HP x360 Convertible PC (model numbers 11-p100 through p199)

Maintenance and Service Guide
IMPORTANT! This document is intended for HP authorized service providers only.

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 on all editions of Windows 10. This computer may require upgraded and/or separately purchased hardware, drivers, and/or software to take full advantage of Windows 10 functionality. See http://www.microsoft.com for details.

Software terms

By installing, copying, downloading, or otherwise using any software product preinstalled on this tablet, you agree to be bound by the terms of the HP End User License Agreement (EULA). If you do not accept these license terms, your sole remedy is to return the entire unused product (hardware and software) within 14 days for a refund subject to the refund policy of your place of purchase.

For any further information or to request a full refund of the tablet, 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 60950-1).

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1 Product description

Category	Description
Product Name	HP x360 Convertible PC (model numbers 11-p100 through p199)
Processor	Intel® Celeron™ N2840 processor (up to 2.58 GHz, 2 MB L2, 1333 MHz, dual core)
Chipset	Intel soldered-on circuit (SoC)
Graphics	**Internal graphics:**
	Intel HD Graphics
	Support for DX11
	Support for HD playback, streaming, and recording @ 720p 30fps
Panel	11.6-in, high-definition (HD), white light emitting diode (WLED), AntiGlare (1366×768), flat panel TouchScreen with MultiTouch enabled; 16:9 ultra-wide aspect ratio; typical brightness: 200 nits (cd/m²)
	Supports low-voltage differential signaling (LVDS) (co-layout with eDP1.3+PSR)
Memory	On-board system memory
	Support for DDR3L-1333 MHz (DDR3L-1600 downgrade to DDR3L-1333 MHz)
	Supports up to 2 GB max on-board system memory (2048 MB (256 MB × 16 x 4pcs))
Optical drive	Support for external 9.5 mm tray load, SATA, DVD+/-RW DL SuperMulti drive only
Audio and video	Integrated HP TrueVision camera: HD (1280×720 by 30 frames per second), fixed (no tilt), with activity light
	Dual array Digital Microphones with appropriate software - beam forming, echo cancellation, noise suppression
	DTS Studio Sound
	Dual speakers support 25 mm x 14 mm speaker
Ethernet	Integrated 10/100 network interface card (NIC)
	Co-layout with Giga-LAN
Sensor	Sensor hub (Accelerometer + Gyroscope + e-Compass)
Wireless	Compatible with Miracast-certified devices
	Support Assistant GPS
	Integrated wireless local area network (WLAN) options by way of wireless module; 1 antenna
	Support for Broadcom BCM43142 802.11 b/g/n 1x1 Wi-Fi + Bluetooth® 4.0 HMC Combo Adapter
External media cards	HP Multi-Format Digital Media Card Reader with push-push technology. Supports SD/SDHC/SDXC
Ports	• AC adapter: HP Smart pin plug (4.5 mm barrel)
	• Audio: one combo audio-out (headphone)/audio-in (microphone) jack, supports jack auto-detection
	• HDMI: v. 1.4a, supporting up to 1080p, 1920×1080 at 60 Hz
	• RJ-45/Ethernet

Category	Description
	● (1) USB 3.0
	● (2) USB 2.0
	● VGA (Dsub 15 pin) supporting 1920×1200 external resolution at 60 Hz, hot plug/unplug and auto-detection for correct output to wide-aspect versus standard aspect video
Keyboard/pointing devices	97% size, textured, island-style keyboard (no numerical keypad)
	Touchpad requirements:
	HP Imagepad - Clickpad with image sensor
	Taps enabled as default
	Multitouch gestures enabled
	Support for PS/2 and SMB interface
	Support for Windows Modern TouchPad Gestures
Power requirements	1 meter length power cord
	AC adapter with localized cable plug support
	Support for 45 W HP Smart AC adapter (non-PFC, with 26.5 mm z-height adapter [non-slim]) (not for India/People's Republic of China)
	Support for embedded 3-cell, 43-WHr, prismatic battery
Security	Security cable lock slot
Operating system	**Preinstalled**: Windows 10
Serviceability	**End user replaceable part:** AC adapter

2 External component identification

Right side

Component			Description
(1)		Memory card reader	Reads optional memory cards that store, manage, share, or access information.
			To insert a card, hold the card label-side up, with connectors facing the slot, insert the card into the slot, and then push in on the card until it is firmly seated.
			To remove a card, press in on the card it until it pops out.
(2)		USB 2.0 port	Connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub.
(3)		USB 3.0 port	Connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub.
(4)		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.
(5)		RJ-45 (network) jack/status lights	Connects a network cable. ● White: The network is connected. ● Amber: Activity is occurring on the network.
(6)		AC adapter/battery light	● On: The AC adapter is connected and the battery is charged. ● Off: The computer is using battery power.
(7)		Power connector	Connects an AC adapter.

Left side

Component		Description
(1)	Security cable slot	Attaches an optional security cable to the computer.
		NOTE: The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.
(2)	Power button	● 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.
		CAUTION: Pressing and holding down the power button will result in the loss of unsaved information.
		If the computer has stopped responding and Windows shutdown procedures are ineffective, press and hold the power button down for at least 5 seconds to turn off the computer.
		To learn more about your power settings, see your power options.
		Type `power` in the taskbar search box, and then select **Power and sleep settings**.
(3)	USB 2.0 port	Connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub.
(4)	Audio-out (headphone)/Audio-in (microphone) jack	Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects an optional headset microphone. This jack does not support optional microphone-only devices.
		NOTE: When a device is connected to the jack, the computer speakers are disabled.
		NOTE: Be sure that the device cable has a 4-conductor connector that supports both audio-out (headphone) and audio-in (microphone).
		WARNING! To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, refer to the *Regulatory, Safety, and Environmental Notices*.
		To access this document:

Component		Description
		1. Type `support` in the taskbar search box, and then select the **HP Support Assistant** app. – or – Click the question mark icon in the taskbar. 2. Select **My PC**, select the **Specifications** tab, and then select **User Guides**.
(5) ▬ ╋	Volume up/down button	Controls speaker volume. To decrease speaker volume, press the **▬** edge of the button. To increase speaker volume, press the **+** edge of the button.

Display
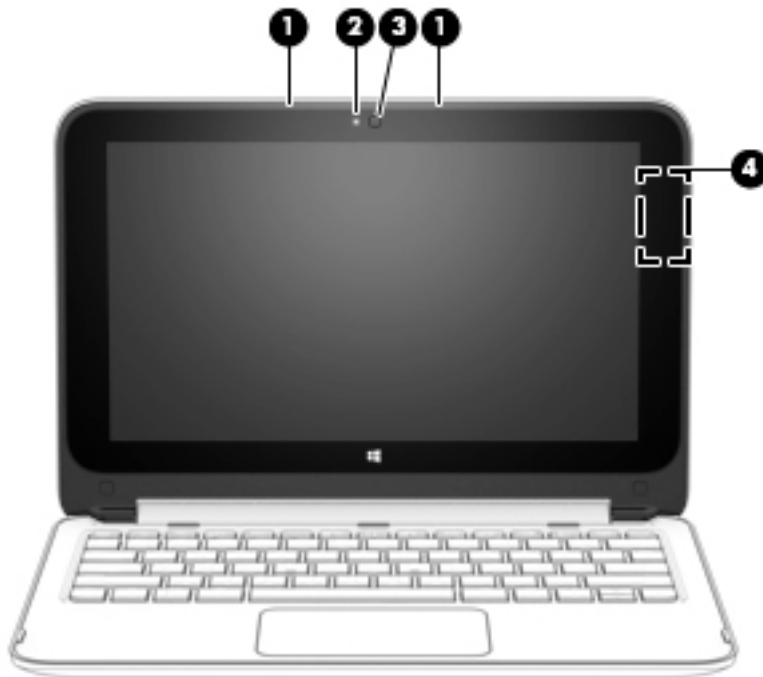
Component		Description
(1)	Internal microphones (2)	Record sound.
(2)	Webcam light	On: The webcam is in use.
(3)	Webcam	Records video and captures photographs. Some models allow you to video conference and chat online using streaming video.
		To use the webcam, type `camera` in the taskbar search box, and then select **Camera**.
(4)	WLAN antenna*	Sends and receives wireless signals to communicate with wireless local area networks (WLANs).

*The antennas are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas free from obstructions. For wireless regulatory notices, see the section of the *Regulatory, Safety, and Environmental Notices* that applies to your country or region. To access this guide:

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

– or –

Click the question mark icon in the taskbar.

2. Select **My PC**, select the **Specifications** tab, and then select **User Guides**.

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

Changing your notebook to an entertainment stand

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

Changing your notebook to a tablet

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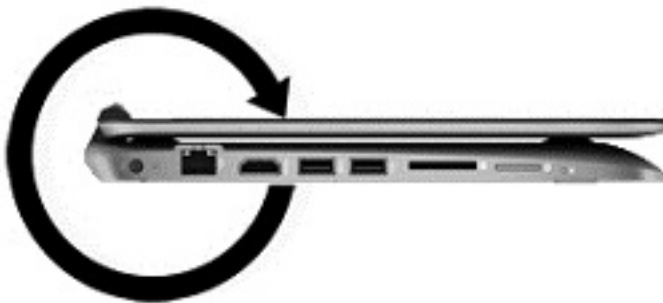
Top

TouchPad
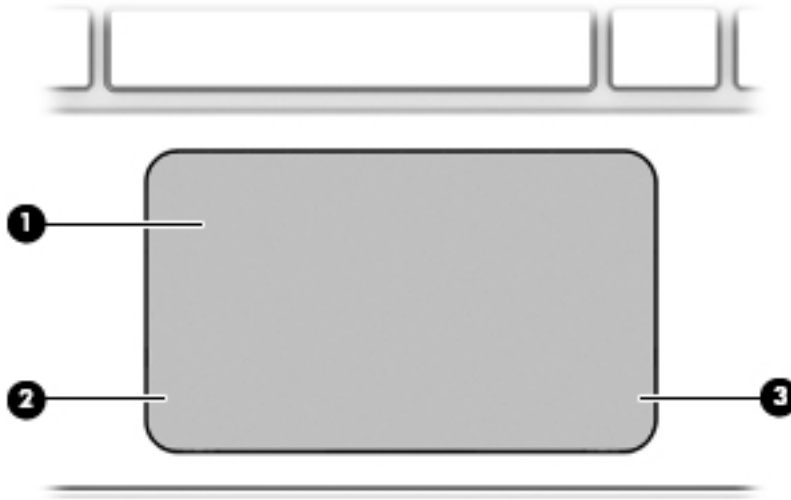
Component		Description
(1)	TouchPad zone	Moves the on-screen pointer and selects or activates items on the screen.
		NOTE: The TouchPad also supports edge-swipe gestures.
(2)	Left TouchPad button	Functions like the left button on an external mouse.
(3)	Right TouchPad button	Functions like the right button on an external mouse.

Speakers

Component	Description
Speakers (2)	Produce sound.

Lights
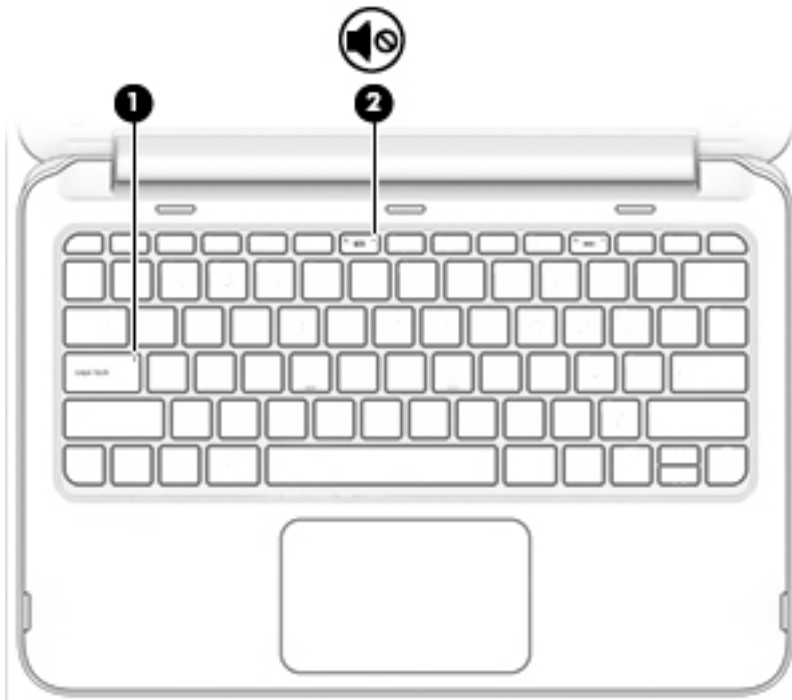
Component		Description
(1)	Caps lock light	On: Caps lock is on, which switches the keys to all capital letters.
(2)	Mute light	● Amber: Computer sound is off.
		● Off: Computer sound is on.

Keys
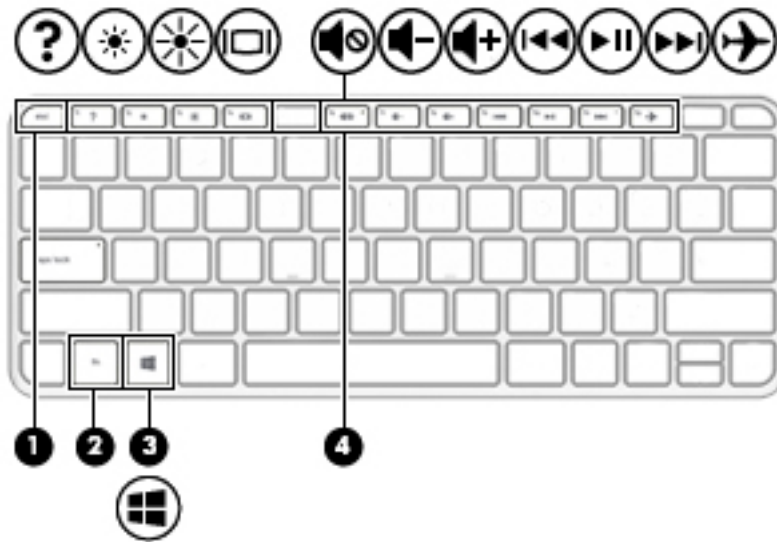
Component		Description
(1)	esc key	Displays system information when pressed in combination with the fn key.
(2)	fn key	Executes frequently used system functions when pressed in combination with the b key, the spacebar, or the esc key.
(3)	Windows key	Returns you to the Start screen from an open app or the Windows desktop. **NOTE:** Pressing the Windows key again will return you to the previous screen.
(4)	Action keys	Execute frequently used system functions.

Service label and PCID label

Service label

When ordering parts or requesting information, provide the computer serial number and model description provided on the service label.

- Serial number (s/n) **(1)**. This is an alphanumeric identifier that is unique to each product.

- Part number/Product number (p/n) **(2)**. This number provides specific information about the product's hardware components. The part number helps a service technician to determine what components and parts are needed.

- Warranty period **(3)**. This describes the duration (in years) of the warranty period for the computer.

- Model **(4)**. This is the alphanumeric identifier used to locate documents, drivers, and support for the computer.

PCID label

The PCID label provides the information required to properly reset the notebook firmware (BIOS) back to factory shipped specifications when replacing the system board. The label may have a different number of characters depending on the operating system on the computer The PCID lable is located inside the bottom case.

Windows 10 models

PCID:XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Non-Windows models

PCID:XXXXXXXX

3 Illustrated parts catalog

Computer major components

📝 **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.
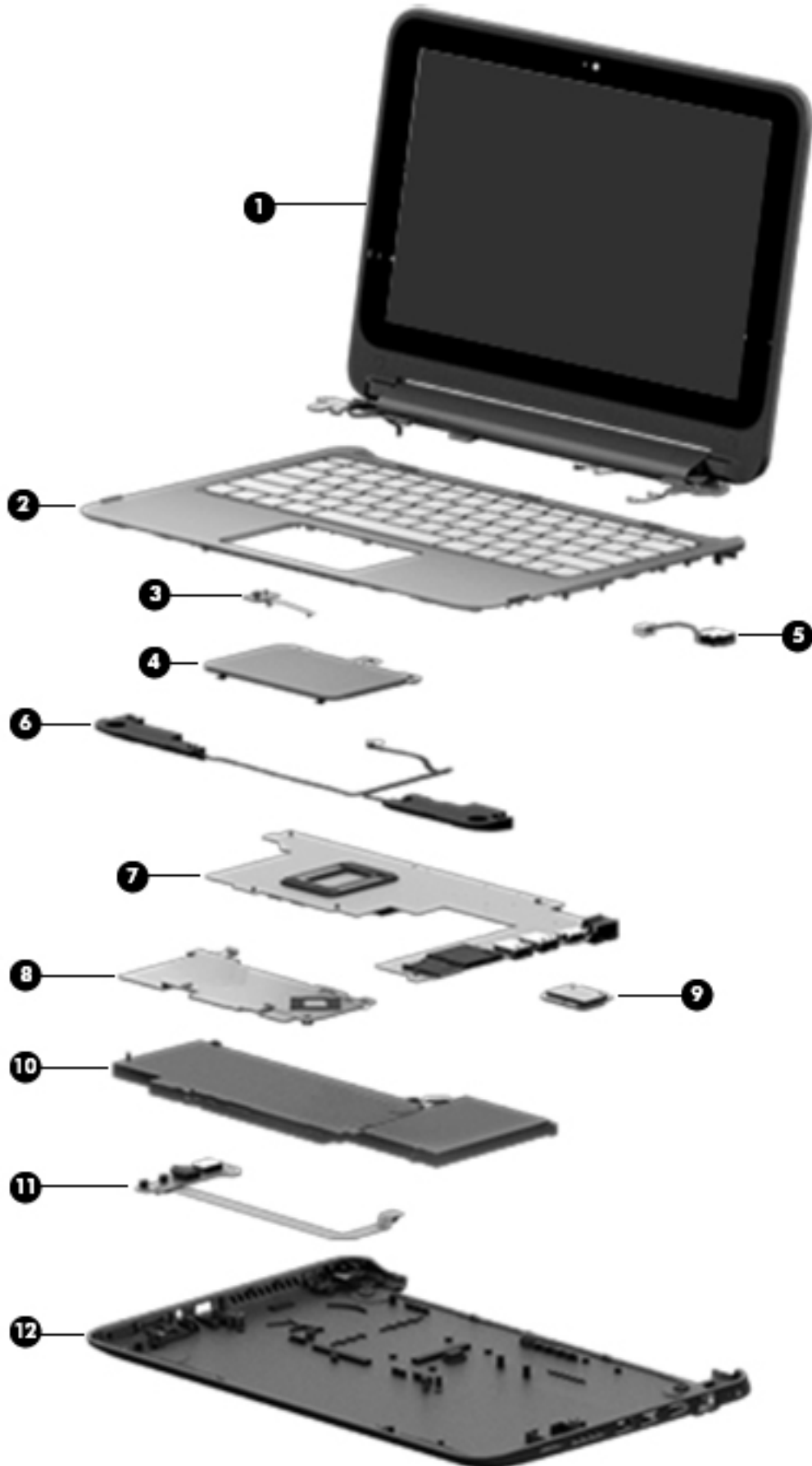
Item	Component	Spare part number
(1)	**Display assembly** (11.6-in, AntiGlare, SVA, LED, TouchScreen; includes webcam/microphone module WLAN antenna cable and transceiver):	794294-001
	The display assembly is also spared at the subcomponent level. See for more information.	
(2)	**Keyboard/top cover** (includes keyboard cable):	
	For use in Belgium	82 -A41
	For use in Canada	829867-DB1
	For use in Denmark, Finland, and Norway	829867-DH1
	For use in France	829867-051
	For use in Germany	829867-041
	For use in Latin America	829867-161
	For use in the Netherlands	829867-B31
	For use in Russia	829867-251
	For use in Spain	829867-071
	For use in the United Kingdom	829867-031
	For use in the United States	829867-001
(3)	**Power button board** (includes cable)	755733-001
(4)	**TouchPad** (includes bracket and cable)	820517-001
(5)	**Power connector cable**	755727-001
(6)	**Speaker Kit** (includes left and right speakers and cable)	794298-001
(7)	**System board** (includes replacement thermal material):	
	Equipped with an Intel Celeron N2840 processor, 2.0-GB memory, 32-GB eMMC, WWAN capability, and the Windows 10 operating system (includes replacement thermal material)	794299-601
	Equipped with an Intel Celeron N2840 processor, 2.0-GB memory, 32G-B eMMC, no WWAN capability, and a non-Windows operating system (includes replacement thermal material)	794299-001
(8)	**Thermal plate** (not spared)	
(9)	**Broadcom BCM43142 802.11 b/g/n 1x1 Wi-Fi + Bluetooth 4.0 HMC Combo Adapter**	753076-005
(10)	**Battery** (3-cell, 43-WHr, 3.82-AHr)	787520-005
(11)	**USB board** (includes cable)	755734-001
(12)	**Bottom cover**	829865-001

Display assembly subcomponents
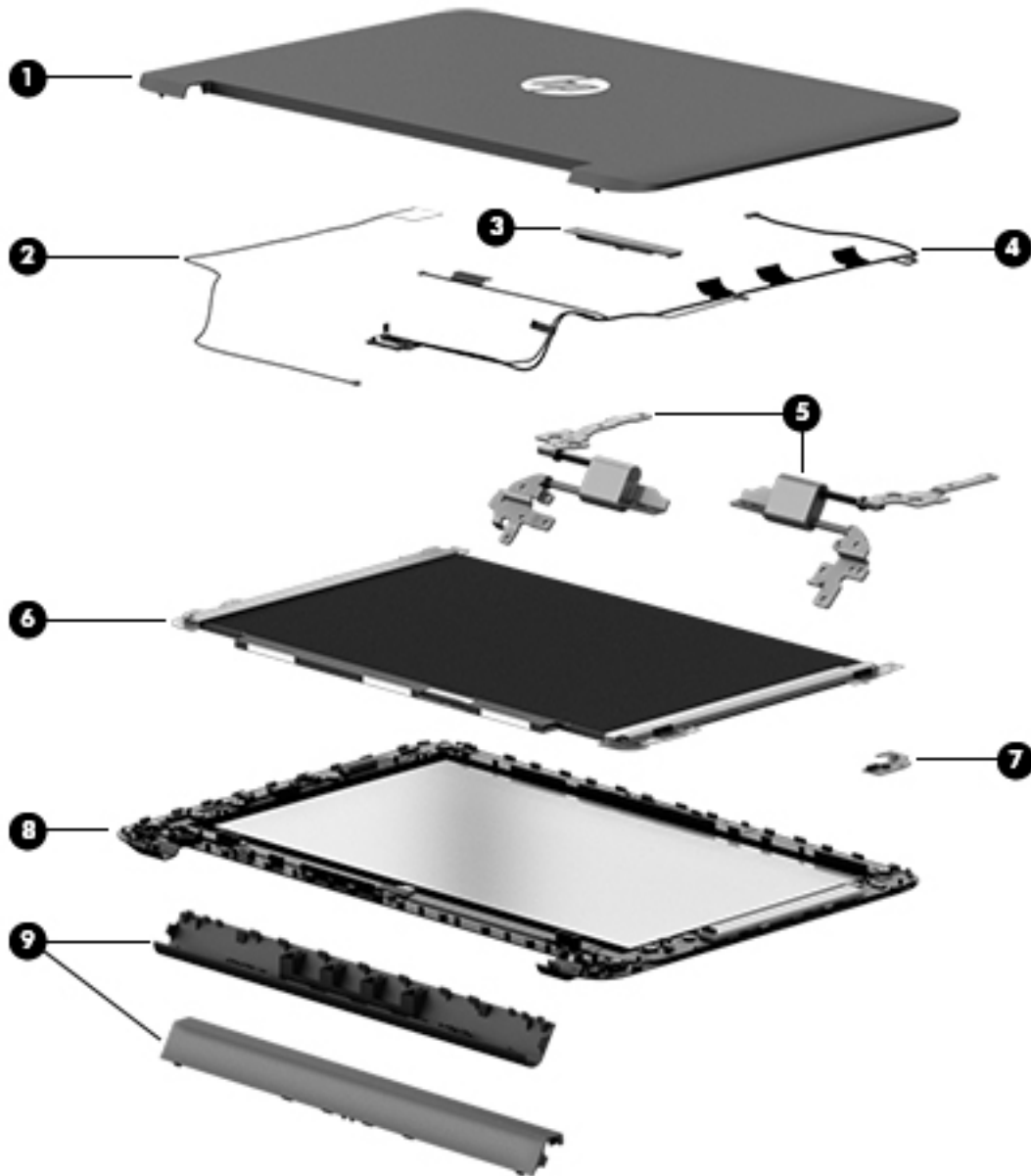
Item	Component	Spare part number
(1)	**Display back cover**	820512-001
(2)	**WLAN antenna** (includes WLAN antenna cable and transceiver)	794285-001
(3)	**Webcam/microphone module** (includes microphone rubber gaskets)	794303-001
(4)	**Display panel cable**	761350-001
(5)	**Display hinges** (2, includes left and right hinges)	794308-001
(6)	**Display panel** (includes display screw mylar covers and rubber gaskets)	794295-001
(7)	**Proximity sensor board**	788218-001

Item	Component	Spare part number
(8)	**Display bezel** (includes bezel, touch glass, touch control board, and magnets for hibernation and 360)	794290-001
(9)	**Display hinge covers** (includes top and bottom covers)	829866-001

Miscellaneous parts

Component	Spare part number
45-W HP Smart AC adapter (non-PFC, 4.5-mm; not for use in India or the People's Republic of China)	741727-001
HDMI to VGA adapter	701943-001
HP External DVD±RW Double-Layer with SuperMulti Drive	747080-001
Power cord (3-pin, black, 1.83-m):	
For use in Denmark	755530-081
For use in Europe	755530-021
For use in Italy	755530-061
For use in North America	755530-001
For use in the United Kingdom and Singapore	755530-031
Rubber Feet Kit (includes 2 rear rubber feet)	820515-001
Screw Kit	794297-001

4 Removal and replacement procedures preliminary requirements

Tools required

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

- Flat-bladed screw driver
- Magnetic screw driver
- Phillips P0 and P1 screw drivers

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			
	Relative humidity		
Event	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 ±10% resistance in the ground cords. To provide proper ground, wear a strap snugly against the skin at all times. On grounded mats with banana-plug connectors, use alligator clips to connect a wrist strap.

- When standing, use foot straps and a grounded floor mat. Foot straps (heel, toe, or boot straps) can be used at standing workstations and are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use foot straps on both feet with a minimum of one megohm resistance between the operator and ground. To be effective, the conductive must be worn in contact with the skin.

The following grounding equipment is recommended to prevent electrostatic damage:

- Antistatic tape

- Antistatic smocks, aprons, and sleeve protectors

- Conductive bins and other assembly or soldering aids

- Nonconductive foam

- Conductive tabletop workstations with ground cords of one megohm resistance

- Static-dissipative tables or floor mats with hard ties to the ground

- Field service kits

- Static awareness labels

- Material-handling packages

- Nonconductive plastic bags, tubes, or boxes

- Metal tote boxes

- Electrostatic voltage levels and protective materials

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

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

5 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 76 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.

Bottom cover

| Description	Spare part number
Bottom cover	829865-001
Rubber Kit (includes 2 rear rubber feet)	820515-001

Before removing the bottom 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.
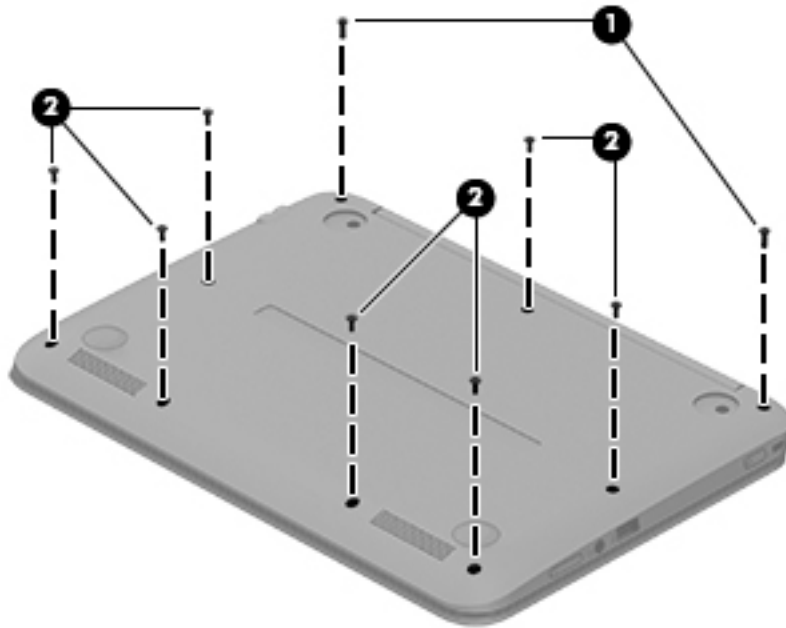
Remove the bottom cover:

1. Position the computer upside-down.

2. Pry the two rear rubber feet off the bottom cover **(1)**.

3. Remove the two Phillips PM2.5×8.0 screws **(2)** that secure the bottom cover to the computer.
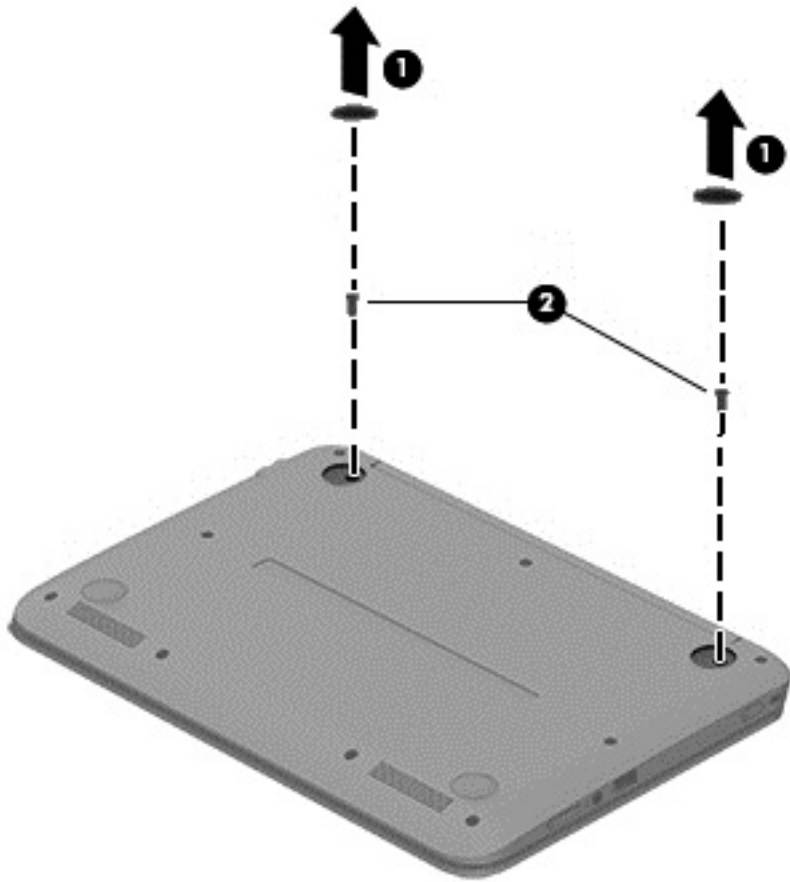
4. Remove the two Phillips PM2.5×8.0 screws **(1)** and the seven Phillips PM2.0×7.0 screws **(2)** that secure the bottom cover to the computer.

5. Separate the bottom cover from the computer by lifting up at the seam near the display hinges **(1)**, and then lift the cover up and off the computer far enough to access the USB/audio board connector on the system board.

    > **NOTE:** When you lift the bottom cover, a cable is connected from the USB/audio board (installed on the inside of the bottom cover) to the system board. Be sure not to pull the cable loose when lifting the bottom cover.

6. Disconnect the USB/audio board cable from the system board by lifting the ZIF connector **(2)**, and then removing the USB/audio board cable **(3)** from the system board connector.

7. Remove the bottom cover **(4)**.
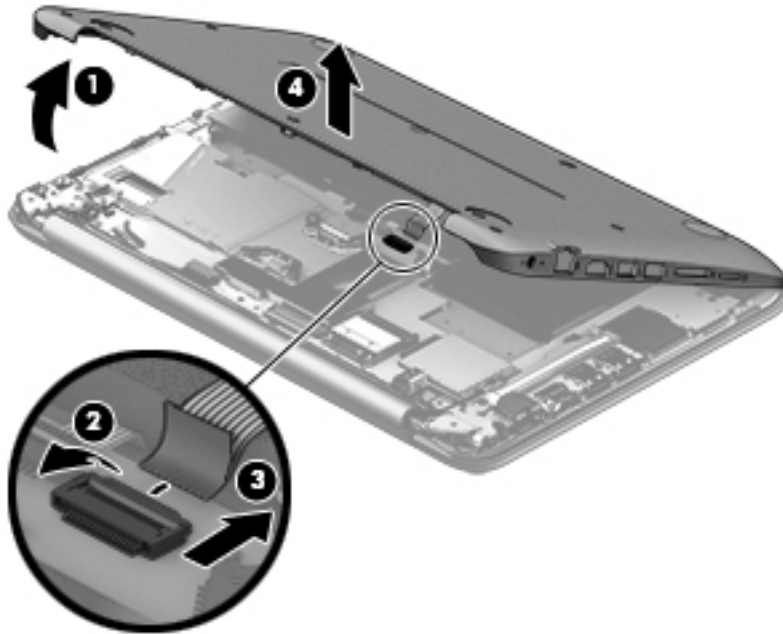
Reverse this procedure to install the bottom cover.
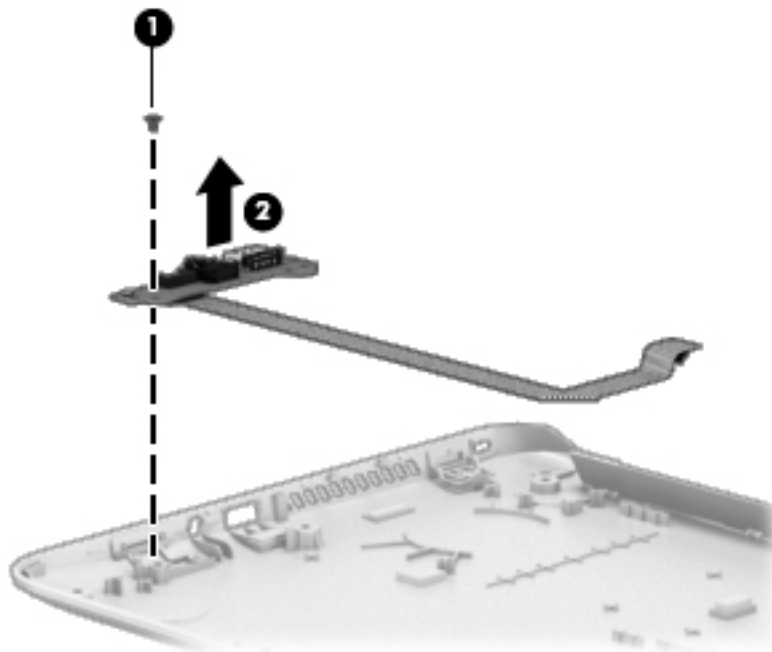
USB board

Description	Spare part number
USB board (includes cable)	755734-001

Before removing the USB board, follow these steps:

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

2. Disconnect all external devices connected to the computer.

3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.

4. Remove the bottom cover (see Bottom cover on page 23).

To remove the USB board:

1. Position the bottom cover upside-down.

2. Remove the Phillips PM2.0×3.0 screw **(1)**.

3. Lift up the ribbon cable to detach it from the bottom cover. The cable is held in place with double-sided tape.

4. Lift up the rear of the board and remove the board from the bottom cover **(2)**.

Reverse this procedure to install the USB board.

WLAN module

Description	Spare part number
Broadcom BCM43142 802.11 b/g/n 1x1 Wi-Fi + Bluetooth 4.0 HMC Combo Adapter	753076-005

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

Before removing the WLAN module, follow these steps:

1. 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 bottom cover (see Bottom cover on page 23).

5. Disconnect the battery.
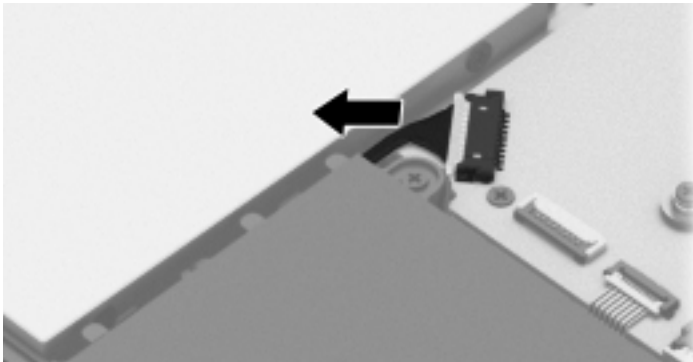
Remove the WLAN module:

1. Disconnect the WLAN antenna cable **(1)** from the terminal on the WLAN module.

   📝 **NOTE:** The WLAN antenna cable connects to the WLAN module "Main" terminal labeled "1".

2. Remove the two Phillips PM2.0×3.5 screws **(2)** that secure 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.
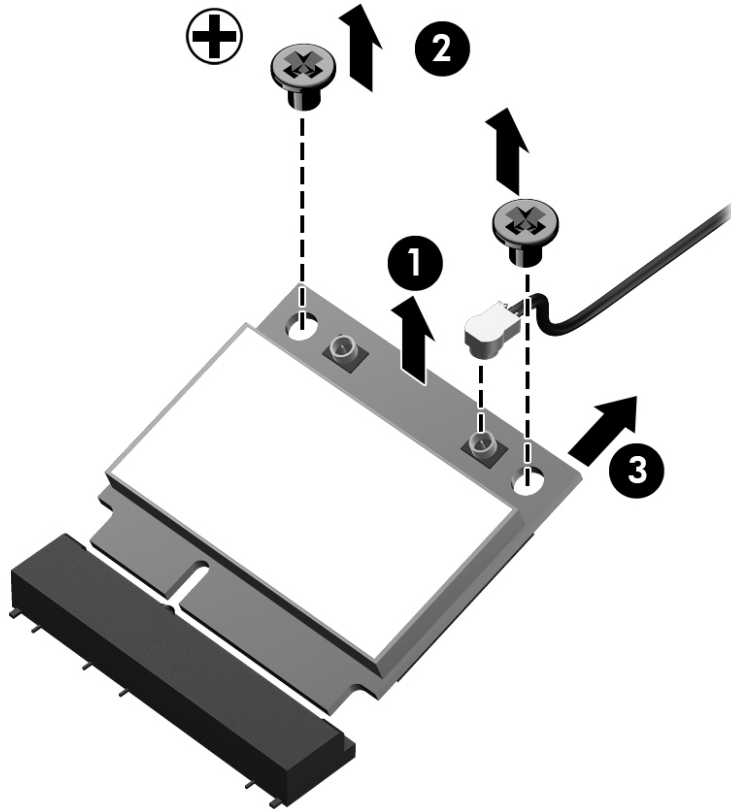
NOTE: If the WLAN antenna cables are not connected to the terminals on the WLAN module, the protective sleeves must be installed on the antenna connectors, as shown in the following illustration.
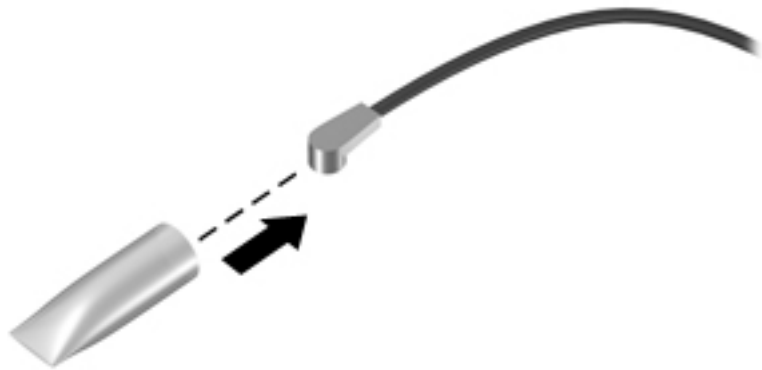

Reverse this procedure to install the WLAN module.

Power button board

Description	Spare part number
Power button board (includes cable)	755733-001

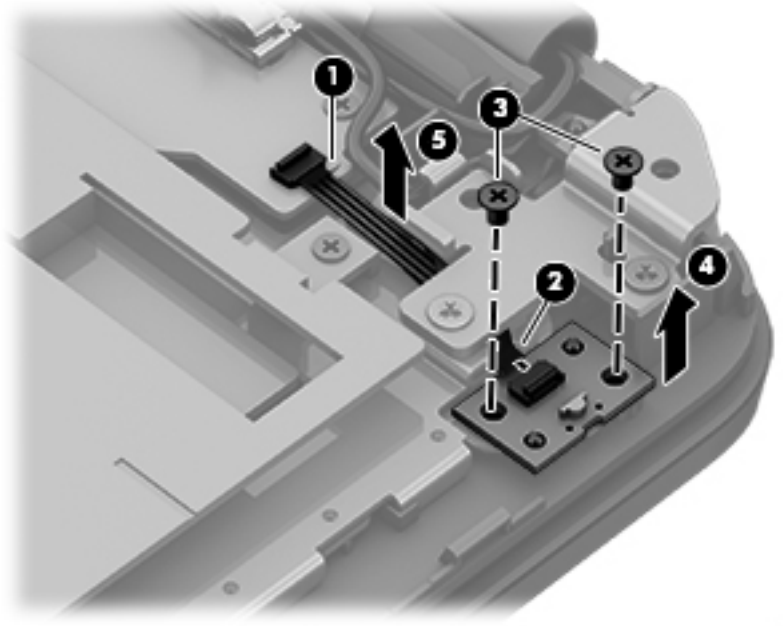Before removing the power button board, follow these steps:

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 bottom cover (see Bottom cover on page 23).

5. Disconnect the battery.
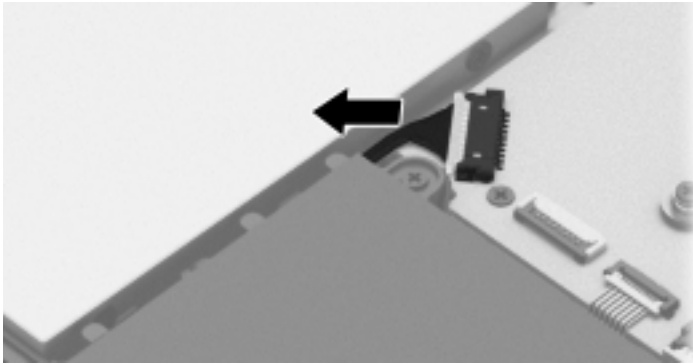
Remove the power button board:

1. Disconnect the power button board cable **(1)** from the system board.

2. Disconnect the power button board cable **(2)** from the power button board.

3. Remove the two Phillips PM2.0×3.0 screws **(3)** that secure the power button board to the computer.

4. Remove the power button board **(4)**.

5. Remove the power button board cable **(5)**. The cable is attached with double-sided adhesive.

Reverse this procedure to install the power button board.

Speakers

Description	Spare part number
Speaker Kit (includes left and right speakers and cable)	794298-001

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 bottom cover (see Bottom cover on page 23).

5. Disconnect the battery.
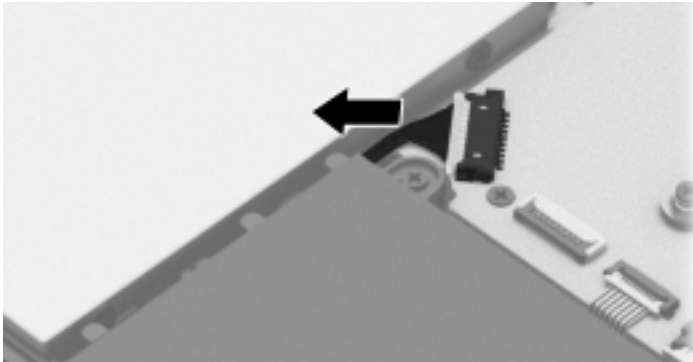
Remove the speakers:

1. Disconnect the speaker cable from the system board **(1)**.

2. Release the speaker cable **(2)** from the clips on the battery.

3. Remove the four Phillips PM2.0×6.0 broad head screws **(3)** that secure the speakers to the computer.

📝 **NOTE:** Make note of the rubber gaskets **(4)** that fit around each screw. For installation, make sure the gaskets are properly installed.
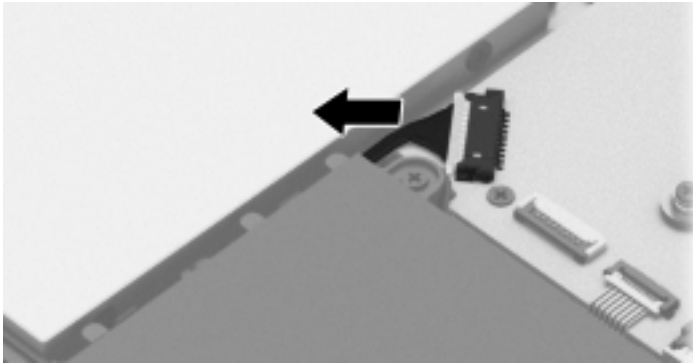
4. Remove the speakers **(5)**.
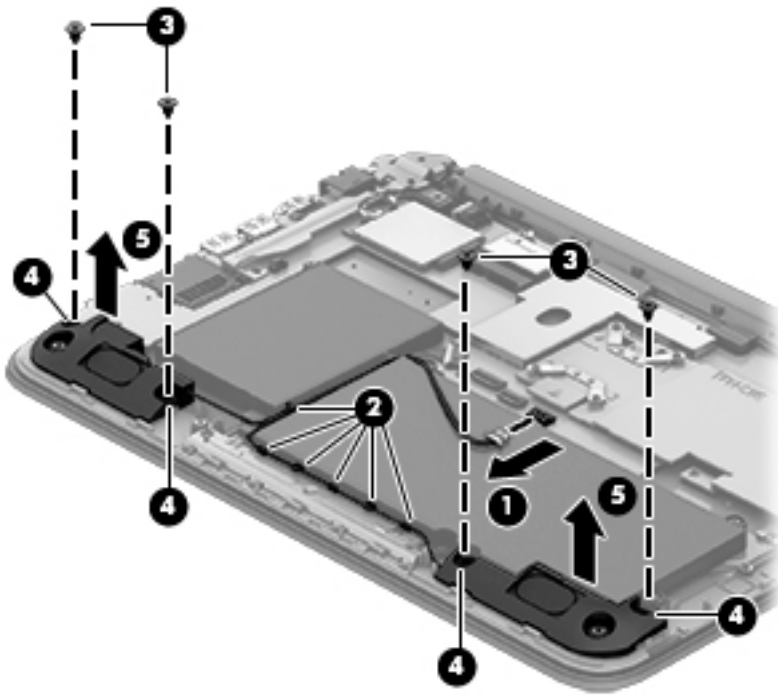
Reverse this procedure to install the speakers.

Battery

Description	Spare part number
Embedded 3 cell, 43 Wh, 3.82 Ah, prismatic battery pack	787520-005

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 bottom cover (see Bottom cover on page 23).

5. Disconnect the battery.

6. Disconnect the speaker cable from the system board and release the speaker cable from the clips on the battery. See Speakers on page 32.
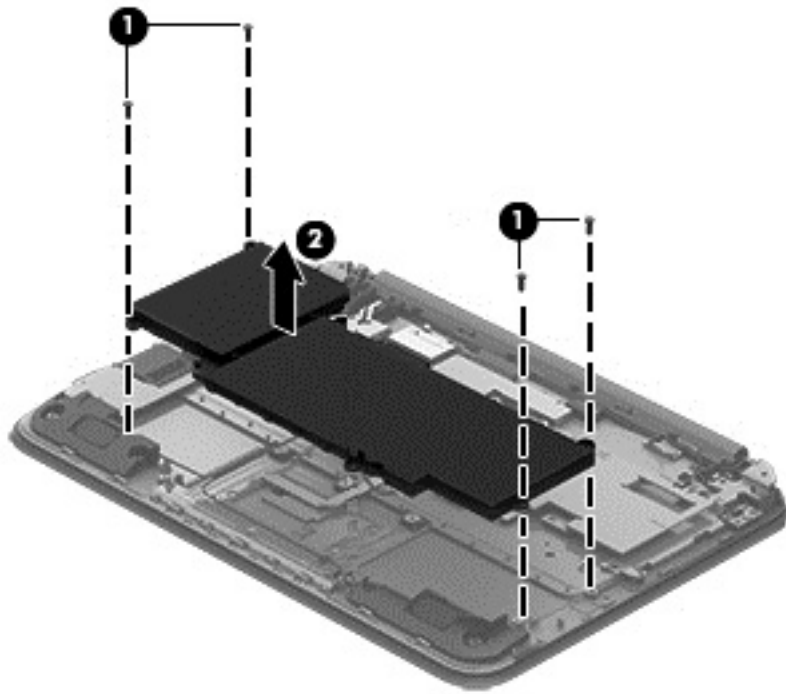
Remove the battery:

⚠ 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.

1. Remove the four Phillips PM2.0×7.0 screws **(1)** that secure the battery to the computer.

📝 NOTE: The battery is also held in place by a fifth screw that was removed when the bottom cover was removed.

2. Remove the battery **(2)**.

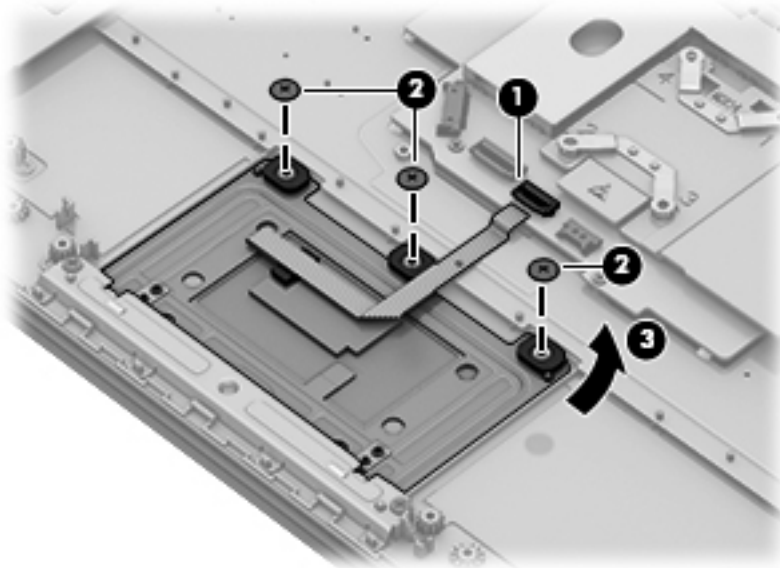Reverse this procedure to install the battery.

TouchPad

Description	Spare part number
TouchPad (includes bracket and cable)	820517-001

Before removing the TouchPad, follow these steps:

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

2. Disconnect the power from the computer by unplugging the power cord from the computer.

3. Disconnect all external devices from the computer.

4. Remove the bottom cover (see Bottom cover on page 23).

5. Remove the battery (see Battery on page 34).

Remove the TouchPad:

1. Disconnect the TouchPad cable from the system board by lifting the ZIF connector **(1)**, and then removing the TouchPad cable from the system board connector. The cable is held in place with adhesive.

2. Remove three Phillips PM2.0×2.0 broadhead screws **(2)** that secure the Touchpad to the computer.

3. Remove the EMI tape from the TouchPad.

4. Lift and remove the TouchPad **(3)** from the computer.

Reverse this procedure to install the TouchPad.

Power connector cable

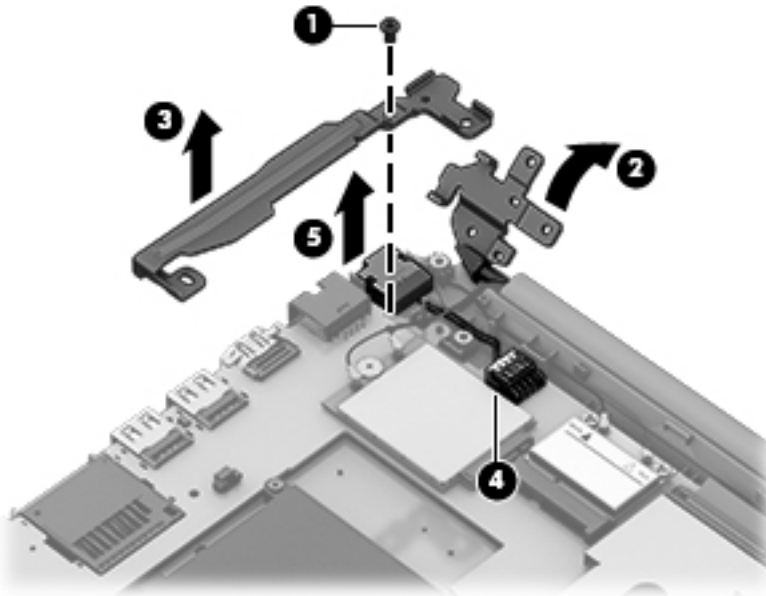| Description	Spare part number
Power connector cable	755727-001

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 bottom cover (see Bottom cover on page 23).

5. Remove the battery (see Battery on page 34).

Remove the power connector cable:

NOTE: The right bracket is also held in place by screws that were removed when the bottom cover was removed.

1. Remove the black Phillips PM2.5×6.0 screw **(1)** that secures the right bracket to the computer.

2. Open the display assembly right hinge **(2)** as far as it will open.

3. Remove the right hinge bracket from the computer **(3)**.

4. Disconnect the power connector cable **(4)** from the system board.

5. Remove the power connector **(5)** from the computer.

Reverse this procedure to install the power connector cable.

System board

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

Description	Spare part number
Equipped with an Intel Celeron N2840 processor, 2.0-GB memory, 32-GB eMMC, WWAN capability, and the Windows 10 or Windows 8.1 Professional operating system	794299-601
Equipped with an Intel Celeron N2840 processor, 2.0-GB memory, 32-GB eMMC, WWAN capability, and a non-Windows operating system	794299-001

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 bottom cover (see).

5. Remove the battery (see).

📝 **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)

● Thermal plate

Remove the system board:

1. Disconnect the following cables from the system board:

    (1): WWAN wireless antennas

    (2): Power connector cable

    (3): WLAN wireless antenna

    (4): Keyboard ZIF cable

    (5): Webcam cable

    (6): Display cable

    (7): Power button board ZIF cable

    (8): TouchPad board ZIF cable

    (9): Speaker cable
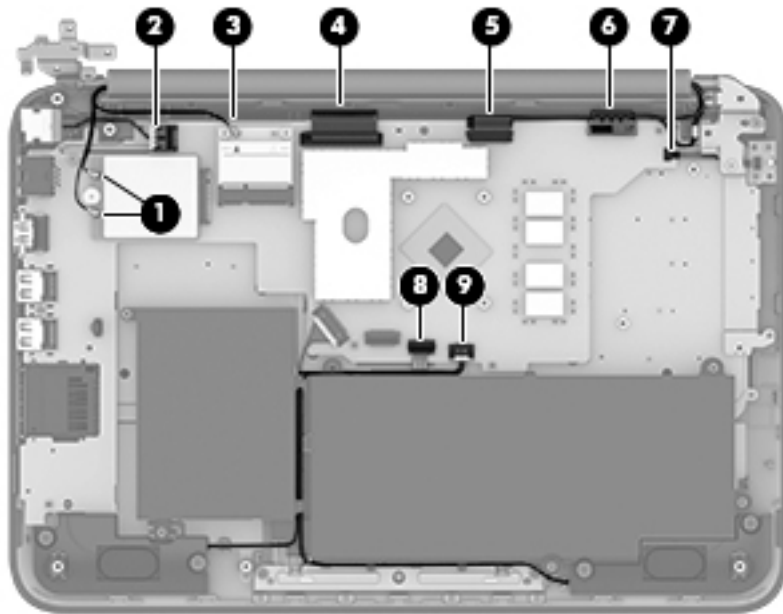
2. Remove the thermal plate:

a. Remove the six Phillips PM 2.0x3.0 screws **(1)** securing the thermal plate.

b. Remove the thermal plate **(2)**.
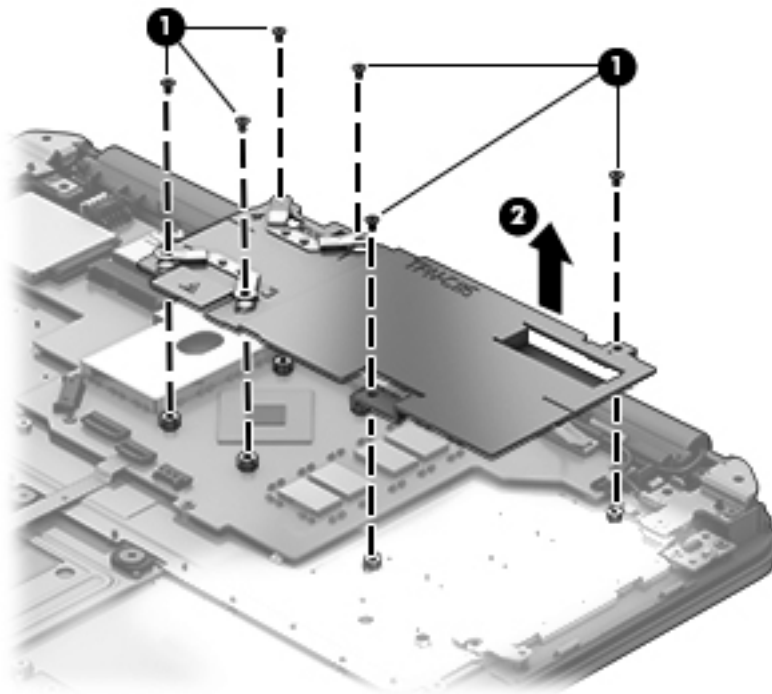
> **NOTE:** The thermal material must be thoroughly cleaned from the surfaces of the thermal plate and the system board components each time the thermal plate is removed. Replacement thermal material is included with the system board spare part kits.

Thermal paste is used on the thermal plate section **(1)** and the processor **(2)** on the system board.
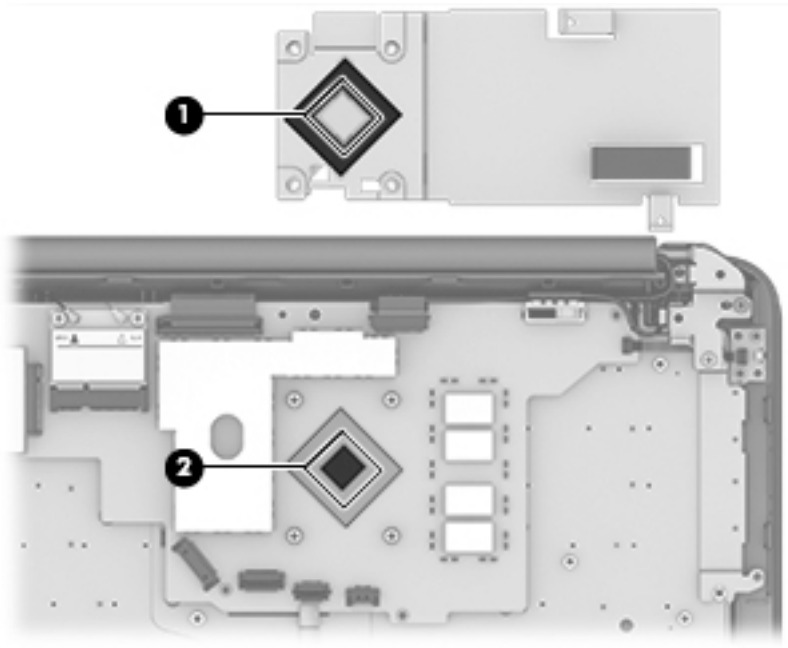
3. Remove the four Phillips PM2.0×3.0 screws **(1)** that secure the system board to the computer.

4. Remove the system board **(2)** from the computer.
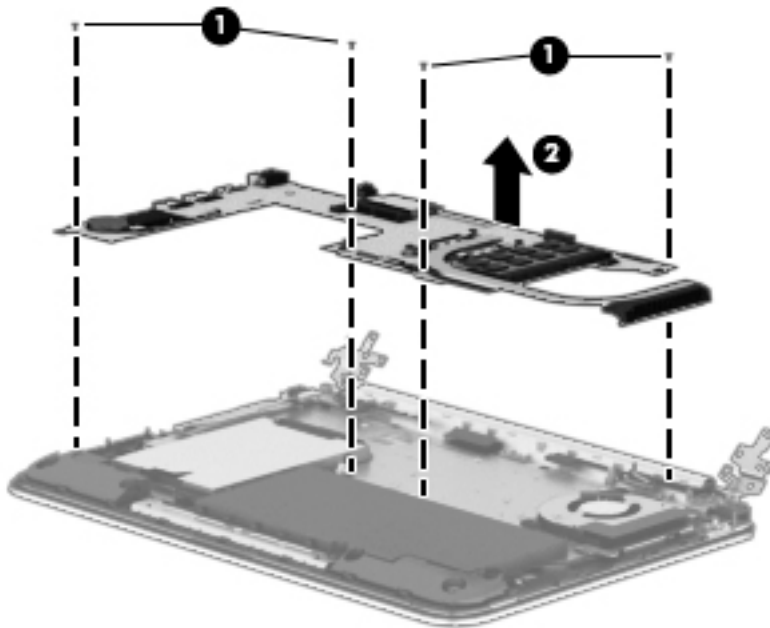
Reverse this procedure to install the system board.

Display assembly

📝 **NOTE:** The display assembly is spared as a whole assembly and also is spared as subcomponents.

Description	Spare part number
Display assembly (11.6 in [29.5 cm], AntiGlare, SVA, LED TouchScreen)	794294-001

Display assembly subcomponents

| Description	Spare part number
Display bezel (includes bezel, touch glass, touch control board, and magnets for hibernation and 360)	794290-001
Display cable	761350-001
Display back cover	820512-001
Display hinge	794308-001
Display hinge covers (includes top and bottom covers)	829866-001
Display panel (includes display screw mylar covers and rubber gaskets)	794295-001
Proximity sensor board	788218-001
Webcam (includes microphone rubber gaskets)	794303-001
WLAN antenna	794285-001

Before removing the display assembly, follow these steps:

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

2. Disconnect all external devices connected to the computer.

3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.

4. Remove the bottom cover (see).

5. Remove the battery (see).

To remove the display assembly:

1. Release the WWAN wireless antennas from the clips **(1)** built into the base enclosure.

2. Release the WLAN wireless antenna cable from the clip **(2)** built into the base enclosure.

3. Disconnect the webcam cable **(3)** from the system board.

4. Disconnect the display cable **(4)** from the system board.
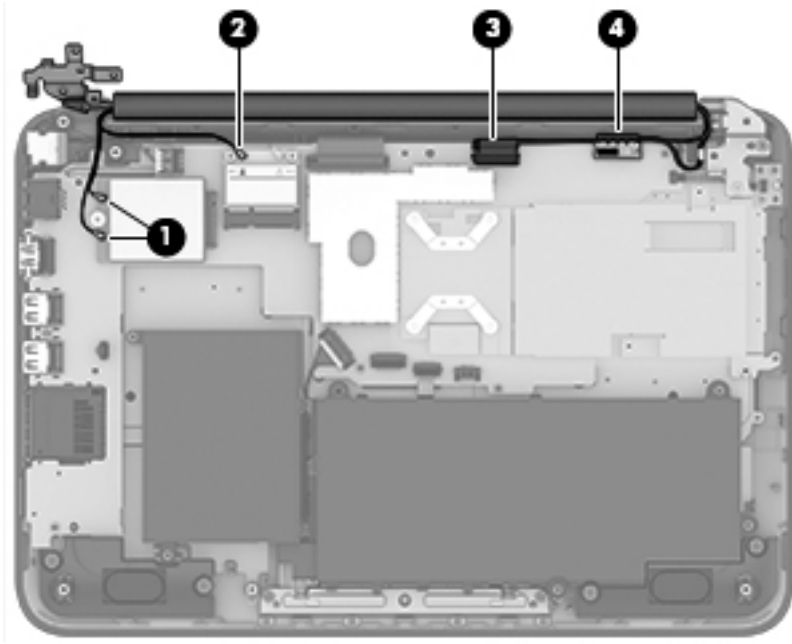
5. Remove the two silver Phillips PM2.5×4.0 screws **(1)** and the two black Phillips PM2.5×5.0 screws **(2)** that secure the display assembly and bracket to the computer.

> ⚠ **CAUTION:** Support the display assembly when removing the screws. Failure to support the display assembly can result in damage to the display assembly and other computer components.

6. Lift the computer and separate the display assembly from the computer **(3)**.
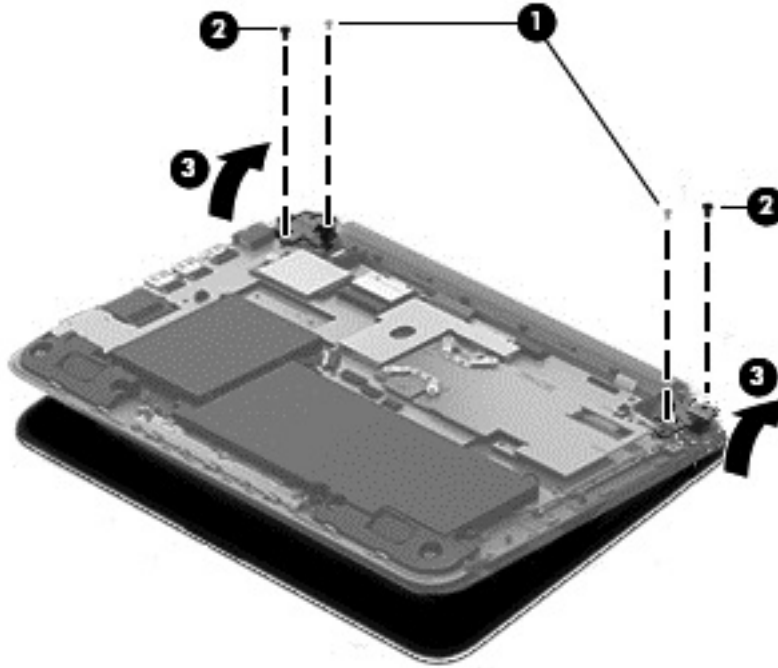
If it is necessary to replace any of the display assembly subcomponents:

1. To remove the display hinge covers:

    a. Use a thin tool **(1)** to separate the snaps on the top hinge cover **(2)** and then rotate it off.

    b. Remove the four Phillips PM2.5×5.0 screws **(3)** that secure the bottom hinge cover to the display.

**c.** Remove the bottom display hinge cover from the display **(4)**.
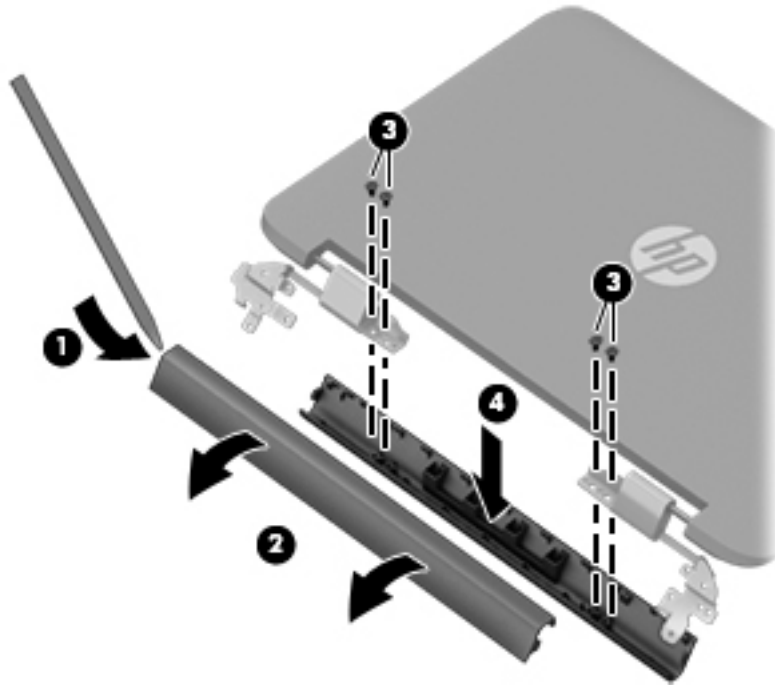
2. To remove the display enclosure:

a. Remove the two screw covers **(1)**.

b. Remove the two Phillips PM2.5×4.0 screws **(2)** that secure the enclosure to the display.

c. Pry from the side to separate the display enclosure from the display **(3)**.
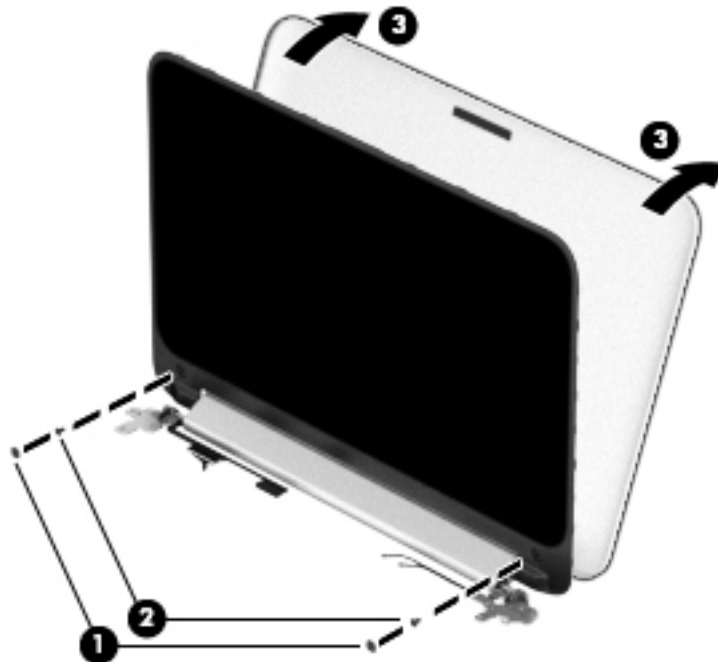
3. To remove the webcam module:

NOTE: Before removing the webcam module, note the placement of the rubber gaskets on the webcam module.

    a. Lift the webcam module **(1)** enough to gain access to the cable.

    b. Disconnect the cable **(2)** from the module.
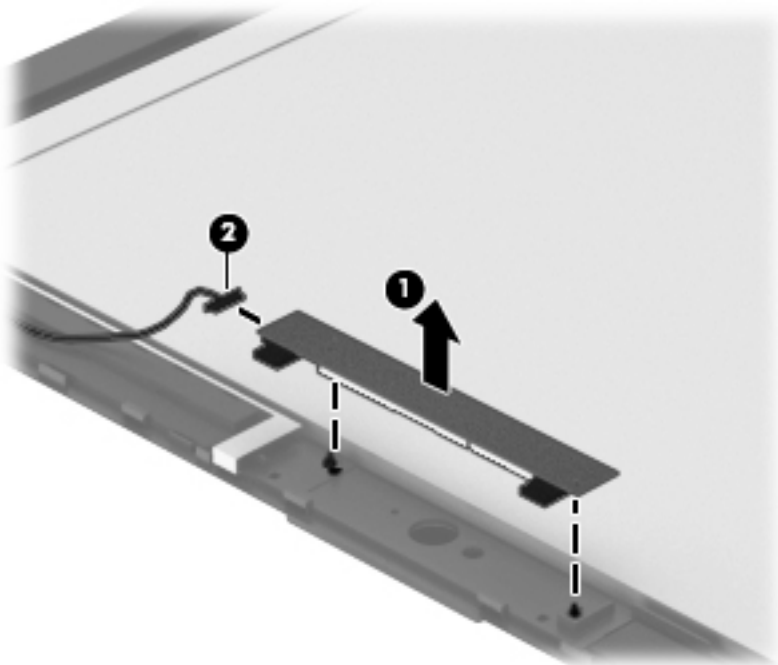
4. To remove the proximity sensor board:

    a. Disconnect the cable **(1)** from the display.

    b. Remove the screw **(2)** that secures the board to the display.

    c. Remove the board **(3)**.
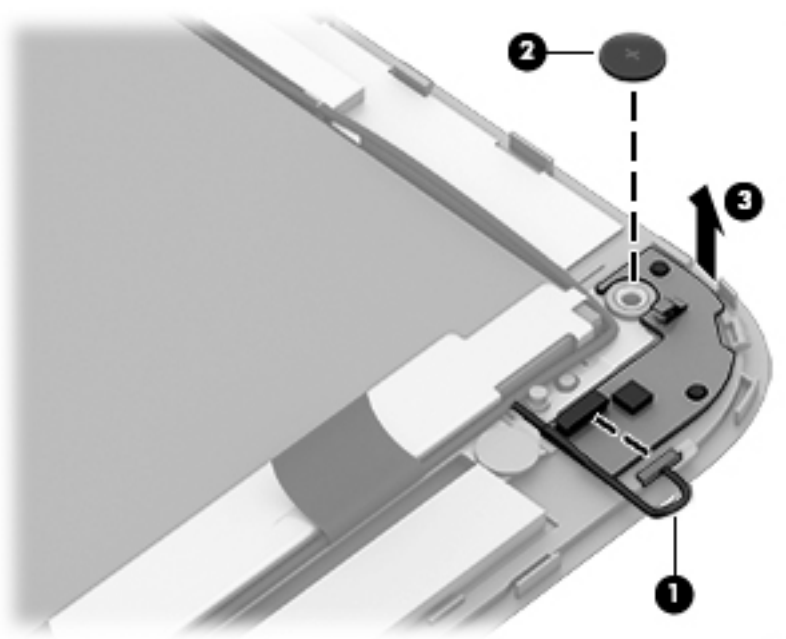
5. To remove the display cable:

   a. Release the display cable tape **(1)** holding the cable on the display bezel.

   b. Disconnect the end of the display cable **(2)** from the small connector at the bottom of the display panel.

   c. Disconnect the display cable **(3)** from the large connector on the bottom of the display panel.

   d. Remove the cable from clips **(4)** that secure it to the display enclosure.

   e. Lift the display cable **(5)** from the display enclosure to remove it.
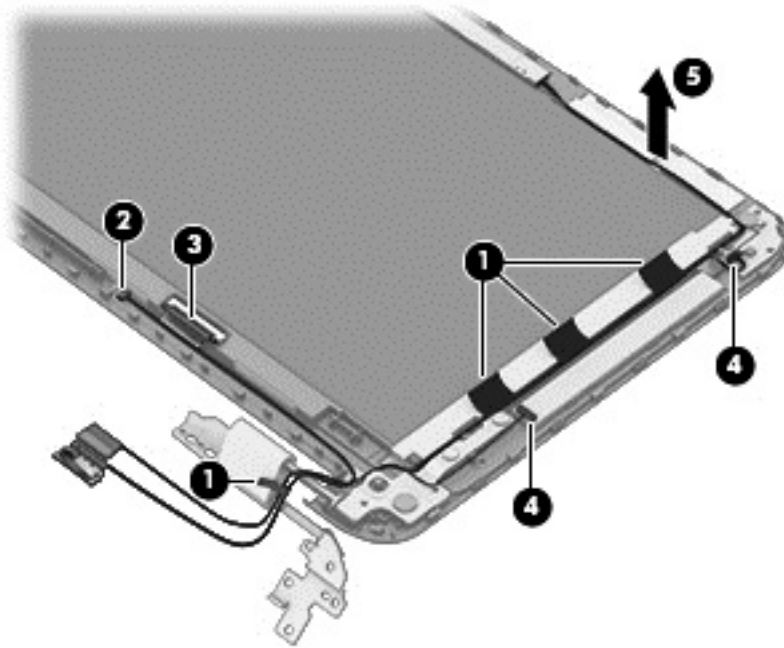
6. To remove the WLAN antenna:

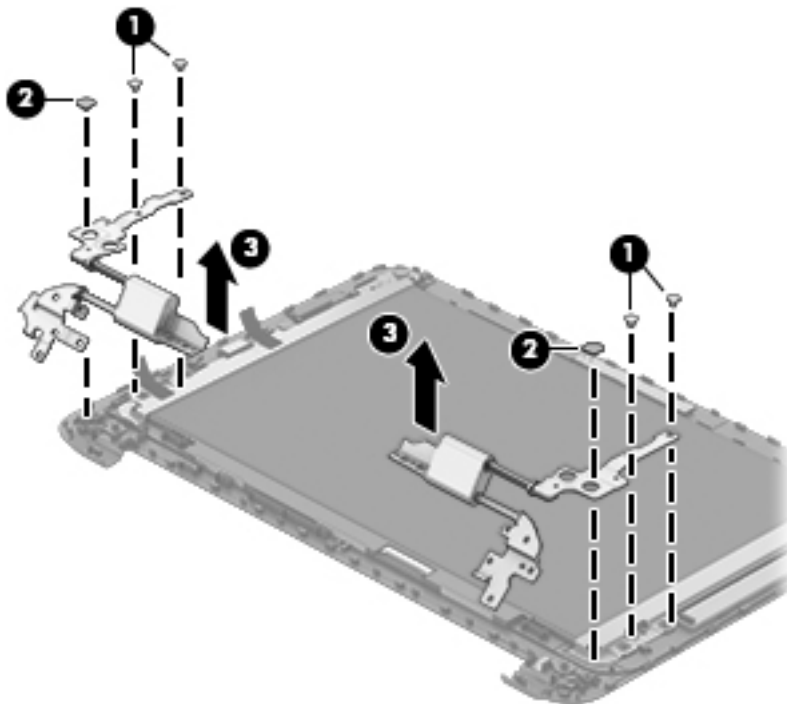   **a.** Remove the tape **(1)** securing the antenna.

b. Lift the antenna **(2)** to remove it from the display.
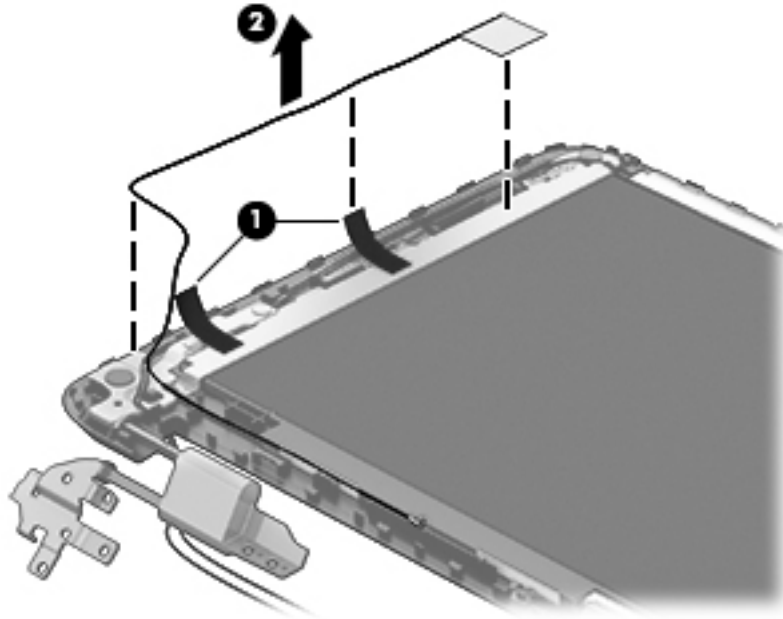
7. To remove the display hinges:

a. Remove the four Phillips silver screws **(1)** from the left and right display hinges.

b. Remove the two Phillips black screws **(2)** from the left and right display hinges.

c. Remove the hinges **(3)**.

> **NOTE:** The hinges are marked with an L for left and R for right.

Reverse this procedure to reassemble and install the display assembly.

6 Using Setup Utility (BIOS)

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

NOTE: To start Setup Utility on convertible computers, your computer must be in notebook mode and you must use the keyboard attached to your notebook. The on-screen keyboard, which displays in tablet mode, cannot access Setup Utility.

Starting Setup Utility (BIOS)

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

NOTE: To start Setup Utility on convertible computers, your computer must be in notebook mode and you must use the keyboard attached to your notebook. The on-screen keyboard, which displays in tablet mode, cannot access Setup Utility.

- Computers or tablets with keyboards:

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

- Tablets without keyboards:

 1. Turn on or restart the tablet, and then quickly hold down the volume down button.

   – or –

   Turn on or restart the tablet, and then quickly hold down the Windows button.

 2. Tap f10.

Updating Setup Utility (BIOS)

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

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

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

Determining the BIOS version

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

To reveal the BIOS version information (also known as ROM date and System BIOS):

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

    – or –

    Click the question mark icon in the taskbar.

2. Select **My PC**, and then select **Specifications**.

    – or –

    ▲ Use Setup Utility (BIOS).

To use Setup Utility (BIOS):

1. Start Setup Utility (BIOS) (see).

2. Select **Main**, select **System Information**, and then make note of the BIOS version.

3. Select **Exit**, select **No**, and then follow the on-screen instructions.

To check for later BIOS versions, see .

Downloading a BIOS update

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

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

-   Do not shut down the computer or initiate Sleep.

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

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

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

    – or –

    Click the question mark icon in the taskbar.

2. Click **Updates**, and then click **Check for updates and messages**.

3. Follow the on-screen instructions.

4. At the download area, follow these steps:

    a. Identify the most recent BIOS update and compare it to the BIOS version currently installed on your computer. If the update is more recent than your BIOS version, make a note of the date,

name, or other identifier. You may need this information to locate the update later, after it has been downloaded to your hard drive.

b. Follow the on-screen instructions to download your selection to the hard drive.

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

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

1. Type `file` in the taskbar search box, and then select **File Explorer**.

2. Click your hard drive designation. The hard drive designation is typically Local Disk (C:).

3. Using the hard drive path you recorded earlier, open the folder that contains the update.

4. Double-click the file that has an .exe extension (for example, *filename*.exe).

The BIOS installation begins.

5. Complete the installation by following the on-screen instructions.

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

Synchronizing a tablet and keyboard (select products only)

For a tablet with a detachable keyboard, when you attach the tablet to the keyboard and restart the computer, Setup Utility (BIOS) checks to see if the Embedded Controller firmware on the keyboard needs to be synchronized. If so, synchronization begins. If the synchronization is interrupted, a notification screen displays for 10 seconds before the tablet restarts and attempts to synchronize again.

NOTE: The Embedded Controller firmware will synchronize ONLY if the tablet or keyboard battery is more than 50% charged, or if your tablet is connected to AC power.

7 Using HP PC Hardware Diagnostics (UEFI)

HP PC Hardware Diagnostics is a Unified Extensible Firmware Interface (UEFI) that allows you to run diagnostic tests to determine whether the computer hardware is functioning properly. The tool runs outside the operating system so that it can isolate hardware failures from issues that are caused by the operating system or other software components.

NOTE: To start BIOS on a convertible computer, your computer must be in notebook mode and you must use the keyboard attached to your tablet. The on-screen keyboard, which displays in tablet mode, cannot access BIOS.

To start HP PC Hardware Diagnostics UEFI:

1. Start BIOS:

   - Computers or tablets with keyboards:

     ▲ Turn on or restart the computer, quickly press esc.

   - Tablets without keyboards:

     ▲ Turn on or restart the tablet, and then quickly hold down the volume down button.

     – or –

     Turn on or restart the tablet, and then quickly hold down the Windows button.

2. Press or tap f2.

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

   a. Connected USB drive

   NOTE: To download the HP PC Hardware Diagnostics (UEFI) tool to a USB drive, see Downloading HP PC Hardware Diagnostics (UEFI) to a USB device on page 52.

   b. Hard drive

   c. BIOS

3. When the diagnostic tool opens, select the type of diagnostic test you want to run, and then follow the on-screen instructions. On a tablet, press the volume down button to stop a diagnostic test.

NOTE: If you need to stop a diagnostic test on computers or tablets with a keyboard, press esc.

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

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

Download the latest UEFI version:

1. Go to http://www.hp.com/go/techcenter/pcdiags. The HP PC Diagnostics home page is displayed.

2. In the HP PC Hardware Diagnostics section, click the **Download** link, and then select **Run**.

Download any version of UEFI for a specific product:

1. Go to http://www.hp.com/support, and then select your country. The HP Support page is displayed.

2. Click **Drivers & Downloads**.

3. In the text box, enter the product name, and then click **Go**.

    – or –

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

4. Select your computer, and then select your operating system.

5. In the **Diagnostic** section, follow the on-screen instructions to select and download the UEFI version you want.

8 Specifications

Computer specifications

	Metric	U.S.
Dimensions		
Width	**308 mm**	12.13 in
Depth	**215.1 mm**	8.47 in
Height	**21.9 mm**	0.86 in
Weight	**<1.5 kg**	<3.31 lbs
Input power		
Operating voltage and current	19.5 V dc @ 2.31 A – 45 W	
Temperature		
Operating	**5°C to 35°C**	41°F to 95°F
Nonoperating	**-20°C to 60°C**	-4°F to 140°F
Relative humidity (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%	
Maximum altitude (unpressurized)		
Operating	**-15 m to 3,048 m**	-50 ft to 10,000 ft
Nonoperating	**-15 m to 12,192 m**	-50 ft to 40,000 ft

NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The device operates well within this range of temperatures.

9 Backing up, restoring, and recovering

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

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

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

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

– or –

Click the question mark icon in the taskbar.

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

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

Creating recovery media and backups

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

- Use HP Recovery Manager to create HP Recovery media after you successfully set up the computer. This step creates a backup of the HP Recovery partition on the computer. The backup can be used to reinstall the original operating system in cases where the hard drive is corrupted or has been replaced. For information on creating recovery media, see Creating HP Recovery media (select products only) on page 55. For information on the recovery options that are available using the recovery media, see Using Windows Tools on page 56.

- Use Windows tools to create system restore points and create backups of personal information.

  For more information, see Recovering using HP Recovery Manager on page 57.

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

Creating HP Recovery media (select products only)

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

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

  You can use Windows tools to create system restore points and create backups of personal information, see *Using Windows tools on page 61*.

- If your computer does list the Recovery partition and the Windows partition, you can use HP Recovery Manager to create recovery media after you successfully set up the computer. HP Recovery media can be used to perform system recovery if the hard drive becomes corrupted. System recovery reinstalls the original operating system and software programs that were installed at the factory and then configures the settings for the programs. HP Recovery media can also be used to customize the system or restore the factory image if you replace the hard drive.

  ◦ Only one set of recovery media can be created. Handle these recovery tools carefully, and keep them in a safe place.

  ◦ HP Recovery Manager examines the computer and determines the required storage capacity for the media that will be required.

  ◦ To create recovery discs, your computer must have an optical drive with DVD writer capability, and you must use only high-quality blank DVD-R, DVD+R, DVD-R DL, or DVD+R DL discs. Do not use rewritable discs such as CD±RW, DVD±RW, double-layer DVD±RW, or BD-RE (rewritable Blu-ray) discs; they are not compatible with HP Recovery Manager software. Or, instead, you can use a high-quality blank USB flash drive.

  ◦ If your computer does not include an integrated optical drive with DVD writer capability, but you would like to create DVD recovery media, you can use an external optical drive (purchased separately) to create recovery discs. If you use an external optical drive, it must be connected directly to a USB port on the computer; the drive cannot be connected to a USB port on an external device, such as a USB hub. If you cannot create DVD media yourself, you can obtain recovery discs for your computer from HP. See the *Worldwide Telephone Numbers* booklet included with the computer. You can also find contact information on the HP website. Go to http://www.hp.com/support, select your country or region, and follow the on-screen instructions.

  ◦ Be sure that the computer is connected to AC power before you begin creating the recovery media.

  ◦ The creation process can take an hour or more. Do not interrupt the creation process.

  ◦ If necessary, you can exit the program before you have finished creating all of the recovery DVDs. HP Recovery Manager will finish burning the current DVD. The next time you start HP Recovery Manager, you will be prompted to continue.

To create HP Recovery media:

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

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

2. Select **Create recovery media**, and then follow the on-screen instructions.

If you ever need to recover the system, see Recovering using HP Recovery Manager on page 57.

Using Windows Tools

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

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

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

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

Restore and recovery

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

IMPORTANT: Not all methods are available on all products.

- Windows offers several options for restoring from backup, refreshing the computer, and resetting the computer to its original state. For more information see the Get started app.

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

- If you need to correct a problem with a preinstalled application or driver, use the Reinstall drivers and/or applications option (select products only) of HP Recovery Manager to reinstall the individual application or driver.

  ▲ Type `recovery` in the taskbar search box, select **HP Recovery Manager**, select **Reinstall drivers and/or applications**, and then follow the on-screen instructions.

- If you want to recover the Windows partition to original factory content, you can choose the System Recovery option from the HP Recovery partition (select products only) or use the HP Recovery media. For more information, see Recovering using Recovering using HP Recovery Manager on page 57. If you have not already created recovery media, see Creating HP Recovery media (select products only) on page 55.

- On select products, if you want to recover the computer's original factory partition and content, or if you have replaced the hard drive, you can use the Factory Reset option of HP Recovery media. For more information, see Recovering using HP Recovery Manager on page 57.

- On select products, if you want to remove the recovery partition to reclaim hard drive space, HP Recovery Manager offers the Remove Recovery Partition option.

For more information, see Removing the Removing the HP Recovery partition (select products only) on page 59.

Recovering using HP Recovery Manager

HP Recovery Manager software allows you to recover the computer to its original factory state by using the HP Recovery media that you either created or that you obtained from HP, or by using the HP Recovery partition (select products only). If you have not already created recovery media, see Creating HP Recovery media (select products only) on page 55.

What you need to know before you get started

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

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

- To use the Factory Reset option (select products only), you must use HP Recovery media. If you have not already created recovery media, see Creating HP Recovery media (select products only) on page 55.

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

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

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

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

- System Recovery—Reinstalls the original operating system, and then configures the settings for the programs that were installed at the factory.

- Factory Reset—Restores the computer to its original factory state by deleting all information from the hard drive and re-creating the partitions. Then it reinstalls the operating system and the software that was installed at the factory.

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

Using the HP Recovery partition (select products only)

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

To start HP Recovery Manager from the HP Recovery partition:

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

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

   – or –

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

   For tablets without keyboards:

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

   – or –

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

2. Select **Troubleshoot** from the boot options menu.

3. Select **Recovery Manager**, and then follow the on-screen instructions.

Using HP Recovery media to recover

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

1. If possible, back up all personal files.

2. Insert the HP Recovery media, and then restart the computer.

   NOTE: If the computer does not automatically restart in HP Recovery Manager, change the computer boot order. See Changing the computer boot order on page 59.

3. Follow the on-screen instructions.

Changing the computer boot order

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

To change the boot order:

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

1. Insert the HP Recovery media.

2. Access BIOS:

   For computers or tablets with keyboards attached:

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

   For tablets without keyboards:

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

   – or –

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

3. Select the optical drive or USB flash drive from which you want to boot.

4. Follow the on-screen instructions.

Removing the HP Recovery partition (select products only)

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

IMPORTANT: After you remove the HP Recovery partition, you will not be able to perform System Recovery or create HP recovery media from the HP Recovery partition. So before you remove the Recovery partition, create HP Recovery media; see Creating HP Recovery media (select products only) on page 55.

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

Follow these steps to remove the HP Recovery partition:

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

2. Select **Remove Recovery Partition**, and then follow the on-screen instructions.

10 Power cord set requirements

The wide-range input feature of the computer permits it to operate from any line voltage from 100 to 120 V ac, or from 220 to 240 V 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 or regions must meet the requirements of the country and 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 A and a nominal voltage rating of 125 or 250 V ac, as required by the power system of each country or region.

- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with the appliance inlet on the back of the computer.

Requirements for specific countries and regions

Country/region	Accredited agency	Applicable note number
Argentina	IRAM	1
Australia	SAA	1
Austria	OVE	1
Belgium	CEBEC	1
Brazil	ABNT	1
Canada	CSA	2
Chile	IMQ	1
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
India	ISI	1
Israel	SII	1
Italy	IMQ	1
Japan	JIS	3
The Netherlands	KEMA	1
New Zealand	SANZ	1
Norway	NEMKO	1
The People's Republic of China	CCC	4
Saudi Arabia	SASO	7
Singapore	PSB	1
South Africa	SABS	1
South Korea	KTL	5
Sweden	SEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	6
Thailand	TISI	1
The United Kingdom	ASTA	1
The United States	UL	2

1. The flexible cord must be Type HO5VV-F, 3-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.

Country/region	Accredited agency	Applicable note number

2. The flexible cord must be Type SVT/SJT or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5–15P (15 A, 125 V ac) or NEMA 6–15P (15 A, 250 V ac) configuration. CSA or C–UL mark. UL file number must be on each element.

3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCTF, 3-conductor, 0.75 mm² or 1.25 mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V ac) configuration.

4. The flexible cord must be Type RVV, 3-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the CCC certification mark.

5. The flexible cord must be Type H05VV-F 3-conductor, 0.75 mm² conductor size. KTL logo and individual approval number must be on each element. Corset approval number and logo must be printed on a flag label.

6. The flexible cord must be Type HVCTF 3-conductor, 1.25 mm² conductor size. Power cord set fittings (appliance coupler, cable, and wall plug) must bear the BSMI certification mark.

7. For 127 V ac, the flexible cord must be Type SVT or SJT 3-conductor, 18 AWG, with plug NEMA 5–15P (15 A, 125 V ac), with UL and CSA or C–UL marks. For 240 V ac, the flexible cord must be Type H05VV-F 3-conductor, 0.75 mm² or 1.00 mm2 conductor size, with plug BS 1363/A with BSI or ASTA marks.

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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