HP Pro Tablet 608 G1

Maintenance and Service Guide
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Product notice

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

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 tablet, do not place the tablet directly on your lap. Do not allow a soft surface, such as pillows or rugs or clothing, to block airflow. Also, do not allow the AC adapter to come into contact with the skin or a soft surface, such as pillows or rugs or clothing, during operation. The tablet 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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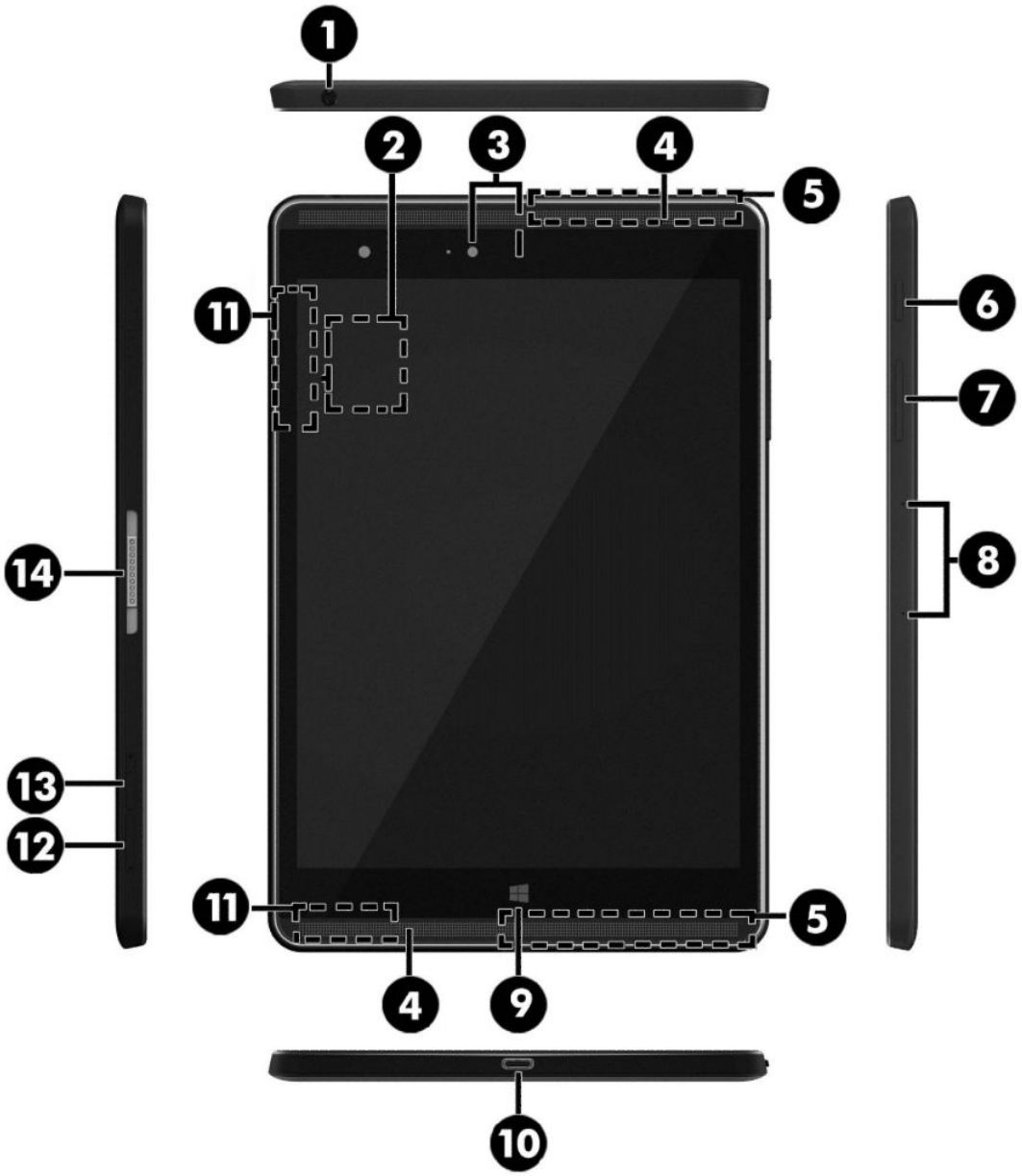
1 Product description

Category	Description
Product Name	HP Pro Tablet 608 G1
Processor	Intel® Atom™ x5-Z8500 Quad Core SOC B-1 4c BGA 1.36 GHz 16 EU, 2.16 GHz Burst, Type 4 QHAU (soldered on the system board)
Graphics	Integrated Gen8-LP 8 EU up to 640 MHz
Panel	7.86 inch, Quad Extended Graphics Array (QXGA) resolution (2048 x 1536) BV white light emitting diode (WLED), Ultra-Wide Viewing Angle (UWVA), 70% cg, 450 nits (cd/m^2) MIPI Supports Active Pen and Multitouch
Memory	2 GB LPDDR3 memory, integrated onto system board, 1600 253b package (8 Gb(128 MbX32X2)*2pcs) 4 GB LPDDR3 memory, integrated onto system board, 1600 253b package (16 Gb(128 MbX32X4)*2pcs) eMMC 4.51 (Memory HW will be 4.51 and 5.0 but SOC can only supports up to 4.51 protocol)
Storage	32 GB eMMC, integrated onto system board 64 GB eMMC, integrated onto system board 128 GB eMMC, integrated onto system board Your tablet has read/write support for SDXC microSD cards up to 2 TB.
Audio and video	Two noise cancellation microphones Two speakers with DTS Studio Sound 8.0 MP full-frame high-definition rear-facing webcamera 2.0 MP full-frame high-definition front-facing webcamera Supports HD audio formats Supports headset
Sensors	Accelerometer + eCompass Gyroscope Ambient light sensor Haptics sensor Proximity Sensor (WWAN Only)
Wireless networking	**Integrated WLAN option**: Intel 7265.D2WG18V AC 2x2 + Bluetooth® 4 LE PCIe+USB SD 1216 WW 2 WLAN antennas configured with panel on all units **Near field communication (NFC)**: NXP NPC100 Integrated NFC module and antennas **WWAN** (SIM Module, 4 FF/nano SIM, M.2 3042 S3 module): • HP lt4211, LTE/EV-DO/HSPA+, QCOM MDM9615 Integrated GPS (North America only) • Huawei ME906E, LTE/HSPA+, QCOM MDM9215, integrated GPS: HP lt4112 LTE/HSPA+ Gobi 4G Module (EMEA only)

Category	Description
	• Huawei MU736, HSPA+, Intel XMM6260 3G, integrated GPS: HP hs3110 HSPA+ Mobile Broadband Module (worldwide) Supports No WWAN/No GPS option
External expansion	Integrated SDXC microSD card reader expandable up to 2 TB.
Ports	• Audio: headphone/microphone combo jack • MicroSD card reader • Nano SIM card slot • USB Type-C (charging) port • 1x 10 Pin Magnetic connector (POGO)
Docking	Portable docking
Keyboard/Mouse	Support for Magnector connected soft keyboard, USB or Bluetooth connected external keyboard and mouse
Power requirements	21 Whr, 1S2P, Lithium-polymer, non-user removable battery 15 W + USB Type-C (charging). (100% attached) (Micro USB Adapter) cable and localized cable plug support
Operating system	**Preinstalled**: • Windows® 8.1 Pro 64 for Small Tablets • Windows 8.1 Pro 64 StF MSNA (only available with equal to or less than 64 GB eMMC Storage, not available with 128 GB eMMC Storage) • Windows 8.1 Pro 64 StF EM (only available with equal to or less than 64 GB eMMC Storage, not available with 128 GB eMMC Storage) • Windows 8.1 Pro 64 for Small Tablets retail (only available with RS BUs) • Windows Embedded 8.1 Industry Pro 64 Retail (only available with RS BUs) • Windows 8.1 Core for Higher Education 64 ML (only available for Emerging Markets) • Windows 10 Home 64 Chinese Market CPPP (only available for the People's Republic of China) • Windows 10 Home 64 Shape the Future OS AV for Higher Education (only available for Emerging Markets except Asia and the People's Republic of China) • Windows 10 Home 64 Entry Tablet + 2-in-1 Notebook (not available for Asia or the People's Republic of China) • Windows 10 Home 64 Entry Tablet + 2-in-1 Notebook Chinese markets (only available for the People's Republic of China) • Windows 10 Home 64 Entry Tablet + 2-in-1 Notebook Single Language (only available for Emerging Markets) • Windows 10 Home 64 Small Tablet + 2-in-1 Notebook (not available for Asia or the People's Republic of China) • Windows 10 Home 64 Small Tablet + 2-in-1 Notebook Chinese market (only available for the People's Republic of China) • Windows 10 Home 64 Small Tablet + 2-in-1 Notebook Single Language (only available for emerging markets) • Windows 10 Pro 64 Small Tablet + 2-in-1 Notebook • Windows 10 Pro 64 Small Tablet + 2-in-1 Notebook (Retail—select countries)

Category	Description
	• Windows 10 Pro 64 StF MSNA (only available for developed markets) • Windows 10 Pro 64 StF MSNA (only available for emerging markets) **Web-only support**: • Windows 8.1 Enterprise • Windows 10 Enterprise **Restore USB–for service only**: USB recovery to align with customer image, to include base operating system, language packs, drivers, and QFE's.
Serviceability	**End user replaceable parts**: • AC adapter

2 External component identification



Component		Description
(1)	Audio-out (headphone)/Audio-in (microphone) combo 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.

Component		Description
		WARNING! To reduce the risk of personal injury, adjust the volume before using headphones, earbuds, or a headset. For additional safety information, see the *Regulatory, Safety and Environmental Notices*. **NOTE:** When a device is connected to the jack, the tablet 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).
(2)	NFC (Near Field Communications) area (select models only)	Allows you to share data and files with another device that has NFC by simply touching the devices together.
(3)	Front-facing and rear-facing webcams	Record video and capture photographs.
(4)	Speakers	Produce sound.
(5)	WWAN antennas (select models only)*	Send and receive wireless signals to communicate with wireless wide area networks (WWANs).
(6)	Power button	• 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. **CAUTION:** Unsaved information is lost when the tablet shuts down. Be sure to save your work before shutting down the tablet. **NOTE:** Although you can turn off the tablet with the power button, the recommended procedure is to use the Windows Shut down command.
(7)	Volume button	Press to increase or decrease sound.
(8)	Microphones	Receive sound.
(9)	Windows button	Returns you to the Start screen from an open app or the Windows desktop. **NOTE:** Pressing the Windows button again will return you to the previous screen.
(10)	USB Type-C (charging) port	Connects any USB device with a Type-C connector. **NOTE:** Some USB Type-C ports can charge select models of cell phones, laptops, tablets, and MP3 players, even when the tablet is off. Some can also connect DisplayPort, VGA, HDMI, and other video devices.
(11)	WLAN antennas*	Send and receive wireless signals to communicate with wireless local area networks (WLANs).
(12)	MicroSD card reader	Reads microSD cards that store, manage, share, or access information. **NOTE:** Your tablet has read/write support for SDXC microSD cards up to 2 TB.
(13)	Nano SIM card slot (select models only)	Supports a wireless subscriber identity module (SIM) card.

Component		Description
(14)	ZIF (Zero Insertion Force) expansion slot	Allows you to connect accessories such as a keyboard or power supply using the POGO pin connector.

*The antennas are not visible from the outside of the tablet. 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.

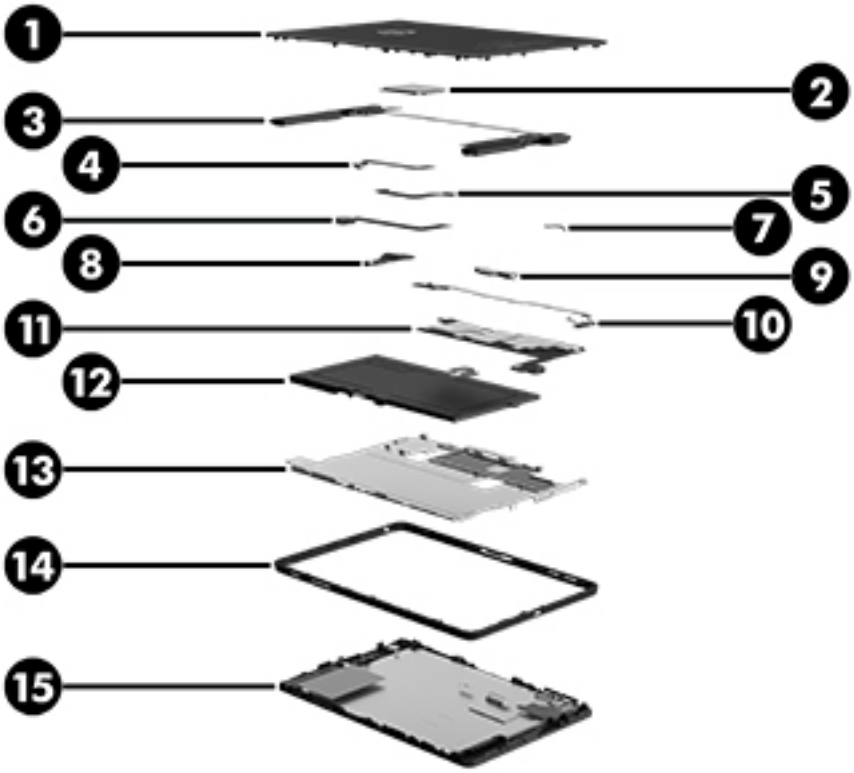
3 Illustrated parts catalog

Locating the serial number and model number

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

The model number **(1)** and serial number **(2)** of your tablet are located on the back cover of the tablet. You may need the information when you travel internationally or when you contact support.

Tablet major components



Item	Component	Spare part number
(1)	**Back cover**	823034-001
(2)	**WWAN module**	
	• HP lt4211, LTE/EV-DO/HSPA+, QCOM MDM9615 Integrated GPS	793116-005
	• Huawei ME906E, LTE/HSPA+, QCOM MDM9215, integrated GPS: HP lt4112 LTE/HSPA+ Gobi 4G Module	790198-005
	• Huawei MU736, HSPA+, Intel XMM6260 3G, integrated GPS: HP hs3110 HSPA+ Mobile Broadband Module	793516-005
(3)	**Speaker kit** (includes left and right speakers and cables)	823050-001
(4)	**Front-facing webcamera** (includes cable)	823055-001
(5)	**Rear-facing webcamera** (includes cable)	823056-001
(6)	**Vibration motor board**	823042-001
(7)	**Audio/USB connector board** (spared with the system board)	
(8)	**POGO pin connector and cable**	823960-001
(9)	**Antenna kit**, includes all WLAN, WWAN, and Proximity Sensor antennas	823033-001

Item	Component	Spare part number
(10)	**System board**, includes audio board and thermal pads	
	• Equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 2 GB RAM memory, 32 GB eMMC, NFC (WLAN soldered on)	823051-601
	• Equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 2 GB RAM memory, 64 GB eMMC, NFC (WLAN soldered on)	823052-601
	• Equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 64 GB eMMC NFC, WWAN support (WLAN soldered on)	823053-601
	• Equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 64 GB eMMC NFC, (WLAN soldered on)	826801-601
	• Equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 128 GB eMMC NFC, WWAN support (WLAN soldered on)	823054-601
	• Equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 2 GB RAM memory, 32 GB eMMC, NFC (WLAN soldered on)	823051-401
	• Equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 2 GB RAM memory, 64 GB eMMC, NFC (WLAN soldered on)	823052-401
	• Equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 64 GB eMMC NFC, WWAN support (WLAN soldered on)	823053-401
	• Equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 64 GB eMMC NFC, (WLAN soldered on)	826801-401
	• Equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 128 GB eMMC NFC, WWAN support (WLAN soldered on)	823054-401
(11)	**Battery and middle plate**, 21 Whr, 1S2P, Lithium-polymer, non-user removable	
	• For models with WWAN capability	823040-001
	• For models without WWAN capability	823039-001
(12)	**LCD metal outer ring**	
	For models with WWAN capability	823038-001
	For models without WWAN capability	823037-001
(13)	**7.86 inch QXGA (2048x1536) BV WLED UWVA 70%cg 450nits MIPI Touchscreen display panel assembly**, includes bezel and touchscreen LCD module	823047-001

Miscellaneous parts

Component	Spare part number
15W + Type C charging Micro USB Adapter (100% attached)	792619-001
Cable kit, includes audio board cables and DMIC cables	823035-001
Metal kit, includes SD and SIM card trays, LCD sheet, battery sheet, audio jack bracket, and POGO pin bracket	823036-001
Pen	823045-001
Plastics kit, includes power button and volume button	823046-001

Component	Spare part number
Power cord with adapter	
• For use in Australia	762584-005
• For use in Europe	762584-004
• For use in India	762584-006
• For use in North America	762584-001
• For use in the United Kingdom	762584-003
Rubber kit, includes microphone rubber, WWAN gasket, camera foils, and plastic	823048-001
Screw kit	823049-001
Tablet	
• For use in Asia, supports SKU# N4L91PA-ABG	833756-001
• For use in Asia, supports SKU# N4L92PA-ABG	833757-001
• For use in Asia, supports SKU# N4L93PA-ABG	833758-001
• For use in North America, supports SKU# N3G36AA-ABA	833759-001
• For use in North America, supports SKU# N3G41AA-ABA	833760-001
• For use in North America, supports SKU# N3G38AA-ABA	833761-001
• For use in North America, supports SKU# N3G33AA-ABA	833762-001
• For use in North America, supports SKU# N3G40AA-ABA	833763-001

Sequential part number listing

Spare part number	Description
762584-001	**Power cord with adapter**, for use in North America
762584-003	**Power cord with adapter**, for use in the United Kingdom
762584-004	**Power cord with adapter**, for use in Europe
762584-005	**Power cord with adapter**, for use in Australia
762584-006	**Power cord with adapter**, for use in India
790198-005	WWAN module, Huawei ME906E, LTE/HSPA+, QCOM MDM9215, integrated GPS: HP lt4112 LTE/HSPA+ Gobi 4G Module
792619-001	15W + Type C charging micro USB adapter (100% attached)
793116-005	WWAN module, HP lt4211, LTE/EV-DO/HSPA+, QCOM MDM9615 Integrated GPS
793516-005	WWAN module, Huawei MU736, HSPA+, Intel XMM6260 3G, integrated GPS: HP hs3110 HSPA+ Mobile Broadband Module
823033-001	Antenna kit, includes all WLAN, WWAN, and Proximity Sensor antennas
823034-001	Back cover
823035-001	Cable kit, includes audio board and DMIC cables

Spare part number	Description
823036-001	Metal kit, includes SD and SIM card trays, LCD sheet, battery sheet, audio jack bracket, and POGO pin bracket
823037-001	Outer ring for models without WWAN capability
823038-001	Outer ring for models with WWAN capability
823039-001	Battery and middle plate for models without WWAN capability, 21 Whr, 1S2P, Lithium-polymer, non-user removable
823040-001	Battery and middle plate for models with WWAN capability, 21 Whr, 1S2P, Lithium-polymer, non-user removable
823042-001	Vibration motor board
823045-001	Pen
823046-001	Plastics kit, includes power button and volume button
823047-001	7.86 inch QXGA (2048x1536) BV WLED UWVA 70%cg 450nits MIPI Touchscreen display panel assembly
823048-001	Rubber kit, includes microphone rubber, WWAN gasket, camera foils, and plastic
823049-001	Screw kit
823050-001	Speaker kit (includes left and right speakers and cables)
823051-401	System board equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 2 GB RAM memory, 32 GB eMMC, NFC (WLAN soldered on), includes thermal pads and audio board
823051-601	System board equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 2 GB RAM memory, 32 GB eMMC, NFC (WLAN soldered on), includes thermal pads and audio board
823052-401	System board equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 2 GB RAM memory, 64 GB eMMC NFC (WLAN soldered on), includes thermal pads and audio board
823052-601	System board equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 2 GB RAM memory, 64 GB eMMC NFC (WLAN soldered on), includes thermal pads and audio board
823053-401	System board equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 64 GB eMMC NFC, WWAN support (WLAN soldered on), includes thermal pads and audio board
823053-601	System board equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 64 GB eMMC NFC, WWAN support (WLAN soldered on), includes thermal pads and audio board
823054-401	System board equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 128 GB eMMC NFC, WWAN support (WLAN soldered on), includes thermal pads and audio board
823054-601	System board equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 128 GB eMMC NFC, WWAN support (WLAN soldered on), includes thermal pads and audio board
823055-001	Front-facing webcamera (includes cable)
823056-001	Rear-facing webcamera (includes cable)
823960-001	POGO pin connector and cable
826801-401	System board equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 64 GB eMMC NFC (WLAN soldered on), includes thermal pads and audio board
826801-601	System board equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 64 GB eMMC NFC (WLAN soldered on), includes thermal pads and audio board
833756-001	Tablet for use in Asia, supports SKU# N4L91PA-ABG
833757-001	Tablet for use in Asia, supports SKU# N4L92PA-ABG

Spare part number	Description
833758-001	Tablet for use in Asia, supports SKU# N4L93PA-ABG
833759-001	Tablet for use in North America, supports SKU# N3G36AA-ABA
833760-001	Tablet for use in North America, supports SKU# N3G41AA-ABA
833761-001	Tablet for use in North America, supports SKU# N3G38AA-ABA
833762-001	Tablet for use in North America, supports SKU# N3G33AA-ABA
833763-001	Tablet for use in North America, supports SKU# N3G40AA-ABA

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 00 screw driver
- Phillips 000 screw driver
- Plastic pry tool
- Suction cup
- Tweezers

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			
	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

Tablet component replacement procedures

CAUTION: Tablet components described in this chapter should only be accessed by an authorized service provider. Accessing these parts can damage the tablet and void the warranty.

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

This chapter provides removal and replacement procedures for authorized service provider only parts.

There are as many as 30 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.

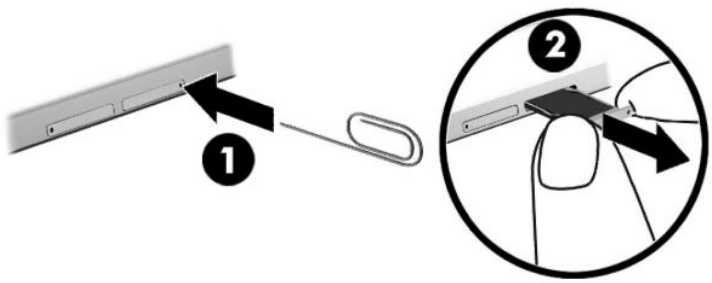
MicroSD card tray

CAUTION: To reduce the risk of loss of data or an unresponsive system, use the following procedure to safely remove the microSD card.

NOTE: The microSD card tray is spared as part of the metal kit, spare part number 823036-001.

Remove the microSD card tray:

1. Save your information and close all programs associated with the microSD card.
2. Click the remove hardware icon on the Windows desktop in the notification area, at the far right of the taskbar. Then follow the on-screen instructions.
3. Insert a small straightened paper clip **(1)** into the card tray access hole.
4. Press in gently only until the card tray is ejected.
5. Remove the tray **(2)** from the tablet.



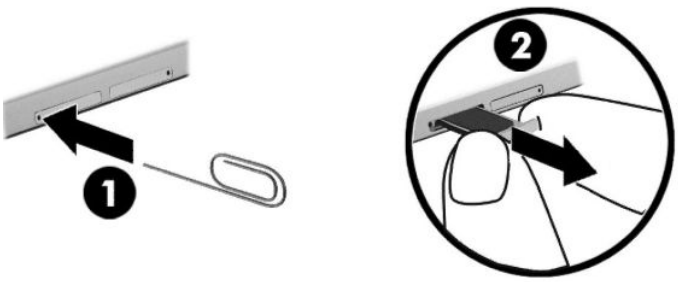
Reverse the steps to replace the tray.

Nano SIM card tray (select models only)

NOTE: The nano SIM card tray is spared as part of the metal kit, spare part number 823036-001.

Remove the SIM card tray:

1. Insert a small straightened paper clip **(1)** into the card tray access hole.
2. Press in gently only until the card tray is ejected.
3. Remove the tray **(2)** from the tablet.



Reverse the steps to replace the tray.

Back cover

Description	Spare part number
Back cover	823034-001

Before disassembling the tablet, follow these steps:

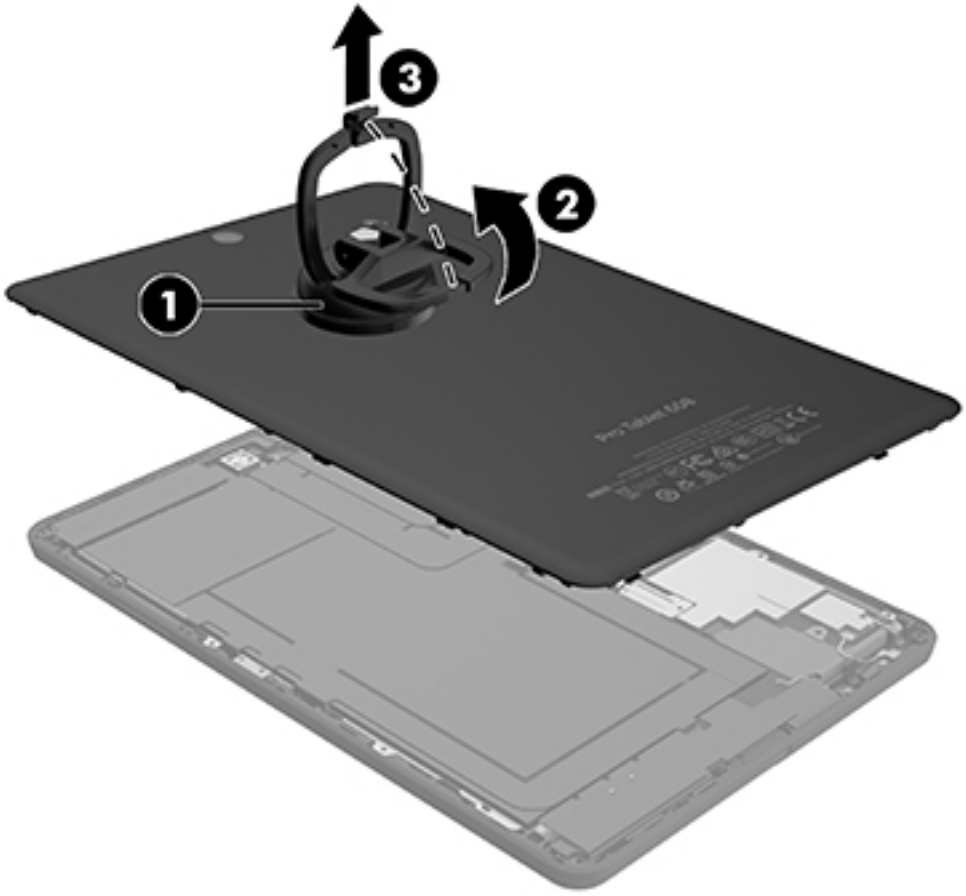
1. Turn off the tablet. If you are unsure whether the tablet is off, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power adapter cord from the tablet.
3. Disconnect all external devices from the tablet.

Remove the back cover:

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

1. Place the tablet on a flat surface, display panel side down.
2. Place a suction tool **(1)** on the back cover near the POGO connector.

3. Lift the tool handle **(2)** and the use the handle **(3)** to remove the back cover.



Reverse this procedure to install the back cover.

Disconnecting the battery

CAUTION: Disconnecting a battery that is the sole power source for the tablet can cause loss of information. To prevent loss of information, save your work or shut down the tablet through the operating system before disconnecting the battery.

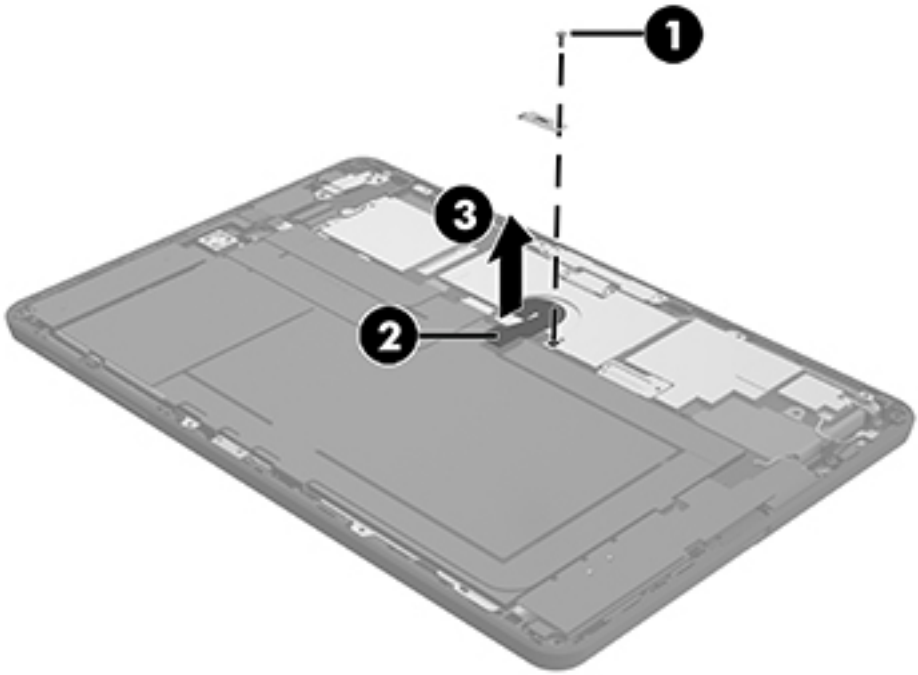
Before disconnecting the battery, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off, 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 Back cover on page 18).

NOTE: Disconnect the battery cable carefully; pulling too hard can break the system board connector.

Disconnect the battery:

1. Remove the 1.2 mm P0 Phillips-head screw **(1)** that secures the battery connector bracket to the system board.
2. Lift the battery connector **(2)** to remove it from the system board.
3. Carefully remove the battery ribbon cable **(3)** from the adhesive that secures it to the system board, and then disconnect the battery from the system board.



Reverse this procedure to connect the battery.

WWAN module (select models only)

Description	Spare part number
HP lt4211, LTE/EV-DO/HSPA+, QCOM MDM9615 Integrated GPS	793116-005
Huawei ME906E, LTE/HSPA+, QCOM MDM9215, integrated GPS: HP lt4112 LTE/HSPA+ Gobi 4G Module	790198-005
Huawei MU736, HSPA+, Intel XMM6260 3G, integrated GPS: HP hs3110 HSPA+ Mobile Broadband Module	793516-005

Before removing the WWAN module, follow these steps:

1. Turn off the computer. If you are unsure whether the computer is off, 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 Back cover on page 18).
5. Disconnect the battery (see Disconnecting the battery on page 19).

Remove the WWAN module:

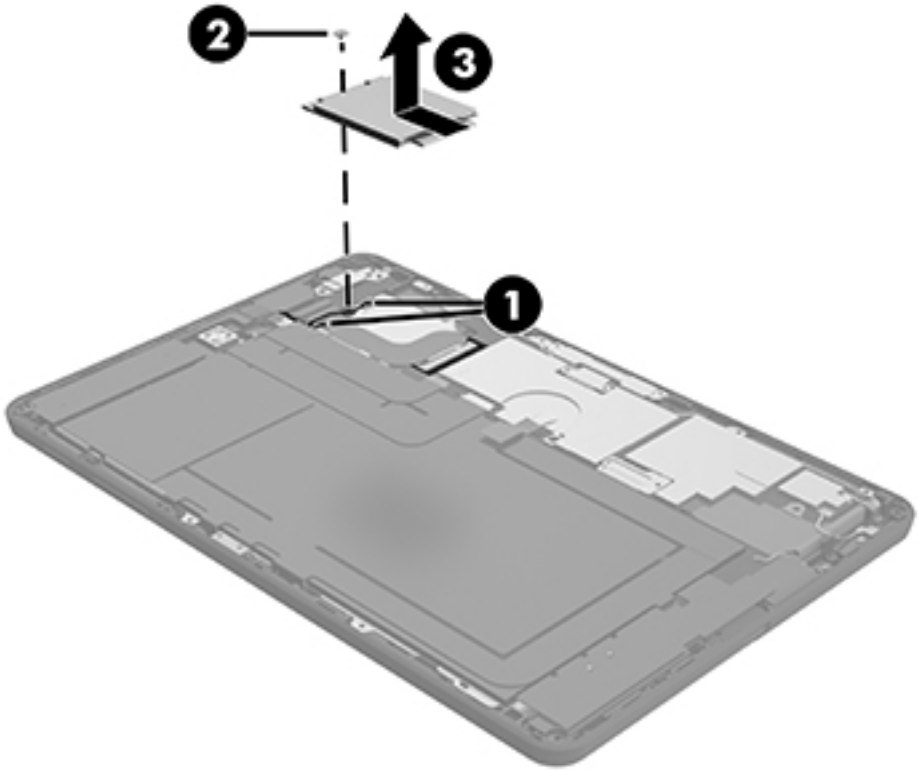
1. Disconnect the WWAN antenna cables **(1)** from the terminals on the WWAN module.

NOTE: The red WWAN antenna cable is connected to the WWAN module “Main” terminal. The blue WWAN antenna cable is connected to the WWAN module “Aux” terminal.

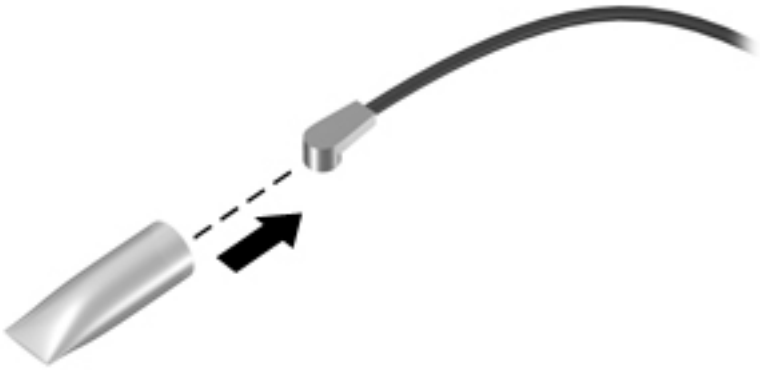
2. Remove the 2 mm P0 Phillips screw **(2)** that secures the WWAN module to the system board.

3. Remove the WWAN module **(3)** by pulling the module away from the slot.

NOTE: WWAN modules are designed with a notch to prevent incorrect insertion.



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



Reverse this procedure to install the WWAN module.

Left speaker

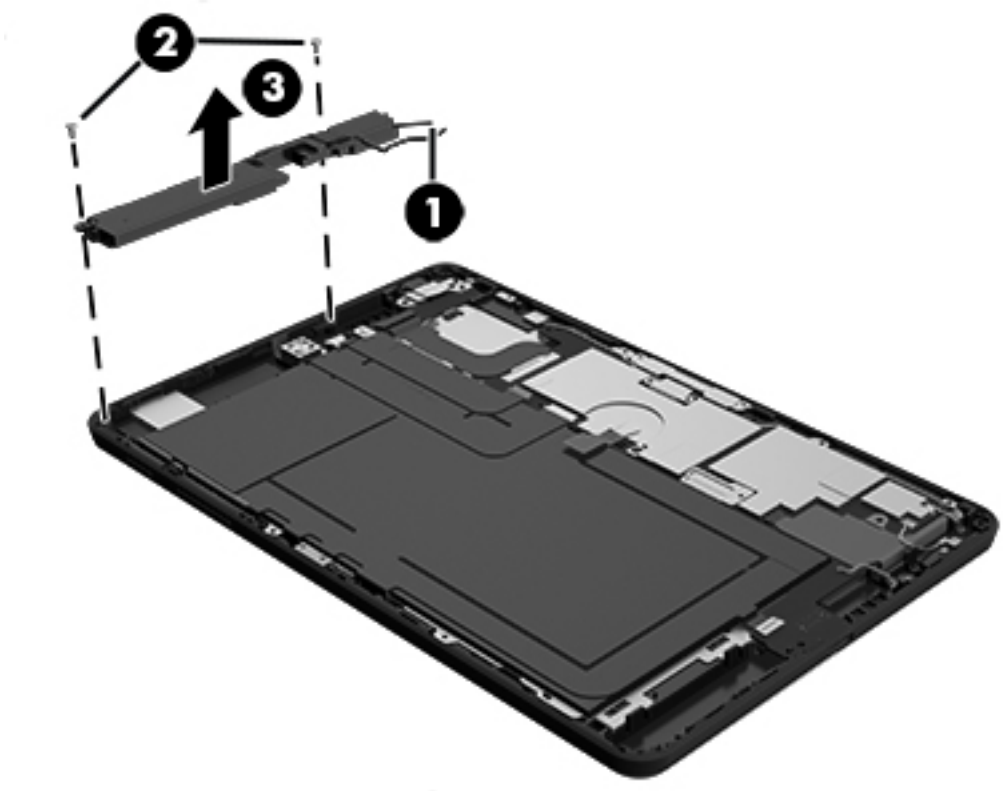
Description	Spare part number
Speaker kit (includes left and right speakers and cables)	823050-001

Before removing the speakers, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power adapter cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see Back cover on page 18).
5. Disconnect the battery (see Disconnecting the battery on page 19).
6. Disconnect the WWAN antenna (see WWAN module (select models only) on page 21).

Remove the left speaker:

1. Disconnect the left speaker cable **(1)** from the system board .
2. Remove the two 3 mm P0 Phillips screws **(2)** that secure the left speaker to the display panel assembly.
3. Lift and remove the left speaker **(3)**.



Reverse this procedure to install the left speaker.

Audio board

IMPORTANT: The audio board is spared with the system board. You must replace the system board when you replace the audio board. See System board on page 30.

The BIOS on the tablet is injected into the audio board. If you replace the audio board, but not the system board, you must reflash the Trusted Execution Environment (TXE) region in SPI ROM to avoid a TXE encryption key mismatch between the audio board and the system board.

Before removing the audio board, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power adapter cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see Back cover on page 18).
5. Disconnect the battery (see Disconnecting the battery on page 19).
6. Remove the WWAN module (see WWAN module (select models only) on page 21).
7. Remove the left speaker (see Left speaker on page 23).

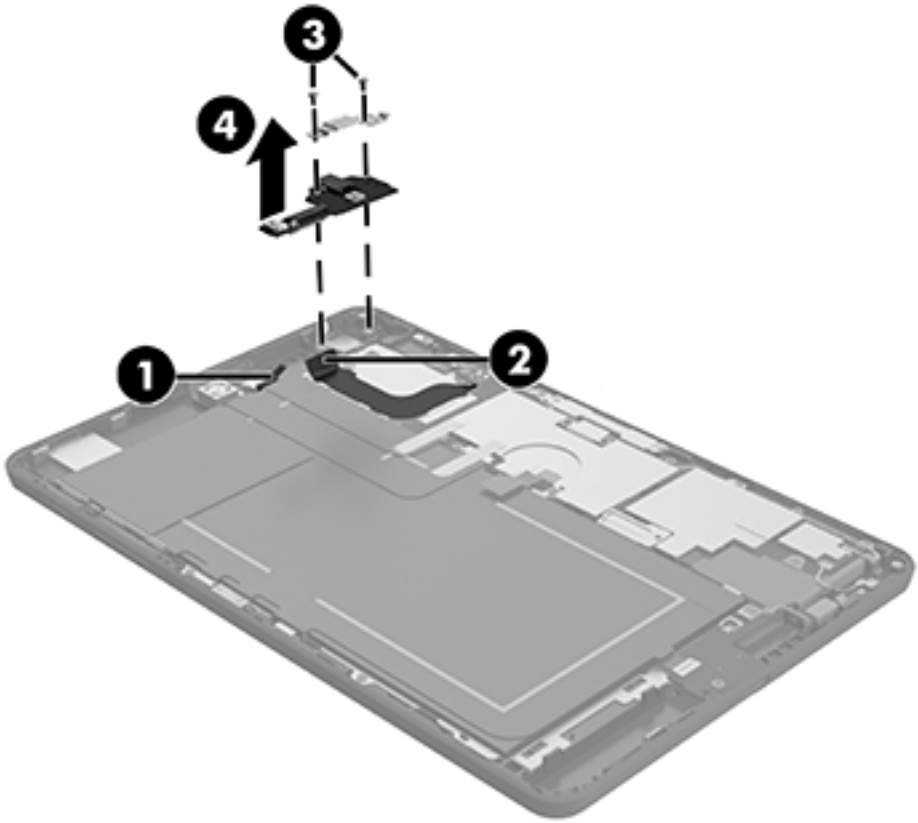
Remove the audio board:

CAUTION: Use care to prevent damaging the ZIF connectors and ribbon cables.

IMPORTANT: Make careful note of the placement of the proximity sensor antenna for later replacement.

1. Release the proximity antenna ZIF connector **(1)**, and then disconnect the proximity sensor antenna ribbon cable from the audio board.
2. Release the audio board ZIF connector **(2)**, and then disconnect the audio board ribbon cable from the audio board.
3. Remove the two 3 mm P0 Phillips screws **(3)** that secure the audio board bracket to the display panel assembly, and then remove the bracket.

4. Lift and remove the audio board **(4)**.



Reverse this procedure to install the audio board.

Vibration motor board

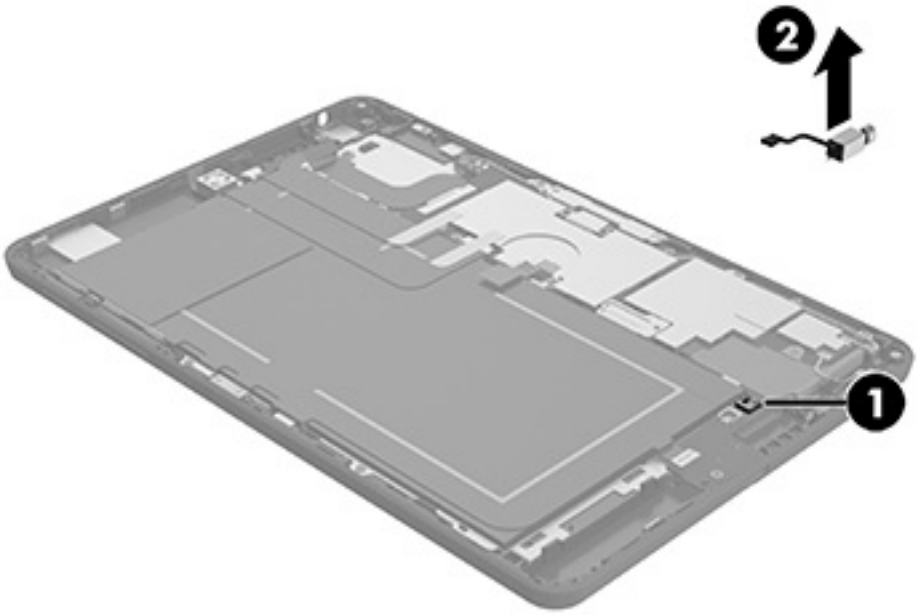
Description	Spare part number
Vibration motor board	823042-001

Before removing the vibration motor board, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power adapter cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see Back cover on page 18).
5. Disconnect the battery (see Disconnecting the battery on page 19).

Remove the vibration motor board:

1. Lift up the vibration motor board, and then disconnect the cable connector **(1)** from the system board.
2. Remove the vibrator motor cable from the routing tab on the right speaker, and then remove the vibration motor board **(2)**.



Reverse this procedure to install the vibration motor board.

Front-facing webcamera

Description	Spare part number
Front-facing webcamera (includes cable)	823055-001

Before removing the front-facing webcamera, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power adapter cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see Back cover on page 18).
5. Disconnect the battery (see Disconnecting the battery on page 19).
6. Remove the left speaker (see Left speaker on page 23).
7. Disconnect the proximity sensor antenna ribbon cable from the audio board (see Audio board on page 24).

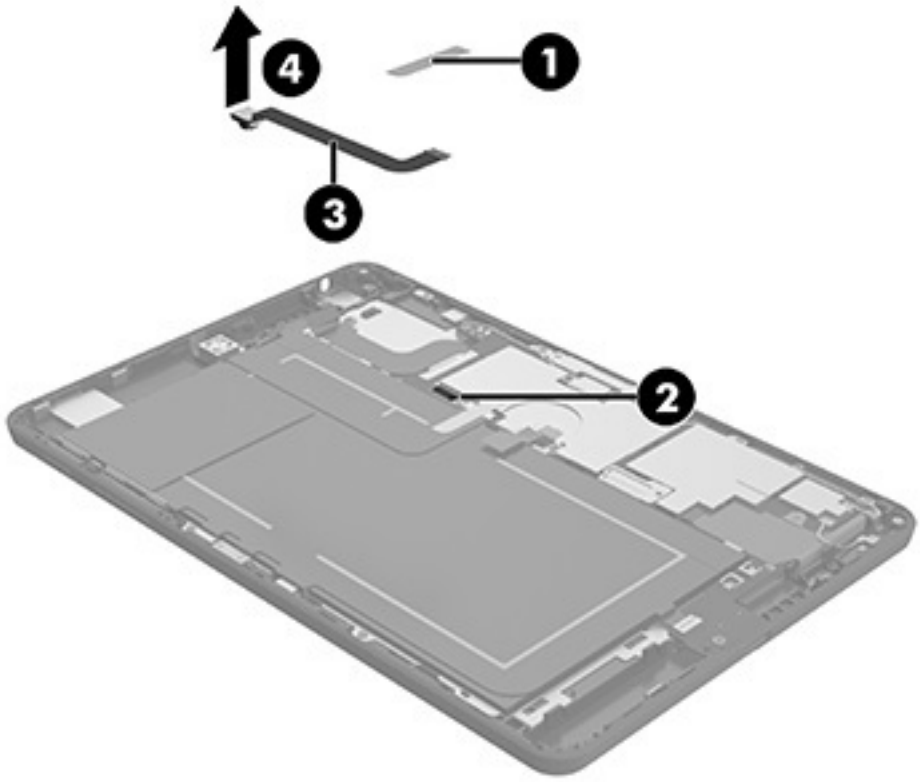
Remove the front-facing webcamera:

CAUTION: Use care to prevent damaging the ZIF connectors and ribbon cables.

1. Release the copper grounding strap and remove the plastic tape **(1)** covering the front-facing webcamera ZIF connector.
2. Release the ZIF connector **(2)** attaching the front-facing webcamera cable to the system board.
3. Peel up the adhesive connecting the webcamera cable to the battery. Start from the elbow of the adhesive and lift the front-facing webcamera cable **(3)** from the display panel assembly.

IMPORTANT: The webcamera is held in place by two plastic retaining clips. Detach the camera carefully to avoid breaking the clips.

4. Carefully remove the front-facing webcamera **(4)** from the retention clips that secure it to the display panel assembly, and then remove the webcamera.



Reverse this procedure to install the front-facing webcamera.

Rear-facing webcamera

Description	Spare part number
Rear-facing webcamera (includes cable)	823056-001

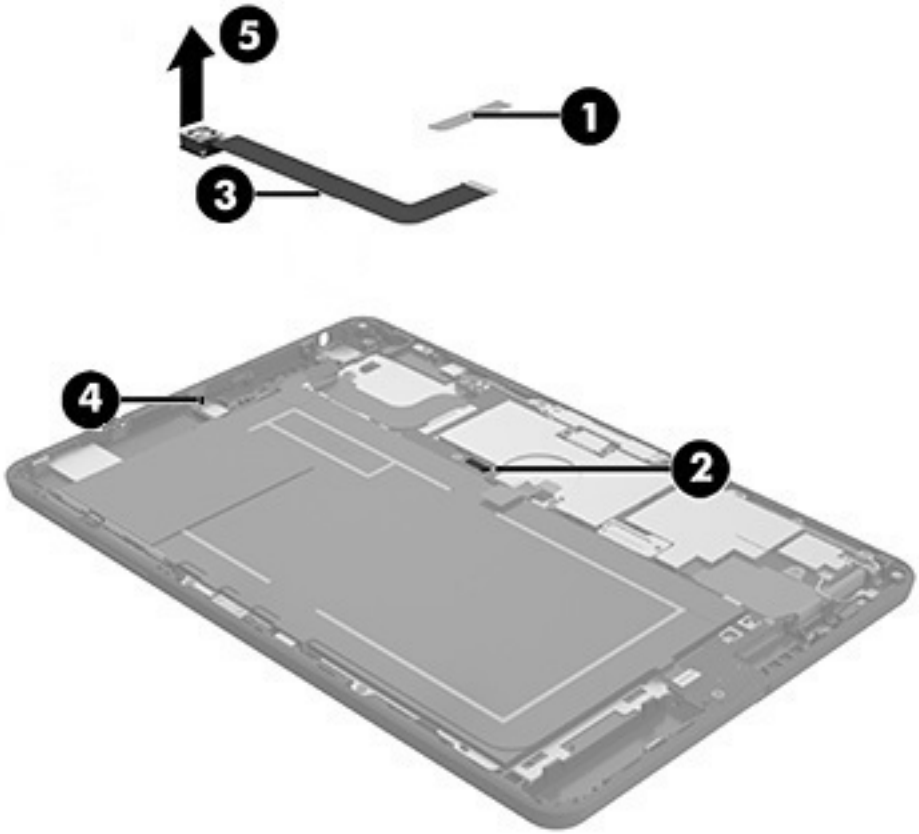
Before removing the rear-facing webcamera, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power adapter cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the back cover (see Back cover on page 18).
5. Disconnect the battery (see Disconnecting the battery on page 19).
6. Remove the left speaker (see Left speaker on page 23).
7. Disconnect the proximity sensor antenna ribbon cable from the audio board (see Audio board on page 24).

Remove the rear-facing webcamera:

CAUTION: Use care to prevent damaging the ZIF connectors and ribbon cables.

1. Release the copper grounding strap and remove the plastic tape **(1)** covering the rear-facing webcamera ZIF connector.
2. Release the ZIF connector **(2)** attaching the rear-facing webcamera cable to the system board.
3. Peel up the adhesive connecting the webcamera cable to the battery. Start from the elbow of the adhesive and lift the rear-facing webcamera cable **(3)** from the system board.
4. Route the camera cable through the antenna proximity sensor area **(4)**.
5. Remove the rear-facing webcamera **(5)** from the display panel assembly.



Reverse this procedure to install the rear-facing webcamera.

IMPORTANT: Ensure that the ring gasket is properly positioned in the rear-facing webcam cradle before replacing the rear-facing camera.

System board

Description	Spare part number
Equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 2 GB RAM memory, 32 GB eMMC, NFC (WLAN soldered on), includes thermal pads and audio board	823051-601
Equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 2 GB RAM memory, 64 GB eMMC, NFC (WLAN soldered on), includes thermal pads and audio board	823052-601
Equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 64 GB eMMC NFC, WWAN support (WLAN soldered on), includes thermal pads and audio board	823053-601
Equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 64 GB eMMC NFC (WLAN soldered on), includes thermal pads and audio board	826801-601
Equipped with Windows 10, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 128 GB eMMC NFC, WWAN support (WLAN soldered on), includes thermal pads and audio board	823054-601
Equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 2 GB RAM memory, 32 GB eMMC, NFC (WLAN soldered on), includes thermal pads and audio board	823051-401
Equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 2 GB RAM memory, 64 GB eMMC, NFC (WLAN soldered on), includes thermal pads and audio board	823052-401
Equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 64 GB eMMC NFC, WWAN support (WLAN soldered on), includes thermal pads and audio board	823053-401
Equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 64 GB eMMC NFC (WLAN soldered on), includes thermal pads and audio board	826801-401
Equipped with Windows 8.1, Intel Atom x5-Z8500 Quad Core 4 GB RAM memory, 128 GB eMMC NFC, WWAN support (WLAN soldered on), includes thermal pads and audio board	823054-401

IMPORTANT: The processor, memory, WLAN+Bluetooth, and eMMC storage card are all embedded on the system board. If any of these components fail and require replacement, the entire system board must be replaced. The tablet provides units with 32G, 64GB, and 128GB eMMC modules soldered onto the system board. In addition, the system board contains the Windows DPK. If you are replacing the system board, be sure to order the board that contains the correct storage capacity and Windows OS version.

IMPORTANT: Select tablet models are configured with an Intel® Atom™ series processor and a Windows® operating system. **If your tablet is configured as described, do not change the processor configuration setting in msconfig.exe from 4 or 2 processors to 1 processor.** If you do so, your tablet will not restart. You will have to perform a factory reset to restore the original settings.

IMPORTANT: The audio board is paired with the system board. The audio board must be replaced every time the system board is replaced and is provided in the system board spare kit. When the audio board and system board are replaced together, reflashing of the TXE region in SPI ROM is not necessary.

The system boards are not localized; if the system board is replaced, the operating system must also be reinstalled.

IMPORTANT: After system board replacement, be sure to complete postinstallation tasks as required that may include:

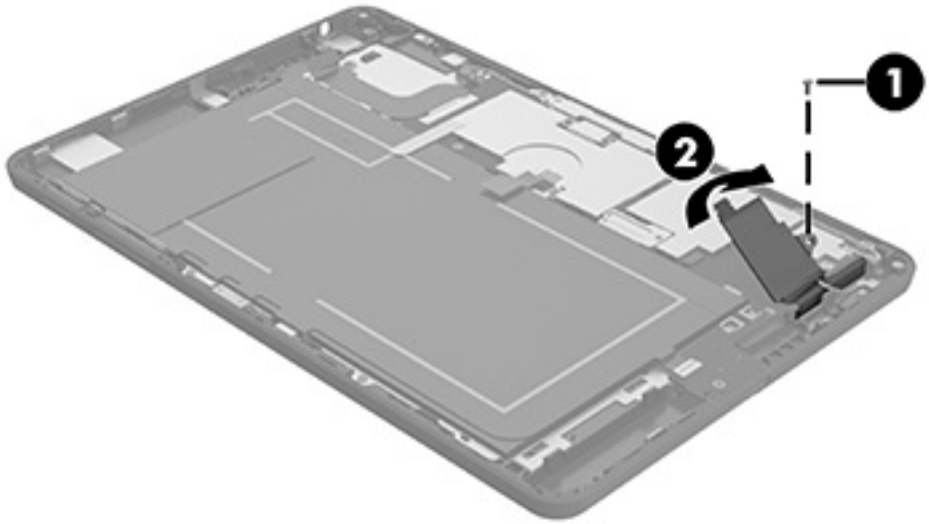
- Verifying functionality of the tablet
- Updating the BIOS
- Updating DMI and other settings
- Injecting Windows Digital Product Keys

Before removing the system board, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power adapter cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the MicroSD card tray (see MicroSD card tray on page 17).
5. Remove the Nano SIM card tray (select products only) (see Nano SIM card tray (select models only) on page 18.
6. Remove the back cover (see Back cover on page 18).
7. Disconnect the battery (see Disconnecting the battery on page 19).
8. Remove the WWAN module (see WWAN module (select models only) on page 21).
9. Remove the left speaker (see Left speaker on page 23).
10. Remove the audio board (see Audio board on page 24).
11. Remove the vibration motor board (see Vibration motor board on page 26).
12. Remove the front-facing webcamera (see Front-facing webcamera on page 27).
13. Remove the rear-facing webcamera (see Rear-facing webcamera on page 28).

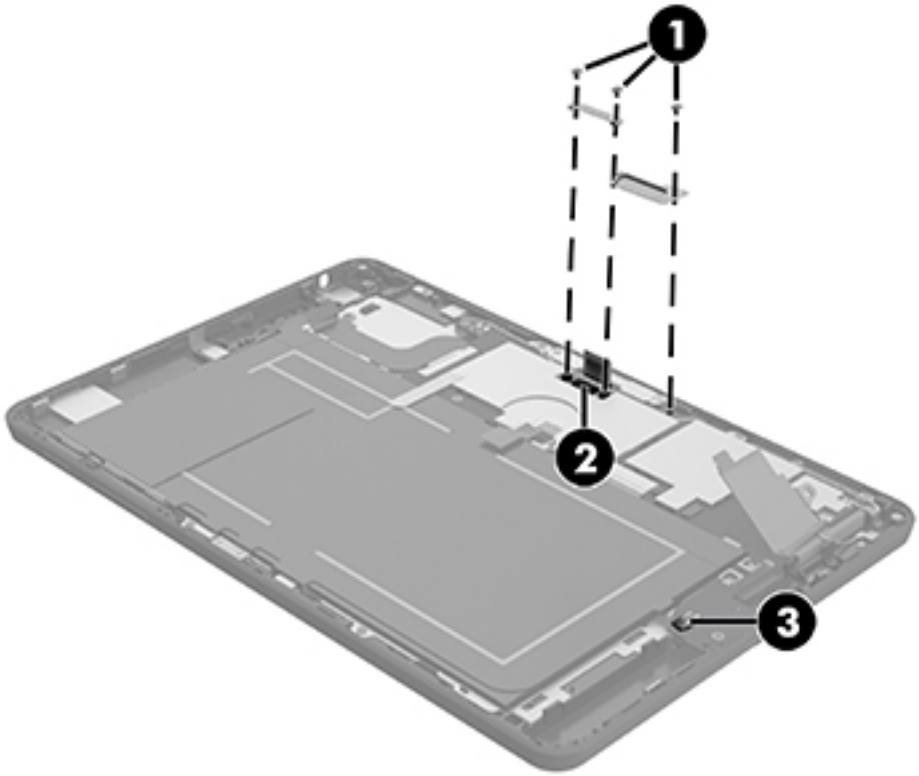
Remove the system board:

1. Remove the screw **(1)** that connects the touch module to the system board, and then lift up the touch module **(2)** to move it out of the way.

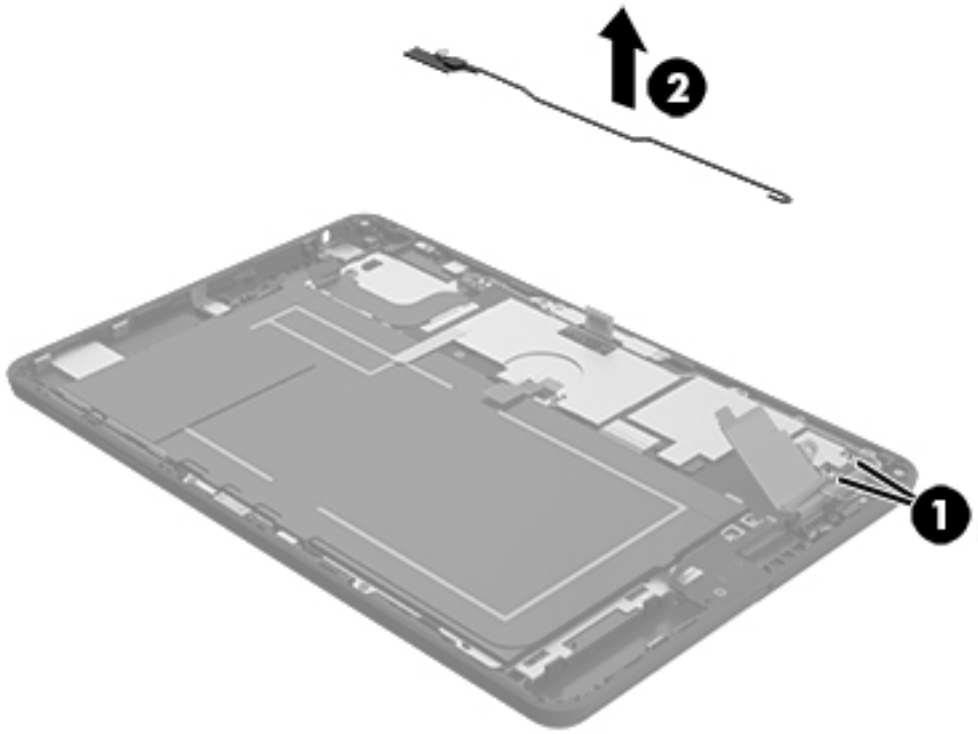


2. Remove the two 1.2 mm P0 Phillips screws that secure the POGO pin metal bracket to the system board and the two 1.2 mm P0 Phillips-head screws that secure the display panel cable bracket, and then remove the brackets **(1)**.

3. Disconnect the POGO pin connector **(2)** from the system board and disconnect the microphone ribbon cable, and disconnect the right speaker cable **(3)** and move the cables out of the way.

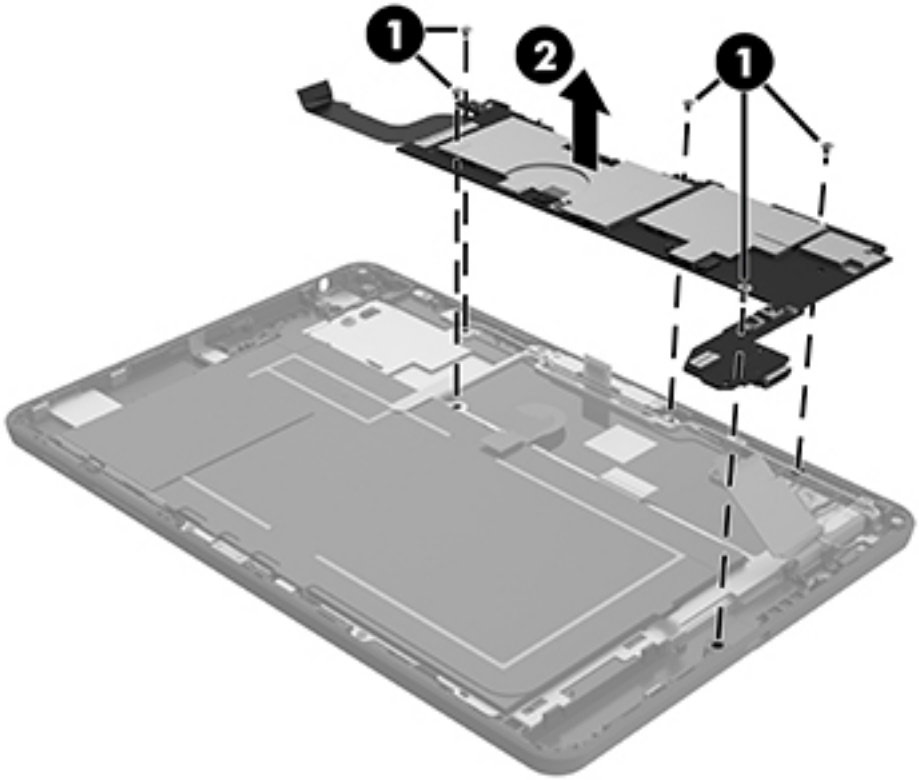


4. Carefully disconnect the wireless LAN antenna cables **(1)** from the system board, Remove the MAIN wireless LAN antenna cable from the routing clips on the system board and remove the cable **(2)**.

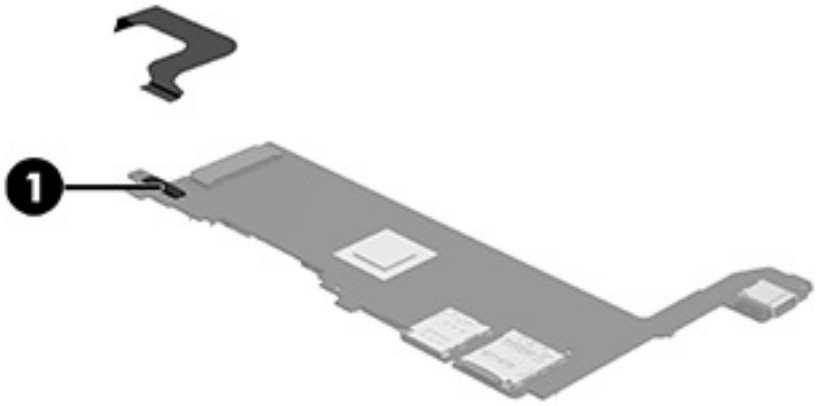


5. Remove the five Phillips silver screws **(1)** securing the system board to the display panel assembly.

6. Carefully lift the left edge of the system board and at an angle, remove the USB port from the cutout in the display panel assembly. and then remove the system board **(2)**.



7. Turn over the system board, and then release the ZIF connector to remove the audio cable **(1)** from the system board.



Reverse this procedure to install the system board.

Right speaker

Description	Spare part number
Speaker kit (includes left and right speakers and cables)	823050-001

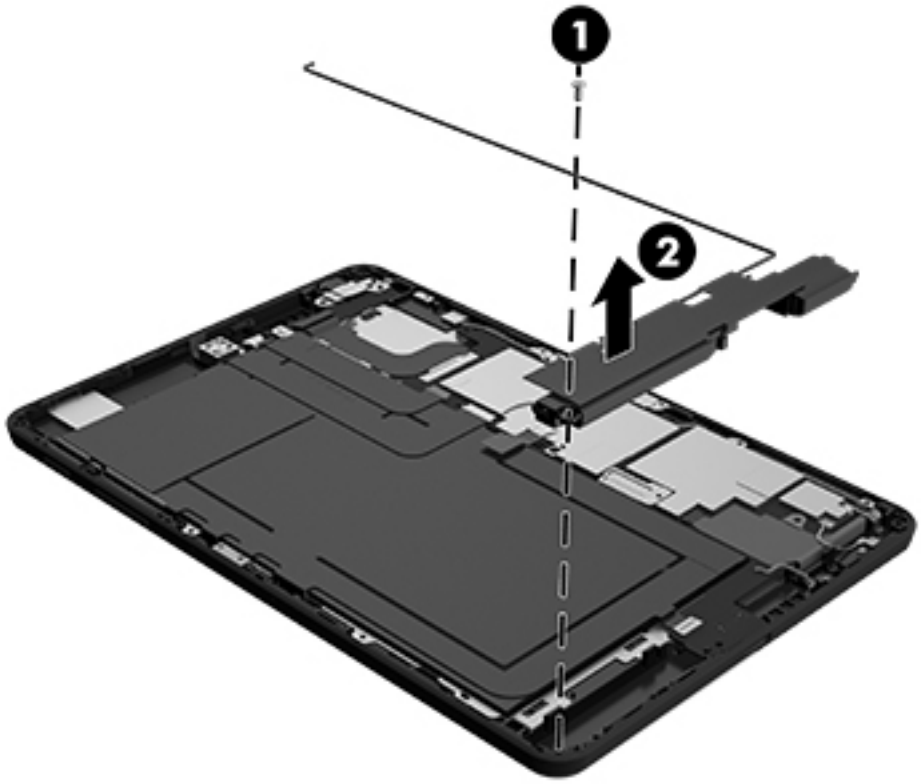
Before removing the right speaker, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power adapter cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the MicroSD card tray (see MicroSD card tray on page 17).
5. Remove the Nano SIM card tray (select products only) (see Nano SIM card tray (select models only) on page 18.
6. Remove the back cover (see Back cover on page 18).
7. Disconnect the battery (see Disconnecting the battery on page 19).
8. Remove the WWAN module (see WWAN module (select models only) on page 21).
9. Remove the left speaker (see Left speaker on page 23).
10. Remove the audio board (see Audio board on page 24).
11. Remove the vibration motor board (see Vibration motor board on page 26).
12. Remove the front-facing webcamera (see Front-facing webcamera on page 27).
13. Remove the rear-facing webcamera (see Rear-facing webcamera on page 28).
14. Remove the system board (see System board on page 30).

Remove the right speaker:

1. Remove the 3 mm P0 Phillips screw **(1)** that secures the right speaker to the display panel assembly.

2. Lift and remove the right speaker **(2)**.



Reverse this procedure to install the right speaker.

Battery and middle plate

Description	Spare part number
Battery and middle plate for models without WWAN capability, 21 Whr, 1S2P, Lithium-polymer, non-user removable	823039-001
Battery and middle plate for models with WWAN capability, 21 Whr, 1S2P, Lithium-polymer, non-user removable	823040-001

Before removing the battery, follow these steps:

1. Turn off the tablet. If you are unsure whether the tablet is off, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power adapter cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the MicroSD card tray (see MicroSD card tray on page 17).
5. Remove the Nano SIM card tray (select products only) (see Nano SIM card tray (select models only) on page 18.
6. Remove the back cover (see Back cover on page 18).
7. Disconnect the battery (see Disconnecting the battery on page 19).

8. Remove the WWAN module (see WWAN module (select models only) on page 21).
9. Remove the left speaker (see Left speaker on page 23).
10. Remove the audio board (see Audio board on page 24).
11. Remove the vibration motor board (see Vibration motor board on page 26).
12. Remove the front-facing webcamera (see Front-facing webcamera on page 27).
13. Remove the rear-facing webcamera (see Rear-facing webcamera on page 28).
14. Remove the system board (see System board on page 30).
15. Remove the right speaker (see Right speaker on page 35).

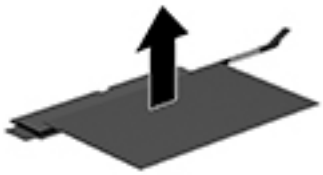
WARNING! To reduce potential safety issues, use only the battery provided with the tablet, a replacement battery provided by HP, or a compatible battery purchased from HP.

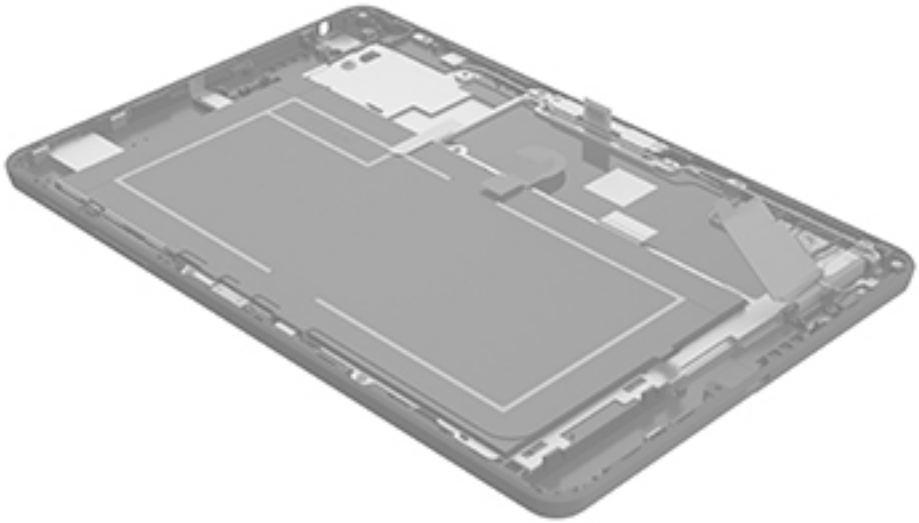
WARNING! Do not remove the battery from the middle plate. To avoid personal injury and damage to the product, use extreme care not to puncture, twist, or crack the battery. A puncture or rupture of the battery internally can cause a short with the battery bursting into flames.

CAUTION: Removing a battery that is the sole power source for the tablet can cause loss of information. To prevent loss of information, save your work or shut down the tablet through the operating system before disconnecting and removing the battery.

Remove the battery and middle plate:

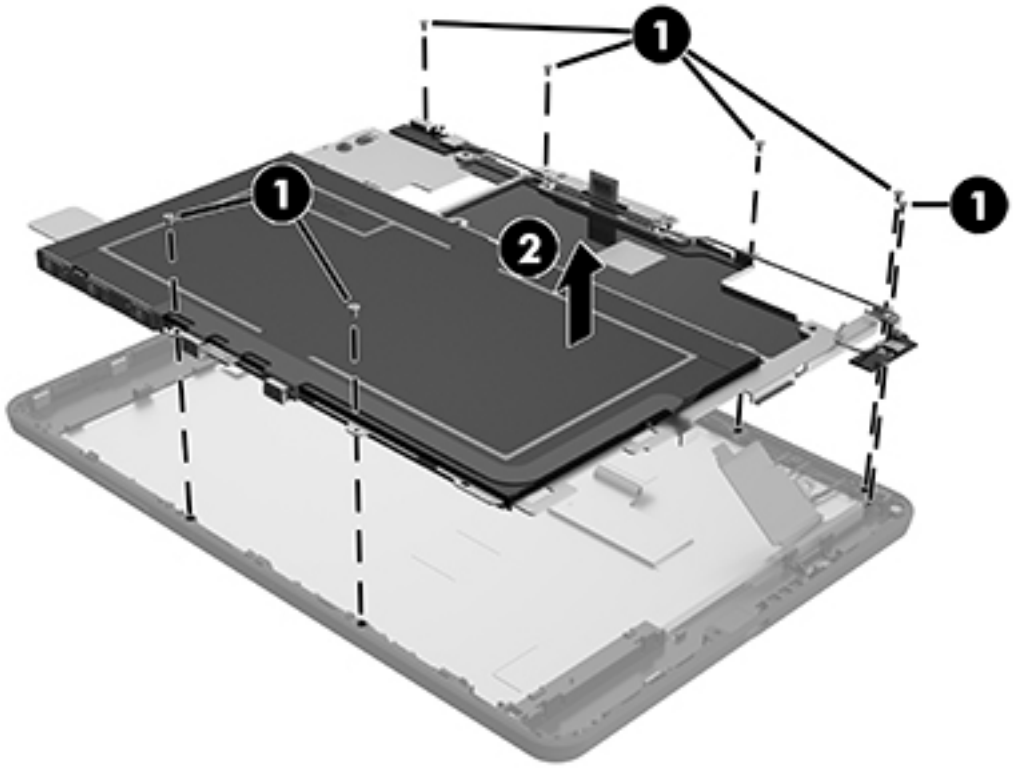
1. Peel off and remove the proximity sensor plastic **(1)**.





2. Remove the six 2 mm P0 Phillips and two 3 mm P0 Phillips screws **(1)** that secure the middle frame to the display assembly.

3. Lift and remove the battery and middle plate **(2)**.



Reverse this procedure to install the battery and middle plate.

Outer ring

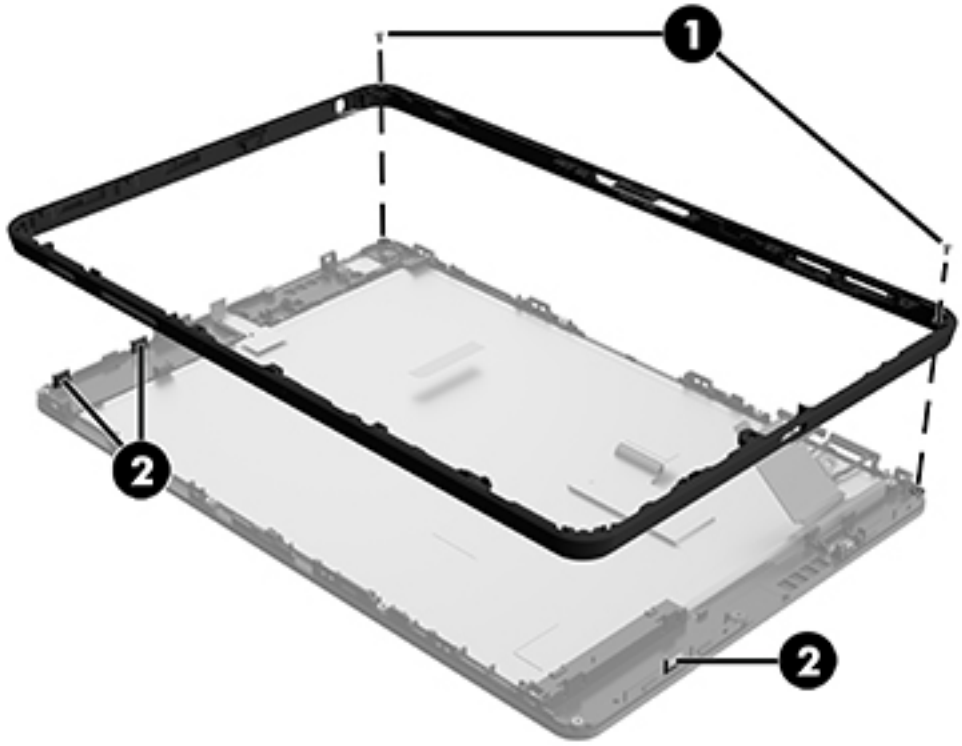
Description	Spare part number
Outer ring for models with WWAN capability	823038-001
Outer ring for models without WWAN capability	823037-001

1. Turn off the tablet. If you are unsure whether the tablet is off, turn the tablet on, and then shut it down through the operating system.
2. Disconnect all external devices from the tablet.
3. Remove the MicroSD card tray (see MicroSD card tray on page 17).
4. Remove the Nano SIM card tray (select products only) (see Nano SIM card tray (select models only) on page 18).
5. Remove the back cover (see Back cover on page 18).
6. Disconnect the battery (see Disconnecting the battery on page 19).
7. Remove the WWAN module (see WWAN module (select models only) on page 21).
8. Remove the left speaker (see Left speaker on page 23).
9. Remove the audio board (see Audio board on page 24).

10. Remove the vibration motor board (see Vibration motor board on page 26).
11. Remove the front-facing webcamera (see Front-facing webcamera on page 27).
12. Remove the rear-facing webcamera (see Rear-facing webcamera on page 28).
13. Remove the system board (see System board on page 30).
14. Remove the right speaker (see Right speaker on page 35).
15. Remove the battery and middle plate (see Battery and middle plate on page 36).

Remove the outer ring:

1. Remove the power and volume buttons from the ring, and then remove the two 2 mm P0 Phillips screws **(1)** that secure the outer ring to the display panel assembly.
2. Disconnect the outer ring from the clips **(2)** on the frame, and then lift the outer ring from the display assembly.



Reverse this procedure to install the outer ring.

POGO pin connector

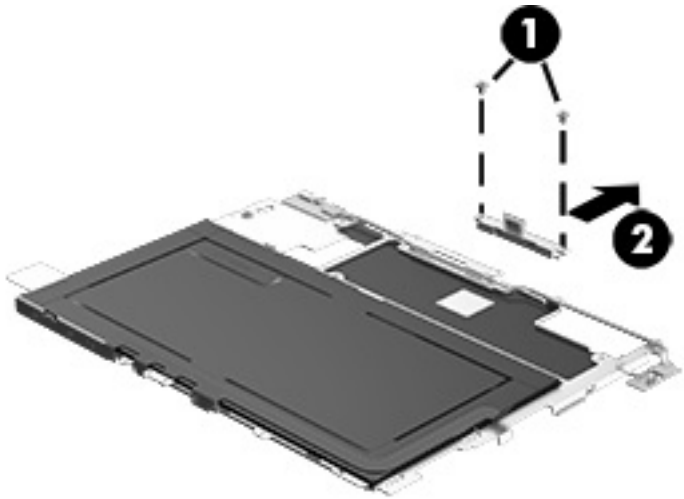
Description	Spare part number
POGO pin connector and cable	823960-001

1. Turn off the tablet. If you are unsure whether the tablet is off, turn the tablet on, and then shut it down through the operating system.
2. Disconnect the power from the tablet by unplugging the power adapter cord from the tablet.
3. Disconnect all external devices from the tablet.
4. Remove the MicroSD card tray (see MicroSD card tray on page 17).
5. Remove the Nano SIM card tray (select products only) (see Nano SIM card tray (select models only) on page 18.
6. Remove the back cover (see Back cover on page 18).
7. Disconnect the battery (see Disconnecting the battery on page 19).
8. Remove the WWAN module (see WWAN module (select models only) on page 21).
9. Remove the left speaker (see Left speaker on page 23).
10. Remove the audio board (see Audio board on page 24).
11. Remove the vibration motor board (see Vibration motor board on page 26).
12. Remove the front-facing webcamera (see Front-facing webcamera on page 27).
13. Remove the rear-facing webcamera (see Rear-facing webcamera on page 28).
14. Remove the system board (see System board on page 30).
15. Remove the right speaker (see Right speaker on page 35).
16. Remove the battery and middle plate (see Battery and middle plate on page 36).
17. Remove the outer ring (see Outer ring on page 38).

Remove the POGO pin connector:

1. Remove two 2.3 mm P0 Phillips screws **(1)**, that secure the POGO pin connector to the display enclosure **(1)**.

2. Remove the POGO pin connector **(2)**, and then remove the POGO pin connector ribbon cable from the adhesive that secures it to the display enclosure.



Reverse this procedure to install the POGO pin connector.

6 Specifications

	Metric	U.S.
Dimensions (portrait orientation)		
Height	**20.70 cm**	8.14 in
Width	**13.70 cm**	5.39 in
Depth	**0.84 cm**	0.33 in
Weight (lowest weight configuration)	**0.42 kg**	0.92 lb
Input power		
The tablet operates on DC power, which can be supplied by an AC or a DC power source. The AC power source must be rated at 100–240 V, 50/60 Hz, 0.3–1.0 A. **NOTE:** . The HP adapter included with your tablet is recommended for charging the tablet.		
Temperature		
Operating	**0°C to 35°C**	32°F to 95°F
Nonoperating	**-20°C to 60°C**	-4°F to 140°F
Relative humidity (non-condensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%	
Maximum altitude (unpressurized)		
Operating	**-15 m to 3,048 m**	-50 ft to 10,000 ft
Nonoperating	**-15 m to 12,192 m**	-50 ft to 40,000 ft
NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The device operates well within this range of temperatures.		

7 Using Computer Setup (BIOS)

Computer Setup, or F10 BIOS Setup (Basic Input/Output System), controls communication between all the input and output devices on the system (such as disk drives, display, keyboard, mouse, and printer). Computer Setup includes settings for the types of devices installed, the startup sequence of the tablet, and the amount of system and extended memory.

NOTE: Use extreme care when making changes in Computer Setup. Errors can prevent the tablet from operating properly.

Starting Computer Setup

1. Shut down the tablet.
2. Press the power button and when the **Press and hold the Volume down button or the ESC key on external Keyboard to enter Startup Menu** message displays, press the volume down button.

   The Startup menu is displayed.
3. Tap **F10 BIOS Setup** to enter Computer Setup.

Navigating and selecting in Computer Setup

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

1. Shut down the tablet.
2. Press the power button and when the **Press and hold the Volume down button or the ESC key on external Keyboard to enter Startup Menu** message displays, press the volume down button.

   The Startup menu is displayed.
3. Tap **F10 BIOS Setup** to enter Computer Setup.
   - Tap a menu or a menu item to select it.
   - To close open dialog boxes and return to the main Computer Setup screen, tap **Escape**, and then follow the on-screen instructions.
4. To exit Computer Setup menus without saving your changes, select **Main**, select **Ignore Changes and Exit**, and then follow the on-screen instructions.

   – or –

   To save your changes and exit, select **Main**, select **Save Changes and Exit**, and then follow the on-screen instructions.

Restoring factory settings in Computer Setup

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

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

1. Shut down the tablet.
2. Press the power button and when the **Press and hold the Volume down button or the ESC key on external Keyboard to enter Startup Menu** message displays, press the volume down button.

   The Startup menu is displayed.
3. Tap **F10 BIOS Setup** to enter Computer Setup.
4. Select **Main**, and then tap **Restore Defaults**.
5. Follow the on-screen instructions.
6. Make the selections to save your changes and exit.

   Your changes go into effect when the tablet restarts.

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

Updating the BIOS

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

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

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

Determining the BIOS version

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

BIOS version information (also known as *ROM date* and *System BIOS*) can be revealed from the Start screen from the **HP Support Assistant** app, or by using Setup Utility (BIOS).

1. Shut down the tablet.
2. Press the power button and when the **Press and hold the Volume down button or the ESC key on external Keyboard to enter Startup Menu** message displays, press the volume down button.

   The Startup menu is displayed.
3. Tap **F10 BIOS Setup** to enter Computer Setup.
4. Select **Main**, select **System Information**, and then make note of your BIOS version.
5. Make the selections to exit without saving your changes.

Downloading a BIOS update

CAUTION: To reduce the risk of damage to the tablet or an unsuccessful installation, download and install a BIOS update only when the tablet is connected to reliable external power using the AC adapter. Do not download or install a BIOS update while the tablet 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 on the tablet by unplugging the power cord from the AC outlet.

Do not shut down the tablet or initiate Sleep.

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

1. To access HP Support Assistant:

   Windows 10

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

   – or –

   Tap the question mark icon in the taskbar.

   Windows 8

   On the Start screen, tap the **HP Support Assistant** app.

   – or –

   From the Windows desktop, tap the question mark icon in the taskbar.

2. Make the selections for updates.
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 tablet. Make a note of the date, name, or other identifier. You may need this information to locate the update later, after it has been downloaded to your hard drive.

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

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

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

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

1. Access File Explorer:

   Windows 10

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

   Windows 8

From the Start screen, tap , type `file`, and then tap **File Explorer**.

2. Select your hard drive designation. The hard drive designation is typically Local Disk (C:).
3. Using the hard drive path you recorded earlier, open the folder on your hard drive that contains the update.
4. Double-tap 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.

8 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):

1. Turn off the tablet.
2. Press the power button and when the **Press and hold the Volume down button or the ESC key on external Keyboard to enter Startup Menu** message displays, press the volume down button.

   The Startup menu is displayed.
3. Tap **F2 System Diagnostics**.
4. When the diagnostic tool opens, select the type of diagnostic test you want to run, and then follow the on-screen instructions.

NOTE: If you need to stop a diagnostic test, press the volume down button.

Downloading HP PC Hardware Diagnostics (UEFI)

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

The preferred method is to download UEFI to your tablet. You can also download UEFI to a USB device; depending on the type of USB device used, an adapter for the USB Type-C port may needed to transfer the data to the tablet.

There are two options to download HP PC Hardware Diagnostics:

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

1. Go to http://www.hp.com/go/techcenter/pcdiags.
2. Click the **Download** link under HP PC Hardware Diagnostics, and then select **Run**.

Option 2: Support and Drivers pages—Provide 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 model, and then select your operating system.
5. In the **Diagnostic** section, click **HP UEFI Support Environment**.

   – or –

   Click **Download**, and then select **Run**.

9 Backup and recovery

To protect your information, create recovery media by using an optional external flash drive and use Windows backup and restore utilities to back up and create system restore points. In case of system failure, you can use the backup files to restore the contents of your tablet.

IMPORTANT: If you will be creating recovery media or using recovery media to recover your system, the tablet battery must be at least 70% charged before you start the process.

NOTE: For detailed instructions on various backup and restore options, perform a search for these topics in the Get started app or Windows Help and Support.

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

NOTE: Windows includes the User Account Control feature to improve the security of your tablet. You may be prompted for your permission or password for tasks such as installing software, running utilities, or changing Windows settings. For more information, see the Get started app or Windows Help and Support.

Creating recovery media and backups

The following methods of creating recovery media and backups are available.

- Use HP Recovery Manager to create recovery media after you successfully set up the tablet. This step creates a Windows Reset image that 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 recovery media on page 48.
- Use Windows tools to create system restore points and create backups of personal information.

  For more information, see Backing up your information on page 49.

Creating recovery media

HP Recovery Manager is a software program that allows you to create recovery media (using a flash drive) after you successfully set up the tablet. The recovery media can be used to perform system recovery if the hard drive becomes corrupted. System recovery reinstalls the original operating system. Recovery media can also be used to repair the system if you replace the hard drive.

- Handle these recovery tools carefully, and keep them in a safe place.
- HP Recovery Manager examines the tablet and determines the required storage capacity for the media that will be required.
- The creation process can take an hour or more. Do not interrupt the creation process.

To create recovery media:

1. Access HP Recovery Manager:

   Windows 10

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

   Windows 8

From the Start screen, tap , type `recovery`, and then select **HP Recovery Manager**.

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

Backing up your information

Recovery after a system failure is as good as your most recent backup. You should create system repair media and your initial backup immediately after initial system setup. As you add new software and data files, you should continue to back up your system on a regular basis to maintain a reasonably current backup.

For more information on the Windows backup features, see the Get started app or Windows Help and Support.

Performing a system recovery

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

- When your tablet is not working properly and you need to regain system stability, the Windows Refresh option allows you to start fresh and keep what is important to you. For more information, see the Get started app or Windows Help and Support.
- Windows recovery tools: You can use Windows Backup and Restore to recover information you have previously backed up. You can also use Windows Startup Repair to fix problems that might prevent Windows from starting correctly. See Using the Windows recovery tools on page 49.
- The Windows Reset option allows you to perform detailed reformatting of your tablet, or remove personal information before you give away or recycle your tablet. For more information on these features, see the Get started app or Windows Help and Support.

NOTE: If you are unable to boot (start up) your tablet, contact support.

Using the Windows recovery tools

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

Windows recovery tools offer you the ability to recover information you previously backed up as well as refresh the tablet.

The Windows Reset option allows you to perform detailed reformatting of your tablet, or remove personal information before you give away or recycle your tablet. For more information on these features, see the Get started app or Windows Help and Support.

To recover information you previously backed up, see Get started app or Windows Help and Support for steps on restoring files and folders.

To recover your information using Windows Startup Repair, follow these steps:

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

NOTE: An external flash drive may be required to perform this procedure.

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

   Windows 10

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

   Windows 8

   From the Start screen, tap , type `file`, and then tap **File Explorer**.
3. If the Windows partition is listed, shut down the tablet.
4. Turn off the tablet.
5. Press the power button and when the **Press and hold the Volume down button or the ESC key on external Keyboard to enter Startup Menu** message displays, press the volume down button.

   The Startup menu is displayed.
6. Tap **F11 HP Recovery**.
7. Select **Troubleshoot**, select **Advanced Options**, and then select **Startup Repair**.
8. Follow the on-screen instructions.

NOTE: For additional information on recovering information using the Windows tools, perform a search for these topics in Windows Help and Support.

Changing the boot device order

To change the boot order so that you can boot from an external device:

NOTE: An external flash drive is required to perform this procedure.

1. If possible, back up all personal files.
2. Shut down the tablet.
3. Connect the external flash drive.
4. Turn off the tablet.
5. Press the power button and when the **Press and hold the Volume down button or the ESC key on external Keyboard to enter Startup Menu** message displays, press the volume down button.

   The Startup menu is displayed.
6. Tap **F9 Boot Options**.
7. Select the external flash drive as the boot device.
8. Restart the tablet.

10 Power adapter requirements

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

The 2-conductor power adapter included with the tablet meets the requirements for use in the country or region where the equipment is purchased.

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

Requirements for all countries

The following requirements are applicable to all countries and regions:

- The length of the adapter cord set must be at least **1.0 m** (3.3 ft) and no more than **2.0 m** (6.5 ft).
- All power adapters must be approved by an acceptable accredited agency responsible for evaluation in the country or region where the adapter will be used.

Requirements for specific countries and regions

Country/region	Accredited agency
Argentina	IRAM
Australia	SAA
Austria	OVE
Belgium	CEBEC
Brazil	ABNT
Canada	CSA
Chile	IMQ
Denmark	DEMKO
Finland	FIMKO
France	UTE
Germany	VDE
India	ISI
Israel	SII
Italy	IMQ
Japan	JIS
The Netherlands	KEMA
New Zealand	SANZ

Country/region	Accredited agency
Norway	NEMKO
The People's Republic of China	CCC
Saudi Arabia	SASO
Singapore	PSB
South Africa	SABS
South Korea	KTL
Sweden	SEMKO
Switzerland	SEV
Taiwan	BSMI
Thailand	TISI
The United Kingdom	ASTA
The United States	UL

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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