Maintenance and Service Guide

SUMMARY

This guide provides information about spare parts, removal and replacement of parts, security, backing up, and more.

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 or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated, which is always enabled. High-speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com. **If your product ships with Windows in S Mode:** Windows in S Mode works exclusively with apps from the Microsoft Store within Windows. Certain default settings, features, and apps cannot be changed. Some accessories and apps that are compatible with Windows may not work (including some antivirus, PDF writers, driver utilities, and accessibility apps), and performance may vary, even if you switch out of S Mode. If you switch to Windows, you cannot switch back to S Mode. Learn more at Windows.com/SmodeFAQ.

Software terms

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 or rugs or clothing, to block airflow. Also, do not allow the AC adapter to come into contact with the skin or a soft surface, such as pillows or rugs or clothing, during operation. The computer and the AC adapter comply with the user-accessible surface temperature limits defined by applicable safety standards.

Table of contents

1   Product description

This table provides detailed product information.

Table 1-1 Product components and their descriptions

Category	Description
Product Name	**HP 11 inch Tablet PC**
	Model numbers: 11-be0xxx
Processor	Intel® Pentium® Silver N6000 (1.1 GHz, turbo up to 3.3 GHz, 2933 MHz/4 MB L3, quad core, 6 W)
Graphics	**Internal graphics**
	Intel® UHD Graphics
	Supports HD decode, DX12, and HDMI
Display	**3:2 aspect ratio**
	27.8 cm (11.0 in), 2.1 K (2160 × 1440), white light emitting diode (WLED), antiglare, UWVA (ultra wide view angle) sRGB 100%, embedded DisplayPort (eDP) 1.4 + (panel self-refresh) PSR2, 400 nits, bent panel (2.0 mm/3.8 mm), low blue light, touch screen
	Touch solution with flush glass, multitouch enabled
	Gorilla Glass 5
	Anti smudge
	Flicker free
	Supports active stylus
	Supports active stylus
	Supports Microsoft HDR streaming
Memory	**Onboard, nonupgradeable**
	LPDDR4X-2933, single channel support
	Supports the following configurations:
	● 8 GB
	● 4 GB
Primary storage	**Solid-state drive** (PCIe, NVMe, 2230)
	256 GB
	128 GB
Audio and video	HP Audio Center
	Three speakers with amplifier
	Supports speaker swap
	Supports Far Field Cortana

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

Category	Description
	Supports Alexa
	Supports XiaoWei
	HP True Vision 13 MP Camera - auto focus, Mobile Industry Processor Interface (MIPI), back-illuminated sensor (BSI) sensor, f2.0, wide dynamic range (WDR)/temporal noise reduction (TNR), 76° narrow field of view (NFOV)
	13 MP by 30 frames per second
	Dual-array digital (MEMS) microphones with appropriate software, echo cancellation, and noise suppression
Wireless	**Integrated wireless options with dual antennas**
	Intel Wi-Fi 6 AX201-W + Bluetooth5 (non-vPro) (802.11ax 2 × 2, MU-MIMO, supporting gigabit file transfer speeds)
	Support for Miracast®
	Supports modern standby (connected)
	Supports S2 (sleep) idle
Media card reader	**HP MultiFormat microSD Media Card Reader**
	Supports microSD™, SDHC™, SDXC™
Ports	**Tablet**
	USB 3.2 Gen1 Type-C
	- Supports power delivery
	- Supports data transfer
	- Supports DisplayPort 1.4 out up to 4096 × 2160 @ 60 Hz
	- Supports HP Sleep & Charge
	(2) Docking connector (5 pin)
	Soft cover
	Docking connector (5 pin)
	Hot plug/unplug and auto detect for correct output to wide-aspect vs. standard aspect video (auto adjust panel resolution to fit embedded panel and external monitor connected)
Keyboard	**HP USB Soft Cover Keyboard**
	Touchpad requirements
	Clickpad with image sensor
	Multitouch gestures enabled
	Supports precision touchpad
	Supports modern trackpad gestures
	Taps enabled as default
Power requirements	**Battery**
	2 cell, 32.2 Whr, polymer
	Long life

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

Category	Description
	Fast charge
	AC adapter, USB Type-C®
	45 W, nPFC (non-power factor correcting), straight,1.8 m (6.0 ft)
	30 W USB-C, wall mount, straight, fixed, 2-prong, power adapter (IIan)
	30 W USB-C, wall mount, straight, fixed, 2-prong, power adapter (Suao)
	Power cord
	C5, conventional, 1.0 m (3.3 ft)
Security	Trusted Platform Module (TPM) 2.0
	Fingerprint reader (on power button)
Sensors	Accelerometer
	Gyroscope
	Sensor hub
	Hall sensor
	Proximity sensor
	Color sensor
Operating system	Windows® 10 Home S 64
	Windows 10 Home S 64 Chinese Market CPPP
	Windows 10 Home S 64 Entry
	Windows 10 Home S 64 Entry Single Language
	Windows 10 Home S 64 Entry Single Language India PPP
	Windows 10 Home S 64 Single Language
	Windows 10 Home S 64 Single Language India PPP
	Windows 11 Home 64
	Windows 11 Home 64 Chinese Market CPPP
	Windows 11 Home S 64
	Windows 11 Home S 64 Chinese Market CPPP
	Windows 11 Home S 64 Entry
	Windows 11 Home S 64 Entry Single Language
	Windows 11 Home S 64 Entry Single Language India PPP
	Windows 11 Home S 64 Single Language
	Windows 11 Home S 64 Single Language India PPP
Serviceability	**End user replaceable parts**
	AC adapter

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

Category	Description
	Kickstand
	Soft keyboard

2 Getting to know your tablet

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

Locating hardware

To find out what hardware is installed on your tablet, select the **Search** icon in the taskbar, type `device manager` in the search box, and then select the **Device Manager** app.

For information about system hardware components and the system BIOS version number, press ctrl+alt+s for tablets with on-screen keyboards or fn+esc for tablets with keyboards (select products only).

Locating software

To find out what software is installed on your tablet, right-click the **Start** button, and then select **Apps and Features**.

Top

Identify the components on the top of the tablet.

Table 2-1 Top components and their descriptions

Component		Description
(1)	AC adapter and battery light	• White: The AC adapter is connected and the battery is fully charged.
		• Blinking amber: The AC adapter is disconnected, and the battery has reached a low battery level.
		• Amber: The AC adapter is connected, and the battery is charging.
		• Off: The battery is not charging.
(2)	USB Type-C® power connector and SuperSpeed 5 Gbps port with HP Sleep and Charge and DisplayPort™ output	Connects an AC adapter that has a USB Type-C connector, supplying power to the tablet and, if needed, charging the tablet battery. – and –

Table 2-1 Top components and their descriptions (continued)

Component		Description
		Connects a USB device, provides high-speed data transfer, and charges small devices (such as a smartphone), even when the tablet is off.
		NOTE: Use a standard USB Type-C charging cable or cable adapter (purchased separately) when charging a small external device. For a faster charge, connect the device directly to AC power.
		– and –
		Connects a display device that has a USB Type-C connector, providing DisplayPort output.
(3)	Internal microphones (2)	Record sound.
(4)	Camera function key	Switches the camera between front facing and rear facing.
(5) ⏻	Power button	• When the tablet is off, press the button briefly to turn on the tablet. • When the tablet is on, press the button briefly to initiate Sleep. • When the tablet is in the Sleep state, press the button briefly to exit Sleep (select products only). • When the tablet is in Hibernation, press the button briefly to exit Hibernation. **IMPORTANT:** Pressing and holding down the power button results in the loss of unsaved information. If the tablet has stopped responding and shutdown procedures are ineffective, press and hold the power button down for at least 10 seconds to turn off the tablet. To learn more about your power and sleep settings: ▲ Right-click the **Power** icon ▮▮▮ , and then select **Power and sleep settings**.
(6)	Fingerprint reader	Allows a fingerprint logon to Windows, instead of a password logon. ▲ Touch your finger to the fingerprint reader. **IMPORTANT:** To prevent fingerprint logon issues, be sure when you register your fingerprint that all sides of your finger are registered by the fingerprint reader.

Bottom

Identify the component on the bottom of the tablet.
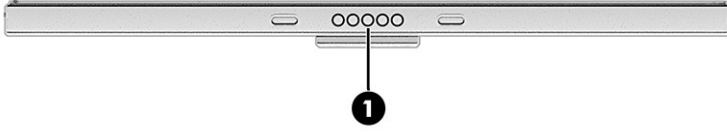
Table 2-2 Bottom component and its description

Component		Description
(1)	Portrait pogo connectors	Connect the tablet to the optional keyboard.

Right

Identify the components on the right side of the tablet.

Table 2-3 Right-side components and their descriptions

Component		Description
(1)	Volume button	Controls speaker volume on the tablet.
(2)	microSD™ memory card reader	Reads optional memory cards that enable you to store, manage, share, or access information. To insert a card, see Inserting a microSD card on page 16.

Left side

Identify the left side component of the tablet.
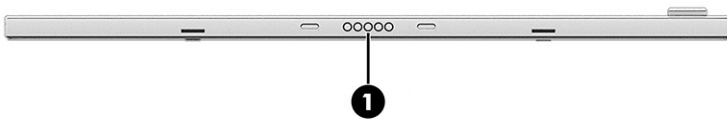
Table 2-4 Left-side component and its description

Component		Description
(1)	Landscape pogo connectors	Connect the tablet to the optional keyboard.

Display

The tablet display can include essential components such as speakers, antennas, cameras, and microphones.

Low blue light mode

Your tablet display is shipped from the factory in low blue light mode for improved eye comfort and safety. Also, blue light mode automatically adjusts blue light emissions when you are using the tablet at night or for reading.

📝 **NOTE:** Wake-on Touch (WOT) is enabled on this display. You can tap the screen twice to wake the tablet.

⚠ **WARNING!** To reduce the risk of serious injury, read the *Safety & Comfort Guide*. It describes proper workstation setup and proper posture, health, and work habits for computer users. The *Safety & Comfort Guide* also provides important electrical and mechanical safety information. The *Safety & Comfort Guide* is available on the web at http://www.hp.com/ergo.
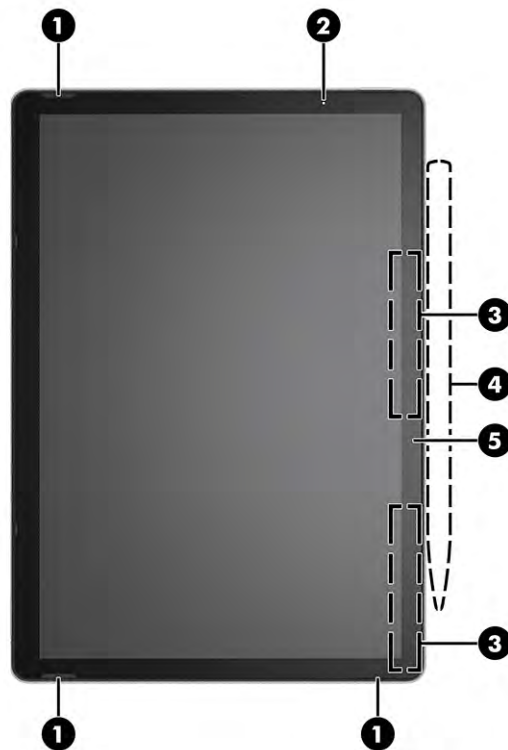
Table 2-5 Display components and their descriptions

Component		Description
(1)	Speakers (3)	Produce sound.
(2)	Camera light	On: The camera is in use.

Table 2-5 Display components and their descriptions (continued)

Component		Description
(3)	WLAN antennas*	Send and receive wireless signals to communicate with wireless local area networks (WLANs).
(4)	Magnetic pen attachment area	Holds an optional pen. Place the pen tip facing down for optimal magnetic attachment.
		NOTE: For more information about the pen, see the documentation provided with the pen.
(5)	Ambient light and color sensor	Adjusts the brightness of the display, depending on the ambient light, and manages and controls the color temperature. Color temperature enables you to measure and adjust the warmth or coolness of the light source.
		NOTE: Do not cover the sensor. The display brightness adjusts if the sensor notices light change.

*The antennas are not visible from the outside of the tablet. For optimal transmission, keep the areas immediately around the antennas free from obstructions.

For wireless regulatory notices, see the section of the *Regulatory, Safety, and Environmental Notices* that applies to your country or region.

To access this guide:

▲ Select the **Search** icon in the taskbar, type `HP Documentation` in the search box, and then select **HP Documentation**.

Rear

Identify the rear component.
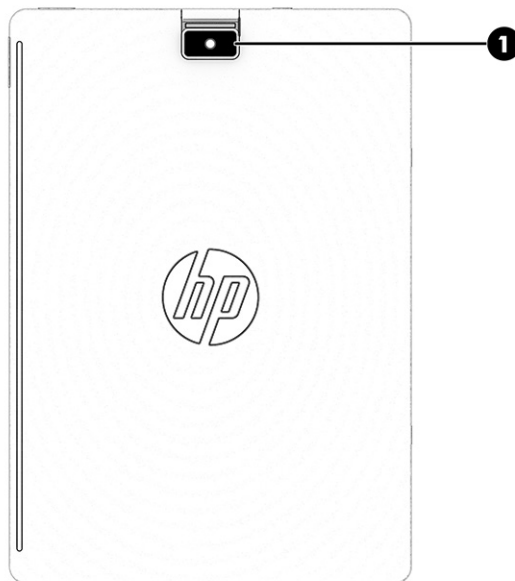
Table 2-6 Rear component and its description

Component		Description
(1)	Camera	Allows you to video chat, record video, and record still images. You can have the camera face either to the front or

Table 2-6 Rear component and its description (continued)

Component	Description
	to the rear. The camera can rotate up to 235° for share mode or desktop view.
	NOTE: Camera functions vary depending on the camera hardware and software installed on your product.

Using the kickstand

The kickstand works with the tablet in portrait or landscape mode.

1. Turn the tablet upside down on a flat surface and attach the kickstand to back of the tablet.
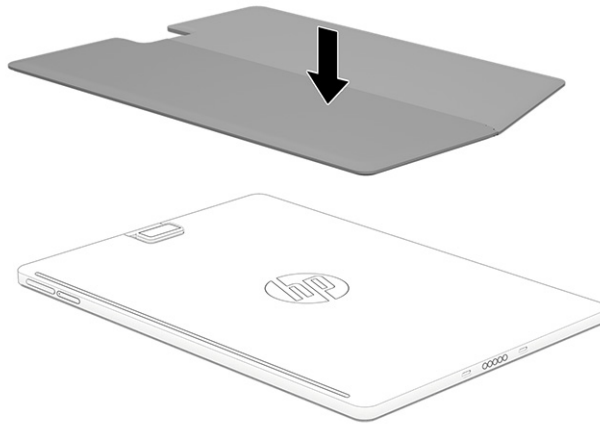
2. Use one of the following sets of steps, depending on whether the tablet is in portrait or landscape mode.

    ▲   In portrait mode, open the right side of the kickstand.
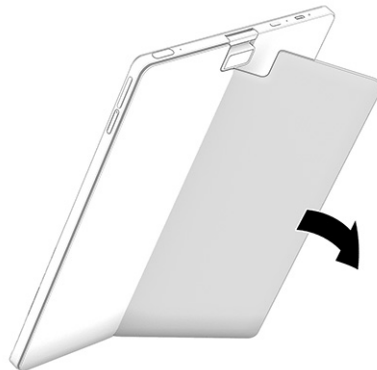
    ▲   In landscape mode, slide the bottom of the kickstand away from the tablet and adjust your viewing angle, up to approximately 163°.
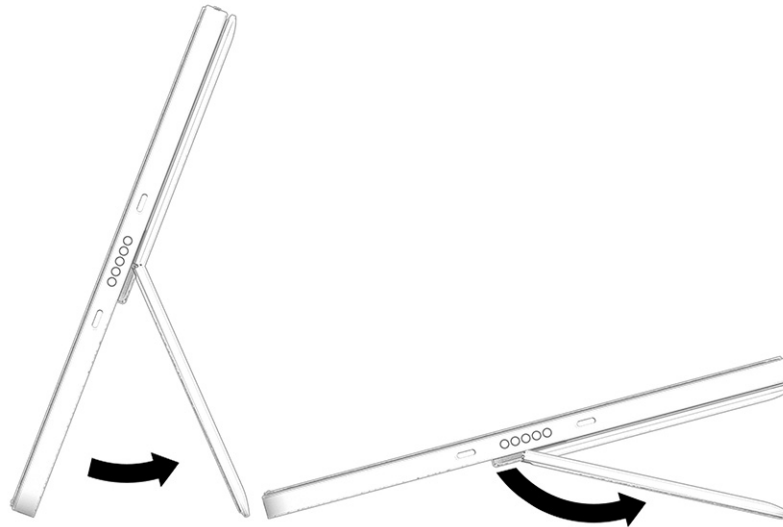
Keyboard (soft cover) (select products only)

Keyboards can vary by language.

Connecting the keyboard

The tablet can connect to the keyboard in either portrait or landscape mode. Pogo connectors are located on the bottom edge and left side of the tablet.

▲ To connect the keyboard, lower the tablet onto the keyboard until the connectors click into place.

📝 **NOTE:** For proper keyboard placement, be sure that the keyboard is at an angle and not lying flat against a surface.

Removing the keyboard

Use this step to remove the keyboard from the tablet.

▲ To remove the tablet from the keyboard, pull the tablet away from the back of the keyboard.

Touchpad settings and components

Learn the touchpad settings and components

Touchpad settings

Learn how to adjust touchpad settings.

Adjusting touchpad settings

Use these steps to adjust touchpad settings and gestures.

1. Select the **Search** icon in the taskbar, type `touchpad settings` in the search box, and then press enter.

2. Choose a setting.

Turning on the touchpad

Follow these steps to turn on the touchpad.

1. Select the **Search** icon in the taskbar, type `touchpad settings` in the search box, and then press enter.

2. Using an external mouse, click the **touchpad** button.

    If you are not using an external mouse, press the Tab key repeatedly until the pointer rests on the **touchpad** button. Then press the spacebar to select the button.

Touchpad components

Identify the touchpad components.
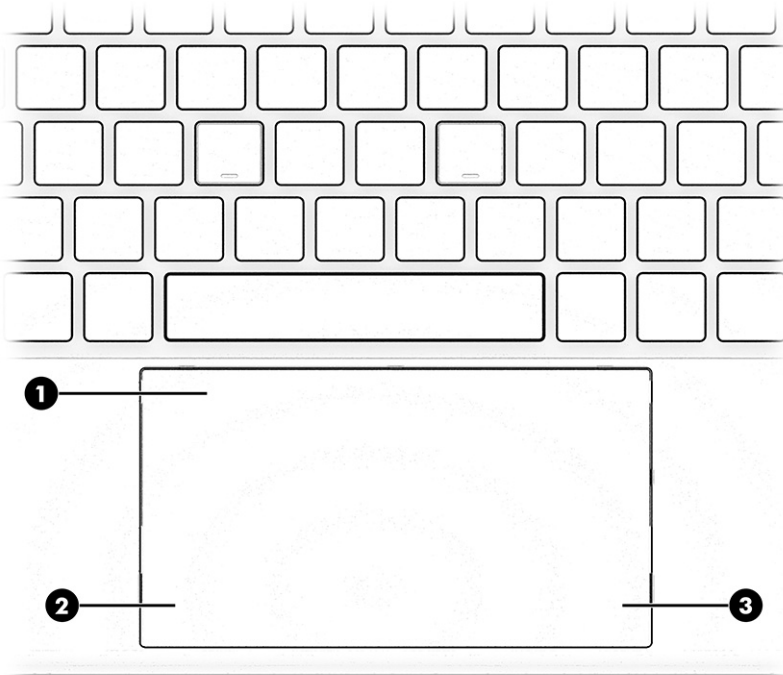
Table 2-7 Touchpad components and their descriptions

Component		Description
(1)	Touchpad zone	Reads your finger gestures to move the pointer or activate items on the screen.
(2)	Left touchpad button	Functions like the left button on an external mouse.
(3)	Right touchpad button	Functions like the right button on an external mouse.

Lights

Identify the light on the keyboard.
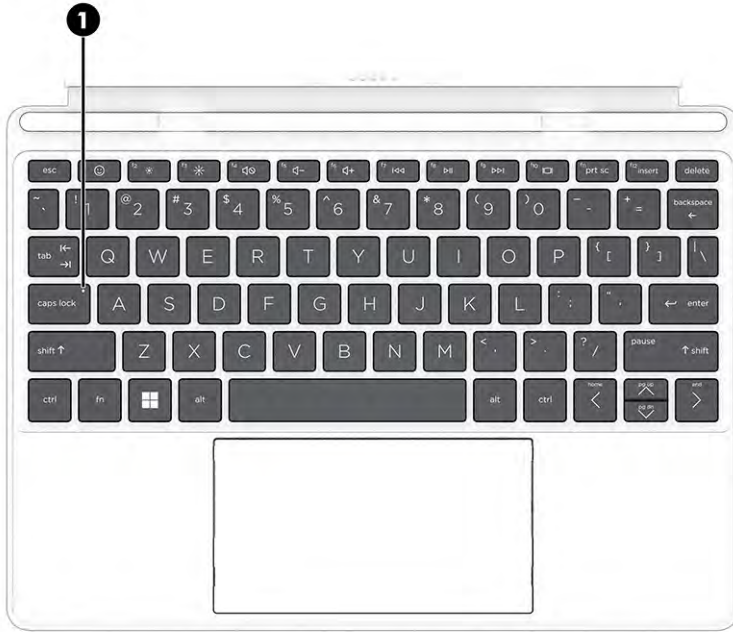
Table 2-8 Light and its description

Component		Description
(1)	Caps lock light	On: Caps lock is on, which switches the key input to all capital letters.

Special keys

Identify the special keys.
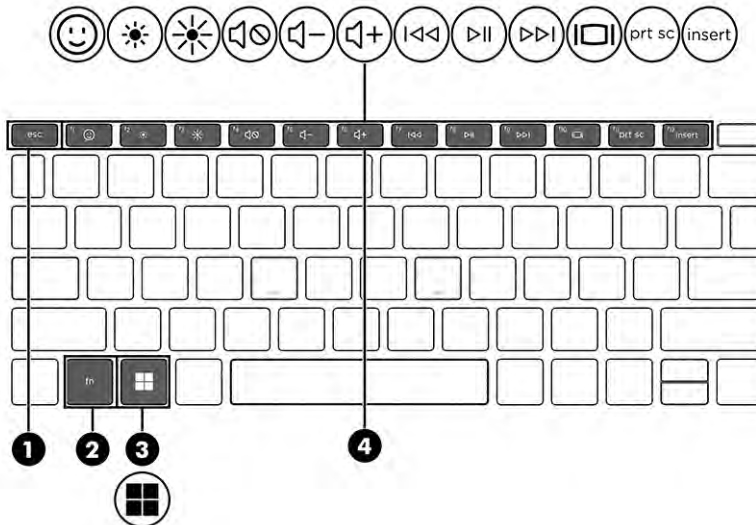
Table 2-9 Special keys and their descriptions

Component		Description
(1)	esc key	Displays system information when pressed in combination with the fn key.

Table 2-9 Special keys and their descriptions (continued)

Component		Description
(2)	fn key	Executes specific functions when pressed in combination with another key.
(3)	⊞ Windows key	Opens the Start menu. **NOTE:** Pressing the Windows key again will close the Start menu.
(4)	Action keys	Execute frequently used system functions as defined by the icon symbols on f1 through f12 function keys.

Labels

The labels affixed to the computer provide information that you might need when you troubleshoot system problems or travel internationally with the computer. Labels can 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 2-10 Service label components

Component	
(1)	Serial number
(2)	Product ID
(3)	HP product name and model number
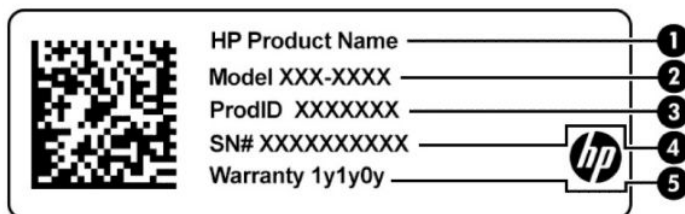
Table 2-11 Service label components

	Component
(1)	HP product name
(2)	Model number
(3)	Product ID
(4)	Serial number
(5)	Warranty period
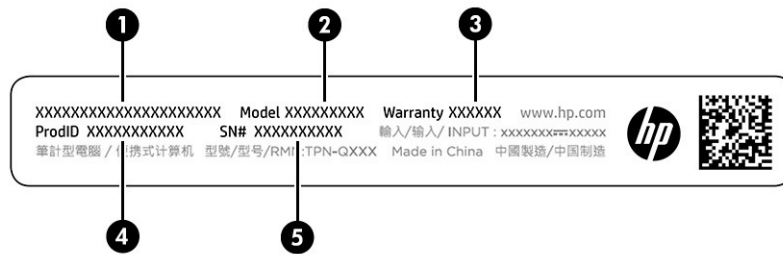
Table 2-12 Service label components

	Component
(1)	HP product name
(2)	Model number
(3)	Warranty period
(4)	Product ID
(5)	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 in which the devices have been approved for use.

Inserting a microSD card

Insert a microSD card by following these steps.

1. Position the tablet display-side down on a flat surface.

2. Insert a small straightened paper clip into the card tray access hole.

3. Press in gently on the clip until the card tray is ejected. **(1)**

4. Remove the tray **(2)** from the tablet and insert the card **(3)**.

5. Replace the tray in the tablet. Press in gently on the tray **(4)** until it is firmly seated.
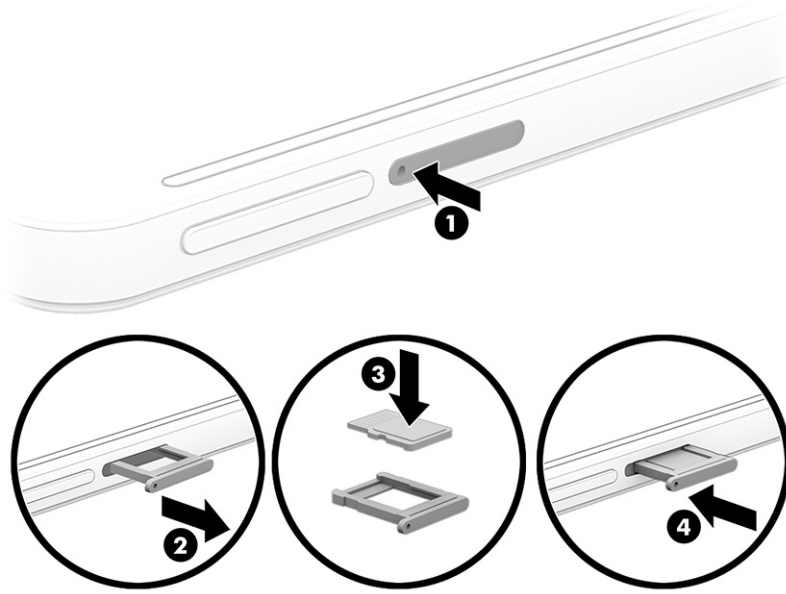
3   Illustrated parts catalog

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

Computer major components

To identify the computer major components, use this illustration and table.

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.
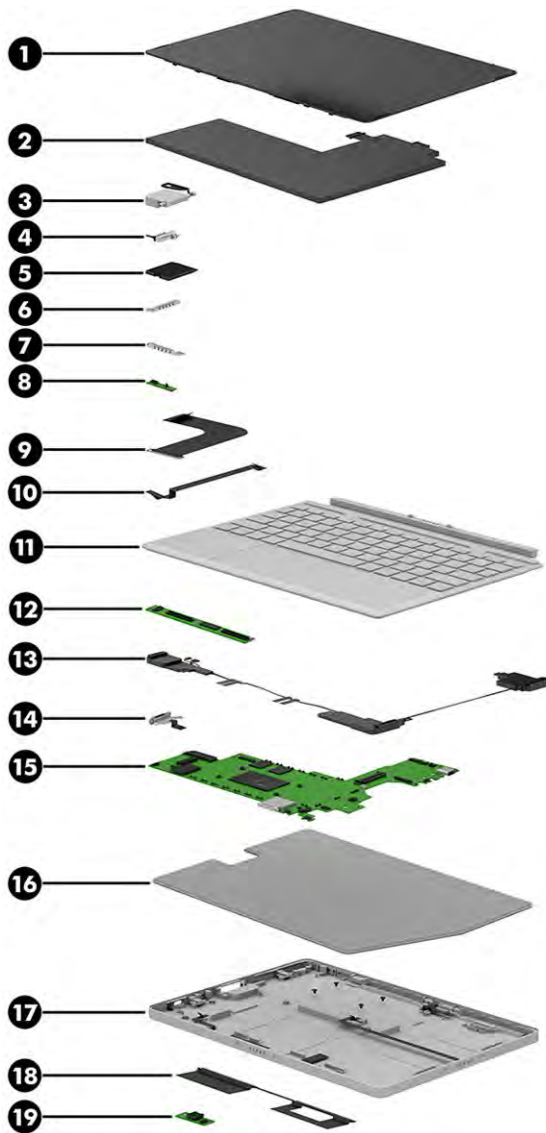
Table 3-1 Computer major component descriptions and part numbers

Item	Component	Spare part number
(1)	**Display panel kit**	M93495-001
(2)	**Battery** (2 cell, 32 Whr, 4.18 Ah)	M75108-006
	NOTE: Battery adhesive is available as spare part number M98024-001.	
(3)	**Camera** (includes cable)	M93508-001
	NOTE: The camera bracket is available as spare part number M98023-001.	
(4)	**Power button**	M93501-001
	NOTE: The power button cable is available as spare part number M98507-001.	
	The power button bracket is available as spare part number M98022-001.	
(5)	**Solid-state drive** (2230, PCIe)	
	256 GB	M11042-007
	128 GB	M11040-007
(6)	**Pogo connector and cable** (bottom)	M93509-001
(7)	**Pogo connector and cable** (right)	M93510-001
(8)	**Sensor board**	
	NOTE: The sensor board cable is available as spare part number M98508-001.	
	DF	M93500-001
	FF	M99727-001
(9)	**Display cable** (includes foil)	M93496-001
(10)	**Touch control board cable**	M93497-001
(11)	**Keyboard**	M90128-xx1
	Denmark, Finland, and Norway	-DH1
	France	-051
	French Canada	-DB1
	Germany	-041
	Italy	-061
	Switzerland	-BG1
	United Kingdom	-031
	United States	-001
(12)	**Touch control board**	M93498-001
(13)	**Speaker Kit** (includes left, right, and top speakers)	M93499-001
(14)	**Camera motor**	M93507-001
(15)	**System board** (includes heat sink, integrated processor, and system memory; includes replacement thermal material)	
	NOTE: The system board support kit is available as spare part number M98016-888.	

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

Item	Component	Spare part number
	8 GB system memory	M93505-601
	4 GB system memory	M93504-601
(16)	**Kickstand**	M93494-001
(17)	**Computer cover** (includes battery)	M98025-001
(18)	**WLAN antennas**	M93511-001
	NOTE: Antenna adhesive is available as spare part number M98505-001.	
(19)	**BIOS board**	M98510-001
	NOTE: The BIOS board cable is available as spare part number M98509-001.	
	Fingerprint reader module (not illustrated)	M98501-001
	SD card holder (not illustrated)	M93503-001

Miscellaneous parts

To identify the miscellaneous parts, use this table.

Table 3-2 Miscellaneous part descriptions and part numbers

Component	Spare part number
Screw Kit	M93513-001
Protective Tape Kit	M93502-001
LED rubber	M98504-001
Zenvo Pen (includes cable)	L95614-001
Power cord (C5, 1.0 m [3.3 ft])	
Australia	L19358-001
Europe (Austria, Belgium, Finland, France, Germany, the Netherlands, Norway, and Sweden)	L19361-001
India	L19363-001
Switzerland	L19370-001
The United Kingdom	L19373-001

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:

- Tweezers
- Nonconductive, nonmarking pry tool
- Magnetic Phillips P1 screwdriver

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, 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 .

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	Relative humidity		
	55%	40%	10%
Walking across carpet	7,500 V	15,000 V	35,000 V

	Relative humidity		
Event	**55%**	**40%**	**10%**
Walking across vinyl floor	3,000 V	5,000 V	12,000 V
Motions of bench worker	400 V	800 V	6,000 V
Removing DIPs (dual in-line packages) from plastic tube	400 V	700 V	2,000 V
Removing DIPs from vinyl tray	2,000 V	4,000 V	11,500 V
Removing DIPs from polystyrene foam	3,500 V	5,000 V	14,500 V
Removing bubble pack from PCB (printed circuit board)	7,000 V	20,000 V	26,500 V
Packing PCBs in foam-lined box	5,000 V	11,000 V	21,000 V
Multiple electric components can be packaged together in plastic tubes, trays, or polystyrene foam.			

NOTE: As little as 700 V 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 MΩ ±10% resistance in the ground cords. To provide proper ground, a strap must be worn snug against bare skin. The ground cord must be connected and fit snugly into the banana plug connector on the grounding mat or workstation.

● **Heel straps/Toe straps/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 them on both feet with a maximum of 1 MΩ ±10% resistance between the operator and ground.

Table 4-2 Static shielding protection levels

Static shielding protection levels	
Method	**Voltage**
Antistatic plastic	1,500
Carbon-loaded plastic	7,500
Metallized 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 MΩ ±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 MΩ ±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**.

     – or –

   - Select the **HP Easy Clean** icon in the taskbar.

     – or –

   - 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 25 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 26 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 27.

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 26 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 25, Caring for wood veneer (select products only) on page 27, 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 25 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 26 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.

Table 4-3 Support information locations (continued)

Service consideration	Path to access information
	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. (On commercial products) Under the **Main** tab, select **BIOS event log**, and then select **View BIOS Event Log**.
	– or –
	(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. Click the search icon 🔍 in the taskbar.
	3. Type Event Viewer, and then press enter.
	4. Select the log from the left panel. Details display in the right panel.
	Chrome:
	1. Go to support.google.com/chrome.
	2. Search collect Chrome device logs.
Technical bulletins	To locate technical bulletins:
	1. Go to www.hp.com.
	2. Place the cursor over **Problem solving** to display more options.
	3. Select **Support & Troubleshooting**.
	4. Type the serial number, product number, or product name to go to the product support page.
	5. Select **Advisories** to view technical bulletins.
Repair professionals	To locate repair professionals:
	1. Go to www.hp.com.
	2. Place the cursor over **Support resources** to display more options.
	3. Select **Authorized service providers**.
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 **Get Support**.
	3. Near the bottom of the window, select **Notebook PCs**, and then select your location.

5 Removal and replacement procedures for authorized service provider parts

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

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

> **NOTE:** Details about your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer.

Component replacement procedures

To remove and replace computer components, use these procedures.

> **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.

You must remove, replace, or loosen as many as 46 screws when you service the parts described in this chapter. Make special note of each screw size and location during removal and replacement.

Preparation for disassembly

To remove and replace computer components, use these procedures.

See Removal and replacement procedures preliminary requirements on page 21 for initial safety procedures.

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.

Kickstand

To remove the kickstand, use these procedures and illustrations.

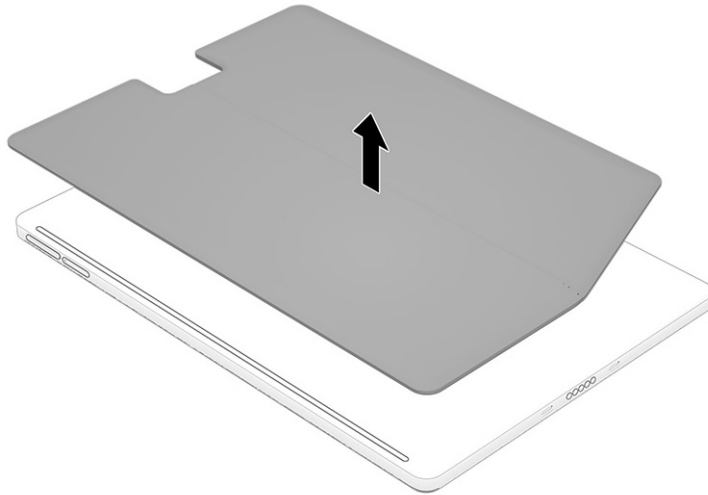**Table 5-1 Kickstand description and part number**

Description	Spare part number
Kickstand	M93494-001

Before removing the kickstand, follow these steps:

▲ Prepare the computer for disassembly (see Preparation for disassembly on page 29).

Remove the kickstand:

▲ Lift the kickstand off the computer. The kickstand is held to the computer with magnets.

Reverse this procedure to install the kickstand.

Basic camera function test

When repairing all components except for the AC adapter, kickstand, and keyboard, perform the camera function test after the repair. If the test fails, run the calibration tool.

Run the camera function test:

1. Does the camera rotate from 0° to 180° when the camera button is pressed?

2. Does the camera rotate from 180° to 0° when the camera button is pressed?

3. Does the camera rotate to the target angle from the Glamcam app? Check the following angles: 0°, 180°, and 235°.

You can also use the calibration tool to determine if the camera was deliberately turned back during rotation by using the Get Reverse Count feature of the calibration tool. For more information about the calibration tool, see https://support.hp.com/.

Display assembly

To remove and disassemble the display assembly, use these procedures and illustrations.

NOTE: Wake-on Touch (WOT) is enabled on this display. You can tap the screen twice to wake the tablet.

Table 5-2 Display assembly description and part number

Description	Spare part number
Display panel kit	M93495-001
Display cable (includes foil)	M93496-001

Before removing the display panel, follow these steps:

▲ Prepare the computer for disassembly (see).

Remove the display assembly:

1. Position an open suction cup on the top corner of the display **(1)**, and then lift up on the handle to secure the suction cup **(2)**.

2. Pull the suction cup up to release the panel from the display **(3)**. Lift the panel up enough to insert a tool between the panel and the computer **(4)**.

3. Pull the tool around under the entire display panel until the panel is fully released **(5)**.

4. Lift the panel far enough off the computer to access the cables underneath **(6)**.

> **NOTE:** When lifting the display panel, be sure not to accidentally disconnect the cables from the system board.
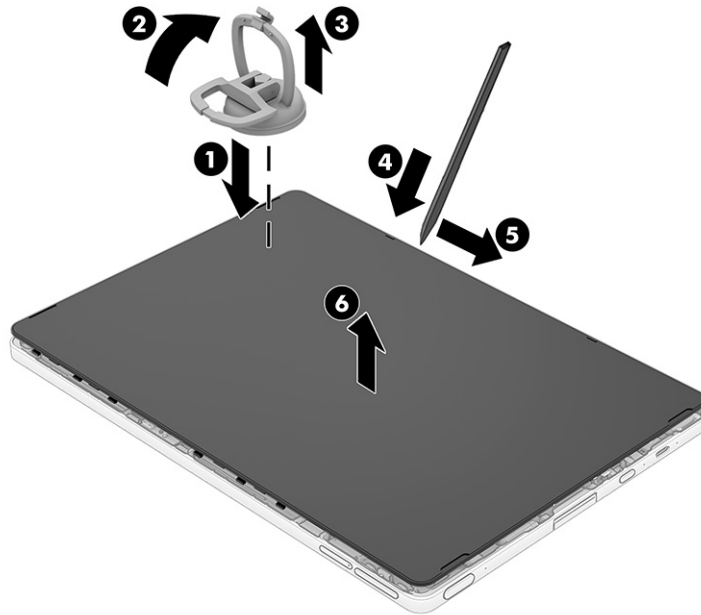
5. While holding up the display, disconnect the following cables from the system board:

(1) Touch cable (ZIF connector)

(2) Display LVDS cable (reverse ZIF connector)
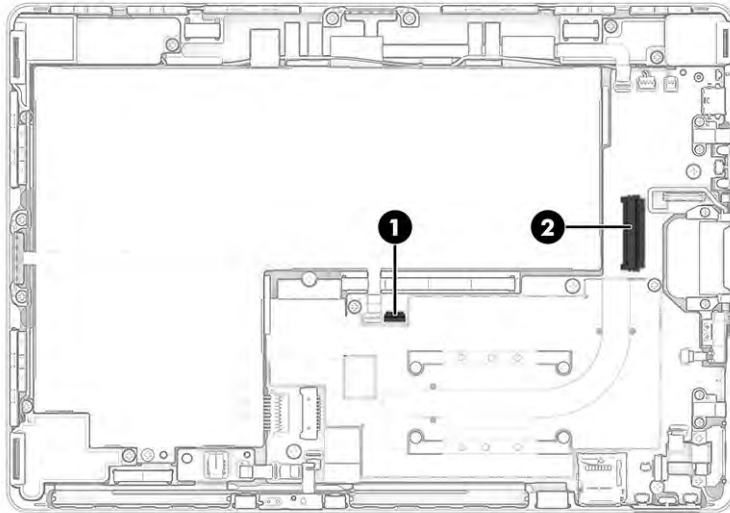
6. If you need to replace the display cables, disconnect touch cable from the ZIF connector on the back of the display panel **(1)**. Lift the tape and disconnect the LVDS display cable from the back of the display panel **(2)**.
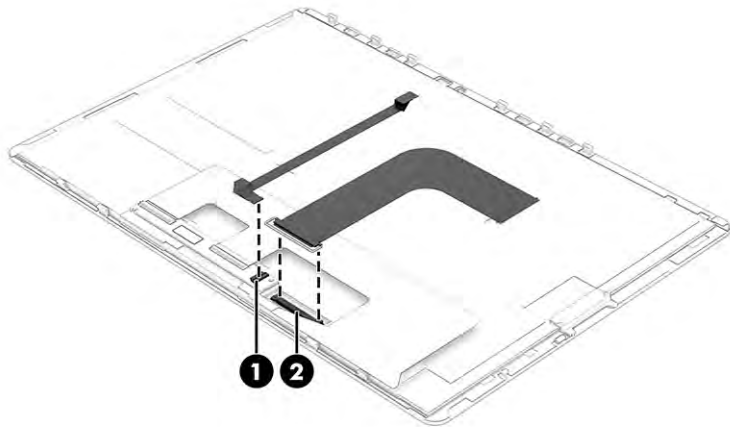
Reverse this procedure to replace the display assembly. Run the camera function test after the repair. For more information, see Basic camera function test on page 30.

Touch control board

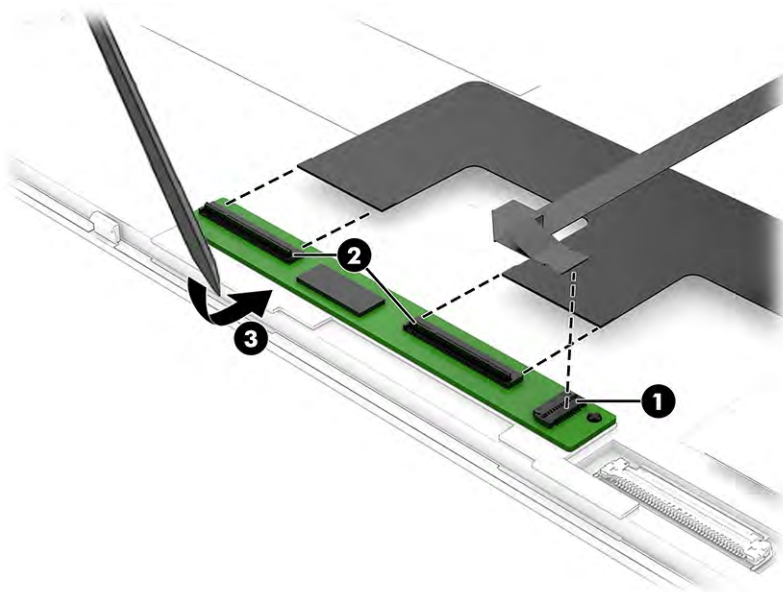To remove the touch control board, use this procedure and illustration.

Table 5-3 Touch control board and cable descriptions and part numbers

Description	Spare part number
Touch control board	M93498-001
Touch control board cable	M93497-001

1. Prepare the computer for disassembly (see Preparation for disassembly on page 29).

2. Remove the display assembly (see Display assembly on page 30).

Remove the touch control board:

1. Position the display panel upside down.

2. Disconnect the touch cable from the ZIF connector on the touch control board **(1)**.

3. Disconnect the two thick ribbon cables from the reverse ZIF connectors on the board **(2)**.

4. Use a tool to release the board from the display **(3)**. The board is secured with adhesive.

To replace the touch control board, reverse the removal procedures. Run the camera function test after the repair. For more information, see Basic camera function test on page 30.

Speakers

To remove the speakers, use this procedure and illustration.
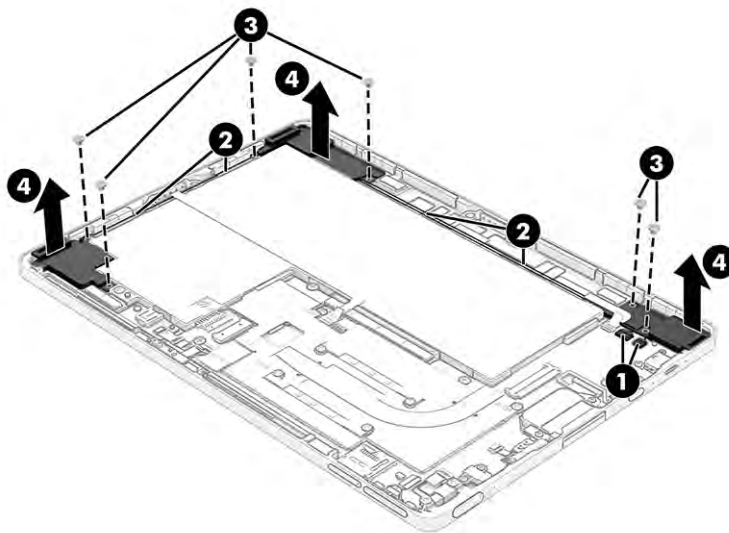
Table 5-4 Speaker description and part number

Description	Spare part number
Speaker Kit	M93499-001

Before removing the speakers, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 29).

2. Remove the display assembly (see Display assembly on page 30).

3. Disconnect the battery cable from the system board (see Battery on page 44).

Remove the speakers:

1. Disconnect the two speaker cables from the system board **(1)**.

2. Remove the speaker cables from their routing around the left and top of the computer **(2)**.

3. Remove the two Phillips M2.0 × 2.0 screws **(3)** that secure each speaker to the computer. The computer includes three speakers.

4. Remove the speakers and cables from the computer **(4)**.

Reverse this procedure to install the speakers. Run the camera function test after the repair. For more information, see Basic camera function test on page 30.

Sensor board

To remove the sensor board, use this procedure and illustration.

Table 5-5 Sensor board description and part number
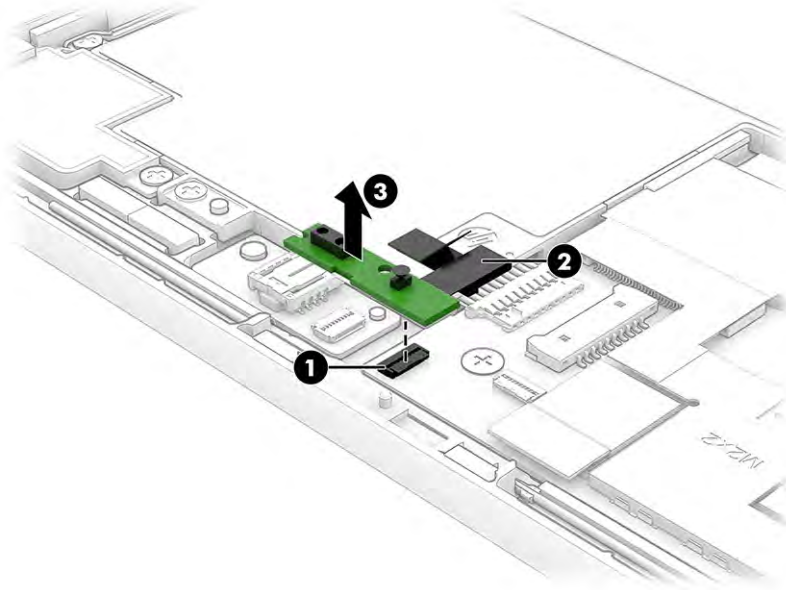
| Description	Spare part number
Sensor board, DF	M93500-001
Sensor board, FF	M99727-001
Sensor board cable	M98508-001

Before removing the sensor board, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 29).

2. Remove the display assembly (see Display assembly on page 30).

3. Disconnect the battery cable from the system board (see Battery on page 44).

Remove the sensor board:

1. Disconnect the sensor board cable from the ZIF connector on the system board **(1)**.

2. Pull the cable out from under the antenna cable that connects to the integrated WLAN module **(2)**.

3. Remove the sensor board from the computer **(3)**.

Reverse this procedure to install the sensor board. Run the camera function test after the repair. For more information, see .

Power button

To remove the power button, use this procedure and illustration.

Table 5-6 Power button descriptions and part numbers

Description	Spare part number
Power button	M93501-001
Power button cable	M98507-001
Power button bracket	M98022-001
Fingerprint reader module	M98501-001

Before removing the power button, follow these steps:

1. Prepare the computer for disassembly (see).

2. Remove the display assembly (see).

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

Remove the power button:

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

2. Remove the two Phillips M2.0 × 3.0 screws **(2)** that secure the board.

3. Remove the bracket **(3)**, and then remove the power button module from the computer **(4)**.
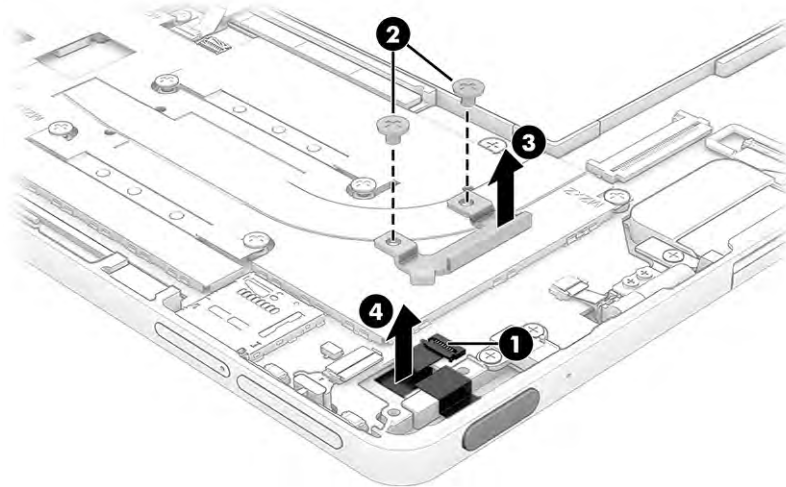
Reverse this procedure to install the power button. Run the camera function test after the repair. For more information, see Basic camera function test on page 30.

BIOS board

To remove the BIOS board, use this procedure and illustration.

Table 5-7 BIOS board description and part number

Description	Spare part number
BIOS board	M98510-001
BIOS board cable	M98509-001

1. Prepare the computer for disassembly (see Preparation for disassembly on page 29).

2. Remove the display assembly (see Display assembly on page 30).

3. Disconnect the battery cable from the system board (see Battery on page 44).

Remove the BIOS board:

1. Disconnect the BIOS board cable from the ZIF connector on the system board **(1)**.

2. Remove the board from the computer **(2)**. The board is secured with adhesive.
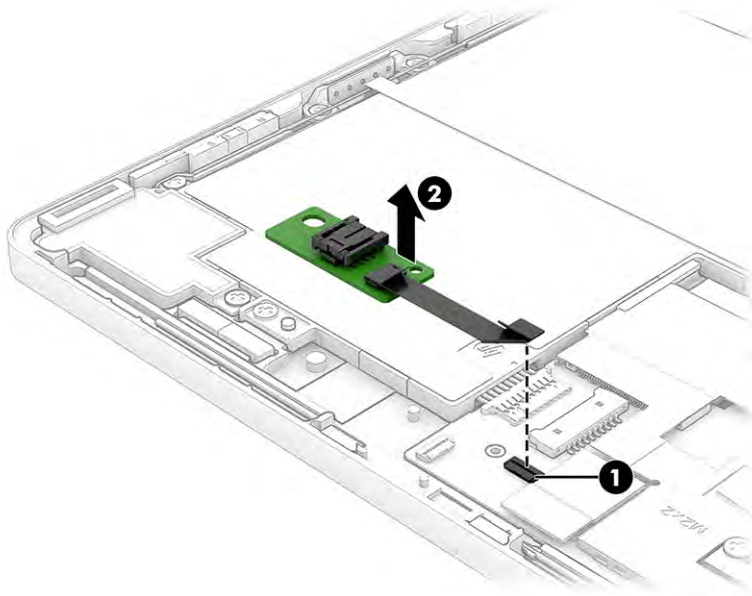
To replace the BIOS board, reverse the removal procedures. Run the camera function test after the repair. For more information, see Basic camera function test on page 30.

Pogo connectors and cables

The computer includes two different pogo connectors so that the user can connect a keyboard and orient the display in either portrait or landscape mode. To remove the pogo connectors and cables, use these procedures and illustrations.

Table 5-8 Pogo connector and cable description and part number

Description	Spare part number
Pogo connector and cable (bottom, portrait)	M93509-001
Pogo connector and cable (right, landscape)	M93510-001

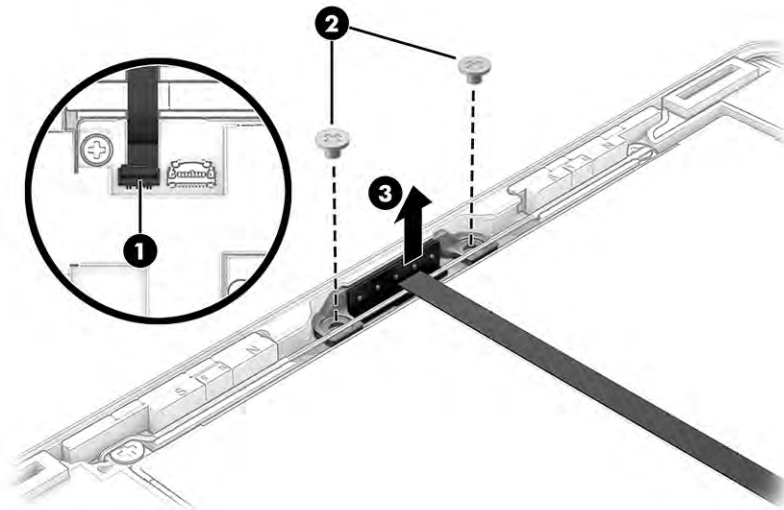Before removing the pogo connectors and cables, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 29).

2. Remove the display assembly (see Display assembly on page 30).

3. Disconnect the battery cable from the system board (see Battery on page 44).

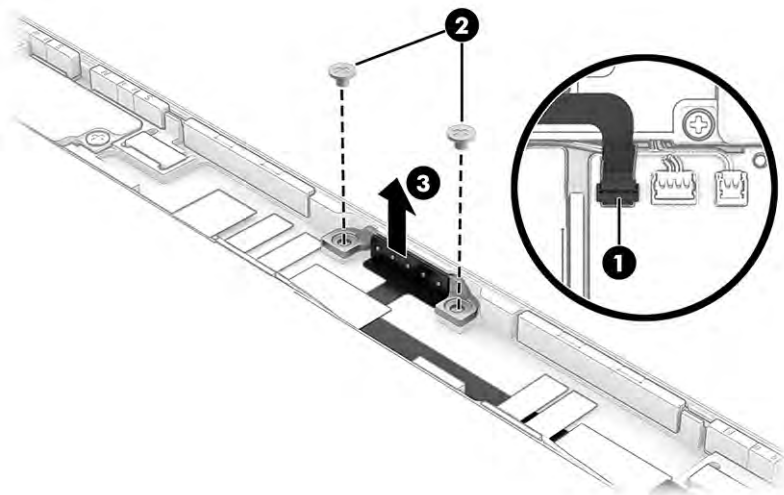Remove the pogo connectors and cables:

1. Disconnect the pogo cable from the ZIF connector on the system board **(1)**.

2. Remove the two Phillips M2.0 × 2.0 screws **(2)** that secure the pogo connector to the computer.

3. Remove the connector and cable from the computer **(3)**.

Bottom (portrait mode)

Right side (landscape mode)

Reverse this procedure to install the pogo connector and cable. Run the camera function test after the repair. For more information, see Basic camera function test on page 30.

WLAN antennas and cables

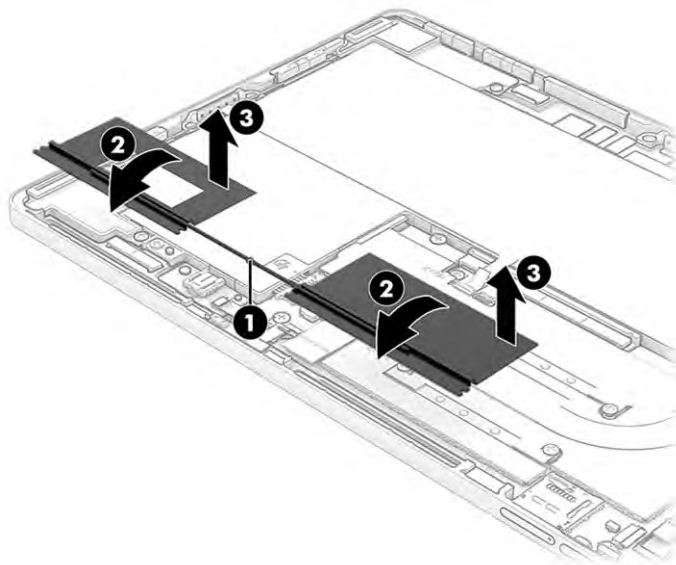To remove the WLAN antennas and cables, use this procedure and illustration.

Table 5-9 WLAN antennas description and part number

Description	Spare part number
WLAN antennas	M93511-001
Antenna adhesive	M98505-001

1. Prepare the computer for disassembly (see Preparation for disassembly on page 29).

2. Remove the display assembly (see Display assembly on page 30).

3. Disconnect the battery cable from the system board (see Battery on page 44).

Remove the WLAN antennas and cables:

1. Disconnect the antenna cables from the system board **(1)**.

2. Peel the antennas off the heat sink and battery **(2)**.

3. Remove the antennas and cables from the computer **(3)**.

To replace the WLAN antennas, reverse the removal procedures. Run the camera function test after the repair. For more information, see Basic camera function test on page 30.

System board

To remove the system board, use these procedures and illustrations.

Table 5-10 System board descriptions and part numbers

Description	Spare part number
System board with 8 GB of system memory (includes processor)	M93505-601
System board with 4 GB of system memory (includes processor)	M93504-601
SD card holder	M93503-001
System board support kit	M98016-888

Before removing the system board, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 29).

2. Remove the display assembly (see Display assembly on page 30).

3. Disconnect the battery cable from the system board (see Battery on page 44).
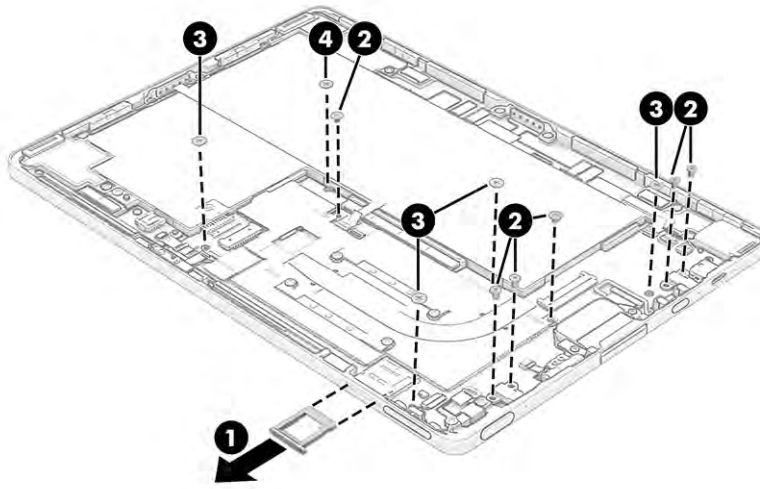
Remove the system board:

1. Disconnect the following cables from the system board:

    (1) Pogo cable

    (2) Speaker cables (2)

    (3) Camera cable

    (4) Motor cable

    (5) Power button cable

    (6) Pogo cable

    (7) BIOS board cable

    (8) Sensor board cable

    (9) Antenna cables
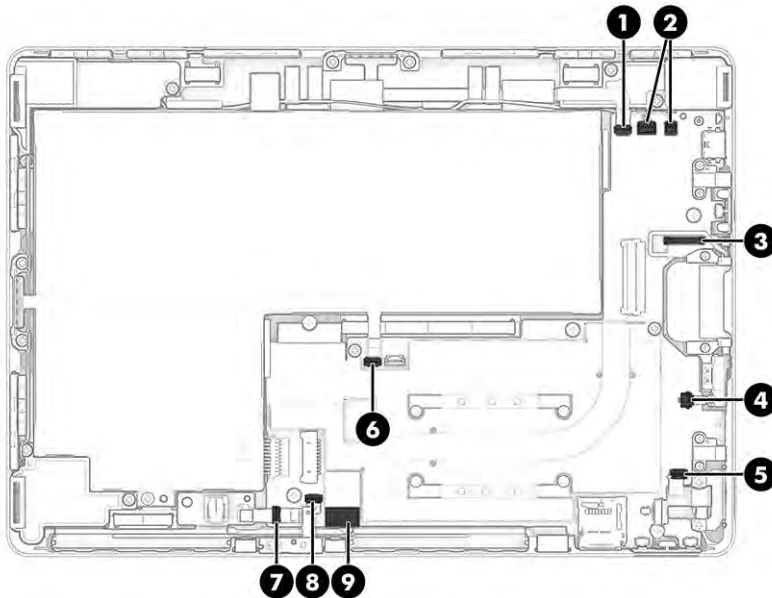
2. Remove the card reader insert **(1)**.

3. Remove the six Phillips M2.0 × 2.0 screws **(2)** from the system board.

4. Remove the two Phillips M1.6 × 1.6 screws **(3)** from the system board.

5. Remove the Phillips M2.0 × 3.0 screw **(4)** from the solid-state drive.

6. Remove the three pieces of thin gray tape **(1)**.

7. Remove the plastic piece that covers the WLAN antenna cable connectors on the system board **(2)**.

8. Lift up the antenna that is glued to the heat sink **(3)**.

9. Remove the black foam tape from the left side near the camera **(4)**.
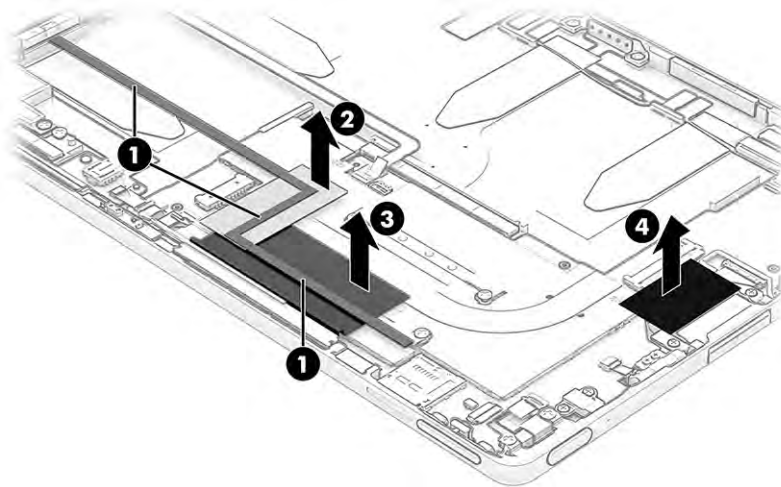
10. Lift the interior side of the system board up **(1)**, and then remove the system board from the computer **(2)**
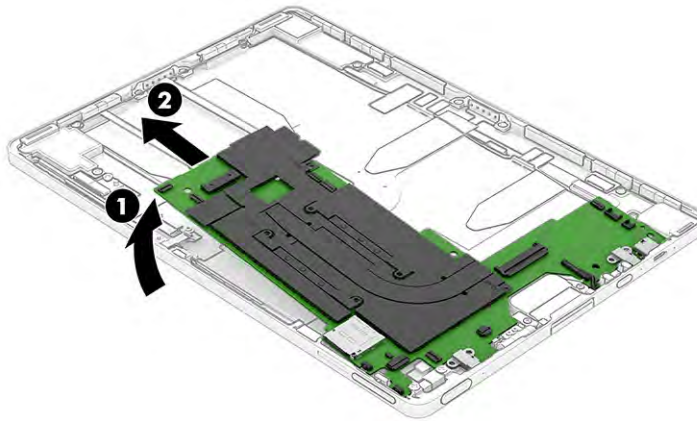
Reverse this procedure to install the system board. Run the camera function test after the repair. For more information, see Basic camera function test on page 30.

Solid-state drive

To remove the solid-state drive, use this procedure and illustration.

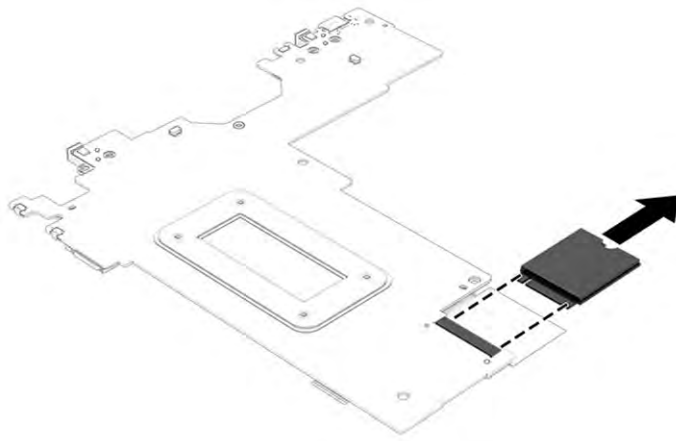**Table 5-11 Solid-state drive description and part number**

Description	Spare part number
256 GB	M11042-007
128 GB	M11040-007

Before removing the solid-state drive, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 29).

2. Remove the display assembly (see Display assembly on page 30).

3. Disconnect the battery cable from the system board (see Battery on page 44).

4. Remove the system board (see System board on page 39).

Remove the solid-state drive:

▲ From the removed system board, pull the drive away from the socket to remove it.

To install the solid-state drive, reverse the removal procedures. Run the camera function test after the repair. For more information, see Basic camera function test on page 30.

When installing a new solid-state drive, be sure to install a thermal pad onto the drive.
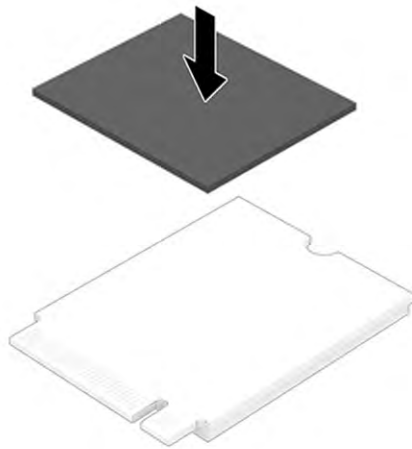
Camera

To remove the camera, use this procedure and illustration.

Table 5-12 Camera descriptions and part numbers

| Description	Spare part number
Camera	M93508-001
Camera motor	M93507-001
Camera bracket	M98023-001

Before removing the camera, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 29).

2. Remove the display assembly (see Display assembly on page 30).

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

4. Remove the system board (see).

Remove the camera:

1. Remove the two Phillips M2.0 × 3.0 screws from the camera module brackets **(1)**.

2. Remove the two Phillips M1.0 × 3.0 screws from the motor **(2)**.

3. Remove the brackets from the computer **(3)**.

4. Remove the motor **(4)**.

5. Pull the camera module up through the hole to remove it **(5)**.
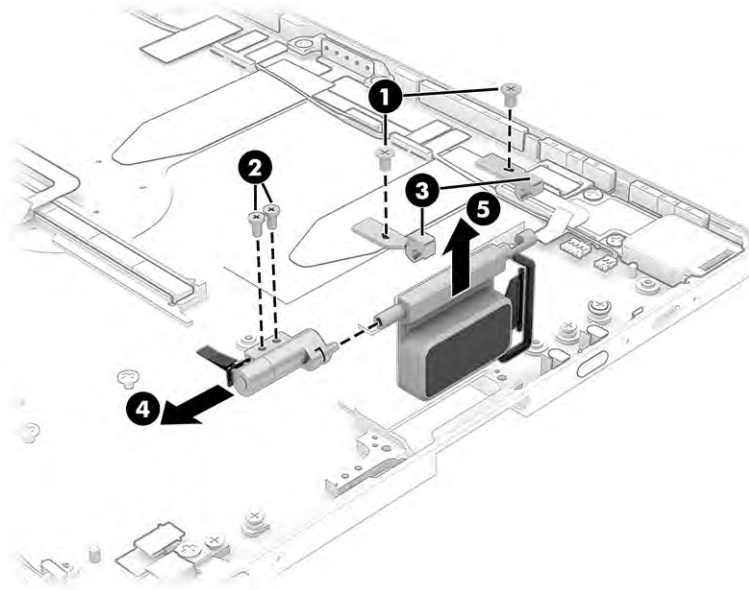
Reverse this procedure to install the camera. Run the camera function test after the repair. For more information, see .

Battery

To remove the battery, use these procedures and illustrations.

Table 5-13 Battery description and part number

Description	Spare part number
Battery (2 cell, 32 Whr, 4.18 Ah)	M75108-006
Battery adhesive	M98024-001

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. They can cause a short inside the battery, which 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.

Before removing the battery, follow these steps:

1. Prepare the computer for disassembly (see Preparation for disassembly on page 29).

2. Remove the display assembly (see Display assembly on page 30).

3. Remove the system board (see System board on page 39).

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. Remove the black foam tape from the battery connector on the system board **(1)**.

2. Disconnect the battery cable from the system board **(2)**.

3. Remove the antenna that is glued to the top of the battery **(3)**.

4. Peel the gray foam strip off the battery **(4)**.

5. Peel the antenna off the top of the battery **(5)**.
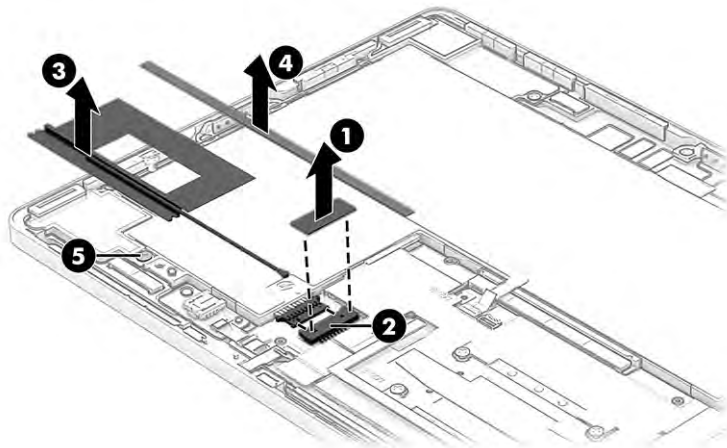
6. The battery is secured to the computer with tape that is installed under the battery. To remove the battery, use tweezers to grasp the end of the tape **(1)**. While turning the tweezers, wrap the tape around

the tweezers as you continue to pull the tape out from behind the battery **(2)**. You must pull the tape multiple times before it is completely removed.

NOTE: Tips for removing the tape the secures the battery:

- Pull the tape out from under the battery at an approximate 45° angle.

- Do not wrinkle the tape prior to pulling the tab. Wrinkled tape tears more easily.

- When pulling out the tape, use a steady motion to help reduce the risk of breaking the tape.

- If the tape breaks but you can still see and reach the end of the tape, use tweezers to grasp and slowly and steadily pull the tape out far enough to grasp it and pull it out with your fingers.

- If the tape breaks and you cannot see it under the battery and most of the tape is still under the battery, use a tool to lift the bottom of the battery up, apply solvent (such as alcohol) under the battery, and then wait 10-20 minutes. Use a tool to lift up the battery, and then use tweezers to grasp and slowly and steadily pull the tape out far enough to grasp it and pull it out with your fingers.

- If the tape breaks and you cannot see it under the battery but only a small part of the tape is still under the battery, use a tool around all sides to release the battery from the computer.

7. Remove the battery from the computer **(3)**.
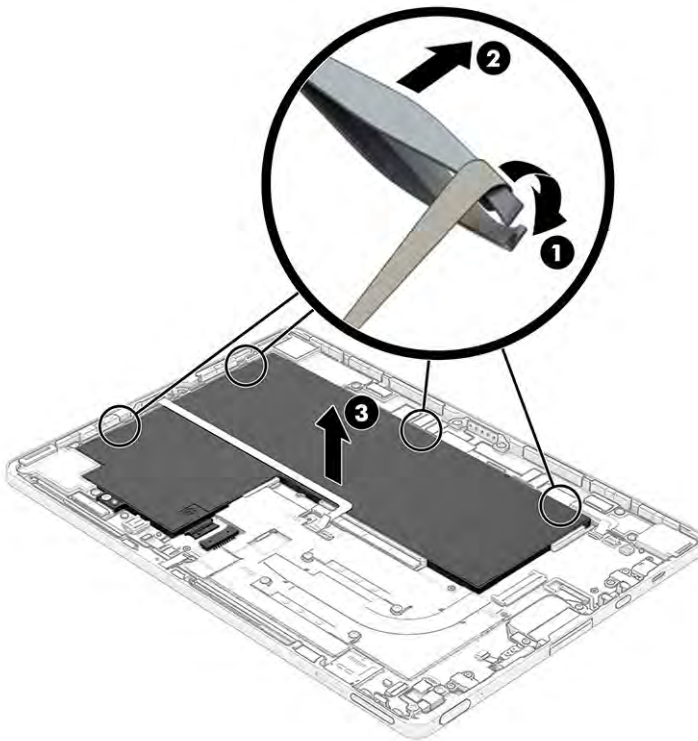
To install a new battery, reverse the removal procedures. Run the camera function test after the repair. For more information, see Basic camera function test on page 30.

IMPORTANT: The battery cannot be reused. Do not install the battery once it has been removed. Install only a new battery.

6 Using Setup Utility (BIOS)

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

NOTE: To start Setup Utility on convertible computers, your computer must be in notebook mode and you must use the keyboard attached to your notebook.

Starting Setup Utility (BIOS)

You have several ways to access the Setup Utility (BIOS).

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

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

– or –

Turn on or restart the computer, quickly press esc, and then press f10 when the Start menu is displayed.

Updating Setup Utility (BIOS)

Updated versions of Setup Utility (BIOS) might be available on the HP website. Most BIOS updates on the HP website are packaged in compressed files called *SoftPaqs*. Some download packages contain a file named Readme.txt, which contains information regarding installing and troubleshooting the file.

Determining the BIOS version

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

To reveal the BIOS version information (also known as *ROM date* and *System BIOS*), use one of these options.

- HP Support Assistant

  1. Select the **Search** icon in the taskbar, type `support` in the search box, and then select the **HP Support Assistant** app.

     – or –

     Select the question mark icon in the taskbar.

  2. Under **My notebook**, select **Specifications**.

- Setup Utility (BIOS)

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

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

  3. Select **Exit**, select one of the options, and then follow the on-screen instructions.

- In Windows, press ctrl+alt+s.

To check for later BIOS versions, see .

Preparing for a BIOS update

Be sure to follow all prerequisites before downloading and installing a BIOS update.

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

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

- Do not shut down the computer or initiate Sleep.

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

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

Downloading a BIOS update

After you review the prerequisites, you can check for and download BIOS updates.

1. Select the **Search** icon in the taskbar, type `support` in the search box, and then select the **HP Support Assistant** app.

   – or –

   Select the question mark icon in the taskbar.

2. Select **Updates**. The **Checking for Updates** window opens, and Windows checks for updates.

3. Follow the on-screen instructions.

4. At the download area, follow these steps:

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

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

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

Installing a BIOS update

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

1. Select the **Search** icon in the taskbar, type `file` in the search box, and then select **File Explorer**.

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

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

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

The BIOS installation begins.

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

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

7 Backing up, restoring, and recovering

You can use Windows tools or HP software to back up your information, create a restore point, reset your computer, create recovery media, or restore your computer to its factory state. Performing these standard procedures can return your computer to a working state faster.

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

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

Backing up information and creating recovery media

These methods of creating recovery media and backups are available on select products only.

Using Windows tools for backing up

HP recommends that you back up your information immediately after initial setup. You can do this task either using Windows Backup locally with an external USB drive or using online tools.

IMPORTANT: Windows is the only option that allows you to back up your personal information. Schedule regular backups to avoid information loss.

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

Using the HP Cloud Recovery Download Tool to create recovery media (select products only)

You can use the HP Cloud Recovery Download Tool to create HP Recovery media on a bootable USB flash drive.

For details:

▲ Go to http://www.hp.com/support, search for HP Cloud Recovery, and then select the result that matches the type of computer that you have.

NOTE: If you cannot create recovery media yourself, contact support to obtain recovery discs. Go to http://www.hp.com/support, select your country or region, and then follow the on-screen instructions.

IMPORTANT: HP recommends that you follow the to restore your computer before you obtain and use the HP recovery discs. Using a recent backup can return your machine to a working state sooner than using the HP recovery discs. After the system is restored, reinstalling all the operating system software released since your initial purchase can be a lengthy process.

Restoring and recovering your system

You have several tools available to recover your system both within and outside of Windows if the desktop cannot load.

HP recommends that you attempt to restore your system using the .

Creating a system restore

System Restore is available in Windows. The System Restore software can automatically or manually create restore points, or snapshots, of the system files and settings on the computer at a particular point.

When you use System Restore, it returns your computer to its state at the time you made the restore point. Your personal files and documents should not be affected.

Restoring and recovery methods

After you run the first method, test to see whether the issue still exists before you proceed to the next method, which might now be unnecessary.

1. Run a Microsoft System Restore.

2. Run Reset this PC.

   NOTE: The options **Remove everything** and then **Fully clean the drive** can take several hours to complete and leave no information on your computer. It is the safest way to reset your computer before you recycle it.

3. Recover using HP Recovery media. For more information, see Recovering using HP Recovery media on page 51.

For more information about the first two methods, see the Get Help app:

Select the **Start** button, select **All apps**, select the **Get Help** app, and then enter the task you want to perform.

NOTE: You must be connected to the internet to access the Get Help app.

Recovering using HP Recovery media

You can use HP Recovery media to recover the original operating system and software programs that were installed at the factory. On select products, it can be created on a bootable USB flash drive using the HP Cloud Recovery Download Tool.

For details, see Using the HP Cloud Recovery Download Tool to create recovery media (select products only) on page 50.

NOTE: If you cannot create recovery media yourself, contact support to obtain recovery discs. Go to http://www.hp.com/support, select your country or region, and then follow the on-screen instructions.

To recover your system:

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

NOTE: HP recommends that you follow the Restoring and recovery methods on page 51 to restore your computer before you obtain and use the HP recovery discs. Using a recent backup can return your machine to a working state sooner than using the HP recovery discs. After the system is restored, reinstalling all the operating system software released since your initial purchase can be a lengthy process.

Changing the computer boot order

If your computer does not restart using the HP Recovery media, you can change the computer boot order, the order of devices listed in BIOS for startup information. You can select an optical drive or a USB flash drive, depending on the location of your HP Recovery media.

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

To change the boot order:

1.   Insert the HP Recovery media.

2.   Access the system **Startup** menu.

     ●   For computers or tablets with keyboards attached, turn on or restart the computer or tablet, quickly press esc, and then press f9 for boot options.

     ●   For tablets without keyboards, turn on or restart the tablet, quickly press and hold the volume up button, and then select **f9**.

         – or –

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

3.   Select the optical drive or USB flash drive from which you want to boot, and then follow the on-screen instructions.

Using HP Sure Recover (select products only)

Select computer models are configured with HP Sure Recover, a PC operating system (OS) recovery solution built into the hardware and software. HP Sure Recover can fully restore the HP OS image without installed recovery software.

Using HP Sure Recover, an administrator or user can restore the system and install:

●   Latest version of the operating system

●   Platform-specific device drivers

●   Software applications, in the case of a custom image

To access the latest documentation for HP Sure Recover, go to http://www.hp.com/support. Follow the on-screen instructions to find your product and locate your documentation.

8 Using HP PC Hardware Diagnostics

You can use the HP PC Hardware Diagnostics utility to determine whether your computer hardware is running properly. The three versions are HP PC Hardware Diagnostics Windows, HP PC Hardware Diagnostics UEFI (Unified Extensible Firmware Interface), and (for select products only) Remote HP PC Hardware Diagnostics UEFI, a firmware feature.

Using HP PC Hardware Diagnostics Windows (select products only)

HP PC Hardware Diagnostics Windows is a Windows-based utility that allows you to run diagnostic tests to determine whether the computer hardware is functioning properly. The tool runs within the Windows operating system to diagnose hardware failures.

If HP PC Hardware Diagnostics Windows is not installed on your computer, first you must download and install it. To download HP PC Hardware Diagnostics Windows, see Downloading HP PC Hardware Diagnostics Windows on page 54.

Using an HP PC Hardware Diagnostics Windows hardware failure ID code

When HP PC Hardware Diagnostics Windows detects a failure that requires hardware replacement, a 24-digit failure ID code is generated for select component tests. For interactive tests, such as keyboard, mouse, or audio and video palette, you must perform troubleshooting steps before you can receive a failure ID.

▲ You have several options after you receive a failure ID:

- Select **Next** to open the Event Automation Service (EAS) page, where you can log the case.

  – or –

- Scan the QR code with your mobile device, which takes you to the EAS page, where you can log the case.

  – or –

- Select the box next to the 24-digit failure ID to copy your failure code and send it to support.

Accessing HP PC Hardware Diagnostics Windows

After HP PC Hardware Diagnostics Windows is installed, you can access it from HP Support Assistant or the Start menu.

Accessing HP PC Hardware Diagnostics Windows from HP Support Assistant

After HP PC Hardware Diagnostics Windows is installed, follow these steps to access it from HP Support Assistant.

1. Select the **Search** icon in the taskbar, type `support` in the search box, and then select the **HP Support Assistant** app.

   – or –

Select the question mark icon in the taskbar.

2. Select **Fixes & Diagnostics**.

3. Select **Run hardware diagnostics**, and then select **Launch**.

4. When the tool opens, select the type of diagnostic test that you want to run, and then follow the on-screen instructions.

NOTE: To stop a diagnostic test, select **Cancel**.

Accessing HP PC Hardware Diagnostics Windows from the Start menu (select products only)

After HP PC Hardware Diagnostics Windows is installed, follow these steps to access it from the Start menu.

1. Select the **Start** button, and then select **All apps**.

2. Select **HP PC Hardware Diagnostics Windows**.

3. When the tool opens, select the type of diagnostic test that you want to run, and then follow the on-screen instructions.

NOTE: To stop a diagnostic test, select **Cancel**.

Downloading HP PC Hardware Diagnostics Windows

The HP PC Hardware Diagnostics Windows downloading instructions are provided in English only. You must use a Windows computer to download this tool because only .exe files are provided.

Downloading the latest HP PC Hardware Diagnostics Windows version from HP

To download HP PC Hardware Diagnostics Windows from HP, follow these steps.

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

2. Select **Download HP Diagnostics Windows**, and then select the specific Windows diagnostics version to download to your computer or a USB flash drive.

The tool downloads to the selected location.

Downloading the HP PC Hardware Diagnostics Windows from the Microsoft Store

You can download the HP PC Hardware Diagnostics Windows from the Microsoft Store.

1. Select the Microsoft Store app on your desktop or select the **Search** icon in the taskbar, and then type `Microsoft Store` in the search box.

2. Enter `HP PC Hardware Diagnostics Windows` in the **Microsoft Store** search box.

3. Follow the on-screen directions.

The tool downloads to the selected location.

Downloading HP Hardware Diagnostics Windows by product name or number (select products only)

You can download HP PC Hardware Diagnostics Windows by product name or number.

NOTE: For some products, you might have to download the software to a USB flash drive by using the product name or number.

1. Go to http://www.hp.com/support.

2. Select **Software and Drivers**, select your type of product, and then enter the product name or number in the search box that is displayed.

3. In the **Diagnostics** section, select **Download**, and then follow the on-screen instructions to select the specific Windows diagnostics version to be downloaded to your computer or USB flash drive.

    The tool downloads to the selected location.

Installing HP PC Hardware Diagnostics Windows

To install HP PC Hardware Diagnostics Windows, navigate to the folder on your computer or the USB flash drive where the .exe file downloaded, double-click the .exe file, and then follow the on-screen instructions.

Using HP PC Hardware Diagnostics UEFI

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

NOTE: For some products, you must use a Windows computer and a USB flash drive to download and create the HP UEFI support environment because only .exe files are provided. For more information, see Downloading HP PC Hardware Diagnostics UEFI to a USB flash drive on page 56.

If your PC does not start in Windows, you can use HP PC Hardware Diagnostics UEFI to diagnose hardware issues.

Using an HP PC Hardware Diagnostics UEFI hardware failure ID code

When HP PC Hardware Diagnostics UEFI detects a failure that requires hardware replacement, a 24-digit failure ID code is generated.

For assistance in solving the problem:

▲ Select **Contact HP**, accept the HP privacy disclaimer, and then use a mobile device to scan the failure ID code that appears on the next screen. The HP Customer Support - Service Center page appears with your failure ID and product number automatically filled in. Follow the on-screen instructions.

  – or –

  Contact support, and provide the failure ID code.

NOTE: To start diagnostics on a convertible computer, your computer must be in notebook mode, and you must use the attached keyboard.

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

Starting HP PC Hardware Diagnostics UEFI

To start HP PC Hardware Diagnostics UEFI, follow this procedure.

1. Turn on or restart the computer, and quickly press esc.

2. Press f2.

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

a. Connected USB flash drive

   NOTE: To download the HP PC Hardware Diagnostics UEFI tool to a USB flash drive, see .

b. Hard drive

c. BIOS

3. When the diagnostic tool opens, select the type of diagnostic test that you want to run, and then follow the on-screen instructions.

Downloading HP PC Hardware Diagnostics UEFI to a USB flash drive

Downloading HP PC Hardware Diagnostics UEFI to a USB flash drive can be useful in some situations.

- HP PC Hardware Diagnostics UEFI is not included in the preinstallation image.

- HP PC Hardware Diagnostics UEFI is not included in the HP Tool partition.

- The hard drive is damaged.

NOTE: The HP PC Hardware Diagnostics UEFI downloading instructions are provided in English only, and you must use a Windows computer to download and create the HP UEFI support environment because only .exe files are provided.

Downloading the latest HP PC Hardware Diagnostics UEFI version

To download the latest HP PC Hardware Diagnostics UEFI version to a USB flash drive, follow this procedure.

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

2. Select **Download HP Diagnostics UEFI**, and then select **Run**.

Downloading HP PC Hardware Diagnostics UEFI by product name or number (select products only)

You can download HP PC Hardware Diagnostics UEFI by product name or number (select products only) to a USB flash drive.

NOTE: For some products, you might have to download the software to a USB flash drive by using the product name or number.

1. Go to http://www.hp.com/support.

2. Enter the product name or number, select your computer, and then select your operating system.

3. In the **Diagnostics** section, follow the on-screen instructions to select and download the specific UEFI Diagnostics version for your computer.

Using Remote HP PC Hardware Diagnostics UEFI settings (select products only)

Remote HP PC Hardware Diagnostics UEFI is a firmware (BIOS) feature that downloads HP PC Hardware Diagnostics UEFI to your computer. It can then execute the diagnostics on your computer, and it might upload results to a preconfigured server.

For more information about Remote HP PC Hardware Diagnostics UEFI, go to http://www.hp.com/go/techcenter/pcdiags, and then select **Find out more**.

Downloading Remote HP PC Hardware Diagnostics UEFI

HP Remote PC Hardware Diagnostics UEFI is also available as a SoftPaq that you can download to a server.

Downloading the latest Remote HP PC Hardware Diagnostics UEFI version

You can download the latest HP PC Hardware Diagnostics UEFI version to a USB flash drive.

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

2. Select **Download Remote Diagnostics**, and then select **Run**.

Downloading Remote HP PC Hardware Diagnostics UEFI by product name or number

You can download HP Remote PC Hardware Diagnostics UEFI by product name or number.

> **NOTE:** For some products, you might have to download the software by using the product name or number.

1. Go to http://www.hp.com/support.

2. Select **Software and Drivers**, select your type of product, enter the product name or number in the search box that is displayed, select your computer, and then select your operating system.

3. In the **Diagnostics** section, follow the on-screen instructions to select and download the **Remote UEFI** version for the product.

Customizing Remote HP PC Hardware Diagnostics UEFI settings

Using the Remote HP PC Hardware Diagnostics setting in Computer Setup (BIOS), you can perform several customizations.

*   Set a schedule for running diagnostics unattended. You can also start diagnostics immediately in interactive mode by selecting **Execute Remote HP PC Hardware Diagnostics**.

*   Set the location for downloading the diagnostic tools. This feature provides access to the tools from the HP website or from a server that has been preconfigured for use. Your computer does not require the traditional local storage (such as a hard drive or USB flash drive) to run remote diagnostics.

*   Set a location for storing the test results. You can also set the user name and password that you use for uploads.

*   Display status information about the diagnostics run previously.

To customize Remote HP PC Hardware Diagnostics UEFI settings, follow these steps:

1. Turn on or restart the computer, and when the HP logo appears, press f10 to enter Computer Setup.

2. Select **Advanced**, and then select **Settings**.

3. Make your customization selections.

4. Select **Exit**, then select **Save Changes and Exit** to save your settings.

Your changes take effect when the computer restarts.

9 Specifications

This chapter provides specifications for your computer.

Computer specifications

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

Table 9-1 Computer specifications

	Metric	U.S.
Dimensions, tablet		
Width	252.5 mm	9.9 in
Depth	176.5 mm	7.0 in
Height	8.2 mm	0.3 in
Weight (lowest configuration)	657 g	1.45 lb
Dimensions, soft cover		
Width	252.5 mm	9.9 in
Depth	180.1 mm	7.1
Height	4.5 mm	0.2 in
Weight (lowest configuration)	245 g	0.54 lb
Dimensions, kickstand		
Width	251.9	9.9 in
Depth	176.5 mm	7.0 in
Height	4.1 mm	0.2 in
Weight (lowest configuration)	240	0.53 lb
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

Table 9-1 Computer specifications (continued)

	Metric	U.S.
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 9-2 Display specifications

	Metric	U.S.
Active diagonal size	**27.8 cm**	11.0 in
Resolution	2160 × 1440	
Surface treatment	Antiglare	
Brightness	400 nits	
Viewing angle	UWVA	
Backlight	WLED	
Display panel interface	sRGB	

10 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 three-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 10-1 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 10-1 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
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, three-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, three-conductor. The wall plug must be a two-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, three-conductor, 0.75 mm² or 1.25 mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V ac) configuration.

4. The flexible cord must be Type RVV, three-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 H05VV-F three-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 three-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 three-conductor, 0.75 mm² or 1.00 mm² conductor size, with plug BS 1363/A with BSI or ASTA marks.

11 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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