



HP Mini 200

Maintenance and Service Guide

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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	5
Keys	5
Display	6
Buttons	7
Lights	8
TouchPad	9
Left side	10
Right side	11
Bottom	12
3 Illustrated parts catalog	13
Service tag	14
Computer major components	15
Display assembly subcomponents	19
Mass storage devices	21
Miscellaneous parts	22
Sequential part number listing	23
4 Removal and replacement procedures	27
Preliminary replacement requirements	27
Tools required	27
Service considerations	27
Plastic parts	27
Cables and connectors	27
Drive handling	28
Grounding guidelines	28
Electrostatic discharge damage	28
Packaging and transporting guidelines	30
Component replacement procedures	32

Service tag	32
Computer feet	33
Battery	34
SIM (select models only)	35
WLAN module	36
WWAN module	39
Memory module	41
RTC battery	42
Hard drive	43
Keyboard	45
Top cover	48
Speakers	54
System board	55
Fan	58
Heat sink	60
Display assembly	62

5 Setup Utility (BIOS) and System Diagnostics 68

Using Setup Utility	68
Starting Setup Utility	68
Changing the language of Setup Utility	68
Navigating and selecting in Setup Utility	69
Displaying system information	69
Restoring factory settings in Setup Utility	70
Exiting Setup Utility	70
Updating the BIOS	70
Determining the BIOS version	71
Downloading a BIOS update	71
Using System Diagnostics	72

6 Specifications 73

Computer specifications	73
10.1-inch WSVGA display specifications	74
Hard drive specifications	75

7 Backup and recovery 76

Backing up your information	77
Performing a system recovery	78
Using the Windows recovery tools	78
Using f11 recovery tools	79

Using a Windows 7 operating system DVD (purchased separately)	79
8 Power cord set requirements	81
Requirements for all countries	81
Requirements for specific countries and regions	82
9 Recycling	84
Index	85

1 Product description

Category	Description
Product Name	HP Mini 200
Processors	<ul style="list-style-type: none">Intel® Atom N2800 1.86-GHz processor, dual core, 1.0-MB L2 cache, 1066-MHz front-side bus (FSB), 6.5 WIntel Atom N2600 1.60-GHz processor, dual core, 1.0-MB L2 cache, 800-MHz FSB, 3.5 W <p>Processor is soldered to the system board</p>
Chipset	Intel NM10 Express Chipset
Graphics	<p>Internal graphics: Intel Graphics Media Accelerator 3600 (shared memory with up to 256-MB supported via Intel DVMT)</p> <p>Supports MPEG2/AVC/H.264/VC1/WMV9, and Microsoft DX9</p>
Panel	<p>10.1-in, light-emitting diode (LED), WSVGA, AntiGlare (1024×600) display; typical brightness: 200 nits</p> <p>All display assemblies include 2 wireless local area network (WLAN) antenna cables</p> <p>Supports 16:9 wide aspect ratio</p> <p>Lighted logo on top bezel</p>
Memory	<p>One customer-accessible/upgradable memory module slot</p> <p>DDR3-1066-MHz single channel support (on computer models equipped with an Intel Atom N2800 processor), DDR3-800-MHz single channel support (on computer models equipped with an Intel Atom N2600 processor)</p> <p>Supports 2-GB of system RAM (2048×1)</p>
Hard drives	<p>Supports 6.35-cm (2.5-in) hard drives in 9.5-mm (.37-in) and 7.0-mm (.28-in) thicknesses</p> <p>Customer-accessible</p> <p>Serial ATA</p> <p>Supports Accelerometer hard drive protection</p>

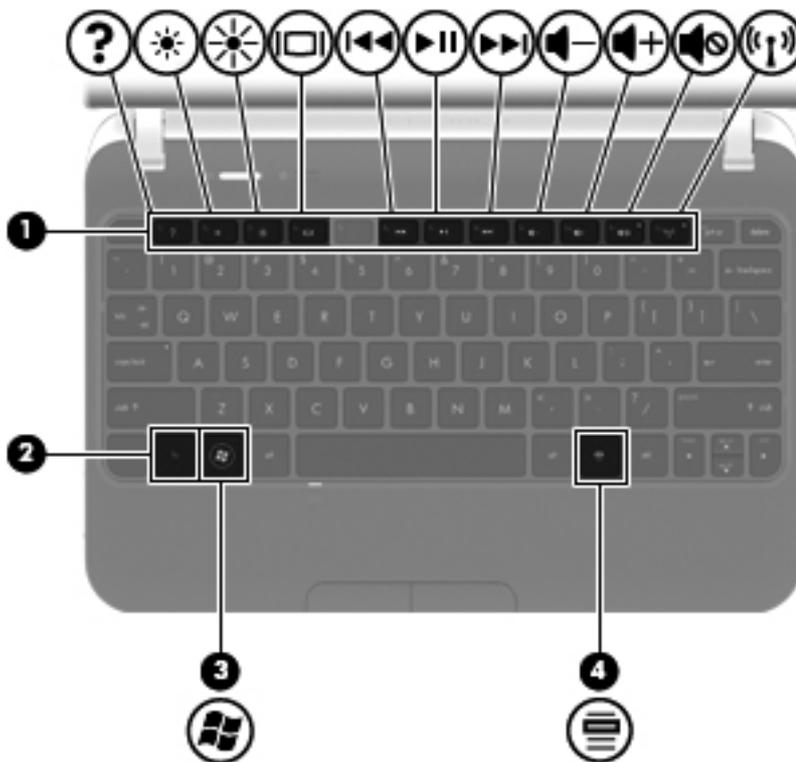
Category	Description
	<p>Supports the following configurations:</p> <ul style="list-style-type: none"> • 500 GB, 5400 rpm, 9.5 mm <p>NOTE: A 500-GB hard drive is not supported on computer models equipped with Windows 7 Starter or Windows 7 Home Basic in the People's Republic of China.</p> <ul style="list-style-type: none"> • 320 GB, 7200 rpm, 7.0 mm • 320 GB, 5400 rpm, 9.5 and 7.0 mm • 250 GB, 7200 rpm, 7.0 mm • 250 GB, 5400 rpm, 9.5 and 7.0 mm
Audio and video	<p>Single digital microphone</p> <p>Beats Audio with Beats logo</p> <p>Beats hotkey (fn+b)</p> <p>2 integrated, boxed stereo speakers, 1.5 W max</p> <p>HP VGA webcam (fixed, no tilt with activity LED, F/2.8, 640×480 by 30 frames per second)</p>
Ethernet	<p>Integrated 10/100 RTL8105T-VC-CG network interface card (NIC)</p>
Wireless	<p>Integrated wireless local area network (WLAN) options by way of wireless module</p> <p>Two WLAN antennas built into display assembly</p> <p>Support for the following WLAN formats:</p> <ul style="list-style-type: none"> • Atheros 9485GN 802.11b/g/n 1×1 WiFi and 3012 Bluetooth 4.0 Combo Adapter • Broadcom 4313GN 802.11b/g/n 1×1 WiFi and 20702 Bluetooth 4.0 Combo Adapter • Intel Centrino Advanced-N 6230 WLAN module • Ralink 5390GN 802.11b/g/n 1×1 WiFi Adapter • Ralink RT5390R 802.11bgn 1×1 Wi-Fi Adapter <p>Integrated wireless wide area network (WWAN) options by way of wireless module</p> <p>Two WWAN antennas built into display assembly</p> <p>Support for the following WLAN formats:</p> <ul style="list-style-type: none"> • HP hs2350 HSPA+ Mobile Broadband Module • HP hs2340 HSPA+ Mobile Broadband Module • HP lc2010 HSPA Mobile Broadband Module • HP lc2000 HSPA Mobile Broadband Module

Category	Description
External media cards	<p>Digital Media Slot with push-push technology, supporting:</p> <ul style="list-style-type: none"> • MultiMediaCard • Secure Digital (SD) Memory Card • Secure Digital High Capacity (SDHC) Memory Card • Secure Digital Extended Capacity (SDxC) <p>Supports mini versions by use of an adapter (adapter is not included).</p>
Ports	<ul style="list-style-type: none"> • 3-pin AC power • Audio-in (mono microphone) • Audio-out (stereo headphone) • RJ-45 (Ethernet, includes link and activity lights) • USB 2.0 (3 ports) • VGA (Dsub 15 pin) supporting 1920 × 1200 external resolution @ 60Hz, hot plug and unplug and auto-detection for correct output to wide-aspect vs. standard aspect video
Keyboard/pointing devices	<p>93%-size, Island-style, spill-resistant, keyboard with full numeric keypad</p> <p>Textured, pocket-style keyboard</p> <p>TouchPad with capacitive multi-touch gestures, 2-finger scrolling, and pinch-zoom enabled</p> <p>Taps enabled by default</p>
Power requirements	<p>40W AC adapter with localized cable plug support (3-wire plug with ground pin, supports 3-pin DC connector)</p> <p>Support for the following batteries:</p> <ul style="list-style-type: none"> • 6-cell, 55-Whr, 2.55-Ah Li-ion battery • 3-cell, 28-Whr, 2.55-Ah Li-ion battery
Security	<p>Supports security lock</p>

Category	Description
Operating system	Preinstalled: <ul style="list-style-type: none">• Windows 7 Home Basic 32-bit• Windows 7 Home Premium 32-bit• Windows 7 Professional 32-bit• Windows 7 Starter 32-bit• FreeDOS• USB key recovery support for service, refurbish centers, and repair centers
Serviceability	End-user replaceable parts: <ul style="list-style-type: none">• AC adapter• Battery• Hard drive• Memory module• WLAN module• WWAN module

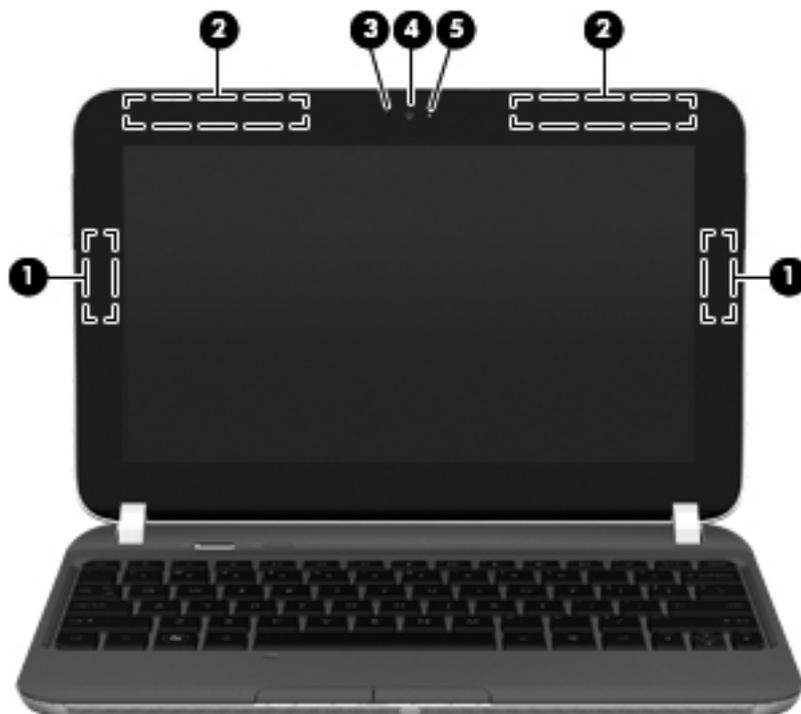
2 External component identification

Keys



Item	Component	Description
(1)	Action keys	Execute frequently used system functions.
(2)	<code>fn</code> key	Executes frequently used system functions when pressed in combination with a function key, the <code>num lk</code> key, or the <code>esc</code> key.
(3)	Windows logo key	Displays the Windows Start menu.
(4)	Windows applications key	Displays a shortcut menu for items beneath the pointer.

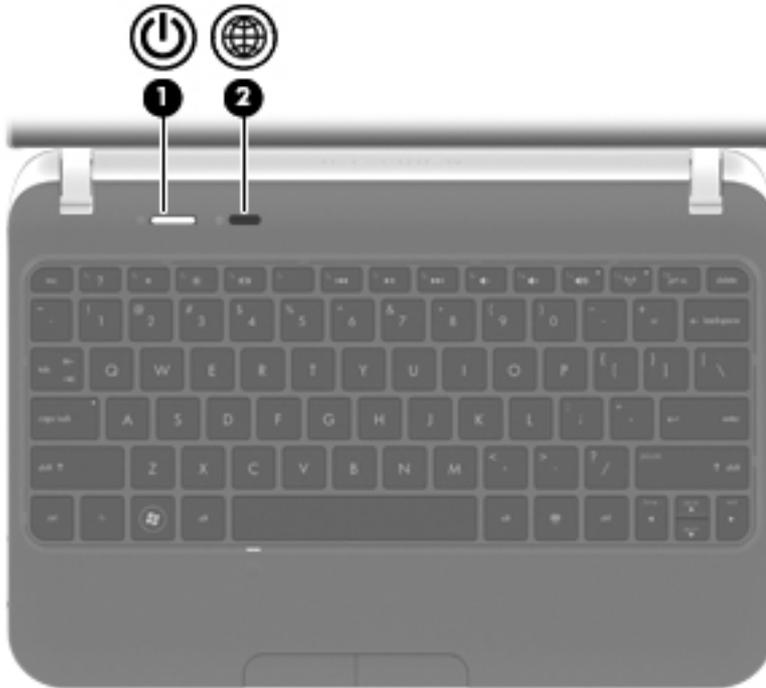
Display



Item	Component	Description
(1)	WLAN antennas (2)*	Send and receive wireless signals to communicate with WLANs.
(2)	WWAN antennas (2)*	Send and receive wireless signals to communicate with WWANs.
(3)	Internal microphone	Records sound.
(4)	Webcam	Records video and captures still photographs. To use the webcam, double-click the ArcSoft Camera Suite icon on the desktop, or select Start > All Programs > ArcSoft Camera Suite > Launch WebCam Companion .
(5)	Webcam light	On: The webcam is in use.

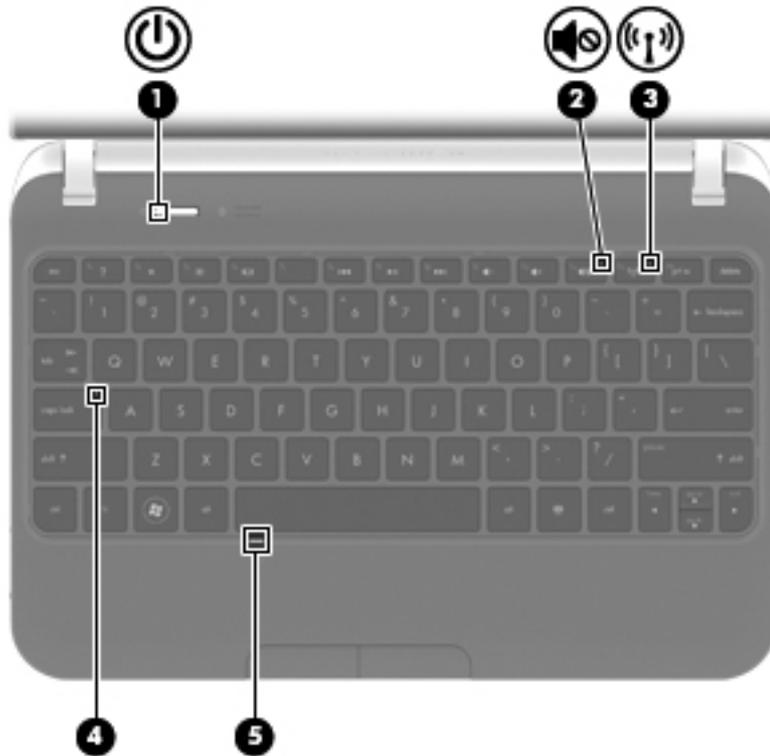
*The antennas are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas free from obstructions. To see wireless regulatory notices, refer to the section of the *Regulatory, Safety, and Environmental Notices* that applies to your country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

Buttons



Item	Component	Description
(1)	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>If the computer has stopped responding and Windows shutdown procedures are ineffective, press and hold the power button for at least 5 seconds to turn off the computer.</p> <p>To learn more about your power settings, select Start > Control Panel > System and Security > Power Options, or refer to the <i>HP Notebook Reference Guide</i>.</p>
(2)	Web browser button	<p>When the computer is in Microsoft Windows, press the button to open the default Web browser.</p>

Lights



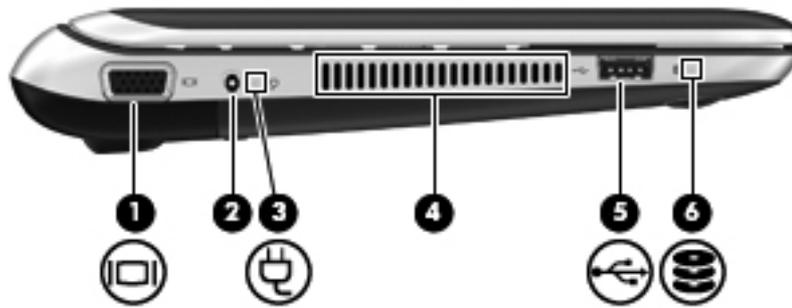
Item	Component	Description
(1)	Power light	<ul style="list-style-type: none">• White: The computer is on.• Blinking white: The computer is in the Sleep state.• Off: The computer is off or in Hibernation.
(2)	Mute light	<ul style="list-style-type: none">• Amber: Computer sound is off.• Off: Computer sound is on.
(3)	Wireless light	<ul style="list-style-type: none">• White: An integrated wireless device, such as a WLAN device and/or a Bluetooth device, is on.• Amber: All wireless devices are off.
(4)	Caps lock light	On: Caps lock is on.
(5)	TouchPad light	<ul style="list-style-type: none">• Off: The TouchPad is on.• Amber: The TouchPad is off.

TouchPad



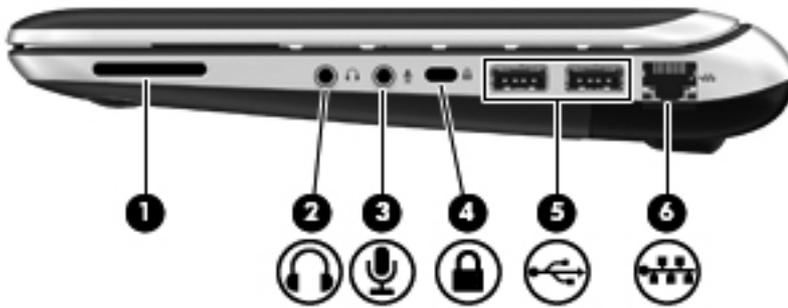
Item	Component	Description
(1)	TouchPad light	<ul style="list-style-type: none">• On: The TouchPad is on.• Amber: The TouchPad is off.
(2)	TouchPad on/off button	Quickly double-tap the TouchPad on/off button to turn the TouchPad off and on.
(3)	TouchPad zone	Moves the pointer and selects or activates items on the screen.
(4)	Left TouchPad button	Functions like the left button on an external mouse.
(5)	Right TouchPad button	Functions like the right button on an external mouse.

Left side



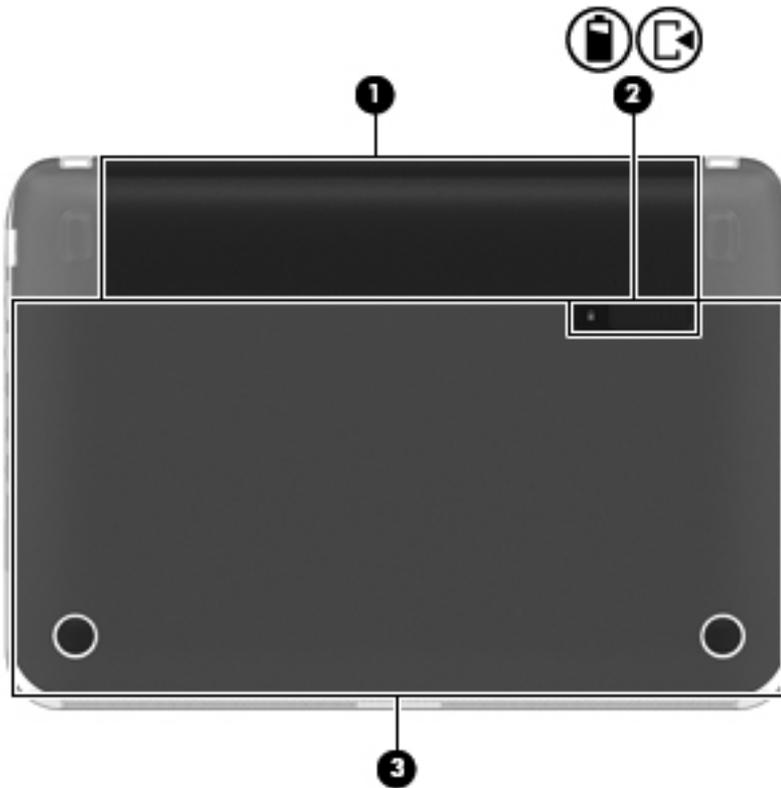
Item	Component	Description
(1)	External monitor port	Connects an external VGA monitor or projector.
(2)	Power connector	Connects an AC adapter.
(3)	AC adapter/battery light	<ul style="list-style-type: none">• Amber: The computer is connected to external power, and the battery is charging.• White: The computer is connected to external power, and the battery is fully charged.• Blinking white: The computer is in the Sleep state, or the battery charge level is 10% or less (recharge the battery as soon as possible).• Off: The computer is not connected to external power.
(4)	Vents	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.
(5)	USB 2.0 port	Connect an optional USB 2.0 device.
(6)	Hard drive light	On : The hard drive is being accessed.

Right side



Item	Component	Description
(1)	Digital Media Slot	<p>Supports the following digital card formats:</p> <ul style="list-style-type: none"> • MultiMediaCard • Secure Digital (SD) Memory Card • Secure Digital High Capacity (SDHC) Memory Card • Secure Digital Extended Capacity (SDxC) <p>Supports mini versions by use of an adapter (adapter is not included).</p>
(2)	Audio-out (headphone) jack	<p>Produce sound when connected to optional powered stereo speakers, headphones, ear buds, a headset, or television audio.</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>.</p> <p>When a device is connected to the jack, the computer speakers are disabled.</p>
(3)	Audio-in (microphone) jack	Connects an optional computer headset microphone, stereo array microphone, or monaural microphone.
(4)	Security cable slot	<p>Attaches an optional security cable to the computer.</p> <p>NOTE: The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.</p>
(5)	USB 2.0 ports (2)	Connects optional USB 2.0 devices.
(6)	RJ-45 (network) jack	Connects a network cable.

Bottom

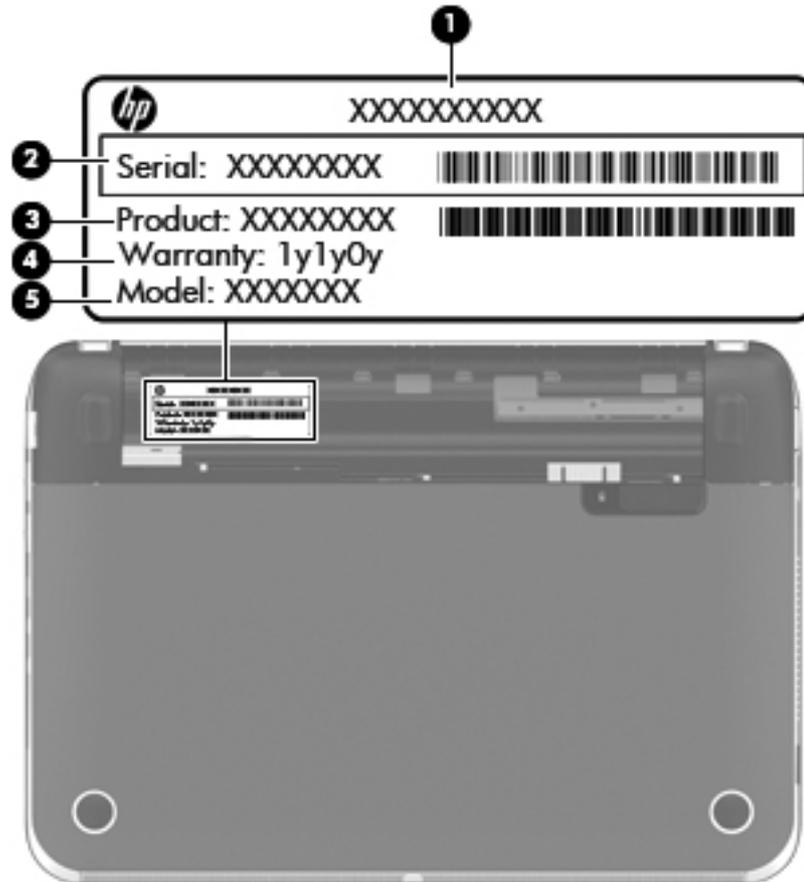


Item	Component	Description
(1)	Battery bay	Holds the battery and the subscriber identity module (SIM) slot.
(2)	Battery/service cover release latch	Releases the battery from the battery bay and the service cover from the computer.
(3)	Service cover	Provides access to the hard drive bay, the memory module slot, the WLAN module, and the WWAN module (select models only).

3 Illustrated parts catalog

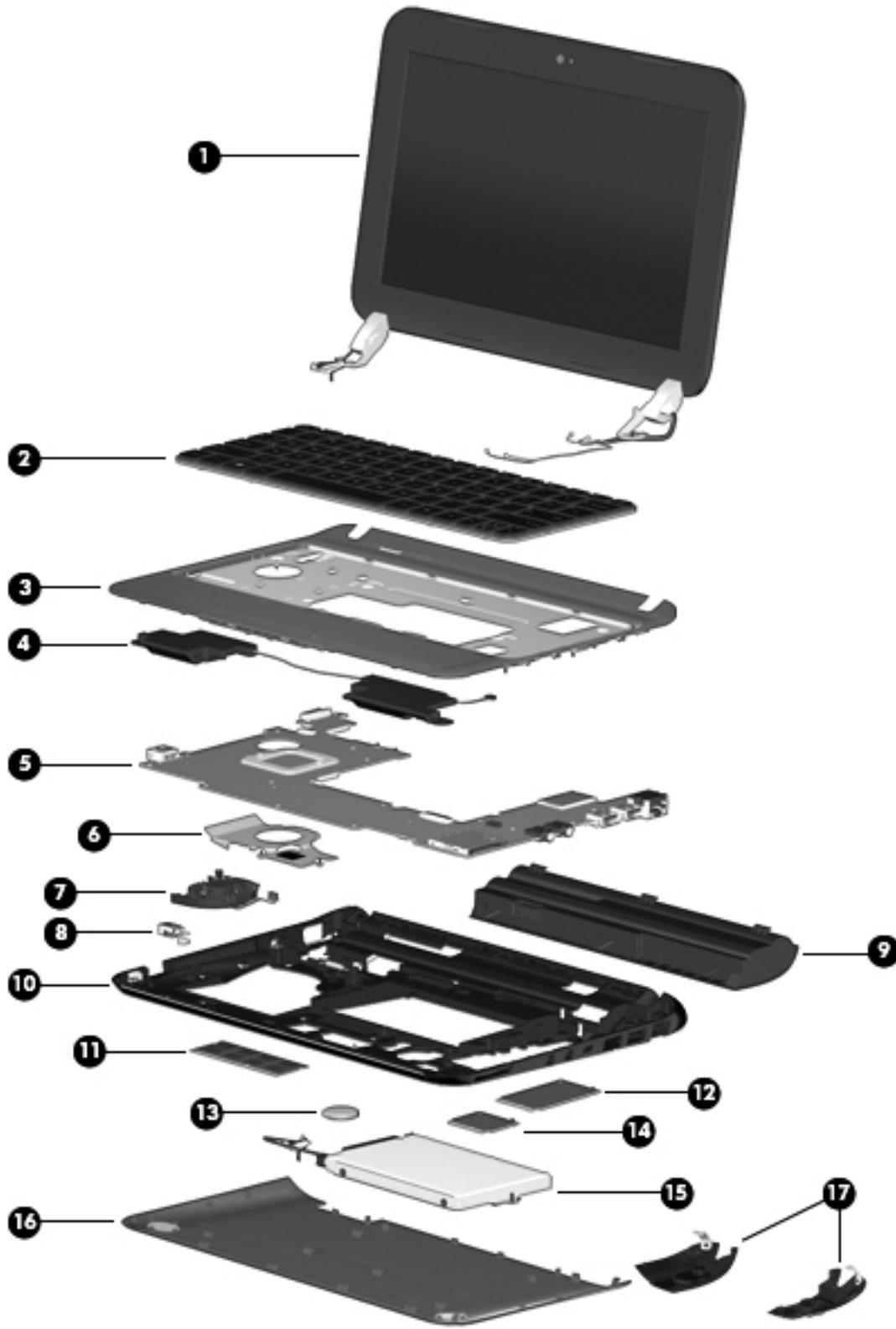
Service tag

When ordering parts or requesting information, provide the computer serial number and model number provided on the service tag. It is necessary to remove the battery to obtain these numbers. See [Battery on page 34](#) for battery removal instructions.



Item	Description	Function
(1)	Product name	This is the product name affixed to the front of the computer.
(2)	Serial number (s/n)	This is an alphanumeric identifier that is unique to each product.
(3)	Part number/Product number (p/n)	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	This is the alphanumeric identifier used to locate documents, drivers, and support for the computer.

Computer major components

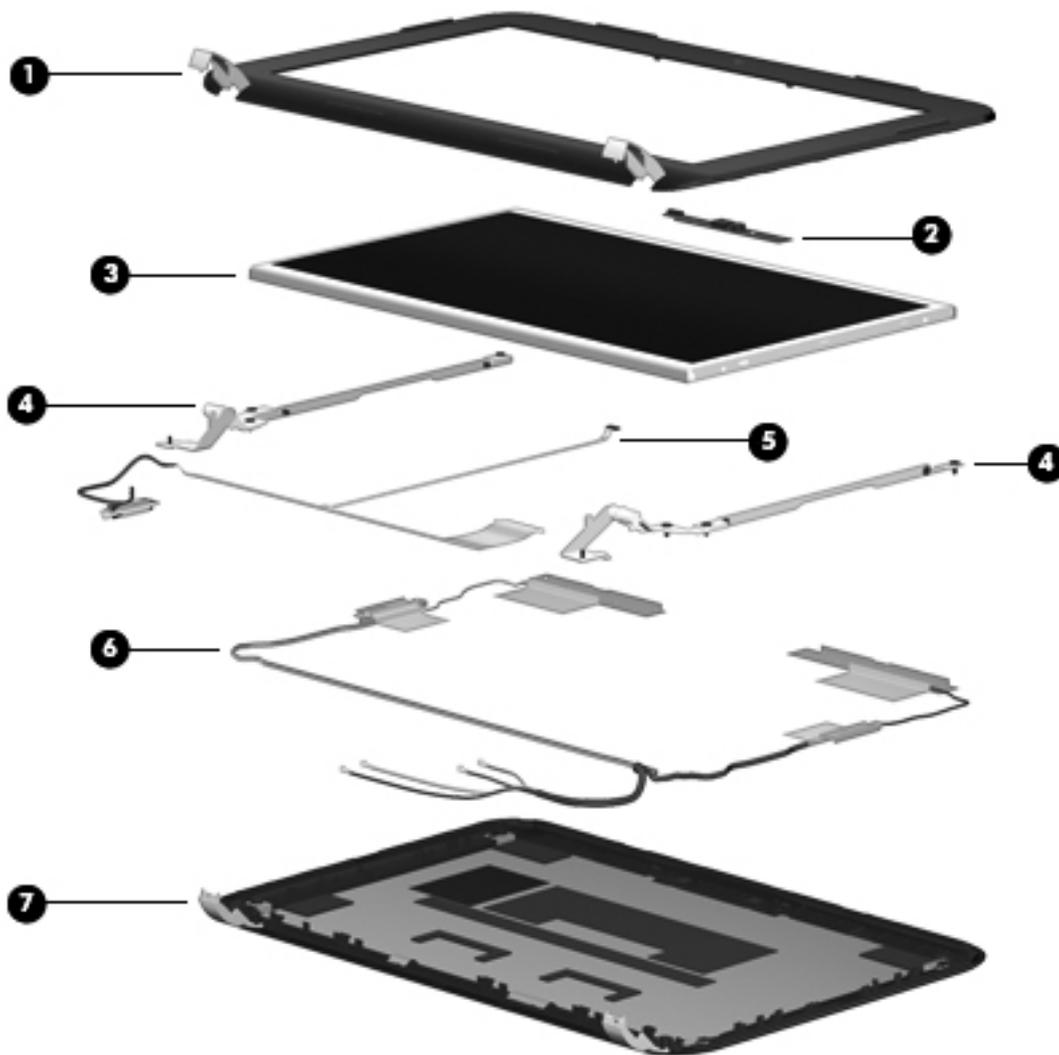


Item	Component	Spare part number
(1)	Display assembly , 10.1-in, WSVGA, HD (includes display panel cable, 2 WLAN antenna transceivers and cables, and webcam/microphone module and cable):	
	In gloss black finish	658507-001
	In Pacific blue finish	658510-001
	In Sonoma red finish	658508-001
	WSVGA, HD display assembly in gloss black finish for use only on computer models equipped with WWAN capability (includes WWAN antenna cables and transceivers)	668166-001
	NOTE: For more display assembly spare part information, see Display assembly subcomponents on page 19 .	
(2)	Keyboard (includes keyboard cable):	
	For use in Belgium	660843-A41
	For use in Canada	660843-121
	For use in the Czech Republic and Slovakia	660843-FL1
	For use in Denmark, Finland, and Norway	660843-DH1
	For use in France	660843-051
	For use in Germany	660843-041
	For use in Greece	660843-DJ1
	For use in Hungary	660843-211
	For use in India	660843-D61
	For use in Israel	660843-BB1
	For use in Italy	660843-061
	For use in Japan	660843-291
	For use in Latin America	660843-161
	For use in the Netherlands	660843-B31
	For use in Portugal	660843-131
	For use in Russia	660843-251
	For use in Saudi Arabia	660843-171
	For use in Slovenia	660843-BA1
	For use in South Korea	660843-AD1
	For use in Spain	660843-071
	For use in Switzerland	660843-BG1
	For use in Taiwan	660843-AB1
	For use in Thailand	660843-281
	For use in Turkey	660843-141

Item	Component	Spare part number
	For use in the United Kingdom and Singapore	660843-031
	For use in the United States	660843-001
(3)	Top cover (includes TouchPad board and bracket):	
	In gloss black finish	663677-001
	In Pacific blue finish	658515-001
	In Sonoma red finish	658513-001
(4)	Speakers (include cables)	650736-001
(5)	System board (includes processor and replacement thermal material):	
	For use only on computer models equipped with an Intel Atom N2800 1.86-GHz processor and WWAN capability (1.0-MB L2 cache, dual core, 6.5 W)	676912-001
	For use only on computer models equipped with an Intel Atom N2800 1.86-GHz processor, but not WWAN capability (1.0-MB L2 cache, dual core, 6.5 W)	676911-001
	For use only on computer models equipped with an Intel Atom N2600 1.60-GHz processor and WWAN capability (1.0-MB L2 cache, dual core, 3.5 W)	676910-001
	For use only on computer models equipped with an Intel Atom N2600 1.60-GHz processor, but not WWAN capability (1.0-MB L2 cache, dual core, 3.5 W)	676909-001
(6)	Heat sink (includes replacement thermal material)	651898-001
(7)	Fan	651897-001
(8)	Power connector cable	656095-001
(9)	Battery:	
	6-cell, 55-Wh, 2.55-Ah, Li-ion battery	646757-001
	3-cell, 28-Wh, 2.55-Ah, Li-ion battery	646755-001
(10)	Base enclosure	663675-001
(11)	Memory module:	
	2-GB memory module (PC3, 12800, 1600-MHz)	652972-001
	2-GB memory module (PC3, 10600, 1333-MHz)	621565-001
(12)	WWAN module:	
	HP hs2350 HSPA+ Mobile Broadband Module	668969-001
	HP hs2340 HSPA+ Mobile Broadband Module	632155-001
	HP lc2010 HSPA Mobile Broadband Module	612600-001
	HP lc2000 HSPA Mobile Broadband Module	612599-001
(13)	RTC battery	599516-001
(14)	WLAN module:	
	Atheros 9485GN 802.11b/g/n 1×1 WiFi and 3012 Bluetooth 4.0 Combo Adapter	655795-001

Item	Component	Spare part number
	Broadcom 4313GN 802.11b/g/n 1×1 WiFi and 20702 Bluetooth 4.0 Combo Adapter	657325-001
	Ralink RT5390R 802.11bgn 1×1 Wi-Fi Adapter	691415-001
	Intel Centrino Advanced-N 6230 WLAN module	631956-001
	Ralink 5390GN 802.11b/g/n 1×1 WiFi Adapter	630703-001
(15)	Hard drive (2.5-in, 7.0-mm, SATA; does not include hard drive bracket, hard drive connector cable, hard drive rubber isolators, screws):	
	500-GB, 5400-rpm	634932-001
	320-GB, 5400-rpm	645193-001
	250-GB, 5400-rpm	645191-001
	Hard Drive Hardware Kit (not illustrated, includes hard drive bracket, hard drive connector cable, hard drive rubber isolators, and screws)	664913-001
(16)	Service cover	663676-001
(17)	Corner covers	652308-001
	Rubber Kit (includes 2 rubber feet)	650734-001

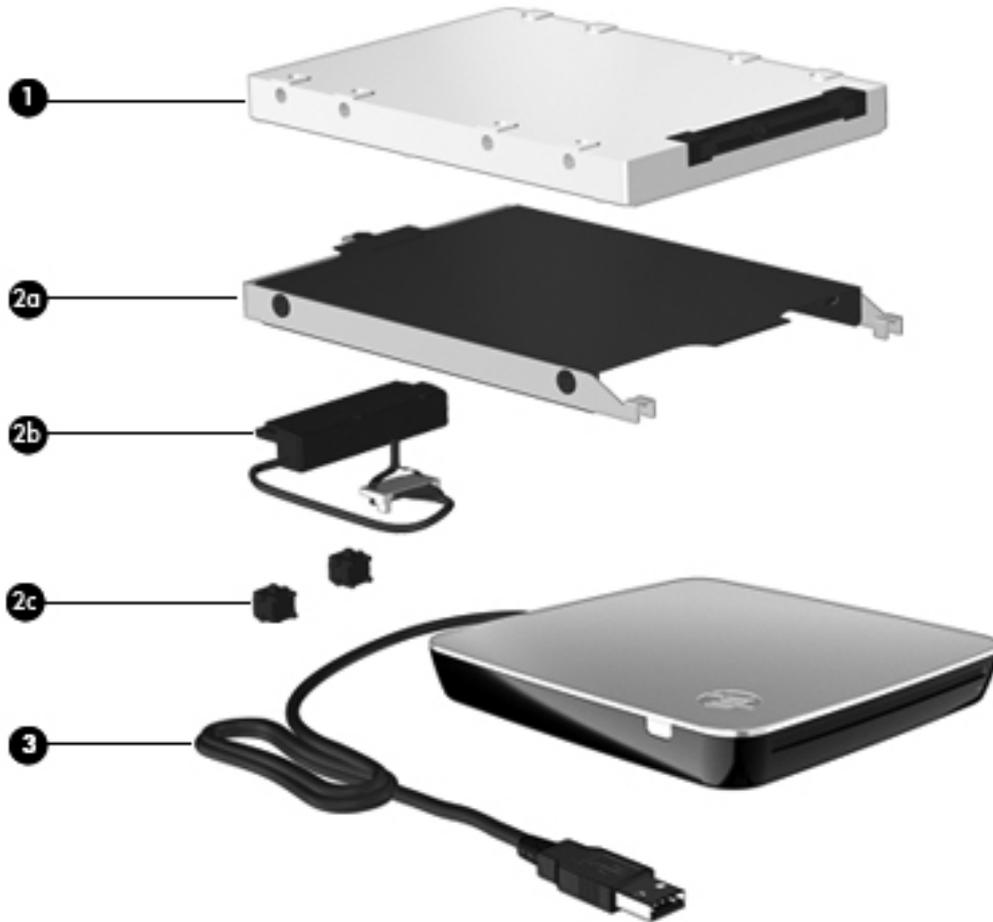
Display assembly subcomponents



Item	Component	Spare part number
(1)	Display bezel	658503-001
(2)	Webcam/microphone module	658516-001
(3)	10.1-in, LED, BrightView, WSVGA display panel	658511-001
(4)	Display Hinge Kit (includes left and right display hinges and brackets)	650711-001
(5)	Display Cable Kit (includes display panel cable and webcamera/microphone module cable)	658505-001
(6)	Antenna Kit (includes left and right wireless antenna cables and transceivers)	658498-001
(7)	Display enclosure	
	In gloss black finish	658499-001
	In Pacific blue finish	658502-001

Item	Component	Spare part number
	In Sonoma red	658500-001
	In gloss black finish for use only on computer models equipped with WWAN capability	684439-001

Mass storage devices



Item	Component	Spare part number
(1)	Hard drive (2.5-in, 7.0-mm, SATA; does not include hard drive connector cable, hard drive bracket, or screws):	
	500-GB, 5400-rpm	634932-001
	320-GB, 5400-rpm	645193-001
	250-GB, 5400-rpm	645191-001
	Hard Drive Hardware Kit , includes:	664913-001
(2a)	Hard drive bracket	
(2b)	Hard drive connector cable	
(2c)	Hard drive rubber isolators (2)	
	Screws (not illustrated)	
(3)	USB external DVD±RW DL SuperMulti Drive	659940-001

Miscellaneous parts

Component	Spare part number
40-W HP Smart AC adapter (RC/V 2-wire)	624502-001
HP mobile optical wireless 2.4-GHz mouse	597587-001
Power cord (3-pin, black, 1.83-m):	
For use in Argentina	490371-D01
For use in Australia	490371-011
For use in Denmark	490371-081
For use in Europe	490371-021
For use in India	490371-D61
For use in Israel	490371-BB1
For use in Italy	490371-061
For use in Japan	490371-291
For use in North America	490371-001
For use in the People's Republic of China	490371-AA1
For use in South Africa	490371-AR1
For use in South Korea	490371-AD1
For use in Switzerland	490371-111
For use in Taiwan	490371-AB1
For use in Thailand	490371-201
For use in the United Kingdom and Singapore	490371-031
Screw Kit	650735-001

Sequential part number listing

Spare part number	Description
490371-001	Power cord for use in North America (3-pin, black, 1.83-m)
490371-011	Power cord for use in Australia (3-pin, black, 1.83-m)
490371-021	Power cord for use in Europe (3-pin, black, 1.83-m)
490371-031	Power cord for use in the United Kingdom and Singapore (3-pin, black, 1.83-m)
490371-061	Power cord for use in Italy (3-pin, black, 1.83-m)
490371-081	Power cord for use in Denmark (3-pin, black, 1.83-m)
490371-111	Power cord for use in Switzerland (3-pin, black, 1.83-m)
490371-201	Power cord for use in Thailand (3-pin, black, 1.83-m)
490371-291	Power cord for use in Japan (3-pin, black, 1.83-m)
490371-AA1	Power cord for use in the People's Republic of China (3-pin, black, 1.83-m)
490371-AB1	Power cord for use in Taiwan (3-pin, black, 1.83-m)
490371-AD1	Power cord for use in South Korea (3-pin, black, 1.83-m)
490371-AR1	Power cord for use in South Africa (3-pin, black, 1.83-m)
490371-BB1	Power cord for use in Israel (3-pin, black, 1.83-m)
490371-D01	Power cord for use in Argentina (3-pin, black, 1.83-m)
490371-D61	Power cord for use in India (3-pin, black, 1.83-m)
597587-001	HP 2.4-GHz wireless optical mouse
599516-001	RTC battery
612599-001	HP Ic2000 HSPA Mobile Broadband Module
612600-001	HP Ic2010 HSPA Mobile Broadband Module
621565-001	2-GB memory module (PC3, 10600, 1333-MHz)
624502-001	40-W HP Smart AC adapter (RC/V 2-wire)
630703-001	Ralink 5390GN 802.11b/g/n 1x1 WiFi Adapter
632155-001	HP hs2340 HSPA+ Mobile Broadband Module
634932-001	500-GB, 5400-rpm, 7.0-mm hard drive (does not include hard drive bracket, hard drive connector cable, hard drive rubber isolators, or screws)
	NOTE: The hard drive bracket, hard drive connector cable, hard drive rubber isolators, and screws are included in the Hard Drive Hardware Kit, spare part number 664913-001.
645191-001	250-GB, 5400-rpm, 7.0-mm hard drive (does not include hard drive bracket, hard drive connector cable, hard drive rubber isolators, or screws)
	NOTE: The hard drive bracket, hard drive connector cable, hard drive rubber isolators, and screws are included in the Hard Drive Hardware Kit, spare part number 664913-001.

Spare part number	Description
645193-001	320-GB, 5400-rpm, 7.0-mm hard drive (does not include hard drive bracket, hard drive connector cable, hard drive rubber isolators, or screws) NOTE: The hard drive bracket, hard drive connector cable, hard drive rubber isolators, and screws are included in the Hard Drive Hardware Kit, spare part number 664913-001.
646755-001	3-cell, 28-Wh, 2.55-Ah, Li-ion battery
646757-001	6-cell, 55-Wh, 2.55-Ah, Li-ion battery
650711-001	Display hinges (includes left and right display hinges)
650734-001	Rubber Kit (includes 2 base enclosure rubber feet)
650735-001	Screw Kit
650736-001	Speakers (includes left and right speakers and cables)
651897-001	Fan
651898-001	Heat sink (includes replacement thermal material)
652308-001	Corner covers (includes left and right corner covers)
652972-001	2-GB memory module (PC3, 12800, 1600-MHz)
655795-001	Atheros 9485GN 802.11b/g/n 1×1 WiFi and 3012 Bluetooth 4.0 Combo Adapter
656095-001	Power connector cable
657325-001	Broadcom 4313GN 802.11b/g/n 1×1 WiFi and 20702 Bluetooth 4.0 Combo Adapter
658498-001	Antenna Kit (includes WLAN antenna cables and transceivers and WWAN antenna cables and transceivers)
658499-001	Display enclosure in gloss black finish
658500-001	Display enclosure in Sonoma red finish
658502-001	Display enclosure in Pacific blue finish
658503-001	Display bezel
658505-001	Display panel cable (includes display panel cable and webcam/microphone module cable)
658507-001	10.1-in, BrightView, WSVGA display assembly in gloss black finish (includes display panel cable, webcam/microphone module, and WLAN antenna cables and transceivers)
658508-001	10.1-in, BrightView, WSVGA display assembly in Sonoma red finish (includes display panel cable, webcam/microphone module, and WLAN antenna cables and transceivers)
658510-001	10.1-in, BrightView, WSVGA display assembly in Pacific blue finish (includes display panel cable, webcam/microphone module, and WLAN antenna cables and transceivers)
658511-001	10.1-in, WSVGA, display panel
658513-001	Top cover in Sonoma red finish (includes TouchPad board and bracket)
658515-001	Top cover in Pacific blue finish (includes TouchPad board and bracket)
658516-001	Webcam/microphone module (includes double-sided tape)
659940-001	External USB DVD±RW DL SuperMulti Drive

Spare part number	Description
660843-001	Keyboard for use in the United States (includes keyboard cable)
660843-031	Keyboard for use in the United Kingdom and Singapore (includes keyboard cable)
660843-041	Keyboard for use in Germany (includes keyboard cable)
660843-051	Keyboard for use in France (includes keyboard cable)
660843-061	Keyboard for use in Italy (includes keyboard cable)
660843-071	Keyboard for use in Spain (includes keyboard cable)
660843-121	Keyboard for use in Canada (includes keyboard cable)
660843-131	Keyboard for use in Portugal (includes keyboard cable)
660843-141	Keyboard for use in Turkey (includes keyboard cable)
660843-161	Keyboard for use in Latin America (includes keyboard cable)
660843-171	Keyboard for use in Saudi Arabia (includes keyboard cable)
660843-211	Keyboard for use in Hungary (includes keyboard cable)
660843-251	Keyboard for use in Russia (includes keyboard cable)
660843-281	Keyboard for use in Thailand (includes keyboard cable)
660843-291	Keyboard for use in Japan (includes keyboard cable)
660843-A41	Keyboard for use in Belgium (includes keyboard cable)
660843-AB1	Keyboard for use in Taiwan (includes keyboard cable)
660843-AD1	Keyboard for use in South Korea (includes keyboard cable)
660843-B31	Keyboard for use in the Netherlands (includes keyboard cable)
660843-BA1	Keyboard for use in Slovenia (includes keyboard cable)
660843-BB1	Keyboard for use in Israel (includes keyboard cable)
660843-BG1	Keyboard for use in Switzerland (includes keyboard cable)
660843-D61	Keyboard for use in India (includes keyboard cable)
660843-DH1	Keyboard for use in Denmark, Finland, and Norway (includes keyboard cable)
660843-DJ1	Keyboard for use in Greece (includes keyboard cable)
660843-FL1	Keyboard for use in the Czech Republic and Slovakia (includes keyboard cable)
663675-001	Base enclosure
663676-001	Service door
663677-001	Top cover in gloss black finish (includes TouchPad board and bracket)
664913-001	Hard Drive Hardware Kit (includes hard drive bracket, hard drive connector cable, hard drive rubber isolators, and screws)
668166-001	10.1-in, BrightView, WSVGA display assembly in gloss black for use only on computer models with WWAN capability (includes display panel cable, webcamera/microphone module, WLAN antenna cables and transceivers, and WWAN antenna cables and transceivers)

Spare part number	Description
668969-001	HP hs2350 HSPA+ Mobile Broadband Module
676909-001	System board for use only on computer models equipped with an Intel Atom N2600 1.60-GHz processor, but not WWAN capability (1.0-MB L2 cache, dual core, 3.5 W; includes processor and replacement thermal material)
676910-001	System board for use only on computer models equipped with an Intel Atom N2600 1.60-GHz processor and WWAN capability (1.0-MB L2 cache, dual core, 3.5 W; includes processor and replacement thermal material)
676911-001	System board for use only on computer models equipped with an Intel Atom N2800 1.86-GHz processor, but not WWAN capability (1.0-MB L2 cache, dual core, 6.5 W; includes processor and replacement thermal material)
676912-001	System board for use only on computer models equipped with an Intel Atom N2800 1.86-GHz processor and WWAN capability (1.0-MB L2 cache, dual core, 6.5 W; includes processor and replacement thermal material)
684439-001	Display enclosure in gloss black finish
691415-001	Ralink RT5390R 802.11bgn 1x1 Wi-Fi Adapter

4 Removal and replacement procedures

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, 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 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			
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.

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 $\pm 10\%$ 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 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 as many as 41 screws that must be removed, replaced, or loosened when servicing the computer. Make special note of each screw size and location during removal and replacement.

Service tag

When ordering parts or requesting information, provide the computer serial number and model number provided on the service tag. It is necessary to remove the battery to obtain these numbers. See [Battery on page 34](#) for battery removal instructions.

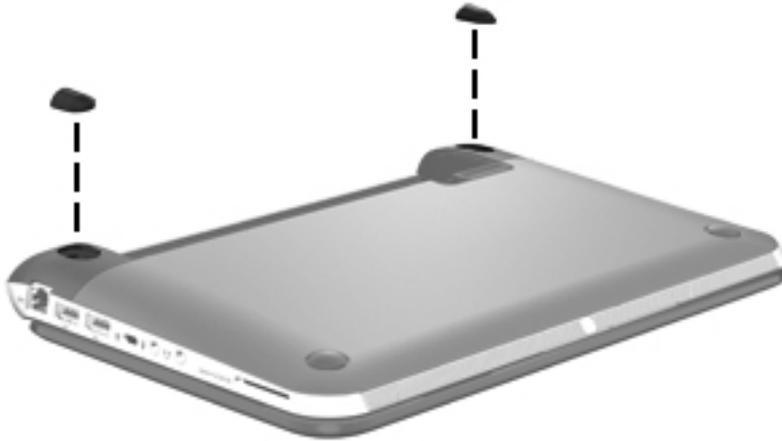


Item	Component	Description
(1)	Product name	This is the product name affixed to the front of the computer.
(2)	Serial number (s/n)	This is an alphanumeric identifier that is unique to each product.
(3)	Part number/Product number (p/n)	This number provides specific information about the product's hardware components. The part number helps a service technician determine what components and parts are needed.

Item	Component	Description
(4)	Warranty period	This number describes the duration of the warranty period for the computer.
(5)	Model description	This is the alphanumeric identifier used to locate documents, drivers, and support for the computer.

Computer feet

The computer feet are adhesive-backed rubber pads. There are 2 rubber feet that attach to the corner covers in the locations illustrated below. These rubber feet are available in the Rubber Kit, spare part number 650734-001.



Battery

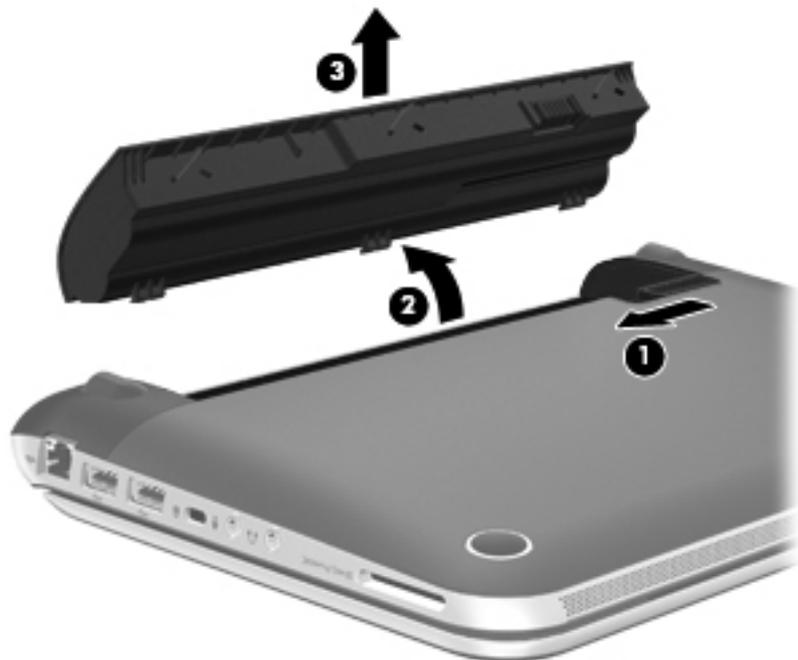
Description	Spare part number
6-cell, 55-Wh, 2.55-Ah, Li-ion battery	646757-001
3-cell, 28-Wh, 2.55-Ah, Li-ion battery	646755-001

Before disassembling the computer, 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 battery:

1. Slide the battery/service cover release latch **(1)** to release the battery.
2. Pivot the front edge of the battery **(2)** up and back.
3. Remove the battery **(3)** from the computer.



To insert the battery:

1. Align the tabs on the rear edge of the battery with the notches on the rear edge of the battery bay.
2. Pivot the front edge of the battery down into the battery bay until it is seated. (The battery release latch will automatically lock into place.)

SIM (select models only)

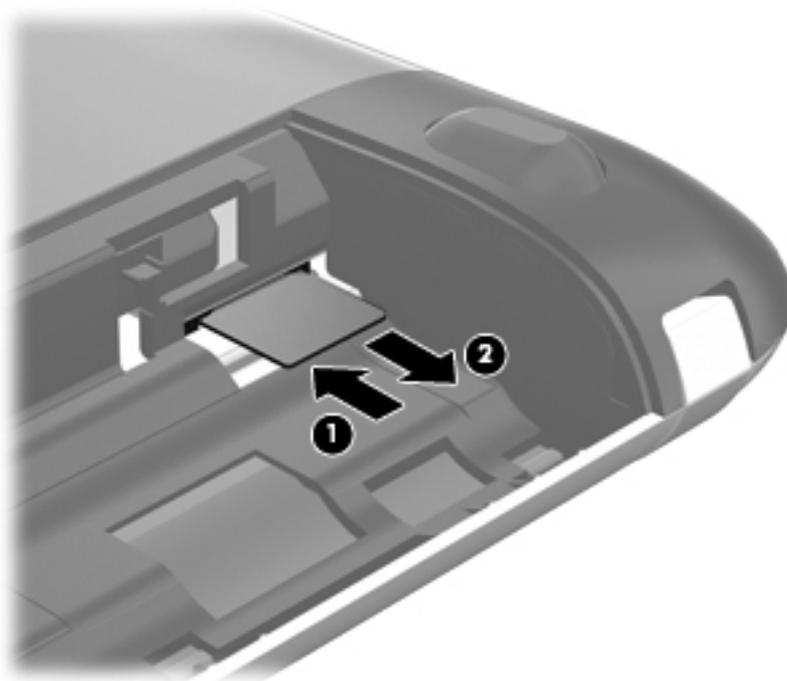
 **NOTE:** The SIM is provided by the end-user as a security measure for the WWAN module. The SIM should be removed, placed into a static-dissipative container, and then replaced when the computer is reassembled.

Before removing the SIM, 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 battery (see [Battery on page 34](#)).

Remove the SIM:

1. Press in on the SIM **(1)** to release it from the SIM slot.
2. Remove the SIM **(2)** from the SIM slot.



Insert the SIM into the SIM slot, and gently push the SIM into the slot until it is firmly seated.

WLAN module

Description	Spare part number
Atheros 9485GN 802.11b/g/n 1×1 WiFi and 3012 Bluetooth 4.0 Combo Adapter	655795-001
Broadcom 4313GN 802.11b/g/n 1×1 WiFi and 20702 Bluetooth 4.0 Combo Adapter	657325-001
Intel Centrino Advanced-N 6230 WLAN module	631956-001
Ralink 5390GN 802.11b/g/n 1×1 WiFi Adapter	630703-001
Ralink RT5390R 802.11bgn 1×1 Wi-Fi Adapter	691415-001

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

Before removing the 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 battery (see [Battery on page 34](#)).

Remove the WLAN module:

1. Slide the battery/service cover latch **(1)** to release the service cover.
2. Release the service cover **(2)** by sliding it toward the front of the computer.

 **NOTE:** When releasing the service cover, it may be helpful to apply additional pressure to the front/left corner **(3)** of the service cover.

3. Remove the service cover **(4)**.

 **NOTE:** It is normal for the service cover to flex slightly when it is released. You may also hear some popping noises as the service cover tabs disengage from the base enclosure slots.



The service cover is available using the following spare part number 663676-001.

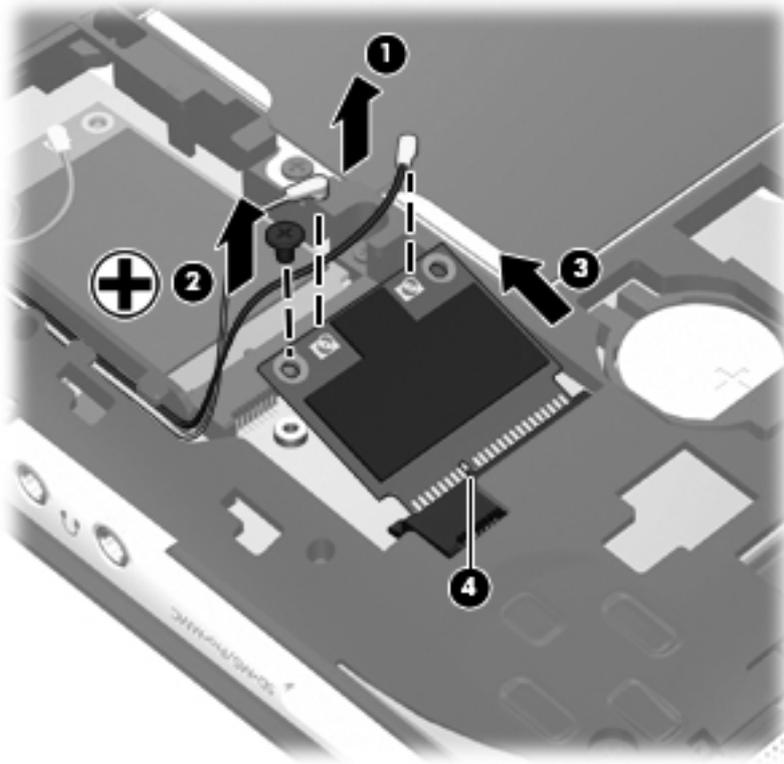
4. Disconnect the WLAN antenna cables **(1)** from the terminals on the WLAN module.

 **NOTE:** The #1 WLAN antenna cable is connected to the WLAN module "Main" terminal.
The #2 WLAN antenna cable is connected to the WLAN module "Aux" terminal.

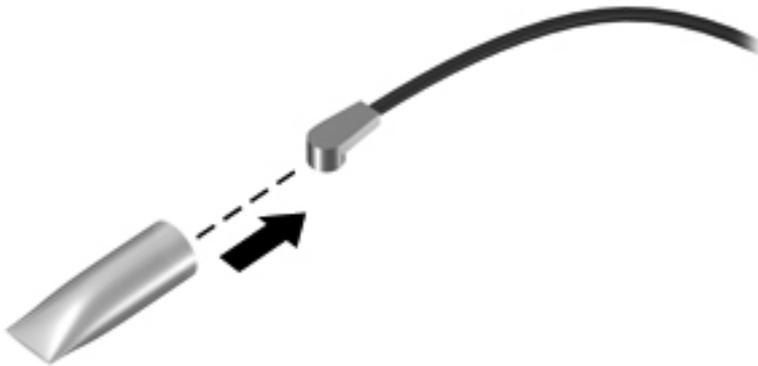
5. Remove the Phillips PM2.0×3.0 screw **(2)** that secures the WLAN module to the system board. (The WLAN module tilts up.)

6. 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 **(4)** 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 must be installed on the antenna connectors, as shown in the following illustration.



Reverse this procedure to install the WLAN module.

WWAN module

Description	Spare part number
HP hs2350 HSPA+ Mobile Broadband Module	668969-001
HP hs2340 HSPA+ Mobile Broadband Module	632155-001
HP lc2010 HSPA Mobile Broadband Module	612600-001
HP lc2000 HSPA Mobile Broadband Module	612599-001

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

Before removing the WWAN module, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 34](#)).
5. Remove the service cover (see [WLAN module on page 36](#)).

Remove the WWAN module:

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

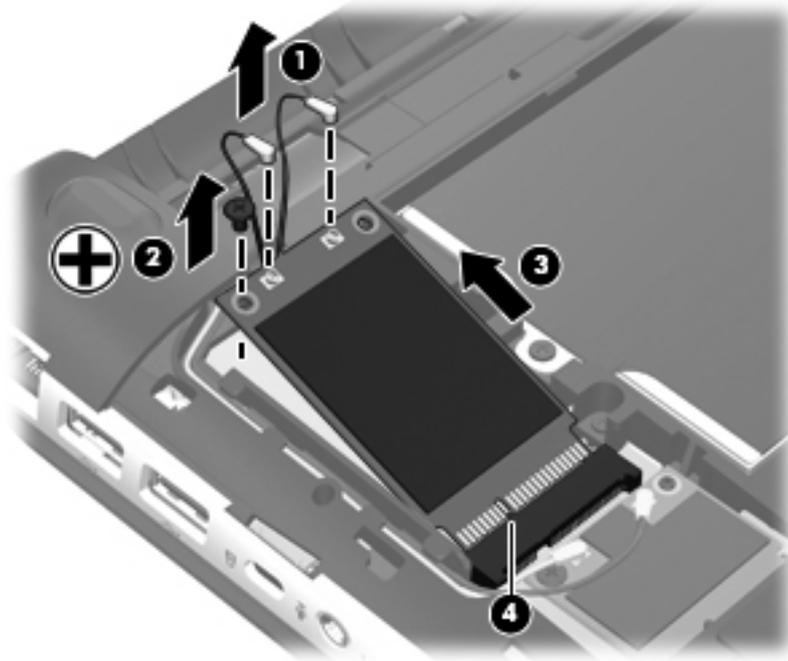


NOTE: The #1 WWAN antenna cable is connected to the WWAN module "Main" terminal. The #2 WWAN antenna cable is connected to the WWAN module "Aux" terminal.

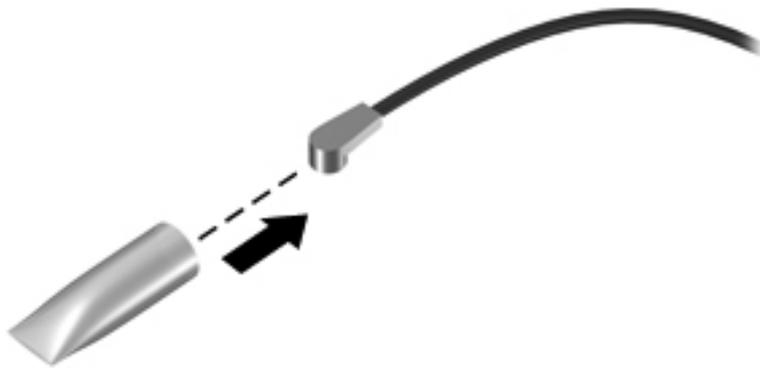
2. Remove the Phillips PM2.0×3.0 screw **(2)** that secures the WWAN module to the system board. (The WWAN module tilts up.)

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

 **NOTE:** The WWAN module is designed with a notch **(4)** to prevent incorrect installation into the WWAN module socket.



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



Reverse this procedure to install the WWAN module.

Memory module

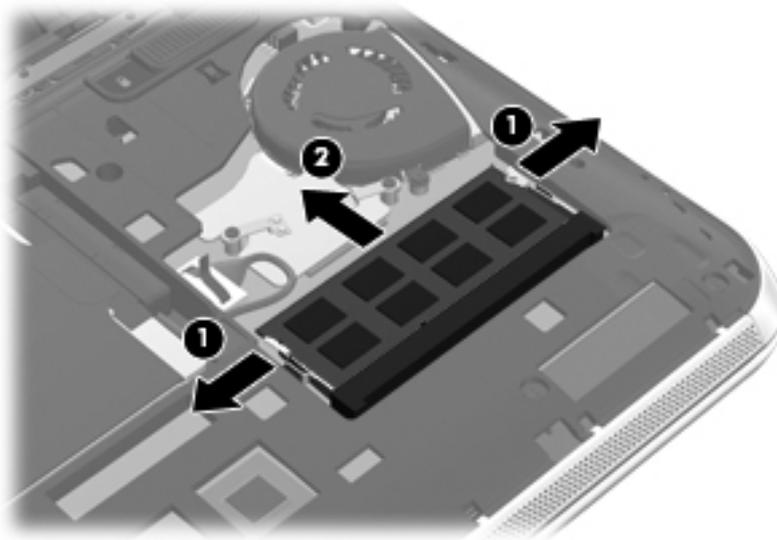
Description	Spare part number
2-GB memory module (PC3, 12800, 1600-MHz)	652972-001
2-GB memory module (PC3, 10600, 1333-MHz)	621565-001

Before removing the memory 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 battery (see [Battery on page 34](#)).
5. Remove the service cover (see [WLAN module on page 36](#)).

Remove the memory module:

1. Spread the retaining tabs **(1)** on each side of the memory module slot to release the memory module. (The memory module tilts up.)
2. Remove the memory module **(2)** by pulling it away from the slot at an angle.



Reverse this procedure to install the memory module.

RTC battery

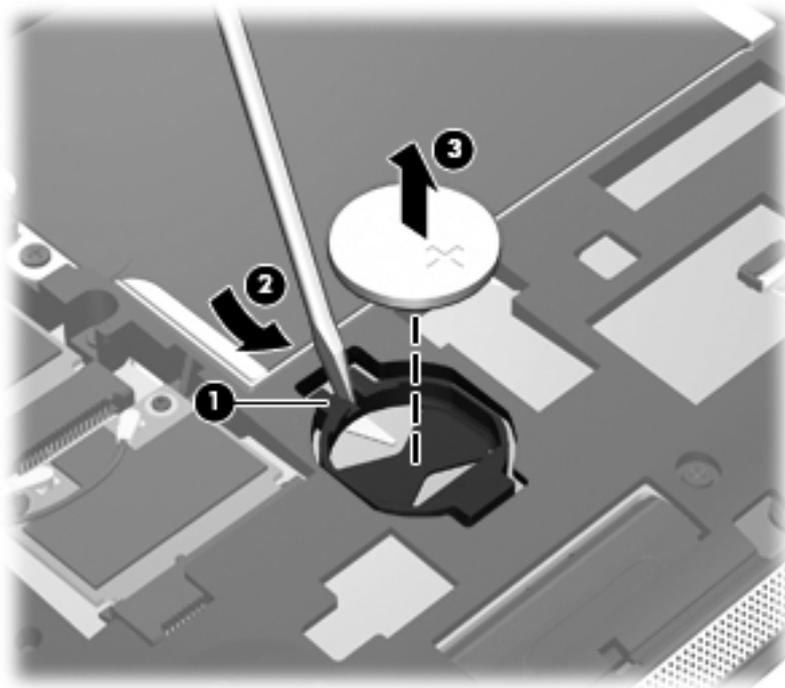
Description	Spare part number
RTC battery	621565-001

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 battery (see [Battery on page 34](#)).
5. Remove the service cover (see [WLAN module on page 36](#)).

Remove the RTC battery:

1. Insert a non-conductive, flat-tip, tool **(1)** into the notch **(2)** on the side of the RTC battery socket.
2. Remove the RTC battery **(3)** from the socket on the system board.



Reverse this procedure to install the RTC battery. When installing the RTC battery, be sure the “+” sign faces up.

Hard drive

 **NOTE:** The hard drive spare part kit does not include the hard drive bracket, connector cable, rubber isolators, or screws. These components are included in the Hard Drive Hardware Kit, spare part number 664913-001.

Description	Spare part number
500-GB, 5400-rpm	634932-001
320-GB, 5400-rpm	645193-001
250-GB, 5400-rpm	645191-001

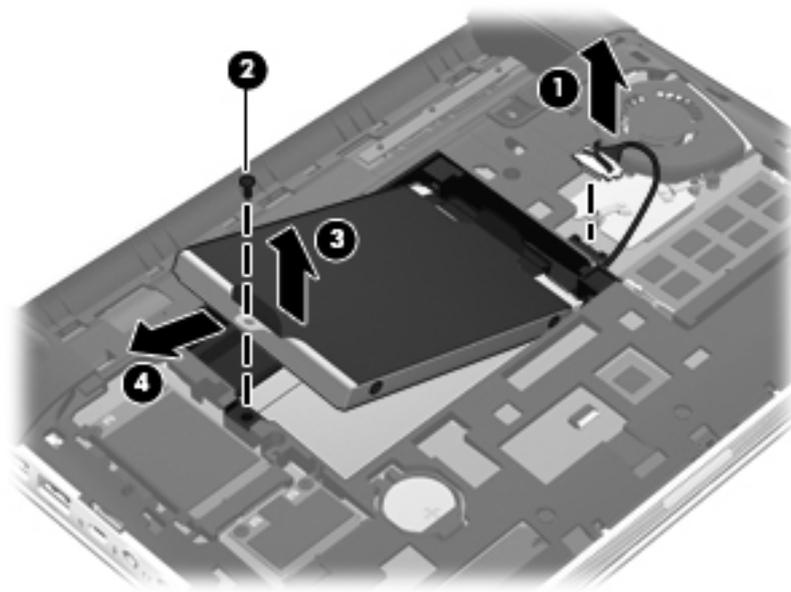
Before removing the hard drive, follow these steps:

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 battery (see [Battery on page 34](#)).
5. Remove the service cover (see [WLAN module on page 36](#)).

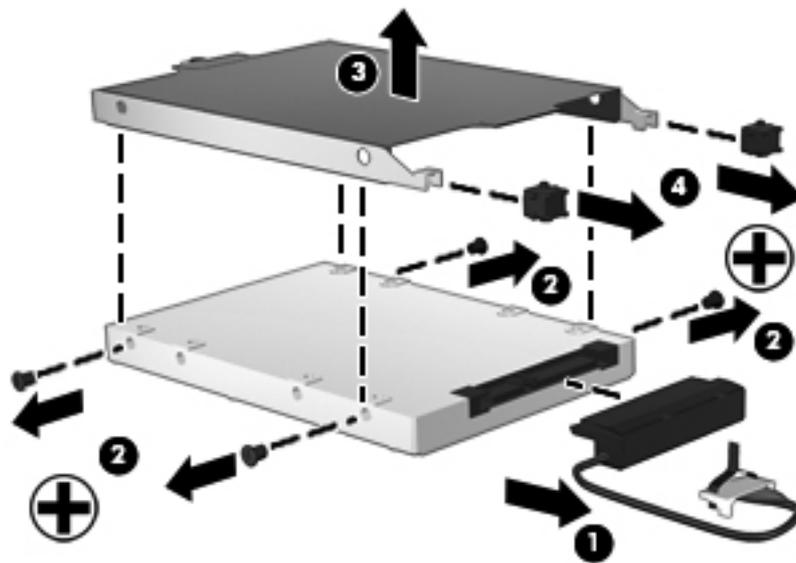
Remove the hard drive:

1. Disconnect the hard drive connector cable **(1)** from the system board.
2. Remove the Phillips PM 2.0×5.0 screw **(2)** that secures the hard drive to the computer.
3. Use the pull tab **(3)** to lift the left side of the hard drive until it rests at an angle.

4. Remove the hard drive (4) by sliding it up and to the left at an angle.



5. If it is necessary to replace the hard drive connector cable (1), the hard drive screws (2), the hard drive bracket (3), or the rubber isolators (4), remove and replace the components.



Reverse this procedure to reassemble and install the hard drive.

Keyboard



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

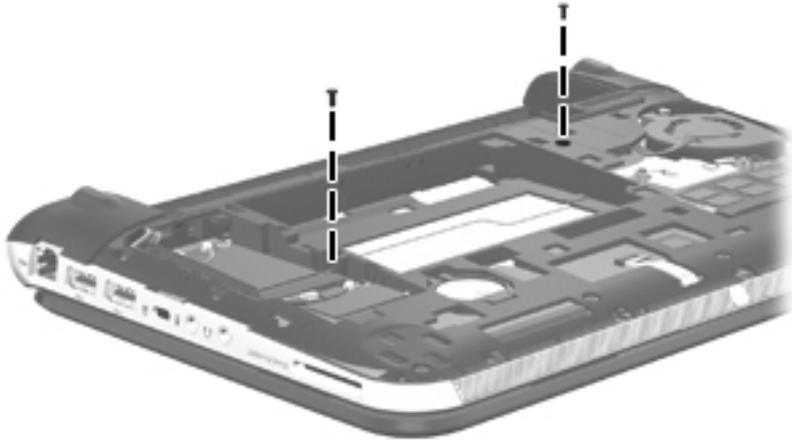
Description	Spare part number	Description	Spare part number
For use in Belgium	660843-A41	For use in the Netherlands	660843-B31
For use in Canada	660843-121	For use in Portugal	660843-131
For use in the Czech Republic and Slovakia	660843-FL1	For use in the Russia	660843-251
For use in Denmark, Finland, and Norway	660843-DH1	For use in Saudi Arabia	660843-171
For use in France	660843-051	For use in Slovenia	660843-BA1
For use in Germany	660843-041	For use in South Korea	660843-AD1
For use in Greece	660843-DJ1	For use in Spain	660843-071
For use in Hungary	660843-211	For use in Switzerland	660843-BG1
For use in India	660843-D61	For use in Taiwan	660843-AB1
For use in Israel	660843-BB1	For use in Thailand	660843-281
For use in Italy	660843-061	For use in Turkey	660843-141
For use in Japan	660843-291	For use in the United Kingdom and Singapore	660843-031
For use in Latin America	660843-161	For use in the United States	660843-001

Before removing the keyboard, follow these steps:

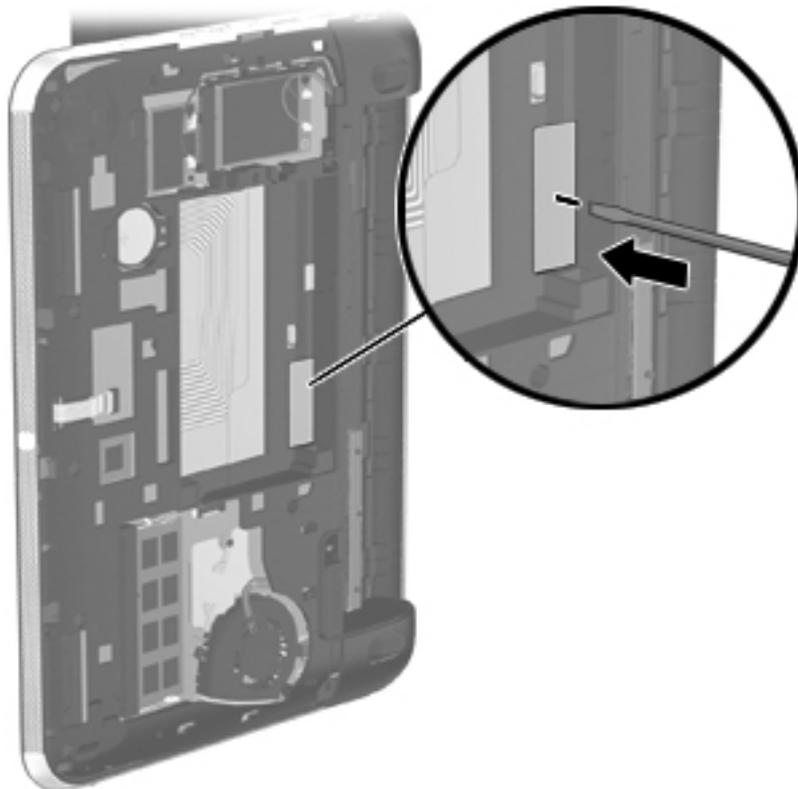
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 34](#)).
5. Remove the service cover (see [WLAN module on page 36](#)).

Remove the keyboard:

1. Remove the two Phillips PM2.0×5.0 screws that secure the keyboard to the computer.



2. Rest and secure the computer on its left side.
3. Partially open the computer.
4. Insert a screw driver or similar thin tool into the keyboard release area, and then press on the back of the keyboard until the keyboard disengages from the computer.

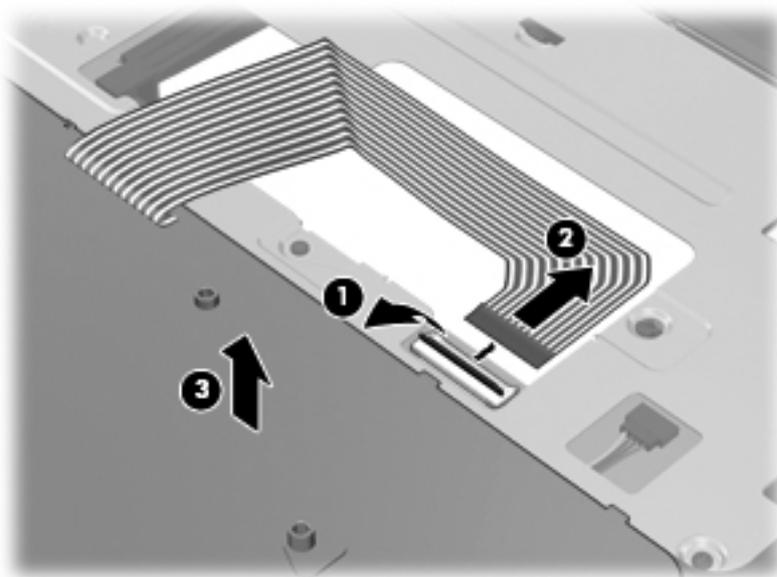


5. Turn the computer right-side up with the front toward you.
6. Open the computer as far as it will open.

7. Lift the rear edge of the keyboard **(1)**, and then swing the keyboard **(2)** up and forward until it rests upside down on the palm rest.



8. Release the zero insertion force (ZIF) connector **(1)** to which the keyboard cable is attached, and then disconnect the keyboard cable **(2)** from the system board.
9. Remove the keyboard **(3)**.



Reverse this procedure to install the keyboard.

Top cover

 **NOTE:** The top cover spare part kit includes the TouchPad and TouchPad cable.

Description	Spare part number
In gloss black finish	663677-001
In Pacific blue finish	658515-001
In Sonoma red finish	658513-001

Before removing the top cover, 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 battery (see [Battery on page 34](#)).
5. Remove the service cover (see [WLAN module on page 36](#)).
6. Remove the keyboard (see [Keyboard on page 45](#)).

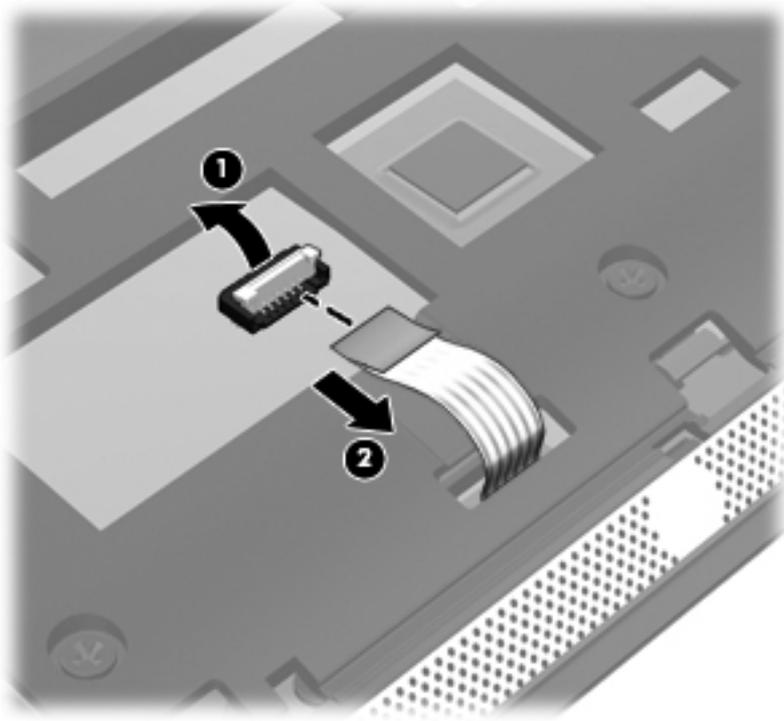
 **NOTE:** When replacing the top cover, be sure to remove the speakers from the defective top cover and install them on the replacement top cover. See [Speakers on page 54](#) for speaker removal and replacement instructions.

Remove the top cover:

1. Close the computer.
2. Turn the computer upside down, with the front toward you.

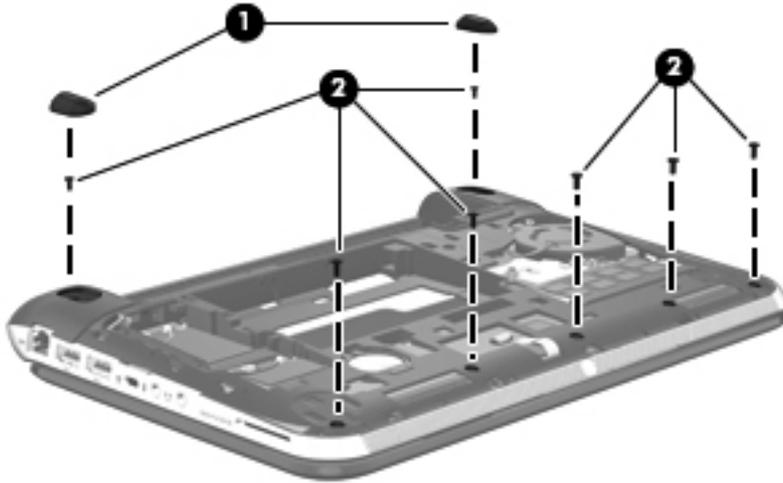
3. Release the ZIF connector **(1)** to which the TouchPad cable is connected, and then disconnect the TouchPad cable **(2)** from the system board.

 **NOTE:** Additional slight force may be needed when releasing the TouchPad cable from the top cover. Double-sided adhesive is used to attach the TouchPad cable to the top cover surface.

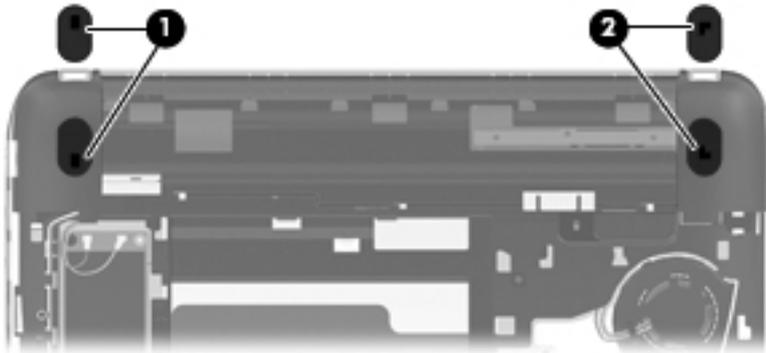


4. Remove the two rubber feet **(1)** on the rear corners of the base enclosure. (The rubber feet are available in the Rubber Kit, spare part number 650734-001.)

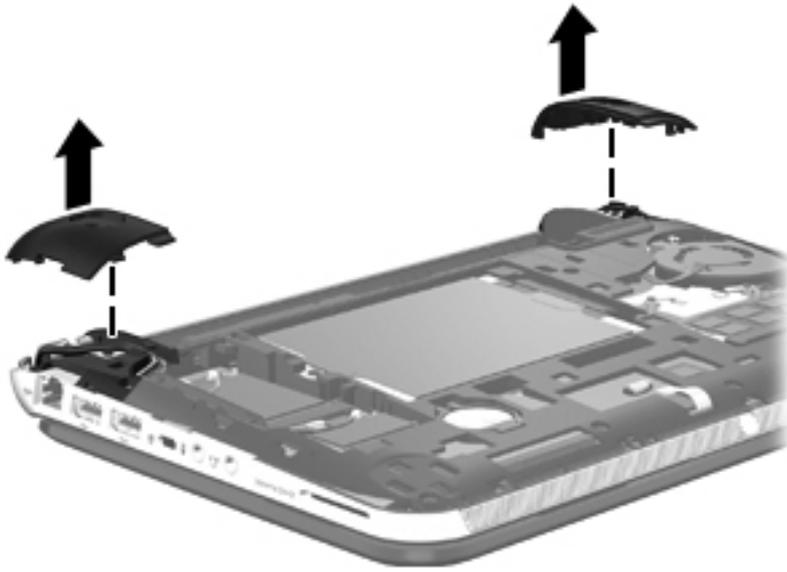
5. Remove the seven Phillips PM2.0×5.0 screws **(2)** that secure the top cover and the corner covers to the base enclosure.



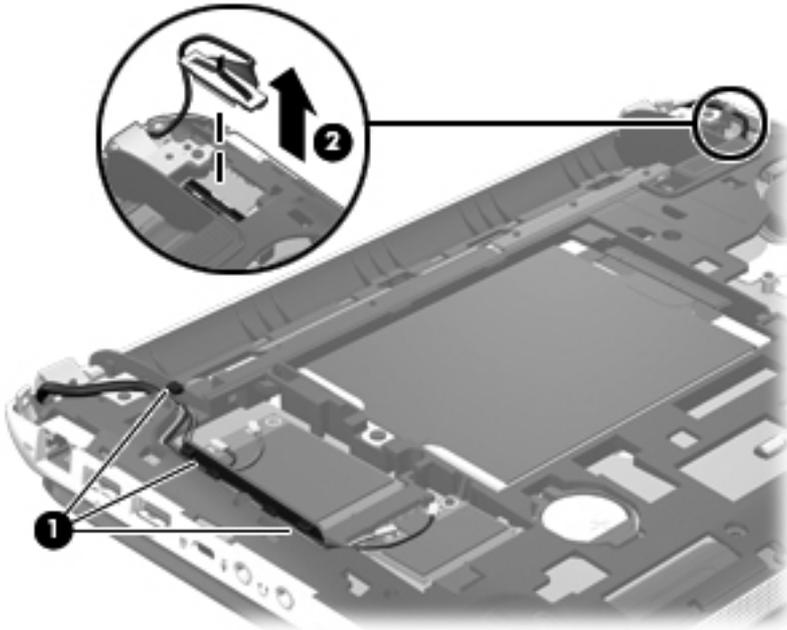
 **NOTE:** The rubber feet are notched differently. The rubber foot **(1)** that fits on the left side has a rectangular alignment notch. The rubber foot **(2)** that fits on the right side has an “L”-shaped alignment notch. When installing the rubber feet, align them according to the side of the computer on which they should be installed.



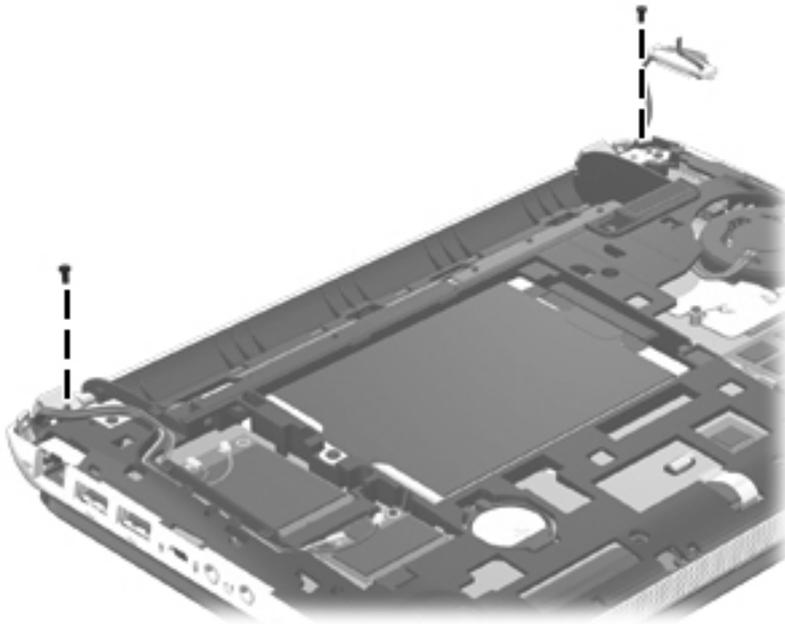
6. Remove the corner covers.



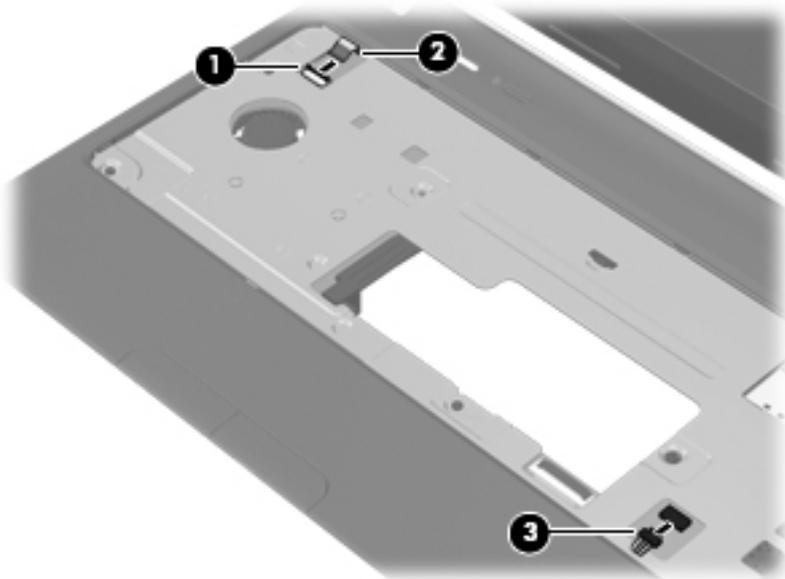
7. Release the wireless antenna cables from the clips (1) and routing channel built into the base enclosure.
8. Disconnect the display panel cable (2) from the system board.



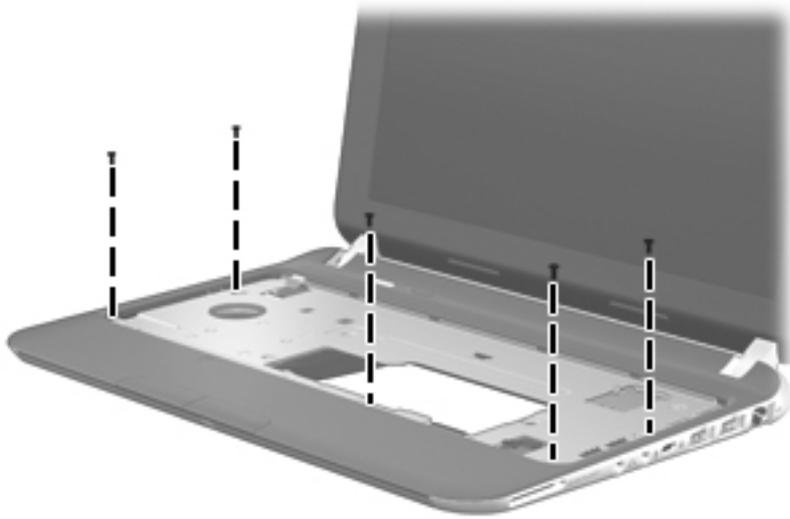
9. Remove the two Phillips PM2.0x5.0 screws that secure the top cover to the base enclosure.



10. Turn the computer right side up, with the front toward you.
11. Open the computer as far as it will open.
12. Release the ZIF connector **(1)** to which the power button board cable is connected, and then disconnect the power button board cable **(2)** from the system board.
13. Disconnect the speaker cable **(3)** from the system board.

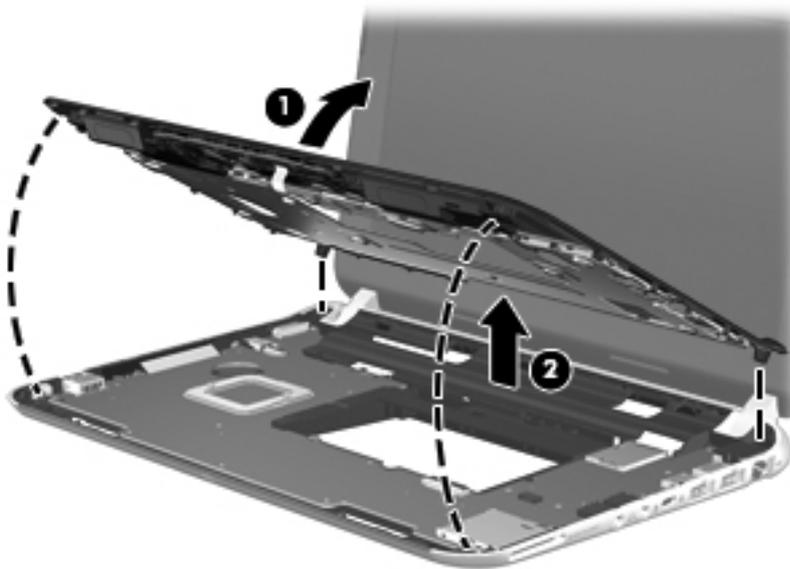


- 14.** Remove the five Phillips PM2.0×5.0 screws that secure the top cover to the base enclosure.



- 15.** Lift the front edge of the top cover **(1)** until the left and right sides disengage from the base enclosure.

- 16.** Remove the top cover **(2)**.



Reverse this procedure to install the top cover.

Speakers

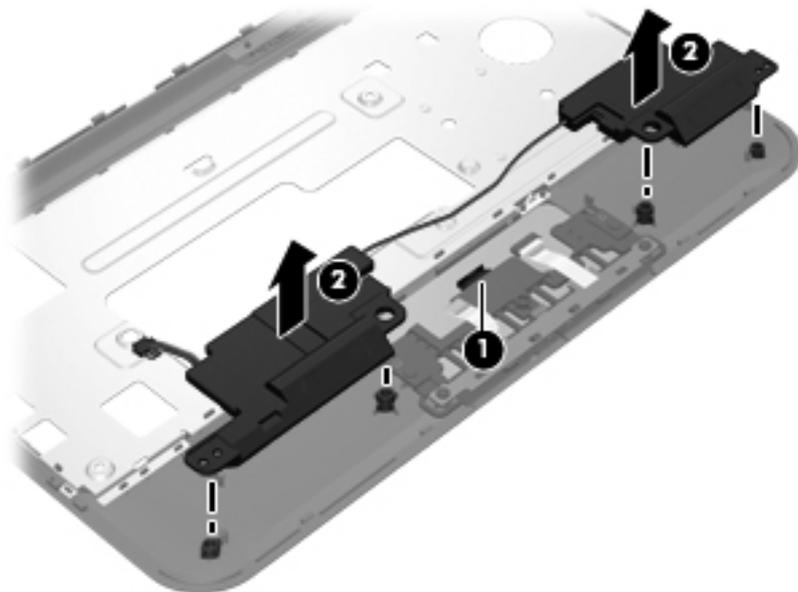
Description	Spare part number
Speakers (include cable)	650736-001

Before removing the speakers, 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 battery (see [Battery on page 34](#)), and then remove the following components:
 - Service cover (see [WLAN module on page 36](#))
 - Keyboard (see [Keyboard on page 45](#))
 - Top cover (see [Top cover on page 48](#))

Remove the speakers:

1. Release the speaker cable from the clip **(1)** built into the top cover.
2. Remove the speakers **(2)** from the top cover.



Reverse this procedure to install the speakers.

System board



NOTE: The system board spare part kit includes replacement thermal material.

Description	Spare part number
For use only on computer models equipped with an Intel Atom N2800 1.86-GHz processor and WWAN capability (1.0-MB L2 cache, dual core, 6.5 W)	676912-001
For use only on computer models equipped with an Intel Atom N2800 1.86-GHz processor, but not WWAN capability (1.0-MB L2 cache, dual core, 6.5 W)	676911-001
For use only on computer models equipped with an Intel Atom N2600 1.60-GHz processor and WWAN capability (1.0-MB L2 cache, dual core, 3.5 W)	676910-001
For use only on computer models equipped with an Intel Atom N2600 1.60-GHz processor, but not WWAN capability (1.0-MB L2 cache, dual core, 3.5 W)	676909-001

Before removing the system board, follow these steps:

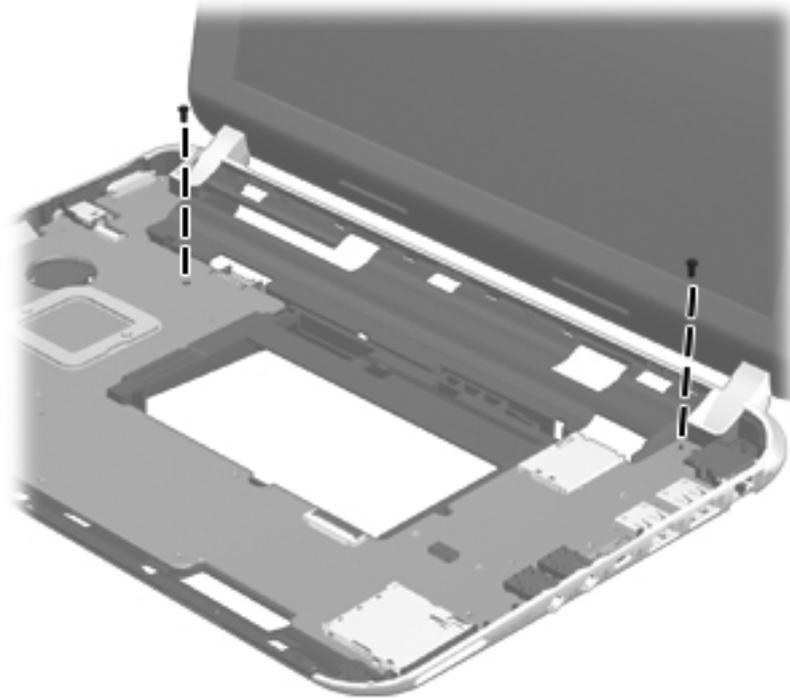
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 34](#)), and then remove the following components:
 - Service cover (see [WLAN module on page 36](#))
 - Hard drive (see [Hard drive on page 43](#))
 - Keyboard (see [Keyboard on page 45](#))
 - Top cover (see [Top cover on page 48](#))

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

- SIM (see [SIM \(select models only\) on page 35](#))
- WLAN module (see [WLAN module on page 36](#))
- WWAN module (see [WWAN module on page 39](#))
- RTC battery (see [RTC battery on page 42](#))
- Memory module (see [Memory module on page 41](#))
- Power connector cable (see [System board on page 55](#))
- Fan (see [Fan on page 58](#))
- Heat sink (see [Heat sink on page 60](#))

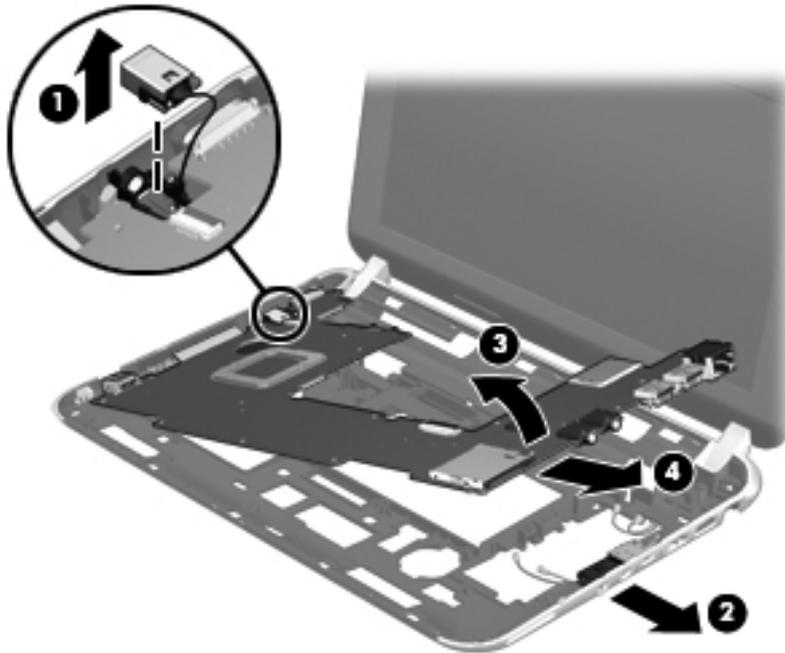
Remove the system board:

1. Remove the two Phillips PM2.0×5.7 screws that secure the system board to the base enclosure.

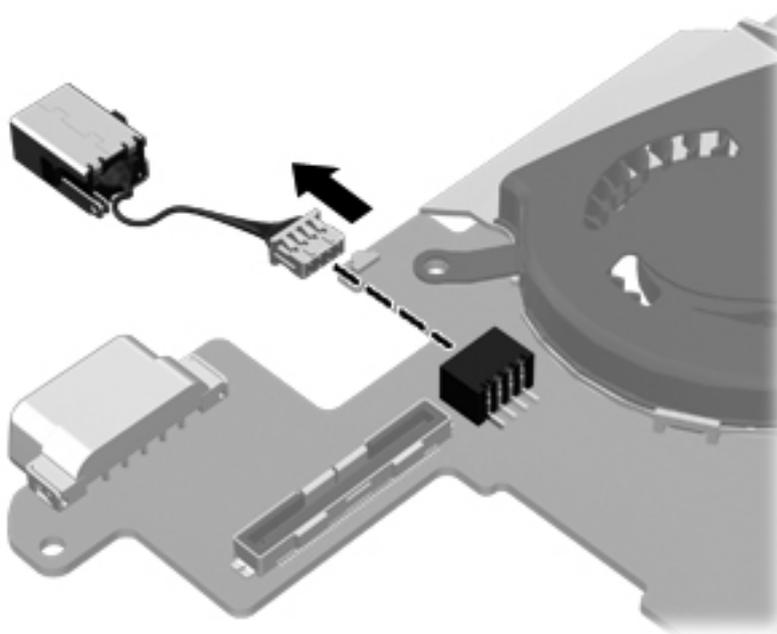


2. Release the power connector **(1)** from the clip built into the base enclosure.
3. Flex the right side of the base enclosure **(2)** until the jacks and ports on the right side of the system board are clear of the openings in the base enclosure.
4. Lift the right side of the system board **(3)** until it rests at an angle.

5. Remove the system board (4) by sliding it up and to the right at an angle.



NOTE: If it is necessary to replace the power connector cable, turn the system board upside down with the rear toward you, and then disconnect the power connector cable from the system board. The power connector cable is available using spare part number 656095-001.



Reverse this procedure to install the system board and the power connector cable.

Fan

Description	Spare part number
Fan	651897-001

 **NOTE:** To properly ventilate the computer, allow at least 7.6 cm (3 in) of clearance on the left side of the computer. The computer uses an electric fan for ventilation. The fan is controlled by a temperature sensor and is designed to turn on automatically when high temperature conditions exist. These conditions are affected by high external temperatures, system power consumption, power management/battery conservation configurations, battery fast charging, and software requirements. Exhaust air is displaced through the ventilation grill located on the left side of the computer.

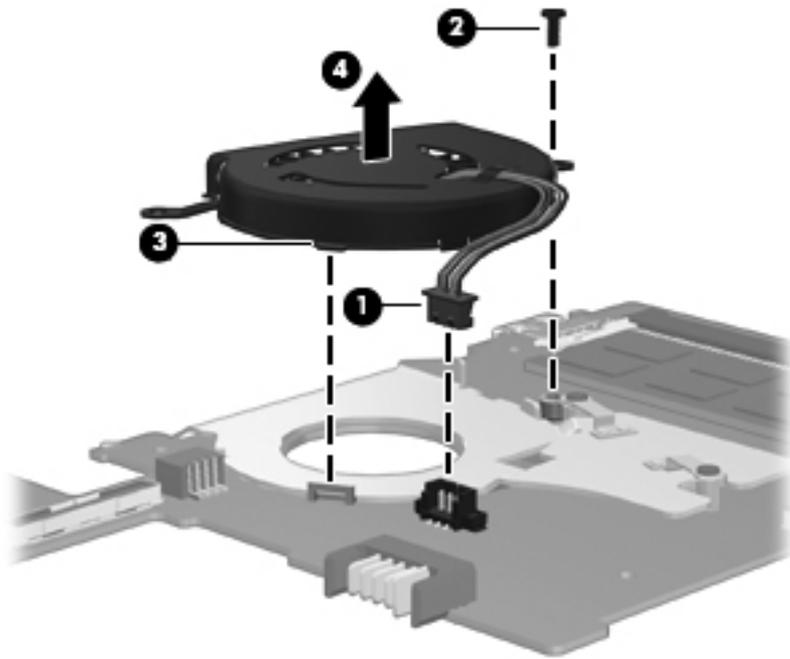
Before removing the fan, follow these steps:

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 battery (see [Battery on page 34](#)), and then remove the following components:
 - Service cover (see [WLAN module on page 36](#))
 - Keyboard (see [Keyboard on page 45](#))
 - Top cover (see [Top cover on page 48](#))
 - System board (see [System board on page 55](#))

Remove the fan:

1. Turn the system board upside down, with the rear toward you.
2. Disconnect the fan cable **(1)** from the system board.
3. Remove the Phillips PM2.0×4.6 screw **(2)** that secures the fan to the system board.
4. Disengage the tab **(3)** on the fan from the slot on the system board.

5. Remove the fan (4).



Heat sink

Description	Spare part number
Heat sink (includes replacement thermal material)	651898-001

Before removing the heat sink, follow these steps:

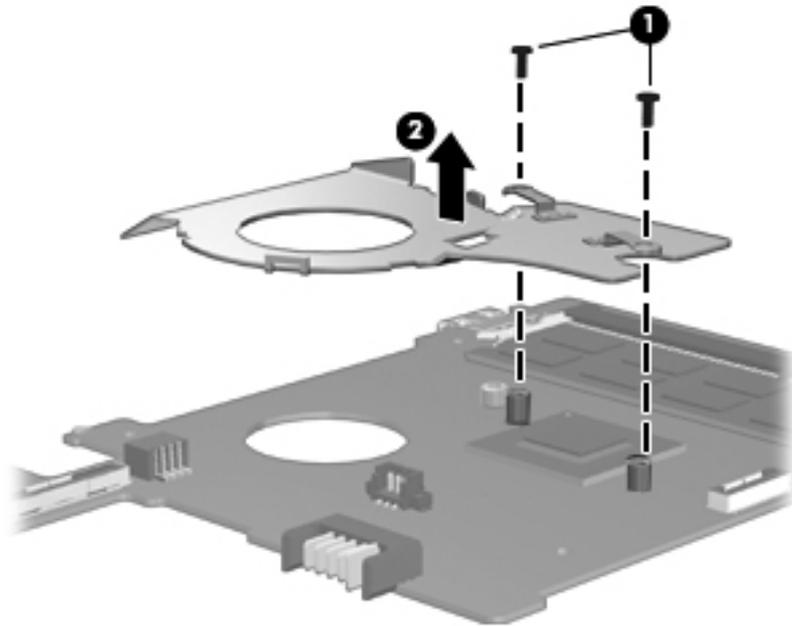
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 34](#)), and then remove the following components:
 - Service cover (see [WLAN module on page 36](#))
 - Keyboard (see [Keyboard on page 45](#))
 - Top cover (see [Top cover on page 48](#))
 - System board (see [System board on page 55](#))
 - Fan (see [Fan on page 58](#))

Remove the heat sink:

1. Remove the two Phillips PM2.0×4.6 screws **(1)** that secure the heat sink to the system board.

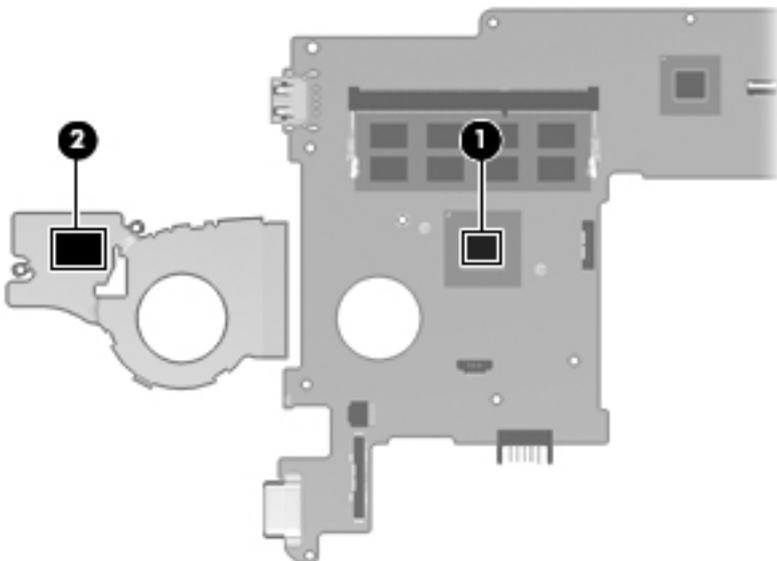
2. Remove the heat sink **(2)**.

 **NOTE:** Due to the adhesive quality of the thermal material located between the heat sink and system board components, it may be necessary to move the heat sink from side to side to detach it.



The thermal material must be thoroughly cleaned from the surfaces of the heat sink and the system board components each time the heat sink is removed. Replacement thermal material is included with the heat sink and system board spare part kits.

 **NOTE:** The following illustration shows the replacement thermal material locations. Thermal paste is used on the processor **(1)** and the heat sink section **(2)** that services it.



Reverse this procedure to install the heat sink.

Display assembly



NOTE: The display assembly spare part kit includes the display panel cable, 2 WLAN antenna transceivers and cables, and a webcam/microphone module and cable.

Description	Spare part number
In gloss black finish	658507-001
In Pacific blue finish	658510-001
In Sonoma red finish	658508-001
WSVGA, HD display assembly in gloss black finish for use only on computer models equipped with WWAN capability (includes WWAN antenna cables and transceivers)	668166-001

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.
4. Remove the battery (see [Battery on page 34](#)), and then remove the following components:
 - Service cover (see [WLAN module on page 36](#))
 - Keyboard (see [Keyboard on page 45](#))
 - Top cover (see [Top cover on page 48](#))

Remove the display assembly:

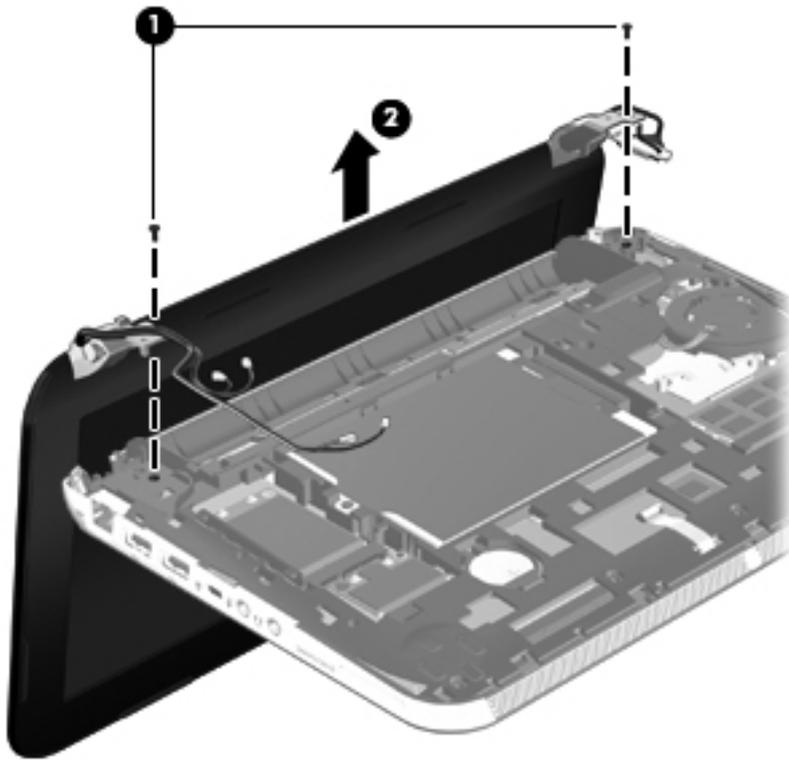
1. Position the computer upside down, with the front toward you.



CAUTION: Support the open 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.

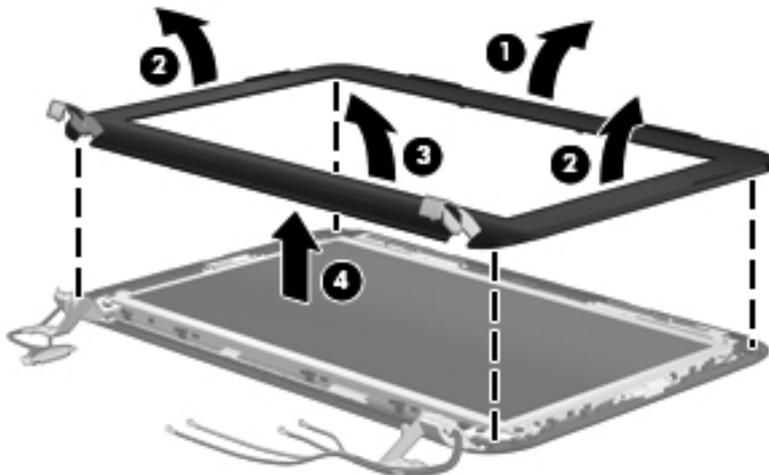
2. Remove the two Phillips PM2.0×5.7 screws **(1)** that secure the display assembly to the computer.

3. Remove the display assembly (2).

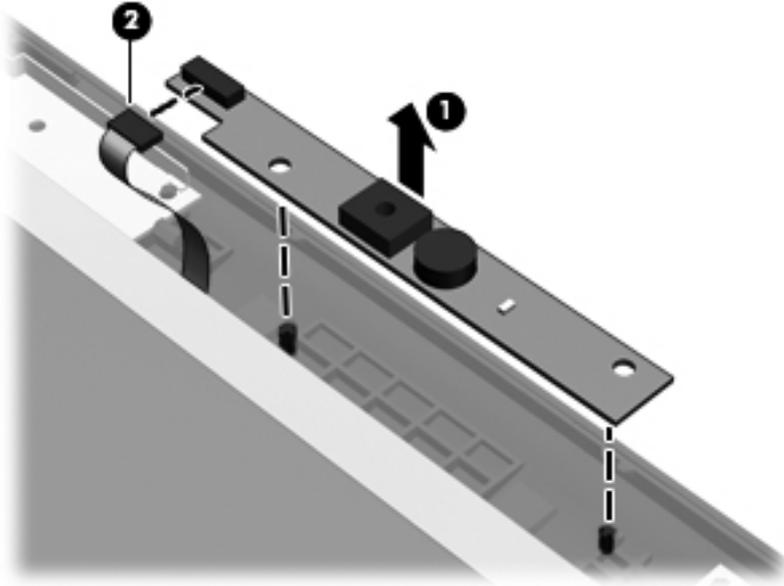


 **NOTE:** Steps 4 through 9 apply only to Compaq Mini CQ10 and HP Mini 110 computer models.

4. If it is necessary to replace the display bezel or any of the display assembly subcomponents:
 - a. Flex the inside edges of the top edge (1), the left and right sides (2), and the bottom edge (3) of the display bezel until the bezel disengages from the display enclosure.
 - b. Remove the display bezel (4). The display bezel is available using spare part number 658503-001.

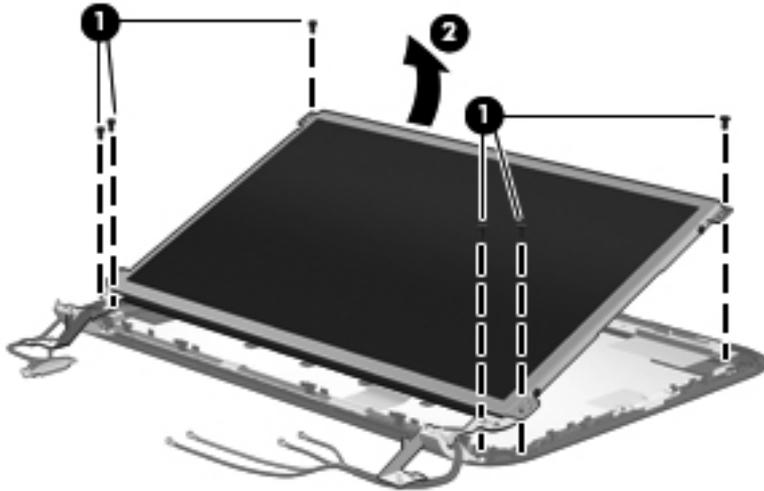


5. If it is necessary to replace the webcam/microphone module:
 - a. Detach and release the module **(1)** as far as the module cable allows. (The module is attached to the display enclosure with double-sided tape.)
 - b. Disconnect the module cable **(2)** from the module.



- c. Remove the webcam/microphone module. The webcam/microphone module is available using spare part number 658516-001.
6. If it is necessary to replace the display panel:
 - a. Remove the six Phillips PM2.0×4.6 screws **(1)** that secure the display panel to the display enclosure.

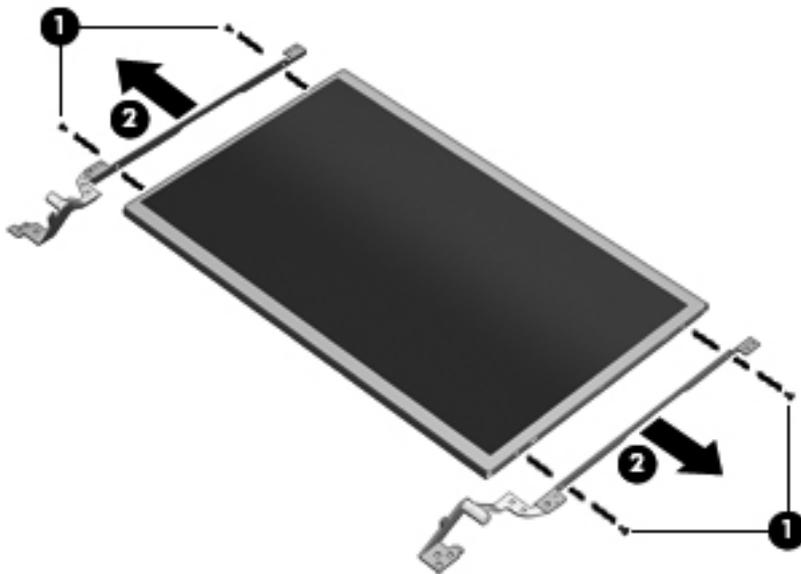
- b. Lift the top edge of the display panel **(2)** and swing it up and forward until it rests at an angle.



- c. Remove the display panel. The display panel is available using spare part number 658511-001.

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

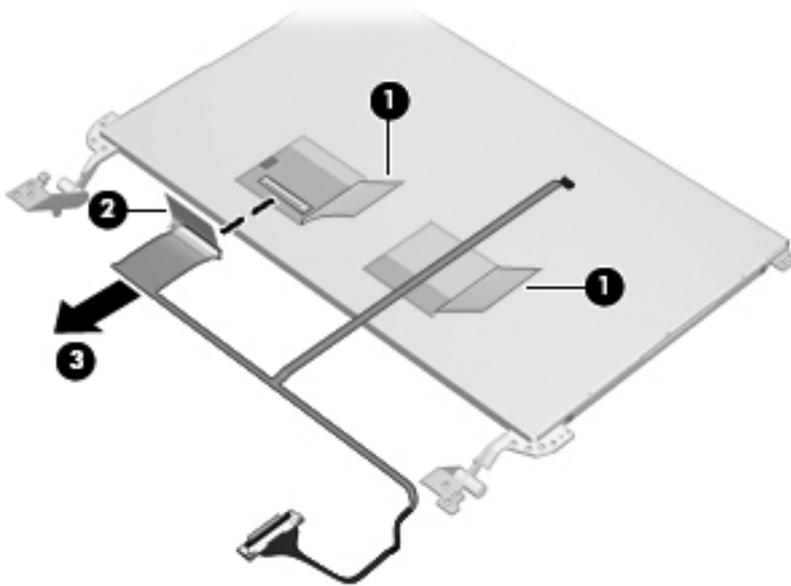
- a. Remove the four Phillips PM2.0×3.7 screws **(1)** that secure the display hinges to the display panel.
- b. Remove the display hinges **(2)**. The display hinges include the display hinges and brackets and are available using spare part number 650711-001.



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

⚠ CAUTION: Make sure the work surface is free of any foreign objects before turning the display panel upside down. Failure to clear the work surface can result in scratches and damage to the display panel surface.

- a. Turn the display panel upside down with the bottom edge toward you.
- b. Release the tabs **(1)** built into the shielding on the back of the display panel that conceal the display panel connector and secure the display panel cable.
- c. Release the adhesive strip **(2)** that secures the display panel cable to the display panel, and then disconnect the display panel cable **(3)** from the display panel.

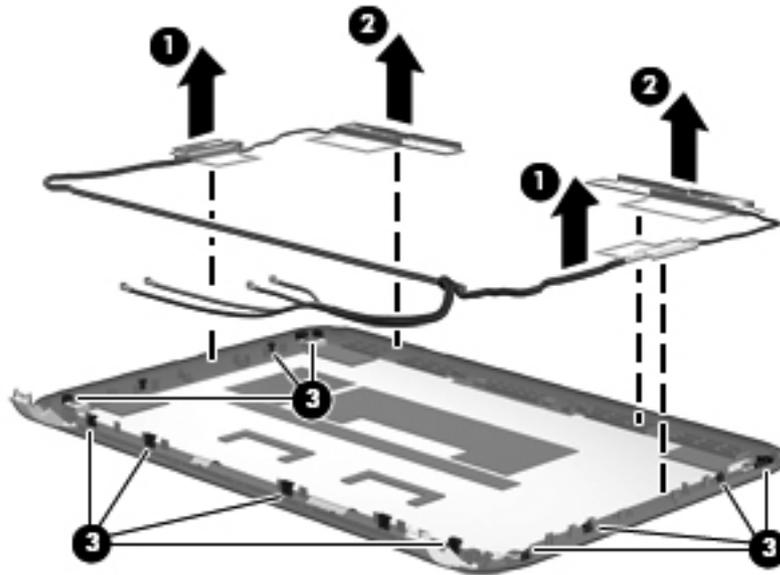


- d. Remove the display panel cable. The display panel cable includes the webcam/microphone module cable and is available in the Display Cable Kit, spare part number 658505-001.

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

- a. Release the WLAN antenna transceivers **(1)** and the WWAN antenna transceivers **(2)** from the display enclosure. (The antenna transceivers are attached to the display enclosure with double-sided tape.)

- b.** Release the wireless antenna cables from the clips **(3)** built into the display enclosure.



- c.** Remove the wireless antenna cables and transceivers. The wireless antenna cables and transceivers are available in the Antenna Kit, spare part number 658498-001.

Reverse this procedure to reassemble and install the display assembly.

5 Setup Utility (BIOS) and System Diagnostics

Using Setup Utility

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

 **NOTE:** An external keyboard or mouse connected to a USB port can be used with Setup Utility only if USB legacy support is enabled.

To start Setup Utility, follow these steps:

1. Turn on or restart the computer, and then press **esc** while the “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen.
2. Press **f10** to enter 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

To navigate and select in Setup Utility, follow these steps:

1. Turn on or restart the computer, and then press **esc** while the “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen.
 - To select a menu or a menu item, use the tab key and the keyboard arrow keys and then press **enter**, or use a pointing device to click the item.
 - To scroll up and down, click the up arrow or the down arrow in the upper-right corner of the screen, or use the up arrow key or the down arrow key.
 - To close open dialog boxes and return to the main Setup Utility screen, press **esc**, and then follow the on-screen instructions.
2. Press **f10** to enter Setup Utility.

To exit Setup Utility menus, choose one of the following methods:

- To exit Setup Utility menus without saving your changes, press the **esc** key, and then follow the on-screen instructions.

– or –

Use the arrow keys to select **Exit > Exit Discarding Changes**, and then press **enter**.
- To save your changes and exit Setup Utility menus, press **f10**, and then follow the on-screen instructions.

– or –

Use the tab key and the arrow keys to select **Exit > Exit Saving Changes**, and then press **enter**.

Your changes go into effect when the computer restarts.

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 settings in Setup Utility

 **NOTE:** Restoring defaults will not change the hard drive mode.

To return all settings in Setup Utility to the values that were set at the factory, follow these steps:

1. Turn on or restart the computer, and then press **esc** while the “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen.
2. Press **f10** to enter Setup Utility.
3. Use the arrow keys to select **Exit > Load Setup Defaults**.
4. Follow the on-screen instructions.
5. To save your changes and exit, press **f10**, and then follow the on-screen instructions.

– or –

Use the arrow keys to select **Exit > Exit Saving Changes**, and then press **enter**.

Your changes go into effect when the computer restarts.

 **NOTE:** Your password settings and security 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 Web site.

Most BIOS updates on the HP Web site 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 pressing **fn +esc** (if you are already in Windows) or by using Setup Utility.

1. Start Setup Utility (BIOS).
2. Use the arrow keys to select **Main**.
3. To exit Setup Utility (BIOS) without saving your changes, use the tab key and 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, 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 or Hibernation.

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

1. **Windows 7**—Select **Start > Help and Support > Maintain**.

Windows XP—Select **Start > Help and Support**, and then select the software and drivers update.

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. If no instructions are displayed, follow these steps:

1. **Windows 7**—Open Windows Explorer by selecting **Start > Computer**.
Windows XP—Open Windows Explorer by selecting Start > **My Computer**.
2. Double-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 System Diagnostics

System Diagnostics allows you to run diagnostic tests to determine if the computer hardware is functioning properly. The following diagnostic tests are available in 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. If the battery fails the test, contact HP support to report the issue and purchase a replacement battery.

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

To start System Diagnostics:

1. Turn on or restart the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, 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**.

6 Specifications

Computer specifications

	Metric	U.S.
Dimensions		
Width	26.8 cm	10.55 in
Depth	19.1 cm	7.52 in
Height (front to back)	2.3 to 3.3 cm	0.91 to 1.29 in
Weight		
	1.26 kg (with 3-cell battery), 1.40 kg (with 6-cell battery)	2.77 lb (with 3-cell battery), 3.09 lb (with 6-cell battery)
Input power		
Operating voltage and current	19.5 V dc @ 2.05 A - 40W	
Temperature		
Operating	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Relative humidity (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%	
Maximum altitude (unpressurized)		
Operating	-15 m to 3,048 m	-50 ft to 10,000 ft
Nonoperating	-15 m to 12,192 m	-50 ft to 40,000 ft
NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The device operates well within this range of temperatures.		

10.1-inch WSVGA display specifications

	Metric	U.S.
Dimensions		
Height	23.5 cm	9.3 in
Width	14.3 cm	5.6 in
Diagonal	25.7 cm	10.1 in
Number of colors	262,144	
Contrast ratio	500:1 (typical)	
Brightness	200 nits (typical)	
Pixel resolution		
Pitch	0.2175 × 0.2088 mm	
Format	1024 × 600	
Configuration	RGB vertical stripe	
Backlight	LED	
Character display	80 × 25	
Total power consumption	3.46 W	
Viewing angle	±45° horizontal, +15/−35° vertical (typical)	

Hard drive specifications

	500-GB*	320-GB*	250-GB*
Dimensions			
Height	9.5 mm	9.5 and 7.0 mm	9.5 and 7.0 mm
Width	70 mm	70 mm	70 mm
Weight	101 g	101 g	101 g
Interface type			
	SATA	SATA	SATA
Seek times (typical read, including setting)			
Single track	3 ms	3 ms	3 ms
Average (read/write)	13 ms	13 ms	13 ms
Maximum	24 ms	24 ms	24 ms
Logical blocks			
	1,048,576,000	625,141,400	488,397,168
Disk rotational speed			
	5400 rpm	7200 and 5400 rpm	7200 and 5400 rpm
Operating temperature		0°C to 60°C (32°F to 140°F)	
*1 GB = 1 billion bytes when referring to hard drive storage capacity. Actual accessible capacity is less.			
NOTE: Certain restrictions and exclusions apply. Contact technical support for details.			

7 Backup and recovery

To protect your information, use Windows Backup and Restore to back up individual files and folders, back up your entire hard drive (select models only), create system repair discs (select models only) by using the installed optical drive (select models only) or an optional external optical drive, or create system restore points. In case of system failure, you can use the backup files to restore the contents of your computer.

Windows Backup and Restore provides the following options:

- Creating a system repair disc (select models only) by using the installed optical drive (select models only) or an optional external optical drive
- Backing up your information
- Creating a system image (select models only)
- Scheduling automatic backups (select models only)
- Creating system restore points
- Recovering individual files
- Restoring the computer to a previous state
- Recovering information using recovery tools

 **NOTE:** For detailed instructions, perform a search for these topics in Help and Support.

In case of system instability, HP recommends that you print the recovery procedures and save them for later use.

 **NOTE:** Windows includes 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 Help and Support for more information.

Backing up your information

Recovery after a system failure is as good as your most recent backup. You should create system repair discs (select models only) by using the installed optical drive (select models only) or an optional external optical drive, and your initial backup immediately after software setup. 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. The system repair discs (select models only) are used to start up (boot) the computer and repair the operating system in case of system instability or failure. Your initial and subsequent backups allow you to restore your data and settings if a failure occurs.

You can back up your information to an optional external hard drive, a network drive, or discs.

Note the following when backing up:

- Store personal files in the Documents library, and back it up regularly.
- Back up templates that are stored in their associated programs.
- Save customized settings that appear in a window, toolbar, or menu bar by taking a screen shot of your settings. The screen shot can be a time-saver if you have to reset your preferences.
- When backing up to discs, use any of the following types of discs (purchased separately): CD-R, CD-RW, DVD+R, DVD+R DL, DVD-R, DVD-R DL, or DVD±RW. The discs you use will depend on the type of external optical drive you are using.

 **NOTE:** DVDs and DVDs with double-layer (DL) support store more information than CDs, so using them for backup reduces the number of recovery discs required.

- When backing up to discs, number each disc before inserting it into the external drive.

To create a backup using Backup and Restore:

 **NOTE:** Be sure that the computer is connected to AC power before you start the backup process.

 **NOTE:** The backup process may take over an hour, depending on file size and the speed of the computer.

1. Select **Start > All Programs > Maintenance > Backup and Restore**.
2. Follow the on-screen instructions to set up your backup, create a system image (select models only), or create a system repair disc (select models only).

Performing a system recovery

In case of system failure or instability, the computer provides the following tools to recover your files:

- Windows recovery tools: You can use Windows Backup and Restore to recover information you have previously backed up. You can also use Windows Startup Repair to fix problems that might prevent Windows from starting correctly.
- **f11** recovery tools: You can use the **f11** recovery tools to recover your original hard drive image. The image includes the Windows operating system and software programs installed at the factory.

 **NOTE:** If you are unable to boot (start up) your computer and you cannot use the system repair discs you previously created (select models only), you must purchase a Windows 7 operating system DVD to reboot the computer and repair the operating system. For additional information, refer to the “Using a Windows 7 operating system DVD (purchased separately)” section.

Using the Windows recovery tools

To recover information you previously backed up:

1. Select **Start > All Programs > Maintenance > Backup and Restore**.
2. Follow the on-screen instructions to recover your system settings, your computer (select models only), or your files.

To recover your information using Startup Repair, follow these steps:

 **CAUTION:** Using Startup Repair 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. When reformatting is complete, the recovery process restores the operating system, as well as the drivers, software, and utilities from the backup used for recovery.

1. If possible, back up all personal files.
2. If possible, check for the presence of the Windows partition and the HP Recovery partition.

To check for the Windows partition, select **Start > Computer**.

To check for the HP Recovery partition, click **Start**, right-click **Computer**, click **Manage**, and then click **Disk Management**.

 **NOTE:** If the Windows partition and the HP Recovery partition are not listed, you must recover your operating system and programs using the Windows 7 operating system DVD and the Driver Recovery disc (both purchased separately). For additional information, refer to the “Using a Windows 7 operating system DVD (purchased separately)” section.

3. If the Windows partition and the HP Recovery partition are listed, restart the computer, and then press **f8** before the Windows operating system loads.
4. Select **Startup Repair**.
5. Follow the on-screen instructions.

 **NOTE:** For additional information on recovering information using the Windows tools, perform a search for these topics in Help and Support.

Using f11 recovery tools

 **CAUTION:** Using f11 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 f11 recovery tool reinstalls the operating system and HP programs and drivers that were installed at the factory. Software not installed at the factory must be reinstalled.

To recover the original hard drive image using f11:

1. If possible, back up all personal files.
2. If possible, check for the presence of the HP Recovery partition: click **Start**, right-click **Computer**, click **Manage**, and then click **Disk Management**.

 **NOTE:** If the HP Recovery partition is not listed, you must recover your operating system and programs using the Windows 7 operating system DVD and the Driver Recovery disc (both purchased separately). For additional information, refer to the “Using a Windows 7 operating system DVD (purchased separately)” section.

3. If the HP Recovery partition is listed, restart the computer, and then press **esc** while the “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen.
4. Press **f11** while the <Press F11 for recovery> message is displayed.
5. Follow the on-screen instructions.

Using a Windows 7 operating system DVD (purchased separately)

To order a Windows 7 operating system DVD, go to <http://www.hp.com/support>, select your country or region, and follow the on-screen instructions. You can also order the DVD by calling technical support. For contact information, refer to the Worldwide Telephone Numbers booklet included with the computer.

 **CAUTION:** Using a Windows 7 operating system DVD 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. When reformatting is complete, the recovery process helps you restore the operating system, as well as drivers, software, and utilities.

To initiate recovery using a Windows 7 operating system DVD:

 **NOTE:** This process takes several minutes.

1. If possible, back up all personal files.
2. Restart the computer, and then insert the Windows 7 operating system DVD into the optical drive before the Windows operating system loads.
3. When prompted, press any keyboard key.
4. Follow the on-screen instructions.

5. Click **Next**.
6. Select **Repair your computer**.
7. Follow the on-screen instructions.

After the repair is completed:

1. Eject the Windows 7 operating system DVD, and then insert the *Driver Recovery disc*.
2. Install the Hardware Enabling Drivers first, and then install Recommended Applications.

8 Power cord set requirements

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

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

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

Requirements for all countries

The following requirements are applicable to all countries and regions:

- The length of the power cord set must be at least **1.5 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
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
<ol style="list-style-type: none"> 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) 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 HO5VV-F 3X0.75-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 3x1.25-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 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 HO5VV-F 3x0.75-/1.00-mm² conductor size, with plug BS 1363/A with BSI or ASTA marks. 		

9 Recycling

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

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

Index

A

AC adapter, spare part number
22, 23
AC adapter/battery light 10
Action keys 5
antenna
locations 6
removal 66
spare part number 19, 24, 67
Antenna Kit, spare part number
19, 24, 67
audio, product description 2
audio-in jack 11
audio-out jack 11

B

base enclosure, spare part
number 17, 25
battery
removal 34
spare part numbers 17, 24,
34
battery bay 12
battery/service cover release
latch 12
bottom components 12
button components 7
buttons
power 7
TouchPad 9
TouchPad on/off 9
Web browser 7

C

cables, service considerations 27
caps lock light 8
chipset, product description 1
components
bottom 12

buttons 7
display 6
keys 5
left-side 10
lights 8
right-side 11
TouchPad 9
computer feet, locations 33
computer major components 15
computer part number 32
computer specifications 73
connectors, service
considerations 27
corner cover
spare part number 24
corner covers
spare part number 18

D

Digital Media Slot 11
display
components 6
specifications 74
display assembly
removal 62
spare part numbers 16, 24,
25, 62
subcomponents 19
display bezel
removal 63
spare part number 19, 24, 63
Display Cable Kit, spare part
number 19, 66
display enclosure, spare part
numbers 19, 24, 26
Display Hinge Kit, spare part
number 19, 65
display hinge, spare part number
24

display panel
product description 1
removal 64
spare part number 19, 24, 65
display panel cable
removal 66
spare part number 19, 24, 66
drives, preventing damage 28
DVD±RW DL SuperMulti Drive
precautions 28
spare part number 21, 24

E

electrostatic discharge 28
equipment guidelines 31
Ethernet, product description 2
external monitor port 10

F

fan
removal 58
spare part number 17, 24, 58
feet, locations 33
fn key 5

G

graphics, product description 1
grounding guidelines 28
guidelines
equipment 31
grounding 28
packaging 30
transporting 30
workstation 30

H

hard drive
precautions 28
product description 1

- removal 43
- spare part numbers 18, 21, 23, 24, 43
- specifications 75
- hard drive bracket
 - illustrated 21
 - removal 44
- hard drive connector cable
 - illustrated 21
 - removal 44
- Hard Drive Hardware Kit, spare part number 18, 21, 25, 43
- hard drive light 10
- hard drive rubber isolator
 - illustrated 21
 - removal 44
- headphone jack 11
- heat sink
 - removal 60
 - spare part number 17, 24, 60
- hinge
 - removal 65
 - spare part number 19, 65

J

- jacks
 - audio-in 11
 - audio-out 11
 - headphone 11
 - microphone 11
 - network 11
 - RJ-45 11

K

- key components 5
- keyboard
 - product description 3
 - removal 45
 - spare part numbers 16, 25, 45

keys

- Action 5
- fn 5
- Windows applications 5
- Windows logo 5

L

- left-side components 10
- light components 8
- lights
 - AC adapter/battery 10

- caps lock 8
- hard drive 10
- mute 8
- power 8
- TouchPad 8, 9
- webcam 6
- wireless 8

M

- mass storage device
 - precautions 28
 - removal 43
 - spare part numbers 21, 43
- memory module
 - product description 1
 - removal 41
 - spare part numbers 17, 23, 24, 41
- microphone
 - location 6
 - product description 2
- microphone jack 11
- model description 33
- model name 1
- monitor port 10
- mouse, spare part number 22, 23
- mute light 8

N

- network jack 11

O

- operating system, product description 4
- optical drive
 - precautions 28
 - spare part number 21, 24

P

- packaging guidelines 30
- plastic parts, service considerations 27
- pointing device, product description 3
- ports
 - external monitor 10
 - monitor port 10
 - product description 3
 - USB 10, 11
- power button 7
- power connector 10

- power connector cable
 - removal 57
 - spare part number 17, 24, 57
- power cord
 - set requirements 81
 - spare part numbers 22, 23
- power light 8
- power requirements, product description 3
- processor, product description 1
- product description
 - audio 2
 - chipset 1
 - display panel 1
 - Ethernet 2
 - external media cards 3
 - graphics 1
 - hard drives 1
 - keyboard 3
 - memory module 1
 - microphone 2
 - operating system 4
 - pointing device 3
 - ports 3
 - power requirements 3
 - processors 1
 - product name 1
 - security 3
 - serviceability 4
 - video 2
 - wireless 2
- product name 1, 32
- product number 32

R

- removal/replacement
 - preliminaries 27
 - procedures 32
- right-side components 11
- RJ-45 jack 11
- RTC battery
 - removal 42
 - spare part number 17, 23, 42
- Rubber Kit, spare part number 18, 24

S

- Screw Kit, spare part number 22, 24
- security cable slot 11

- security, product description 3
- serial number 32
- service considerations
 - cables 27
 - connectors 27
 - plastic parts 27
- service cover
 - location 12
 - removal 36
 - spare part number 18, 25, 37
- service tag 14, 32
- serviceability, product description 4
- SIM, removal 35
- speakers
 - removal 54
 - spare part number 17, 24, 54
- specifications
 - computer 73
 - display 74
 - hard drive 75
- system board
 - removal 55
 - spare part numbers 17, 26, 55
- webcamera/microphone module
 - removal 64
 - spare part number 19, 24, 64
- Windows applications key 5
- Windows logo key 5
- wireless antenna
 - locations 6
 - removal 66
 - spare part number 19, 24, 67
- wireless light 8
- wireless, product description 2
- WLAN module
 - removal 36
 - spare part numbers 17, 23, 24, 26, 36
- workstation guidelines 30
- WWAN
 - spare part numbers 26
- WWAN module
 - removal 39
 - spare part numbers 17, 23, 39

T

- tools required 27
- top cover
 - removal 48
 - spare part numbers 17, 24, 25, 48
- TouchPad button 9
- TouchPad components 9
- TouchPad light 8, 9
- TouchPad on/off button 9
- TouchPad zone 9
- transporting guidelines 30

U

- USB port 10, 11

V

- vents 10
- video, product description 2

W

- warranty period 33
- Web browser button 7
- webcam 6
- webcam light 6