



HP Pavilion 10 Notebook PC

Maintenance and Service Guide

© Copyright 2014 Hewlett-Packard Development Company, L.P.

Bluetooth is a trademark owned by its proprietor and used by Hewlett-Packard Company under license. Microsoft, Windows, and Windows Vista are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. SD Logo is a trademark of its proprietor.

The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Second Edition: June 2014

First Edition: March 2014

Document Part Number: 758965-002

Product notice

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


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

Software terms

By installing, copying, downloading, or otherwise using any software product preinstalled on this computer, you agree to be bound by the terms of the HP End User License Agreement (EULA). If you do not accept these license terms, your sole remedy is to return the entire unused product (hardware and software) within 14 days for a refund subject to the refund policy of your place of purchase.

For any further information or to request a full refund of the computer, please contact your local point of sale (the seller).

Important Notice about Customer Self-Repair Parts

 **CAUTION:** Your computer includes Customer Self-Repair parts and parts that should only be accessed by an authorized service provider. See Chapter 5, "Removal and replacement procedures for Customer Self-Repair parts," for details. Accessing parts described in Chapter 6, "Removal and replacement procedures for Authorized Service Provider only parts," can damage the computer or void your warranty.

Safety warning notice


 **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 the International Standard for Safety of Information Technology Equipment (IEC 60950).

Table of contents

1 Product description	1
2 External component identification	3
Finding your hardware and software information	3
Locating hardware	3
Locating software	3
Right side	4
Left side	4
Display	5
Top	7
TouchPad	8
Buttons	9
Keys	10
Bottom	11
Labels	11
3 Illustrated parts catalog	13
Computer major components	13
Display components	16
Miscellaneous parts	17
Sequential part number listing	17
4 Removal and replacement procedures preliminary requirements	19
Tools required	19
Service considerations	19
Plastic parts	19
Cables and connectors	20
Drive handling	20
Grounding guidelines	21
Electrostatic discharge damage	21
Packaging and transporting guidelines	22
Equipment guidelines	23
5 Removal and replacement procedures for Authorized Service Provider parts	19
Component replacement procedures	24
Keyboard	25

Base enclosure	28
Display	30
Battery	36
WLAN/Bluetooth combo card	37
Speaker assembly	39
Hard drive	40
System board	42
RTC battery	44
6 Using Setup Utility (BIOS) and HP PC Hardware Diagnostics (UEFI)	46
Starting Setup Utility (BIOS)	46
Updating the BIOS	46
Determining the BIOS version	46
Downloading a BIOS update	47
Using HP PC Hardware Diagnostics (UEFI)	47
Downloading HP PC Hardware Diagnostics (UEFI) to a USB device	48
7 Ubuntu Linux – Using Setup Utility (BIOS) and System Diagnostics	49
Starting Setup Utility	49
Using Setup Utility	49
Changing the language of Setup Utility	49
Navigating and selecting in Setup Utility	49
Displaying system information	50
Restoring factory default settings in Setup Utility	50
Exiting Setup Utility	50
Updating the BIOS	51
Determining the BIOS version	51
Downloading a BIOS update	51
Using Advanced System Diagnostics	52
8 Backing up, restoring, and recovering	53
Creating recovery media and backups	53
Creating HP Recovery media	53
Restore and recovery	54
Recovering using HP Recovery Manager	55
What you need to know	55
Using the HP Recovery partition (select models only)	55
Using HP Recovery media to recover	56
Changing the computer boot order	56
Removing the HP Recovery partition	56

9 Ubuntu Linux – Backing up, restoring, and recovering	57
Performing a system recovery	57
Creating the restore DVDs	57
Creating a restore image on a USB device	57
Performing recovery using the restore media	58
Backing up your information	58
10 Specifications	60
Computer specifications	60
35.6-cm (10.1-in), HD+ display specifications	61
Hard drive specifications	62
Specification information in Device Manager	62
11 Power cord set requirements	63
Requirements for all countries and regions	63
Requirements for specific countries and regions	63
12 Recycling	65
Battery	65
Index	66

1 Product description

Category	Description
Product Name	HP Pavilion ¹⁰ Notebook PC
Processors	AMD Dual-Core E-Series Processor <ul style="list-style-type: none">E1 Micro-6200T (1 GHz), DDR3L-1066 MHz/1 MB L2, 300MHz, 3.95 W
Chipset	AMD® Integrated SoC FCH
Graphics	AMD Radeon™™ R2 Graphics Supports HD Decode, DX11, and HDMI
Panel	16:9 Ultra Wide Aspect Ratio 10.1" High Definition LED AntiGlare (1366x768) (3.6mm) SVA Flat Touchscreen, multitouch enabled Display assemblies include 1 WLAN antenna
Memory	DDR3L-1066 MHz @ 1.35V Single Channel Support (DDR3L-1600 MHz downgrade to DDR3L-1066MHz) Non- accessible / non-upgradeable 2048 MB (256MX 16x 4 pcs) 4096 MB (256MX 16 X 2 X 4 pcs)
Hard drives	Supports 7-mm, 2.5-in SATA hard drive <ul style="list-style-type: none">500-GB, 5400-rpm 32 GB eMMC <ul style="list-style-type: none">32 GB eMMC
Fixed optical drives	No internal optical drive support
Audio/Visual	VGA webcam (HD design in) Single digital microphone with software - echo cancellation, Fixed Integrated VGA camera (select models only) 640x480 by 30 frames per second Single microphone Stereo speakers (2) Headphone and microphone jack High Definition audio with DTS Sound+
Ethernet	Integrated 10/100 NIC Ethernet cable not included
Wireless	Integrated Wireless LAN via PCI-E half size mini-card One WLAN antenna built into display assembly

Category	Description
	<p>Supports the following WLAN formats:</p> <ul style="list-style-type: none"> 802.11bgn 1x1 Wi-Fi Adapter (Single antenna) 802.11bgn 1x1 Wi-Fi Adapter (Single antenna) Bluetooth™ Combo
External Memory card	<p>Memory Reader Slot</p> <p>Support SD/SDHC/SDXC</p> <p>Push-Push insertion/removal</p>
Ports	<p>Audio-in/Audio-out (mic-in/stereo headphone)</p> <p>RJ-45 (Ethernet)</p> <p>USB 3.0 (1)</p> <p>USB 2.0 (1)</p> <p>HDMI 1.4 supporting: up to 1920x1080 @ 60 Hz DVI mode</p> <p>DC in Jack (1)</p>
Keyboard/pointing devices	<p>Island Type Keyboard (black)</p> <p>TouchPad (78x30 mm)</p> <p>TouchPad includes:</p> <ul style="list-style-type: none"> Multi-touch gestures enabled Support Windows 8 modern trackpad gestures Taps enabled as default
Power requirements	<p>19 V dc @ 2.1 A – 40 W adapter non-Smart nPFC AC adapter</p> <p>19.5 V dc @ 3.33 A – 65 W</p> <p>1 meter length power cord</p> <p>3-cell, 24-Wh, 2.2 Ah (4 hour battery life)</p>
Security	<p>Security lock</p>
Operating system	<p>Preinstalled:</p> <ul style="list-style-type: none"> Microsoft Windows 8.1 small screen touch with Office 365 Personal Microsoft Windows 8.1 small screen Microsoft Windows 8.1 Bing 64 bit Microsoft Windows 8.1 Bing 64 bit Wimboot FreeDos 2.0 Ubuntu Linux
Restore Media	<p>SSRU (System Recovery USB)</p>
Serviceability	<p>End-user replaceable parts:</p> <ul style="list-style-type: none"> AC adapter Keyboard (select models only)

2 External component identification

Finding your hardware and software information

Locating hardware

To find out what hardware is installed on your computer:

1. From the Start screen, type `control panel`, and then select **Control Panel**.
2. Select **System and Security**, select **System**, and then click **Device Manager** in the left column.

A list displays all the devices installed on your computer.

To find out information about system hardware components and the system BIOS version number, press `fn+esc`.

Locating software

To find out what software is installed on your computer:

- ▲ From the Start screen, click the down arrow in the lower-left corner of the screen.

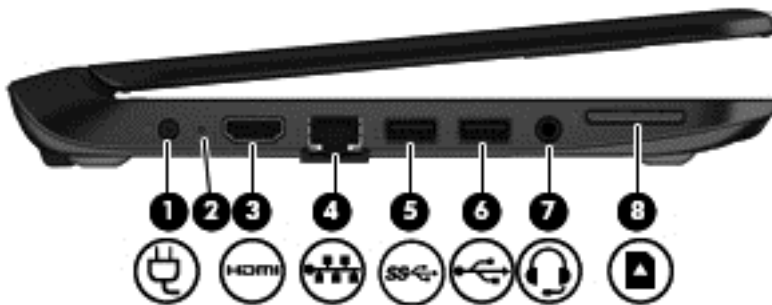
For Ubuntu Linux information, see the Ubuntu User Guide.








Right side




Component	Description
Security cable slot	Attaches an optional security cable to the computer. NOTE: The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.

Left side



Component	Description
(1)  Power connector	Connects an AC adapter.
(2)  AC adapter light	<ul style="list-style-type: none"> White: The AC adapter is connected and the battery is charging. Amber: The battery is charged.
(3)  HDMI port	Connects an optional video or audio device, such as a high-definition television, any compatible digital or audio component, or a high-speed HDMI device.
(4)  RJ-45 (network) jack	Connects a network cable.
(5)  USB 3.0 port	Each USB 3.0 port connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub.
(6)  USB 2.0 port	Each USB 2.0 port connects an optional USB device, such as a keyboard, mouse, external drive, printer, scanner or USB hub.
(7)  Audio-out (headphone)/Audio-in (microphone) jack	Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also

Component	Description
(8)  Memory card reader	<p>connects an optional headset microphone. This jack does not support optional microphone-only devices.</p> <p>WARNING! To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, refer to the <i>Regulatory, Safety, and Environmental Notices</i>. To access this guide, from the Start screen, type <code>support</code>, and then select the HP Support Assistant app.</p> <p>NOTE: When a device is connected to the jack, the computer speakers are disabled.</p> <p>NOTE: Be sure that the device cable has a 4-conductor connector that supports both audio-out (headphone) and audio-in (microphone).</p> <p>Reads optional memory cards that store, manage, share, or access information.</p> <p>To insert a card:</p> <p>Hold the card label-side up, with connectors facing the slot, insert the card into the slot, and then push in on the card until it is firmly seated.</p> <p>To remove a card:</p> <p>Press in on the card it until it pops out.</p>

Display

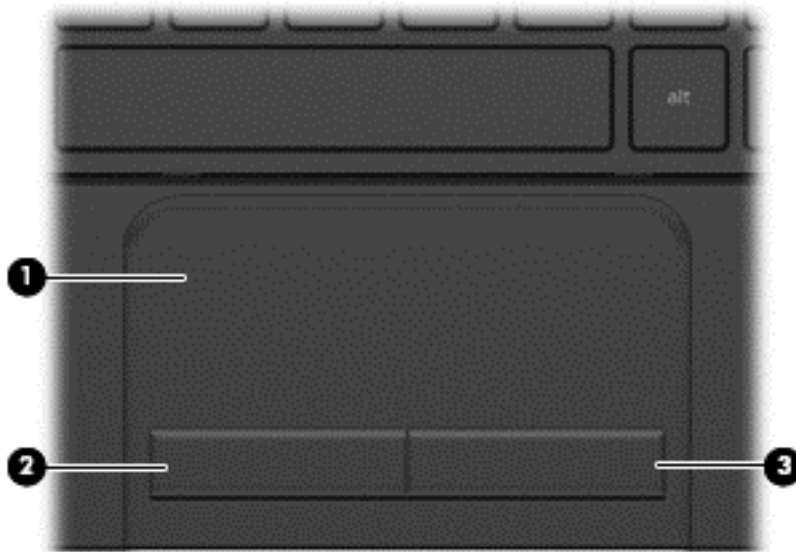


Component	Description
(1) Internal display switch	Turns off the display and initiates Sleep if the display is closed while the power is on.

Component	Description
	<p>NOTE: The internal display switch is not visible from the outside of the computer.</p>
(2) Internal microphone (1)	Records sound.
(3) Webcam	<p>Records video and captures photographs. Some models allow you to video conference and chat online using streaming video.</p> <p>To use the webcam, from the Start screen, type <code>camera</code>, and then select Camera from the list of applications.</p>
(4) Webcam light	On: The webcam is in use.
(5) WLAN antennas (1)*	Sends and receive wireless signals to communicate with wireless local area networks (WLANs).
<p>*The antennas are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas free from obstructions. For wireless regulatory notices, see the section of the <i>Regulatory, Safety, and Environmental Notices</i> that applies to your country or region. To access this guide, from the Start screen, type <code>support</code>, and then select the HP Support Assistant app.</p>	

[Top](#)


TouchPad



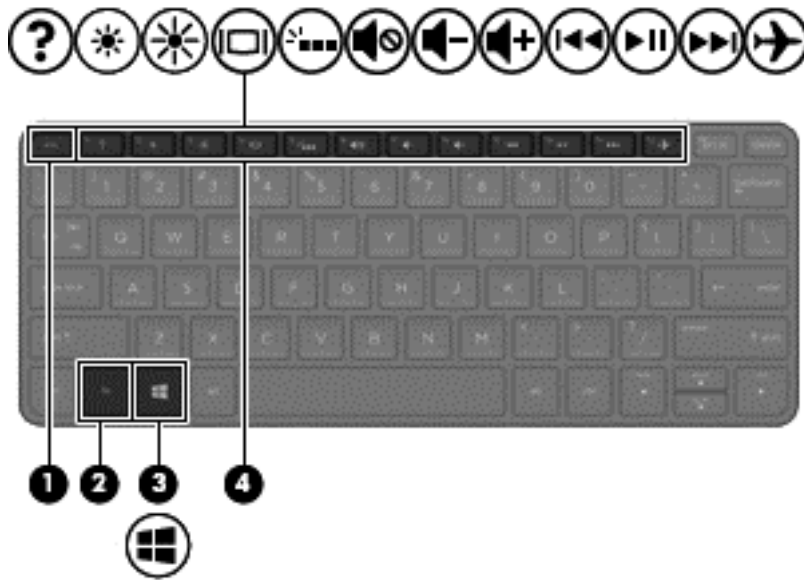
Component	Description
(1) TouchPad zone	Moves the on-screen pointer and selects or activates items on the screen.
(2) Left TouchPad button	Functions like the left button on an external mouse.
(3) Right TouchPad button	Functions like the right button on an external mouse.


Buttons



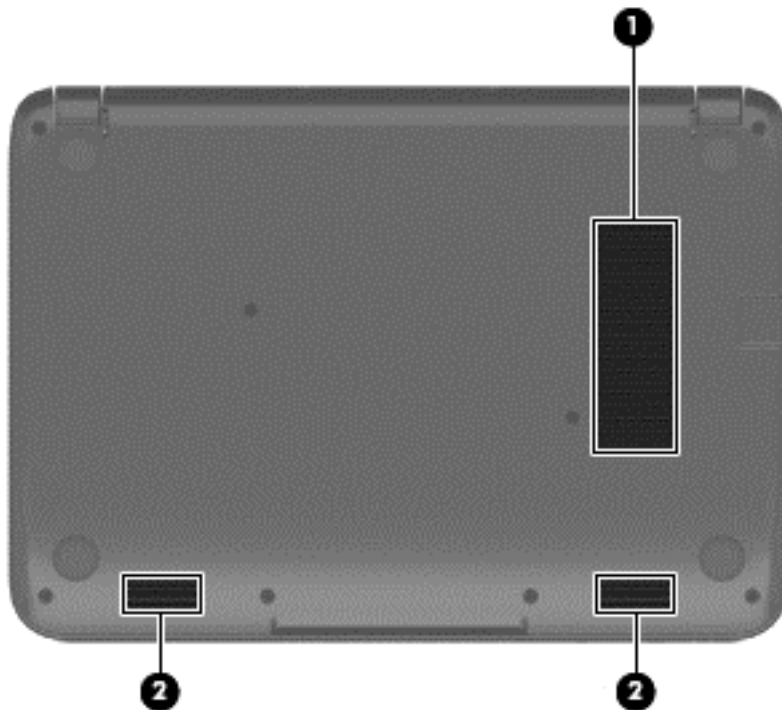
Component	Description
 Power button	<ul style="list-style-type: none">• When the computer is off, press the button to turn on the computer.• When the computer is on, press the button briefly to initiate Sleep.• When the computer is in the Sleep state, press the button briefly to exit Sleep.• When the computer is in Hibernation, press the button briefly to exit Hibernation. <p>CAUTION: Pressing and holding down the power button will result in the loss of unsaved information.</p> <p>If the computer has stopped responding and Windows® shutdown procedures are ineffective, press and hold the power button down for at least 5 seconds to turn off the computer.</p> <p>To learn more about your power settings, see your power options. From the Start screen, type <code>power</code>, select Power and sleep settings, and then select Power and sleep from the list of applications.</p>

Keys



Component	Description
(1) esc key	Displays system information when pressed in combination with the fn key.
(2) fn key	Executes frequently used system functions when pressed in combination with the spacebar , or the esc key.
(3)  Windows key	Returns you to the Start screen from an open app or the Windows desktop. NOTE: Pressing the Windows key again will return you to the previous screen.
(4) Action keys	Execute frequently used system functions. NOTE: On select models, the f5 action key turns the radiance backlight keyboard feature off or on.


Bottom



Component	Description
(1) Vent (1)	Enables airflow to cool internal components. NOTE: The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.
(2) Speakers (2)	Produce sound.

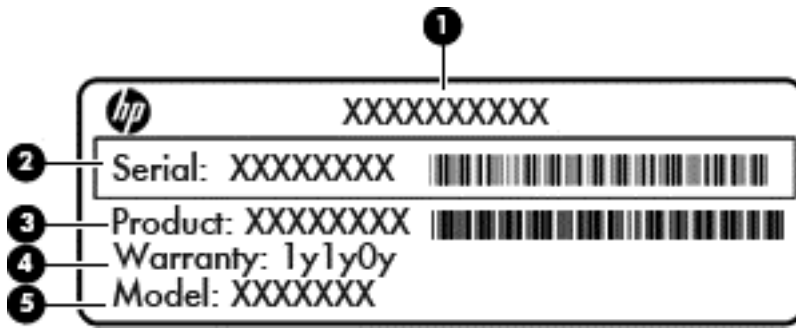
Labels

The labels are laser etched to the computer and provide information you may need when you troubleshoot system problems or travel internationally with the computer.

 **IMPORTANT:** All laser etched labels described in this section will be located on the bottom of your computer.

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

Your service label will resemble the example shown below.



Component

- (1) Product name

- (2) Serial number

- (3) Product number


- (4) Warranty period


- (5) Model number (select models only)

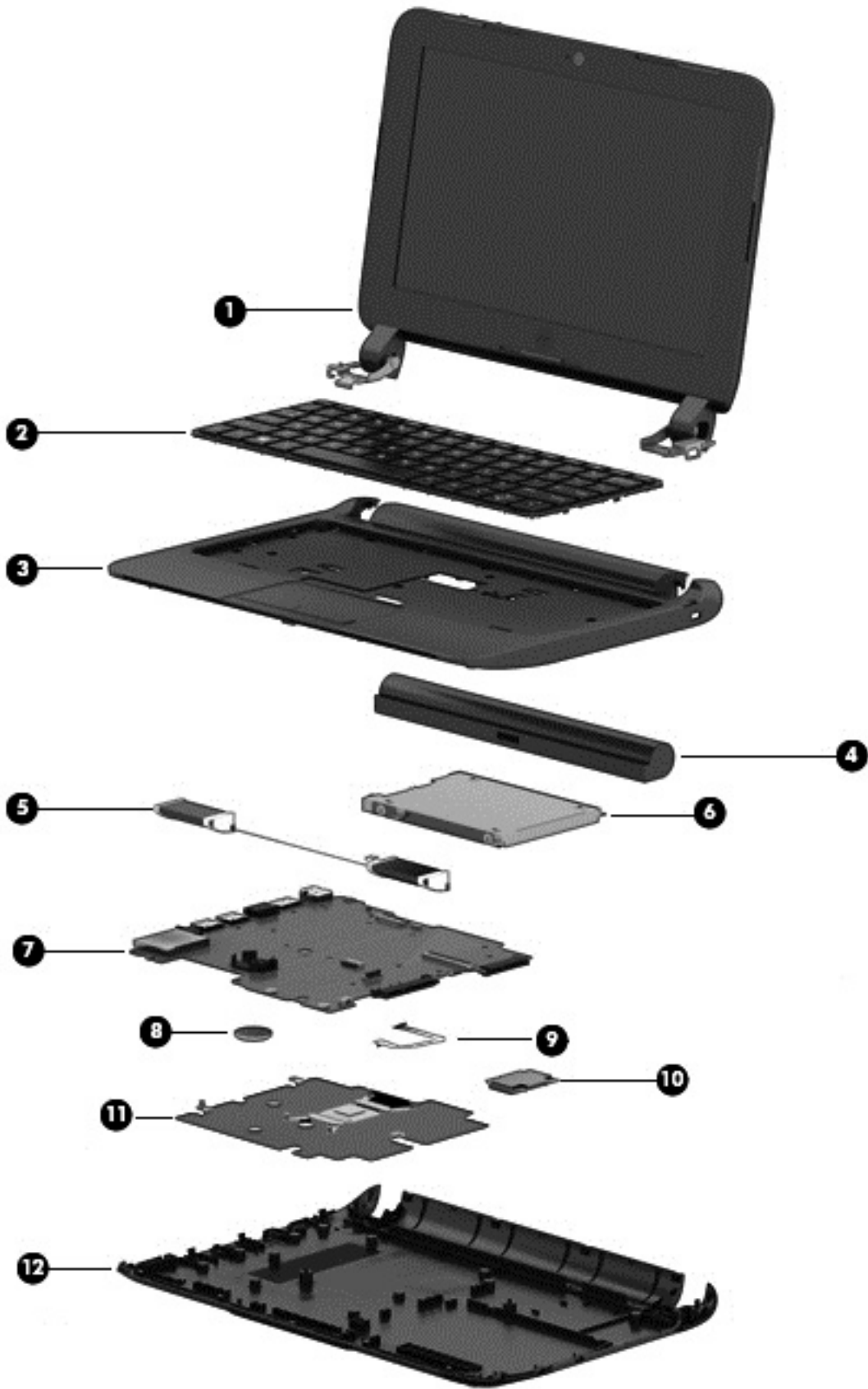
- Regulatory label(s)—Provide(s) regulatory information about the computer.
- Wireless certification label(s)—Provide(s) information about optional wireless devices and the approval markings for the countries or regions in which the devices have been approved for use.

3 Illustrated parts catalog

Computer major components

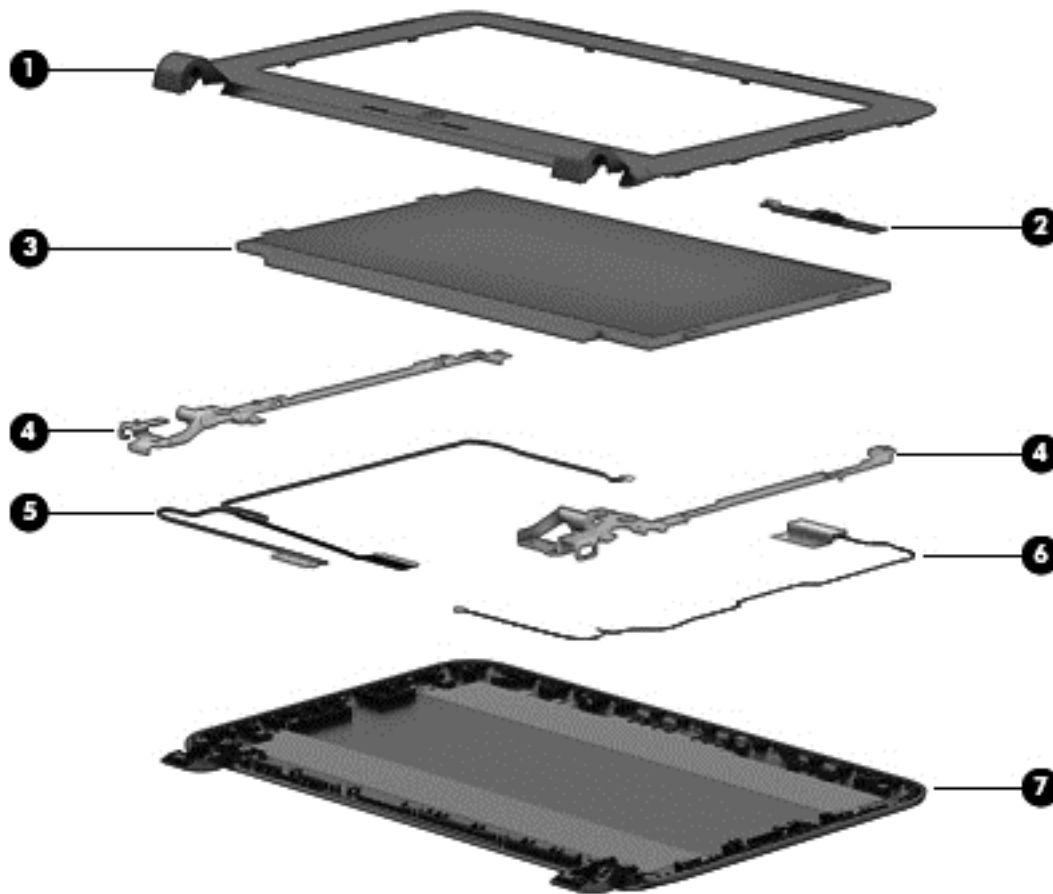
 **NOTE:** HP continually improves and changes product parts. For complete and current information on supported parts for your computer, go to <http://partsurfer.hp.com>, select your country or region, and then follow the on-screen instructions.

 **NOTE:** Details about your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer. See Service tag on page 16 for details.



Item	Description	Spare part number
(1)	Display panel 10.1" High Definition LED AntiGlare (1366x768) (3.6mm) SVA Flat Touchscreen See Display components on page 16 for details.	
(2)	Keyboard NOTE: For a detailed list of keyboards by country, see Keyboard on page 25 .	758644-xx1
(3)	Top cover with TouchPad black (includes TouchPad assembly and cable)	758649-001
(4)	Battery 3-cell (24 WHr, 2.2 Ah)	758639-001
(5)	Speaker assembly	758646-001
(6)	Hard drive 500-GB, 5400-rpm	778186-005
(7)	System board	
	UMA E1 Micro-6200T 2 GB (1 GHz), DDR3L-1066 MHz/1 MB L2, 300 MHz, 3.95 W System Board for FreeDos and Ubuntu	769701-001
	UMA E1 Micro-6200T 2 GB (1 GHz), DDR3L-1066 MHz/1 MB L2, 300 MHz, 3.95 W System Board for Windows 8.1 Standard	769701-501
	UMA E1 Micro-6200T 4 GB (1 GHz), DDR3L-1066 MHz/1 MB L2, 300 MHz, 3.95 W System Board for FreeDos and Ubuntu	769702-001
	UMA E1 Micro-6200T 4 GB (1 GHz), DDR3L-1066 MHz/1 MB L2, 300 MHz, 3.95 W System Board for Windows 8.1 Standard	769702-501
	UMA E1 Micro-6200T (1 GHz), DDR3L-1066 MHz/1 MB L2, 300 MHz, 3.95 W eMMC System Board for FreeDos and Ubuntu	777619-001
	UMA E1 Micro-6200T (1 GHz), DDR3L-1066 MHz/1 MB L2, 300 MHz, 3.95 W eMMC System Board for Windows 8.1 Standard	777619-501
(8)	RTC battery	718440-001
(9)	TouchPad cable (included with the top cover)	
(10)	WLAN module	
	802.11bgn 1x1 Wi-Fi Adapter (Single antenna)	675794-001
	802.11bgn 1x1 Wi-Fi Adapter (Single antenna) Bluetooth 4 Combo HMC	753077-001
(11)	Heat shield (included with the system board)	
(12)	Base enclosure	758638-001

Display components



Item	Description	Spare part number
(1)	Display bezel	758640-001
(2)	Webcam	758650-001
(3)	Raw panel	758645-001
(4)	Display bracket (included with the Display back cover)	
(5)	Display cable (included with the Display back cover)	
(6)	WLAN antenna (included with the Display back cover)	
(7)	Display back cover	758637-001
(8)	Display panel 10.1" High Definition LED AntiGlare (1366x768) (3.6mm) SVA Flat Touchscreen (Whole unit replacement), (not illustrated)	773020-001

Miscellaneous parts

Description	Spare part number
AC adapters	
19 V dc @ 2.1 A – 40 W Non-Smart nPFC AC adapter	758633-001
19.5 V dc @ 3.33 A –65 W Power Adapter nPFC EM	758633-001
Power cords: (3-pin, black, 1.83-m):	
For use in North America	763966-001
For use in Europe	763966-021
For use in the United Kingdom and Singapore	763966-031
Power cord for use in South Africa	763966-AR1
Rubber Kit (includes rubber base enclosure screw covers)	758641-001
Screw Kit	758636-001
Hardware kit	762706-001
Hard drive insert	782645-001

Sequential part number listing

Spare part number	Description
675794-001	WLAN 802.11bgn 1x1 Wi-Fi Adapter (Single antenna)
718440-001	RTC battery
753077-001	WLAN 802.11bgn 1x1 Wi-Fi Adapter Bluetooth Combo (Single antenna)
758633-001	AC adapter 40 W 19.5V adapter non-Smart nPFC
758636-001	Screw kit
758637-001	Display cover black (includes brackets, cable and WLAN antenna)
758638-001	Base enclosure
758639-001	Battery
758640-001	Display bezel
758641-001	Rubber Kit (includes rubber base enclosure screw covers)
758644-001	Keyboard for use in the United States
758644-031	Keyboard for use in the United Kingdom
758644-041	Keyboard for use in Germany
758644-051	Keyboard for use in France
758644-061	Keyboard for use in Italy
758644-071	Keyboard for use in Portugal

Spare part number	Description
758644-131	Keyboard for use in the United Kingdom
758644-141	Keyboard for use in Turkey
758644-171	Keyboard for use in Saudi Arabia
758644-251	Keyboard for use in Russia
758644-261	Keyboard for use in Bulgaria
758644-271	Keyboard for use in Romania
758644-A41	Keyboard for use in Belgium
758644-B31	Keyboard for international use
758644-BA1	Keyboard for use in Slovenia
758644-FL1	Keyboard for use in the Czech Republic
758645-001	Display raw panel
758646-001	Speaker kit
758649-001	Top cover with TouchPad
758650-001	Webcam
762706-001	Hard drive hardware kit
763966-001	Power cord for use in North America
763966-021	Power cord for use in Europe
763966-031	Power cord for use in the United Kingdom
763966-AR1	Power cord for use in South Africa
769701-001	UMA E1 Micro-6200T 2 GB (1 GHz), DDR3L-1066 MHz/1 MB L2, 300 MHz, 3.95 W System Board for FreeDos and Ubuntu
769701-501	UMA E1 Micro-6200T 2 GB (1 GHz), DDR3L-1066 MHz/1 MB L2, 300 MHz, 3.95 W System Board for Windows 8.1 Standard
769702-001	UMA E1 Micro-6200T 4 GB (1 GHz), DDR3L-1066 MHz/1 MB L2, 300 MHz, 3.95 W System Board for FreeDos and Ubuntu
769702-501	UMA E1 Micro-6200T 4 GB (1 GHz), DDR3L-1066 MHz/1 MB L2, 300 MHz, 3.95 W System Board for Windows 8.1 Standard
769703-001	65 W Power Adapter nPFC EM
773020-001	10.1" High Definition LED AntiGlare (1366x768) (3.6mm) SVA Flat Touchscreen Display Panel
777619-001	UMA E1 Micro-6200T (1 GHz), DDR3L-1066 MHz/1 MB L2, 300 MHz, 3.95 W eMMC System Board for FreeDos and Ubuntu
777619-501	UMA E1 Micro-6200T (1 GHz), DDR3L-1066 MHz/1 MB L2, 300 MHz, 3.95 W eMMC System Board for Windows 8.1 Standard
778186-005	500 GB 5400 RPM Hard Drive
782645-001	Hard drive insert

4 Removal and replacement procedures preliminary requirements

Tools required

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

- Flat-bladed screwdriver
- Phillips P0 and P1 screwdrivers

Service considerations

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



NOTE: As you remove each subassembly from the computer, place the subassembly (and all accompanying screws) away from the work area to prevent damage.

Plastic parts



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

Cables and connectors

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

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

Drive handling

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

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

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

Avoid dropping drives from any height onto any surface.

After removing a hard drive, an optical drive, or a diskette drive, place it in a static-proof bag.

Avoid exposing a 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."

Grounding guidelines

Electrostatic discharge damage

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

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

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

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

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

Use nonmagnetic tools.

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

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

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

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

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

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

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

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

Equipment guidelines

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

- When seated, wear a wrist strap connected to a grounded system. Wrist straps are flexible straps with a minimum of one megohm $\pm 10\%$ resistance in the ground cords. To provide proper ground, wear a strap snugly against the skin at all times. On grounded mats with banana-plug connectors, use alligator clips to connect a wrist strap.
- When standing, use foot straps and a grounded floor mat. Foot straps (heel, toe, or boot straps) can be used at standing workstations and are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use foot straps on both feet with a minimum of one megohm resistance between the operator and ground. To be effective, the conductive strips must be worn in contact with the skin.


The following grounding equipment is recommended to prevent electrostatic damage:


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

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


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

5 Removal and replacement procedures for Authorized Service Provider parts

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

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

Component replacement procedures

 **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.

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

There are as many as 40 screws that must be removed, replaced, or loosened when servicing Authorized Service Provider only parts. Make special note of each screw size and location during removal and replacement.

Keyboard

Description	Spare part number
Island Type Keyboard (black), (includes TouchPad and TouchPad cable) for use in the United States	758644-001
Island Type Keyboard (black), (includes TouchPad and TouchPad cable) for use in the United Kingdom	758644-031
Island Type Keyboard (black), (includes TouchPad and TouchPad cable) for use in Germany	758644-041
Island Type Keyboard (black), (includes TouchPad and TouchPad cable) for use in France	758644-051
Island Type Keyboard (black), (includes TouchPad, and TouchPad cable) for use in Italy	758644-061
Island Type Keyboard (black), (includes TouchPad, and TouchPad cable) for use in Portugal	758644-071
Island Type Keyboard (black), (includes TouchPad, and TouchPad cable) for use in the United Kingdom	758644-131
Island Type Keyboard (black), (includes TouchPad and TouchPad cable) for use in Turkey	758644-141
Island Type Keyboard (black), (includes TouchPad and TouchPad cable) for use in Saudi Arabia	758644-171
Island Type Keyboard (black), (includes TouchPad and TouchPad cable) for use in Russia	758644-251
Island Type Keyboard (black), (includes TouchPad and TouchPad cable) for use in Bulgaria	758644-261
Island Type Keyboard (black), (includes TouchPad and TouchPad cable) for use in Romania	758644-271
Island Type Keyboard (black), (includes TouchPad and TouchPad cable) for use in Belgium	758644-A41
Island Type Keyboard (black), (includes TouchPad and TouchPad cable) for International use	758644-B31
Island Type Keyboard (black), (includes TouchPad and TouchPad cable) for use in Slovenia	758644-BA1
Island Type Keyboard (black), (includes TouchPad and TouchPad cable) for use in the Czech Republic and Slovakia	758644-FL1

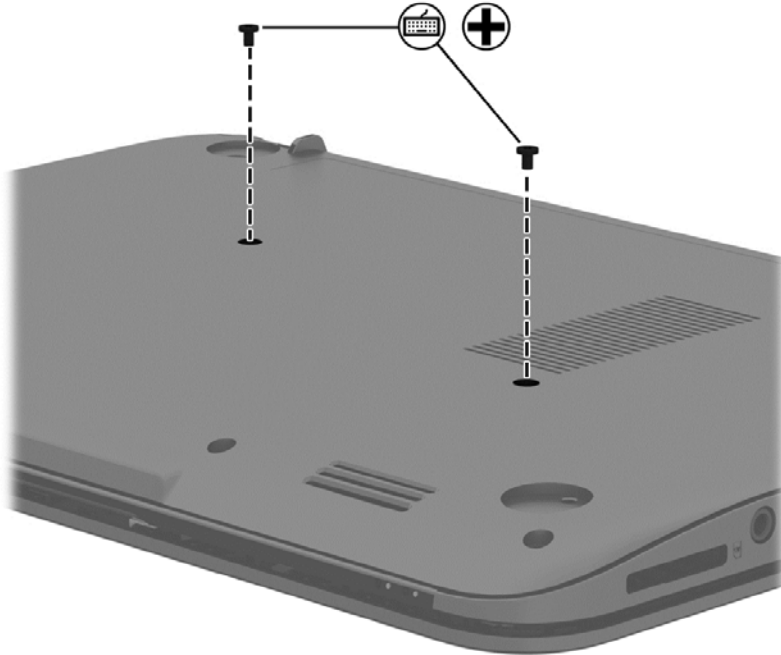
Before removing the keyboard, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.

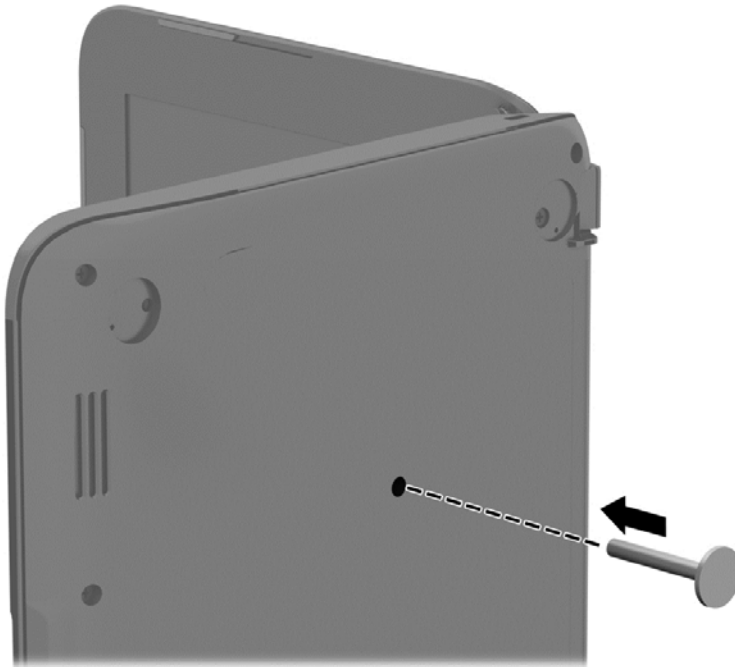
To remove the keyboard:

1. Turn the computer upside down on a flat surface.

2. Remove the two Phillips 2.0×6.0 screws keyboard screws from the bottom of the computer.



3. Turn the computer on its side and insert the push tool in the keyboard release hole to release the keyboard.



4. Turn the computer upright and carefully tilt the keyboard and slide it toward the display to disconnect the tabs holding the keyboard in position.

Disconnect the TouchPad cable from the top cover by releasing the ZIF connector (1) and carefully removing the cable (2).


5. Slide the keyboard cable ZIF connector (3) and slide the disconnected cable (4). Lift the keyboard (5) to remove it.



Reverse this procedure to install the keyboard.

Base enclosure

Description	Spare part number
Base enclosure	758638-001
Top cover (includes the TouchPad and TouchPad cable)	758649-001

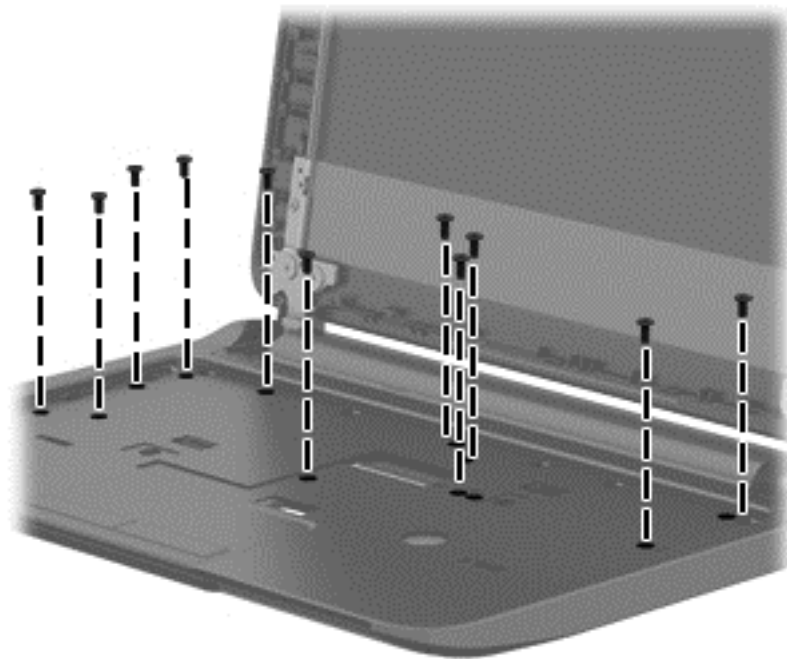
 **NOTE:** The base enclosure and top cover screws are removed during this procedure.

Before removing the base enclosure, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard (see [Keyboard on page 25](#)).


Remove the base enclosure and top cover screws:

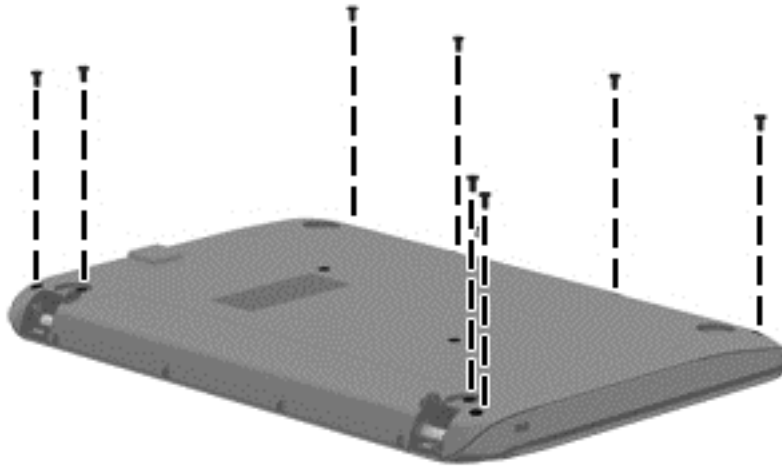
1. Position the computer upright and open it as far as possible.
2. Remove the following eleven Phillips 2.5×5.0 screws that secure the top cover.



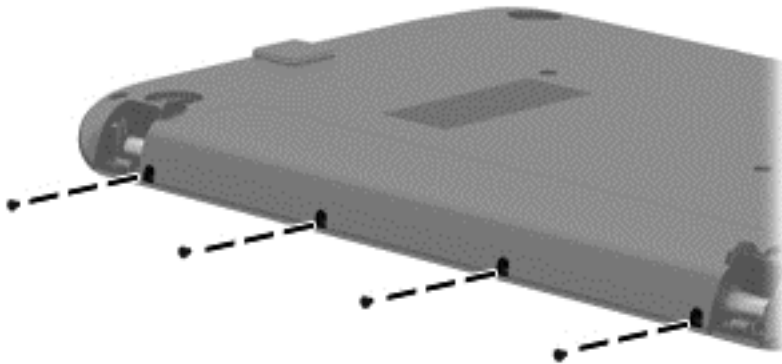
3. Position the computer upside down with the front toward you.

4. Remove the following covers and eight Phillips screws that secure the base enclosure to the computer:

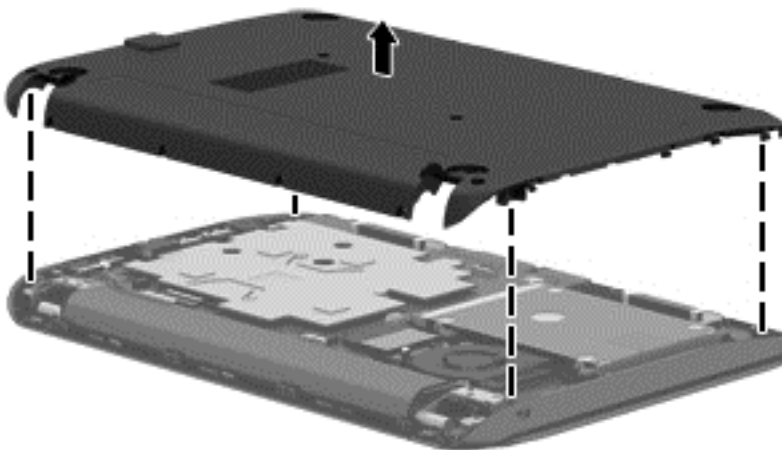
 **NOTE:** Rubber screw covers are available in the Rubber Kit, spare part number 758641-001.



5. Remove the four Phillips 6.0×2.5 screws on the back side of the base enclosure.



6. Lift the base enclosure to remove it.



Reverse this procedure to install the base enclosure.

Display



NOTE: The Display instructions are to remove the whole panel. The Touchscreen spare part 773020-001 is a whole unit replacement. For non-touchscreens, complete the removal of the unit and then perform the Display Assembly removal steps for the sub-components.

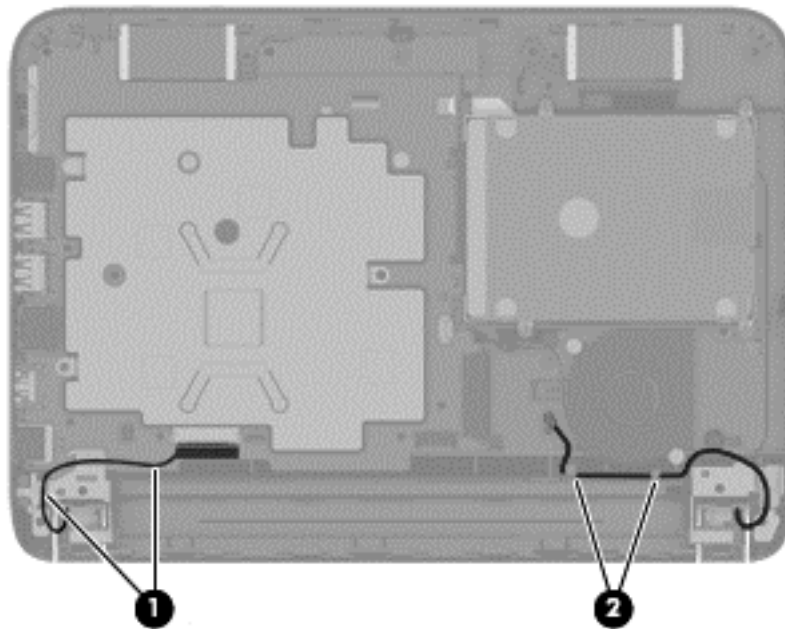
Description	Spare part number
Display assembly 25.6-cm (10.1-inch) HD LED AntiGlare (1366x768) (3.6mm) SVA Flat Touchscreen whole unit	773020-001
Display bezel	758640-001
Webcam	758650-001
Raw panel	758645-001
Display back cover (includes brackets, cable and WLAN antenna)	758637-001

Before removing the display assembly, follow these steps:

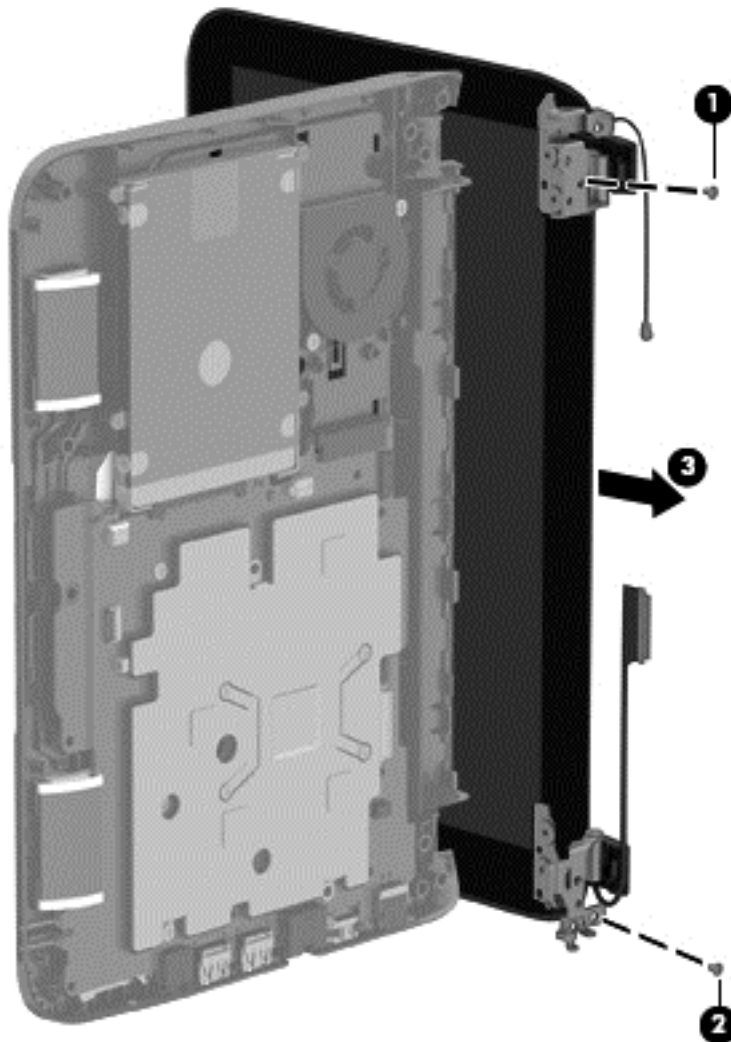
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.

Remove the display panel:

1. Place the top cover upside down.
2. Disconnect the video cable (1) and WLAN antenna cable (2) and carefully remove from the routing path in the top cover.



3. Open the computer as far as possible and turn the computer on its side. Remove the two Phillips 2.5×5.0 screws (1), and (2) from the display hinges.
4. Slide the display assembly (3) to remove it.



⚠ CAUTION: When installing the display assembly, be sure that the wireless antenna cables are routed and arranged properly.

Failure to properly route the antennas can result in degradation of the computer's wireless performance.

5. Replace the panel if this is a whole unit touchscreen replacement by reversing these procedures. The whole unit panel replacement is complete.

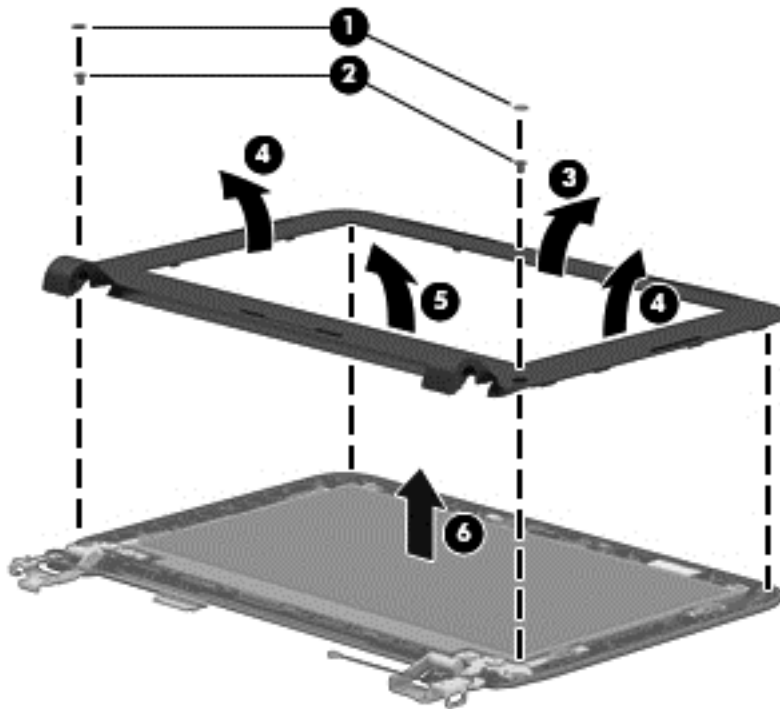
📝 NOTE: If you are replacing an assembly component for a non-touchscreen display, continue the steps below.

Display assembly


Remove the display assembly:

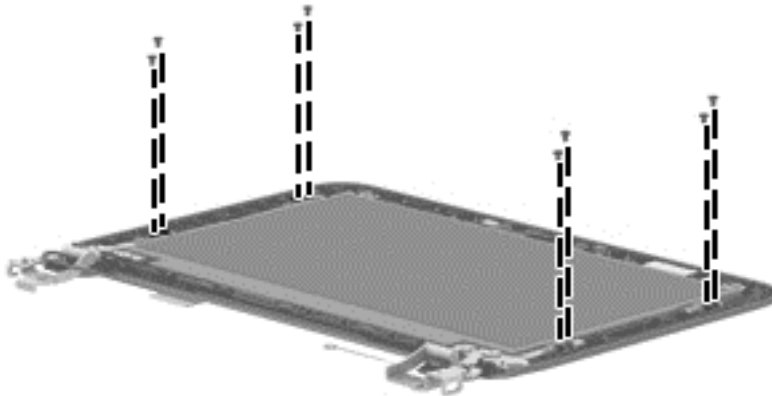
1. Place the computer upright and open as far as possible.
2. Remove the display screw covers (1) and remove the two Phillips 2.5×2.5 screws (2).

- Carefully pry the display bezel away from the display panel (3), (4), (5), and remove the display bezel (6).

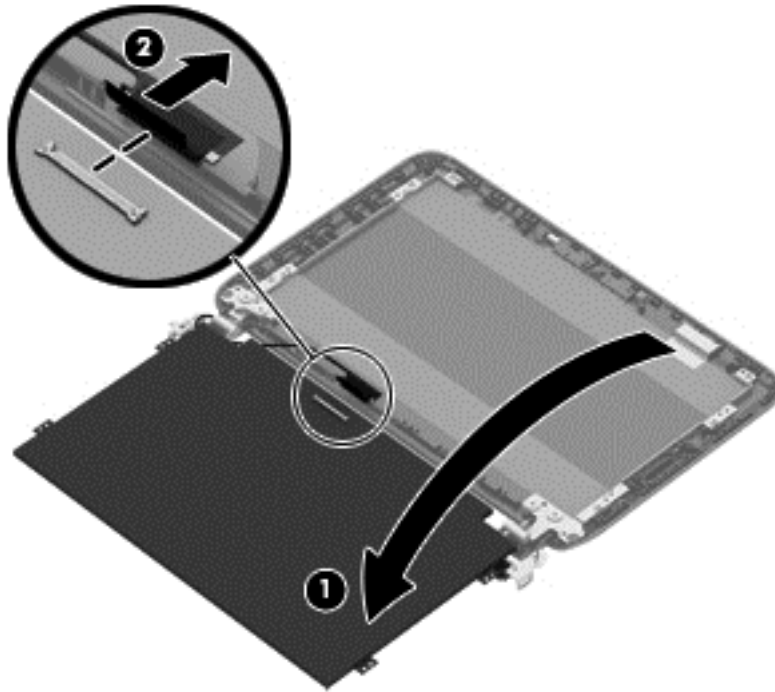


- Remove the eight Phillips 2.0×3.0 screws for the display panel and carefully lift the panel.


 **NOTE:** Carefully release any adhesive tape.



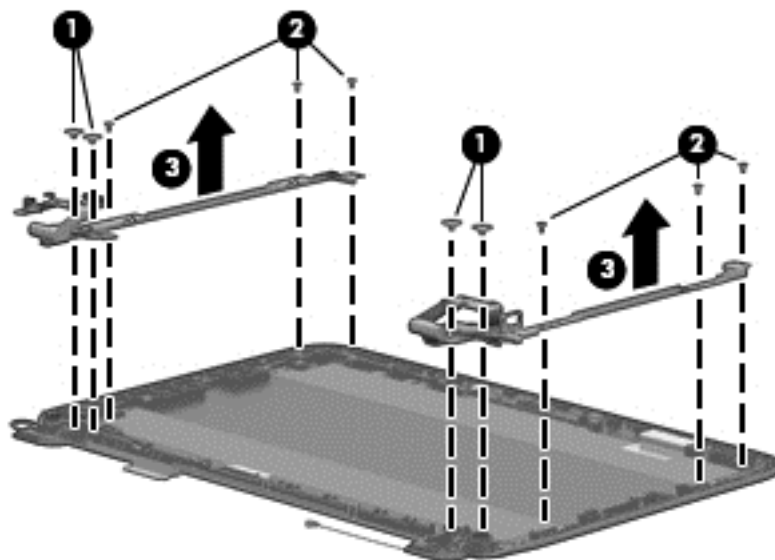
5. Carefully tilt the panel forward (1), disconnect the panel connection (2) and lift the panel to remove it.



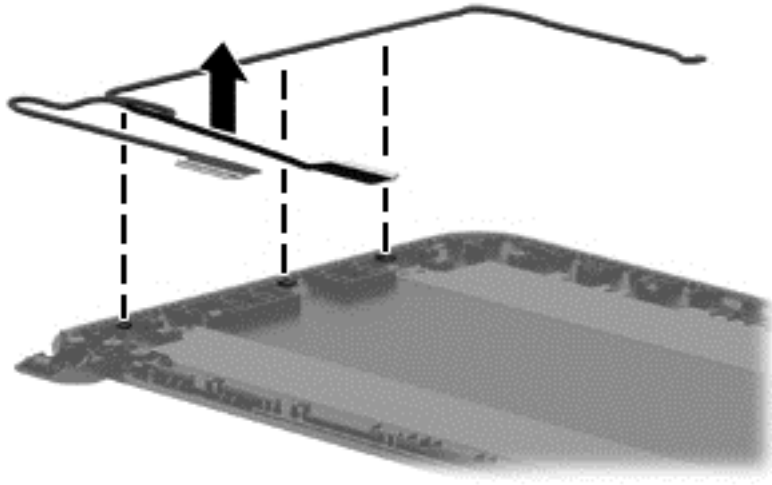
6. If it is necessary to replace the WLAN antenna cable, display cable or webcam, follow these procedures:

 **NOTE:** The display hinges are spared with the back cover.

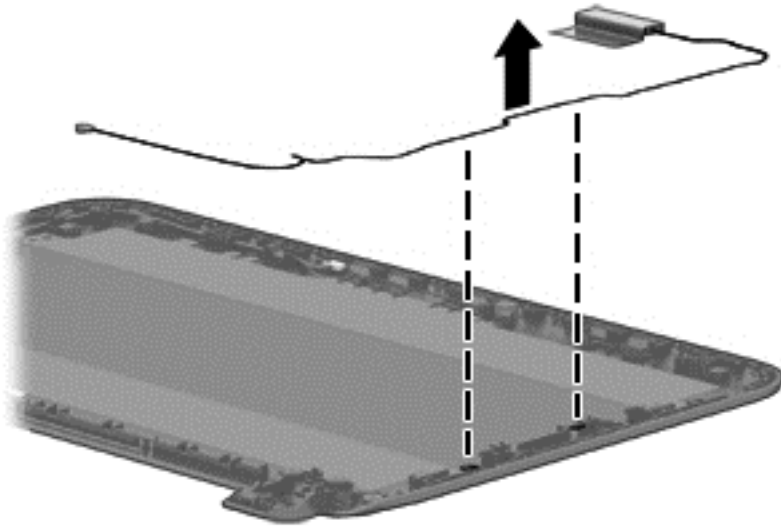
- a. Position the display back cover face up.
- b. Remove the display brackets by removing the 10 Phillips and broadhead screws (1) and (2), securing the hinge brackets to the back cover, and then lift the brackets (3) to remove them.



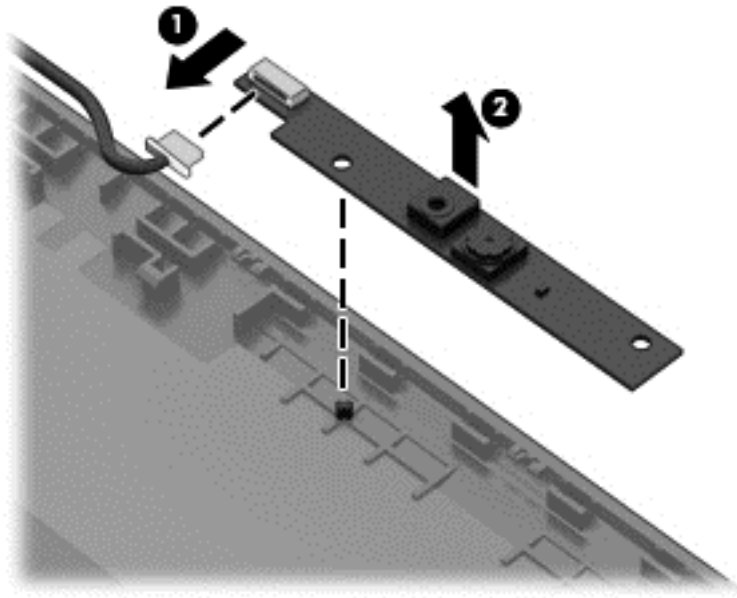
- c. Remove the display cable by releasing the wires from the retaining channels of the back cover and lift the cable to remove it.



- d. Release the wireless antenna transceivers from the back cover. (The wireless antenna transceivers are attached to the display bezel with double-sided tape.)
- e. Remove the wireless antenna from the retaining channels, and lift the antenna.



- f. If it is necessary to replace the webcam/microphone perform the following: Disconnect the module connector (1) and lift the module (2) from the adhesive holding it in place on the display bezel and if you have not already done so when removing the display cable.



Reverse this procedure to install the display panel.

Battery

Description	Spare part number
3-cell 24 WHr 2.2 AH	758639-001

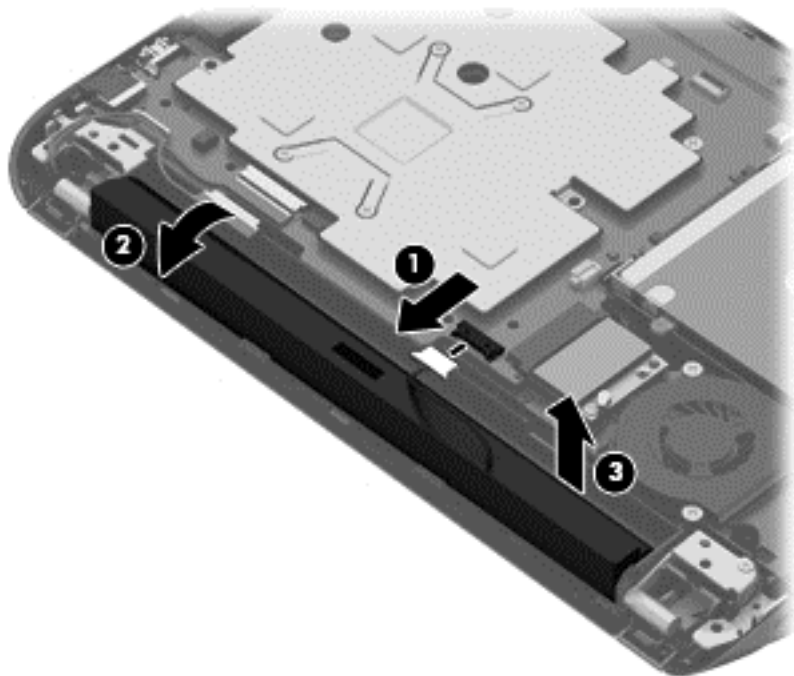
Before removing the battery, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard (see [Keyboard on page 25](#)).
5. Remove the base enclosure (see [Base enclosure on page 28](#)).

To remove the battery:

CAUTION: 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 and shut down the computer through Windows before removing the battery.

1. Turn the computer upside down on a flat surface.
2. Disconnect the battery connector (1), rotate the battery (2) and lift the battery (3) to remove it from the computer.



Reverse this procedure to install the battery.

WLAN/Bluetooth combo card

Select models use a card that provides both WLAN and Bluetooth functionality.

Description	Spare part number
802.11bgn 1x1 Wi-Fi Adapter (Single antenna)	675794-001
802.11bgn 1x1 Wi-Fi Adapter (Single antenna) Bluetooth 4 Combo HMC	753077-001


Before removing the WLAN module, follow these steps:

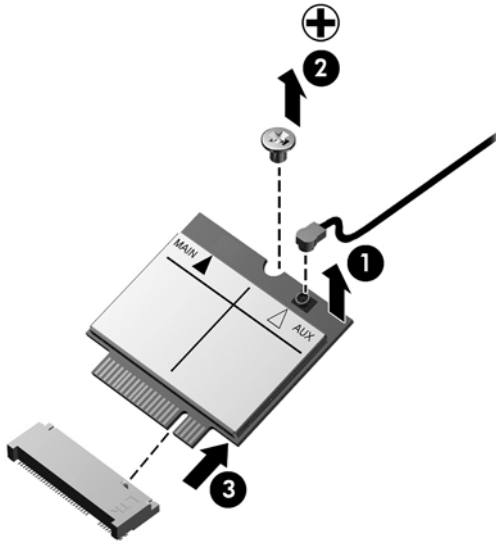
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard (see [Keyboard on page 25](#)).
5. Remove the base enclosure (see [Base enclosure on page 28](#)).
6. Remove the battery (see [Battery on page 36](#)).


Remove the WLAN module:

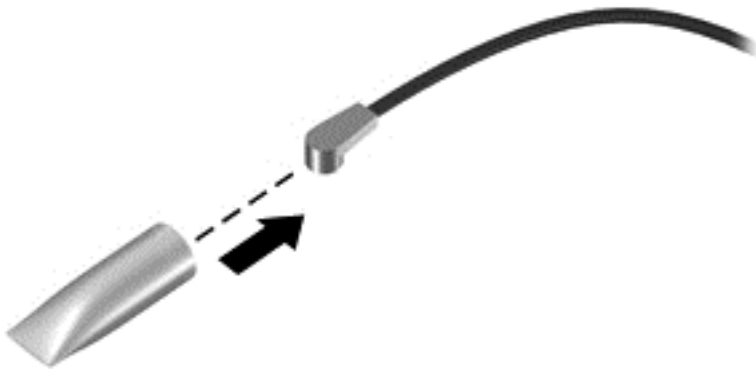
1. Position the top cover upside down.
2. Disconnect the WLAN cable (1).
3. Remove the Phillips screw (2) that secures the WLAN module to the top cover.

4. Remove the WLAN module (3) by pulling the module away at an angle from the slot connected to the system board.

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



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



Reverse this procedure to install the WLAN module.

Speaker assembly

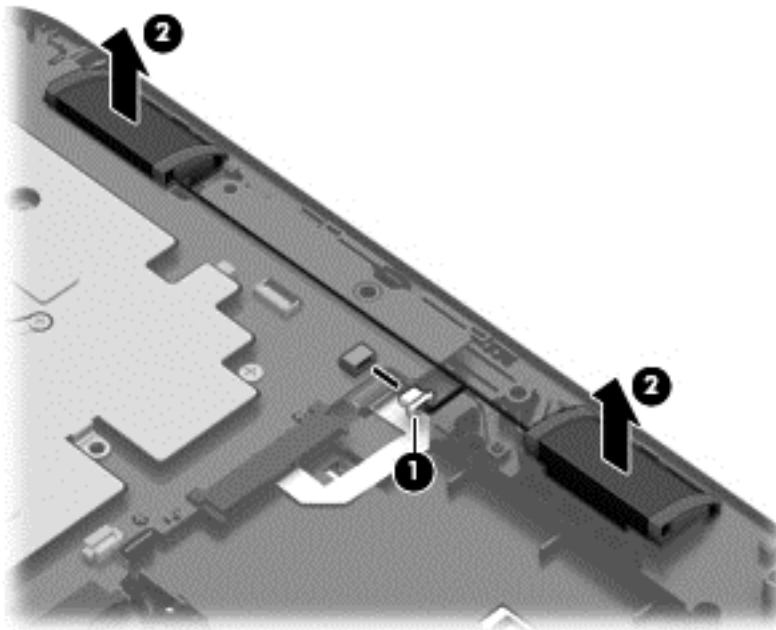
Description	Spare part number
Speaker assembly	758646-001

Before removing the speaker assembly, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard (see [Keyboard on page 25](#)).
5. Remove the base enclosure (see [Base enclosure on page 28](#)).
6. Remove the battery (see [Battery on page 36](#)).

Remove the speaker assembly:

1. Position the top cover upside down with the speakers in front.
2. Disconnect the speaker cable from the system board (1).
3. Remove the tape that holds the speaker wires in place and carefully lift the speakers (2).



Reverse this procedure to install the speaker assembly.

Hard drive

Description	Spare part number
500-GB, 5400-rpm	778186-005


Before removing the hard drive, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard (see [Keyboard on page 25](#)).
5. Remove the base enclosure (see [Base enclosure on page 28](#)).
6. Remove the battery (see [Battery on page 36](#)).

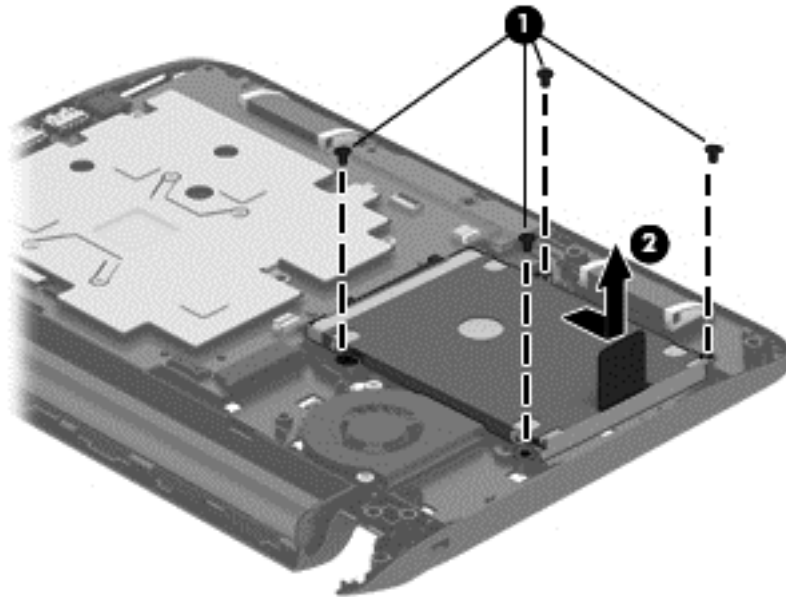
To remove a hard drive:


1. Position the top cover upside down on a flat surface.

Remove the four Phillips 2.5×3.5 screws that secure the hard drive to the top cover (1).

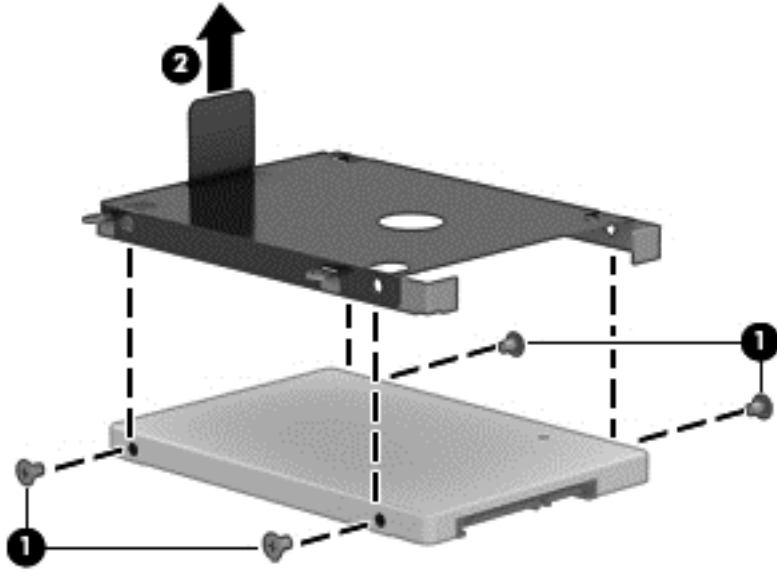
 **NOTE:** Some models may only have two screws.

2. Lift the hard drive (2) out of the hard drive bay.



 **NOTE:** The top side of the top cover has a small hole that you can push through to release the hard drive.

3. To remove the hard drive from the hard drive cover, remove the four Phillips 3.0×3.5 screws (1) that secure the cover to the drive, and then lift the cover straight up and off the hard drive (2).



Reverse this procedure to install a hard drive.

System board

Description	Spare part number
UMA E1-6200 2 GB for use with FreeDos and Ubuntu	769701-001
UMA E1-6200 2 GB Standard	769701-501
UMA E1-6200 4 GB for use with FreeDos and Ubuntu	769702-001
UMA E1-6200 4 GB Standard	769702-501
UMA E1-6200 2 GB eMMC for use with FreeDos and Ubuntu	777619-001
UMA E1-6200 2 GB eMMC Standard	777619-501

Before removing the system board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard (see [Keyboard on page 25](#)).
5. Remove the base enclosure (see [Base enclosure on page 28](#)).
6. Remove the battery (see [Battery on page 36](#)).
7. Remove the following components:
 - a. Display video cable if not already removed.
 - b. WLAN (see [WLAN/Bluetooth combo card on page 37](#)).
 - c. Speaker assembly (see [Speaker assembly on page 39](#)).
 - d. Hard drive (see [Hard drive on page 40](#)).

When replacing the system board, be sure to remove the following components from the defective system board and install on the replacement system board:

- RTC battery (see [RTC battery on page 44](#)).
- TouchPad cable (see Step 7 below).


Remove the system board:

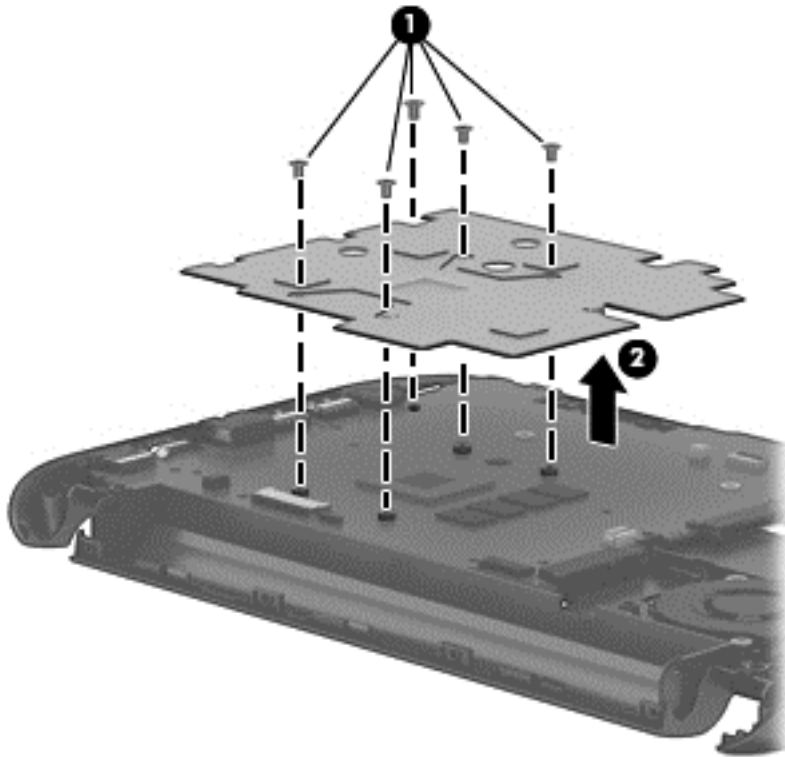


NOTE: The heat shield is spared with the system board. You will need to remove the heat shield to remove the system board.

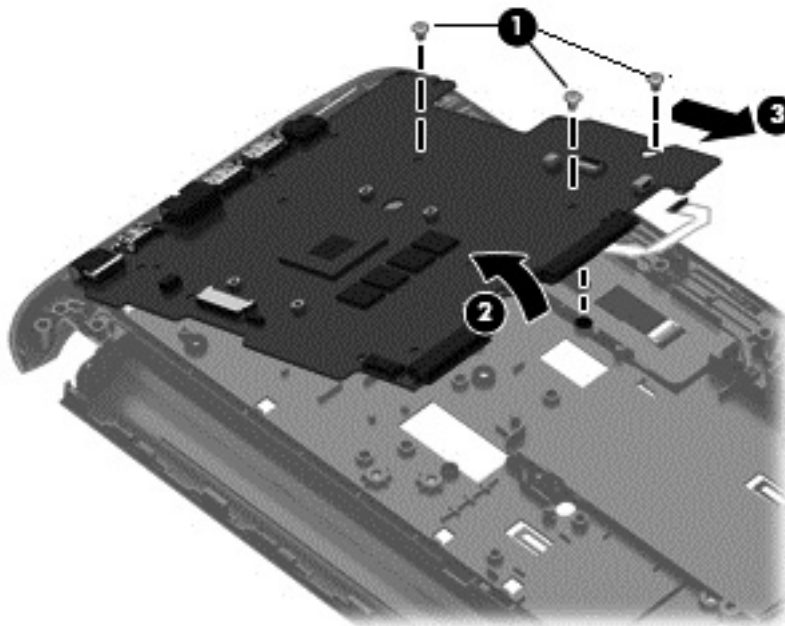
1. Position the top cover upright with the front toward you.

2. Remove the three Phillips 2.5×3.5 and one Phillips 2.5×2.5 screws (1) that secure the heat shield to the system board and lift the heat shield (2).

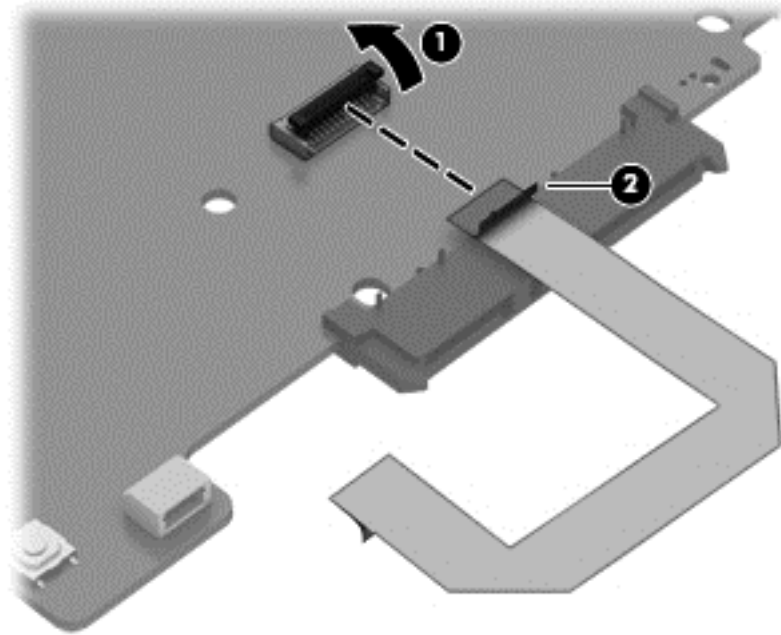
 **NOTE:** Some models may only have four screws.



3. Remove the three Phillips 2.5×3.5 screws (1) from the system board.
4. Lift the right side of the system board up at an angle (2).
5. Pull the system board (3) up and toward the right to remove it.



6. Turn the system board upside down to access the TouchPad cable.
7. Lift the TouchPad cable connector (1) and gently pull the TouchPad cable (2) to remove it.



Reverse this procedure to install the system board.

RTC battery

Description	Spare part number
RTC battery	718440-001

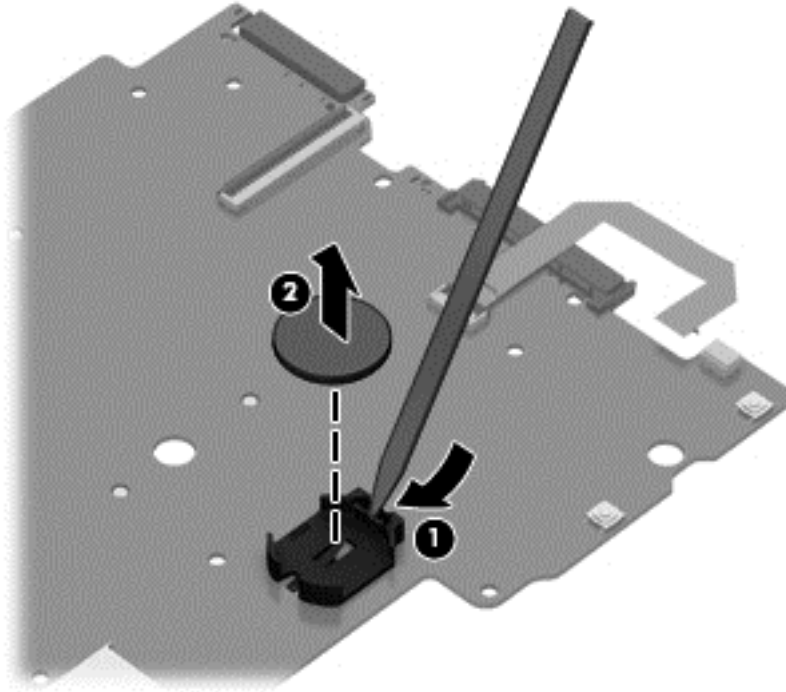
Before removing the RTC battery, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet, and then unplugging the AC adapter from the computer.
4. Remove the keyboard (see [Keyboard on page 25](#)).
5. Remove the base enclosure (see [Base enclosure on page 28](#)).
6. Remove the battery (see [Battery on page 36](#)).
7. Remove the following components:
 - a. Remove the [System board on page 42](#).
 - b. Display video cable if not already removed.
 - c. WLAN (see [WLAN/Bluetooth combo card on page 37](#)).

- d. Speaker assembly (see [Speaker assembly on page 39](#)).
- e. Hard drive (see [Hard drive on page 40](#)).

Remove the RTC battery:

1. Position the system board upside down.
2. Use a thin screwdriver or similar tool to pry the battery out of the socket (1).
3. Remove the battery from the socket (2).



Reverse this procedure to install the RTC battery.

6 Using Setup Utility (BIOS) and HP PC Hardware Diagnostics (UEFI)

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

Starting Setup Utility (BIOS)

To start Setup Utility (BIOS), turn on or restart the computer, quickly press **esc**, and then press **f10**.



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

Updating the BIOS

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

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

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


Determining the BIOS version

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

BIOS version information (also known as *ROM date* and *System BIOS*) can be revealed by pressing **fn+esc** (if you are already in Windows) or by using Setup Utility (BIOS).

1. Start Setup Utility (BIOS) (see [Starting Setup Utility \(BIOS\) on page 46](#)).
2. Use the arrow keys to select **Main**.
3. To exit Setup Utility (BIOS) without saving your changes, use the arrow keys to select **Exit**, select **Exit Discarding Changes**, and then press **enter**.
4. Select **Yes**.

Downloading a BIOS update

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


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

Do not shut down the computer or initiate Sleep.

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

1. From the Start screen, type `hp support assistant`, and then select the **HP Support Assistant** app.
2. Click **Updates and tune-ups**, and then click **Check for HP updates now**.
3. Follow the on-screen instructions.
4. At the download area, follow these steps:
 - a. Identify the most recent BIOS update and compare it to the BIOS version currently installed on your computer. If the update is more recent than your BIOS, make a note of the date, name, or other identifier. You may need this information to locate the update later, after it has been downloaded to your hard drive.
 - b. Follow the on-screen instructions to download your selection to the hard drive.


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

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

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

1. From the Start screen, type `file`, and then select **File Explorer**.
2. Click your hard drive designation. The hard drive designation is typically Local Disk (C:).
3. Using the hard drive path you recorded earlier, open the folder on your hard drive that contains the update.
4. Double-click the file that has an `.exe` extension (for example, `filename.exe`).

The BIOS installation begins.
5. Complete the installation by following the on-screen instructions.

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

Using HP PC Hardware Diagnostics (UEFI)

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

To start HP PC Hardware Diagnostics UEFI:

1. Turn on or restart the computer, quickly press **esc**, and then press **f2**.

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

- a. Connected USB drive



NOTE: To download the HP PC Hardware Diagnostics (UEFI) tool to a USB drive, see [Downloading HP PC Hardware Diagnostics \(UEFI\) to a USB device on page 48](#).

- b. Hard drive

- c. BIOS

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



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

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



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


1. Go to <http://www.hp.com>.
2. Click **Support & Drivers**, and then click the **Drivers & Downloads** tab.
3. Enter the product name in the text box, and then click **Go**.
4. Select your computer model, and then select your operating system.
5. In the **Diagnostic** section, click **HP UEFI Support Environment**.

– or –

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

7 Ubuntu Linux – Using Setup Utility (BIOS) and System Diagnostics

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 includes settings for the types of peripherals installed, the startup sequence of the computer, and the amount of system and extended memory.

 **NOTE:** Use extreme care when making changes in Setup Utility. Errors can prevent the computer from operating properly.

Starting Setup Utility

- ▲ Turn on or restart the computer. While the computer is booting press **esc**. When the Startup menu is displayed, press **f10**.

Using Setup Utility

Changing the language of Setup Utility

1. Start Setup Utility.
2. Use the arrow keys to select **System Configuration > Language**, and then press **enter**.
3. Use the arrow keys to select a language, and then press **enter**.
4. When a confirmation prompt with your language selected is displayed, press **enter**.
5. To save your change and exit Setup Utility, use the arrow keys to select **Exit > Exit Saving Changes**, and then press **enter**.

Your change takes effect immediately.

Navigating and selecting in Setup Utility

Setup Utility does not support the TouchPad. Navigation and selection are by keystroke.

- To choose a menu or a menu item, use the arrow keys.
- To choose an item in a list or to toggle a field—for example an Enable/Disable field—use either the arrow keys or **f5** and **f6**.
- To select an item, press **enter**.
- To close a text box or return to the menu display, press **esc**.
- To display additional navigation and selection information while Setup Utility is open, press **f1**.

Displaying system information

1. Start Setup Utility.
2. Select the **Main** menu. System information such as the system time and date, and identification information about the computer is displayed.
3. To exit Setup Utility without changing any settings, use the arrow keys to select **Exit > Exit Discarding Changes**, and then press **enter**.

Restoring factory default settings in Setup Utility

1. Start Setup Utility.
2. Use the arrow keys to select **Exit > Load Setup Defaults**, and then press **enter**.
3. When the Setup Confirmation is displayed, press **enter**.
4. To save your change and exit Setup Utility, use the arrow keys to select **Exit > Exit Saving Changes**, and then press **enter**.

The Setup Utility factory settings take effect when the computer restarts.



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

Exiting Setup Utility

- To exit Setup Utility and save your changes from the current session:
If the Setup Utility menus are not visible, press **esc** to return to the menu display. Then use the arrow keys to select **Exit > Exit Saving Changes**, and then press **enter**.
- To exit Setup Utility without saving your changes from the current session:
If the Setup Utility menus are not visible, press **esc** to return to the menu display. Then use the arrow keys to select **Exit > Exit Discarding Changes**, and then press **enter**.

Updating the BIOS

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

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

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


Determining the BIOS version

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

BIOS version information (also known as *ROM date* and *System BIOS*) can be displayed by using Setup Utility.

1. Start Setup Utility.
2. If the system information is not displayed, use the arrow keys to select the **Main** menu.
BIOS and other system information is displayed.
3. To exit Setup Utility, use the arrow keys to select **Exit > Exit Discarding Changes**, and then press **enter**.

Downloading a BIOS update

 **CAUTION:** To reduce the risk of damage to the computer or an unsuccessful installation, download and install a BIOS update only when the computer is connected to reliable external power using the AC adapter. Do not download or install a BIOS update while the computer is running on battery power, 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 Suspend or Hibernation.

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

1. Access the page on the HP website that provides software for your computer.
2. Follow the on-screen instructions to identify your computer and access the BIOS update you want to download.
3. At the download area, follow these steps:
 - a. Identify the BIOS update that is later than the BIOS version currently installed on your computer. Make a note of the date, name, or other identifier. You may need this information to locate the update later, after it has been downloaded to your hard drive.
 - b. Follow the on-screen instructions to download your selection to the hard drive.

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

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

BIOS installation procedures vary. Follow any instructions that are displayed on the screen after the download is complete.



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

Using Advanced System Diagnostics

Advanced System Diagnostics allows you to run diagnostic tests to determine if the computer hardware is functioning properly. The following diagnostic tests are available in Advanced System Diagnostics:

- **Start-up test**—This test analyzes the main computer components that are required to start the computer.
- **Run-in test**—This test repeats the start-up test and checks for intermittent problems that the start-up test does not detect.
- **Hard disk test**—This test analyzes the physical condition of the hard drive, and then checks all data in every sector of the hard drive. If the test detects a damaged sector, it attempts to move the data to a good sector.
- **Memory test**—This test analyzes the physical condition of the memory modules. If it reports an error, replace the memory modules immediately.
- **Battery test**—This test analyzes the condition of the battery and calibrates the battery if necessary. If the battery fails the test, contact support to report the issue and purchase a replacement battery.
- **System Tune-Up**—This group of additional tests checks your computer to make sure that the main components are functioning correctly. System Tune-Up runs longer and more comprehensive tests on memory modules, hard drive SMART attributes, the hard drive surface, the battery (and battery calibration), video memory, and the WLAN module status.

You can view system information and error logs in the Advanced System Diagnostics window.

To start Advanced System Diagnostics:

1. Turn on or restart the computer. While the computer is booting press **esc**. When the Startup menu is displayed, press **f2**.
2. Click the diagnostic test you want to run, and then follow the on-screen instructions.



NOTE: If you need to stop a diagnostics test while it is running, press **esc**.

8 Backing up, restoring, and recovering

This chapter provides information about the following processes:

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

Creating recovery media and backups

1. After you successfully set up the computer, create HP Recovery media. This step creates a backup of the HP Recovery partition on the computer. The backup can be used to reinstall the original operating system in cases where the hard drive is corrupted or has been replaced.

HP Recovery media you create will provide the following recovery options:

- **System Recovery**—Reinstalls the original operating system and the programs that were installed at the factory.
- **Minimized Image Recovery**—Reinstalls the operating system and all hardware-related drivers and software, but not other software applications.
- **Factory Reset**—Restores the computer to its original factory state by deleting all information from the hard drive and re-creating the partitions. Then it reinstalls the operating system and the software that was installed at the factory.

See [Creating HP Recovery media on page 53](#).

2. Use the Windows tools to create system restore points and create backups of personal information. For more information and steps, see Help and Support. From the Start screen, type `help`, and then select **Help and Support**.

Creating HP Recovery media

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

- Only one set of HP Recovery media can be created. Handle these recovery tools carefully, and keep them in a safe place.
- HP Recovery Manager examines the computer and determines the required storage capacity for the blank USB flash drive or the number of blank DVD discs that will be required.
- To create recovery discs, your computer must have an optical drive with DVD writer capability, and you must use only high-quality blank DVD-R, DVD+R, DVD-R DL, or DVD+R DL discs. Do not use rewritable discs such as CD±RW, DVD±RW, double-layer DVD±RW, or BD-RE (rewritable Blu-ray) discs; they are not compatible with HP Recovery Manager software. Or instead you can use a high-quality blank USB flash drive.
- If your computer does not include an integrated optical drive with DVD writer capability, but you would like to create DVD recovery media, you can use an external optical drive (purchased

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

- Be sure that the computer is connected to AC power before you begin creating the recovery media.
- The creation process can take up to an hour or more. Do not interrupt the creation process.
- If necessary, you can exit the program before you have finished creating all of the recovery DVDs. HP Recovery Manager will finish burning the current DVD. The next time you start HP Recovery Manager, you will be prompted to continue, and the remaining discs will be burned.

To create HP Recovery media:



IMPORTANT: For tablets, connect to the keyboard dock before beginning these steps (select models only).

1. From the Start screen, type `recovery`, and then select **HP Recovery Manager**.
2. Select **Recovery Media Creation**, and then follow the on-screen instructions.

If you ever need to recover the system, see [Recovering using HP Recovery Manager on page 55](#).

Restore and recovery

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

- Windows offers several options for restoring from backup, refreshing the computer, and resetting the computer to its original state. For more information and steps, see Help and Support. From the Start screen, type `help`, and then select **Help and Support**.
- If you need to correct a problem with a preinstalled application or driver, use the Drivers and Applications Reinstall option of HP Recovery Manager to reinstall the individual application or driver.

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

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

For more information, see [Recovering using HP Recovery Manager on page 55](#).

- If you want to recover the computer's original factory partitioning and content, you can choose the System Recovery option from the HP Recovery partition (select models only) or use the HP Recovery media that you have created. For more information, see [Recovering using HP Recovery Manager on page 55](#). If you have not already created recovery media, see [Creating HP Recovery media on page 53](#).

- If you have replaced the hard drive, you can use the Factory Reset option of HP Recovery media to restore the factory image to the replacement drive. For more information, see [Recovering using HP Recovery Manager on page 55](#).
- If you wish to remove the recovery partition to reclaim hard drive space, HP Recovery Manager offers the Remove Recovery Partition option.

For more information, see [Removing the HP Recovery partition on page 56](#).

Recovering using HP Recovery Manager

HP Recovery Manager software allows you to recover the computer to its original factory state by using the HP Recovery media that you created or by using the HP Recovery partition (select models only). If you have not already created recovery media, see [Creating HP Recovery media on page 53](#).

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

- System Recovery—Reinstalls the original operating system, and then configures the settings for the programs that were installed at the factory.
- Minimized Image Recovery (select models only)—Reinstalls the operating system and all hardware-related drivers and software, but not other software applications.
- Factory Reset—Restores the computer to its original factory state by deleting all information from the hard drive and re-creating the partitions. Then it reinstalls the operating system and the software that was installed at the factory.

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

What you need to know

- HP Recovery Manager recovers only software that was installed at the factory. For software not provided with this computer, you must either download the software from the manufacturer's website or reinstall the software from the media provided by the manufacturer.
- Recovery through HP Recovery Manager should be used as a final attempt to correct computer issues.
- HP Recovery media must be used if the computer hard drive fails. If you have not already created recovery media, see [Creating HP Recovery media on page 53](#).
- To use the Factory Reset option, you must use HP Recovery media. If you have not already created recovery media, see [Creating HP Recovery media on page 53](#).
- If the HP Recovery media does not work, you can obtain recovery media for your system from support. See the *Worldwide Telephone Numbers* booklet included with the computer. You can also find contact information from the HP website. Go to <http://www.hp.com/support>, select your country or region, and follow the on-screen instructions.



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

Using the HP Recovery partition (select models only)

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

To start HP Recovery Manager from the HP Recovery partition:



IMPORTANT: For tablets, connect to the keyboard dock before beginning these steps (select models only).

1. Press **f11** while the computer boots.
– or –
Press and hold **f11** as you press the power button.
2. Choose your keyboard layout.
3. Select **Troubleshoot** from the boot options menu.
4. Select **Recovery Manager**, and then follow the on-screen instructions.

Using HP Recovery media to recover

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

1. If possible, back up all personal files.
2. Insert the HP Recovery media that you created, and then restart the computer.



NOTE: If the computer does not automatically restart in HP Recovery Manager, change the computer boot order. See [Changing the computer boot order on page 56](#).

3. Follow the on-screen instructions.

Changing the computer boot order

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

To change the boot order:

1. Insert the HP Recovery media you created.
2. Restart the computer, quickly press **esc**, and then press **f9** for boot options.
3. Select the optical drive or USB flash drive you want to boot from.
4. Follow the on-screen instructions.

Removing the HP Recovery partition

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



IMPORTANT: After you remove the HP Recovery partition, you can no longer use the Windows Refresh option, the Windows option to remove everything and reinstall Windows, or the HP Recovery Manager option. So before you remove the Recovery partition, create HP Recovery media; see [Creating HP Recovery media on page 53](#).

Follow these steps to remove the HP Recovery partition:


1. From the Start screen, type *recovery*, and then select **HP Recovery Manager**.
2. Select **Remove Recovery Partition**, and then follow the on-screen instructions.


9 Ubuntu Linux – Backing up, restoring, and recovering

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

Performing a system recovery

The Deja Dup Restore Tool allows you to repair or restore the computer to its original factory state. You can create an image restore DVD using an optional external DVD±RW optical drive. You can also create a restore image on a USB storage device.

 **CAUTION:** Using Restore completely erases hard drive contents and reformats the hard drive. All files you have created and any software installed on the computer are permanently removed. The recovery tool reinstalls the original operating system and programs and drivers that were installed at the factory. Software, drivers, and updates not installed at the factory must be manually reinstalled. Personal files must be restored from a backup.

 **NOTE:** HP recommends that you create the image restore in the event of a system failure.


Creating the restore DVDs

The restore creation software creates a set of system restore discs using blank, writable DVDs (DVD-R or DVD+R). HP recommends using blank DVD+R discs from a manufacturer you trust, because these recovery DVDs are so important. You need approximately 3 blank DVD+R discs. The program states how many discs are needed at the beginning of the process.


To create restore DVDs:

1. Click the **System** menu icon at the far right of the top panel, and then click **System Settings > Backup**.
2. Select **Storage** from the panel on the left side of the window, click the down-arrow next to **Backup Location**, and select the DVD from the drop-down list.
3. Select **Overview** from the panel on the left side of the window, and then click **Back Up Now**.
4. Follow the on-screen instructions.

Creating a restore image on a USB device


 **NOTE:** Be sure AC power is connected to the computer you begin.

Verify the exact amount of free space on your storage device before you begin the creation process. For most models, you will need at least 8 GB of free space on the storage device. However, depending on the drivers and software installed on your computer, you may need slightly more than 8 GB of space. **HP recommends that you use a 16 GB device or above for best results.**

 **IMPORTANT:** Remember to insert your USB device into the USB port on the computer before starting this procedure.


To create the restore image:

1. Click the **System menu** icon at the far right of the top panel, and then click **System Settings > Backup**.
2. Select **Storage** from the panel on the left side of the window, click the down-arrow next to **Backup location**, and select the USB device from the drop-down list.


 **NOTE:** If the USB device is not listed in the drop-down list for Backup Location, select **Local Folder**, and then click the **Choose Folder** button. Select the USB device from the panel on the left side of the **Choose Folder** window, and click **OK**.

3. Select **Overview** from the panel on the left side of the window, and then click **Backup Now**.
4. Follow the on-screen instructions.

Performing recovery using the restore media

 **NOTE:** The following procedure uses the F11 BIOS Recovery feature to perform the recovery.

1. If possible, back up all personal files.
2. Shut down the computer.
3. Be sure the restore DVD or USB device is connected to the computer.
4. Restart the computer.
5. Using the arrow keys, select **Recovery**, and then press **enter**.
6. Follow the on-screen instructions.


 **NOTE:** If you are unable to boot (start up) your computer with the primary operating system, and you did not create a system recovery disc, you must purchase an *Ubuntu Operating System* DVD to reinstall the operating system. For additional information, refer to the *Worldwide Telephone Numbers* booklet for more information.

Backing up your information

You should back up your computer files on a regular schedule to maintain a current backup. You can manually back up your information to an optional external drive, a network drive, discs, or the Ubuntu One website. Back up your system at the following times:

- At regularly scheduled times
- Before the computer is repaired or restored
- Before you add or modify hardware or software

To back up your home directory files to the Ubuntu website using the Deja Dup Backup Tool:

 **NOTE:** Before you back up your information, be sure you have designated a location to save the backup files.

1. Click the **System menu** icon at the far right of the top panel, and then click **System Settings > Backup** icon.
2. Select **Folders** from the panel on the left side of the window, and beneath **Folders to back up**, select the folders to back up.

3. Select **Storage** from the panel on the left side of the window, click the down-arrow next to **Backup Location**, and select **Ubuntu One** from the drop-down list.
4. Select **Overview** from the panel on the left side of the window, and then click **Back Up Now**.



NOTE: The first time you backup your files to Ubuntu One, you will need to create an account to sign into Ubuntu One. Enter your email address and password into the account sign-in boxes and follow the on-screen instructions to complete the sign-in process.

To restore backup files:


1. Click the **System menu** icon at the far right of the top panel, and then click **System Settings > Backup** icon.
2. Click **Restore**, select the location of the backup files and the folder name, and then click **Forward**.
3. Under **Restore from When?**, select the date of the files to be restored and click **Forward**.
4. Select the location and folder where the files are to be restored and click **Forward**.
5. Follow the on-line instructions.
6. Click **Restore** to start restoring the files, or click **Cancel** to cancel the operation.



NOTE: You may also back up to cloud storage services provided by various companies. For a small fee, they will keep your backup for you. A cloud service is recommended since it is an easy way to keep your backups off-site and safe from any disaster.

10 Specifications

Computer specifications

	Metric	U.S.
Dimensions		
NOTE: Dimensions vary based on configurations.		
Length	19.45 cm	9.4 in
Width	27.28 cm	13.4 in
Height (front to rear)	2.245 cm	0.9 to 1.1 in
Weight		
Equipped with no optical drive, 1 DIMM, hard drive, WLAN module, webcam, 3 cell battery	1.0 kg	3.27 lbs
Input power		
Operating voltage	19 V dc @ 2.1 A – 40 W 19.5 V dc @ 3.33 A – 65 W	
DC plug of external HP power supply		
Temperature		
Operating (writing to optical disc)	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Relative humidity		
Operating	10% to 90%	
Nonoperating	5% to 95%	
Maximum altitude (unpressurized)		
Operating (14.7 to 10.1 psia)	-15 m to 3,048 m	50 ft to 10,000 ft
Nonoperating (14.7 to 4.4 psia)	-15 m to 12,192 m	-50 ft to 40,000 ft
Shock		
Operating	125 g, 2 ms, half-sine	
Nonoperating	200 g, 2 ms, half-sine	
Random vibration		
Operating	0.75 g zero-to-peak, 10 Hz to 500 Hz, 0.25 oct/min sweep rate	

	Metric	U.S.
Nonoperating	1.50 g zero-to-peak, 10 Hz to 500 Hz, 0.5 oct/min sweep rate	

NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The computer operates well within this range of temperatures.

35.6-cm (10.1-in), HD+ display specifications

	Metric	U.S.
Active diagonal size	35.6-cm	10.1-in
Resolution	1600x900 (HD+)	
Active area	309.399x173.952	
PPI	112	
Surface treatment	Anti-glare	
Contrast ratio	300:1 (typical)	
Response time	8 ms	
Brightness	220 nits (typical)	
Viewing angle	SVA	
Backlight	LED	
Luminance uniformity @ 13 points	1.4 (typ), 1.6 (max)	
Lifetime (1/2 luminance)	12,000 hours	
Color coordinate (white)	(0.313, 0.329)	
Color tolerance (White)	+/- 0.02	
Color tolerance (W, R, G, B)	+/- 0.03	
Color gamut	45% typical	


Hard drive specifications

500-GB*	
Dimensions	
Height	7 mm
Width	70 mm
Weight	101 g
Interface type	SATA
Transfer rate	100 MB/sec
Security	ATA security
Seek times (typical read, including setting)	
Single track	3 ms
Average	13 ms
Maximum	24 ms
Logical blocks	1,048,576,000
Disc rotational speed	5400 rpm
Operating temperature	
*1 GB = 1 billion bytes when referring to hard drive storage capacity. Actual accessible capacity is less. Actual drive specifications may differ slightly.	
NOTE: Certain restrictions and exclusions apply. Contact technical support for details.	

Specification information in Device Manager

Device Manager allows you to view and control the hardware attached to the computer, as well as provides hardware specification information.

You can also add hardware or modify device configurations using Device Manager.

 **NOTE:** Windows 7 and Windows Vista include the User Account Control feature to improve the security of your computer. You may be prompted for your permission or password for tasks such as installing software, running utilities, or changing Windows settings. Refer to Windows Help and Support for more information.

After you open Device Manager, drill-down to a device and double-click it to access its properties.

To access Device Manager in Windows 8:

1. From the Start screen, type `control`, and then select **Control Panel**.
2. Select **System and Security**, and then in the System area, click **Device Manager**.

A list display all the devices installed in your computer.

To access Device Manager in Windows 7:

1. Select **Start > Computer > System properties**.
2. In the left pane, click **Device Manager**.

11 Power cord set requirements

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

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

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

Requirements for all countries and regions

The following requirements are applicable to all countries and regions:

- The length of the power cord set must be at least **1.5 m** (5.0 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 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

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
India	ISI	1
Israel	SII	1
Italy	IMQ	1

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

1. The flexible cord must be Type H05VV-F, 3-conductor, 0.75mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
2. The flexible cord must be Type SVT/SJT or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a 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, 3-conductor, 0.75mm² or 1.25mm² 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, 3-conductor, 0.75mm² 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 3X0.75mm² conductor size. KTL logo and individual approval number must be on each element. Corset approval number and logo must be printed on a flag label.
6. The flexible cord must be Type HVCTF 3X1.25mm² 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 x 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 3X0.75/1.00mm² conductor size, with plug BS 1363/A with BSI or ASTA marks.

12 Recycling

Battery

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

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

Index

- A**
 - AC adapter 4
 - AC adapter, spare part numbers 17
 - action keys
 - identifying 10
 - adapter
 - spare part number 17
 - Advanced System Diagnostics
 - using for Ubuntu Linux
 - computer models 52
 - audio, product description 1
 - audio-out (headphone)/audio-in (microphone) jack 4
- B**
 - backups 53
 - for Ubuntu Linux computer models 57
 - personal information for Ubuntu Linux computer models 58
 - base enclosure
 - spare part number 17, 28
 - base enclosure, spare part number 15
 - battery
 - spare part number 15, 17
 - BIOS
 - determining version 46
 - determining version for Ubuntu Linux computer models 51
 - downloading an update 47
 - downloading an update for Ubuntu Linux computer models 51
 - updating 46
 - updating for Ubuntu Linux computer models 51
 - Bluetooth card
 - spare part number 37
 - Bluetooth label 12
 - boot order
 - changing HP Recovery Manager 56
 - bottom 12
 - buttons
 - left TouchPad 8
 - power 9
 - right TouchPad 8
- C**
 - cables, service considerations 20
 - chipset, product description 1
 - components
 - bottom 11
 - display 5
 - left side 4
 - right side 4
 - top 7
 - computer specifications 60
 - connector, power 4
 - connectors, service considerations 20
- D**
 - default settings, restoring for Ubuntu Linux computer models 50
 - deleted files
 - restoring 54
 - diskette drive
 - precautions 20
 - display assembly
 - removal 31
 - spare part numbers 30, 31
 - Display back cover
 - spare parts 16
 - display bezel
 - spare part number 17
 - display bracket
 - spare parts 16
 - display cable
 - spare parts 16
 - display components, spare part numbers 16
 - display cover
 - spare part number 17
 - display panel
 - product description 1
 - spare part number 15
 - spare part numbers 18
 - display panel assembly
 - removal 30
 - display panel cable
 - removal 33
 - display specifications 61
 - drives
 - preventing damage 20
- E**
 - electrostatic discharge 21
 - esc key, identifying 10
 - Ethernet, product description 1
 - external media cards, product description 2
- F**
 - factory settings, restoring for Ubuntu Linux computer models 50
 - fn key, identifying 10
- G**
 - graphics, product description 1
 - grounding equipment and methods 23
- H**
 - hard drive
 - precautions 20
 - product description 1
 - removing 40
 - spare part numbers 15, 18
 - specifications 62
 - hard drive insert
 - spare part number 17
 - spare part numbers 18
 - hardware kit
 - spare part number 17
 - HDMI port
 - identifying 4
 - heat shield, spare part number 15

HP PC Hardware Diagnostics
(UEFI)
 downloading 48
 using 47
HP Recovery Manager
 correcting boot problems 56
 starting 55
HP Recovery media
 creating 53
 recovery 56
HP Recovery partition
 recovery 55
 removing 56

I
internal display switch,
 identifying 5
internal microphones, identifying
 6

J
jacks
 audio-out (headphone)/audio-in
 (microphone) 4
 network 4
 RJ-45 (network) 4

K
keyboard
 product description 2
 spare part number 17, 18
keys
 action 10
 esc 10
 fn 10
 Windows 10

L
labels
 Bluetooth 12
 regulatory 12
 serial number 11
 service 11
 wireless certification 12
 WLAN 12
lights
 AC adapter 4
 RJ-45 (network) status 4

M
memory card reader, identifying
 5
memory card, identifying 5
memory module
 product description 1
microphone (audio-in) jack
 product description 1
minimized image
 creating 55
minimized image recovery 55
model name 1

N
network jack, identifying 4

O
operating system, product
 description 2
optical drive
 precautions 20
 product description 1
original system recovery 55

P
packing guidelines 22
plastic parts 19
pointing device, product
 description 2
ports
 charging (powered) 4
 HDMI 4
 product description 2
 USB 2.0 4
 USB 3.0 4
power adapter
 spare part numbers 18
power button, identifying 9
power connector, identifying 4
power cord
 set requirements 63
 spare part numbers 17, 18
power requirements, product
 description 2
processor
 product description 1
product description
 audio 1
 chipset 1
 display panel 1
 Ethernet 1

external media cards 2
graphics 1
hard drives 1
keyboard 2
memory module 1
microphone 1
operating system 2
optical drives 1
pointing devices 2
ports 2
power requirements 2
processors 1
product name 1, 2
restore media 2
security 2
serviceability 2
webcam 1
wireless 1
product name 1, 2
product name and number,
 computer 11

R
raw panel
 spare part number 16, 18
recovery
 discs 53, 56
 HP Recovery Manager 55
 media 56
 options 54
 starting 55
 supported discs 53
 system 55
 USB flash drive 56
 using HP Recovery media 54
recovery media
 creating 53
 creating using HP Recovery
 Manager 54
recovery partition
 removing 56
regulatory information
 regulatory label 12
 wireless certification labels 12
removal/replacement
 preliminaries 19
 procedures, Authorized Service
 Provider 24

- restore
 - recovery for Ubuntu Linux
 - computer models 58
 - Windows File History 54
- restore DVDs
 - for Ubuntu Linux computer models 57
- restore USB device
 - for Ubuntu Linux computer models 57
- RJ-45 (network) jack, identifying 4
- RJ-45 (network) status lights, identifying 4
- RTC battery
 - removal 44
 - spare part number 15, 17, 44
- rubber kit
 - spare part number 17
- rubber kit, spare part number 17

S

- screw kit
 - spare part number 17
- screw Kit, spare part number 17
- security cable slot, identifying 4
- security, product description 2
- serial number 11
- serial number, computer 11
- service considerations 19
- service labels
 - locating 11
- serviceability, product description 2
- Setup Utility
 - changing the language for Ubuntu Linux computer models 49
 - displaying system information for Ubuntu Linux computer models 50
 - exiting for Ubuntu Linux computer models 50
 - navigating for Ubuntu Linux computer models 49
 - restoring default settings for Ubuntu Linux computer models 50

- selecting for Ubuntu Linux
 - computer models 49
- starting for Ubuntu Linux
 - computer models 49
- slots
 - memory card reader 5
 - security cable 4
- speaker assembly
 - removal 39
 - spare part number 15, 39
- speakers
 - identifying 11
 - spare part number 18
- specifications
 - computer 60
 - display 61
 - hard drive 62
- static-shielding materials 23
- supported discs
 - recovery 53
- system board
 - removal 42
 - spare part numbers 15, 18, 42
- system information, displaying for Ubuntu Linux computer models 50
- system recovery 55
 - for Ubuntu Linux computer models 57
- system restore point
 - creating 53

T

- tools required 19
- top cover
 - removal 28
 - spare part number 15
 - spare part numbers 18
 - TouchPad button board 15
- TouchPad
 - buttons 8
- TouchPad cable
 - spare part number 15
- TouchPad zone, identifying 8
- transporting guidelines 22
- traveling with the computer 12

U

- USB 2.0 ports, identifying 4
- USB 3.0 ports, identifying 4

V

- vents, identifying 11

W

- webcam
 - identifying 6
 - product description 1
 - spare part numbers 18
- webcam light, identifying 6
- Windows
 - File History 54
 - restoring files 54
 - system restore point 53
- Windows key, identifying 10
- wireless certification label 12
- wireless, product description 1
- WLAN
 - spare part number 15, 17
- WLAN antenna
 - spare parts 16
- WLAN antennas, identifying 6
- WLAN device 12
- WLAN label 12
- WLAN/Bluetooth combo card
 - removal 37
 - spare part number 37