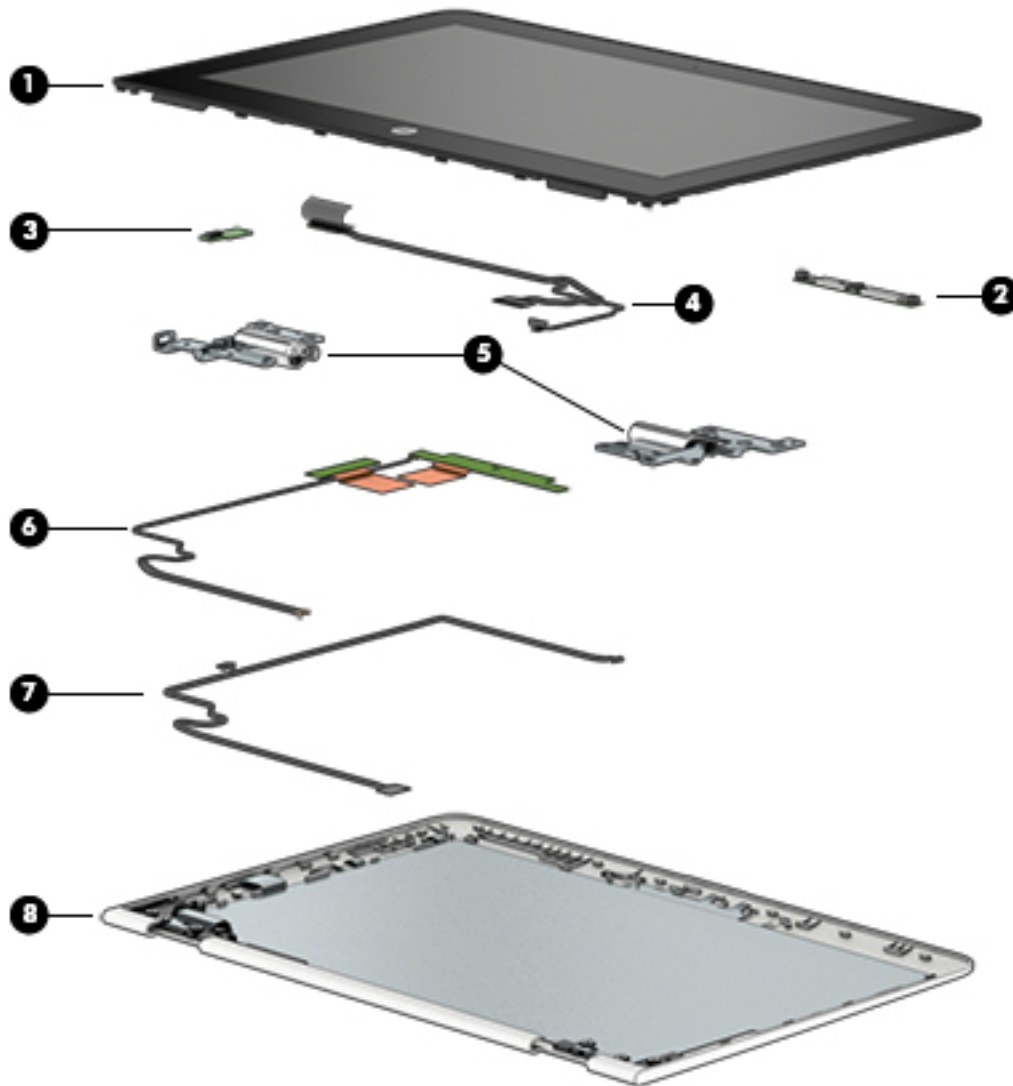
Item	Component	Spare part number
	For use in Russia	856071-251
	For use in Saudi Arabia	856071-171
	For use in South Korea	856071-AD1
	For use in Spain	856071-071
	For use in Switzerland	856071-BG1
	For use in Taiwan	856071-AB1
	For use in Thailand	856071-281
	For use in Turkey	856071-141
	For use in the United Kingdom	856071-031
	For use in the United States	856071-001
(3)	TouchPad cable (includes double-sided adhesive):	
	For use only on computer models equipped with an Intel Core processor	856061-001
	For use only on computer models equipped with an Intel Pentium or Intel Celeron processor	856062-001
(4)	TouchPad (includes bracket)	858953-001
(5)	Battery (includes cable):	
	3-cell, 40-Wh, 3.62-Ah, Li-ion	844201-855
	2-cell, 35-Wh, 4.56-Ah, Li-ion	844200-855
(6)	128-MB, M2.2280 solid-state drive	827560-011
	Solid-state drive bracket (not illustrated)	856067-001
(7)	Hard drive:	
	NOTE: The hard drive spare part kit does not include the hard drive bracket, cable, or screws. The hard drive bracket and screws are available using spare part number 856068-001. The hard drive cable is available using spare part numbers 909096-001 and 856066-001.	
	1-TB, 5400-rpm, SATA, 7.2-mm hard drive	762990-005
	500-GB, 5400-rpm, SATA, 7.2-mm hard drive	778186-005
	500-GB, 5400-rpm, SATA, 7.0-mm, 8.0-GB NAND hybrid solid-state hard drive	732000-005
(8)	Hard drive cable (includes double-sided adhesive)	909096-001 and 856066-001
(9)	Hard drive bracket (includes screws)	856068-001
(10)	Connector board (includes audio jack and USB port)	
	For use only on computer models equipped with an Intel Core processor	909095-001
	For use only on computer models equipped with an Intel Pentium or Intel Celeron processor	856099-001
(11)	Connector board cable (includes double-sided adhesive):	
	For use only on computer models equipped with an Intel Core processor	856059-001
	For use only on computer models equipped with an Intel Pentium or Intel Celeron processor	856060-001
(12)	System board (includes processor and replacement thermal material):	

Item	Component	Spare part number
	For use only on computer models with model numbers m1-u100 through m1-u199:	
	Equipped with an Intel Core i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, a solid-state drive slot, and the Windows 10 Professional operating system	903213-601
	Equipped with an Intel Core i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, a solid-state drive slot, and a non-Windows operating system	903213-001
	Equipped with an Intel Core i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, and the Windows 10 Professional operating system	903212-601
	Equipped with an Intel Core i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, and a non-Windows operating system	903212-001
	Equipped with an Intel Pentium N4200 1.1-GHz (turbo up to 2.5-GHz) processor (1866-MHz FSB, 2.0-MB L2 cache, quad core, 6-W), a graphics subsystem with UMA memory, and the Windows 10 Professional operating system	903209-601
	Equipped with an Intel Pentium N4200 1.1-GHz (turbo up to 2.5-GHz) processor (1866-MHz FSB, 2.0-MB L2 cache, quad core, 6-W), a graphics subsystem with UMA memory, and a non-Windows operating system	903209-001
	Equipped with an Intel Celeron N3350 1.1-GHz (turbo up to 2.4-GHz) processor (1866-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, 2-GB of system memory, 32-GB eMMC storage, and the Windows 10 Professional operating system	903211-601
	Equipped with an Intel Celeron N3350 1.1-GHz (turbo up to 2.4-GHz) processor (1866-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, 2-GB of system memory, 32-GB eMMC storage, and a non-Windows operating system	903211-001
	Equipped with an Intel Celeron N3350 1.1-GHz (turbo up to 2.4-GHz) processor (1866-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, a graphics subsystem with UMA memory, and the Windows 10 Professional operating system	903210-601
	Equipped with an Intel Celeron N3350 1.1-GHz (turbo up to 2.4-GHz) processor (1866-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, and a non-Windows operating system	903210-001
	For use on all computer models:	
	Equipped with an Intel Core i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, a solid-state drive slot, and the Windows 10 Professional operating system	855722-601
	Equipped with an Intel Core i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, a solid-state drive slot, and a non-Windows operating system	855722-001
	Equipped with an Intel Core i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, and the Windows 10 Professional operating system	855721-601
	Equipped with an Intel Core i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, and a non-Windows operating system	855721-001
	Equipped with an Intel Pentium N3710 1.60-GHz (turbo up to 2.56-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, quad core, 6-W), a graphics subsystem with UMA memory, and the Windows 10 Professional operating system	855718-601

Item	Component	Spare part number
	Equipped with an Intel Pentium N3710 1.60-GHz (turbo up to 2.56-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, quad core, 6-W), and a non-Windows operating system	855718-001
	Equipped with an Intel Celeron N3060 1.60-GHz (turbo up to 2.48-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, 2.0-GB of on-board system memory, a 32-GB eMMC, and the Windows 10 Professional operating system	855720-601
	Equipped with an Intel Celeron N3060 1.60-GHz (turbo up to 2.48-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, 2.0-GB of on-board system memory, a 32-GB eMMC, and a non-Windows operating system	855720-001
	Equipped with an Intel Celeron N3060 1.60-GHz (turbo up to 2.48-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, and the Windows 10 Professional operating system	855719-601
	Equipped with an Intel Celeron N3060 1.60-GHz (turbo up to 2.48-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, and a non-Windows operating system	855719-001
(13)	Power button board (includes cable)	856100-001
(14)	WLAN module:	
	For use on all computer models:	
	Intel 3165NGWG 1 ac 1×1 + Bluetooth 4.0 LE PCIe+USB NGFF 2230 Combo Adapter for use in all countries and regions	806723-005
	Realtek RTL8723BE 802.11b/g/n 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter for use in all countries and regions except Brazil	855106-855
	For use only on computer models with model numbers m1-u000 through m1-u099:	
	Realtek RTL8723BE 802.11b/g/n 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter for use only in Brazil	792610-205
(15)	Memory module:	
	8-GB (2133, 1.2-V, DDR4; for use only on computer models equipped with an Intel Core processor)	820570-005
	8-GB (PCL3, 12800, 1600; for use only on computer models equipped with an Intel Pentium or Intel Celeron processor)	693374-005
	4-GB (2133, 1.2-V, DDR4; for use only on computer models equipped with an Intel Core processor)	820569-005
	4-GB (PCL3, 12800, 1600; for use only on computer models equipped with an Intel Pentium or Intel Celeron processor)	691740-005
(16)	Memory module shield	856069-001
(17)	RTC battery (includes cable and double-sided adhesive)	691572-001
(18)	Fan/heat sink assembly (includes replacement thermal material):	
	For use only on computer models equipped with an Intel Core processor	855996-001
	For use only on computer models equipped with an Intel Pentium N4200 or Intel Celeron N3350 processor	903214-001
	For use only on computer models equipped with an Intel Pentium M3710 or Intel Celeron N3060 processor	855997-001

Item	Component	Spare part number
	For use only on computer models equipped with an Intel Celeron N3060 processor and eMMC	855998-001
(19)	Power connector cable	855995-001
(20)	Speakers (includes cable)	856108-001
(21)	Bottom cover (includes front rubber feet, retention magnets, shielding, and vents):	
	In dragonfly blue finish	856058-001
	In modern gold finish	856056-001
	In natural silver finish	856055-001
	Rubber Kit (not illustrated, includes bottom cover rubber foot strip and screw covers):	
	In dragonfly blue finish	856105-001
	In modern gold finish	856103-001
	In natural silver finish	856102-001

Display components



Item	Component	Spare part number
(1)	11.6-in, HD, AG (1366×768), WLED, UWVA, TouchScreen display panel assembly	856101-001
(2)	Webcam/microphone module (includes double-sided adhesive)	833962-005
(3)	G-sensor board (includes double-sided adhesive)	856098-001
(4)	Display panel cable (includes TouchScreen board cable, adhesive support strip, and double-sided adhesive):	
	For use on all computer models	902941-001
	For use only on computer models with model numbers m1-u100 through m1-u199	856063-001
(5)	Display hinges (2, include display hinge covers)	856070-001
(6)	Antenna (includes antenna cables and transceivers)	856050-001
(7)	Webcam/microphone module cable: (includes G-sensor board cable)	

Item	Component	Spare part number
	For use only on computer models equipped with an Intel Core processor	856064-001
	For use only on computer models equipped with an Intel Pentium or Intel Celeron processor	856065-001
(8)	Display back cover:	
	In dragonfly blue finish	856054-001
	In modern gold finish	856052-001
	In natural silver finish	856051-001

Miscellaneous parts

Component	Spare part number
AC adapter:	
65-W HP Smart AC adapter (non-PFC, 4.5-mm, EM)	714635-850
45-W HP Smart AC adapter (non-PFC, 4.5-mm, RC)	741553-850
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 South Korea	267836-008
For use in Switzerland	213354-008
For use in Taiwan	393313-003
For use in Thailand	285096-006
For use in the United Kingdom and Singapore	213351-008
Power cord (Option 917, 1.0-m (3.2-ft), 3-wire conductor, ROHS)	361240-002
Rubber Support Kit (includes battery pad, hard drive pads, and solid-state drive pads)	856106-001
Screw Kit	856107-001

4 Removal and replacement preliminary requirements


Tools required

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


- Flat-bladed screw driver
- Magnetic screw driver
- Phillips P0 screw driver

Service considerations

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

 **NOTE:** As you remove each subassembly from the 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 parts. Apply pressure only at the points designated in the maintenance instructions.

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

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

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

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

Avoid dropping drives from any height onto any surface.

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

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

Avoid exposing a drive to temperature extremes or liquids.

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

Grounding guidelines

Electrostatic discharge damage

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

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

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

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

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

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

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

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

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

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

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

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

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

Workstation guidelines

Follow these grounding workstation guidelines:

- Cover the workstation with approved static-shielding material.
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use conductive field service tools, such as cutters, screw drivers, and vacuums.
- When fixtures must directly contact dissipative surfaces, use fixtures made only of static-safe materials.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and Styrofoam.
- Handle ESD-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting or removing connectors or test equipment.

Equipment guidelines

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

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

the following grounding equipment is recommended to prevent electrostatic damage:

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

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

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

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

Component replacement procedures

NOTE: Details about the computer, including model, serial number, product key, and length of warranty, are on the service tag on the back of the computer. See [Locating the model number, serial number, product number, and warranty information on page 16](#) for details.

This chapter provides removal and replacement procedures.

There are as many as 56 screws that must be removed, replaced, and/or loosened when servicing the computer. Make special note of each screw size and location during removal and replacement.

Keyboard/top cover

NOTE: the keyboard/top cover spare part kit includes the backlight cable, keyboard cable, and shielding.

For use in country/region	Spare part number	For use in country/region	Spare part number
In dragonfly blue finish:		For use in Latin America	856177-161
For use in Belgium	856177-A41	For use in the Netherlands	856177-B31
For use in Brazil (for use only on computer models with model numbers m1-u000 through m1-u099)	856177-201	For use in Portugal	856177-131
For use in Bulgaria	856177-261	For use in Romania	856177-271
For use in Canada	856177-DB1	For use in Russia	856177-251
For use in the Czech Republic and Slovakia	856177-FL1	For use in Saudi Arabia	856177-171
For use in Denmark, Finland, and Norway	856177-DH1	For use in South Korea	856177-AD1
For use in France	856177-051	For use in Spain	856177-071
For use in Germany	856177-041	For use in Switzerland	856177-BG1
For use in Greece	856177-151	For use in Taiwan	856177-AB1
For use in Hungary	856177-211	For use in Thailand	856177-281
For use in Israel	856177-BB1	For use in Turkey	856177-141
For use in Italy	856177-061	For use in the United Kingdom	856177-031
For use in Japan	856177-291	For use in the United States	856177-001
In modern gold finish:		For use in Latin America	856175-161
For use in Belgium	856175-A41	For use in the Netherlands	856175-B31

For use in country/region	Spare part number	For use in country/region	Spare part number
For use in Brazil (for use only on computer models with model numbers m1-u000 through m1-u099)	856175-201	For use in Portugal	856175-131
For use in Bulgaria	856175-261	For use in Romania	856175-271
For use in Canada	856175-DB1	For use in Russia	856175-251
For use in the Czech Republic and Slovakia	856175-FL1	For use in Saudi Arabia	856175-171
For use in Denmark, Finland, and Norway	856175-DH1	For use in South Korea	856175-AD1
For use in France	856175-051	For use in Spain	856175-071
For use in Germany	856175-041	For use in Switzerland	856175-BG1
For use in Greece	856175-151	For use in Taiwan	856175-AB1
For use in Hungary	856175-211	For use in Thailand	856175-281
For use in Israel	856175-BB1	For use in Turkey	856175-141
For use in Italy	856175-061	For use in the United Kingdom	856175-031
For use in Japan	856175-291	For use in the United States	856175-001
In natural silver finish:		For use in Latin America	856071-161
For use in Belgium	856071-A41	For use in the Netherlands	856071-B31
For use in Brazil (for use only on computer models with model numbers m1-u000 through m1-u099)	856071-201	For use in Portugal	856071-131
For use in Bulgaria	856071-261	For use in Romania	856071-271
For use in Canada	856071-DB1	For use in Russia	856071-251
For use in the Czech Republic and Slovakia	856071-FL1	For use in Saudi Arabia	856071-171
For use in Denmark, Finland, and Norway	856071-DH1	For use in South Korea	856071-AD1
For use in France	856071-051	For use in Spain	856071-071
For use in Germany	856071-041	For use in Switzerland	856071-BG1
For use in Greece	856071-151	For use in Taiwan	856071-AB1
For use in Hungary	856071-211	For use in Thailand	856071-281
For use in Israel	856071-BB1	For use in Turkey	856071-141
For use in Italy	856071-061	For use in the United Kingdom	856071-031
For use in Japan	856071-291	For use in the United States	856071-001

Before disassembling the computer, follow these steps:

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

Remove the keyboard/top cover:

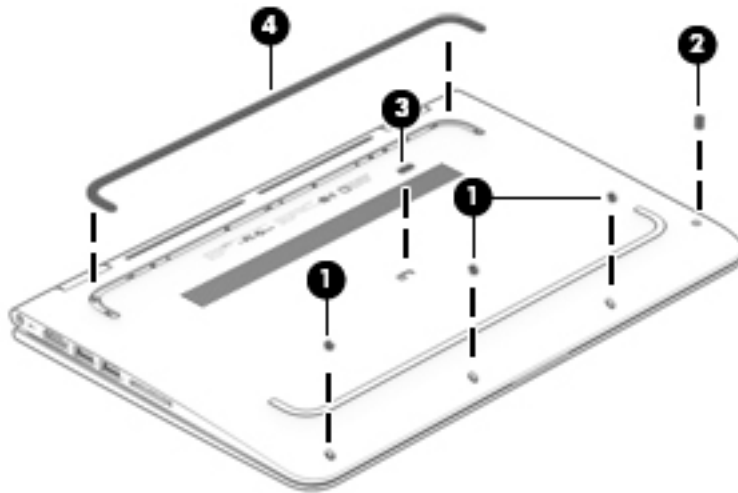
1. Close the computer.
2. Turn the computer upside down with the front toward you.
3. Remove the following:
 - (1) Three rubber screw covers on the front edge of the computer
 - (2) One rubber plug on the right side of the computer
 - (3) One flat screw cover in the middle of the computer
 - (4) One rubber foot strip

These components are included in the Rubber Kits, using the following spare part numbers:

856105-001 – Rubber Kit in dragonfly blue finish

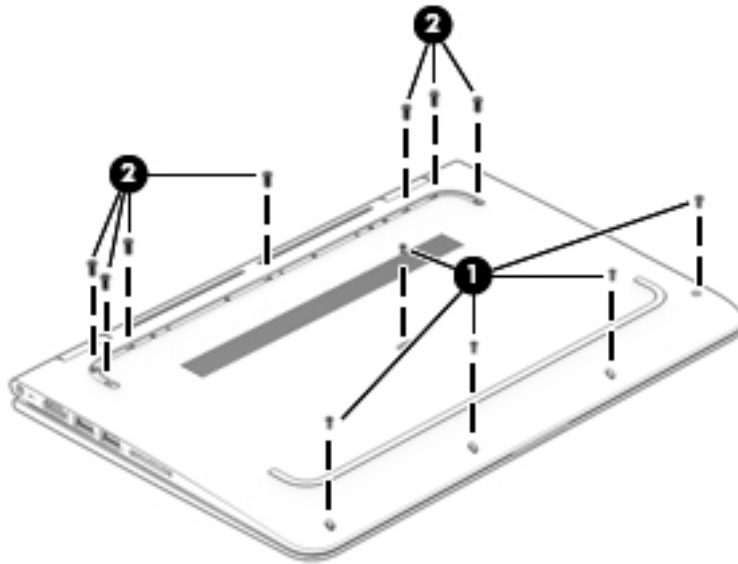
856103-001 – Rubber Kit in modern gold finish

856102-001 – Rubber Kit in natural silver finish

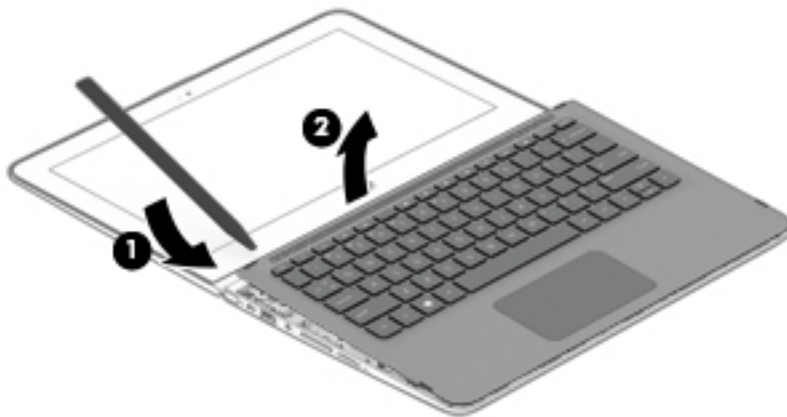


4. Remove the five Phillips M2.0×4.9 screws (1) that secure the bottom cover to the computer.

5. Remove the seven Phillips M2.5×5.7 screws **(2)** that secure the bottom cover to the computer.

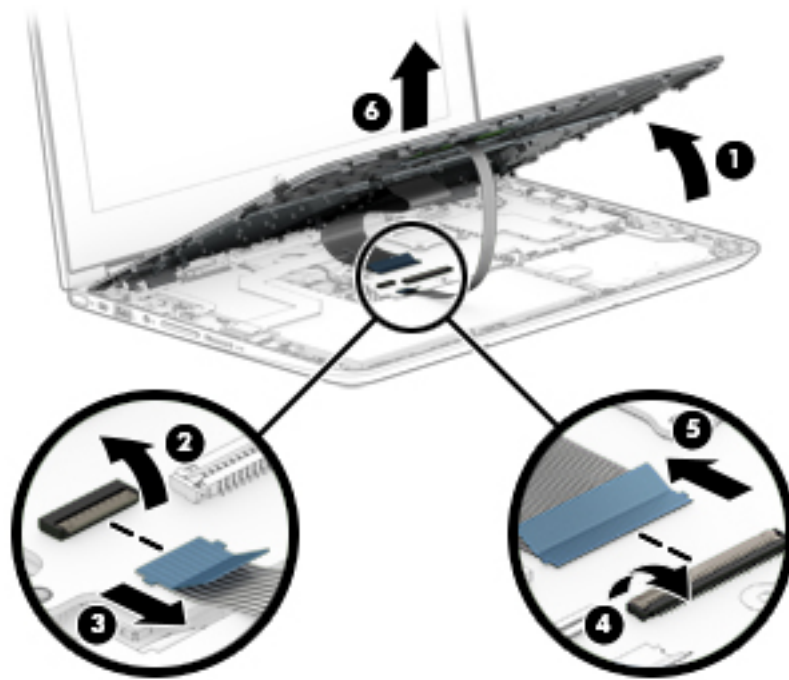


6. Turn the computer right side up with the front toward you.
7. Open the computer as far as it will open.
8. Insert a case utility tool **(1)** or similar plastic, flat-edged tool between the keyboard/top cover and the bottom cover near the display hinge area.
9. Release the rear edge **(2)** of the keyboard/top cover and swing it up and forward until it detaches from the bottom cover.



10. Lift the front edge **(1)** of the keyboard/top cover until the backlight cable and keyboard cable are accessible.
11. Release the zero insertion force (ZIF) connector **(2)** to which the backlight cable is connected, and then disconnect the backlight cable **(3)** from the system board.
12. Release the ZIF connector **(4)** to which the keyboard cable is connected, and then disconnect the keyboard cable **(5)** from the system board.

13. Remove the keyboard/top cover (6).



Reverse this procedure to install the keyboard/top cover.

TouchPad cable

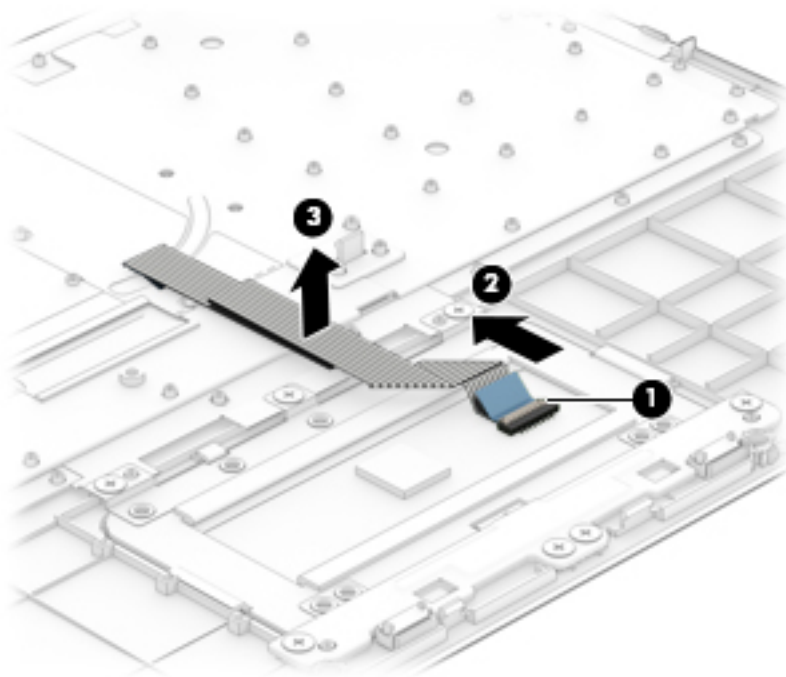
Description	Spare part number
For use only on computer models equipped with an Intel Core processor	856061-001
For use only on computer models equipped with an Intel Pentium or Intel Celeron processor	856062-001

Before removing the TouchPad cable, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 32](#)).

Remove the TouchPad cable:

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



Reverse this procedure to install the TouchPad cable.

TouchPad

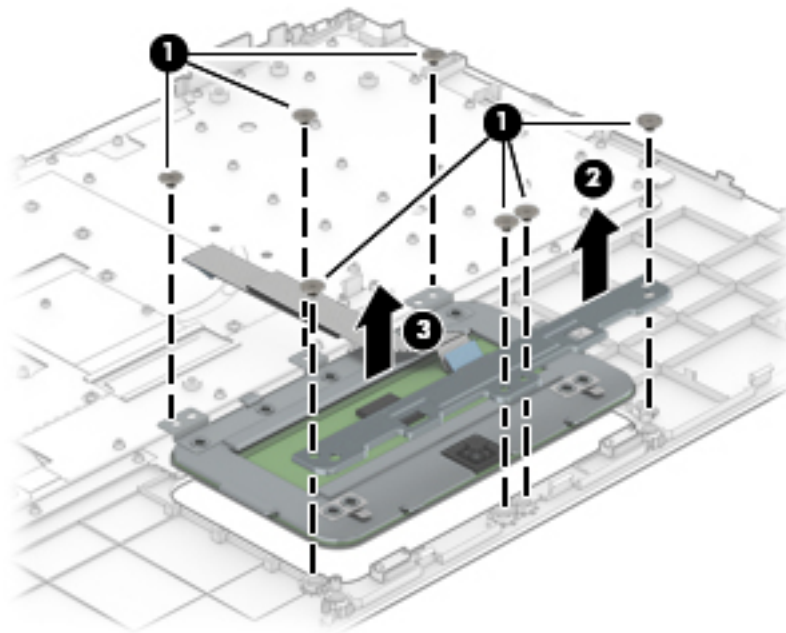
Description	Spare part number
TouchPad (includes bracket)	858953-001

Before removing the TouchPad, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 32](#)).

Remove the TouchPad:

1. Turn the keyboard/top cover upside down with the front toward you.
2. Remove the seven Phillips M2.0×2.3 screws **(1)** that secure the TouchPad to the keyboard/top cover.
3. Remove the TouchPad bracket **(2)**.
4. Remove the TouchPad **(3)**.



Reverse this procedure to install the TouchPad.

Battery

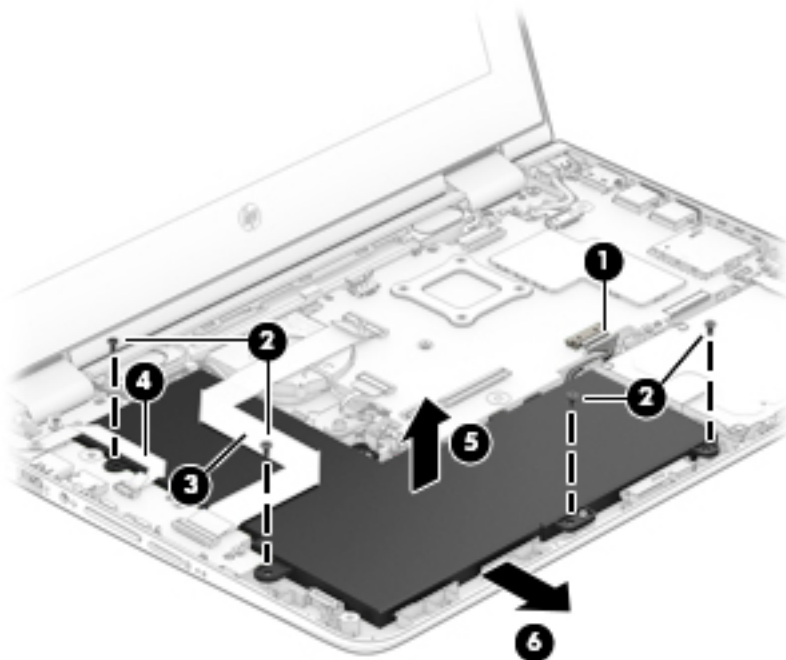
Description	Spare part number
3-cell, 40-Wh, 3.62-Ah, Li-ion	844201-855
2-cell, 35-Wh, 4.56-Ah, Li-ion	844200-855

Before removing the battery, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 32](#)).


Remove the battery:

1. Disconnect the battery cable **(1)** from the system board.
2. Remove the four Phillips M2.0×4.6 screws **(2)** that secure the battery to the bottom cover.
3. Detach the connector board cable **(3)** from the battery. (The connector board cable is attached to the battery with double-sided adhesive.)
4. Detach the power button board cable **(4)** from the battery. (The power button board cable is attached to the battery with double-sided adhesive.)
5. Release the battery **(5)** by lifting it up until it is clear of its alignment posts.
6. Remove the battery **(6)** by sliding it forward.



Reverse this procedure to install the battery.

Hard drive

 **NOTE:** The hard drive spare part kit does not include the hard drive bracket, cable, or screws. The hard drive bracket and screws are available using spare part number 856068-001. The hard drive cable is available using spare part numbers 909096-001 and 856066-001.

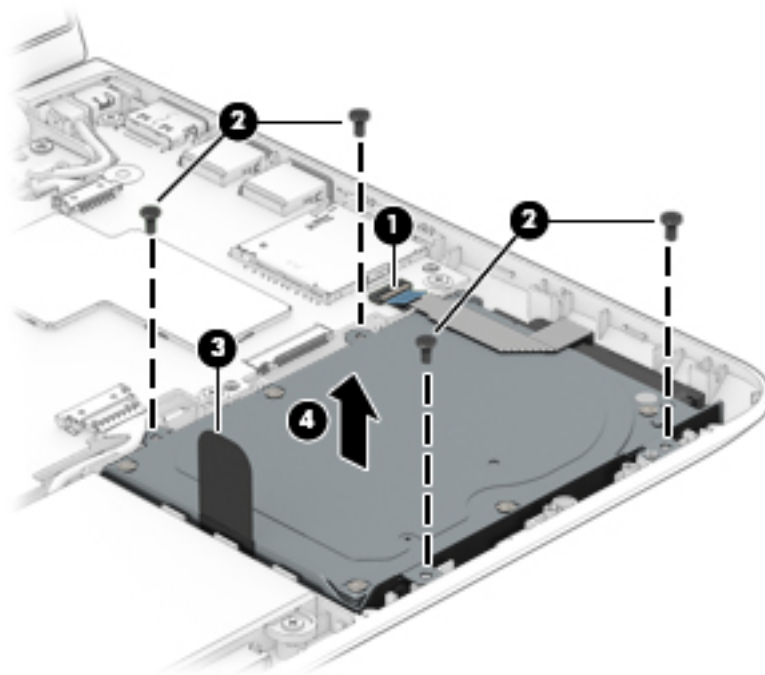
Description	Spare part number
1-TB, 5400-rpm, SATA, 7.2-mm hard drive	762990-005
500-GB, 5400-rpm, SATA, 7.2-mm hard drive	778186-005
500-GB, 5400-rpm, SATA, 7.0-mm, 8.0-GB NAND hybrid solid-state hard drive	732000-005

Before removing the hard drive, follow these steps:

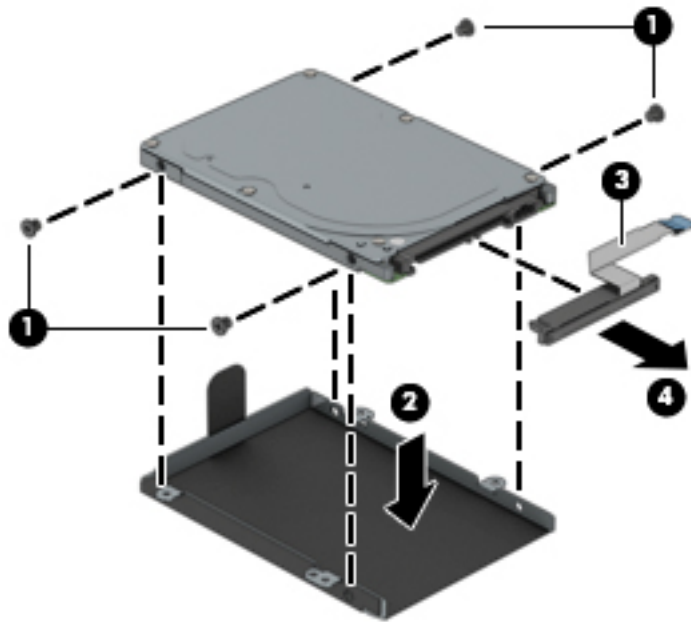
1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 32](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 39](#)).

Remove the hard drive:

1. Release the ZIF connector **(1)** to which the hard drive cable is connected, and then disconnect the hard drive cable from the system board.
2. Remove the four Phillips PM2.0×4.6 screws **(2)** that secure the hard drive to the bottom cover.
3. Use the hard drive tab **(3)** to remove the hard drive **(4)**.



4. If it is necessary to replace the hard drive bracket, remove the four Phillips PM3.0×4.1 screws **(1)** that secure the bracket to the hard drive, and then remove the hard drive bracket **(2)**.
5. If it is necessary to replace the hard drive cable, detach the cable **(3)** from the hard drive. (The hard drive cable is attached to the hard drive with double-sided adhesive.)
6. Slide the cable **(4)** off of the front end of the hard drive.



Reverse this procedure to reassemble and install the hard drive.

Solid-state drive

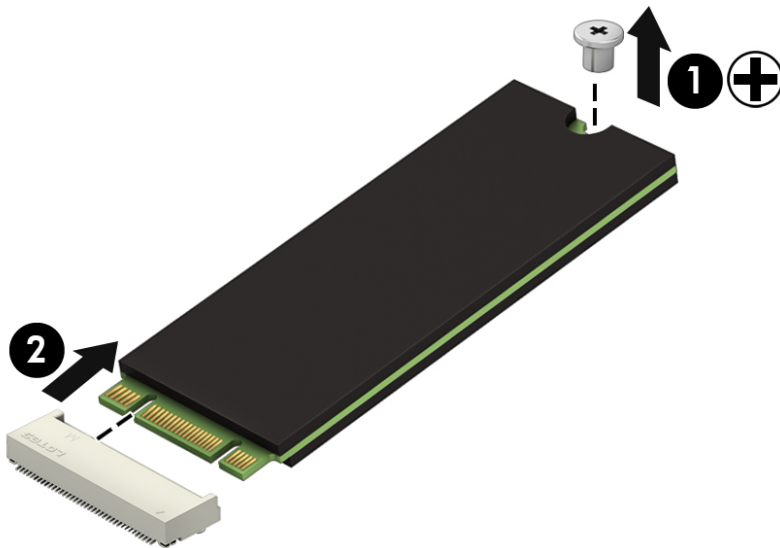
Description	Spare part number
128-MB, M2.2280 solid-state drive (DRAM-less; for use only on computer models equipped with an Intel Core processor)	827560-011

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

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 32](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 39](#)).


Remove the solid-state drive:


1. Remove the Phillips PM2.0×2.0 screw **(1)** that secures the solid-state drive to the computer. (The solid-state drive tilts up.)
2. Remove the solid-state drive **(2)** by pulling the drive away from the slot at an angle.



Reverse this procedure to install the solid-state drive.

Connector board

 **NOTE:** The connector board spare part kit includes an audio jack and a USB port.

 **NOTE:** The connector board spare part kit does not include the connector board cable. The connector board cable is available using spare part numbers 856059-001 (for use only on computer models equipped with an Intel Core processor) and 856060-001 (for use only on computer models equipped with an Intel Pentium or Intel Celeron processor).

Description	Spare part number
For use only on computer models equipped with an Intel Core processor	909095-001
For use only on computer models equipped with an Intel Pentium or Intel Celeron processor	856099-001

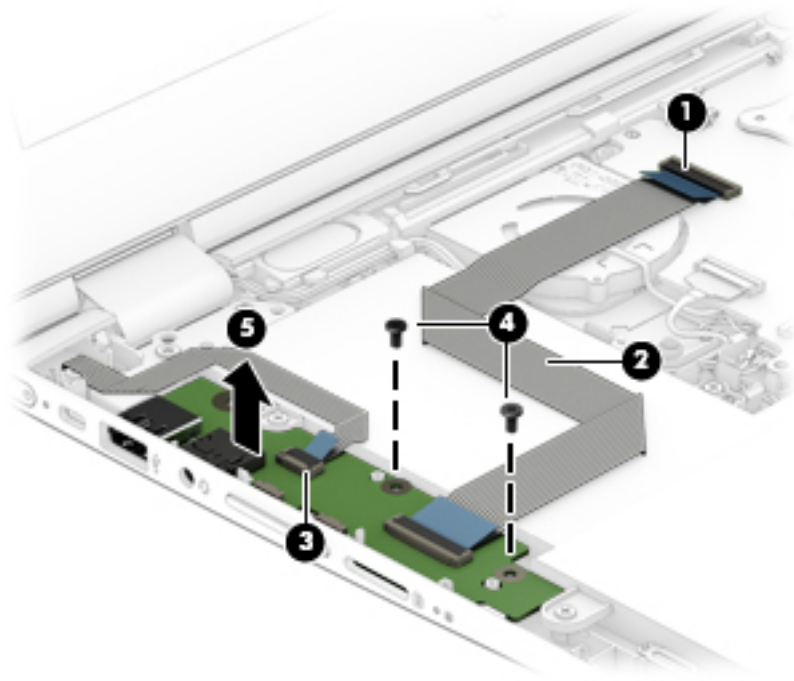
Before removing the connector board, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 32](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 39](#)).

Remove the connector board:

1. Release the ZIF connector **(1)** to which the connector board cable is connected, and then disconnect the connector board cable from the system board.
2. Detach the connector board cable **(2)** from the battery. (The connector board cable is attached to the battery with double-sided adhesive.)
3. Release the ZIF connector **(3)** to which the power button board cable is connected, and then disconnect the power button board cable from the connector board.
4. Remove the two Phillips PM2.0×4.6 screws **(4)** that secure the connector board to the bottom cover.

5. Remove the connector board (5).



Reverse this procedure to install the connector board.

Power button board

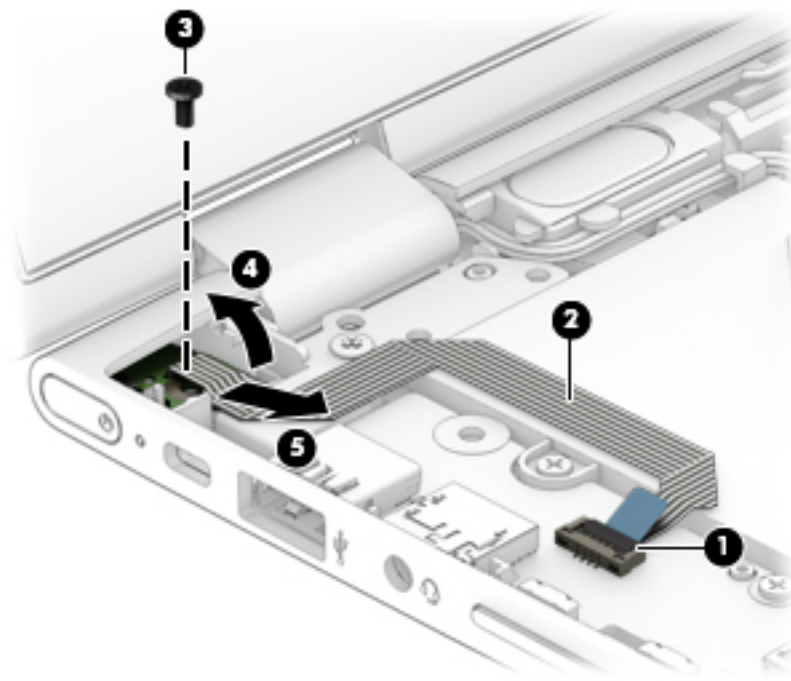
Description	Spare part number
Power button board (includes cable)	856100-001

Before removing the power button board, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 32](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 39](#)).

Remove the power button board:

1. Release the ZIF connector (1) to which the power button board cable is connected, and then disconnect the power button board cable from the connector board.
2. Detach the power button board cable (2) from the battery. (The power button board cable is attached to the battery with double-sided adhesive.)
3. Remove the Phillips PM2.0×4.6 screw (3) that secures the power button board to the bottom cover.
4. Release the power button board (4) by tilting the front edge up until it rests at an angle.
5. Remove the power button board (5) by sliding it forward.



Reverse this procedure to install the power button board.

System board

Description	Spare part number
For use only on computer models with model numbers m1-u100 through m1-u199:	
Equipped with an Intel Core i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, a solid-state drive slot, and the Windows 10 Professional operating system	903213-601
Equipped with an Intel Core i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, a solid-state drive slot, and a non-Windows operating system	903213-001
Equipped with an Intel Core i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, and the Windows 10 Professional operating system	903212-601
Equipped with an Intel Core i3-7100U 2.40-GHz processor (2133-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, and a non-Windows operating system	903212-001
Equipped with an Intel Pentium N4200 1.1-GHz (turbo up to 2.5-GHz) processor (1866-MHz FSB, 2.0-MB L2 cache, quad core, 6-W), a graphics subsystem with UMA memory, and the Windows 10 Professional operating system	903209-601
Equipped with an Intel Pentium N4200 1.1-GHz (turbo up to 2.5-GHz) processor (1866-MHz FSB, 2.0-MB L2 cache, quad core, 6-W), a graphics subsystem with UMA memory, and a non-Windows operating system	903209-001
Equipped with an Intel Celeron N3350 1.1-GHz (turbo up to 2.4-GHz) processor (1866-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, 2-GB of system memory, 32-GB eMMC storage, and the Windows 10 Professional operating system	903211-601
Equipped with an Intel Celeron N3350 1.1-GHz (turbo up to 2.4-GHz) processor (1866-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, 2-GB of system memory, 32-GB eMMC storage, and a non-Windows operating system	903211-001
Equipped with an Intel Celeron N3350 1.1-GHz (turbo up to 2.4-GHz) processor (1866-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, a graphics subsystem with UMA memory, and the Windows 10 Professional operating system	903210-601
Equipped with an Intel Celeron N3350 1.1-GHz (turbo up to 2.4-GHz) processor (1866-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, and a non-Windows operating system	903210-001
For use on all computer models:	
Equipped with an Intel Core i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, a solid-state drive slot, and the Windows 10 Professional operating system	855722-601
Equipped with an Intel Core i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, a solid-state drive slot, and a non-Windows operating system	855722-001
Equipped with an Intel Core i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, and the Windows 10 Professional operating system	855721-601
Equipped with an Intel Core i3-6100U 2.30-GHz processor (1600-MHz FSB, 3.0-MB L3 cache, dual core, 15-W), a graphics subsystem with UMA memory, and a non-Windows operating system	855721-001
Equipped with an Intel Pentium N3710 1.60-GHz (turbo up to 2.56-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, quad core, 6-W), a graphics subsystem with UMA memory, and the Windows 10 Professional operating system	855718-601
Equipped with an Intel Pentium N3710 1.60-GHz (turbo up to 2.56-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, quad core, 6-W), and a non-Windows operating system	855718-001

Description	Spare part number
Equipped with an Intel Celeron N3060 1.60-GHz (turbo up to 2.48-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, 2.0-GB of on-board system memory, a 32-GB eMMC, and the Windows 10 Professional operating system	855720-601
Equipped with an Intel Celeron N3060 1.60-GHz (turbo up to 2.48-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, 2.0-GB of on-board system memory, a 32-GB eMMC, and a non-Windows operating system	855720-001
Equipped with an Intel Celeron N3060 1.60-GHz (turbo up to 2.48-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, and the Windows 10 Professional operating system	855719-601
Equipped with an Intel Celeron N3060 1.60-GHz (turbo up to 2.48-GHz) processor (1600-MHz FSB, 2.0-MB L2 cache, dual core, 6-W), a graphics subsystem with UMA memory, and a non-Windows operating system	855719-001

Before removing the system board, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 32](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 39](#)).



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:

- Memory module shield and memory module (see [Memory module on page 49](#))
- WLAN module (see [WLAN module on page 51](#))
- Fan/heat sink assembly (see [Fan/heat sink assembly on page 53](#))

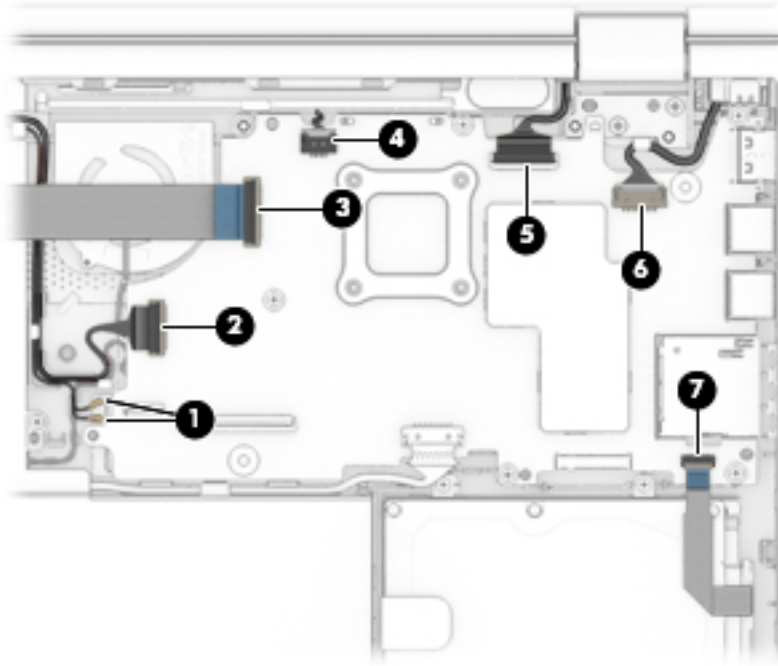
Remove the system board:


1. Disconnect the following cables from the system board:
 - (1) WLAN module antenna cables

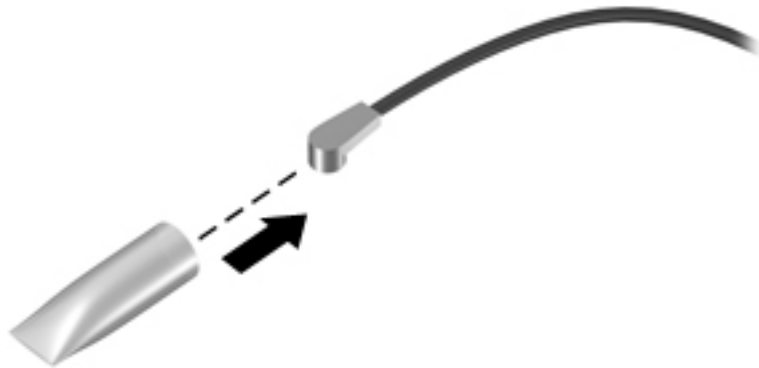


NOTE: The WLAN “Main/#1” antenna cable is connected to the WLAN module “Main” terminal. The WLAN “Aux/#2” antenna cable is connected to the WLAN module “Aux” terminal.

- (2) Display panel ZIF connector cable
- (3) Connector board ZIF connector cable
- (4) Speaker cable
- (5) Webcam/microphone module ZIF connector cable
- (6) Power connector cable
- (7) Hard drive ZIF connector cable

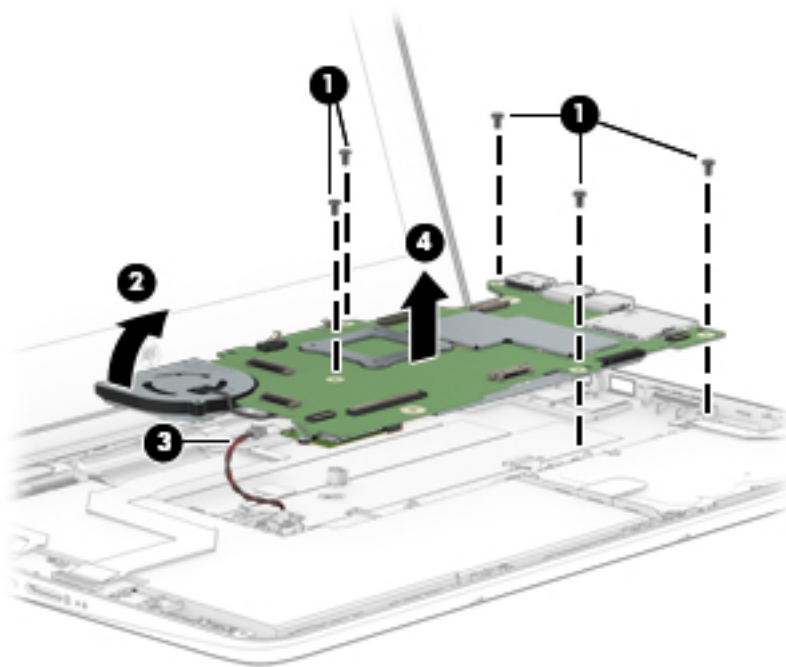


 **NOTE:** If the WLAN antenna cables are not connected to the WLAN module terminals, protective sleeves should be installed on the antenna connectors, as shown in the following illustration.



2. Remove the five Phillips PM2.0×4.6 screws **(1)** that secure the system board to the bottom cover.
3. Lift the left side of the system board **(2)** until the RTC battery cable connector is accessible.
4. Disconnect the RTC battery cable **(3)** from the system board.

5. Remove the system board (4).



Reverse this procedure to install the system board.

Memory module

Description	Spare part number
8-GB (2133, 1.2-V, DDR4; for use only on computer models equipped with an Intel Core processor)	820570-005
8-GB (PCL3, 12800, 1600; for use only on computer models equipped with an Intel Pentium or Intel Celeron processor)	693374-005
4-GB (2133, 1.2-V, DDR4; for use only on computer models equipped with an Intel Core processor)	820569-005
4-GB (PCL3, 12800, 1600; for use only on computer models equipped with an Intel Pentium or Intel Celeron processor)	691740-005

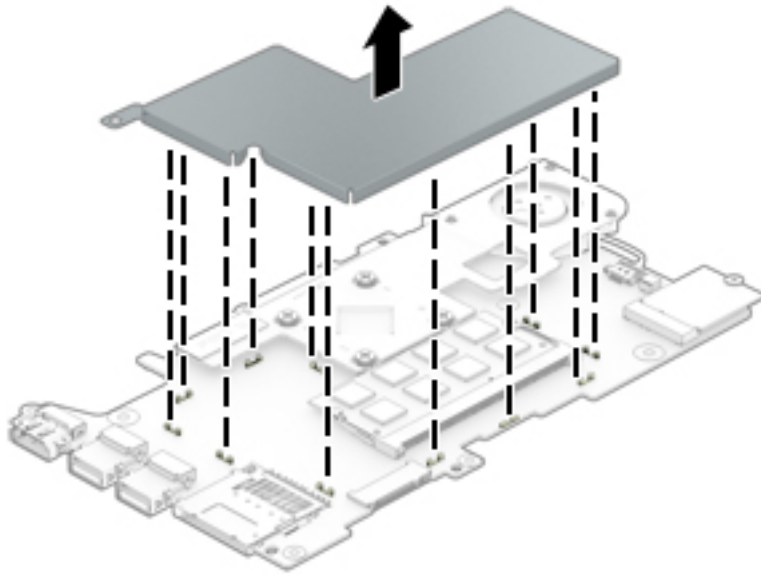
Before removing a memory module, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 32](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 39](#)).
6. Remove the system board (see [System board on page 46](#)).

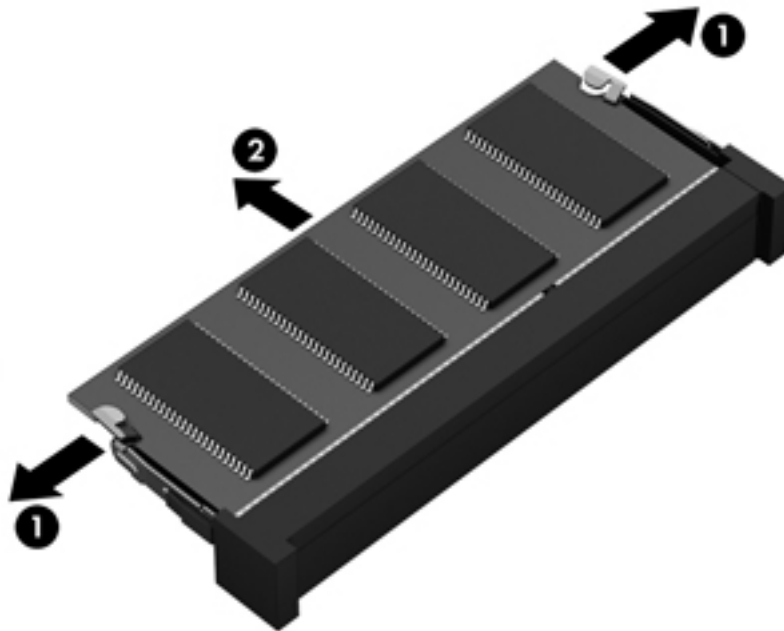
Remove the memory module:

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 available using spare part number 856069-001.




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 a memory module.

WLAN module

Description	Spare part number
Intel 3165NGWG 1 ac 1×1 + Bluetooth 4.0 LE PCIe+USB NGFF 2230 Combo Adapter for use in all countries and regions	806723-005
Realtek RTL8723BE 802.11b/g/n 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter for use in all countries and regions except Brazil	855106-855
Realtek RTL8723BE 802.11b/g/n 1×1 Wi-Fi + Bluetooth 4.0 Combo Adapter for use only in Brazil	792610-205

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

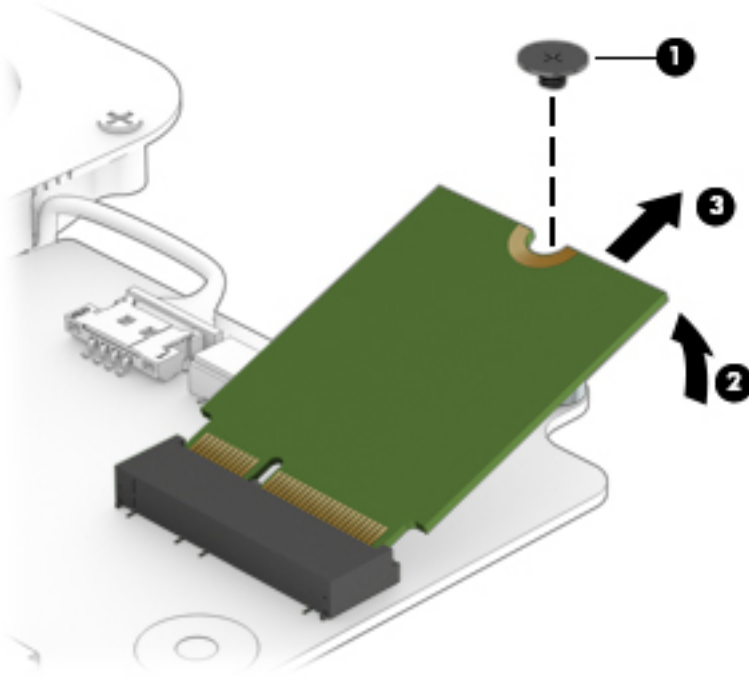
Before removing the WLAN module, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 32](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 39](#)).
6. Remove the system board (see [System board on page 46](#)).

Remove the WLAN module:

1. Turn the system board upside down with the front toward you.
2. Remove the Phillips PM2.0×2.0 screw **(1)** that secures the WLAN module to the computer. (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 replacement thermal material.

Description	Spare part number
For use only on computer models equipped with an Intel Core processor	855996-001
For use only on computer models equipped with an Intel Pentium N4200 or Intel Celeron N3350 processor	903214-001
For use only on computer models equipped with an Intel Pentium M3710 or Intel Celeron N3060 processor	855997-001
For use only on computer models equipped with an Intel Celeron N3060 processor and eMMC	855998-001

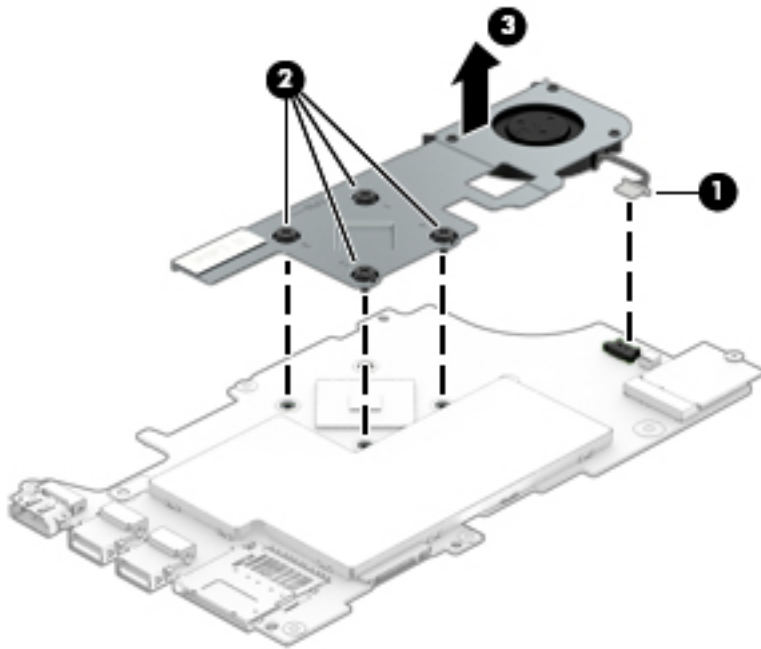
Before removing the fan/heat sink assembly, follow these steps:


1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 32](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 39](#)).
6. Remove the system board (see [System board on page 46](#)).

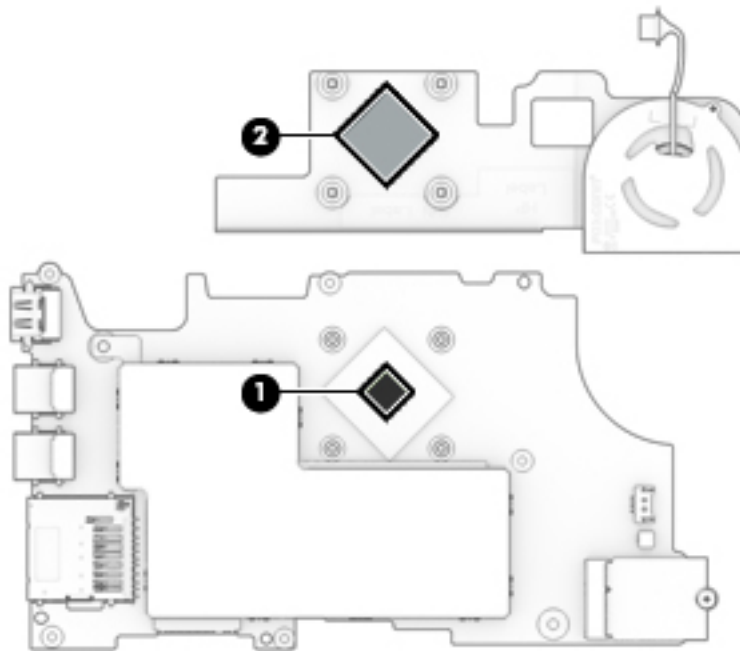
Remove the fan/heat sink assembly:

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 Phillips PM2.0×6.2 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.

Speakers

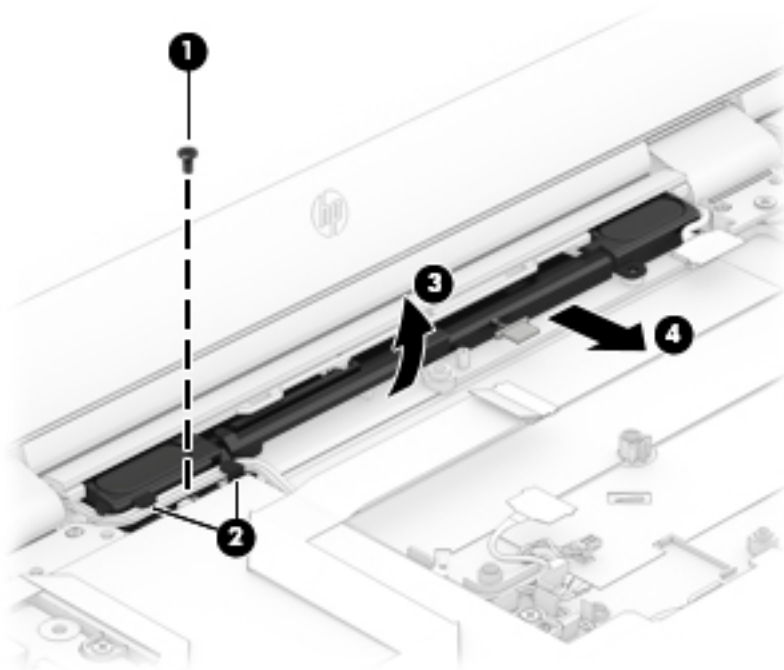
Description	Spare part number
Speakers (includes cable)	856108-001

Before removing the speakers, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 32](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 39](#)).
6. Remove the system board (see [System board on page 46](#)).


Remove the speakers:

1. Remove the Phillips PM2.0×4.6 screw **(1)** that secures the speakers to the bottom cover.
2. Release the display panel cable and the wireless antenna cables from the routing clips **(2)** built into the speakers.
3. Release the speakers **(3)** by tilting the front edge up.
4. Remove the speakers **(4)** by sliding them forward.



Reverse this procedure to install the speakers.

Display assembly

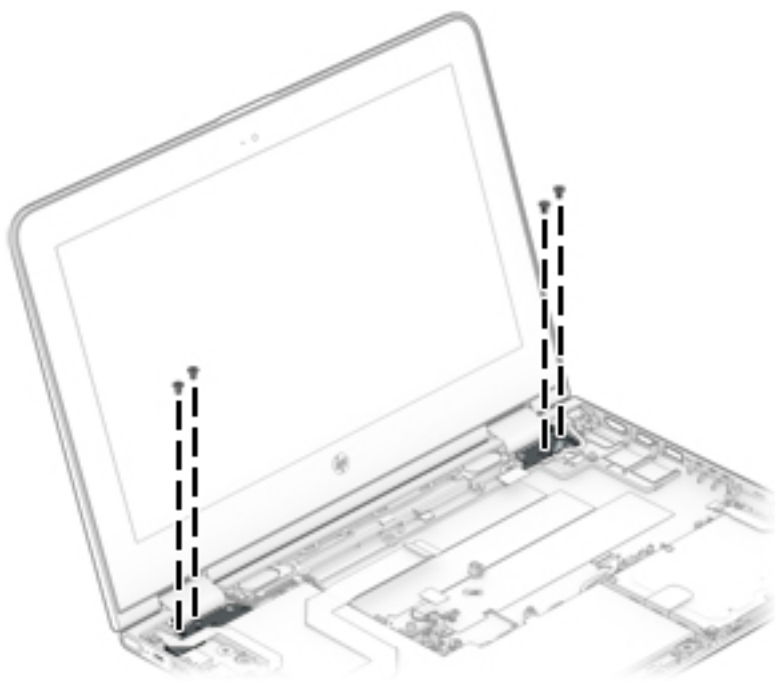
 **NOTE:** The display assembly is spared at the subcomponent level only. For display assembly spare part information, see the individual removal subsections.

Before removing the display assembly, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 32](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 39](#)).
6. Remove the system board (see [System board on page 46](#)).

Remove the display assembly:

1. Tilt the display forward to an upright position.
2. Remove the four Phillips PM2.5×4.2 screws that secure the display assembly to the bottom cover.



3. Tilt the top edge of the display **(1)** back to release the display hinges from the alignment pins upon which they rest.
4. Slide the bottom edge of the display assembly forward **(2)** until it releases from the bottom cover.

5. Remove the display assembly (3).



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

- a. Use a case utility tool (1) or similar plastic, flat-edged tool to separate the bottom edge (2) of the display panel assembly from the display back cover.

CAUTION: Before turning the display panel assembly upside down, make sure the work surface is clear of tools, screws, and any other foreign objects. Failure to follow this caution can result in damage to the display panel assembly.

- b. Swing the top edge (3) of the display panel assembly up and forward until the display panel assembly rests upside down in front of the display back cover.



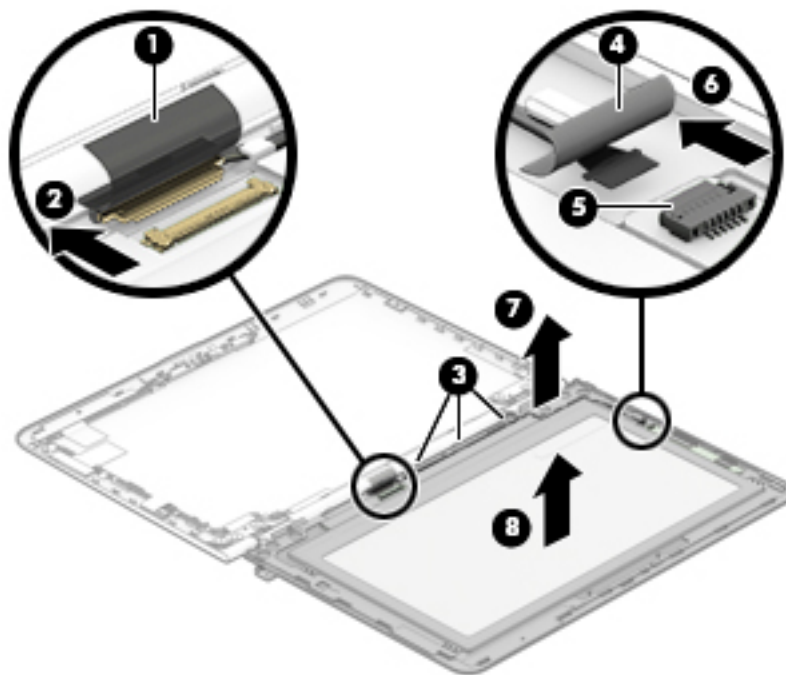
- c. Release the adhesive support strip (1) that secures the display panel cable connector to the display panel.

- d. Disconnect the display panel cable **(2)** from the display panel.
- e. Release the display panel cable from the retention clips **(3)** built into the display bezel.
- f. Release the adhesive support strip **(4)** that secures the TouchScreen board cable connector to the TouchScreen board.
- g. Release the ZIF connector **(5)** to which the TouchScreen board cable is connected, and then disconnect the TouchScreen board cable **(6)** from the TouchScreen board.
- h. Remove the display panel cable **(7)**.

The display panel cable is available using spare part numbers 856063-001 (for use only on computer models with model numbers m1-u100 through m1-u199) and 902941-001 (for use only on computer models with model numbers m1-u000 through m1-u099) and includes the TouchScreen board cable.

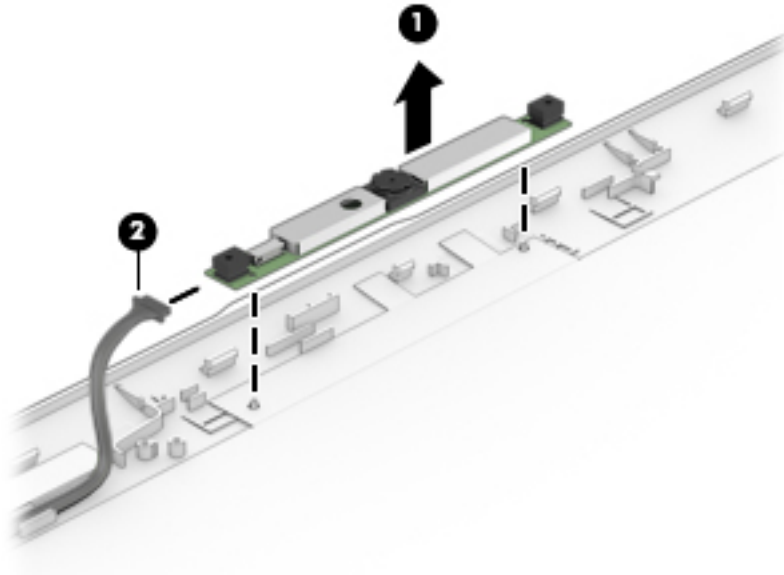
- i. Remove the display panel assembly **(8)**.

The 11.6-in, HD, AG (1366×768), WLED, UWVA, TouchScreen display panel assembly is available using spare part number 856101-001.



- 7. 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.)

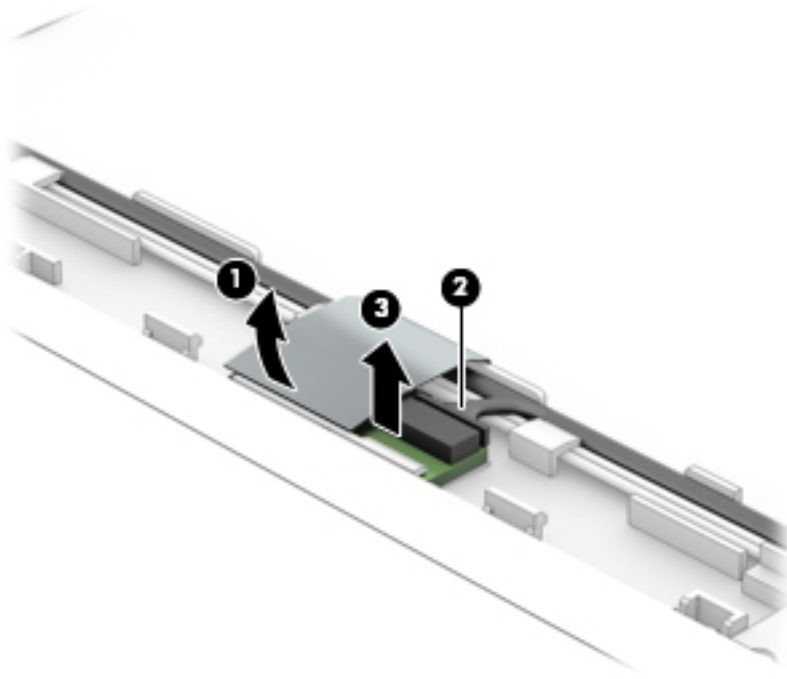
- c. Disconnect the webcam/microphone module cable **(2)** from the webcam/microphone module.



- d. Remove the webcam/microphone module.
The webcam/microphone module is available using spare part number 833962-005.

8. If it is necessary to replace the G-sensor board:
 - a. Remove the display panel assembly.
 - b. Release the shielding tab **(1)** that covers the G-sensor board.
 - c. Disconnect the G-sensor board cable **(2)** from the G-sensor board.

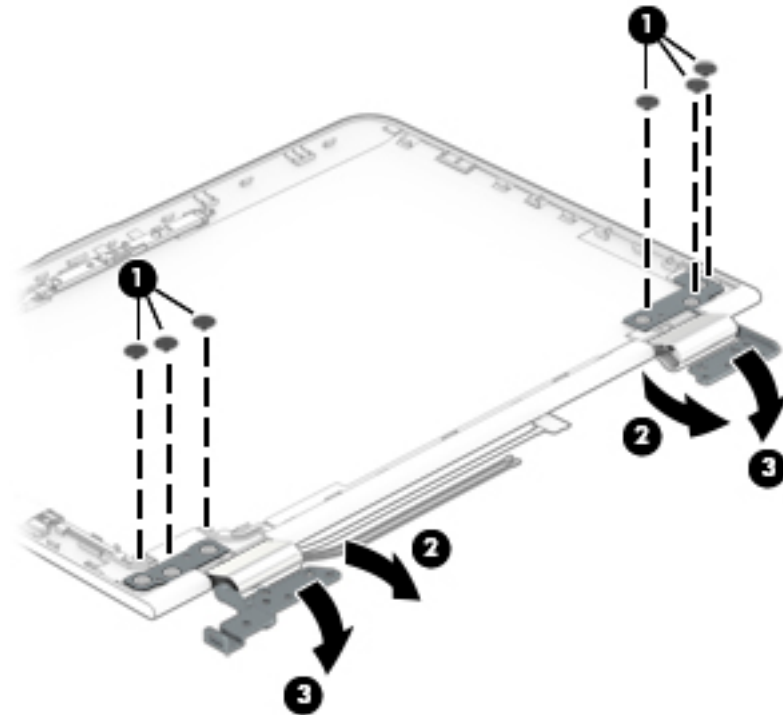
- d. Detach the G-sensor board **(3)** from the display back cover. (The G-sensor board is secured to the display back cover with double-sided adhesive.)



- e. Remove the G-sensor board.
The G-sensor board is available using spare part number 856098-001.
9. If it is necessary to replace the display hinges:
 - a. Remove the display panel assembly.
 - b. Remove the six Phillips PM2.5×3.0 broad head screws **(1)** that secure the display hinges to the display back cover.
 - c. Release the display hinges **(2)** by swinging them outward.

- d. Remove the display hinges **(3)**.

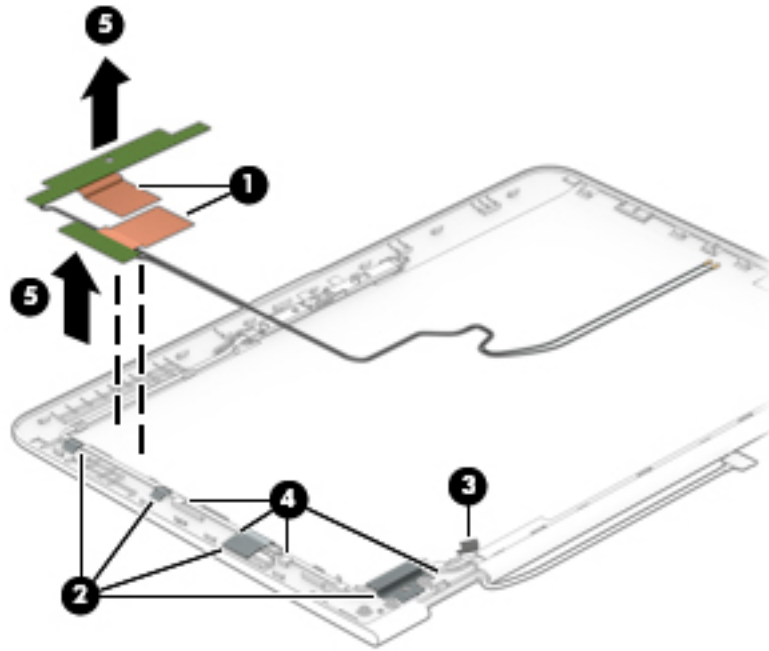
The display hinges are available using spare part number 856070-001 and include the display hinge covers.



10. 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 shielding tabs **(2)** that secure the wireless antenna cables.
 - e. Detach the retention tape **(3)** that secures the wireless antenna cables.
 - f. Release the wireless antenna cables from the routing clips **(4)** and channel built into the display back cover.

- g.** Remove the wireless antenna cables and transceivers **(5)**.

The wireless antenna cables and transceivers are available using spare part number 856050-001.

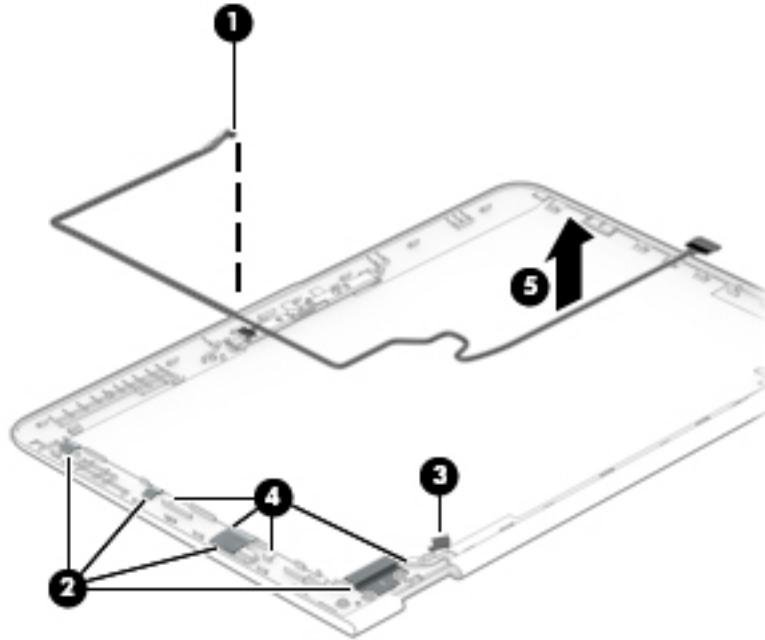


- 11.** If it is necessary to replace the webcam/microphone module cable:

- a.** Remove the display panel assembly.
- b.** Remove the display hinges.
- c.** Remove the wireless antenna cables and transceivers.
- d.** Disconnect the webcam/microphone module cable from the webcam/microphone module.
- e.** Detach the retention tape **(2)** that secures the webcam/microphone module cable.
- f.** Release the shielding tabs **(3)** that secure the webcam/microphone module cable.
- g.** Release the webcam/microphone module cable from the routing clips **(4)** and channel built into the display back cover.

h. Remove the webcam/microphone module cable (5).

The webcam/microphone module cable is available using spare part numbers 856064-001 (for use only on computer models equipped with an Intel Core processor) and 856065-001 (for use only on computer models equipped with an Intel Pentium or Intel Celeron processor) and includes the G-sensor board cable.



Reverse this procedure to reassemble and install the display assembly.

Power connector cable

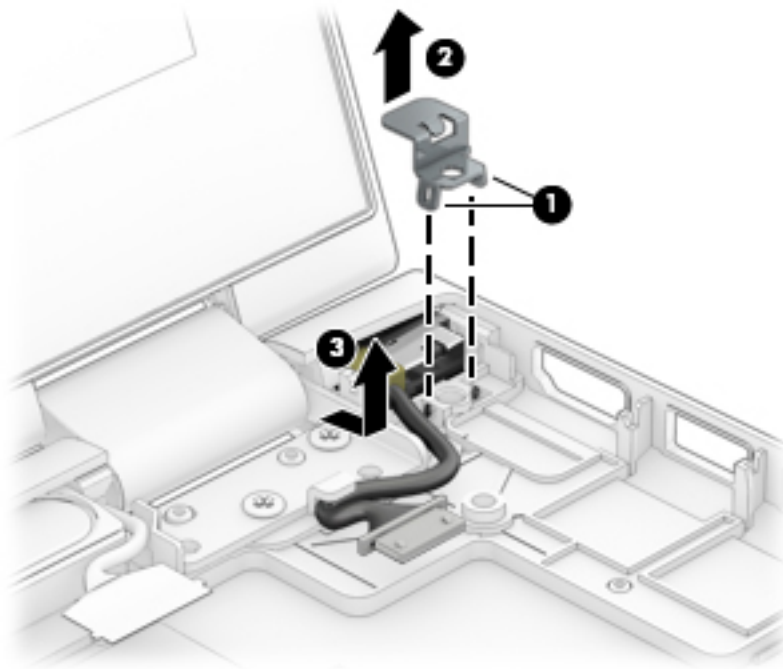
Description	Spare part number
Power connector cable	855995-001

Before removing the power connector cable, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the keyboard/top cover (see [Keyboard/top cover on page 32](#)).
5. Disconnect the battery cable from the system board (see [Battery on page 39](#)).
6. Remove the system board (see [System board on page 46](#)).

Remove the power connector cable:


1. Detach the clips **(1)** on the power connector cable bracket from the tabs built into the bottom cover.
2. Remove the power connector cable bracket **(2)**.
3. Remove the power connector cable **(3)** by sliding it forward, and then lifting it up.



Reverse this procedure to install the power connector cable.

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 65](#)).
 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 66](#).

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 67](#).


- b. Hard drive

- c. BIOS

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

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

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

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

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

Download the latest UEFI version

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

Download any version of UEFI for a specific product

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

3. Use the categories listed to find your product.

– or –

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

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

8 Specifications

Dimensions

	Metric	U.S.
computer dimensions		
Width	30.6 cm	12.01 in
Depth	20.8 cm	8.19 in
Height	1.93 cm	0.76 in
Weight with hard drive installed	1.4 kg	3.11 lbs
Weight with solid-state drive installed	1.3 kg	2.93 lbs

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%	
Nonoperating	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

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



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

9 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 71](#). For information on the recovery options that are available using the recovery media, see [Using Windows tools on page 72](#).
- 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 73](#).

 **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 72](#).

- 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 73](#).

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 73](#). If you have not already created recovery media, see [Creating HP Recovery media \(select products only\) on page 71](#).
- 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 73](#).
- 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 76](#).

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 71](#).


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 71](#).
- 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 71](#).
- 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 75](#).

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 71](#).



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.

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 all countries 113

Requirements for specific countries and regions

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

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

1. the flexible cord must be Type H05VV-F, 3-conductor, 1.0-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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