HP Pavilion 14 Chromebook

Maintenance and Service Guide

SUMMARY

CAUTION: Your computer has user-replaceable parts and *non-user-replaceable parts that should only be replaced by an authorized service provider*. Accessing some internal parts can damage the computer or void your warranty. Go to Removal and replacement procedures on page 15 for details.

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Safety warning notice

WARNING! To reduce the possibility of heat-related injuries or of overheating the device, do not place the device directly on your lap or obstruct the device air vents. Use the device only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or rugs or clothing, to block airflow. Also, do not allow the AC adapter to contact the skin or a soft surface, such as pillows or rugs or clothing, during operation. The device and the AC adapter comply with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC 60950).

Table of contents

1 Product description 1

2 External component identification 3

Display 3

Top 4

TouchPad 4

Lights, speakers, and buttons 5

Left side 6

Right side 7

Bottom 8

3 Illustrated parts catalog 9

Service label 9

Computer major components 10

Display assembly subcomponents 12

Miscellaneous parts 12

Sequential part number listing 13

4 Removal and replacement procedures 15

Preliminary replacement requirements 15

Tools required 15

Service considerations 15

Plastic parts 15

Cables and connectors 15

Drive handling 16

Grounding guidelines 16

Electrostatic discharge damage 16

Packaging and transporting guidelines 17

Component replacement procedures 19

Service label 19

Battery 20

Computer feet 21

Display panel 22

Keyboard 24

Top cover 27

Power button board 30

Hard drive 31
USB board/Audio jack 33
WLAN module 34
System board 37
Memory module 40
RTC battery 43
PCH heat sink 44
Heat sink 45
Fan 46
Speaker assembly 47
RJ-45 cover 48
Display Assembly 49
Power connector 52

5 Specifications 54
Computer specifications 54
35.6 cm (14.0 in), display specifications 55
Hard drive specifications 55
Solid-state drive specifications 56

6 Power cord set requirements 57
Requirements for all countries 57
Requirements for specific countries and regions 58

7 Recycling 60

Index 61

1 Product description

Category	Description
Product Name	HP Pavilion 14 Chromebook
Processor	Intel® Celeron® 847 (1.1GHz, 1333 MHz/2 MB L3 Cache, dual core, controllable TDP, 8 W-17 W)
Chipset	Intel NM70 Express chipset
Graphics	Intel HD Graphics Supports HD Decode, DX11, and HDMI
Display panel	**35.6 cm** (14.0 in), high-definition (HD), white light-emitting diode (WLED), flat (3.6 mm) SVA BrightView (1366×768) display: • Typical brightness: 200 cd/m^2 (nits) • All display assemblies include two wireless local area network (WLAN) antenna cables • Supports 16:9 ultra-wide aspect ratio
Memory	Two SODIMM memory module slots
	Dual-channel memory support
	DDR3L-1600 MHz Dual Channel support
	DDR3-1333 MHz support (DDR3L-1600 downgraded to DDR3-1333)
	Supports up to 4 GB of system RAM in the following configurations: • 4096 MB total system memory (4096 MB × 1) • 2048 MB total system memory (2048 MB × 1)
Hard drives	Supports **6.35 cm** (2.5 in) hard drives in **9.5 mm** (.37 in) and **7.0 mm** (.28 in) thicknesses
	Serial ATA (SATA)
	Supports the following single hard drive configurations:
	• 320 GB, 5400 rpm, 9.5 mm
	• 320 GB, 5400 rpm, 7.0 mm
	• 16 GB solid-state drive
Audio and video	One digital microphone
	HD audio
	Two Altec Lansing speakers
	HP TrueVision HD camera (fixed, no tilt) with activity LED, USB 2.0, M-JPEG, 1280 x 720 by 30 frames per second
Ethernet	Integrated 10/100 network interface card (NIC)
Wireless	Integrated wireless local area network (WLAN) options by way of wireless module

Category	Description
	Two WLAN antennas built into display assembly
	Support for the following WLAN formats: • Atheros AR9462 802.11 a/b/g/n 2x2 Bluetooth® 4.0 combo adapter, HMC
External media card	HP Multi-Format Digital Media Reader slot with push-push technology, supporting the following digital card formats: • Secure Digital (SD) Memory Card • Secure Digital High Capacity (SDHC) Memory Card • Secure Digital Extended Capacity (SDXC) Memory Card • MultiMediaCard (MMC)
Internal media cards	• One half-size Mini Card slot for WLAN
Ports	• Audio-in/Audio-out (combination headphone/microphone)
	• HDMI version 1.4 supporting up to 1920×1200 @ 60Hz
	• HP AC power adapter
	• RJ-45 (Ethernet, includes link and activity lights)
	• USB 2.0 (3 ports)
Keyboard/pointing devices	Full-size, island-style keyboard
	TouchPad with two buttons: • Multitouch gesture support enabled as default • Taps enabled by default
Power requirements	**AC adapter** 65 W AC adapter, nPFC
	Battery 4 cell, 37 Whr, 2.55 Ah, Li-ion battery Supports fast charge
Security	Security cable slot Trusted Platform Module (TPM) functionality
Operating system	**Preinstalled:**
	• Google™ Chrome OS
Serviceability	**End-user replaceable parts:** • AC adapter • Battery • Keyboard

2 External component identification

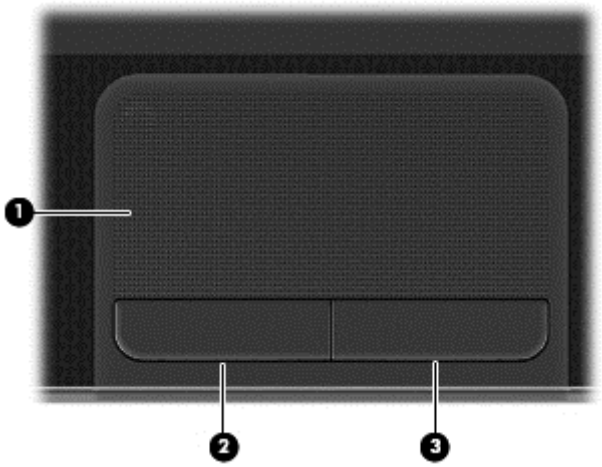
Display

Component		Description
(1)	WLAN antennas (2)*	Send and receive wireless signals to communicate with wireless local area networks (WLANs).
(2)	Webcam light	On: The webcam is in use.
(3)	HP TrueVision HD Webcam	Records video, captures still photographs, and allows you to video conference and chat online using streaming video.
(4)	Internal microphone	Records sound.

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

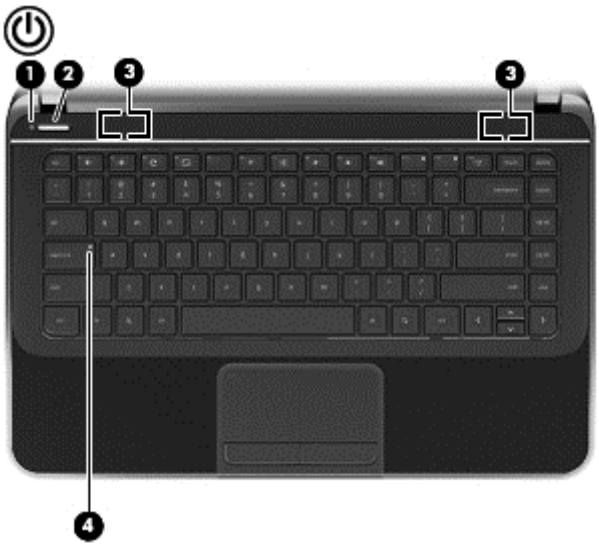
Top

TouchPad



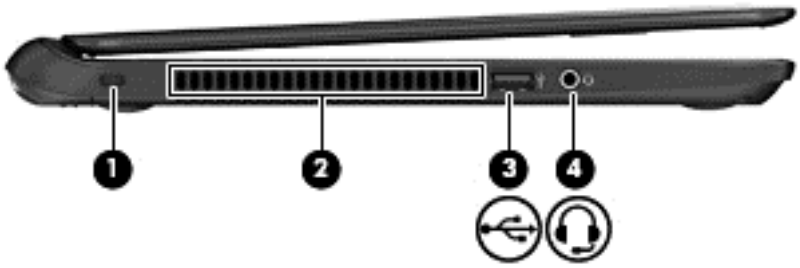
Component		Description
(1)	TouchPad zone	Moves the on-screen pointer and selects or activates items on the screen.
(2)	Left TouchPad button	Functions like the left button on an external mouse.
(3)	Right TouchPad button	Functions like the right button on an external mouse.

Lights, speakers, and buttons



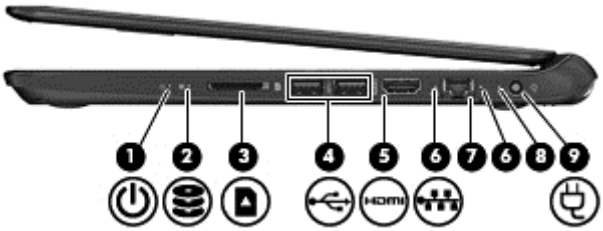
Component		Description
(1)	Power light	• White: The computer is on. • Blinking white: The computer is in the Sleep state, which is an energy-saving mode. The computer shuts off power to the display and other unneeded components. • Off: The computer is off.
(2)	Power button	• When the computer is off, press the button to turn on the computer. • When the computer is in the Sleep state, press the button briefly to exit that state. • When the computer is on and you want to lock the screen, briefly press the power button until you see the sign-in screen appear. Pressing the power button during screen lock mode will turn off the computer. • When computer is on and you want to turn off the computer, press and hold the power button until it turns off.
(3)	Speakers (2)	Produce sound.
(4)	Caps lock light	White: Caps lock is on, which switches the letter keys to all capital letters.

Left side



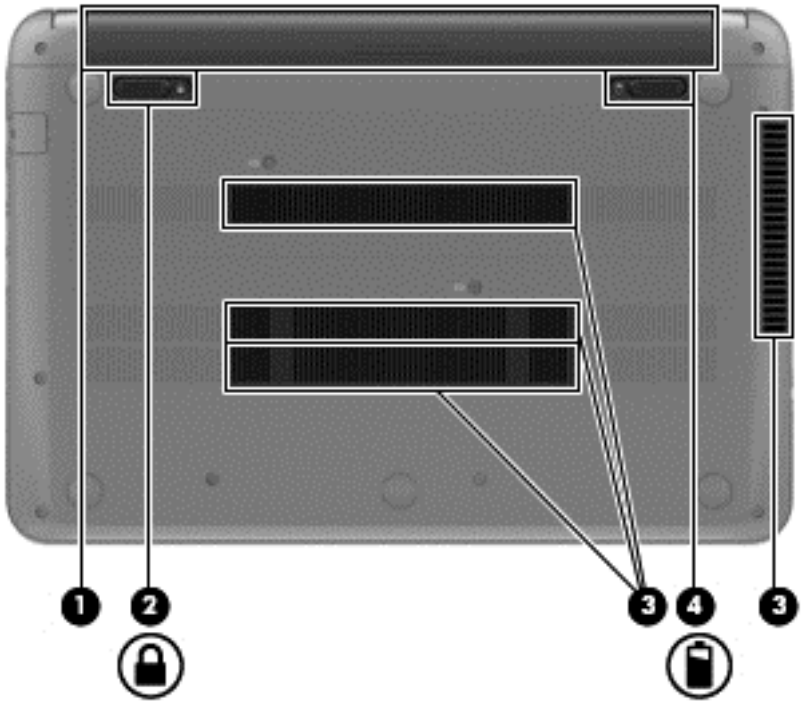
Component		Description
(1)	Security cable slot	Attaches an optional security cable to the computer. **NOTE:** The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.
(2)	Vent	Enables airflow to cool internal components. **NOTE:** The 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.
(3)	USB 2.0 port	Connects an optional USB 2.0 device.
(4)	Audio-out (headphone) jack/Audio-in (microphone) jack	Produces sound when connected to optional powered stereo speakers, headphones, earbuds, a headset, or television audio. Also connects an optional headset microphone. The jack does not support optional microphone-only devices. **WARNING!** To reduce the risk of personal injury, adjust the volume before using headphones, earbuds, or a headset. For additional safety information, see the *Regulatory, Safety and Environmental Notices*. **NOTE:** When a device is connected to the jack, the computer speakers are disabled. **NOTE:** Be sure that the device cable has a 4-conductor connector that supports both audio-out (headphone) and audio-in (microphone).

Right side



Component			Description
(1)		Power light	• White: The computer is on. • Blinking white: The computer is in the Sleep state, which is an energy-saving mode. The computer shuts off power to the display and other unneeded components. • Off: The computer is off.
(2)		Drive light	• Blinking white: The drive is being accessed.
(3)		Digital Media Slot	Supports the following digital card formats: • Secure Digital (SD) Memory Card • Secure Digital High Capacity (SDHC) Memory Card • Secure Digital Extended Capacity (SDxC) Memory Card • MultiMediaCard (MMC)
(4)		USB 2.0 ports (2)	Connect optional USB 2.0 devices.
(5)	HDMI	HDMI port	Connects an optional video or audio device, such as a high-definition television, or any compatible digital or audio device.
(6)		RJ-45 (network) jack lights	• White: Computer is connected to a network. • Blinking amber: Data is being transferred. **NOTE:** When both lights are off the computer is not connected to a network.
(7)		RJ-45 (network) jack	Connects a network cable.
(8)		AC adapter light	• White: The AC adapter is connected and the battery is charged. • Blinking white: The battery has reached a low battery level. • Amber: The AC adapter is connected and the battery is charging. • Off: The computer is using DC power.
(9)		Power connector	Connects an AC adapter.

Bottom



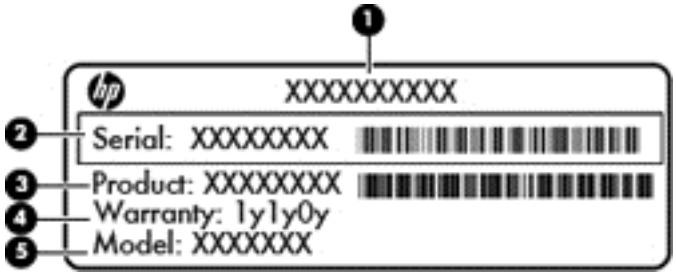
Component			Description
(1)		Battery bay	Holds the battery.
(2)		Battery lock	Unlocks and locks the battery.
(3)		Vents (4)	Enable airflow to cool internal components. **NOTE:** The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.
(4)		Battery release latch	Releases the battery from the battery bay.

3 Illustrated parts catalog

Service label

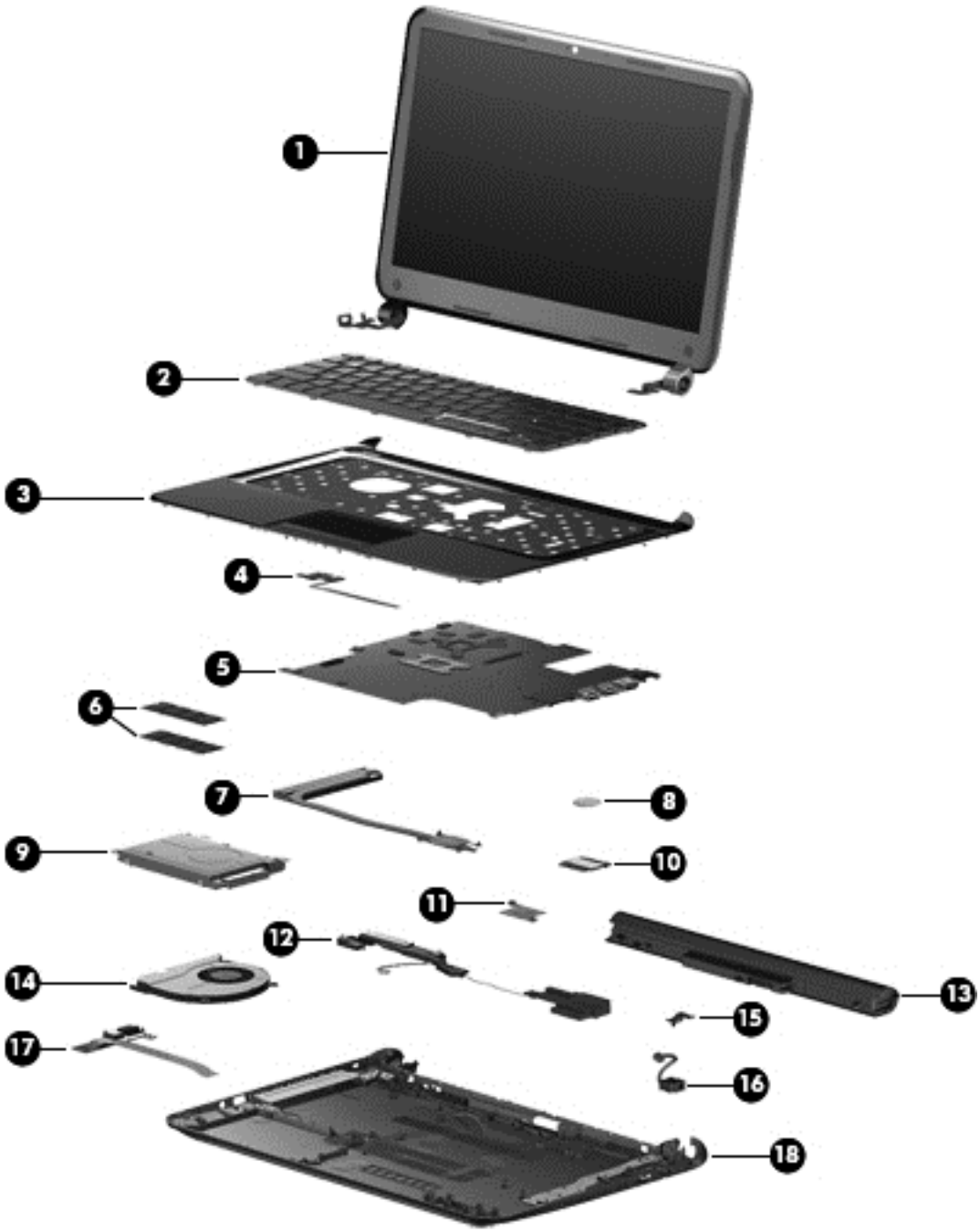
When ordering parts or requesting information, provide the computer serial number and model description provided on the service label. The service label is located on the bottom of the computer.

NOTE: Your label may look slightly different from the illustration in this section.



Item	Description	Function
(1)	Product name	This is the model name for the computer.
(2)	Serial number	This is an alphanumeric identifier that is unique to each product.
(3)	Product part number	This number provides specific information about the product's hardware components. The part number helps a service technician to determine what components and parts are needed.
(4)	Warranty period	This number describes the duration of the warranty period for the computer.
(5)	Model description (select models only)	This is the alphanumeric identifier needed to locate documents, drivers, and support for the computer.

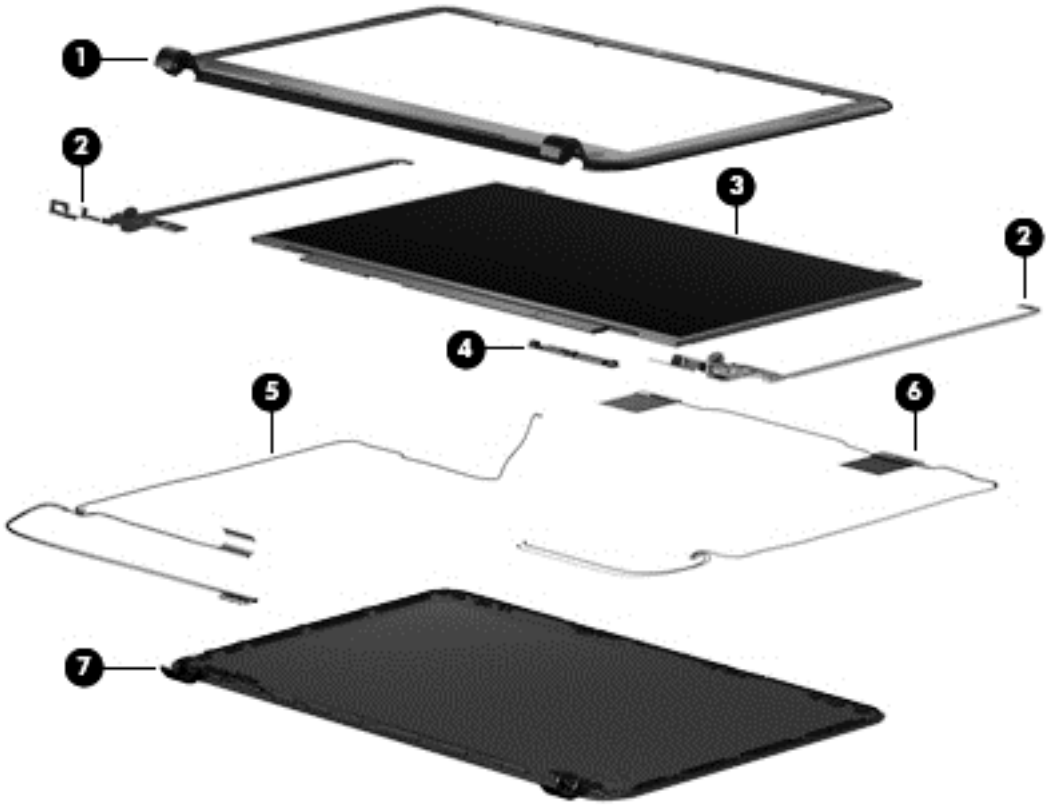
Computer major components



Item	Component	Spare part number
(1)	**35.6 cm (14.0 in), high definition (HD), WLED, SVA BrightView flat display assembly.** The display assembly is spared at the subcomponent level only. **NOTE:** For a full list of display spare parts, see Display assembly subcomponents on page 12.	
(2)	**Keyboard**, black finish (includes keyboard cable):	
	• For use in Canada	708135-DB1

Item	Component	Spare part number
	• For use in Latin America	708135-161
	• For use in the United States	708135-001
(3)	**Top cover**, sparkling black (includes TouchPad)	708136-001
(4)	**Power button board** (includes cable)	697901-001
(5)	**System board** (includes processor and replacement thermal material)	704989-001
(6)	**Memory modules** (two, DDR3-1600 MHz, PC3-12800):	
	• 4 GB	691740-001
	• 2 GB	691739-001
(7)	**Heat sink** (includes replacement thermal material)	697915-001
(8)	**RTC battery**	697917-001
(9)	**Hard drive** SATA, (does not include hard drive bracket or cable):	
	9.5 mm (0.37 in) x **6.35 cm** (2.50 in):	
	• 320 GB, 5400 rpm	622643-005
	7.0 mm (0.28 in) × **6.35 cm** (2.50 in):	
	• 320 GB, 5400 rpm	645193-005
	Solid-state drive, 16 GB	713526-001
	Hard Drive Hardware Kit, not illustrated, (includes hard drive bracket, screws, and cable)	697905-001
(10)	**WLAN module:**	
	• Atheros AR9462 802.11 a/b/g/n 2x2 Bluetooth 4.0 combo adapter, HMC	676786-005
(11)	**Platform Controller Hub (PCH) heat sink**	699248-001
(12)	**Speaker assembly** (includes left and right speakers and cable)	697918-001
(13)	**Battery**, 4 cell, 37 Whr, (2.55 Ah)	695192-001
(14)	**Fan**	697914-001
(15)	**RJ-45 cover**	700428-001
(16)	**Power connector**	697921-001
(17)	**USB board** (includes cable and audio-out/audio-in jack)	697902-001
(18)	**Base enclosure**	708134-001
	Rubber Feet Kit, not illustrated	697906-001

Display assembly subcomponents



Item	Component	Spare part number
(1)	**Display bezel**	697907-001
(2)	**Display Hinge Kit** (includes left and right display hinges and brackets)	697908-001
(3)	**35.6 cm (14.0 in), HD, WLED, SVA BrightView flat display panel**	698523-001
(4)	**Webcam/microphone module**	697903-001
(5)	**Antenna Kit** (includes left and right wireless antenna cables and transceivers)	697913-001
(6)	**Display Panel Cable Kit** (includes display panel cable and webcam/microphone module cable)	697911-001
(7)	**Back cover**, sparkling black	708133-001

Miscellaneous parts

Component	Spare part number
AC adapter (65 W RC V AC)	693715-001
Power cord (3-pin, black, 1.83 m):	
• For use in North America	490371-001
• For use in the United Kingdom and Singapore	490371-031

Component	Spare part number
Screw Kit (not illustrated)	697912-001
Thermal Material Kit	680571-001

Sequential part number listing

Spare part number	Description
490371-001	Power cord for use in North America (black, 3-pin, 1.83 m)
490371-031	Power cord for use in the United Kingdom and Singapore (black, 3-pin, 1.83 m)
622643-005	320 GB, 5400 rpm hard drive (9.5 mm (0.37 in) × 6.35 cm (2.50 in) SATA, does not include hard drive bracket or cable)
645193-005	320 GB, 5400 rpm hard drive (7.0 mm (0.28 in) × 6.35 cm (2.50 in) SATA, does not include hard drive bracket or cable)
676786-005	Atheros AR9462 802.11 a/b/g/n 2x2 Bluetooth 4.0 combo adapter, HMC
680571-001	Thermal Material Kit (includes replacement thermal paste and pads)
691739-001	2 GB memory module (DDR3-1600 MHz, PC3-12800)
691740-001	4 GB memory module (DDR3-1600 MHz, PC3-12800)
693715-001	65 W, nPFC, AC adapter
695192-001	4 cell, 37 Whr, 2.55 Ah Li-ion battery
697901-001	Power button board (includes cable)
697902-001	USB board (includes cable and audio-out/audio-in jack)
697903-001	Webcam/microphone module
697905-001	Hard Drive Hardware Kit (includes hard drive bracket, screws, and cable)
697906-001	Rubber Feet Kit
697907-001	Display bezel
697908-001	Display Hinge Kit (includes left and right display hinges and brackets)
697911-001	Display Panel Cable Kit (includes display panel cable and webcam/microphone module cable)
697912-001	Screw Kit
697913-001	Antenna Kit (includes left and right wireless antenna cables and transceivers)
697914-001	Fan
697915-001	Heat sink (includes replacement thermal material)
697917-001	RTC battery
697918-001	Speaker assembly (includes left and right speakers and cable)
697921-001	Power connector
698523-001	35.6 cm (14.0 in), HD, WLED, SVA BrightView flat display panel
699248-001	PCH heat sink

Spare part number	Description
700428-001	RJ-45 cover
704989-001	System board (includes processor and replacement thermal material)
708133-001	Back cover, sparkling black
708134-001	Base enclosure
708135-001	Keyboard with black finish for use in the United States (includes cable)
708135-161	Keyboard with black finish for use in Latin America (includes cable)
708135-DB1	Keyboard with black finish for use in Canada (includes cable)
708136-001	Top cover, sparkling black (includes TouchPad)
713526-001	16 GB solid-state drive

4 Removal and replacement procedures

CAUTION: The user-replaceable parts for this computer are:

AC adapter

Battery

Keyboard

For all parts that are **not** user-replaceable, only HP authorized service providers should perform the removal and replacement procedures described here. Accessing the internal part could damage the computer or void the warranty.

Preliminary replacement requirements

Tools required

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

- Flat-bladed screwdriver
- Magnetic 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, turn off the computer.

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

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, or a diskette drive, place it in a static-proof bag.

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

Avoid exposing a drive to temperature extremes or liquids.

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

Grounding guidelines

Electrostatic discharge damage

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

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

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

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

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

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

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

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

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

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

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

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

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

Workstation guidelines

Follow these grounding workstation guidelines:

- Cover the workstation with approved static-shielding material.
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use conductive field service tools, such as cutters, screwdrivers, and vacuums.
- When fixtures must directly contact dissipative surfaces, use fixtures made only of static-safe materials.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and Styrofoam.

- Handle ESD-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting or removing connectors or test equipment.

Equipment guidelines

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

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

The following grounding equipment is recommended to prevent electrostatic damage:

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

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

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

Component replacement procedures

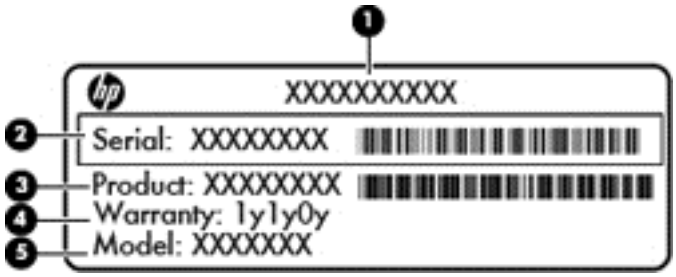
This chapter provides removal and replacement procedures.

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

Service label

When ordering parts or requesting information, provide the computer serial number and model number provided on the service label. The service label is located on the bottom of the computer.

NOTE: Your label may look slightly different from the illustration in this section.



Item	Description	Function
(1)	Product name	The name affixed to the front of the computer.
(2)	Serial number	This is an alphanumeric identifier that is unique to each product.
(3)	Product part number	This number provides specific information about the product's hardware components. The part number helps a service technician to determine what components and parts are needed.
(4)	Warranty period	This number describes the duration of the warranty period for the computer.
(5)	Model description (select models only)	This is the alphanumeric identifier needed to locate documents, drivers, and support for the computer.

Battery

Description	Spare part number
4 cell, 37 Whr, 2.55 Ah Li-ion battery	695192-001

Before disassembling the computer, follow these steps:

1. Shut down the computer.
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 battery:

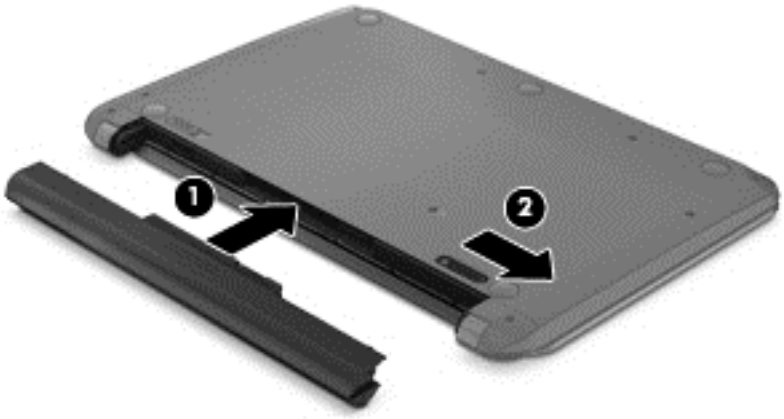
1. Turn the computer upside down on a flat surface.
2. Slide the battery release lock **(1)** far enough that it rests in the unlocked position.
3. Slide the battery release latch **(2)** to release the battery.
4. Slide the battery **(3)** from the middle to remove it from the computer.

To insert the battery, follow these steps:

⚠ **CAUTION:** Do not slant the battery as you insert it.

1. Holding the battery in the middle, slide the battery **(1)** straight into the computer until the battery release latch locks into place.

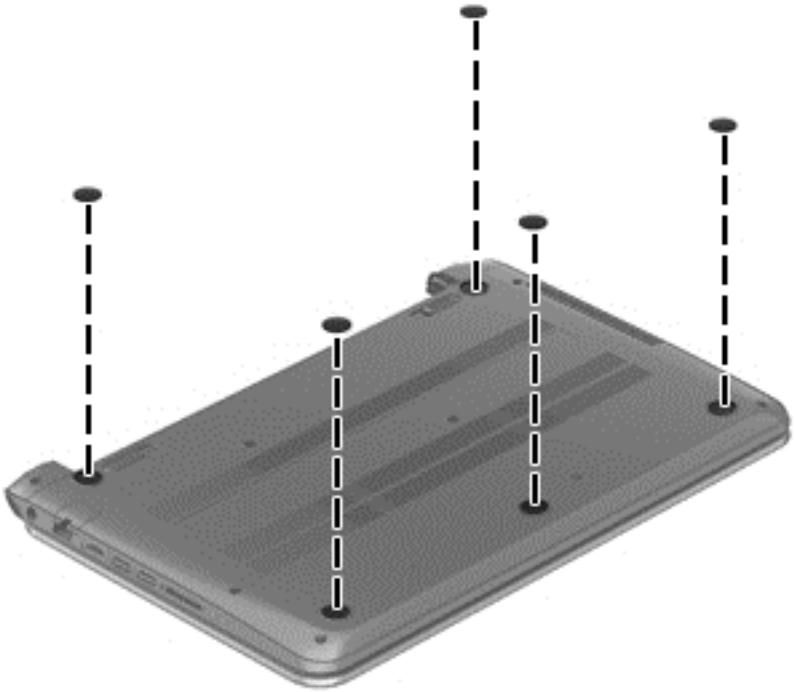
2. Reset the battery release lock **(2)** to the locked position.



Computer feet

Description	Spare part number
Rubber Feet Kit	697906-001

The computer feet are adhesive-backed rubber pads. There are 5 rubber feet that attach to the base enclosure in the locations illustrated below.



Display panel

Description	Spare part number
Display bezel	697907-001
35.6 cm (14.0 in), HD, WLED, SVA BrightView flat display panel	698523-001

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

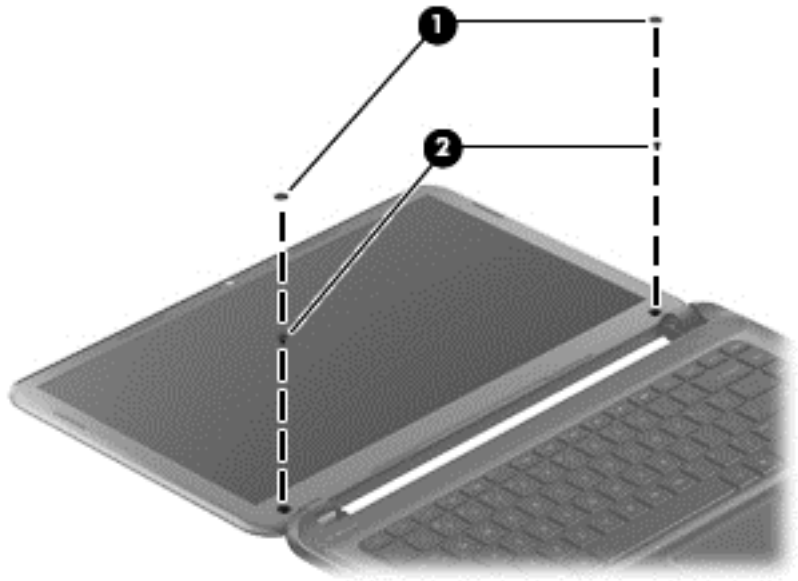
Before removing the display panel, follow these steps:

1. Shut down the computer.
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 battery (see Battery on page 20).

NOTE: To replace the entire display assembly, additional steps are required (see Display Assembly on page 49).

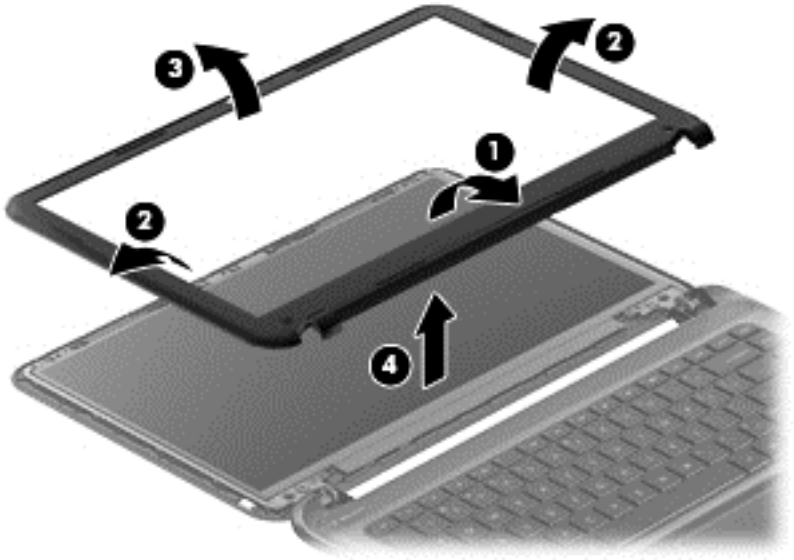
Remove the panel:

1. Remove the plastic screw covers **(1)** and the two Phillips screws **(2)** that secure the display bezel to the display assembly.

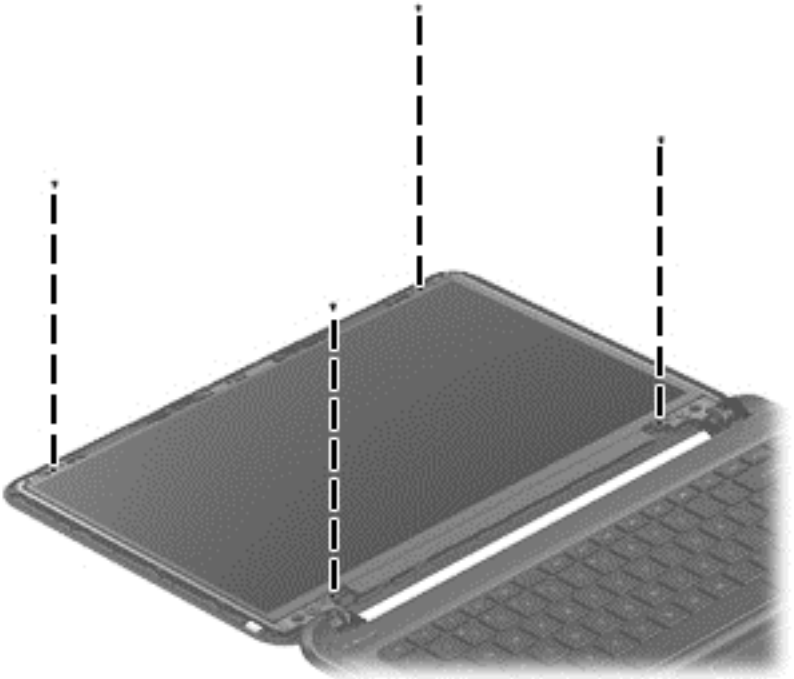


2. Flex the inside edges of the bottom edge **(1)**, the left and right sides **(2)**, and the top edge **(3)** of the display bezel until the bezel disengages from the display enclosure.

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



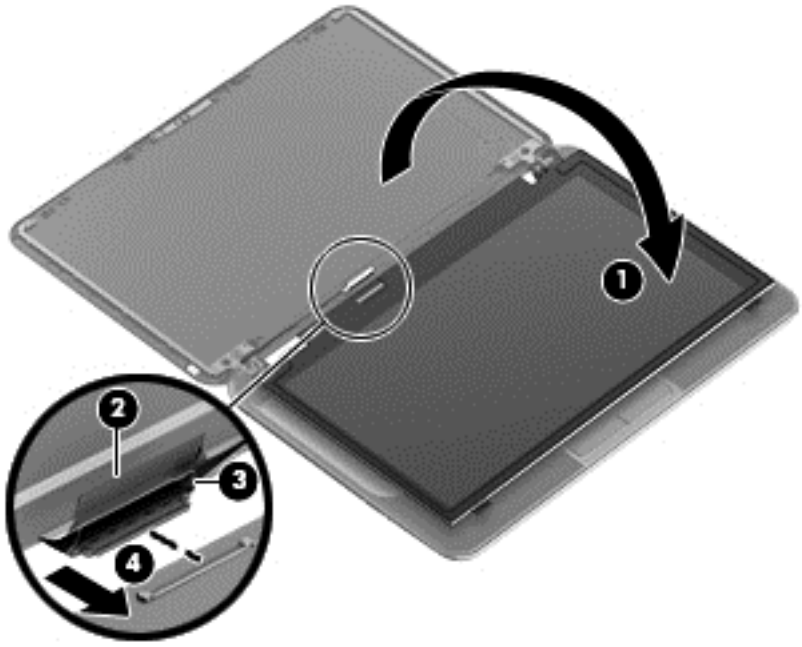
4. Remove the four Phillips screws for the display panel.



NOTE: Support the display panel as you lean the panel forward.

5. Move the panel toward the keyboard **(1)**.
6. Release the adhesive support strip **(2)** that secures the display panel cable connector to the display panel.

7. Disconnect the display panel cable **(3)** from the display panel, and then remove the panel **(4)**.



Reverse this procedure to replace the panel.

Keyboard

NOTE: The keyboard spare part kit includes a keyboard cable.

Description	Spare part number
Black keyboard:	
• For use in Latin America	708135-161
• For use in Canada	708135-DB1
• For use in the United States	708135-001

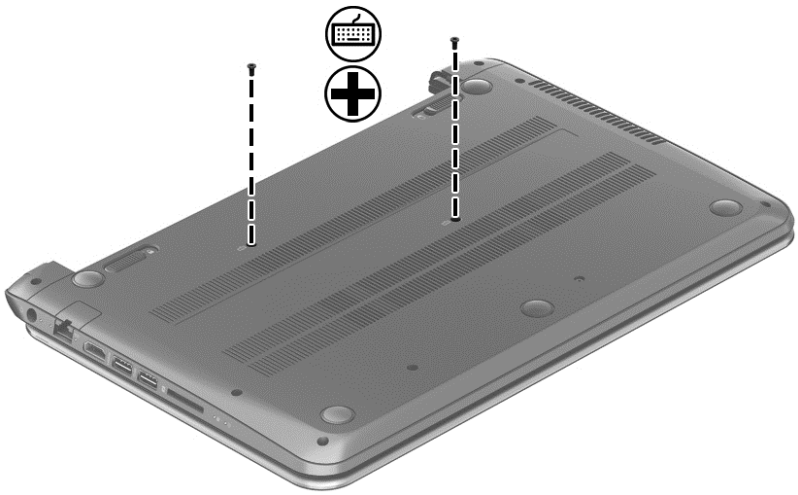
IMPORTANT: Make special note of each screw and screw lock size and location during removal and replacement.

Before removing the keyboard, follow these steps:

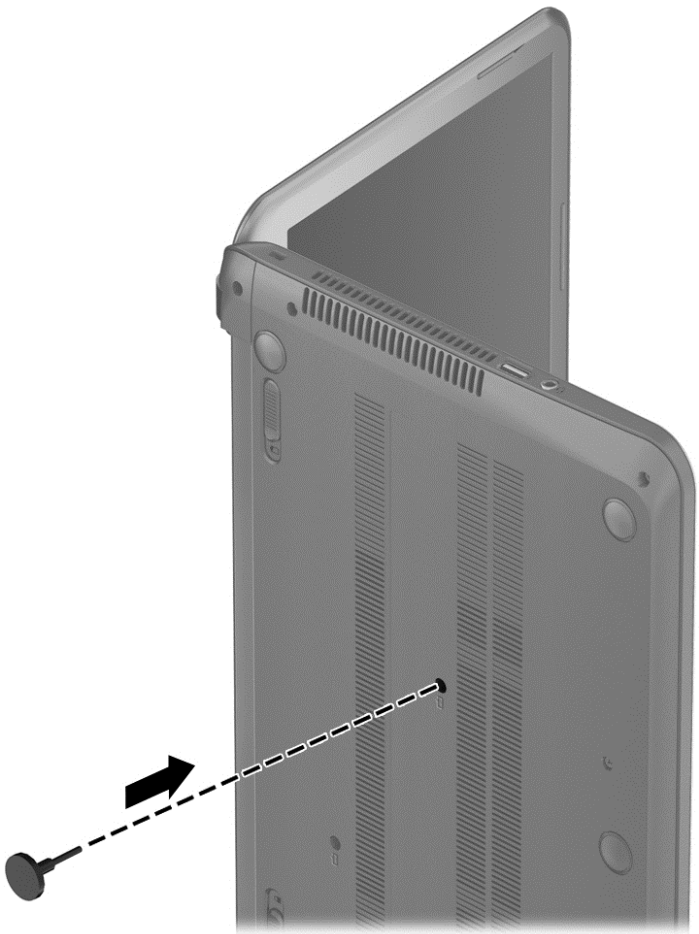
1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 20).

Remove the keyboard:

1. Remove the two Phillips screws that secure the keyboard to the computer.

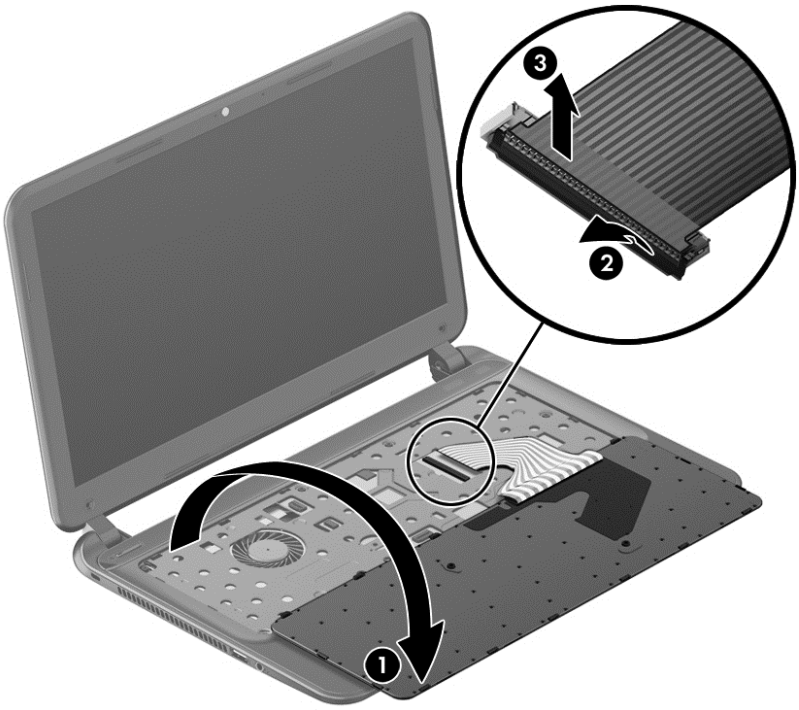


2. Turn the computer right-side up with the front toward you. Open the display and stand the computer on its right side. Insert a thin tool through the keyboard access hole. (The keyboard icon indicates the keyboard access hole.) Push firmly on the bottom of the keyboard until it disengages from the computer.



3. Turn the computer right-side up with the front toward you and open the display.
4. Gently slide your finger along the top edge of the keyboard to release the keyboard clips. Lift up on the rear of the keyboard.

5. Tilt the keyboard forward **(1)** onto the palm rest. Release the zero insertion force (ZIF) connector **(2)** to which the keyboard cable is attached, and then disconnect the keyboard cable **(3)** from the system board.



6. Remove the keyboard.

Reverse this procedure to install the keyboard.

Top cover

NOTE: The top cover spare part kit includes the TouchPad support, TouchPad board and TouchPad cable.

Description	Spare part number
Sparkling black top cover	708136-001

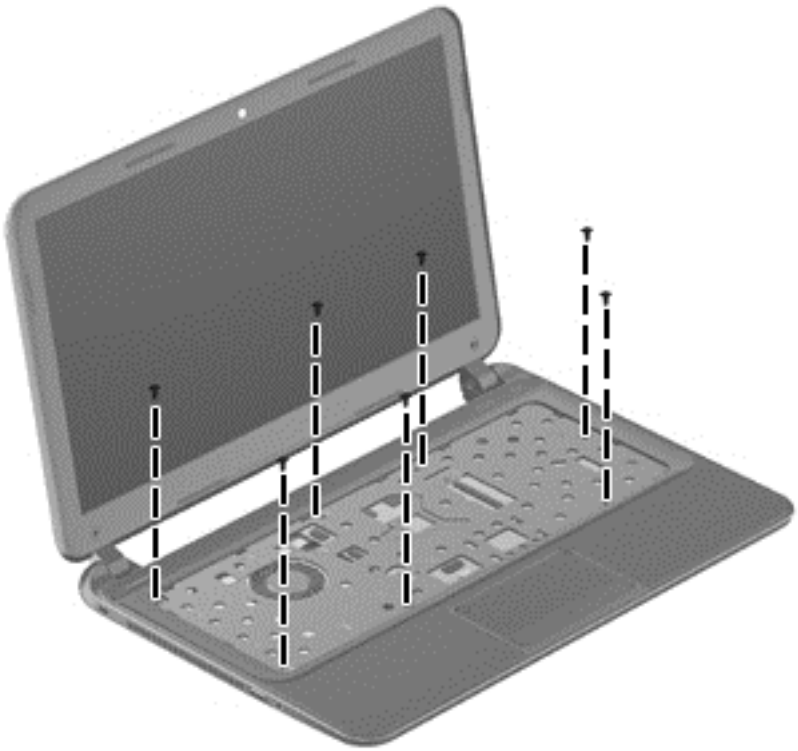
IMPORTANT: Make special note of each screw and screw lock size and location during removal and replacement.

Before removing the top cover, follow these steps:

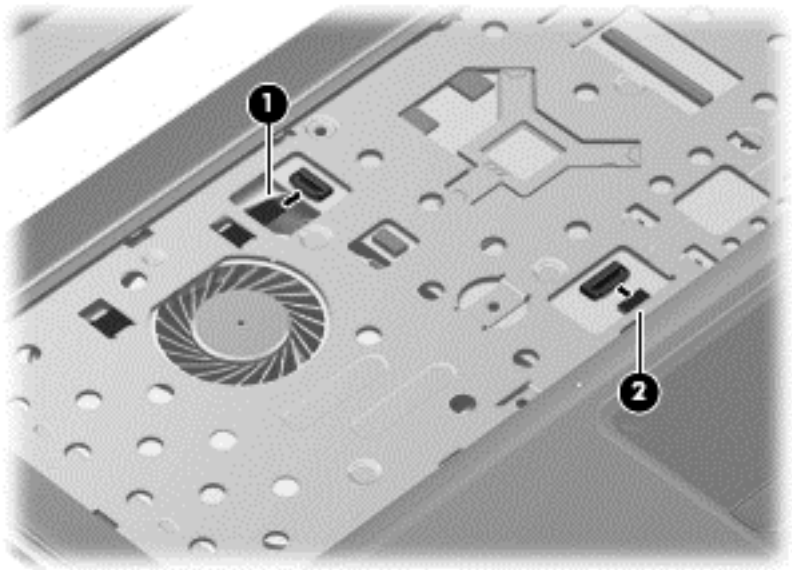
1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 20).
5. Remove the keyboard (see Keyboard on page 24).

Remove the top cover:

1. Remove the seven Phillips screws that secure the top cover to the base enclosure.

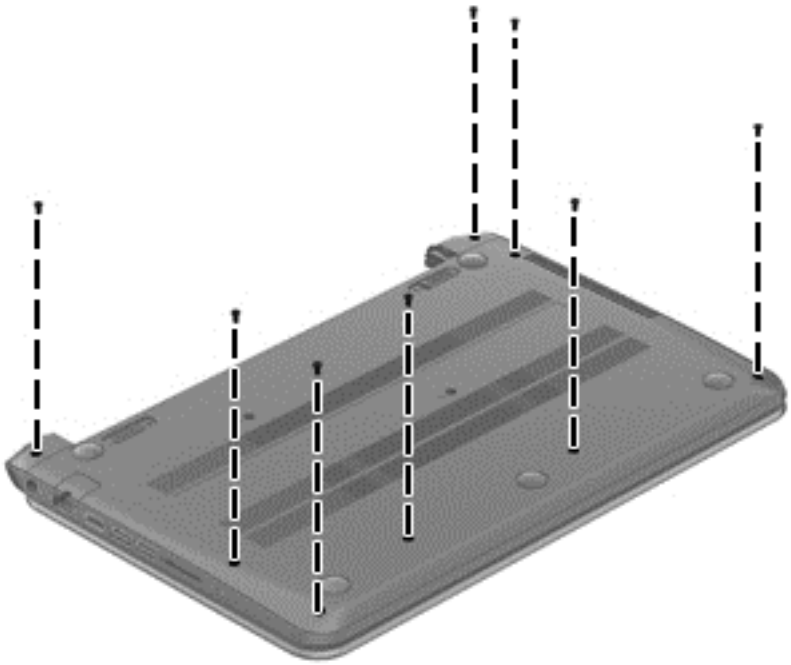


2. Disconnect the power button cable **(1)** and the TouchPad cable **(2)**.

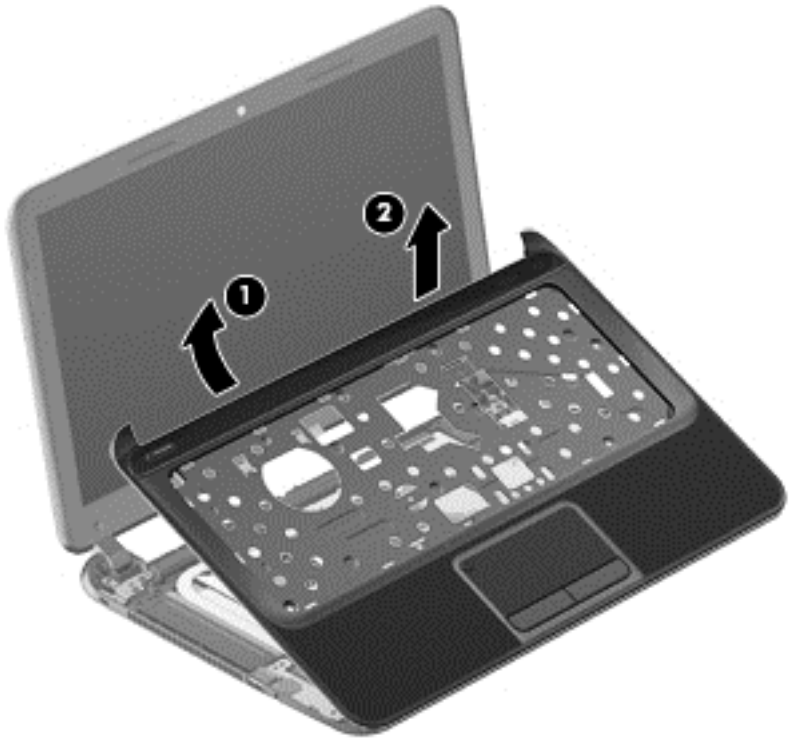


3. Close the display and turn the computer upside down.

4. Remove the eight Phillips screws from the bottom of the computer.



5. Turn the computer over and open the display.
6. Gently lift around the edges of the top cover **(1)** and lift to remove the top cover **(2)**.



When replacing the top cover, be sure that the following components are removed from the defective top cover and installed on the replacement top cover:

- Power button board and cable (see Power button board on page 30).

Reverse this procedure to install the top cover.

Power button board

Description	Spare part number
Power button board (includes cable)	697901-001

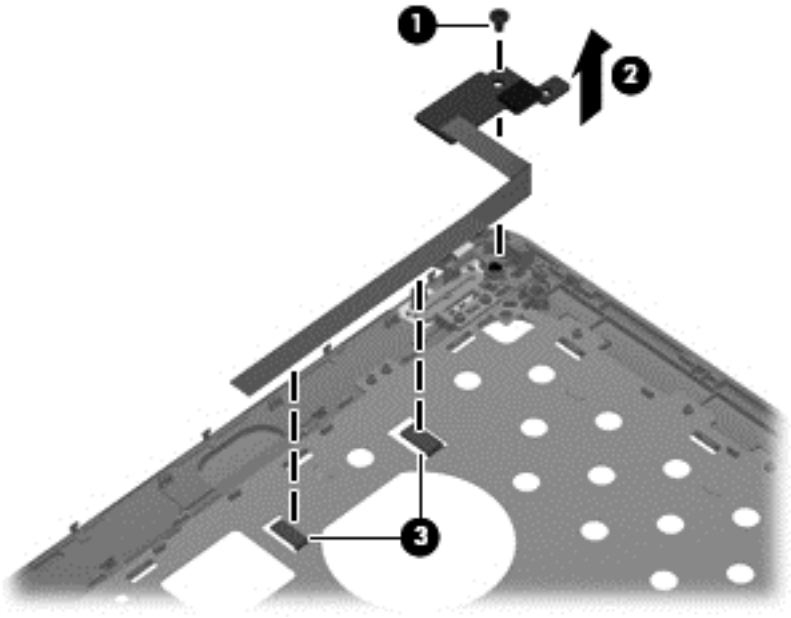
IMPORTANT: Make special note of each screw and screw lock size and location during removal and replacement.

Before removing the power button board, follow these steps:

1. Shut down the computer.
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 battery (see Battery on page 20).
5. Remove the keyboard (see Keyboard on page 24).
6. Remove the top cover (see Top cover on page 27).

Remove the power button board:

1. Turn the top cover upside down, with the front toward you.
2. Remove the Phillips screw **(1)** and tape that secure the power button board to the top cover.
3. Release the clips, lift the power button board **(2)**, and carefully slide the power button cable out from the guides **(3)** to remove the power button board.



Reverse this procedure to install the power button board.

Hard drive

NOTE: The hard drive spare part kit does not include the hard drive cable, or hard drive bracket and screws.

Description	Spare part number
9.5 mm (0.37 in) × 6.35 cm (2.50 in), 320 GB, 5400 rpm, SATA	622643-005
7.0 mm (0.28 in) × 6.35 cm (2.50 in), 320 GB, 5400 rpm, SATA	645193-005
16 GB solid-state drive, SATA	713526-001
Hard Drive Hardware Kit (includes hard drive cable, and hard drive bracket and screws)	697905-001

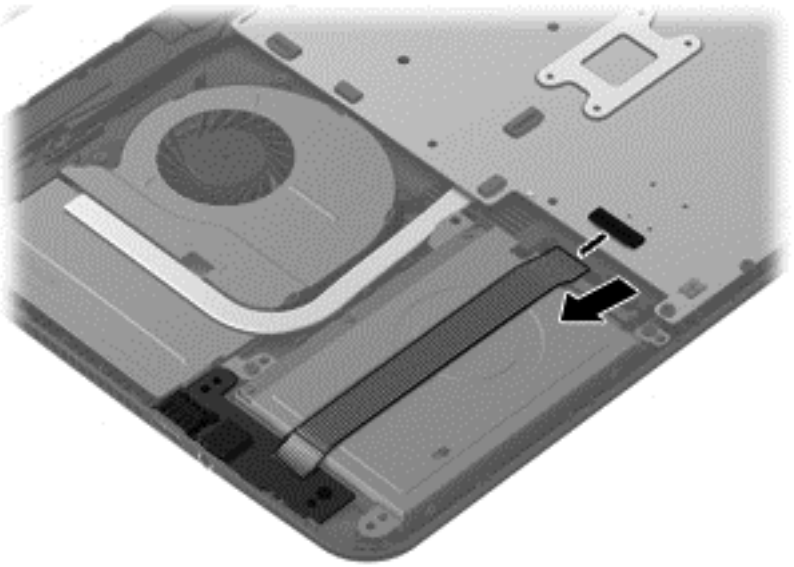
IMPORTANT: Make special note of each screw and screw lock size and location during removal and replacement.

Before removing the hard drive, follow these steps:

1. Shut down the computer.
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 battery (see Battery on page 20).
5. Remove the keyboard (see Keyboard on page 24).
6. Remove the top cover (see Top cover on page 27).

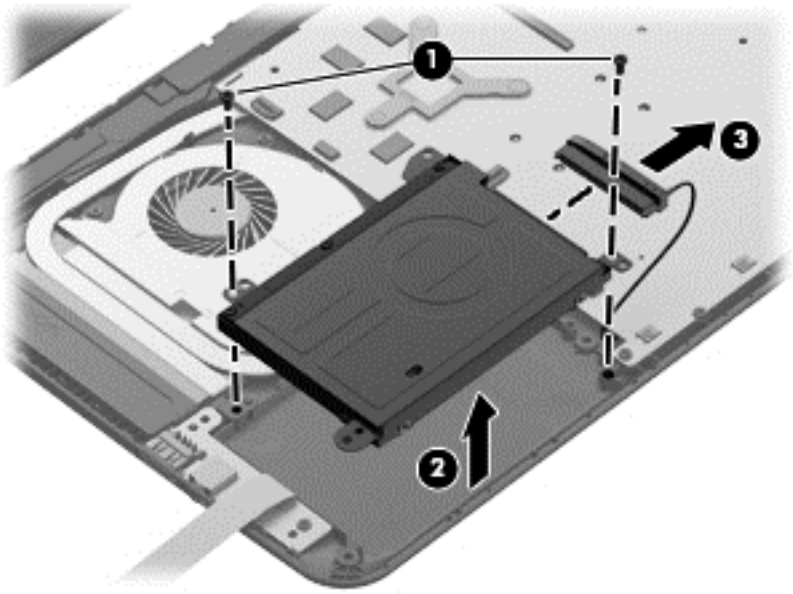
Remove the hard drive:

1. Disconnect the USB cable on top of the hard drive from the computer.

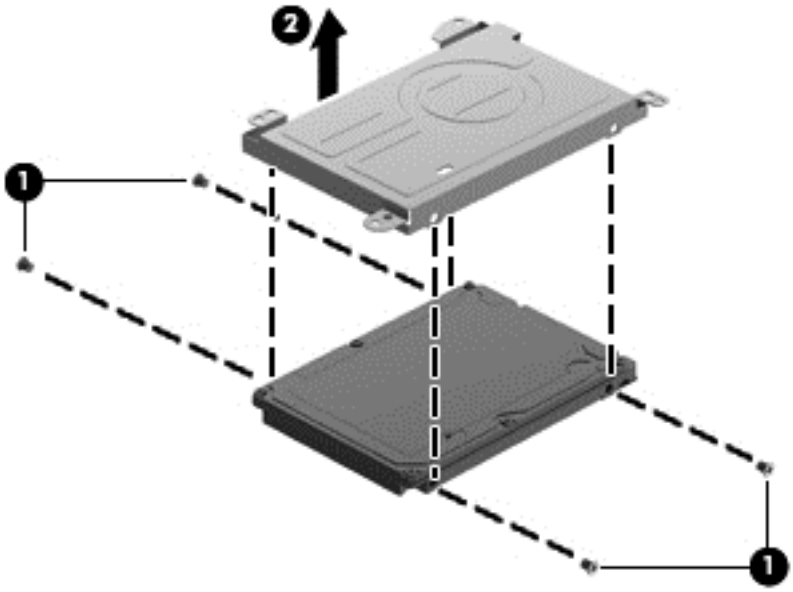


NOTE: If it is necessary to replace the hard drive cable, see System board on page 37.

2. Remove the two Phillips screws **(1)**. Lift the hard drive **(2)** to remove and disconnect the hard drive cable **(3)**.



3. Remove the four Phillips screws **(1)**, and then remove the bracket **(2)** from the hard drive.



To install a hard drive, reverse the removal procedure.

USB board/Audio jack

Description	Spare part number
USB board (includes cable and audio-out/audio-in jack)	697902-001

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

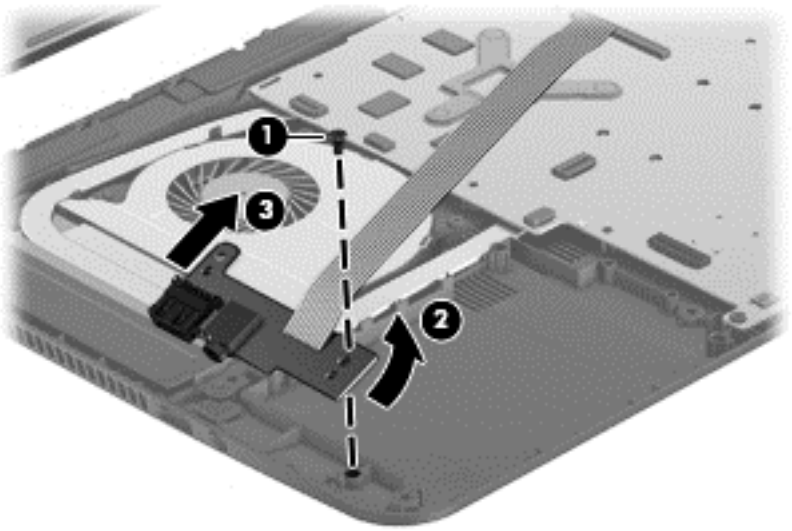
Before removing the USB board, follow these steps:

1. Shut down the computer.
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 battery (see Battery on page 20).
5. Remove the keyboard (see Keyboard on page 24).
6. Remove the top cover (see Top cover on page 27).
7. Remove the hard drive (see Hard drive on page 31).

Remove the USB board:

NOTE: One side of the USB cable lies across the hard drive. It is disconnected during the hard drive removal process.

1. Remove the screw **(1)** and gently lift the USB board **(2)** up.
2. Slide the USB board **(3)** out to remove it.



Reverse this procedure to install the USB board.

WLAN module

Description	Spare part number
Atheros AR9462 802.11 a/b/g/n 2x2 Bluetooth 4.0 combo adapter, HMC	676786-005

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

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

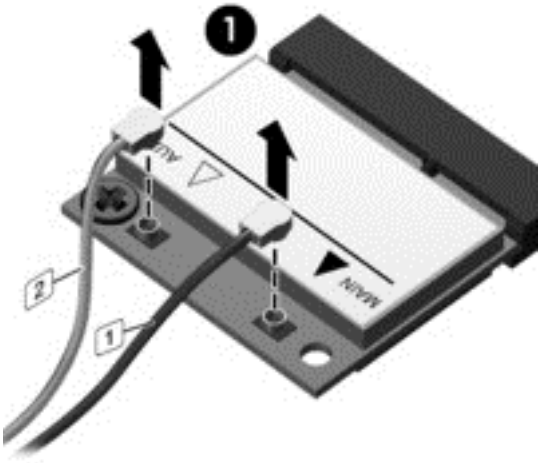
Before removing the WLAN module, follow these steps:

1. Shut down the computer.
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 battery (see Battery on page 20).
5. Remove the keyboard (see Keyboard on page 24).
6. Remove the top cover (see Top cover on page 27).

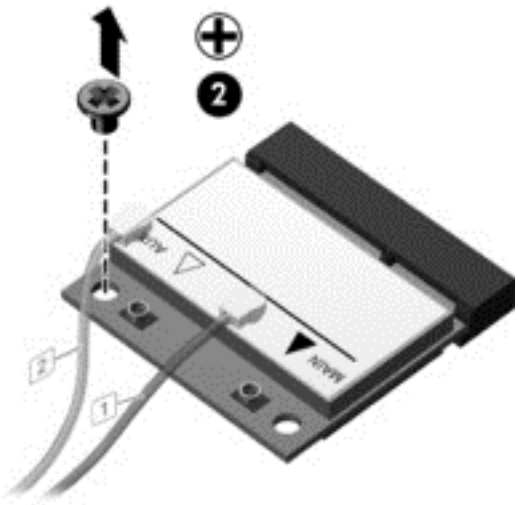
Remove the WLAN module:

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

NOTE: The 1/black WLAN antenna cable is connected to the WLAN module 1/Main terminal. The 2/white WLAN antenna cable is connected to the WLAN module 2/Aux terminal.

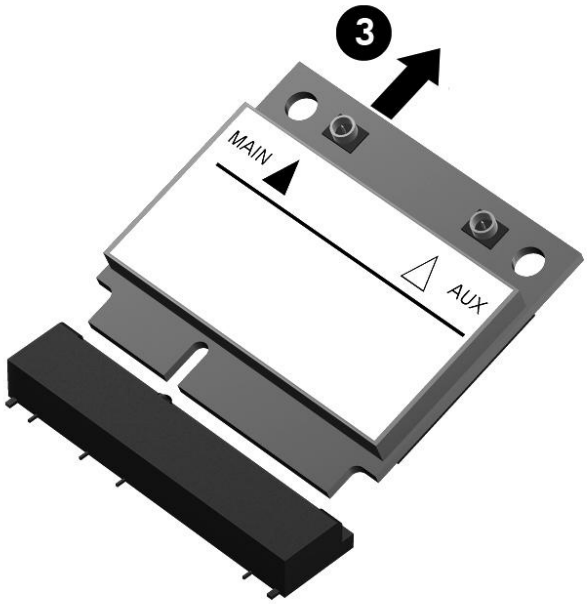


2. Remove the Phillips screw **(2)** that secures the WLAN module to the system board. (The WLAN module tilts up.)



3. Remove the WLAN module by pulling the module away from the slot at an angle **(3)**.

NOTE: The WLAN module is designed with a notch to prevent incorrect installation into the WLAN module socket.



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

Reverse this procedure to install the WLAN module.

System board

NOTE: The processor is included on the system board.

The system board Thermal Material Kit, part number 680571-001, includes replacement thermal paste and pads.

Description	Spare part number
System board	704989-001

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

Before removing the system board, follow these steps:

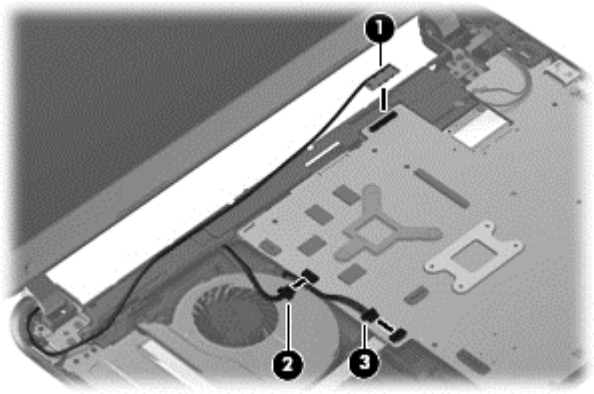
1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 20).
5. Remove the keyboard (see Keyboard on page 24).
6. Remove the top cover (see Top cover on page 27).
7. Remove the hard drive (see Hard drive on page 31).
8. Remove the USB board (see USB board/Audio jack on page 33).
9. Remove the WLAN (see WLAN module on page 34).

After removing the system board, be sure that the following components are removed from the defective system board and installed on the replacement system board:

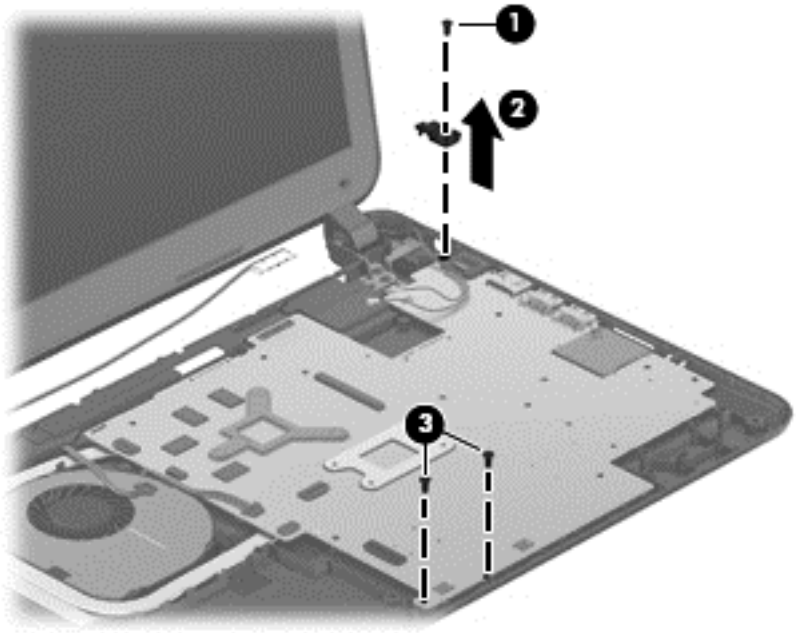
- Memory module (see Memory module on page 40)
- RTC battery (see RTC battery on page 43)
- Heat sink (see Heat sink on page 45)
- PCH heat sink (see PCH heat sink on page 44)

Remove the system board:

1. Disconnect the following cables from the system board:
   - Display panel cable **(1)**
   - Speaker cable **(2)**
   - Fan power connector **(3)**

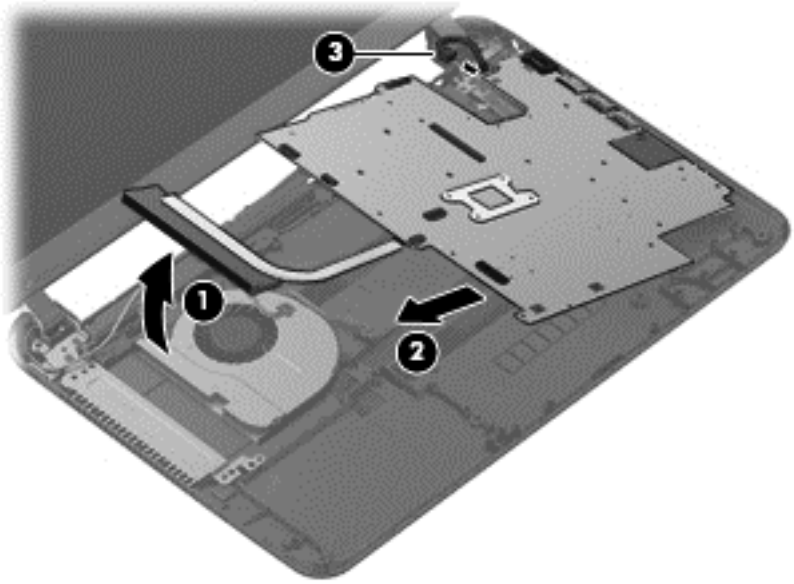


2. Remove the power connector bracket Phillips screw **(1)** and remove the power connector bracket **(2)**.
3. Remove the two Phillips screws **(3)** that secure the system board to the base enclosure.

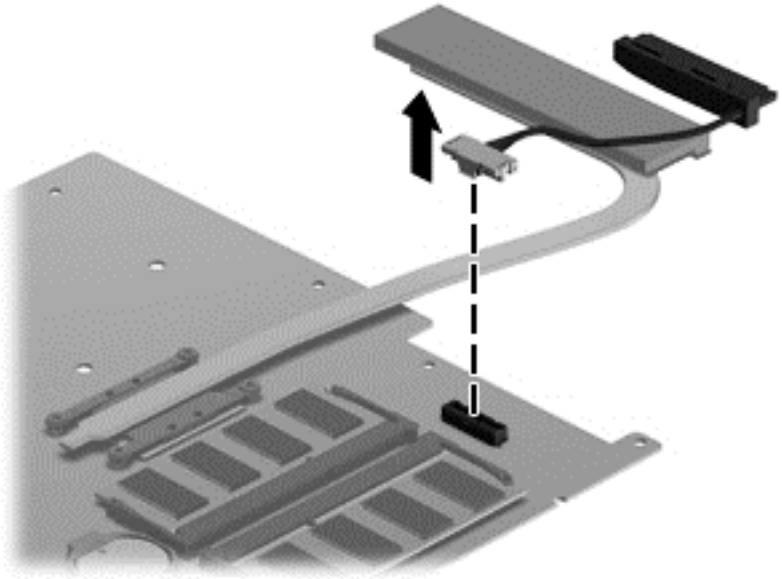


4. Lift the left side of the system board **(1)** until it rests at an angle.
5. Remove the system board by sliding it up and to the left at an angle **(2)**.

6. Disconnect the power connector cable **(3)**.



7. Remove the hard drive cable:
   a. Turn the system board upside down, with the front toward you.
   b. Disconnect the hard drive cable from the system board.



Reverse this procedure to install the system board.

Memory module

WARNING! To reduce the risk of electric shock and damage to the equipment, unplug the power cord and remove all batteries before installing a memory module.

CAUTION: Electrostatic discharge (ESD) can damage electronic components. Before beginning any procedure, ensure that you are discharged of static electricity by touching a grounded metal object.

Description	Spare part number
4 GB (DDR3-1600 MHz, PC3-12800)	691740-001
2 GB (DDR3-1600 MHz, PC3-12800)	691739-001

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

Before removing a memory module, follow these steps:

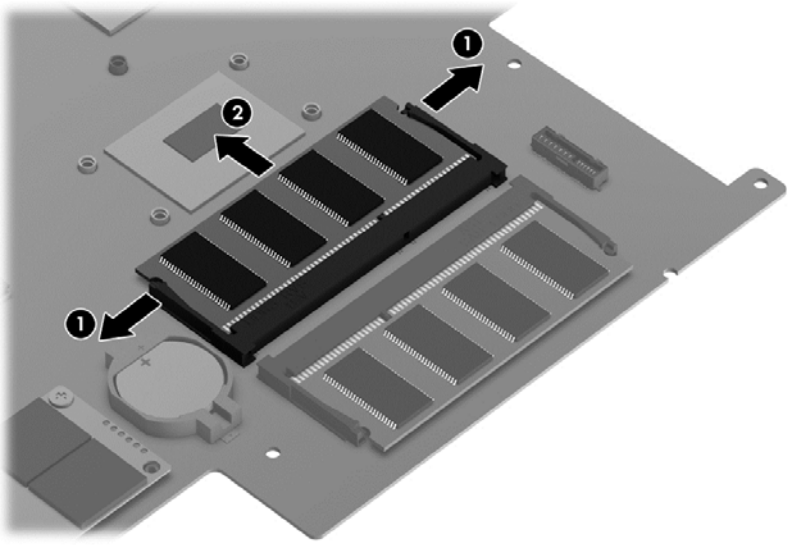
1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 20).
5. Remove the keyboard (see Keyboard on page 24).
6. Remove the top cover (see Top cover on page 27).
7. Remove the hard drive (see Hard drive on page 31).
8. Remove the USB board (see USB board/Audio jack on page 33).
9. Remove the WLAN (see WLAN module on page 34).
10. Remove the system board (see System board on page 37).

To remove a memory module:

1. Turn the system board upside down to access the memory module.
2. Spread the retention clips **(1)** on each side of the memory module slot to release the memory module. (The memory module tilts up.)

3. Remove the memory module **(2)** by pulling it away from the slot at an angle.

CAUTION: To prevent damage to the memory module, hold the memory module by the edges only. Do not touch the components on the memory module.

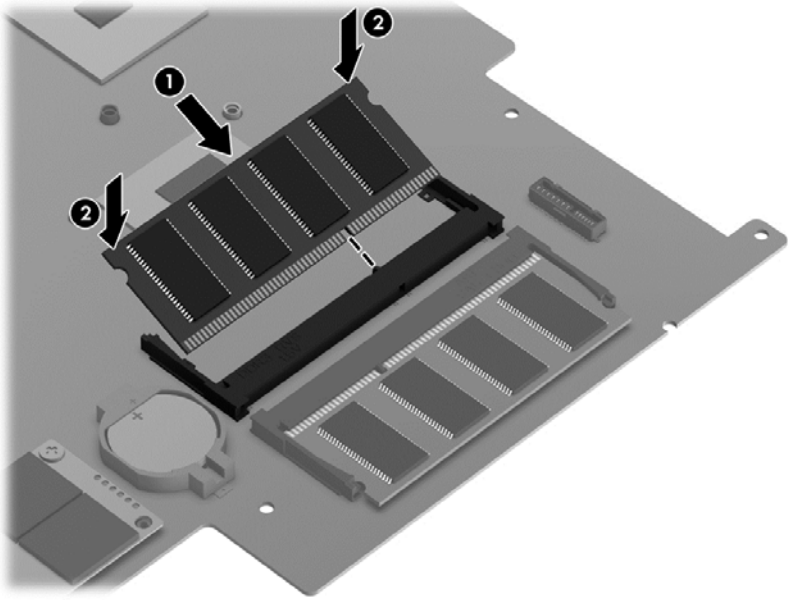


CAUTION: To protect a memory module after removal, place it in an electrostatic-safe container.

To replace the memory module:

1. Align the notched edge of the replacement memory module with the tab in the memory module slot, and then press the module **(1)** into the slot at a 45-degree angle until it is firmly seated.

2. Press down on the left and right sides of the memory module **(2)** until the side retention clips snap back into place.



3. Reverse the previous steps to replace the following items:
   - System board
   - WLAN
   - USB board
   - Hard drive
   - Top cover
   - Keyboard
   - Battery
   - Any external devices and the AC adapter

RTC battery

Description	Spare part number
RTC battery	697917-001

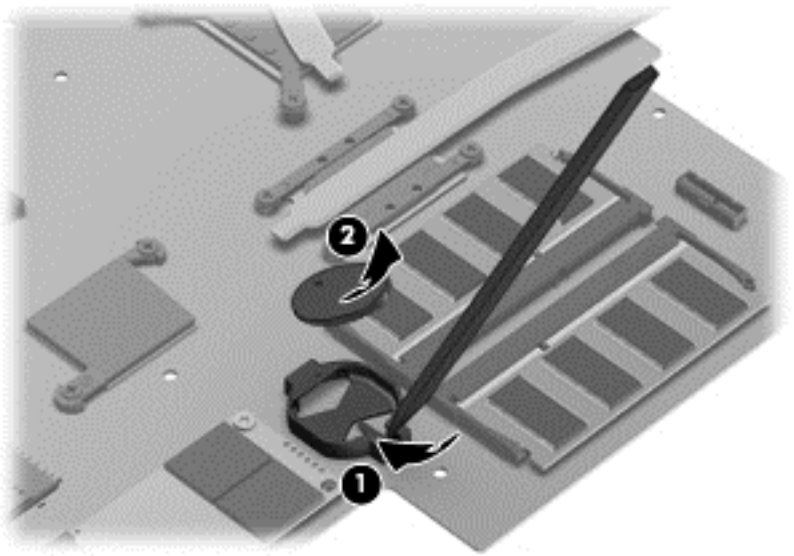
IMPORTANT: Make special note of each screw and screw lock size and location during removal and replacement.

Before removing the RTC battery, follow these steps:

1. Shut down the computer.
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 battery (see Battery on page 20).
5. Remove the keyboard (see Keyboard on page 24).
6. Remove the top cover (see Top cover on page 27).
7. Remove the hard drive (see Hard drive on page 31).
8. Remove the USB board (see USB board/Audio jack on page 33).
9. Remove the WLAN (see WLAN module on page 34).
10. Remove the system board (see System board on page 37).

Remove the RTC battery:

1. Turn the system board upside down, with the front toward you.
2. Remove the RTC battery **(1)** by pressing down with a thin plastic tool or your finger. The battery is spring loaded and will pop up. Lift and remove the RTC battery **(2)**.



Reverse this procedure to install the RTC battery.

PCH heat sink

Description	Spare part number
PCH heat sink	699248-001

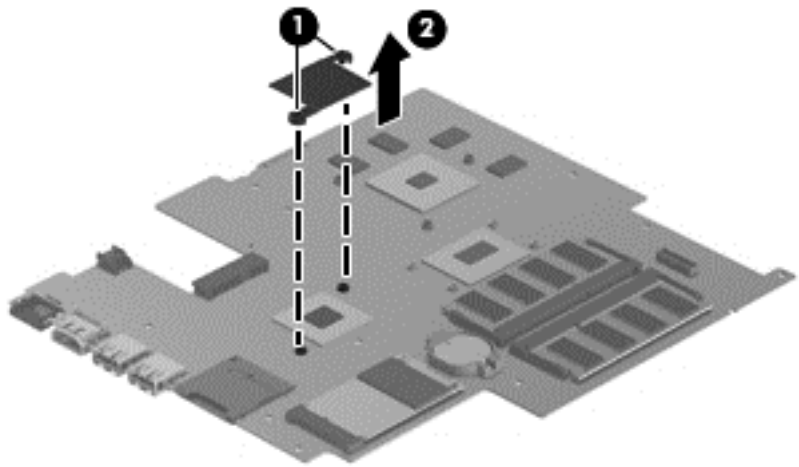
IMPORTANT: Make special note of each screw and screw lock size and location during removal and replacement.

Before removing the PCH heat sink, follow these steps:

1. Shut down the computer.
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 battery (see Battery on page 20).
5. Remove the keyboard (see Keyboard on page 24).
6. Remove the top cover (see Top cover on page 27).
7. Remove the hard drive (see Hard drive on page 31).
8. Remove the USB board (see USB board/Audio jack on page 33).
9. Remove the WLAN (see WLAN module on page 34).
10. Remove the system board (see System board on page 37).

Remove the PCH heat sink:

1. Turn the system board upside down, with the front toward you.
2. Remove the two Phillips screws **(1)** and lift off the PCH heat sink **(2)**.



Reverse this procedure to install the PCH heat sink onto a replacement system board.

Heat sink

Description	Spare part number
Heat sink	697915-001

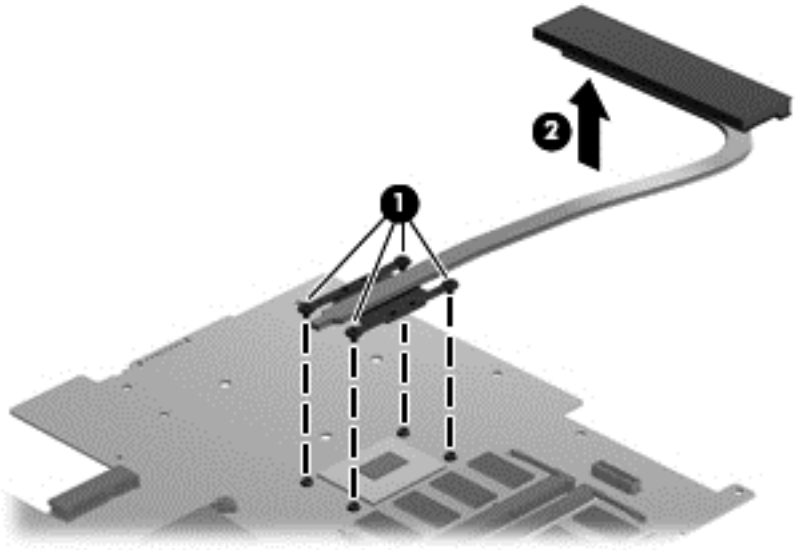
IMPORTANT: Make special note of each screw and screw lock size and location during removal and replacement.

Before removing the heat sink, follow these steps:

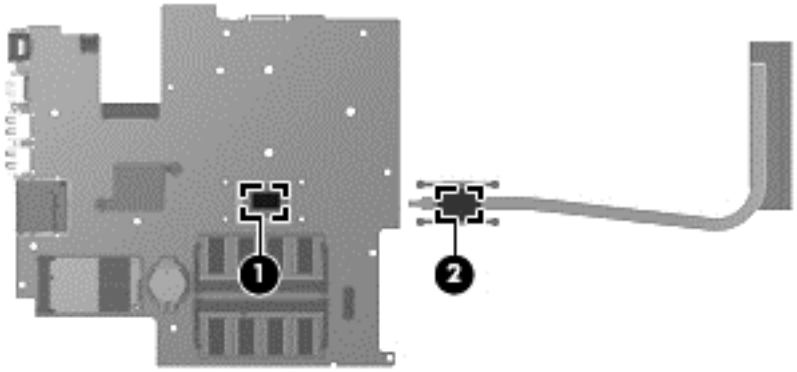
1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 20).
5. Remove the keyboard (see Keyboard on page 24).
6. Remove the top cover (see Top cover on page 27).
7. Remove the hard drive (see Hard drive on page 31).
8. Remove the USB board (see USB board/Audio jack on page 33).
9. Remove the WLAN (see WLAN module on page 34).
10. Remove the system board (see System board on page 37).

Remove the heat sink:

1. Turn the system board upside down, with the front toward you.
2. Remove the heat sink.
   a. Loosen the captive screws **(1)** and lift the heat sink **(2)** from the system board.



b. Thoroughly clean the thermal connections **(1)** on the system board and the heat sink **(2)** before replacing a heat sink onto a system board.



3. Reverse this procedure to replace the heat sink. Replace the thermal material that ships with the replacement heat sink.

Fan

Description	Spare part number
Fan	697914-001

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

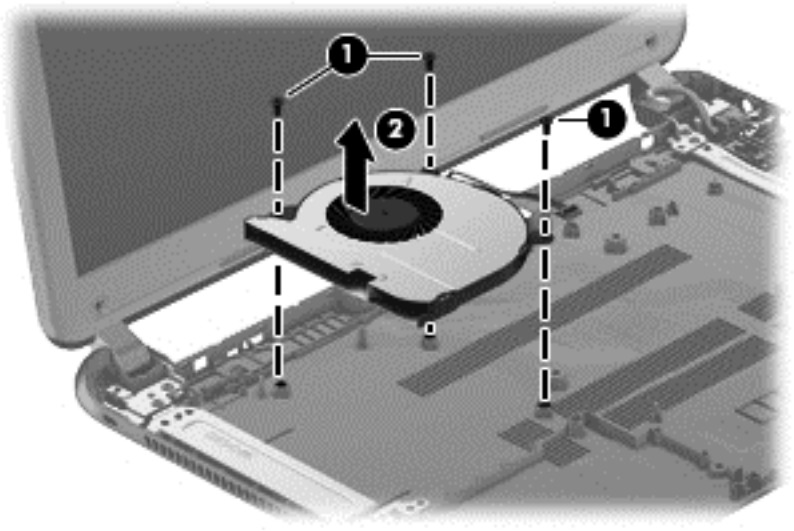
Before removing the fan, follow these steps:

1. Shut down the computer.
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 battery (see Battery on page 20).
5. Remove the keyboard (see Keyboard on page 24).
6. Remove the top cover (see Top cover on page 27).
7. Remove the hard drive (see Hard drive on page 31).
8. Remove the USB board (see USB board/Audio jack on page 33).
9. Remove the WLAN (see WLAN module on page 34).
10. Remove the system board (see System board on page 37).

To remove the fan from the base enclosure:

1. Disconnect the fan cable.

2. Remove the three Phillips screws **(1)** from the fan **(2)** and lift up to remove the fan.



Reverse this procedure to install the cooling fan in the base enclosure.

Speaker assembly

Description	Spare part number
Speaker assembly	697918-001

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

Before removing the speaker assembly, follow these steps:

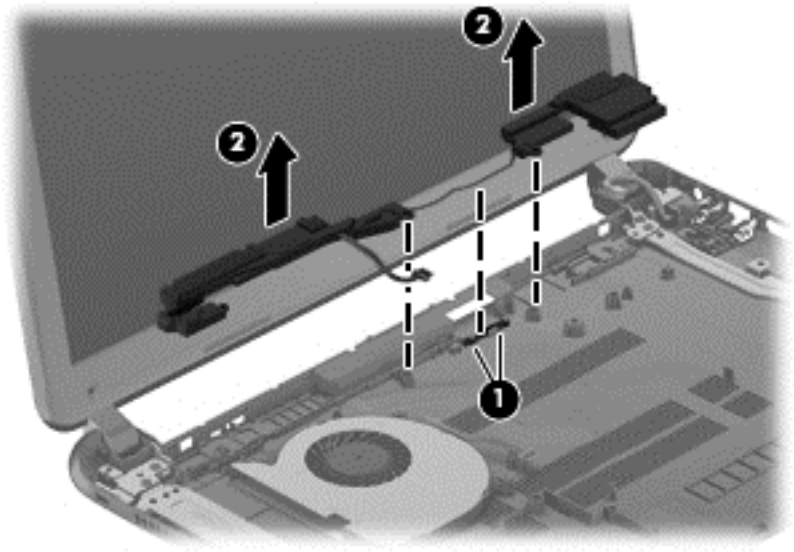
1. Shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 20).
5. Remove the keyboard (see Keyboard on page 24).
6. Remove the top cover (see Top cover on page 27).
7. Remove the hard drive (see Hard drive on page 31).
8. Remove the USB board (see USB board/Audio jack on page 33).
9. Remove the WLAN (see WLAN module on page 34).
10. Remove the system board (see System board on page 37).

Remove the speaker assembly:

NOTE: The speaker screws were removed during the process to remove the top cover.

1. Gently release the wires **(1)** routed along the top of the base enclosure.

2. Lift both pieces of the speaker assembly **(2)**.



Reverse this procedure to install the speaker assembly on the base enclosure.

RJ-45 cover

Description	Spare part number
RJ-45 cover	700428-001

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

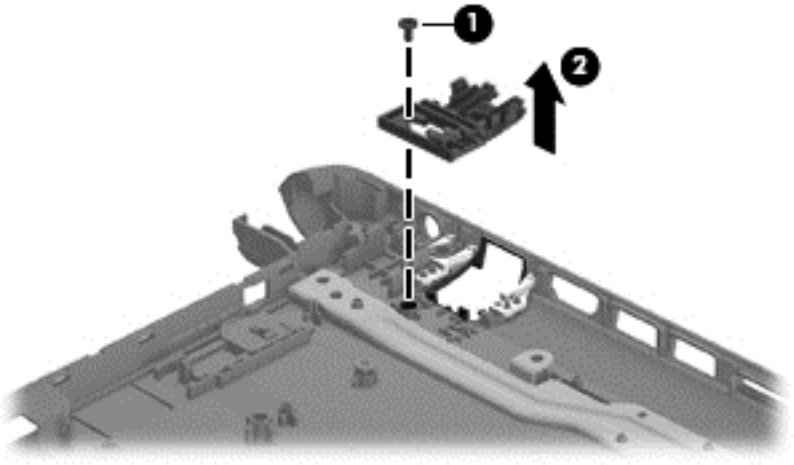
Before removing the RJ-45 cover, follow these steps:

1. Shut down the computer.
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 battery (see Battery on page 20).
5. Remove the keyboard (see Keyboard on page 24).
6. Remove the top cover (see Top cover on page 27).
7. Remove the hard drive (see Hard drive on page 31).
8. Remove the USB board (see USB board/Audio jack on page 33).
9. Remove the WLAN (see WLAN module on page 34).
10. Remove the system board (see System board on page 37).

Remove the RJ-45 cover:

1. Remove the Phillips M screw **(1)** for the RJ-45 cover.

2. Lift the RJ-45 cover **(2)** to remove it from the base enclosure.



Reverse these procedures to replace the RJ-45 cover.

Display Assembly

Description	Spare part number
Antenna Kit (includes left and right wireless antenna cables and transceivers)	697913-001
Display Panel Cable Kit (includes display panel cable and webcam/microphone module cable)	697911-001
Back cover, sparkling black	708133-001
Display Hinge Kit (includes left and right display hinges and brackets)	697908-001
Webcam/microphone module	697903-001

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

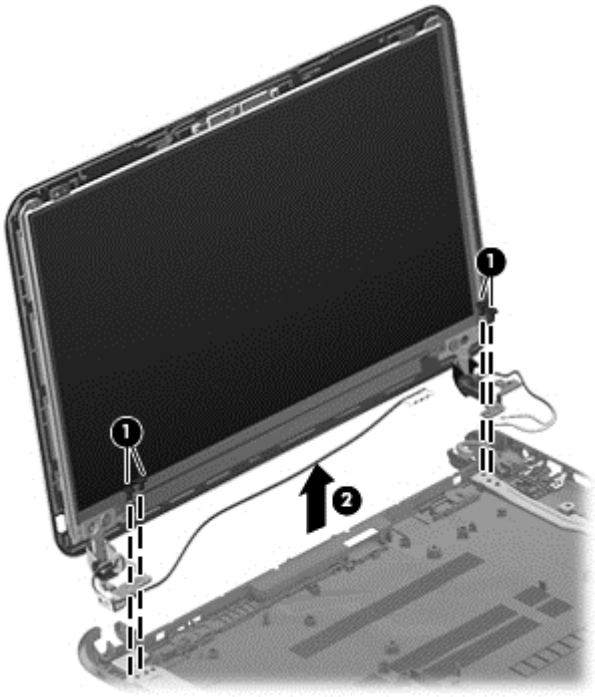
Before removing the display assembly, follow these steps:

1. Shut down the computer.
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 battery (see Battery on page 20).
5. Remove the display panel (see Display panel on page 22).
6. Remove the keyboard (see Keyboard on page 24).
7. Remove the top cover (see Top cover on page 27).
8. Remove the hard drive (see Hard drive on page 31).
9. Remove the USB board (see USB board/Audio jack on page 33).
10. Remove the WLAN (see WLAN module on page 34).
11. Remove the system board (see System board on page 37).

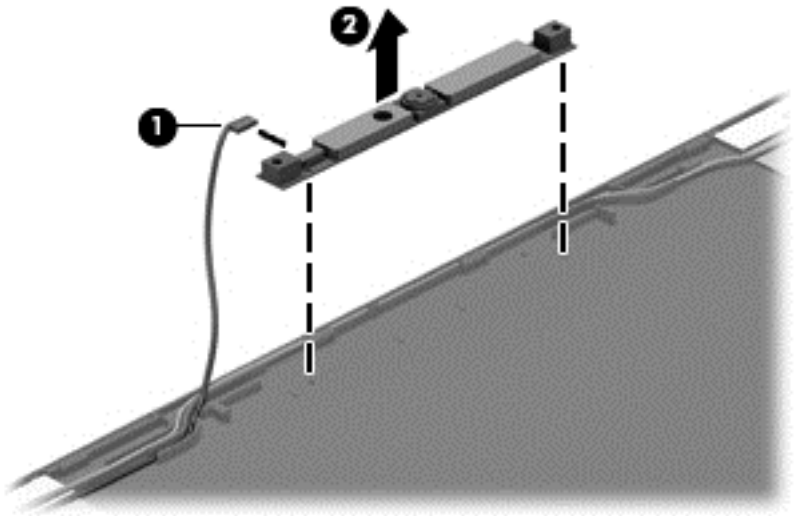
Remove the display assembly:

⚠ **CAUTION:** Support the display assembly when removing the following screws. Failure to support the display assembly can result in damage to the display assembly and other computer components.

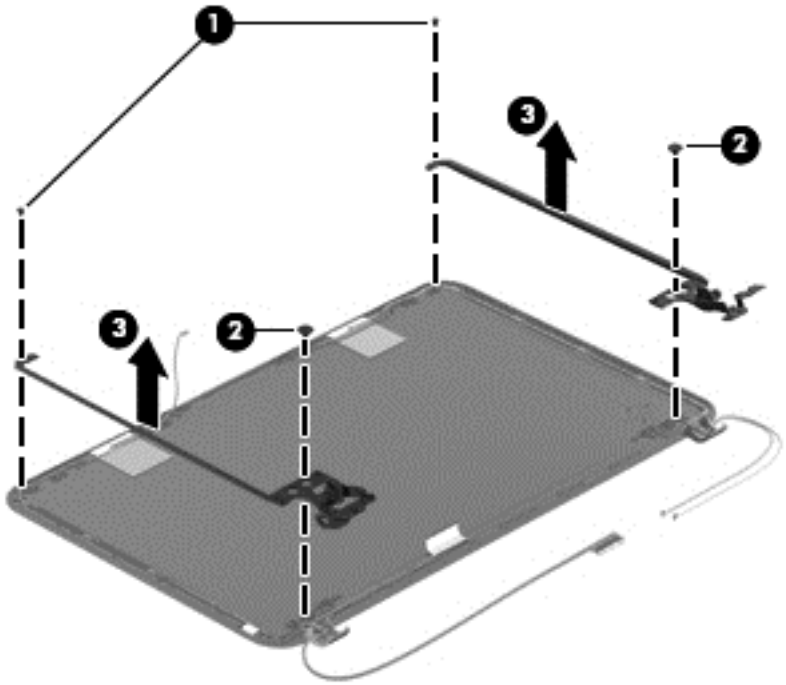
1. Remove the four Phillips screws from the display hinges **(1)** and lift the display assembly **(2)**.



2. If it is necessary to replace the webcam/microphone module:
   a. Detach and release the webcam/microphone module as far as the webcam/microphone module cable allows. (The webcam/microphone module is attached to the back cover with double-sided tape.)
   b. Disconnect the webcam/microphone cable **(1)** from the webcam/microphone module.
   c. Remove the webcam/microphone module **(2)**.



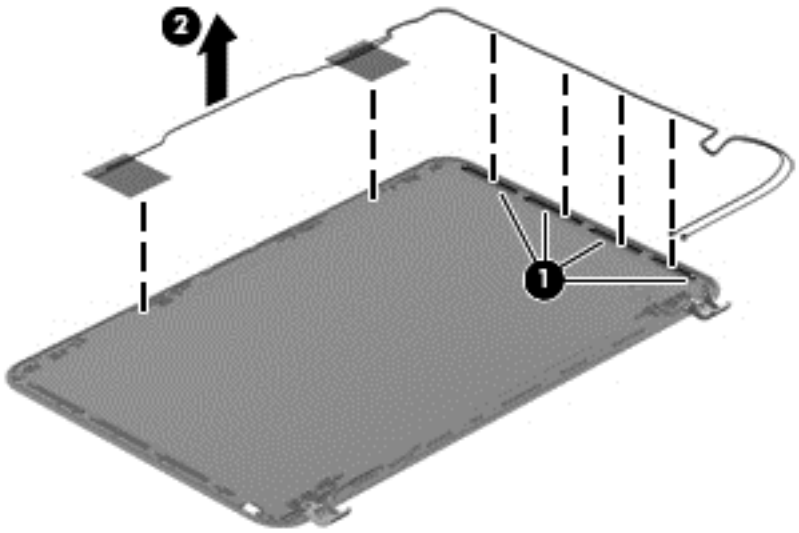
3. Remove the two top screws **(1)** and two bottom screws **(2)** from the display bracket and lift the display brackets **(3)** to remove them.



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

   a. Gently remove the cable from the routing clips **(1)**.

   b. Detach and release the cable (it is attached to the back cover with double-sided tape), and remove the cable **(2)**.

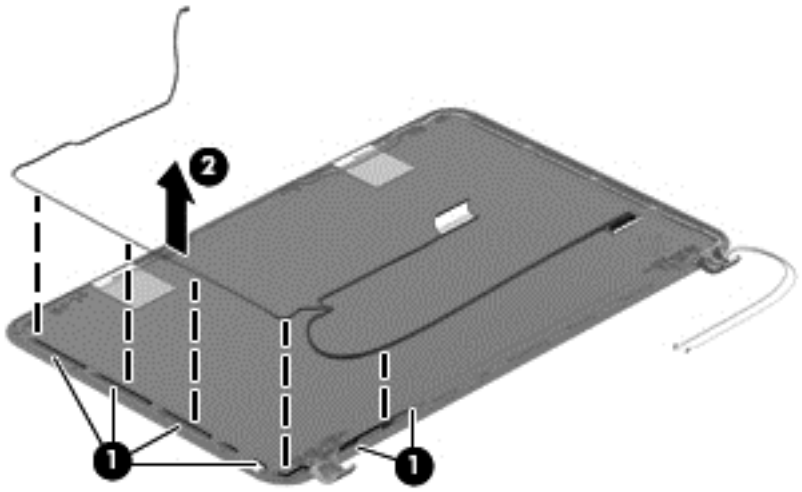


5. If it is necessary to replace the wireless antenna cables and transceivers:

   a. Release the wireless antenna cables from the clips **(1)** built into the back cover.

   b. Release the wireless antenna transceivers from the back cover. (The wireless antenna transceivers are attached to the back cover with double-sided tape.)

c. Remove the wireless antenna cables and transceivers **(2)**.



Reverse this procedure to reassemble and install the display assembly.

Power connector

Description	Spare part number
Power connector	697921-001

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

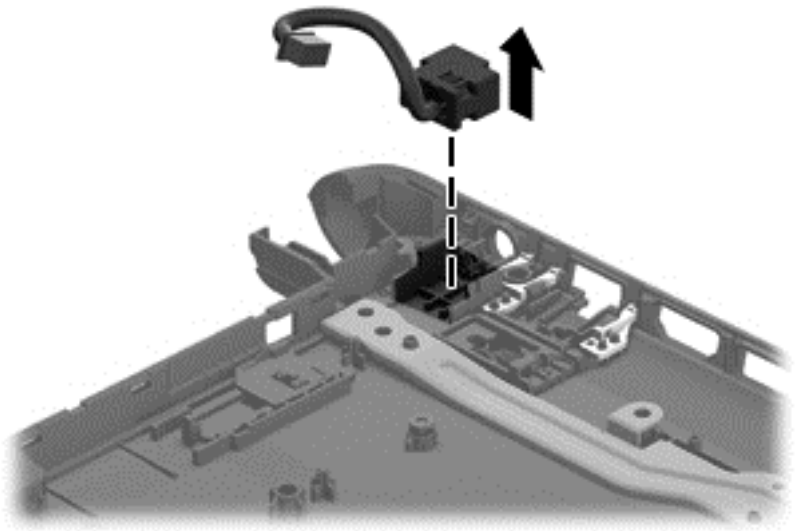
Before removing the power connector, follow these steps:

1. Shut down the computer.
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 battery (see Battery on page 20).
5. Remove the keyboard (see Keyboard on page 24).
6. Remove the top cover (see Top cover on page 27).
7. Remove the hard drive (see Hard drive on page 31).
8. Remove the USB board (see USB board/Audio jack on page 33).
9. Remove the WLAN (see WLAN module on page 34).
10. Remove the system board (see System board on page 37).
11. Remove the display assembly (see Display panel on page 22).

Remove the power connector:

NOTE: The power connector screw and bracket were removed during the process to remove the system board.

▲ Lift out the power connector to remove it from the base enclosure.



Reverse these procedures to replace the power connector.

5 Specifications

Computer specifications

	Metric	U.S.
Dimensions:		
Width	**34.7 cm**	13.67 in
Depth	**23.8 cm**	9.37 in
Height (front to back)	**2.1 cm to 2.1 cm**	.83 in to .83 in
Weight:	**1.8 kg**	3.96 lbs
Input power		
Operating voltage and current	19.5 V dc @ 3.33 A – 65 W	
Temperature		
Operating	**5°C to 35°C**	41°F to 95°F
Nonoperating	**-20°C to 60°C**	-4°F to 140°F
Relative humidity		
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	
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 (14.0 in), display specifications

	Metric	U.S.
Dimensions		
Width	**32.4 cm**	12.8 in
Height	**19.3 cm**	7.6 in
Diagonal	**35.6 cm**	14.0 in
Number of colors	262K (6 bit)	
Contrast ratio	500:1 (typical)	
Brightness	200 cd/m^2 (nits) (typical)	
Backlight	WLED	
Total power consumption	3.2 W (max)	
Viewing angle	±45° horizontal, +15° up & -35° down vertical (typical)	

Hard drive specifications

	320 GB*
Dimensions	
Height	9.5 mm and 7.0 mm
Width	70 mm
Weight	107 g max
Interface type	SATA
Transfer rate	300 MB/sec
Security	ATA security
Seek times (typical read, including setting)	
Single track	2.0 ms
Average	12.0 ms
Maximum	22.0 ms
Logical blocks	625,121,433
Disk rotational speed	5400 rpm
Operating temperature	
*Size refers to hard drive storage capacity. Actual accessible capacity is less. Actual drive specifications may differ slightly.	
NOTE: Certain restrictions and exclusions apply. Contact support for details.	

Solid-state drive specifications

Performance	
Sequential read (maximum)	up to 220 MB/s
Sequential write (maximum)	up to 50 MB/s
Characteristics	
Interface	SATA 3.0
Flash type	Multi-Level Cell (MLC) NAND
Flash capacity	16 GB
Features	ATA Security; ATA8-ACS; SATA 3.0; Device Initiated Power Management (DIPM)
Environmental specifications	
Operating temperature	0°C to +70°C (32°F to 158°F)
Storage temperature	-55°C to +85°C (-67°F to 185°F)
Shock	1500 g/0.5msec half sine
Vibration (operating)	5 Grms, 10-2000 Hz
Physical specifications	
Connector	7+15 pin SATA connector
Weight	53 g (1.87 oz)

6 Power cord set requirements

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

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

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

Requirements for all countries

The following requirements are applicable to all countries and regions:

- The length of the power cord set must be at least **1.0 m** (3.3 ft) and no more than **2.0 m** (6.5 ft).
- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country or region where the power cord set will be used.
- The power cord sets must have a minimum current capacity of 10 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
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

Country/region	Accredited agency	Applicable note number
The United States	UL	2

1. The flexible cord must be Type HO5VV-F, 3-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
2. The flexible cord must be Type SVT/SJT or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a 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, 0.75 mm² or 1.25 mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V ac) configuration.
4. The flexible cord must be Type RVV, 3-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the CCC certification mark.
5. The flexible cord must be Type H05VV-F 3-conductor, 0.75 mm² 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 3-conductor, 1.25 mm² conductor size. Power cord set fittings (appliance coupler, cable, and wall plug) must bear the BSMI certification mark.
7. For 127 V ac, the flexible cord must be Type SVT or SJT 3-conductor, 18 AWG, with plug NEMA 5-15P (15 A, 125 V ac), with UL and CSA or C-UL marks. For 240 V ac, the flexible cord must be Type H05VV-F 3-conductor, 0.75 mm² or 1.00 mm2 conductor size, with plug BS 1363/A with BSI or ASTA marks.

7 Recycling

When a battery has reached the end of its useful life, do not dispose of the battery in general household waste. Follow the local laws and regulations in your area for battery disposal. HP encourages customers to recycle used electronic hardware, HP original print cartridges, and rechargeable batteries.

For more information about recycling programs, see the HP website at www.hp.com/recycle.

Index

A

AC adapter
- lights 7
- product description 2
- spare part number 12, 13

antenna
- identifying 3, 12
- removal 49
- spare part number 12, 13, 49

Antenna Kit
- identifying 12
- removal 49
- spare part number 12, 13, 49

audio, product description 1

audio-in jack
- identifying 6, 11
- removal 33
- spare part number 11, 13, 33

audio-out jack
- identifying 6, 11
- removal 33
- spare part number 11, 13, 33

B

back cover
- identifying 12
- removal 49
- spare part number 12, 14, 49

base enclosure
- identifying 11
- spare part number 11, 14

battery
- identifying 11
- product description 2
- removal 20
- replacement 20
- spare part number 11, 13, 20

battery bay 8

battery lock, identifying 8

battery release latch, identifying 8

battery, RTC
- identifying 11
- removal 43
- spare part number 11, 13, 43

buttons
- left TouchPad 4
- power 5
- right TouchPad 4

C

cables, service considerations 15

caps lock light, identifying 5

chipset, product description 1

components
- bottom 8
- display 3
- left side 6
- right side 7
- top 4

computer feet
- locations 21
- spare part number 11, 13, 21

computer major components 10

computer specifications 54

connectors, service considerations 15

D

Digital Media Slot, identifying 7

display assembly
- removal 49
- spare part number 10, 49
- subcomponents 12

display bezel
- identifying 12
- spare part number 12, 13, 22

Display Hinge Kit
- identifying 12
- removal 49
- spare part number 12, 13, 49

display panel
- identifying 12
- product description 1
- removal 22
- spare part number 12, 13, 22

Display Panel Cable Kit
- identifying 12
- removal 49
- spare part number 12, 13, 49

display specifications 55

drive light, identifying 7

drives, precautions 16

E

electrostatic discharge 16

equipment guidelines 18

Ethernet, product description 1

external media cards, product description 2

F

fan
- identifying 11
- removal 46
- spare part number 11, 13, 46

feet
- locations 21
- spare part number 11, 13, 21

G

graphics, product description 1

grounding guidelines 16

guidelines
- equipment 18
- grounding 16
- packaging 17
- transporting 17
- workstation 17

H

hard drive
- identifying 11
- precautions 16
- product description 1
- removal 31
- spare part number 11, 13, 31
- specifications 55

Hard Drive Hardware Kit, spare part number 11, 13, 31

hard drive light, identifying 7

HDMI port, identifying 7

headphone
- identifying 6
- spare part number 11, 13, 33

heat sink
identifying 11
removal 45
spare part number 11, 13, 45
hinge
identifying 12
spare part number 12, 13, 49

I
integrated webcam light, identifying 3
internal media card, product description 2
internal microphone, identifying 3

J
jack
audio-in 6
audio-out 6
headphone 6
microphone 6
network 7
RJ-45 (network) 7
RJ-45 (network) lights 7

K
keyboard
identifying 10
product description 2
removal 24
spare part number 10, 14, 24

L
latch, battery release 8
lights
AC adapter 7
caps lock 5
drive 7
hard drive 7
power 5, 7
webcam 3

M
mass storage device
precautions 16
removal 31
spare part number 31
memory module
identifying 11
installation 40
product description 1
removal 40
spare part number 11, 13, 40
microphone
identifying 6
product description 1
removal 49
spare part number 11, 13, 33, 49
model name 1

N
network jack, identifying 7

O
operating system, product description 2

P
packaging guidelines 17
PCH heat sink
identifying 11
removal 44
spare part number 11, 13, 44
plastic parts, service considerations 15
pointing device, product description 2
ports
HDMI 7
product description 2
USB 2.0 6, 7
power button board
identifying 11
removal 30
spare part number 11, 13, 30
power button, identifying 5
power connector
identifying 7, 11
removal 52
spare part number 11, 13, 52
power cord
requirements for all countries 57
requirements for specific countries and regions 58
set requirements 57
spare part number 12, 13
power lights, identifying 5, 7
power requirements, product description 2
processor, product description 1
product description
AC adapter 2
audio 1
battery 2
chipset 1
display panel 1
drive 1
Ethernet 1
external media cards 2
graphics 1
hard drive 1
internal media card 2
keyboard 2
memory module 1
microphone 1
operating system 2
pointing device 2
ports 2
power requirements 2
processor 1
product name 1
security 2
serviceability 2
solid-state drive 1
video 1
wireless 1
product name 1

R
recycling 60
removal/replacement
preliminaries 15
procedures 19
RJ-45 (network) jack lights, identifying 7
RJ-45 (network) jack, identifying 7
RJ-45 cover
identifying 11
removal 48
spare part number 11, 14, 48
RTC battery
identifying 11
removal 43
spare part number 11, 13, 43
Rubber Feet Kit
spare part number 11, 13, 21

S
Screw Kit, spare part number 13

security cable slot, identifying 6
security, product description 2
service considerations
cables 15
connectors 15
plastic parts 15
service label 9, 19
serviceability, product description 2
slots
Digital Media 7
security cable 6
solid-state drive
identifying 11
spare part number 11, 14, 21
specifications 56
speaker assembly
identifying 11
removal 47
spare part number 11, 13, 47
Speaker Kit, spare part number 11, 13, 47
speakers, identifying 5
specifications
computer 54
display 55
hard drive 55
solid-state drive 56
system board
identifying 11
removal 37
spare part number 11, 14, 37

T

Thermal Material Kit, spare part number 13
tools required 15
top cover
identifying 11
removal 27
spare part number 11, 14, 27
TouchPad buttons 4
TouchPad zone, identifying 4
transporting guidelines 17

U

USB 2.0 ports, identifying 6, 7
USB board
identifying 11
removal 33
spare part number 11, 13, 33

V

vents, identifying 6, 8
video, product description 1

W

webcam light, identifying 3
webcam, identifying 3
webcam/microphone module
identifying 12
removal 49
spare part number 12, 13, 49
wireless antenna
identifying 12
removal 49
spare part number 12, 13, 49
wireless, product description 1
WLAN antennas, identifying 3
WLAN module
identifying 11
removal 34
spare part number 11, 13, 34
workstation guidelines 17