



HP ElitePad 1000 G2

Maintenance and Service Guide for Thin Client
systems

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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.

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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).

Table of contents

1 Product description	1
2 External component identification	3
Front	3
Rear	4
Top	5
Bottom	6
Service tag	6
Changing your tablet's settings	7
Opening the Control Panel	7
Changing the Control Panel view	7
Adjusting your tablet's screen brightness	7
Changing your tablet's orientation	7
Using the tablet's autorotate lock feature	7
Finding your hardware and software information	8
Locating hardware	8
Locating software	8
Updating the software installed on the tablet	8
3 Illustrated parts catalog	9
Tablet major components	9
Power components	11
Miscellaneous parts	12
Sequential part number listing	12
4 Removal and replacement preliminary requirements	15
Tools required	15
Service considerations	15
Plastic parts	15
Cables and connectors	15
Grounding guidelines	15
Electrostatic discharge damage	15
Packaging and transporting guidelines	17
Workstation guidelines	17

5 Removal and replacement procedures for Authorized Service Provider parts	19
Tablet component replacement procedures	19
Display assembly	19
WWAN module	26
WLAN module	28
Microphones	30
Rear-facing webcam	31
Power button board	32
Volume button board	34
Audio jack board	36
TXE board	37
Vibrator module	38
Battery	39
System board	40
Forward-facing webcam	44
Slot cover	45
Docking connector cable	46
WLAN antenna	48
WWAN/GPS auxiliary antenna	50
Speakers	51
6 HP PC Hardware Diagnostics (UEFI)	53
Using HP PC Hardware Diagnostics (UEFI)	53
Downloading HP PC Hardware Diagnostics (UEFI) to a USB device	53
7 Specifications	55
Tablet specifications	55
8 Statement of Volatility	56
Non-volatile memory usage	57
Questions and answers	60
9 Power cord set requirements	61
Requirements for all countries	61
Requirements for specific countries and regions	61
10 Recycling	63
Index	64

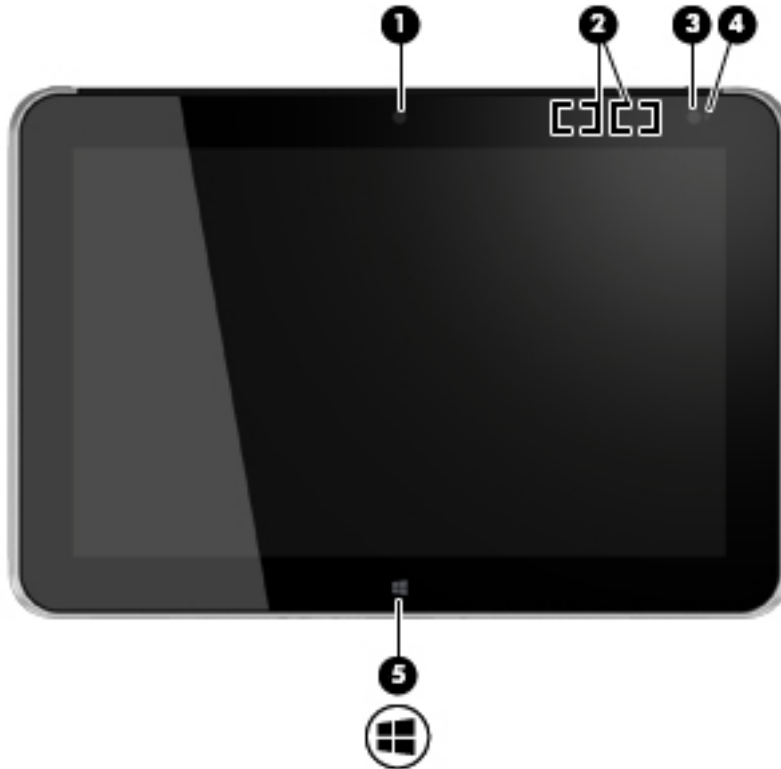
1 Product description

Category	Description
Product Name	HP ElitePad 1000 G2
Processor	Intel® Atom z3795 1.60-GHz processor (core burst up to 2.39-GHz), 1.60-GHz front-side bus (FSB), 2.0-MB L2 cache, up to 778-MHz graphics burst frequency, soldered to system board
Graphics	Intel HD Graphics
Panel	10.1-in., WUXGA (1900×1200), UWVA, 50% CG, 400-nit, active pen and MultiTouch capacitive digitizer, chemically-strengthened glass with anti-smudge
Memory	On-board 1067-MHz, LPDDR3, 4096-MB memory (soldered to system board); system supports a 4096-MB × 1 (4 pieces, 128 MB × 32 chips) configuration
Primary storage	64-GB embedded MultiMedia Card (eMMC), soldered to the system board
Optical drive	No internal optical drive or USB-powered optical drive is supported
Audio and video	2 integrated stereo speakers, each 1.5 W HD Audio SRS Audio Digital microphone 2 fixed, integrated webcams (1080p, 2.1-MP front-facing webcam; 8.0-MP rear-facing webcam with LED flash)
Ethernet	No direct Ethernet support
Wireless	Integrated wireless local area network (WLAN) options by way of wireless module Integrated WLAN antennas Support for the Broadcom BCM43241 802.11abgn 2x2 Wi-Fi + BT 4.0 Combo Adapter
External media cards	Flash Media slot (with push-push technology) Supports up to SDXC cards (micro SDXC)
Ports	Audio-in (mono microphone)/audio-out (stereo headphone) combo jack HP ElitePad 900-proprietary docking connector On-board digital dual array microphones
Sensors	Accelerometer + eCompass Ambient light sensor Gyroscope Haptics
Docking	HP ElitePad-G1 Docking Station with 4 standard 3.0 USB ports, VGA port, HDMI-out port, audio in/out jacks, RJ-45 jack, and HP Smart AC adapter connector
Keyboard/pointing devices	No integrated keyboard or TouchPad Support for USB- or Bluetooth-connected external keyboard and mouse

Category	Description
Power requirements	Support for an HP ElitePad-proprietary 10-W AC adapter (3-wire, wall-mount and 2-wire, wall-mount for use in Japan); connector on AC Adapter connects to the tablet through the docking connector
	Support for 2-cell, 30-Wh, 4.0-Ah, Li-ion battery
Security	Support for trusted platform module (TPM; Infineon TPM is SLB9656VQ1.2FW4.32)
Operating system	Preinstalled: Microsoft® Windows® Embedded 8.1 Industry 64 Professional

2 External component identification

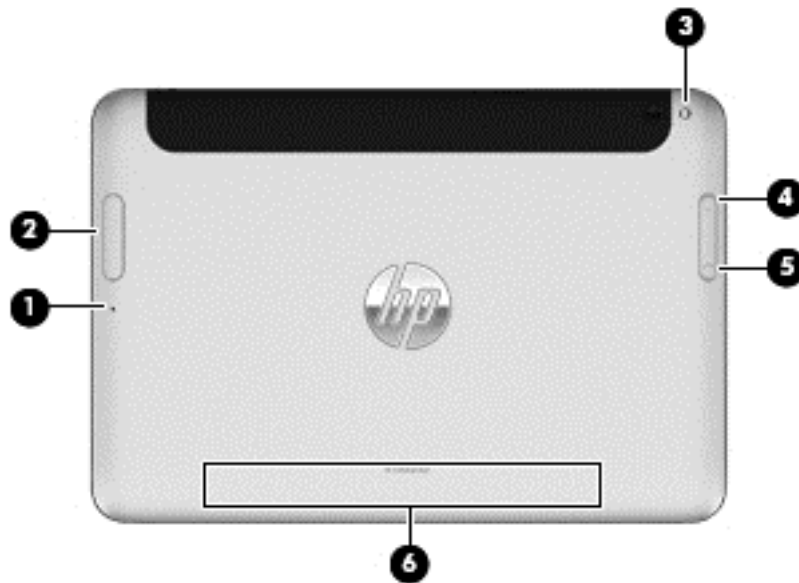
Front







Component	Description
(1) Front webcam	Records video and captures still photographs. To use the webcam, swipe from the right edge of the touch screen to display the charms, tap the Search icon, and then tap the search box. In the search box, type c , and then tap Camera .
(2) WLAN antennas (2)*	Send and receive wireless signals to communicate with wireless local area networks (WLAN).
(3) Ambient light sensor	The ambient light sensor automatically adjusts the display brightness based on the lighting conditions in your environment.
(4) Webcam status light (front)	On: The webcam is on.
(5) Windows button	Displays the Start screen.

*The antennas are not visible on the outside of the computer. For optimal transmission, keep the areas immediately around the antennas free from obstructions. To see wireless regulatory notices, see the section of the *Regulatory, Safety, and Environmental Notices* that applies to your country or region. To access the user guides, select **Start > Hewlett-Packard > HP Documentation**.





Rear



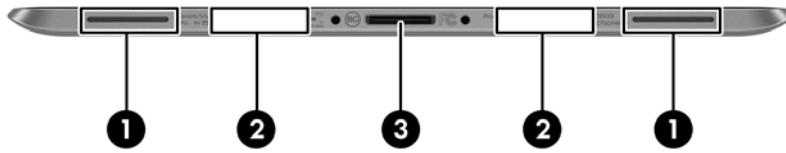
Component	Description
(1)	Micro SD Card Reader/Micro SIM slot access hole Allows you to insert the end of a paper clip to open the access door to insert or remove a micro SD card or micro SIM module.
(2)	Memory card reader/Micro SIM slot Reads optional micro memory cards that store, manage, share, or access information. and supports an optional wireless micro subscriber identity module (SIM) (select models only).  
(3)	Rear webcam Records video, captures still photographs, and allows video conferences and online chat by means of streaming video.
(4)	Volume up button To increase speaker volume, press the top edge of the button. 
(5)	Volume down button To decrease speaker volume, press the bottom edge of the button. 
(6)	Regulatory information Displays regulatory information (select models only).



Top



Component	Description
<p>(1)  Audio-out (headphone) jack/Audio-in (microphone) jack</p>	<p>Produces sound when connected to optional powered stereo speakers, headphones, earbuds, a headset, or television audio. Also connects an optional headset microphone.</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>. To access the user guides, select Start > Hewlett-Packard > HP Documentation.</p> <p>NOTE: When a device is connected to the jack, the tablet 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>
<p>(2)  Autorotate switch</p>	<p>When the tablet is on, slide the autorotate switch to lock the autorotate feature of the display. To unlock the autorotate feature, slide the switch again.</p> <p>– or –</p> <p>Swipe from the right edge of the touch screen to display the charms, tap Settings, tap the screen icon, and then tap the autorotate icon. To unlock the autorotate feature, tap the autorotate icon again.</p>
<p>(3)  Integrated microphones (2)</p>	<p>Record sound.</p>
<p>(4)  Power button</p>	<ul style="list-style-type: none"> • When the tablet is off, press the button to turn on the tablet. • When the tablet is on, press the button briefly to initiate Sleep. • When the tablet is in the Sleep state, press the button briefly to exit Sleep. <p>CAUTION: Pressing and holding down the power button will result in the loss of unsaved information.</p> <p>If the tablet has stopped responding and Windows® shutdown procedures are ineffective, press and hold the power button for at least 5 seconds to turn off the tablet.</p> <p>To learn more about your power settings, see your power options. Swipe from the right edge of the touch screen to display the charms, tap the Search icon, and then tap the search box. In the search box, type <code>power</code>, select Power and sleep settings, and then select Power and sleep from the list of applications.</p>

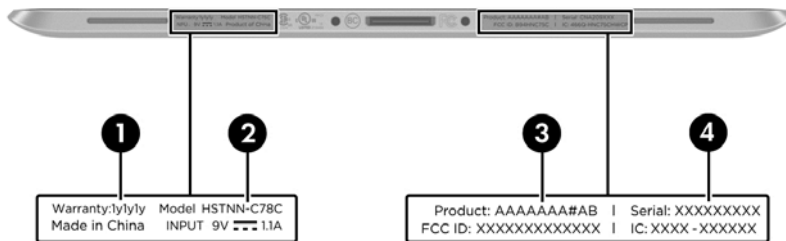
Bottom



Component		Description
(1)	Speakers (2)	Produce sound.
(2)	Product and regulatory information	Displays product and regulatory information (select models only).
(3)	 	Docking connector Connects an AC adapter or an optional docking device.

Service tag

When ordering parts or requesting information, provide the tablet serial number and model number provided on the service tag.




Item	Description	Function
(1)	Warranty period	This number describes the duration of the warranty period for the tablet.
(2)	Model description	This is the alphanumeric identifier used to locate documents, drivers, and support for the tablet.
(3)	Product name	This is the product name affixed to the front of the tablet.
(4)	Serial number (s/n)	This is an alphanumeric identifier that is unique to each product.

Changing your tablet's settings

Opening the Control Panel

You can open the Control Panel using any of the following methods:

- ▲ Right-click the Windows icon on the taskbar and select **Control Panel** from the menu.
-
-  **TIP:** A right-click can also be performed by touching and holding the desired location on the touch screen.
-
- ▲ Open the Charms bar and select **Settings > Control Panel**.
 - ▲ On the Start screen, type `Control Panel`, and then click **Control Panel** when it appears in the search results.

Changing the Control Panel view

The default Control Panel view is by Large icons. You may prefer to change the view to Category mode.


To change the Control Panel view:

1. Click the **Start** button, and then select **Control Panel**.
2. In the **View by** menu, select **Category**.
3. To return to viewing by large icons, in the **View by** menu, select **Large icons**.

Adjusting your tablet's screen brightness

To adjust the screen brightness:

1. Swipe from the right edge of the touch screen to display the charms, and then tap **Settings**.
2. Tap the **Screen** icon at the bottom right. A vertical slider displays that controls the screen brightness.

 **NOTE:** On the Windows desktop, you can also tap the **Power Meter** icon in the notification area at the far right of the taskbar, tap **Adjust screen brightness**, and then move the slider next to **Screen brightness** at the bottom of the screen.

Changing your tablet's orientation

Your tablet's orientation, or view, changes automatically from landscape to portrait view, or from portrait to landscape view.

1. To change the view of your tablet from landscape view to portrait view:
Hold the tablet vertically, and then turn it 90 degrees to the right (in a clockwise direction).
2. To change the view of your tablet from portrait view to landscape view:
Hold the tablet vertically, and then turn it 90 degrees to the left (in a counter-clockwise direction).

Using the tablet's autorotate lock feature

To turn on your tablet's autorotate lock feature:

- ▲ Slide the autorotate switch on the top edge of the tablet.
- or –

1. Swipe from the right edge of the touch screen to display the charms, and then tap **Settings**.
2. Tap the screen icon to lock your current tablet screen in place and to prevent rotation. The icon displays a lock symbol when the autorotate lock is active.

To turn off your tablet's autorotate lock feature:

- ▲ Slide the autorotate switch on the top edge of the tablet again.

– or –

1. Swipe from the right edge of the touch screen to display the charms, and then tap **Settings**.
2. Tap the **Screen** icon at the bottom right, and then tap the autorotate lock icon again.

Finding your hardware and software information

Locating hardware

You can use Windows Device Manager to find out what hardware is installed on your tablet. To use Device Manager, you must be logged in as an Administrator.

To open Device Manager:

1. Swipe from the right edge of the touch screen to display the charms, tap the **Search** icon, and then tap the search box.
2. In the search box, type `device manager`, and then tap **Device Manager**.
3. To access Device Manager for the first time, select **Update device drivers** to open the **Device Manager** window.

To access Device Manager in subsequent searches, select **Device Manager**.

A list displays all the devices installed on your tablet.



NOTE: For more information, go to <http://www.hp.com/go/hpdm> and see the *HP Device Manager Administrator Guide*.

Locating software

- ▲ To find out what software is installed on your tablet, on the **Start** screen, swipe up from the center of the touch screen to display the Apps screen.


Updating the software installed on the tablet

Most software, including the operating system, is updated frequently by the manufacturer or provider. Important updates to the software included with the tablet may have been released since the tablet left the factory.

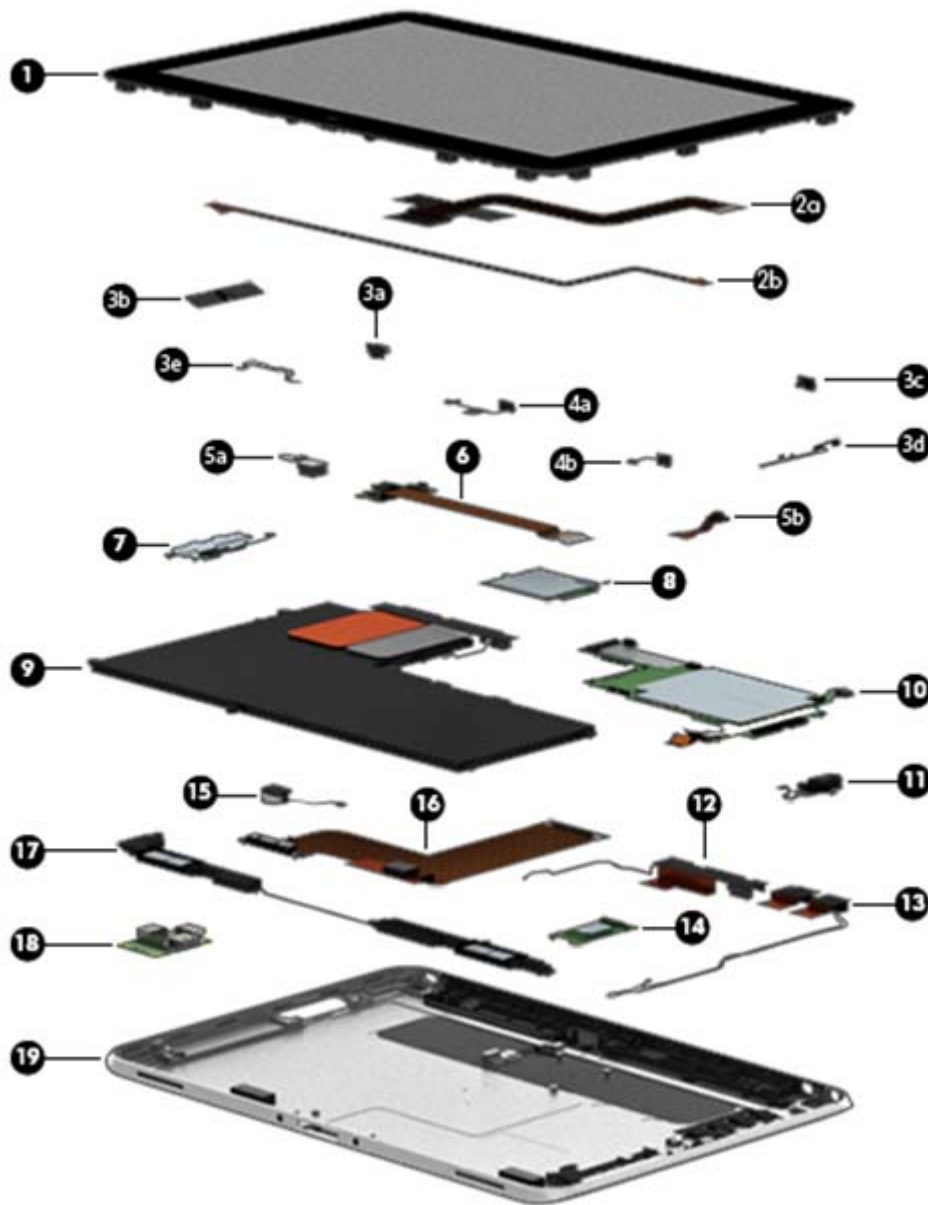
Some updates may affect the way the tablet responds to optional software or external devices. Many updates provide security enhancements.

Update the operating system and other software installed on the tablet as soon as the tablet is connected to the Internet. To access the updates, go to <http://www.hp.com/support>, and select your country. Select **Drivers & Downloads**, and then follow the on-screen instructions.

3 Illustrated parts catalog

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

Tablet major components



Item	Component	Spare part number
(1)	Display assembly (10.1-in., WUXGA (1900×1200), UWVA, 50% CG, 400-nit, active pen and MultiTouch capacitive digitizer, chemically-strengthened glass with anti-smudge; includes display panel, display LVDS cable, TouchScreen cable, and display panel support rubber)	747658-001
	Display Cable Kit , includes:	747625-001
(2a)	TouchScreen cable	
(2b)	Display LVDS cable	
	Button Kit , includes:	747634-001
(3a)	Power button actuator	
(3b)	Volume button actuator	
(3c)	Autorotate switch actuator	
(3d)	Slot cover hardware (slot cover, retention bracket, spring bracket)	
(3e)	Docking connector bracket	
	Webcam/Microphone Kit , includes:	762828-001
(4a)	Left microphone	
(4b)	Right microphone	
(5a)	Rear-facing webcam	
(5b)	Front-facing webcam	
(6)	Power button board (includes cable)	
	For use only on tablet models equipped with the Windows 8 Professional operating system	753976-601
	For use only on tablet models equipped with the Windows 8 Standard operating system	753976-501
	Does not include operating system	753976-001
(7)	Volume button board (includes bracket and cable)	759031-001
(8)	WWAN module (HP lt4226 LTE/HSPA+ Gobi 4G Module)	736675-005
(9)	2-cell, 30-Wh, 4.0-Ah, Li-ion battery (includes battery cable)	728558-005
(10)	System board equipped with an Intel Atom z3795 quad core 1.60-GHz processor (burst up to 2.39-GHz; 2.0-MB L2 cache), 4096-MB of system memory, and 64-GB of eMMC primary storage (includes processor, memory, and eMMC)	753740-001
(11)	Audio jack board (includes audio jack and cable)	747627-001
	Antenna Kit for use in Japan, includes:	767885-001
(12)	WWAN/GPS auxiliary antenna cable and transceiver	
(13)	WLAN main and auxiliary antenna cables and transceivers	
	Antenna Kit for use in European countries and regions, North America, and Latin America	799297-001
(13)	WLAN main and auxiliary antenna cables and transceivers	
(14)	Broadcom BCM43241 802.11abgn 2x2 Wi-Fi + BT 4.0 Combo Adapter	723677-005
(15)	Vibrator module (includes cable, double-sided adhesive, plastic cover)	747630-001
(16)	Docking connector cable (includes cable and double-sided adhesive)	747631-001

Item	Component	Spare part number
(17)	Speakers (include left and right speakers and cables)	747629-001
(18)	TXE board	753977-001
(19)	Bottom case (includes the power button actuator and the slot cover and brackets)	747628-001

Power components



Item	Component	Spare part number
(1)	AC adapter	
	10W, RC, V, 3-wire, wall mount	686120-001
	10W, Non-PFC, non-Smart adapter, 2-wire, wall-mount (for use in Japan)	746156-001
	40-W Smart AC adapter (RC, V, 3-wire)	693717-001
(2)	Duck head power adapter:	
	For use in Australia	755184-011
	For use in Denmark	755184-081
	For use in Europe	755184-021
	For use in India	755184-D61
	For use in Israel	755184-BB1
	For use in Italy	755184-061
	For use in Japan	720949-291
	For use in the People's Republic of China	755184-371
	For use in South Africa	755184-AR1
	For use in Switzerland	755184-BG1
	For use in the United Kingdom and Singapore	755184-031
	For use in the United States	755184-001
(3)	Power cord:	
	For use in Australia	490371-011
	For use in the People's Republic of China	490371-AA1
	For use in Europe, the Middle East, and Africa	490371-011

Item	Component	Spare part number
	For use in India	490371-D61
	For use in Israel	490371-BB1
	For use in Italy	490371-061
	For use in Japan	490371-291
	For use in South Africa	490371-AR1
	For use in South Korea	490371-AD1
	For use in Taiwan	490371-AB1
	For use in Switzerland	490371-111
	For use in the United Kingdom	490371-031
	For use in the United States	490371-001

Miscellaneous parts

Component	Spare part number
HP ElitePad Service Tool (includes suction cup)	714222-001
HP ElitePad suction cup	714223-001
Screw Kit	753735-001
Card Reader Cover Kit (not illustrated)	747632-001
Docking station	708621-001
Tape Support Kit	762827-001

Sequential part number listing

Spare part number	Description
490371-001	Power cord, 1.83 m (6 foot), for use in the United States
490371-011	Power cord, 1.83 m (6 foot), for use in Australia
490371-021	Power cord, 1.83 m (6 foot), for use in Europe, the Middle East, and Africa
490371-031	Power cord, 1.83 m (6 foot), for use in the United Kingdom and Singapore
490371-061	Power cord, 1.83 m (6 foot), for use in Italy
490371-111	Power cord, 1.83 m (6 foot), for use in Switzerland
490371-291	Power cord, 1.83 m (6 foot), for use in Japan
490371-AA1	Power cord, 1.83 m (6 foot), for use in the People's Republic of China
490371-AB1	Power cord, 1.83 m (6 foot), for use in Taiwan
490371-AD1	Power cord, 1.83 m (6 foot), for use in South Korea

Spare part number	Description
490371-AR1	Power cord, 1.83 m (6 foot), for use in South Africa
490371-BB1	Power cord, 1.83 m (6 foot), for use in Israel
490371-D61	Power cord, 1.83 m (6 foot), for use in India
686120-001	10-W AC adapter (RC, V, 3-wire, wall-mount)
693717-001	40-W Smart AC adapter (RC, V, 3-wire)
708621-001	Docking station
714222-001	HP ElitePad Service Tool (includes suction cup)
714223-001	HP ElitePad suction cup
720949-291	Duck head power adapter for use only in Japan
723677-005	Broadcom BCM43241 802.11 abgn 2x2 Wi-Fi + BT 4.0 Combo Adapter
728558-005	2-cell, 30-Wh, 4.0-Ah, Li-ion battery (includes battery cable)
736675-005	HP lt4226 LTE/HSPA+ Gobi 4G Module
739321-001	HP ElitePad USB3 adapter
746156-001	10-W AC adapter (non-PFC, non-Smart, 2-wire, wall-mount; for use in Japan)
747625-001	Display Cable Kit (includes the display LVDS cable and the TouchScreen cable)
747627-001	Audio jack board (includes audio jack and cable)
747628-001	Bottom case (includes the power button actuator and the slot cover and brackets)
747629-001	Speakers (include left and right speakers and cables)
747630-001	Vibrator module (includes cable, double-sided adhesive, plastic cover)
747631-001	Docking connector cable (includes double-sided adhesive)
747632-001	Smart Card Reader Cover Kit
747634-001	Button Kit (includes autorotate switch actuator, docking connector bracket, power button actuator, slot cover hardware, and volume button actuator)
747658-001	Display assembly (10.1-in., WUXGA (1900×1200), UWVA, 50% CG, 400-nit, active pen and MultiTouch capacitive digitizer, chemically-strengthened glass with anti-smudge; includes display panel, display LVDS cable, TouchScreen cable, and display panel support rubber)
753735-001	Screw Kit
753740-001	System board equipped with an Intel Atom z3795 quad core 1.60-GHz processor (burst up to 2.39-GHz; 2.0-MB L2 cache), 4096-MB of system memory, and 64-GB of eMMC primary storage (includes processor, memory, and eMMC)
753976-001	Power button board (does not include operating system)
753976-501	Power button board for use only on tablet models equipped with the Windows 8 Standard operating system
753976-601	Power button board for use only on tablet models equipped with the Windows 8 Professional operating system
753977-001	TXE board
755184-001	Duck head power adapter for use only in the United States

Spare part number	Description
755184-011	Duck head power adapter for use only in Australia
755184-021	Duck head power adapter for use only in Europe
755184-031	Duck head power adapter for use only in the United Kingdom and Singapore
755184-061	Duck head power adapter for use only in the Italy
755184-081	Duck head power adapter for use only in the Denmark
755184-371	Duck head power adapter for use only in the People's Republic of China
755184-AR1	Duck head power adapter for use only in South Africa
755184-BB1	Duck head power adapter for use only in Israel
755184-BG1	Duck head power adapter for use only in Switzerland
755184-D61	Duck head power adapter for use only in India
759031-001	Volume button board (includes bracket and cable)
762827-001	Tape Support Kit
762828-001	Webcam/Microphone Kit (includes forward-facing and rear-facing webcams and microphones)
767885-001	Antenna Kit for use in Japan, includes WLAN main and auxiliary antenna cables and transceivers and WWAN/GPS auxiliary antenna cable and transceiver
799297-001	Antenna Kit for use in European countries and regions, North America, and Latin America (includes WLAN main and auxiliary antenna cables and transceivers)

4 Removal and replacement preliminary requirements


Tools required

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


- Magnetic screw driver
- Phillips P0 screw driver
- Plastic case utility tool

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 tablet, 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 tablet, be sure that cables are placed in their proper locations during the reassembly process. Improper cable placement can damage the tablet.

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.

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 tablet 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 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.

Tablet component replacement procedures

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

There are as many as 34 screws that must be removed, replaced, and/or loosened when servicing the tablet. Make special note of each screw size and location during removal and replacement.

Display assembly

Description	Spare part number
10.1-in., WUXGA (1900×1200), UWVA, 50% CG, 400-nit, active pen and MultiTouch capacitive digitizer, chemically-strengthened glass with anti-smudge; includes display panel, display LVDS cable, TouchScreen cable, and display panel support rubber	747658-001

Before disassembling the tablet, follow these steps:

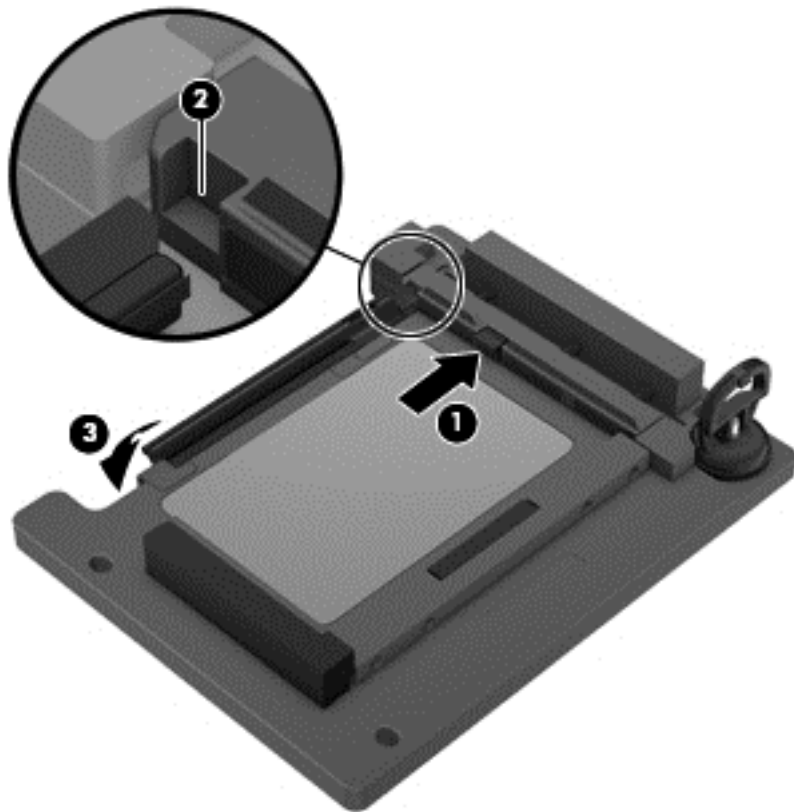
1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.

Remove the display assembly:

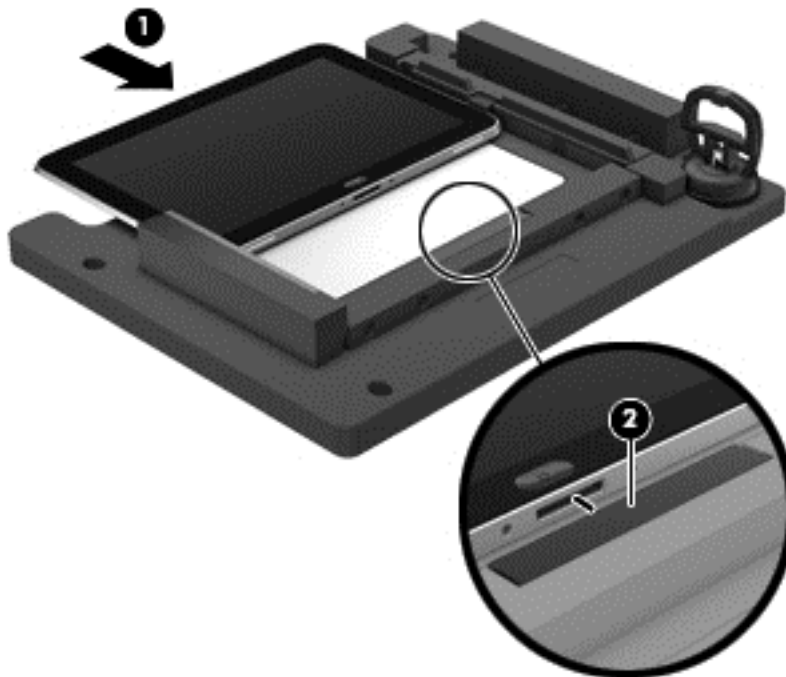
1. Remove the two Phillips PM1.4×3.2 screws that secure the display assembly to the tablet.



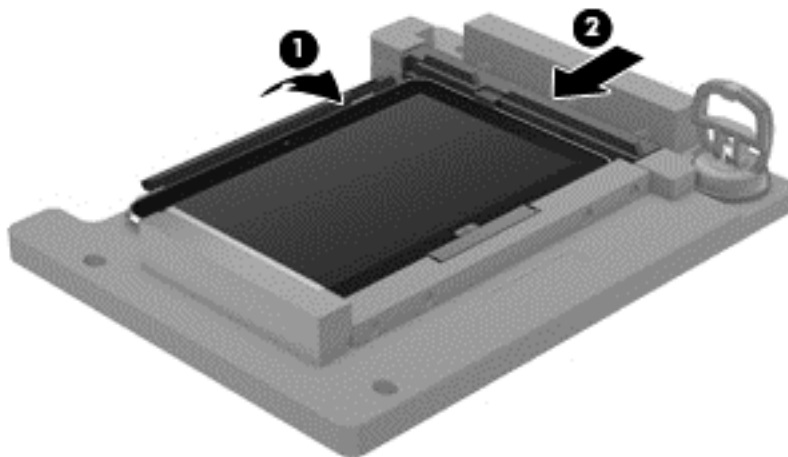
2. Place the HP ElitePad Service Tool on a flat, sturdy surface.
The HP ElitePad Service Tool is available using spare part number 714222-001.
3. Move the HP ElitePad Service Tool retention bar **(1)** to the left until the notch **(2)** in the retention bar allows the retention gate to open.
4. Open the retention gate **(3)**.



5. Place the tablet on the service tool and slide it **(1)** forward until the tablet docking connector engages with the service tool docking connector **(2)**.



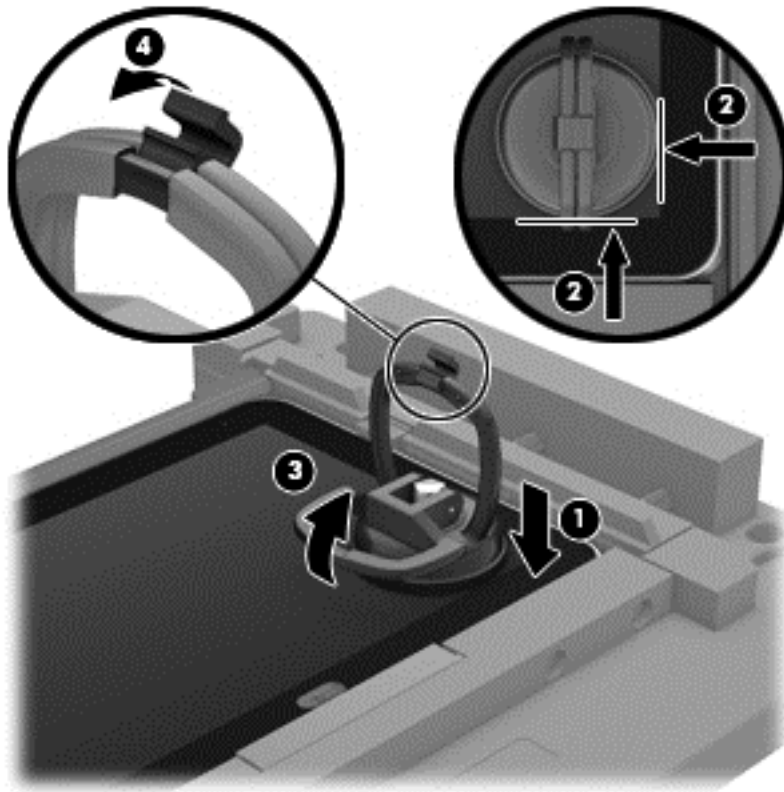
6. Close the retention gate **(1)** and release the retention bar **(2)** to secure the tablet in the service tool.



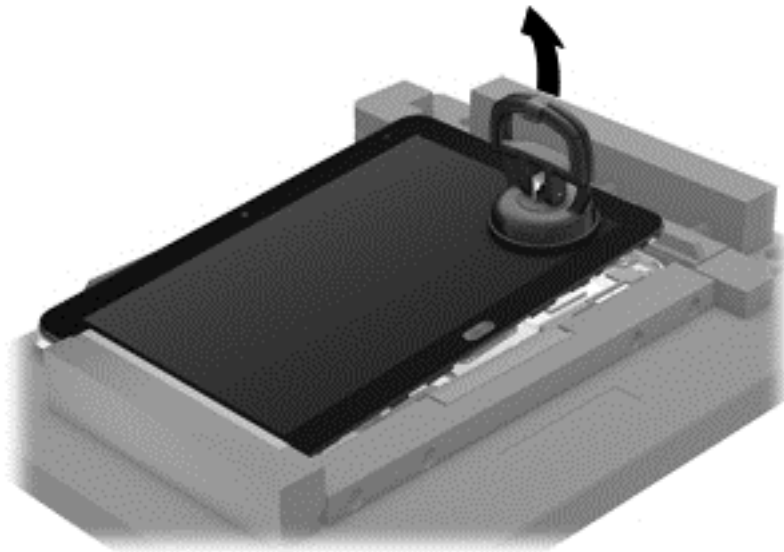
7. Place the suction cup **(1)** on the lower right corner of the tablet display glass, making sure to place the suction cup inside the edges of the border **(2)** of the display glass.
The suction cup is available using spare part number 714223-001.
8. Raise the suction cup handle **(3)**.

9. Lock the two suction cup handles together (4).

CAUTION: Do not lift the right edge of the display assembly more than ¼-inch from the tablet when releasing the display assembly. Failure to follow this caution can result in damage to the tablet components.

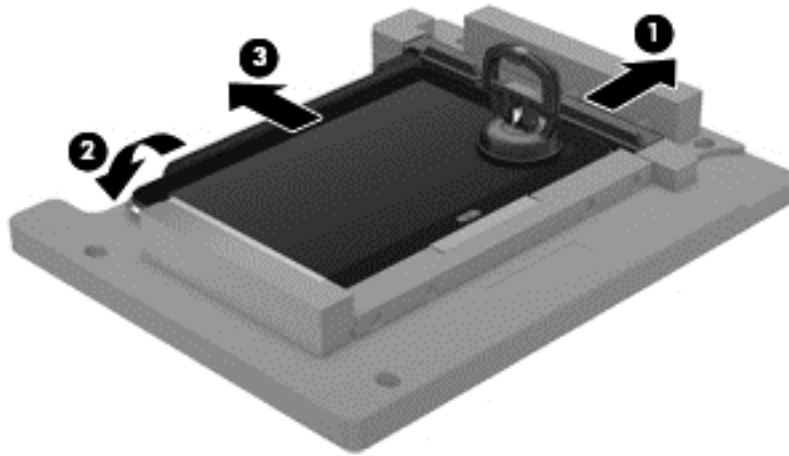


10. Firmly lift up on the suction cup to release the right side of the display assembly approximately ¼-inch from the tablet.



11. Move the retention bar (1) until the notch in the retention bar allows the retention gate to open.

12. Open the retention gate (2).
13. Slide the tablet out of the service tool (3).

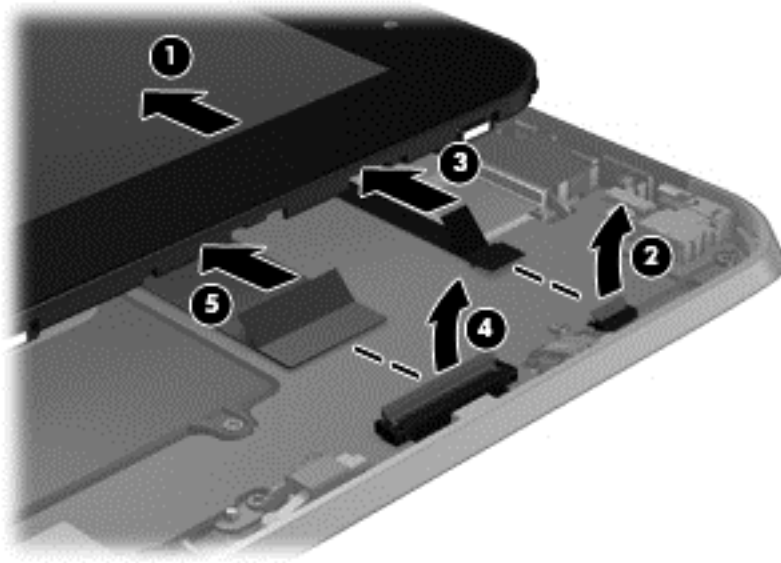


14. Disconnect the suction cup handles (1).
15. Lower the suction cup handle (2).
16. Remove the suction cup (3).



17. Slide the display assembly (1) to the left until the display assembly cables and connectors are accessible.
18. Release the zero insertion force (ZIF) connector (2) to which the TouchScreen cable is attached, and then disconnect the TouchScreen cable (3) from the system board.

19. Release the ZIF connector **(4)** to which the LVDS cable is attached, and then disconnect the LVDS cable **(5)** from the system board.



20. Remove the display assembly and cables.
21. If it is necessary to replace the display assembly cables:
 - a. Turn the display assembly upside down, with the bottom toward you.
 - b. Detach the TouchScreen cable **(1)** from the surface of the display assembly. (The TouchScreen cable is attached to the display assembly with double-sided adhesive.)
 - c. Release the ZIF connector **(2)** to which the TouchScreen cable is attached, and then disconnect the TouchScreen cable **(3)** from the display assembly.
 - d. Detach the display LVDS cable **(4)** from the surface of the display assembly. (The display LVDS cable is attached to the display assembly with double-sided adhesive.)

- e. Release the ZIF connector (5) to which the display LVDS cable is attached, and then disconnect the display LVDS cable (6) from the display assembly.

The TouchScreen and display LVDS cables are included in the Display Cable Kit, spare part number 718758-001.



To install the display assembly:

1. Reconnect the display LVDS and TouchScreen cables to the respective ZIF connectors on the display assembly.
2. Toe the left side of the display assembly into the left side of the bottom case.
3. Swing the right side of the display assembly down into the right side of the bottom case.
4. Firmly press all edges of the display assembly surface to ensure it is fully engaged with the bottom case.

WWAN module

Description	Spare part number
HP lt4226 LTE/HSPA+ Gobi 4G Module	736675-005

Before removing the WWAN module, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)).

Remove the WWAN module:

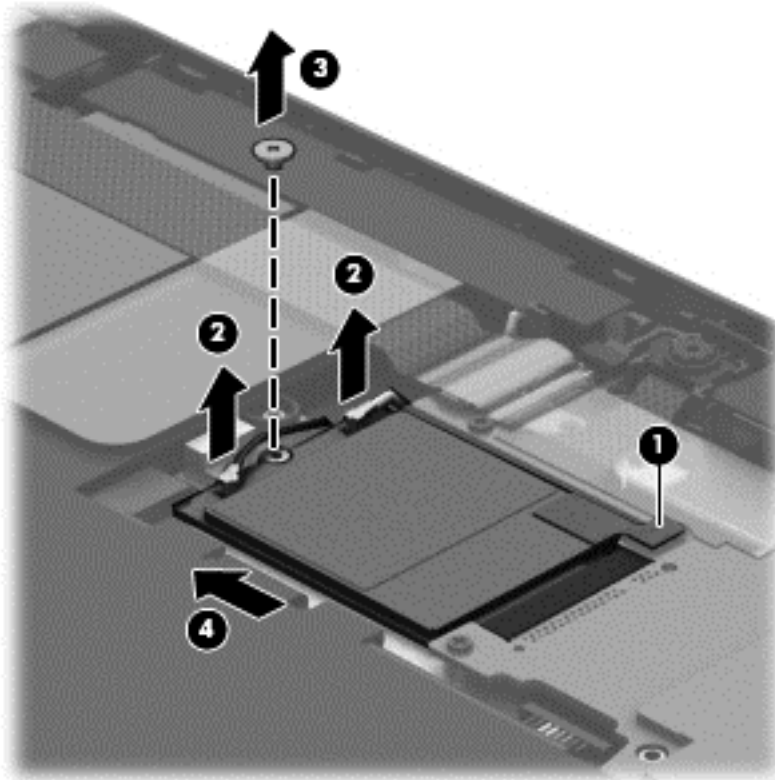
1. Release the grounding tape **(1)** that secures the WWAN module to the system board.
2. Disconnect the WWAN antenna cables **(2)** from the terminals on the WWAN module.




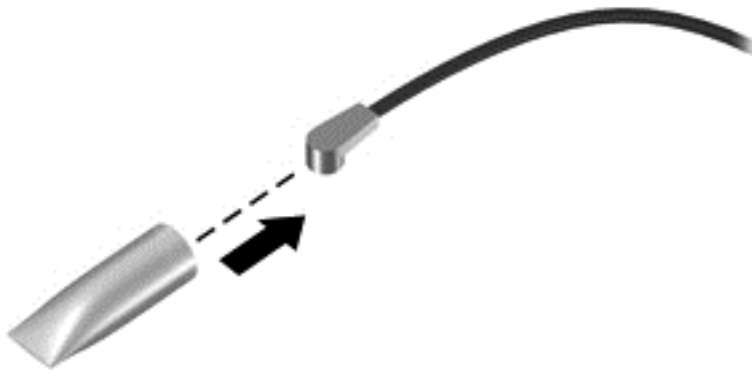
NOTE: The WWAN antenna cable labeled “5” connects to the WWAN module “MAIN” terminal labeled “5”. The WWAN antenna cable labeled “6” connects to the WWAN module “AUX/GPS” terminal labeled “6”.

3. Remove the Phillips PM1.3×1.5 broad head screw **(3)** that secures the WWAN module to the bottom cover.

4. Remove the WWAN module (4) by sliding it away from the socket on the system board.



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



Reverse this procedure to install the WWAN module.

WLAN module

Description	Spare part number
Broadcom BCM43241 802.11abgn 2x2 Wi-Fi + BT 4.0 Combo Adapter	723677-005

Before removing the WLAN module, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)).

Remove the WLAN module:

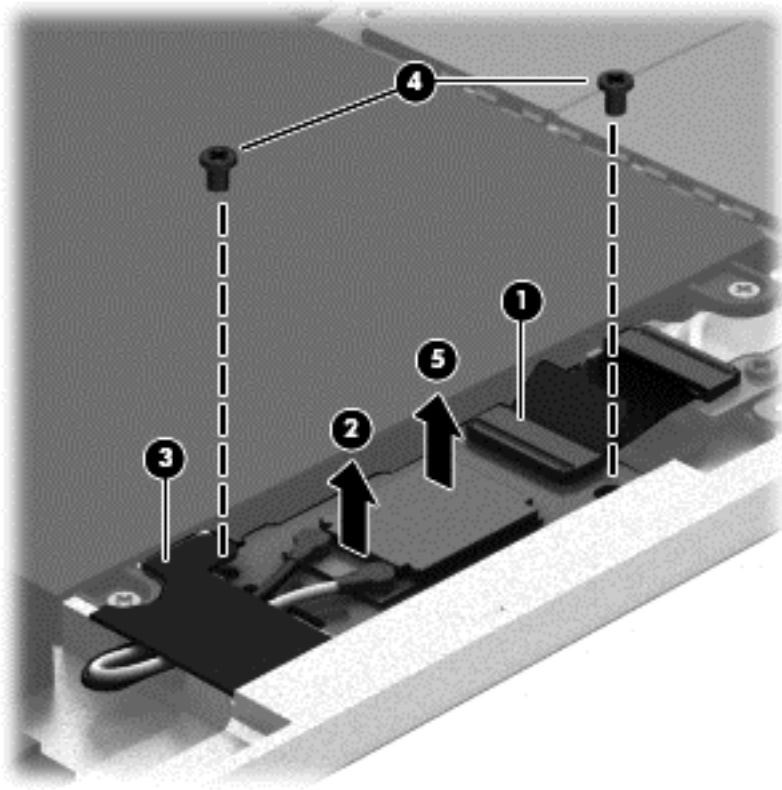
1. Release the ZIF connector **(1)** to which the WLAN ribbon cable is attached, and then disconnect the WLAN ribbon cable from the system board.
2. Disconnect the WLAN antenna cables **(2)** from the terminals on the WLAN module.




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”.

3. Release the shielding **(3)** to gain access to the bottom screw that secures the WLAN module to the bottom cover.
4. Remove the two Phillips PM1.3×2.0 screws **(4)** that secure the WLAN module to the bottom cover.

5. Remove the WLAN module (5).




 **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.

Microphones

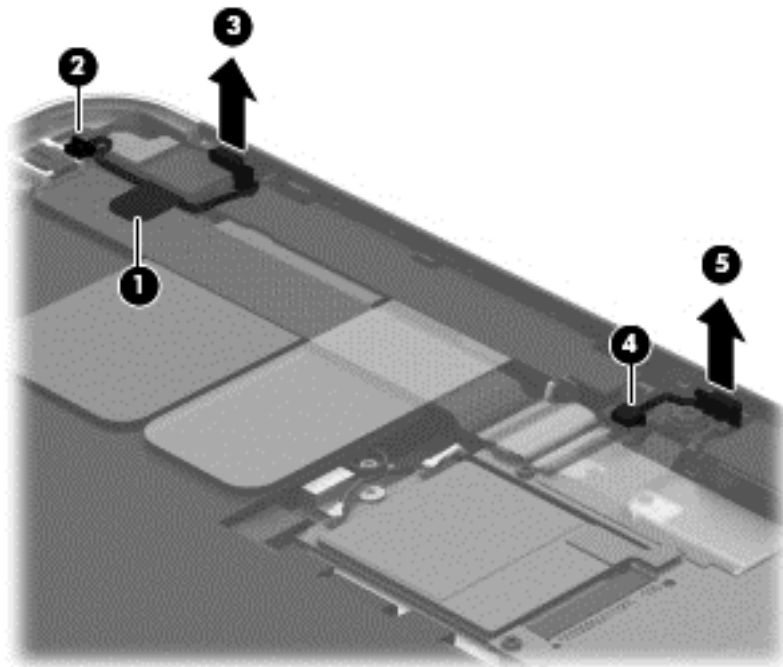
 **NOTE:** The microphones are included in the Webcam/Microphone Kit, spare part number 762828-001.

Before removing the microphones, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)).

Remove the microphones:

1. Detach the tape **(1)** that secures the left microphone cable to the battery.
2. Disconnect the left microphone cable **(2)** from the power button board.
3. Release the left microphone **(3)** from the molding built into the bottom cover.
4. Disconnect the right microphone cable **(4)** from the system board.
5. Release the right microphone **(5)** from the molding built into the bottom cover.



6. Remove the microphones and cables.

Reverse this procedure to install the microphones.

Rear-facing webcam

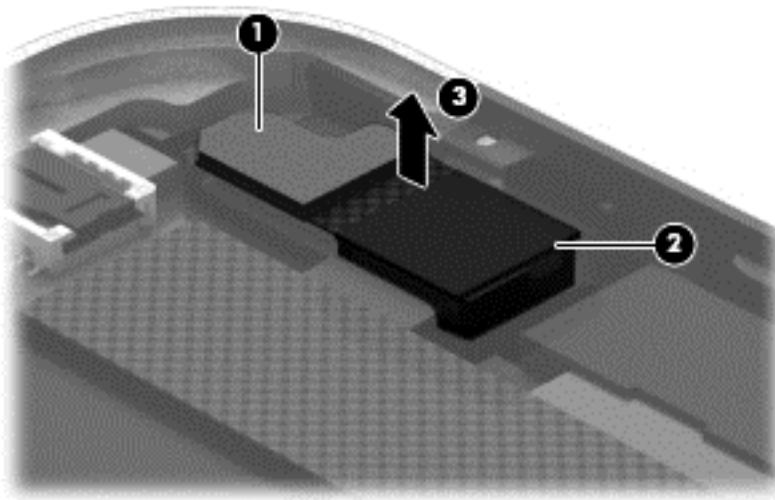
 **NOTE:** The rear-facing webcam is included in the Webcam/Microphone Kit, spare part number 762828-001.

Before removing the rear-facing webcam, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)).

Remove the rear-facing webcam:

1. Disconnect the rear-facing webcam cable **(1)** from the power button board.
2. Release the rear-facing webcam **(2)** from the molding built into the bottom cover.
3. Remove the rear-facing webcam **(3)** and cable.



Reverse this procedure to install the rear-facing webcam.

Power button board

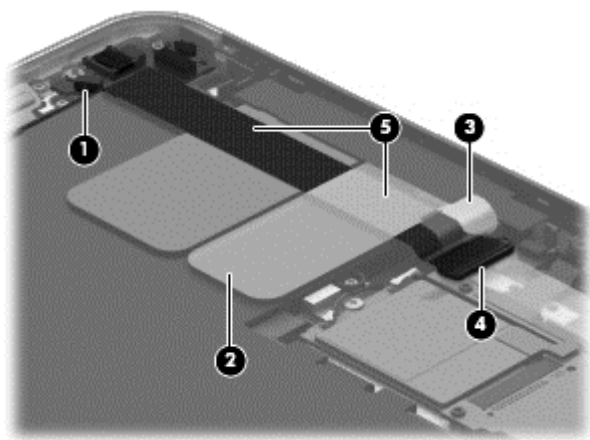
Description	Spare part number
For use only on computer models equipped with the Windows 8 Professional operating system	753976-601
For use only on computer models equipped with the Windows 8 Standard operating system	753976-501
Does not include operating system	753976-001

Before removing the power button board, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)).
5. Disconnect the left microphone cable from the power button board (see [Microphones on page 30](#)).
6. Disconnect the rear-facing webcam cable from the power button board (see [Rear-facing webcam on page 31](#)).

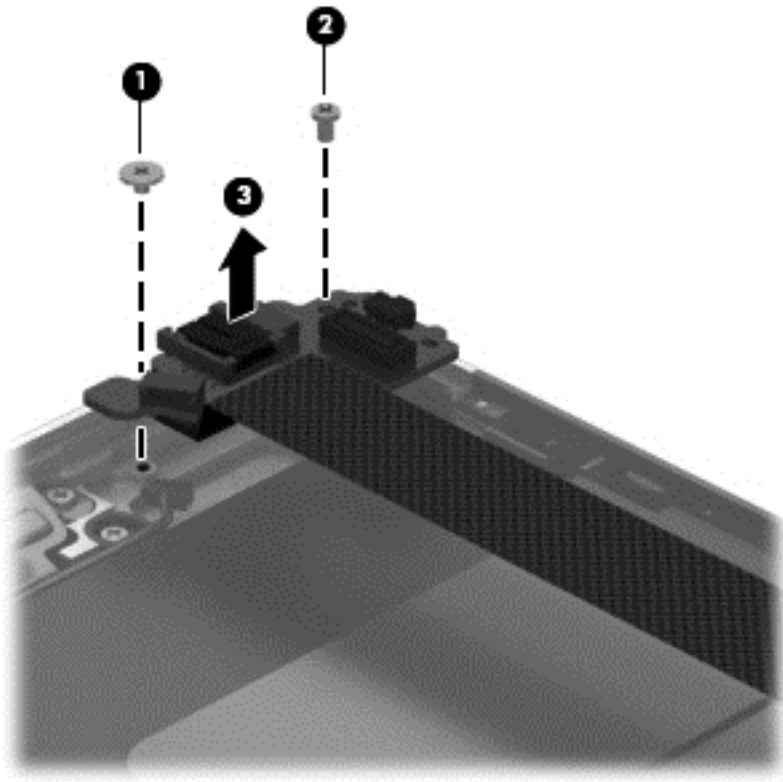
Remove the power button board:


1. Disconnect the volume button board cable **(1)** from the power button board.
2. Release the support strip **(2)** that secures the WWAN antenna transceiver to the battery.
3. Release the support strip **(3)** that secures the power button board cable to the system board.
4. Release the ZIF connector **(4)** to which the power button board cable is attached, and then disconnect the power button board cable from the system board.
5. Detach the power button board cable **(5)** from the surface of the battery. (The power button board cable is attached to the battery with double-sided adhesive.)



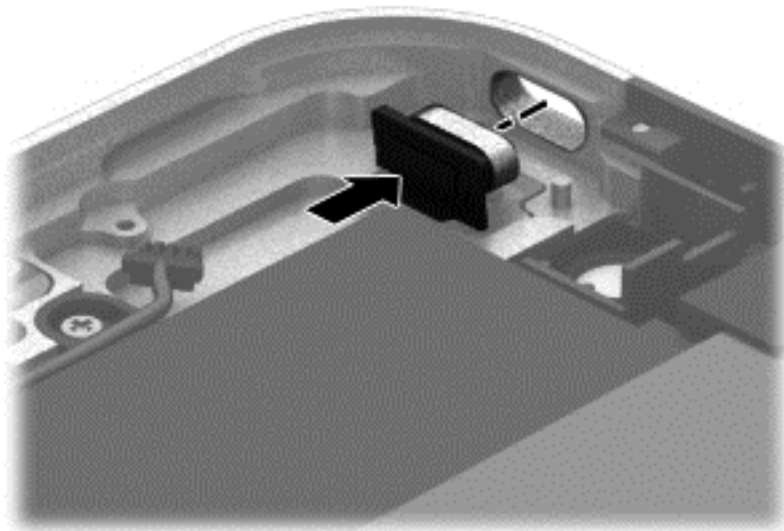
6. Remove the Phillips PM1.3×2.0 broad head screw **(1)** and the Phillips PM1.3×2.0 screw **(2)** that secure the power button board to the bottom cover.

7. Remove the power button board (3) and cable.



 **NOTE:** In the process of removing the power button board, the power button actuator may be accidentally dislodged from the bottom cover. To replace the power button actuator, refer to the following illustration.

The power button actuator is included in the Button Kit, spare part number 747634-001.



Reverse this procedure to install the power button board.

Volume button board

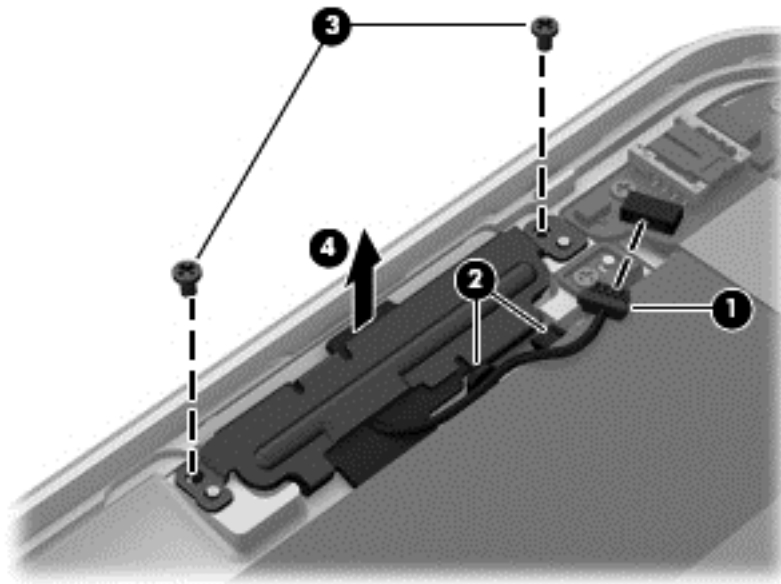
Description	Spare part number
Volume button board (includes bracket and cable)	759031-001

Before removing the volume button board, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)).

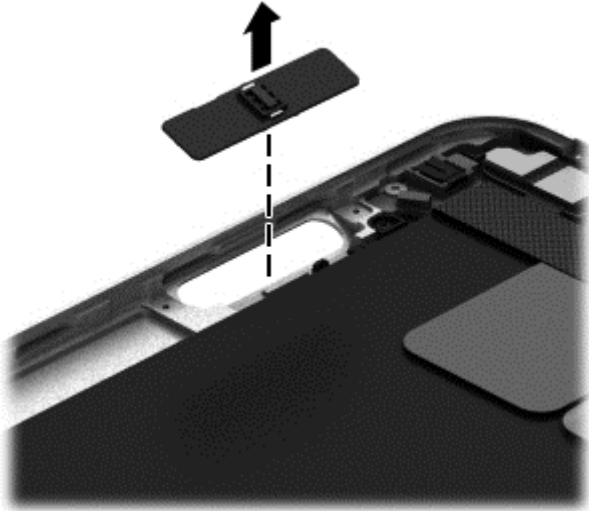
Remove the volume button board:

1. Disconnect the volume button board cable (1) from the power button board.
2. Release the volume button board cable from the retention clips (2) built into the battery.
3. Remove the two Phillips PM1.5×2.0 screws (3) that secure the volume button board to the bottom cover.
4. Remove the volume button board (4) and cable.



NOTE: In the process of removing the volume button board, the volume button actuator may be accidentally dislodged from the bottom cover. To replace the volume button actuator, refer to the following illustration.

The volume button actuator is included in the Button Kit, spare part number 747634-001.



Reverse this procedure to install the volume button board.

Audio jack board

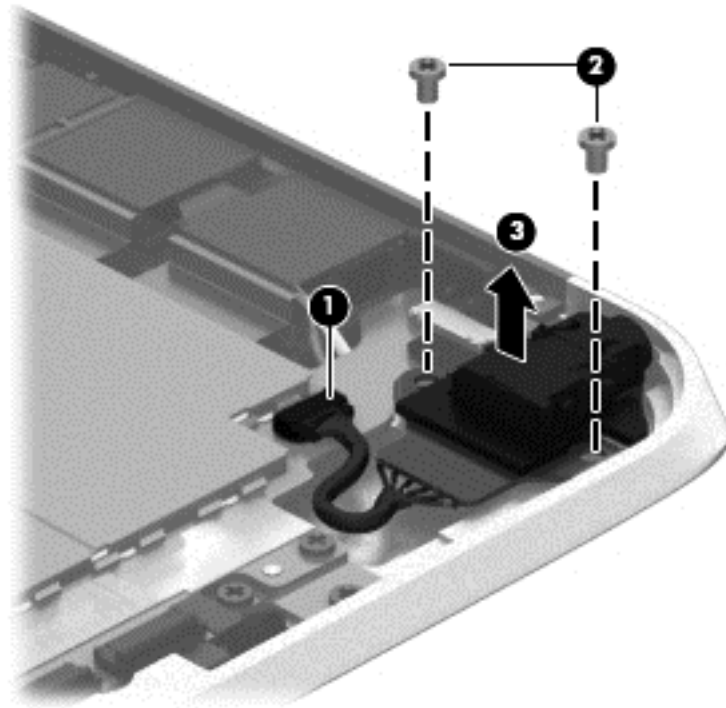
Description	Spare part number
Audio jack board (includes audio jack and cable)	747627-001

Before removing the audio jack board, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)).

Remove the audio jack board:

1. Disconnect the audio jack board cable **(1)** from the system board.
2. Remove the two Phillips PM1.3×2.0 screws **(2)** that secure the audio jack board to the bottom cover.
3. Remove the audio jack board **(3)** and cable.



Reverse this procedure to install the audio jack board.

TXE board

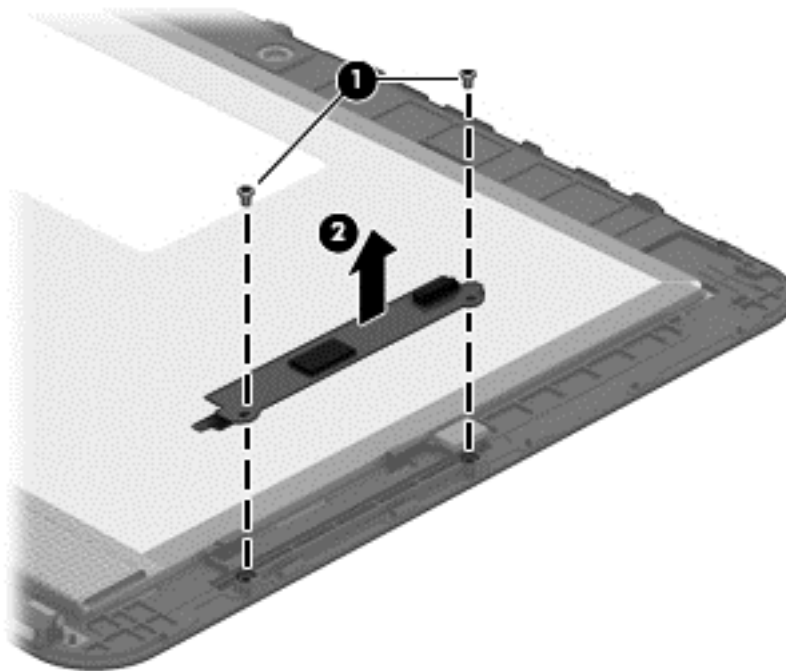
Description	Spare part number
TXE board	753977-001

Before removing the TXE board, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)).

Remove the TXE board:

1. Remove the two Phillips PM1.3×2.0 screws (1) that secure the board to the bottom cover.
2. Remove the TXE board (2).



Reverse this procedure to install the TXE board.

Vibrator module

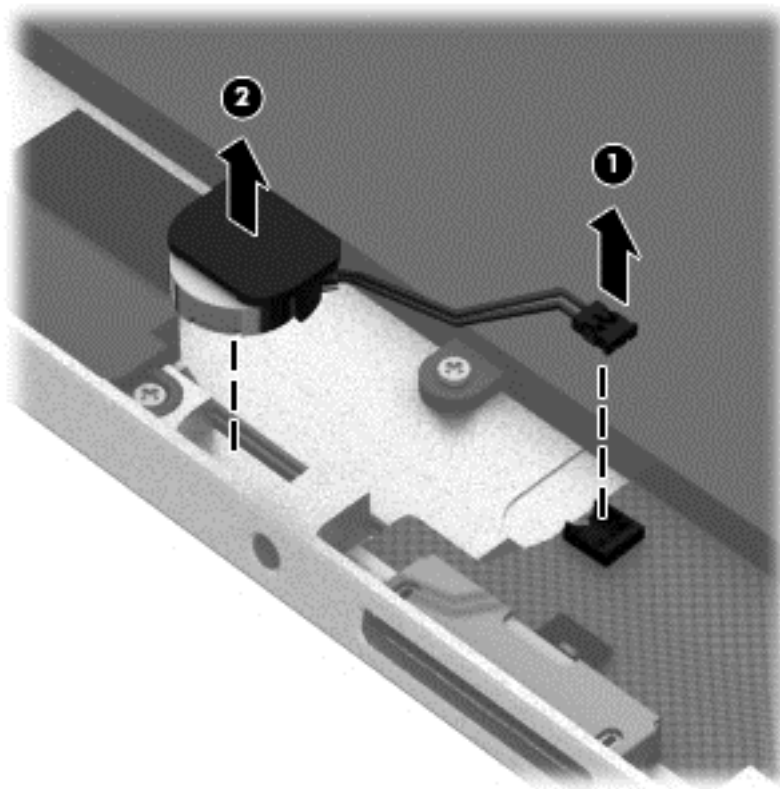
Description	Spare part number
Vibrator module (includes cable, double-sided adhesive, plastic cover)	747630-001

Before removing the vibrator module, follow these steps:


1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)).

Remove the vibrator module:

1. Disconnect the vibrator module cable (1) from the system board.
2. Detach the vibrator module (2) from the bottom cover. (The vibrator module is attached to the bottom cover with double-sided adhesive.)



3. Remove the vibrator module and cable.

 **NOTE:** The vibrator module cover is attached to the vibrator module with double-sided adhesive.

Reverse this procedure to install the vibrator module.

Battery

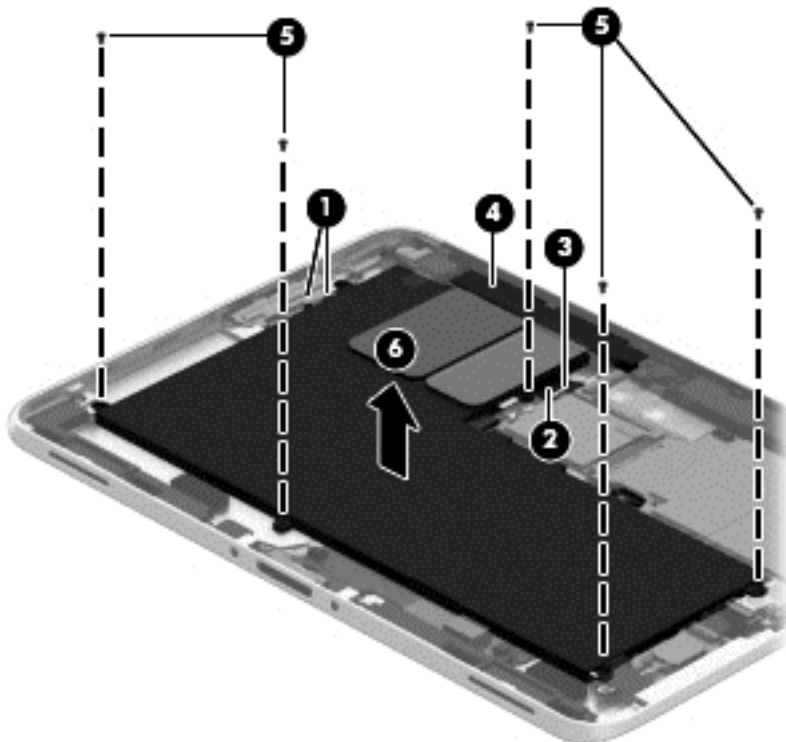
Description	Spare part number
2-cell, 30-Wh, 4.0-Ah, Li-ion battery (includes battery cable)	728558-005

Before removing the battery, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)).
5. Remove the power button board (see [Power button board on page 32](#)).

Remove the battery:

1. Release the volume button board cable from the retention clips **(1)** built into the battery.
2. Release the tab **(2)** built into the bottom cover that secures the WWAN/GPS antenna cables, and then release the antenna cables **(3)**.
3. Detach the WWAN/GPS main transceiver **(4)** from the bottom cover. (The WWAN/GPS main transceiver is attached to the bottom cover with double-sided adhesive.)
4. Remove the six Phillips PM1.3×2.0 screws **(5)** that secure the battery to the bottom cover.
5. Remove the battery **(6)**.



Reverse this procedure to install the battery.

System board



NOTE: The system board spare part kit is equipped with an Intel Atom z3795 quad core 1.60-GHz processor (burst up to 2.39-GHz; 2.0-MB L2 cache), and 4096-MB of system memory and includes the processor, memory, and eMMC.

Description	Spare part number
Equipped with 64-GB of eMMC primary storage	753740-001

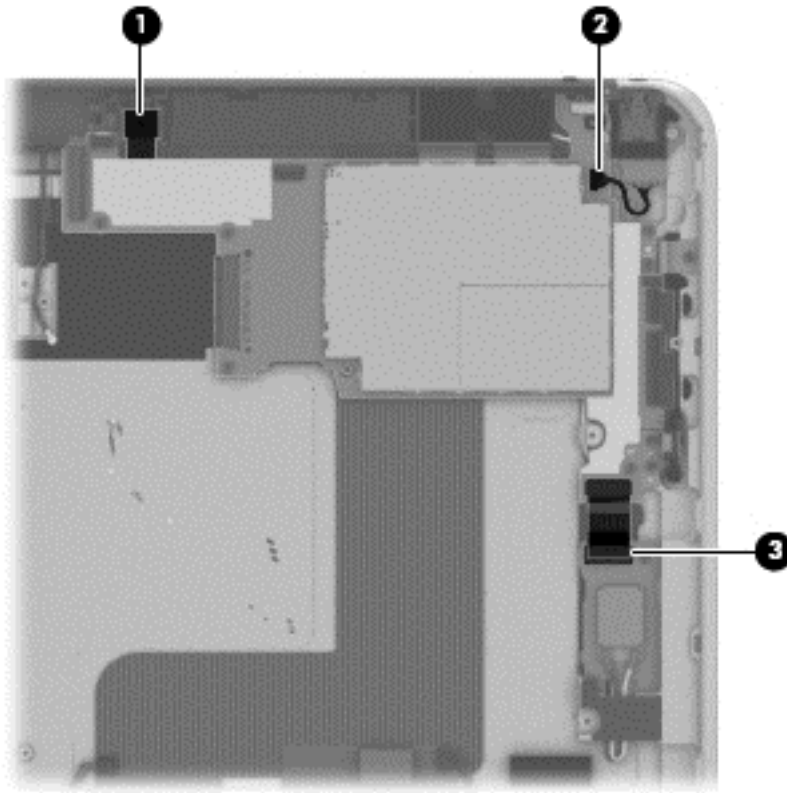
Before removing the system board, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)), and then remove the following components:
 - a. WWAN module (see [WWAN module on page 26](#))
 - b. Power button board (see [Power button board on page 32](#))
 - c. Battery (see [Battery on page 39](#))

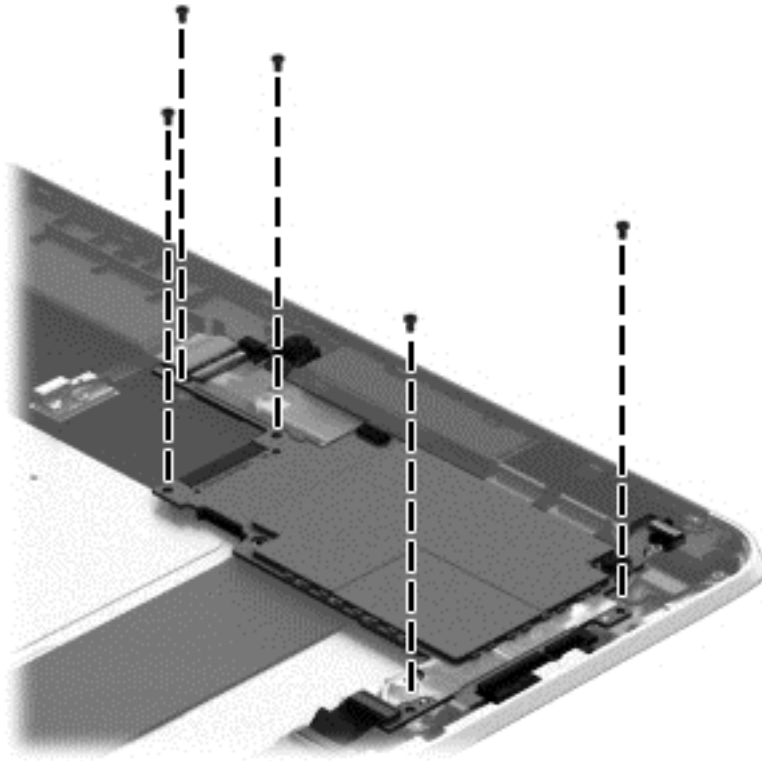
Remove the system board:

1. Release the forward-facing webcam **(1)** from the molding built into the bottom cover.
2. Disconnect the audio jack board cable **(2)** from the system board.

3. Release the ZIF connector **(3)** to which the WLAN ribbon cable is attached, and then disconnect the WLAN ribbon cable from the WLAN module.

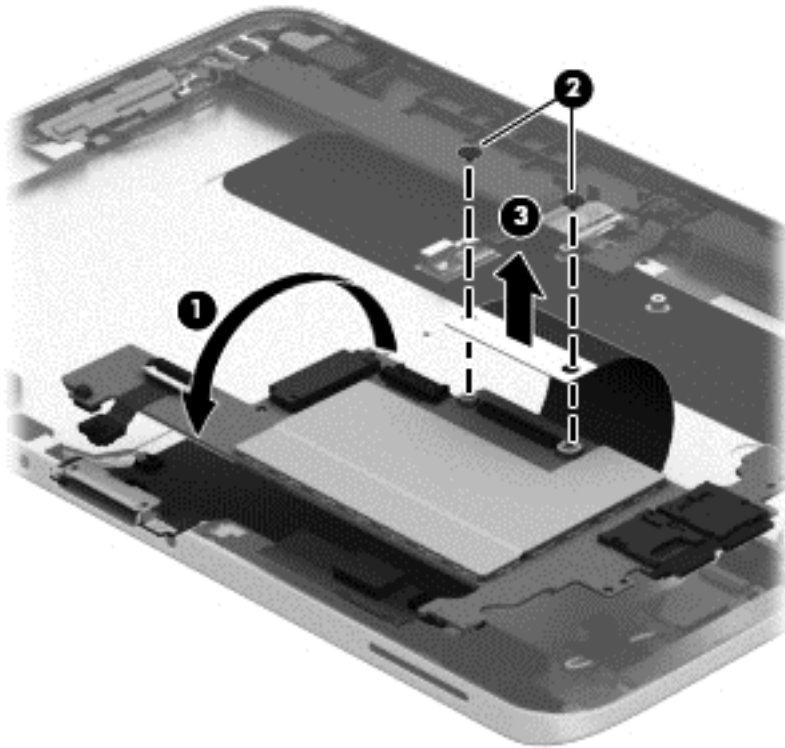


4. Remove the five Phillips PM1.3×2.0 screws that secure the battery to the bottom cover.



5. Lift the top edge of the system board **(1)** and swing it up and forward until it rests upside down above the tablet.
6. Remove the two Phillips PM1.3×1.5 broad head screws **(2)** that secure the docking connector cable to the system board.

7. Disconnect the docking connector cable (3) from the system board.

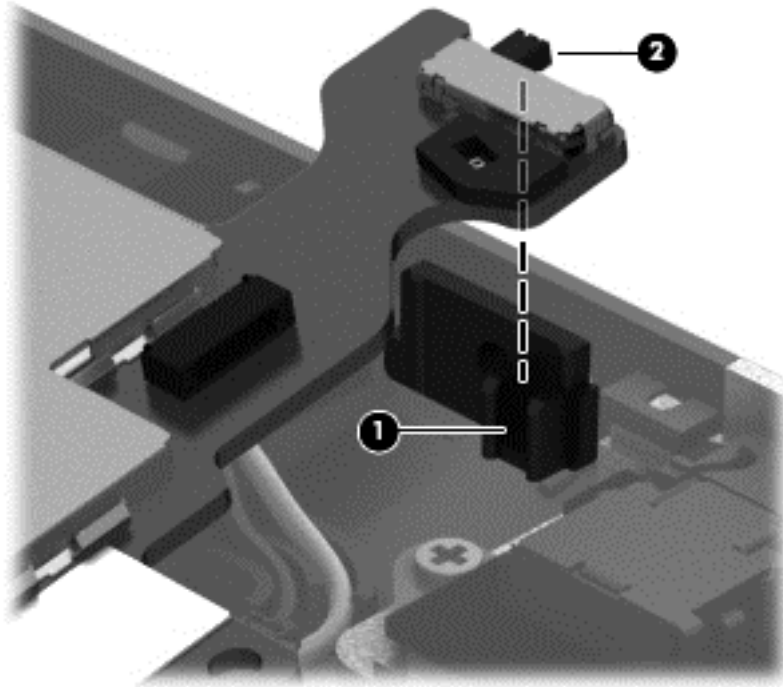


8. Remove the system board.



NOTE: In the process of removing the system board, the autorotate switch actuator may be accidentally dislodged from the bottom cover. To replace the autorotate switch actuator, refer to the following illustration. When installing the autorotate switch actuator, make sure the two tabs (1) on the autorotate switch actuator engage the autorotate switch (2) on the system board.

The autorotate switch actuator is included in the Button Kit, spare part number 747634-001.



Reverse this procedure to install the system board.

Forward-facing webcam



NOTE: The forward-facing webcam is included in the Webcam/Microphone Kit, spare part number 762828-001.

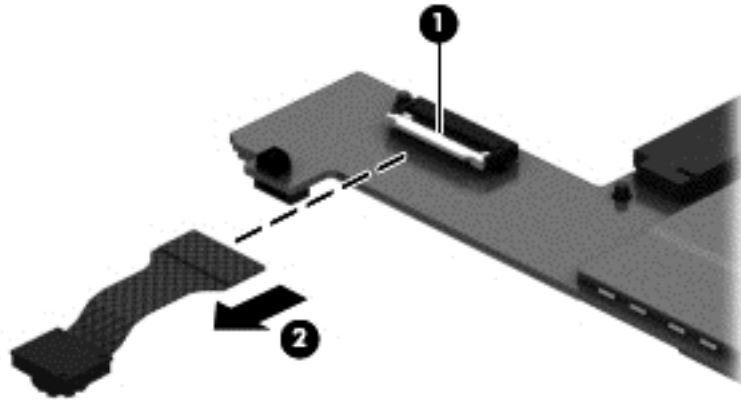
Before removing the forward-facing webcam, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)), and then remove the following components:
 - a. WWAN module (see [WWAN module on page 26](#))
 - b. Power button board (see [Power button board on page 32](#))
 - c. Battery (see [Battery on page 39](#))
 - d. System board (see [System board on page 40](#))

Remove the forward-facing webcam:

1. Turn the system board upside down, with the top toward you.


2. Release the ZIF connector **(1)** to which the forward-facing webcam cable is attached, and then disconnect the forward-facing webcam cable **(2)** from the system board.



3. Remove the forward-facing webcam and cable.

Reverse this procedure to install the forward-facing webcam.

Slot cover

 **NOTE:** The slot cover is included in the Button Kit, spare part number 747634-001.

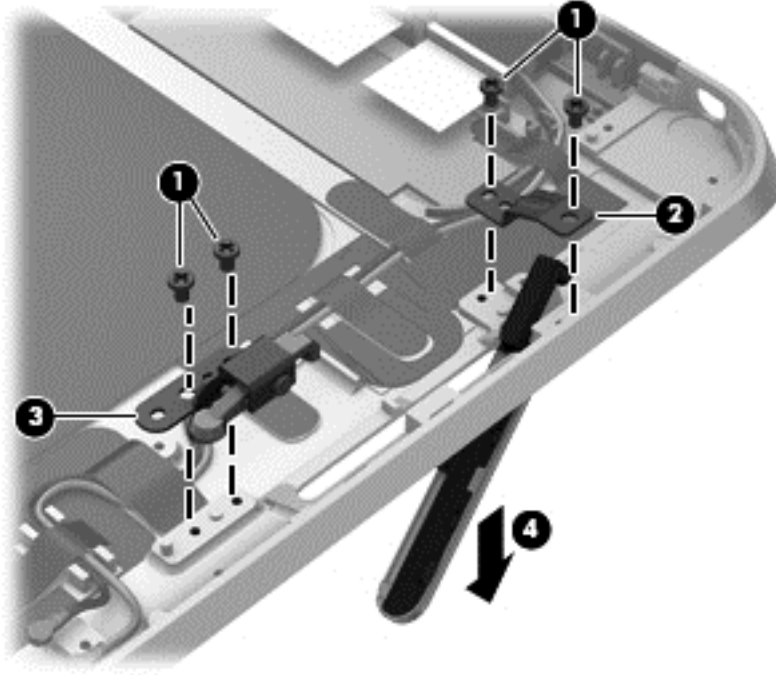
Before removing the slot cover, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)), and then remove the following components:
 - a. WWAN module (see [WWAN module on page 26](#))
 - b. Power button board (see [Power button board on page 32](#))
 - c. Battery (see [Battery on page 39](#))
 - d. System board (see [System board on page 40](#))

Remove the slot cover:

1. Remove the four Phillips PM1.3×2.0 screws **(1)** that secure the slot cover retention bracket and spring bracket to the bottom cover.
2. Remove the slot cover retention bracket **(2)** and the slot cover spring bracket **(3)**.

3. Remove the slot cover (4) by pressing it through the bottom cover.



4. Remove the slot cover.

Reverse this procedure to install the slot cover.

Docking connector cable

Description	Spare part number
Docking connector cable (includes double-sided adhesive)	747631-001

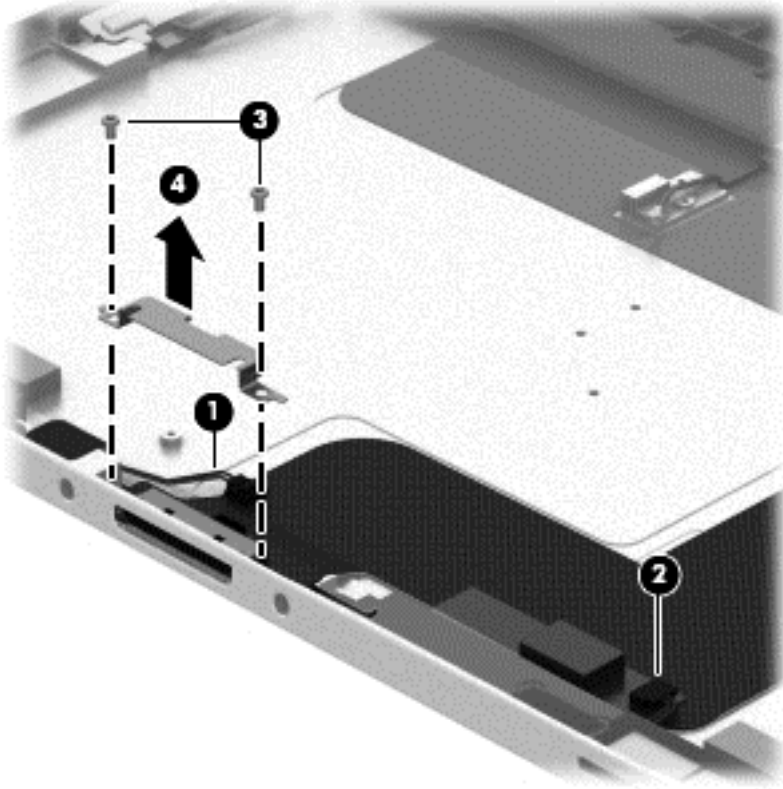
Before removing the docking connector cable, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)), and then remove the following components:
 - a. WWAN module (see [WWAN module on page 26](#))
 - b. Power button board (see [Power button board on page 32](#))
 - c. Battery (see [Battery on page 39](#))
 - d. System board (see [System board on page 40](#))

Remove the docking connector cable:

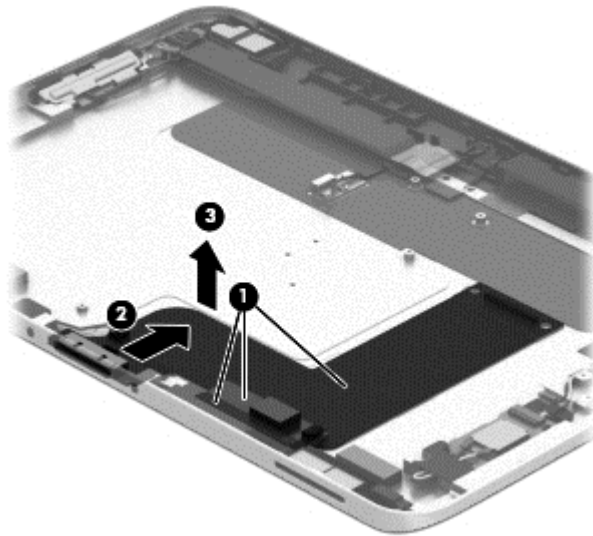
1. Disconnect the vibrator module cable **(1)** from the docking connector cable.
2. Disconnect the speaker cable **(2)** from the docking connector cable.
3. Remove the two Phillips PM1.3×2.0 screws **(3)** that secure the docking connector cable bracket to the bottom cover.
4. Remove the docking connector bracket **(4)**.

The docking connector bracket is included in the Button Kit, spare part number 747634-001.



5. Detach the docking connector cable **(1)** from the surface of the bottom cover. (The docking connector cable is attached to the bottom cover with double-sided adhesive.)
6. Release the docking connector **(2)** from the bottom cover by sliding it away from the opening in the bottom edge.

7. Remove the docking connector cable (3).



Reverse this procedure to install the docking connector cable.

WLAN antenna



NOTE: The WLAN antenna are included in the Antenna Kit and include the WLAN antenna main and auxiliary cables and transceivers.

Description	Spare part number
Antenna Kit for use in European countries and regions, North America, and Latin America	799297-001

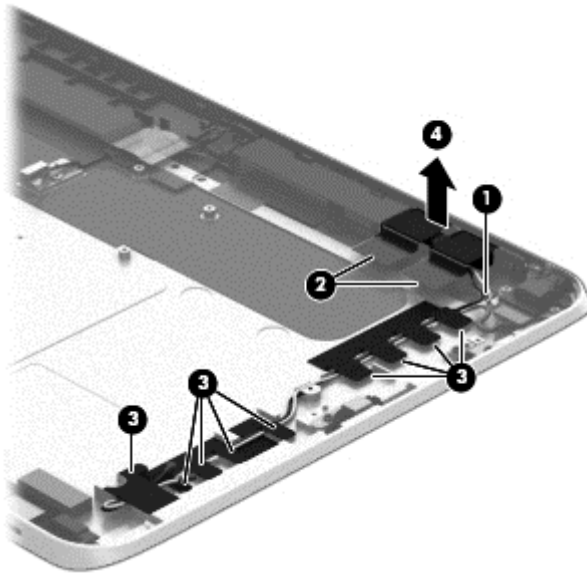
Before removing the WLAN antenna, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)), and then remove the following components:
 - a. WWAN module (see [WWAN module on page 26](#))
 - b. Power button board (see [Power button board on page 32](#))
 - c. Battery (see [Battery on page 39](#))
 - d. System board (see [System board on page 40](#))

Remove the WLAN antenna:

1. Release the WLAN antenna cables from the routing channel (1) built into the bottom cover.
2. Detach the WLAN antenna transceivers (2) from the bottom cover.

3. Release the tabs **(3)** built into the bottom cover that secure the speaker cable, and then release the WLAN antenna cables.
4. Remove the WLAN antenna cables and transceivers **(4)**.



Reverse this procedure to install the WLAN antenna.

WWAN/GPS auxiliary antenna



NOTE: The WWAN/GPS auxiliary antenna are included in the Antenna Kits and include the WWAN/GPS auxiliary antenna cable and transceiver.

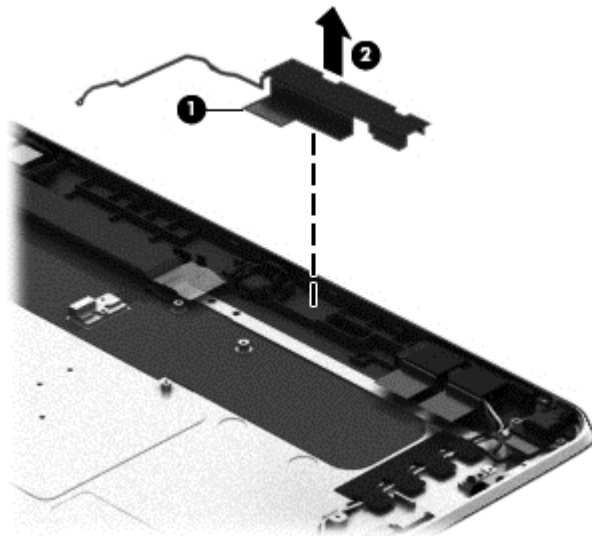
Description	Spare part number
Antenna Kit for use only in Japan	767885-001

Before removing the WWAN/GPS auxiliary antenna, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)), and then remove the following components:
 - a. WWAN module (see [WWAN module on page 26](#))
 - b. Power button board (see [Power button board on page 32](#))
 - c. Battery (see [Battery on page 39](#))
 - d. System board (see [System board on page 40](#))

Remove the WWAN/GPS auxiliary antenna:

1. Detach the WWAN/GPS auxiliary antenna transceiver **(1)** from the bottom cover.
2. Remove the WWAN/GPS auxiliary antenna cable and transceiver **(2)**.



Reverse this procedure to install the WWAN/GPS auxiliary antenna.

Speakers

Description	Spare part number
Speakers (include left and right speakers and cables)	747629-001

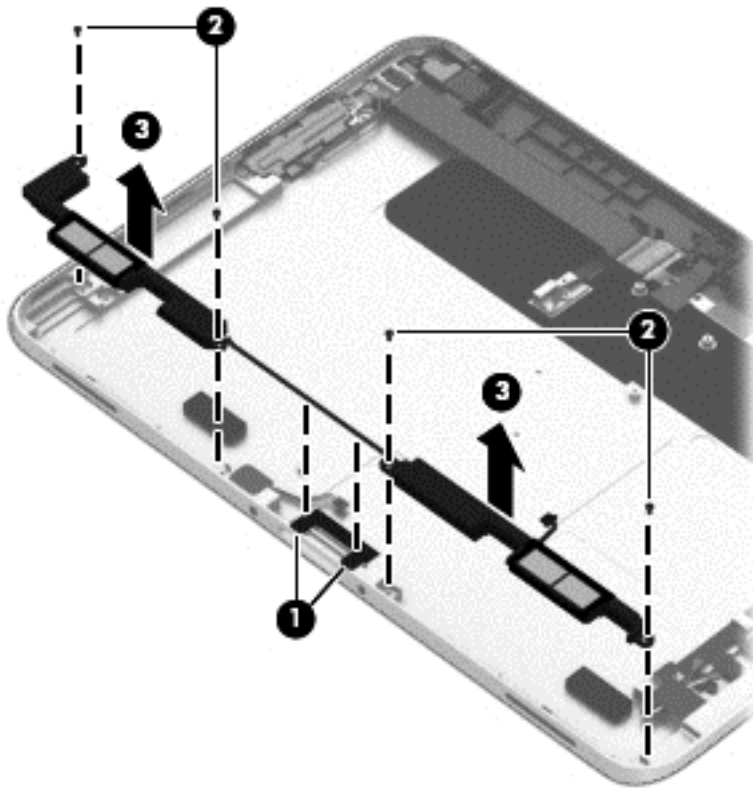
Before removing the speakers, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off or in Hibernation, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the display assembly (see [Display assembly on page 19](#)), and then remove the following components:
 - a. WWAN module (see [WWAN module on page 26](#))
 - b. Power button board (see [Power button board on page 32](#))
 - c. Battery (see [Battery on page 39](#))
 - d. System board (see [System board on page 40](#))
 - e. Docking connector cable (see [Docking connector cable on page 46](#))

Remove the speakers:

1. Release the tabs **(1)** built into the bottom cover that secure the speaker cable, and then release the speaker cable.
2. Remove the four Phillips PM1.3×2.0 screws **(2)** that secure the speakers to the bottom cover.

3. Remove the speakers (3).



Reverse this procedure to install the speakers.


6 HP PC Hardware Diagnostics (UEFI)

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 tablet 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.

To start HP PC Hardware Diagnostics UEFI using the touchscreen:

1. Shut down the tablet if it is not already powered off
2. To power on the tablet, press the **Power** button, and then press the **Volume down** button.
3. Select **System Diagnostics**.
4. Select the type of diagnostic test that 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 anywhere on the screen.

To start HP PC Hardware Diagnostics UEFI using a keyboard:

1. Turn on or restart the tablet, quickly press the **ESC** button on the tablet, and then press **f2**.

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

- a. Connected USB drive


 **NOTE:** To download the HP PC Hardware Diagnostics (UEFI) tool to a USB drive, see [Downloading HP PC Hardware Diagnostics \(UEFI\) to a USB device on page 53](#).

- b. Hard drive
- c. BIOS

2. When the diagnostic tool opens, use the keyboard arrow keys to select the type of diagnostic test you want to run, and then follow the on-screen instructions.

 **NOTE:** If you need to stop a diagnostic test, press **esc**.

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

 **NOTE:** Instructions for downloading HP PC Hardware Diagnostics (UEFI) are provided in English only.

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

Option 1: HP PC Diagnostics homepage—Provides access to the latest UEFI version

1. Go to <http://hp.com/go/techcenter/pcdiags>.
2. Click the **UEFI Download** link, and then select **Run**.

Option 2: Support and Drivers page—Provides downloads for a specific product for earlier and later versions

1. Go to <http://www.hp.com>.
2. Point to **Support**, located at the top of the page, and then click **Download Drivers**.
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 tablet model, and then select your operating system.
5. In the **Diagnostic** section, click **HP UEFI Support Environment**.
– or –
Click **Download**, and then select **Run**.

7 Specifications

Tablet specifications

	Metric	U.S.
Dimensions		
Width	17.80 cm	7.0 in
Depth	26.10 cm	10.28 in
Height	0.92 cm	0.36 in
Weight	0.68 kg	1.50 lbs
Input power		
Operating voltage and current	9 V DC @ 1.1A – 10W	
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.		

8 Statement of Volatility

The purpose of this document is to provide general information regarding non-volatile memory in industry-standards based HP Business Notebook PC systems and provide general instructions for restoring nonvolatile memory that can contain personal data after the system has been powered off and the hard drive has been removed.

HP Business Notebook PC products that use Intel-based or AMD®-based system boards contain volatile DDR memory. The amount of nonvolatile memory present in the system depends upon the system configuration. Intel-based and AMD-based system boards contain nonvolatile memory subcomponents as originally shipped from HP assuming that no subsequent modifications have been made to the system and assuming that no applications, features, or functionality have been added to or installed on the system.

Following system shutdown and removal of all power sources from an HP Business Notebook PC system, personal data can remain on volatile system memory (DIMMs) for a finite period of time and will also remain in nonvolatile memory. The steps below will remove personal data from the notebook PC, including the nonvolatile memory found in Intel-based and AMD-based system boards. Some of these steps are disclosed in the Maintenance and Service Guides available for HP PC products available on the product support pages at www.hp.com.

1. Follow steps (a) through (i) below to restore the nonvolatile memory that can contain personal data. Restoring or re-programming nonvolatile memory that does not store personal data is neither necessary nor recommended.
 - a. Enter BIOS (F10) Setup by powering on the system and pressing **F10** when prompted near the bottom of the display, or press the **ESC** key to display the start up menu, then press **F10**. If the system has a BIOS administrator password, enter the password at the prompt.
 - b. Select the **File** menu, then **Restore Defaults**.
 - c. Select the **System Configuration** menu, then **Restore Security Defaults**.
 - d. If an asset or ownership tag is set, select the **Security** menu and scroll down to the **Utilities** menu. Select **System IDs**, and then select the tag that has been set. Press the spacebar once to clear the tag, then press **Enter** to return to the prior menu.
 - e. If a DriveLock password is set, select the **Security** menu, scroll down to **DriveLock**, then select **DriveLock password**. Select the desired hard drive. Click **Disable protection**, enter the existing master DriveLock password, then press **Enter** to confirm and return to the prior menu. Repeat this procedure if more than one hard drive has a DriveLock password.
 - f. If an Automatic DriveLock password is set, select the **Security menu**, scroll down to **Automatic DriveLock**, then select the desired hard drive and disable protection. Repeat this procedure if more than one hard drive has an Automatic DriveLock password.
 - g. Select the **File** menu, then **Reset BIOS Security** to factory default. Click **yes** at the warning message.
 - h. Select the **File** menu, then **Save Changes and Exit**.
 - i. Reboot the system. If the system has a Trusted Platform Module and/or fingerprint sensor, one or two prompts will appear: one to clear the TPM and the other to reset fingerprint sensor. Press **F1** to accept or **F2** to reject.

If the HP notebook model number ends in a 'p' or 'w' and includes Intel Centrino with VPro™, reboot the PC and enter BIOS Setup by pressing **F10** when prompted. Select **System**


Configuration, then **AMT Options**. Then select **Un-configure AMT on next boot**. Select **Save**, then **Yes**. Select the **File** menu, and then select **Save Changes and Exit**. Reboot the system and confirm that you want to un-configure AMT.

- j. If the optional Intel Anti-Theft Technology (AT) was activated, contact the provider to deactivate it.
 - k. If the optional Absolute® Software Computrace® management and tracking service was activated on the notebook PC, contact the provider to deactivate it.
 - l. Remove all power and system batteries for at least 24 hours.
2. Remove and retain the storage drive or clear the contents of the drive.

a. Hard Disk Drive (HDD)

Clear the HDD contents by using the HP Disk Sanitizer® utility or a third party application that, ideally, is U.S. Department of Defense (DOD) 5220.22-M approved.

To run HP Disk Sanitizer, enter BIOS Setup by powering on the system and pressing **F10** when prompted near the bottom of the display, or press **ESC** to display the start up menu, then press **F10**. Select the **Security** menu and scroll down to the **Utilities** menu. Select **Disk Sanitizer** and select the desired drive. For a higher level of protection, select **Optimum**.

 **NOTE:** This process will take a long time, and the amount of time varies based on the hard drive capacity.

b. Solid State Drive (SSD)

Clear the SSD contents by using the BIOS Setup Secure Erase command option, or by using a third party utility designed to erase data from an SSD. To run Secure Erase, enter BIOS Setup by powering on the system and pressing **F10** when prompted near the bottom of the display. Select the **Security** menu and scroll down to the **Utilities** menu. Select **Secure Erase** and select the desired hard drive.

Non-volatile memory usage

Non Volatile Memory Type	Amount (Size)	Does this memory store customer data?	Does this memory retain data when power is removed?	What is the purpose of this memory?	How is data input into this memory?	How is this memory write protected?
Real Time Clock (RTC) battery backed-up CMOS configuration memory (CMOS)	256 Bytes	No	Yes	Stores system date and time and limited keyboard controller data.	Using the F10 Setup utility or changing the Microsoft Windows date and time.	This memory is not write-protected. HP recommends password protecting the F10 Setup utility.
Controller (NIC) EEPROM	64 KBytes (not customer accessible)	No	Yes	Store NIC configuration and NIC firmware.	Using a utility from the NIC vendor that can be run from DOS.	A utility is required to write data to this memory and is available from NIC vendor. Writing data to this ROM in an inappropriate manner will

Non Volatile Memory Type	Amount (Size)	Does this memory store customer data?	Does this memory retain data when power is removed?	What is the purpose of this memory?	How is data input into this memory?	How is this memory write protected?
						render the NIC nonfunctional.
Keyboard ROM	64 KBytes (not customer accessible)	No	Yes	Stores firmware code (keyboard, mouse, & battery management).	Programmed at the factory. Code is updated when the system BIOS is updated.	A utility is required for writing data to this memory and is available on the HP website. Writing data to this ROM in an inappropriate manner can render the PC nonfunctional.
DIMM Serial Presence Detect (SPD) configuration data	256 Bytes per memory module, 128 Bytes programmable (not customer accessible)	No	Yes	Stores memory module information.	Programmed by the memory vendor.	Data cannot be written to this memory when the module is installed in a PC. The specific write protection method varies by memory vendor.
System BIOS	4 to 5 MBytes	Yes	Yes	Store system BIOS code and PC configuration data.	System BIOS code is programmed at the factory. Code is updated when the system BIOS is updated. Configuration data and settings are input using the F10 setup utility or a custom utility.	A utility is required for writing data to this memory and is available on the HP website. Writing data to this ROM in an inappropriate manner can render the PC nonfunctional.
Intel Management Engine Firmware (present only in models ending in a 'p' or 'w' or with Intel Centrino Pro technology)	1.5 or 5 MBytes	Yes	Yes	Stores Management Engine Code, Settings, Provisioning Data and iAMT third party data store.	Management Engine Code is programmed at the factory. Code is updated via Intel secure firmware update utility. Unique Provisioning Data can be entered at the factory or by an administrator using the Management Engine (MEBx) setup utility. The	The Intel chipset is configured to enforce hardware protection to block all direct read/write access to this area. An Intel utility is required for updating the firmware. Only firmware updates digitally signed by Intel can be applied using this utility.

Non Volatile Memory Type	Amount (Size)	Does this memory store customer data?	Does this memory retain data when power is removed?	What is the purpose of this memory?	How is data input into this memory?	How is this memory write protected?
					third party data store contents can populated by a remote management console or local applications registered by an administrator to have access to the space.	
Bluetooth flash	2 MBits	No	Yes	Stores Bluetooth configuration and firmware.	Programmed at the factory. Tools for writing data to this memory are not publicly available but can be obtained from the silicon vendor.	A utility is required for writing data to this memory and is made available through newer versions of the driver if the flash requires an upgrade.
802.11 WLAN EEPROM	4 KBytes to 8 KBytes	No	Yes	Stores configuration and calibration data.	Programmed at the factory. Tools for writing data to this memory are not made public.	A utility is required for writing data to this memory and is typically not made available to the public unless a firmware upgrade is necessary to address a unique issue.
Webcam	64 KBits	No	Yes	Store webcam configuration and firmware.	Using a utility from the device manufacturer that can be run from Windows.	A utility is required for writing data to this memory and is typically not made available to the public unless a firmware upgrade is necessary to address a unique issue.
Fingerprint reader	512 KBytes flash	Yes	Yes	Stores fingerprint templates.	By enrolling in HP ProtectTools Security Manager.	Only a digitally signed application can make the call to write to the flash.

Questions and answers

1. How can the BIOS settings be restored (returned to default settings)?

- a. Turn on or restart the computer and press **F10** when prompted near the bottom of the display.
- b. Select **File**, then select **Restore defaults**.
- c. Follow the on-screen instructions.
- d. Select **File**, save changes and exit, then press **Enter**.

2. What kind of configuration data is stored on the DIMM Serial Presence Detect (SPD) memory module? How would this data be written?

The DIMM SPD memory contains information about the memory module such as size, serial number, data width, speed/timing, voltage and thermal information. This information is written by the module manufacturer and stored on an EEPROM. This EEPROM cannot be written to when the memory module is installed in a PC. Third party tools do exist that can write to the EEPROM when the memory module is not installed in a PC. There are various third party tools available to read SPD memory.

3. Does the “Firmware Hub for System BIOS” contain the BIOS program? Is this chip writable, and if so how?

The Firmware Hub does contain the BIOS program and is writable. A utility is required to perform the write function.

4. In some PC systems, the Firmware Hub for System BIOS is a flash memory chip so that updates can be written by the customer. Is this true for these BIOS chips?

Yes, they are flash memory chips.

5. What is meant by “Restore the nonvolatile memory found in Intel-based system boards?”

This relates to clearing the Real Time Clock (RTC) CMOS memory that contains PC configuration data.

6. Does resetting the CMOS configuration memory return the PC back to factory defaults?

The process of resetting the CMOS will return certain system settings to factory default but will not reset many of the system data and configuration defaults to their default settings. To return these system data and configuration defaults to default settings, refer to question and answer 1 and follow the instructions for returning the BIOS settings to factory defaults.

9 Power cord set requirements

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

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

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

Requirements for all countries

The following requirements are applicable to all countries and regions:

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

Requirements for specific countries and regions

Country/region	Accredited agency	Applicable note number
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	METI	3
The Netherlands	KEMA	1
Norway	NEMKO	1
The People's Republic of China	COC	5
South Korea	EK	4

Country/region	Accredited agency	Applicable note number
Sweden	SEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	4
The United Kingdom	BSI	1
The United States	UL	2

1. The flexible cord must be Type H05VV-F, 3-conductor, 1.0-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.
3. The appliance coupler, flexible cord, and wall plug must bear a “T” mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00-mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.
4. The flexible cord must be Type RVV, 3-conductor, 0.75-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
5. The flexible cord must be Type VCTF, 3-conductor, 0.75-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.

10 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>.

Index

- A**
 - AC adapter, spare part number 13
 - AC adapter, spare part numbers 11, 13
 - ambient light sensor, identifying 3
 - antenna
 - removal 48, 50
 - spare part numbers 10, 14, 48, 50
 - Antenna Kit, spare part numbers 10, 14, 48, 50
 - audio jack board
 - removal 36
 - spare part number 10, 13, 36
 - audio, product description 1
 - audio-in (microphone) jack, identifying 5
 - audio-out (headphone) jack, identifying 5
 - autorotate lock feature 7
 - autorotate switch actuator
 - installation 43
 - spare part number 10, 43
- B**
 - battery
 - removal 39
 - spare part numbers 10, 13, 39
 - bottom case, spare part number 11, 13
 - brightness, adjusting 7
 - Button Kit, spare part number 10, 13
 - buttons
 - power 5
- C**
 - cables, service considerations 15
 - Card Reader Cover Kit, spare part number 12
 - components
 - bottom 6
 - front 3
 - rear 4
 - top 5
 - connectors, service considerations 15
 - Control Panel
 - changing view 7
 - control panel
 - methods of opening 7
- D**
 - Device Manager, Windows 8
 - diagnostics 53
 - display assembly
 - removal 19
 - spare part number 10, 13, 19
 - Display Cable Kit, spare part number 10, 13, 25
 - display LVDS cable
 - removal 25
 - spare part number 10, 25
 - Display Panel Kit, spare part number 10, 13, 19
 - display panel, product description 1
 - docking connector bracket
 - removal 47
 - spare part number 10, 47
 - docking connector cable
 - removal 46
 - spare part numbers 10, 13, 46
 - docking connector, identifying 6
 - docking station, spare part number 12, 13
 - docking, product description 1
 - duck head power adapter
 - illustrated 11
 - spare part numbers 11, 13, 14
- E**
 - electrostatic discharge 15
 - equipment guidelines 18
 - Ethernet, product description 1
- F**
 - forward-facing webcam
 - removal 44
 - spare part number 44
- G**
 - graphics, product description 1
 - grounding guidelines 15
 - guidelines
 - equipment 18
 - grounding 15
 - packaging 17
 - transporting 17
 - workstation 17
- H**
 - hardware
 - locating information 8
 - headphone (audio-out) jack 5
 - HP ElitePad Service Tool, spare part number 20
 - HP PC Hardware Diagnostics (UEFI) 53
 - downloading 53
 - using 53
- J**
 - jacks
 - audio-in (microphone) 5
 - audio-out (headphone) 5
- K**
 - keyboard, product description 1
- M**
 - memory card reader, identifying 4
 - memory card/SIM slot, identifying 4
 - memory, product description 1
 - microphone
 - product description 1
 - removal 30
 - spare part number 14, 30
 - microphone (audio-in) jack, identifying 5
 - model name 1
- O**
 - operating system, product description 2
 - optical drive, product description 1

P

- packaging guidelines 17
- plastic parts, service considerations 15
- pointing device, product description 1
- ports, product description 1
- power button actuator
 - installation 33
 - spare part number 10, 33
- power button board
 - removal 32
 - spare part numbers 10, 13, 32
- power button, identifying 5
- power components 11
- power cord
 - illustrated 11
 - set requirements 61
 - spare part numbers 11
- power requirements, product description 2
- primary storage, product description 1
- processor, product description 1
- product description
 - audio 1
 - display panel 1
 - docking 1
 - Ethernet 1
 - external media cards 1
 - graphics 1
 - keyboard 1
 - memory 1
 - microphone 1
 - operating system 2
 - optical drive 1
 - pointing device 1
 - ports 1
 - power requirements 2
 - primary storage 1
 - processor 1
 - product name 1
 - security 2
 - sensors 1
 - video 1
 - wireless 1
- product name 1

R

- rear-facing webcam
 - removal 31
 - spare part number 31
- removal/replacement procedures 19

S

- screen brightness, adjusting 7
- Screw Kit, spare part numbers 12, 13
- security, product description 2
- sensors, product description 1
- service considerations
 - cables 15
 - connectors 15
 - plastic parts 15
- service tag 6
- service tool, spare part number 12, 13
- settings, changing tablet's 7
- slot cover
 - removal 45
 - spare part number 10, 45
- slots, memory card/SIM, identifying 4
- Smart Card Reader Cover Kit, spare part number 13
- software
 - locating information 8
 - updating 8
 - Windows Device Manager 8
- speakers
 - removal 51
 - spare part number 11, 13, 51
- speakers, identifying 6
- specifications 55
- suction cup, spare part number 12, 13, 21
- switch, autorotate, identifying 5
- system board
 - removal 40
 - spare part numbers 10, 13, 40

T

- tablet
 - major components 9
 - specifications 55
- Tape Support Kit, spare part number 12, 14

- tools required 15
- TouchScreen cable
 - removal 25
 - spare part number 10, 25
- transporting guidelines 17
- TXE board
 - removal 37
 - spare part number 11, 13, 37

U

- UEFI 53
- USB3 adapter, spare part number 13

V

- vibrator module
 - removal 38
 - spare part number 10, 13, 38
- video, product description 1
- view, changing tablet's 7
- volume button actuator
 - installation 34
 - spare part number 10, 34
- volume button board
 - removal 34
 - spare part number 10, 14, 34

W

- webcam 3
 - removal 31, 44
 - spare part numbers 10, 14, 31, 44
- Webcam/Microphone Kit, spare part number 10, 14
- Windows button, identifying 3
- Windows Device Manager 8
- wireless antenna
 - removal 48, 50
 - spare part numbers 10, 14, 48, 50
- wireless, product description 1
- WLAN
 - antennas, identifying 3
 - antenna
 - removal 48
 - spare part numbers 48
- WLAN module
 - removal 28
 - spare part number 10, 13, 28
- workstation guidelines 17

WWAN module

removal 26

spare part numbers 26

WWAN/GPS auxiliary antenna

removal 50

spare part numbers 50

