



HP Mini 210

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).

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1 Product description

Category	Description
Product Name	HP Mini 210
Processor	Intel® Atom™ N455 1.66 GHz single-core processor, 512 KB level 2 cache, 667 MHz front-side bus (FSB)
	Intel® Atom™ N475 1.83 GHz single-core processor, 512 KB level 2 cache, 667 MHz FSB
	Intel® Atom™ N570 1.66 GHz dual-core processor, 1 MB level 2 cache, 667 MHz FSB
Chipset	Intel NM10 Express
Graphics	Intel Graphics Media Accelerator 3150 universal memory architecture (UMA) graphics subsystem
Panels	Wide aspect 16:9 ratio panels, typical brightness: 200nits
	25.7 cm (10.1 in) (1024 × 600) WSVGA, Anti-Glare (AG)
	25.7 cm (10.1 in) (1366 × 786) High Definition (HD) AG
Memory	One customer accessible/upgradable memory module slot
	PC3-10600, 1333 MHz, shared
	Supports the following configurations: <ul style="list-style-type: none">• 1 GB total system memory• 2 GB total system memory (select models only)
Hard drives	Supports the following 9.5 mm (0.37 in) × 6.35 cm (2.50 in), parallel SATA, 5400 rpm hard drives: <ul style="list-style-type: none">• 500 GB (select models only)• 320 GB (select models only)• 250 GB
	Supports the following 7.0 mm (0.28 in) × 6.35 cm (2.50 in), parallel SATA, 5400 rpm hard drives: <ul style="list-style-type: none">• 320 GB• 250 GB
Optical drive	Supports external USB optical drives only
Audio/Visual	HP Beats Audio™
	Supports HP Beats audio driver
	Integrated 1.5 W speakers (2)
	Digital microphone
	Fixed integrated VGA webcam, 640 × 480 resolution, up to 30 frames per second
Modem	Supports external USB modems only
Ethernet	Integrated Realtek RTL8105T 10/100 network interface card (NIC)

Category	Description
Wireless	Integrated WLAN by way of: <ul style="list-style-type: none"> Atheros AR9002WB-1NGB 802.11b/g/n 1x1 WiFi and Bluetooth 2.1+EDR Combo Adapter (BT3.0+HS ready) Realtek RTL8191SE 802.11b/g/n 1x1 WiFi Adapter Realtek RTL8188CE 802.11b/g/n WiFi Adapter Broadcom 4312G 802.11b/g WiFi and 2070 Bluetooth 2.1+EDR Combo Adapter (BT3.0+HS ready) Ralink 5390GN 802.11b/g/n 1x1 WiFi Adapter
	2 WWAN antennas built into display assembly
	2 WLAN antennas built into display assembly
	Integrated WWAN options by way of WWAN module: <ul style="list-style-type: none"> HP hs2340 HSPA+ Mobile Broadband Module HP Ic2010 HSPA Mobile Broadband Module HP Ic2000 HSPA Mobile Broadband Module
External media cards	Digital Media Slot with push-push technology, supporting: <ul style="list-style-type: none"> Secure Digital (SD) Memory Card MultiMediaCard (MMC) Secure Digital High Capacity (SDHC) Memory Card (standard and large size) Secure Digital Extended Capacity (SDxC) Memory Card <p>NOTE: SDxC supported for capacity; not speed</p>
Internal media cards	Two Mini Card slots: <ul style="list-style-type: none"> Full-size Mini Card slot Half-size Mini Card slot
Ports	Audio in/out combo, supporting jack detection
	RJ-45 (Ethernet, includes link and activity lights)
	USB (3)
	VGA, supporting up to 1600 x 900 external resolution @ 60 Hz, hot plug /unplug, and auto detection for correct output to wide Aspect vs. standard aspect video
	3-pin AC power
Keyboard/pointing device	93% island-style keyboard
	TouchPad with multi-touch/gesture support
	TouchPad with 2 TouchPad buttons and 2-way scrolling (taps enabled and some gestures enabled by default)
	TouchPad on/off button with LED indicator
Power requirements	40 W UMA AC adapter (non-Smart) with localized cable plug support and stepped plug
	AC adapter connector on cable
	1.0 m (3.28 ft) power cord


Category	Description
	3-cell Lithium-ion (Li-ion) battery (2.55 Ah, 28 Whr)
	6-cell Li-ion battery (2.55 Ah, 55 Whr)
Security	Supports security lock
Operating system	Windows 7 Professional
	Windows 7 Home Premium
	Windows 7 Home Basic
	Windows 7 Home Starter
Serviceability	End-user replaceable parts:
	AC adapter
	Battery (system)
	Hard drive
	Keyboard
	Memory module
	WLAN module or WLAN+BT half size mini-PCI card
	WWAN full size mini-PCI card

2 External component identification

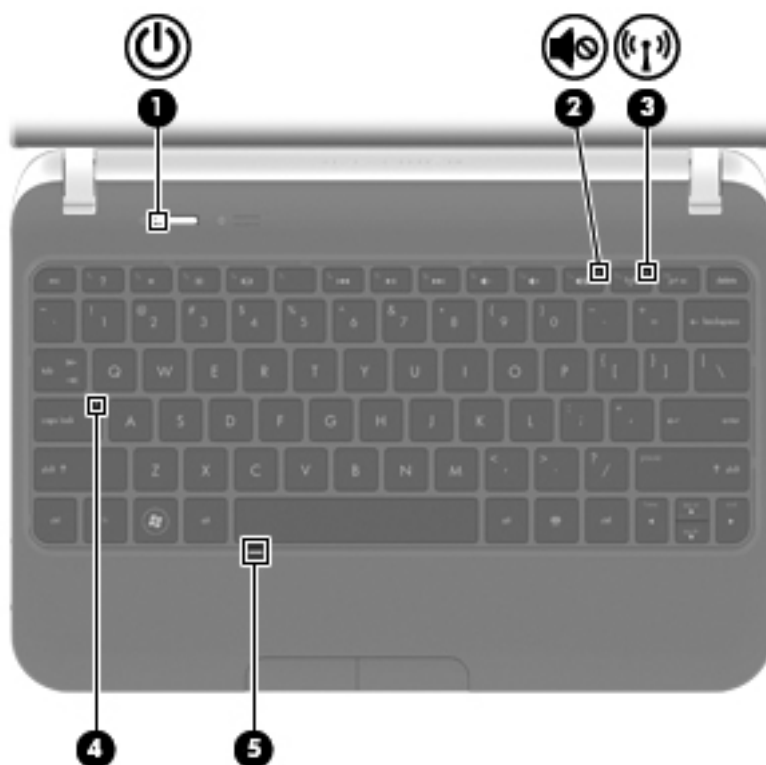
Top




TouchPad



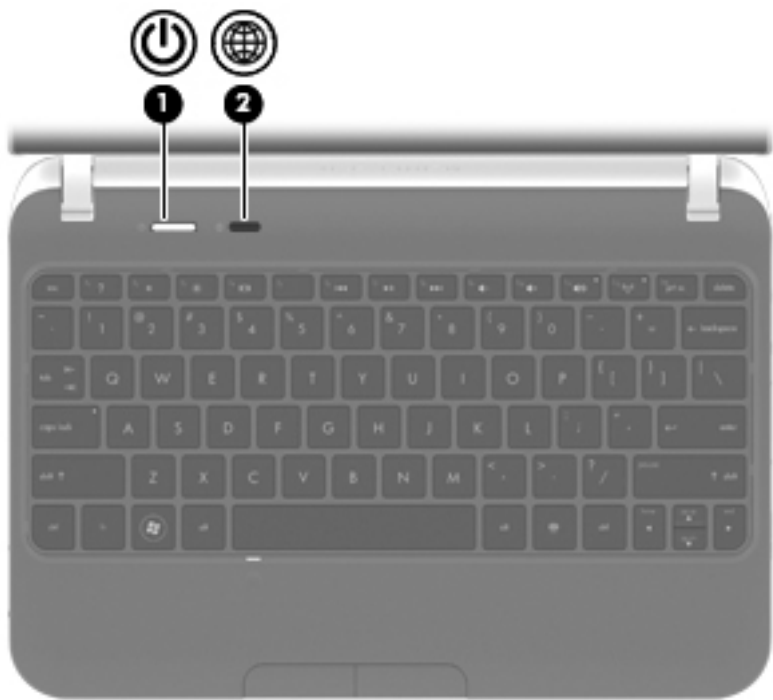
Component		Description
(1)	TouchPad light	<ul style="list-style-type: none">Off: The TouchPad is on.Amber: The TouchPad is off.
(2)	 TouchPad on/off button	Quickly double-tap the TouchPad on/off button to turn the TouchPad on or off.
(3)	TouchPad zone	Moves the pointer and selects or activates items 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.

Lights



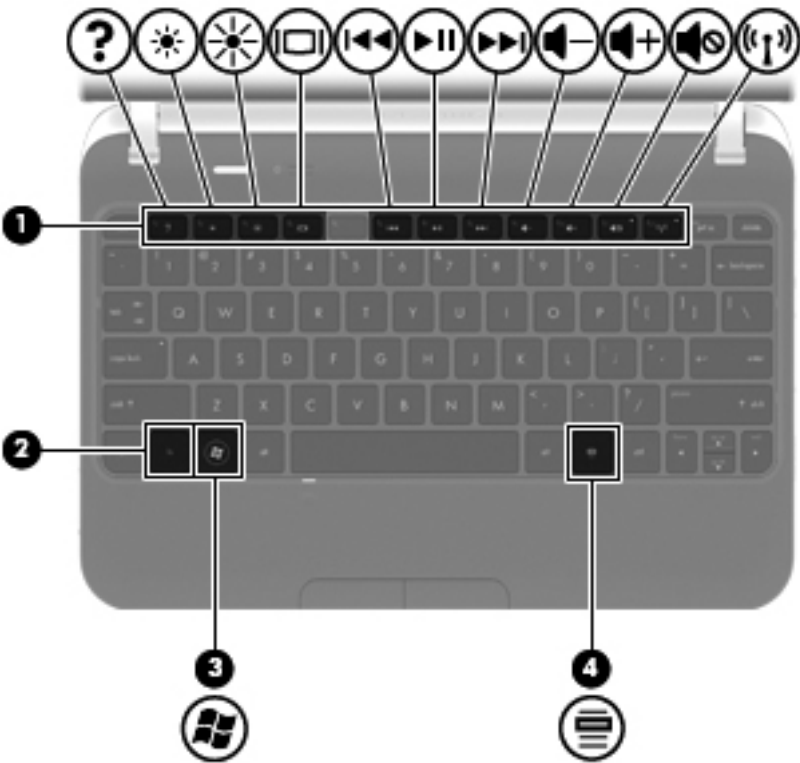
Component		Description
(1)	 Power light	<ul style="list-style-type: none">• White: The computer is on.• Blinking white: The computer is in the Sleep state.• Off: The computer is off or in Hibernation.
(2)	 Mute light	<ul style="list-style-type: none">• Amber: Computer sound is off.• Off: Computer sound is on.
(3)	 Wireless light	<ul style="list-style-type: none">• White: An integrated wireless device, such as a wireless local area network (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.



Buttons



Component		Description
(1)		<p>Power button</p> <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)		<p>QuickWeb button</p> <ul style="list-style-type: none">• When the computer is off or in Hibernation, press the button to open HP QuickWeb.• When the computer is in Microsoft Windows, press the button to open the default Web browser.• When the computer is in HP QuickWeb, press the button to open the default Web browser. <p>NOTE: For more information, refer to “HP QuickWeb” in this guide and to the HP QuickWeb software Help. If your computer does not have HP QuickWeb software, the button does not perform any action or function.</p>

Keys



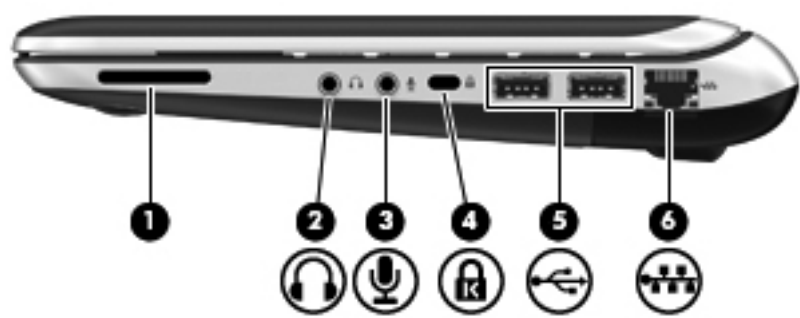
Component		Description
(1)	Action keys	Execute frequently used system functions.
(2)	fn key	Executes frequently used system functions when pressed in combination with a function key, the num lk key, or the esc key.
(3)	 Windows logo key	Displays the Windows Start menu.
(4)	 Windows applications key	Displays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






Front



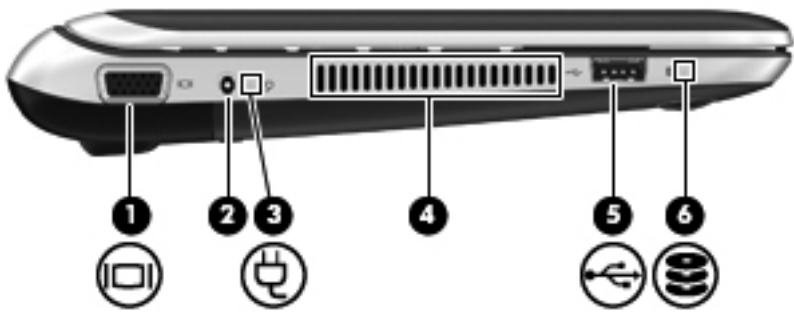
Component	Description
Speakers (2)	Produce sound.





Right side



Component		Description
(1)	Digital Media Slot	<p>Supports the following digital card formats:</p> <ul style="list-style-type: none">• MultiMediaCard• Secure Digital (SD) Card• Secure Digital High Capacity Card (SDHC)• 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>Produces sound when connected to optional powered stereo speakers, headphones, earbuds, 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>NOTE: When a device is connected to the headphone jack, the computer speakers are disabled.</p>
(3)	 Audio in (microphone) jack	<p>Connects an optional computer headset microphone, stereo array microphone, or monaural microphone.</p>
(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 ports (2)	<p>Connect optional USB devices.</p>
(6)	 RJ-45 (network) jack	<p>Connects a network cable.</p>

Left side



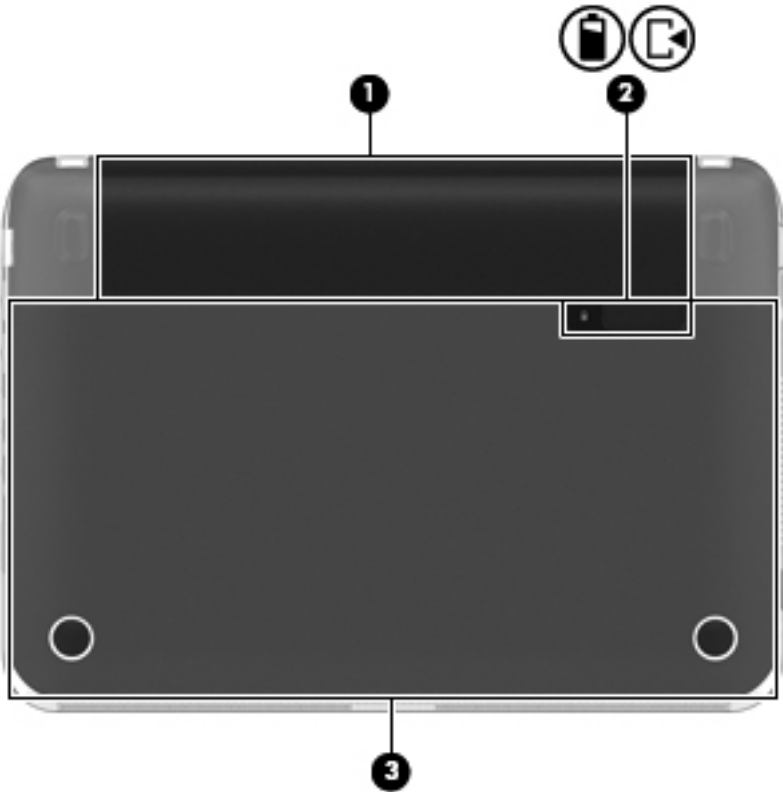
Component		Description
(1)		External monitor port Connects an external VGA monitor or projector.
(2)		Power connector Connects an AC adapter.
(3)		AC adapter light <ul style="list-style-type: none">White: The computer is connected to external power and the battery is fully charged.Amber: The computer is connected to external power and the battery is charging.Off: The computer is not connected to external power.
(4)		Vent Enables airflow to cool internal components. NOTE: The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.
(5)		USB port Connects an optional USB device.
(6)		Hard drive light On: The hard drive is being accessed.



Display



Component		Description
(1)	WLAN antennas (2)	Send and receive wireless signals to communicate with wireless local area networks (WLAN).
(2)	WWAN antennas (2)	Send and receive wireless signals to communicate with wireless wide area networks (WWAN).
(3)	Internal microphone	Records sound.
(4)	Webcam	Records video and captures still photographs. To use the webcam, select Start > All Programs > HP > HP Camera .
(5)	Webcam light	On: The webcam is in use.

Bottom



Component		Description
(1)	Battery bay	Holds the battery.
(2)	 Battery/service access cover latch	Releases the battery from the battery bay and the service access cover from the computer.
(3)	 Service access cover	Provides access to the hard drive bay, a memory module slot, the WLAN module, and the WWAN module.

3 Illustrated parts catalog

Serial number label location

When ordering parts or requesting information, the serial number label, located inside the battery bay, provides important information that you may need when contacting technical support.

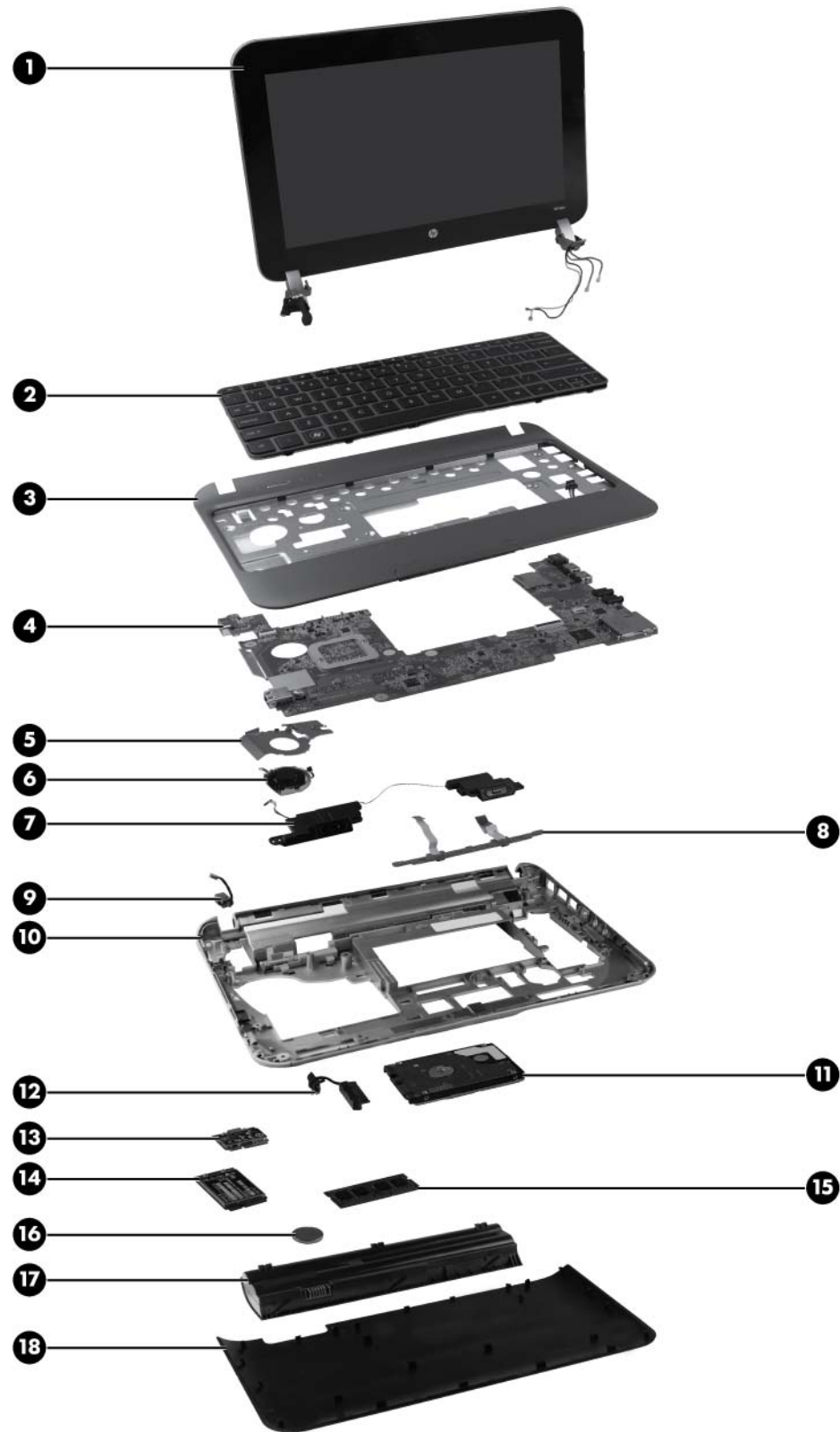


NOTE: Serial number label location, format, and color vary on select models.



(1) Product name	(4) Warranty period
(2) Serial number	(5) Model description (select models)
(3) Product number	

Computer major components



Item	Description	Spare part number
(1)	Display assembly, 25.7 cm (10.1 in) (includes display panel cable, 2 WLAN antenna transceivers and cables, 2 WWAN antenna transceivers and cables, and webcam/microphone module and cable):	
	• HD, flush glass display assembly, Charcoal	650712-001
	• HD, flush glass display assembly, Crimson Red	650717-001
	• HD, flush glass display assembly, Luminous Rose	650716-001
	• HD, flush glass display assembly, Ocean Drive	650713-001
	• HD, flush glass display assembly, Sweet Purple	654201-001
	• WSVGA, flush glass display assembly, Charcoal	650719-001
	• WSVGA, flush glass display assembly, Crimson Red	650724-001
	• WSVGA, flush glass display assembly, Luminous Rose	650723-001
	• WSVGA, flush glass display assembly, Ocean Drive	650720-001
	• WSVGA, flush glass display assembly, Sweet Purple	654202-001
(2)	Keyboard (includes cable)	
	Charcoal:	
	• For use in Belgium	650726 A41
	• For use in the Czech Republic and Slovakia	650726-FL1
	• For use in Denmark, Finland, and Norway	650726-DH1
	• For use in France	650726-051
	• For use in French Canada	650726-121
	• For use in Germany	650726-041
	• For use in Greece	650726-DJ1
	• For use in Hungary	650726-211
	• For use internationally	650726-B31
	• For use in Israel	650726-BB1
	• For use in Italy	650726-061
	• For use in Latin America	650726-161
	• For use in Portugal	650726-131
	• For use in Russia	650726-251
	• For use in Saudi Arabia	650726-171
	• For use in Slovenia	650726-BA1
	• For use in Spain	650726-071
	• For use in Switzerland	650726-BG1
	• For use in Turkey	650726-141
	• For use in the United Kingdom	650726-031

Item	Description	Spare part number
	<ul style="list-style-type: none"> For use in the United States 	650726-001
	Crimson Red:	
	<ul style="list-style-type: none"> For use in Belgium 	656761-A41
	<ul style="list-style-type: none"> For use in the Czech Republic and Slovakia 	656761-FL1
	<ul style="list-style-type: none"> For use in Denmark, Finland, and Norway 	656761-DH1
	<ul style="list-style-type: none"> For use in France 	656761-051
	<ul style="list-style-type: none"> For use in French Canada 	656761-121
	<ul style="list-style-type: none"> For use in Germany 	656761-041
	<ul style="list-style-type: none"> For use in Greece 	656761-DJ1
	<ul style="list-style-type: none"> For use in Hungary 	656761-211
	<ul style="list-style-type: none"> For use internationally 	656761-B31
	<ul style="list-style-type: none"> For use in Israel 	656761-BB1
	<ul style="list-style-type: none"> For use in Italy 	656761-061
	<ul style="list-style-type: none"> For use in Latin America 	656761-161
	<ul style="list-style-type: none"> For use in Portugal 	656761-131
	<ul style="list-style-type: none"> For use in Russia 	656761-251
	<ul style="list-style-type: none"> For use in Saudi Arabia 	656761-171
	<ul style="list-style-type: none"> For use in Slovenia 	656761-BA1
	<ul style="list-style-type: none"> For use in Spain 	656761-071
	<ul style="list-style-type: none"> For use in Switzerland 	656761-BG1
	<ul style="list-style-type: none"> For use in Turkey 	656761-141
	<ul style="list-style-type: none"> For use in the United Kingdom 	656761-031
	<ul style="list-style-type: none"> For use in the United States 	656761-001
	Luminous Rose:	
	<ul style="list-style-type: none"> For use in Belgium 	656760-A41
	<ul style="list-style-type: none"> For use in the Czech Republic and Slovakia 	656760-FL1
	<ul style="list-style-type: none"> For use in Denmark, Finland, and Norway 	656760-DH1
	<ul style="list-style-type: none"> For use in France 	656760-051
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	<ul style="list-style-type: none"> For use in Greece 	656760-DJ1
	<ul style="list-style-type: none"> For use in Hungary 	656760-211
	<ul style="list-style-type: none"> For use internationally 	656760-B31
	<ul style="list-style-type: none"> For use in Israel 	656760-BB1

Item	Description	Spare part number
	• For use in Italy	656760-061
	• For use in Latin America	656760-161
	• For use in Portugal	656760-131
	• For use in Russia	656760-251
	• For use in Saudi Arabia	656760-171
	• For use in Slovenia	656760-BA1
	• For use in Spain	656760-071
	• For use in Switzerland	656760-BG1
	• For use in Turkey	656760-141
	• For use in the United Kingdom	656760-031
	• For use in the United States	656760-001
	Ocean Drive:	
	• For use in Belgium	656757-A41
	• For use in the Czech Republic and Slovakia	656757-FL1
	• For use in Denmark, Finland, and Norway	656757-DH1
	• For use in France	656757-051
	• For use in French Canada	656757-121
	• For use in Germany	656757-041
	• For use in Greece	656757-DJ1
	• For use in Hungary	656757-211
	• For use internationally	656757-B31
	• For use in Israel	656757-BB1
	• For use in Italy	656757-061
	• For use in Latin America	656757-161
	• For use in Portugal	656757-131
	• For use in Russia	656757-251
	• For use in Saudi Arabia	656757-171
	• For use in Slovenia	656757-BA1
	• For use in Spain	656757-071
	• For use in Switzerland	656757-BG1
	• For use in Turkey	656757-141
	• For use in the United Kingdom	656757-031
	• For use in the United States	656757-001
	Sweet Purple:	

Item	Description	Spare part number
	• For use in Belgium	656763-A41
	• For use in the Czech Republic and Slovakia	656763-FL1
	• For use in Denmark, Finland, and Norway	656763-DH1
	• For use in France	656763-051
	• For use in French Canada	656763-121
	• For use in Germany	656763-041
	• For use in Greece	656763-DJ1
	• For use in Hungary	656763-211
	• For use internationally	656763-B31
	• For use in Israel	656763-BB1
	• For use in Italy	656763-061
	• For use in Latin America	656763-161
	• For use in Portugal	656763-131
	• For use in Russia	656763-251
	• For use in Saudi Arabia	656763-171
	• For use in Slovenia	656763-BA1
	• For use in Spain	656763-071
	• For use in Switzerland	656763-BG1
	• For use in Turkey	656763-141
	• For use in the United Kingdom	656763-031
	• For use in the United States	656763-001
(3)	Top cover (includes TouchPad board and bracket)	
	Charcoal	650747-001
	Crimson Red	650752-001
	Luminous Rose	650751-001
	Ocean Drive	650748-001
	Sweet Purple	654204-001
(4)	System board (includes processor and replacement thermal material)	
	Intel® Atom™ N455 single-core, 1.66 GHz processor, 512 KB level 2 cache, 667 MHz front-side bus (FSB)	650737-001
	Intel® Atom™ N475 single-core, 1.83 GHz processor, 512 KB level 2 cache, 667 MHz FSB	650738-001
	Intel® Atom™ N570 dual-core, 1.66 GHz processor, 1 MB level 2 cache, 667 MHz FSB	650739-001
	Intel® Atom™ N455 single-core, 1.66 GHz processor, 512 KB level 2 cache, 667 MHz FSB, XSL0T	650740-001

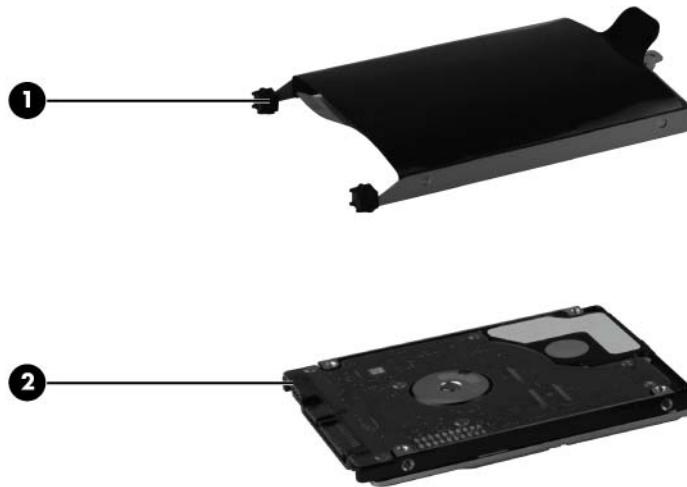
Item	Description	Spare part number
	Intel® Atom™ N475 single-core, 1.83 GHz processor, 512 KB level 2 cache, 667 MHz FSB, XSLOT	650741-001
	Intel® Atom™ N570 dual-core, 1.66 GHz processor, 1 MB level 2 cache, 667 MHz FSB, XSLOT	650742-001
(5)	Heat sink (includes replacement thermal material)	651898-001
(6)	Fan	651897-001
(7)	Speakers (include cables)	650736-001
(8)	TouchPad button board	651901-001
(9)	Power connector	656095-001
(10)	Base enclosure	650710-001
(11)	Hard drive:	
	<ul style="list-style-type: none"> 500 GB, 9.5 mm (0.37 in) × 6.35 cm (2.50 in), parallel SATA, 5400-rpm (select models only) 	634932-001
	<ul style="list-style-type: none"> 320 GB, 9.5 mm (0.37 in) × 6.35 cm (2.50 in), parallel SATA, 5400-rpm (select models only) 	622643-001
	<ul style="list-style-type: none"> 250 GB, 9.5 mm (0.37 in) × 6.35 cm (2.50 in), parallel SATA, 5400-rpm 	622641-001
	<ul style="list-style-type: none"> 320 GB, 7.0 mm (0.28 in) × 6.35 cm (2.50 in), parallel SATA, 5400 rpm 	645193-001
	<ul style="list-style-type: none"> 250 GB, 7.0 mm (0.28 in) × 6.35 cm (2.50 in), parallel SATA, 5400 rpm 	645191-001
(12)	Cable adapter (included in the Hard Drive Hardware Kit, spare part number 651899-001)	
(13)	WLAN module	
	Atheros AR9002WB-1NGB 802.11b/g/n 1x1 WiFi and Bluetooth 2.1+EDR Combo Adapter (BT3.0+HS ready) For use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Caledoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikstan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen	593127-001

Item	Description	Spare part number
	<p>Broadcom 4312G 802.11b/g WiFi and 2070 Bluetooth 2.1+EDR Combo Adapter (BT3.0+HS ready)</p> <p>For use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Calédoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen</p>	575920-001
	<p>Realtek RTL8191SE 802.11b/g/n 1x1 WiFi Adapter</p> <p>For use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Calédoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen</p>	602993-001
	<p>Ralink 5390GN 802.11b/g/n 1x1 WiFi Adapter</p> <p>For use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Calédoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen</p>	630703-001

Item	Description	Spare part number
	Realtek RTL8188CE 802.11b/g/n WiFi Adapter	640926-001
	For use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Caledoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen	
(14)	WWAN module	
	HP Ic2000 HSPA Mobile Broadband Module	612599-001
	For use in Argentina, Bolivia, Canada, Chile, Colombia, Ecuador, El Salvador, Guatemala, Honduras, Mexico, New Zealand, Nicaragua, Panama, Paraguay, Peru, Thailand, the United States, and Venezuela	
	HP Ic2010 HSPA Mobile Broadband Module	612600-001
	For use in Australia, Belgium, Bulgaria, the People's Republic of China, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, India, Indonesia, Italy, Latvia, Lithuania, Malaysia, New Zealand, Norway, the Philippines, Poland, Portugal, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Thailand, Turkey, the United Arab Emirates and the United Kingdom	
	HP hs2340 HSPA+ Mobile Broadband Module	632155-001
	For use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Liechtenstein, Lithuania, Luxembourg, Malaysia, the Maldives, Martinique, Mexico, Monaco, Morocco, Namibia, Nepal, the Netherlands, New Zealand, Nicaragua, Norway, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Portugal, Qatar, Romania, Russia, San Marino, Saudi Arabia, Singapore, Slovakia, South Africa, South Korea, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Turkey, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, and Yemen	
(15)	Memory module (PC3, 10600, 1333 MHz single channel):	
	1 GB	639736-001
	2 GB (select models only)	621565-001
(16)	RTC battery	599516-001
(17)	Battery	
	6-cell, Li-ion, 2.55 Ah, 55 WHr	646757-001

Item	Description	Spare part number
	3-cell, Li-ion, 2.55 Ah, 28 WHr	646755-001
(18)	<ul style="list-style-type: none"> • Service access cover 	
	<ul style="list-style-type: none"> • Charcoal 	650727-001
	<ul style="list-style-type: none"> • Crimson Red 	650732-001
	<ul style="list-style-type: none"> • Luminous Rose 	650731-001
	<ul style="list-style-type: none"> • Ocean Drive 	650728-001
	<ul style="list-style-type: none"> • Sweet Purple 	654203-001

Mass storage devices



Item	Description	Spare part number
(1)	Hard drive bracket NOTE: The hard drive bracket is included in the Hard Drive Hardware Kit, spare part number 651899-001.	
(2)	Hard drive	
	9.5 mm (0.37 in) × 6.35 cm (2.50 in), parallel SATA, 5400-rpm:	
	500 GB (select models only)	634932-001
	320 GB (select models only)	622643-001
	250 GB	622641-001
	7.0 mm (0.28 in) × 6.35 cm (2.50 in), parallel SATA, 5400-rpm:	
	320 GB	645193-001

Item	Description	Spare part number
	250 GB	645191-001
External optical drive:		
	DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive	584383-001

Miscellaneous parts

Description	Spare part number
AC adapters:	
• 40 W RA AC adapter, non-smart RC/V, 2W	624502-001
• 40 W RA MSH AC adapter, non-smart RC/V, 2W	625188-001
Power cords:	
• For use in Argentina	490371-D01
• For use in Denmark	490371-081
• For use in Europe, the Middle East, and Africa	490371-021
• For use in Israel	490371-BB1
• For use in Italy	490371-061
• For use in North America	490371-001
• For use in Singapore and the United Kingdom	490371-031
• For use in South Africa	490371-AR1
• For use in Switzerland	490371-111
Plastics Kit (includes left and right rear corner covers)	652308-001
Rubber Kit	650734-001
Screw Kit	650735-001
Sleeves:	
• Charcoal	631188-001
• Crimson Red	628348-001
• Luminous Rose	628344-001
• Ocean Drive	628346-001
Thermal Pad Kit	634431-001

Sequential part number listing

Spare part number	Description
490371-001	Power cord for use in North America
490371-021	Power cord for use in Europe, the Middle East, and Africa
490371-031	Power cord for use in Singapore and the United Kingdom
490371-061	Power cord for use in Italy
490371-081	Power cord for use in Denmark
490371-111	Power cord for use in Switzerland
490371-AR1	Power cord for use in South Africa
490371-BB1	Power cord for use in Israel
490371-D01	Power cord for use in Argentina
575920-001	WLAN, Broadcom 4312G 802.11b/g WiFi and 2070 Bluetooth 2.1+EDR Combo Adapter (BT3.0+HS ready) for use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Caledoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen
584383-001	External optical drive, DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive
593127-001	WLAN, Atheros AR9002WB-1NGB 802.11b/g/n 1x1 WiFi and Bluetooth 2.1+EDR Combo Adapter (BT3.0+HS ready) for use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Caledoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen
599516-001	RTC battery

Spare part number	Description
602993-001	WLAN, Realtek RTL8191SE 802.11b/g/n 1x1 WiFi Adapter for use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Caledoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen
612599-001	WWAN, HP Ic2000 HSPA Mobile Broadband Module for use in Argentina, Bolivia, Canada, Chile, Colombia, Ecuador, El Salvador, Guatemala, Honduras, Mexico, New Zealand, Nicaragua, Panama, Paraguay, Peru, Thailand, the United States, and Venezuela
612600-001	WWAN, HP Ic2010 HSPA Mobile Broadband Module for use in Australia, Belgium, Bulgaria, the People's Republic of China, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, India, Indonesia, Italy, Latvia, Lithuania, Malaysia, New Zealand, Norway, the Philippines, Poland, Portugal, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Thailand, Turkey, the United Arab Emirates and the United Kingdom
621565-001	Memory module, 2GB, PC3 10600, 1333 MHz single channel (select models only)
622641-001	Hard drive, 250 GB, 9.5 mm (0.37 in) × 6.35 cm (2.50 in), parallel SATA, 5400-rpm
622643-001	Hard drive, 320 GB, 9.5 mm (0.37 in) × 6.35 cm (2.50 in), parallel SATA, 5400-rpm (select models only)
624502-001	AC adapter, 40 W RA, non-smart RC/V
625188-001	AC adapter, 40 W RA MSH, non-smart RC/V
628344-001	Sleeve, Luminous Rose
628346-001	Sleeve, Ocean Drive
628348-001	Sleeve, Crimson Red
630703-001	WLAN, Ralink 5390GN 802.11b/g/n 1x1 WiFi Adapter for use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Caledoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen
631188-001	Sleeve, Charcoal

Spare part number	Description
632155-001	WWAN, HP hs2340 HSPA+ Mobile Broadband Module for use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Liechtenstein, Lithuania, Luxembourg, Malaysia, the Maldives, Martinique, Mexico, Monaco, Morocco, Namibia, Nepal, the Netherlands, New Zealand, Nicaragua, Norway, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Portugal, Qatar, Romania, Russia, San Marino, Saudi Arabia, Singapore, Slovakia, South Africa, South Korea, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Turkey, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, and Yemen
634431-001	Thermal Pad Kit
634932-001	Hard drive, 500 GB, 9.5 mm (0.37 in) × 6.35 cm (2.50 in), parallel SATA, 5400-rpm (select models only)
639736-001	Memory module, 1GB, PC3 10600, 1333 MHz single channel
640926-001	WLAN, Realtek RTL8188CE 802.11b/g/n WiFi Adapter for use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Calédoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen
645191-001	Hard drive, 250 GB, 7.0 mm (0.28 in) × 6.35 cm (2.50 in), parallel SATA, 5400 rpm
645193-001	Hard drive, 320 GB, 7.0 mm mm (0.28 in) × 6.35 cm (2.50 in), parallel SATA, 5400 rpm
646755-001	Battery, 3 cell Li-ion, 2.55 Ah, 28 Whr
646757-001	Battery, 6-cell, Li-ion, 2.55 Ah, 55 Whr
650710-001	Base enclosure
650712-001	Display assembly, 25.7 cm (10.1 in) HD, flush glass, Charcoal (includes display panel cable, 2 WLAN antenna transceivers and cables, 2 WWAN antenna transceivers and cables, and webcam/microphone module and cable)
650713-001	Display assembly, 25.7 cm (10.1 in) HD, flush glass, Ocean Drive (includes display panel cable, 2 WLAN antenna transceivers and cables, 2 WWAN antenna transceivers and cables, and webcam/microphone module and cable)
650716-001	Display assembly, 25.7 cm (10.1 in) HD, flush glass, Luminous Rose (includes display panel cable, 2 WLAN antenna transceivers and cables, 2 WWAN antenna transceivers and cables, and webcam/microphone module and cable)
650717-001	Display assembly, 25.7 cm (10.1 in) HD, flush glass, Crimson Red (includes display panel cable, 2 WLAN antenna transceivers and cables, 2 WWAN antenna transceivers and cables, and webcam/microphone module and cable)

Spare part number	Description
650719-001	Display assembly, 25.7 cm (10.1 in) WSVGA, flush glass, Charcoal (includes display panel cable, 2 WLAN antenna transceivers and cables, 2 WWAN antenna transceivers and cables, and webcam/microphone module and cable)
650720-001	Display assembly, 25.7 cm (10.1 in) WSVGA, flush glass, Ocean Drive (includes display panel cable, 2 WLAN antenna transceivers and cables, 2 WWAN antenna transceivers and cables, and webcam/microphone module and cable)
650723-001	Display assembly, 25.7 cm (10.1 in) WSVGA, flush glass, Luminous Rose (includes display panel cable, 2 WLAN antenna transceivers and cables, 2 WWAN antenna transceivers and cables, and webcam/microphone module and cable)
650724-001	Display assembly, 25.7 cm (10.1 in) WSVGA, flush glass, Crimson Red (includes display panel cable, 2 WLAN antenna transceivers and cables, 2 WWAN antenna transceivers and cables, and webcam/microphone module and cable)
650726-001	Keyboard, Charcoal, for use only in the United States (includes cable)
650726-031	Keyboard, Charcoal, for use only in the United Kingdom (includes cable)
650726-041	Keyboard, Charcoal, for use only in Germany (includes cable)
650726-051	Keyboard, Charcoal, for use only in France (includes cable)
650726-061	Keyboard, Charcoal, for use only in Italy (includes cable)
650726-071	Keyboard, Charcoal, for use only in Spain (includes cable)
650726-121	Keyboard, Charcoal, for use only in French Canada (includes cable)
650726-131	Keyboard, Charcoal, for use only in Portugal (includes cable)
650726-141	Keyboard, Charcoal, for use only in Turkey (includes cable)
650726-161	Keyboard, Charcoal, for use only in Latin America (includes cable)
650726-171	Keyboard, Charcoal, for use only in Saudi Arabia (includes cable)
650726-211	Keyboard, Charcoal, for use only in Hungary (includes cable)
650726-251	Keyboard, Charcoal, for use only in Russia (includes cable)
650726-A41	Keyboard, Charcoal, for use only in Belgium (includes cable)
650726-B31	Keyboard, Charcoal, for use internationally (includes cable)
650726-BA1	Keyboard, Charcoal, for use only in Slovenia (includes cable)
650726-BB1	Keyboard, Charcoal, for use only in Israel (includes cable)
650726-BG1	Keyboard, Charcoal, for use only in Switzerland (includes cable)
650726-DH1	Keyboard, Charcoal, for use only in Denmark, Finland, and Norway (includes cable)
650726-DJ1	Keyboard, Charcoal, for use only in Greece (includes cable)
650726-FL1	Keyboard, Charcoal, for use only in the Czech Republic and Slovakia (includes cable)
650727-001	Service access cover, Charcoal
650728-001	Service access cover, Ocean Drive
650731-001	Service access cover, Luminous Rose
650732-001	Service access cover, Crimson Red
650734-001	Rubber Kit (includes 2 rubber feet)

Spare part number	Description
650735-001	Screw Kit
650736-001	Speakers (include cables)
650737-001	System board with Intel® Atom™ N455 single-core, 1.66 GHz processor, 512 KB level 2 cache, 667 MHz FSB
650738-001	System board with Intel® Atom™ N475 single-core, 1.83 GHz processor, 512 KB level 2 cache, 667 MHz FSB
650739-001	System board with Intel® Atom™ N570 dual-core, 1.66 GHz processor, 1 MB level 2 cache, 667 MHz FSB
650740-001	System board with Intel® Atom™ N455 single-core, 1.66 GHz processor, 512 KB level 2 cache, 667 MHz FSB, XSLOT
650741-001	System board with Intel® Atom™ N475 single-core, 1.83 GHz processor, 512 KB level 2 cache, 667 MHz FSB, XSLOT
650742-001	System board with Intel® Atom™ N570 dual-core, 1.66 GHz processor, 1 MB level 2 cache, 667 MHz FSB, XSLOT
650747-001	Top cover (includes TouchPad board and bracket), Charcoal
650748-001	Top cover (includes TouchPad board and bracket), Ocean Drive
650751-001	Top cover (includes TouchPad board and bracket), Luminous Rose
650752-001	Top cover (includes TouchPad board and bracket), Crimson Red
651897-001	Fan
651898-001	Heat sink (includes replacement thermal material)
651899-001	Hard Drive Hardware Kit
651901-001	TouchPad button board (includes cables)
652308-001	Plastics Kit (includes left and right rear corner covers)
654201-001	25.7 cm (10.1 in) HD, flush glass display assembly, Sweet Purple (includes display panel cable, 2 WLAN antenna transceivers and cables, 2 WWAN antenna transceivers and cables, and webcam/microphone module and cable)
654202-001	25.7 cm (10.1 in) WSVGA, flush glass display assembly, Sweet Purple (includes display panel cable, 2 WLAN antenna transceivers and cables, 2 WWAN antenna transceivers and cables, and webcam/microphone module and cable)
654203-001	Service access cover, Sweet Purple
654204-001	Top cover (includes TouchPad board and bracket), Sweet Purple
656095-001	Power connector
656757-001	Keyboard, Ocean Drive, for use only in the United States (includes cable)
656757-031	Keyboard, Ocean Drive, for use only in the United Kingdom (includes cable)
656757-041	Keyboard, Ocean Drive, for use only in Germany (includes cable)
656757-051	Keyboard, Ocean Drive, for use only in France (includes cable)
656757-061	Keyboard, Ocean Drive, for use only in Italy (includes cable)
656757-071	Keyboard, Ocean Drive, for use only in Spain (includes cable)
656757-121	Keyboard, Ocean Drive, for use only in French Canada (includes cable)

Spare part number	Description
656757-131	Keyboard, Ocean Drive, for use only in Portugal (includes cable)
656757-141	Keyboard, Ocean Drive, for use only in Turkey (includes cable)
656757-161	Keyboard, Ocean Drive, for use only in Latin America (includes cable)
656757-171	Keyboard, Ocean Drive, for use only in Saudi Arabia (includes cable)
656757-211	Keyboard, Ocean Drive, for use only in Hungary (includes cable)
656757-251	Keyboard, Ocean Drive, for use only in Russia (includes cable)
656757-A41	Keyboard, Ocean Drive, for use only in Belgium (includes cable)
656757-B31	Keyboard, Ocean Drive, for use internationally (includes cable)
656757-BA1	Keyboard, Ocean Drive, for use only in Slovenia (includes cable)
656757-BB1	Keyboard, Ocean Drive, for use only in Israel (includes cable)
656757-BG1	Keyboard, Ocean Drive, for use only in Switzerland (includes cable)
656757-DH1	Keyboard, Ocean Drive, for use only in Denmark, Finland, and Norway (includes cable)
656757-DJ1	Keyboard, Ocean Drive, for use only in Greece (includes cable)
656757-FL1	Keyboard, Ocean Drive, for use only in the Czech Republic and Slovakia (includes cable)
656760-001	Keyboard, Luminous Rose, for use only in the United States (includes cable)
656760-031	Keyboard, Luminous Rose, for use only in the United Kingdom (includes cable)
656760-041	Keyboard, Luminous Rose, for use only in Germany (includes cable)
656760-051	Keyboard, Luminous Rose, for use only in France (includes cable)
656760-061	Keyboard, Luminous Rose, for use only in Italy (includes cable)
656760-071	Keyboard, Luminous Rose, for use only in Spain (includes cable)
656760-121	Keyboard, Luminous Rose, for use only in French Canada (includes cable)
656760-131	Keyboard, Luminous Rose, for use only in Portugal (includes cable)
656760-141	Keyboard, Luminous Rose, for use only in Turkey (includes cable)
656760-161	Keyboard, Luminous Rose, for use only in Latin America (includes cable)
656760-171	Keyboard, Luminous Rose, for use only in Saudi Arabia (includes cable)
656760-211	Keyboard, Luminous Rose, for use only in Hungary (includes cable)
656760-251	Keyboard, Luminous Rose, for use only in Russia (includes cable)
656760-A41	Keyboard, Luminous Rose, for use only in Belgium (includes cable)
656760-B31	Keyboard, Luminous Rose, for use internationally (includes cable)
656760-BA1	Keyboard, Luminous Rose, for use only in Slovenia (includes cable)
656760-BB1	Keyboard, Luminous Rose, for use only in Israel (includes cable)
656760-BG1	Keyboard, Luminous Rose, for use only in Switzerland (includes cable)
656760-DH1	Keyboard, Luminous Rose, for use only in Denmark, Finland, and Norway (includes cable)
656760-DJ1	Keyboard, Luminous Rose, for use only in Greece (includes cable)

Spare part number	Description
656760-FL1	Keyboard, Luminous Rose, for use only in the Czech Republic and Slovakia (includes cable)
656761-001	Keyboard, Crimson Red, for use only in the United States (includes cable)
656761-031	Keyboard, Crimson Red, for use only in the United Kingdom (includes cable)
656761-041	Keyboard, Crimson Red, for use only in Germany (includes cable)
656761-051	Keyboard, Crimson Red, for use only in France (includes cable)
656761-061	Keyboard, Crimson Red, for use only in Italy (includes cable)
656761-071	Keyboard, Crimson Red, for use only in Spain (includes cable)
656761-121	Keyboard, Crimson Red, for use only in French Canada (includes cable)
656761-131	Keyboard, Crimson Red, for use only in Portugal (includes cable)
656761-141	Keyboard, Crimson Red, for use only in Turkey (includes cable)
656761-161	Keyboard, Crimson Red, for use only in Latin America (includes cable)
656761-171	Keyboard, Crimson Red, for use only in Saudi Arabia (includes cable)
656761-211	Keyboard, Crimson Red, for use only in Hungary (includes cable)
656761-251	Keyboard, Crimson Red, for use only in Russia (includes cable)
656761-A41	Keyboard, Crimson Red, for use only in Belgium (includes cable)
656761-B31	Keyboard, Crimson Red, for use internationally (includes cable)
656761-BA1	Keyboard, Crimson Red, for use only in Slovenia (includes cable)
656761-BB1	Keyboard, Crimson Red, for use only in Israel (includes cable)
656761-BG1	Keyboard, Crimson Red, for use only in Switzerland (includes cable)
656761-DH1	Keyboard, Crimson Red, for use only in Denmark, Finland, and Norway (includes cable)
656761-DJ1	Keyboard, Crimson Red, for use only in Greece (includes cable)
656761-FL1	Keyboard, Crimson Red, for use only in the Czech Republic and Slovakia (includes cable)
656763-001	Keyboard, Sweet Purple, for use only in the United States (includes cable)
656763-031	Keyboard, Sweet Purple, for use only in the United Kingdom (includes cable)
656763-041	Keyboard, Sweet Purple, for use only in Germany (includes cable)
656763-051	Keyboard, Sweet Purple, for use only in France (includes cable)
656763-061	Keyboard, Sweet Purple, for use only in Italy (includes cable)
656763-071	Keyboard, Sweet Purple, for use only in Spain (includes cable)
656763-121	Keyboard, Sweet Purple, for use only in French Canada (includes cable)
656763-131	Keyboard, Sweet Purple, for use only in Portugal (includes cable)
656763-141	Keyboard, Sweet Purple, for use only in Turkey (includes cable)
656763-161	Keyboard, Sweet Purple, for use only in Latin America (includes cable)
656763-171	Keyboard, Sweet Purple, for use only in Saudi Arabia (includes cable)
656763-211	Keyboard, Sweet Purple, for use only in Hungary (includes cable)

Spare part number	Description
656763-251	Keyboard, Sweet Purple, for use only in Russia (includes cable)
656763-A41	Keyboard, Sweet Purple, for use only in Belgium (includes cable)
656763-B31	Keyboard, Sweet Purple, for use internationally (includes cable)
656763-BA1	Keyboard, Sweet Purple, for use only in Slovenia (includes cable)
656763-BB1	Keyboard, Sweet Purple, for use only in Israel (includes cable)
656763-BG1	Keyboard, Sweet Purple, for use only in Switzerland (includes cable)
656763-DH1	Keyboard, Sweet Purple, for use only in Denmark, Finland, and Norway (includes cable)
656763-DJ1	Keyboard, Sweet Purple, for use only in Greece (includes cable)
656763-FL1	Keyboard, Sweet Purple, for use only in the Czech Republic and Slovakia (includes cable)

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 device, 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 device, be sure that cables are placed in their proper locations during the reassembly process. Improper cable placement can damage the device.

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 device, damage to a drive, or loss of information, observe these precautions:

Before removing or inserting a hard drive, shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device 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.

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

Avoid dropping drives from any height onto any surface.

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

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

Avoid exposing a drive to temperature extremes or liquids.

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

Grounding guidelines

Electrostatic discharge damage

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

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

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

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

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

Use nonmagnetic tools.

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

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

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

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

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

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

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

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

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 strips 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 plastic	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 33 screws, in 3 different sizes, 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, located inside the battery bay.

 **NOTE:** Serial number label location, format, and color vary on select models.



(1) Product name	(4) Warranty period
(2) Serial number	(5) Model description (select models)
(3) Product number	

Computer feet

The computer feet are adhesive-backed rubber pads. The feet are included in the Rubber Kit, spare part number 650734-001. There are 2 rubber feet that attach to the base enclosure in the locations shown in the following illustration.

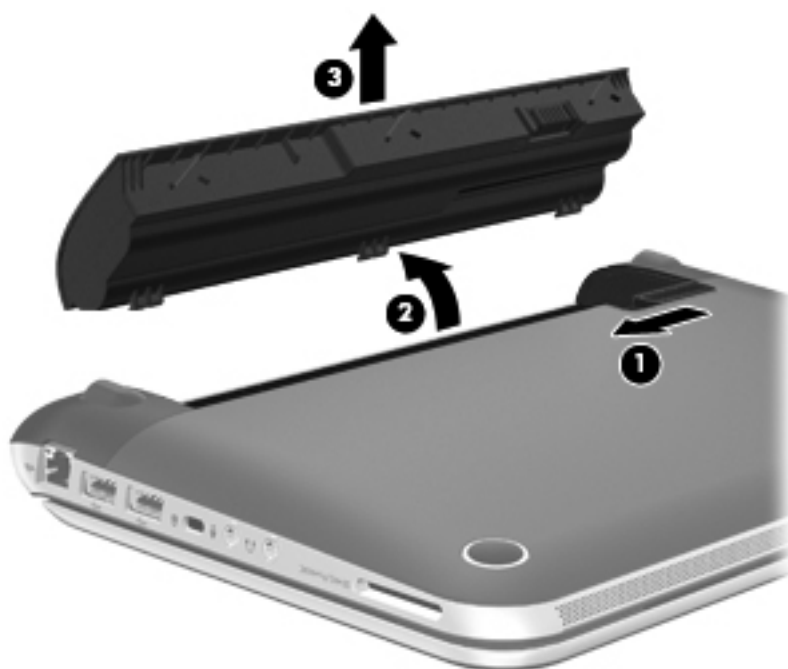


Battery

Description	Spare part number
6-cell, Li-ion, 2.55 Ah, 55 Whr	646757-001
3-cell, Li-ion, 2.55 Ah, 28 Whr	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.
1. Position the computer upside-down on a flat surface.
2. Slide the battery/service access cover latch (1) to unlock the battery.
3. Pivot the battery (2) upward and lift it out of the computer (3).



Reverse this procedure to install the battery.

Service access cover


Description	Spare part number
Charcoal	650727-001
Crimson Red	650732-001
Luminous Rose	650731-001
Ocean Drive	650728-001
Sweet Purple	654203-001

Before removing the service access 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 37](#)).

Remove the service access cover:

1. Slide the battery/service access cover latch **(1)** to release the service access cover.
2. Slide the service access cover toward the front of the computer **(2)** and then remove the cover **(3)**.

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



Reverse this procedure to install the service access cover.

WLAN module

Description	Spare part number
<p>Atheros AR9002WB-1NGB 802.11b/g/n 1x1 WiFi and Bluetooth 2.1+EDR Combo Adapter (BT3.0+HS ready)</p> <p>For use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Caledoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen</p>	593127-001
<p>Broadcom 4312G 802.11b/g WiFi and 2070 Bluetooth 2.1+EDR Combo Adapter (BT3.0+HS ready)</p> <p>For use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Caledoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen</p>	575920-001
<p>Realtek RTL8191SE 802.11b/g/n 1x1 WiFi Adapter</p> <p>For use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Caledoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen</p>	602993-001

Description	Spare part number
<p>Ralink 5390GN 802.11b/g/n 1x1 WiFi Adapter</p> <p>For use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Caledoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen</p>	630703-001
<p>Realtek RTL8188CE 802.11b/g/n WiFi Adapter</p> <p>For use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Gibraltar, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, the Maldives, Martinique, Mauritius, Mayotte, Mexico, Moldova, Monaco, Montenegro, Morocco, Namibia, Nauru, Nepal, the Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Nouvelle Caledoni, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Polynesie Francais, Portugal, Qatar, Reunion, Romania, Russia, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, St. Pierre et Miquel, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Tunisia, Turkey, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Wallis et Futuna, and Yemen</p>	640926-001

⚠ CAUTION: The WWAN module and the WLAN module are not interchangeable.


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 computer functionality, and then contact technical support through Help and Support.

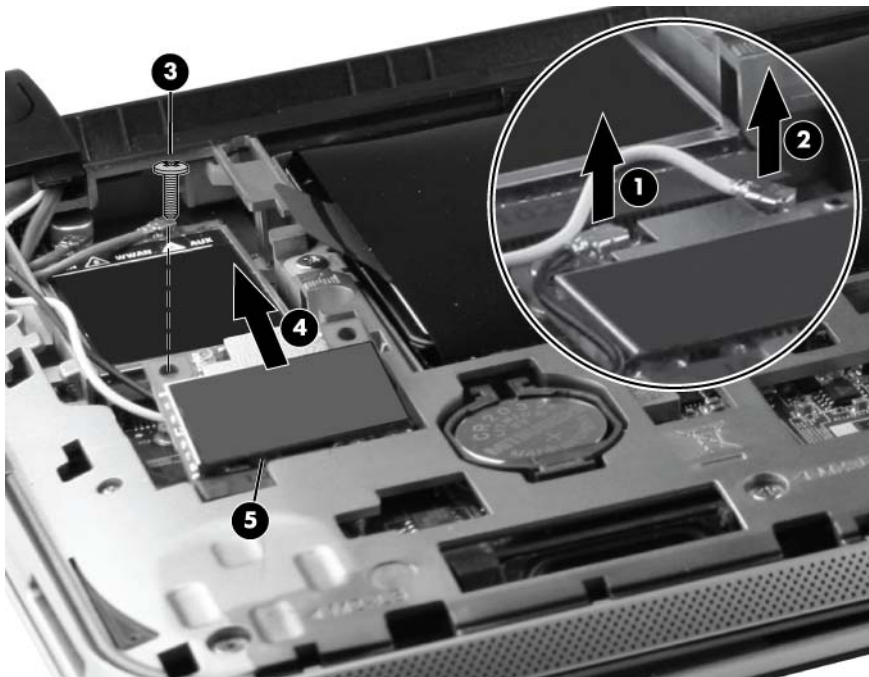
Before removing the WLAN module, follow these steps:

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 device 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 37](#)).
5. Remove the service access cover (see [Service access cover on page 38](#)).

Remove the WLAN module:

1. Disconnect the black WLAN antenna cable (1) from the WLAN module “Main” terminal.
2. Disconnect the gray WLAN antenna cable (2) from the WLAN module “Aux” terminal.
3. Remove the Phillips PM2.0×3.0 screw (3) that secures the WLAN module to the system board. (The WLAN module tilts up.)
4. Remove the WLAN module (4) by pulling the module away from the slot at an angle.

 **NOTE:** WLAN modules are designed with a notch (5) to prevent incorrect insertion.




Reverse this procedure to install a WLAN module.

WWAN module

Description	Spare part number
HP Ic2000 HSPA Mobile Broadband Module	612599-001
For use in Argentina, Bolivia, Canada, Chile, Colombia, Ecuador, El Salvador, Guatemala, Honduras, Mexico, New Zealand, Nicaragua, Panama, Paraguay, Peru, Thailand, the United States, and Venezuela	

Description	Spare part number
<p>HP Ic2010 HSPA Mobile Broadband Module</p> <p>For use in Australia, Belgium, Bulgaria, the People's Republic of China, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, India, Indonesia, Italy, Latvia, Lithuania, Malaysia, New Zealand, Norway, the Philippines, Poland, Portugal, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Thailand, Turkey, the United Arab Emirates and the United Kingdom</p>	612600-001
<p>HP hs2340 HSPA+ Mobile Broadband Module</p> <p>For use in Albania, Algeria, Andorra, Angola, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Botswana, Brunei, Bulgaria, Cambodia, Cameroon, Canada, Chad, Chile, the People's Republic of China, Colombia, Costa Rica, the Czech Republic, Denmark, East Timor, Ecuador, Egypt, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Greece, Guadeloupe, Guatemala, Guyane Francais, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Liberia, Liechtenstein, Lithuania, Luxembourg, Malaysia, the Maldives, Martinique, Mexico, Monaco, Morocco, Namibia, Nepal, the Netherlands, New Zealand, Nicaragua, Norway, Oman, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Portugal, Qatar, Romania, Russia, San Marino, Saudi Arabia, Singapore, Slovakia, South Africa, South Korea, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Turkey, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, and Yemen</p>	632155-001

 **CAUTION:** The WWAN module and the WLAN module are not interchangeable.

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:

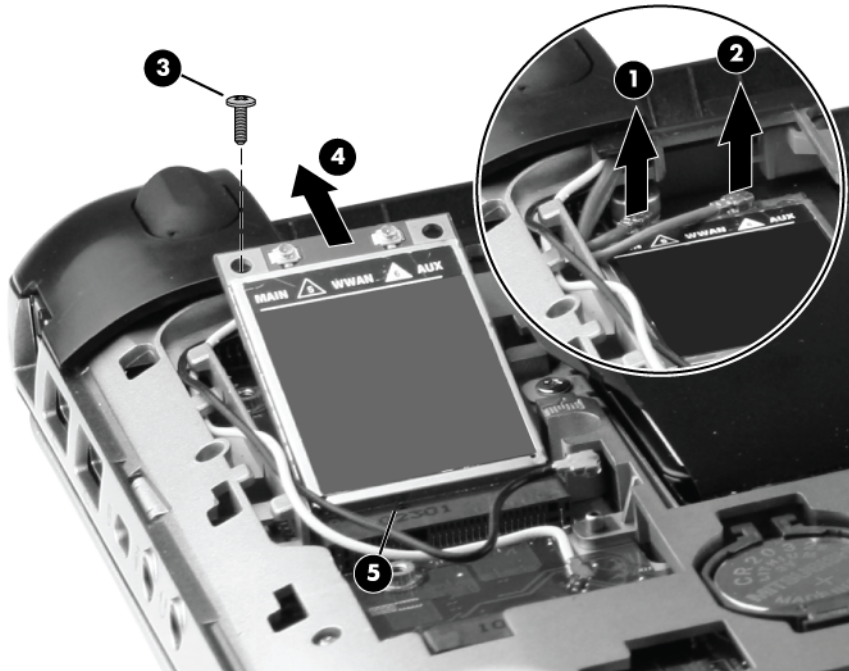
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 37](#)).
5. Remove the service access cover (see [Service access cover on page 38](#)).

Remove the WWAN module:

1. Disconnect the red WWAN antenna cable **(1)** from the WWAN module "Main" terminal.
2. Disconnect the blue WWAN antenna cable **(2)** from the WWAN module "Aux" terminal.
3. Remove the Phillips PM2.0×3.0 screw **(3)** that secures the WWAN module to the system board. (The WWAN module tilts up.)

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

 **NOTE:** WWAN modules are designed with a notch (5) to prevent incorrect insertion.



Reverse this procedure to install a WWAN module.

Memory module


Description	Spare part number
1 GB memory module (PC3 10600 1333 MHz, single channel)	639736-001
2 GB memory module (PC3 10600 1333 MHz, single channel) (select models only)	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 37](#)).
5. Remove the service access cover (see [Service access cover on page 38](#)).

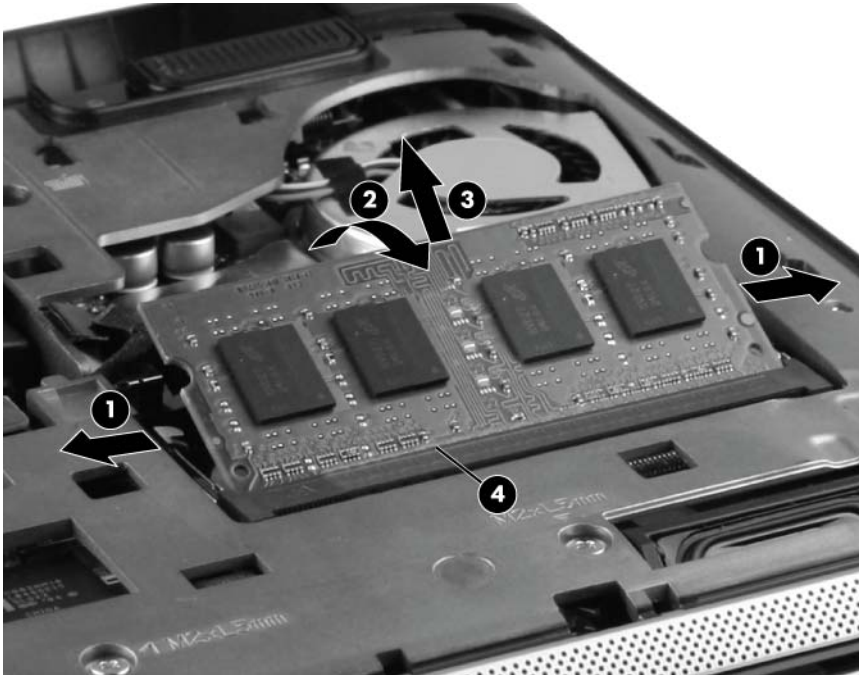
Remove the memory module:

1. Pull away the retention clips (1) on each side of the memory module to release the module. (The memory module tilts up (2).)

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

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

 **NOTE:** Memory modules are designed with a notch (4) to prevent incorrect insertion.



Reverse this procedure to install the memory module.

RTC battery

Description	Spare part number
RTC battery	599516-001

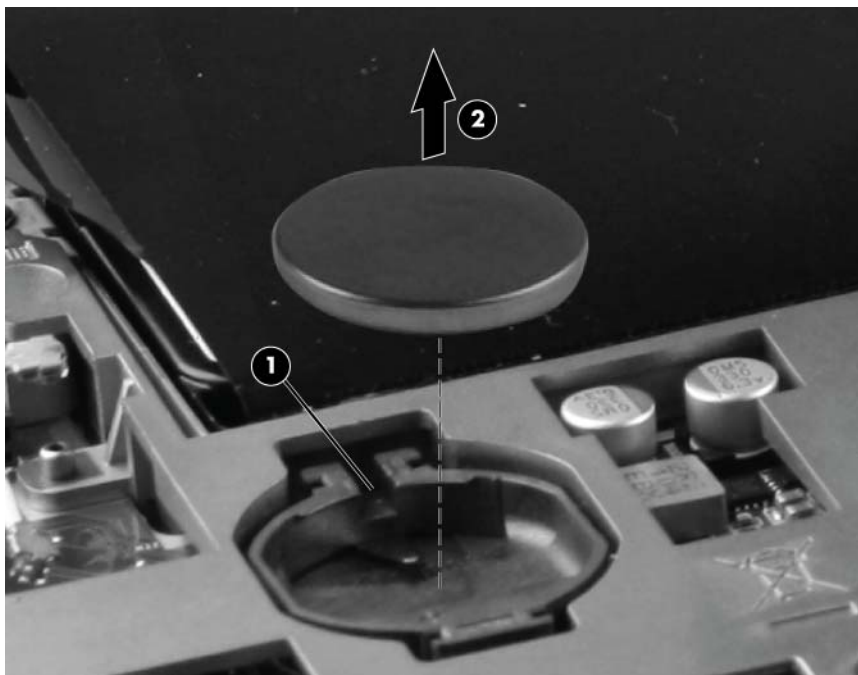
Before removing the real-time clock (RTC) battery, follow these steps:

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 37](#)).
5. Remove the service access cover (see [Service access cover on page 38](#)).

Remove the RTC battery:


1. Lift the edge (1) of the battery from the system board.

2. Remove the RTC battery (2) 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 bracket is included in the Hard Drive Hardware Kit, spare part number 651899-001.

Description	Spare part number
Hard drive:	
500 GB, 9.5 mm (0.37 in) × 6.35 cm (2.50 in), parallel SATA, 5400-rpm (select models only)	634932-001
320 GB, 9.5 mm (0.37 in) × 6.35 cm (2.50 in), parallel SATA, 5400-rpm (select models only)	622643-001
250 GB, 9.5 mm (0.37 in) × 6.35 cm (2.50 in), parallel SATA, 5400-rpm	622641-001
320 GB, 7.0 mm mm (0.28 in) × 6.35 cm (2.50 in), parallel SATA, 5400 rpm	645193-001
250 GB, 7.0 mm (0.28 in) × 6.35 cm (2.50 in), parallel SATA, 5400 rpm	645191-001
Hard Drive Hardware Kit	651899-001

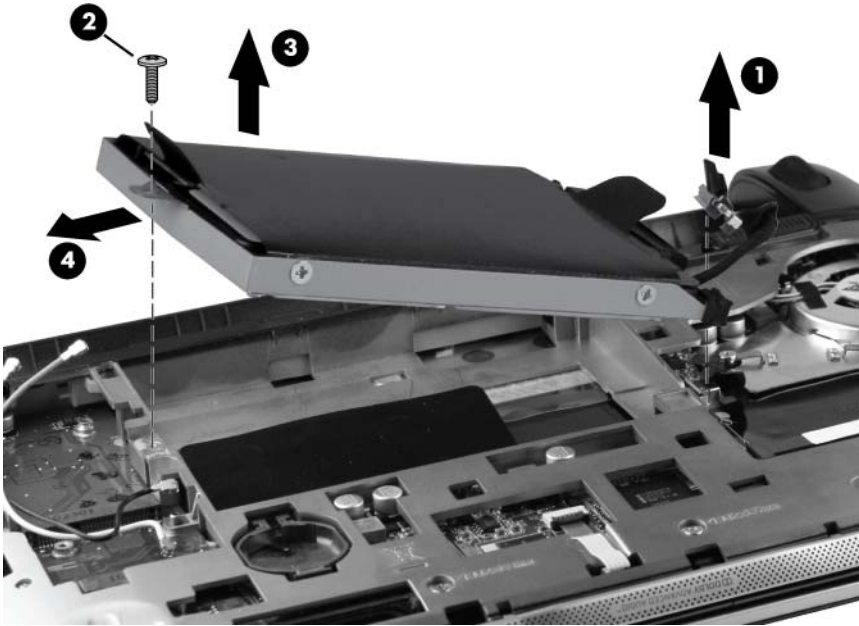
Before removing the hard drive, follow these steps:

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 37](#)).
5. Remove the service access cover (see [Service access cover on page 38](#)).

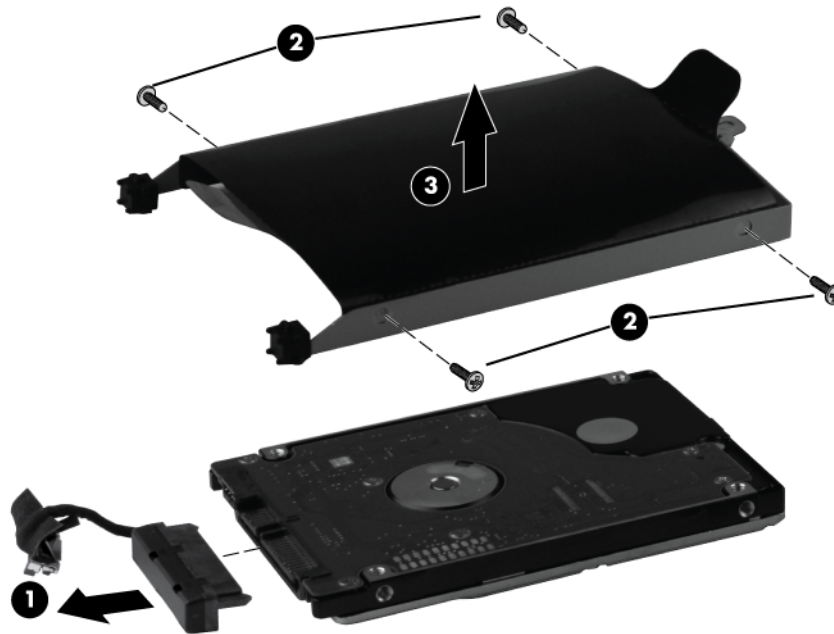
Remove the hard drive:

1. Remove the Phillips PM2.0x5.0 screw **(1)** that secures the hard drive to the computer.
2. Disconnect the hard drive connector cable **(2)**.
3. Pull up on the hard drive tab **(3)**, and then remove the hard drive from the hard drive bay at an angle.



4. If it is necessary to replace the hard drive bracket, follow these steps:
 - a. Disconnect the cable adapter **(1)** from the hard drive.
 - b. Remove the four Phillips PM3.0×3.0 screws **(2)** that secure the hard drive bracket to the drive.

- c. Remove the hard drive bracket (3).



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
Charcoal:	
• For use in Belgium	650726-A41
• For use in the Czech Republic and Slovakia	650726-FL1
• For use in Denmark, Finland, and Norway	650726-DH1
• For use in France	650726-051
• For use in French Canada	650726-121
• For use in Germany	650726-041
• For use in Greece	650726-DJ1
• For use in Hungary	650726-211
• For use internationally	650726-B31
• For use in Israel	650726-BB1
• For use in Italy	650726-061
• For use in Latin America	650726-161
• For use in Portugal	650726-131
• For use in Russia	650726-251
• For use in Saudi Arabia	650726-171
• For use in Slovenia	650726-BA1
• For use in Spain	650726-071
• For use in Switzerland	650726-BG1
• For use in Turkey	650726-141
• For use in the United Kingdom	650726-031
• For use in the United States	650726-001
Crimson Red:	
• For use in Belgium	656761-A41
• For use in the Czech Republic and Slovakia	656761-FL1
• For use in Denmark, Finland, and Norway	656761-DH1
• For use in France	656761-051
• For use in French Canada	656761-121
• For use in Germany	656761-041
• For use in Greece	656761-DJ1
• For use in Hungary	656761-211

Description	Spare part number
• For use internationally	656761-B31
• For use in Israel	656761-BB1
• For use in Italy	656761-061
• For use in Latin America	656761-161
• For use in Portugal	656761-131
• For use in Russia	656761-251
• For use in Saudi Arabia	656761-171
• For use in Slovenia	656761-BA1
• For use in Spain	656761-071
• For use in Switzerland	656761-BG1
• For use in Turkey	656761-141
• For use in the United Kingdom	656761-031
• For use in the United States	656761-001
Luminous Rose:	
• For use in Belgium	656760-A41
• For use in the Czech Republic and Slovakia	656760-FL1
• For use in Denmark, Finland, and Norway	656760-DH1
• For use in France	656760-051
• For use in French Canada	656760-121
• For use in Germany	656760-041
• For use in Greece	656760-DJ1
• For use in Hungary	656760-211
• For use internationally	656760-B31
• For use in Israel	656760-BB1
• For use in Italy	656760-061
• For use in Latin America	656760-161
• For use in Portugal	656760-131
• For use in Russia	656760-251
• For use in Saudi Arabia	656760-171
• For use in Slovenia	656760-BA1
• For use in Spain	656760-071
• For use in Switzerland	656760-BG1
• For use in Turkey	656760-141
• For use in the United Kingdom	656760-031

Description	Spare part number
• For use in the United States	656760-001
Ocean Drive:	
• For use in Belgium	656757-A41
• For use in the Czech Republic and Slovakia	656757-FL1
• For use in Denmark, Finland, and Norway	656757-DH1
• For use in France	656757-051
• For use in French Canada	656757-121
• For use in Germany	656757-041
• For use in Greece	656757-DJ1
• For use in Hungary	656757-211
• For use internationally	656757-B31
• For use in Israel	656757-BB1
• For use in Italy	656757-061
• For use in Latin America	656757-161
• For use in Portugal	656757-131
• For use in Russia	656757-251
• For use in Saudi Arabia	656757-171
• For use in Slovenia	656757-BA1
• For use in Spain	656757-071
• For use in Switzerland	656757-BG1
• For use in Turkey	656757-141
• For use in the United Kingdom	656757-031
• For use in the United States	656757-001
Sweet Purple:	
• For use in Belgium	656763-A41
• For use in the Czech Republic and Slovakia	656763-FL1
• For use in Denmark, Finland, and Norway	656763-DH1
• For use in France	656763-051
• For use in French Canada	656763-121
• For use in Germany	656763-041
• For use in Greece	656763-DJ1
• For use in Hungary	656763-211
• For use internationally	656763-B31
• For use in Israel	656763-BB1

Description	Spare part number
• For use in Italy	656763-061
• For use in Latin America	656763-161
• For use in Portugal	656763-131
• For use in Russia	656763-251
• For use in Saudi Arabia	656763-171
• For use in Slovenia	656763-BA1
• For use in Spain	656763-071
• For use in Switzerland	656763-BG1
• For use in Turkey	656763-141
• For use in the United Kingdom	656763-031
• For use in the United States	656763-001

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 37](#)).
5. Remove the service access cover (see [Service access cover on page 38](#)).


Remove the keyboard:

1. Position the computer upside-down on a flat surface.

2. Remove the two Phillips PM2.0x5.0 screws that secure the keyboard to the computer.



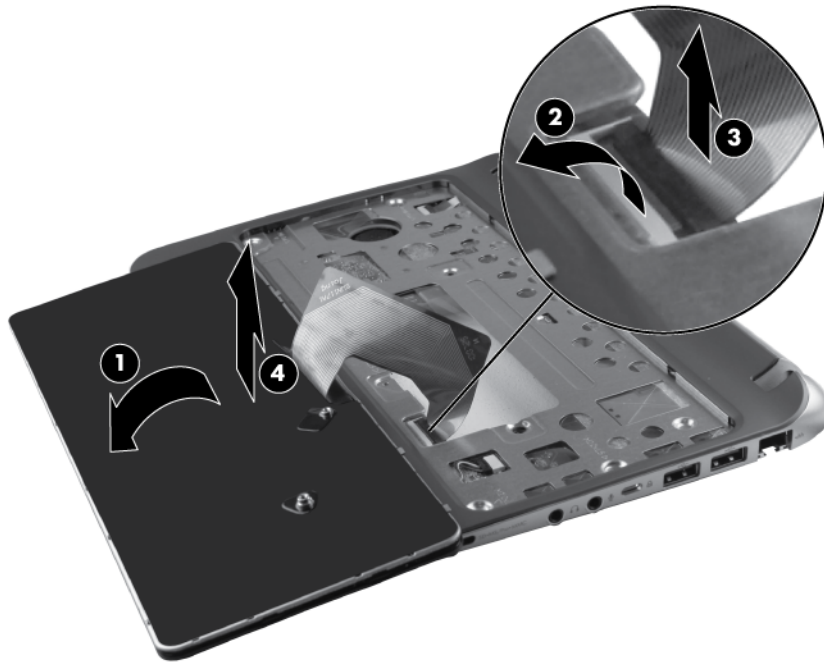
3. Position the computer on its side. Using a screwdriver or a similar tool, push firmly through the bottom of the base enclosure (1) to release the keyboard (2).

 **NOTE:** It may require extra effort to release the keyboard.



4. Position the computer right-side up.
5. Turn the keyboard over onto the palm rest (1).

6. Release the zero insertion force (ZIF) connector (2) to which the keyboard cable is attached, and then disconnect the keyboard cable (3) from the system board.
7. Lift the keyboard (4) straight up to remove it from the computer.



Reverse this procedure to install the keyboard.

Top cover



NOTE: The top cover includes the TouchPad board and bracket.

Description	Spare part number
Charcoal	650747-001
Crimson Red	650752-001
Luminous Rose	650751-001
Ocean Drive	650748-001
Sweet Purple	654204-001

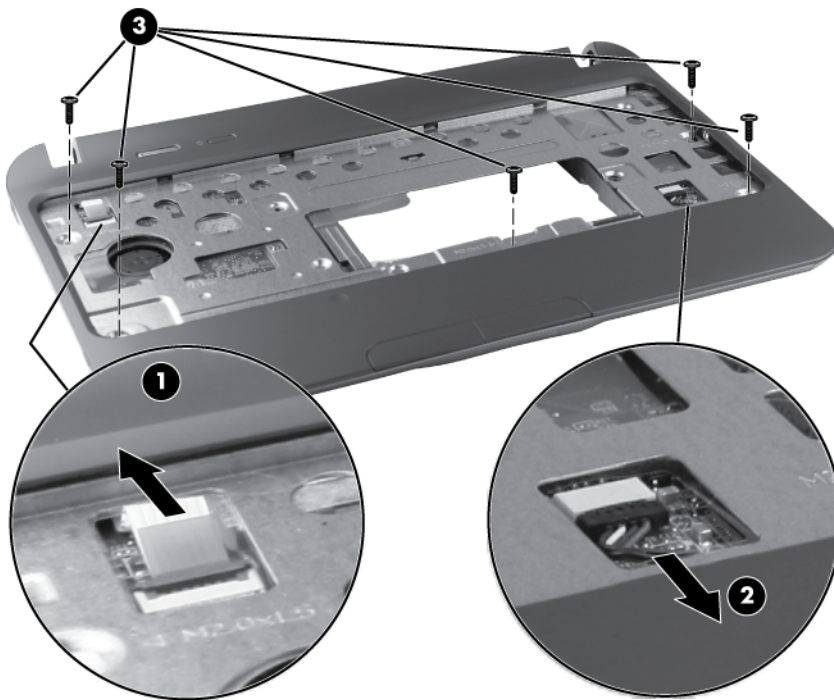
Before removing the top cover, follow these steps:

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 37](#)).
5. Remove the service access cover (see [Service access cover on page 38](#)).
6. Remove the keyboard (see [Keyboard on page 48](#)).

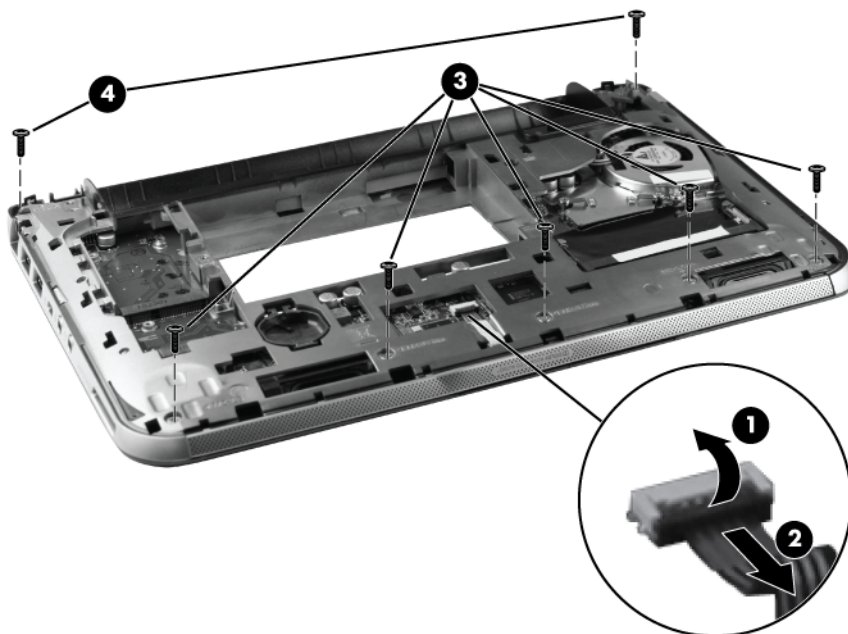
Remove the top cover:

1. Turn the computer right-side up, with the front toward you.
2. Release the power button ZIF connector and disconnect the power button cable **(1)**.
3. Release the speaker ZIF connector and disconnect the speaker cable **(2)**.

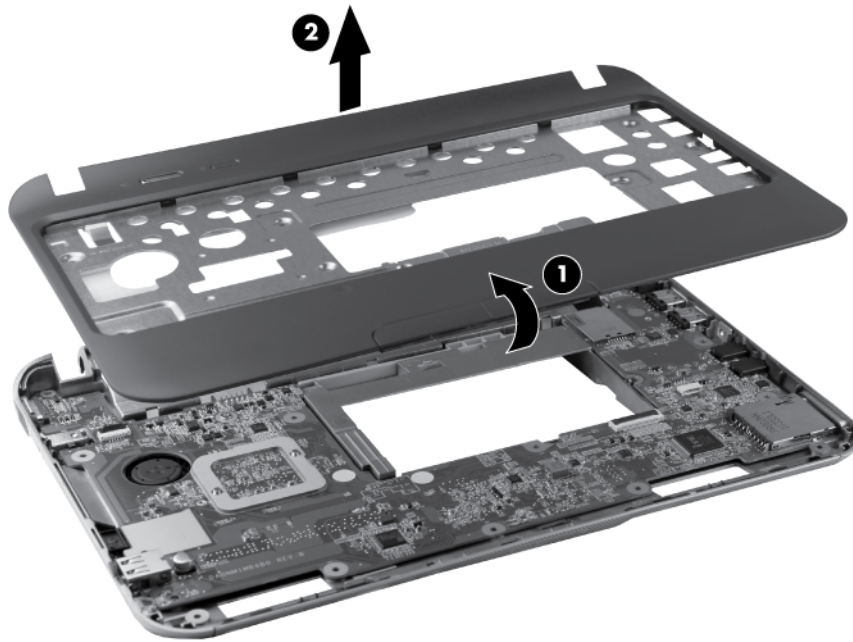
4. Remove the five Phillips PM2.0x5.0 screws **(3)** from the top cover .



5. Turn the computer upside down, with the front toward you.
6. Release the TouchPad ZIF connector **(1)** and disconnect the TouchPad cable **(2)**. (The ZIF cable is attached with double-sided adhesive.)
7. Remove the five Phillips PM2.0x5.0 screws **(3)** along the front edge of the base enclosure.
8. Remove the two Phillips PM2.0x5.0 screws **(4)** from underneath the rear corner plates, one in each corner.



9. Lift the front edge (1) of the top cover until it disengages from the base enclosure, and then remove the top cover (2) by lifting it straight up.



Reverse this procedure to install the top cover.

Speakers

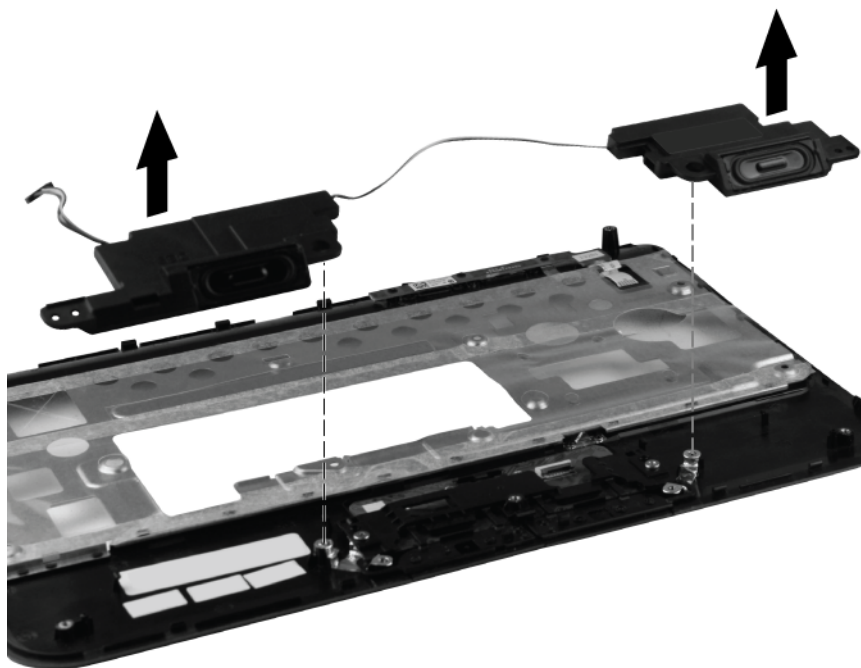
Description	Spare part number
Speakers (include cables)	650736-001

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 37](#)).
5. Remove the following components:
 - a. Service access cover (see [Service access cover on page 38](#)).
 - b. Keyboard (see [Keyboard on page 48](#)).
 - c. Top cover (see [Top cover on page 54](#)).

Remove the speakers:

1. Turn the top cover upside down, with the front toward you.
2. Release the speaker cable from the clips built into the TouchPad bracket, and then remove the speakers.



Reverse this procedure to install the speakers.

TouchPad button board

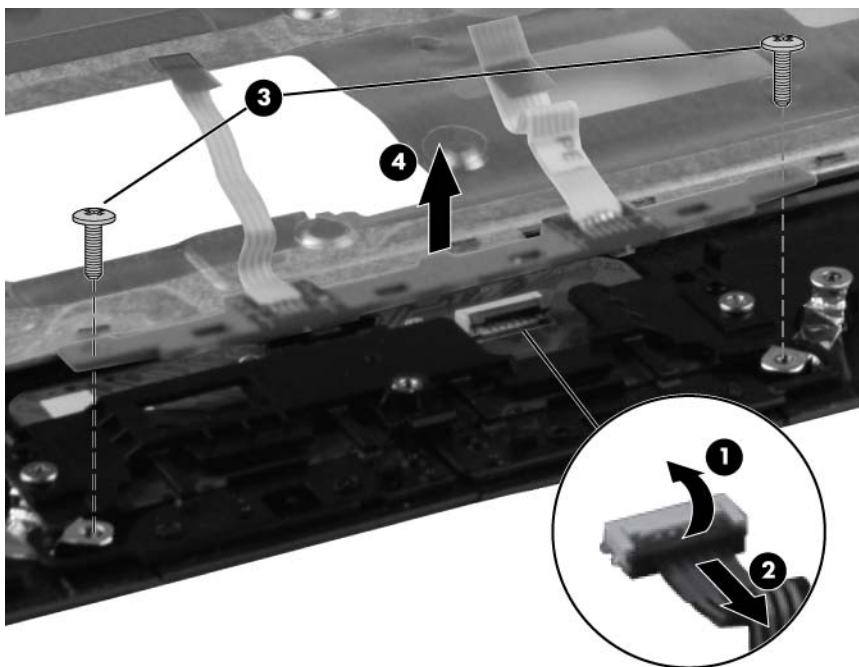
Description	Spare part number
TouchPad button board	651901-001

Before removing the TouchPad button 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 37](#)).
5. Remove the following components:
 - a. Service access cover (see [Service access cover on page 38](#)).
 - b. Keyboard (see [Keyboard on page 48](#)).
 - c. Top cover (see [Top cover on page 54](#)).

Remove the TouchPad button board:

1. Turn the top cover upside down, with the front toward you.
2. Release the TouchPad button board ZIF connector (1), and then disconnect the TouchPad button board cable (2).
3. Remove the two Phillips PM2.0x3.0 screws (3).
4. Remove the TouchPad button board (4).



Reverse this procedure to install the TouchPad button board.

Display assembly

Description	Spare part number
25.7 cm (10.1 in) display assembly (includes display panel cable, 2 WLAN antenna transceivers and cables, 2 WWAN antenna transceivers and cables, and webcam/microphone module and cable):	
• HD, flush glass display assembly, Charcoal	650712-001
• HD, flush glass display assembly, Crimson Red	650717-001
• HD, flush glass display assembly, Luminous Rose	650716-001
• HD, flush glass display assembly, Ocean Drive	650713-001
• HD, flush glass display assembly, Sweet Purple	654201-001
• WSVGA, flush glass display assembly, Charcoal	650719-001
• WSVGA, flush glass display assembly, Crimson Red	650724-001
• WSVGA, flush glass display assembly, Luminous Rose	650723-001
• WSVGA, flush glass display assembly, Ocean Drive	650720-001
• WSVGA, flush glass display assembly, Sweet Purple	654202-001


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 37](#)).
5. Remove the service access cover (see [Service access cover on page 38](#)).
6. Disconnect the WLAN antenna cables from the WLAN module (see [WLAN module on page 39](#)).
7. Disconnect the WWAN antenna cables from the WWAN module (see [WWAN module on page 41](#)).
8. Remove the keyboard (see [Keyboard on page 48](#)).
9. Remove the top cover (see [Top cover on page 54](#)).

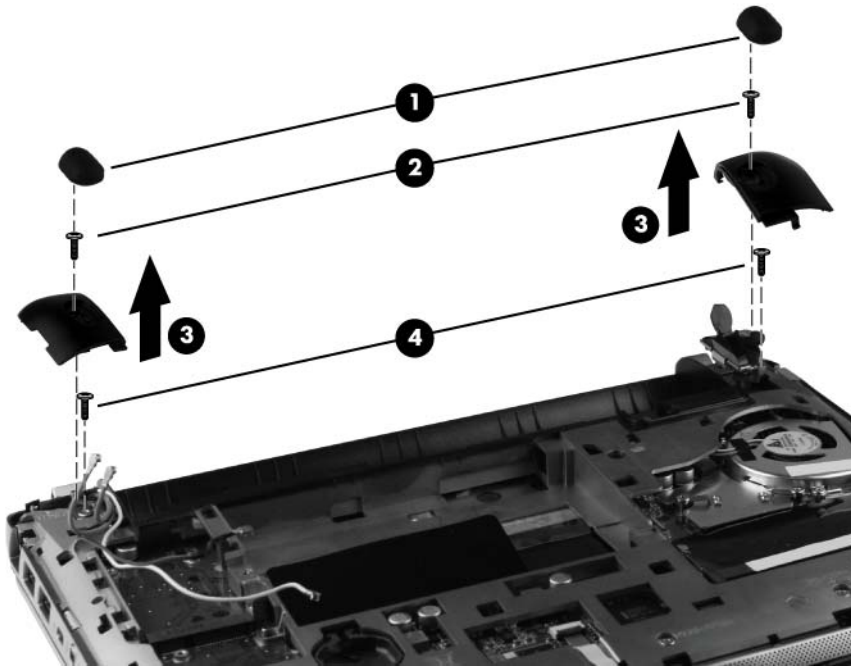
Remove the display assembly:

1. Close the computer.
2. Position the computer upside down, with the front toward you.
3. Remove the back corner rubber feet **(1)**.
4. Remove the two Phillips PM2.0x5.0 screws **(2)**, one beneath each rubber foot.

5. Remove the plastic rear corner covers (3).

 **NOTE:** The rear corner covers are included in the Plastics Kit, spare part number 652308-001.

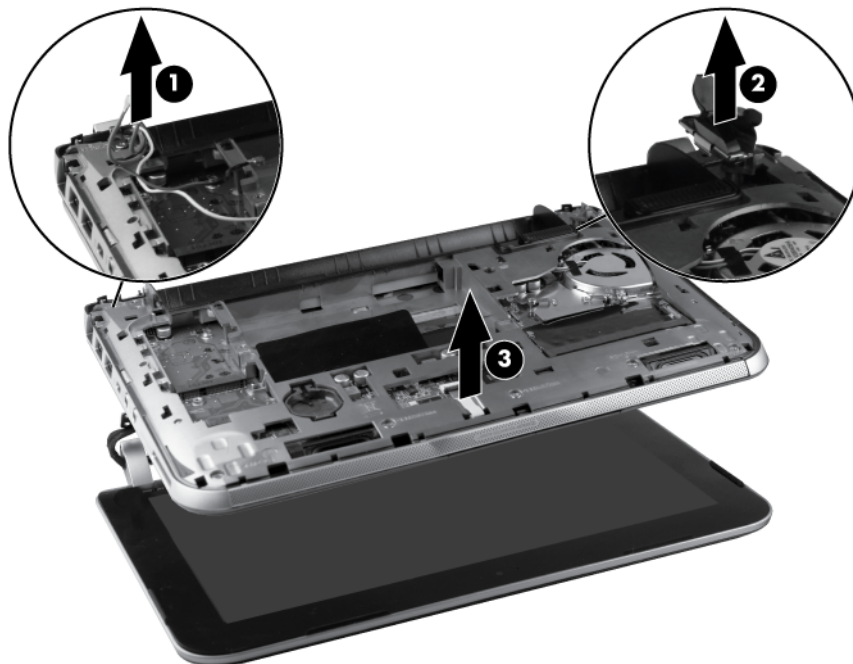
6. Remove the two Phillips PM2.0x5.0 screws (4), one beneath each rear corner cover.



7. Remove the WLAN antenna cables (1) from the routing channel.

8. Disconnect the display panel cable (2) from the system board.

9. Carefully lift the base enclosure away from the display assembly (3).



Reverse this procedure to reassemble and install the display assembly.

System board



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

Description	Spare part number
Intel® Atom™ N455 single-core, 1.66 GHz processor, 512 KB level 2 cache, 667 MHz front-side bus (FSB)	650737-001
Intel® Atom™ N475 single-core, 1.83 GHz processor, 512 KB level 2 cache, 667 MHz FSB	650738-001
Intel® Atom™ N570 dual-core 1.66 GHz processor, 1 MB level 2 cache, 667 MHz FSB	650739-001
Intel® Atom™ N455 single-core 1.66 GHz processor, 512 KB level 2 cache, 667 MHz FSB, XSLOT	650740-001
Intel® Atom™ N475 single-core, 1.83 GHz processor, 512 KB level 2 cache, 667 MHz FSB, XSLOT	650741-001
Intel® Atom™ N570 dual-core 1.66 GHz processor, 1 MB level 2 cache, 667 MHz FSB, XSLOT	650742-001

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 37](#)).
5. Remove the service access cover (see [Service access cover on page 38](#)).
6. Disconnect the hard drive cable from the system board (see [Hard drive on page 45](#)).
7. Disconnect the WLAN antenna cables from the WLAN module (see [WLAN module on page 39](#)).
8. Disconnect the WWAN antenna cables from the WWAN module (see [WWAN module on page 41](#)).
9. Remove the keyboard (see [Keyboard on page 48](#)).
10. Remove the top cover (see [Top cover on page 54](#)).

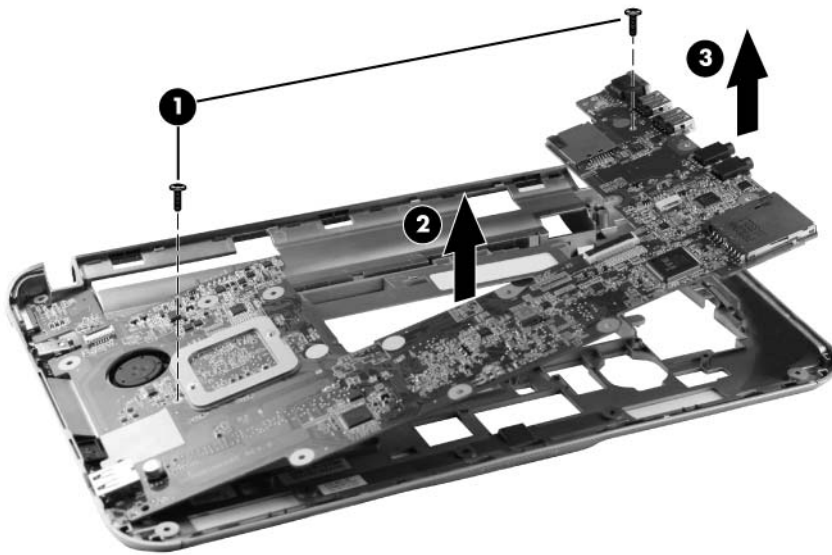
When replacing the system board, be sure that the following components are removed from the defective system board and installed on the replacement system board:

- WLAN module (see [WLAN module on page 39](#))
- WWAN module (see [WWAN module on page 41](#))
- Memory module (see [Memory module on page 43](#))
- RTC battery (see [RTC battery on page 44](#))

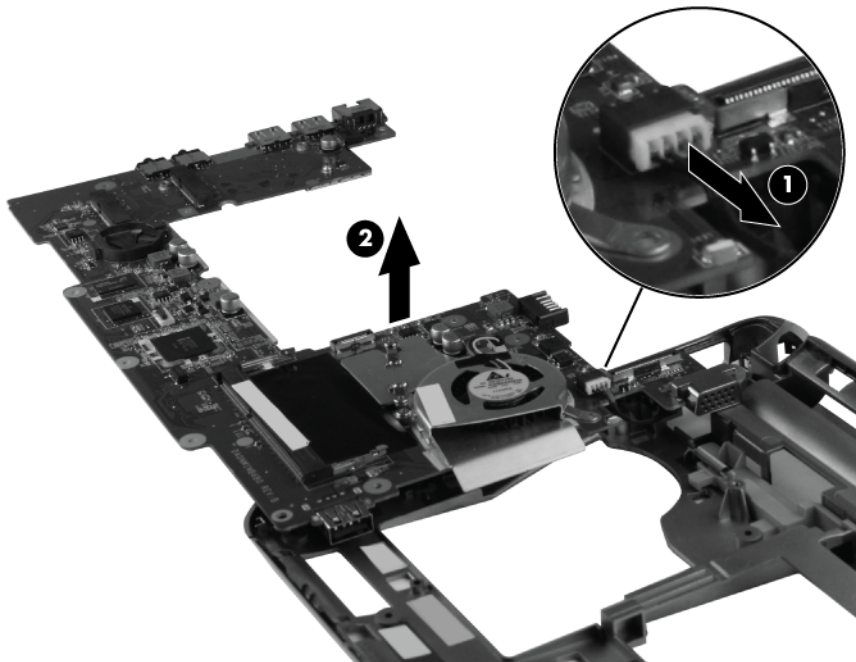
Remove the system board:

1. Remove the 2 Phillips PM2.0x5.0 screws **(1)** that secure the system board to the base enclosure .
2. Starting in the middle of the system board, lift the system board up, and then lift the right side of the system board **(2)** until it rests at an angle.

3. Tilt the system board away from the base enclosure (3).



4. Disconnect the power cable (1) from the system board.
5. Remove the system board (2) by sliding it up and away from the base enclosure.



Reverse this procedure to install the system board.

Fan/heat sink

Description	Spare part number
Fan	651897-001
Heat sink (includes replacement thermal material)	651898-001



NOTE: To properly ventilate the computer, allow at least a 7.6-cm (3 inch) 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 or heat sink, follow these steps:

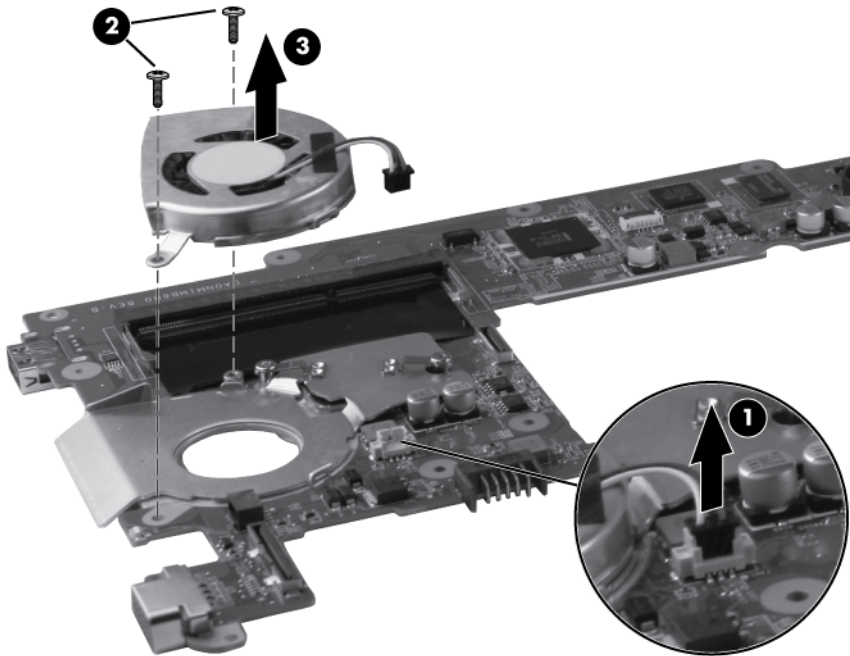
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 37](#)).
5. Remove the service access cover (see [Service access cover on page 38](#)).
6. Disconnect the hard drive cable from the system board (see [Hard drive on page 45](#)).
7. Disconnect the WLAN antenna cables from the WLAN module (see [WLAN module on page 39](#)).
8. Disconnect the WWAN antenna cables from the WWAN module (see [WWAN module on page 41](#)).
9. Remove the following components:
 - a. Keyboard (see [Keyboard on page 48](#)).
 - b. Top cover (see [Top cover on page 54](#)).
 - c. System board (see [System board on page 61](#)).

Remove the fan:

1. Turn the system board upside down, with the front toward you.
2. Disconnect the fan cable **(1)** from the system board.
3. Remove the two Phillips PM2.0x4.0 screws **(2)** that secure the fan to the system board .

4. Remove the fan **(3)** from the system board.


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

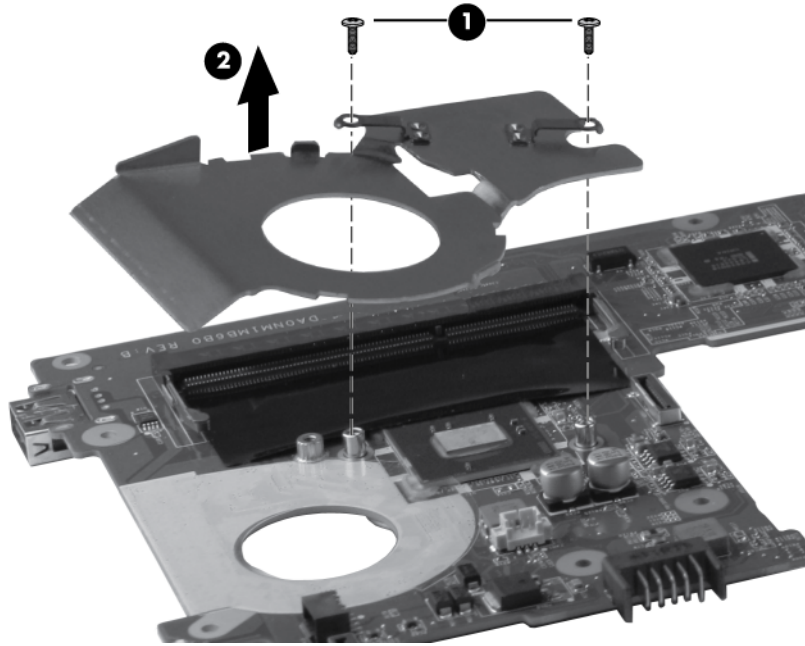



Remove the heat sink:

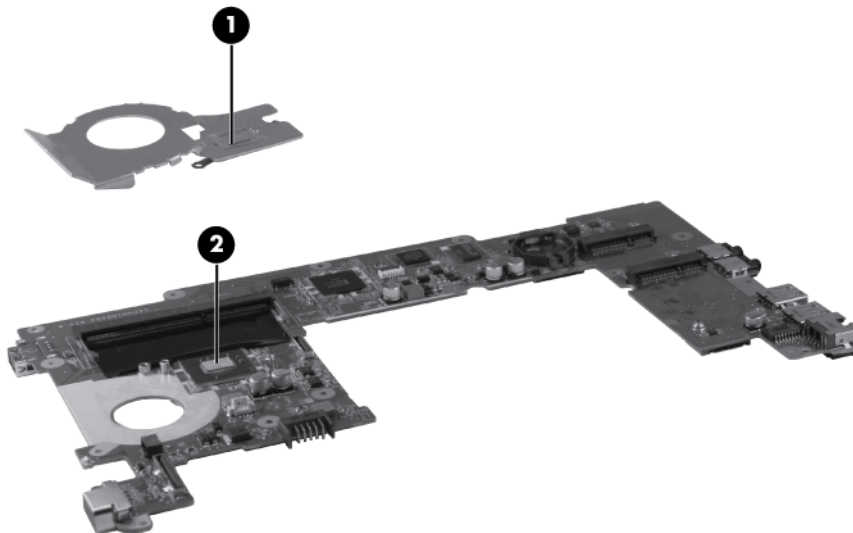
1. Remove the two Phillips PM2.0x4.0 screws **(1)** that secure the heat sink to the system board .

2. Remove the heat sink **(2)** by lifting straight up from the system board.

 **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 from the system board.



 **NOTE:** Thermal paste located on the surfaces of the heat sink **(1)** and processor **(2)** must be thoroughly removed and replaced each time the heat sink is removed.



Reverse this procedure to install the fan/heat sink.

Power connector

Description	Spare part number
Power connector	646095-001

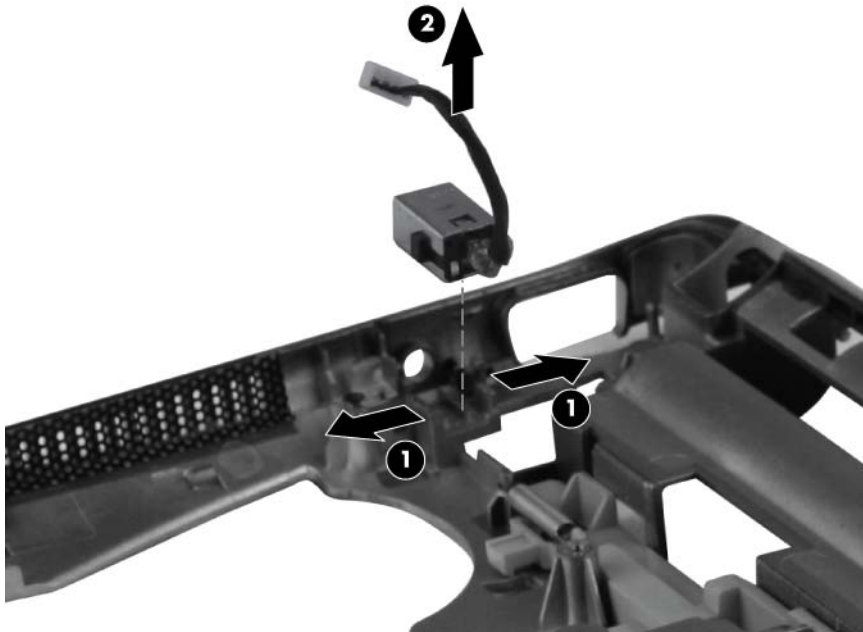
Before removing the power connector, follow these steps:

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 37](#)).
5. Remove the service access cover (see [Service access cover on page 38](#)).
6. Disconnect the hard drive cable from the system board (see [Hard drive on page 45](#)).
7. Disconnect the WLAN antenna cables from the WLAN module (see [WLAN module on page 39](#)).
8. Disconnect the WWAN antenna cables from the WWAN module (see [WWAN module on page 41](#)).
9. Remove the following components:
 - a. Keyboard (see [Keyboard on page 48](#)).
 - b. Top cover (see [Top cover on page 54](#)).
 - c. Display assembly (see [Display assembly on page 59](#)).
 - d. System board (see [System board on page 61](#)).

Remove the power connector:

1. Loosen the tabs **(1)** that secure the power connector to the base enclosure.

2. Remove the power connector (2) by lifting it straight up from the base enclosure.



Reverse this procedure to install the power connector.

5 Setup Utility

Starting Setup Utility

Setup Utility is a ROM-based information and customization utility that can be used even when your Windows operating system is not working.

The utility reports information about the computer and provides settings for startup, security, and other preferences.

To start Setup Utility:

- ▲ Open Setup Utility by turning on or restarting the computer, and then pressing **f10** while the “F10 = BIOS Setup Options” message is displayed in the lower-left corner of the screen.

Using Setup Utility

Changing the language of Setup Utility

The following procedure explains how to change the language of Setup Utility. If Setup Utility is not already running, begin at step 1. If Setup Utility is already running, begin at step 2.

1. Open Setup Utility by turning on or restarting the computer, and then pressing **f10** while the “F10 = BIOS Setup Options” message is displayed in the lower-left corner of the screen.
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 goes into effect immediately.

Your change goes into effect immediately.

Navigating and selecting in Setup Utility

Because Setup Utility is not Windows based, it does not support the TouchPad. Navigation and selection are by keystroke.

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

Displaying system information

The following procedure explains how to display system information in Setup Utility. If Setup Utility is not open, begin at step 1. If Setup Utility is open, begin at step 2.

1. Open Setup Utility by turning on or restarting the computer, and then pressing **f10** while the “F10 = BIOS Setup Options” message is displayed in the lower-left corner of the screen.
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 default settings in Setup Utility

The following procedure explains how to restore the Setup Utility default settings. If Setup Utility is not already running, begin at step 1. If Setup Utility is already running, begin at step 2.

1. Open Setup Utility by turning on or restarting the computer, and then pressing **f10** while the “F10 = BIOS Setup Options” message is displayed in the lower-left corner of the screen.
2. Use the arrow keys to select **Exit > Load Setup Defaults**, and then press **enter**.
3. When the Setup Confirmation is displayed, press **enter**.
4. To save your change and exit Setup Utility, use the arrow keys to select **Exit > Exit Saving Changes**, and then press **enter**.

The Setup Utility default settings go into effect when the computer restarts.



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

Exiting Setup Utility

You can exit Setup Utility with or without saving changes.

- 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**. After either choice, the computer restarts in Windows.

Setup Utility Menus

Main Menu

The menu tables in this section provide an overview of the Setup Utility options



NOTE: Some of the Setup Utility menu items listed in this chapter may not be supported by your computer.

Select	To do this
System information	<ul style="list-style-type: none">• View and change the system time and date.• View identification information about the computer.• View specification information about the processor, memory size, and system BIOS.

Security Menu

Select	To do this
Administrator password	Enter, change, or delete an administrator password.
Power-On password	Enter, change, or delete a power-on password.

System Configuration Menu

Select	To do this
Language Support	Change the Setup Utility language.
Fan Always On	Enable/disable Fan Always On. When enabled, the computer fan will always be on (enabled by default).
Action Keys Mode	Enable/disable Action Keys Mode (enabled by default).
Boot Options	<p>Set the following boot options:</p> <ul style="list-style-type: none">• f10 and f12 Delay (sec.)—Set the delay for the f10 and f12 functions of Setup Utility in intervals of 5 seconds each (0, 5, 10, 15, 20).• Floppy boot—Enable/disable floppy boot (disabled by default).• Internal Network Adapter boot—Enable/disable boot from Internal Network Adapter (disabled by default).• Boot Device Priority—Set the boot device priority for:<ul style="list-style-type: none">◦ Internal hard drive◦ USB Diskette on Key/USB hard drive◦ USB CD/DVD ROM drive◦ USB floppy◦ Network adapter <p>NOTE: Only the devices attached to the system will appear in the boot order menu.</p>

Diagnostics Menu

Select	To do this
Hard Disk Self Test (select models only)	Run a comprehensive self-test on the hard drive.
Memory Test	Run a diagnostic test on the system memory.

6 Specifications

Device specifications

	Metric	U.S.
Dimensions		
Depth	19 cm	7.5 in
Width	27 cm	11 in
Height	2.3-3.2 cm	0.91-0.93 in
Weight		
25.7-cm (10.1-in) LCD, equipped with a 3-cell battery, hard drive, 1-GB memory, WLAN module, and 2 wireless antennas	1.22 kg	2.69 lb
25.7-cm (10.1-in). LCD, equipped with a 6-cell battery, hard drive, 1-GB memory, WLAN module, and 2 wireless antennas	1.36 kg	3.0 lb
Input power		
Operating voltage	19.5 V dc @ 2.05A – 40 W	
Operating current	2.05 A	
Temperature		
Operating	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 65°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.		

25.7-cm (10.1-in) high-definition AntiGlare display specifications

	Metric	U.S.
Dimensions		
Height	23.45 cm	9.23 in
Width	14.3 cm	5.62 in
Diagonal	25.7 cm	10.1 in
Number of colors	262,144	
Contrast ratio	400:1 (typical)	
Brightness	200 nits (typical)	
Pixel resolution		
Pitch	0.16305 × 016305 mm	
Format	High-definition: 1366 × 768	
Configuration	RGB vertical stripe	
Backlight	LED	
Character display	80 × 25	
Total power consumption	3.46 W	
Viewing angle	+/-30° horizontal, +10/-20° vertical (typical)	

25.7-cm (10.1-in) WSVGA AntiGlare 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 (varies by display)	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 mm	9.5 mm
Width	70 mm	70 mm	70 mm
Weight	101 g	101 g	101 g
Interface type	SATA	SATA	SATA
I/O data transfer rate (maximum)	100 Gbits/sec	100 Gbits/sec	100 Gbits/sec
Security	ATA security	ATA security	ATA security
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
Disc rotational speed	5400 rpm	5400 rpm	5400 rpm
Operating temperature	5°C to 55°C (41°F to 151°F)	5°C to 55°C (41°F to 131°F)	5°C to 55°C (41°F to 131°F)
*1 GB = 1 billion bytes when referring to hard drive storage capacity. Actual accessible capacity is less. Actual drive specifications may differ slightly.			
NOTE: Certain restrictions and exclusions apply. Contact technical support for details.			

7 Backup and recovery

- [Restore](#)
- [Creating restore media](#)
- [Performing a system restore](#)
- [Backing up and recovering your information](#)

Your computer includes tools provided by the operating system and HP to help you safeguard your information and restore it if ever needed.


This chapter provides information on the following topics:


- Creating a set of recovery discs or a recovery flash drive (HP Recovery Manager software feature)
- Performing a system restore (from the partition, recovery discs, or a recovery flash drive)
- Backing up your information
- Recovering a program or driver

Restore

In the event of hard drive failure, to restore your system to its factory image you will need a set of recovery discs or a recovery flash drive that you can create using HP Recovery Manager. HP recommends that you use this software to create either a set of recovery discs or a recovery flash drive immediately after software setup.


If for some other reason you need to restore your system, this can be achieved using the HP Recovery partition (select models only), without the need for recovery discs or a recovery flash drive. To check for the presence of a recovery partition, click **Start**, right-click **Computer**, click **Manage**, and then click **Disk Management**. If the recovery partition is present, a Recovery drive is listed in the window.


 **CAUTION:** HP Recovery Manager (partition or discs/flash drive) restores only software that was preinstalled at the factory. Software not provided with this computer must be reinstalled manually.

 **NOTE:** Recovery discs have been included if your computer does not have a recovery partition.

Creating restore media


HP recommends that you create either a set of recovery discs or a recovery flash drive to be sure that you can restore your computer to its original factory state if the hard drive fails, or if for any reason you cannot restore using the recovery partition tools. Create these discs or the flash drive after setting up the computer for the first time.

 **NOTE:** HP Recovery Manager allows the creation of only one set of recovery discs or one recovery flash drive. Handle these discs or flash drive carefully and keep them in a safe place.


 **NOTE:** If your computer does not include an integrated optical drive, you can use an optional external optical drive (purchased separately) to create recovery discs, or you can purchase recovery discs for your computer from the HP Web site. If you use an external optical drive, it must be connected directly to a USB port on the computer, not to a USB port on an external device, such as a USB hub.

Guidelines:

- Purchase high-quality DVD-R, DVD+R, DVD-R DL, or DVD+R DL discs.

 **NOTE:** Read-write discs, such as CD-RW, DVD±RW, double-layer DVD±RW, and BD-RE (rewritable Blu-ray) discs, are not compatible with the HP Recovery Manager software.

- The computer must be connected to AC power during this process.
- Only one set of recovery discs or one recovery flash drive can be created per computer.

 **NOTE:** If you are creating recovery discs, number each disc before inserting it into the optical drive.


- If necessary, you can exit the program before you have finished creating the recovery discs or recovery flash drive. The next time you open HP Recovery Manager, you will be prompted to continue the backup creation process.

To create a set of recovery discs or a recovery flash drive:

1. Select **Start > All Programs > HP > HP Recovery Manager > HP Recovery Media Creation**.
2. Follow the on-screen instructions.

Performing a system restore

HP Recovery Manager software allows you to repair or restore the computer to its original factory state. HP Recovery Manager works from recovery discs, a recovery flash drive, or from a dedicated recovery partition (select models only) on the hard drive.

 **NOTE:** A system restore needs to be performed if the computer hard drive has failed or if all attempts to correct any functional computer issues fail. A system restore should be used as a final attempt to correct computer issues.

Note the following when performing a system restore:

- You can restore only the system that you have previously backed up. HP recommends that you use HP Recovery Manager to create either a set of recovery discs or a recovery flash drive as soon as you set up the computer.
- Windows has its own built-in repair features, such as System Restore. If you have not already tried these features, try them before using HP Recovery Manager.
- HP Recovery Manager restores only software that was preinstalled at the factory. Software not provided with this computer must be downloaded from the manufacturer's Web site or reinstalled from the disc provided by the manufacturer.

Restoring using the dedicated recovery partition (select models only)

When using the dedicated recovery partition, there is an option to back up pictures, music and other audio, videos and movies, recorded TV shows, documents, spreadsheets and presentations, e-mails, Internet favorites and settings during this process.

To restore the computer from the recovery partition, follow these steps:

1. Access HP Recovery Manager in either of the following ways:
 - Select **Start > All Programs > HP > HP Recovery Manager > HP Recovery Manager**.
 - or –
 - 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. Then, press **f11** while the “F11 (System Recovery)” message is displayed on the screen.
2. Click **System Recovery** in the **HP Recovery Manager** window.
3. Follow the on-screen instructions.

Restoring using the restore media

1. If possible, back up all personal files.
2. Insert the first recovery disc into the optical drive on your computer or an optional external optical drive, and then restart the computer.

– or –

Insert the recovery flash drive into a USB port on your computer, and then restart the computer.



NOTE: If the computer does not automatically restart in the HP Recovery Manager, the computer boot order needs to be changed.

3. Press **f9** at system bootup.
4. Select the optical drive or the flash drive.
5. Follow the on-screen instructions.

Changing the computer boot order

To change the boot order for recovery discs:

1. Restart the computer.
2. Press **esc** while the computer is restarting, and then press **f9** for boot options.
3. Select **Internal CD/DVD ROM Drive** from the boot options window.

To change the boot order for recovery flash drive:

1. Insert the flash drive into a USB port.
2. Restart the computer.
3. Press **esc** while the computer is restarting, and then press **f9** for boot options.
4. Select the flash drive from the boot options window.

Backing up and recovering your information

It is very important to back up your files and keep any new software in a safe place. As you add new software and data files, continue to create backups on a regular basis.

How completely you are able to recover your system depends on how recent your backup is.



NOTE: A recovery from your most recent backup needs to be performed if the computer has a virus attack or if any major system components fail. In order to correct computer issues, a recovery should first be attempted before a system restore is attempted.

You can back up your information to an optional external hard drive, a network drive, or discs. Back up your system at the following times:

- At regularly scheduled times



TIP: Set reminders to back up your information periodically.

- Before the computer is repaired or restored
- Before you add or modify hardware or software

Guidelines:

- Create system restore points using the Windows® System Restore feature, and periodically copy them to an optical disc or an external hard drive. For more information on using system restore points, refer to [Using Windows system restore points on page 82](#).
- Store personal files in the Documents library and back up this folder periodically.
- Save customized settings 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 re-enter your preferences.

To create a screen shot:

1. Display the screen you want to save.
2. Copy the screen image:

To copy only the active window, press **alt+fn+prt sc**.

To copy the entire screen, press **prt sc**.

3. Open a word-processing document, and then select **Edit > Paste**. The screen image is added to the document.
4. Save and print the document.

Using Windows Backup and Restore

Guidelines:

- Be sure that the computer is connected to AC power before you start the backup process.
- Allow enough time to complete the backup process. Depending on file sizes, it may take over an hour.

To create a backup:

1. Select **Start > Control Panel > System and Security > Backup and Restore**.
2. Follow the on-screen instructions to schedule and create a backup.



NOTE: Windows® includes the User Account Control feature to improve the security of the 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.

Using Windows system restore points

A system restore point allows you to save and name a snapshot of your hard drive at a specific point in time. You can then recover back to that point if you want to reverse subsequent changes.



NOTE: Recovering to an earlier restore point does not affect data files saved or e-mails created since the last restore point.

You also can create additional restore points to provide increased protection for your files and settings.

When to create restore points

- Before you add or modify software or hardware
- Periodically, whenever the computer is functioning optimally



NOTE: If you revert to a restore point and then change your mind, you can reverse the restoration.

Create a system restore point

1. Select **Start > Control Panel > System and Security > System**.
2. In the left pane, click **System Protection**.
3. Click the **System Protection** tab.
4. Follow the on-screen instructions.

Restore to a previous date and time

To revert to a restore point (created at a previous date and time), when the computer was functioning optimally, follow these steps:

1. Select **Start > Control Panel > System and Security > System**.
2. In the left pane, click **System Protection**.
3. Click the **System Protection** tab.
4. Click **System Restore**.
5. Follow the on-screen instructions.

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 amps 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
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	METI	3
The Netherlands	KEMA	1
Norway	NEMKO	1
The People's Republic of China	COC	5
South Korea	EK	4
Sweden	SEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	4
The United Kingdom	BSI	1
The United States	UL	2

1. The flexible cord must be Type HO5VV-F, 3 conductor, 1.0 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 SPT-3 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) configuration.
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 VCT or VCTF, 3 conductor, 1.00 mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) 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 certification mark of the agency responsible for evaluation in the country or region where it will be used.
5. The flexible cord must be Type VCTF, 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.

9 Recycling

Battery

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

Display

⚠ WARNING! The backlight contains mercury. Caution must be exercised when removing and handling the backlight to avoid damaging this component and causing exposure to the mercury.

⚠ CAUTION: The procedures in this chapter can result in damage to display components. The only components intended for recycling purposes are the liquid crystal display (LCD) panel and the backlight. When you remove these components, handle them carefully.

📝 NOTE: Materials Disposal. This HP product contains mercury in the backlight in the display assembly that might require special handling at end-of-life. Disposal of mercury may be regulated because of environmental considerations. For disposal or recycling information, contact your local authorities, or see the Electronic Industries Alliance (EIA) Web site at <http://www.eiai.org>.

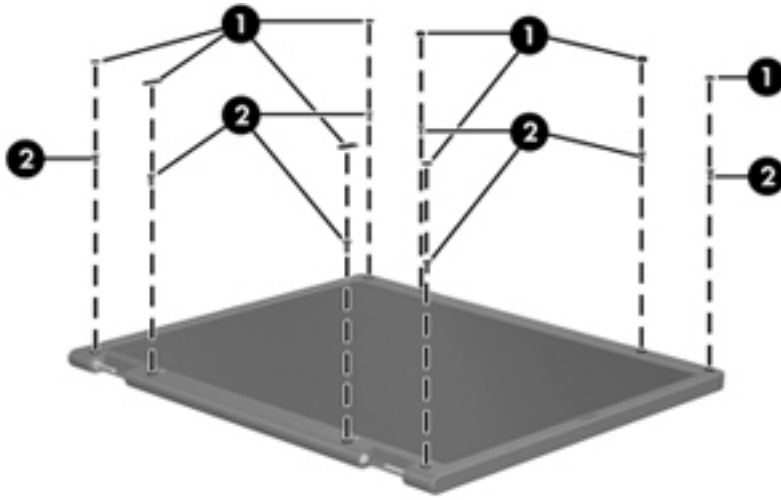
This section provides disassembly instructions for the display assembly. The display assembly must be disassembled to gain access to the backlight (1) and the liquid crystal display (LCD) panel (2).



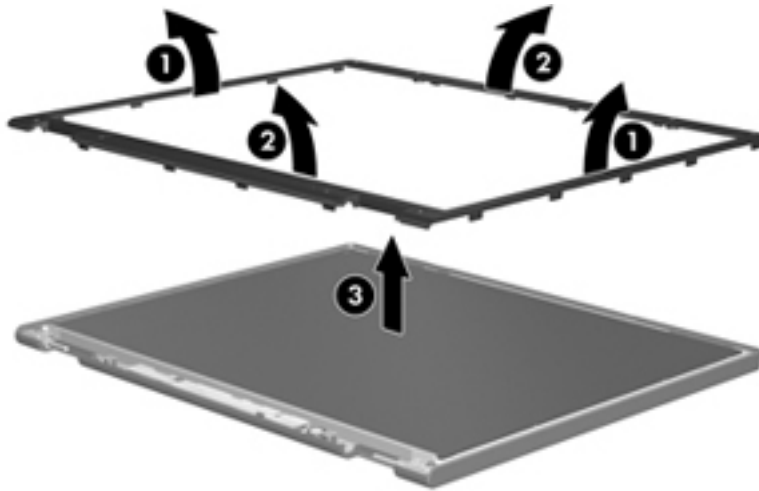
📝 NOTE: The procedures provided in this chapter are general disassembly instructions. Specific details, such as screw sizes, quantities, and locations, and component shapes and sizes, can vary from one computer model to another.

Perform the following steps:

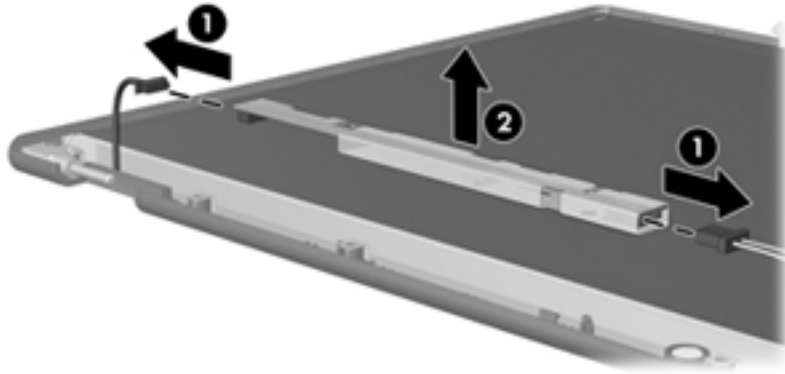
1. Remove all screw covers **(1)** and screws **(2)** that secure the display bezel to the display assembly.



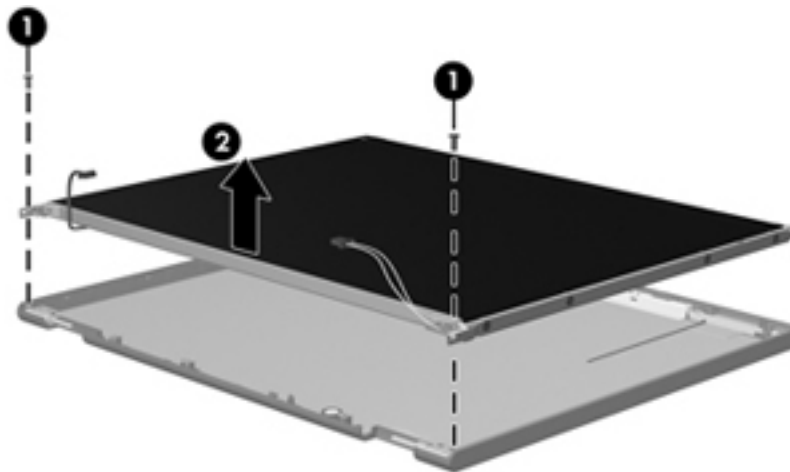
2. Lift up and out on the left and right inside edges **(1)** and the top and bottom inside edges **(2)** of the display bezel until the bezel disengages from the display assembly.
3. Remove the display bezel 3.



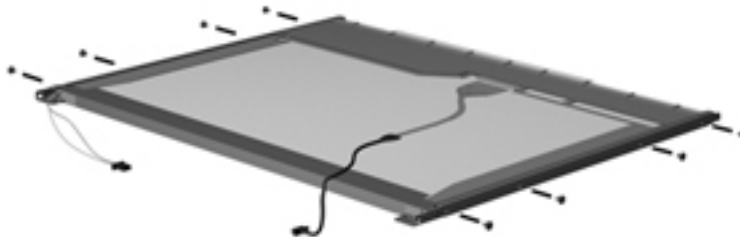
4. Disconnect all display panel cables (1) from the display inverter and remove the inverter 2.



5. Remove all screws (1) that secure the display panel assembly to the display enclosure.
6. Remove the display panel assembly (2) from the display enclosure.

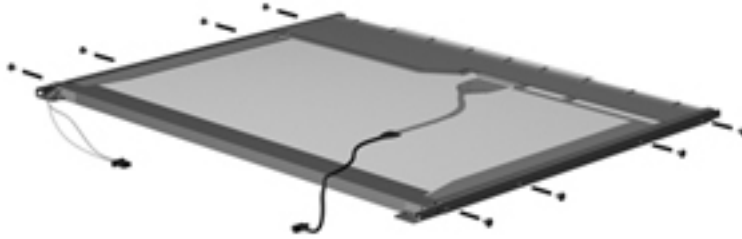


7. Turn the display panel assembly upside down.
8. Remove all screws that secure the display panel frame to the display panel.



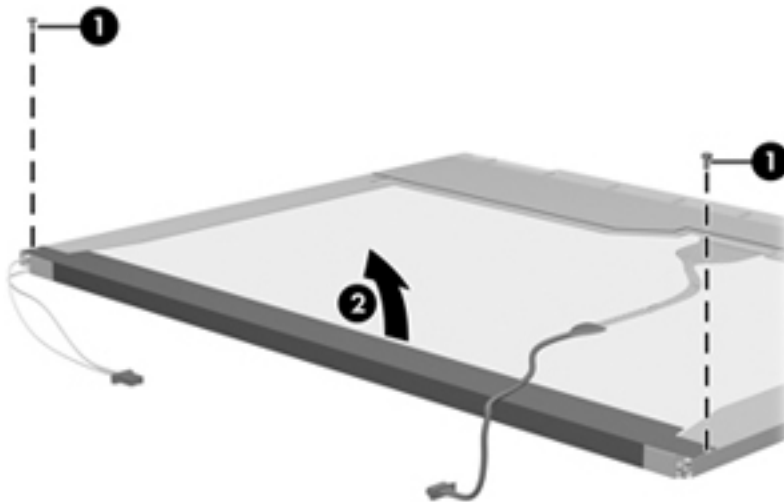
9. Use a sharp-edged tool to cut the tape (1) that secures the sides of the display panel to the display panel frame.

10. Remove the display panel frame (2) from the display panel.



11. Remove the screws (1) that secure the backlight cover to the display panel.

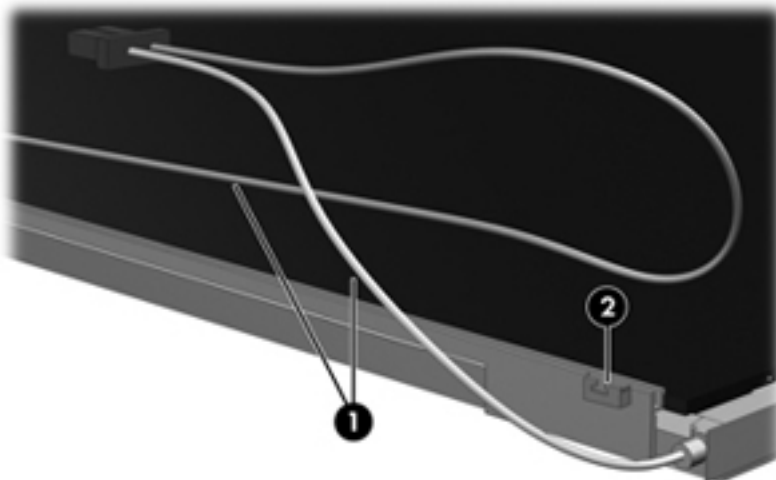
12. Lift the top edge of the backlight cover (2) and swing it outward.



13. Remove the backlight cover.

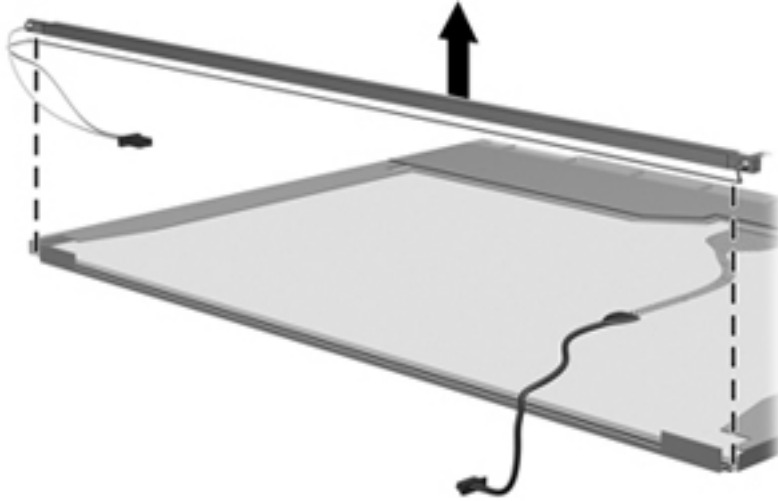
14. Turn the display panel right-side up.

15. Remove the backlight cables (1) from the clip (2) in the display panel.



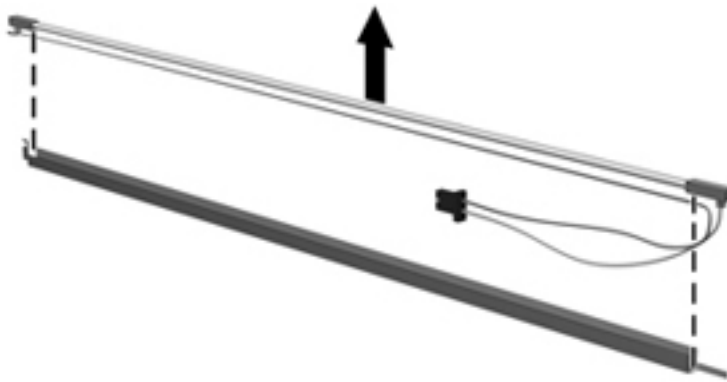
16. Turn the display panel upside down.

17. Remove the backlight frame from the display panel.



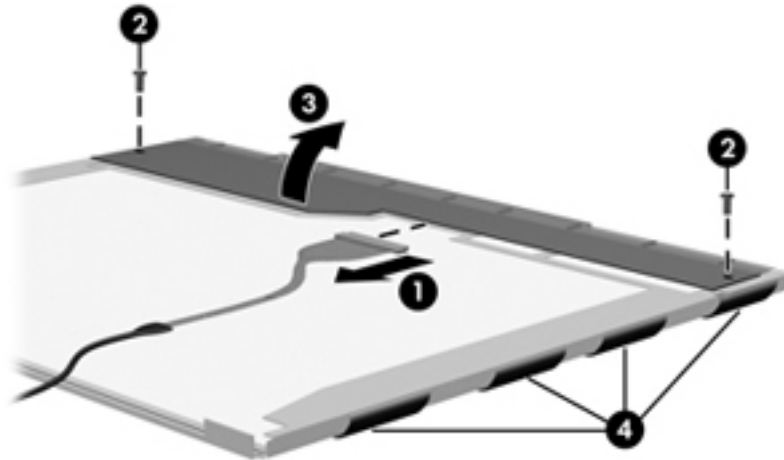
⚠ WARNING! The backlight contains mercury. Exercise caution when removing and handling the backlight to avoid damaging this component and causing exposure to the mercury.

18. Remove the backlight from the backlight frame.

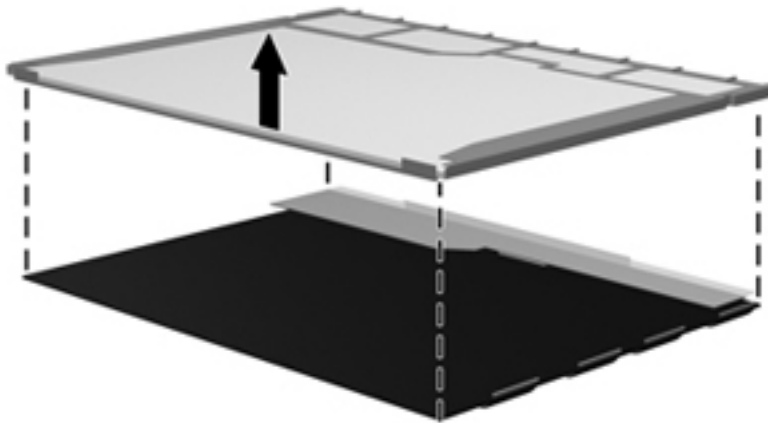


19. Disconnect the display cable (1) from the LCD panel.
20. Remove the screws (2) that secure the LCD panel to the display rear panel.
21. Release the LCD panel (3) from the display rear panel.

22. Release the tape (4) that secures the LCD panel to the display rear panel.



23. Remove the LCD panel.



24. Recycle the LCD panel and backlight.

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