



HP g14 Notebook PC

Maintenance and Service Guide

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Product notice

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

Not all features are available in all editions of Windows 8. This computer may require upgraded and/or separately purchased hardware, drivers, and/or software to take full advantage of Windows 8 functionality. See for <http://www.microsoft.com> details.

Software terms

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For any further information or to request a full refund of the computer, please contact your local point of sale (the seller).

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 g14 Notebook PC
Processor	<ul style="list-style-type: none">• Intel® Core® i5-4200U 1.60-GHz processor (dual core, 15 W)• Intel Core i3-4010U 1.70-GHz processor (dual core, 15 W)• Intel Celeron® 2957U 1.40-GHz processor (dual core, 15 W)
Chipset	Intel processor controller hub (PCH), soldered on circuit (SoC)
Panel	14.0-in, BrightView, high-definition (HD), light-emitting diode (LED) backlit, 1366×768, SVA (3.6 mm), non-TouchScreen display panel with and without webcam Support for low-voltage differential signalling (LVDS) Typical brightness: 200 nits 16:9 Ultra Wide Aspect Ratio
Graphics	Internal graphics – Integrated universal memory architecture (UMA) graphics: <ul style="list-style-type: none">• Intel HD Graphics 4400 on computer models equipped with an Intel Core processor• Intel HD Graphics on computer models equipped with an Intel Celeron processor
Memory	Two customer-accessible/upgradable memory module slots Support for DDR3L 1600-MHz PCL3-12800 dual channel memory Support for 16384-MB of system memory in the following configurations: <ul style="list-style-type: none">• 16384-MB total system memory (8192 MB × 2; not available with 32-bit operating system)• 8192-MB total system memory (4096 MB × 2; not available with 32-bit operating system)• 4096-MB total system memory (4096 MB × 1; only memory configuration supported in Brazil)• 2048-MB total system memory (2048 MB × 1)

Category	Description
Primary storage	<p>Support for 6.35-cm (2.5-in) hard drives in 7.0-mm (.28-in) and 9.5-mm (.37-in) thickness</p> <p>Support for mSATA</p> <p>Support for Intel Smart Response Technology Accelerometer</p> <p>Support for hard drive protection</p> <p>Support for the following hard drives:</p> <ul style="list-style-type: none"> • 750-GB, 5400-rpm, SATA, 7.0-mm hard drive • 500-GB, 5400-rpm, SATA, 7.0-mm hard drive
Optical drive	<p>DVD±RW Double Layer with SuperMulti Drive</p> <p>9.5-mm tray load</p> <p>SATA</p> <p>Fixed (not modular)</p> <p>Support for zero-power optical drive</p> <p>Support for no optical drive option</p>
Audio and video	<p>HP TrueVision HD webcam (fixed/no tilt), 1280×720 by 30 frames per second</p> <p>Support for non-webcamera option</p> <p>Single digital microphone</p> <p>Stereo speakers (2)</p> <p>DTS Sound</p>
Ethernet	<p>Integrated 10/100/1000 network interface card (NIC)</p>
Wireless networking	<p>Integrated wireless local area network (WLAN) options by way of wireless module</p> <p>Two WLAN antennas built into display assembly</p> <p>Support for the following WLAN formats:</p> <ul style="list-style-type: none"> • Qualcomm Atheros AR9565 802.11b/g/n 1×1 WiFi + BT 4.0 Combo Adapter • Realtek RTL8188EE 802.11bgn Wi-Fi Adapter
External expansion	<p>HP 2-in-1 multifunction Digital Media Reader Slot with push-push technology. Reads data from and writes data to digital memory cards such as Secure Digital (SD®).</p>

Category	Description
Ports	<ul style="list-style-type: none"> • AC adapter, HP Smart (4.5-mm barrel) • Audio-in (mono microphone)/audio-out (stereo headphone) combo jack • HDMI v1.4 supporting up to 1920×1080 @ 60-Hz • RJ45 (Ethernet) • USB 3.0 (2) • USB 2.0 (1) • VGA (Dsub 15 pin) supporting: 1080p external resolution @ 60-Hz, hot plug and unplug and autodetection for correct output to wide-aspect vs. standard aspect video
Keyboard/ pointing devices	<p>Full-size, island-style, spill-resistant keyboard</p> <p>Touchpad Requirements:</p> <ul style="list-style-type: none"> • Default on for 2-finger scroll and pinch • Multitouch gestures enabled • Taps enabled as default
Power requirements	<p>Support for a removable 4-cell, 41-WHr, 2.80-AHr, Li-ion battery</p> <p>Support for a 65-W HP Smart adapter (non-PFC, EM, 4.5-mm)</p>
Security	<ul style="list-style-type: none"> • Support for security cable lock • Support for Intel Anti-Theft • Support for Intel IPT • Support for OTP
Operating system	<p>Preinstalled:</p> <ul style="list-style-type: none"> • Microsoft® Windows® 8.1 (64-bit) • FreeDOS 2.0 • Driver support for Microsoft Windows 7 (64-bit)
Serviceability	<p>End user replaceable part:</p> <ul style="list-style-type: none"> • AC adapter • Battery (system) • Hard drive • Keyboard • Memory module • Optical drive • WLAN module

2 External component identification

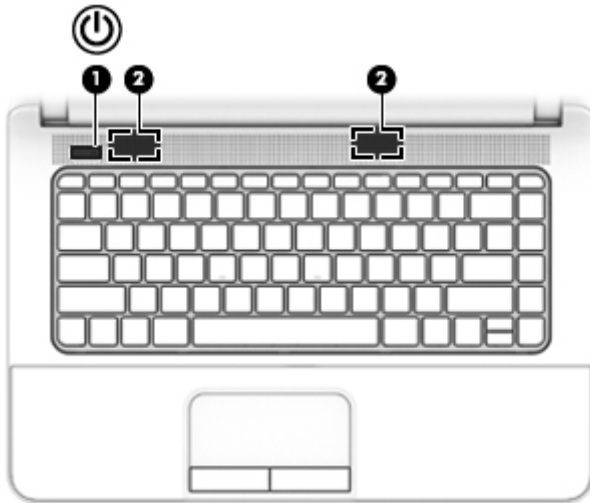
Display



Item	Component	Description
(1)	WLAN antenna	Sends and receives wireless signals to communicate with WLANs.
(2)	Webcamera (select models only)	Records video and captures photographs. Some models allow you to video conference and chat online using streaming video. For information on using the webcam, access HP Support Assistant. To access HP Support Assistant, from the Start screen, type <code>support</code> , and then select the HP Support Assistant app.
(3)	Internal microphone	Records sound.

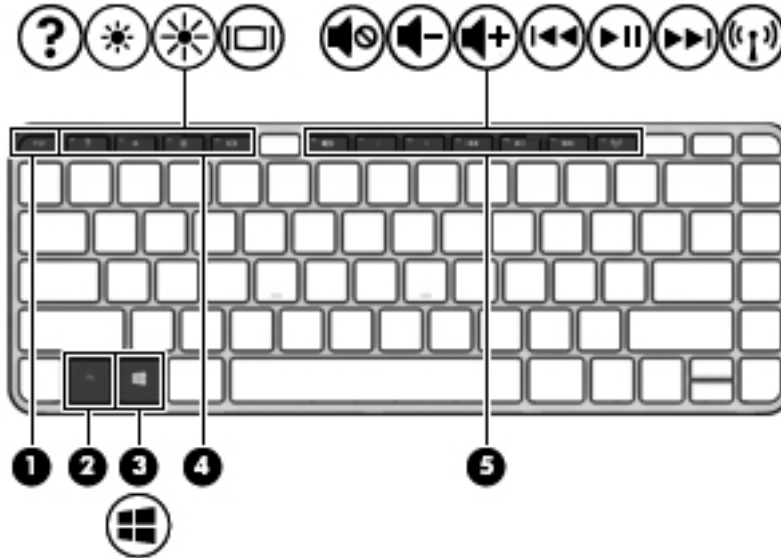
*The antenna is not visible from the outside of the computer. For optimal transmission, keep the area immediately around the antenna free from obstructions. For wireless regulatory notices, see the section of the Regulatory, Safety, and Environmental Notices that applies to your country or region. To access this guide, from the Start screen, type `support`, and then select the **HP Support Assistant** app.

Buttons and speakers



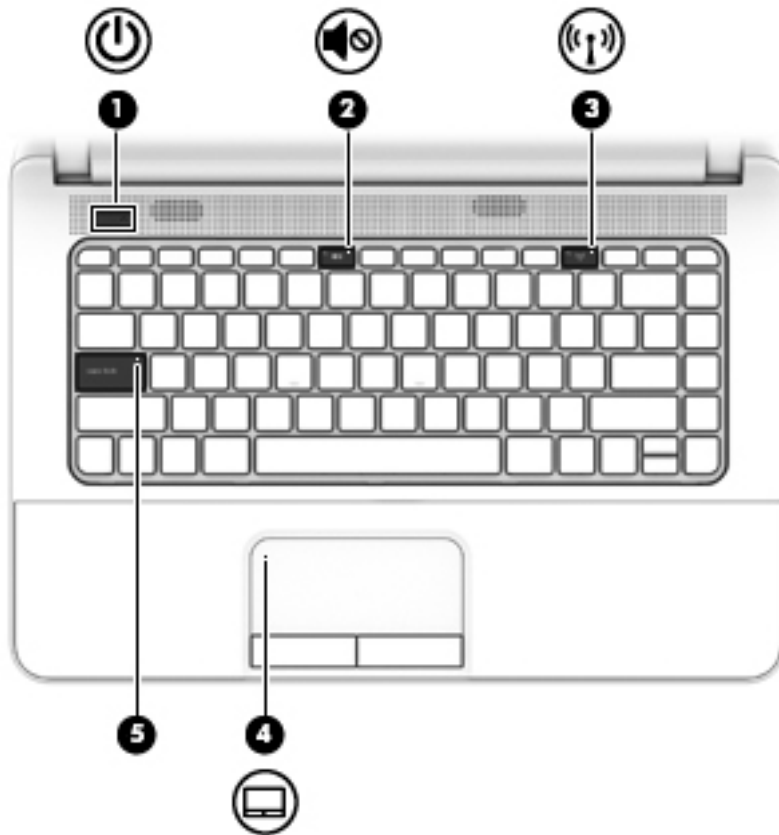
Item	Component	Description
(1)	Power button	<ul style="list-style-type: none">• When the computer is off, press the button to turn on the computer.• When the computer is on, press the button briefly to initiate Sleep.• When the computer is in the Sleep state, press the button briefly to exit Sleep.• When the computer is in Hibernation, press the button briefly to exit Hibernation. <p>CAUTION: Pressing and holding down the power button will result in the loss of unsaved information.</p> <p>If the computer has stopped responding and Windows shutdown procedures are ineffective, press and hold the power button 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.</p> <p>To learn more about your power settings, see your power options. From the Start screen, type <code>power</code>, select Power and sleep settings, and then select Power and sleep from the list of applications.</p>
(2)	Speakers (2)	Produce sound.

Keys



Item	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 a function key, the num lk key, the esc key, or the b key.
(3)	Windows button	Displays the Windows Start menu.
(4)	Function keys	Execute frequently used system functions when pressed in combination with the fn key.
(5)	Function keys	Execute frequently used system functions when pressed in combination with the fn key.

Lights



Item	Component	Description
(1)	Power light	<ul style="list-style-type: none"> On: The computer is on. Blinking: The computer is in the Sleep state, a power-saving state. The computer shuts off power to the display and other unneeded components. Off: The computer is off or in Hibernation. Hibernation is a power-saving state that uses the least amount of power. <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.</p>
(2)	Mute light	<ul style="list-style-type: none"> Amber: Computer sound is off. Off: Computer sound is on.
(3)	Wireless light	<p>On: An integrated wireless device, such as a WLAN device and/or a Bluetooth® device, is on.</p> <p>NOTE: On some models, the wireless light is amber when all wireless devices are off.</p>

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

TouchPad



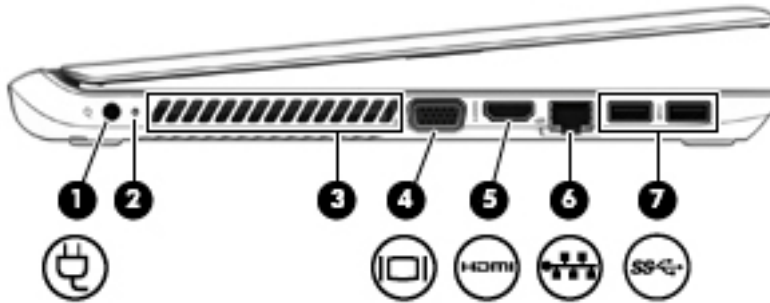
Item	Component	Description
(1)	TouchPad on/off button and light	Turns the TouchPad on and off. <ul style="list-style-type: none"> Amber: The TouchPad is off. Off: The TouchPad is on.
(2)	TouchPad zone	Reads your finger gestures to move the pointer or activate items on the screen.
(3)	Left TouchPad button	Functions like the left button on an external mouse.
(4)	Right TouchPad button	Functions like the right button on an external mouse.

Front



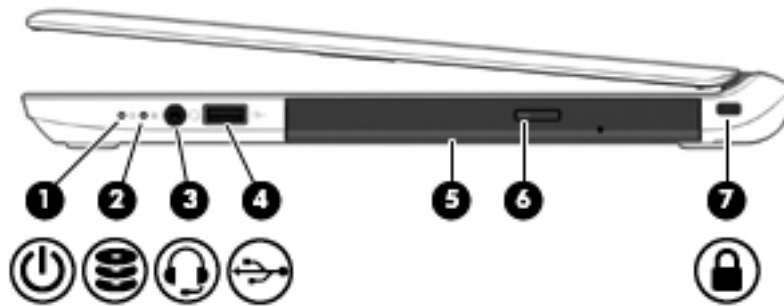
Item	Component	Description
(1)	Memory card reader	Reads optional memory cards that store, manage, share, or access information.

Left side



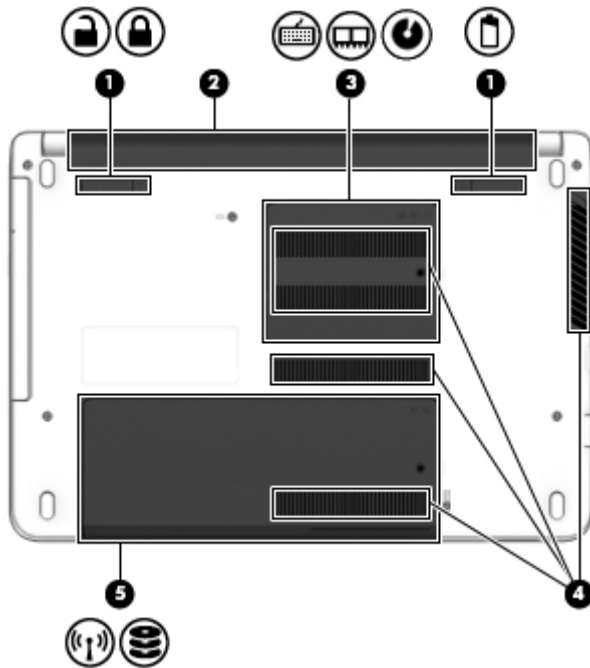
Item	Component	Description
(1)	Power connector	Connects an AC adapter.
(2)	AC adapter/Battery light	<ul style="list-style-type: none"> White: The AC adapter is connected to external power and the battery is fully charged. Amber: The AC adapter is connected to external power and the battery is charging. Off: The AC adapter is not connected to external power.
(3)	Vent	<p>Enables airflow to cool internal components.</p> <p>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.</p>
(4)	External monitor port	Connects an external VGA monitor or projector.
(5)	HDMI port	Connects an optional video or audio device, such as a high-definition television, any compatible digital or audio component, or a high-speed HDMI device.
(6)	RJ-45 (network) jack/lights	<p>Connects a network cable.</p> <ul style="list-style-type: none"> Green (left): The network is connected. Amber (right): The network is showing activity.
(7)	USB 3.0 ports (2)	Each USB 3.0 port connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub.

Right side



Item	Component	Description
(1)	Power light	<ul style="list-style-type: none"> On: The computer is on. Blinking: The computer is in the Sleep state, a power-saving state. The computer shuts off power to the display and other unneeded components. Off: The computer is off or in Hibernation. Hibernation is a power-saving state that uses the least amount of power. <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.</p>
(2)	Hard drive light	Blinking white: The hard drive is being accessed.
(3)	Audio-out (headphone) jack/Audio-in (microphone) combo jack	<p>Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects an optional headset microphone. This jack does not support optional microphone-only devices.</p> <p>WARNING! To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, see 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)	USB 2.0 port	Connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub.
(5)	Optical drive (select models only)	Depending on your computer model, reads an optical disc or reads and writes to an optical disc.
(6)	Optical drive eject button (select models only)	Releases the optical drive disc tray.
(7)	Security cable slot	<p>Attaches an optional security cable to the computer.</p> <p>NOTE: The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.</p>


Bottom



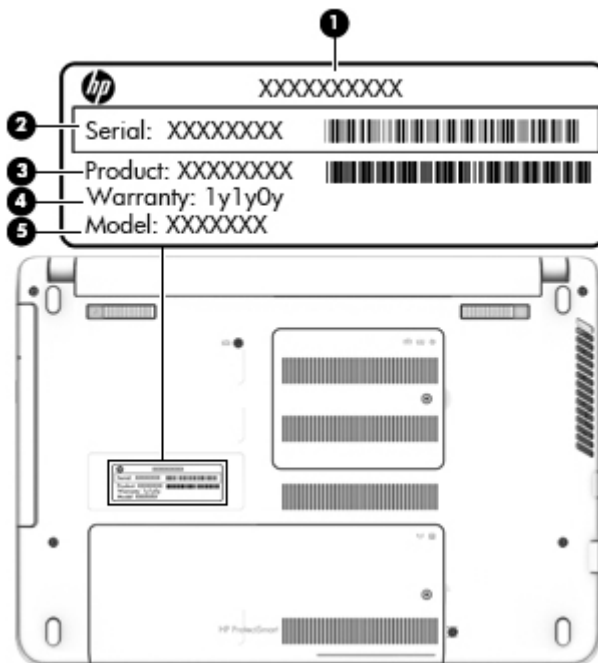
Item	Component	Description
(1)	Battery cover release latch and lock	Releases the battery cover over the battery bay.
(2)	Battery bay	Holds the battery.
(3)	Memory module compartment cover	Provides access to one of the keyboard screws, the memory module slots, and the optical drive screw.
(4)	Vents (2)	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.
(5)	Service cover	Provides access to the hard drive bay and the WLAN module slot. 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 computer functionality, and then contact support through Help and Support.

3 Illustrated parts catalog

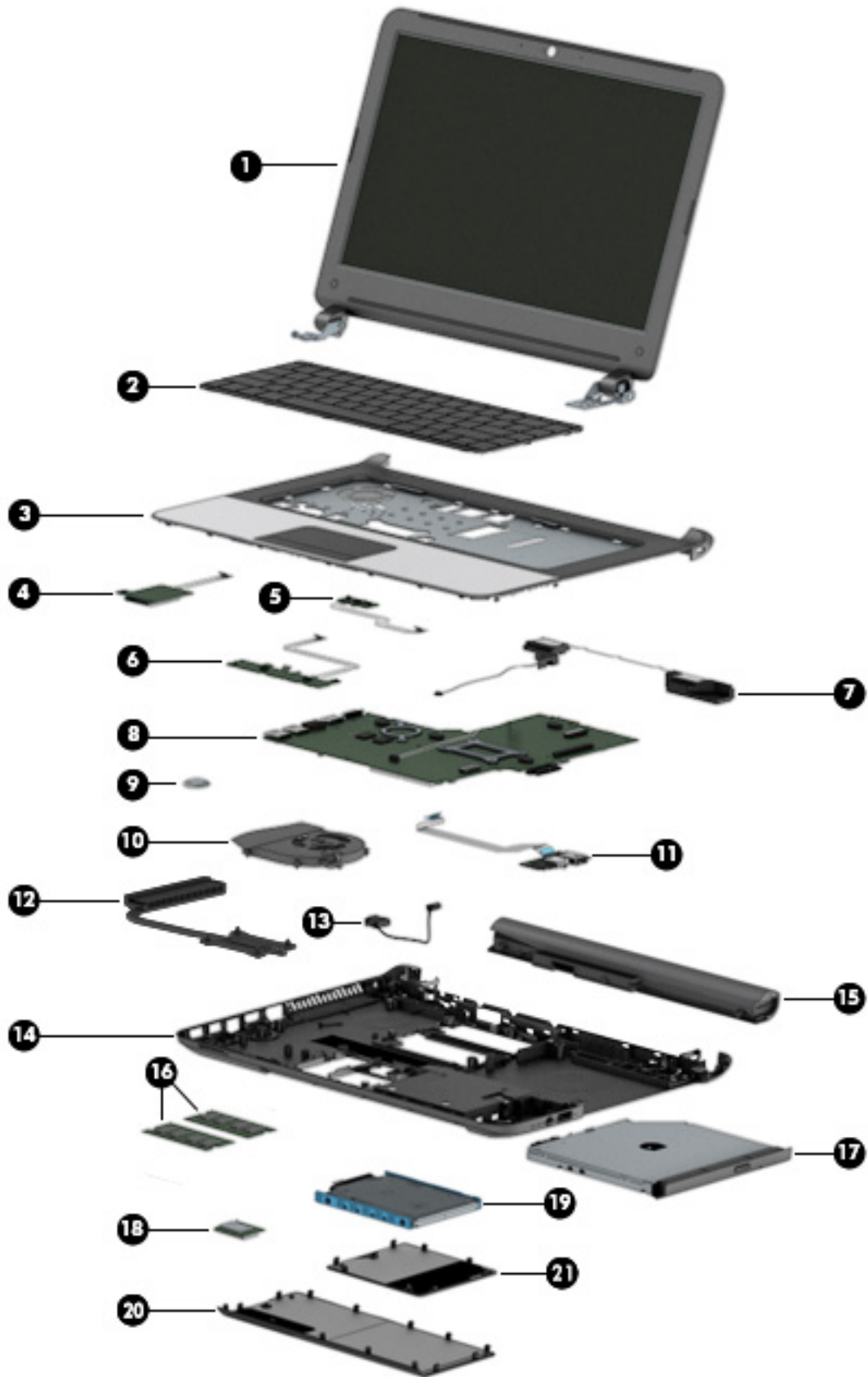
Locating the serial number, product number, and model number

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

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



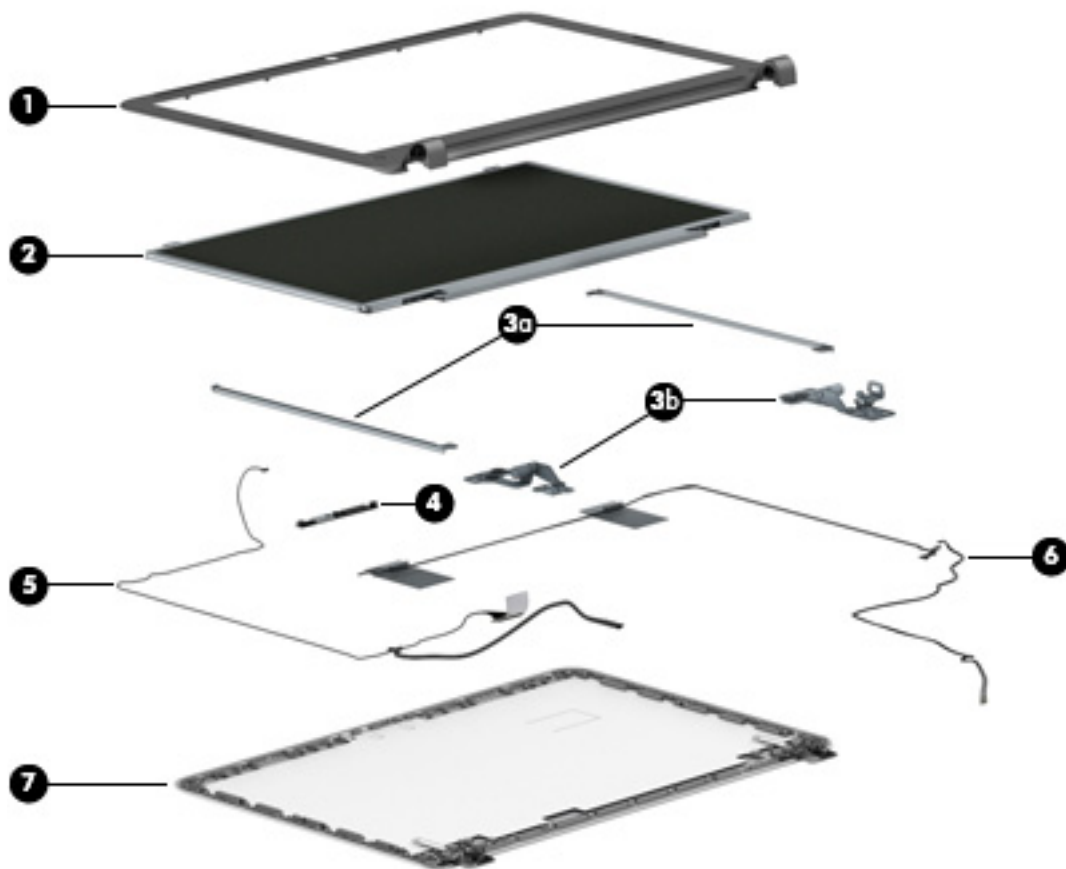
Computer major components



Item	Component	Spare part number
(1)	Display assembly: The display assembly is spared at the subcomponent level only. For more display assembly spare part information, see Display assembly components on page 17 .	
(2)	Keyboard (includes keyboard cable)	746019-001
(3)	Top cover (includes TouchPad and TouchPad cable)	759271-001
(4)	Card reader board (includes cable and double-sided adhesive)	746645-001
(5)	Power button board (includes cable and double-sided adhesive)	746646-001
(6)	TouchPad button board (includes TouchPad cable, TouchPad button board cable, and double-sided adhesive)	767331-001
(7)	Speaker Kit (includes left and right speakers and cables)	746656-001
(8)	System board (includes replacement thermal material):	
	Equipped with an Intel Core i5-4200U 1.60-GHz processor (dual core, 15 W, 3-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and the Windows 8 Standard operating system	759268-501
	Equipped with an Intel Core i5-4200U 1.60-GHz processor (dual core, 15 W, 3-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and a non-Windows 8 operating system	759268-001
	Equipped with an Intel Core i5-4200U 1.60-GHz processor (dual core, 15 W, 3-MB L3 cache), a graphics subsystem with UMA memory, and the Windows 8 Standard operating system	762219-501
	Equipped with an Intel Core i5-4200U 1.60-GHz processor (dual core, 15 W, 3-MB L3 cache), a graphics subsystem with UMA memory, and a non-Windows 8 operating system	762219-001
	Equipped with an Intel Core i3-4010U 1.70-GHz processor (dual core, 15 W, 3-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and the Windows 8 Standard operating system	759269-501
	Equipped with an Intel Core i3-4010U 1.70-GHz processor (dual core, 15 W, 3-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and a non-Windows 8 operating system	759269-001
	Equipped with an Intel Core i3-4010U 1.70-GHz processor (dual core, 15 W, 3-MB L3 cache), a graphics subsystem with UMA memory, and the Windows 8 Standard operating system	762220-501
	Equipped with an Intel Core i3-4010U 1.70-GHz processor (dual core, 15 W, 3-MB L3 cache), a graphics subsystem with UMA memory, and a non-Windows 8 operating system	762220-001
	Equipped with an Intel Celeron 2957U 1.40-GHz processor (dual core, 15 W, 2-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and the Windows 8 Standard operating system	759270-501
	Equipped with an Intel Celeron 2957U 1.40-GHz processor (dual core, 15 W, 2-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and a non-Windows 8 operating system	759270-001
	Equipped with an Intel Celeron 2957U 1.40-GHz processor (dual core, 15 W, 2-MB L3 cache), a graphics subsystem with UMA memory, and the Windows 8 Standard operating system	762221-501

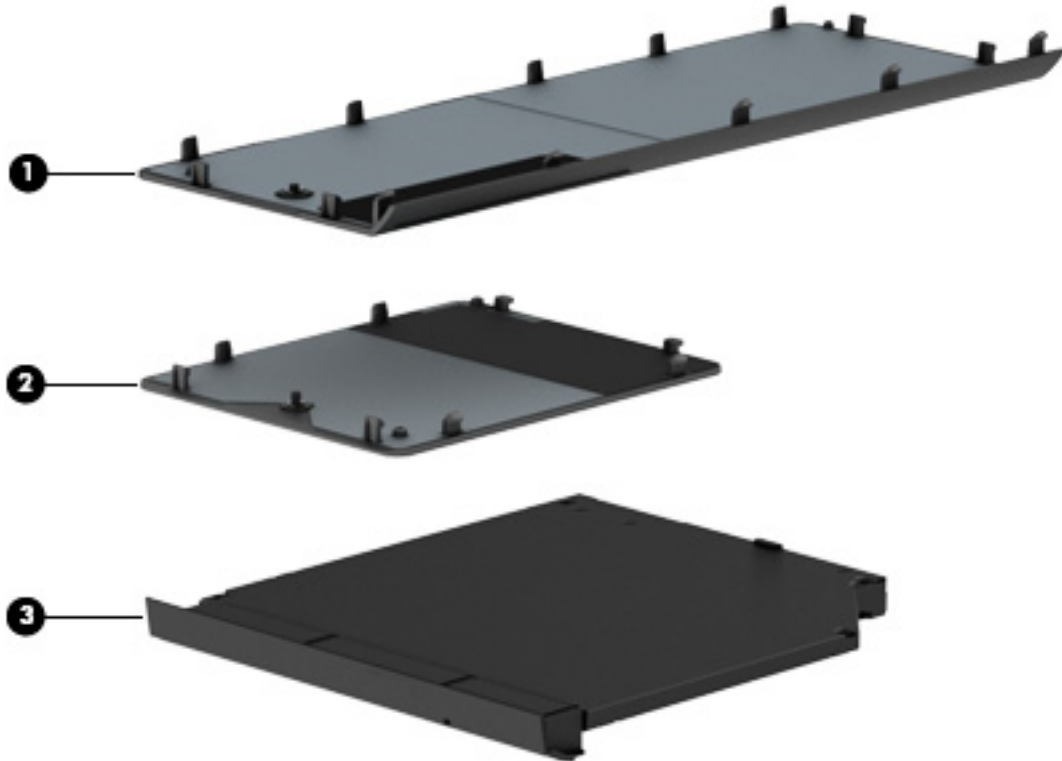
Item	Component	Spare part number
	Equipped with an Intel Celeron 2957U 1.40-GHz processor (dual core, 15 W, 2-MB L3 cache), a graphics subsystem with UMA memory, and a non-Windows 8 operating system	762221-001
(9)	RTC battery	718440-001
(10)	Fan (includes cable)	746657-001
(11)	Audio/USB board (includes audio jack, USB port, and cable)	759266-001
(12)	Heat sink (includes replacement thermal material)	746658-001
(13)	Power connector cable	746660-001
(14)	Base enclosure	759264-001
	Rubber Kit (not illustrated, includes base enclosure rubber feet)	761810-001
(15)	4-cell, 41-WHr, 2.80-AHr, Li-ion battery	752237-001
(16)	Memory modules (2; PCL3, 12800, 1600-MHz):	
	8 GB	693374-001
	4 GB	691740-001
	2 GB	691739-001
(17)	DVD±RW Double Layer with SuperMulti Drive	760729-001
(18)	WLAN module:	
	Qualcomm Atheros AR9565 802.11b/g/n 1×1 WiFi + BT 4.0 Combo Adapter	733476-001
	Realtek RTL8188EE 802.11bgn Wi-Fi Adapter	709848-001
(19)	Hard drive (does not include hard drive bracket or hard drive connector adapter):	
	NOTE: The hard drive bracket and hard drive connector adapter are included in the Hard Drive Hardware Kit, spare part number 746650-001. See Mass storage devices on page 19 for more information on the Hard Drive Hardware Kit.	
	750-GB, 5400-rpm, SATA, 7.0-mm hard drive	634250-001
	500-GB, 5400-rpm, SATA, 7.0-mm hard drive	683802-001
	Plastics Kit , includes:	761809-001
	NOTE: See Plastics Kit on page 18 for more Plastics Kit information.	
(20)	Service cover (includes one captive screw, secured by an O-ring)	
(21)	Memory module compartment cover (includes one captive screw, secured by an O-ring)	
	Optical drive bay space saver (not illustrated)	

Display assembly components



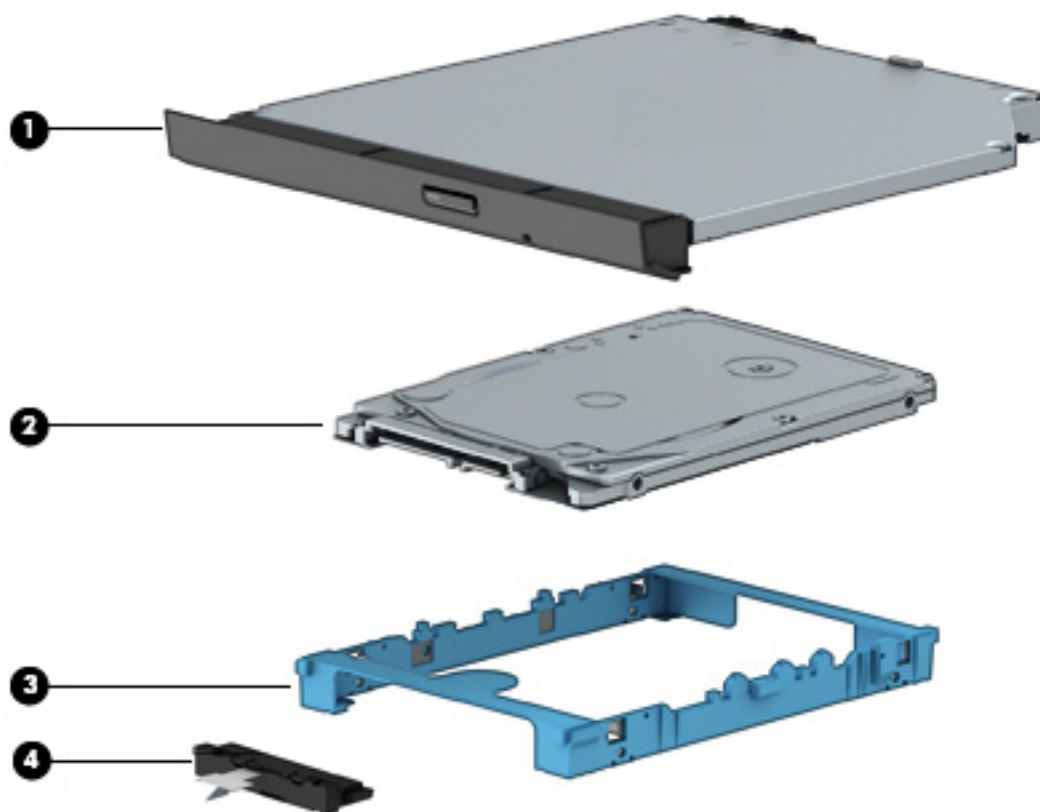
Item	Component	Spare part number
(1)	Display bezel	759265-001
(2)	14.0-in, HD, SVA display panel	754891-001
	Display Hinge Kit, includesL	761808-001
(3a)	Left and right display hinge brackets	
(3b)	Left and right display hinges	
(4)	Webcamera/microphone module (includes double-sided adhesive)	759272-001
(5)	Display panel cable	759267-001
(6)	Antenna Kit (includes left and right wireless antenna cables and transceivers)	761807-001
(7)	Display enclosure	759263-001

Plastics Kit



Item	Component	Spare part number
	Plastics Kit , includes:	761809-001
(1)	Service cover (includes one captive screw, secured by an O-ring)	
(2)	Memory module compartment cover (includes one captive screw, secured by an O-ring)	
(3)	Optical drive bay space saver	

Mass storage devices



Item	Component	Spare part number
(1)	DVD±RW Double Layer with SuperMulti Drive	760729-001
(2)	Hard drive (does not include hard drive bracket, hard drive connector adapter, or screws): NOTE: The hard drive bracket, hard drive connector adapter, and screws are included in the Hard Drive Hardware Kit.	
	750-GB, 5400-rpm, SATA, 7.0-mm hard drive	634250-001
	500-GB, 5400-rpm, SATA, 7.0-mm hard drive	683802-001
	Hard Drive Hardware Kit , includes:	746650-001
(3)	Hard drive bracket	
(4)	Hard drive connector adapter	
	Screws (not illustrated)	

Miscellaneous parts

Component	Spare part number
65-W HP Smart adapter (non-PFC, EM, 4.5-mm)	714657-001
Power cord for use only in the People's Republic of China (3-pin, black, 1.83-m):	490371-AA1
Rubber Kit	761810-001
Screw Kit	761811-001

Sequential part number listing

Spare part number	Description
490371-AA1	Power cord for use in the People's Republic of China (3-pin, black, 1.83-m)
634250-001	750-GB, 5400-rpm, SATA, 7.0-mm hard drive (does not include hard drive bracket or hard drive connector adapter): NOTE: The hard drive bracket and hard drive connector adapter are included in the Hard Drive Hardware Kit, spare part number 746650-001. NOTE: The hard drive bracket, hard drive connector adapter, and screws are included in the Hard Drive Hardware Kit, spare part number 746650-001.
683802-001	500-GB, 5400-rpm, SATA, 7.0-mm hard drive (does not include hard drive bracket, hard drive connector adapter, or screws) NOTE: The hard drive bracket, hard drive connector adapter, and screws are included in the Hard Drive Hardware Kit, spare part number 746650-001.
691739-001	2-GB memory module (PCL3, 12800, 1600-MHz)
691740-001	4-GB memory module (PCL3, 12800, 1600-MHz)
693374-001	8-GB memory module (PCL3, 12800, 1600-MHz)
709848-001	Realtek RTL8188EE 802.11bgn Wi-Fi Adapter
714657-001	65-W HP Smart adapter (non-PFC, EM, 4.5-mm)
718440-001	RTC battery (includes cable and double-sided adhesive)
733476-001	Qualcomm Atheros AR9565 802.11b/g/n 1×1 WiFi + BT 4.0 Combo Adapter
746019-001	Keyboard (includes keyboard cable)
746645-001	Card reader board (includes cable and double-sided adhesive)
746646-001	Power button board (includes cable and double-sided adhesive)
746650-001	Hard Drive Hardware Kit (includes hard drive bracket, hard drive connector adapter, and screws)
746656-001	Speaker Kit (includes left and right speakers and cables)
746657-001	Fan (includes cable)
746658-001	Heat sink (includes replacement thermal material)

Spare part number	Description
746660-001	Power connector cable
746664-001	Display panel cable
752237-001	4-cell, 41-WHr, 2.80-AHr, Li-ion battery
759263-001	Display enclosure
759264-001	Base enclosure
759265-001	Display bezel
759266-001	Audio/USB board (includes audio jack, USB port, and cable)
759267-001	14.0-in, HD, SVA display panel
759268-001	System board equipped with an Intel Core i5-4200U 1.60-GHz processor (dual core, 15 W, 3-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and a non-Windows 8 operating system (includes replacement thermal material)
759268-501	System board equipped with an Intel Core i5-4200U 1.60-GHz processor (dual core, 15 W, 3-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and the Windows 8 Standard operating system (includes replacement thermal material)
759269-001	System board equipped with an Intel Core i3-4010U 1.70-GHz processor (dual core, 15 W, 3-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and a non-Windows 8 operating system (includes replacement thermal material)
759269-501	System board equipped with an Intel Core i3-4010U 1.70-GHz processor (dual core, 15 W, 3-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and the Windows 8 Standard operating system (includes replacement thermal material)
759270-001	System board equipped with an Intel Celeron 2957U 1.40-GHz processor (dual core, 15 W, 2-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and a non-Windows 8 operating system (includes replacement thermal material)
759270-501	System board equipped with an Intel Celeron 2957U 1.40-GHz processor (dual core, 15 W, 2-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and the Windows 8 Standard operating system (includes replacement thermal material)
759271-001	Top cover (includes TouchPad and TouchPad cable)
759272-001	Webcamera/microphone module (includes double-sided adhesive)
760729-001	DVD±RW Double Layer with SuperMulti Drive
761807-001	Antenna Kit (includes left and right wireless antenna cables and transceivers)
761808-001	Display Hinge Kit (includes left and right display hinges)
761809-001	Plastics Kit (includes the memory module compartment cover, the optical drive bay space saver, and the service cover)
	NOTE: See Plastics Kit on page 18 for more Plastics Kit information.
761810-001	Rubber Kit (includes base enclosure rubber feet)
761811-001	Screw Kit
762219-001	System board equipped with an Intel Core i5-4200U 1.60-GHz processor (dual core, 15 W, 3-MB L3 cache), a graphics subsystem with UMA memory, and a non-Windows 8 operating system (includes replacement thermal material)

Spare part number	Description
762219-501	System board equipped with an Intel Core i5-4200U 1.60-GHz processor (dual core, 15 W, 3-MB L3 cache), a graphics subsystem with UMA memory, and the Windows 8 Standard operating system (includes replacement thermal material)
762220-001	System board equipped with an Intel Core i3-4010U 1.70-GHz processor (dual core, 15 W, 3-MB L3 cache), a graphics subsystem with UMA memory, and a non-Windows 8 operating system (includes replacement thermal material)
762220-501	System board equipped with an Intel Core i3-4010U 1.70-GHz processor (dual core, 15 W, 3-MB L3 cache), a graphics subsystem with UMA memory, and the Windows 8 Standard operating system (includes replacement thermal material)
762221-001	System board equipped with an Intel Celeron 2957U 1.40-GHz processor (dual core, 15 W, 2-MB L3 cache), a graphics subsystem with UMA memory, and a non-Windows 8 operating system (includes replacement thermal material)
762221-501	System board equipped with an Intel Celeron 2957U 1.40-GHz processor (dual core, 15 W, 2-MB L3 cache), a graphics subsystem with UMA memory, and the Windows 8 Standard operating system (includes replacement thermal material)
767331-001	TouchPad button board (includes TouchPad cable, TouchPad button board cable, and double-sided adhesive)

4 Removal and replacement preliminary requirements


Tools required

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


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

Service considerations

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

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

Equipment guidelines

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

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


The following grounding equipment is recommended to prevent electrostatic damage:

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

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


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


5 Removal and replacement procedures for Customer Self-Repair parts

 **NOTE:** The Customer Self-Repair program is not available in all locations. Installing a part not supported by the Customer Self-Repair program may void your warranty. Check your warranty to determine if Customer Self-Repair is supported in your location.

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

Component replacement procedures

 **NOTE:** Please read and follow the procedures described here to access and replace Customer Self-Repair parts successfully.

 **NOTE:** Details about your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer. See [Locating the serial number, product number, and model number on page 13](#) for details.

This chapter provides removal and replacement procedures for Customer Self-Repair parts.

There are as many as 6 screws that must be removed, replaced, and/or loosened when servicing Customer Self-Repair parts. Make special note of each screw size and location during removal and replacement.

Battery

Description	Spare part number
4-cell, 41-WHr, 2.80-AHr, Li-ion battery	752237-001

Before removing the disassembling the computer, follow these steps:

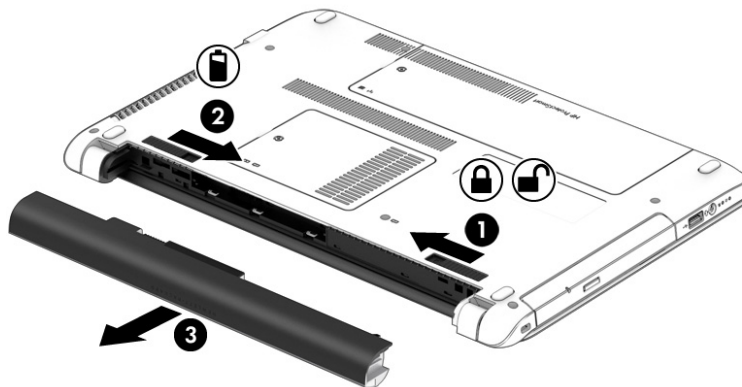
1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.

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

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


Remove the battery:

1. Turn the computer upside down on a flat surface, with the battery bay toward you.
2. Slide the battery release latch **(1)** and battery lock **(2)** inwards to release the battery.
3. Remove the battery from the computer **(3)**.



Reverse this procedure to install the battery.

Service cover

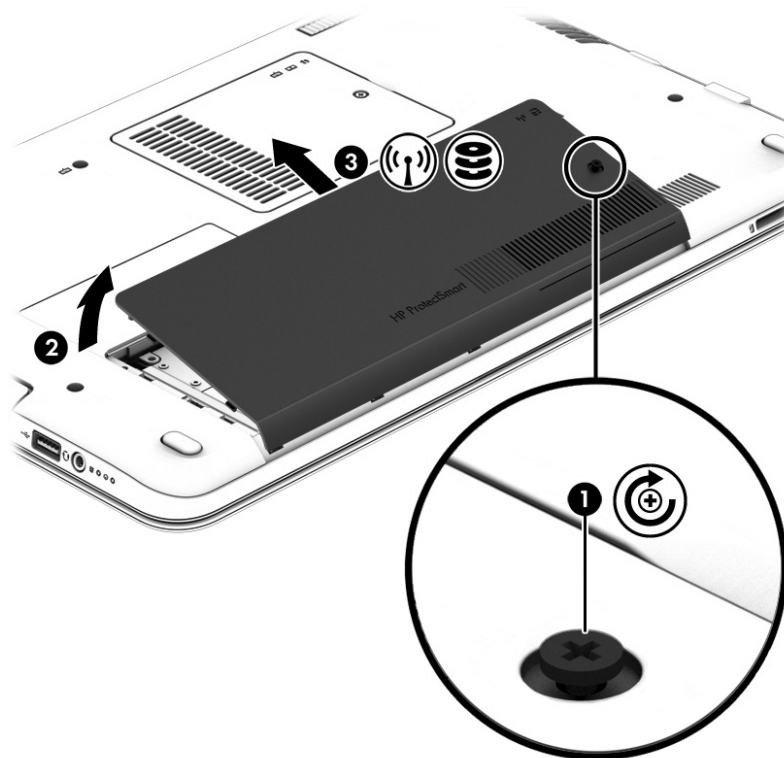
 **NOTE:** The service cover is included in the Plastics Kit, spare part number 761809-001.

Before removing the service cover, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the battery (See [Battery on page 29](#)).

Remove the service cover:

1. Loosen the Phillips PM2.5×4.5 captive screw **(1)** that secures the service cover to the computer.
2. Lift the rear edge of the service cover **(2)** until it rests at an angle.
3. Remove the service cover **(3)**.



Reverse this procedure to install the service cover.

Hard drive



NOTE: The hard drive spare part kit does not include the hard drive bracket or hard drive connector adapter. The hard drive bracket and hard drive connector adapter are included in the Hard Drive Hardware Kit, spare part number 746650-001. See [Mass storage devices on page 19](#) for more information on the Hard Drive Hardware Kit.

Description	Spare part number
750-GB, 5400-rpm, SATA, 7.0-mm hard drive	634250-001
500-GB, 5400-rpm, SATA, 7.0-mm hard drive	683802-001

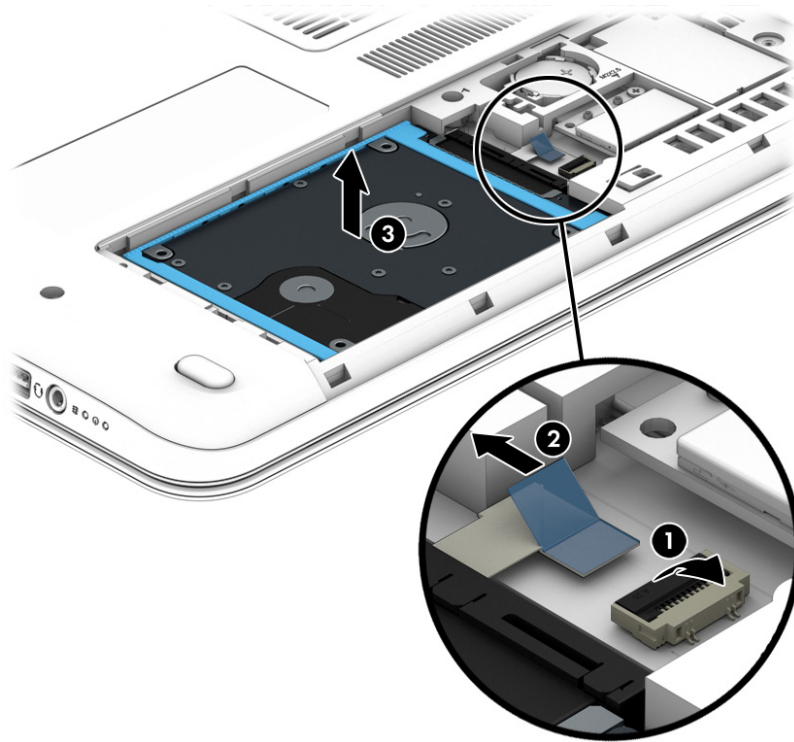
Before removing the battery, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the battery (see [Battery on page 29](#)).
5. Remove the service cover (see [Service cover on page 30](#)).

Remove the hard drive:

1. Release the zero insertion force (ZIF) connector **(1)** to which the hard drive connector cable is attached, and then disconnect the hard drive connector cable **(2)** from the system board.

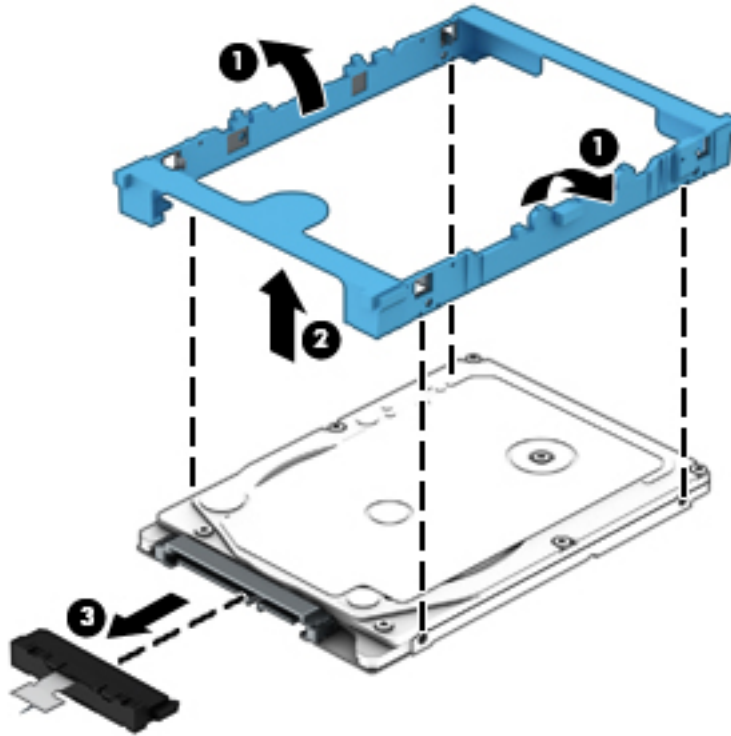
2. Remove the hard drive **(3)** from the hard drive bay.



3. If it is necessary to disassemble the hard drive, perform the following steps:
 - a. Position the hard drive with the hard drive connector adapter toward you.
 - b. Release the left and right sides of the hard drive bracket **(1)** from the hard drive.
 - c. Remove the hard drive bracket **(2)** from the hard drive.

- d. Remove the hard drive connector adapter **(3)** from the hard drive.

The hard drive bracket and hard drive connector adapter are available in the Hard Drive Hardware Kit, spare part number 746650-001.



Reverse this procedure to reassemble and install the hard drive.

WLAN module


Description	Spare part number
Realtek RTL8188EE 802.11bgn Wi-Fi Adapter	709848-001
Qualcomm Atheros AR9565 802.11b/g/n 1×1 WiFi + BT 4.0 Combo Adapter	733476-001

Before removing the WLAN module, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the battery (see [Battery on page 29](#)).
5. Remove the service cover (see [Service cover on page 30](#)).

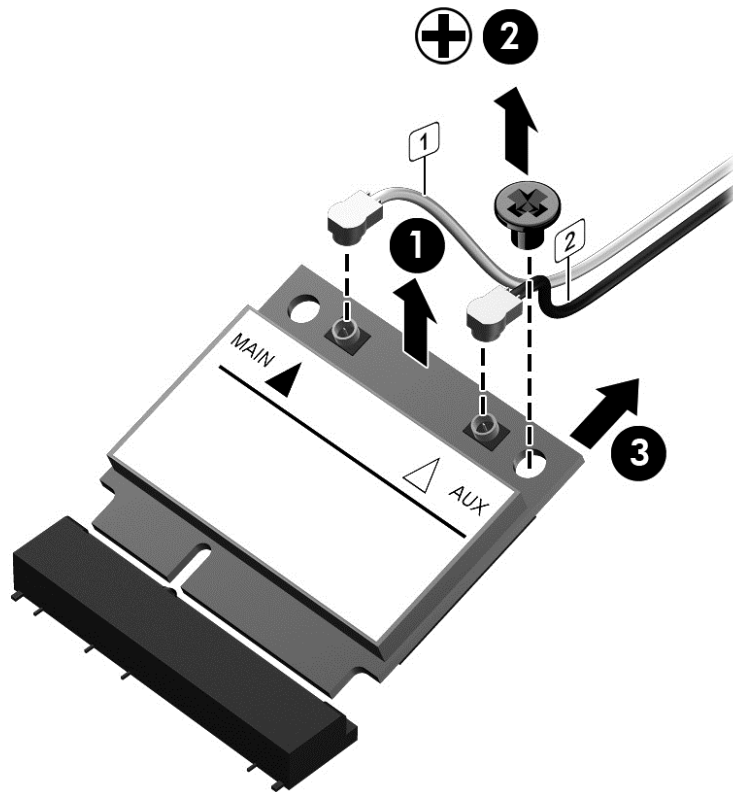
Remove the WLAN module:


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

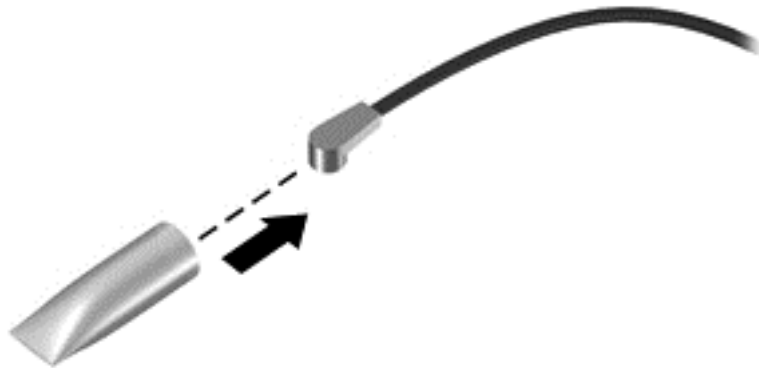
 **NOTE:** The WLAN antenna cable labeled “1” connects to the WLAN module “Main” terminal labeled “1”. The WLAN antenna cable labeled “2” connects to the WLAN module “Aux” terminal labeled “2”.

2. Remove the Phillips PM2.0×3.0 screw **(2)** that secures the WLAN module to the system board. (The WLAN module tilts up.)

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



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



Reverse this procedure to install the WLAN module.

Memory module

Description	Spare part number
8 GB	693374-001
4 GB	691740-001
2 GB	691739-001

Before removing the memory module, follow these steps:

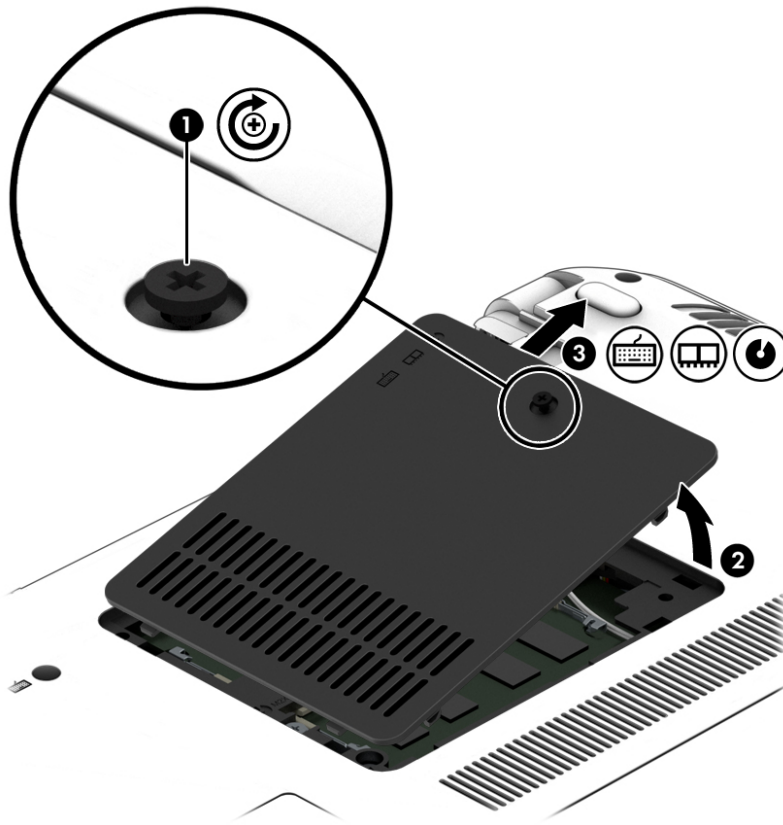
1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the battery (see [Battery on page 29](#)).

Remove the memory module:

1. Loosen the Phillips PM2.5×4.5 captive screw **(1)** that secures the memory module compartment cover to the computer.
2. Lift the right edge of the memory module compartment cover **(2)** until it rests at an angle.

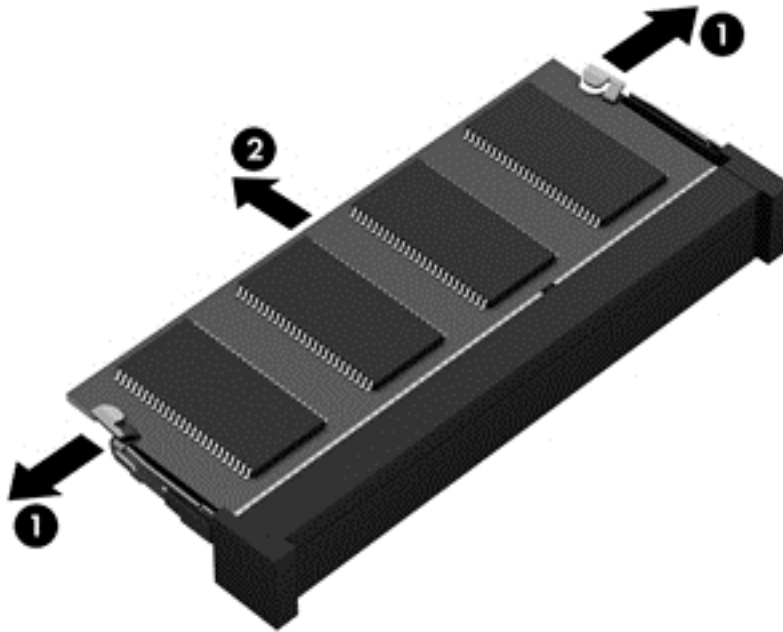
3. Remove the memory module compartment cover **(3)**.

The memory module compartment cover is included in the Plastics Kit, spare part number 761809-001.



4. Spread the retaining tabs **(1)** on each side of the memory module slot to release the memory module. (The memory module tilts up.)

5. Remove the memory module **(2)** by pulling the module away from the slot at an angle.



Reverse this procedure to install a memory module.

Optical drive

Description	Spare part number
DVD±RW Double Layer with SuperMulti Drive	760729-001

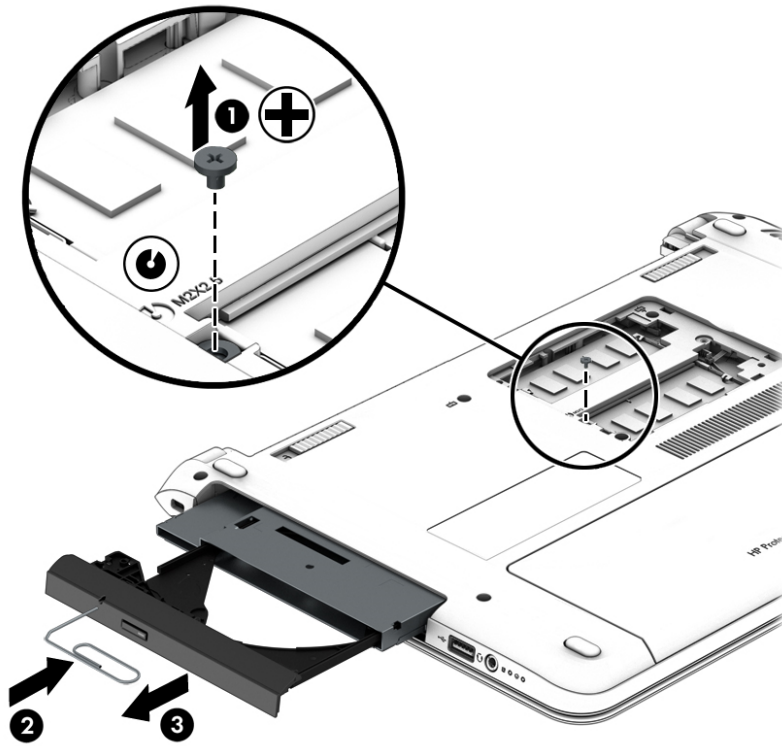
Before removing the optical drive, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the battery (see [Battery on page 29](#)).
5. Remove the memory module compartment cover (see [Memory module on page 36](#)).

Remove the optical drive:

1. Position the computer with the left side toward you.
2. Remove the Phillips PM2.0×3.0 screw **(1)** that secures the optical drive to the computer.
3. Use a thin plastic tool to press on the optical drive tab **(2)** and release the optical drive from the computer.

4. Remove the optical drive **(3)**.



Reverse this procedure to install the optical drive.

Keyboard

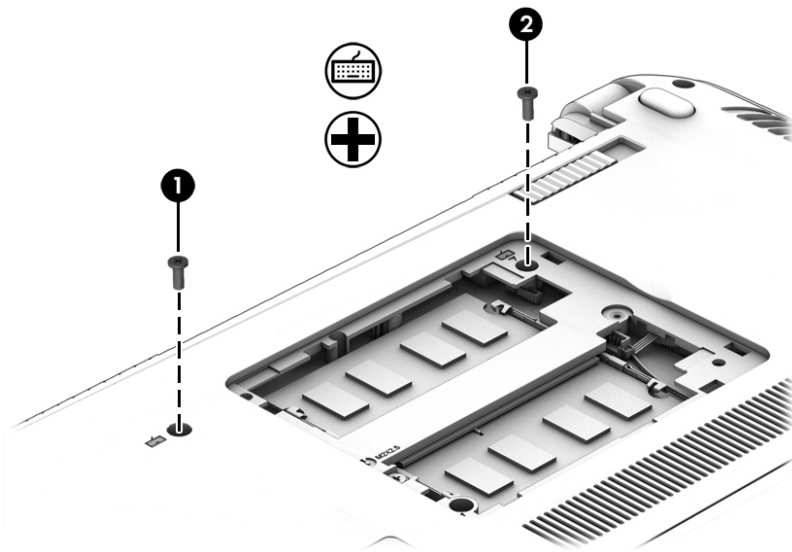
Description	Spare part number
Keyboard (includes keyboard cable)	746019-001

Before removing the keyboard, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the battery (see [Battery on page 29](#)).
5. Remove the memory module compartment cover (see [Memory module on page 36](#)).

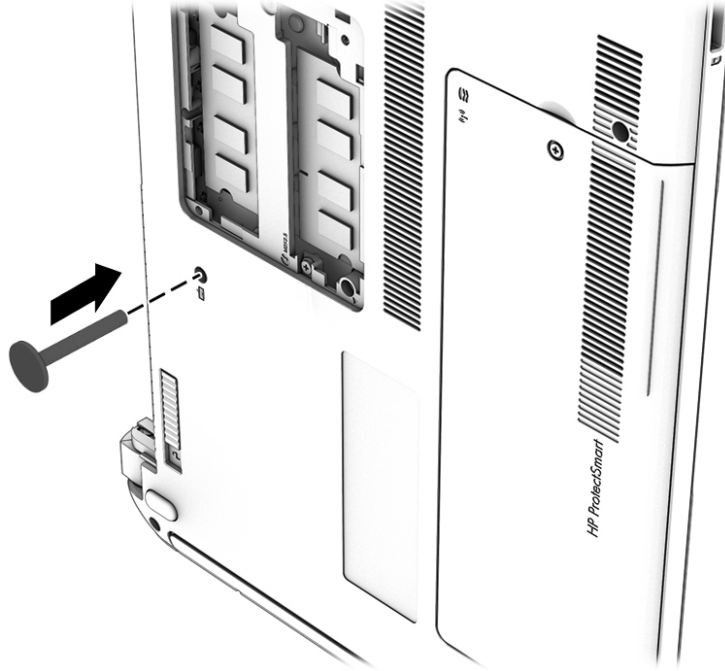
Remove the keyboard:

1. Remove the Phillips PM2.4×3.6 screw **(1)** and the Phillips PM2.4×6.6 screw **(2)** that secure the keyboard to the computer.

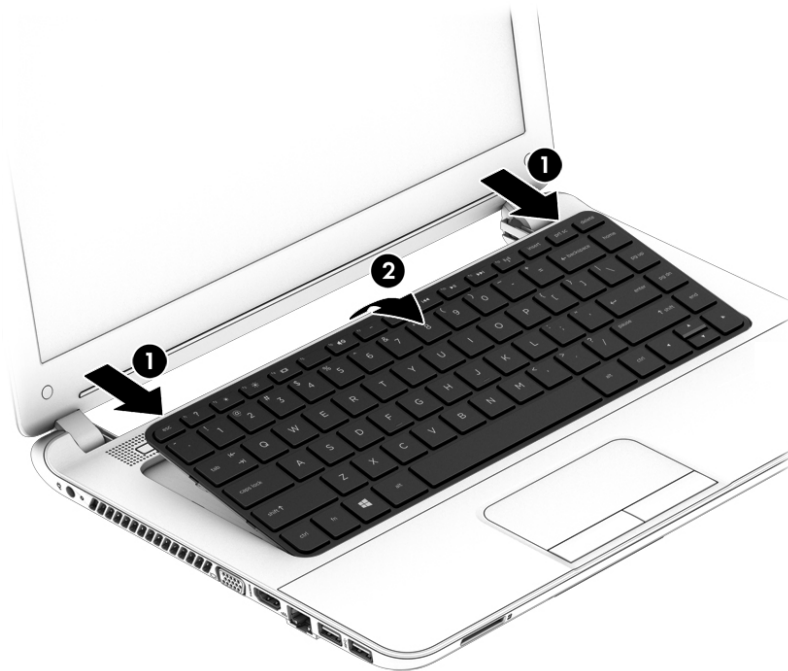


2. Partially open the computer.
3. Rest and secure the computer on its left side.

4. Insert a thin, plastic tool into the keyboard retention screw hole, and then press on the back of the keyboard until the keyboard disengages from the computer.



5. Open the computer as far as it will open.
6. Slide the keyboard **(1)** toward the TouchPad as far as it will slide.
7. Lift the rear edge of the keyboard **(2)** until it rests at an angle.




8. Swing the keyboard **(1)** up and forward until it rests upside down on the palm rest.

9. Release the ZIF connector **(2)** to which the keyboard cable is attached, and then disconnect the keyboard cable **(3)** from the system board.
10. Remove the keyboard **(4)**.



Reverse this procedure to install the keyboard.

6 Removal and replacement procedures for Authorized Service Provider parts

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

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

Component replacement procedures

This chapter provides removal and replacement procedures for Authorized Service Provider only parts.

There are as many as 48 screws that must be removed, replaced, and/or loosened when servicing the computer. Make special note of each screw size and location during removal and replacement.


Top cover

Description	Spare part number
Top cover (includes TouchPad and TouchPad cable)	759271-001

Before removing the top cover, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the Battery (see [Battery on page 29](#)), and then remove the following components:
 - a. Service cover (see [Service cover on page 30](#))
 - b. Hard drive (see [Hard drive on page 31](#))


- c. Optical drive (see [Optical drive on page 38](#))
- d. Keyboard (see [Keyboard on page 40](#))

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

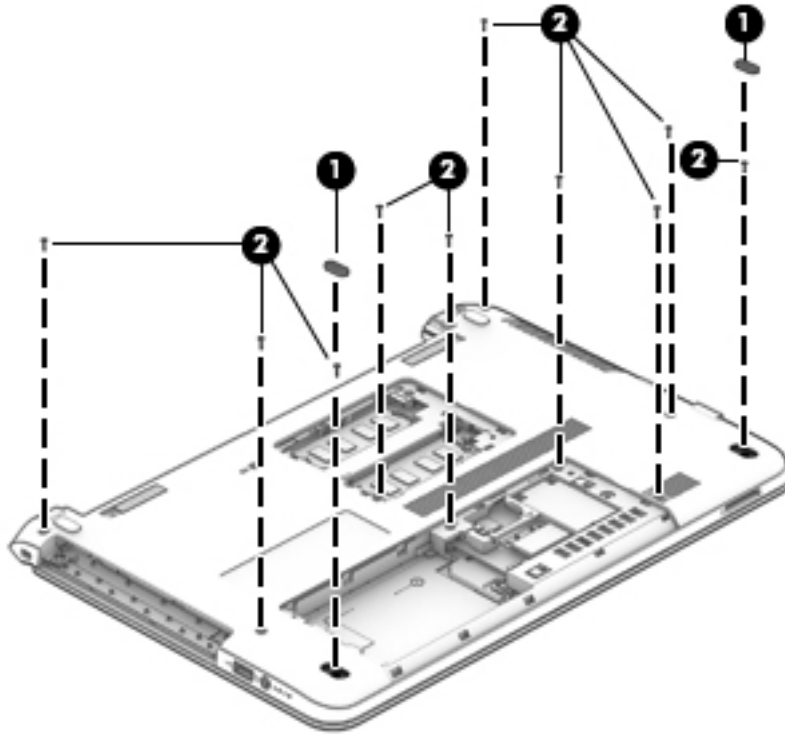
- TouchPad button board (See [TouchPad button board on page 46](#))
- Card reader board (See [Card reader board on page 47](#))
- Power button board (See [Power button board on page 49](#))

Remove the top cover:

1. Close the computer.
2. Turn the computer upside down with the front toward you.
3. Remove the two front rubber feet **(1)**.

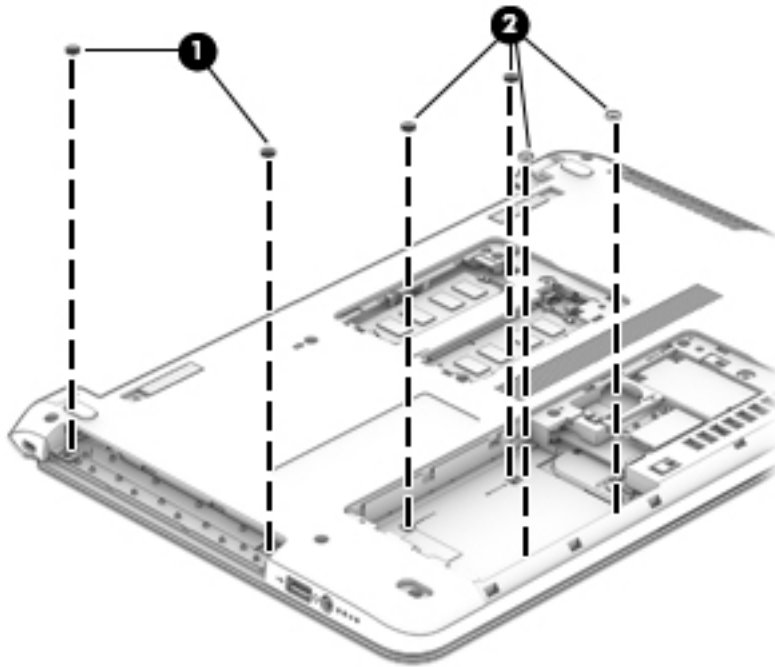
 **NOTE:** The rubber feet are included in the Rubber Kit, spare part number 746669-001.

4. Remove the ten Phillips PM2.4×6.6 screws **(2)** that secure the top cover to the base enclosure.

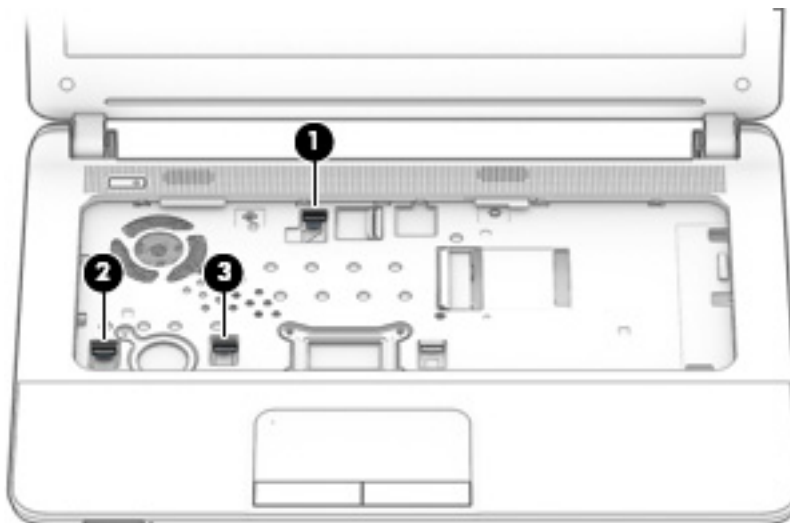


5. Remove the two Phillips PM2.0×2.0 broad head screws **(1)** in the optical drive bay that secure the top cover to the base enclosure.

6. Remove the four Phillips PM2.0×2.0 broad head screws **(2)** in the hard drive bay that secure the top cover to the base enclosure.

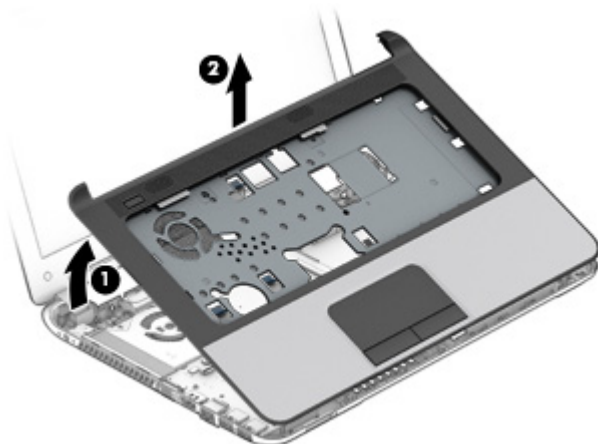


7. Turn the computer right side up with the front toward you.
8. Open the computer as far as it will open.
9. Disconnect the following cables from the system board:
 - (1)** Power button board ZIF connector and ribbon cable
 - (2)** Card reader board ZIF connector and ribbon cable
 - (3)** TouchPad button board ZIF connector and ribbon cable



10. Separate the rear edge of the top cover **(1)** from the base enclosure.

11. Remove the top cover **(2)**.



Reverse this procedure to install the top cover.

TouchPad button board

Description	Spare part number
TouchPad button board (includes TouchPad cable, TouchPad button board cable, and double-sided adhesive)	767331-001

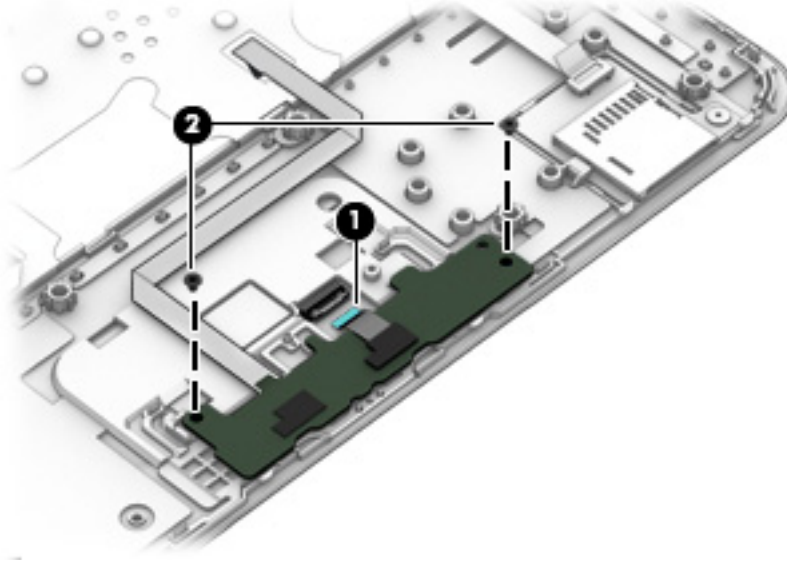
Before removing the TouchPad button board, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the Battery (see [Battery on page 29](#)), and then remove the following components:
 - a. Service cover (see [Service cover on page 30](#))
 - b. Hard drive (see [Hard drive on page 31](#))
 - c. Optical drive (see [Optical drive on page 38](#))
 - d. Keyboard (see [Keyboard on page 40](#))
 - e. Top cover (see [Top cover on page 43](#))

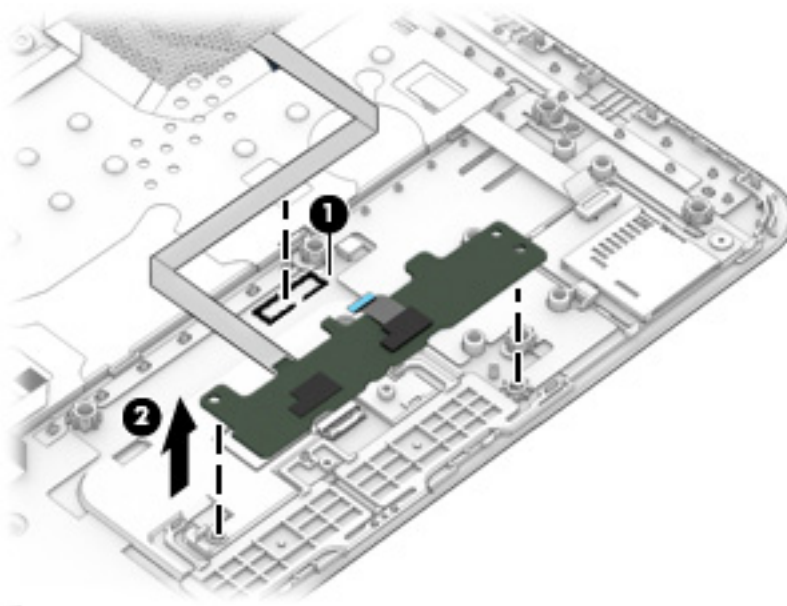
Remove the TouchPad button board:

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

3. Remove the two Phillips PM2.0×3.0 screws **(2)** that secure the TouchPad button board to the top cover.



4. Detach the TouchPad button board cable **(1)** from the top cover. (The TouchPad button board cable is attached to the top cover with double-sided adhesive.)
5. Remove the TouchPad button board **(2)** and cable.



Reverse this procedure to install the TouchPad button board.

Card reader board

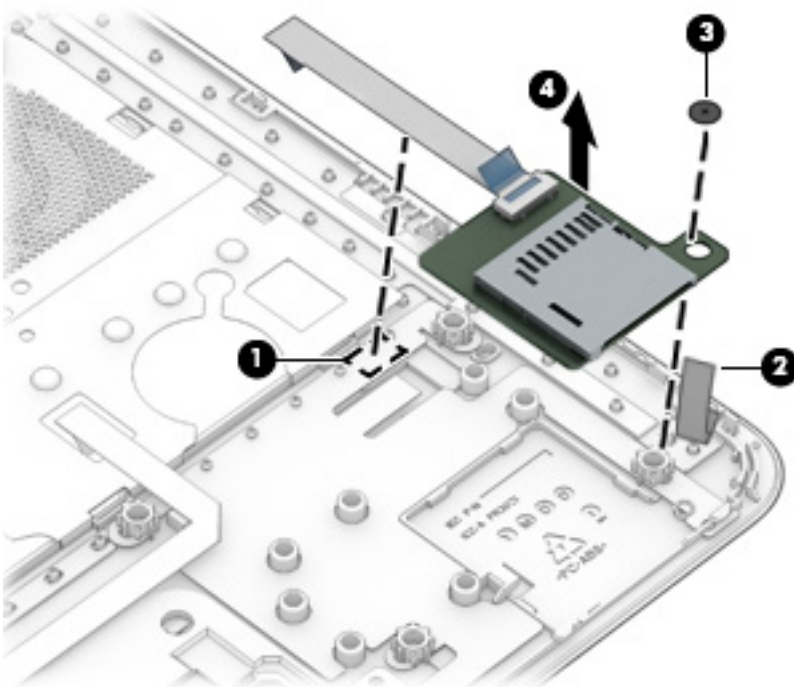
Description	Spare part number
Card reader board (includes cable and double-sided adhesive)	746645-001

Before removing the card reader board, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the Battery (see [Battery on page 29](#)), and then remove the following components:
 - a. Service cover (see [Service cover on page 30](#))
 - b. Hard drive (see [Hard drive on page 31](#))
 - c. Optical drive (see [Optical drive on page 38](#))
 - d. Keyboard (see [Keyboard on page 40](#))
 - e. Top cover (see [Top cover on page 43](#))

Remove the card reader board:

1. Turn the top cover upside down with the front toward you.
2. Detach the card reader board cable **(1)** from the top cover. (The card reader board cable is attached to the top cover with double-sided adhesive.)
3. Detach the grounding tape **(2)** that secures the card reader board to the top cover.
4. Remove the Phillips PM2.0×2.0 broad head screw **(3)** that secures the card reader board to the top cover.
5. Remove the card reader board **(4)** and cable.



Reverse this procedure to install the card reader board.

Power button board

Description	Spare part number
Power button board (includes cable and double-sided adhesive)	746646-001

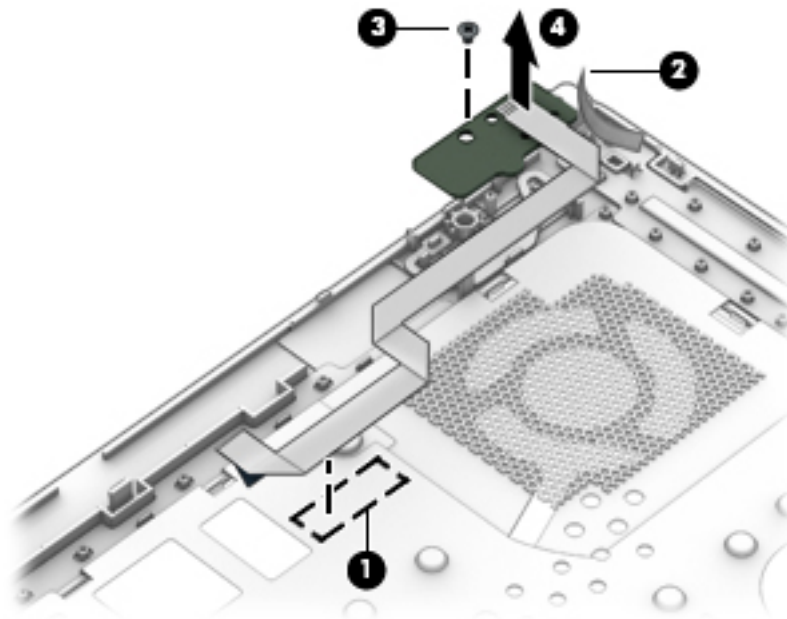
Before removing the power button board, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the Battery (see [Battery on page 29](#)), and then remove the following components:
 - a. Service cover (see [Service cover on page 30](#))
 - b. Hard drive (see [Hard drive on page 31](#))
 - c. Optical drive (see [Optical drive on page 38](#))
 - d. Keyboard (see [Keyboard on page 40](#))
 - e. Top cover (see [Top cover on page 43](#))

Remove the power button board:

1. Turn the top cover upside down with the front toward you.
2. Detach the power button board cable **(1)** from the top cover. (The power button board cable is attached to the top cover with double-sided adhesive.)
3. Detach the grounding tape **(2)** that secures the power button board to the top cover.
4. Remove the Phillips PM2.0×3.0 screw **(3)** that secures the power button board to the top cover.

5. Remove the power button board (4) and cable.



Reverse this procedure to install the power button board.

Speakers

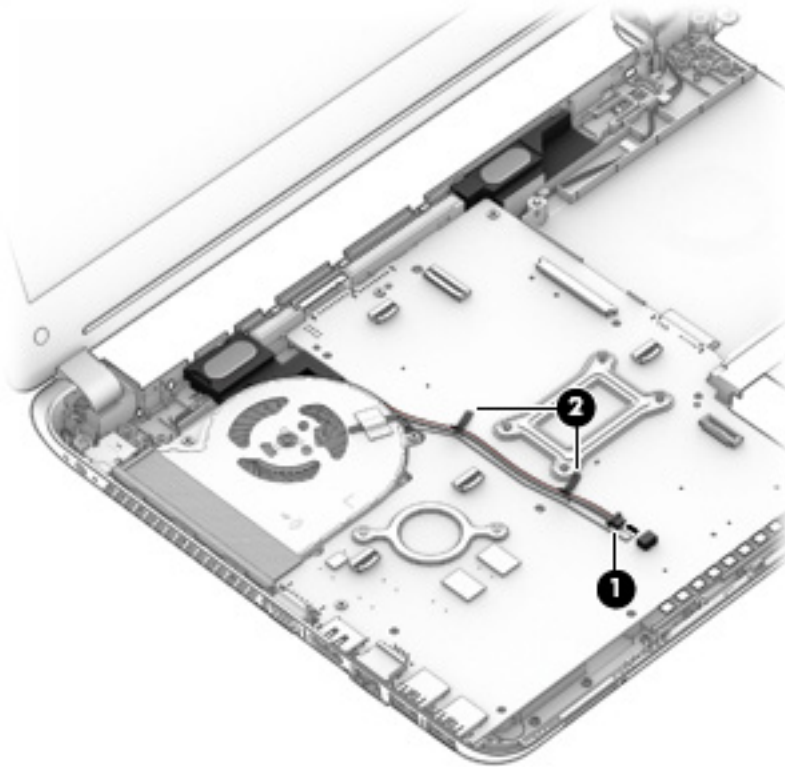
Description	Spare part number
Speaker Kit (includes left and right speakers and cables)	746656-001

Before removing the speakers, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the Battery (see [Battery on page 29](#)), and then remove the following components:
 - a. Service cover (see [Service cover on page 30](#))
 - b. Hard drive (see [Hard drive on page 31](#))
 - c. Optical drive (see [Optical drive on page 38](#))
 - d. Keyboard (see [Keyboard on page 40](#))
 - e. Top cover (see [Top cover on page 43](#))

Remove the speakers:

1. Disconnect the speaker cable **(1)** from the system board.
2. Detach the speaker cable **(2)** from the system board. (The speaker cable is attached to the system board with tape.)
3. Remove the speakers **(3)**.



Reverse this procedure to install the speakers.

Audio/USB board

Description	Spare part number
Audio/USB board (includes audio jack, USB port, and cable)	759266-001

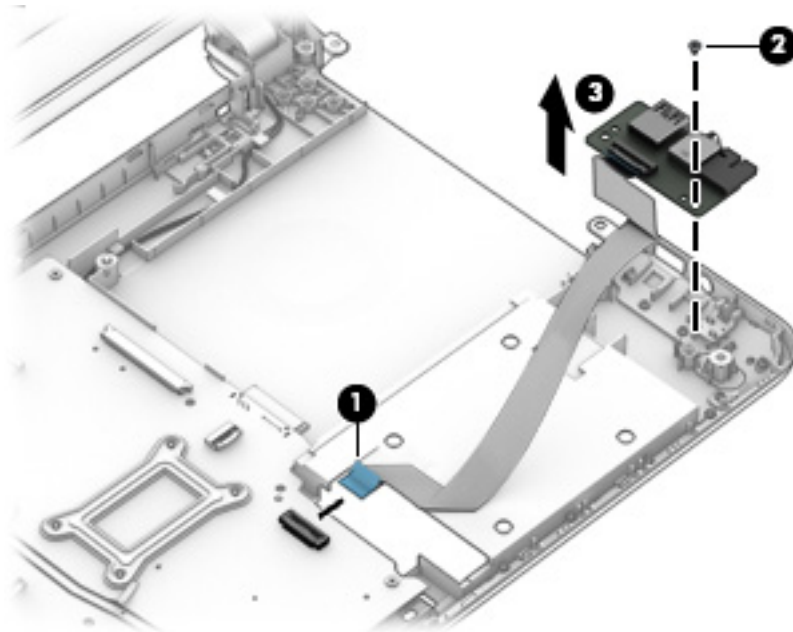
Before removing the audio/USB board, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the Battery (see [Battery on page 29](#)), and then remove the following components:
 - a. Service cover (see [Service cover on page 30](#))
 - b. Hard drive (see [Hard drive on page 31](#))
 - c. Optical drive (see [Optical drive on page 38](#))
 - d. Keyboard (see [Keyboard on page 40](#))
 - e. Top cover (see [Top cover on page 43](#))

Remove the audio/USB board:


1. Release the ZIF connector **(1)** to which the audio/USB board cable is attached, and then disconnect the audio/USB board cable from the system board.
2. Remove the Phillips PM2.5×4.5 screw **(2)** that secures the audio/USB board to the base enclosure.

3. Remove the audio/USB board (3) and cable.



Reverse this procedure to install the audio/USB board.

System board


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

Description	Spare part number
Equipped with an Intel Core i5-4200U 1.60-GHz processor (dual core, 15 W, 3-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and the Windows 8 Standard operating system	759268-501
Equipped with an Intel Core i5-4200U 1.60-GHz processor (dual core, 15 W, 3-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and a non-Windows 8 operating system	759268-001
Equipped with an Intel Core i5-4200U 1.60-GHz processor (dual core, 15 W, 3-MB L3 cache), a graphics subsystem with UMA memory, and the Windows 8 Standard operating system	762219-501
Equipped with an Intel Core i5-4200U 1.60-GHz processor (dual core, 15 W, 3-MB L3 cache), a graphics subsystem with UMA memory, and a non-Windows 8 operating system	762219-001
Equipped with an Intel Core i3-4010U 1.70-GHz processor (dual core, 15 W, 3-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and the Windows 8 Standard operating system	759269-501
Equipped with an Intel Core i3-4010U 1.70-GHz processor (dual core, 15 W, 3-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and a non-Windows 8 operating system	759269-001
Equipped with an Intel Core i3-4010U 1.70-GHz processor (dual core, 15 W, 3-MB L3 cache), a graphics subsystem with UMA memory, and the Windows 8 Standard operating system	762220-501

Description	Spare part number
Equipped with an Intel Core i3-4010U 1.70-GHz processor (dual core, 15 W, 3-MB L3 cache), a graphics subsystem with UMA memory, and a non-Windows 8 operating system	762220-001
Equipped with an Intel Celeron 2957U 1.40-GHz processor (dual core, 15 W, 2-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and the Windows 8 Standard operating system	759270-501
Equipped with an Intel Celeron 2957U 1.40-GHz processor (dual core, 15 W, 2-MB L3 cache), an AMD Radeon R5 M240 graphics subsystem with 2-GB of discrete memory, and a non-Windows 8 operating system	759270-001
Equipped with an Intel Celeron 2957U 1.40-GHz processor (dual core, 15 W, 2-MB L3 cache), a graphics subsystem with UMA memory, and the Windows 8 Standard operating system	762221-501
Equipped with an Intel Celeron 2957U 1.40-GHz processor (dual core, 15 W, 2-MB L3 cache), a graphics subsystem with UMA memory, and a non-Windows 8 operating system	762221-001

Before removing the system board, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the Battery (see [Battery on page 29](#)), and then remove the following components:
 - a. Service cover (see [Service cover on page 30](#))
 - b. Hard drive (see [Hard drive on page 31](#))
 - c. Optical drive (see [Optical drive on page 38](#))
 - d. Keyboard (see [Keyboard on page 40](#))
 - e. Top cover (see [Top cover on page 43](#))
 - f. Speakers (see [Speakers on page 50](#))

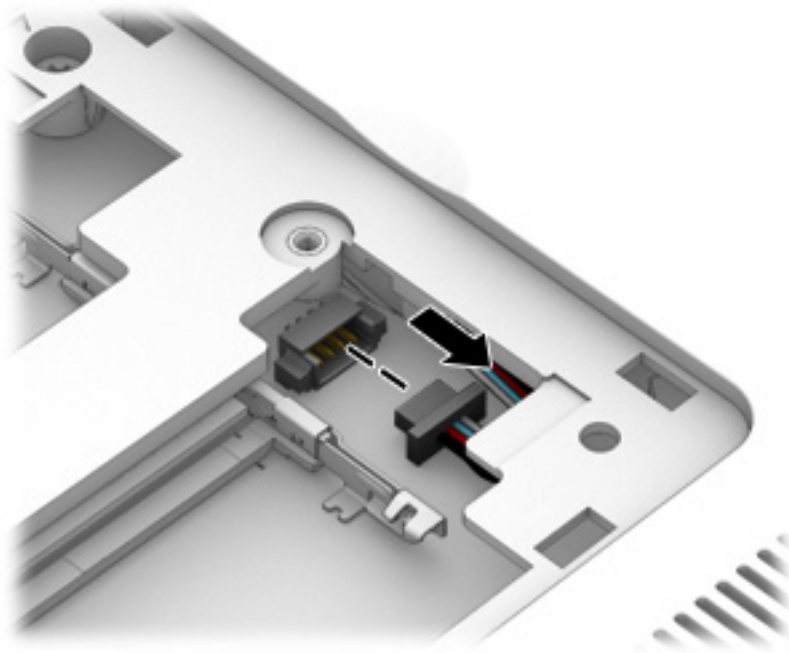
 **NOTE:** When replacing the system board, be sure that the following components are removed from the defective system board and installed on the replacement system board:

- WLAN module (see [WLAN module on page 34](#))
- Memory modules (see [Memory module on page 36](#))
- RTC battery (see [RTC battery on page 61](#))
- Heat sink (see [Heat sink on page 57](#))

Remove the system board:

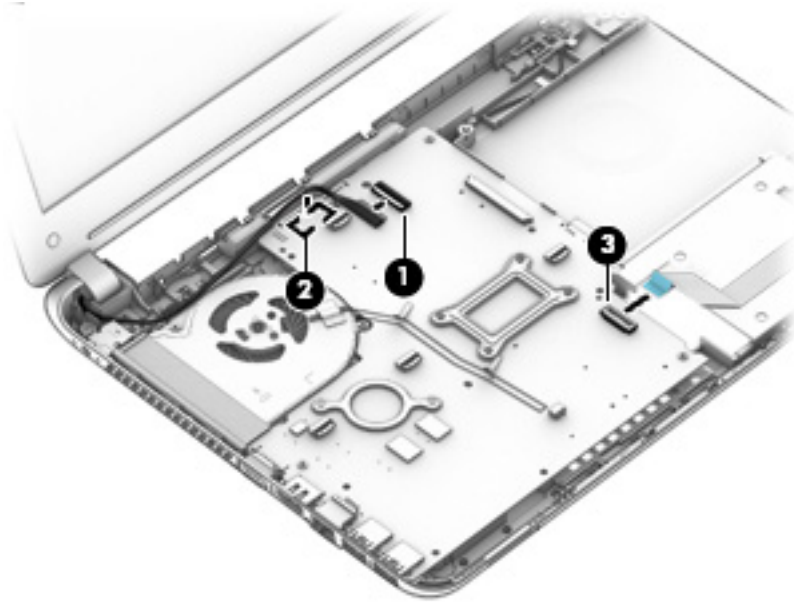
1. Close the computer.
2. Turn the computer upside down with the front toward you.

3. Disconnect the fan cable from the system board.

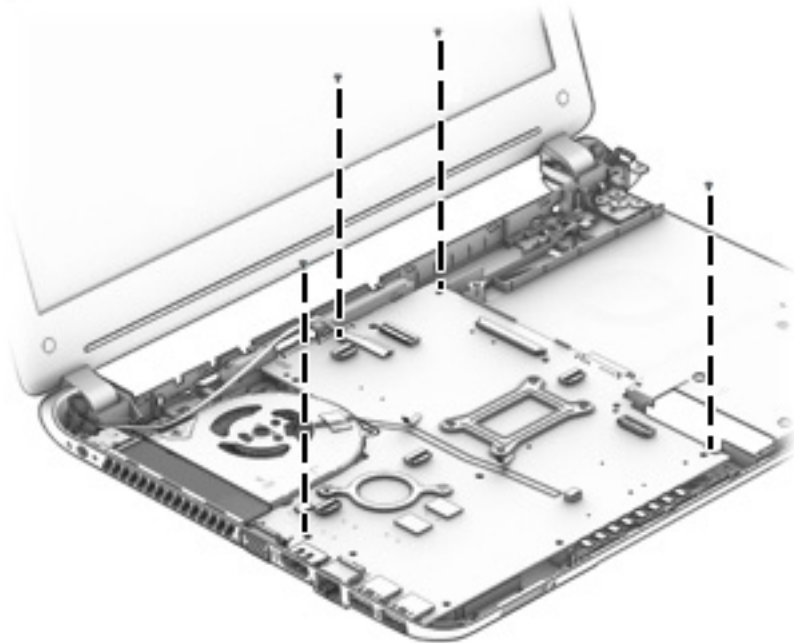


4. Turn the computer right side up with the front toward you.
5. Open the computer.
6. Release the ZIF connector **(1)** to which the display panel cable is attached, and then disconnect the display panel cable from the system board.
7. Detach the display panel cable from the system board. (The display panel cable is attached to the system board with double-sided adhesive.)

8. Release the ZIF connector **(3)** to which the audio/USB board cable is attached, and then disconnect the audio/USB board cable from the system board.



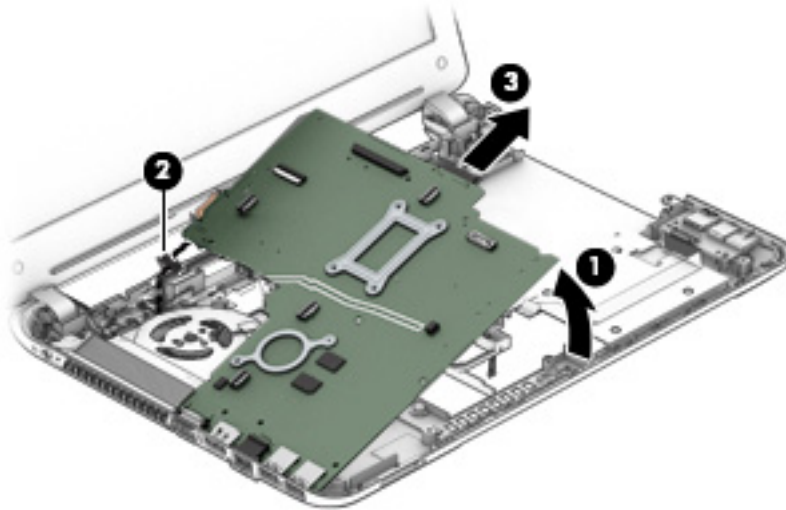
9. Remove the four Phillips PM2.4x4.6 screws that secure the system board to the base enclosure.



cad edit: need to replace system board screws

10. Lift up on the right side of the system board **(1)** until it rests at an angle.
11. Disconnect the power connector cable **(2)** from the system board.

12. Remove the system board **(3)** by sliding it up and to the right at an angle.



Reverse this procedure to install the system board.

Heat sink


Description	Spare part number
Heat sink (includes replacement thermal material)	746658-001

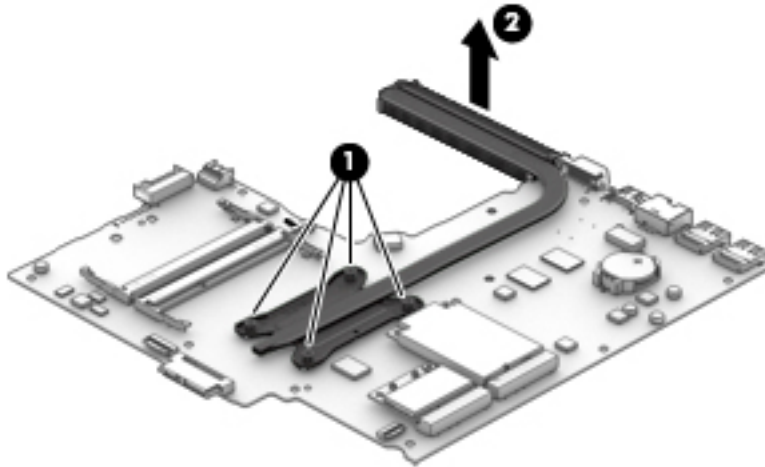
Before removing the heat sink, follow these steps:


1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the Battery (see [Battery on page 29](#)), and then remove the following components:
 - a. Service cover (see [Service cover on page 30](#))
 - b. Hard drive (see [Hard drive on page 31](#))
 - c. Optical drive (see [Optical drive on page 38](#))
 - d. Keyboard (see [Keyboard on page 40](#))
 - e. Top cover (see [Top cover on page 43](#))
 - f. Speakers (see [Speakers on page 50](#))
 - g. System board (see [System board on page 53](#))

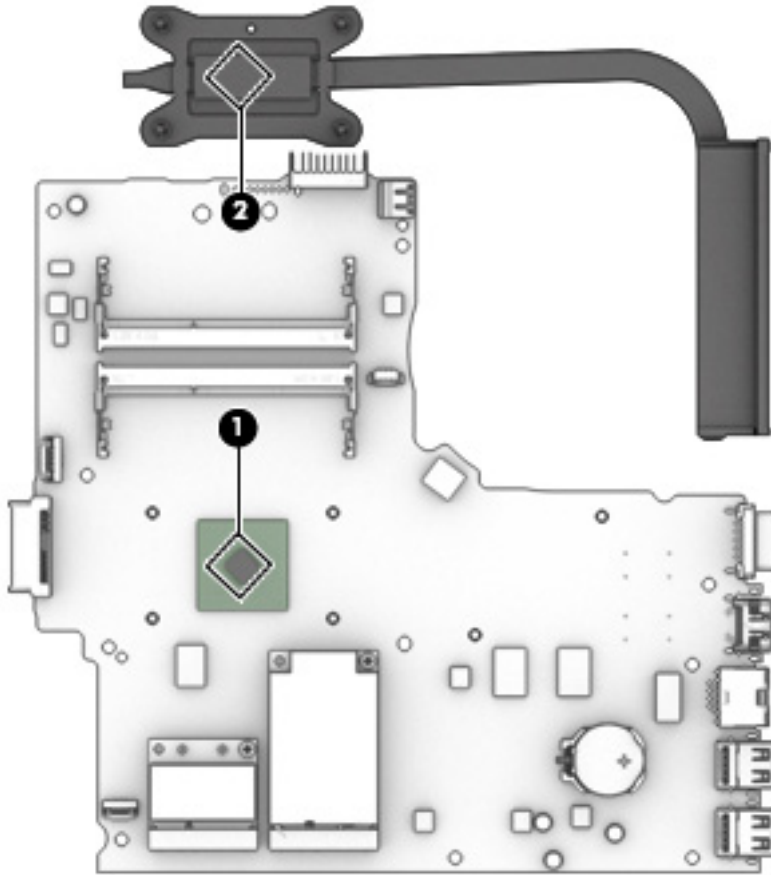
Remove the heat sink:

1. Turn the system board upside down with the front toward you.
2. Following the 1 through 4 sequence stamped into the heat sink, loosen the four Phillips captive screws **(1)** that secure the heat sink to the system board.
3. Remove the heat sink **(2)**.

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



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



Reverse this procedure to install the heat sink.

Fan

Description	Spare part number
Fan (includes cable)	746657-001

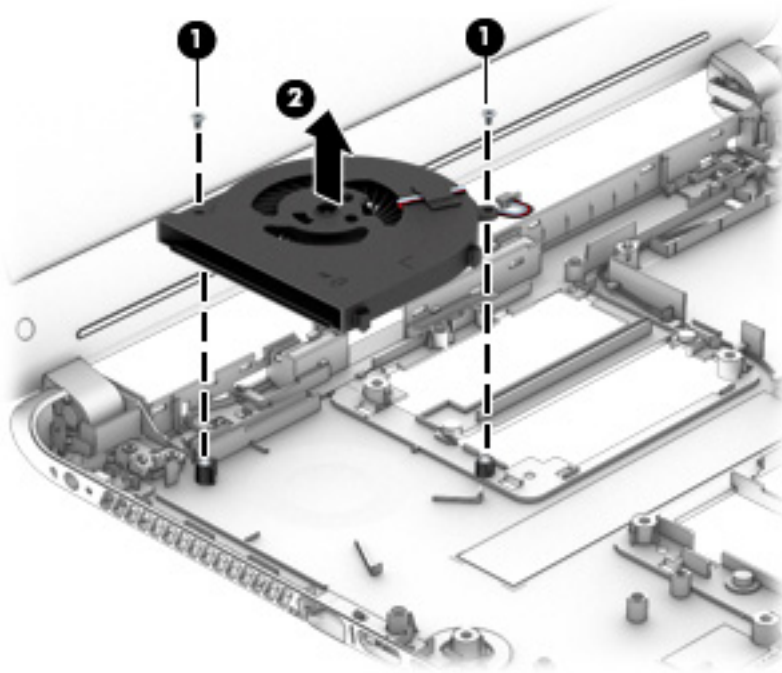
Before removing the fan, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the Battery (see [Battery on page 29](#)), and then remove the following components:
 - a. Service cover (see [Service cover on page 30](#))
 - b. Hard drive (see [Hard drive on page 31](#))
 - c. Optical drive (see [Optical drive on page 38](#))
 - d. Keyboard (see [Keyboard on page 40](#))
 - e. Top cover (see [Top cover on page 43](#))
 - f. Speakers (see [Speakers on page 50](#))
 - g. System board (see [System board on page 53](#))
 - h. Heat sink (see [Heat sink on page 57](#))

Remove the fan:

1. Remove the two Phillips PM1.9×4.6 screws **(1)** that secure the fan to the base enclosure.

2. Remove the fan **(2)**.



Reverse this procedure to install the fan.

RTC battery

Description	Spare part number
RTC battery (includes cable and double-sided adhesive)	718440-001

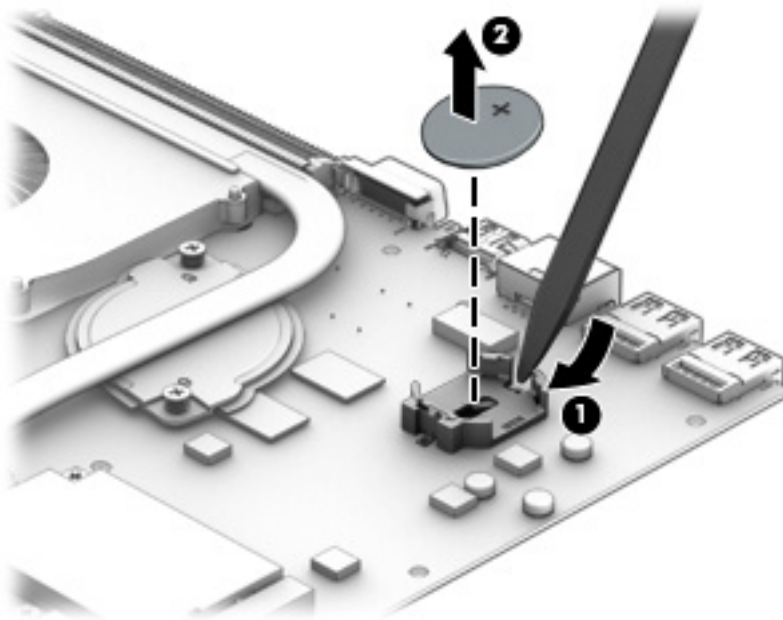
Before removing the RTC battery, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the Battery (see [Battery on page 29](#)), and then remove the following components:
 - a. Service cover (see [Service cover on page 30](#))
 - b. Hard drive (see [Hard drive on page 31](#))
 - c. Optical drive (see [Optical drive on page 38](#))
 - d. Keyboard (see [Keyboard on page 40](#))
 - e. Top cover (see [Top cover on page 43](#))

- f. Speakers (see [Speakers on page 50](#))
- g. System board (see [System board on page 53](#))

Remove the RTC battery:

1. Turn the system board upside down with the front toward you.
2. Use a plastic flat-bladed tool **(1)** to release the RTC battery **(2)** from the socket on the system board.



Reverse this procedure to install the RTC battery. When installing the RTC battery in the system board socket, make sure the "+" is facing up.

Power connector cable

Description	Spare part number
Power connector cable	746660-001

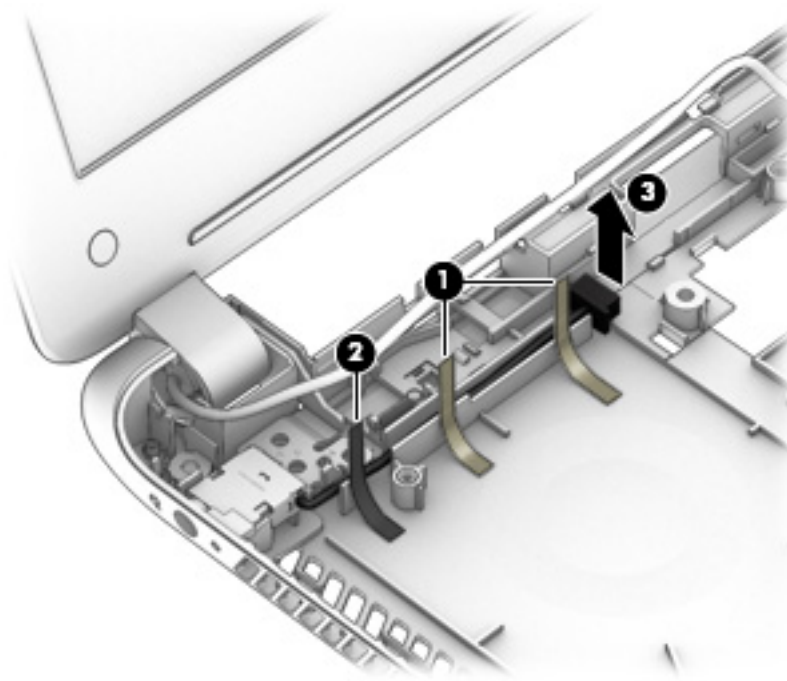
Before removing the power connector cable, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.
4. Remove the Battery (see [Battery on page 29](#)), and then remove the following components:
 - a. Service cover (see [Service cover on page 30](#))
 - b. Hard drive (see [Hard drive on page 31](#))
 - c. Optical drive (see [Optical drive on page 38](#))
 - d. Keyboard (see [Keyboard on page 40](#))
 - e. Top cover (see [Top cover on page 43](#))
 - f. Speakers (see [Speakers on page 50](#))
 - g. System board (see [System board on page 53](#))

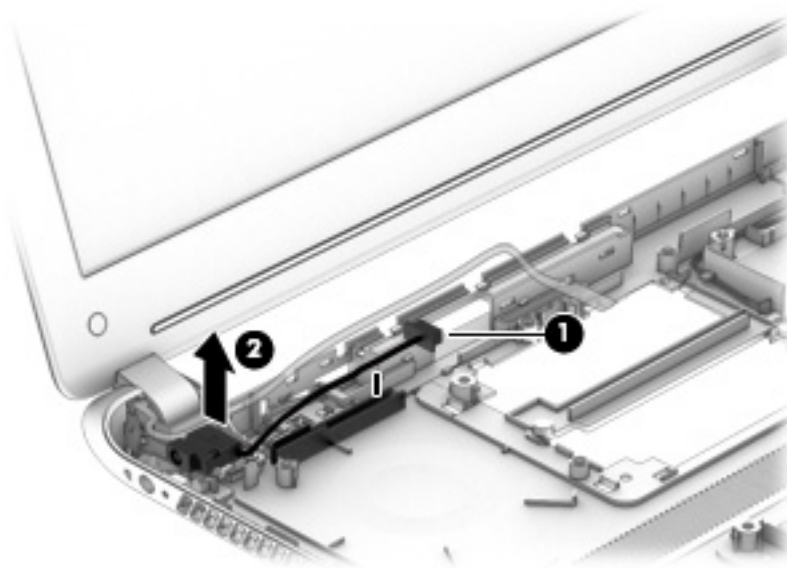
Remove the power connector cable:

1. Release the two pieces of grounding tape **(1)** and the adhesive tape **(2)** that secure the display panel cable to the base enclosure.

2. Release the display panel cable **(3)** from the routing channel built into the base enclosure.



3. Release the power connector cable **(1)** from the routing channel built into the base enclosure.
4. Release the power connector **(2)** from the molding built into the base enclosure.



5. Remove the power connector cable.

Reverse this procedure to install the power connector cable.

Display assembly



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

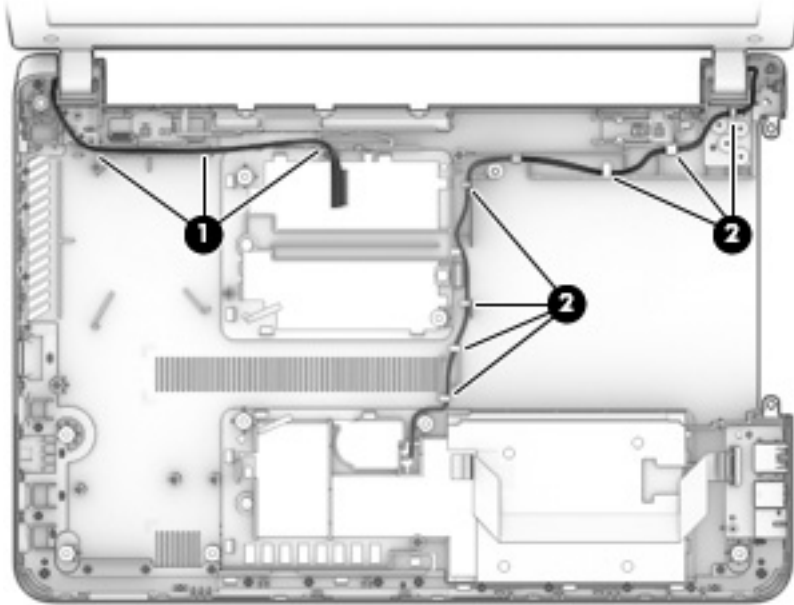
Before removing the display assembly, follow these steps:

- 1.** Turn off the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
- 2.** Disconnect the power from the computer by unplugging the power cord from the computer.
- 3.** Disconnect all external devices from the computer.
- 4.** Remove the Battery (see [Battery on page 29](#)), and then remove the following components:
 - a.** Service cover (see [Service cover on page 30](#))
 - b.** Hard drive (see [Hard drive on page 31](#))
 - c.** Optical drive (see [Optical drive on page 38](#))
 - d.** Keyboard (see [Keyboard on page 40](#))
 - e.** Top cover (see [Top cover on page 43](#))
 - f.** Speakers (see [Speakers on page 50](#))
 - g.** System board (see [System board on page 53](#))
 - h.** Fan (see [Fan on page 60](#))

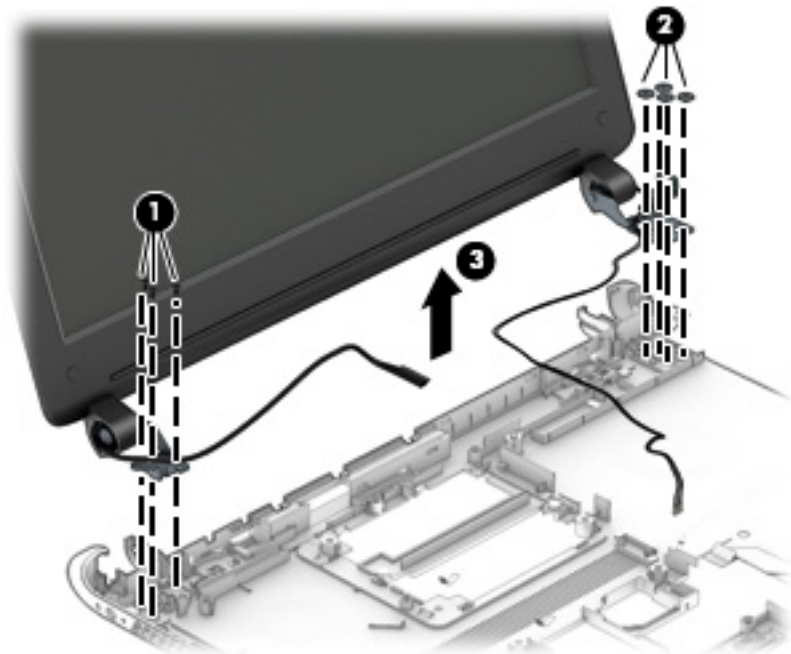
Remove the display assembly:

- 1.** Release the display panel cable from the routing clips **(1)** and channel built into the base enclosure.

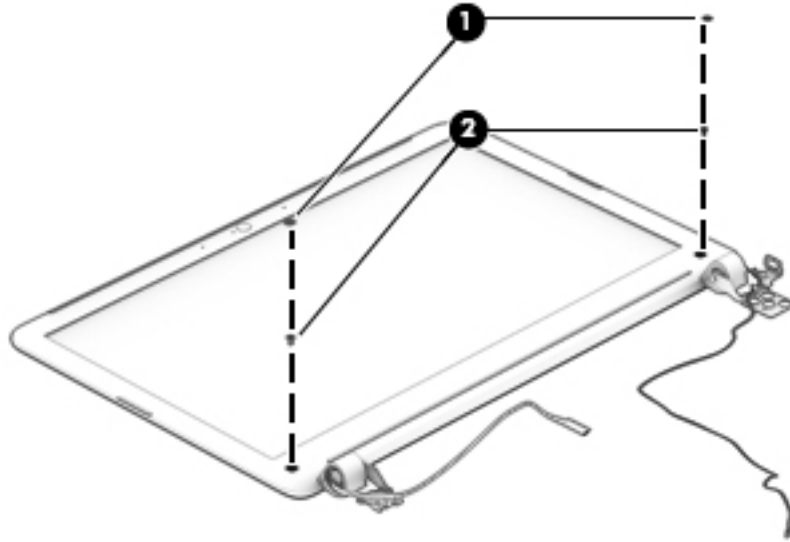
2. Release the wireless antenna cables from the routing clips **(2)** and channel built into the base enclosure.



3. Remove the three Phillips PM2.4x4.6 screws **(1)** that secure the display assembly left hinge to the base enclosure.
4. Remove the four Phillips PM2.4x3.4 broad head screws **(2)** that secure the display assembly right hinge to the base enclosure.
5. Remove the display assembly **(3)**.

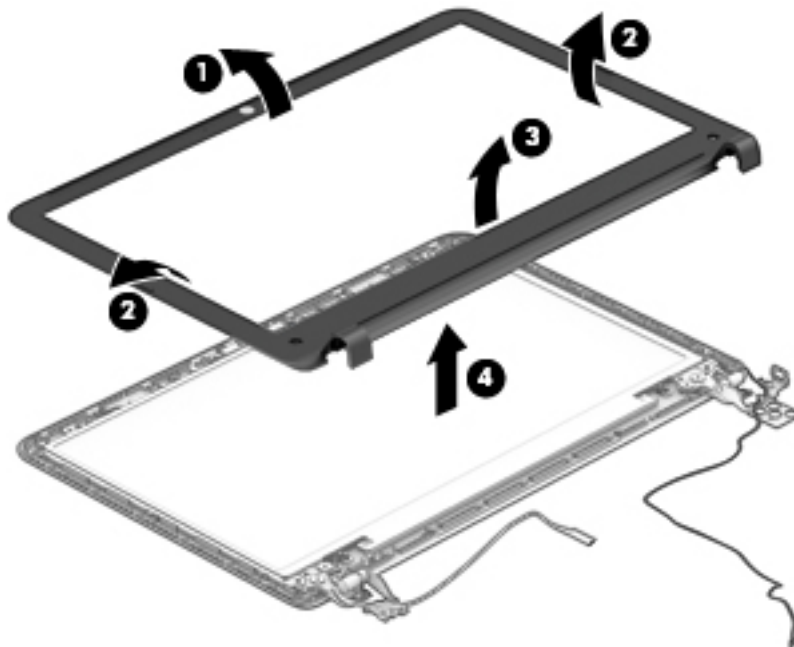


6. If it is necessary to replace the display bezel or any of the display assembly subcomponents:
 - a. Remove the two display bezel screw covers (1).
 - b. Remove the two Phillips PM2.0×3.75 screws (2) that secure the display bezel to the display assembly.

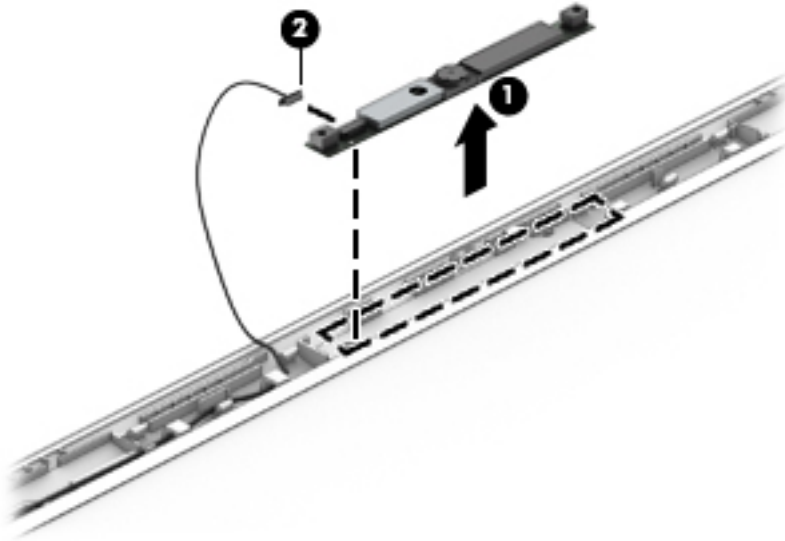


- c. Flex the inside edges of the top edge (1), the left and right sides (2), and the bottom edge (3) of the display bezel until the bezel disengages from the display enclosure.
 - d. Remove the display bezel (4).

The display bezel is available using spare part number 759265-001.

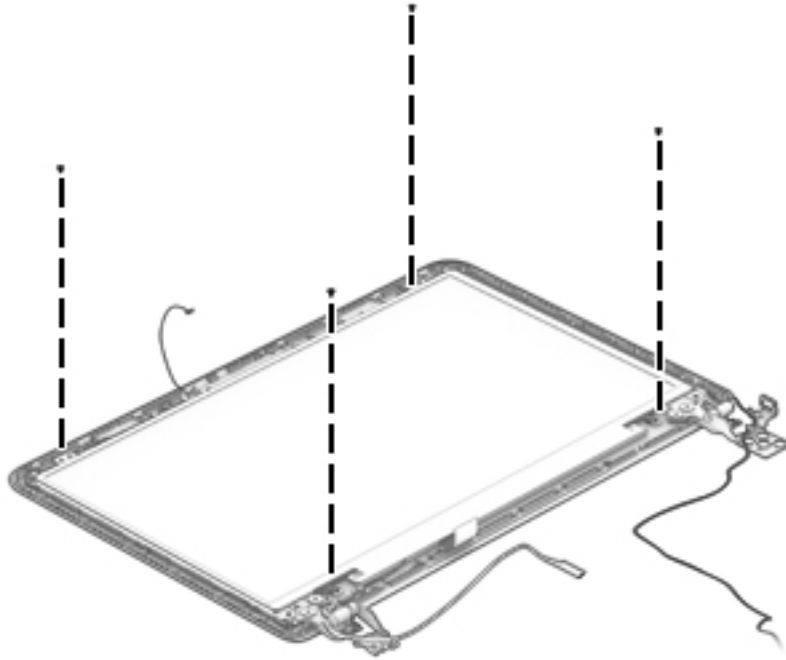


7. If it is necessary to replace the webcam/microphone module:
 - a. Detach the webcam/microphone module **(1)** from the display enclosure. (The webcam/microphone module is attached to the display enclosure with double-sided adhesive.)
 - b. Disconnect the webcam/microphone module cable **(2)** from the webcam/microphone module.



- c. Remove the webcam/microphone module.
The webcam/microphone module is available using spare part number 759272-001.

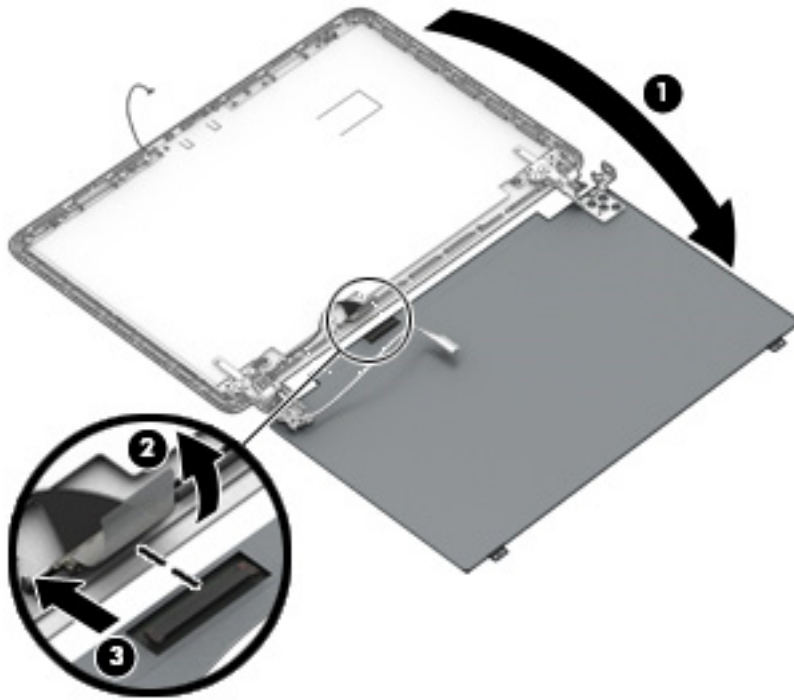
8. If it is necessary to replace the display panel:
 - a. Remove the four Phillips PM2.0×3.0 screws that secure the display panel to the display enclosure.



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

- b. Lift the top edge of the display panel **(1)** and swing it up and forward until it rests upside down in front of the display enclosure.
- c. Release the adhesive strip **(2)** that secures the display panel cable connector to the display panel.

- d. Disconnect the display panel cable **(3)** from the display panel.



- e. Remove the display panel.

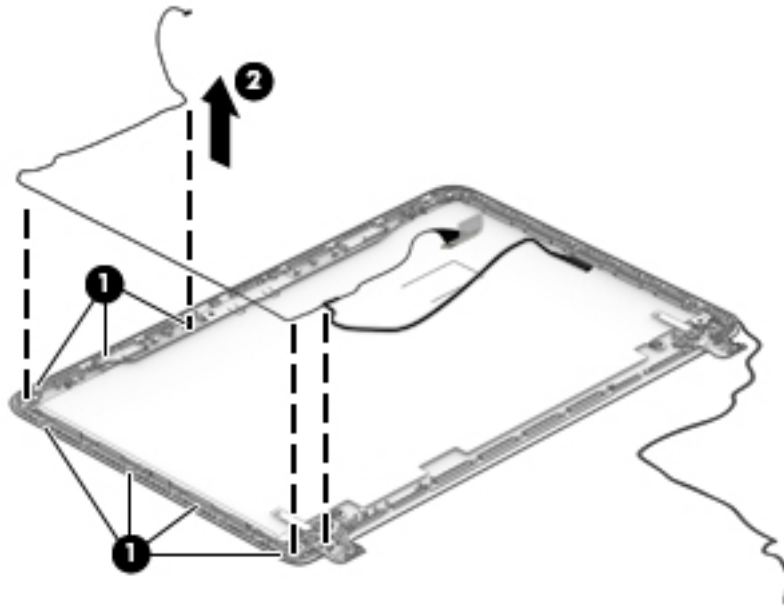
The display panel is available using spare part number 754891-001.

- 9. If it is necessary to replace the display panel cable:

- a. Release the display panel cable from the clips **(1)** and routing channel built into the the display enclosure.

- b.** Remove the display panel cable (2).

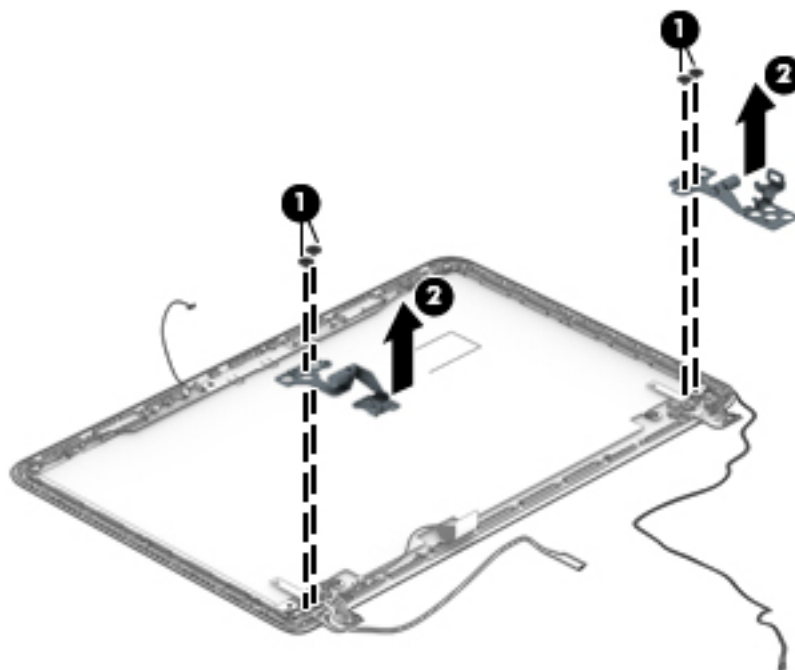
The display panel cable is available using spare part number 759267-001.



- 10.** If it is necessary to replace the display hinges:

- a.** Remove the four Phillips PM2.5×3.25 broad head screws (1) that secure the display hinges to the display enclosure.
- b.** Remove the display hinges (2).

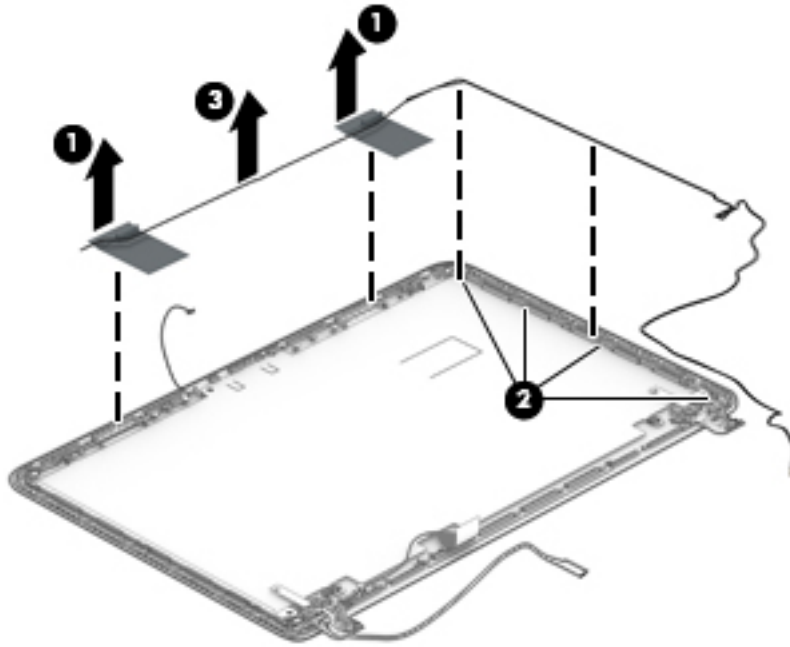
The display hinges are included in the Display Hinge Kit, spare part number 761808-001.



11. If it is necessary to replace the WLAN antenna cables and transceivers:

- a.** Detach the WLAN antenna transceivers **(1)** from the display enclosure. (The WLAN antenna transceivers are attached to the display enclosure with double-sided adhesive.)
- b.** Release the WLAN antenna cables from the clips **(2)** and routing channel built into the top edge and right side of the display enclosure.
- c.** Remove the WLAN antenna cables and transceivers **(3)**.

The WLAN antenna cables and transceivers are included in the Antenna Kit, spare part number 761807-001.



Reverse this procedure to reassemble install the display assembly.

7 Using Setup Utility (BIOS) and System Diagnostics

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

Starting Setup Utility (BIOS)

To start Setup Utility (BIOS), turn on or restart the computer, quickly press [esc](#), and then press [f10](#).

Information about how to navigate in Setup Utility (BIOS) is located at the bottom of the screen.



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

Updating the BIOS

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

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

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


Determining the BIOS version

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

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

1. Start Setup Utility (BIOS) (see [Starting Setup Utility \(BIOS\) on page 73](#)).
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**.
4. Select **Yes**.

Downloading a BIOS update

 **CAUTION:** 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, type `support`, 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.

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

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

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

1. From the Start screen, type `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.

To start System Diagnostics:

1. Turn on or restart the computer, quickly press `esc`, and then 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 diagnostic test while it is running, press `esc`.

8 Specifications


	Metric	U.S.
Dimensions		
Width	24.5 cm	9.7 in
Depth	34.7 cm	13.7 in
Height	2.3 cm	0.9 in
Weight	1.9 kg	4.19 lb
Operating voltage and current	19.5 V dc @ 3.33 A – 65 W DC plug	
	NOTE: This product is designed for IT power systems in Norway with phase-to-phase voltage not exceeding 240 V rms.	
	NOTE: The computer operating voltage and current can be found on the system regulatory label.	
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 (non-condensing)		
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.	

9 Backing up, restoring, and recovering

Your computer includes tools provided by HP and the operating system to help you safeguard your information and retrieve it if you ever need to. These tools will help you return your computer to a proper working state or even back to the original factory state, all with simple steps.

This chapter provides information about the following processes:

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

 **NOTE:** This guide describes an overview of backing up, restoring and recovering options. For more details about the tools provided, see Help and Support. From the Start screen, type `h`, and then select **Help and Support**.

Creating recovery media and backups

Recovery after a system failure is only as good as your most recent backup.

1. After you successfully set up the computer, create HP Recovery media. This step creates a backup of the HP Recovery partition on the computer. The backup can be used to reinstall the original operating system in cases where the hard drive is corrupted or has been replaced.

HP Recovery media you create will provide the following recovery options:

- **System Recovery**—Reinstalls the original operating system and the programs that were installed at the factory.
- **Minimized Image Recovery**—Reinstalls the operating system and all hardware-related drivers and software, but not other software applications.
- **Factory Reset**—Restores the computer to its original factory state by deleting all information from the hard drive and re-creating the partitions. Then it reinstalls the operating system and the software that was installed at the factory.

See [Creating HP Recovery media on page 78](#).

2. As you add hardware and software programs, create system restore points. A system restore point is a snapshot of certain hard drive contents saved by Windows System Restore at a specific time. A system restore point contains information that Windows uses, such as registry settings. Windows creates a system restore point for you automatically during a Windows update and during other system maintenance (such as a software update, security scanning, or system diagnostics). You can also manually create a system restore point at any time. For more information and steps for creating specific system restore points, see Help and Support. From the Start screen, type **h**, and then select **Help and Support**.
3. As you add photos, video, music, and other personal files, create a backup of your personal information. Windows File History can be set to regularly and automatically back up files from libraries, desktop, contacts, and favorites. If files are accidentally deleted from the hard drive and they can no longer be restored from the Recycle Bin, or if files become corrupted, you can restore the files that you backed up using File History. Restoring files is also useful if you ever choose to reset the computer by reinstalling Windows or choose to recover using HP Recovery Manager.



NOTE: File History is not enabled by default, so you must turn it on.

For more information and steps for enabling Windows File History, see Help and Support. From the Start screen, type **h**, and then select **Help and Support**.

Creating HP Recovery media

HP Recovery Manager is a software program that offers a way to create recovery media after you successfully set up the computer. HP Recovery media can be used to perform system recovery if the hard drive becomes corrupted. System recovery reinstalls the original operating system and the software programs installed at the factory, and then configures the settings for the programs. HP Recovery media can also be used to customize the system or aid in the replacement of a hard drive.

- Only one set of HP Recovery media can be created. Handle these recovery tools carefully, and keep them in a safe place.
- HP Recovery Manager examines the computer and determines the required storage capacity for the blank USB flash drive or the number of blank DVD discs that will be required.
- To create recovery discs, your computer must have an optical drive with DVD writer capability, and you must use only high-quality blank DVD-R, DVD+R, DVD-R DL, or DVD+R DL discs. Do not use rewritable discs such as CD±RW, DVD±RW, double-layer DVD±RW, or BD-RE (rewritable Blu-ray) discs; they are not compatible with HP Recovery Manager software. Or instead you can use a high-quality blank USB flash drive.
- If your computer does not include an integrated optical drive with DVD writer capability, but you would like to create DVD recovery media, you can use an external optical drive (purchased separately) to create recovery discs, or you can obtain recovery discs for your computer from the HP website. For U.S. support, go to <http://www.hp.com/go/contactHP>. For worldwide support, go to http://welcome.hp.com/country/us/en/wwcontact_us.html. If you use an external optical drive, it must be connected directly to a USB port on the computer; the drive cannot be connected to a USB port on an external device, such as a USB hub.

- Be sure that the computer is connected to AC power before you begin creating the recovery media.
- The creation process can take up to an hour or more. Do not interrupt the creation process.
- If necessary, you can exit the program before you have finished creating all of the recovery DVDs. HP Recovery Manager will finish burning the current DVD. The next time you start HP Recovery Manager, you will be prompted to continue, and the remaining discs will be burned.

To create HP Recovery media:

1. From the Start screen, type `recovery`, and then select **HP Recovery Manager**.
2. Select **Recovery Media Creation**, and then follow the on-screen instructions.

If you ever need to recover the system, see [Recovering using HP Recovery Manager on page 81](#).

Restore and recovery

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

- If you need to restore your personal files and data, you can use Windows File History to restore your information from the backups you created. For more information and steps for using File History, see Help and Support. From the Start screen, type `h`, and then select **Help and Support**.
- If you need to correct a problem with a preinstalled application or driver, use the Drivers and Applications Reinstall option of HP Recovery Manager to reinstall the individual application or driver.

From the Start screen, type `recovery`, select **HP Recovery Manager**, select **Drivers and Applications Reinstall**, and then follow the on-screen instructions.

- If you want to restore the system to a previous state without losing any personal information, Windows System Restore is an option. System Restore allows you to restore without the requirements of Windows Refresh or a reinstallation. Windows creates system restore points automatically during a Windows update and other system maintenance events. Even if you did not manually create a restore point, you can choose to restore to a previous point, automatically created. For more information and steps for using Windows System Restore, see Help and Support. From the Start screen, type `h`, and then select **Help and Support**.
- If you want a quick and easy way to recover the system without losing your personal information, settings, or apps that came preinstalled on your computer or were purchased from the Windows Store, consider using Windows Refresh. This option does not require backing up data to another drive.

For more information, see [Using Windows Refresh for quick and easy recovery on page 80](#).

- If you want to reset your computer to its original state, Windows provides an easy way to remove all personal data, apps, and settings, and reinstall Windows.

For more information, see [Remove everything and reinstall Windows on page 81](#).

- If you want to reset your computer using a minimized image, you can choose the HP Minimized Image Recovery option from the HP Recovery partition (select models only) or HP Recovery media. Minimized Image Recovery installs only drivers and hardware-enabling applications. Other applications included in the image continue to be available for installation through the Drivers and Applications Reinstall option in HP Recovery Manager.

For more information, see [Recovering using HP Recovery Manager on page 81](#).

- If you want to recover the computer's original factory partitioning and content, you can choose the System Recovery option from the HP Recovery media.

For more information, see [Recovering using HP Recovery Manager on page 81](#).

- If you have replaced the hard drive, you can use the Factory Reset option of HP Recovery media to restore the factory image to the replacement drive.


For more information, see [Recovering using HP Recovery Manager on page 81](#).


- If you wish to remove the recovery partition to reclaim hard drive space, HP Recovery Manager offers the Remove Recovery Partition option.


For more information, see [Removing the HP Recovery partition on page 83](#).

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 Help and Support for instructions on reinstalling traditional applications. From the Start screen, type **h**, and then select **Help and Support**.


 **NOTE:** You may be prompted for your permission or password when using Refresh. See Help and Support for more information. From the Start screen, type **h**, and then select **Help and Support**.

To start Refresh:

1. From the Start screen, point to the upper-right or lower-right corner of the screen to reveal 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. Scroll the right-side choices down to display **Refresh your PC without affecting your files**.
5. Under **Refresh your PC without affecting your files**, select **Get started**, and then 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. Choose your keyboard layout.
3. Select **Troubleshoot** from the boot options menu.
4. Select **Reset your PC**, and then follow the on-screen instructions.

To use the Start screen:

1. From the Start screen, point to the upper-right or lower-right corner of the screen to reveal 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. Scroll the right-side choices down to display **Remove everything and reinstall Windows**.
5. Under **Remove everything and reinstall Windows**, select **Get started**, and follow the on-screen instructions.

Recovering using HP Recovery Manager

HP Recovery Manager software allows you to recover the computer to its original factory state. Using the HP Recovery media you created, you can choose from one of the following recovery options:

- System Recovery—Reinstalls the original operating system, and then configures the settings for the programs that were installed at the factory.
- Minimized Image Recovery—Reinstalls the operating system and all hardware-related drivers and software, but not other software applications.
- Factory Reset—Restores the computer to its original factory state by deleting all information from the hard drive and re-creating the partitions. Then it reinstalls the operating system and the software that was installed at the factory.

The HP Recovery partition (select models only) allows Minimized Image Recovery.

What you need to know

- HP Recovery Manager recovers only software that was installed at the factory. For software not provided with this computer, you must either download the software from the manufacturer's website or reinstall the software from the media provided by the manufacturer.
- Recovery through HP Recovery Manager should be used as a final attempt to correct computer issues.
- HP Recovery media must be used if the computer hard drive fails.
- To use the Factory Reset or System Recovery options, you must use HP Recovery media.
- If the HP Recovery media do not work, you can obtain recovery media for your system from the HP website. For U.S. support, go to <http://www.hp.com/go/contactHP>. For worldwide support, go to http://welcome.hp.com/country/us/en/wwcontact_us.html.



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

Using the HP Recovery partition to recover a minimized image (select models only)

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

To start HP Recovery Manager from the HP Recovery partition:

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

Using HP Recovery media to recover

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

1. If possible, back up all personal files.
2. Insert the first HP Recovery disc you created into the optical drive on your computer or into an optional external optical drive, and then restart the computer.

– or –

Insert the HP Recovery USB flash drive you created into a USB port on your computer, and then restart the computer.

 **NOTE:** If the computer does not automatically restart in HP Recovery Manager, change the computer boot order. See [Changing the computer boot order on page 83](#).

3. Follow the on-screen instructions.

Changing the computer boot order


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

To change the boot order:

1. Insert the HP Recovery media you created.
2. Restart the computer, quickly press **esc**, and then press **f9** for boot options.
3. Select the optical drive or USB flash drive you want to boot from.
4. Follow the on-screen instructions.

Removing the HP Recovery partition

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

 **IMPORTANT:** Removing the HP Recovery partition means you can no longer use Windows Refresh, the Windows Remove everything and reinstall Windows option, or the HP Recovery Manager option for minimized image recovery. Create HP Recovery media before removing the Recovery partition to ensure you have recovery options; see [Creating HP Recovery media on page 78](#).

Follow these steps to remove the HP Recovery partition:

1. From the Start screen, type `recovery`, and then select **HP Recovery Manager**.
2. Select **Remove Recovery Partition**, and then follow the on-screen instructions.

10 Power cord set requirements

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

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

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

Requirements for all countries

The following requirements are applicable to all countries and regions:

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

Requirements for specific countries and regions

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

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

1. The flexible cord must be Type HO5VV-F, 3-conductor, 1.0-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.
3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00-mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.
4. The flexible cord must be Type RVV, 3-conductor, 0.75-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
5. The flexible cord must be Type VCTF, 3-conductor, 0.75-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.

11 Recycling

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

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

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