HP Chromebook (model numbers 14-x000 through 14-x099)

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

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Product notice

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

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

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
Product Name	HP Chromebook (model numbers 14-x000 through 14-x099)
Processor	Nvidia CD570M 2.10-GHz quad core processor system-on-chip (SoC)
Chipset	Integrated SoC processor controller hub (PCH)
Graphics	**Internal Graphics**: Nvidia GeForce (integrated in the ARM SoC) Support for HD decode, DX11, and HDMI
Panel	**TouchScreen models**: 14.0-in, full high-definition (FHD), white light-emitting diode (WLED), BrightView (1920×1080), slim (3.0 mm), SVA, TouchScreen solution with bezel, multitouch enabled, 270 nits typical brightness **Non-TouchScreen models**: 14.0-in, high-definition (HD), WLED, AntiGlare (1366×768), flat (3.6 mm), SVA, 200 nits typical brightness
Memory	Supports DDR3L-1600MHz Supports up to 4096-MB maximum on-board system memory (4 pieces of 256-MB × 16 × 2)
Storage	Supports 16- and 32-GB embedded MultiMedia Controller (eMMC)
Audio and video	HP TrueVision HD slim webcam, 1280×720 by 30 frames per second; fixed (no tilt), with activity LED Single digital microphone with appropriate echo-cancellation, noise-suppression software Two speakers HD audio
Sensors	Trusted platform module (TPM)
Wireless	Integrated wireless local area network (WLAN) options by way of wireless module Two built-in WLAN antennas Supports a Marvell 88W8897 802.11ac 2×2 Wi-Fi + Bluetooth 4.0 Combo Adapter
	Integrated wireless wide area network (WWAN) options by way of wireless module Two built-in WWAN antennas SIM card slot for security (user-accessible) Support for the following WWAN modules: ● HP cr3114 HSPA+ Mobile Broadband Module ● HP lt4110 LTE/HSPA+ 4G Module
External media cards	HP 2-in-1 multiformat Digital Media Reader Slot with push-push technology. Reads data from and writes data to digital memory cards such as Secure Digital (SD™).
Ports	● AC adapter, HP Smart ● Audio-in (mono microphone)/audio-out (stereo headphone) combo jack ● HDMI v1.4 supporting up to 1920×1080 @ 60Hz

Category	Description
Ports *(continued)*	● RJ-45 (Ethernet)
	● USB: one USB 3.0 port, 2 USB 2.0 ports
Keyboard/pointing devices	Full-sized, textured, island-style, Google keyboard
	Touchpad requirements:
	Multitouch gestures enabled
	Taps enabled as default
Power requirements	Support for a 3-cell, 37-WHr battery
	Support for a 65-W, EM or 45-W AC adapter with a 1.0-M power cord
Operating system	**Preinstalled:** Google Chrome operating system
Serviceability	**End user replaceable parts:** AC adapter

2 External component identification

Display
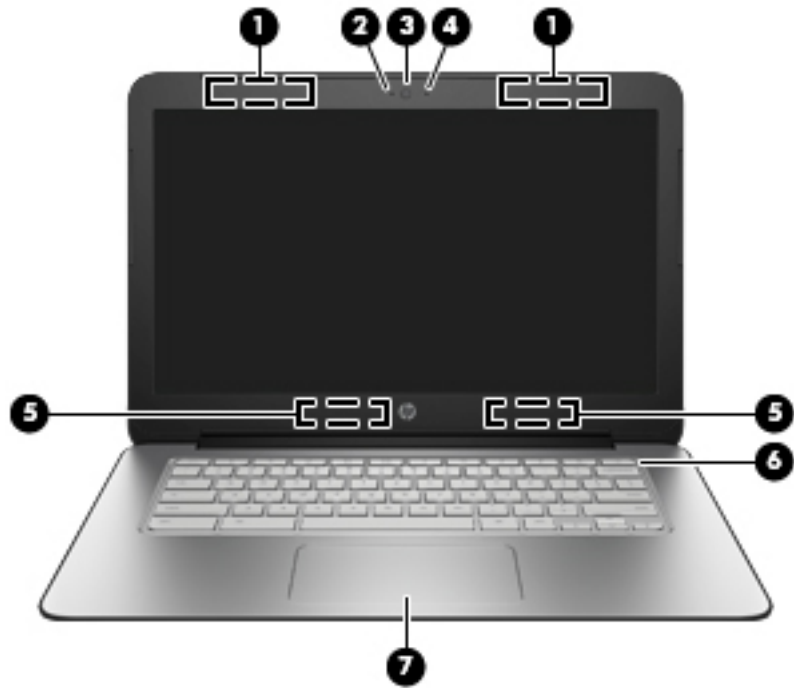
Item	Description		Item	Description
(1)	WWAN antennas (2)*		**(5)**	WLAN antennas (2)*
(2)	Internal microphone		**(6)**	Power button
(3)	HP TrueVision HD Webcam		**(7)**	TouchPad
(4)	Webcam light			

* The position of the WLAN antennas differs, depending on model. Antennas are not visible on the exterior of the device.

Left side
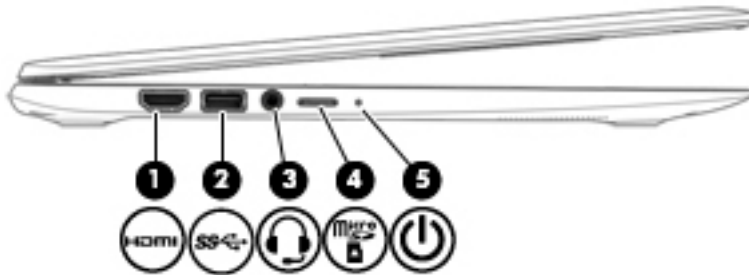
Item	Description	Item	Description
(1)	HDMI port	**(4)**	Media card reader
(2)	USB port	**(5)**	Power light
(3)	Audio-out (headphone)/Audio-in (microphone) jack		

Right side
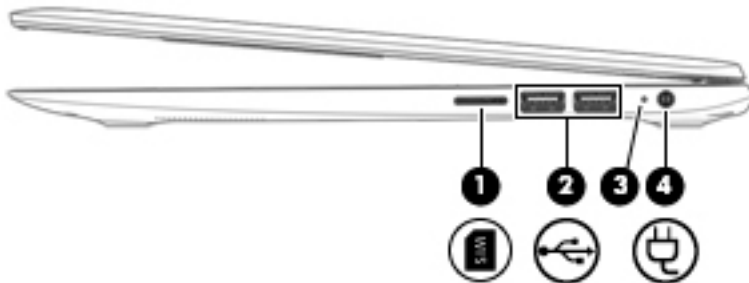
Item	Description	Item	Description
(1)	SIM card reader*	**(3)**	AC adapter/Battery light
(2)	USB port	**(4)**	Power connector (select models only)

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.

Locating the service tag information

The product name **(1)**, serial number **(2)**, product number **(3)**, warranty information **(4)**, and model number **(5)** are located on the bottom of the computer. This information may be needed when travelling internationally or contacting support.
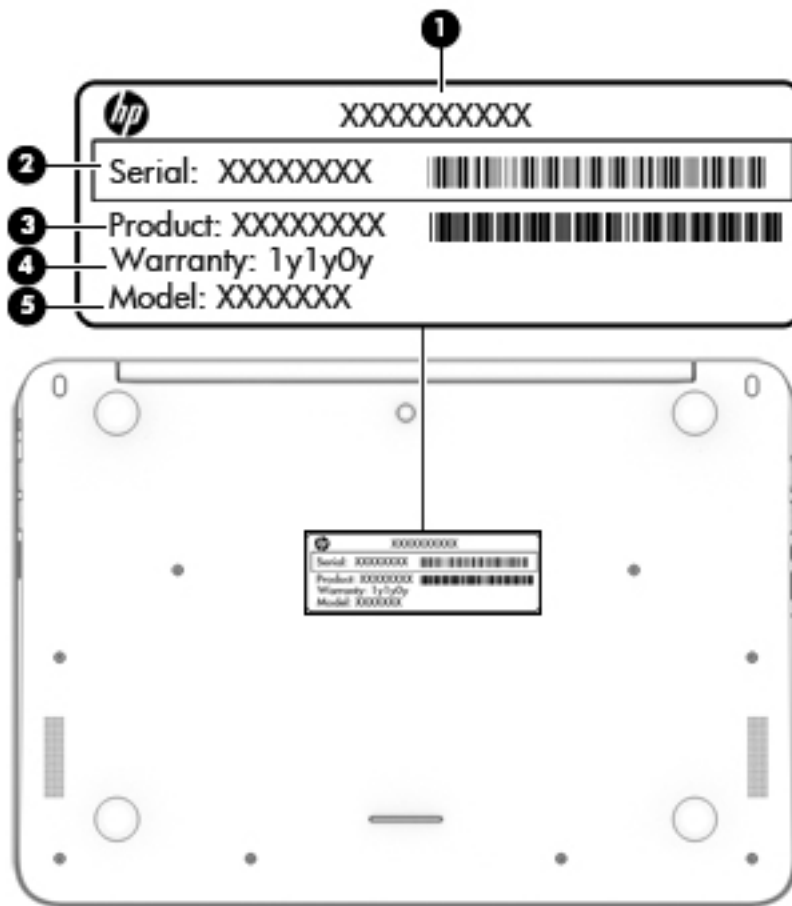
Computer major components
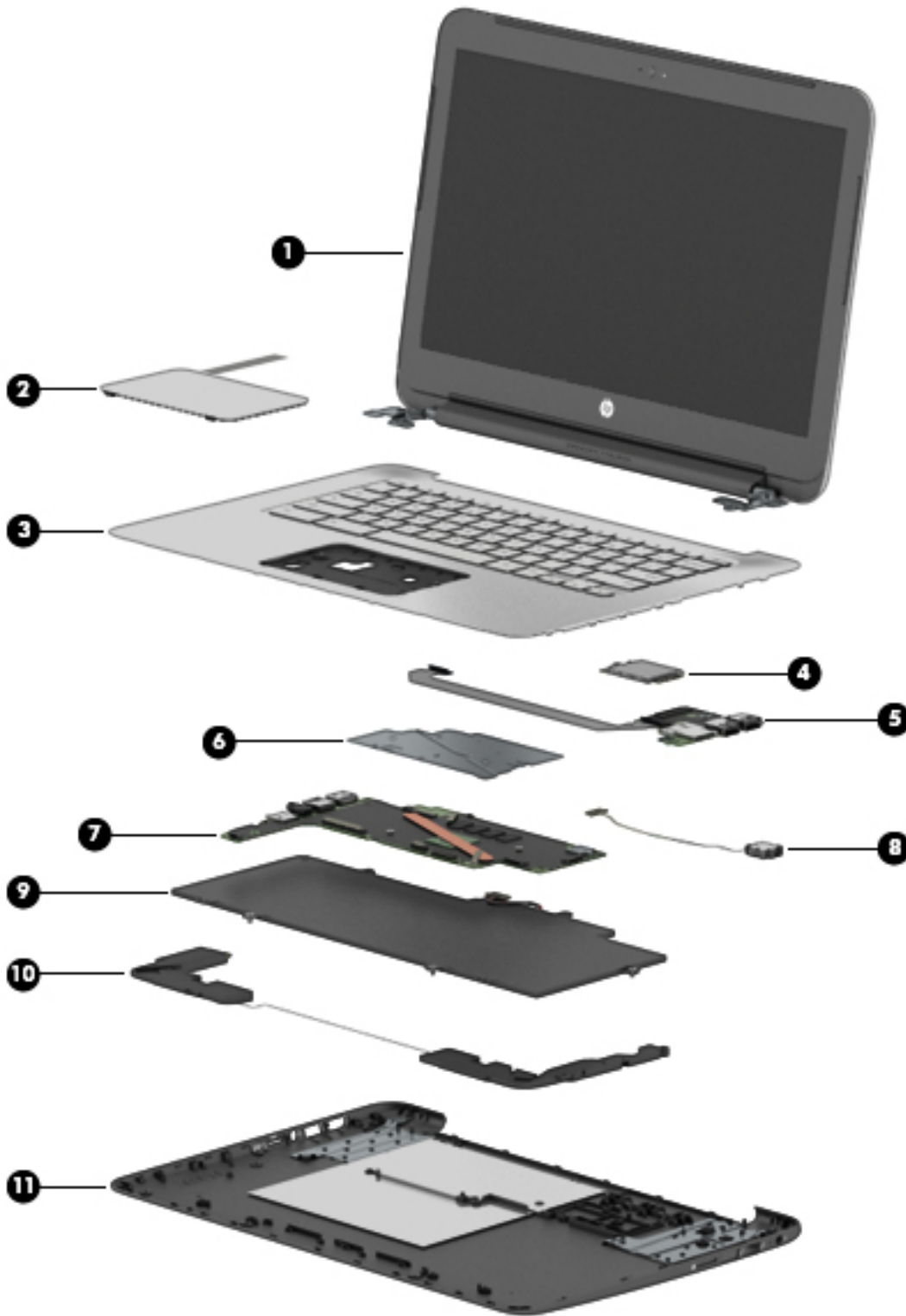
| Item	Component	Spare part number
(1)	**Display assembly**: The display assembly is spared at the subcomponent level only. For display assembly spare part information, see Display assembly subcomponents on page 10.	
(2)	**TouchPad** (includes cable)	787716-001
(3)	**Keyboard/top cover** (includes keyboard cable):	
	In neon green finish:	
	For use in Belgium	787734-A41
	For use in Canada	787734-DB1
	For use in Denmark, Finland, and Norway	787734-DH1
	For use in France	787734-051
	For use in Germany	787734-041
	For use in Italy	787734-061
	For use in the Netherlands	787734-B31
	For use in Russia	787734-251
	For use in Spain	787734-071
	For use in Switzerland	787734-BG1
	For use in the United Kingdom and Singapore	787734-031
	For use in the United States	787734-001
	In ocean turquoise finish:	
	For use in Belgium	787732-A41
	For use in Canada	787732-DB1
	For use in Denmark, Finland, and Norway	787732-DH1
	For use in France	787732-051
	For use in Germany	787732-041
	For use in Italy	787732-061
	For use in the Netherlands	787732-B31
	For use in Russia	787732-251
	For use in Spain	787732-071
	For use in Switzerland	787732-BG1
	For use in the United Kingdom and Singapore	787732-031
	For use in the United States	787732-001
	In smoke silver finish:	
	For use in Belgium	787735-A41
	For use in Canada	787735-DB1
	For use in Denmark, Finland, and Norway	787735-DH1

Item	Component	Spare part number
	For use in France	787735-051
	For use in Germany	787735-041
	For use in Italy	787735-061
	For use in the Netherlands	787735-B31
	For use in Russia	787735-251
	For use in Spain	787735-071
	For use in Switzerland	787735-BG1
	For use in the United Kingdom and Singapore	787735-031
	For use in the United States	787735-001
	In sorbet orange finish:	
	For use in Belgium	787733-A41
	For use in Canada	787733-DB1
	For use in Denmark, Finland, and Norway	787733-DH1
	For use in France	787733-051
	For use in Germany	787733-041
	For use in Italy	787733-061
	For use in the Netherlands	787733-B31
	For use in Russia	787733-251
	For use in Spain	787733-071
	For use in Switzerland	787733-BG1
	For use in the United Kingdom and Singapore	787733-031
	For use in the United States	787733-001
(4)	**WWAN module:**	
	HP cr3114 HSPA+ Mobile Broadband Module	741284-005
	HP lt4110 LTE/HSPA+ 4G Module	755529-001
(5)	**Connector board** (includes cable and double-sided adhesive):	
	For use only on computer models equipped with WWAN capability (includes SD Card Reader slot and SIM slot)	787715-001
	For use only on computer models not equipped with WWAN capability (includes SD Card Reader slot)	787714-001
(6)	**Heat sink** (includes grounding tape and replacement thermal material)	787711-001
(7)	**System board** equipped with an Nvidia CD570M 2.10-GHz quad core processor and a graphics subsystem with UMA memory (includes replacement thermal material)	
	Equipped with 4.0-GB of system memory and 32-GB of eMMC primary storage for use only on computer models equipped with WWAN capability	787731-001

| Item	Component	Spare part number
	Equipped with 4.0-GB of system memory and 32-GB of eMMC primary storage for use only on computer models not equipped with WWAN capability	787727-001
	Equipped with 4.0-GB of system memory and 16-GB of eMMC primary storage for use only on computer models equipped with WWAN capability	787730-001
	Equipped with 4.0-GB of system memory and 16-GB of eMMC primary storage for use only on computer models not equipped with WWAN capability	787726-001
	Equipped with 2.0-GB of system memory and 32-GB of eMMC primary storage for use only on computer models equipped with WWAN capability	787729-001
	Equipped with 2.0-GB of system memory and 32-GB of eMMC primary storage for use only on computer models not equipped with WWAN capability	787725-001
	Equipped with 2.0-GB of system memory and 16-GB of eMMC primary storage for use only on computer models equipped with WWAN capability	787728-001
	Equipped with 2.0-GB of system memory and 16-GB of eMMC primary storage for use only on computer models not equipped with WWAN capability	787724-001
(8)	**Power connector cable**	790635-001
(9)	**Battery**, 3-cell, 37-WHr, 2.96-AHr, Li-ion (includes cable)	774159-001
(10)	**Speakers** (includes left and right speakers and cables)	787723-001
(11)	**Base enclosure:**	
	In neon green finish for use only on computer models equipped with WWAN capability	787703-001
	In ocean turquoise finish for use only on computer models equipped with WWAN capability	787701-001
	In neon smoke silver for use only on computer models equipped with WWAN capability	787704-001
	In sorbet orange finish for use only on computer models equipped with WWAN capability	787702-001
	In neon green finish for use only on computer models not equipped with WWAN capability	787699-001
	In ocean turquoise finish for use only on computer models not equipped with WWAN capability	787697-001
	In neon smoke silver for use only on computer models not equipped with WWAN capability	787700-001
	In sorbet orange finish for use only on computer models not equipped with WWAN capability	787698-001
	Rubber Kit (not illustrated, includes 2 display bezel screw covers, 4 rubber feet, and 3 rubber screw covers)	787721-001

Display assembly subcomponents

TouchScreen display assembly components
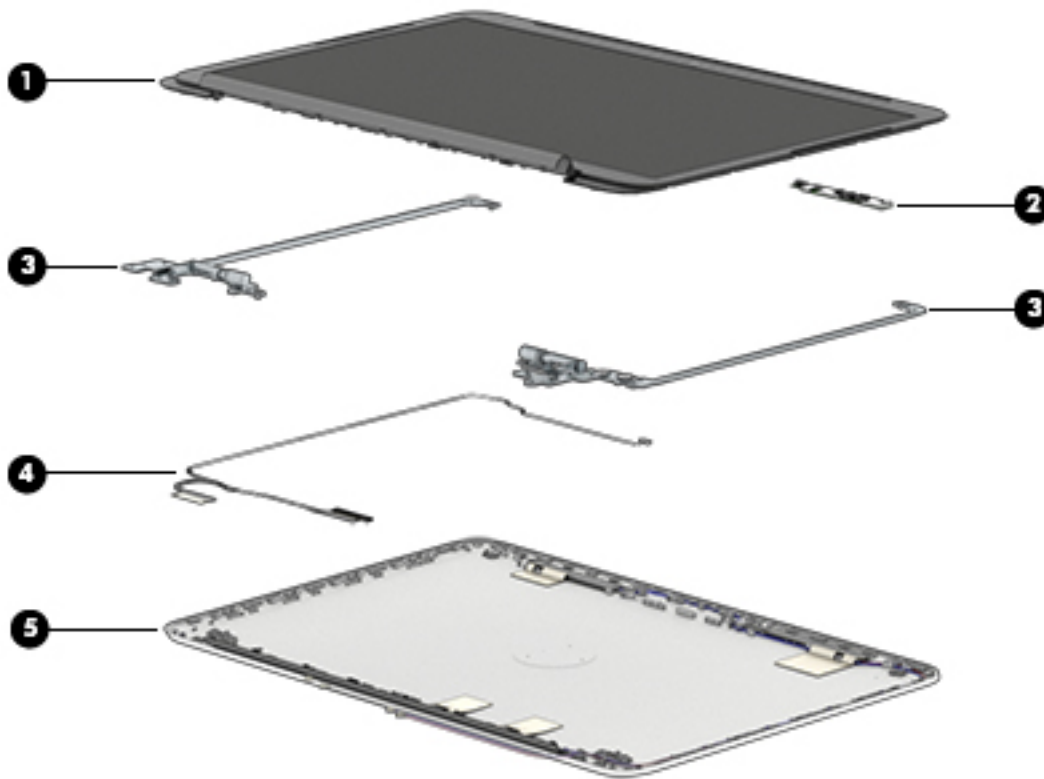
Item	Description	Spare part number
(1)	**Display panel assembly** (14.0-in, BrightView [1920×1080], FHD, WLED, slim [3.0 mm], SVA; includes bezel, display panel cable, and TouchScreen cable):	
	In neon green finish	787719-001
	In ocean turquoise finish	787717-001
	In smoke silver finish	787720-001
	In sorbet orange finish	787718-001
(2)	**Webcam/microphone module** (includes double-sided adhesive)	787736-001
(3)	**Display Hinge Kit**	787713-001
(4)	**Display panel cable** (includes webcamera/microphone module cable)	787710-001
(6)	**Display enclosure** (includes wireless antenna cables and transceivers)	
	In neon green finish	787695-001
	In ocean turquoise finish	787693-001
	In smoke silver finish	787696-001
	In sorbet orange finish	787694-001

Non-TouchScreen display assembly components
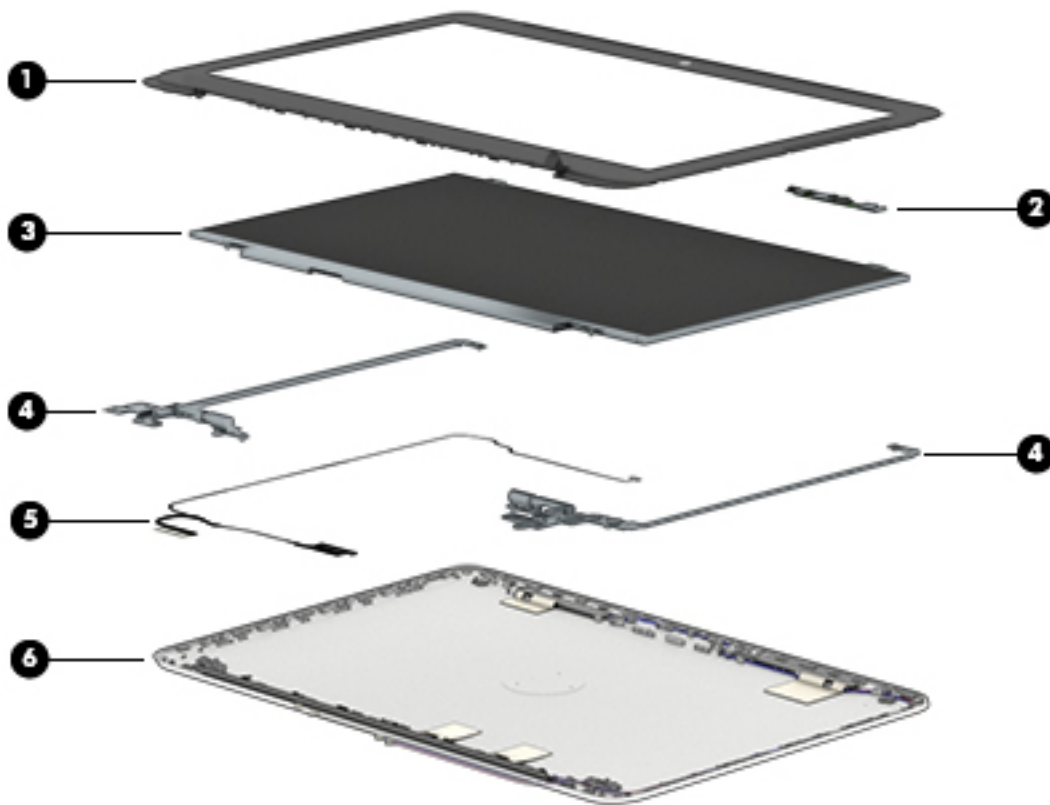
Item	Description	Spare part number
(1)	**Display bezel:**	
	In neon green finish	787707-001
	In ocean turquoise finish	787705-001
	In smoke silver finish	787708-001
	In sorbet orange finish	787706-001
(2)	**Webcam/microphone module** (includes double-sided adhesive)	787736-001
(3)	**Display panel:**	
	14.0-in, AG, FLT, HD display panel for use only on computer models equipped with WWAN capability	794316-001
	14.0-in, AG, FHD, slim, display panel for use only on computer models not equipped with WWAN capability	794314-001
	14.0-in, AG, FLT, HD display panel for use only on computer models not equipped with WWAN capability	788509-001
(4)	**Display Hinge Kit**	787712-001
(5)	**Display panel cable** (includes webcamera/microphone module cable)	787709-001
(6)	**Display enclosure** (includes wireless antenna cables and transceivers)	
	In neon green finish	787691-001

Item	Description	Spare part number
	In ocean turquoise finish	787689-001
	In smoke silver finish	787692-001
	In sorbet orange finish	787690-001

Miscellaneous parts

Component	Spare part number
AC adapter	
65-W HP Smart AC adapter (non-PFC, EM, 4.5-mm)	714657-001
45-W HP Smart AC adapter (non-PFC, RC, 4.5-mm)	741727-001
Power cord (3-pin, 1.0-meter, black):	
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 North America	755530-001
For use in Switzerland	755530-111
For use in the United Kingdom and Singapore	755530-031
Rubber Kit (includes 2 display bezel screw covers, 4 rubber feet, and 2 rubber screw covers)	787721-001
Screw Kit	787722-001

Sequential part number listing

Spare part number	Description
714657-001	65-W HP Smart AC adapter (non-PFC, EM, 4.5-mm)
741284-005	HP cr3114 HSPA+ Mobile Broadband Module
741727-001	45-W HP Smart AC adapter (non-PFC, RC, 4.5-mm)
755529-001	HP lt4110 LTE/HSPA+ 4G Module
755530-001	Power cord for use in North America (3-pin, 1.0-meter, black)
755530-011	Power cord for use in Australia (3-pin, 1.0-meter, black)
755530-021	Power cord for use in Europe (3-pin, 1.0-meter, black)
755530-031	Power cord for use in the United Kingdom and Singapore (3-pin, 1.0-meter, black)
755530-081	Power cord for use in Denmark (3-pin, 1.0-meter, black)
755530-111	Power cord for use in Switzerland (3-pin, 1.0-meter, black)
755530-D61	Power cord for use in India (3-pin, 1.0-meter, black)
774159-001	Battery (3-cell, 37-WHr, 2.96-AHr, Li-ion; includes cable)
787689-001	Display enclosure in ocean turquoise finish for use only on computer models equipped with a non-TouchScreen display (includes wireless antenna cables and transceivers)
787690-001	Display enclosure in sorbet orange finish for use only on computer models equipped with a non-TouchScreen display (includes wireless antenna cables and transceivers)
787691-001	Display enclosure in neon green finish for use only on computer models equipped with a non-TouchScreen display (includes wireless antenna cables and transceivers)
787692-001	Display enclosure in smoke silver finish for use only on computer models equipped with a non-TouchScreen display (includes wireless antenna cables and transceivers)
787693-001	Display enclosure in ocean turquoise finish for use only on computer models equipped with a TouchScreen display (includes wireless antenna cables and transceivers)
787694-001	Display enclosure in sorbet orange finish for use only on computer models equipped with a TouchScreen display (includes wireless antenna cables and transceivers)
787695-001	Display enclosure in neon green finish for use only on computer models equipped with a TouchScreen display (includes wireless antenna cables and transceivers)
787696-001	Display enclosure in smoke finish for use only on computer models equipped with a TouchScreen display (includes wireless antenna cables and transceivers)
787697-001	Base enclosure in ocean turquoise finish for use only on computer models not equipped with WWAN capability
787698-001	Base enclosure in sorbet orange finish for use only on computer models not equipped with WWAN capability
787699-001	Base enclosure in neon green finish for use only on computer models not equipped with WWAN capability
787700-001	Base enclosure in smoke finish for use only on computer models not equipped with WWAN capability
787701-001	Base enclosure in ocean turquoise finish for use only on computer models equipped with WWAN capability

Spare part number	Description
787702-001	Base enclosure in sorbet orange finish for use only on computer models equipped with WWAN capability
787703-001	Base enclosure in neon green finish for use only on computer models equipped with WWAN capability
787704-001	Base enclosure in smoke finish for use only on computer models equipped with WWAN capability
787705-001	Display bezel in ocean turquoise finish (for use only on computer models equipped with a non-TouchScreen display)
787706-001	Display bezel in sorbet orange finish for (use only on computer models equipped with a non-TouchScreen display)
787707-001	Display bezel in neon green finish (for use only on computer models equipped with a non-TouchScreen display)
787708-001	Display bezel in smoke silver finish (for use only on computer models equipped with a non-TouchScreen display)
787709-001	Display panel cable for use only on computer models equipped with a non-TouchScreen display (includes webcamera/microphone module cable)
787710-001	Display panel cable for use only on computer models equipped with a TouchScreen display (includes TouchScreen cable and webcamera/microphone module cable)
787711-001	Heat sink (includes grounding tape and replacement thermal material)
787712-001	Display Hinge Kit for use only on computer models equipped with a non-TouchScreen display
787713-001	Display Hinge Kit for use only on computer models equipped with a TouchScreen display
787714-001	Connector board for use only on computer models not equipped with WWAN capability (includes cable, SD Card Reader slot, and double-sided adhesive)
787715-001	Connector board for use only on computer models equipped with WWAN capability (includes cable, SD Card Reader slot, SIM slot, and double-sided adhesive)
787716-001	TouchPad (includes cable)
787717-001	14.0-in, BrightView [1920×1080], FHD, WLED, slim [3.0 mm], SVA TouchScreen display panel in ocean turquoise finish (includes display panel cable, display TouchScreen cable, and wireless antenna cables)
787718-001	14.0-in, BrightView [1920×1080], FHD, WLED, slim [3.0 mm], SVA TouchScreen display panel in sorbet orange finish (includes display panel cable, display TouchScreen cable, and wireless antenna cables)
787719-001	14.0-in, BrightView [1920×1080], FHD, WLED, slim [3.0 mm], SVA TouchScreen display panel in neon green finish (includes display panel cable, display TouchScreen cable, and wireless antenna cables)
787720-001	14.0-in, BrightView [1920×1080], FHD, WLED, slim [3.0 mm], SVA TouchScreen display panel in smoke silver finish (includes display panel cable, display TouchScreen cable, and wireless antenna cables)
787721-001	Rubber Kit
787722-001	Screw Kit
787723-001	Speaker Kit
787724-001	System board equipped with an Nvidia CD570M 2.10-GHz quad core processor, a graphics subsystem with UMA memory, 2.0-GB of system memory, and 16-GB of eMMC primary storage for use only on computer models not equipped with WWAN capability (includes replacement thermal material)

Spare part number	Description
787725-001	System board equipped with an Nvidia CD570M 2.10-GHz quad core processor, a graphics subsystem with UMA memory, 2.0-GB of system memory, and 32-GB of eMMC primary storage for use only on computer models not equipped with WWAN capability (includes replacement thermal material)
787726-001	System board equipped with an Nvidia CD570M 2.10-GHz quad core processor, a graphics subsystem with UMA memory, 4.0-GB of system memory, and 16-GB of eMMC primary storage for use only on computer models not equipped with WWAN capability (includes replacement thermal material)
787727-001	System board equipped with an Nvidia CD570M 2.10-GHz quad core processor, a graphics subsystem with UMA memory, 4.0-GB of system memory, and 32-GB of eMMC primary storage for use only on computer models not equipped with WWAN capability (includes replacement thermal material)
787728-001	System board equipped with an Nvidia CD570M 2.10-GHz quad core processor, a graphics subsystem with UMA memory, 2.0-GB of system memory, and 16-GB of eMMC primary storage for use only on computer models equipped with WWAN capability (includes replacement thermal material)
787729-001	System board equipped with an Nvidia CD570M 2.10-GHz quad core processor, a graphics subsystem with UMA memory, 2.0-GB of system memory, and 32-GB of eMMC primary storage for use only on computer models equipped with WWAN capability (includes replacement thermal material)
787730-001	System board equipped with an Nvidia CD570M 2.10-GHz quad core processor, a graphics subsystem with UMA memory, 4.0-GB of system memory, and 16-GB of eMMC primary storage for use only on computer models equipped with WWAN capability (includes replacement thermal material)
787731-001	System board equipped with an Nvidia CD570M 2.10-GHz quad core processor, a graphics subsystem with UMA memory, 4.0-GB of system memory, and 32-GB of eMMC primary storage for use only on computer models equipped with WWAN capability (includes replacement thermal material)
787732-001	Keyboard/top cover in ocean turquoise finish for use in the United States (includes keyboard cable)
787732-031	Keyboard/top cover in ocean turquoise finish for use in the United Kingdom and Singapore (includes keyboard cable)
787732-041	Keyboard/top cover in ocean turquoise finish for use in France (includes keyboard cable)
787732-051	Keyboard/top cover in ocean turquoise finish for use in Germany (includes keyboard cable)
787732-061	Keyboard/top cover in ocean turquoise finish for use in Italy (includes keyboard cable)
787732-071	Keyboard/top cover in ocean turquoise finish for use in Spain (includes keyboard cable)
787732-251	Keyboard/top cover in ocean turquoise finish for use in Russia (includes keyboard cable)
787732-A41	Keyboard/top cover in ocean turquoise finish for use in Belgium (includes keyboard cable)
787732-B31	Keyboard/top cover in ocean turquoise finish for use in the Netherlands (includes keyboard cable)
787732-BG1	Keyboard/top cover in ocean turquoise finish for use in Switzerland (includes keyboard cable)
787732-DB1	Keyboard/top cover in ocean turquoise finish for use in Canada (includes keyboard cable)
787732-DH1	Keyboard/top cover in ocean turquoise finish for use in Denmark, Finland, and Norway (includes keyboard cable)
787734-001	Keyboard/top cover in sorbet orange finish for use in the United States (includes keyboard cable)
787734-031	Keyboard/top cover in sorbet orange finish for use in the United Kingdom and Singapore (includes keyboard cable)

Spare part number	Description
787734-041	Keyboard/top cover in sorbet orange finish for use in France (includes keyboard cable)
787734-051	Keyboard/top cover in sorbet orange finish for use in Germany (includes keyboard cable)
787734-061	Keyboard/top cover in sorbet orange finish for use in Italy (includes keyboard cable)
787734-071	Keyboard/top cover in sorbet orange finish for use in Spain (includes keyboard cable)
787734-251	Keyboard/top cover in sorbet orange finish for use in Russia (includes keyboard cable)
787734-A41	Keyboard/top cover in sorbet orange finish for use in Belgium (includes keyboard cable)
787734-B31	Keyboard/top cover in sorbet orange finish for use in the Netherlands (includes keyboard cable)
787734-BG1	Keyboard/top cover in sorbet orange finish for use in Switzerland (includes keyboard cable)
787734-DB1	Keyboard/top cover in sorbet orange finish for use in Canada (includes keyboard cable)
787734-DH1	Keyboard/top cover in sorbet orange finish for use in Denmark, Finland, and Norway (includes keyboard cable)
787733-001	Keyboard/top cover in neon green finish for use in the United States (includes keyboard cable)
787733-031	Keyboard/top cover in neon green finish for use in the United Kingdom and Singapore (includes keyboard cable)
787733-041	Keyboard/top cover in neon green finish for use in France (includes keyboard cable)
787733-051	Keyboard/top cover in neon green finish for use in Germany (includes keyboard cable)
787733-061	Keyboard/top cover in neon green finish for use in Italy (includes keyboard cable)
787733-071	Keyboard/top cover in neon green finish for use in Spain (includes keyboard cable)
787733-251	Keyboard/top cover in neon green finish for use in Russia (includes keyboard cable)
787733-A41	Keyboard/top cover in neon green finish for use in Belgium (includes keyboard cable)
787733-B31	Keyboard/top cover in neon green finish for use in the Netherlands (includes keyboard cable)
787733-BG1	Keyboard/top cover in neon green finish for use in Switzerland (includes keyboard cable)
787733-DB1	Keyboard/top cover in neon green finish for use in Canada (includes keyboard cable)
787733-DH1	Keyboard/top cover in neon green finish for use in Denmark, Finland, and Norway (includes keyboard cable)
787735-001	Keyboard/top cover in smoke silver finish for use in the United States (includes keyboard cable)
787735-031	Keyboard/top cover in smoke silver finish for use in the United Kingdom and Singapore (includes keyboard cable)
787735-041	Keyboard/top cover in smoke silver finish for use in France (includes keyboard cable)
787735-051	Keyboard/top cover in smoke silver finish for use in Germany (includes keyboard cable)
787735-061	Keyboard/top cover in smoke silver finish for use in Italy (includes keyboard cable)
787735-071	Keyboard/top cover in smoke silver finish for use in Spain (includes keyboard cable)
787735-251	Keyboard/top cover in smoke silver finish for use in Russia (includes keyboard cable)
787735-A41	Keyboard/top cover in smoke silver finish for use in Belgium (includes keyboard cable)
787735-B31	Keyboard/top cover in smoke silver finish for use in the Netherlands (includes keyboard cable)
787735-BG1	Keyboard/top cover in smoke silver finish for use in Switzerland (includes keyboard cable)

Spare part number	Description
787735-DB1	Keyboard/top cover in smoke silver finish for use in Canada (includes keyboard cable)
787735-DH1	Keyboard/top cover in smoke silver finish for use in Denmark, Finland, and Norway (includes keyboard cable)
787736-001	Webcam/microphone module (includes double-sided adhesive)
788509-001	14.0-in, AG, FLT, HD display panel for use only on computer models equipped with a non-TouchScreen display assembly without WWAN capability
794314-001	14.0-in, AG, FHD, slim, display panel for use only on computer models equipped with a non-TouchScreen display assembly without WWAN capability
794316-001	14.0-in, AG, FLT, HD display panel for use only on computer models equipped with a non-TouchScreen display assembly with WWAN capability

4 Removal and replacement preliminary requirements

Tools required

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

- Flat-bladed screw driver
- Magnetic screw driver
- Phillips 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 computer, place the subassembly (and all accompanying screws) away from the work area to prevent damage.

Plastic parts

CAUTION: Using excessive force during disassembly and reassembly can damage plastic parts. Use care when handling the plastic parts. Apply pressure only at the points designated in the maintenance instructions.

Cables and connectors

> **CAUTION:** When servicing the computer, be sure that cables are placed in their proper locations during the reassembly process. Improper cable placement can damage the computer.

Cables must be handled with extreme care to avoid damage. Apply only the tension required to unseat or seat the cables during removal and insertion. Handle cables by the connector whenever possible. In all cases, avoid bending, twisting, or tearing cables. Be sure that cables are routed in such a way that they cannot be caught or snagged by parts being removed or replaced. Handle flex cables with extreme care; these cables tear easily.

Drive handling

> **CAUTION:** Drives are fragile components that must be handled with care. To prevent damage to the computer, damage to a drive, or loss of information, observe these precautions:

Before removing or inserting a drive, shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.

Before handling a drive, be sure that you are discharged of static electricity. While handling a drive, avoid touching the connector.

Before removing a diskette drive or optical drive, be sure that a diskette or disc is not in the drive and be sure that the optical drive tray is closed.

Handle drives on surfaces covered with at least one inch of shock-proof foam.

Avoid dropping drives from any height onto any surface.

After removing drive, place it in a static-proof bag.

Avoid exposing a drive to products that have magnetic fields, such as monitors or speakers.

Avoid exposing a drive to temperature extremes or liquids.

If a drive must be mailed, place the drive in a bubble pack mailer or other suitable form of protective packaging and label the package "FRAGILE."

Grounding guidelines

Electrostatic discharge damage

Electronic components are sensitive to electrostatic discharge (ESD). Circuitry design and structure determine the degree of sensitivity. Networks built into many integrated circuits provide some protection, but in many cases, ESD contains enough power to alter device parameters or melt silicon junctions.

A discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Even if the spark is neither felt nor heard, damage may have occurred.

An electronic device exposed to ESD may not be affected at all and can work perfectly throughout a normal cycle. Or the device may function normally for a while, then degrade in the internal layers, reducing its life expectancy.

CAUTION: To prevent damage to the computer when you are removing or installing internal components, observe these precautions:

Keep components in their electrostatic-safe containers until you are ready to install them.

Before touching an electronic component, discharge static electricity by using the guidelines described in this section.

Avoid touching pins, leads, and circuitry. Handle electronic components as little as possible.

If you remove a component, place it in an electrostatic-safe container.

The following table shows how humidity affects the electrostatic voltage levels generated by different activities.

CAUTION: A product can be degraded by as little as 700 V.

Typical electrostatic voltage levels			
	Relative humidity		
Event	10%	40%	55%
Walking across carpet	35,000 V	15,000 V	7,500 V
Walking across vinyl floor	12,000 V	5,000 V	3,000 V
Motions of bench worker	6,000 V	800 V	400 V
Removing DIPS from plastic tube	2,000 V	700 V	400 V
Removing DIPS from vinyl tray	11,500 V	4,000 V	2,000 V
Removing DIPS from Styrofoam	14,500 V	5,000 V	3,500 V
Removing bubble pack from PCB	26,500 V	20,000 V	7,000 V
Packing PCBs in foam-lined box	21,000 V	11,000 V	5,000 V

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

- To avoid hand contact, transport products in static-safe tubes, bags, or boxes.
- Protect ESD-sensitive parts and assemblies with conductive or approved containers or packaging.
- Keep ESD-sensitive parts in their containers until the parts arrive at static-free workstations.
- Place items on a grounded surface before removing items from their containers.
- Always be properly grounded when touching a component or assembly.
- Store reusable ESD-sensitive parts from assemblies in protective packaging or nonconductive foam.
- Use transporters and conveyors made of antistatic belts and roller bushings. Be sure that mechanized equipment used for moving materials is wired to ground and that proper materials are selected to avoid static charging. When grounding is not possible, use an ionizer to dissipate electric charges.

Workstation guidelines

Follow these grounding workstation guidelines:

- Cover the workstation with approved static-shielding material.
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use conductive field service tools, such as cutters, screw drivers, and vacuums.
- When fixtures must directly contact dissipative surfaces, use fixtures made only of static-safe materials.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and Styrofoam.
- Handle ESD-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting or removing connectors or test equipment.

Equipment guidelines

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

- When seated, wear a wrist strap connected to a grounded system. Wrist straps are flexible straps with a minimum of one megohm ±10% resistance in the ground cords. To provide proper ground, wear a strap snugly against the skin at all times. On grounded mats with banana-plug connectors, use alligator clips to connect a wrist strap.

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

The following grounding equipment is recommended to prevent electrostatic damage:

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

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

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

5 Removal and replacement procedures

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

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

Component replacement procedures

There are as many as 58 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

📝 **NOTE:** The keyboard/top cover spare part kit includes the keyboard cable.

Description	Spare part number	Description	Spare part number
Keyboard/top cover in neon green finish with white keys:			
For use in Belgium	787734-A41	For use in the Netherlands	787734-B31
For use in Canada	787734-DB1	For use in Russia	787734-251
For use in Denmark, Finland, and Norway	787734-DH1	For use in Spain	787734-071
For use in France	787734-051	For use in Switzerland	787734-BG1
For use in Germany	787734-041	For use in the United Kingdom and Singapore	787734-031
For use in Italy	787734-061	For use in the United States	787734-001
Keyboard/top cover in ocean turquoise finish with white keys:			
For use in Belgium	787732-A41	For use in the Netherlands	787732-B31
For use in Canada	787732-DB1	For use in Russia	787732-251
For use in Denmark, Finland, and Norway	787732-DH1	For use in Spain	787732-071
For use in France	787732-051	For use in Switzerland	787732-BG1
For use in Germany	787732-041	For use in the United Kingdom and Singapore	787732-031
For use in Italy	787732-061	For use in the United States	787732-001
Keyboard/top cover in smoke silver finish with white keys:			
For use in Belgium	787735-A41	For use in the Netherlands	787735-B31
For use in Canada	787735-DB1	For use in Russia	787735-251

Description	Spare part number	Description	Spare part number
For use in Denmark, Finland, and Norway	787735-DH1	For use in Spain	787735-071
For use in France	787735-051	For use in Switzerland	787735-BG1
For use in Germany	787735-041	For use in the United Kingdom and Singapore	787735-031
For use in Italy	787735-061	For use in the United States	787735-001
Keyboard/top cover in sorbet orange finish with white keys:			
For use in Belgium	787733-A41	For use in the Netherlands	787733-B31
For use in Canada	787733-DB1	For use in Russia	787733-251
For use in Denmark, Finland, and Norway	787733-DH1	For use in Spain	787733-071
For use in France	787733-051	For use in Switzerland	787733-BG1
For use in Germany	787733-041	For use in the United Kingdom and Singapore	787733-031
For use in Italy	787733-061	For use in the United States	787733-001

Before removing the disassembling the computer, follow these steps:

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

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

3. Disconnect all external devices from the computer.

📝 NOTE: When replacing the keyboard/top cover, be sure that the heat sink (see Heat sink on page 36) and TouchPad (see TouchPad on page 27) 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 two rubber screw covers (1).

4. Remove the two rear rubber feet (2).

5. Remove the middle rubber screw cover **(3)**.

> 📝 **NOTE:** The rubber feet and screw covers are included in the Rubber Kit, spare part number 787721-001.
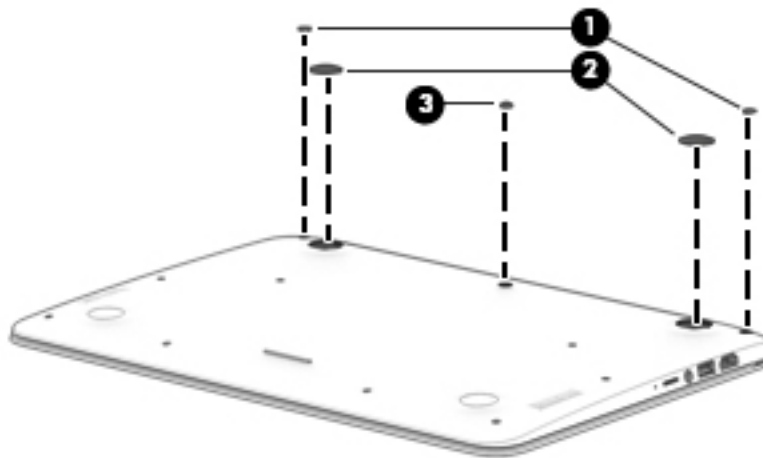
6. Remove the thirteen Phillips PM1.9×5.7 screws that secure the keyboard/top cover to the base enclosure.
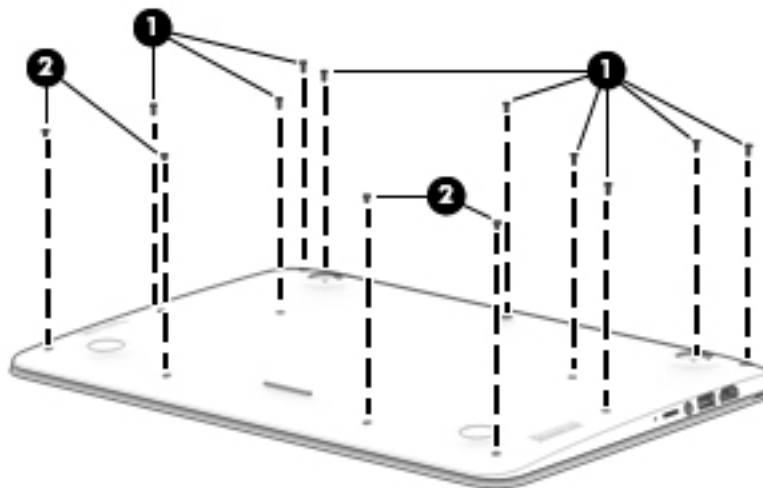
7. Turn the computer right side up with the front toward you.

8. Open the computer as far as it will open.

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

10. Lift the left **(2)** and right sides of the keyboard/top cover until they separate from the left and right sides of the base enclosure.

11. Disconnect the battery cable **(3)** from the system board.

12. Release the zero insertion force (ZIF) connector **(4)** to which the keyboard cable is attached, and then disconnect the keyboard cable from the system board.

13. Release the ZIF connector **(5)** to which the TouchPad cable is attached, and then disconnect the TouchPadd cable from the system board.

14. Remove keyboard/top cover **(6)** by sliding it forward.
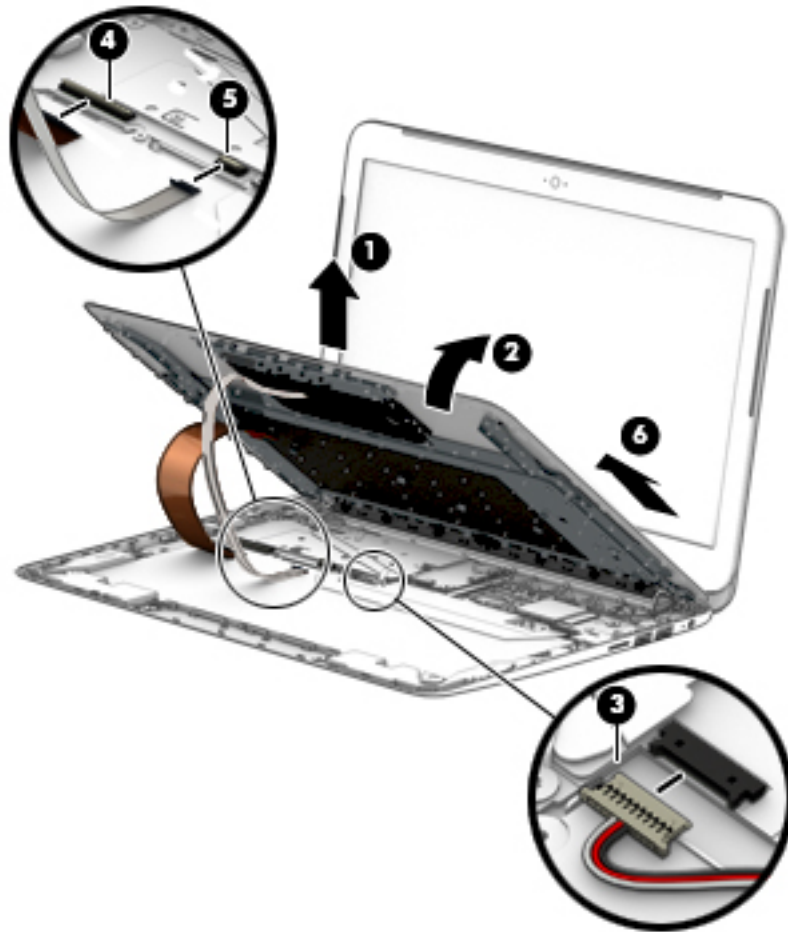
Reverse this procedure to install the keyboard/top cover.

TouchPad

Description	Spare part number
TouchPad (includes TouchPad cable)	787716-001

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 Keyboard/top cover on page 23).

Remove the TouchPad button board:

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

2. Detach the TouchPad cable **(1)** from the keyboard/top cover. (The TouchPad cable is attached to the keyboard/top cover with double-sided adhesive.)

3. Remove the two Phillips PM1.9×2.4 broad head screws **(2)** that secure the TouchPad to the keyboard/top cover.

4. Detach the two pieces of grounding tape **(3)** that secure the TouchPad to the keyboard/top cover.

5. Release the TouchPad **(4)** by pressing it through the opening in the keyboard/top cover.

6. Remove the TouchPad **(5)** and cable.
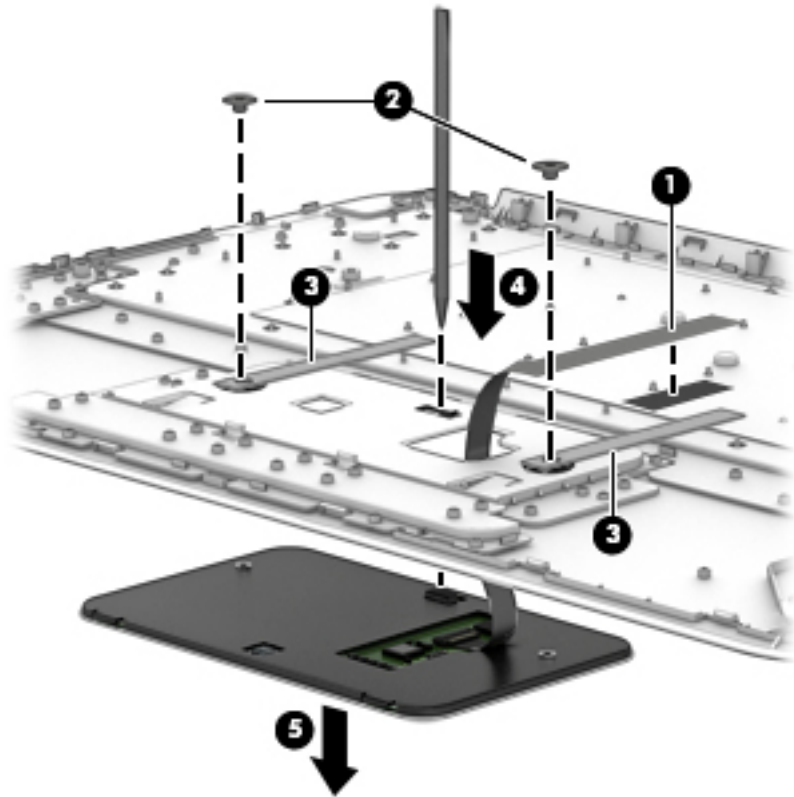
Reverse this procedure to install the TouchPad.

WWAN module

Description	Spare part number
HP cr3114 HSPA+ Mobile Broadband Module	741284-005
HP lt4110 LTE/HSPA+ 4G Module	755529-001

⚠ **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 23).

Remove the WWAN module:

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

📝 **NOTE:** The #5/red WWAN antenna cable connects to the WWAN module Main terminal. The #6/blue WWAN antenna cable connects to the WWAN module Aux terminal.

2. Remove the Phillips PM1.9×4.2 screw **(2)** that secures the WWAN module to the base enclosure. (The WWAN module tilts up.)

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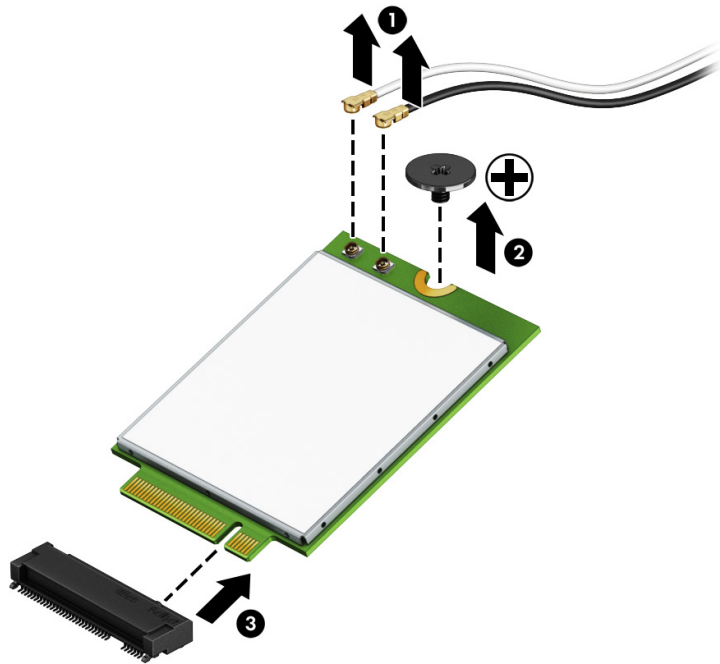
NOTE: If the WWAN antenna is not connected to the terminal on the WWAN module, a protective sleeve must be installed on the antenna connector, as shown in the following illustration.
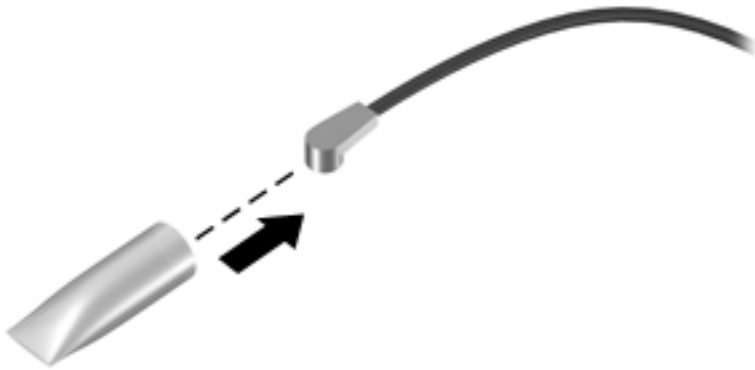
Reverse this procedure to install the WWAN module.

Battery

Description	Spare part number
Battery, 3-cell, 37-WHr, 2.96-AHr, Li-ion (includes cable)	774159-001

Before removing the battery, follow these steps:

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

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

3. Disconnect all external devices from the computer.

4. Remove the keyboard/top cover (see Keyboard/top cover on page 23).

Remove the battery:

1. Remove the eight Phillips PM1.9×2.8 screws **(1)** that secure the battery to the base enclosure.

2. Detach the connector board cable **(2)** from the battery. (The connector board cable is attached to the battery with double-sided adhesive.)

3. Lift the front edge of the battery **(3)** until it rests at an angle.

4. Remove the battery **(4)** by sliding it up and forward at an angle.
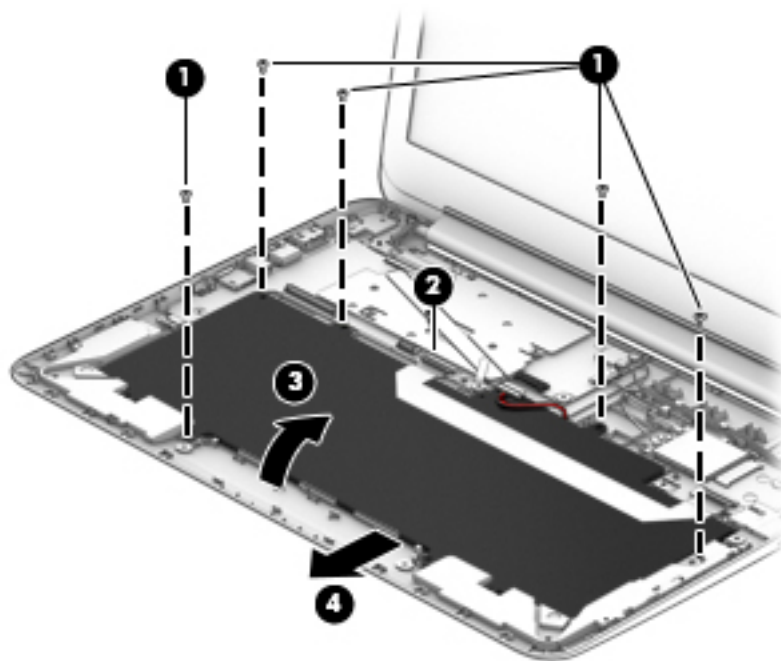
Reverse this procedure to install the battery.

Connector board

NOTE: The connector board spare part kit includes a cable and double-sided adhesive.

| Description	Spare part number
For use only on computer models equipped with WWAN capability (includes SD Card Reader slot and SIM slot)	787715-001
For use only on computer models not equipped with WWAN capability (includes SD Card Reader slot)	787714-001

Before removing the connector 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).

Remove the connector board:

1. Release the ZIF connector **(1)** to which the connector board ribbon cable is attached, and then disconnect the connector board ribbon cable from the system board.

2. Detach the connector board cable **(2)** from the battery. (The connector board cable is attached to the battery with double-sided adhesive.)

3. Remove the two Philllips PM1.9×2.4 broad head screws **(3)** that secure the connector board to the base enclosure.

4. Remove the connector board **(4)** and cable.
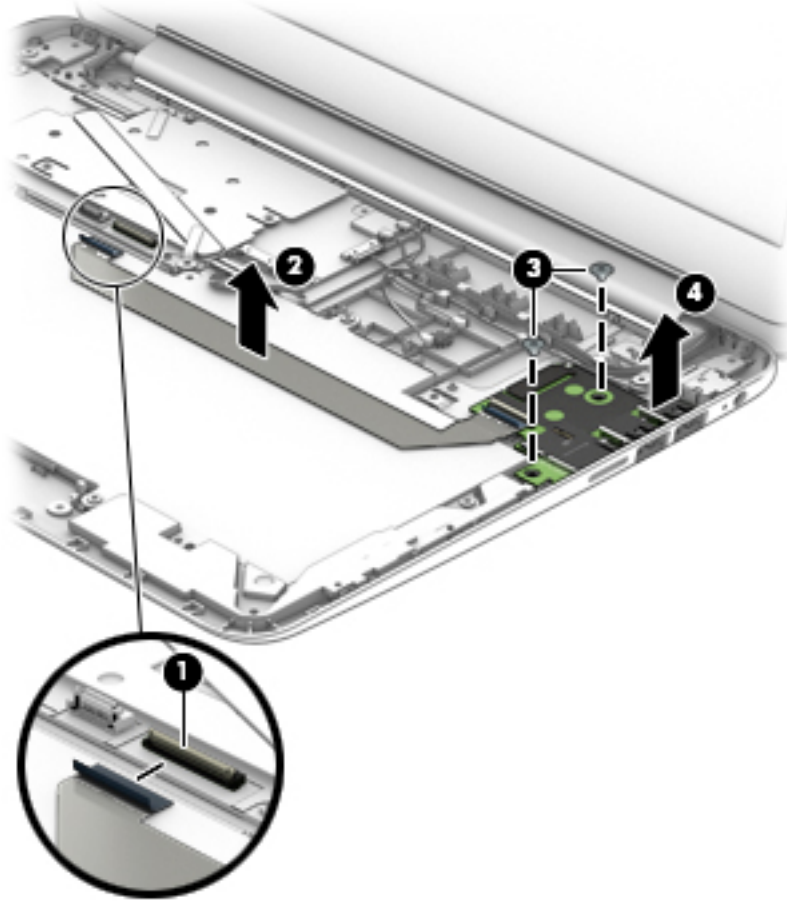
Reverse this procedure to install the connector board.

System board

NOTE: The system board is equipped with an Nvidia CD570M 2.10-GHz quad core processor and a graphics subsystem with UMA memory and includes replacement thermal material.

Description	Spare part number
Equipped with 4.0-GB of system memory and 32-GB of eMMC primary storage for use only on computer models equipped with WWAN capability	787731-001
Equipped with 4.0-GB of system memory and 32-GB of eMMC primary storage for use only on computer models not equipped with WWAN capability	787727-001
Equipped with 4.0-GB of system memory and 16-GB of eMMC primary storage for use only on computer models equipped with WWAN capability	787730-001
Equipped with 4.0-GB of system memory and 16-GB of eMMC primary storage for use only on computer models not equipped with WWAN capability	787726-001
Equipped with 2.0-GB of system memory and 32-GB of eMMC primary storage for use only on computer models equipped with WWAN capability	787729-001
Equipped with 2.0-GB of system memory and 32-GB of eMMC primary storage for use only on computer models not equipped with WWAN capability	787725-001
Equipped with 2.0-GB of system memory and 16-GB of eMMC primary storage for use only on computer models equipped with WWAN capability	787728-001
Equipped with 2.0-GB of system memory and 16-GB of eMMC primary storage for use only on computer models not equipped with WWAN capability	787724-001

Before removing the system board, follow these steps:

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

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

3. Disconnect all external devices from the computer.

4. Remove the keyboard/top cover (see Keyboard/top cover on page 23).

Remove the system board:

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

2. Release the ZIF connector **(2)** to which the display panel cable is attached, and then disconnect the display panel cable from the system board.

3. Disconnect the WLAN antenna cables **(3)** from the WLAN terminals on the system board.

    NOTE: The white WLAN antenna cable labeled "1/Main" connects to the system board "Main" terminal. The black WLAN antenna cable labeled "2/Aux" connects to the system board "Aux" terminal.

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

5. Release the ZIF connector **(5)** to which the connector board cable is attached, and then disconnect the connector board cable from the system board.
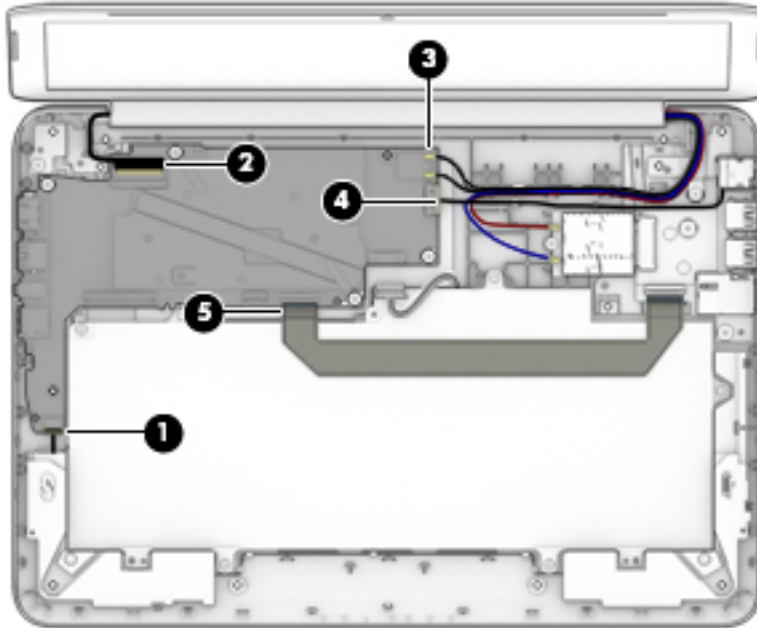
6. Remove the four Philllips PM1.9×2.4 broad head screws **(1)** that secure the system board to the base enclosure.

7. Lift the right side of the system board **(2)** until it rests at an angle.

8. Remove the system board **(3)** by sliding it up and to the right at an angle.
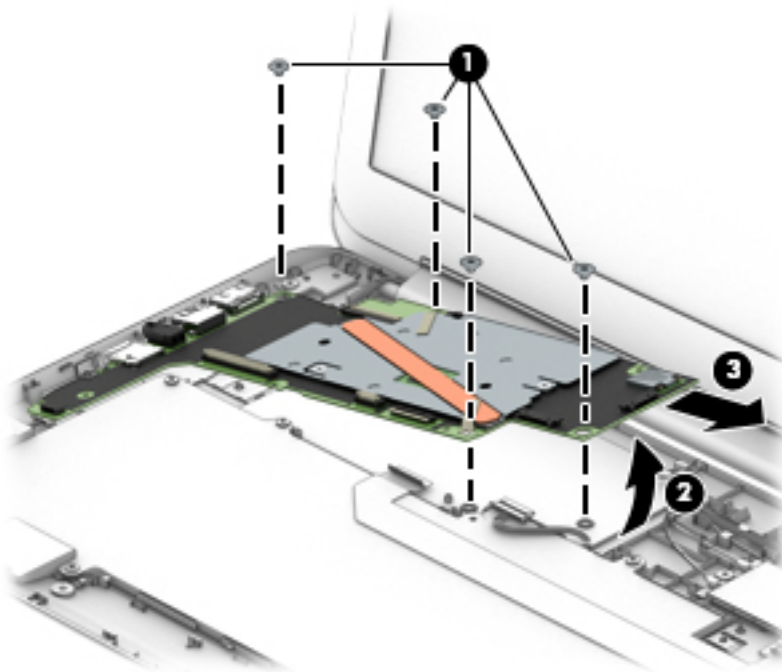
Reverse this procedure to install the system board.

Heat sink

Description	Spare part number
Heat sink (includes grounding tape and replacement thermal material)	787711-001

Before removing the heat sink, follow these steps:

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

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

3. Disconnect all external devices from the computer.

4. Remove the keyboard/top cover (see Keyboard/top cover on page 23).

5. Remove the system board (see System board on page 34).

Remove the heat sink:

1. Detach the two pieces of ground tape **(1)** that secure the heat sink to the system board.

2. Remove the two Phillips PM1.9×1.9 screws **(2)** that secure the heat sink to the system board.

3. Remove the heat sink **(3)**.
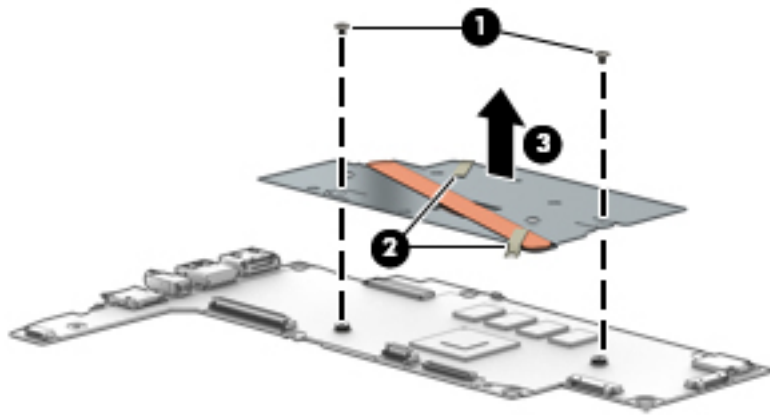
> 📝 **NOTE:** The thermal material must be thoroughly cleaned from the surfaces of the system board and the heat sink components each time the heat sink is removed. Thermal paste is used on the processor **(1)** and the heat sink section **(2)** that services it.
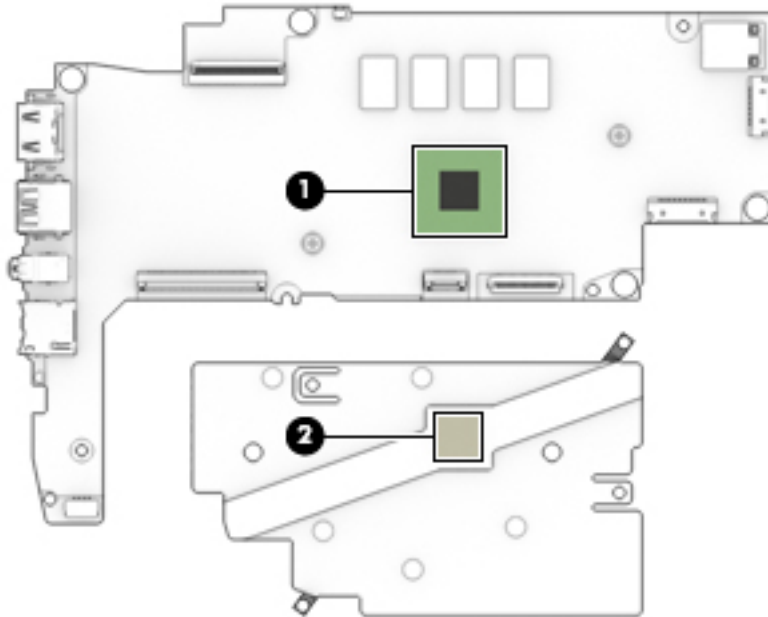
Reverse this procedure to install the heat sink.

Speakers

Description	Spare part number
Speakers (include left and right speakers and cables)	787723-001

Before removing the speakers, follow these steps:

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

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

3. Disconnect all external devices from the computer.

4. Remove the keyboard/top cover (see Keyboard/top cover on page 23).

5. Remove the battery (see Battery on page 31).

Remove the speakers:

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

2. Release the speaker cables from the routing clips **(2)** and channels built into the base enclosure.

3. Remove the speakers **(3)**.
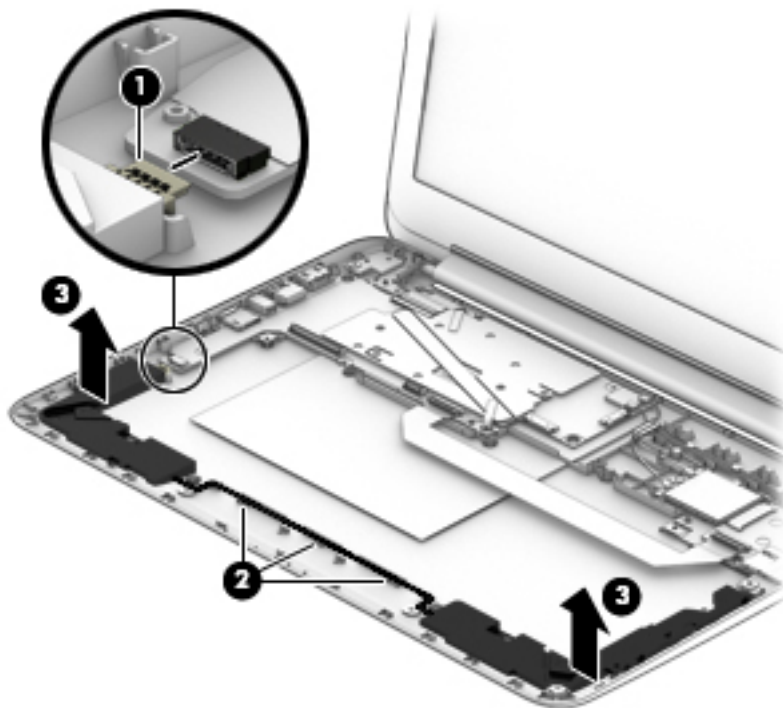
Reverse this procedure to install the speakers.

Display assembly

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 23).

Remove the display assembly:

1. Release the ZIF connector (1) to which the display panel cable is attached, and then disconnect the display panel cable from the system board.

2. Disconnect the wireless antenna cables (2) from the WLAN terminals on the system board and WWAN terminals on the WWAN module.

    NOTE: The white WLAN antenna cable labeled "1/Main" connects to the system board "Main" terminal. The black WLAN antenna cable labeled "2/Aux" connects to the system board "Aux" terminal.

    The red WWAN antenna cable labeled "5/Main" connects to the WWAN module "Main" terminal. The blue WWAN antenna cable labeled "6/Aux" connects to the WWAN module "Aux" terminal.

3. Release the wireless antenna cables from the routing clips (3) built into the base enclosure.

4. Remove the two Phillips PM1.9×3.3 screws (4) that secure the display assembly to the base enclosure.

5. Remove the display assembly (5).
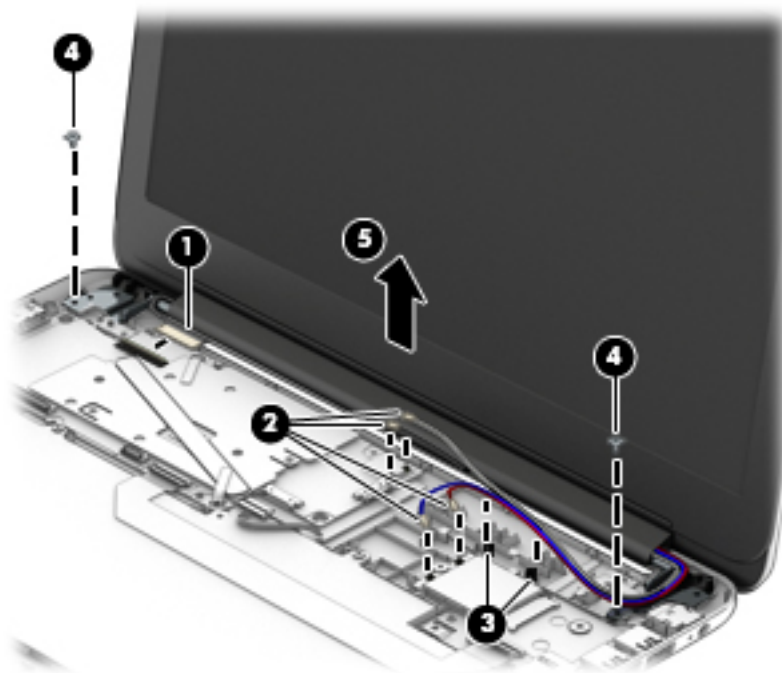
NOTE: Steps 6 through 9 provide disassembly instructions for computer models equipped with a TouchScreen display assembly. See steps 10 through 14 for disassembly instructions for computer models equipped with a non-TouchScreen display assembly.

6. If it is necessary to replace the display enclosure or any of the display assembly subcomponents:

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

   The display bezel screw covers are included in the Rubber Kit, spare part number 787721-001.

b. Remove the two Phillips PM2.0×2.2 broad head screws (2) that secure the display enclosure to the display panel assembly.
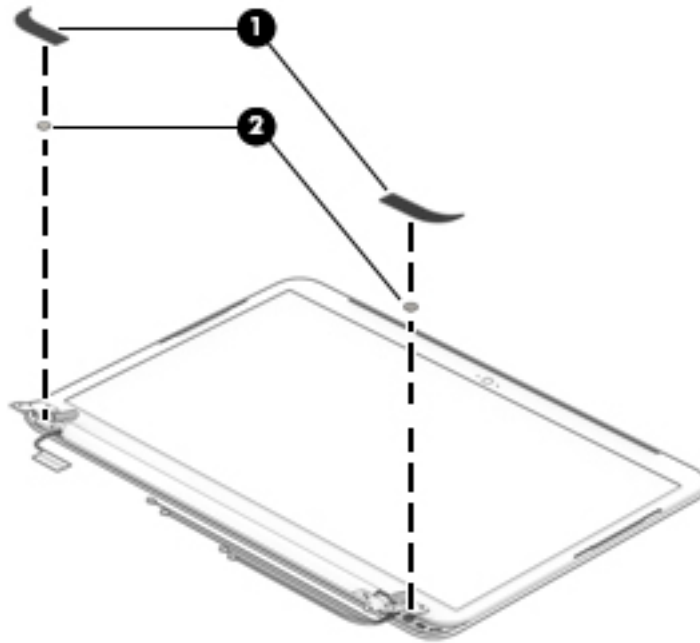
⚠ **CAUTION:** Before turning the display panel upside down, make sure the work surface is clear of tools, screws, and any other foreign objects. Failure to follow this caution can result in damage to the display panel.

c. Turn the display assembly upside down with the top edge toward you.

d. Use a case utility tool (1) or similar flat plastic tool to separate the display enclosure from the display panel assembly.

e. Lift the top edge of the display enclosure **(2)** until it separates from the display panel assembly.
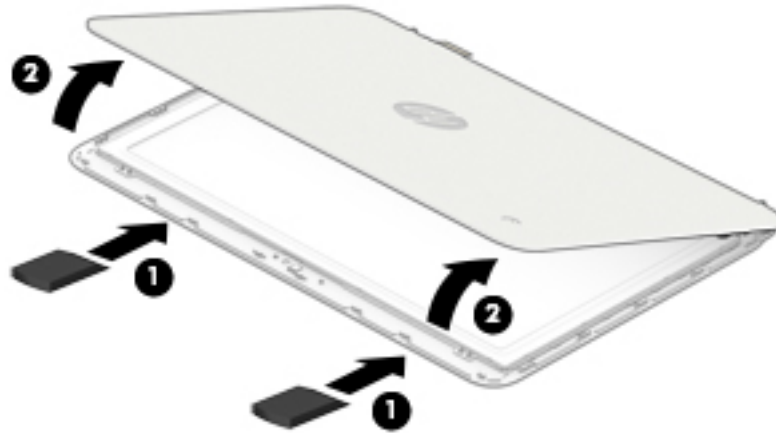
f. Swing the top edge of the display enclosure **(1)** up and back until it rests upside down behind the display panel assembly.

g. Release the adhesive strip **(2)** that secures the display panel cable connector to the display panel.

h. Disconnect the display panel cable **(3)** from the display panel.

i. Remove the display enclosure **(4)**.

The TouchScreen display assembly display enclosure is available using the following spare part numbers:

- 787695-001–For use on computer models in neon green finish
- 787693-001–For use on computer models in ocean turquoise finish
- 787696-001–For use on computer models in smoke silver finish
- 787694-001–For use on computer models in sorbet orange finish
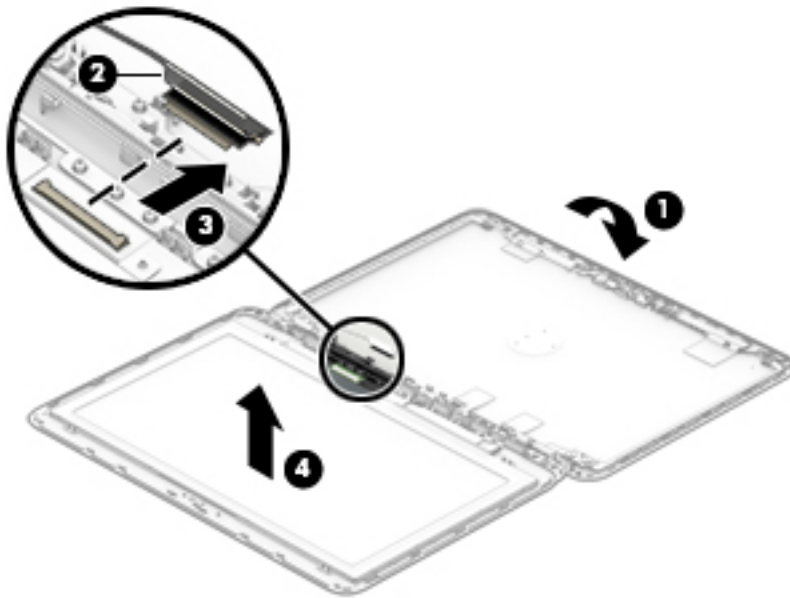
7.   If it is necessary to replace the webcam/microphone module:

   a.   Remove the display enclosure.

   b.   Detach the webcam/microphone module **(1)** from the display enclosure. (The webcam/microphone module is attached to the display enclosure with double-sided adhesive at two locations.)

   c.   Disconnect the webcam/microphone module cable **(2)** from the webcam/microphone module.
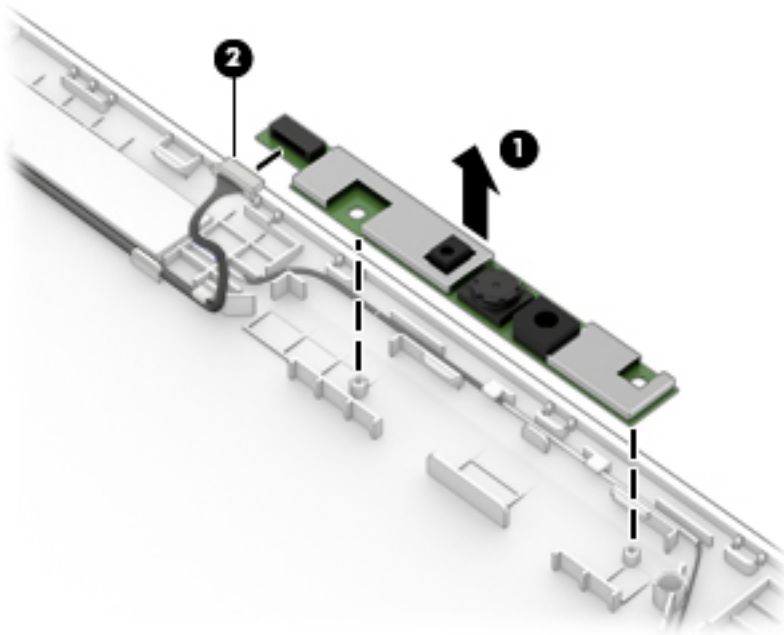
   d.   Remove the webcam/microphone module.

   The webcam/microphone module is available using spare part number 787736-001.

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

   a. Remove the display enclosure.

   b. Remove the following screws that secure the display hinges and display hinge support bracket to the display enclosure:

      (1) Two Phillips PM1.9×2.9 screws that secure the display hinge brackets

      (2) Four Phillips PM2.4×3.1 screws that secure the display hinges

      (3) Two Phillips PM2.4×3.6 screws that secure the display hinges

   c. Remove the display hinges and display hinge support brackets **(4)**.

      The TouchScreen display assembly display hinges are included in the Display Hinge Kit, spare part number 787713-001.

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

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

   b. Detach the wireless antenna transceiver **(2)** from the display enclosure. (The wireless antenna transceiver is attached to the display enclosure with double-sided adhesive.)

   c. Release the display panel cable from the routing path **(3)** built into the display enclosure.

   d. Remove the display panel cable **(4)**.

      The TouchScreen display assembly display panel cable is available using spare part number 787710-001 and includes the webcam/microphone module cable.
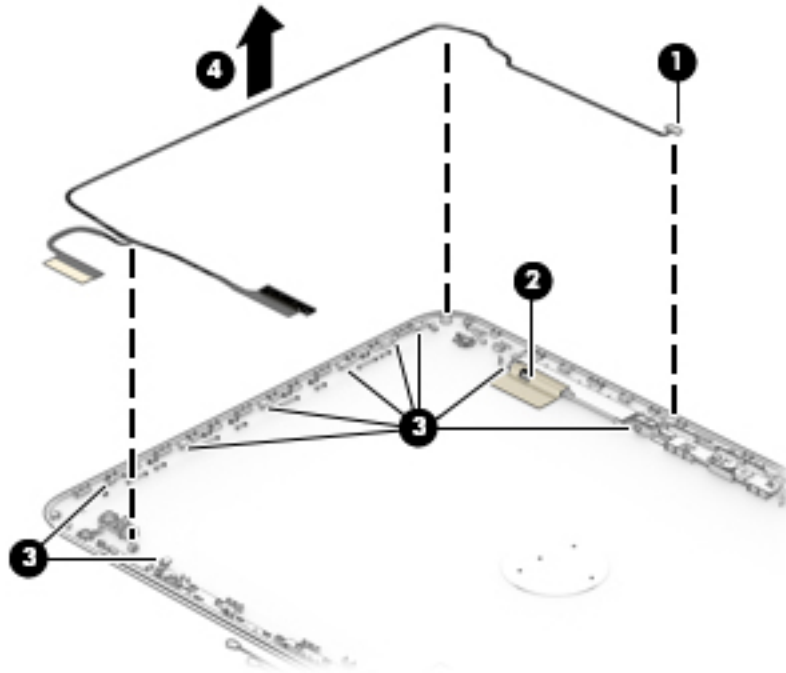
NOTE: Steps 10 through 14 provide disassembly instructions for computer models equipped with a non-TouchScreen display assembly. See steps 6 through 9 for disassembly instructions for computer models equipped with a TouchScreen display assembly.

10. If it is necessary to replace the display bezel or any of the display assembly subcomponents:

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

📝 **NOTE:** The display bezel screw covers are included in the Rubber Kit, spare part number 787721-001.

b. Remove the two Phillips PM2.0×2.2 broad head screws **(2)** that secure the display panel to the display enclosure.

c. Flex the inside edges of the bottom edge **(3)**, the left and right sides **(4)**, and the bottom edge **(5)** of the display bezel until the bezel disengages from the display enclosure.

d. Remove the display bezel **(6)**.

The non-TouchScreen display assembly display bezel is available using the following spare part numbers:

- 787707-001–For use on computer models in neon green finish
- 787705-001–For use on computer models in ocean turquoise finish
- 787708-001–For use on computer models in smoke silver finish
- 787706-001–For use on computer models in sorbet orange finish
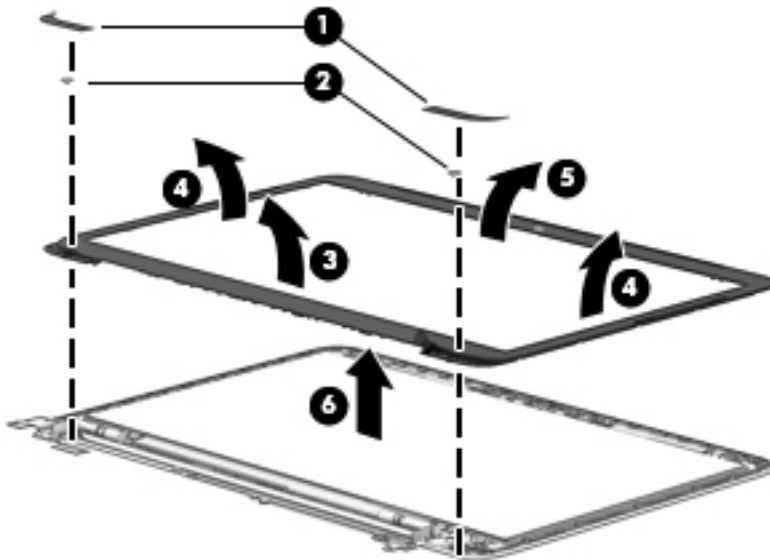
11. If it is necessary to replace the webcam/microphone module:

a. Remove the display bezel.

b. Detach the webcam/microphone module **(1)** from the display enclosure. (The webcam/microphone module is attached to the display enclosure with double-sided adhesive at two locations.)

c. Disconnect the webcam/microphone module cable **(2)** from the webcam/microphone module.
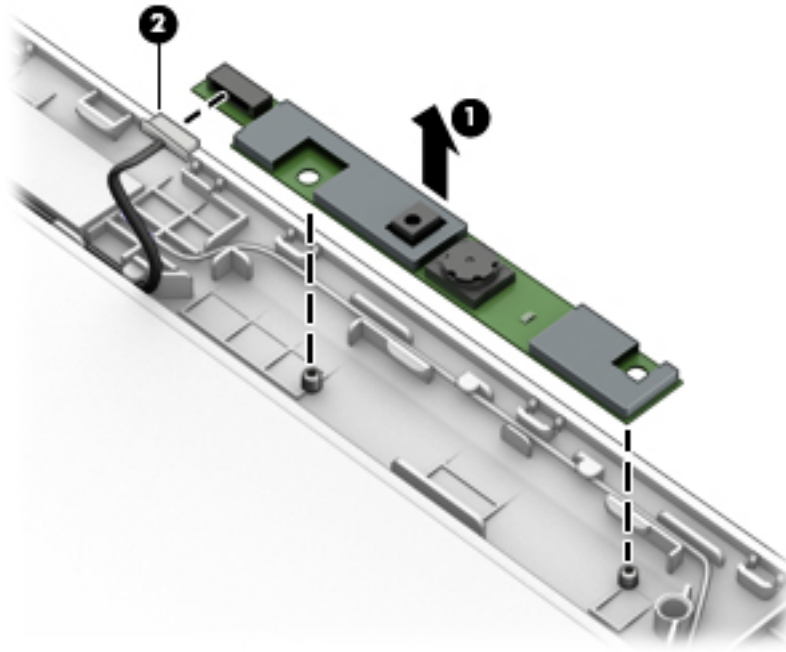
d. Remove the webcam/microphone module.

The webcam/microphone module is available using spare part number 787736-001.

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

a. Remove the display bezel.

b. Remove the four Phillips PM2.0×2.2 broad head screws **(1)** that secure the display panel to the display enclosure.

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

c. 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 enclosure.
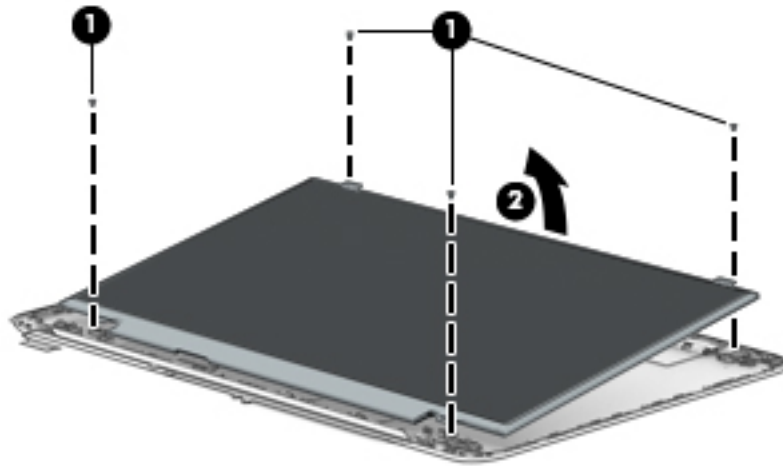
d. Release the adhesive strip **(1)** that secures the display panel cable connector to the display panel.

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

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

The non-TouchScreen display assembly display panel is available using the following spare part numbers:

- 787719-001–For use on computer models in ocean turquoise finish
- 787717-001–For use on computer models in ocean turquoise finish
- 787720-001–For use on computer models in ocean turquoise finish
- 787718-001–For use on computer models in ocean turquoise finish
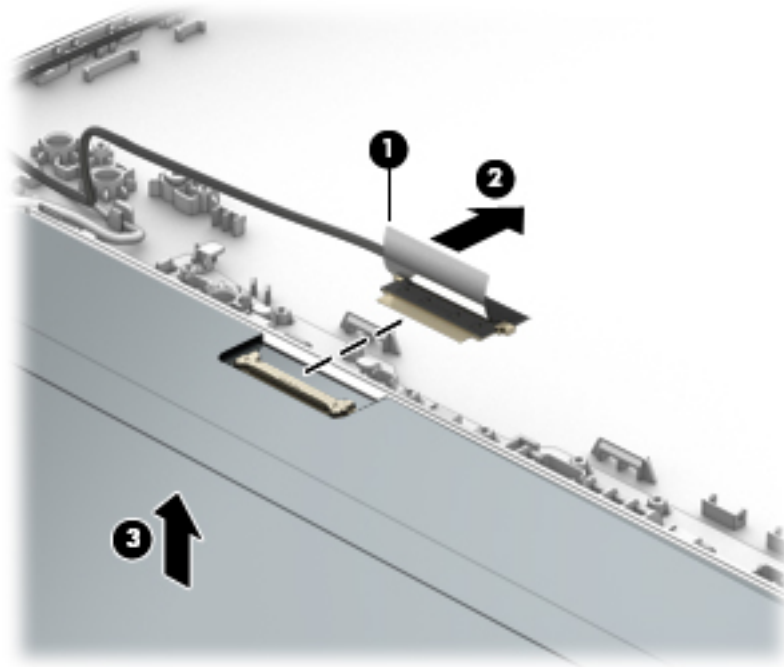
13. If it is necessary to replace the display hinges:

    a.   Remove the display bezel.

    b.   Remove the display panel.

    c.   Remove the following screws that secure the display hinges and display hinge support brackets to the display enclosure:

         (1) Two Phillips PM1.9×2.9 screws that secure the display hinge brackets

         (2) Four Phillips PM2.4×3.1 broad head screws that secure the display hinges

         (3) Two Phillips PM2.4×3.6 screws that secure the display hinges

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

The non-TouchScreen display assembly display hinges are included in the Display Hinge Kit, spare part number 787712-001.
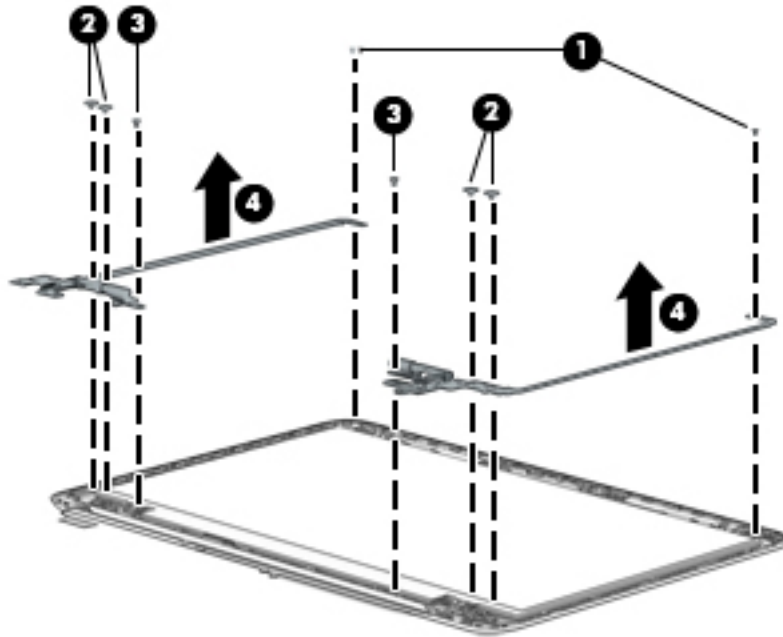
14. If it is necessary to replace the display panel cable:

    a. Disconnect the display panel cable from the webcam/microphone module.

    b. Remove the display panel.

    c. Remove the display hinges and brackets.

    d. Release the display panel cable from the retention clips **(1)** and channel built into the top, left, and bottom edges of the display enclosure.

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

The non-TouchScreen display assembly display panel cable is available using spare part number 787709-001 and includes the webcam/microphone module cable.
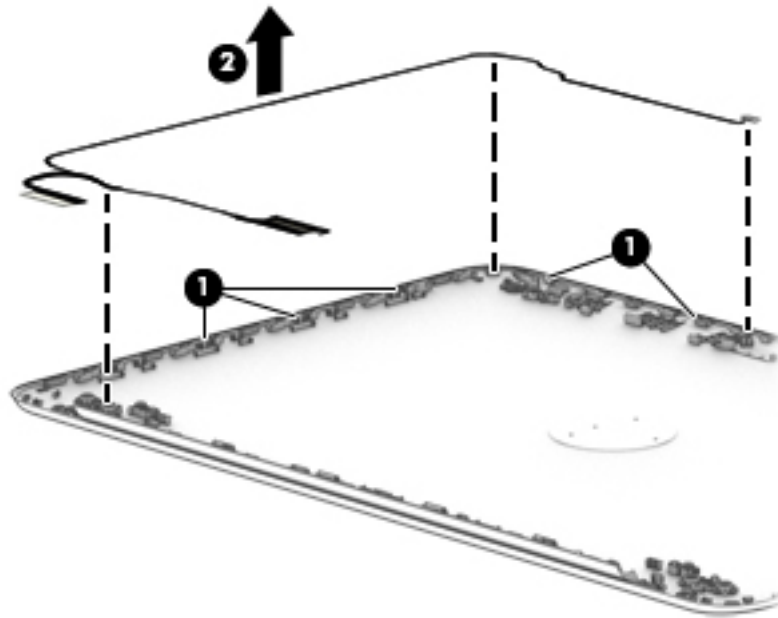
Reverse this procedure to reassemble and install the display assembly.

6 Specifications

	Metric	U.S.
Computer dimensions		
Width	**34.4 cm**	13.5 in
Depth	**24.0 cm**	9.5 in
Height	**1.8 cm**	0.7 in
Weight	**1.7 kg**	3.8 lbs
Operating voltage and current:	19.5V dc @ 2.31 A – 45 W	
	19.5V dc @ 3.33 A – 65 W	

NOTE: This product is designed for IT power systems in Norway with phase-to-phase voltage not exceeding 240 V rms.

NOTE: The device operating voltage and current can be found on the system regulatory label.

	Metric	U.S.
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.

7 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.

8 Recycling

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

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

Index