HP Stream Notebook PC 13

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

Product notice

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

Software terms

By installing, copying, downloading, or otherwise using any software product preinstalled on this computer, 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 full refund subject to the refund policy of your seller.

For any further information or to request a full refund of the price of the computer, please contact your seller.

This computer may require upgraded and/ or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality. See http://windows.microsoft.com/en-us/windows7/get-know-windows-7 for details.

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

Category	Description	Non-touch	Touch
Product Name	HP Stream Notebook PC 13	√	√
Processor	**Intel Bay Trail-M**	√	√
	Intel Celeron N2840 (2.16 GHz, turbo up to 2.58 GHz), 1333 MHz/1 MB L2 cache), Dual-Core		
	Intel Braswell	√	
	Intel Celeron N3050 (1.6 GHz, turbo up to 2.16 GHz), 1600 MHz/2 MB L2 cache), Dual-Core		
Chipset	Intel Bay Trail-M SoC	√	√
	Intel Braswell SoC	√	
Graphics	Internal Graphics: Intel HD Graphics	√	√
	Support for DX11, HD decode, and HDMI		
	Support for DX12, HD decode, and HDMI (Braswell processors only)	√	
Panel	All displays 16:9 ultra-wide aspect ratio	√	√
	13.3-in (1368×768), AntiGlare, high-definition (HD), light-emitting diode (LED), low-voltage differential-signalling (LVDS), flat 3.6 mm, 200 nits	√	√
	Touch screen with flush glass, multitouch enabled		√
	Support LVDS as default, co-layout with eDP1.3	√	√
Memory	On-board system memory		
	DDR3L-1600MHz support		
	Supports up to 4-GB maximum on-board system memory		√
	Supports up to 2-GB maximum on-board system memory	√	
Hard drive	Support for on-board eMMC drives	√	√
	64-GB		√
	32-GB	√	√
Optical drive	External, 9.5-mm tray load, SATA, USB, DVD±RW DL SuperMulti Drive	√	√
Audio and video	Webcam: HP TrueVision HD, fixed (no tilt), with activity light, 1280×720 by 30 frames per second	√	√
	Dual digital microphones with appropriate echo-cancellation and noise-suppression software		
	DTS Studio Sound		
	Dual speakers		
Wireless	**Integrated wireless local area network (WLAN) options by way of wireless module**	√	√
	Support for the following single antenna (in display assembly) WLAN modules:		
	● Broadcom BCM43142 802.11 bgn 1x1 Wi-Fi + BT4.0 HMC Combo Adapter		

Category	Description	Non-touch	Touch
	● Realtek RT8723BE 802.11bgn 1x1 Wi-Fi + BT 4.0 Combo Adapter		
	Support for the following dual antenna (in display assembly) WLAN module:		
	● Intel Dual Band Wireless-AC 3160 802.11 ac 1×1 WiFi + Bluetooth 4.0 Combo Adapter		
	WWAN 3G module (with two antennas):	√	√
	● HP hs3110 HSPA+ Mobile Broadband Module		
	● HP hs3114 HSPA+ Mobile Broadband Module		
	Compatible with Miracast-certified devices		
External media cards	HP Multiformat Digital Media Card Reader with push-push technology.	√	√
	Support SD/SDHC/SDXC with UHS-1		
Internal expansion	One half-size mini-card for WLAN	√	√
	One M.2 card slot for WWAN		
Ports	AC adapter HP Smart plug (4.5 mm barrel)	√	√
	Audio: one combo audio-out (headphone)/audio-in (microphone) jack, supports jack auto-detection		
	High-definition multimedia interface (HDMI) v.1.4, supporting up to 1080p, 1920×1080 at 60 Hz		
	RJ-45/Ethernet		
	USB 3.0 (1)		
	USB 2.0 (2)		
Keyboard/ pointing devices	Full-size, island keyboard	√	√
	Touchpad requirements:		
	● Clickpad with image sensor		
	● Taps enabled as default		
	● Multi-touch gestures enabled – ability to turn on and off		
	● Support for Microsoft® Windows® 8.1 modern TouchPad gestures		
	● Support for PS/2, SMBus		
	● Default on for 2-finger scroll and pinch		
Power requirements	65-W HP Smart adapter (non-PFC, EM, 3-wire, 4.5-mm) and 45-W HP Smart adapter (non-PFC, RC, 3-wire, 4.5-mm)	√	√
	3-cell, 37-WHr, 3.25-AHr, Li-ion battery		
Security	Kensington Lock slot	√	√
	Support for Trust Platform Module (TPM) 2.0 (except for the People's Republic of China and Russia)		
Operating system	Microsoft Windows 8.1 with Bing and one year of Office 365 Personal	√	
	Microsoft Windows 8.1 with Bing	√	
	Microsoft Windows 8.1 with one year of Office 365 Personal	√	√
	Microsoft Windows 8.1	√	√

Category	Description	Non-touch	Touch
	Windows 10 Home Step-up NB Entry ML Compact	√	
	Windows 10 Home with OneDrive Entry NB ML Compact		
	Windows 10 Home with Office365 Personal Entry NB ML Compact		
	Windows 10 Home Value NB EM/SL Compact		
	Windows 10 Home with OneDrive Entry NB EM/SL Compact		
	Windows 10 Home with Office365 Personal Entry NB EM/SL Compact		
	Windows 10 Home CH/SL Compact (CPPP)		
	Windows 10 Home Value NB CH/SL Compact		
Serviceability	**End user replaceable parts:**	√	√
	AC adapter		
	SIM card		

2   External component identification

Front
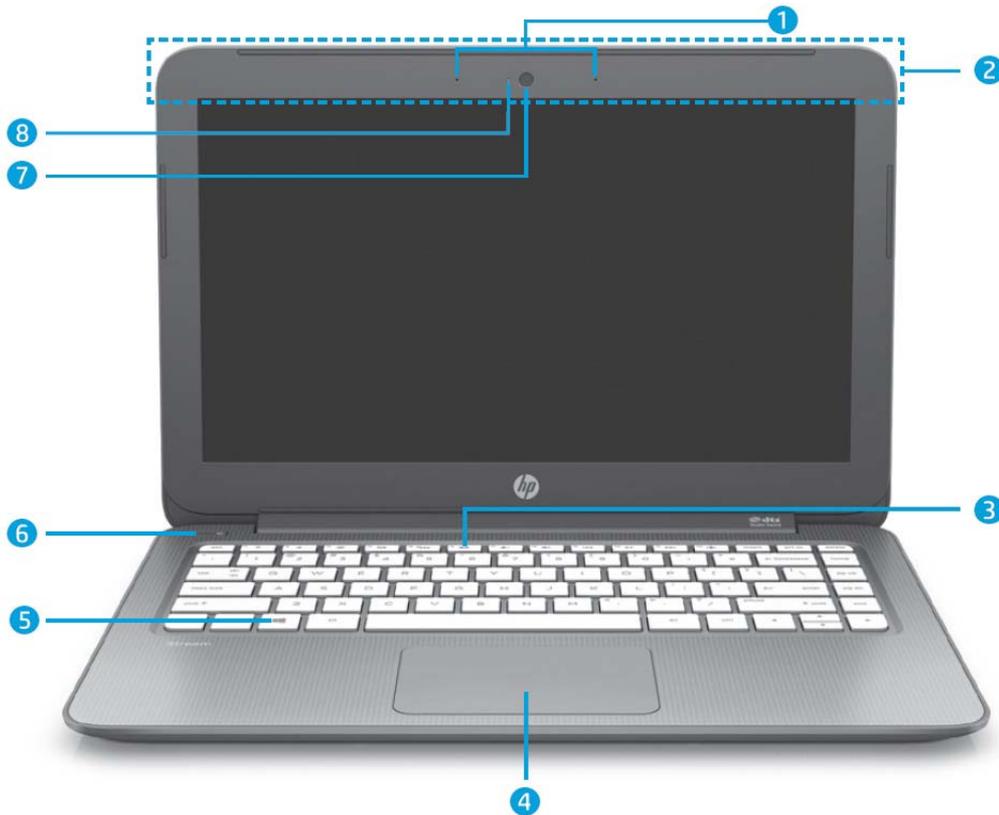
Item	Component	Description
(1)	Internal microphones (2)	Record sound.
(2)	WLAN antennas (2)*	Send and receive wireless signals to communicate with WLANs.
(3)	Mute light	• Amber: Computer sound is off. • Off: Computer sound is on.
(4)	TouchPad zone	Reads your finger gestures to move the pointer or activate items on the screen. **NOTE:** The TouchPad also supports edge-swipe gestures.
(5)	Windows key	Returns you to the Start screen from an open app or the Windows desktop. **NOTE:** Pressing the Windows key again will return you to the previous screen.
(6)	Power button	• When the computer is off, press the button to turn on the computer.

Item	Component	Description
		• When the computer is on, press the button briefly to initiate Sleep.
		• When the computer is in the Sleep state, press the button briefly to exit Sleep.
		• When the computer is in Hibernation, press the button briefly to exit Hibernation.
		CAUTION: Pressing and holding down the power button will result in the loss of unsaved information.
		If the computer has stopped responding and Windows shutdown procedures are ineffective, press and hold the power button down for at least 5 seconds to turn off the computer.
		To learn more about your power settings, see your power options:
		Windows 8.1::
		▲ From the Start screen, type `power`, select **Power and sleep settings**, and then select **Power and sleep** from the list of applications.
		– or –
		From the Windows desktop, right-click the **Start** button, and then select **Power Options**.
		Windows 10:
		▲ Type `power` in the taskbar search box, and then select **Power and sleep settings**.
		– or –
		Right-click the **Start** button, and then select **Power Options**.
(7)	Webcam light	On: The webcam is in use.
(8)	Webcam – or – 3D camera (select products only)	Records video and captures photographs. Some models allow you to video conference and chat online using streaming video. To use the webcam or 3D camera: ▲ **Windows 8.1**: From the Start screen, type `camera`, and then select **Camera** from the list of applications. ▲ **Windows 10**: Type `camera` in the taskbar search box, and then select **Camera**. **NOTE:** A 3D camera captures 3D images and displays them on the computer screen. It includes additional hardware (a 3D camera sensor and a 3D laser projector) plus special software. To learn more about using a 3D camera, open the Intel RealSense app **Welcome to Intel RealSense**. To access the 3D camera apps, go to the **Intel RealSense Technology** app.

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

To access this document in **Windows 8.1**:

From the Start screen, type `support`, and then select the **HP Support Assistant** app.

– or –

From the Windows desktop, click the question mark icon in the notification area, at the far right of the taskbar.

Item	Component	Description
	To access this document in **Windows 10**:	
	Select **Start**, select **All apps**, select **HP Help and Support**, and then select **HP Documentation**.	

Left side

Item	Component	Description
(9)	Security cable slot	Attaches an optional security cable to the computer.
		The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.
(10)	HDMI port	Connects an optional video or audio device, such as a highdefinition television, any compatible digital or audio component, or a high-speed HDMI device.
(11)	USB 3.0 port	Connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub.
(12)	Audio-out (headphone)/Audio-in (microphone) jack	Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects an optional headset microphone. This jack does not support optional microphone-only devices.
		WARNING! To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, refer to the *Regulatory, Safety, and Environmental Notices*. To access this guide:
		Windows 8.1:
		From the Start screen, type `support`, and then select the **HP Support Assistant** app.
		– or –
		From the Windows desktop, click the question mark icon in the notification area, at the far right of the taskbar.
		Windows 10:
		Select **Start**, select **All apps**, select **HP Help and Support**, and then select **HP Documentation**.
		NOTE: When a device is connected to the jack, the computer speakers are disabled.
		NOTE: Be sure that the device cable has a 4-conductor connector that supports both audio-out (headphone) and audio-in (microphone).
(13)	Memory card reader	Reads optional memory cards that store, manage, share, or access information.

Item	Component	Description
		To insert a card: Hold the card label-side up, with connectors facing the slot, insert the card into the slot, and then push in on the card until it is firmly seated.
		To remove a card:
		Press in on the card it until it pops out.
(14)	Power light	• On: The computer is on.
		• Blinking: The computer is in the Sleep state, a power saving state. The computer shuts off power to the display and other unneeded components.
		• Off: The computer is off or in Hibernation. Hibernation is a power-saving state that uses the least amount of power.

Right side

Item	Component	Description
(15)	SIM slot	Supports a wireless subscriber identity module (SIM).
(16)	USB 2.0 ports (2)	Each USB 3.0 port connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub.
(17)	AC adapter light	• On: The AC adapter is connected and the battery is charged.
		• Off: The computer is using battery power.
(18)	Power connector	Connects an AC adapter.

Rear

Item	Component	Description
(19)	Speakers (2)	Produce sound.

Labels

The labels affixed to the computer provide information you may need when you troubleshoot system problems or travel internationally with the computer.

IMPORTANT: Check the following locations for the labels described in this section: the bottom of the computer, inside the battery bay, under the service door, or on the back of the display.

● Service label—Provides important information to identify your computer. When contacting support, you will probably be asked for the serial number, and possibly for the product number or the model number. Locate these numbers before you contact support.

Your service label will resemble one of the examples shown below. Refer to the illustration that most closely matches the service label on your computer.

Component		
(1)	Serial number	
(2)	Product number	
(3)	Warranty period	
(4)	Model number (select products only)	
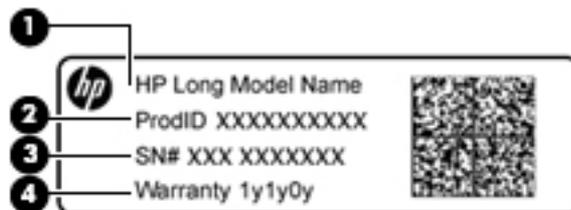
Component		
(1)	Model name (select products only)	
(2)	Product number	
(3)	Serial number	
(4)	Warranty period	

● Regulatory label(s)—Provide(s) regulatory information about the computer.

● Wireless certification label(s)—Provide(s) information about optional wireless devices and the approval markings for the countries or regions in which the devices have been approved for use.

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.

Computer major components
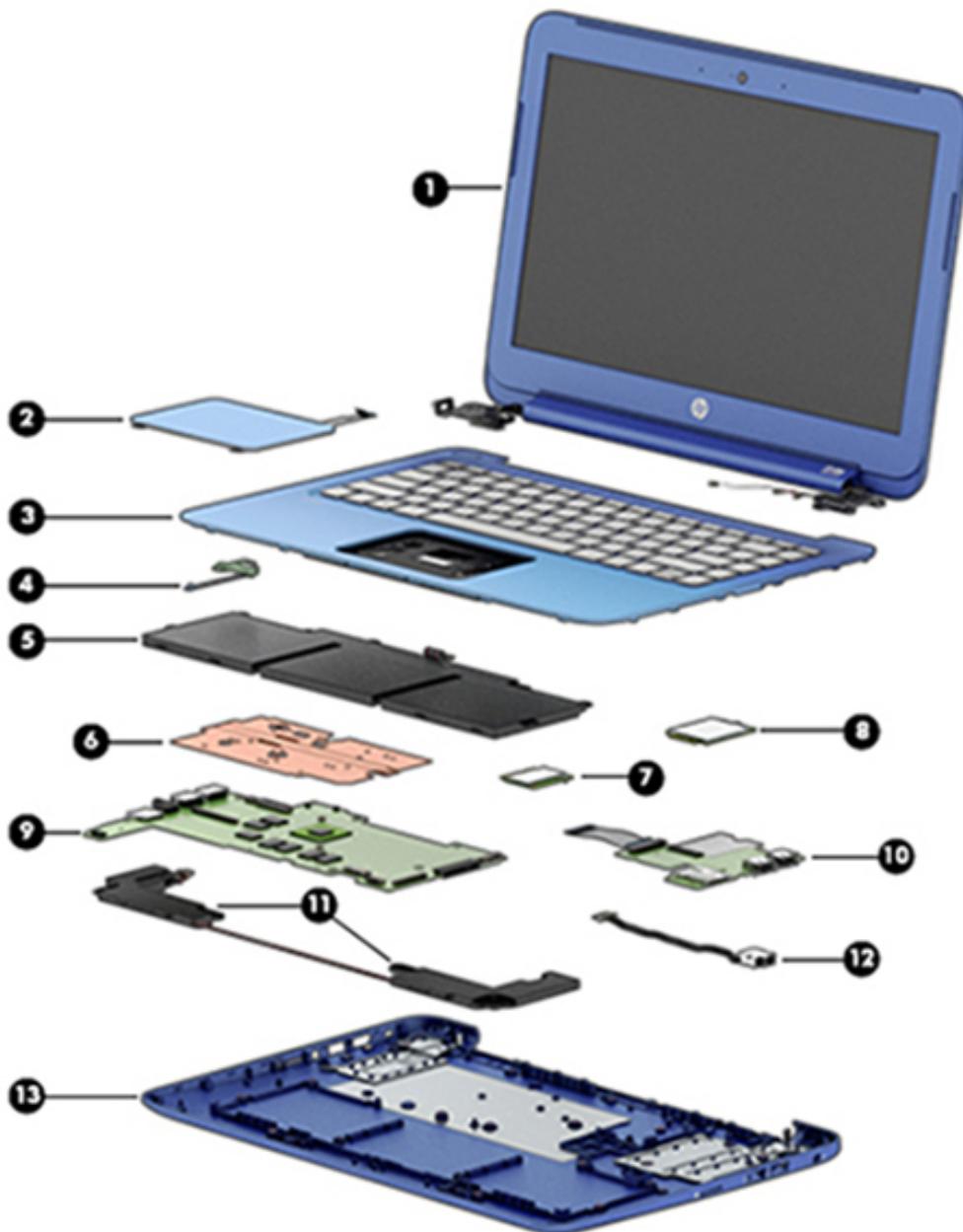
Item	Component	Spare part number
(1)	**Display assembly**: The display assembly is spared at the subcomponent level only. For more display assembly spare part information, see Display assembly components – non-touch screen on page 12.	
(2)	**TouchPad** (includes cable)	
	For use in models without WWAN	795911-001
	For use in models with WWAN	792776-001
	TouchPad cable	838683-001
(3)	**Keyboard/top cover** (includes keyboard cable):	
	For a list of keyboard country codes, see Keyboard/top cover on page 29 or Sequential part number listing on page 16.	
	Orchid magenta models (does not include touchpad)	792792-xxx
	Horizon blue models (does not include touchpad)	792791-xxx
	Cobalt blue models (includes touchpad)	830646-xxx
	Violet purple models (includes touchpad)	830647-xxx
	Horizon blue models (includes touchpad)	836872-xxx
	Orchid magenta models (includes touchpad)	836873-xxx
(4)	**Power button board** (includes cable)	792777-001
(5)	**Battery**, 3-cell, 37-WHr, 3.25-AHr, Li-ion (includes cable)	787521-005
(6)	**Heat sink** (includes thermal cloth)	
	For use in models with Bay Trail (Celeron N2840) processors	792773-001
	For use in models with Braswell (Celeron N3050) processors	832476-001
(7)	**WLAN module:**	
	Broadcom BCM43142 802.11 bgn 1x1 Wi-Fi + BT4.0 HMC Combo Adapter	753076-005
	Realtek RT8723BE 802.11bgn 1x1 Wi-Fi + BT 4.0 Combo Adapter	753077-005
	Intel Dual Band Wireless-AC 3160 802.11 ac 1×1 WiFi + Bluetooth 4.0 Combo Adapter	784638-005
	Broadcom BCM43142 802.11 b/g/n 1x1 Wi-Fi + BT4.0 M.2 Combo Adapter	792608-005
	Intel Dual Band Wireless-AC 3165 802.11 ac 1x1 WiFi + BT 4.0 Combo Adapter	806723-005
(8)	**WWAN/GPS module:**	
	HP hs3110 HSPA+ Mobile Broadband Module	748599-005
	HP hs3114 HSPA+ Mobile Broadband Module	748600-005
(9)	**System board** (includes a graphics subsystem with UMA memory, thermal grease, and thermal pads):	
	Equipped with an Intel Celeron N2840 processor with 2 GB system memory, 64 GB eMMC hard drive, and the Windows 8.1 Standard operating system	792786-501
	Equipped with an Intel Celeron N2840 processor with 2 GB system memory, 64 GB eMMC hard drive, and Windows 7 or a non-Windows operating system	792786-001
	Equipped with an Intel Celeron N2840 processor with 2 GB system memory, 32 GB eMMC hard drive, and the Windows 8.1 Professional or Windows 10 operating system	792785-601

Item	Component	Spare part number
	Equipped with an Intel Celeron N2840 processor with 2 GB system memory, 32 GB eMMC hard drive, and the Windows 8.1 Standard operating system	792785-501
	Equipped with an Intel Celeron N2840 processor with 2 GB system memory, 32 GB eMMC hard drive, and Windows 7 or a non-Windows operating system	792785-001
	Equipped with an Intel Celeron N3050 processor with 2 GB system memory, 32 GB eMMC hard drive, and the Windows 8.1 or Windows 10 operating system	830639-601
	Equipped with an Intel Celeron N3050 processor with 2 GB system memory, 32 GB eMMC hard drive, and Windows 7 or a non-Windows operating system	830639-001
(10)	**USB/card reader board** (includes cable)	
	For use in models without WWAN	792778-001
	For use in models with WWAN	792769-001
(11)	**Speakers** (include left and right speakers and cables)	792784-001
(12)	**Power connector cable** (includes tape)	796086-001
(13)	**Base enclosure**	
	For use in blue non-touch screen models without WWAN	792763-001
	For use in blue non-touch screen models with WWAN	792764-001
	For use in magenta models without a touch screen and without WWAN	792765-001
	For use in magenta models without a touch screen and with WWAN	792766-001
	For use in magenta models with a touch screen	792770-001
	For use in blue touch screen models without WWAN	798213-001
	For use in horizon blue touch screen models with WWAN	798214-001
	For use in cobalt blue non-touch screen models without WWAN	830642-001
	For use in violet purple non-touch screen models without WWAN	830643-001
	Rubber Kit (not illustrated; includes bottom screw covers and computer feet)	
	For use in horizon blue and orchid magenta models	792782-001
	For use in cobalt blue and violet purple models	830713-001

Display assembly components – non-touch screen
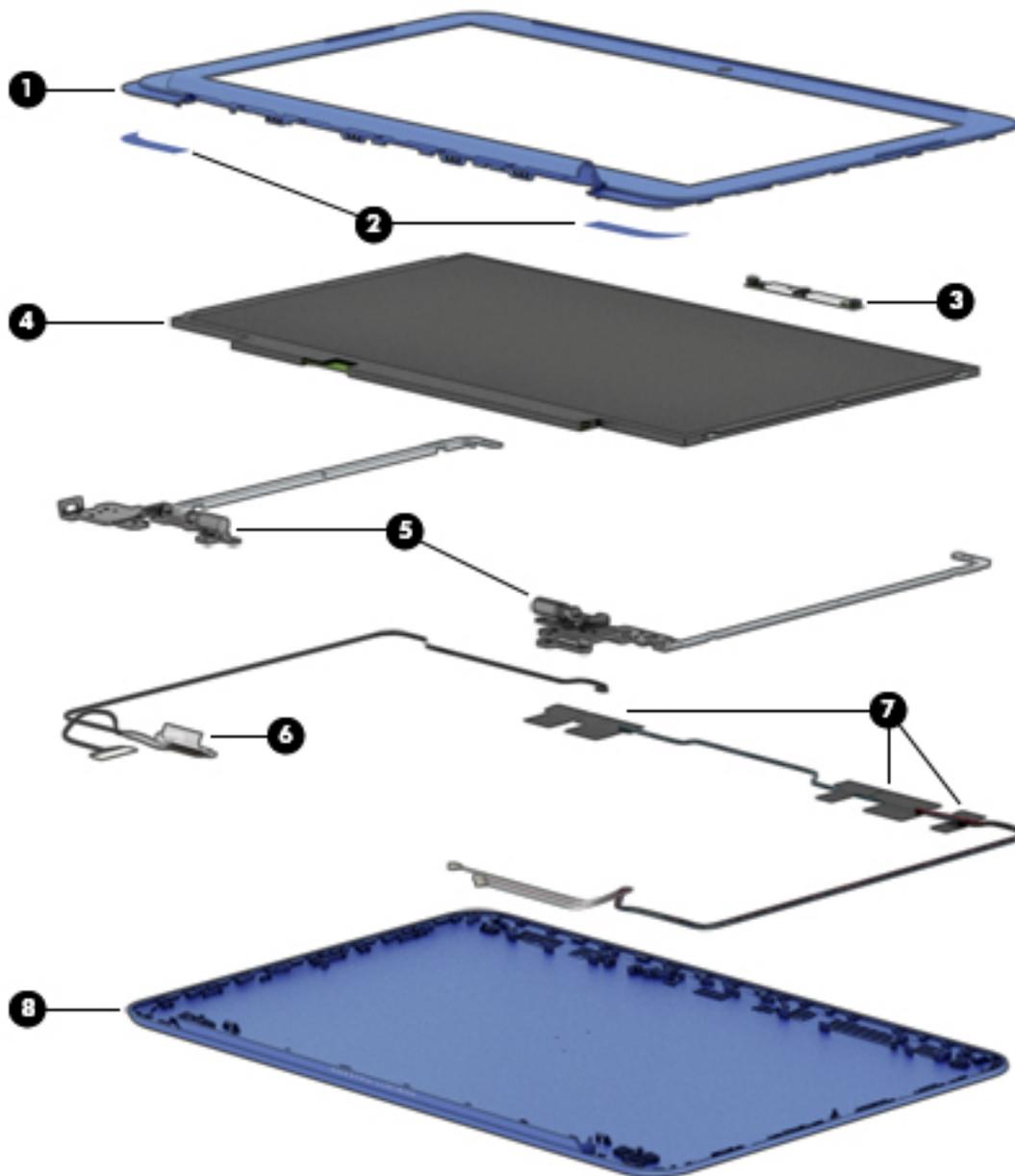
Item	Description	Spare part number
(1)	**Display bezel** (includes Mylar screw covers)	
	For use in magenta models	792768-001
	For use in horizon blue models	792767-001
	For use in cobalt blue models	830644-001
	For use in purple models	830645-001
(2)	**Display bezel screw covers**: The display bezel screw covers are included in all display spare part kits.	
(3)	**Webcam/microphone module** (includes Mylar screw covers)	793616-001

Item	Description	Spare part number
(4)	**Raw display panel** (includes Mylar screw covers)	792779-001
(5)	**Display Hinge Kit** (includes left and right display hinges and Mylar screw covers)	792774-001
(6)	**Display panel cable** (includes Mylar screw covers)	
	For use in models without a touch screen and without WWAN	792771-001
	For use in models without a touch screen and with WWAN	798215-001
(7)	**Antenna Kit** (includes wireless antenna cable, transceiver, Mylar screw covers, and screws)	
	WLAN	792758-001
	WWAN	792757-001
(8)	**Display back cover** (includes screws)	
	For use in magenta models	792760-001
	For use in horizon blue models	792761-001
	For use in cobalt blue models	830640-001
	For use in violet purple models	830641-001

Display assembly components – touch screen
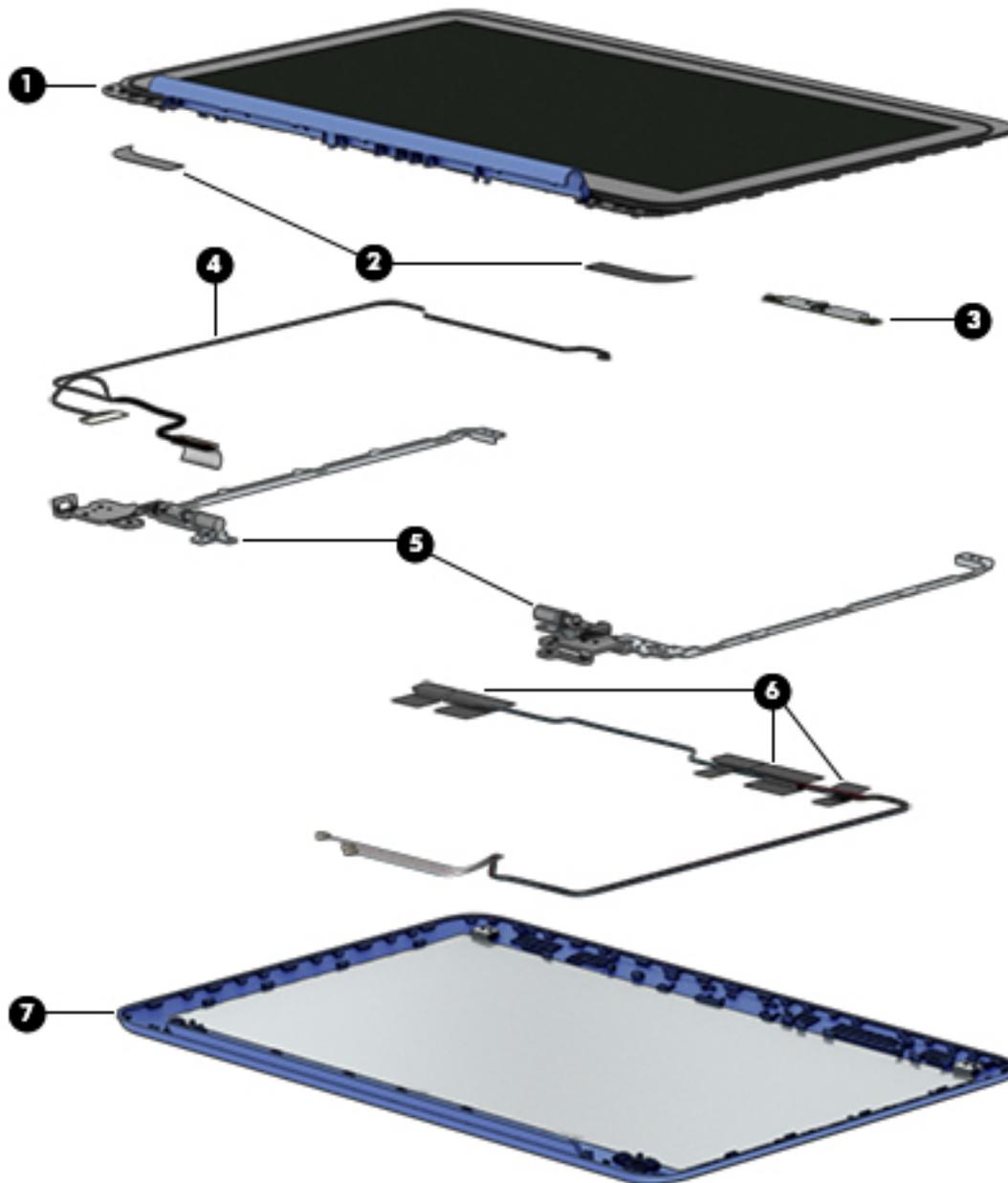
Item	Description	Spare part number
(1)	**Display panel assembly**, includes bezel and Mylar screw covers	
	For use in horizon blue models	792780-001
	For use in orchid magenta models	792781-001
(2)	**Display bezel screw covers**: The display bezel screw covers are included in all display spare part kits.	
(3)	**Webcam/microphone module** (includes Mylar screw covers)	792793-001
(4)	**Display panel cable** (includes Mylar screw covers)	
	For use in touch screen models without WWAN	792772-001

Item	Description	Spare part number
	For use in touch screen models with WWAN	798216-001
(5)	**Display Hinge Kit** (includes left and right display hinges)	792775-001
(6)	**Antenna Kit** (includes wireless antenna cable, transceiver, Mylar screw covers, and screws)	
	WLAN	792758-001
	WWAN	792757-001
(7)	**Display back cover** (includes Mylar screw covers and screws)	
	For use in horizon blue models	792759-001
	For use in orchid magenta models	792762-001

Miscellaneous parts

Component	Spare part number
AC adapter:	
65-W HP Smart adapter (non-PFC, EM, 3-wire, 4.5-mm)	714657-001
45-W HP Smart adapter (non-PFC, RC, 3-wire, 4.5-mm)	741727-001
HP HDMI-to-VGA adapter	701943-001
RJ-45/USB adapter dongle	539614-001
HP USB external DVD±RW DL SuperMulti Drive	747080-001
Power cord (3-pin, black, 1.00-m):	
For use in Australia	755530-011
For use in Denmark	755530-081
For use in Europe	755530-021
For use in India	755530-D61
For use in Israel	755530-BB1
For use in Italy	755530-061
For use in Japan	755530-291
For use in North America	755530-001
For use in the People's Republic of China	755530-AA1
For use in South Africa	755530-AR1
For use in South Korea	755530-AD1
For use in Switzerland	755530-111
For use in Taiwan	755530-AB1
For use in Thailand	755530-201
For use in the United Kingdom and Singapore	755530-031

Component	Spare part number
Rubber Feet Kit (includes bottom cover screw covers and computer feet)	
For use in horizon blue and orchid magenta models	792782-001
For use in cobalt blue and violet purple models	830713-001
Screw Kit	792783-001
HP 14.0 Spectrum Blue Sleeve	787585-001
HP 14.0 Spectrum Magenta Sleeve	787587-001

Sequential part number listing

Spare part number	Description
539614-001	RJ-45/USB adapter dongle
701943-001	HP HDMI-to-VGA adapter
714657-001	65-W HP Smart adapter (non-PFC, EM, 3-wire, 4.5-mm)
741727-001	45-W HP Smart adapter (non-PFC, RC, 3-wire, 4.5-mm)
747080-001	HP USB external DVD±RW DL SuperMulti Drive
748599-005	HP hs3110 HSPA+ Mobile Broadband Module
748600-005	HP hs3114 HSPA+ Mobile Broadband Module
753076-005	Broadcom BCM43142 802.11 bgn 1x1 Wi-Fi + Bluetooth Combo Adapter
753077-005	Realtek RT8723BE 802.11bgn 1x1 Wi-Fi + BT 4.0 Combo Adapter
755530-001	Power cord for use in North America (3-pin, black, 1.00-m)
755530-011	Power cord for use in Australia (3-pin, black, 1.00-m)
755530-021	Power cord for use in Europe (3-pin, black, 1.00-m)
755530-031	Power cord for use in the United Kingdom and Singapore (3-pin, black, 1.00-m)
755530-061	Power cord for use in Italy (3-pin, black, 1.00-m)
755530-081	Power cord for use in Denmark (3-pin, black, 1.00-m)
755530-111	Power cord for use in Switzerland (3-pin, black, 1.00-m)
755530-201	Power cord for use in Thailand (3-pin, black, 1.00-m)
755530-291	Power cord for use in Japan (3-pin, black, 1.00-m)
755530-AA1	Power cord for use in the People's Republic of China (3-pin, black, 1.00-m)
755530-AB1	Power cord for use in Taiwan (3-pin, black, 1.00-m)
755530-AD1	Power cord for use in South Korea (3-pin, black, 1.00-m)
755530-AR1	Power cord for use in South Africa (3-pin, black, 1.00-m)
755530-BB1	Power cord for use in Israel (3-pin, black, 1.00-m)
755530-D61	Power cord for use in India (3-pin, black, 1.00-m)

Spare part number	Description
784638-005	Intel Dual Band Wireless-AC 3160 802.11 ac 1×1 WiFi + Bluetooth 4.0 Combo Adapter
787521-005	3-cell, 37-WHr, 3.25-AHr, Li-ion battery (includes cable)
792608-005	Broadcom BCM43142 802.11 b/g/n 1x1 Wi-Fi + BT4.0 M.2 Combo Adapter
792757-001	WWAN antenna Kit (includes wireless antenna cable, transceiver, Mylar screw covers, and screws)
792758-001	WLAN antenna Kit (includes wireless antenna cable, transceiver, Mylar screw covers, and screws)
792759-001	Display back cover for use in horizon blue models with a touch screen (includes Mylar screw covers and screws)
792760-001	Display back cover for use in magenta models without a touch screen (includes Mylar screw covers and screws)
792761-001	Display back cover for use in horizon blue models without a touch screen (includes Mylar screw covers and screws)
792762-001	Display back cover for use in orchid magenta models with a touch screen (includes Mylar screw covers and screws)
792763-001	Base enclosure for use in blue non-touch screen models without WWAN
792764-001	Base enclosure for use in blue non-touch screen models with WWAN
792765-001	Base enclosure for use in magenta models without a touch screen and without WWAN
792766-001	Base enclosure for use in magenta models without a touch screen and with WWAN
792767-001	Display bezel for use in horizon blue models (includes screws)
792768-001	Display bezel for use in magenta models (includes screws)
792769-001	USB/card reader board for use in models with WWAN (includes cable)
792770-001	Base enclosure for use in magenta models with a touch screen
792771-001	Display panel cable for use in models without a touch screen and without WWAN (includes Mylar screw covers)
792772-001	Display panel cable for use in models with a touch screen and without WWAN (includes Mylar screw covers)
792773-001	Heat sink for use with Bay Trail (Celeron N2840) processors (includes thermal cloth)
792774-001	Display Hinge Kit for use in models without a touch screen (includes left and right display hinges and Mylar screw covers)
792775-001	Display Hinge Kit for use in models with a touch screen (includes left and right display hinges and Mylar screw covers)
792776-001	TouchPad for use in models with WWAN (includes cable)
792777-001	Power button board (includes cable)
792778-001	USB/card reader board for use in models without WWAN (includes cable)
792779-001	Raw display panel (13.3-in) for use in non-touch screen models (includes Mylar screw covers)
792780-001	Raw display panel (13.3-in) for use in horizon blue touch screen models (includes bezel and Mylar screw covers)
792781-001	Raw display panel (13.3-in) for use in orchid magenta touch screen models (includes bezel and Mylar screw covers)
792782-001	Rubber Kit for use in horizon blue and orchid magenta models (includes bottom cover screw covers and computer feet)
792783-001	Screw Kit
792784-001	Speakers (include left and right speakers and cables)

Spare part number	Description
792785-001	System board equipped with an Intel Celeron N2840 processor with 2 GB system memory, 32 GB eMMC hard drive, and the Windows 7 or non-Windows operating systems (includes thermal grease and thermal pads)
792785-501	System board equipped with an Intel Celeron N2840 processor with 2 GB system memory, 32 GB eMMC hard drive, and the Windows 8.1 Standard operating system (includes thermal grease and thermal pads)
792785-601	System board equipped with an Intel Celeron N2840 processor with 2 GB system memory, 32 GB eMMC hard drive, and the Windows 8.1 Professional or Windows 10 operating system (includes thermal grease and thermal pads)
792786-001	System board equipped with an Intel Celeron N2840 processor with 2 GB system memory, 64 GB eMMC hard drive, and the Windows 7 or non-Windows operating systems (includes thermal grease and thermal pads)
792786-501	System board equipped with an Intel Celeron N2840 processor with 2 GB system memory, 64 GB eMMC hard drive, and the Windows 8.1 Standard operating system (includes thermal grease and thermal pads)
792791-001	Keyboard/top cover (does not include touchpad) for use in horizon blue models in the United States (includes keyboard cable)
792791-031	Keyboard/top cover (does not include touchpad) for use in horizon blue models in the United Kingdom and Singapore (includes keyboard cable)
792791-041	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Germany (includes keyboard cable)
792791-051	Keyboard/top cover (does not include touchpad) for use in horizon blue models in France (includes keyboard cable)
792791-061	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Italy (includes keyboard cable)
792791-071	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Spain (includes keyboard cable)
792791-131	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Portugal (includes keyboard cable)
792791-141	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Turkey (includes keyboard cable)
792791-151	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Greece (includes keyboard cable)
792791-161	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Latin America (includes keyboard cable)
792791-171	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Saudi Arabia (includes keyboard cable)
792791-211	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Hungary (includes keyboard cable)
792791-251	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Russia (includes keyboard cable)
792791-261	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Bulgaria (includes keyboard cable)
792791-271	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Romania (includes keyboard cable)
792791-281	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Thailand (includes keyboard cable)
792791-291	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Japan (includes keyboard cable)
792791-A41	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Belgium (includes keyboard cable)

Spare part number	Description
792791-AB1	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Taiwan (includes keyboard cable)
792791-AD1	Keyboard/top cover (does not include touchpad) for use in horizon blue models in South Korea (includes keyboard cable)
792791-B31	Keyboard/top cover (does not include touchpad) for use in horizon blue models internationally (includes keyboard cable)
792791-BA1	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Slovenia (includes keyboard cable)
792791-BB1	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Israel (includes keyboard cable)
792791-BG1	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Switzerland (includes keyboard cable)
792791-DB1	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Canada (includes keyboard cable)
792791-DH1	Keyboard/top cover (does not include touchpad) for use in horizon blue models in Denmark, Finland, and Norway (includes keyboard cable)
792791-FL1	Keyboard/top cover (does not include touchpad) for use in horizon blue models in the Czech Republic and Slovakia (includes keyboard cable)
792792-001	Keyboard/top cover for use in magenta models in the United States (includes keyboard cable)
792792-031	Keyboard/top cover for use in magenta models in the United Kingdom and Singapore (includes keyboard cable)
792792-041	Keyboard/top cover for use in magenta models in Germany (includes keyboard cable)
792792-051	Keyboard/top cover for use in magenta models in France (includes keyboard cable)
792792-061	Keyboard/top cover for use in magenta models in Italy (includes keyboard cable)
792792-071	Keyboard/top cover for use in magenta models in Spain (includes keyboard cable)
792792-131	Keyboard/top cover for use in magenta models in Portugal (includes keyboard cable)
792792-141	Keyboard/top cover for use in magenta models in Turkey (includes keyboard cable)
792792-151	Keyboard/top cover for use in magenta models in Greece (includes keyboard cable)
792792-161	Keyboard/top cover for use in magenta models in Latin America (includes keyboard cable)
792792-171	Keyboard/top cover for use in magenta models in Saudi Arabia (includes keyboard cable)
792792-211	Keyboard/top cover for use in magenta models in Hungary (includes keyboard cable)
792792-251	Keyboard/top cover for use in magenta models in Russia (includes keyboard cable)
792792-261	Keyboard/top cover for use in magenta models in Bulgaria (includes keyboard cable)
792792-271	Keyboard/top cover for use in magenta models in Romania (includes keyboard cable)
792792-281	Keyboard/top cover for use in magenta models in Thailand (includes keyboard cable)
792792-291	Keyboard/top cover for use in magenta models in Japan (includes keyboard cable)
792792-A41	Keyboard/top cover for use in magenta models in Belgium (includes keyboard cable)
792792-AB1	Keyboard/top cover for use in magenta models in Taiwan (includes keyboard cable)
792792-AD1	Keyboard/top cover for use in magenta models in South Korea (includes keyboard cable)

Spare part number	Description
792792-B31	Keyboard/top cover for use in magenta models internationally (includes keyboard cable)
792792-BA1	Keyboard/top cover for use in magenta models in Slovenia (includes keyboard cable)
792792-BB1	Keyboard/top cover for use in magenta models in Israel (includes keyboard cable)
792792-BG1	Keyboard/top cover for use in magenta models in Switzerland (includes keyboard cable)
792792-DB1	Keyboard/top cover for use in magenta models in Canada (includes keyboard cable)
792792-DH1	Keyboard/top cover for use in magenta models in Denmark, Finland, and Norway (includes keyboard cable)
792792-FL1	Keyboard/top cover for use in magenta models in the Czech Republic and Slovakia (includes keyboard cable)
792793-001	Webcam/microphone module for use in models with a touch screen (includes Mylar screw covers)
793616-001	Webcam/microphone module for use in models without a touch screen (includes Mylar screw covers)
795911-001	TouchPad for use in models without WWAN (includes cable)
796086-001	Power connector cable (includes tape)
797585-001	HP 14.0 Spectrum Blue Sleeve
797587-001	HP 14.0 Spectrum Magenta Sleeve
798213-001	Base enclosure for use in blue touch screen models without WWAN
798214-001	Base enclosure for use in blue touch screen models with WWAN
798215-001	Display panel cable for use in models without a touch screen and with WWAN (includes Mylar screw covers)
798216-001	Display panel cable for use in models with a touch screen and with WWAN (includes Mylar screw covers)
806723-005	Intel Dual Band Wireless-AC 3165 802.11 ac 1x1 WiFi + BT 4.0 Combo Adapter
830639-001	System board equipped with an Intel Celeron N3050 processor with 2 GB system memory, 32 GB eMMC hard drive, and the Windows 7 or a non-Windows 10 operating system (includes thermal grease and thermal pads)
830639-601	System board equipped with an Intel Celeron N3050 processor with 2 GB system memory, 32 GB eMMC hard drive, and the Windows 8.1 or Windows 10 operating system (includes thermal grease and thermal pads)
830640-001	Display back cover for use in cobalt blue models without a touch screen (includes Mylar screw covers and screws)
830641-001	Display back cover for use in violet purple models without a touch screen (includes Mylar screw covers and screws)
830642-001	Base enclosure for use in cobalt blue non-touch screen models without WWAN
830643-001	Base enclosure for use in violet purple non-touch screen models without WWAN
830644-001	Display bezel for use in cobalt blue models (includes screws)
830645-001	Display bezel for use in purple models (includes screws)
830646-001	Keyboard/top cover with touchpad for use in cobalt blue models in the United States (includes keyboard cable)
830646-031	Keyboard/top cover with touchpad for use in cobalt blue models in the United Kingdom and Singapore (includes keyboard cable)
830646-041	Keyboard/top cover with touchpad for use in cobalt blue models in Germany (includes keyboard cable)
830646-051	Keyboard/top cover with touchpad for use in cobalt blue models in France (includes keyboard cable)
830646-061	Keyboard/top cover with touchpad for use in cobalt blue models in Italy (includes keyboard cable)
830646-071	Keyboard/top cover with touchpad for use in cobalt blue models in Spain (includes keyboard cable)

Spare part number	Description
830646-131	Keyboard/top cover with touchpad for use in cobalt blue models in Portugal (includes keyboard cable)
830646-141	Keyboard/top cover with touchpad for use in cobalt blue models in Turkey (includes keyboard cable)
830646-151	Keyboard/top cover with touchpad for use in cobalt blue models in Greece (includes keyboard cable)
830646-161	Keyboard/top cover with touchpad for use in cobalt blue models in Latin America (includes keyboard cable)
830646-171	Keyboard/top cover with touchpad for use in cobalt blue models in Saudi Arabia (includes keyboard cable)
830646-211	Keyboard/top cover with touchpad for use in cobalt blue models in Hungary (includes keyboard cable)
830646-251	Keyboard/top cover with touchpad for use in cobalt blue models in Russia (includes keyboard cable)
830646-261	Keyboard/top cover with touchpad for use in cobalt blue models in Bulgaria (includes keyboard cable)
830646-271	Keyboard/top cover with touchpad for use in cobalt blue models in Romania (includes keyboard cable)
830646-281	Keyboard/top cover with touchpad for use in cobalt blue models in Thailand (includes keyboard cable)
830646-291	Keyboard/top cover with touchpad for use in cobalt blue models in Japan (includes keyboard cable)
830646-A41	Keyboard/top cover with touchpad for use in cobalt blue models in Belgium (includes keyboard cable)
830646-AB1	Keyboard/top cover with touchpad for use in cobalt blue models in Taiwan (includes keyboard cable)
830646-AD1	Keyboard/top cover with touchpad for use in cobalt blue models in South Korea (includes keyboard cable)
830646-B31	Keyboard/top cover with touchpad for use in cobalt blue models internationally (includes keyboard cable)
830646-BA1	Keyboard/top cover with touchpad for use in cobalt blue models in Slovenia (includes keyboard cable)
830646-BB1	Keyboard/top cover with touchpad for use in cobalt blue models in Israel (includes keyboard cable)
830646-BG1	Keyboard/top cover with touchpad for use in cobalt blue models in Switzerland (includes keyboard cable)
830646-DB1	Keyboard/top cover with touchpad for use in cobalt blue models in Canada (includes keyboard cable)
830646-DH1	Keyboard/top cover with touchpad for use in cobalt blue models in Denmark, Finland, and Norway (includes keyboard cable)
830646-FL1	Keyboard/top cover with touchpad for use in cobalt blue models in the Czech Republic and Slovakia (includes keyboard cable)
830647-001	Keyboard/top cover with touchpad for use in purple models in the United States (includes keyboard cable)
830647-031	Keyboard/top cover with touchpad for use in purple models in the United Kingdom and Singapore (includes keyboard cable)
830647-041	Keyboard/top cover with touchpad for use in purple models in Germany (includes keyboard cable)
830647-051	Keyboard/top cover with touchpad for use in purple models in France (includes keyboard cable)
830647-061	Keyboard/top cover with touchpad for use in purple models in Italy (includes keyboard cable)
830647-071	Keyboard/top cover with touchpad for use in purple models in Spain (includes keyboard cable)
830647-131	Keyboard/top cover with touchpad for use in purple models in Portugal (includes keyboard cable)
830647-141	Keyboard/top cover with touchpad for use in purple models in Turkey (includes keyboard cable)
830647-151	Keyboard/top cover with touchpad for use in purple models in Greece (includes keyboard cable)
830647-161	Keyboard/top cover with touchpad for use in purple models in Latin America (includes keyboard cable)
830647-171	Keyboard/top cover with touchpad for use in purple models in Saudi Arabia (includes keyboard cable)

Spare part number	Description
830647-211	Keyboard/top cover with touchpad for use in purple models in Hungary (includes keyboard cable)
830647-251	Keyboard/top cover with touchpad for use in purple models in Russia (includes keyboard cable)
830647-261	Keyboard/top cover with touchpad for use in purple models in Bulgaria (includes keyboard cable)
830647-271	Keyboard/top cover with touchpad for use in purple models in Romania (includes keyboard cable)
830647-281	Keyboard/top cover with touchpad for use in purple models in Thailand (includes keyboard cable)
830647-291	Keyboard/top cover with touchpad for use in purple models in Japan (includes keyboard cable)
830647-A41	Keyboard/top cover with touchpad for use in purple models in Belgium (includes keyboard cable)
830647-AB1	Keyboard/top cover with touchpad for use in purple models in Taiwan (includes keyboard cable)
830647-AD1	Keyboard/top cover with touchpad for use in purple models in South Korea (includes keyboard cable)
830647-B31	Keyboard/top cover with touchpad for use in purple models internationally (includes keyboard cable)
830647-BA1	Keyboard/top cover with touchpad for use in purple models in Slovenia (includes keyboard cable)
830647-BB1	Keyboard/top cover with touchpad for use in purple models in Israel (includes keyboard cable)
830647-BG1	Keyboard/top cover with touchpad for use in purple models in Switzerland (includes keyboard cable)
830647-DB1	Keyboard/top cover with touchpad for use in purple models in Canada (includes keyboard cable)
830647-DH1	Keyboard/top cover with touchpad for use in purple models in Denmark, Finland, and Norway (includes keyboard cable)
830647-FL1	Keyboard/top cover with touchpad for use in purple models in the Czech Republic and Slovakia (includes keyboard cable)
830713-001	Rubber Kit for use in cobalt blue and violet purple models
832476-001	Heat sink for use with Braswell (Celeron N3050) processors (includes thermal cloth)
836872-001	Keyboard/top cover with touchpad for use in horizon blue models in the United States (includes keyboard cable)
836872-031	Keyboard/top cover with touchpad for use in horizon blue models in the United Kingdom and Singapore (includes keyboard cable)
836872-041	Keyboard/top cover with touchpad for use in horizon blue models in Germany (includes keyboard cable)
836872-051	Keyboard/top cover with touchpad for use in horizon blue models in France (includes keyboard cable)
836872-061	Keyboard/top cover with touchpad for use in horizon blue models in Italy (includes keyboard cable)
836872-071	Keyboard/top cover with touchpad for use in horizon blue models in Spain (includes keyboard cable)
836872-131	Keyboard/top cover with touchpad for use in horizon blue models in Portugal (includes keyboard cable)
836872-141	Keyboard/top cover with touchpad for use in horizon blue models in Turkey (includes keyboard cable)
836872-151	Keyboard/top cover with touchpad for use in horizon blue models in Greece (includes keyboard cable)
836872-161	Keyboard/top cover with touchpad for use in horizon blue models in Latin America (includes keyboard cable)
836872-171	Keyboard/top cover with touchpad for use in horizon blue models in Saudi Arabia (includes keyboard cable)
836872-211	Keyboard/top cover with touchpad for use in horizon blue models in Hungary (includes keyboard cable)
836872-251	Keyboard/top cover with touchpad for use in horizon blue models in Russia (includes keyboard cable)
836872-261	Keyboard/top cover with touchpad for use in horizon blue models in Bulgaria (includes keyboard cable)

Spare part number	Description
836872-271	Keyboard/top cover with touchpad for use in horizon blue models in Romania (includes keyboard cable)
836872-281	Keyboard/top cover with touchpad for use in horizon blue models in Thailand (includes keyboard cable)
836872-291	Keyboard/top cover with touchpad for use in horizon blue models in Japan (includes keyboard cable)
836872-A41	Keyboard/top cover with touchpad for use in horizon blue models in Belgium (includes keyboard cable)
836872-AB1	Keyboard/top cover with touchpad for use in horizon blue models in Taiwan (includes keyboard cable)
836872-AD1	Keyboard/top cover with touchpad for use in horizon blue models in South Korea (includes keyboard cable)
836872-B31	Keyboard/top cover with touchpad for use in horizon blue models internationally (includes keyboard cable)
836872-BA1	Keyboard/top cover with touchpad for use in horizon blue models in Slovenia (includes keyboard cable)
836872-BB1	Keyboard/top cover with touchpad for use in horizon blue models in Israel (includes keyboard cable)
836872-BG1	Keyboard/top cover with touchpad for use in horizon blue models in Switzerland (includes keyboard cable)
836872-DB1	Keyboard/top cover with touchpad for use in horizon blue models in Canada (includes keyboard cable)
836872-DH1	Keyboard/top cover with touchpad for use in horizon blue models in Denmark, Finland, and Norway (includes keyboard cable)
836872-FL1	Keyboard/top cover with touchpad for use in horizon blue models in the Czech Republic and Slovakia (includes keyboard cable)
836873-001	Keyboard/top cover with touchpad for use in orchid magenta models in the United States (includes keyboard cable)
836873-031	Keyboard/top cover with touchpad for use in orchid magenta models in the United Kingdom and Singapore (includes keyboard cable)
836873-041	Keyboard/top cover with touchpad for use in orchid magenta models in Germany (includes keyboard cable)
836873-051	Keyboard/top cover with touchpad for use in orchid magenta models in France (includes keyboard cable)
836873-061	Keyboard/top cover with touchpad for use in orchid magenta models in Italy (includes keyboard cable)
836873-071	Keyboard/top cover with touchpad for use in orchid magenta models in Spain (includes keyboard cable)
836873-131	Keyboard/top cover with touchpad for use in orchid magenta models in Portugal (includes keyboard cable)
836873-141	Keyboard/top cover with touchpad for use in orchid magenta models in Turkey (includes keyboard cable)
836873-151	Keyboard/top cover with touchpad for use in orchid magenta models in Greece (includes keyboard cable)
836873-161	Keyboard/top cover with touchpad for use in orchid magenta models in Latin America (includes keyboard cable)
836873-171	Keyboard/top cover with touchpad for use in orchid magenta models in Saudi Arabia (includes keyboard cable)
836873-211	Keyboard/top cover with touchpad for use in orchid magenta models in Hungary (includes keyboard cable)
836873-251	Keyboard/top cover with touchpad for use in orchid magenta models in Russia (includes keyboard cable)
836873-261	Keyboard/top cover with touchpad for use in orchid magenta models in Bulgaria (includes keyboard cable)
836873-271	Keyboard/top cover with touchpad for use in orchid magenta models in Romania (includes keyboard cable)
836873-281	Keyboard/top cover with touchpad for use in orchid magenta models in Thailand (includes keyboard cable)
836873-291	Keyboard/top cover with touchpad for use in orchid magenta models in Japan (includes keyboard cable)
836873-A41	Keyboard/top cover with touchpad for use in orchid magenta models in Belgium (includes keyboard cable)

Spare part number	Description
836873-AB1	Keyboard/top cover with touchpad for use in orchid magenta models in Taiwan (includes keyboard cable)
836873-AD1	Keyboard/top cover with touchpad for use in orchid magenta models in South Korea (includes keyboard cable)
836873-B31	Keyboard/top cover with touchpad for use in orchid magenta models internationally (includes keyboard cable)
836873-BA1	Keyboard/top cover with touchpad for use in orchid magenta models in Slovenia (includes keyboard cable)
836873-BB1	Keyboard/top cover with touchpad for use in orchid magenta models in Israel (includes keyboard cable)
836873-BG1	Keyboard/top cover with touchpad for use in orchid magenta models in Switzerland (includes keyboard cable)
836873-DB1	Keyboard/top cover with touchpad for use in orchid magenta models in Canada (includes keyboard cable)
836873-DH1	Keyboard/top cover with touchpad for use in orchid magenta models in Denmark, Finland, and Norway (includes keyboard cable)
836873-FL1	Keyboard/top cover with touchpad for use in orchid magenta models in the Czech Republic and Slovakia (includes keyboard cable)
838683-001	TouchPad cable

4 Removal and replacement procedures preliminary requirements

Tools required

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

- Flat-bladed screw driver
- Magnetic screw driver
- Phillips P0 screw driver

Service considerations

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

📝 **NOTE:** As you remove each subassembly from the 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 for Authorized Service Provider parts

📝 **NOTE:** 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:** Details about your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer. See Labels on page 8 for details.

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

Component replacement procedures

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

There are as many as 52 screws that must be removed, replaced, and/or loosened when servicing the computer. Make special note of each screw size and location during removal and replacement.

Keyboard/top cover

For use in country or region	Spare part number	For use in country or region	Spare part number
Does not include touchpad; for use in magenta models:			
For use in Belgium	792792-A41	For use in Portugal	792792-131
For use in Bulgaria	792792-261	For use in Romania	792792-271
For use in Canada	792792-DB1	For use in Russia	792792-251
For use in the Czech Republic and Slovakia	792792-FL1	For use in Saudi Arabia	792792-171
For use in Denmark, Finland, and Norway	792792-DH1	For use in Slovenia	792792-BA1
For use in France	792792-051	For use in South Korea	792792-AD1
For use in Germany	792792-041	For use in Spain	792792-071
For use in Greece	792792-151	For use in Switzerland	792792-BG1
For use in Hungary	792792-211	For use in Taiwan	792792-AD1
For use in Israel	792792-BB1	For use in Thailand	792792-281
For use in Italy	792792-061	For use in Turkey	792792-141
For use in Latin America	792792-161	For use in the United Kingdom and Singapore	792792-031
For use in Japan	792792-291	For use in the United States	792792-001
For use in the Netherlands	792792-B31		

For use in country or region	Spare part number	For use in country or region	Spare part number
Includes touchpad; for use in orchid magenta models:			
For use in Belgium	836873-A41	For use in Portugal	836873-131
For use in Bulgaria	836873-261	For use in Romania	836873-271
For use in Canada	836873-DB1	For use in Russia	836873-251
For use in the Czech Republic and Slovakia	836873-FL1	For use in Saudi Arabia	836873-171
For use in Denmark, Finland, and Norway	836873-DH1	For use in Slovenia	836873-BA1
For use in France	836873-051	For use in South Korea	836873-AD1
For use in Germany	836873-041	For use in Spain	836873-071
For use in Greece	836873-151	For use in Switzerland	836873-BG1
For use in Hungary	836873-211	For use in Taiwan	836873-AD1
For use in Israel	836873-BB1	For use in Thailand	836873-281
For use in Italy	836873-061	For use in Turkey	836873-141
For use in Latin America	836873-161	For use in the United Kingdom and Singapore	836873-031
For use in Japan	836873-291	For use in the United States	836873-001
For use in the Netherlands	836873-B31		
Does not include touchpad; for use in horizon blue models:			
For use in Belgium	792791-A41	For use in Portugal	792791-131
For use in Bulgaria	792791-261	For use in Romania	792791-271
For use in Canada	792791-DB1	For use in Russia	792791-251
For use in the Czech Republic and Slovakia	792791-FL1	For use in Saudi Arabia	792791-171
For use in Denmark, Finland, and Norway	792791-DH1	For use in Slovenia	792791-BA1
For use in France	792791-051	For use in South Korea	792791-AD1
For use in Germany	792791-041	For use in Spain	792791-071
For use in Greece	792791-151	For use in Switzerland	792791-BG1
For use in Hungary	792791-211	For use in Taiwan	792791-AD1
For use in Israel	792791-BB1	For use in Thailand	792791-281
For use in Italy	792791-061	For use in Turkey	792791-141
For use in Latin America	792791-161	For use in the United Kingdom and Singapore	792791-031
For use in Japan	792791-291	For use in the United States	792791-001
For use in the Netherlands	792791-B31		

For use in country or region	Spare part number	For use in country or region	Spare part number
Includes touchpad; for use in horizon blue models:			
For use in Belgium	836872-A41	For use in Portugal	836872-131
For use in Bulgaria	836872-261	For use in Romania	836872-271
For use in Canada	836872-DB1	For use in Russia	836872-251
For use in the Czech Republic and Slovakia	836872-FL1	For use in Saudi Arabia	836872-171
For use in Denmark, Finland, and Norway	836872-DH1	For use in Slovenia	836872-BA1
For use in France	836872-051	For use in South Korea	836872-AD1
For use in Germany	836872-041	For use in Spain	836872-071
For use in Greece	836872-151	For use in Switzerland	836872-BG1
For use in Hungary	836872-211	For use in Taiwan	836872-AD1
For use in Israel	836872-BB1	For use in Thailand	836872-281
For use in Italy	836872-061	For use in Turkey	836872-141
For use in Latin America	836872-161	For use in the United Kingdom and Singapore	836872-031
For use in Japan	836872-291	For use in the United States	836872-001
For use in the Netherlands	836872-B31		
Includes touchpad; for use in cobalt blue models:			
For use in Belgium	830646-A41	For use in Portugal	830646-131
For use in Bulgaria	830646-261	For use in Romania	830646-271
For use in Canada	830646-DB1	For use in Russia	830646-251
For use in the Czech Republic and Slovakia	830646-FL1	For use in Saudi Arabia	830646-171
For use in Denmark, Finland, and Norway	830646-DH1	For use in Slovenia	830646-BA1
For use in France	830646-051	For use in South Korea	830646-AD1
For use in Germany	830646-041	For use in Spain	830646-071
For use in Greece	830646-151	For use in Switzerland	830646-BG1
For use in Hungary	830646-211	For use in Taiwan	830646-AD1
For use in Israel	830646-BB1	For use in Thailand	830646-281
For use in Italy	830646-061	For use in Turkey	830646-141
For use in Latin America	830646-161	For use in the United Kingdom and Singapore	830646-031
For use in Japan	830646-291	For use in the United States	830646-001
For use in the Netherlands	830646-B31		

For use in country or region	Spare part number	For use in country or region	Spare part number
Includes touchpad; for use in violet purple models:			
For use in Belgium	830647-A41	For use in Portugal	830647-131
For use in Bulgaria	830647-261	For use in Romania	830647-271
For use in Canada	830647-DB1	For use in Russia	830647-251
For use in the Czech Republic and Slovakia	830647-FL1	For use in Saudi Arabia	830647-171
For use in Denmark, Finland, and Norway	830647-DH1	For use in Slovenia	830647-BA1
For use in France	830647-051	For use in South Korea	830647-AD1
For use in Germany	830647-041	For use in Spain	830647-071
For use in Greece	830647-151	For use in Switzerland	830647-BG1
For use in Hungary	830647-211	For use in Taiwan	830647-AD1
For use in Israel	830647-BB1	For use in Thailand	830647-281
For use in Italy	830647-061	For use in Turkey	830647-141
For use in Latin America	830647-161	For use in the United Kingdom and Singapore	830647-031
For use in Japan	830647-291	For use in the United States	830647-001
For use in the Netherlands	830647-B31		

Before removing the disassembling, follow these steps:

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

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

3. Disconnect all external devices from the computer.

📝 **NOTE:** When replacing the keyboard/top cover, be sure that the TouchPad assembly (see TouchPad on page 35) and power button board (see Power button board on page 36) are removed from the defective keyboard/top cover and installed on the replacement keyboard/top cover:

Remove the keyboard/top cover:

1. Close the computer.

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

3. Remove the four larger computer feet **(1)** from the corners of the computer bottom.

4. Remove the two smaller computer rear feet **(2)** from near the rear corners of the computer bottom.

5. Remove one screw cover **(3)** from the middle rear of the computer bottom.

The screw covers and the computer rear feet are included in the Rubber Kit, spare part number 792782-001 for horizon blue and orchid magenta models or 830713-001 for cobalt blue and violet purple models.
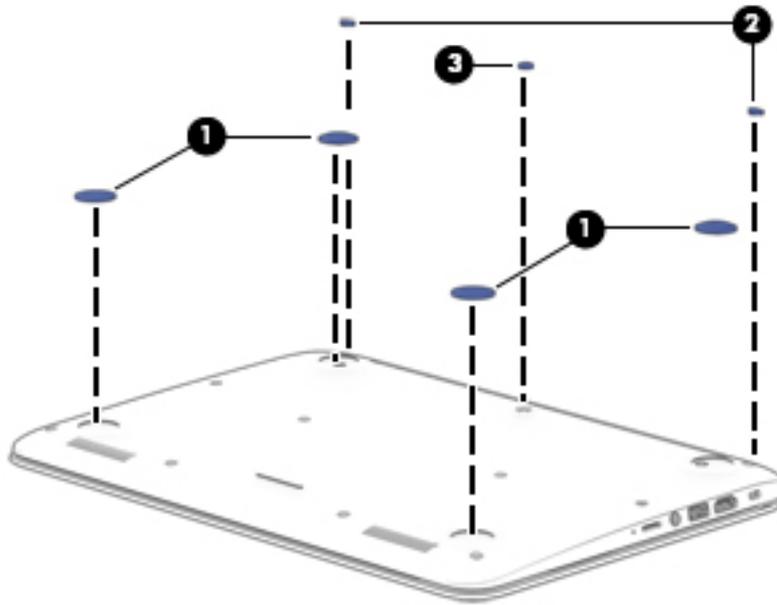
6. Remove the 13 Phillips PM2.5×6.0 screws that secure the keyboard/top cover to the bottom cover.
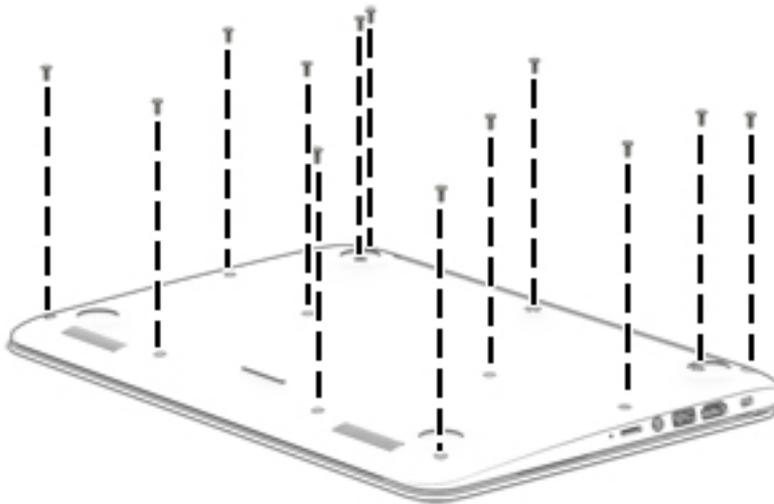
7. Turn the computer right side up, with the front toward you.

8. Open the computer.

⚠ **CAUTION:** Do not completely separate the keyboard/top cover from the bottom cover in the next step. There are ribbon cables connecting the keyboard/top cover to the system board that can be damaged if too much separation is achieved.

9. Lift the front edge **(1)** of the keyboard/top cover until it **(2)** separates from the bottom cover.

10. Disconnect the following cables from the system board:

(3): Battery cable

(4): Touchpad cable

(5): Keyboard cable

(6): Power button board cable

11. Remove the keyboard/top cover from the computer **(7)**.

Reverse this procedure to install the keyboard/top cover.

TouchPad

| Description	Spare part number
TouchPad for use in models without WWAN (includes cable)	795911–001
TouchPad for use in models with WWAN (includes cable)	792776–001
TouchPad cable	838683–001

Before removing the TouchPad, follow these steps:

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

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

3. Disconnect all external devices from the computer.

4. Remove the keyboard/top cover (see).

Remove the TouchPad:

1. Position the keyboard/top cover upside down with the front toward you.

2. Remove the two Philllips PM2.0×2.0 broad head screws **(1)** that secure the TouchPad to the keyboard/top cover.

    NOTE: When removing the TouchPad, make sure the cable is released through the opening in the keyboard/top cover.

3. Remove the TouchPad and cable **(2)** by releasing them downward **(3)** from the top surface of the keyboard/top cover.
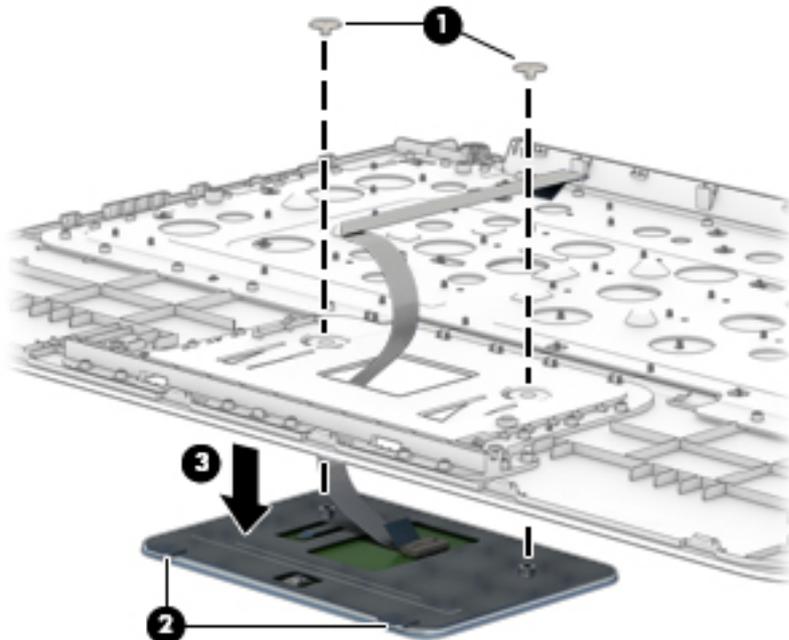
Reverse this procedure to install the TouchPad.

Power button board

Description	Spare part number
Power button board (includes cable)	792777-001

Before removing the power button board, follow these steps:

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

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

3. Disconnect all external devices from the computer.

4. Remove the keyboard/top cover (see Keyboard/top cover on page 29).

Remove the power button board:

1. Position the keyboard/top cover upside down.

2. Remove the PM2.0×2.0 broad head screw **(1)** that secures the power button board to the keyboard/top cover.

3. Lift the board to disengage it from the posts built into the top cover **(2)** and then remove the board **(3)**.
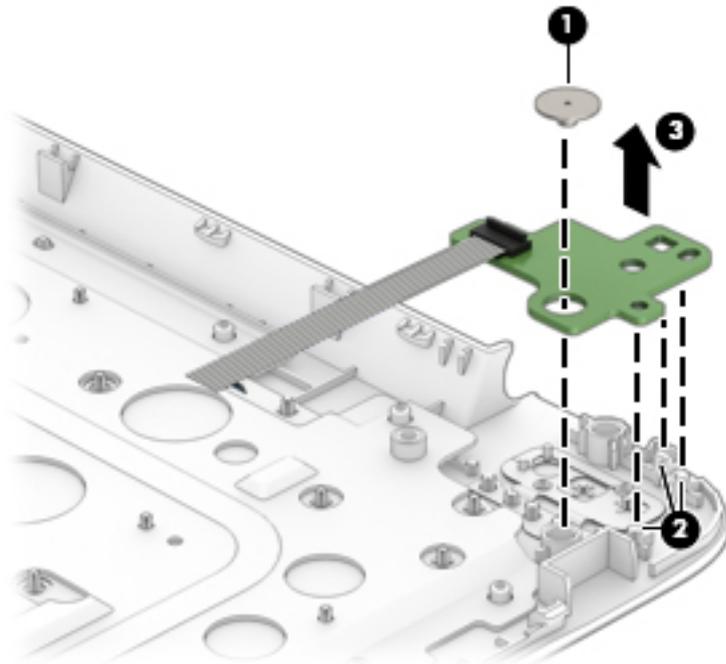
Reverse this procedure to install the power button board.

WLAN module

Description	Spare part number
Broadcom BCM43142 802.11 bgn 1x1 Wi-Fi + BT4.0 HMC Combo Adapter	753076-005
Realtek RT8723BE 802.11bgn 1x1 Wi-Fi + BT 4.0 Combo Adapter	753077-005
Intel Dual Band Wireless-AC 3160 802.11 ac 1×1 WiFi + Bluetooth 4.0 Combo Adapter	784638-005
Broadcom BCM43142 802.11 b/g/n 1x1 Wi-Fi + BT4.0 M.2 Combo Adapter	792608-005
Intel Dual Band Wireless-AC 3165 802.11 ac 1x1 WiFi + BT 4.0 Combo Adapter	806723-005

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

Before removing the WLAN module, follow these steps:

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

2. Disconnect all external devices connected to the computer.

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

4. Remove the keyboard/top cover (see Keyboard/top cover on page 29). Make sure the battery cable is disconnected from the system board.

Remove the WLAN module:

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

   📝 **NOTE:** The 1/black WLAN antenna cable is connected to the WLAN module 1/Main terminal.

   Either one or two antennas may be connected to the module.

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

3. Remove the WLAN module **(3)** by pulling the module away from the slot at an angle.
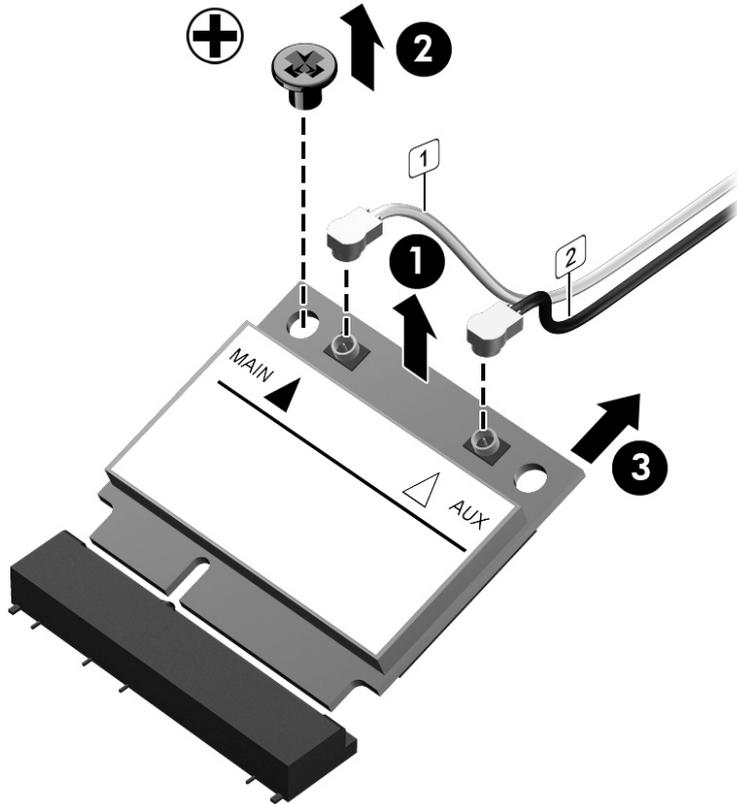
NOTE: If the WLAN antenna is not connected to the terminal on the WLAN module, a protective sleeve must be installed on the antenna connector, as shown in the following illustration.
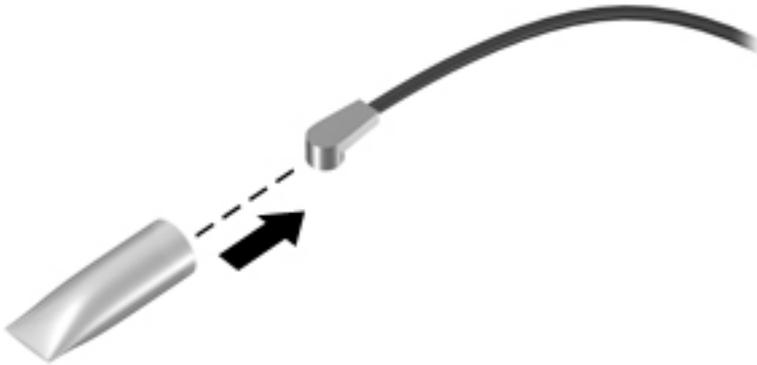
Reverse this procedure to install the WLAN module.

WWAN/GPS module

Description	Spare part number
HP hs3110 HSPA+ Mobile Broadband Module	748599-005
HP hs3114 HSPA+ Mobile Broadband Module	748600-005

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

Before removing the WWAN module, follow these steps:

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

2.	Disconnect all external devices connected to the computer.

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

4.	Remove the keyboard/top cover (see Keyboard/top cover on page 29). Make sure the battery cable is disconnected from the system board.

Remove the WWAN module:

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

2.	Remove the Phillips PM2.0×3.0 screw **(2)** that secures the WLAN module to the computer.

3. Remove the WWAN module **(3)** by pulling the module away from the slot at an angle.
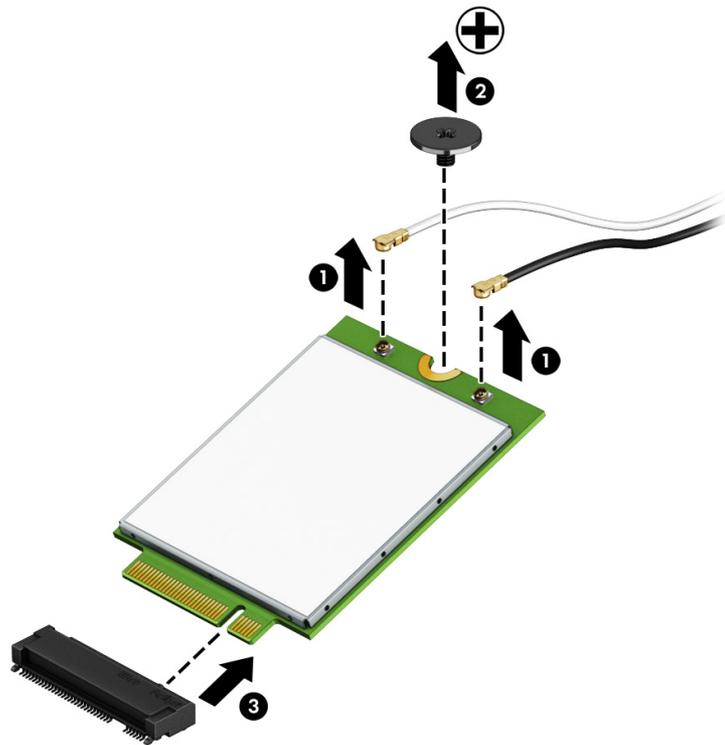
NOTE: If the WLAN antenna is not connected to the terminal on the WWAN module, a protective sleeve must be installed on the antenna connector, as shown in the following illustration.
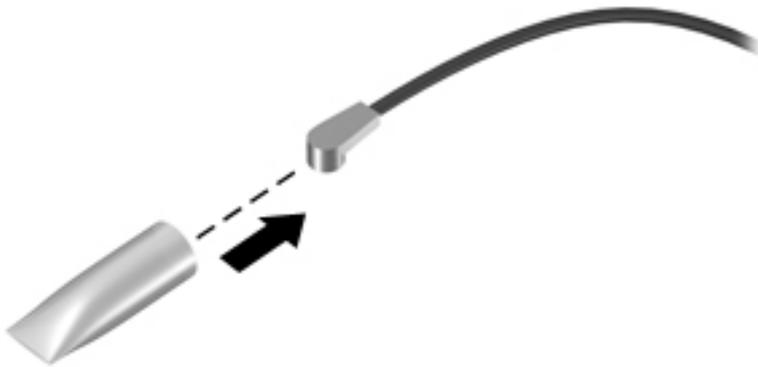
Reverse this procedure to install the WWAN module.

Battery

Description	Spare part number
Battery, 3-cell, 37-WHr, 3.25-AHr, Li-ion (includes cable)	787521-005

Before removing the battery, follow these steps:

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

2. Disconnect all external devices connected to the computer.

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

4. Remove the keyboard/top cover (see Keyboard/top cover on page 29).

Remove the battery:

1. Remove the eight PM2.0×3.0 screws **(1)** that secure the battery to the bottom cover.

2. Lift the battery from the computer **(2)**.
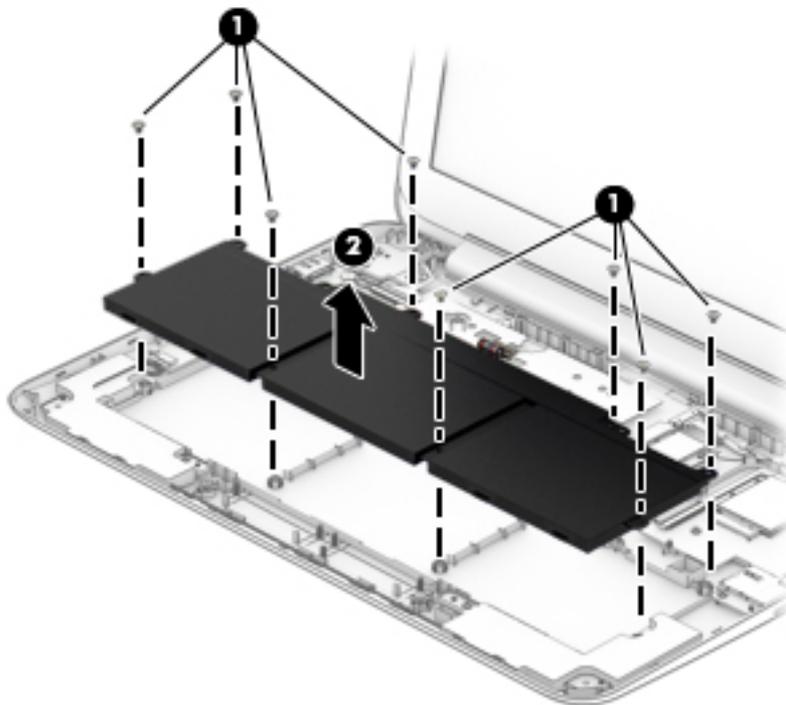
Reverse this procedure to install the battery.

USB/card reader board

Description	Spare part number
USB/card reader board for use in models without WWAN (includes cable)	792778-001
USB/card reader board for use in models with WWAN (includes cable)	792769-001

Before removing the USB/card reader board, follow these steps:

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

2. Disconnect all external devices connected to the computer.

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

4. Remove the keyboard/top cover (see Keyboard/top cover on page 29).

5. Remove the battery (see Battery on page 41).

6. Remove the WWAN/GPS module (see WWAN/GPS module on page 39).

Remove the USB/card reader board:

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

2. Remove the three Phillips PM2.0×3.0 screws **(2)** that secure the USB/card reader board to the computer.

3. Rotate left side of board up and pull it toward the left to remove it from connectors, and then remove the board from the computer **(3)**.
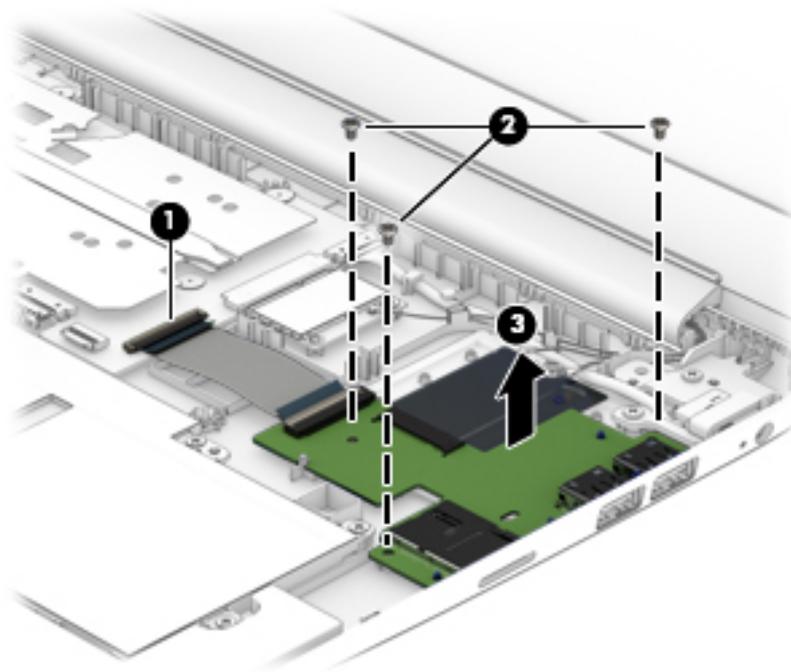
Reverse this procedure to install the USB/card reader board.

Speakers

Description	Spare part number
Speakers (include left and right speakers and cables)	792784-001

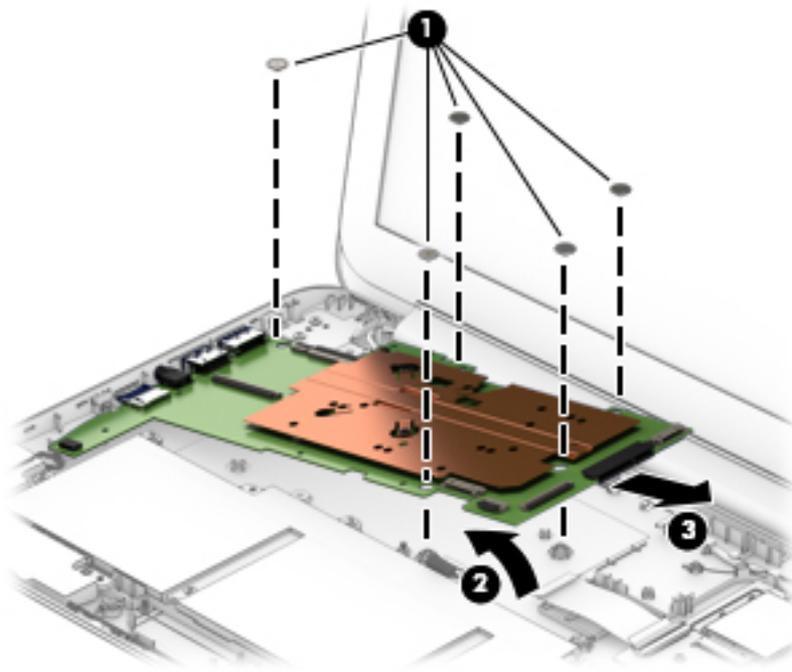Before removing the speakers, follow these steps:

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

2. Disconnect all external devices connected to the computer.

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

4. Remove the keyboard/top cover (see Keyboard/top cover on page 29).

5. Remove the battery (see Battery on page 41).

Remove the speakers:

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

2. Remove the two Phillips PM2.0×3.0 screws **(2)** that secure the speakers to the bottom cover.

3. Lift the speakers from the computer **(3)**.
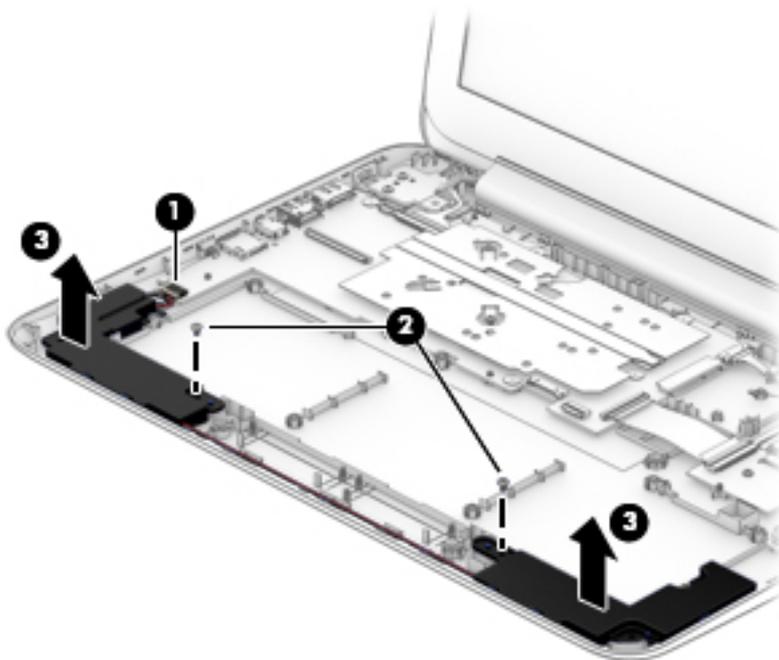
Reverse this procedure to install the speakers.

Heat sink

Description	Spare part number
Heat sink for use with Bay Trail (Celeron N2840) processors (includes thermal cloth)	792773-001
Heat sink for use with Braswell (Celeron N3050) processors (includes thermal cloth)	832476-001

Before removing the heat sink, follow these steps:

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

2. Disconnect all external devices connected to the computer.

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

4. Remove the keyboard/top cover (see).

5. Remove the battery (see).

Remove the heat sink:

1. Remove the two Phillips PM2.0×2.0 screws **(1)** that secure the heat sink to the system board.

2. Lift the heat sink off the system board **(2)**.
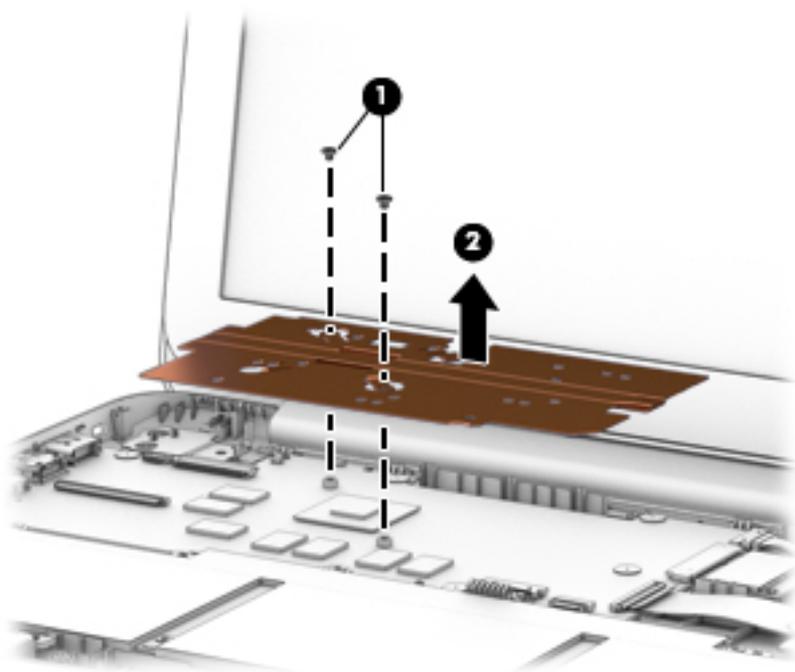
> **NOTE:** The thermal material must be thoroughly cleaned from the surfaces of the heat sink and the system board each time the heat sink is removed. Thermal material is used on the processor **(1)** and the heat sink section **(2)** that services it.
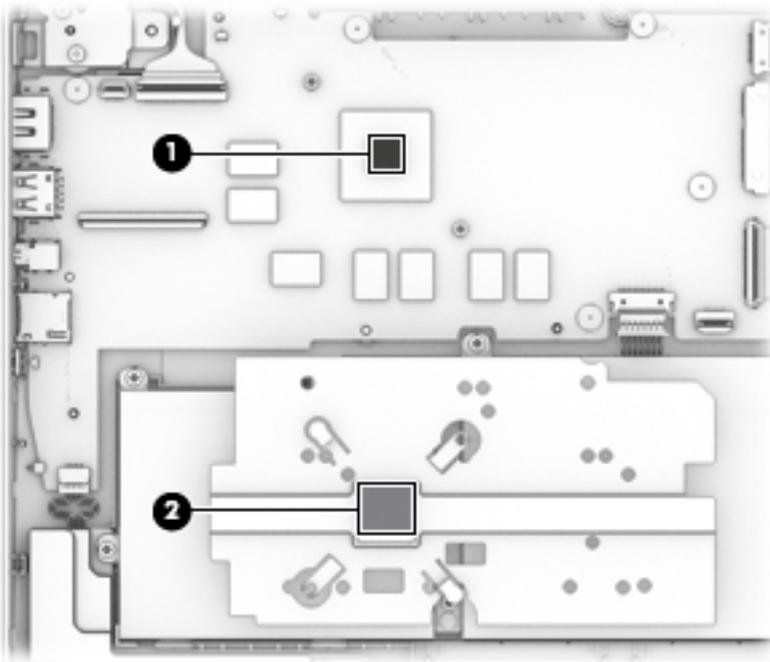
Reverse this procedure to install the heat sink.

System board

Description	Spare part number
Equipped with an Intel Celeron N2840 processor with 2 GB system memory, 64 GB eMMC hard drive, and the Windows 8.1 Standard operating system (includes thermal grease and thermal pads)	792786-501
Equipped with an Intel Celeron N2840 processor with 2 GB system memory, 64 GB eMMC hard drive, and Windows 7 or a non-Windows operating system (includes thermal grease and thermal pads)	792786-001
Equipped with an Intel Celeron N2840 processor with 2 GB system memory, 32 GB eMMC hard drive, and the Windows 8.1 Professional or Windows 10 operating system (includes thermal grease and thermal pads)	792785-601
Equipped with an Intel Celeron N2840 processor with 2 GB system memory, 32 GB eMMC hard drive, and the Windows 8.1 Standard operating system (includes thermal grease and thermal pads)	792785-501
Equipped with an Intel Celeron N2840 processor with 2 GB system memory, 32 GB eMMC hard drive, and Windows 7 or a non-Windows 8.1 operating system (includes thermal grease and thermal pads)	792785-001
Equipped with an Intel Celeron N3050 processor with 2 GB system memory, 32 GB eMMC hard drive, and the Windows 8.1 or Windows 10 operating system (includes thermal grease and thermal pads)	830639-601
Equipped with an Intel Celeron N3050 processor with 2 GB system memory, 32 GB eMMC hard drive, and Windows 7 or a non-Windows operating system (includes thermal grease and thermal pads)	830639-001

Before removing the system board, follow these steps:

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

2. Disconnect all external devices connected to the computer.

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

4. Remove the keyboard/top cover (see Keyboard/top cover on page 29), and then remove the following components:

   a. Battery (see Battery on page 41)

   b. WLAN module (see WLAN module on page 37)

   c. WWAN/GPS module (see WWAN/GPS module on page 39)

   d. Heat sink (see Heat sink on page 44)

Remove the system board:

1. Disconnect the following cables from the system board:

   (1): Display cable

   (2): Power connector cable

   (3): USB/card reader board cable

   (4): Speaker cable
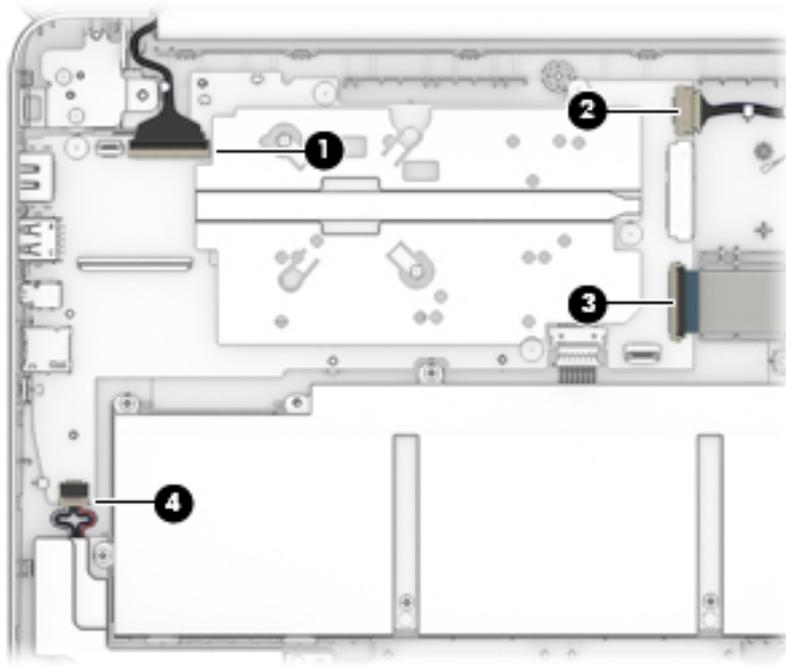
2. Remove the five Phillips PM2.0×2.0 broad head screws **(1)** that secure the system board to the bottom cover.

3. Lift the right side of the system board **(2)**, and then pull the system board toward the right to remove it from the computer **(3)**.

Reverse this procedure to install the system board.

Display assembly – non-touch screen models

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

Before removing the display assembly, follow these steps:

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

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

3. Disconnect all external devices from the computer.

4. Remove the keyboard/top cover (see).

5. Disconnect the battery cable from the system board (see).

Remove the display assembly:

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

2. Disconnect the WLAN and WWAN/GPS antenna cables **(2)** from the terminals on the WLAN and WWAN/GPS modules.

3. Release the display panel cable and the wireless antenna cables from the routing channels and clips **(3)** built into the bottom cover.

4. Remove the four Phillips PM2.5×4.5 screws **(4)** that secure the display assembly to the bottom cover.

5. Remove the display assembly **(5)**.

6. If it is necessary to replace the display back cover or any of the display assembly internal components:

   a. Remove the display bezel screw covers **(1)**.

b. Remove the two Phillips PM2.0×3.0 screws **(2)** that secure the bezel to the display assembly.

📝 **NOTE:** The screw covers may be difficult to remove. If you need to replace the covers, they are available in the Rubber Kit, spare part number 792782-001 for horizon blue and orchid magenta models or 830713-001 for cobalt blue and violet purple models.
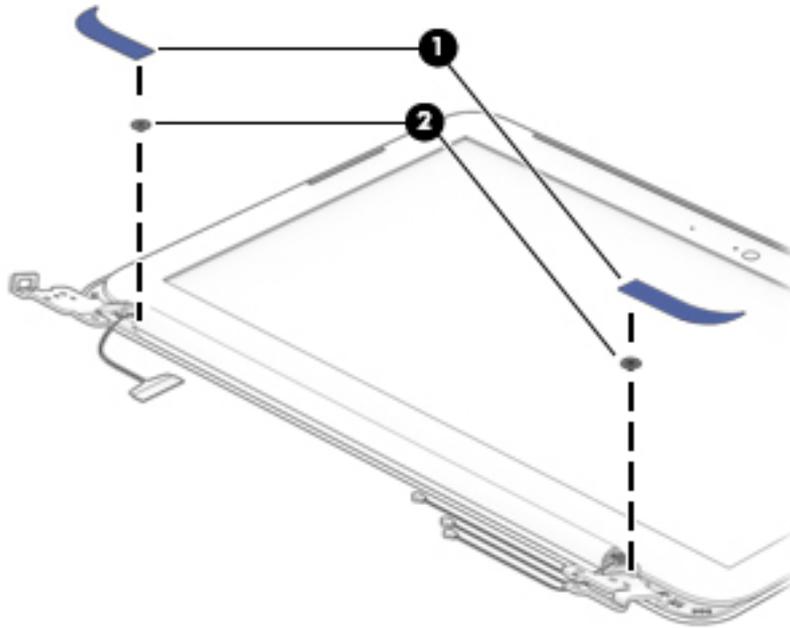
c. Flex the inside edges of the top edge **(1)**, the left and right sides **(2)**, and the bottom edge **(3)** of the display bezel until the bezel disengages from the display back cover.

d. Remove the display bezel **(4)**.

The display bezel is available using spare part number 792768-001 for magenta models, 792767-001 for horizon blue models, 830644-001 for cobalt blue models, and 830645-001 for purple models.
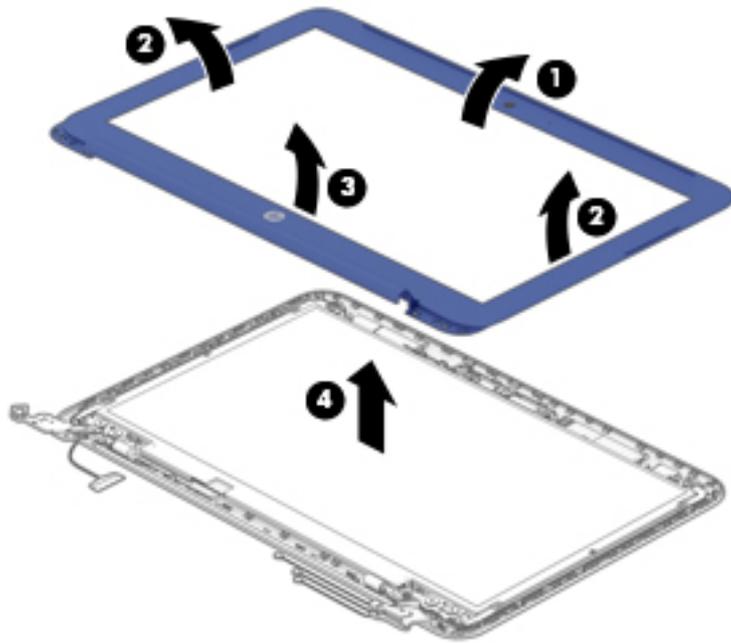
7. If it is necessary to replace the webcam/microphone module:

    a. Disconnect the webcam/microphone module cable **(1)** from the module.

    b. Detach and remove the module **(2)** from the display back cover. (The webcam/microphone module is attached to the display back cover with double-sided adhesive.)

    The webcam/microphone module is available using spare part number 793616-001 for models without a touch screen.
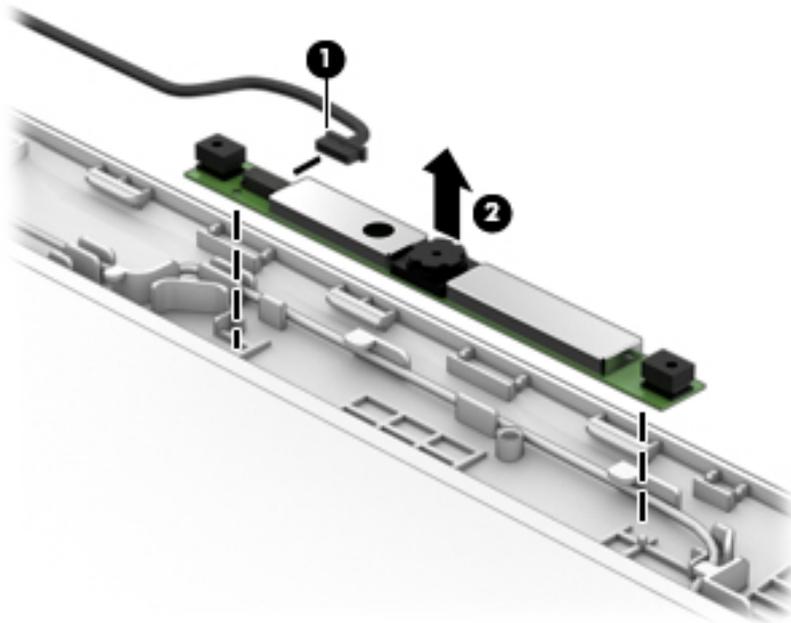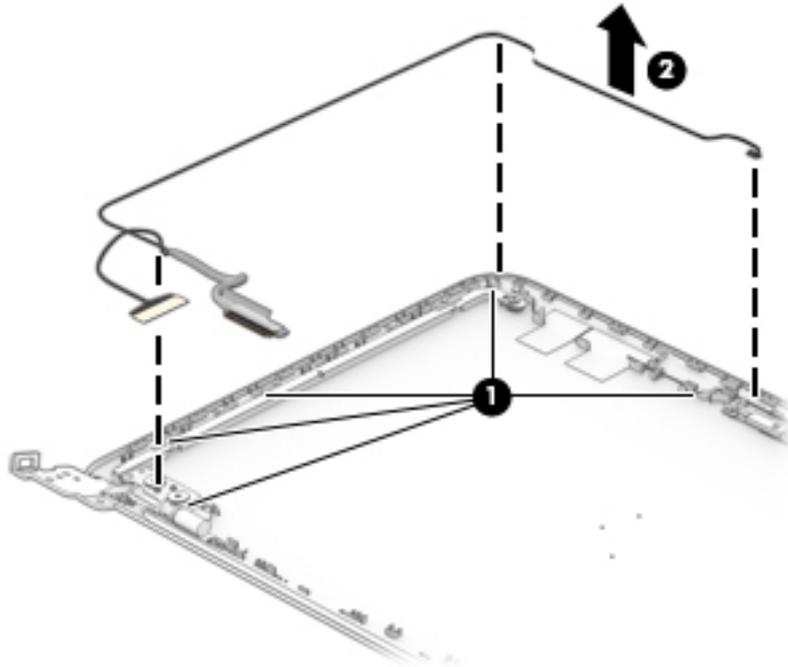

8. If it is necessary to replace the display panel:

a. Remove the four Phillips PM1.5×2.5 screws **(1)** that secure the display panel to the display back cover.

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

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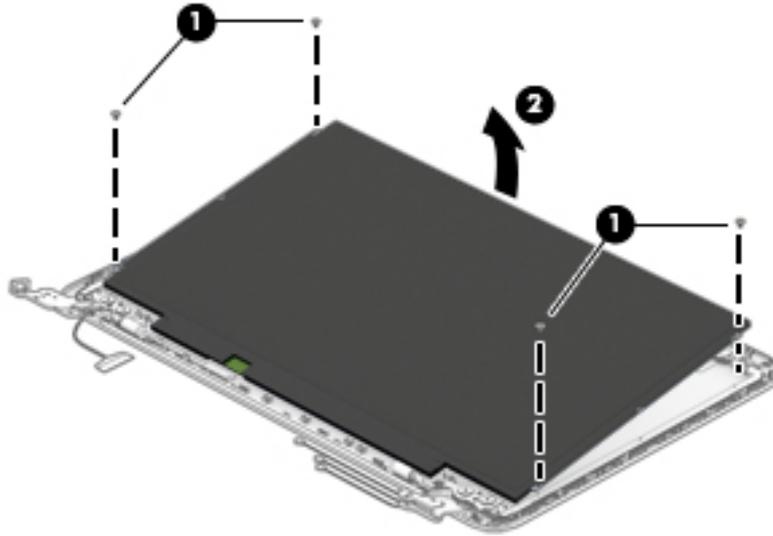
c. Release the adhesive strip **(1)** that secures the display panel cable connector to the display panel.

d. Disconnect the display panel cable **(2)** from the display panel.

e. Remove the display panel **(3)**.

The display panel is available using spare part number 792779-001 for models without a-touch screen.

The display back cover is available using the following spare part numbers:

792760-001: Orchid magenta models

792761-001: Horizon blue models

830640-001: Cobalt blue models

830641-001: Violet purple models

9. If it is necessary to replace the display hinges:

a. Remove the four Phillips PM2.5×3.0 broad head screws **(1)** that secure the display hinges to the display back cover.

b. Remove the two Phillips PM2.0×2.5 screws **(2)** on the bottom of the hinges and the two Phillips PM2.0×2.5 screws **(3)** at the top of the hinges that secure the hinges to the display back cover.

c. Remove the display hinges **(4)**.

The display hinges are included in the Display Hinge Kit, spare part number 792774-001 for models without a touch screen.
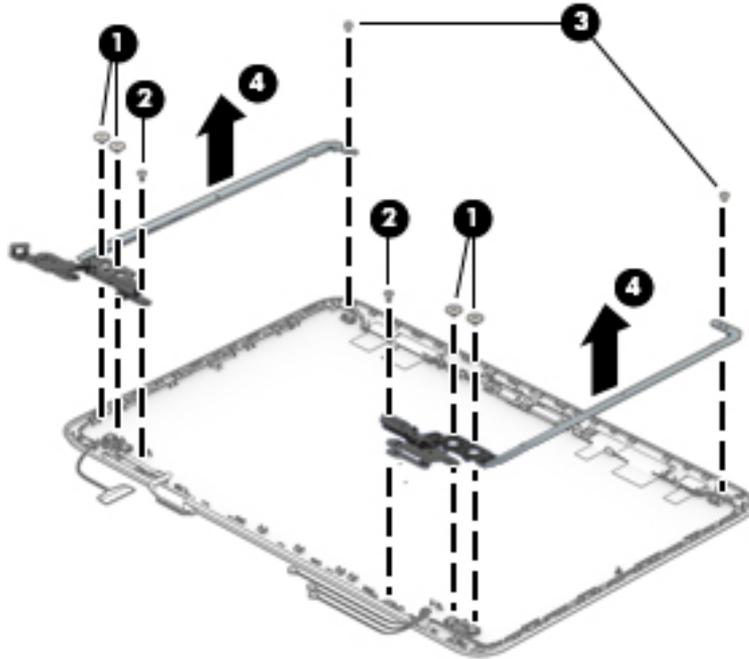
10. If it is necessary to replace the display panel cable:

a. Release the display panel cable from the retention clips **(1)** and channel built into the display back cover.

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

The display panel cable includes the webcam/microphone module cable and is available using the following spare part numbers:

792771-001: Models without a touch screen and without WWAN

798215-001: Models without a touch screen and with WWAN

11. If it is necessary to replace the WLAN antenna cable and transceiver:

    a. Detach the antenna transceivers **(1)** from the display back cover. (The transceivers are attached to the display back cover with double-sided adhesive.)

    b. Release the shielding tape **(2)** that secures the antenna cables to the display back cover.

c. Release the antenna cables from the retention clips **(2)** and channel built into the top edge and right side of the display back cover.

The antenna cables and transceivers are included in the WLAN Antenna Kit, spare part number 792758-001 and WWAN Antenna Kit, spare part number 792757-001.
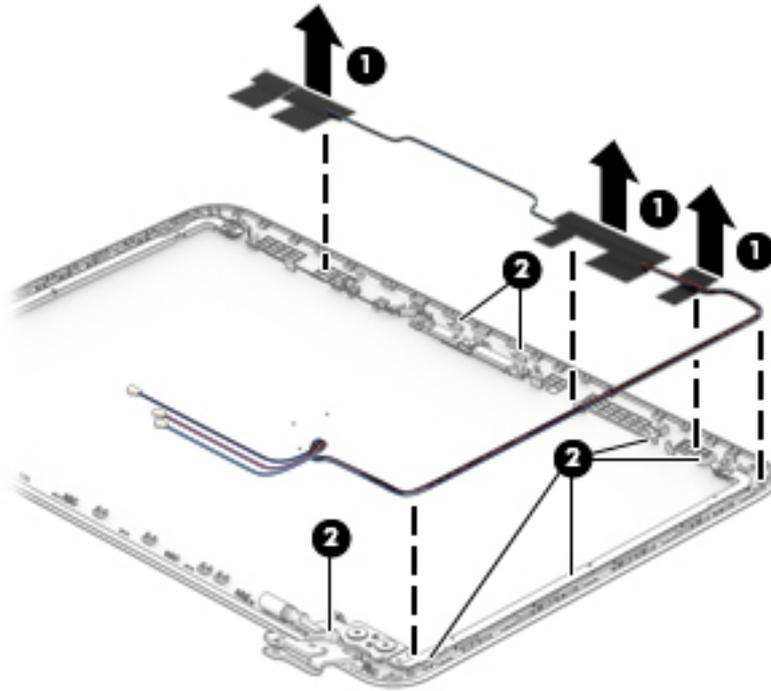
Reverse this procedure to reassemble and install the display assembly.

Display assembly – touch screen models

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

Before removing the display assembly, follow these steps:

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

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

3. Disconnect all external devices from the computer.

4. Remove the keyboard/top cover (see Keyboard/top cover on page 29).

5. Disconnect the battery cable from the system board (see Battery on page 41).

Remove the display assembly:

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

2. Disconnect the WLAN and WWAN/GPS antenna cables **(2)** from the terminals on the WLAN and WWAN/GPS modules.

3. Release the display panel cable and the wireless antenna cables from the routing channels and clips **(3)** built into the bottom cover.

4. Remove the four Phillips PM2.5×4.5 screws **(4)** that secure the display assembly to the bottom cover.

5. Remove the display assembly **(5)**.

6. If it is necessary to replace the display back cover or any of the display assembly internal components:

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

b. Remove the two Phillips PM2.0×3.0 screws **(2)** that secure the to the display assembly.

> 📝 **NOTE:** The screw covers may be difficult to remove. If you need to replace the covers, a Mylar screw cover kit is included in all display spare part kits.
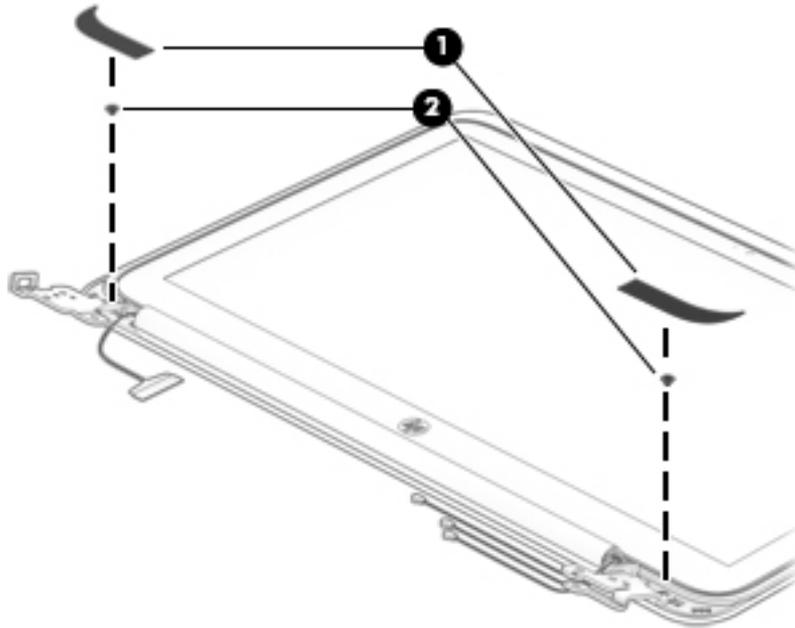
c. Lift the top of the rear cover upward **(1)**, and then lift the cover from the display **(2)**.

The display rear cover is available using spare part number 792759-001 for horizon blue models and 792762-001 for orchid magenta models.

7. If it is necessary to replace the webcam/microphone module:

a. Disconnect the webcam/microphone module cable **(1)** from the module.

b. Detach and remove the module **(2)** from the display back cover. (The webcam/microphone module is attached to the display back cover with double-sided adhesive.)

The webcam/microphone module is available using spare part number 792793-001 for models with a touch screen.

8. If it is necessary to replace the display hinges:

a. Remove the four Phillips PM2.5×3.0 broad head screws **(1)** that secure the display hinges to the display back cover.

b. Remove the two Phillips PM2.0×2.5 screws **(2)** on the bottom of the hinges and the two Phillips PM2.0×2.5 screws **(3)** at the top of the hinges that secure the hinges to the display back cover.

c. Remove the display hinges **(4)**.

The display hinges are included in the Display Hinge Kit, spare part number 792775-001 for touch screen models.
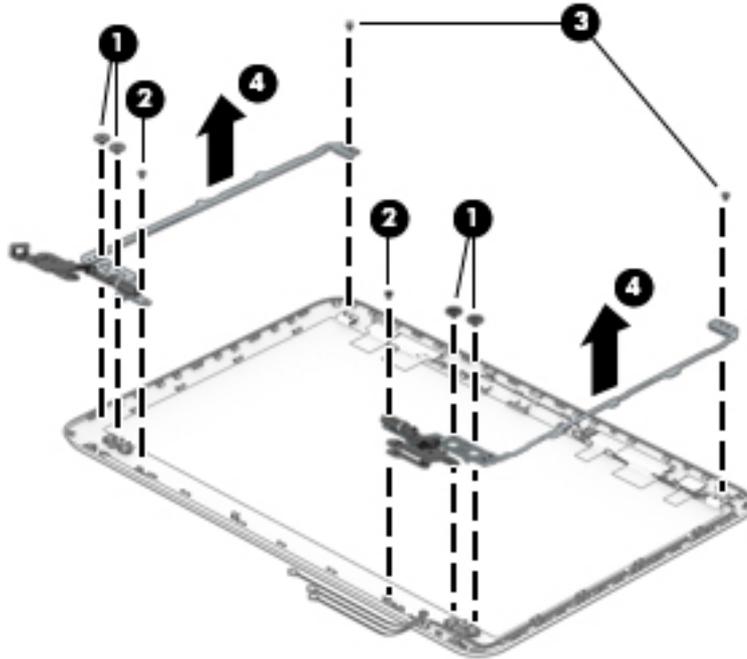
9. If it is necessary to replace the display panel cable:

   a. Lift the Mylar tape from atop the connector on the panel **(1)**, and then disconnect the cable from the connector **(2)**.

   b. Disconnect the cable from the webcam module **(3)**.

c. Remove the cable from the clips on the side of the display panel **(4)**, and then remove the display cable from the display **(5)**.

The display panel cable includes the webcam/microphone module cable and is available using the following spare part numbers:

792772-001: Models with a touch screen and without WWAN

798216-001: Models with a touch screen and with WWAN

10. If it is necessary to replace the WLAN antenna cable and transceiver:

a. Detach the antenna transceivers **(1)** from the display back cover. (The transceivers are attached to the display back cover with double-sided adhesive.)

b. Release the shielding tape **(2)** that secures the antenna cables to the display back cover.

c. Release the antenna cables from the retention clips **(2)** and channel built into the top edge and right side of the display back cover.

The antenna cables and transceivers are included in the WLAN Antenna Kit, spare part number 792758-001 and WWAN Antenna Kit, spare part number 792757-001.
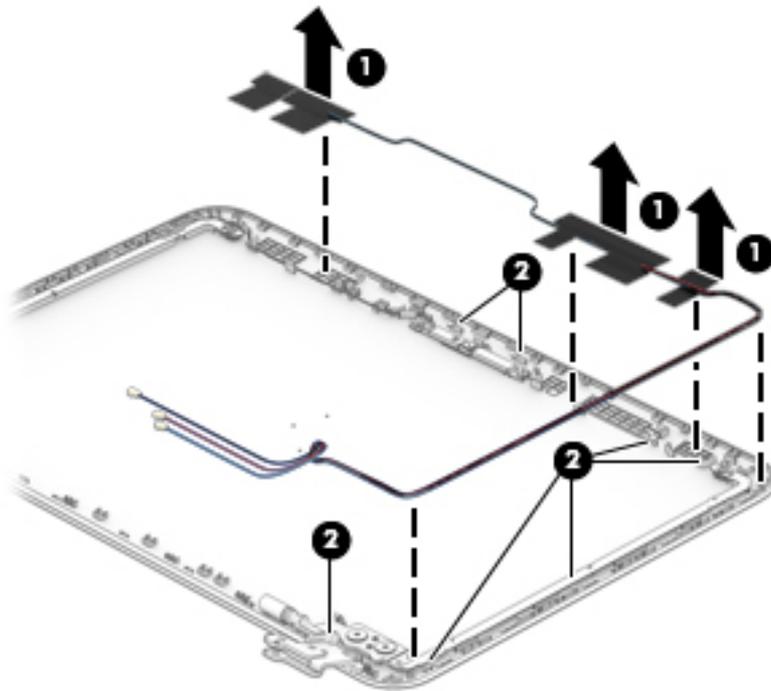
Reverse this procedure to reassemble and install the display assembly.

Power connector cable

Description	Spare part number
Power connector cable (includes tape)	796086-001

Before removing the power connector cable, follow these steps:

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

2. Disconnect all external devices connected to the computer.

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

4. Remove the keyboard/top cover (see Keyboard/top cover on page 29).

5. Disconnect the battery cable from the system board (see Battery on page 41).

6. Remove the display assembly (see Display assembly – non-touch screen models on page 48) or Display assembly – touch screen models on page 56.

Remove the power connector cable:

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

2. Release the power connector **(2)** from the retention clips built into the bottom cover.

3. Remove the power connector cable **(3)**.
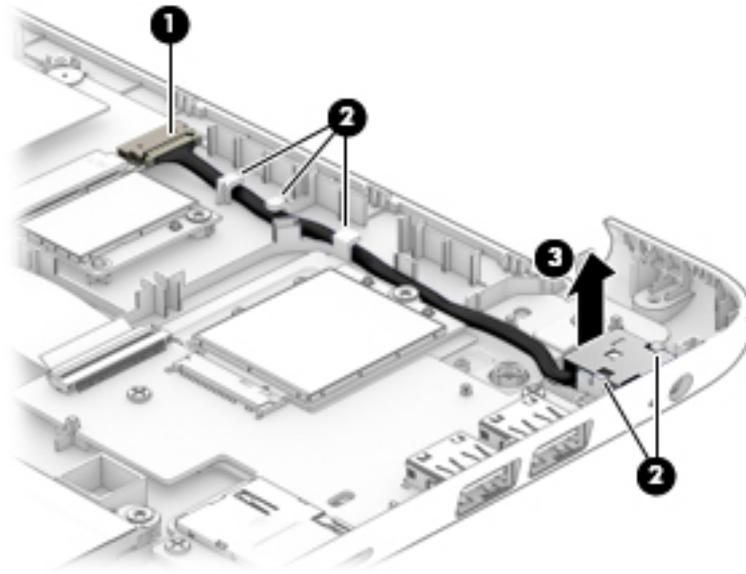
Reverse this procedure to install the power connector cable.

6 Using Setup Utility (BIOS) in Windows 8.1

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

Starting Setup Utility (BIOS)

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

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

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 the one currently installed on the computer, you need to know the version of the system BIOS that is installed.

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

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

2. Select **Main**, and then make note of your BIOS version.

3. Select **Exit**, select **Exit Discarding Changes**, and then follow the on-screen instructions.

Downloading a BIOS update

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

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

● Do not shut down the computer or initiate Sleep.

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

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

1. From the Start screen, type `support`, and then select the **HP Support Assistant** app.

    – or –

    From the Windows desktop, click the question mark icon in the notification area, at the far right of the taskbar.

2. Click **Updates and tune-ups**, and then click **Check for HP updates now**.

3. Follow the on-screen instructions.

4. At the download area, follow these steps:

    a. Identify the most recent BIOS update and compare it to the BIOS version currently installed on your computer. If the update is more recent than your BIOS, make a note of the date, name, or other identifier. You may need this information to locate the update later, after it has been downloaded to your hard drive.

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

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

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

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

    – or –

    From the Windows desktop, right-click the **Start** button, and then select **File Explorer**.

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

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

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

    The BIOS installation begins.

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

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

7   Using Setup Utility (BIOS) in Windows 10

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

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

Starting Setup Utility (BIOS)

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

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

- Computers or tablets with keyboards:

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

- Tablets without keyboards:

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

        - or -

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

    2.   Tap **f10**.

Updating Setup Utility (BIOS)

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

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

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

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

    — or —

Click the question mark icon in the taskbar.

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

– or –

▲ Use Setup Utility (BIOS).

To use Setup Utility (BIOS):

1. Start Setup Utility (BIOS) (see <u>Starting Setup Utility (BIOS) on page 65</u>).

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

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

To check for later BIOS versions, see <u>Downloading a BIOS update on page 66</u>.

Downloading a BIOS update

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

- Do not disconnect power from the computer by unplugging the power cord from the AC outlet.
- Do not shut down the computer or initiate Sleep.
- Do not insert, remove, connect, or disconnect any device, cable, or cord.

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

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

– or –

Click the question mark icon in the taskbar.

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

3. Follow the on-screen instructions.

4. At the download area, follow these steps:

a. Identify the most recent BIOS update and compare it to the BIOS version currently installed on your computer. If the update is more recent than your BIOS version, make a note of the date, name, or other identifier. You may need this information to locate the update later, after it has been downloaded to your hard drive.

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

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

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

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

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

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

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

   The BIOS installation begins.

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

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

Synchronizing a tablet and keyboard (select products only)

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

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

8 Specifications

Computer specifications

	Metric	U.S.
Tablet dimensions		
Width	**33.32 cm**	13.11 in
Depth	**22.44 cm**	8.84 in
Height (front to rear)	**0.69 to 2.14 cm**	0.27 to 0.84 in
Weight (equipped with hard drive)	**1.70 kg**	3.75 lbs
Weight (equipped with solid-state drive)	**1.55 kg**	3.42 lbs
Input power		
Operating voltage and current	19.5 V dc @ 2.31 A – 45 W	
	19.5 V dc @ 3.33 A – 65 W (select models only)	
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.

33.8-cm (13.3-in), HD display specifications

	Metric	U.S.
Active diagonal size	33.8-cm	13.3-in
Resolution	1280x800	
Display colors	262K	
Surface treatment	Anti-glare	
Contrast ratio	300:1 (typical)	
Brightness	200 nits (typical)	
Viewing angle	SVA	
Backlight	LED	
Response time	5.5 ms/10.5 ms (Typ)(Tr/Td)	
Viewing angle	45/45/15/35 (Typ)(L/R/U/D)	

9 Backing up, restoring, and recovering in Windows 8.1

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

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

For additional information, refer to the HP Support Assistant.

▲ From the Start screen, type `support`, and then select the **HP Support Assistant** app.

- or -

From the Windows desktop, click the question mark icon in the notification area, at the far right of the taskbar.

Creating recovery media and backups

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

- Use HP Recovery Manager after you successfully set up the computer to create HP Recovery media. This step creates a backup of the HP Recovery partition on the computer. The backup can be used to reinstall the original operating system in cases where the hard drive is corrupted or has been replaced. For information on creating recovery media, see Creating HP Recovery media (select models only) on page 70. For information on the recovery options that are available using the recovery media, see Recovering using HP Recovery Manager on page 72.

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

  For more information, see Using Windows tools on page 71.

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

Creating HP Recovery media (select models only)

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

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

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

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

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

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

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

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

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

To create HP Recovery media:

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

2. Select **Recovery Media Creation**, and then follow the on-screen instructions.

If you ever need to recover the system, see .

Using Windows tools

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

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

▲ From the Start screen, type `help`, and then select **Help and Support**.

– or –

From the Windows desktop, click the question mark icon in the notification area, at the far right of the taskbar.

For more information and steps, see Help and Support.

Restore and recovery

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

IMPORTANT: Not all methods are available on all models.

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

▲ From the Start screen, type support, and then select the **HP Support Assistant** app.

- or -

From the Windows desktop, click the question mark icon in the notification area, at the far right of the taskbar.

- If you need to correct a problem with a preinstalled application or driver, use the Drivers and Applications Reinstall option of HP Recovery Manager to reinstall the individual application or driver.

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

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

  For more information, see Recovering using HP Recovery Manager on page 72.

- If you want to recover the Windows partition to original factory content, you can choose the System Recovery option from the HP Recovery partition (select models only) or use the HP Recovery media. For more information, see Recovering using HP Recovery Manager on page 72. If you have not already created recovery media, see Creating HP Recovery media (select models only) on page 70.

- On select models, if you want to recover the computer's original factory partition and content , or if you have replaced the hard drive, you can use the Factory Reset option of HP Recovery media. For more information, see Recovering using HP Recovery Manager on page 72.

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

  For more information, see Removing the HP Recovery partition (select models only) on page 74.

Recovering using HP Recovery Manager

HP Recovery Manager software allows you to recover the computer to its original factory state by using the HP Recovery media that you either created or that you obtained from support, or by using the HP Recovery partition (select models only). If you have not already created recovery media, see Creating HP Recovery media (select models only) on page 70.

What you need to know before you get started

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

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

- HP Recovery media must be used if the computer hard drive fails. If you have not already created recovery media, see Creating HP Recovery media (select models only) on page 70.

- To use the Factory Reset option (select models only), you must use HP Recovery media. If you have not already created recovery media, see Creating HP Recovery media (select models only) on page 70.

- If your computer does not allow the creation of HP Recovery media or if the HP Recovery media does not work, you can obtain recovery media for your system from support. See the *Worldwide Telephone Numbers* booklet included with the computer. You can also find contact information from the HP

website. Go to http://www.hp.com/support, select your country or region, and follow the on-screen instructions.

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

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

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

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

- Minimized Image Recovery (select models only)—Reinstalls the operating system and all hardware-related drivers and software, but not other software applications.

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

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

Using the HP Recovery partition (select models only)

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

To start HP Recovery Manager from the HP Recovery partition:

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

   - or-

   Press f11 while the computer boots, or press and hold f11 as you press the power button.

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

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

Using HP Recovery media to recover

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

1. If possible, back up all personal files.

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

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

3. Follow the on-screen instructions.

Changing the computer boot order

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

To change the boot order:

1. Insert the HP Recovery media.

2. Start Computer Setup:

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

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

4. Follow the on-screen instructions.

Removing the HP Recovery partition (select models only)

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

IMPORTANT: After you remove the HP Recovery partition, you can no longer use the Windows Refresh option or the Windows option to remove everything and reinstall Windows. In addition, you will not be able to perform System Recovery or Minimized Image Recovery from the HP Recovery partition. So before you remove the Recovery partition, create HP Recovery media; see Creating HP Recovery media (select models only) on page 70.

Follow these steps to remove the HP Recovery partition:

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

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

10 Backing up, restoring, and recovering in Windows 10

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

- Creating recovery media and backups

- Restoring and recovering your system

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

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

– or –

Click the question mark icon in the taskbar.

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

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

Creating recovery media and backups

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

- Use HP Recovery Manager to create HP Recovery media after you successfully set up the computer. This step creates a backup of the HP Recovery partition on the computer. The backup can be used to reinstall the original operating system in cases where the hard drive is corrupted or has been replaced. For information on creating recovery media, see Creating HP Recovery media (select products only) on page 75. For information on the recovery options that are available using the recovery media, see Using Windows tools on page 76.

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

  For more information, see Recovering using HP Recovery Manager on page 77.

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

Creating HP Recovery media (select products only)

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

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

You can use Windows tools to create system restore points and create backups of personal information, see Using Windows tools on page 76.

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

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

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

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

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

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

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

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

To create HP Recovery media:

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

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

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

If you ever need to recover the system, see Recovering using HP Recovery Manager on page 77.

Using Windows tools

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

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

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

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

Restore and recovery

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

IMPORTANT: Not all methods are available on all products.

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

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

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

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

- If you want to recover the Windows partition to original factory content, you can choose the System Recovery option from the HP Recovery partition (select products only) or use the HP Recovery media. For more information, see Recovering using HP Recovery Manager on page 77. If you have not already created recovery media, see Creating HP Recovery media (select products only) on page 75.

- On select products, if you want to recover the computer's original factory partition and content, or if you have replaced the hard drive, you can use the Factory Reset option of HP Recovery media. For more information, see Recovering using HP Recovery Manager on page 77.

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

  For more information, see Removing the HP Recovery partition (select products only) on page 79.

Recovering using HP Recovery Manager

HP Recovery Manager software allows you to recover the computer to its original factory state by using the HP Recovery media that you either created or that you obtained from HP, or by using the HP Recovery partition (select products only). If you have not already created recovery media, see Creating HP Recovery media (select products only) on page 75.

What you need to know before you get started

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

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

- HP Recovery media must be used if the computer hard drive fails. If you have not already created recovery media, see Creating HP Recovery media (select products only) on page 75.

- To use the Factory Reset option (select products only), you must use HP Recovery media. If you have not already created recovery media, see Creating HP Recovery media (select products only) on page 75.

- If your computer does not allow the creation of HP Recovery media or if the HP Recovery media does not work, you can obtain recovery media for your system from support. See the *Worldwide Telephone Numbers* booklet included with the computer. You can also find contact information from the HP

website. Go to http://www.hp.com/support, select your country or region, and follow the on-screen instructions.

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

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

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

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

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

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

Using the HP Recovery partition (select products only)

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

To start HP Recovery Manager from the HP Recovery partition:

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

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

   - or-

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

   For tablets without keyboards:

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

   - or -

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

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

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

Using HP Recovery media to recover

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

1. If possible, back up all personal files.

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

   NOTE: If the computer does not automatically restart in HP Recovery Manager, change the computer boot order. See Changing the computer boot order on page 79.

3. Follow the on-screen instructions.

Changing the computer boot order

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

To change the boot order:

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

1. Insert the HP Recovery media.

2. Access BIOS:

   For computers or tablets with keyboards attached:

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

   For tablets without keyboards:

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

   - or -

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

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

4. Follow the on-screen instructions.

Removing the HP Recovery partition (select products only)

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

IMPORTANT: After you remove the HP Recovery partition, you will not be able to perform System Recovery or create HP recovery media from the HP Recovery partition. So before you remove the Recovery partition, create HP Recovery media; see .

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

Follow these steps to remove the HP Recovery partition:

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

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

11 Using HP PC Hardware Diagnostics (UEFI)

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

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

To start HP PC Hardware Diagnostics UEFI:

1. Start BIOS:

    - Computers or tablets with keyboards:

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

    - Tablets without keyboards:

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

            - or -

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

2. Press or tap f2.

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

    a. Connected USB drive

        NOTE: To download the HP PC Hardware Diagnostics (UEFI) tool to a USB drive, see Downloading HP PC Hardware Diagnostics (UEFI) to a USB device on page 81.

    b. Hard drive

    c. BIOS

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

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

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

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

Download the latest UEFI version:

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

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

Download any version of UEFI for a specific product:

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

2. Click **Drivers & Downloads**.

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

    – or –

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

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

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

12 Power cord set requirements

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

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

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

Requirements for all countries

The following requirements are applicable to all countries and regions:

- The length of the power cord set must be at least 1.0 m (3.3 ft) and no more than 2.0 m (6.5 ft).

- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country or region where the power cord set will be used.

- The power cord sets must have a minimum current capacity of 10 amps and a nominal voltage rating of 125 or 250 V AC, as required by the power system of each country or region.

- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with the appliance inlet on the back of the computer. Requirements for all countries 113

Requirements for specific countries and regions

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

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

1. The flexible cord must be Type HO5VV-F, 3-conductor, 1.0-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.

2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.

3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00-mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.

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

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

13 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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