



Maintenance and Service Guide

HP Chromebook 14 inch

Model number: 14a-nm0xxx

SUMMARY

This guide provides maintenance information about such topics as spare parts, removal and replacement of parts, security, and backing up.

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

To access the latest user guides, go to <http://www.hp.com/support>, and follow the instructions to find your product. Then select **Manuals**.

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

Safety warning notice

Reduce the possibility of heat-related injuries or of overheating the computer by following the practices described.

 **WARNING!** To reduce the possibility of heat-related injuries or of overheating the computer, do not place the computer directly on your lap or obstruct the computer air vents. Use the computer 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, rugs or clothing, to block airflow. Also, do not allow the AC adapter to come into contact with the skin or a soft surface, such as pillows, rugs or clothing, during operation. The computer and the AC adapter provided by HP comply with the user-accessible surface temperature limits defined by applicable safety standards.

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1 Product description

This table provides detailed product information.

Table 1-1 Product components and their descriptions

Category	Description
Product Name	HP Chromebook™ 14 inch
	Model number: 14a-nm0xxx
	CTO number: 14a-nm000
Processors	MediaTek Kompanio 540
Graphics	Internal graphics
	Arm Mali G57 MC2
Display panel	14.0 in (35.6 cm)
	Full high-definition (FHD) (1920 × 1080), ultrawide viewing angle (UWVA), antiglare, 45% NTSC, embedded DisplayPort™ (eDP) 1.2 without panel self-refresh (PSR), low power, 300 nits
	High-definition (HD) (1366 × 768), standard viewing angle (SVA), antiglare, 45% NTSC, eDP without PSR, 250 nits
	HD, SVA, antiglare, 45% NTSC, eDP 1.2 without PSR, 250 nits, touch screen
	• 16:9 aspect ratio
	• Flat panel • Low power • Screen-to-body ratio: 82%
Memory	Onboard, not accessible or upgradeable
	Supports the following configurations:
	• 8 GB, LPDDR5-6400 • 4 GB, LPDDR5-6400
Primary storage	Embedded MultiMedia Controller (eMMC) 5.0 (onboard)
	64 GB
	Universal Flash Storage (UFS) 3.1 (onboard)
	128 GB
Audio	Dual speakers
Video	HP True Vision HD Camera - indicator LED, USB2.0, HD BSI sensor, f2.0
	HP True Vision FHD Camera - indicator LED, USB2.0, FHD BSI sensor, f2.0
	Dual-array digital microphone with appropriate software - beam forming, echo cancellation, noise suppression
	720p by 30 frames per second

Table 1-1 Product components and their descriptions (continued)

Category	Description
Wireless	Wireless Local Area Network (WLAN) (M.2 2230, dual antennas)
	MediaTek MT7920 Wi-Fi® 6 + Bluetooth® 5.4
	USB 3.2 Gen 1 Type-C® (left side), supports: • Power Delivery 3.2 • Data transfer • DisplayPort 1.4 output up to 4 K (60 Hz) and HDMI 1.4 out using adapter
	USB 3.2 Gen 1 Type-A (right side)
	Audio-out (headphone)/audio-in (microphone) combo jack
Keyboard/pointing devices	Keyboard with clickpad (backlit or not backlit)
	Full size, island style
	Clickpad requirements
	Clickpad with image sensor
	Multitouch gestures enabled
Power requirements	Taps enabled as default
	Battery
	47 Whr, 2 cell
	Long life
	Smart AC adapter (USB Type-C) (select products only)
	45 W, GaN, standard, straight, 1.8 m (6 ft)
	45 W, GaN, wall mount, fixed 2.0 m (6.6 ft)
	45 W, GaN, wall mount, foldable 2.0 m (6.6 ft)
	Power cord (select products only)
	C5, conventional, 1.0 m (3.3 ft) power cord with sticker
Security	Non-standard, black, straight, halogen free, duckhead
	Camera privacy door
Operating system	Google Chrome™ Non-Premium
Serviceability	End user replaceable parts
	AC adapter
	Battery

2 Components

Your computer features top-rated components. This chapter provides details about your components, where they are located, and how they work.

Right

Use the illustration and table to identify the component on the right side of the computer.

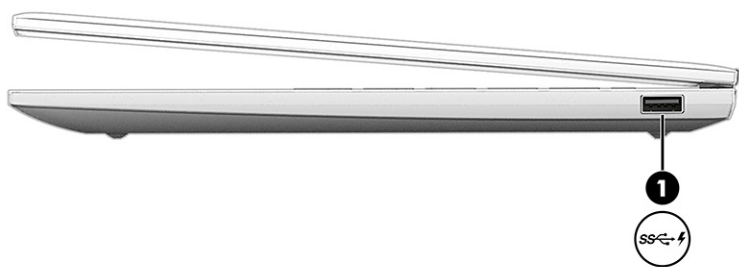


Table 2-1 Right-side component and description

	Component	Description
(1)	 USB 5 Gbps port	Connects a USB device, provides high-speed data transfer, and charges small devices (such as a smartphone). NOTE: Use a standard USB Type-A charging cable or cable adapter (purchased separately) when charging a small external device.

Left

Use the illustration and table to identify the components on the left side of the computer.

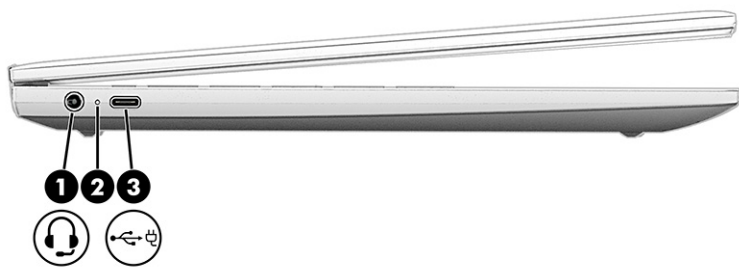


Table 2-2 Left-side components and their descriptions

	Component	Description
(1)	 Audio-out (headphone)/Audio-in (microphone) combo jack	Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects an optional headset microphone. This jack does not support optional standalone microphones. WARNING! To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, see the <i>Regulatory, Safety, and Environmental Notices</i>. NOTE: When a device is connected to the jack, the computer speakers are disabled.
(2)	AC adapter and battery light	• White: The AC adapter is connected and the battery is fully charged. • Amber: The AC adapter is connected and the battery is charging. • Slow blinking amber: The battery has 4% or less charge. • Fast blinking amber: The battery has an error. • Off: The battery is not charging.
(3)	 USB Type-C® power connector and 5 Gbps port	Connects an AC adapter that has a USB Type-C connector, supplying power to the computer and, if needed, charging the computer battery. – and – Connects a USB device, provides data transfer, and (for select products) charges small devices (such as a smartphone) when the computer is on or in sleep. NOTE: Use a standard USB Type-C charging cable or cable adapter (purchased separately) when charging a small external device. – and – Connects a display device that has a USB Type-C connector, providing DisplayPort™ output.

Display

Use the illustration and table to identify the components on the display.

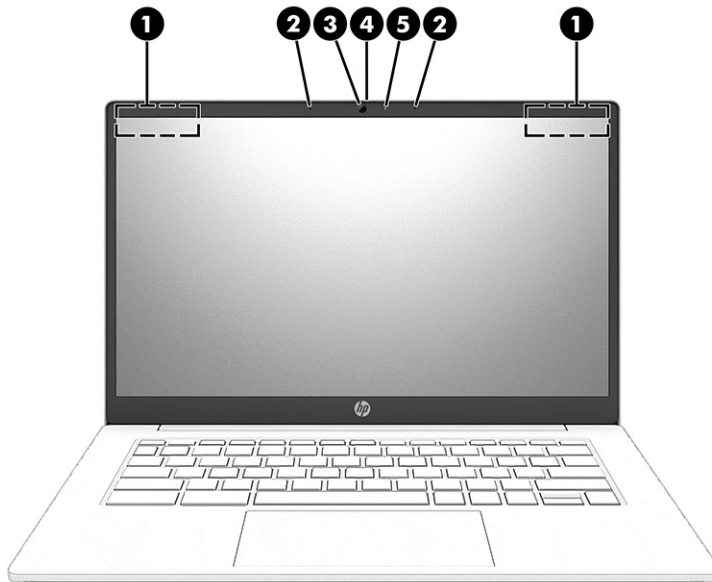


Table 2-3 Display components and their descriptions

Component	Description
(1) WLAN antennas* (2)	Send and receive wireless signals to communicate with wireless local area networks (WLANs).
(2) Internal microphones (2)	Record sound.
(3) Camera	Allows you to video chat, record video, and record still images. NOTE: Camera functions vary depending on the camera hardware and software installed on your product.
(4) Camera privacy cover	By default, the camera lens is uncovered, but you can slide the camera privacy cover to block the camera's view. To use the camera, slide the camera privacy cover in the opposite direction to reveal the lens.
(5) Camera light	On: The camera is in use. Off: The camera is turned off.

*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.

Keyboard area

Keyboards can vary by language.

Touchpad

Use the illustration and table to identify the touchpad component.

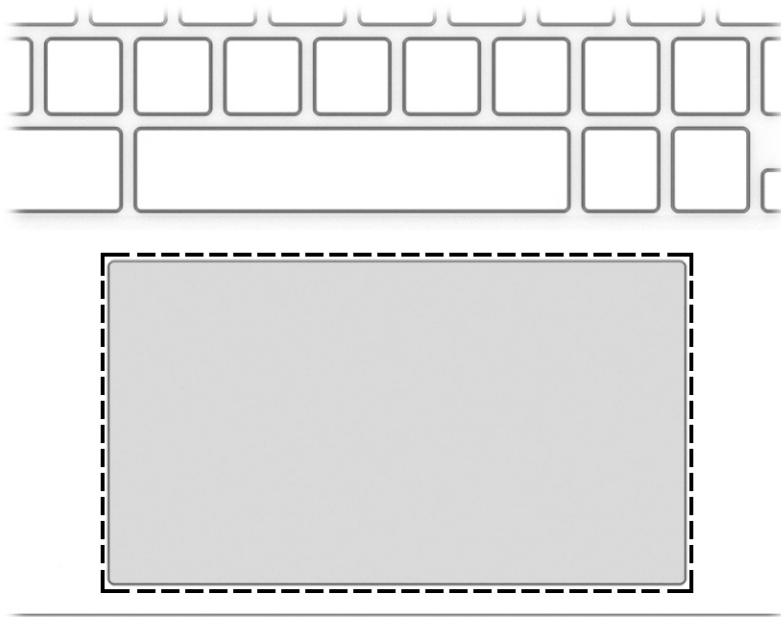


Table 2-4 Touchpad component and description

Component	Description
Touchpad zone	Reads your finger gestures to move the pointer or activate items on the screen.

Speakers

Use the illustration and table to identify the speakers.

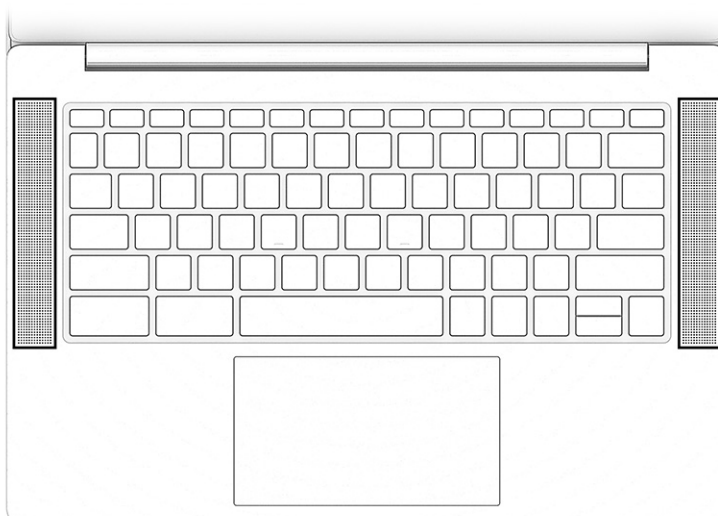


Table 2-5 Speakers and description

Component	Description
Speakers (2)	Produce sound.

Special keys

Use the illustration and table to locate the special keys.

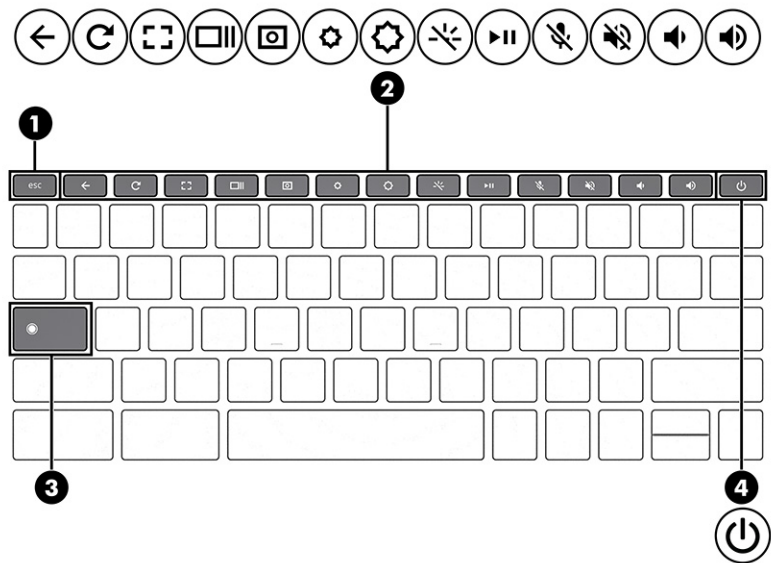


Table 2-6 Special keys and their descriptions

	Component	Description
(1)	<code>esc</code> key	Activates certain computer functions when pressed in combination with other keys, such as <code>tab</code> or <code>shift</code> .
(2)	Action keys	Execute frequently used system functions.
(3)	Search key	Opens a search box.
(4)	 Power key	- When the computer is off, press the key briefly to turn on the computer. - When the computer is in the sleep state, press the key briefly to exit sleep (select products only). IMPORTANT: Pressing and holding down the power key results in the loss of unsaved information. If the computer has stopped responding and shutdown procedures are ineffective, press and hold the power key for at least 10 seconds to turn off the computer.

Bottom

Use the illustration and table to identify the bottom component.



Table 2-7 Bottom component and description

Components	Description
Vent	Enables airflow to cool internal components.

Labels

The labels affixed to the computer provide information you might need when you troubleshoot system problems or travel internationally with the computer. Labels might be in paper form or imprinted on the product.

 **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, on the back of the display, or on the bottom of a tablet kickstand.

- Service label—Provides important information to identify your computer. When contacting support, you might be asked for the serial number, the product number, or the model number. Locate this information before you contact support.

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

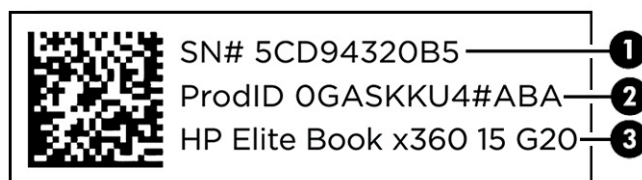


Table 2-8 Service label components

Component	
(1)	Serial number
(2)	Product ID
(3)	HP product name

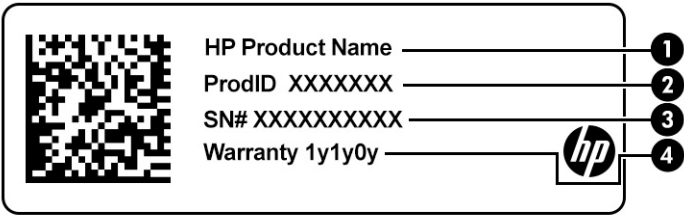


Table 2-9 Service label components

Component	
(1)	HP product name
(2)	Product ID
(3)	Serial number
(4)	Warranty period

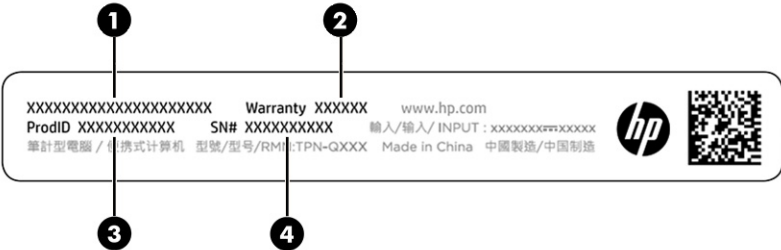


Table 2-10 Service label components

Component	
(1)	HP product name
(2)	Warranty period
(3)	Product ID
(4)	Serial number

- Regulatory labels—Provide regulatory information about the computer.
- Wireless certification labels—Provide information about optional wireless devices and the approval markings for the countries or regions where the devices have been approved for use.

3 Illustrated parts catalog

Use this chapter to determine the spare parts that are available for the computer.

Chromebook major components

Use this illustration and table to identify the Chromebook major components.

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

 **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.

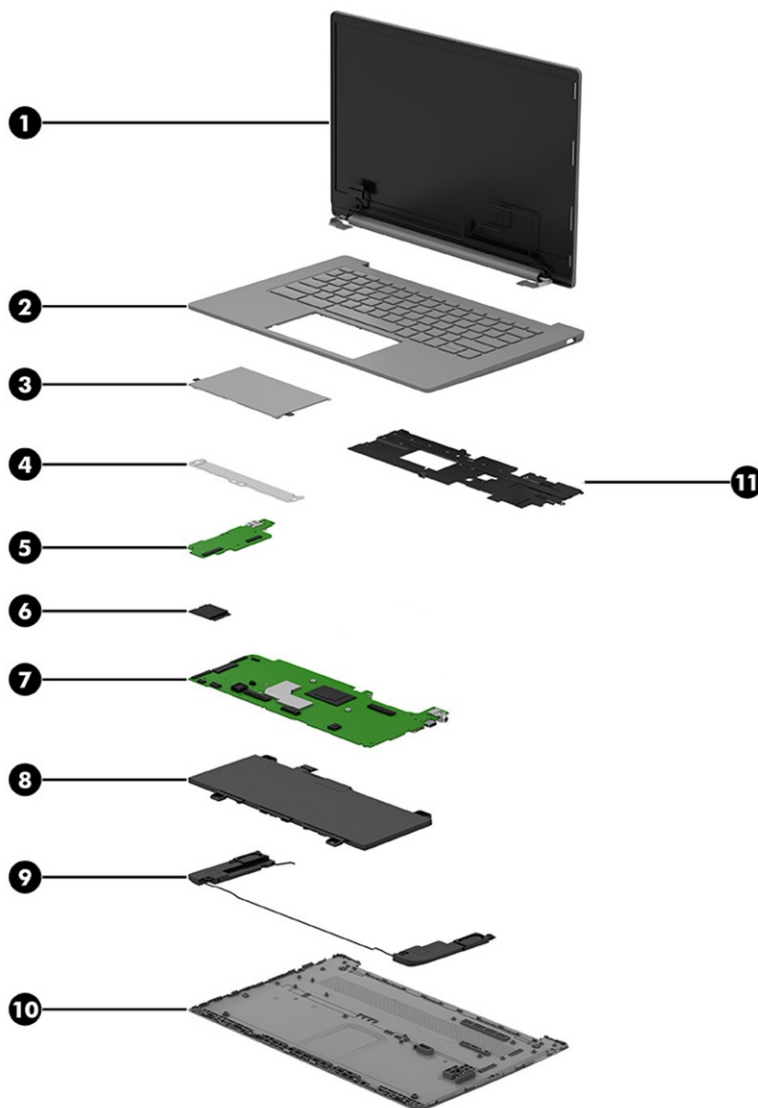


Table 3-1 Computer major component descriptions and part numbers

Item	Component	Spare part number
(1)	Display assembly NOTE: Display assemblies are offered as spare parts only at a subcomponent level. For more information, see Display assembly subcomponents on page 12 .	
(2)	Top cover with keyboard For a detailed list of country codes, see Top cover with keyboard on page 49 .	
	Aquatic blue top cover, not backlit	Q15015-xx1
	Meteor silver top cover, backlit	Q15016-xx1
	Meteor silver top cover, not backlit	Q15017-xx1
	Mica silver top cover, backlit	Q15018-xx1
	Mica silver top cover, not backlit	Q15019-xx1
	Modern gray top cover, not backlit	Q15020-xx1
(3)	Touchpad (includes cable) NOTE: The touchpad cable is available in the Cable Kit as spare part number Q15022-001.	
	Aquatic blue	Q15024-001
	Meteor silver	Q15025-001
	Mica silver	Q15026-001
	Modern gray	Q15027-001
(4)	Touchpad bracket	not available as a spare part
(5)	USB board (includes cable) NOTE: The USB board cable is available in the Cable Kit as spare part number Q15022-001.	Q15021-001
(6)	WLAN module (MediaTek MT7920 Wi-Fi 6 + Bluetooth 5.4) NOTE: WLAN antenna protective tape is available as spare part number M14330-001.	P17386-005
(7)	System board (includes processor, replacement thermal material, and the Chrome operating system)	
	MediaTek Kompanio 540 processor, 8 GB system memory, 128 GB UFS memory	Q15011-001
	MediaTek Kompanio 540 processor, 4 GB system memory, 128 GB UFS memory	Q15009-001
	MediaTek Kompanio 540 processor, 4 GB system memory, 64 GB eMMC memory	Q15010-001
(8)	Battery	L75783-011
(9)	Speakers (left and right)	N93365-001
(10)	Bottom cover Aquatic blue Meteor silver Mica silver Modern gray	Q15029-001 Q15030-001 Q15031-001 Q15032-001

Table 3-1 Computer major component descriptions and part numbers (continued)

Item	Component	Spare part number
(11)	Heat sink	Q15028-001

Display assembly subcomponents

To identify the display assembly subcomponents, use this illustration and table.

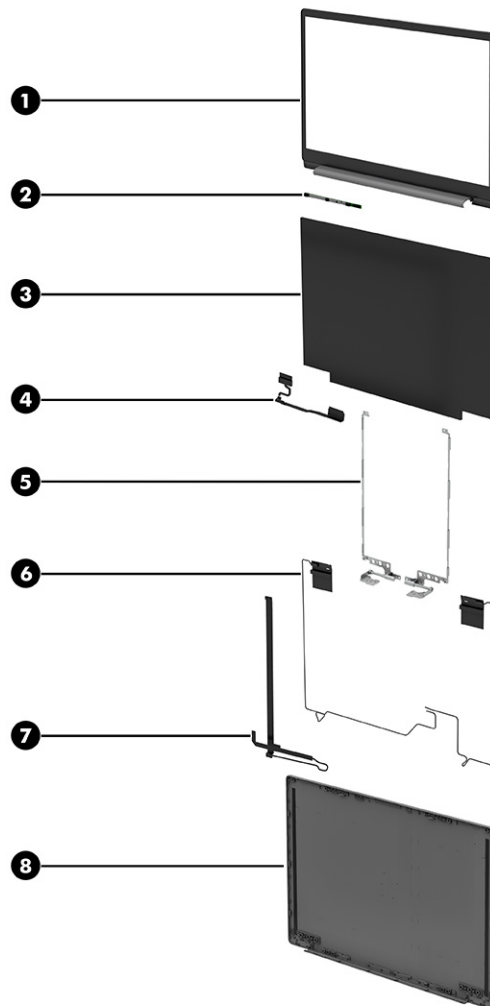


Table 3-2 Display component descriptions and part numbers

Item	Component	Spare part number
(1)	Display bezel (includes hinge covers)	
NOTE: Bezel adhesive is available in the Adhesive Kit as spare part number N93380-001.		
	Aquatic blue	Q15037-001
	Meteor silver	N93372-001
	Mica silver	Q15039-001

Table 3-2 Display component descriptions and part numbers (continued)

Item	Component	Spare part number
	Modern gray	Q15040-001
(2)	Camera module with cable (includes rubber bumpers and bezel adhesive)	
	HD	Q15041-001
	FHD	Q15042-001
(3)	Display panel (includes bezel and panel adhesive)	
	NOTE: Panel adhesive is available in the Adhesive Kit as spare part number N93380-001.	
	HD, touch screen	Q15013-001
	HD, non-touch	Q15012-001
	FHD, non-touch	Q15014-001
(4)	Display cable (includes panel and bezel adhesive and sponge)	
	For use in models without a touch screen	N93375-001
	For use in models with a touch screen	N93376-001
(5)	Hinges (includes left and right display hinges and bezel and panel adhesive)	
	For use with a 250 nit display	N93378-001
	For use with a 300 nit display	N93379-001
(6)	WLAN antennas and cables (includes bezel and panel adhesive)	N93366-001
(7)	Camera cable (included in the Cable Kit)	Q15022-001-001
(8)	Display back cover (includes wireless antennas and bezel adhesive)	
	Aquatic blue	Q15033-001
	Meteor silver	Q15034-001
	Mica silver	Q15035-001
	Modern gray	Q15036-001

Miscellaneous parts

To identify the miscellaneous parts, use this table.

Table 3-3 Miscellaneous part descriptions and part numbers

Component	Spare part number
AC adapter (USB Type-C)	
45 W, standard, straight	P38778-001
45 W, Gan, wall mount, foldable, 2 m (6.6 ft)	P97931-001
45 W, Gan, wall mount, fixed, 2 m (6.6 ft)	Q05687-001
45 W, Gan, wall mount, fixed, 1N, 2 m (6.6 ft)	Q12867-001
Screw Kit	Q15023-001

Table 3-3 Miscellaneous part descriptions and part numbers (continued)

Component	Spare part number
Cable Kit (includes USB cable, touchpad cable, and camera cable)	Q15022-001
Power cord (C5, 1.0 m [3.3 ft], conventional)	
Australia	L19358-001
Denmark	L19360-001
Europe	L19361-001
India	L19363-001
Japan	L19365-001
North America	L19367-001
South America	L19369-001
The United Kingdom	L19373-001
Power cord (Duckhead, non-standard, straight)	
Australia	P57784-001
Europe	P57782-001
India	P57790-001
The United Kingdom	P57783-001

4 Removal and replacement procedures preliminary requirements

Use this information to properly prepare to disassemble and reassemble the computer.

Tools required

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

- Nonconductive, nonmarking pry tool
- Magnetic Phillips P2 screwdriver
- Tweezers
- Suction cups

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

Using excessive force during disassembly and reassembly can damage plastic parts.

Cables and connectors

Handle cables with extreme care to avoid damage.



IMPORTANT: 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.

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 so that they cannot be caught or snagged as you remove or replace parts. Handle flex cables with extreme care; these cables tear easily.

Drive handling

Note the following guidelines when handling drives.



IMPORTANT: Drives are fragile components. Handle them with care. To prevent damage to the computer, damage to a drive, or loss of information, observe these precautions:

- Before removing or inserting a hard drive, shut down the computer. If you are unsure whether the computer is off or in hibernation or sleep mode, 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 an optical drive, be sure that a disc is not in the drive, and be sure that the optical drive tray is closed.
 - Handle drives on surfaces covered with at least 2.54 cm (1 inch) of shock-proof foam.
 - Avoid dropping drives from any height onto any surface.
 - After removing a hard drive or an optical drive, place it in a static-proof bag.
 - Avoid exposing an internal hard drive to products that have magnetic fields, such as monitors or speakers.
 - Avoid exposing a drive to temperature extremes or liquids.
 - If a drive must be mailed, place the drive in a bubble pack mailer or other suitable form of protective packaging, and label the package "FRAGILE."
-

Electrostatic discharge information

A sudden discharge of static electricity from your finger or other conductor can destroy static-sensitive devices or microcircuitry. Often the spark is neither felt nor heard, but damage occurs. An electronic device exposed to electrostatic discharge (ESD) might not appear to be affected at all and can work perfectly throughout a normal cycle. The device might function normally for a while, but it has been degraded in the internal layers, reducing its life expectancy.

Networks built into many integrated circuits provide some protection, but in many cases, the discharge contains enough power to alter device parameters or melt silicon junctions.



IMPORTANT: To prevent damage to the device when you remove or install 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 [Personal grounding methods and equipment on page 17](#).
 - 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.
-

Generating static electricity

Follow these static electricity guidelines.

- Different activities generate different amounts of static electricity.
- Static electricity increases as humidity decreases.

Table 4-1 Static electricity occurrence based on activity and humidity

Event	55% relative humidity	40% relative humidity	10% relative humidity
Walking across carpet	7500 V	15,000 V	35,000 V
Walking across vinyl floor	3000 V	5000 V	12,000 V
Motions of bench worker	400 V	800 V	6000 V
Removing dual in-line packages (DIPs) from plastic tube	400 V	700 V	2000 V
Removing DIPs from vinyl tray	2000 V	4000 V	11,500 V
Removing DIPs from polystyrene foam	3500 V	5000 V	14,500 V
Removing bubble pack from PCB (printed circuit board)	7000 V	20,000 V	26,500 V
Packing PCBs in foam-lined box	5000 V	11,000 V	21,000 V



NOTE: Multiple electric components can be packaged together in plastic tubes, trays, or polystyrene foam.



NOTE: As little as 700 V of static electricity can degrade a product.

Preventing electrostatic damage to equipment

Many electronic components are sensitive to ESD. Circuitry design and structure determine the degree of sensitivity.

The following packaging and grounding precautions are necessary to prevent static electricity damage to electronic components:

- To avoid hand contact, transport products in static-safe containers such as tubes, bags, or boxes.
- Protect all electrostatic parts and assemblies with conductive or approved containers or packaging.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free stations.
- Place items on a grounded surface before removing them from their container.
- Always be properly grounded when touching a sensitive component or assembly.
- Avoid contact with pins, leads, or circuitry.
- Place reusable electrostatic-sensitive parts from assemblies in protective packaging or conductive foam.

Personal grounding methods and equipment

Using certain equipment can prevent static electricity damage to electronic components.

- **Wrist straps** are flexible straps with a maximum of $1\text{ M}\Omega \pm 10\%$ resistance in the ground cords. To provide proper ground, wear a strap snug against bare skin. Verify that the ground cord is connected and fits snugly into the banana plug connector on the grounding mat or workstation.
- You can use **heel straps, toe straps, and boot straps** at standing workstations. These straps are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use them on both feet with a maximum of $1\text{ M}\Omega \pm 10\%$ resistance between the operator and ground.

Table 4-2 Static shielding protection levels

Method	Voltage
Antistatic plastic	1500
Carbon-loaded plastic	7500
Metalized laminate	15,000

Grounding the work area

To prevent static damage at the work area, follow these precautions.

- Cover the work surface with approved static-dissipative material.
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use static-dissipative mats, foot straps, or air ionizers to give added protection.
- Handle electrostatic sensitive components, parts, and assemblies by the case or PCB laminate. Handle them only at static-free work areas.
- Turn off power and input signals before inserting and removing connectors or test equipment.
- Use fixtures made of static-safe materials when fixtures must directly contact dissipative surfaces.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and polystyrene foam.
- Use conductive field service tools, such as cutters, screwdrivers, and vacuums.
- Avoid contact with pins, leads, or circuitry.

Recommended materials and equipment

HP recommends certain materials and equipment to prevent static electricity.

- Antistatic tape
- Antistatic smocks, aprons, or sleeve protectors
- Conductive bins and other assembly or soldering aids
- Conductive foam
- Conductive tabletop workstations with ground cord of $1\text{ M}\Omega \pm 10\%$ resistance
- Static-dissipative table or floor mats with hard tie to ground
- Field service kits
- Static awareness labels
- Wrist straps and footwear straps providing $1\text{ M}\Omega \pm 10\%$ resistance
- Material handling packages
- Conductive plastic bags

- Conductive plastic tubes
- Conductive tote boxes
- Opaque shielding bags
- Transparent metallized shielding bags
- Transparent shielding tubes

Cleaning your computer

Cleaning your computer regularly removes dirt and debris so that your device continues to operate at its best. Use the following information to safely clean the external surfaces of your computer.

Enabling HP Easy Clean (select products only)

HP Easy Clean helps you to avoid accidental input while you clean the computer surfaces. This software disables devices such as the keyboard, touch screen, and touchpad for a preset amount of time so that you can clean all computer surfaces.

1. Start HP Easy Clean in one of the following ways:
 - Select the **Start** menu, and then select **HP Easy Clean**.
 - Select the **HP Easy Clean** icon in the taskbar.
 - Select **Start**, and then select the **HP Easy Clean** tile.
2. Now that your device is disabled for a short period, see [Removing dirt and debris from your computer on page 19](#) for the recommended steps to clean the high-touch, external surfaces on your computer. After you remove the dirt and debris, you can also clean the surfaces with a disinfectant. See [Cleaning your computer with a disinfectant on page 20](#) for guidelines to help prevent the spread of harmful bacteria and viruses.

Removing dirt and debris from your computer

Here are the recommended steps to clean dirt and debris from your computer.

For computers with wood veneer, see [Caring for wood veneer \(select products only\) on page 21](#).

1. Wear disposable gloves made of latex (or nitrile gloves, if you are latex-sensitive) when cleaning the surfaces.
2. Turn off your device and unplug the power cord and other connected external devices. Remove any installed batteries from items such as wireless keyboards.

 **CAUTION:** To prevent electric shock or damage to components, never clean a product while it is turned on or plugged in.

3. Moisten a microfiber cloth with water. The cloth should be moist, but not dripping wet.

 **IMPORTANT:** To avoid damaging the surface, avoid abrasive cloths, towels, and paper towels.

4. Wipe the exterior of the product gently with the moistened cloth.



IMPORTANT: Keep liquids away from the product. Avoid getting moisture in any openings. If liquid makes its way inside your HP product, it can cause damage to the product. Do not spray liquids directly on the product. Do not use aerosol sprays, solvents, abrasives, or cleaners containing hydrogen peroxide or bleach that might damage the finish.

5. Start with the display (if applicable). Wipe carefully in one direction, and move from the top of the display to the bottom. Finish with any flexible cables, like power cord, keyboard cable, and USB cables.
6. Be sure that surfaces have completely air-dried before turning the device on after cleaning.
7. Discard the gloves after each cleaning. Clean your hands immediately after you remove the gloves.

See [Cleaning your computer with a disinfectant on page 20](#) for recommended steps to clean the high-touch, external surfaces on your computer to help prevent the spread of harmful bacteria and viruses.

Cleaning your computer with a disinfectant

The World Health Organization (WHO) recommends cleaning surfaces, followed by disinfection, as a best practice for preventing the spread of viral respiratory illnesses and harmful bacteria.

After cleaning the external surfaces of your computer using the steps in [Removing dirt and debris from your computer on page 19](#), [Caring for wood veneer \(select products only\) on page 21](#), or both, you might also choose to clean the surfaces with a disinfectant. A disinfectant that is within HP's cleaning guidelines is an alcohol solution consisting of 70% isopropyl alcohol and 30% water. This solution is also known as rubbing alcohol and is sold in most stores.

Follow these steps when disinfecting high-touch, external surfaces on your computer:

1. Wear disposable gloves made of latex (or nitrile gloves, if you are latex-sensitive) when cleaning the surfaces.
2. Turn off your device and unplug the power cord and other connected external devices. Remove any installed batteries from items such as wireless keyboards.



CAUTION: To prevent electric shock or damage to components, never clean a product while it is turned on or plugged in.

3. Moisten a microfiber cloth with a mixture of 70% isopropyl alcohol and 30% water. The cloth should be moist, but not dripping wet.



CAUTION: Do not use any of the following chemicals or any solutions that contain them, including spray-based surface cleaners: bleach, peroxides (including hydrogen peroxide), acetone, ammonia, ethyl alcohol, methylene chloride, or any petroleum-based materials, such as gasoline, paint thinner, benzene, or toluene.



IMPORTANT: To avoid damaging the surface, avoid abrasive cloths, towels, and paper towels.

4. Wipe the exterior of the product gently with the moistened cloth.



IMPORTANT: Keep liquids away from the product. Avoid getting moisture in any openings. If liquid makes its way inside your HP product, it can cause damage to the product. Do not spray liquids directly on the product. Do not use aerosol sprays, solvents, abrasives, or cleaners containing hydrogen peroxide or bleach that might damage the finish.

5. Start with the display (if applicable). Wipe carefully in one direction, and move from the top of the display to the bottom. Finish with any flexible cables, like power cord, keyboard cable, and USB cables.
6. Be sure that surfaces have completely air-dried before turning the device on after cleaning.
7. Discard the gloves after each cleaning. Clean your hands immediately after you remove the gloves.

Caring for wood veneer (select products only)

Your product might feature high-quality wood veneer. As with all natural wood products, proper care is important for best results over the life of the product. Because of the nature of natural wood, you might see unique variations in the grain pattern or subtle variations in color, which are normal.

- Clean the wood with a dry, static-free microfiber cloth or chamois.
- Avoid cleaning products containing substances such as ammonia, methylene chloride, acetone, turpentine, or other petroleum-based solvents.
- Do not expose the wood to sun or moisture for long periods of time.
- If the wood becomes wet, dry it by dabbing with an absorbent, lint-free cloth.
- Avoid contact with any substance that might dye or discolor the wood.
- Avoid contact with sharp objects or rough surfaces that might scratch the wood.

See [Removing dirt and debris from your computer on page 19](#) for the recommended steps to clean the high-touch, external surfaces on your computer. After you remove the dirt and debris, you can also clean the surfaces with a disinfectant. See [Cleaning your computer with a disinfectant on page 20](#) for sanitizing guidelines to help prevent the spread of harmful bacteria and viruses.

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.

Accessing support information

Use this information to find the HP support that you need.

Table 4-3 Support information locations

Service consideration	Path to access information
Records of reported failure incidents stored on the computer	Windows®: Pre-operating system failures are logged in the BIOS Event Log. To view the BIOS Event Log: 1. Press the power button. 2. Immediately and repeatedly press esc when the power button light turns white. NOTE: If you do not press esc at the appropriate time, you must restart the computer and again repeatedly press esc when the power button light turns white to access the utility. 3. Press f10 to enter the BIOS setup. 4. Complete one of these tasks: • (On commercial products) Under the Main tab, select BIOS event log, and then select View BIOS Event Log. • (On consumer products) Under the Main tab, select System Log. Post-operating system failures are logged in the Event Viewer. 1. Turn on the computer and allow the operating system to open. 2. Select the search icon  in the taskbar. 3. Type <code>Event Viewer</code>, and then press enter. 4. Select the log from the left panel. Details display in the right panel. ChromeOS™: 1. Go to support.google.com/chrome. 2. Search <code>collect Chrome device logs</code>.
Technical bulletins and alerts	To find technical bulletins, alerts, guides, and whitepapers: 1. Go to www.hp.com/support. 2. Follow the instructions to find your product. 3. Select Bulletins and Alerts to view technical bulletins.
Repair professionals	To locate repair professionals: 1. Go to www.hp.com. 2. Select Authorized service providers. 3. Select your location.
Component and diagnosis information, failure detection, and required action	To locate diagnosis information and actions: 1. Go to http://www.hp.com/go/techcenter/pcdiags. 2. Select the issue you want to diagnose.

5 Removal and replacement procedures for Customer Self-Repair parts

This chapter provides removal and replacement procedures for Customer Self-Repair parts.



NOTE: The Customer Self-Repair program is not available in all locations. Installing a part that is not supported by the Customer Self-Repair program can void your warranty. Check your warranty to determine whether Customer Self-Repair is supported in your location.



NOTE: The [HP Support YouTube Channel](#) (in English) has videos that provide step-by-step removal and replacement instructions for many common parts and models.

Component replacement procedures

Use these procedures to remove and replace computer components.



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.



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

Make special note of each screw size and location during removal and replacement.

Preparation for disassembly

Use these procedures to remove and replace computer components.

For initial safety procedures, see [Removal and replacement procedures preliminary requirements on page 15](#).

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

Bottom cover

Use this procedure to remove the bottom cover.

Table 5-1 Bottom cover descriptions and part numbers

Description	Spare part number
Aquatic blue	Q15029-001
Meteor silver	Q15030-001
Mica silver	Q15031-001

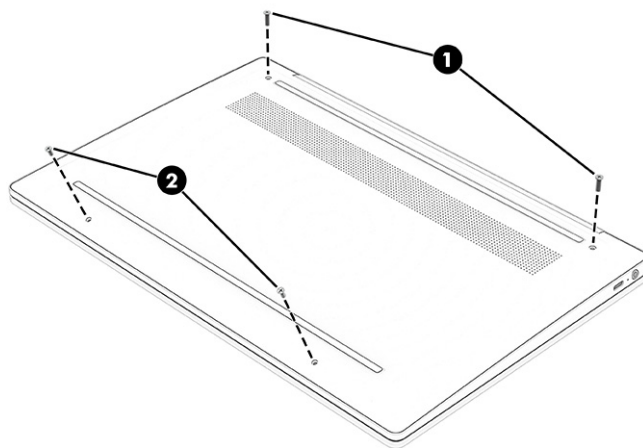
Table 5-1 Bottom cover descriptions and part numbers (continued)

Description	Spare part number
Modern gray	Q15032-001

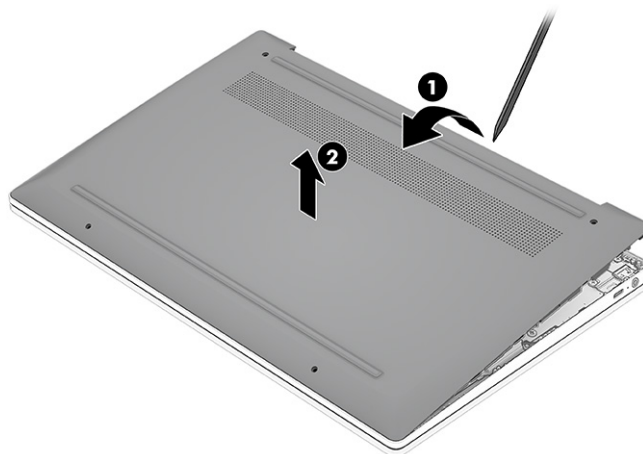
Before removing the bottom cover, prepare the computer for disassembly ([Preparation for disassembly on page 23](#)).

Remove the bottom cover:

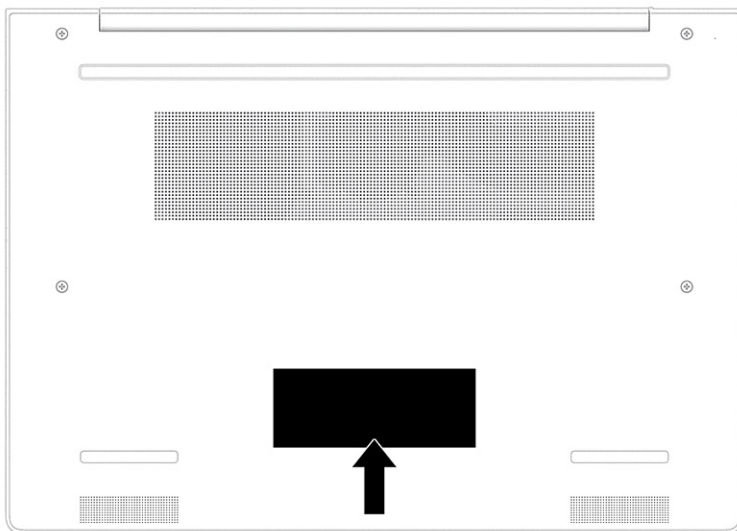
1. Position the computer upside down with the front toward you.
2. Remove the two Phillips M2.5 × 8.5 screws **(1)** and the two Phillips PM2.0 × 4.5 screws **(2)** that secure the bottom cover to the computer.



3. Use a case utility tool or similar thin plastic tool **(1)** to separate the top edge of the bottom cover from the computer.
4. Remove the bottom cover **(2)**.



Reverse the removal procedures to install the bottom cover.



Battery

The battery removal procedure differs depending on whether you are removing and replacing the existing battery or installing a new battery. To install a new battery, you must use a revive kit.

- To remove and replace the existing battery, see [Removing and reinstalling the same battery on page 26](#).
- To install a new battery, see [Installing a new battery on page 27](#).

Removing and reinstalling the same battery

Use this procedure to remove the battery.

⚠ WARNING! To avoid personal injury and damage to the product:

- Do *not* puncture, twist, or crack the battery.
 - Do *not* cause an external puncture or rupture to the battery, which can cause a short inside the battery that can result in battery thermal runaway.
 - Do *not* handle or touch the battery enclosure with sharp objects such as tweezers or pliers, which might puncture the battery.
 - Do *not* compress or squeeze the battery case with tools or heavy objects stacked on top of the case. These actions can apply undue force on the battery.
 - Do *not* touch the connectors with any metallic surface or object, such as metal tools, screws, or coins, which can cause shorting across the connectors.
-

For additional battery information, see the *Regulatory, Safety, and Environmental Notices*. To access this guide, select the **Search** icon in the taskbar, type `HP Documentation` in the search box, and then select **HP Documentation**.

Before removing the battery, follow these steps:

1. Prepare the computer for disassembly (see [Preparation for disassembly on page 23](#)).

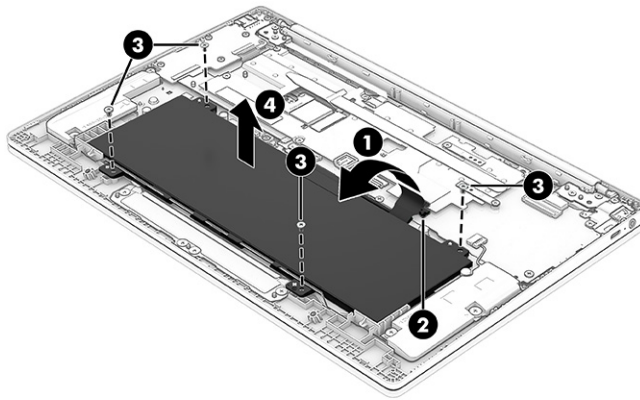
2. Remove the bottom cover (see [Bottom cover on page 23](#)).

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

IMPORTANT: Removing a battery that is the sole power source for the computer can cause loss of information. To prevent loss of information, save your work or shut down the computer through Windows before you remove the battery.

Remove the battery:

1. Lift the tape **(1)** off the system board battery connector, and then disconnect the battery cable **(2)** from the system board.
2. Remove the four Phillips M2.0 × 3.5 screws **(3)** that secure the battery to the computer.
3. Remove the battery **(4)** from the computer.



Reverse the removal procedures to replace the battery.

NOTE: When reinstalling the battery, be sure to completely reassemble the computer and plug in the AC adapter before turning the computer on.

Installing a new battery

Use these procedures and illustrations to install the battery. You must use a revive kit to remove the old battery and install a new one. The revive kit includes an empty containment tray and a containment tray with a battery preinstalled.

Table 5-3 Battery description and part number

Description	Spare part number
2 cell, 47 Whr, Li-ion battery	L75783-011

Before starting this replacement procedure:

- Ensure other individuals are sufficiently clear of your workspace.
- Ensure your workspace is clear of any flammable material such as paper or oils.

- Locate the nearest ABC dry chemical fire extinguisher for use in an emergency.

⚠ WARNING! This procedure requires removing the battery or disconnecting the battery cable. Use care to avoid bending, twisting, or puncturing the battery regardless of its condition. Failure to follow this replacement guide or to use HP recommended tools might damage the system and/or cause a safety hazard.

- Do *not* remove the battery from the containment tray.
- Do *not* handle or touch the battery enclosure with sharp objects such as tweezers or pliers, which might puncture the battery.
- Do *not* touch the connectors with any metallic surface or object, such as metal tools, screws, or coins, which can cause shorting across the connectors.

Should a part become stuck or difficult to remove when opening a unit where a swollen battery is suspected, or if the battery becomes stuck in the unit, stop and contact HP Support for assistance. Do not try to remove a battery by force.

📝 NOTE: Screw locations, latch locations, and internal components might vary.

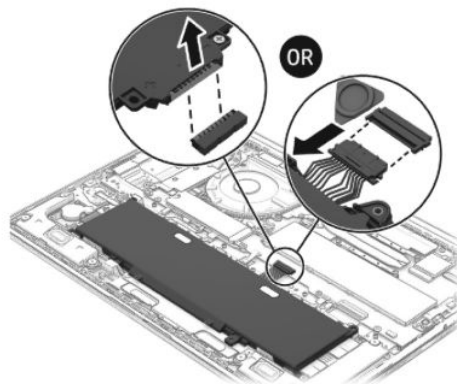
Before removing the battery, follow these steps:

1. Prepare the computer for disassembly (see [Preparation for disassembly on page 23](#)).
2. Remove the bottom cover (see [Bottom cover on page 23](#)).

⚠ WARNING! To reduce potential safety issues, use only the user-replaceable battery provided with the computer, a replacement battery provided by HP, or a compatible battery purchased from HP.

📝 IMPORTANT: Removing a battery that is the sole power source for the computer can cause loss of information. To prevent loss of information, save your work or shut down the computer through Windows before you remove the battery.

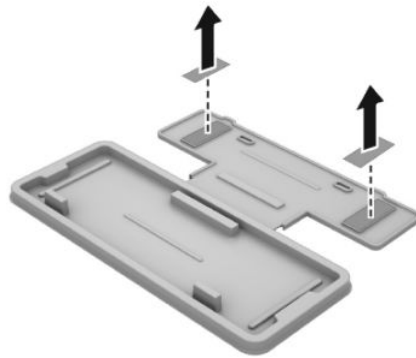
1. Remove the battery using the revive kit:
 - a. Disconnect the battery cable from the system board. The connector location might vary.



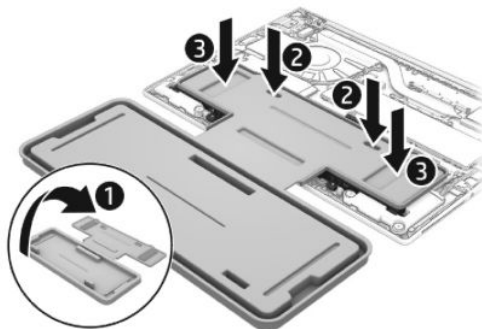
- b. Open the empty battery containment tray.



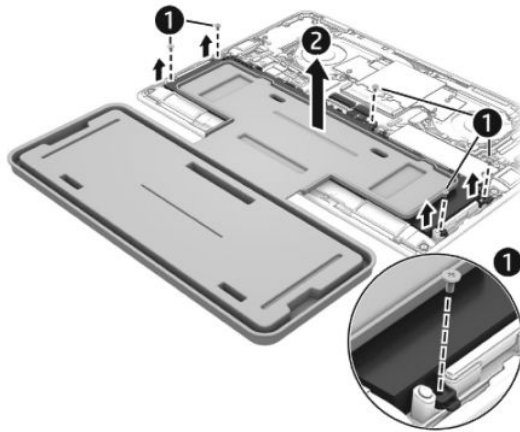
- c. Remove the paper backing layer from the adhesive on the tray.



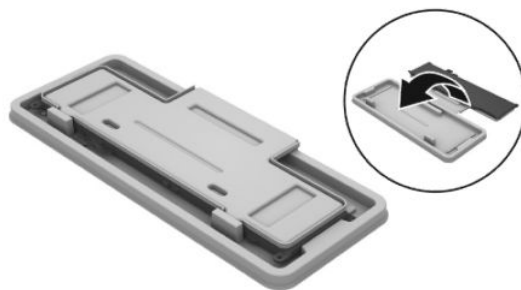
- d. Turn the tray **(1)** over so that the adhesive is facing down.
- e. Place the tray **(2)** centered on the battery.
- f. Press down on the indentations on the tray **(3)** to adhere it to the battery.



- g. Remove the Phillips screws **(1)** that secure the battery to the computer. Number of screws and screw locations might vary.
- h. Lift the top of the tray **(2)** to remove the battery from the computer.



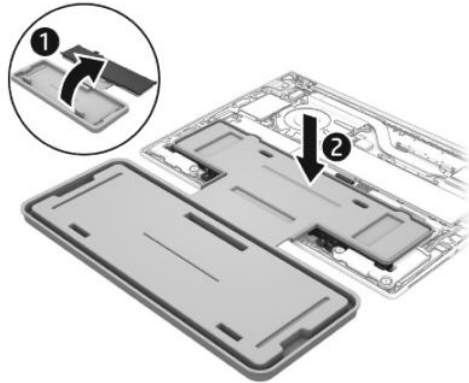
- i. Rotate the battery up and over into the cavity of the containment tray.



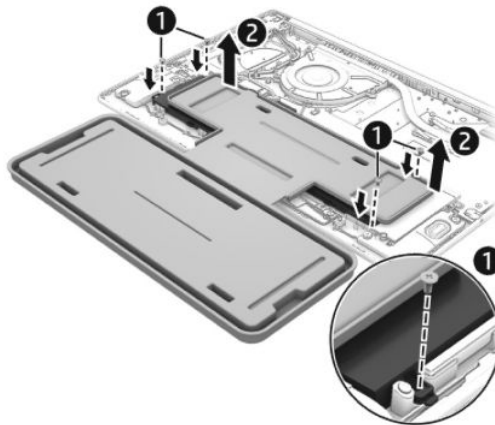
 **NOTE:** Please recycle responsibly. For more information about recycling programs, see the HP website at <http://www.hp.com/recycle>.

- 2. Install the battery using the revive kit:
 - a. Open the containment tray that includes the new battery.

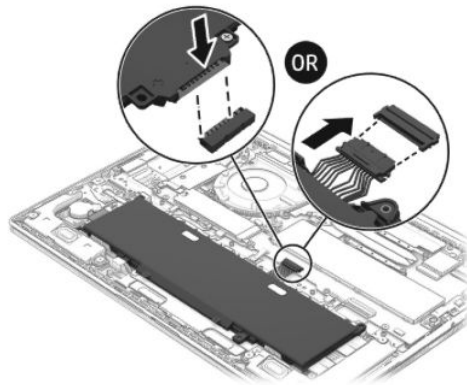
- b. Turn the tray **(1)** over so the battery is facing downward, and then insert the battery **(2)** into the computer. Adhesive secures the battery to the tray.



- c. Install the Phillips screws **(1)** to secure the battery. Number of screws and screw locations might vary.
- d. Lift the containment tray **(2)** off the battery.



- e. Connect the battery cable to the system board. The connector location might vary.



NOTE: When replacing the battery, be sure to completely reassemble the computer and plug in the AC adapter before turning the computer on.

6 Removal and replacement procedures for authorized service provider parts

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

-  **IMPORTANT:** Only an authorized service provider should access the components described in this chapter. 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.
-  **NOTE:** The [HP Support YouTube Channel](#) (in English) has videos that provide step-by-step removal and replacement instructions for many common parts and models.

Component replacement procedures

Use the procedures described in this section to remove and replace computer components.

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

Make special note of each screw size and location during removal and replacement.

Speakers

Use this procedure to remove the speakers.

Table 6-1 Speakers description and part number

Description	Spare part number
Speakers	N93365-001

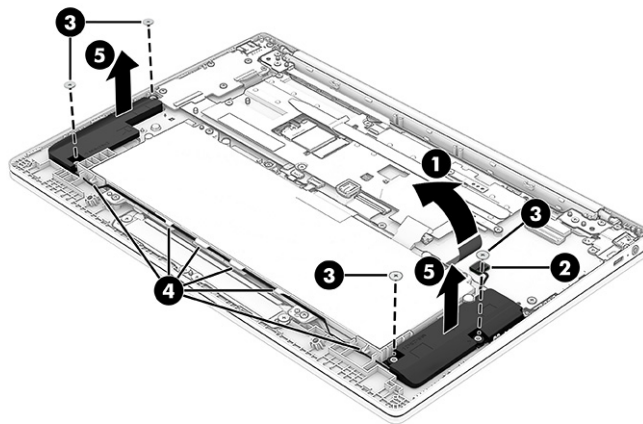
Before removing the speakers, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 23](#)).
2. Remove the bottom cover (see [Bottom cover on page 23](#)).
3. Disconnect the battery cable from the system board (see [Removing and reinstalling the same battery on page 26](#)).

Remove the speakers:

1. Lift the tape **(1)** that covers the system board speaker connector, and then disconnect the cable **(2)** from the system board.
2. Remove the two Phillips M1.6 × 2.5 screws **(3)** from each speaker.

3. Remove the speaker cable from the clips **(4)** along the bottom of the battery.
4. Remove the speakers **(5)** from the computer.



Reverse this procedure to install the speakers.

WLAN module

Use this procedure to remove the WLAN module.

Table 6-2 WLAN module descriptions and part numbers

Description	Spare part number
WLAN module (MediaTek MT7920 Wi-Fi 6 + Bluetooth 5.4)	P17386-005
WLAN antenna protective tape	M14330-001



IMPORTANT: 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. Prepare the computer for disassembly ([Preparation for disassembly on page 23](#)).
2. Remove the bottom cover (see [Bottom cover on page 23](#)).
3. Disconnect the battery cable from the system board (see [Removing and reinstalling the same battery on page 26](#)).

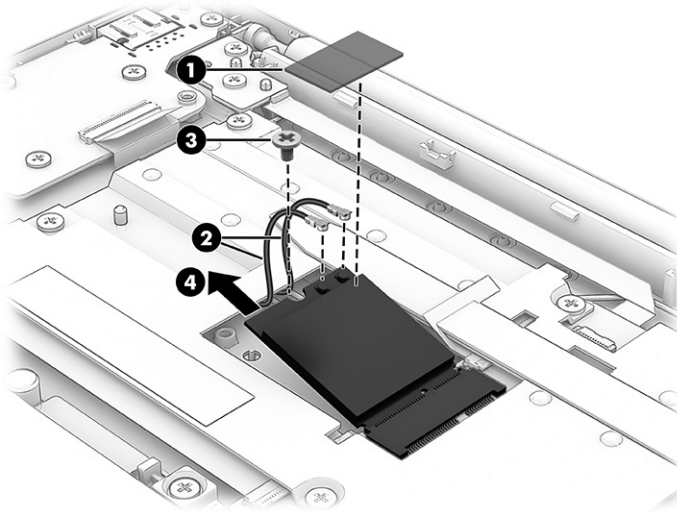
Remove the WLAN module:

1. Remove the protective tape **(1)** that covers the antenna cables.
2. Disconnect the antenna cables **(2)** from the module terminals.
3. Remove the Phillips M2.0 × 3.0 screw **(3)** that secures the module.

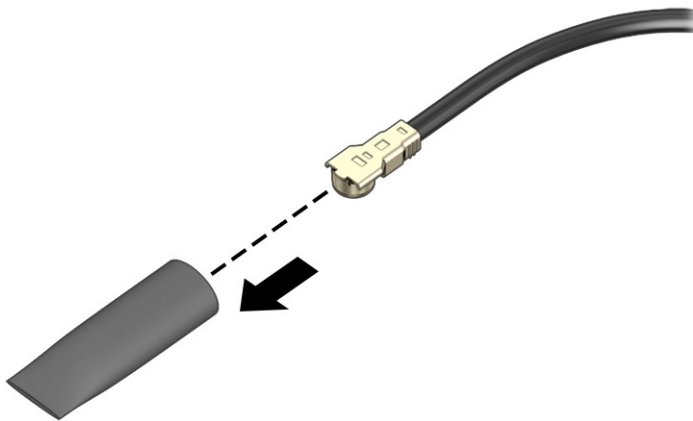
4. Remove the module (4) by pulling the it away from the slot at an angle.



NOTE: WLAN modules are notched to prevent incorrect installation.



5. If the WLAN antenna is not connected to the terminal on the WLAN module, install a protective sleeve on the antenna connector, as shown in the following illustration.



Reverse this procedure to install the WLAN module.

Heat sink

Use this procedure to remove the heat sink.

Table 6-3 Heat sink description and part number

Description	Spare part number
Heat sink	Q15028-001

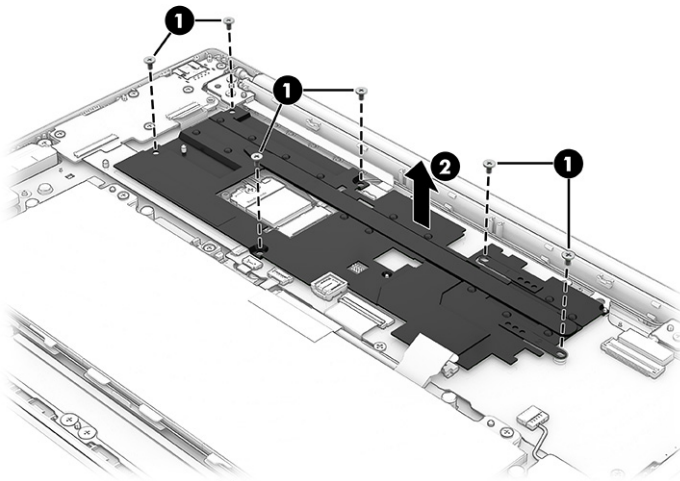
Before removing the heat sink, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 23](#)).

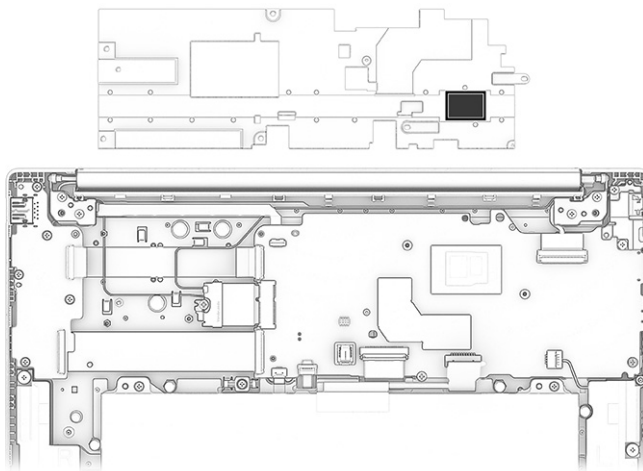
2. Remove the bottom cover (see [Bottom cover on page 23](#)).
3. Disconnect the battery cable from the system board (see [Removing and reinstalling the same battery on page 26](#)).

Remove the heat sink:

1. Remove the six Phillips M2.0 × 3.5 screws **(1)** that secure the heat sink to the system board.
2. Remove the heat sink **(2)**.



3. Each time the heat sink is removed, thoroughly clean and replace the thermal material from the surface of the heat sink. Replacement thermal material is included with the heat sink and system board spare part kits.



Reverse this procedure to install the heat sink.

System board

Use this procedure to remove the system board.

Table 6-4 System board descriptions and part numbers

Description	Spare part number
System board (includes the processor, replacement thermal material, and the Chrome operating system)	
MediaTek Kompanio 540 processor, 8 GB system memory, 128 GB UFS memory	Q15011-001
MediaTek Kompanio 540 processor, 4 GB system memory, 128 GB UFS memory	Q15009-001
MediaTek Kompanio 540 processor, 4 GB system memory, 64 GB eMMC memory	Q15010-001

Before removing the system board, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 23](#)).
2. Remove the bottom cover (see [Bottom cover on page 23](#)).
3. Remove the battery (see [Removing and reinstalling the same battery on page 26](#)).
4. Remove the WLAN module (see [WLAN module on page 34](#)).
5. Remove the heat sink (see [Heat sink on page 35](#)).

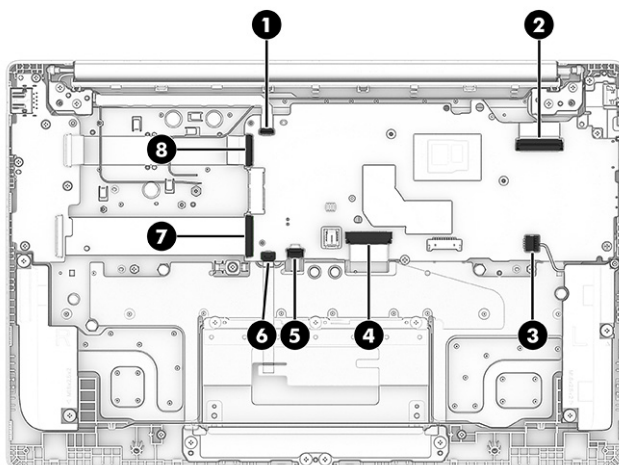
Remove the system board:

1. Disconnect the following cables from the system board:

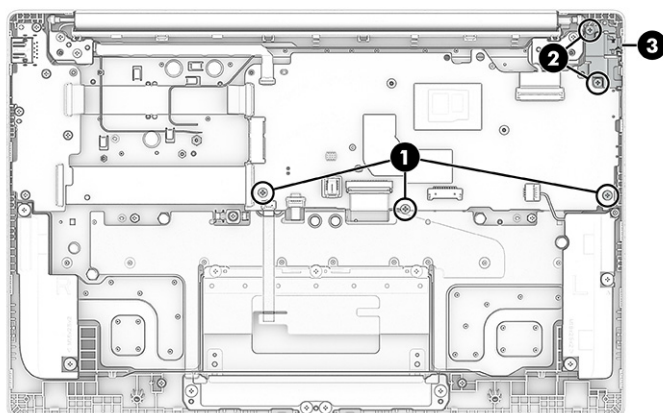


NOTE: A protective cover protects most system board connectors. The cover is secured to the system board with double-sided tape. Lift the cover to access the connectors.

- Camera cable (ZIF) **(1)**
- Display cable (ZIF) **(2)**
- Speaker cable **(3)**
- Keyboard cable (ZIF) **(4)**
- Backlight cable (ZIF) **(5)**
- Touchpad cable (ZIF) **(6)**
- USB board cable (reverse ZIF) from the USB board **(7)**
- USB board cable (reverse) from the USB board **(8)**

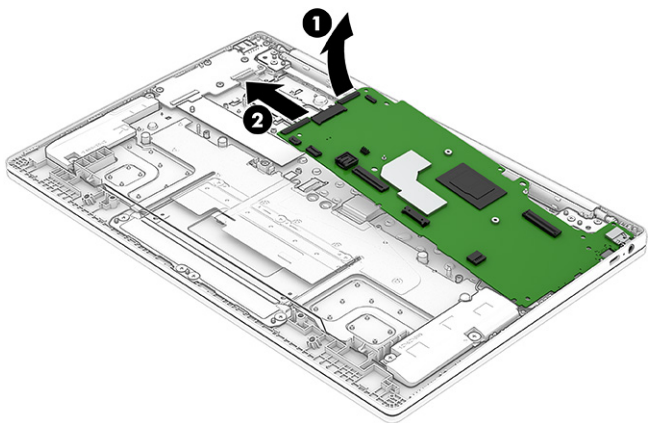


2. Remove the three Phillips M2.0 × 3.0 screws **(1)** that secure the system board to the computer.
3. Remove the two Phillips M2.0 × 3.5 screws **(2)** that secure the USB bracket and system board to the computer.
4. Remove the USB bracket **(3)** from the computer.

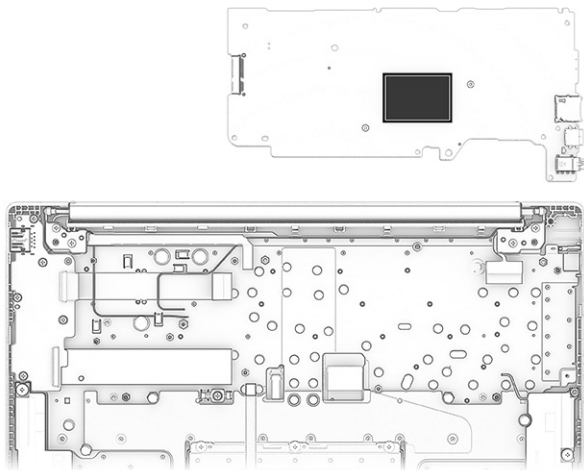


5. Lift the left side of the system board **(1)** until it rests at an angle.

6. Remove the system board (2) by pulling it left and out of the computer.



7. When replacing the system board, be sure to install a thermal pad onto the new system board at the location shown in the following illustration.



Reverse this procedure to install the system board.

USB board

Use this procedure to remove the USB board.

Table 6-5 USB board descriptions and part numbers

Description	Spare part number
USB board	Q15021-001
USB board cable (available in the Cable Kit)	Q15022-001

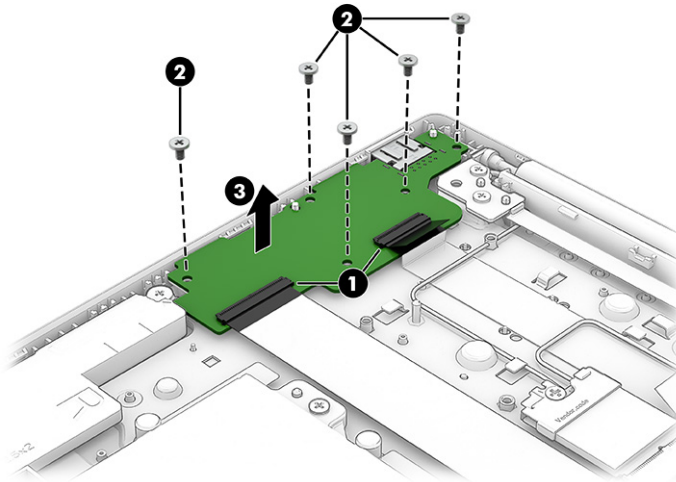
Before removing the USB board, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 23](#)).

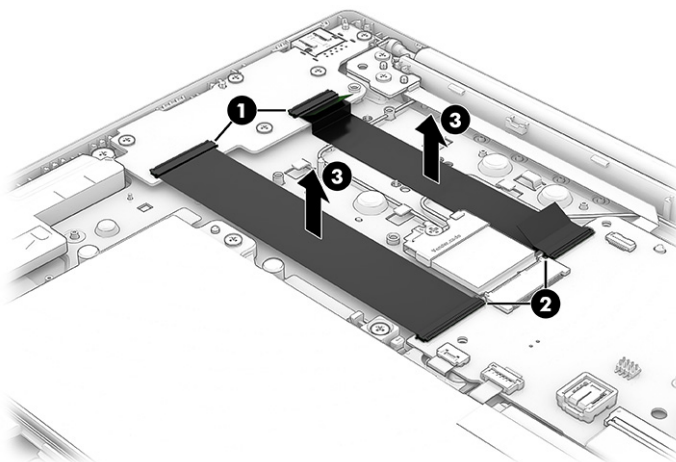
2. Remove the bottom cover (see [Bottom cover on page 23](#)).
3. Disconnect the battery cable from the system board (see [Removing and reinstalling the same battery on page 26](#)).

Remove the USB board:

1. Disconnect the cables from the two ZIF connectors **(1)** on the board.
2. Remove the five Phillips M2.0 × 3.5 screws **(2)** from the bracket and board.
3. Remove the board **(3)** from the computer.



4. To replace the USB cables, remove the heat sink (see [Heat sink on page 35](#)).
5. Remove the antenna cable that routes over the USB cables. For more information, see [Display assembly on page 42](#).
6. Disconnect the USB cables from the ZIF connectors **(1)** on the USB board and from the ZIF connectors **(2)** on the system board.
7. Peel the cables **(3)** off the computer. The cables are secured with adhesive.



Reverse this procedure to install the USB board.

Touchpad

Use this procedure to remove the touchpad.

Table 6-6 Touchpad descriptions and part numbers

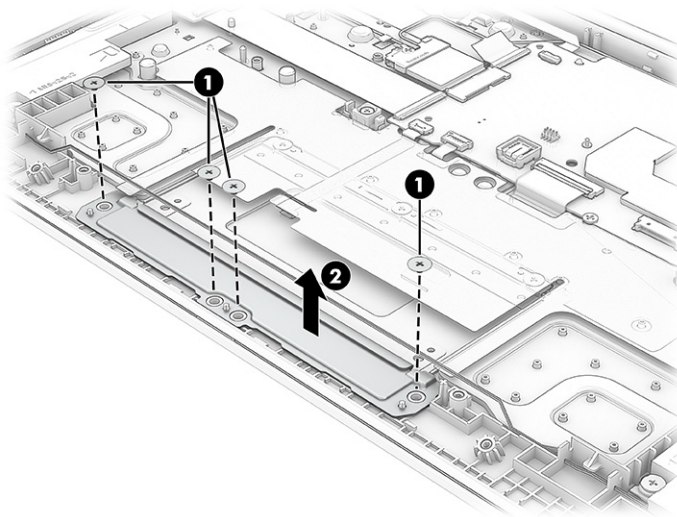
Description	Spare part number
Aquatic blue	Q15024-001
Meteor silver	Q15025-001
Mica silver	Q15026-001
Modern gray	Q15027-001
Touchpad cable (included in the Cable Kit)	Q15022-001

Before removing the touchpad, follow these steps:

1. Prepare the computer for disassembly (see [Preparation for disassembly on page 23](#)).
2. Remove the bottom cover (see [Bottom cover on page 23](#)).
3. Remove the battery (see [Removing and reinstalling the same battery on page 26](#)).

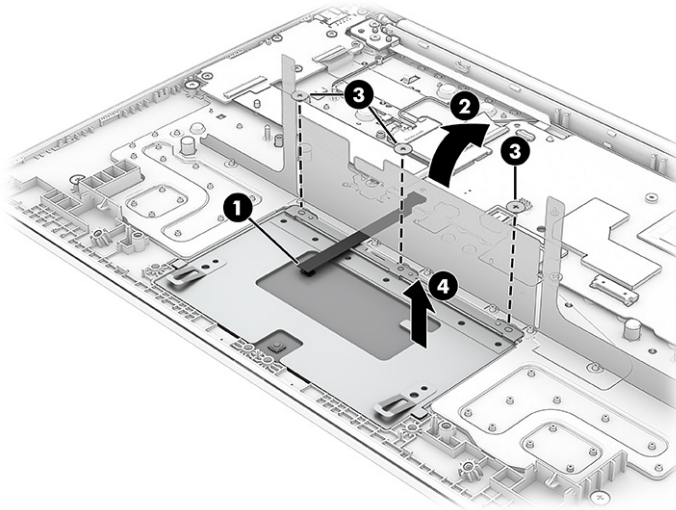
Remove the touchpad:

1. Remove the four Phillips M2.0 × 2.0 screws **(1)** from the touchpad bracket.
2. Remove the bracket **(2)**.

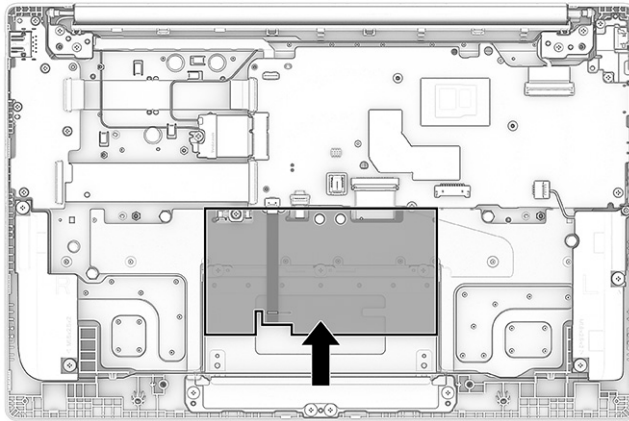


3. Disconnect the cable from the ZIF connector **(1)** on the touchpad, and then lift the protective cover **(2)** off the top of the touchpad.
4. Remove the three Phillips M2.0 × 2.0 screws **(3)** from the touchpad.

5. Remove the touchpad (4) from the computer.



6. When installing a new touchpad, be sure to install new protective tape at the location as shown in the following illustration.



Reverse this procedure to install the touchpad.

Display assembly

Use these procedures to remove and disassemble the display assembly.



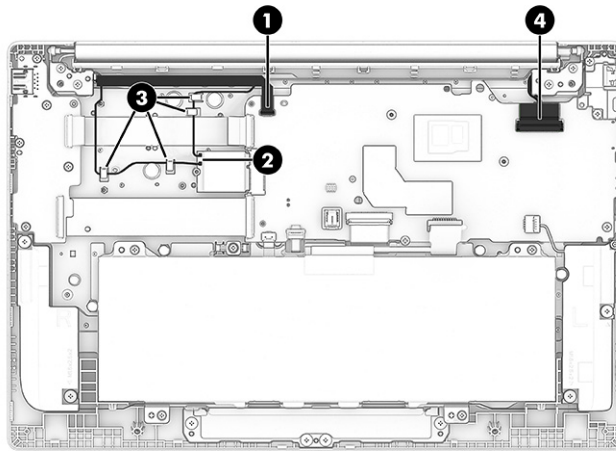
NOTE: The display assembly is spared at the subcomponent level.

Before removing the display panel, follow these steps:

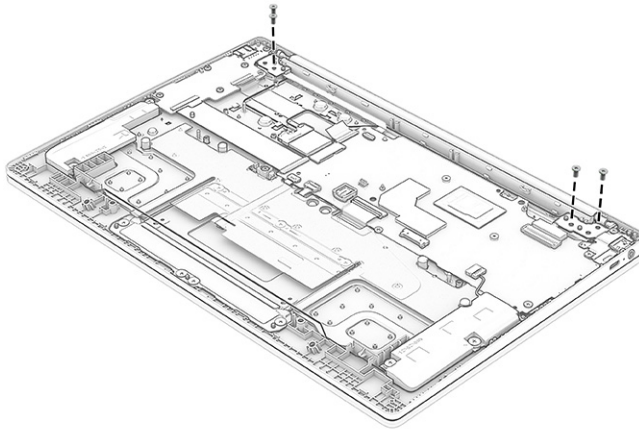
1. Prepare the computer for disassembly ([Preparation for disassembly on page 23](#)).
2. Remove the bottom cover (see [Bottom cover on page 23](#)).
3. Remove the battery (see [Removing and reinstalling the same battery on page 26](#)).

Remove the display assembly:

1. To disconnect the display cables:
 - a. Remove the heat sink (see [Heat sink on page 35](#)).
 - b. Disconnect the camera cable from the system board ZIF connector **(1)**.
 - c. Disconnect the antenna cables **(2)** from the WLAN module.
 - d. Remove the wireless antennas from the clips **(3)** in the computer.
 - e. Disconnect the display cable from the system board ZIF connector **(4)**.

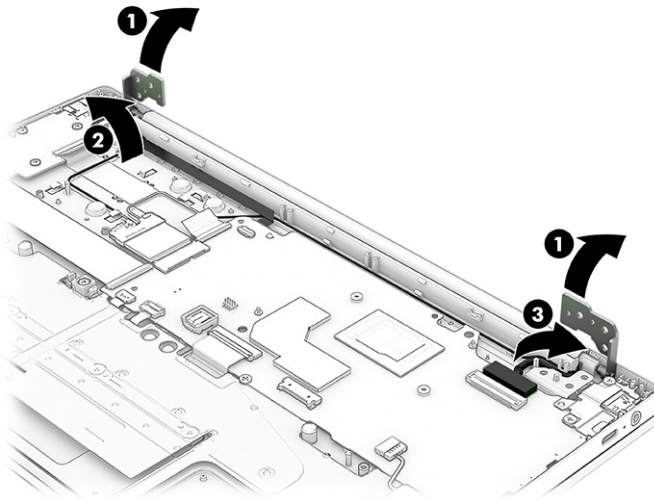


2. Remove the four Phillips M2.5 × 5.0 screws that secure the display assembly to the computer.

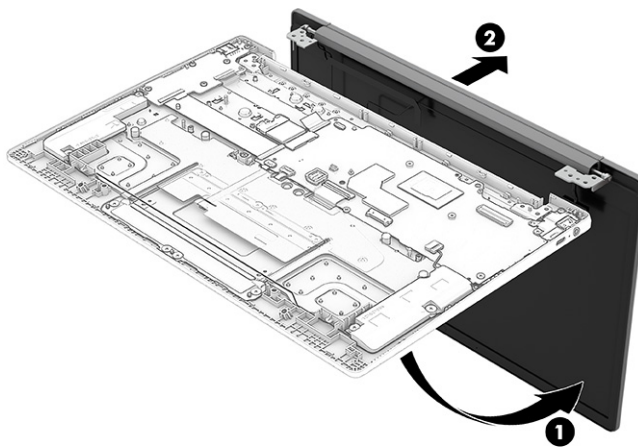


3. Lift up both hinges **(1)** as far as they can open.
4. Remove the camera cable and antenna cable **(2)** from the routing clips.

5. Remove the display cable and antenna cable (3) from the routing clips.



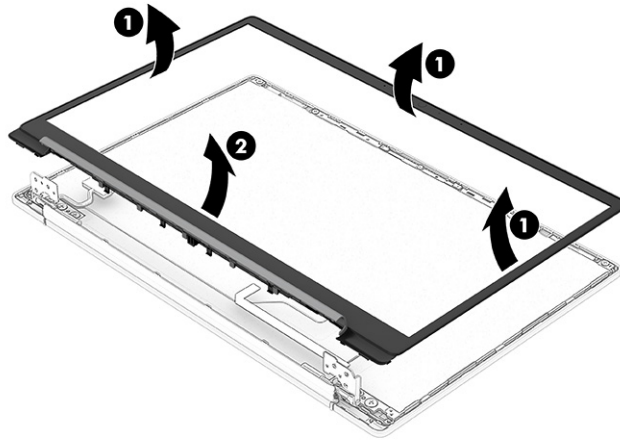
6. Open the display to 90° (1), and then separate the display (2) from the computer.



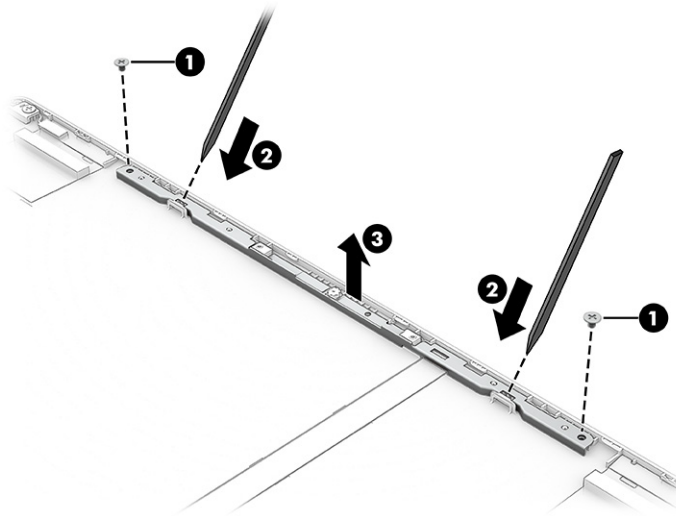
7. To remove the display panel from the display assembly:

- a. Release the top, left, and right sides (1) of the bezel from the display.

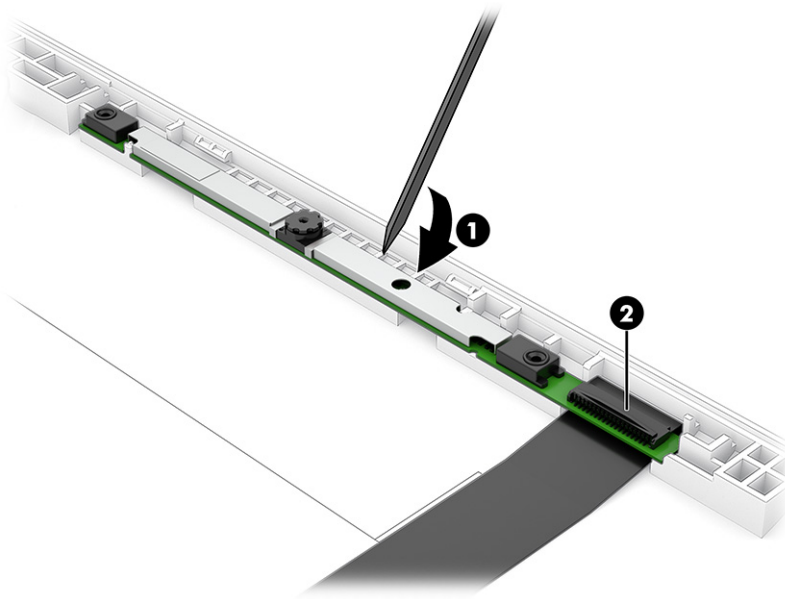
- b. Release the bottom **(2)** of the bezel from the display.



- c. Remove the two Phillips M2.0 × 2.5 screws **(1)** from the top bracket. Use a tool **(2)** to release the bracket at the two hooks, and then remove the bracket **(3)**.



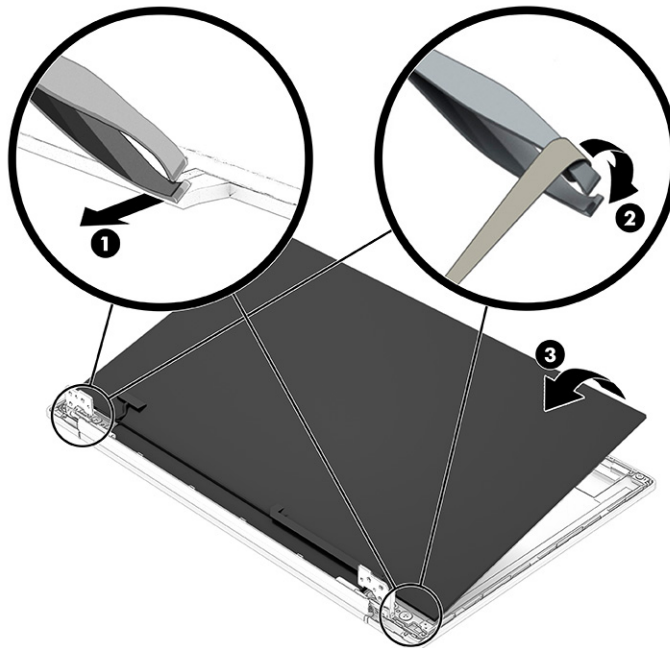
- d. To remove the camera module, use a thin pry tool **(1)** to release the module. Disconnect the cable from the ZIF connector **(2)** on the camera module.



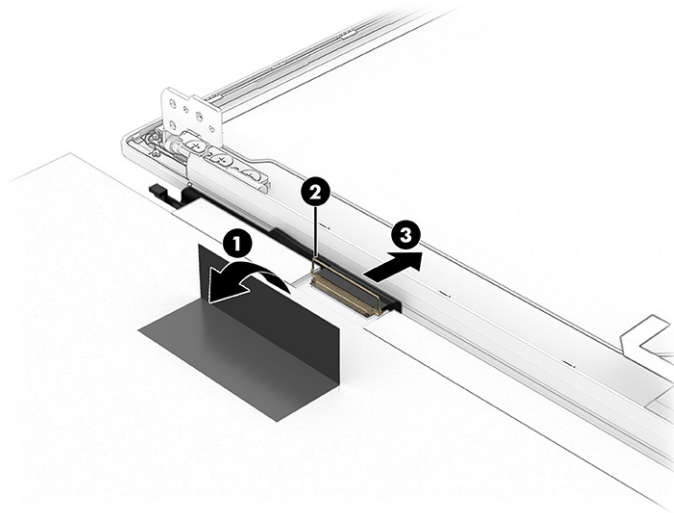
- e. The display panel is secured to the display enclosure with tape that is installed in two locations under the panel. To remove the panel, use tweezers to grasp the end of each piece of tape **(1)**. While wrapping the tape around the tweezers **(2)**, pull the tape out from behind the display panel. You must pull the tape multiple times before it is completely removed. Rotate the top of the panel **(3)** up and over and place it next to the display rear cover.



NOTE: Pull the tape out slowly and evenly to prevent it from breaking prematurely.



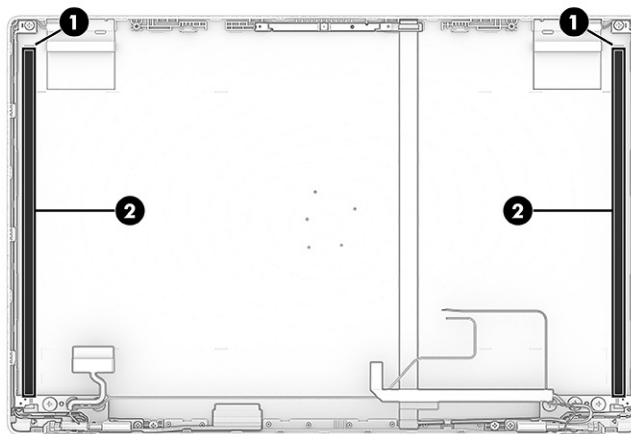
- f. Peel back (do not remove) the conductive tape **(1)** from the connector on the bottom of the panel. Lift the locking bar **(2)**, and then disconnect the cable **(3)** from the panel.



- g. When installing a display panel, locate the tape installation lines **(1)** on the inside of the display rear cover, and install the tape **(2)** below the lines. Be sure that the end of the tape is visible and accessible, and extends out slightly from under the installed display panel.

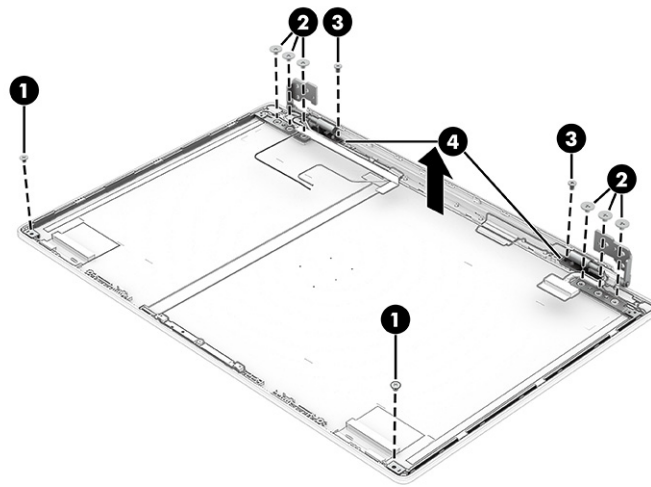


NOTE: Install the stretchable tape **below** the installation lines **(1)**. Do not cover the lines.

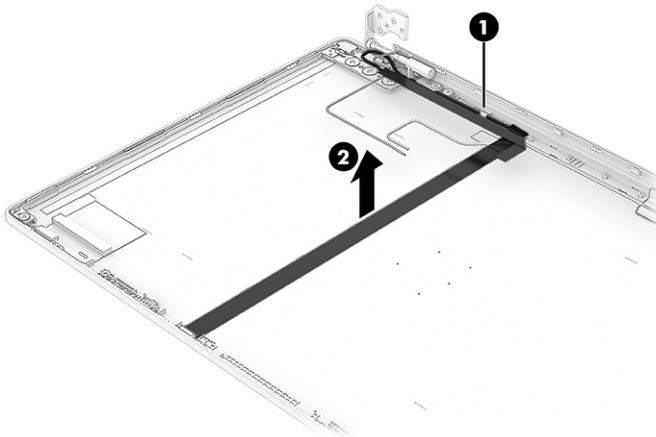


8. To remove the hinges and hinge covers from the display rear cover:
- a. Remove the Phillips M2.0 × 2.5 screw **(1)** from the top of each hinge.
 - b. Remove the three Phillips M2.5 × 3.0 screws **(2)** and the Phillips M2.5 × 3.5 screw **(3)** from the bottom of each hinge.

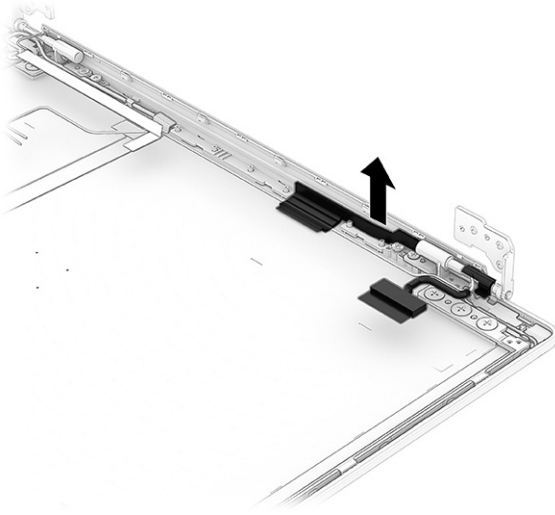
- c. Remove the hinges (**4**) from the display back cover.



9. To remove the camera cable remove the cable from the clip (**1**) at the bottom of the rear cover. Peel the cable (**2**) up off the inside of the display rear cover.

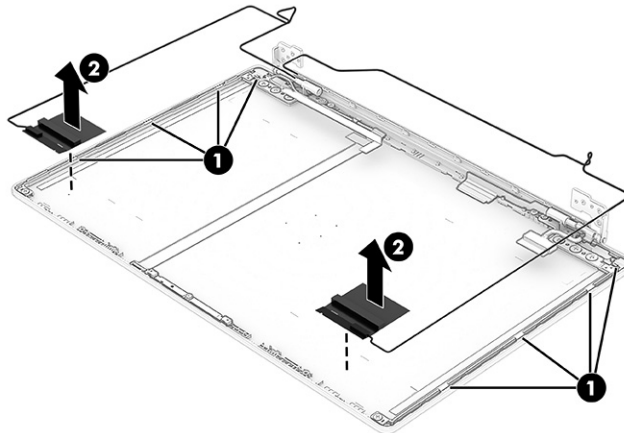


- 10.** To remove the display cable, pull the cable out of its routing along the bottom of the display rear cover.



- 11.** To remove the WLAN antennas and cables:

- a.** Remove the cables from the clips **(1)** along the sides of the display rear cover.
- b.** Peel the antennas **(2)** off the display rear cover.



The wireless cables and antennas are also included in the display rear cover spare part kit.

Reverse these procedures to reassemble and replace the display assembly.



NOTE: When installing the tape onto the display rear cover, be sure that the end of the tape is visible and accessible, and extends out slightly from under the installed display panel.

Top cover with keyboard

The top cover with keyboard remains after removing all other spare parts from the computer. In this section, the first table provides the main spare part number for the top covers with keyboards. The second table provides the country codes.

Table 6-7 Top cover with keyboard descriptions and part numbers

Description	Spare part number
Aquatic blue top cover, not backlit	Q15015-xx1
Meteor silver top cover, backlit	Q15016-xx1
Meteor silver top cover, not backlit	Q15017-xx1
Mica silver top cover, backlit	Q15018-xx1
Mica silver top cover, not backlit	Q15019-xx1
Modern gray top cover, not backlit	Q15020-xx1

Table 6-8 Spare part country codes

For use in country or region	Spare part number	For use in country or region	Spare part number	For use in country or region	Spare part number
Belgium	-A41	Germany	-041	Portugal	-131
Denmark, Finland, and Norway	-DH1	Italy	-061	Spain	-071
French Canada	-DB1	Japan	-291	United Kingdom	-031
France	-051	The Netherlands	-B31	United States	-001

7 Backing up, resetting, and recovering

This chapter provides information about the standard procedures of backing up your personal data, resetting your computer to original factory conditions, and recovering your operating system.

Backing up

You can back up your data to an optional USB flash drive or SD memory card or through Google Drive™.

For detailed information about creating a backup, go to <http://www.support.google.com>.

Resetting

A factory reset erases the information on your computer hard drive, including files in the Downloads folder. Before you reset, back up your files to an optional USB flash drive, to an SD memory card, or through Google Drive. The factory reset will not delete your files at these locations.

You might want to reset your computer in the following circumstances:

- You see the message "Reset this Chrome device."
- You are having problems with your user profile or settings.
- You restarted your computer, and it still doesn't work properly.
- You want to change the owner of your computer.

To reset your computer:

1. Under the **Settings** menu, select **Advanced**.
2. In the **Powerwash** section, select **Powerwash**.
3. Select **Restart**.
4. In the window that opens, select **Powerwash**, and then select **Continue**.
5. Follow the on-screen instructions to reset your computer, and sign in with your Google Account.



NOTE: The account you sign in with after you reset your computer is recognized as the owner account.

6. After you complete the reset, you can set up your computer and check to see whether the problem is fixed.

Recovering

When your ChromeOS™ doesn't work properly, you can perform a recovery. A recovery reinstalls the operating system, software programs, and original factory settings. It deletes locally saved files and saved

networks for all accounts. A system recovery does not affect Google Accounts and data synced to Google Drive.

 **IMPORTANT:** Recovery permanently erases everything on your computer hard drive, including your downloaded files. If possible, back up your files before you recover your computer.

 **NOTE:** For more information about performing a system recovery on your computer, go to <http://www.support.google.com>.

Before you begin the recovery process, you need the following prerequisites:

- A USB flash drive or SD memory card with a capacity of 4 GB or greater. All data is erased from this storage device when the recovery media is created, so back up all files from the device before you begin.
- A computer with internet access. You must also have administrative rights to the computer.
- A computer AC adapter. The computer must be plugged into AC power during recovery.
- The “ChromeOS is missing or damaged” screen displaying on your computer. If this message is not already displayed:
 - Turn on the computer, press and hold the **esc+f3** keys, and then press the power button. The computer restarts, and the screen shows the “ChromeOS is missing or damaged” screen.

Option 1: Recovering using an internet connection

Use these instructions to recover the Chrome operating system on your computer without recovery media:

1. Disconnect any external devices connected to your computer, plug in the power cord, and then turn on the computer.
2. To enter recovery mode, press and hold the **esc+f3** keys, and then press the power button. When the “ChromeOS is missing or damaged” screen appears, select **Recover using internet connection** and follow the on-screen instructions.

 **NOTE:** The computer must have internet access.

3. When the “System Recovery is complete” message appears, reboot your computer.

The computer restarts with ChromeOS reinstalled.

Option 2: Installing the Chromebook Recovery Utility

The Chromebook™ Recovery Utility recovers the original operating system and software programs that were installed at the factory. You can install this utility from the Chrome Web Store on any computer.

 **NOTE:** Use this option if you do not have Internet access on your computer.

To install the Chromebook Recovery Utility:

- Open the Chrome Web Store, search for `chrome recovery`, select **Chromebook Recovery Utility** from the Apps list, and follow the on-screen instructions.

Creating recovery media

You can use recovery media to recover the original operating system and software programs that were installed at the factory.

To create recovery media:

1. Turn on a computer that has internet access.



NOTE: You must have administrative rights to the computer.

2. Select the **Launcher** icon, and then select **All Apps**.
3. In the Apps window, select **Recovery**, and then select **Get started**.
4. Follow the on-screen instructions to create the recovery media.



NOTE: All data and partitions on your recovery media will be deleted. Do not remove the USB flash drive or SD memory card until the process is complete.

Recovering the Chrome operating system with recovery media

Use these instructions to recover the Chrome operating system on your computer using the recovery media that you created.

1. Disconnect any external devices connected to your computer, plug in the power cord, and then turn on the computer.
2. To enter recovery mode, press and hold **esc+f3**, and then press the power button. When the “ChromeOS is missing or damaged” screen appears, insert the recovery media into your computer. The recovery process begins immediately.
3. Wait while Chrome verifies the integrity of the recovery media.



NOTE: If you need to cancel the recovery during the verification process, press and hold the power button until the computer turns off. Do not disrupt the system recovery process after the verification step is complete.



NOTE: If an error message is displayed, you might need to run the Chrome Recovery Utility again or use a different USB flash drive or SD memory card.

4. When the “System Recovery is complete” message appears, remove the recovery media.

The computer restarts with ChromeOS reinstalled.

Setting up your computer after a reset or recovery

After a reset or recovery is complete, perform the initial setup process.

For details about setting up the computer, go to <http://www.support.google.com>.

Erasing and reformatting the recovery media

When you create recovery media, the USB flash drive or SD memory card is formatted as a recovery tool. After recovery, you must erase the recovery media to reuse your storage device. Follow these steps to use the Chromebook Recovery Utility to erase the recovery media.

1. Select the **Launcher** icon, and then select **All Apps**.
2. In the apps window, select **Recovery**.
3. Select the **Settings** icon, and then select **Erase recovery media**.
4. Select the USB flash drive or SD memory card that you inserted, select **Continue**, and then select **Erase now**.
5. After the recovery media is erased, select **Done** to close the Chromebook Recovery Utility, and then remove the USB flash drive or SD memory card.

The media is ready to be formatted using a formatting tool provided by your operating system.

8 Specifications

This chapter provides specifications for your computer system.

Computer specifications

This section provides specifications for your computer. When traveling with your computer, the computer dimensions and weights, input power ratings, and operating specifications provide helpful information.

Table 8-1 Computer specifications

	Metric	U.S.
Dimensions		
Width	325.7 mm	12.8 in
Depth	215.5 mm	8.5 in
Height, rear	18.2 mm	0.7 in
Weight	1350 g	2.98 lbs
Input power		
Operating voltage and current	5 V DC @ 2 A / 12 V DC @ 3 A / 15 V DC @ 3 A - 45 W USB-C® 5 V DC @ 3 A / 9 V DC @ 3 A / 12 V DC @ 3.75 A / 15 V DC @ 3 A - 45 W USB-C 5 V DC @ 3 A / 9 V DC @ 3 A / 10 V DC @ 3.75 A / 12 V DC @ 3.75 A / 15 V DC @ 3 A / 20 V DC @ 2.25 A - 45 W USB-C	
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.

Display specifications

This section provides specifications for your display.

Table 8-2 Display specifications

	Metric	U.S.
Active diagonal size	35.6 cm	14.0 in
Resolution	1920 × 1080 (FHD)	
	1366 × 768 (HD)	
Brightness	300 nits (FHD)	
	250 nits (HD)	
Backlight	WLED (HD)	
	LED (FHD)	
Display panel interface	eDP	

9 Power cord set requirements

This chapter provides power cord requirements for countries and regions.

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

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

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

Requirements for all countries

These power cord requirements are applicable to all countries and regions.

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

Requirements for specific countries and regions

To determine power cord requirements for specific countries and regions, use this table.

Table 9-1 Power cord requirements for specific countries and regions

Country/region	Accredited agency	Applicable note number
Argentina	IRAM	1
Australia	SAA	1
Austria	OVE	1
Belgium	CEBEC	1
Brazil	ABNT	1
Canada	CSA	2
Chile	IMQ	1
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1

Table 9-1 Power cord requirements for specific countries and regions (continued)

Country/region	Accredited agency	Applicable note number
India	BIS	1
Israel	SII	1
Italy	IMQ	1
Japan	JIS	3
Netherlands	KEMA	1
New Zealand	SANZ	1
Norway	NEMKO	1
The People's Republic of China	CCC	4
Saudi Arabia	SASO	7
Singapore	PSB	1
South Africa	SABS	1
South Korea	KTL	5
Sweden	SEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	6
Thailand	TISI	1
United Kingdom	ASTA	1
United States	UL	2

1. The flexible cord must be Type HO5VV-F, 3-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
2. The flexible cord must be Type SVT/SJT or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a 2-pole grounding type with a NEMA 5-15P (15 A, 125 V AC) or NEMA 6-15P (15 A, 250 V AC) configuration. CSA or C-UL mark. UL file number must be on each element.
3. The appliance coupler, flexible cord, and wall plug must bear a T mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCTF, 3-conductor, 0.75 mm² or 1.25 mm² conductor size. The wall plug must be a 2-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V AC) configuration.
4. The flexible cord must be Type RVV, 3-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the CCC certification mark.
5. The flexible cord must be Type HO5VV-F 3-conductor, 0.75 mm² conductor size. KTL logo and individual approval number must be on each element. Approval number and logo must be printed on a flag label.
6. The flexible cord must be Type HVCTF 3-conductor, 1.25 mm² conductor size. Power cord set fittings (appliance coupler, cable, and wall plug) must bear the BSMI certification mark.

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

10 Recycling

When a nonrechargeable 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 website at <http://www.hp.com/recycle>.

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