



HP Spectre^{XT}

Maintenance and Service Guide
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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
Product Name	HP ENVY Spectre XT Ultrabook PC
Processors	Intel® Dual Core™ i7-3667U (2.0GHz, turbo up to 3.1GHz) 1600MHz/4M L3 Intel® Dual Core™ i7-3517U (1.9GHz, turbo up to 3.0GHz) 1600MHz/4M L3 Intel® Dual Core™ i7-3537U (2.0GHz, turbo up to 3.1GHz) 1600MHz/4M L3 Intel® Dual Core™ i5-3317U (1.7GHz, turbo up to 2.6GHz) 1600MHz/3M L3 Intel® Dual Core™ i5-3337U (1.8GHz, turbo up to 2.7GHz) 1600MHz/3ML3
Chipset	Intel® HM76 - Platform Controller Hub (PCH - Panther Point-M)
Graphics	Intel® HD Graphics 4000 discrete-class graphics. Supports BD and or HD-DVD playback with HD decode, and DX11 support and HDMI support
Panel	13.3" HD WLED BrightView (1366x768) (3.64mm) SVA at 45% Color Gamut Slim, Shuriken, 200 nits All display assemblies include 2 wireless local area network (WLAN) antenna cables. Supports 16:9 wide aspect ratio Support for non-flush glass panel cover (non-PMMA)
Memory	Supports up to 4GB max system memory (on-board) DDR3L - 1600MHz dual channel support Supports up to 4096MB (256M x 16 x 8PCs) - 1600 MHz
Drives	mSATA SSD configurations: <ul style="list-style-type: none">• 128-GB SSD• 256-GB SSD
Audio and video	Dual array digital microphones Two integrated stereo speakers Separate discrete amplifiers for headphone and speakers Beats signature audio profile HP TrueVision high-definition webcam (fixed, no tilt, 1280×720 by 30 frames per second)
Ethernet	Integrated 10/100/1000 GB network interface card (NIC)
Wireless	Integrated WLAN options by way of wireless module Two WLAN antennas built into display assembly Supports the following WLAN formats: <ul style="list-style-type: none">• Intel® Centrino® Advanced-N 6235 + Bluetooth combo w/* 2 Antennas (802.11 a/g/n)
External media card	Push-push insertion/removal

Category	Description
	<p>HP Multi-Format Digital Media Reader supports the following digital card formats:</p> <ul style="list-style-type: none"> • MultiMediaCard • Secure Digital (SD) Card • Secure Digital High-Capacity (SDHC) Card • Secure Digital Extended Capacity (SDxC) Card
Ports	<ul style="list-style-type: none"> • 3-pin AC power (non-smart pin) • Audio-in (mono microphone), supports jack detection • Audio-out (stereo headphone), supports jack detection • HDMI version 1.4b supporting 1920p, 1920 × 1200 @ 60Hz • RJ-45 (Ethernet, includes link and activity lights) • USB 3.0 port • USB 2.0 charging port
Backlit keyboard/ pointing devices	<p>Backlit, island-style keyboard in black finish</p> <p>TouchPad with multi-touch gestures</p> <p>Taps enabled as default</p>
Power requirements	<p>Supports the following HP AC adapters:</p> <ul style="list-style-type: none"> • 65-W (non-smart) PFC RC V EM 3-wire HP AC adapter <p>Supports the following batteries:</p> <ul style="list-style-type: none"> • 4-cell, 45WHr 3.05 AH Li-ion battery
Operating system	<p>Preinstalled:</p> <ul style="list-style-type: none"> • Windows 8 Standard • Windows 8 Professional
Serviceability	<p>End-user replaceable parts:</p> <ul style="list-style-type: none"> • AC adapter

2 External component identification


Display



Component	Description
(1) Internal display switch	Turns off the display and initiates Sleep if the display is closed while the power is on. NOTE: The internal display switch is not visible from the outside of the computer.
(2) Internal microphones (2)	Record sound.
(3) Webcam light	On: The webcam is in use.
(4) HP TrueVision HD Webcam	Records video, captures still photographs, and allows video conferences and online chat by means of streaming video. To use the webcam, type <code>o</code> , and then select CyberLink YouCam .

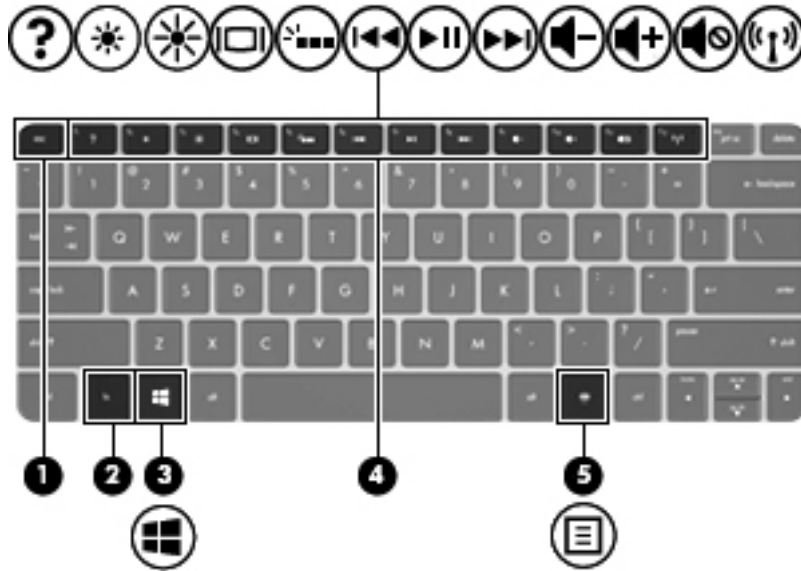
Button, speakers, and other components





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 in the Sleep state, press the button briefly to exit Sleep.• When the computer is in Hibernation, press the button down briefly to exit Hibernation. <p>CAUTION: Pressing and holding down the power button will result in the loss of unsaved information.</p> <p>If the computer has stopped responding and Microsoft® Windows® shutdown procedures are ineffective, press and hold the power button down for at least 5 seconds to turn off the computer.</p> <p>NOTE: For select models, the Intel® Rapid Start Technology feature is enabled at the factory. Rapid Start Technology allows your computer to resume quickly from inactivity. For more information, see the <i>User guide</i>.</p> <p>To learn more about your power settings:</p> <ol style="list-style-type: none">1. From the Start screen, type <code>p</code>.2. In the search box, type <code>power</code>.3. Select Settings, and then select Power options from the list of applications, or see the <i>User guide</i>.
(2) WLAN antennas (2)*	Send and receive wireless signals to communicate with wireless local area networks (WLANs).

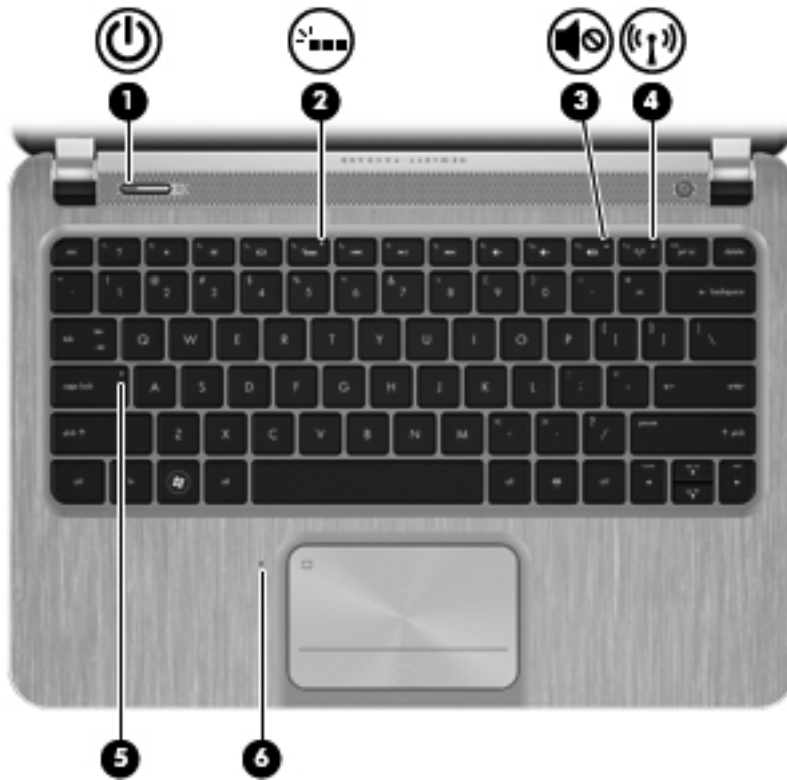
Component	Description
(3) Speakers (4)	Produce sound.
<p>NOTE: Two of the speakers are on the bottom of the computer, and cannot be seen from the top of the computer.</p>	
<p>*The antennas are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas free from obstructions. For wireless regulatory notices, see the section of the <i>Regulatory, Safety, and Environmental Notices</i> that applies to your country or region. These notices are located in HP Support Assistant.</p>	





Keys



Component	Description
(1) esc key	Displays system information when pressed in combination with the fn key.
(2) fn key	Executes frequently used system functions when pressed in combination with the fn or the esc key.
(3)  Windows button	Returns you to the Start screen from an open app or the Desktop. NOTE: Pressing the Windows button again will return you to the previous screen.
(4) Action keys	Execute frequently used system functions.
(5)  Windows applications key	Displays options for a selected object.

Lights



Component	Description
(1)  Power light	<ul style="list-style-type: none"> • White: The computer is on. • Blinking white: The computer is in the Sleep state, which is an energy-saving mode. The computer shuts off power to the display and other unneeded components. • Off: The computer is off or in Hibernation. Hibernation is an energy-saving mode that uses the least amount of power. <p>NOTE: For select models, the Intel® Rapid Start Technology feature is enabled at the factory. Rapid Start Technology allows your computer to resume quickly from inactivity. For more information, see the <i>User guide</i>.</p>
(2)  Keyboard backlight indicator	<p>Indicates that the keyboard backlight feature off or on.</p> <p>NOTE: To conserve battery power, turn off this feature.</p>
(3)  Mute light	<ul style="list-style-type: none"> • Amber: Computer sound is off. • Off: Computer sound is on.
(4)  Wireless light	<ul style="list-style-type: none"> • White: An integrated wireless device, such as a wireless local area network (WLAN) device and/or a Bluetooth® device, is on. • Amber: All wireless devices are off.

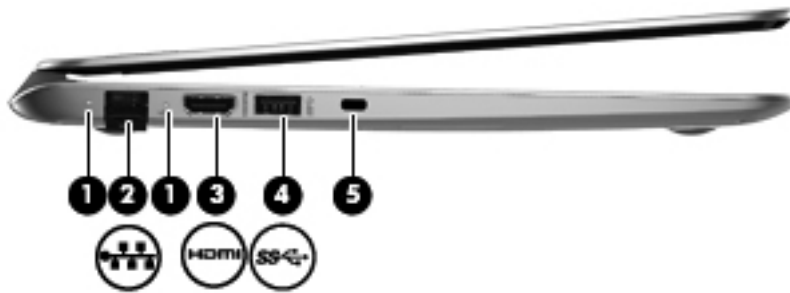
Component	Description
(5) Caps lock light	On: Caps lock is on, which switches the keys to all capital letters.
(6) TouchPad light (select models only)	<ul style="list-style-type: none"> On: The TouchPad is off Off: The TouchPad is on.





TouchPad



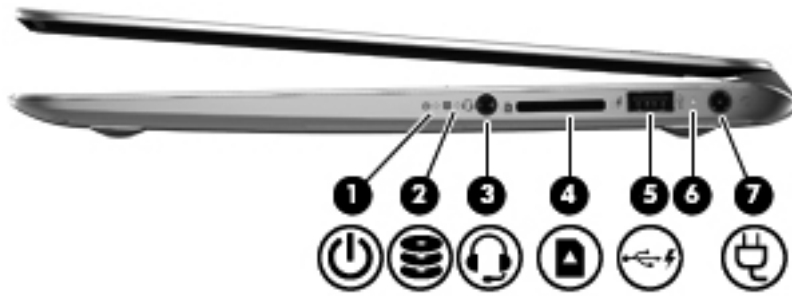
Component	Description
(1) TouchPad on/off button	Turns the TouchPad on or off.
(2) TouchPad light	<ul style="list-style-type: none"> On: The TouchPad is off. Off: The TouchPad is on.
(3) TouchPad zone	Moves the on-screen pointer and selects or activates items on the screen.
(4) Left TouchPad button	Functions like the left button on an external mouse.
(5) Right TouchPad button	Functions like the right button on an external mouse.






Left side




Component	Description
(1)  RJ-45 (network) lights (2)	<ul style="list-style-type: none"> Green: The network is connected. Amber: Activity is occurring on the network.
(2)  RJ-45 (network) jack	Connects a network cable.
(3)  HDMI port	Connects an optional video or audio device, such as a high-definition television, or any compatible digital or audio device.
(4)  USB 3.0 port	Connects an optional USB 3.0 device and provides enhanced USB power performance. NOTE: For details about different types of USB ports, see the <i>User guide</i> .
(5) Security cable slot	Attaches an optional security cable to the computer. NOTE: The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.

Right side



Component	Description
(1) 	<p>Power light</p> <ul style="list-style-type: none"> White: The computer is on. Blinking white: The computer is in the Sleep state, which is an energy-saving mode. The computer shuts off power to the display and other unneeded components. Off: The computer is off. <p>NOTE: For select models, the Intel® Rapid Start Technology feature is enabled at the factory. Rapid Start Technology allows your computer to resume quickly from inactivity. For more information, see the <i>User guide</i>.</p>
(2) 	<p>Hard drive light</p> <ul style="list-style-type: none"> Blinking white: The hard drive is being accessed.
(3) 	<p>Audio-out (headphone) jack/Audio-in (microphone) jack</p> <p>Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects an optional headset microphone.</p> <p>WARNING! To reduce the risk of personal injury, adjust the volume before using headphones, earbuds, or a headset. For additional safety information, refer to the <i>Regulatory, Safety, and Environmental Notices</i>.</p> <p>NOTE: When a device is connected to the jack, the computer speakers are disabled.</p> <p>NOTE: Be sure that the device cable has a 4-conductor connector that supports both audio-out (headphone) and audio-in (microphone).</p>
(4) 	<p>Digital Media Slot</p> <p>Supports the following digital card formats:</p> <ul style="list-style-type: none"> Secure Digital (SD) Memory Card Secure Digital High Capacity (SDHC) Memory Card Secure Digital Extended Capacity (SDXC) Memory Card Ultra High Speed MultiMediaCard (UHS/MMC)
(5) 	<p>USB 2.0 charging port</p> <p>Connects an optional USB device. The USB 2.0 charging port can also charge select models of cell phones and MP3 players, even when the computer is off.</p> <p>NOTE: For details about different types of USB ports, see the <i>User guide</i>.</p>

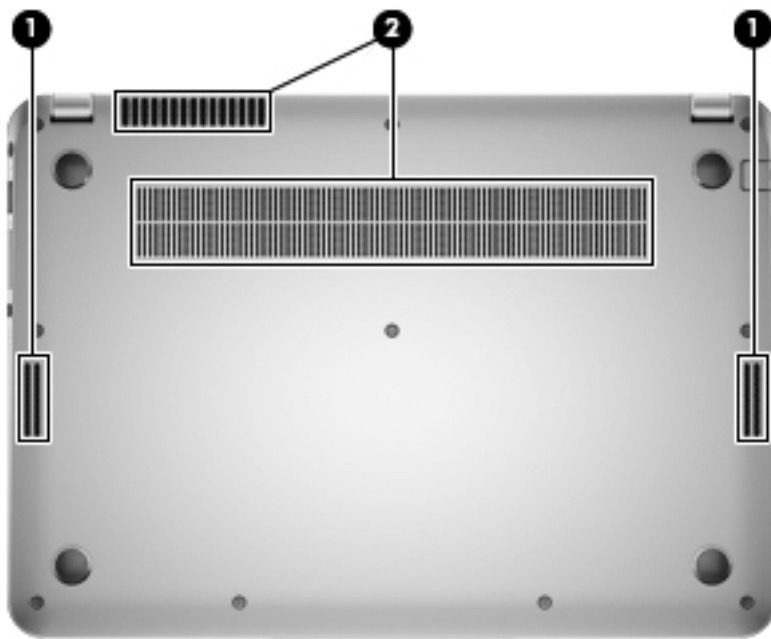
Component		Description
(6)	AC adapter/battery light	<ul style="list-style-type: none">• White: The AC adapter is connected and the battery is charged.• Amber: The AC adapter is connected and the battery is charging.• Off: The computer is using DC power.
(7)	 Power connector	Connects an AC adapter.

Rear



Component	Description
Vent	Enables 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.

Bottom

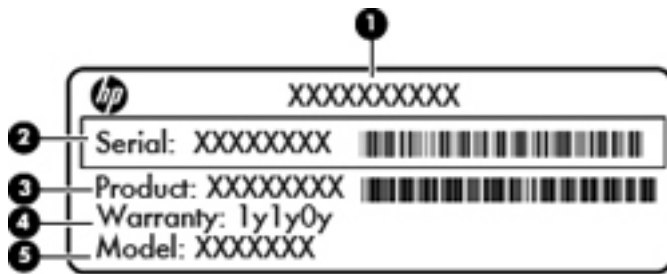


Component	Description
(1) Speakers (4)	Produce sound. NOTE: Two of the speakers are not shown in this illustration.
(2) Vents (2)	Enable airflow to cool internal components. NOTE: The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.

3 Illustrated parts catalog

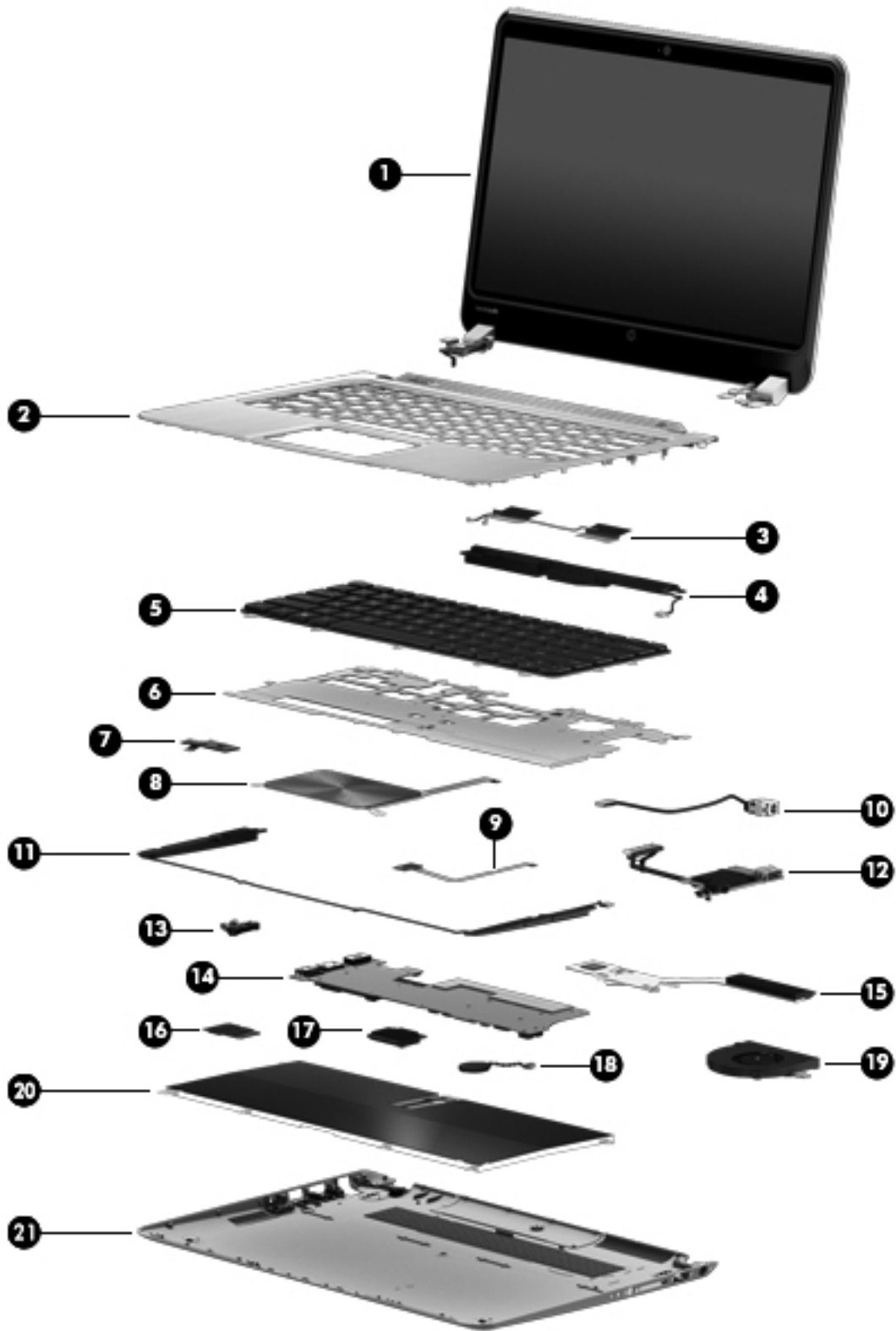
Service tag

When ordering parts or requesting information, provide the computer serial number and model description provided on the service tag, which is located on the bottom of the computer.



Item	Description	Function
(1)	Product name	This is the product name affixed to the front of the computer.
(2)	Serial number (s/n)	This is an alphanumeric identifier that is unique to each product.
(3)	Part number/Product number (p/n)	This number provides specific information about the product's hardware components. The part number helps a service technician to determine what components and parts are needed.
(4)	Warranty period	This number describes the duration of the warranty period for the computer.
(5)	Model description (select models only)	This is the alphanumeric identifier used to locate documents, drivers, and support for the computer.

Computer major components

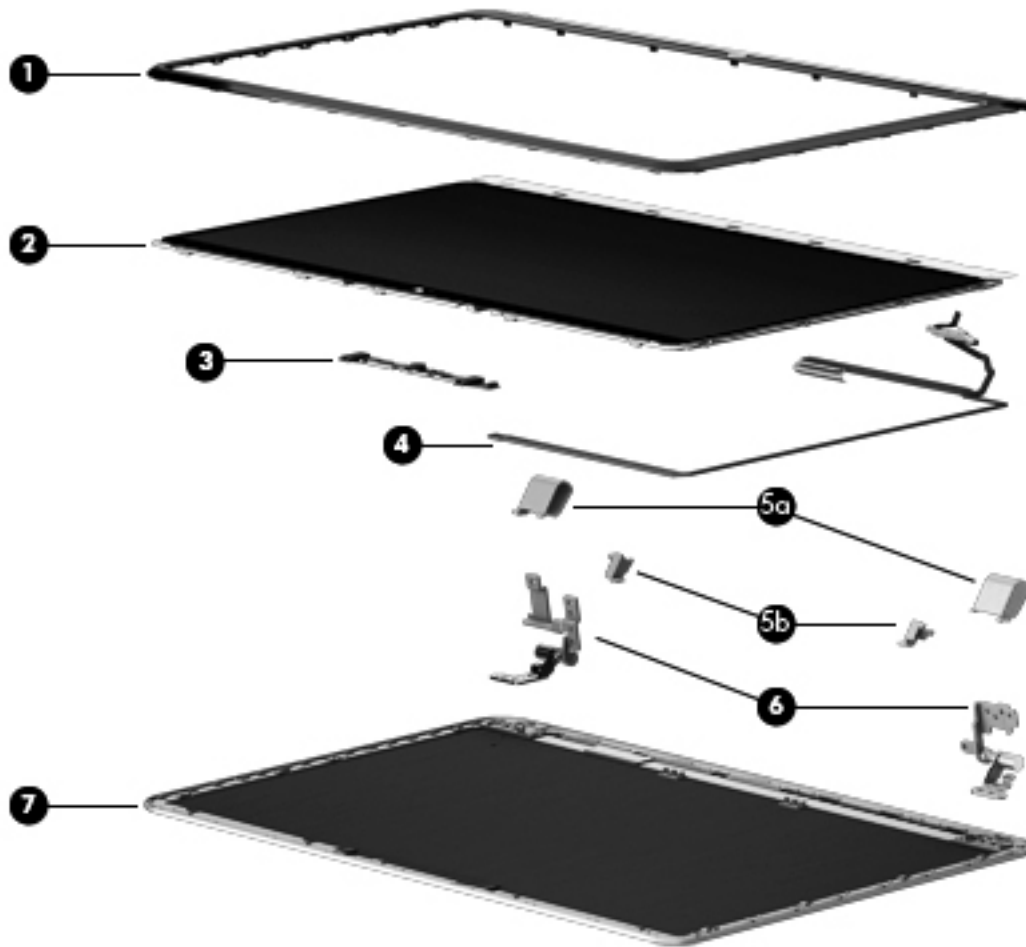


Item	Component	Spare part number
(1)	Display panel	692891-001
(2)	Top cover	689961-001 689962-001
(3)	Antenna	692885-001
(4)	Speaker kit (rear)	689952-001
(5)	Backlit keyboard (with backlight) (includes keyboard cable):	
	Backlit keyboard in black finish:	
	For use in the United States	700381-001
	For use in the United Kingdom and Singapore	700381-031
	For use in Germany	700381-041
	For use in France	700381-051
	For use in Italy	700381-061
	For use in Spain	700381-071
	For use in Portugal	700381-131
	For use in Turkey	700381-141
	For use in Greece	700381-151
	For use in Latin America	700381-161
	For use in Saudi Arabia	700381-171
	For use in Russia	700381-251
	For use in Thailand	700381-281
	For use in Belgium	700381-A41
	For use in Taiwan	700381-AB1
	For use in South Korea	700381-AD1
	For use in the Netherlands	700381-B31
	For use in Israel	700381-BB1
	For use in Switzerland	700381-BG1
	For use in Canada	700381-DB1
	For use in Denmark, Finland, Norway	700381-DH1
(6)	Backlit keyboard bracket	689939-001
(7)	Power button board	689944-001
(8)	TouchPad assembly (includes cable)	
	TouchPad button board	689946-001
	TouchPad button board	712663-001
(9)	TouchPad LED board	689945-001

Item	Component	Spare part number
(10)	Power connector cable	689944-001
(11)	Speakers (front)	689951-001
(12)	USB/Audio board (includes media card reader)	689947-001
(13)	RJ-45 cover	689948-001
(14)	System board	
	System board for use only with computer models equipped with UMA Intel Core i5–3317U processor.	689957-001
	System board for use only with computer models equipped with UMA Intel Core i7–3517U processor.	689958-001
	System board for use only with computer models equipped with UMA Intel Core i7–3667U processor.	689959-001
	System board for use only with computer models equipped with UMA Intel Core i5–3317U processor in the People's Republic of China and Russia	693607–001
	System board for use only with computer models equipped with UMA Intel Core i7–3517U processor in the People's Republic of China and Russia	693608–001
	System board for use only with computer models equipped with UMA Intel Core i7–3667U processor in the People's Republic of China and Russia	693609–001
	System board for use only with computer models equipped with Intel Core i5–3317U processor	702763–001
	System board for use only with computer models equipped with Intel Core i5–3317U processor for Windows 8 Standard	702763–501
	System board for use only with computer models equipped with Intel Core i5–3317U for Windows 8 Professional	702763–601
	System board for use only with computer models equipped with Intel Core i7–3517U processor	702764–001
	System board for use only with computer models equipped with Intel Core i7–3517U processor for Windows 8 Standard	702764–501
	System board for use only with computer models equipped with Intel Core i7–3517U processor for Windows 8 Professional	702764–601
	System board for use only with computer models equipped with Intel Core i7–3667U processor	702765–001
	System board for use only with computer models equipped with Intel Core i7–3667U processor for Windows 8 Standard	702765–501
	System board for use only with computer models equipped with Intel Core i7–3667U processor for Windows 8 Professional	702765–601
	System board for use only with computer models equipped with Intel Core i5–3317U processor in the People's Republic of China and Russia	702766–001
	System board for use only with computer models equipped with Intel Core i5–3317U processor for Windows 8 Standard in the People's Republic of China and Russia	702766–501
	System board for use only with computer models equipped with Intel Core i7–3517U processor in the People's Republic of China and Russia	702767–001

Item	Component	Spare part number
	System board for use only with computer models equipped with Intel Core i7–3517U processor for Windows 8 Standard in the People's Republic of China and Russia	702767–501
	System board for use only with computer models equipped with Intel Core i7–3667U processor in the People's Republic of China and Russia	702768–001
	System board for use only with computer models equipped with Intel Core i7–3667U processor for Windows 8 Standard in the People's Republic of China and Russia	702768–501
	System board for use only with computer models equipped with Intel Core i7–3537U processor	714758–001
	System board for use only with computer models equipped with Intel Core i7–3537U processor for Windows 8 Standard	714758–501
	System board for use only with computer models equipped with Intel Core i7–3537U processor for Windows 8 Professional	714758–601
	System board for use only with computer models equipped with Intel Core i5–3337U processor	714759–001
	System board for use only with computer models equipped with Intel Core i5–3337U processor for Windows 8 Standard	714759–501
	System board for use only with computer models equipped with Intel Core i5–3337U processor for Windows 8 Professional	714759–601
	System board for use only with computer models equipped with Intel Core i7–3537U processor in the People's Republic of China and Russia	714760–001
	System board for use only with computer models equipped with Intel Core i7–3537U processor for Windows 8 Standard in the People's Republic of China and Russia	714760–501
	System board for use only with computer models equipped with Intel Core i5–3337U processor in the People's Republic of China and Russia	714761–001
	System board for use only with computer models equipped with UMA Intel Core i5–3337U processor for Windows 8 Standard in the People's Republic of China and Russia	714761–501
(15)	Heat sink	689938-001
(16)	Solid-state drive	
	128-GB, SSD	689953-001
	256-GB	689955-001
(17)	WLAN	670292-005
(18)	RTC battery:	686922-001
(19)	Fan	692890-001
(20)	Battery:	
	4-cell, 4.5Whr 3.05AH Li-ion battery	685989-001
(21)	Base enclosure	689934-001

Display assembly subcomponents



Item	Component	Spare part number
(1)	Display bezel	692888-001
(2)	13.3" HD, WLED, BrightView display panel	692891-001
(3)	Webcam/microphone module	689965-001
(4)	Display cable	692889-001
(5)	Hinge covers:	
	Hinge covers	689940-001
	Side hinge covers	689940-001
(6)	Hinge brackets	689940-001
(7)	Display enclosure	711562-001

Mass storage device



Item	Component	Spare part number
	Hard drive (mSATA solid-state drive)	
	128-GB solid-state (SSD) drive	689953-001
	256-GB solid-state (SSD) drive	689955-001
	Screws (not illustrated)	

Miscellaneous parts

Component	Spare part number
AC adapter (non-smart):	
65-W AC adapter (non-smart) for use in all countries and regions	693715-001
Power cord (3-pin, black, 1.83-m):	
For use in North America	490371-001
For use in Australia	490371-011
For use in Europe	490371-021
For use in the United Kingdom and Singapore	490371-031
For use in Denmark, Norway, Finland	490371-081
For use in Switzerland	490371-111
For use in Thailand	490371-201
For use in Japan	490371-291

Component	Spare part number
For use in the People's Republic of China	490371-AA1
For use in Taiwan	490371-AB1
For use in South Korea	490371-AD1
For use in Israel	490371-BB1
For use in India	490371-D61
Screw Kit	689949-001

Sequential part number listing


Spare part number	Description
490371-001	Power cord for use in North America (3-pin, black, 1.83-m)
490371-011	Power cord for use in Australia (3-pin, black, 1.83-m)
490371-021	Power cord for use in Europe (3-pin, black, 1.83-m)
490371-031	Power cord for use in the United Kingdom and Singapore (3-pin, black, 1.83-m)
490371-081	Power cord for use in Denmark (3-pin, black, 1.83-m)
490371-111	Power cord for use in Switzerland (3-pin, black, 1.83-m)
490371-201	Power cord for use in Thailand (3-pin, black, 1.83-m)
490371-291	Power cord for use in Japan (3-pin, black, 1.83-m)
490371-AA1	Power cord for use in the People's Republic of China (3-pin, black, 1.83-m)
490371-AB1	Power cord for use in Taiwan (3-pin, black, 1.83-m)
490371-AD1	Power cord for use in South Korea (3-pin, black, 1.83-m)
490371-BB1	Power cord for use in Israel (3-pin, black, 1.83-m)
490371-D61	Power cord for use in India (3-pin, black, 1.83-m)
530607-001	HDMI to VGA Adapter
670292-005	Intel Centrino® Advanced-N 6235 + Bluetooth combo w/* 2 Antennas (802.11 a/g/n)
675458-001	Zipper tote bag
684976-001	Protective cover
685989-001	4-cell, 45WHr 3.05AH Li-ion battery
686922-001	RTC battery for use only with computer models without WWAN capability
689934-001	Base enclosure
689937-001	Power connector
689938-001	Heat sink
689939-001	Backlit keyboard bracket
689940-001	Display hinges

Spare part number	Description
689944-001	Power button board (includes cable)
689945-001	TouchPad LED board with cable
689946-001	TouchPad (includes cable)
689947-001	USB/Audio board with cable
689948-001	RJ-45 cover
689949-001	Screw Kit
689951-001	Speaker (front)
689952-001	Speaker (Rear)
689953-001	128-GB solid-state drive only (does not include bracket, connector cable, isolators, or screws)
689955-001	256-GB solid-state drive only (does not include bracket, connector cable, isolators, or screws)
689957-001	System board for use only with computer models equipped with UMA Intel Core i5-3317U processor
689958-001	System board for use only with computer models equipped with UMA Intel Core i7-3517U processor
689959-001	System board for use only with computer models equipped with UMA Intel Core i7-3667U processor
689960-001	Thermal pad
689961-001	Top cover in black finish for use in the United States
689962-001	Top cover in black finish for use in the United Kingdom
689965-001	Webcam (includes microphone)
692885-001	Antenna
692888-001	Display bezel
692889-001	Display cable
692890-001	Fan
692891-001	Display panel
693607-001	System board for use with computer models equipped with UMA Intel Core i5-3317U processor in the People's Republic of China and Russia
693608-001	System board for use with computer models equipped with UMA Intel Core i7-3517U processor in the People's Republic of China and Russia
693609-001	System board for use with computer models equipped with UMA Intel Core i7-3667U processor in the People's Republic of China and Russia
693715-001	AC Adapter (non-smart) 65 W (non-BFR-PVC free)
700381-001	Backlit keyboard in black finish for use in the United States (includes keyboard cable)
700381-031	Backlit keyboard in black finish for use in the United Kingdom and Singapore(includes keyboard cable)
700381-041	Backlit keyboard in black finish for use in Germany (includes keyboard cable)
700381-051	Backlit keyboard in black finish for use in France (includes keyboard cable)
700381-061	Backlit keyboard in black finish for use in Italy (includes keyboard cable)
700381-071	Backlit keyboard in black finish for use in Spain (includes keyboard cable)

Spare part number	Description
700381-131	Backlit keyboard in black finish for use in Portugal (includes keyboard cable)
700381-141	Backlit keyboard in black finish for use in Turkey (includes keyboard cable)
700381-151	Backlit keyboard in black finish for use in Greece (includes keyboard cable)
700381-161	Backlit keyboard in black finish for use in Latin America (includes keyboard cable)
700381-171	Backlit keyboard in black finish for use in Saudi Arabia (includes keyboard cable)
700381-251	Backlit keyboard in black finish for use in Russia (includes keyboard cable)
700381-281	Backlit keyboard in black finish for use in Thailand (includes keyboard cable)
700381-A41	Backlit keyboard in black finish for use in Belgium (includes keyboard cable)
700381-AB1	Backlit keyboard in black finish for use in Taiwan (includes keyboard cable)
700381-AD1	Backlit keyboard in black finish for use in South Korea (includes keyboard cable)
700381-B31	Backlit keyboard in black finish for use in the Netherlands (includes keyboard cable)
700381-BB1	Backlit keyboard in black finish for use in Israel (includes keyboard cable)
700381-BG1	Backlit keyboard in black finish for use in Switzerland (includes keyboard cable)
700381-DB1	Backlit keyboard in black finish for use in Canada (includes keyboard cable)
700381-DH1	Backlit keyboard in black finish for use in Denmark, Finland, Norway (includes keyboard cable)
701943-001	HDMI to VGA Adapter
702763-001	System board for use with computer models equipped with Intel Core i5-3317U processor
702763-501	System board for use with computer models equipped with Intel Core i5-3317U processor for Windows 8 Standard
702763-601	System board for use with computer models equipped with Intel Core i5-3317U processor for Windows 8 Professional
702764-001	System board for use with computer models equipped with Intel Core i7-3517U processor
702764-501	System board for use with computer models equipped with Intel Core i7-3517U processor for Windows 8 Standard
702764-601	System board for use with computer models equipped with Intel Core i7-3517U Windows 8 Professional
702765-001	System board for use with computer models equipped with Intel Core i7-3667U processor
702765-501	System board for use with computer models equipped with Intel Core i7-3667U processor for Windows 8 Standard
702765-601	System board for use with computer models equipped with Intel Core i7-3667U processor for Windows 8 Professional
702766-001	System board for use with computer models equipped with Intel Core i5-3317U processor in the People's Republic of China and Russia
702766-501	System board for use with computer models equipped with Intel Core i5-3317U processor for Windows 8 Standard in the People's Republic of China and Russia
702767-001	System board for use with computer models equipped with Intel Core i7-3517U processor in the People's Republic of China and Russia

Spare part number	Description
702767-501	System board for use with computer models equipped with Intel Core i7-3517U processor for Windows 8 Standard in the People's Republic of China and Russia
702768-001	System board for use with computer models equipped with Intel Core i7-3667U processor in the People's Republic of China and Russia
702768-501	System board for use with computer models equipped with Intel Core i7-3667U processor for Windows 8 Standard in the People's Republic of China and Russia
711562-001	Display back cover
712663-001	Touch pad (with cable)
712664-001	Top cover with touch pad for use in the United States
712665-001	Top cover with touch pad for use in the United Kingdom
714758-001	System board for use with computer models equipped with Intel Core i7-3537U
714758-501	System board for use with computer models equipped with Intel Core i7-3537U Windows 8 Standard
714758-601	System board for use with computer models equipped with Intel Core i7-3537U Windows 8 Professional
714759-001	System board for use with computer models equipped with Intel Core i5-3337U
714759-501	System board for use with computer models equipped with Intel Core i5-3337U Windows 8 Standard
714759-601	System board for use with computer models equipped with Intel Core i5-3337U Windows 8 Professional
714760-001	System board for use with computer models equipped with Intel Core i7-3537U in the People's Republic of China and Russia
714760-501	System board for use with computer models equipped with Intel Core i7-3537U Windows 8 Standard in the People's Republic of China and Russia
714761-001	System board for use with computer models equipped with Intel Core i5-3337U in the People's Republic of China and Russia
714761-501	System board for use with computer models equipped with Intel Core i5-3337U Windows 8 Standard in the People's Republic of China and Russia

4 Removal and replacement procedures

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

Preliminary replacement requirements


Tools required

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


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

Service considerations


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

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

Plastic parts

 **CAUTION:** Using excessive force during disassembly and reassembly can damage plastic parts. Use care when handling the plastic 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 hard drive, shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.

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

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

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

Avoid dropping drives from any height onto any surface.

After removing a hard drive, an optical drive, or a diskette drive, place it in a static-proof bag.

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

Avoid exposing a drive to temperature extremes or liquids.

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

Grounding guidelines

Electrostatic discharge damage

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

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

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

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

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

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

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

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

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

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

Typical electrostatic voltage levels

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

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

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

Workstation guidelines

Follow these grounding workstation guidelines:

- Cover the workstation with approved static-shielding material.
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use conductive field service tools, such as cutters, screwdrivers, and vacuums.
- When fixtures must directly contact dissipative surfaces, use fixtures made only of 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 tabletop workstations with ground cords of one megohm resistance
- Static-dissipative tables or floor mats with hard ties to the ground
- Field service kits
- Static awareness labels
- Material-handling packages
- Nonconductive plastic bags, tubes, or boxes
- Metal tote boxes
- Electrostatic voltage levels and protective materials

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

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

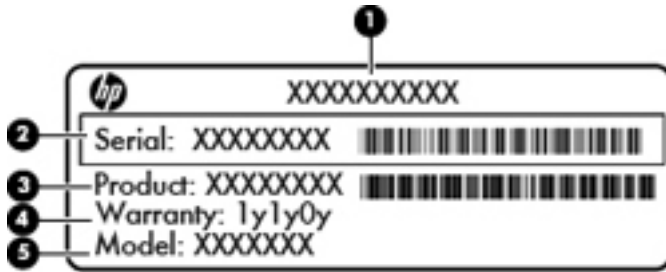
Component replacement procedures

This chapter provides removal and replacement procedures.

There are as many as 77 screws that must be removed, replaced, or loosened when servicing the computer. Make special note of each screw size and location during removal and replacement.

Service label

When ordering parts or requesting information, provide the computer serial number and model number provided on the service label, which is found on the bottom of the computer.



Item	Component	Description
(1)	Product name	This is the product name affixed to the front of the computer.
(2)	Serial number (s/n)	This is an alphanumeric identifier that is unique to each product.
(3)	Part number/Product number (p/n)	This number provides specific information about the product's hardware components. The part number helps a service technician determine what components and parts are needed.
(4)	Warranty period	This number describes the duration of the warranty period for the computer.
(5)	Model description (select models only)	This is the alphanumeric identifier used to locate documents, drivers, and support for the computer.

Base enclosure

Description	Spare part number
Base enclosure (Black)	689934-001

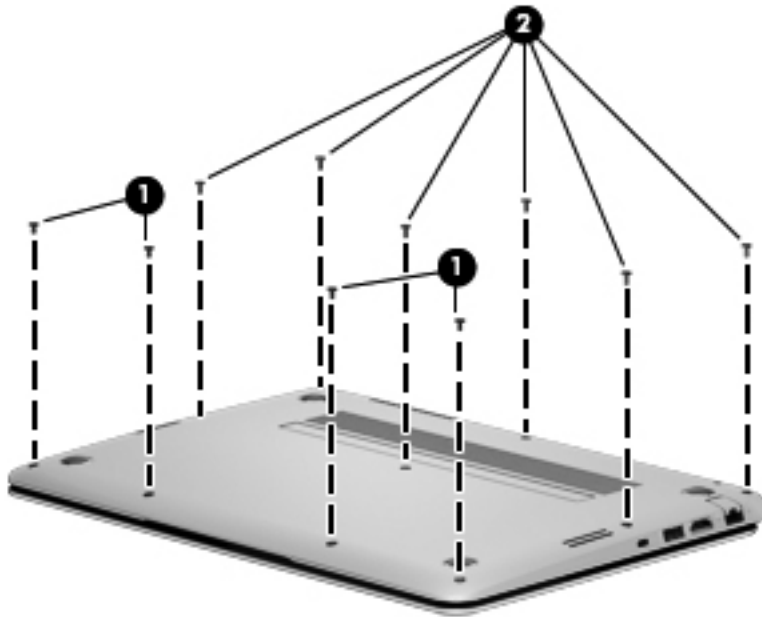
Before disassembling the computer, follow these steps:

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


Remove the base enclosure:

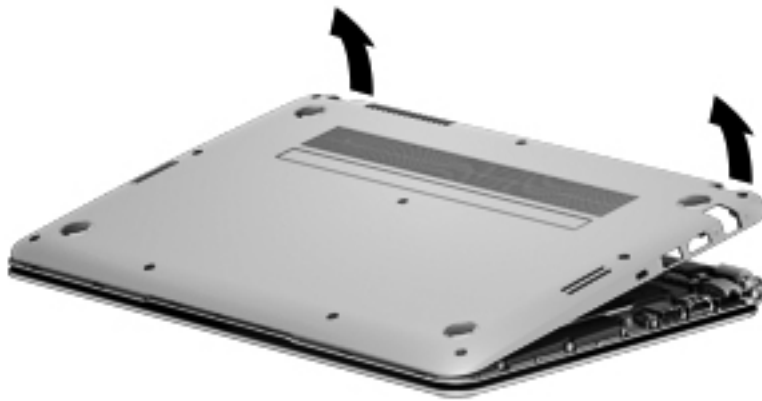
1. Turn the computer face down, and then remove the 4 Phillips PM 4.5 millimeter front-edge screws (1) from the base enclosure.

2. Remove the 6 remaining Phillips PM 5.5 millimeter screws (2) from the back and the middle of the base enclosure.



3. Separate the bottom enclosure from the unit at the rear edge and remove the bottom enclosure.

 **NOTE:** To remove the bottom enclosure, use a thin, non-conductive tool such as the HP Tool Shroud separator. This tool is available on the HP website.



Battery

Description	Spare part number
4-cell, 45WHr 3.05AH Li-ion battery	685989-001

Before removing the battery, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the base enclosure (see [Base enclosure on page 29](#)).

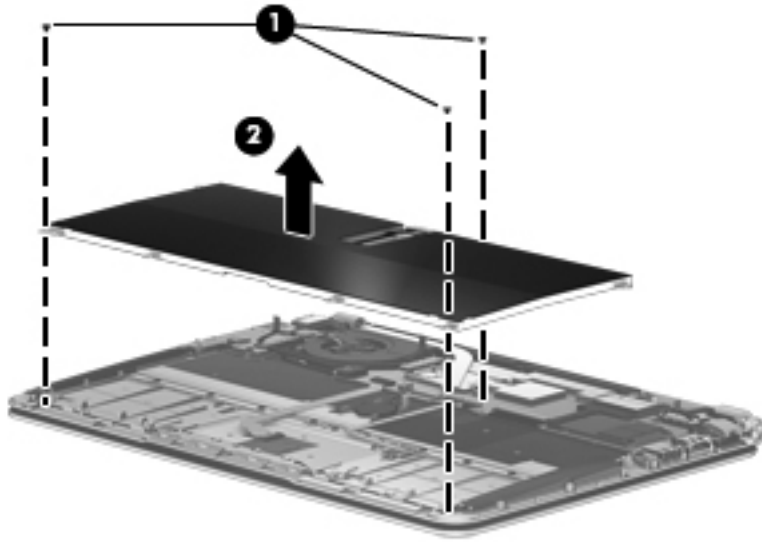
Remove the battery:

1. Turn the computer right-side up, with the front toward you.
2. Disconnect the battery cable.



3. Remove the 3 Phillips PM 2×2 screws (1) that secure the battery to the top cover.

4. Remove the battery from the computer (2).



Reverse this procedure to install the battery.

RTC battery


Description	Spare part number
RTC battery	686922-001

Before removing the RTC battery, follow these steps:

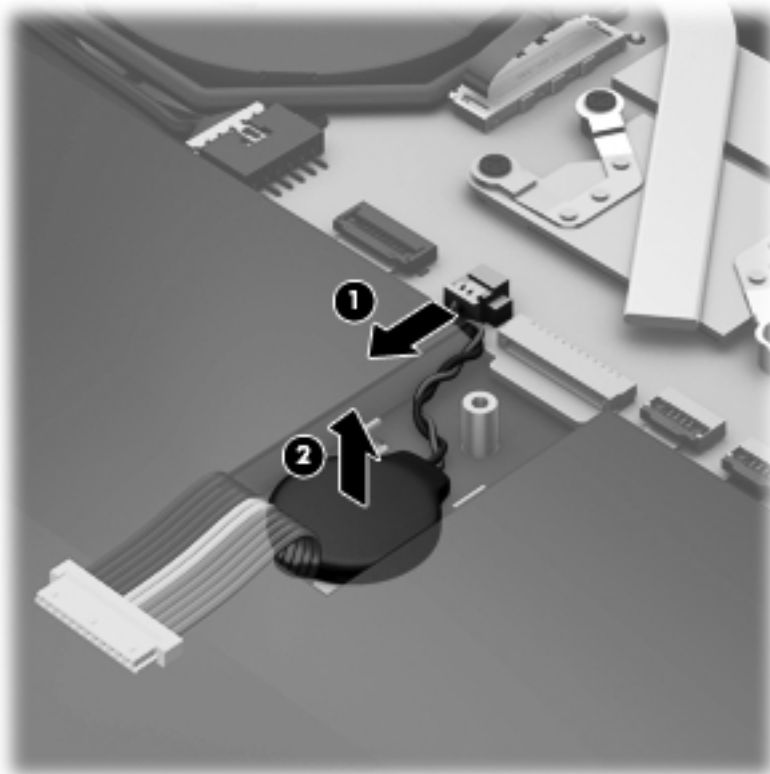
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the base enclosure (see [Base enclosure on page 29](#)).
5. Disconnect the battery cable (see [Battery on page 31](#)).

Remove the RTC battery:

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

 **NOTE:** Use a thin, non-conductive tool to remove the RTC battery from the socket on the system board.

2. Remove the RTC battery **(2)**. (The RTC battery is attached to the system board by double-sided adhesive.)



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

Solid-state drive

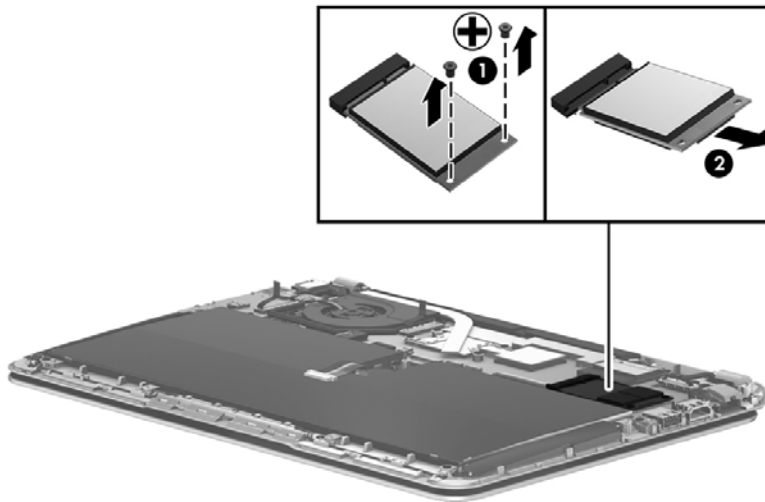
Description	Spare part number
128-GB mSATA solid-state drive (SSD)	689953-001
256-GB mSATA solid-state drive (SSD)	689955-001

Before removing the SSD, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the base enclosure (see [Base enclosure on page 29](#)).
5. Disconnect the battery cable (see [Battery on page 31](#)).

Remove the solid-state drive:

1. Remove the 2 Phillips PM 2.0x2.0 screws (1) securing the solid-state drive to the top cover. The drive tilts upwards.
2. Remove the solid-state drive (2).



Reverse these procedures to reassemble and install the hard drive.

WLAN module

Description	Spare part number
Intel Centrino® Advanced-N 6235 + Bluetooth combo w/* 2 Antennas (802.11 a/g/n)	670292-005

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

Before removing the WLAN module, follow these steps:

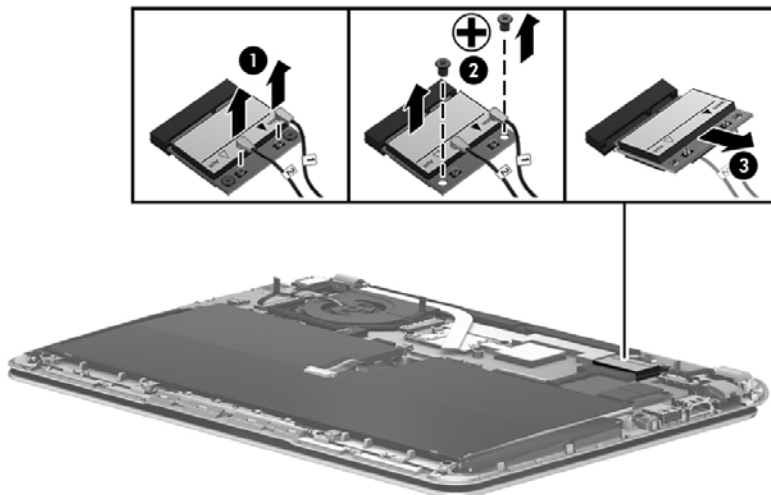
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the base enclosure (see [Base enclosure on page 29](#)).
5. Disconnect the battery cable (see [Battery on page 31](#)).

Remove the WLAN module:

1. Disconnect the #1 and #2 WLAN antenna cables from the WLAN module **(1)**.

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

2. Remove the 2 Phillips PM 2.0×3.0 screws **(2)** that secure the WLAN module to the top cover. (The WLAN module tilts up.)
3. Remove the WLAN module by pulling the module away from the slot at an angle **(3)**.



NOTE: If the WLAN antennas are not connected to the terminals on the WLAN module, the protective sleeves must be installed on the antenna connectors.

Fan

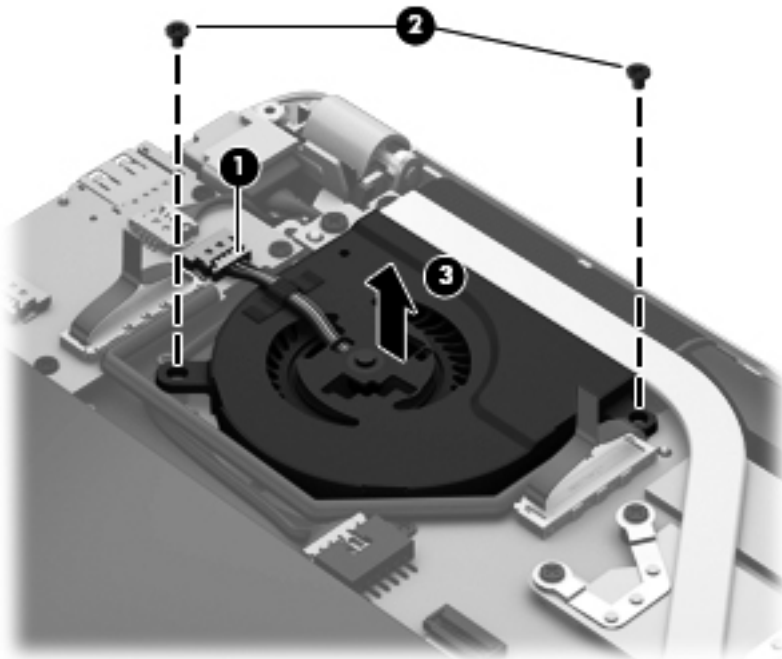
Description	Spare part number
Fan	692890-001


Before removing the fan:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the base enclosure (see [Base enclosure on page 29](#)).

Remove the fan:

1. Disconnect the fan cable (1).
2. Remove the 2 Phillips PM 2.0x4.0 screws securing the fan to the top cover (2), and then lift the fan upwards (3).



 **NOTE:** You may need to remove the piece of tape on the underside of the heat sink that secures the fan to the unit.

RJ-45 module cover

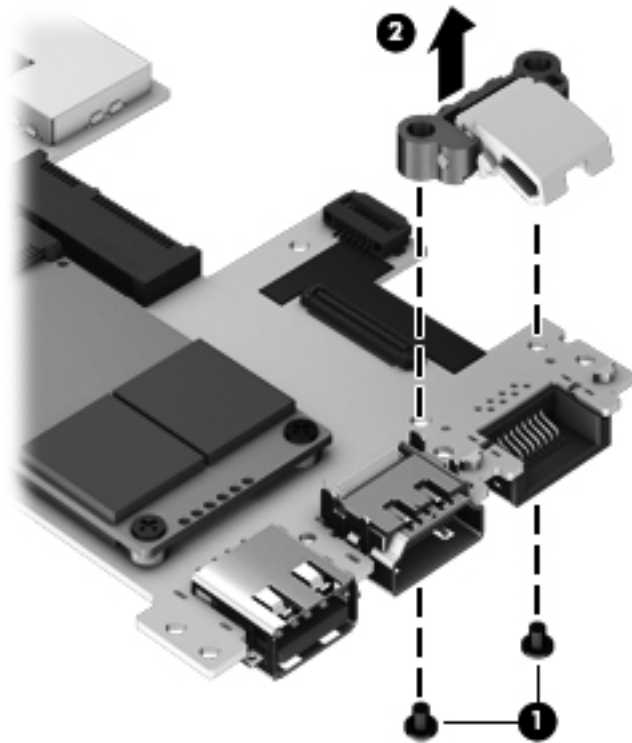
Description	Spare part number
RJ-45 module cover (plastics kit)	689948-001

Before removing the RJ-45 module cover:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the base enclosure (see [Base enclosure on page 29](#)).
5. Disconnect the battery cable (see [Battery on page 31](#)).

Remove the RJ-45 module cover:

1. Remove the 2 Phillips PM screws securing the RJ-45 module cover (1).
2. Remove the cover (2).



System board



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

Description	Spare part number
For use only with computer models equipped with UMA Intel Core i5–3317U processor	689957-001
For use only with computer models equipped with UMA Intel Core i7–3517U processor	689958-001
For use only with computer models equipped with UMA Intel Core i7–3667U processor	689959-001
For use only with computer models equipped with UMA Intel Core i5–3317U processor in the People's Republic of China and Russia	693607-001
For use only with computer models equipped with UMA Intel Core i7–3517U processor in the People's Republic of China and Russia	693608-001
For use only with computer models equipped with UMA Intel Core i7–3667U processor in the People's Republic of China and Russia	693608-001
For use only with computer models equipped with Intel Core i5–3317U processor	702763-001
For use only with computer models equipped with Intel Core i5–3317U processor for Windows 8 Standard	702763-501
For use only with computer models equipped with Intel Core i5–3317U processor for Windows 8 Professional	702763-601
For use only with computer models equipped with Intel Core i7–3517U processor	702764-001
For use only with computer models equipped with Intel Core i7–3517U processor for Windows 8 Standard	702764-501
For use only with computer models equipped with Intel Core i7–3517U processor for Windows 8 Professional	702764-601
For use only with computer models equipped with Intel Core i7–3667U processor	702765-001
For use only with computer models equipped with Intel Core i7–3667U processor for Windows 8 Standard	702765-501
For use only with computer models equipped with Intel Core i7–3667U processor for Windows 8 Professional	702765-601
For use only with computer models equipped with Intel Core i5–3317U processor in the People's Republic of China and Russia	702766-001
For use only with computer models equipped with Intel Core i5–3317U processor for Windows 8 Standard in the People's Republic of China and Russia	702766-501
For use only with computer models equipped with Intel Core i7–3517U processor in the People's Republic of China and Russia	702767-001
For use only with computer models equipped with Intel Core i7–3517U processor for Windows 8 Standard in the People's Republic of China and Russia	702767-501
For use only with computer models equipped with Intel Core i7–3667U processor in the People's Republic of China and Russia	702768-001
For use only with computer models equipped with Intel Core i7–3667U processor for Windows 8 Standard in the People's Republic of China and Russia	702768-501
For use only with computer models equipped with Intel Core i7–3537U processor	714758-001
For use only with computer models equipped with Intel Core i7–3537U processor for Windows 8 Standard	714758-501

Description	Spare part number
For use only with computer models equipped with Intel Core i7–3537U processor for Windows 8 Professional	714758–601
For use only with computer models equipped with Intel Core i7–3337U processor	714759–001
For use only with computer models equipped with Intel Core i7–3337U processor for Windows 8 Standard	714759–801
For use only with computer models equipped with Intel Core i7–3337U processor for Windows 8 Professional	714759–601
For use only with computer models equipped with Intel Core i7–3537U processor in the People's Republic of China and Russia	714760–001
For use only with computer models equipped with Intel Core i7–3537U processor for Windows 8 Standard in the People's Republic of China and Russia	714760–501
For use only with computer models equipped with Intel Core i7–3337U processor in the People's Republic of China and Russia	714761–001
For use only with computer models equipped with Intel Core i7–3337U processor for Windows 8 Standard in the People's Republic of China and Russia	714761–501

Before removing the system board, follow these steps:

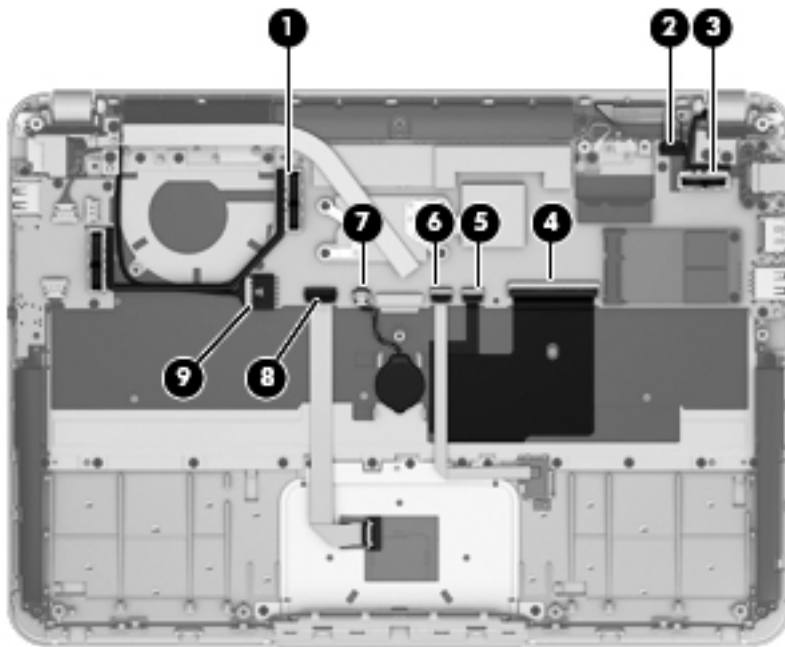
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the base enclosure (see [Base enclosure on page 29](#)).
5. Remove the battery (see [Battery on page 31](#)).
6. Remove the WLAN module (see [WLAN module on page 36](#)).
7. Remove the fan (see [Fan on page 37](#)).

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:

- RTC battery (see [RTC battery on page 33](#))
- Power connector cable (see [Power connector cable on page 50](#))
- Fan (see [Fan on page 37](#)).
- Heat sink (see [Heat sink on page 43](#))
- WLAN module see ([WLAN module on page 36](#)).
- Hard drive (see [Solid-state drive on page 35](#)).
- USB/Audio (see [USB/Audio board on page 46](#)),
- Display panel cable (see [Display panel on page 54](#)).
- RJ-45 cover (see [RJ-45 module cover on page 37](#)).

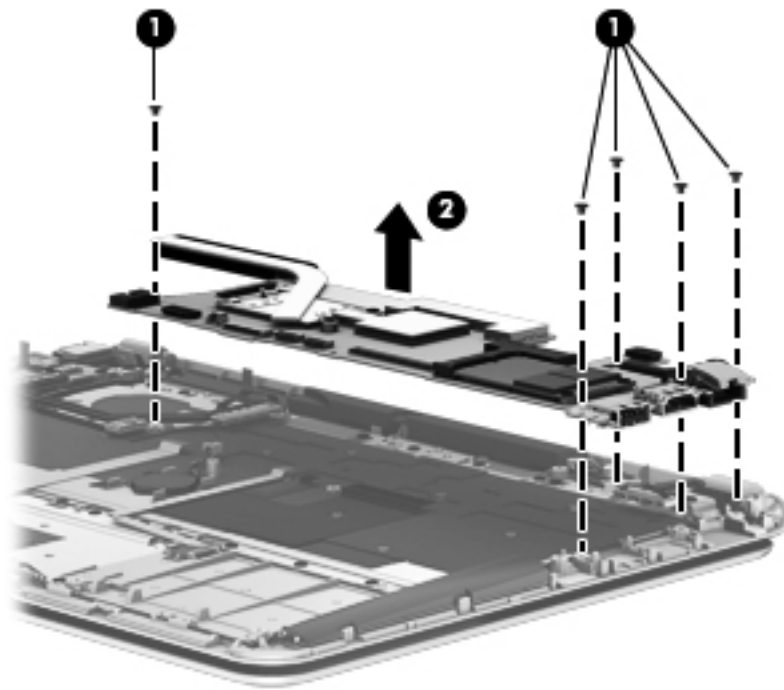
Remove the system board:

1. Remove the following cables:
 - USB/Audio board cable (1)
 - Power button board cable (2)
 - Display panel cable (3)
 - Backlit keyboard cable (4)
 - Backlit keyboard light cable (5)
 - TouchPad LED cable (6)
 - RTC cable (7)
 - TouchPad cable (8)
 - Power connector cable (9)



2. Remove the 5 Phillips PM 2.0x3.0 screws (1).


3. Remove the system board (2).



Reverse this procedure to install the system board.

Heat sink

Description	Spare part number
Heat sink	689938-001


 **NOTE:** To properly ventilate the computer, allow at least 7.6 cm (3 in) of clearance on the left side of the computer. The computer uses an electric fan for ventilation. The fan is controlled by a temperature sensor and is designed to turn on automatically when high temperature conditions exist. These conditions are affected by high external temperatures, system power consumption, power management/battery conservation configurations, battery fast charging, and software requirements. Exhaust air is displaced through the ventilation grill located on the left side of the computer.

Before removing the fan, follow these steps:

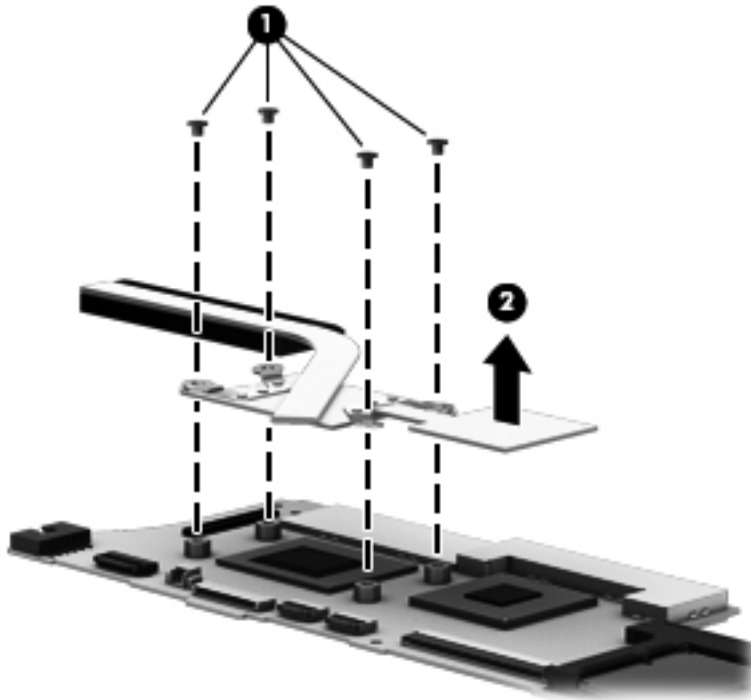
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the base enclosure (see [Base enclosure on page 29](#)).
5. Disconnect the battery cable (see [Battery on page 31](#)),
6. Remove the system board (see [System board on page 39](#)).

Remove the heat sink:

1. From the system board, remove the 4 Phillips PM screws securing the heat sink (1) to the system board.

 **CAUTION:** These screws must be removed in the sequence that is marked on the heat sink so that the correct pressure is applied to the processor and other components.

2. Remove the heat sink (2).



Reverse this procedure to install the heat sink..

CAUTION: These screws must be installed in the sequence that is marked on the heat sink so that the correct pressure is applied to the processor and other components.

Speakers

Description	Spare part number
Speaker Kit, front (includes front speaker and cable)	689951-001
Speaker Kit, rear (includes front speaker and cable)	689952-001

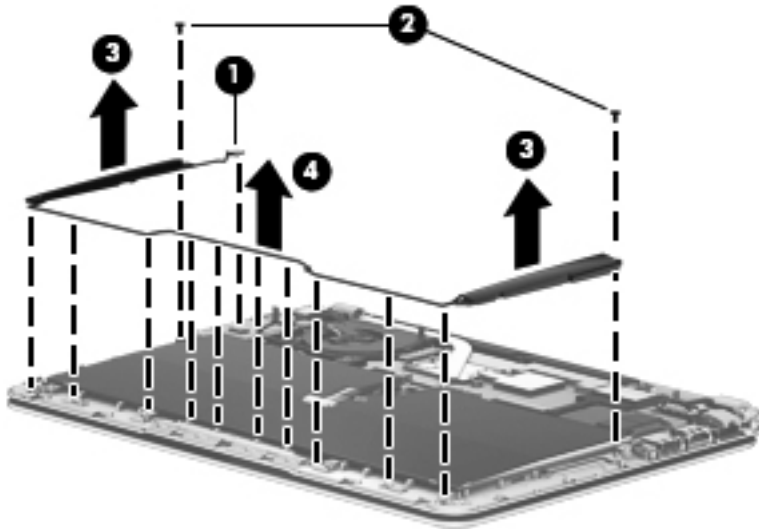
Before removing the front speakers, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the base enclosure (see [Base enclosure on page 29](#)).
5. Disconnect the battery cable (see [Battery on page 31](#)).

Remove the front speakers:

1. Turn the computer, with the front edge toward you.
2. Disconnect the front speaker cable (1) from the USB/audio board.


3. Remove the Phillips PM screws securing each half of the front speaker (2).
4. Remove the speaker cables (3) that are routed on each side of the front area.
5. Remove the speakers (4).



Reverse this procedure to install the front speakers.

Before removing the rear speaker, follow these steps;

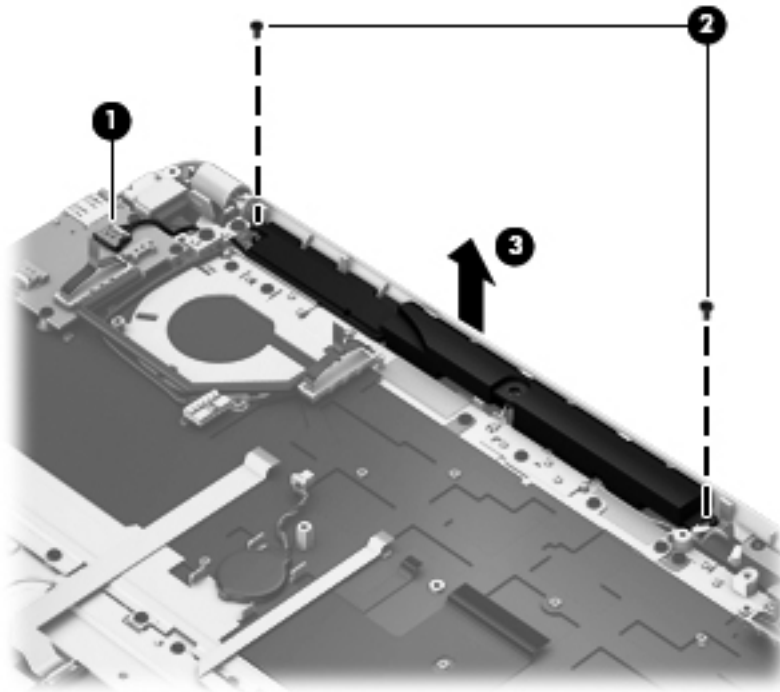
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
1. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
2. Remove the base enclosure (see [Base enclosure on page 29](#)).
3. Disconnect the battery cable (see [Battery on page 31](#)).
4. Remove the system board (see [System board on page 39](#)).

 **NOTE:** The heat sink overlaps the rear speakers so the system board must be removed before the rear speakers.

Remove the rear speakers

1. Disconnect the rear speaker cable from the USB/Audio board (1).

2. Remove the 2 Phillips PM 4.0 millimeter screws (2), and then remove the rear speakers (3).



USB/Audio board

Description	Spare part number
USB/Audio board (includes digital media card reader)	689947-001

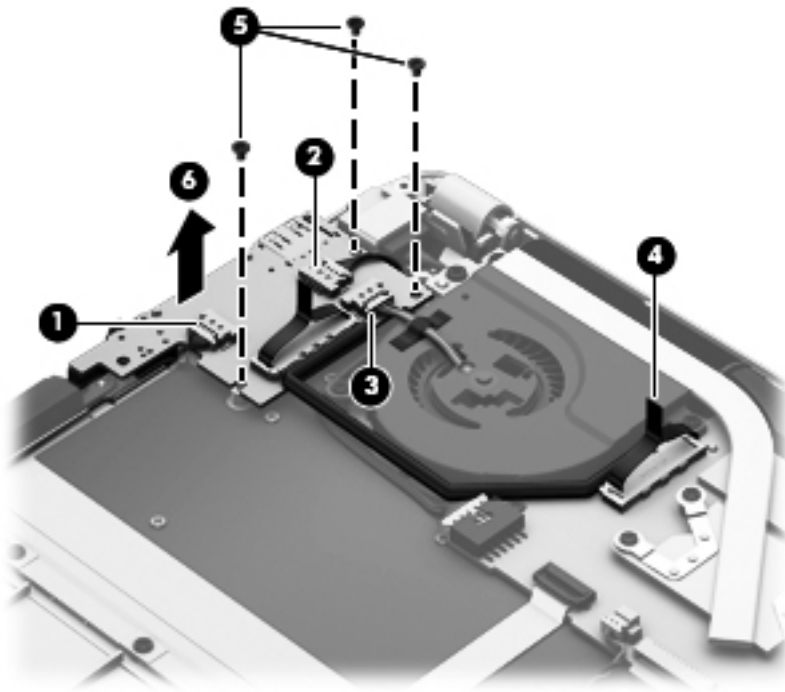
Before removing the USB/Audio board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the display panel (see [Display panel on page 54](#)).
5. Remove the base enclosure (see [Base enclosure on page 29](#)).
6. Disconnect the battery cable (see [Battery on page 31](#)).

Remove the USB/Audio board:

1. Disconnect the left front speaker cable (1).
2. Disconnect the right front speaker cable (2).
3. Disconnect the fan cable (3).
4. Disconnect the rear speaker cable (4).
5. Disconnect the 3 Phillips PM 4.5 millimeter screws securing the USB/Audio board (5).

6. Remove the USB/Audio board (6).



Reverse this procedure to install the USB/Audio board.

TouchPad module

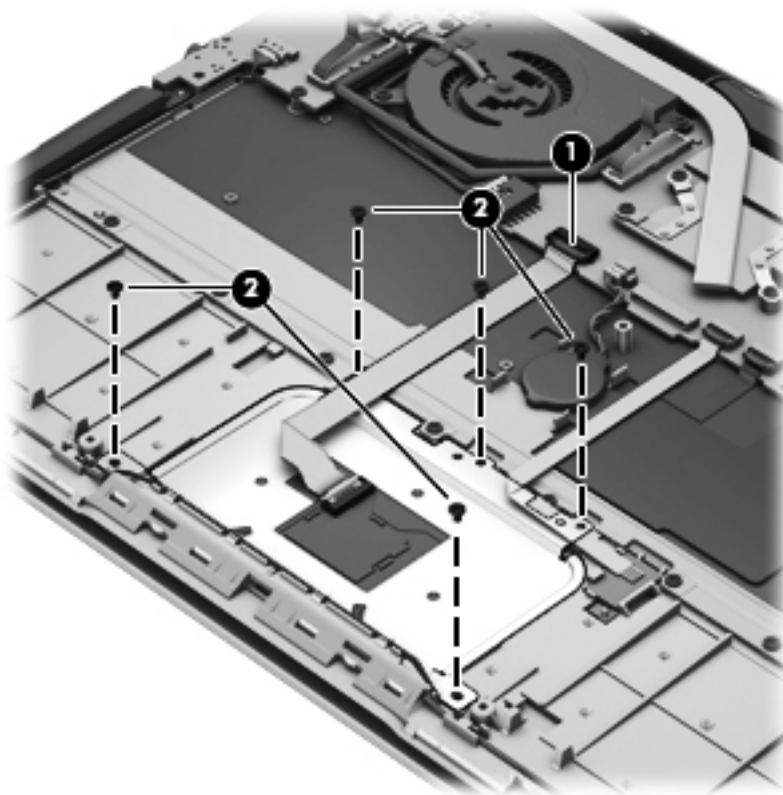
Description	Spare part number
TouchPad button board (includes cable)	689946-001
TouchPad button board (includes cable)	712663-001

Before removing the TouchPad button board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the display panel (see [Display panel on page 54](#)).
5. Remove the base enclosure (see [Base enclosure on page 29](#)).

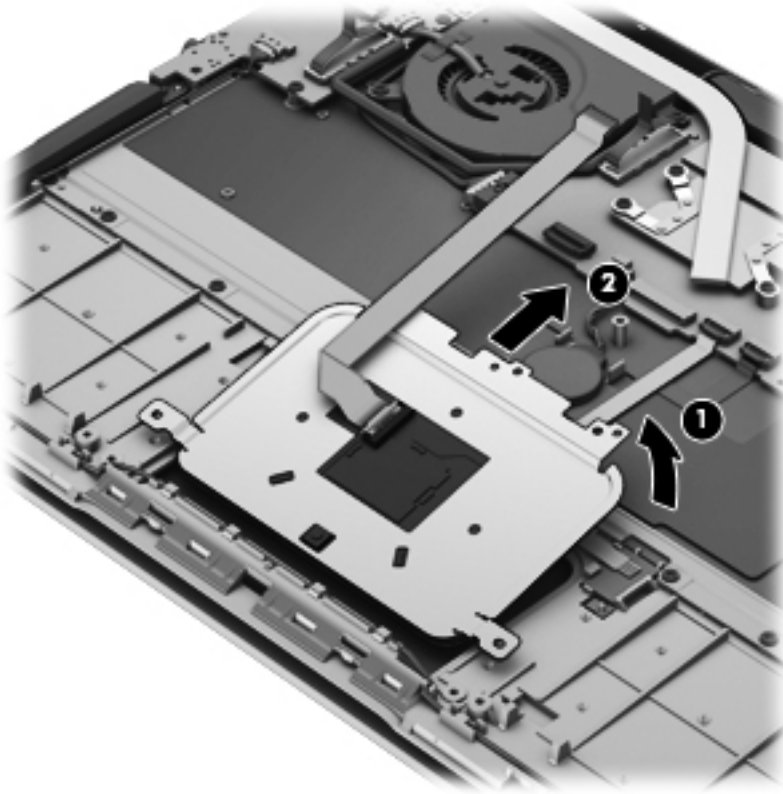
Remove the TouchPad button board and cable:

1. Turn the top cover upside down, with the back edge toward you.
2. Disconnect the TouchPad cable (1) that secures the TouchPad to the system board.
3. Remove the 5 Phillips PM screws (2) that secure the TouchPad button board to the top cover.



4. Lift the TouchPad button board.(1).

5. Remove the TouchPad button board and cable (2).



Reverse this procedure to install the TouchPad button board and cable.

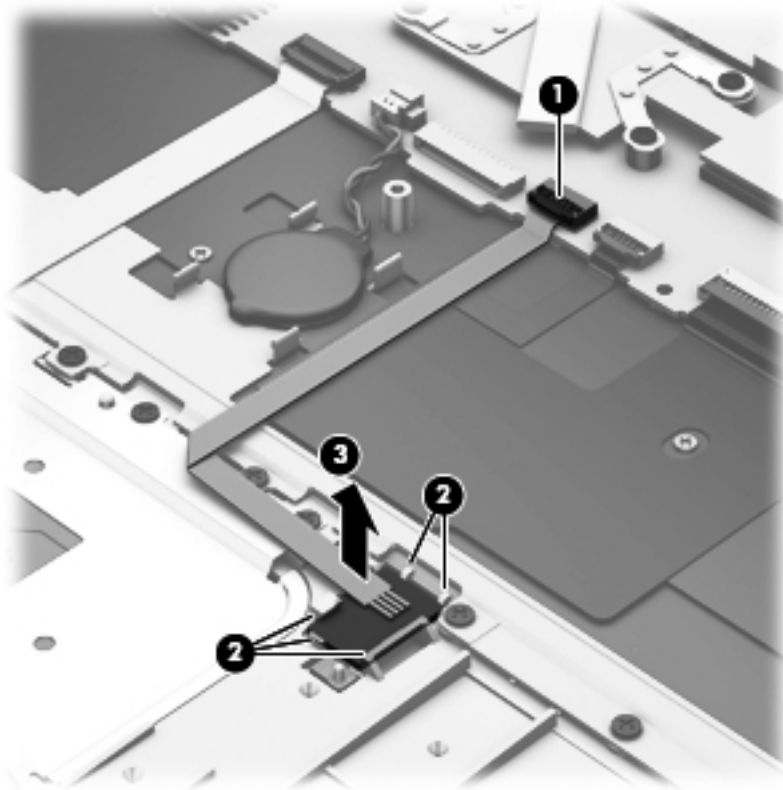
TouchPad LED board

Description	Spare part number
TouchPad LED board	689945-001

Remove the TouchPad LED board:

1. Disconnect the TouchPad LED board cable (1).

2. Unclip the TouchPad LED board (2), and then remove it (3).



Power connector cable

Description	Spare part number
Power connector cable (includes bracket)	689937-001

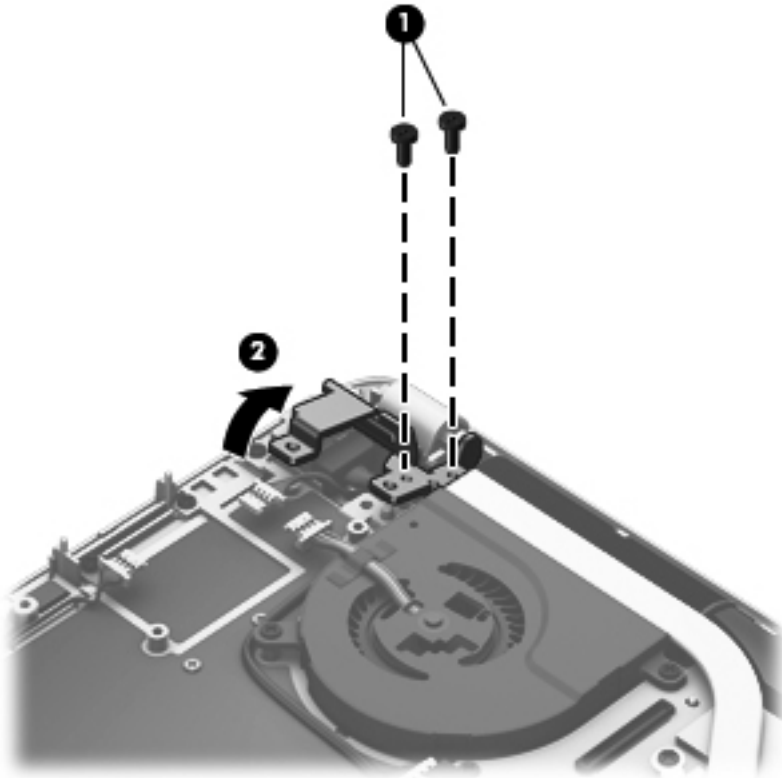
Before removing the power connector cable, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the display panel (see [Display panel on page 54](#)).
5. Remove the base enclosure (see [Base enclosure on page 29](#)).
6. Disconnect the battery cable (see [Battery on page 31](#)).

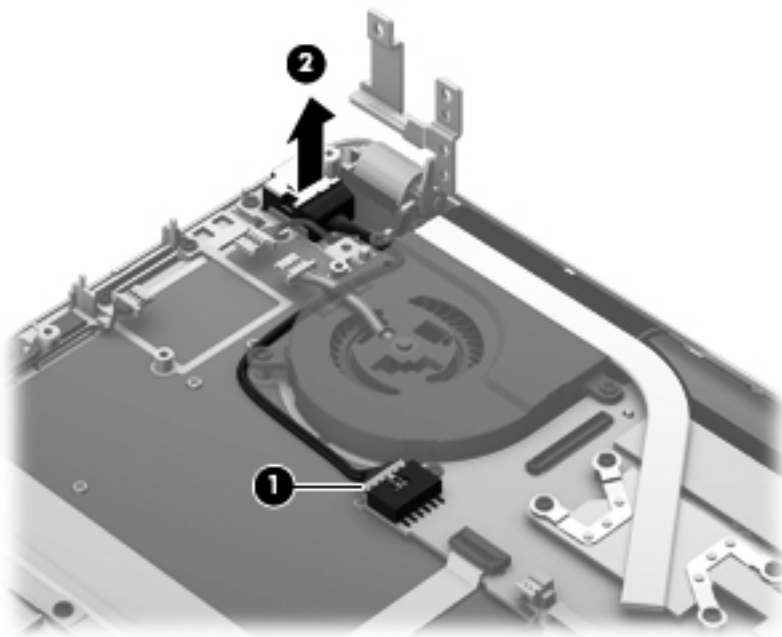
Remove the power connector cable:

1. Turn the computer, with the right side toward you.

2. Remove the 2 screws that secure the right hinge (1), and then rotate the hinge to the open position (2).



3. Disconnect the power connector cable (1), and then remove the power connector and cable (2).



Reverse this procedure to install the power connector and cable.

Power button board

Description	Spare part number
Power button board	689944-001


Before removing the Power button board, follow these steps:

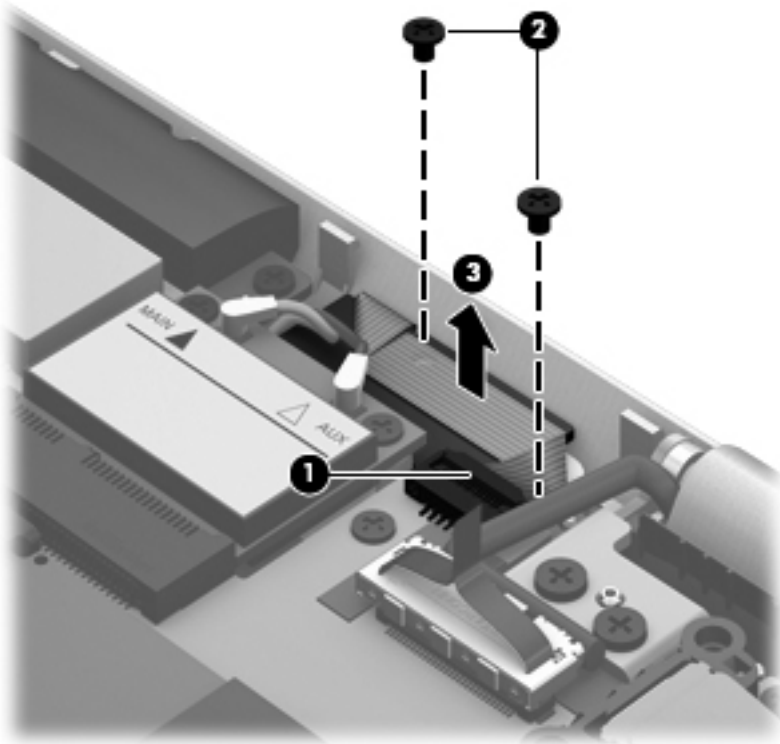
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the display panel (see [Display panel on page 54](#)).
5. Remove the base enclosure (see [Base enclosure on page 29](#)).
6. Disconnect the battery cable (see [Battery on page 31](#)).

Remove the Power button board and cable:

1. Turn the top cover upside down, with the back edge toward you.
2. Disconnect the Power button board cable **(1)**.
3. Remove the 2 Phillips PM screws securing the Power button board to the top cover **(2)**.

4. Remove the Power button board (3).

 **NOTE:** The Power button board's cable is soldered on.



Display panel

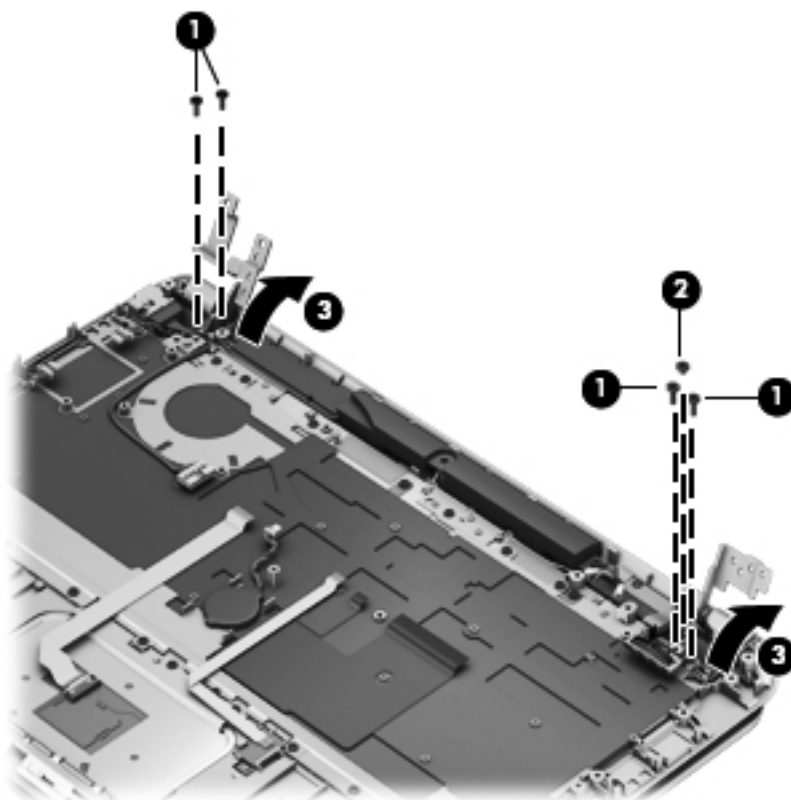
Description	Spare part number
13.3-in, LED, BrightView SVA display panel	692891-001


Before removing the display panel, follow these steps:

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

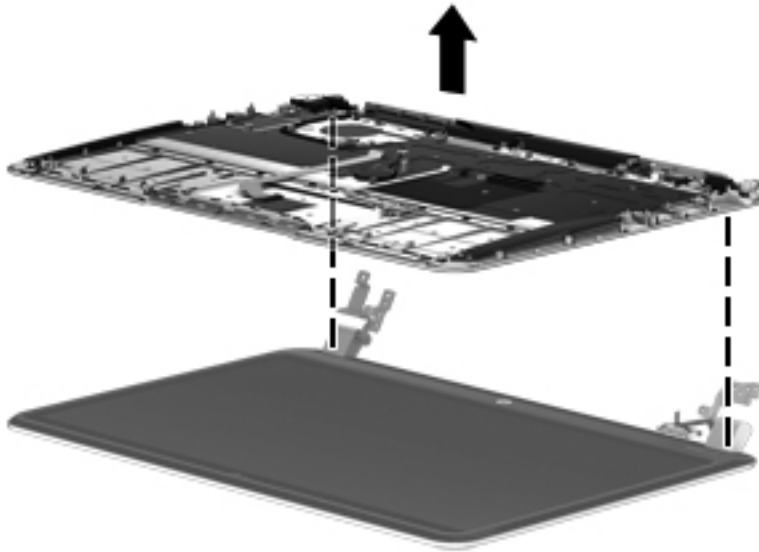
Remove the display panel:

1. Turn the computer right-side up, with the rear toward you.
2. Open the computer.
3. Remove the base enclosure (see [Base enclosure on page 29](#)).
4. Remove the 2 Phillips PM 5.0 millimeter screws on the left and right hinges (1).
5. Remove the Phillips PM 3.0 millimeter screw on the left hinge (2).
6. Rotate both hinges to the open position (3).

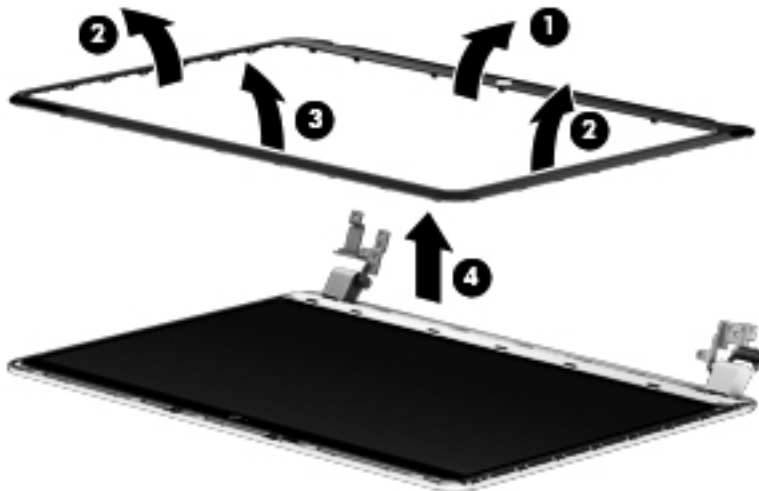


 **NOTE:** Support the display panel as you are removing the screws.


7. Remove the top cover from the display assembly.

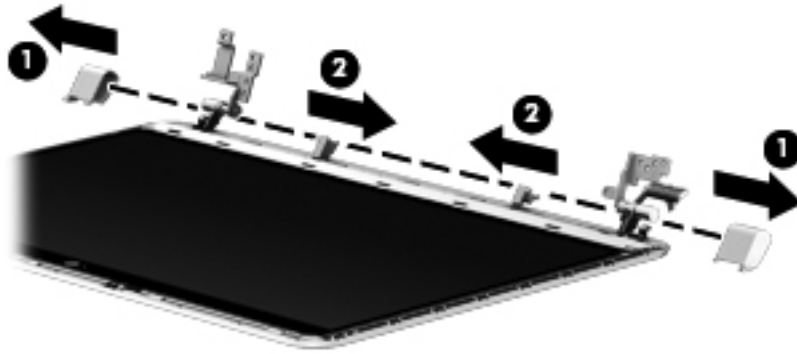


8. Loosen the bottom edge of the plastic bezel cover (1) from all four sides of the display panel.
9. Loosen the left and right side edges of the plastic bezel cover (2), and then loosen the top edge of the plastic bezel cover (3). Remove the plastic bezel cover (4).

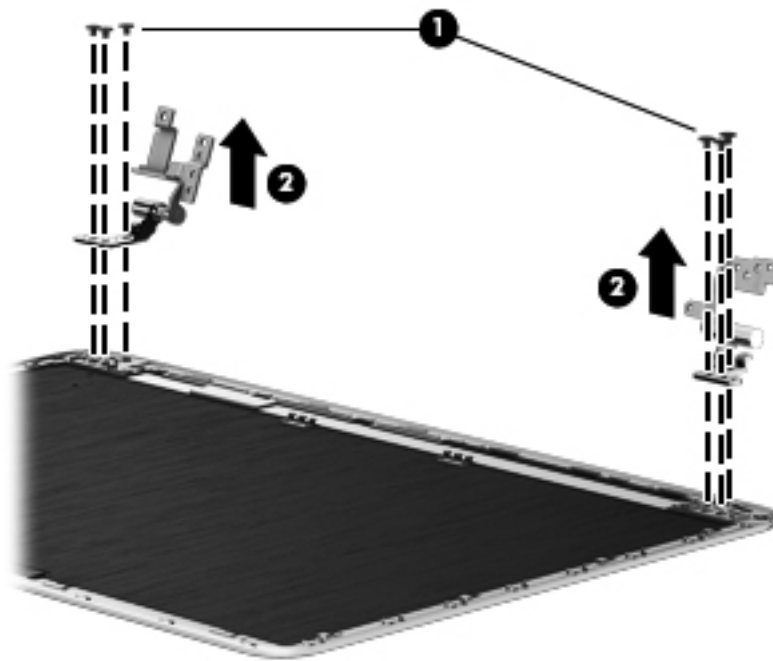


10. Slide the hinge covers outwards (1), and then release the secondary hinge covers (2).

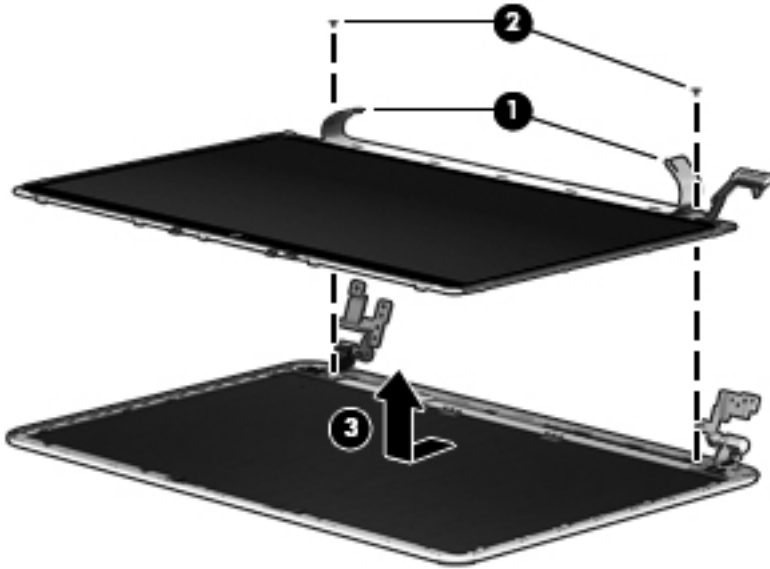
 **NOTE:** Remove any tabs or tape adhering to the display panel.



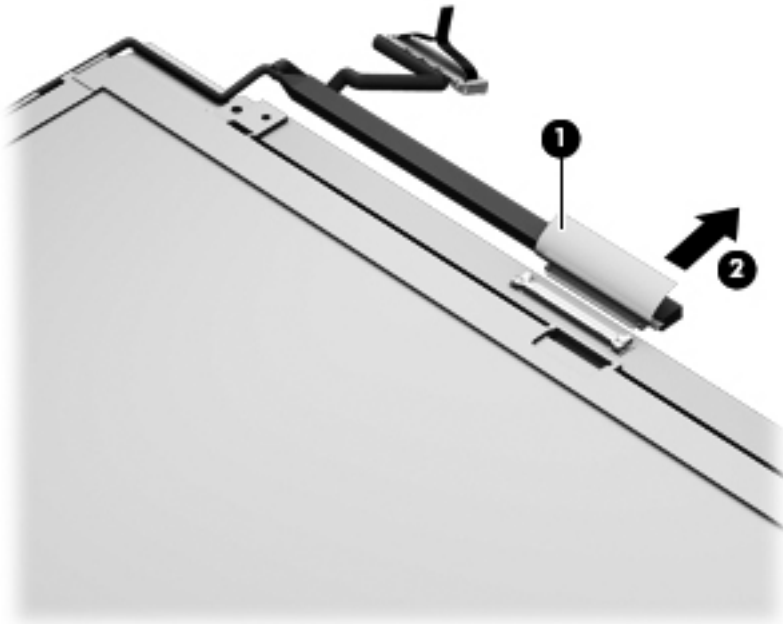
11. Remove the 6 Phillips PM screws (1) from the hinge brackets, and then remove the hinge brackets (2).



12. Rotate the hinges to the open position (1), and then remove the 2 Phillips PM screws (2). Remove the display panel (3).

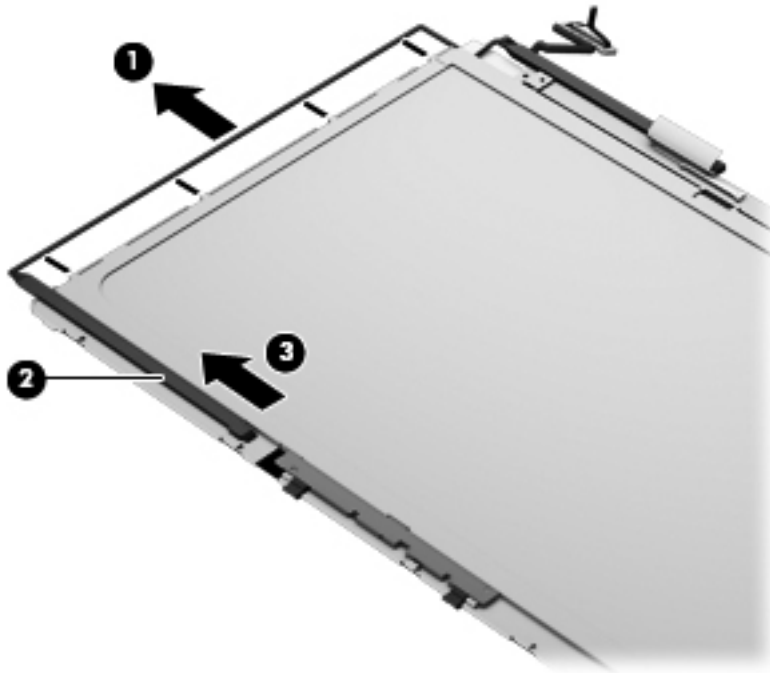


13. Remove the adhesive tape from the display panel cable connector (1).
14. Disconnect the display panel cable connector (1) from the display panel (2).



15. Remove the panel cable from the clips on the left edge (1), and then loosen the cable from the adhesive tape (2).

16. Disconnect the cable from the webcam (3).



Reverse this procedure to install the display panel.

Webcam assembly

Description	Spare part numbers
Webcam assembly	689965-001

Before removing the webcam assembly:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the display panel (see [Display panel on page 54](#)).
5. Remove the base enclosure (see [Base enclosure on page 29](#)).
6. Disconnect the battery cable (see [Battery on page 31](#)).

Remove the webcam assembly:

- ▲ Lift the webcam from the display panel (1), and then remove the webcam assembly (2).



Backlit keyboard



NOTE: The keyboard spare part kit includes a keyboard cable.

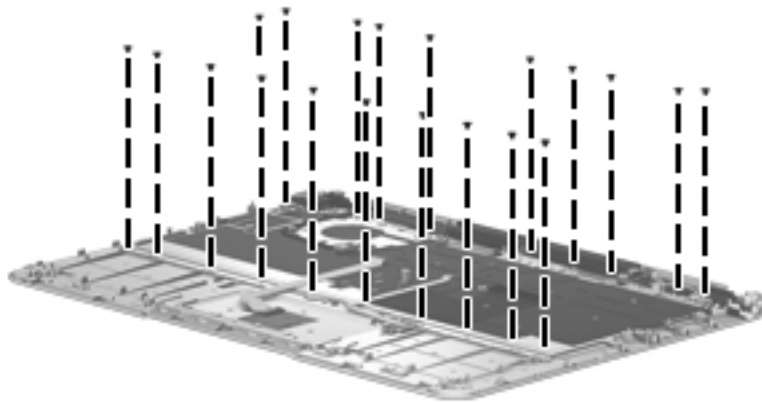
For use in country or region:	Spare part number:	For use in country or region:	Spare part number:
Backlit keyboard in black finish:			
For use in the United States	700381-001	For use in Taiwan	700381-AB1
For use in the United Kingdom and Singapore	700381-031	For use in South Korea	700381-AD1
For use in Germany	700381-041	For use in Saudi Arabia	700381-171
For use in France	700381-051	For use in Russia	700381-251
For use in Italy	700381-061	For use in Thailand	700381-281
For use in Spain	700381-071	For use in Belgium	700381-A41
For use in Portugal	700381-131	For use in Canada	700381-DB1
For use in Turkey	700381-141	For use in The Netherlands	700381-B31
For use in Greece	700381-151	For use in Switzerland	700381-BG1
For use in Latin America	700381-161	For use in Israel	700381-BB1
For use in Denmark, Finland, Norway	700381-DH1		

Before removing the keyboard, follow these steps:

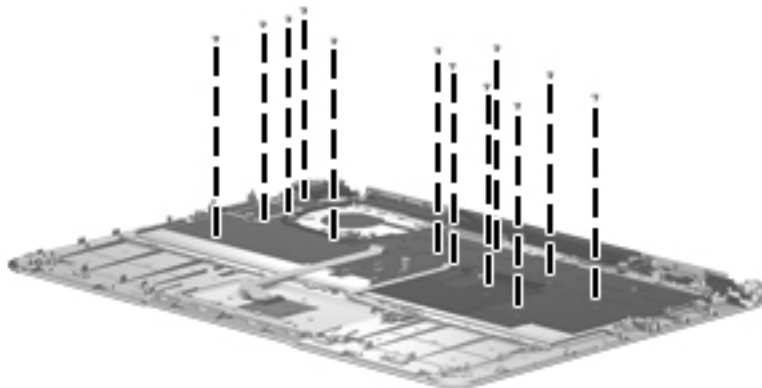
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the display panel (see [Display panel on page 54](#)).
5. Remove the base enclosure (see [Base enclosure on page 29](#)).

Remove the keyboard:

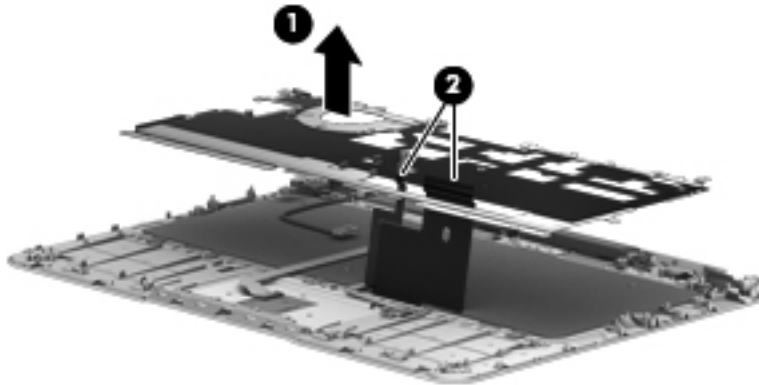
1. Turn the computer right-side up with the front facing you.
2. Remove the 20 black Phillips PM 2x2 screws that secure the keyboard bracket.



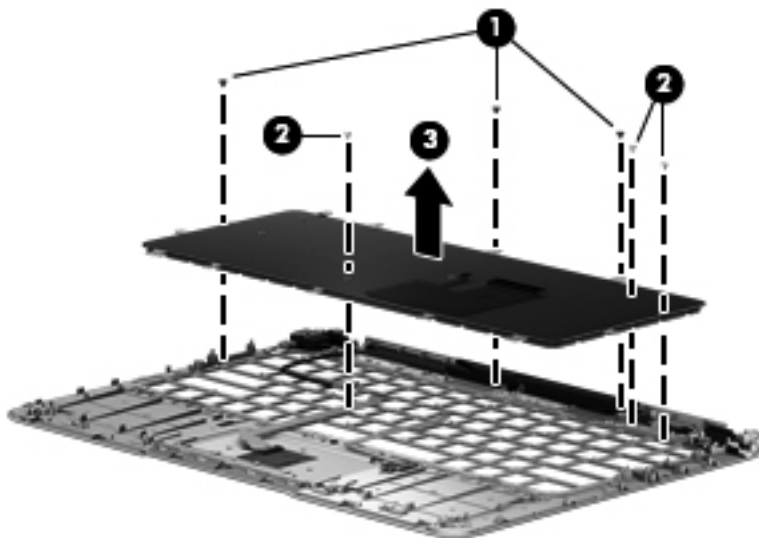
3. Remove the 12 silver Phillips PM 1.6x2 screws (2) that secure the keyboard bracket.



4. Remove the keyboard bracket (1). Make sure the keyboard cables are disengaged from the bracket as you remove the keyboard bracket (2). Make sure to push the keyboard cables through the bracket.



5. Remove the 3 black Phillips PM 2x2 screws (1), and then remove the 3 Phillips PM 1.6 screws (2).
6. Remove the keyboard (3).



Reverse this procedure to install the keyboard.

WLAN antenna cables

Description	Spare part numbers
WLAN antennas	670292-005


Before removing the antenna cables:

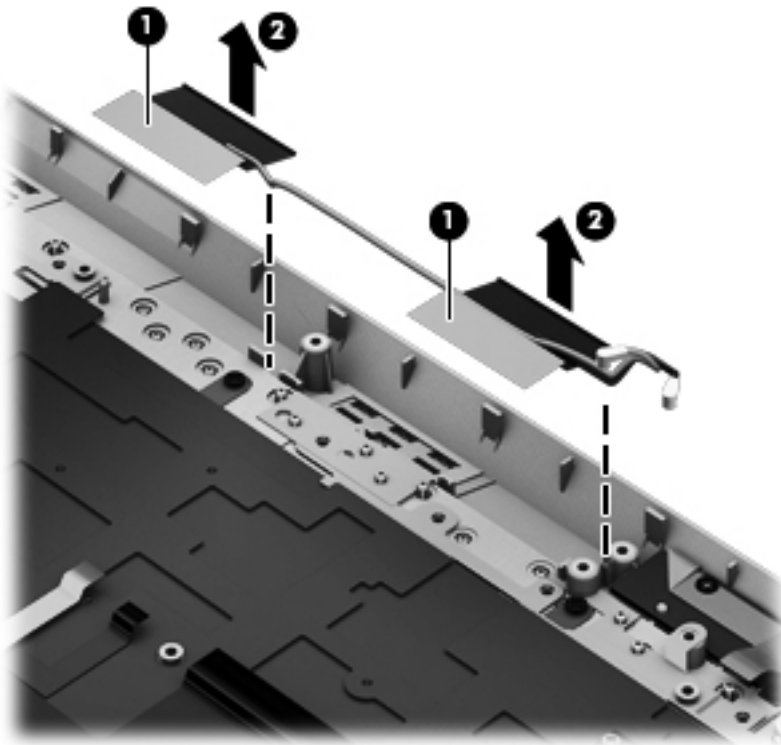
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.

3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the display panel (see [Display panel on page 54](#)).
5. Remove the base enclosure (see [Base enclosure on page 29](#)).
6. Disconnect the battery cable (see [Battery on page 31](#)).

Remove the WLAN antenna cables:

- ▲ Remove the WLAN antenna transceivers (1), and then remove the cables (2) from the right and left sides of the hinge.

 **NOTE:** Be careful when removing the cables.



Top cover

Description	Spare part number
Top cover	689961-001 (for use in the United States)
	712664-001 (for use in the United States)
	689962-001 (for use in the United Kingdom)
	712665-001 (for use in the United Kingdom)

Before removing the top cover from the display panel, follow these steps:

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


Remove the top cover from the display:

- ▲ To remove the top cover from the display, (see [Display panel on page 54](#)).


5 Setup Utility (BIOS) and System Diagnostics

Using Setup Utility

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 includes settings for the types of peripherals installed, the startup sequence of the computer, and the amount of system and extended memory.

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

Starting Setup Utility

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

To start Setup Utility, follow these steps:

1. Turn on or restart the computer, and then press **esc** while the “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen.
2. Press **f10** to enter Setup Utility.

Changing the language of Setup Utility

1. Start Setup Utility.
2. Use the arrow keys to select **System Configuration > Language**, and then press **enter**.
3. Use the arrow keys to select a language, and then press **enter**.
4. When a confirmation prompt with your language selected is displayed, press **enter**.
5. To save your change and exit Setup Utility, use the arrow keys to select **Exit > Exit Saving Changes**, and then press **enter**.

Your change takes effect immediately.

Navigating and selecting in Setup Utility

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

1. Turn on or restart the computer, and then press **esc** while the “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen.
 - To select a menu or a menu item, use the tab key and the keyboard arrow keys and then press **enter**, or use a pointing device to click the item.
 - To scroll up and down, click the up arrow or the down arrow in the upper-right corner of the screen, or use the up arrow key or the down arrow key.
 - To close open dialog boxes and return to the main Setup Utility screen, press **esc**, and then follow the on-screen instructions.
2. Press **f10** to enter Setup Utility.

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

- To exit Setup Utility menus without saving your changes, press the **esc** key, and then follow the on-screen instructions.

– or –

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

- To save your changes and exit Setup Utility menus, press **f10**, and then follow the on-screen instructions.

– or –


Use the tab key and the arrow keys to select **Exit > Exit Saving Changes**, and then press **enter**.

Your changes go into effect when the computer restarts.

Displaying system information

1. Start Setup Utility.
2. Select the **Main menu**. System information such as the system time and date, and identification information about the computer is displayed.
3. To exit Setup Utility without changing any settings, use the arrow keys to select **Exit > Exit Discarding Changes**, and then press **enter**.

Restoring factory settings in Setup Utility

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


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

1. Turn on or restart the computer, and then press **esc** while the “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen.
2. Press **f10** to enter Setup Utility.
3. Use the arrow keys to select **Exit > Load Setup Defaults**.
4. Follow the on-screen instructions.
5. To save your changes and exit, press **f10**, and then follow the on-screen instructions.

– or –

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

Your changes go into effect when the computer restarts.

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

Exiting Setup Utility

- To exit Setup Utility and save your changes from the current session:
If the Setup Utility menus are not visible, press **esc** to return to the menu display. Then use the arrow keys to select **Exit > Exit Saving Changes**, and then press **enter**.
- To exit Setup Utility without saving your changes from the current session:
If the Setup Utility menus are not visible, press **esc** to return to the menu display. Then use the arrow keys to select **Exit > Exit Discarding Changes**, and then press **enter**.

Updating the BIOS

Updated versions of the BIOS may be available on the HP website.

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

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


Determining the BIOS version

To determine whether available BIOS updates contain later BIOS versions than those currently installed on the computer, you need to know the version of the system BIOS currently installed.

BIOS version information (also known as *ROM date* and *System BIOS*) can be displayed by pressing **fn+esc** (if you are already in Windows) or by using Setup Utility (BIOS).

1. Start Setup Utility (BIOS).
2. Use the arrow keys to select **Main**.
3. To exit Setup Utility (BIOS) without saving your changes, use the arrow keys to select **Exit**, select **Exit Discarding Changes**, and then press **enter**.

Downloading a BIOS update

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


Do not disconnect power from the computer by unplugging the power cord from the AC outlet.

Do not shut down the computer or initiate Sleep.

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

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


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

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

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

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

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

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

Using System Diagnostics

System Diagnostics allows you to run diagnostic tests to determine if the computer hardware is functioning properly. The following diagnostic tests are available in System Diagnostics:

- **Start-up test**—This test analyzes the main computer components that are required to start the computer.
- **Run-in test**—This test repeats the start-up test and checks for intermittent problems that the start-up test does not detect.
- **Hard disk test**—This test analyzes the physical condition of the hard drive, and then checks all data in every sector of the hard drive. If the test detects a damaged sector, it attempts to move the data to a good sector.
- **Memory test**—This test analyzes the physical condition of the memory modules. If it reports an error, replace the memory modules immediately.
- **Battery test**—This test analyzes the condition of the battery. If the battery fails the test, contact HP support to report the issue and purchase a replacement battery.

You can also view system information and error logs in the System Diagnostics window.

To start System Diagnostics:

1. Turn on or restart the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press **esc**. When the Startup Menu is displayed, press **f2**.
2. Click the diagnostic test you want to run, and then follow the on-screen instructions.



NOTE: If you need to stop a diagnostics test while it is running, press **esc**.

6 Specifications

Computer specifications

	Metric	U.S.
Dimensions		
Width	29.16 cm	11.48 in
Depth	2.15 cm	8.46 in
Height (front to back)	2.11 to 3.19 cm	0.83 to 1.26 in
Weight		
With 6-cell battery	1.60 kg	3.53 lb
With 3-cell battery	1.46 kg	3.22 lb
Input power		
Operating voltage and current	18.5 V dc @ 3.5 A - 65 W	
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
NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The device operates well within this range of temperatures.		

13.3-inch display specifications


	Metric	U.S.
Dimensions		
Height	16.50 cm	6.50 in
Width	25.34 cm	11.60 in
Diagonal	33.66 cm	13.30 in
Number of colors	262,144	

	Metric	U.S.
Contrast ratio	200:1 (typical)	
Brightness	200 nits (typical)	
Pixel resolution		
Pitch	0.197 mm × 0.197 mm	
Format	1366 × 768	
Configuration	RGB vertical stripe	
Backlight	LED	
Character display	80 × 25	
Total power consumption	2.0 W	
Viewing angle	±65° horizontal, ±50° vertical (typical)	


7 Backup and recovery

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

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

 **NOTE:** For detailed instructions on various backup and restore options, perform a search for these topics in HP Support Assistant. To access HP Support Assistant on the Start screen, select the **HP Support Assistant** app.

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

 **NOTE:** Windows includes the User Account Control feature to improve the security of your computer. You may be prompted for your permission or password for tasks such as installing software, running utilities, or changing Windows settings. Refer to HP Support Assistant. To access HP Support Assistant on the Start screen, select the **HP Support Assistant** app.

Backing up your information

Recovery after a system failure is as good as your most recent backup. You should create system repair media and your initial backup immediately after initial system setup. As you add new software and data files, you should continue to back up your system on a regular basis to maintain a reasonably current backup. The system repair media (select models only) are used to start up (boot) the computer and repair the operating system in case of system instability or failure. Your initial and subsequent backups allow you to restore your data and settings if a failure occurs.


On Start screen, type `backup`, click **Settings**, and then select **Save backup copies of your files with File History**.


You can back up your information to an optional external hard drive or a network drive.

Note the following when backing up:

- Store personal files in the Documents library, and back it up regularly.
- Back up templates that are stored in their associated programs.
- Save customized settings that appear in a window, toolbar, or menu bar by taking a screen shot of your settings. The screen shot can be a time-saver if you have to reset your preferences.

To create a backup using Backup and Restore:

 **NOTE:** Be sure that the computer is connected to AC power before you start the backup process.


 **NOTE:** The backup process may take over an hour, depending on file size and the speed of the computer.

1. From the Start screen, type `backup`, click **Settings**, and then select from the list of displayed options.
2. Follow the on-screen instructions to set up your backup, create a system image (select models only), or create system repair media (select models only).

Performing a system recovery

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

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


 **NOTE:** If you are unable to boot (start up) your computer and you cannot use the system repair media you previously created (select models only), you must purchase Windows 8 operating system media to reboot the computer and repair the operating system. For additional information, see

Using the Windows recovery tools

To recover information you previously backed up:

- ▲ Access HP Support Assistant. To access HP Support Assistant on the Start screen, select the **HP Support Assistant** app.

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


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

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


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

– or –


From the Start screen, type `c`, and then select **Computer**.

 **NOTE:** If the Windows partition and the HP Recovery partition are not listed, you must recover your operating system and programs using the Windows 8 operating system DVD and the *Driver Recovery* media (both purchased separately). For additional information, see [Using Windows 8 operating system media \(purchased separately\) on page 73](#).

3. If the Windows partition and the HP Recovery partition are listed, restart the computer. After Windows has loaded, press and hold the **shift** key while clicking **Restart**.
4. Select **Troubleshoot**, then select **Advanced Options**, and then select **Automatic Repair**.
5. Follow the on-screen instructions.


 **NOTE:** For additional information on recovering information using the Windows tools, perform a search for these topics in HP Support Assistant. To access HP Support Assistant on the Start screen, select the **HP Support Assistant** app.

Using f11 recovery tools

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

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


1. If possible, back up all personal files.
2. If possible, check for the presence of the HP Recovery partition: From the Start screen, type **c**, and then select **Computer**.

 **NOTE:** If the HP Recovery partition is not listed, you must recover your operating system and programs using the Windows 8 operating system media and the *Driver Recovery* media (both purchased separately). For additional information, see [Using Windows 8 operating system media \(purchased separately\) on page 73](#).


3. If the HP Recovery partition is listed, restart the computer, and then press **esc** while the “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen.
4. Press **f11** while the “Press <F11> for recovery” message is displayed on the screen.
5. Follow the on-screen instructions.

Using Windows 8 operating system media (purchased separately)

To order a Windows 8 operating system DVD, go to <http://www.hp.com/support>, select your country or region, and follow the on-screen instructions. You can also order the DVD by calling support. For contact information, see the *Worldwide Telephone Numbers* booklet included with the computer.

 **CAUTION:** Using a Windows 8 operating system media completely erases hard drive contents and reformats the hard drive. All files that you have created and any software that you have installed on the computer are permanently removed. When reformatting is complete, the recovery process helps you restore the operating system, as well as drivers, software, and utilities.

To initiate recovery using a Windows 8 operating system DVD:

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


1. If possible, back up all personal files.
2. Restart the computer, and then insert the Windows 8 operating system DVD into the optical drive before the Windows operating system loads.
3. When prompted, press any keyboard key.
4. Follow the on-screen instructions.


After the repair is completed:


1. Eject the Windows 8 operating system media and then insert the *Driver Recovery* media.
2. Install the Hardware Enabling Drivers first, and then install Recommended Applications.

Using Windows Refresh for quick and easy recovery

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

 **IMPORTANT:** Refresh removes any traditional applications that were not originally installed on the system at the factory.

 **NOTE:** During Refresh, a list of removed traditional applications will be saved so that you have a quick way to see what you might need to reinstall. See HP Support Assistant for instructions on reinstalling traditional applications. To access HP Support Assistant on the Start screen, select the **HP Support Assistant** app.


 **NOTE:** You may be prompted for your permission or password when using Refresh. See HP Support Assistant for more information. To access HP Support Assistant on the Start screen, select the **HP Support Assistant** app.

To start Refresh:

1. On the Start screen, point to the far-right upper or lower corner of the screen to display the charms.
2. Click **Settings**.
3. Click **Change PC settings** in the bottom-right corner of the screen, and then select **General** from the PC settings screen.
4. Under **Refresh your PC without affecting your files**, select **Get started**, and follow the on-screen instructions.

Remove everything and reinstall Windows

Sometimes you want to perform detailed reformatting of your computer, or you want to remove personal information before you give away or recycle your computer. The process described in this section provides a speedy, simple way to return the computer to its original state. This option removes all personal data, apps, and settings from your computer, and reinstalls Windows.

 **IMPORTANT:** This option does not provide backups of your information. Before using this option, back up any personal information you wish to retain.

You can initiate this option by using the **f11** key or from the Start screen.

To use the **f11** key:

1. Press **f11** while the computer boots.
– or –
Press and hold **f11** as you press the power button.
2. Select **Troubleshoot** from the boot options menu.
3. Select **Reset your PC**, and follow the on-screen instructions.

To use the Start screen:

1. On the Start screen, point to the far-right upper or lower corner of the screen to display the charms.
2. Click **Settings**.

3. Click **Change PC settings** in the bottom-right corner of the screen, and then select **General** from the PC settings screen.
4. Under **Remove everything and reinstall Windows**, select **Get started**, and follow the on-screen instructions.

Using HP Software Setup

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

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

8 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 **1.5 m** (5.0 ft) and no more than **2.0 m** (6.5 ft).
- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country or region where the power cord set will be used.
- The power cord sets must have a minimum current capacity of 10 A and a nominal voltage rating of 125 or 250 V ac, as required by the power system of each country or region.
- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with the appliance inlet on the back of the computer.

Requirements for specific countries and regions

Country/region	Accredited agency	Applicable note number
Argentina	IRAM	1
Australia	SAA	1
Austria	OVE	1
Belgium	CEBEC	1
Brazil	ABNT	1
Canada	CSA	2
Chile	IMQ	1
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
India	ISI	1
Israel	SII	1
Italy	IMQ	1

Country/region	Accredited agency	Applicable note number
Japan	JIS	3
The Netherlands	KEMA	1
New Zealand	SANZ	1
Norway	NEMKO	1
The People's Republic of China	CCC	4
Saudi Arabia	SASO	7
Singapore	PSB	1
South Africa	SABS	1
South Korea	KTL	5
Sweden	SEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	6
Thailand	TISI	1
The United Kingdom	ASTA	1
The United States	UL	2

1. The flexible cord must be Type HO5VV-F, 3-conductor, 0.75-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 SVT/SJT or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V ac) configuration. CSA or C-UL mark. UL file number must be on each element.
3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCTF, 3-conductor, 0.75-mm² or 1.25-mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V ac) configuration.
4. The flexible cord must be Type RVV, 3-conductor, 0.75-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the CCC certification mark.
5. The flexible cord must be Type H05VV-F 3X0.75-mm² conductor size. KTL logo and individual approval number must be on each element. Corset approval number and logo must be printed on a flag label.
6. The flexible cord must be Type HVCTF 3×1.25-mm² conductor size. Power cord set fittings (appliance coupler, cable, and wall plug) must bear the BSMI certification mark.
7. For 127 V ac, the flexible cord must be Type SVT or SJT 3 x 18 AWG, with plug NEMA 5-15P (15 A, 125 V ac), with UL and CSA or C-UL marks. For 240 V ac, the flexible cord must be Type H05VV-F 3×0.75-/1.00-mm² conductor size, with plug BS 1363/A with BSI or ASTA marks.

9 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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