

Compaq Presario CQ61 Notebook PC

HP G61 Notebook PC

Maintenance and Service Guide

Document Part Number: 518438-001

May 2009

This guide is a troubleshooting reference used for maintaining and servicing the computer. It provides comprehensive information on identifying computer features, components, and spare parts; and performing computer disassembly procedures.

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Safety warning notice



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

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Product description

Category	Description	Presario CQ61 Intel UMA	Presario CQ61 Intel Discrete	HP G61 Intel UMA Silver	HP G61 Intel Discrete Silver	HP G61 UMA	HP G61 Discrete
Product name	Compaq Presario CQ61 Notebook PC	X	X				
	HP G61 Notebook PC			X	X	X	X
Processors	Intel® Core™2 Duo processors (3-MB L2 cache, 1066-MHz front side bus (FSB))						
	■ P8700 2.53-GHz processor	X	X	X	X	X	X
	■ P7450 2.13-GHz processor	X	X	X	X	X	X
	Intel Core2 Duo processors (2-MB L2 cache, 800-MHz FSB)						
	■ T6600 2.2-GHz processor	X	X	X	X	X	X
	■ T6400 2.0-GHz processor	X	X	X	X	X	X
	Intel Pentium® Dual-Core processor (1-MB L2 cache, 667-MHz FSB)						
	■ T3400 2.16-GHz processor	X	X	X	X	X	X
	Intel Pentium Dual-Core processors (1-MB L2 cache, 800-MHz FSB)						
	■ T4200 2.0-GHz processor	X	X	X	X	X	X
	Intel Celeron® processors (1-MB L2 cache, 667-MHz FSB)						
	■ 585 2.16-GHz processor	X		X		X	
	Intel Celeron 900 processors (1-MB L2 cache, 667-MHz FSB)						
	■ T1700 1.83-GHz processor	X		X		X	
	■ T1600 1.66-GHz processor	X		X		X	

(Continued)

Category	Description	Presario CQ61 Intel UMA	Presario CQ61 Intel Discrete	HP G61 Intel UMA Silver	HP G61 Intel Discrete Silver	HP G61 UMA	HP G61 Discrete	
Chipset	Intel GM45	X		X		X		
	Intel GL40	X		X		X		
	Intel PM45		X		X		X	
	Southbridge ICH9M	X	X	X	X	X		
Graphics	Intel Graphics Media Accelerator 4500MHD (Shared)	X		X		X		
	Unified Memory Architecture (UMA) graphics memory integrated with shared video memory							
	■ Up to 1759 MB of graphics subsystem memory when total system Random Assess Memory (RAM) equals or is greater than 4096 MB (64-bit)	X		X		X		
	■ Up to 1309 MB of graphics subsystem memory when total system RAM equals or is greater than 4096 MB (32-bit)	X		X		X		
	■ Up to 1309 MB of graphics subsystem memory when total system RAM equals or is greater than 3072 MB	X		X		X		
	■ Up to 797 MB of graphics subsystem memory when total system RAM equals or is greater than 2048 MB	X		X		X		
	■ Up to 285 MB of graphics subsystem memory when total system RAM equals or is greater than 1024 MB	X		X		X		
	NVIDIA N10M-GE2-S with 512 MB of dedicated video memory (64M × 16 DDR2 × 4 PCs) Total available video memory		X			X		X
	■ Up to 2302 MB of graphics subsystem memory when total system RAM equals or is greater than 4096 MB (64-bit)			X		X		X
	■ Up to 1790 MB of graphics subsystem memory when total system RAM equals or is greater than 4096 MB (32-bit)			X		X		X
	■ Up to 1790 MB of graphics subsystem memory when total system RAM equals or is greater than 3072 MB			X		X		X
	■ Up to 1278 MB of graphics subsystem memory when total system RAM equals or is greater than 2048 MB			X		X		X
	■ Up to 767 MB of graphics subsystem memory when total system RAM equals or is greater than 1024 MB			X		X		X

(Continued)

Category	Description	Presario CQ61 Intel UMA	Presario CQ61 Intel Discrete	HP G61 Intel UMA Silver	HP G61 Intel Discrete Silver	HP G61 UMA	HP G61 Discrete
Panel	16-inch HD BrightView display panel (1366 × 768)	X	X	X	X	X	X
	15.6-inch HD BrightView display panel (1366 × 768)	X	X	X	X	X	X
	16:9 Wide Aspect Ratio	X	X	X	X	X	X
Memory	2 customer-accessible/upgradable SODIMM slots	X	X	X	X	X	X
	Supports dual-channel memory DDR2 800 MHz dual-channel support	X	X	X	X	X	X
	Supports up to 8 GB of system memory	X	X	X	X	X	X
	Supports the following configurations:						
	■ 8192-MB total system memory (4096 × 2)	X	X	X	X	X	X
	■ 4096-MB total system memory (2048 × 2)	X	X	X	X	X	X
	■ 3072-MB total system memory (2048 × 1 + 1024 × 1)	X	X	X	X	X	X
	■ 2048-MB total system memory (2048 × 1, 1024 × 2)	X	X	X	X	X	X
Hard drives	■ 1024-MB total system memory (1024 × 1)	X	X	X	X	X	X
	Supports all 9.5-mm, 6.35-cm (2.50-in) SATA hard drives	X	X	X	X	X	X
	Customer accessible	X	X	X	X	X	X
	Single hard drive configurations:						
	■ 500-GB, 5400-rpm	X	X	X	X	X	X
	■ 320-GB, 5400-rpm	X	X	X	X	X	X
	■ 250-GB, 5400-rpm	X	X	X	X	X	X
Optical drives	■ 160-GB, 5400-rpm	X	X	X	X	X	X
	12.7-mm fixed SATA tray load	X	X	X	X	X	X
	DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive with LightScribe	X	X	X	X	X	X
	Blue-ray ROM with LightScribe DVD±R/RW SuperMulti Double-Layer Drive	X	X	X	X	X	X

(Continued)

Category	Description	Presario CQ61 Intel UMA	Presario CQ61 Intel Discrete	HP G61 Intel UMA Silver	HP G61 Intel Discrete Silver	HP G61 UMA	HP G61 Discrete
Webcam	VGA camera, fixed angle with activity light	X	X	X	X	X	X
Microphone	Integrated single analog microphone	X	X	X	X	X	
Audio	High-definition audio supports Microsoft premium requirements	X	X	X	X	X	X
Modem	56K V.92 data/fax modem (select models only; computer models not equipped with a modem have a cover over the RJ-11 jack opening)	X	X	X	X	X	X
	Supports all worldwide certification requirements	X	X	X	X	X	X
Ethernet	Integrated 10/100 network interface card (NIC)	X	X	X	X	X	X
	Realtek 8102E	X	X	X	X	X	X
Wireless	Integrated wireless local area network (WLAN) by way of wireless module:						
	2 wireless antennas built into display assembly	X	X	X	X	X	X
	Support for no-WLAN option	X	X	X	X	X	X
	Support for the following WLAN formats:					X	X
	■ Atheros AR9280 802.11 a/g/n	X	X	X	X	X	X
	■ Atheros AR2425 802.11b/g	X	X	X	X	X	X
	■ Atheros 802.11 b/g/n	X	X	X	X	X	X
	■ Atheros 802.11 a/b/g/n	X	X	X	X	X	
	■ Broadcom BCM4312 802.11b/g	X	X	X	X	X	X
	■ Intel Wi-Fi 5100 802.11 a/b/g	X	X	X	X	X	
External media cards	Digital Media Slot supporting SD, MMC, MS, MSPro, xD cards. With adapter (not included), supports mini versions of SD, MMC, MS Duo.	X	X	X	X	X	X

(Continued)

Category	Description	Presario CQ61 Intel UMA	Presario CQ61 Intel Discrete	HP G61 Intel UMA Silver	HP G61 Intel Discrete Silver	HP G61 UMA	HP G61 Discrete
Ports	Audio-in (stereo microphone)	X	X	X	X	X	X
	Audio-out (stereo headphone)	X	X	X	X	X	X
	High-Definition Multimedia Interface (HDMI) version 1.3 supporting 1080p with High-bandwidth Digital Content Protection (HDCP) key (select models only)	X	X	X	X	X	X
	RJ-11 (modem)	X	X	X	X	X	X
	RJ-45 (Ethernet)	X	X	X	X	X	X
	USB (3; one is an eSATA/USB port)	X	X	X	X	X	X
	VGA (Dsub 15-pin) supporting 1920 × 1200 external resolution at 75 Hz, 1600 × 1200 external resolution at 75 Hz	X	X	X	X	X	X
	Multi-pin AC power	X	X	X	X	X	X
Docking	None						
Keyboard and TouchPad	Full-size keyboard, 40.64-cm (16.00-in) with numeric keypad	X	X	X	X	X	X
	TouchPad with 2 TouchPad buttons	X	X	X	X	X	
	Supports 2-way scroll with legend	X	X	X	X	X	X
	Taps enabled as default	X	X	X	X	X	X
Power requirements	65-W AC adapter with localized cable plug support	X		X		X	X
	90-W AC adapter with localized cable plug support		X		X		X
	6-cell, 2.20-Ah, 47-Wh battery	X	X	X	X	X	
Security	Kensington Security Lock	X	X	X	X	X	X
Operating system	Preinstalled:						X
	Windows Vista® Business 32-bit	X	X	X	X	X	X
	Windows Vista Premium 32- and 64-bit	X	X	X	X	X	
	Windows Vista Home Basic 32-bit	X	X	X	X	X	X
	FreeDOS	X	X				X
	RedFlag Linux	X	X				X

(Continued)

Category	Description	Presario CQ61 Intel UMA	Presario CQ61 Intel Discrete	HP G61 Intel UMA Silver	HP G61 Intel Discrete Silver	HP G61 UMA	HP G61 Discrete
Serviceability	End-user replaceable parts:						
	AC adapter	X	X	X	X	X	
	Battery (system)	X	X	X	X	X	
	Hard drive	X	X	X	X	X	X
	Memory module	X	X	X	X	X	X
	Optical drive	X	X	X	X	X	X
	Mini Card components	X	X	X	X	X	X

External component identification

Top components

TouchPad



Item	Component	Function
❶	TouchPad on/off button	Enables/disables the TouchPad.
❷	TouchPad*	Moves the pointer and selects or activates items on the screen.
❸	Left TouchPad button*	Functions like the left button on an external mouse.
❹	TouchPad light	<ul style="list-style-type: none"> ■ White: TouchPad is enabled. ■ Amber: TouchPad is disabled.
❺	TouchPad scroll zone	Scrolls up or down.
❻	Right TouchPad button*	Functions like the right button on an external mouse.

*This table describes factory settings. To view and change pointing device preferences, select **Start > Control Panel > Hardware and Sound > Mouse**.

Lights



Your computer may look slightly different from the illustration in this section.



Item	Component	Description
❶	Caps lock light	On: Caps lock is on.
❷	Power lights (2)*	<ul style="list-style-type: none"> ■ On: The computer is on. ■ Blinking: The computer is in the Sleep state. ■ Off: The computer is off or in Hibernation.
❸	Wireless light	<ul style="list-style-type: none"> ■ Blue: 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.
❹	Num lock light	On: Keypad numeric function is enabled.
❺	Battery light	<ul style="list-style-type: none"> ■ On: A battery is charging. ■ Blinking: A battery that is the only available power source has reached a low battery level. When the battery reaches a critical battery level, the battery light begins blinking rapidly. ■ Off: If the computer is plugged into an external power source, the light is turned off when all batteries in the computer are fully charged. If the computer is not plugged into an external power source, the light stays off until the battery reaches a low battery level.
❻	Drive light	Blinking: The hard drive or optical drive is being accessed.

*The 2 power lights display the same information. The light on the power button is visible only when the computer is open. The power light on the front of the computer is visible whether the computer is open or closed.

Buttons



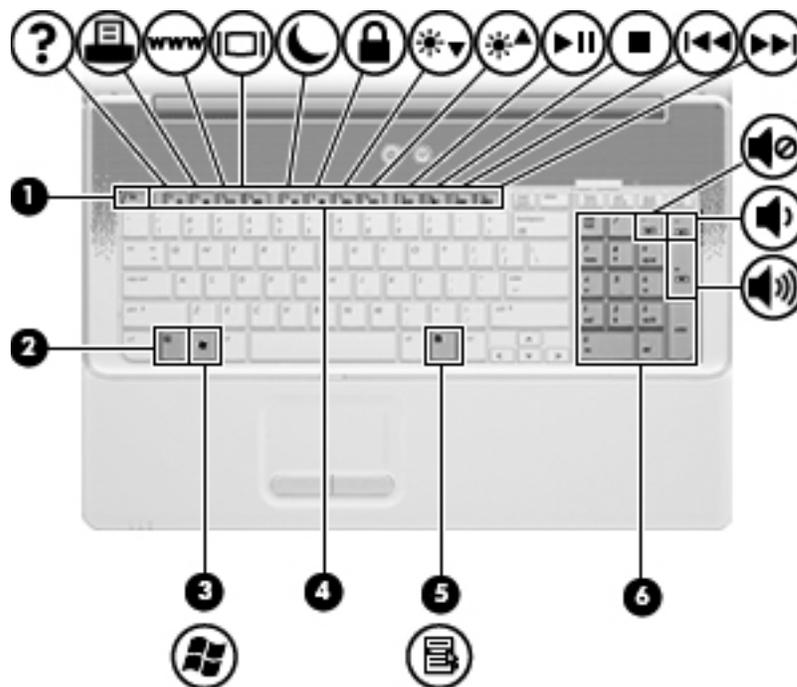
Item	Component	Description
❶	Speakers (2)	Produce sound.
❷	Power button*	<ul style="list-style-type: none"> ■ When the computer is off, press the button to turn on the computer. ■ When the computer is on, press the button briefly to initiate Sleep. ■ When the computer is in the Sleep state, press the button briefly to exit Sleep. ■ When the computer is in Hibernation, press the button briefly to exit Hibernation. <p>If the computer has stopped responding and Windows® shutdown procedures are ineffective, press and hold the power button for at least 5 seconds to turn off the computer.</p> <p>To learn more about your power settings, select Start > Control Panel > System and Maintenance > Power Options.</p>
❸	Wireless button	<p>Turns the wireless feature on or off but does not create a wireless connection.</p> <p> To establish a wireless connection, a wireless network must already be set up.</p>

*This table describes factory settings. For information about changing factory settings, refer to the user guides located in Help and Support.

Keys



Your computer may look slightly different from the illustration in this section.



Item	Component	Description
❶	esc key	Displays system information when pressed in combination with the fn key.
❷	fn key	Executes frequently used system functions when pressed in combination with a function key or the esc key.
❸	Windows logo key	Displays the Windows Start menu.
❹	Function keys	Execute frequently used system functions when pressed in combination with the fn key.
❺	Windows applications key	Displays a shortcut menu for items beneath the pointer.
❻	Integrated numeric keypad and volume hotkeys	<ul style="list-style-type: none"> ■ Can be used like the keys on an external numeric keypad. ■ Adjusts system volume when the asterisk (*), minus sign (-), or plus sign (+) is pressed in combination with the fn key.

Front components



Item	Component	Description
❶	Audio-in (microphone) jack	Connects an optional computer headset microphone, stereo array microphone, or monaural microphone.
❷	Audio-out (headphone) jack	Produces sound when connected to optional powered stereo speakers, headphones, ear buds, a headset, or television audio.

Rear components

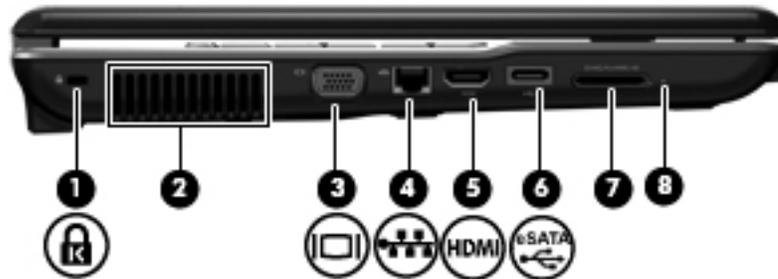


Component	Function
Vents (2)	<p>Enable airflow to cool internal components.</p> <p> The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.</p>

Left-side components

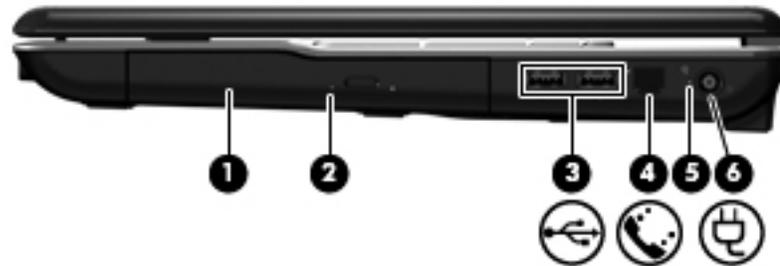


Your computer may look slightly different from the illustration in this section.



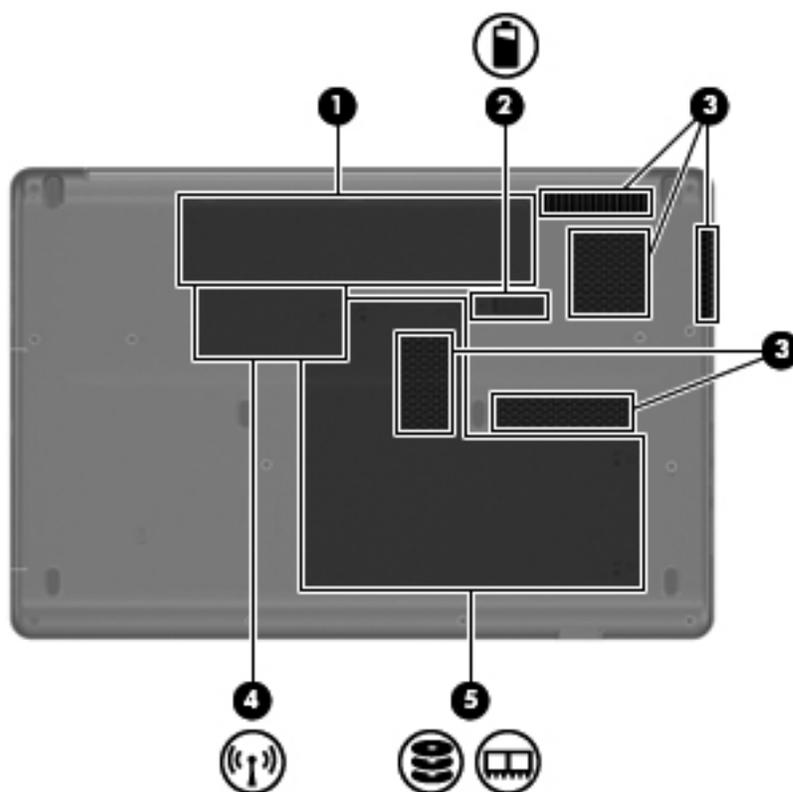
Item	Component	Function
①	Security cable slot	Attaches an optional security cable to the computer. The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.
②	Vent	Enables airflow to cool internal components. The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.
③	External monitor port	Connects an external VGA monitor or projector.
④	RJ-45 (network) jack	Connects a network cable.
⑤	HDMI port (select models only)	Connects an optional video or audio device, such as a high-definition television, or any compatible digital or audio component. Depending on your computer model, the computer may include an HDMI port or a USB port at this location.
⑥	eSATA/USB port	Connects a high-performance eSATA component, such as an eSATA external hard drive, or connects an optional USB device.
⑦	Digital Media Slot (select models only)	Supports the following digital card formats: <ul style="list-style-type: none"> ■ Memory Stick (MS) ■ Memory Stick Pro (MSP) ■ MultiMediaCard (MMC) ■ Secure Digital (SD) Memory Card ■ xD-Picture Card (XD)
⑧	Digital Media Slot light (select models only)	On: The Digital Media Slot is in use.

Right-side components



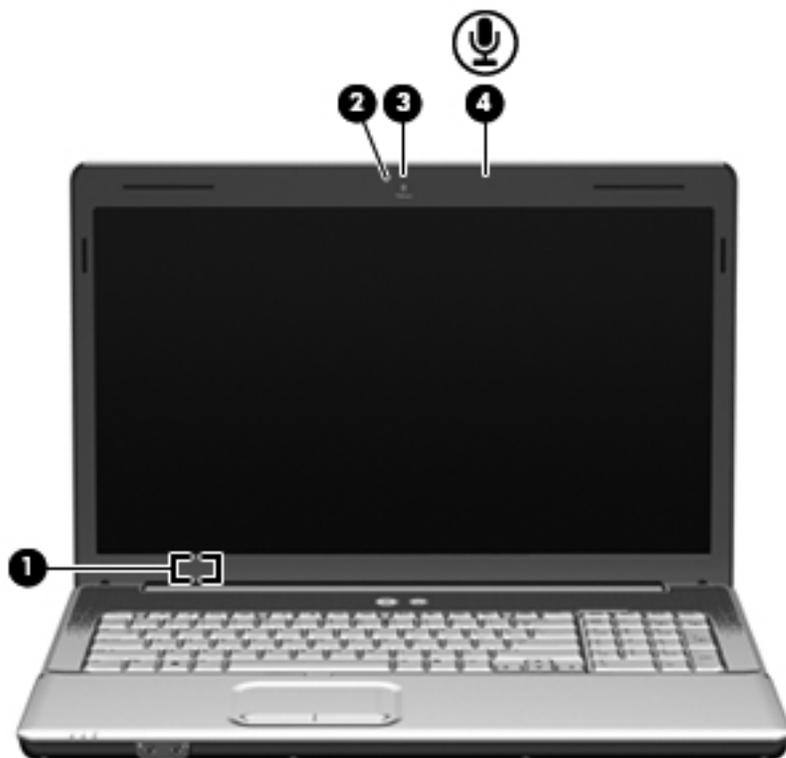
Item	Component	Function
❶	Optical drive	Reads optical discs and, on select models, also writes to optical discs.
❷	Optical drive light	Blinking: The optical drive is being accessed.
❸	USB ports (2)	Connect optional USB devices.
❹	RJ-11 (modem) jack (select models only)	Connects a modem cable.
❺	AC adapter light	<ul style="list-style-type: none"> ■ On: The computer is connected to external power. ■ Off: The computer is not connected to external power.
❻	Power connector	Connects an AC adapter.

Bottom components



Item	Component	Function
❶	Battery bay	Holds the battery.
❷	Battery release latch	Releases the battery from the battery bay.
❸	Vents (5)	<p>Enable airflow to cool internal components.</p> <p> 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.</p>
❹	Wireless module compartment	<p>Holds a wireless LAN module.</p> <p> To prevent an unresponsive system, replace the wireless module with only 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.</p>
❺	Hard drive bay	Holds the hard drive and contains the memory module slots.

Display components



Item	Component	Description
❶	Internal display switch	Turns off the display and initiates Sleep if the display is closed while the power is on.
❷	Webcam light (select models only)	On: The webcam is in use.
❸	Webcam (select models only)	Records audio and video and captures still photographs.
❹	Internal microphone	Records sound.

Wireless antennas

Your computer model has at least 2 antennas that send and receive signals from one or more wireless devices. These antennas are not visible from the outside of the computer.



For optimal transmission, keep the areas immediately around the antennas free from obstructions.

To see wireless regulatory notices, refer to the section of the *Regulatory, Safety and Environmental Notices* that applies to your country or region. These notices are located in Help and Support.

Additional hardware components



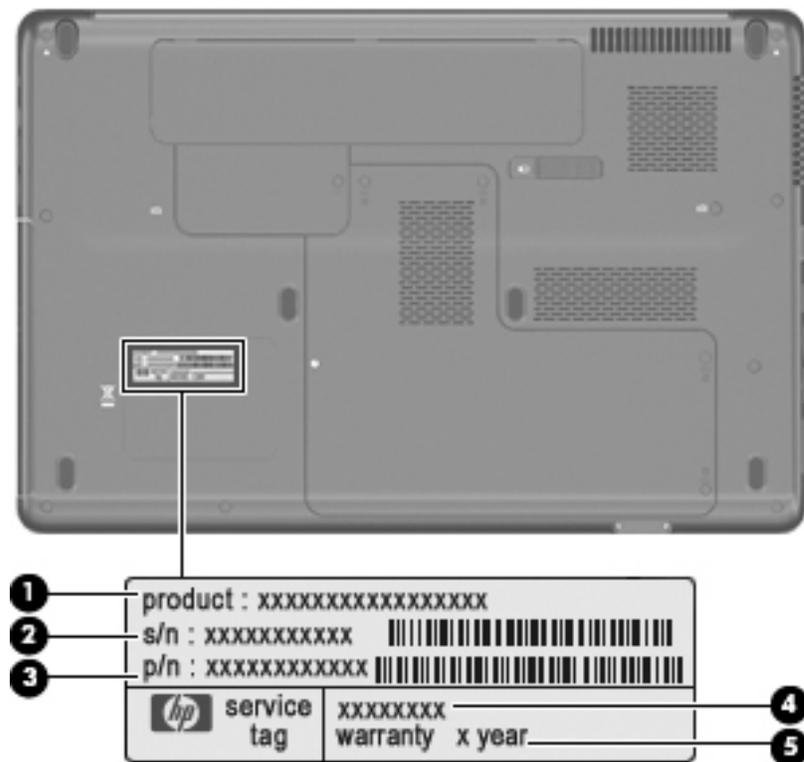
Item	Component	Description
❶	Power cord*	Connects an AC adapter to an AC outlet.
❷	AC adapter	Converts AC power to DC power.
❸	Battery*	Powers the computer when the computer is not plugged into external power.

*Batteries and power cords vary in appearance by region and country.

Illustrated parts catalog

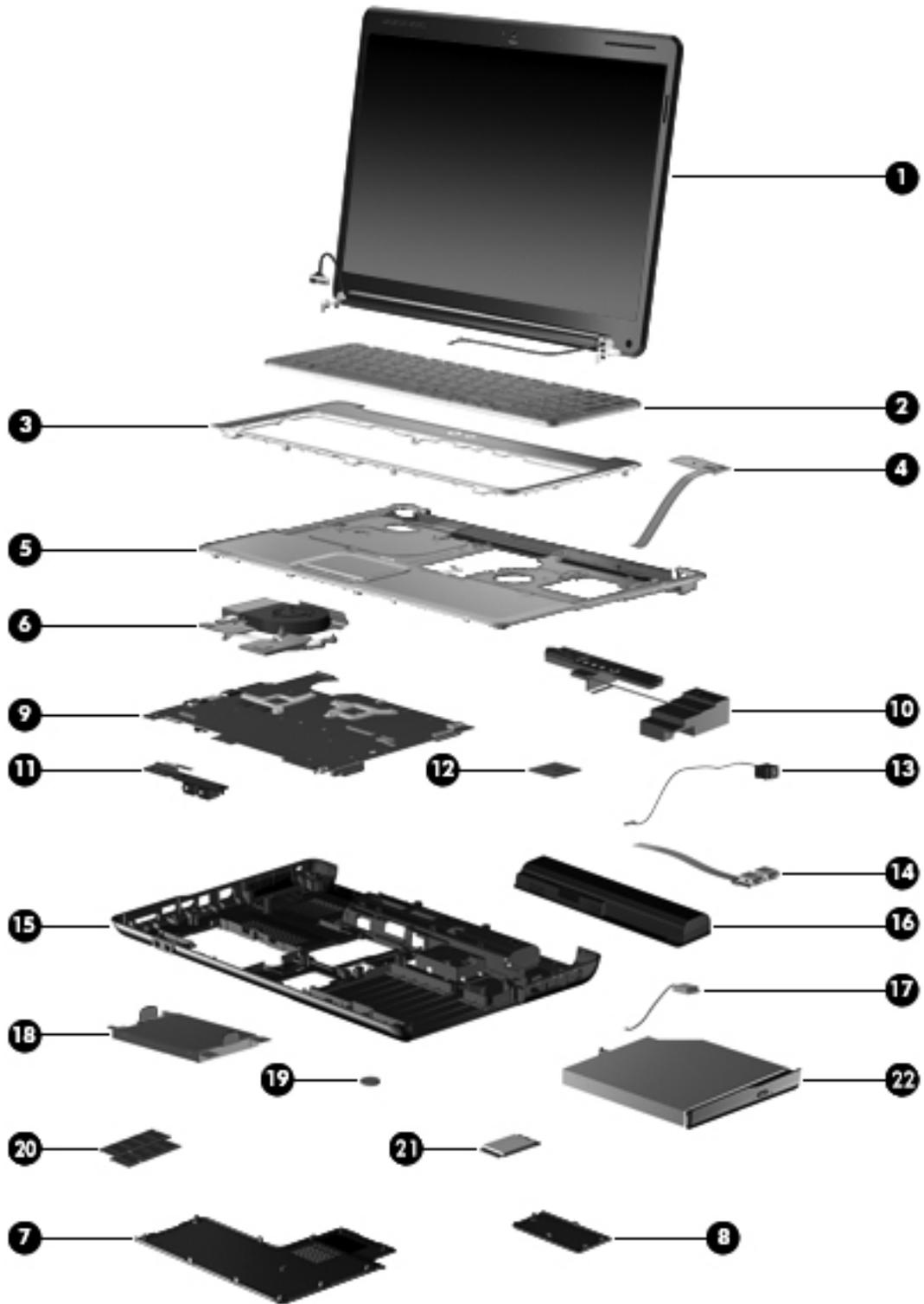
Service tag

When ordering parts or requesting information, provide the computer serial number and model number located on the service tag.



Component	Description
① Product name	This is the product name affixed to the front of your computer.
② Serial number (s/n)	This is an alphanumeric identifier that is unique to each product.
③ Part number/ product number (p/n)	This number provides specific information about the product's hardware components. The part number helps a service technician to determine what components and parts are needed.
④ Model description	This is the alphanumeric identifier you use to locate documents, drivers, and support for your computer.
⑤ Warranty period	This number describes the duration (in years) of the warranty period for this computer.

Computer major components



Item	Description	Spare Part Number
(1)	16-in High Definition (HD), light-emitting diode (LED) display assembly	
	For use in HP G61 computer models (includes webcam module and cable, 2 WLAN antenna transceivers and cables, microphone and cable, and logo)	530981-001
	For use in Presario G61 computer models (includes webcam module and cable, 2 WLAN antenna transceivers and cables, microphone and cable, and logo)	530977-001
	15.6-in HD, light-emitting diode display assembly	
	For use in Presario CQ61 computer models (includes microphone and cable, and logo)	530979-001
	For use in Presario CQ61 computer models (includes webcam module and cable, 2 WLAN antenna transceivers and cables, microphone and cable, and logo)	530978-001
	For use in HP G61 computer models (includes microphone and cable, and logo)	530983-001
	For use in HP G61 computer models (includes webcam module and cable, 2 WLAN antenna transceivers and cables, microphone and cable, and logo)	530982-001
(2)	Keyboard (includes keyboard cable)	
	For use in Brazil	517865-201
	For use in Canada	517865-121
	For use in the Czech Republic	517865-221
	For use in Belgium	517865-A41
	For use in France	517865-051
	For use in Germany	517865-041
	For use in Greece	517865-151
	For use in Hungary	517865-211
	For use in Israel	517865-BB1
	For use in Italy	517865-061
	For international use	517865-B31
	For use in Latin America	517865-161
	For use in Japan	517865-291
	For use in Norway	517865-091
	For use in Portugal	517865-131
	For use in Russia	517865-251
	For use in Saudi Arabia	517865-171
	For use in South Korea	517865-AD1
	For use in Spain	517865-071
	For use in Switzerland	517865-BG1
	For use in Thailand	517865-281
	For use in Turkey	517865-141
	For use in Taiwan	517865-AB1
	For use in the United Kingdom	517865-031
	For use in the United States	517865-001
(3)	Switch cover	531207-001

(Continued)

Item	Description	Spare Part Number
(4)	Power button board (includes power button board cable)	531215-001
(5)	Top cover (includes TouchPad board)	531206-001
(6)	Fan/heat sink assembly for use with UMA systems (includes replacement thermal material)	531210-001
	Fan/heat sink assembly for use with discrete systems (includes replacement thermal material)	531220-001
	Plastics Kit (see “Plastics Kit” on page 12 for contents)	531517-001
(7)	Hard drive cover	
(8)	Wireless module compartment cover	
(9)	System board	
	GM45 UMA system board for use with select UMA computer models (includes built-in modem, Digital Media Slot, HDMI port, and replacement thermal material)	517839-001
	GM45 UMA system board for use with select UMA computer models (includes built-in modem, Digital Media Slot, and replacement thermal material)	517832-001
	GL40 UMA system board for use only with select UMA computer models (includes built-in modem, Digital Media Slot, and replacement thermal material)	517836-001
	GL40 UMA system board for use with select UMA computer models (includes built-in modem, Digital Media Slot, HDMI port, and replacement thermal material)	517835-001
	GL40 UMA system board for use with select UMA computer models (includes built-in modem, Digital Media Slot, HDMI port and replacement thermal material)	570246-001
	PM45 Discrete system board for use with select Discrete computer models (includes built-in modem, Digital Media Slot, HDMI port, and replacement thermal material)	517837-001
	PM45 Discrete system board for use with select Discrete computer models (includes built-in modem, Digital Media Slot, and replacement thermal material)	517838-001
(10)	Speakers (include left and right speakers and cables)	
	For use in India only	572082-001
	For use in all countries and regions except India	531209-001
(11)	Audio board (includes audio board cable)	531208-001
(12)	Processor (includes replacement thermal material)	
	Intel Core2 Duo processors (3-MB L2 cache, 1066-MHz FSB)	
	■ P8700 2.53-GHz processor	507960-001
	■ P7550 2.26-GHz processor	573076-001
	■ P7450 2.13-GHz processor	507965-001
	■ T6600 2.20-GHz processor	513593-001
	■ T6500 2.10 GHz processor	572928-001
	■ T6400 2.06-GHz processor	513592-001
	Intel Pentium Dual-Core processors (1-MB L2 cache, 667-MHz FSB)	
	■ T3400 2.16-GHz processor	509549-001
	Intel Pentium Dual-Core processors (1-MB L2 cache, 800-MHz FSB)	
	■ T4200 2.06-GHz processor	513599-001

(Continued)

Item	Description	Spare Part Number
	Intel Celeron processors (1-MB L2 cache, 667-MHz FSB)	
	■ 900 2.20-GHz processor	534419-001
	■ 585 2.16-GHz processor	519898-001
	■ T1700 1.83-GHz processor	534084-001
	■ T1600 1.66-GHz processor	532324-001
(13)	Power connector cable	533465-001
(14)	USB board (does not include USB board cable)	531866-001
	USB board cable (included in “Cable Kit” on page 13)	
(15)	Base enclosure (with card reader, includes rubber feet)	531205-001
	Rubber Kit (not illustrated, includes 6 rubber feet)	531213-001
(16)	Battery , 6-cell, 2.20-Ah, 47-Wh	531775-001
(17)	Bluetooth® module (does not include Bluetooth cable)	483113-001
	Bluetooth cable (not illustrated) (included in “Cable Kit” on page 13)	
(18)	Hard drive (includes hard drive bracket and connector)	
	500-GB, 5400-rpm	517848-001
	320-GB, 5400-rpm	517847-001
	250-GB, 5400-rpm	517846-001
	160-GB, 5400-rpm	517845-001
	Hard Drive Hardware Kit (not illustrated, includes connector, bracket, and screws)	531204-001
(19)	RTC battery	449729-001
(20)	Memory modules	
	PC2-6400, 800-MHz, DDR2	
	2-GB	517844-001
	1-GB	517843-001
(21)	Wireless (WLAN) module	
	Atheros AR9280 802.11 a/g/n WLAN module:	
	■ For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	482260-001

(Continued)

Item	Description	Spare Part Number
■	For use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	482260-002
Atheros AR2425 802.11b/g WLAN module:		
■	For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	459339-003
■	For use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kiribati, Kuwait, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, Qatar, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Syria, Taiwan, Tajikistan, Tanzania, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	459339-004
Atheros 802.11 b/g/n		
■	For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	518436-001

(Continued)

Item	Description	Spare Part Number
■	For use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kiribati, Kuwait, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, Qatar, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Syria, Taiwan, Tajikistan, Tanzania, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	518436-002
Atheros 802.11 a/b/g/n WLAN module		
■	For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	518437-001
■	For use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kiribati, Kuwait, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, Qatar, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Syria, Taiwan, Tajikistan, Tanzania, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	518437-002

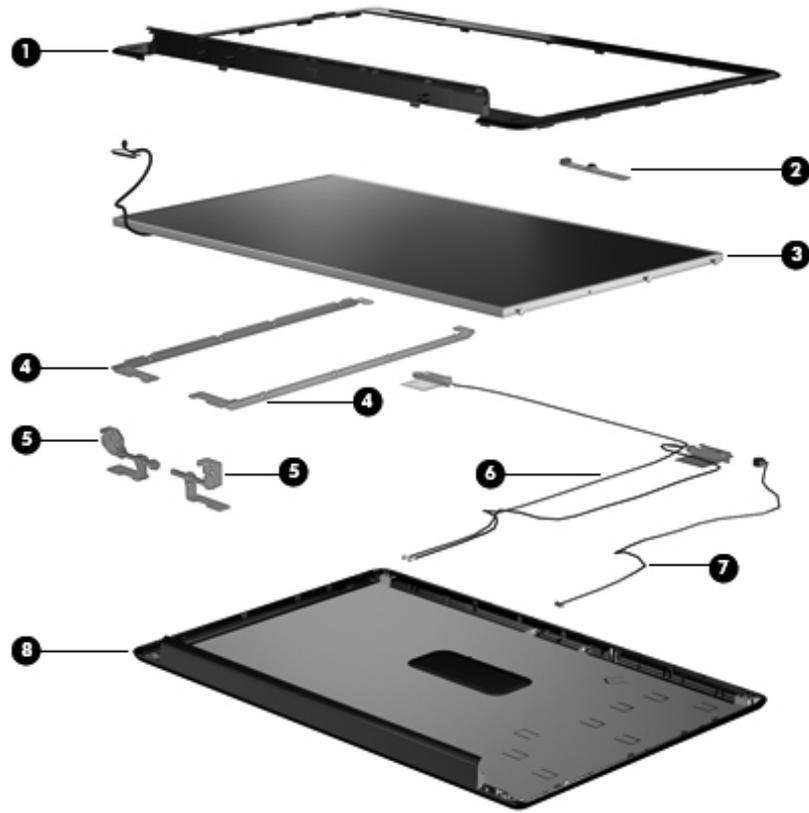
(Continued)

Item	Description	Spare Part Number
Broadcom BCM4312 802.11b/g WLAN module:		
■	For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	459263-001
■	For use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	459263-002
Intel Wi-Fi 5100 802.11 a/b/g for use only with Presario G61 computer models		
■	For use in Russia, Ukraine, and Pakistan	482957-001

(Continued)

Item	Description	Spare Part Number
	■ Intel Wi-Fi 5100 802.11 a/b/g	
	■ For use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	480985-001
(22)	Optical drive (includes optical drive bezel and bracket)	
	DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive with LightScribe	517850-001
	Blu-ray ROM with LightScribe DVD±R/RW SuperMulti Double-Layer Drive	517852-001

Display assembly components



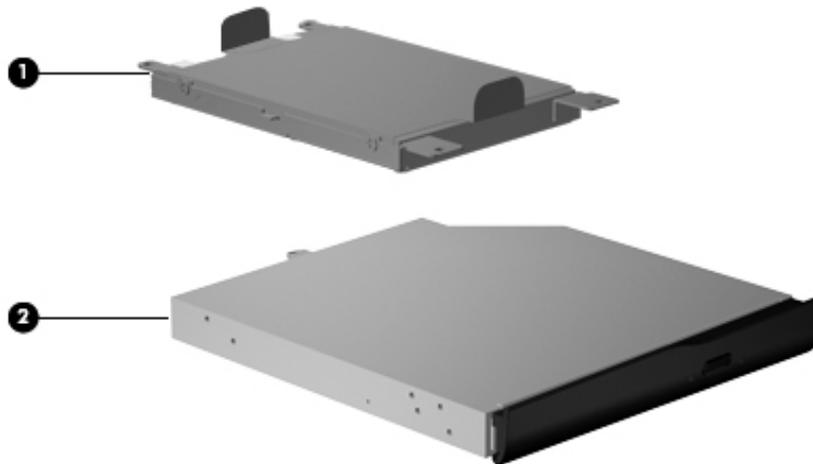
Item	Description	Spare Part Number
(1)	Display bezel	
	For use only with 16-in HP G61 display (includes microphone and webcam)	530478-001
	For use only with 15.6-in HP G61 display (includes microphone and webcam)	530992-001
	For use only with 15.6-in HP G61 display (includes microphone)	534992-001
	For use with 16-in Presario CQ-61 display (includes microphone and webcam)	534994-001
	For use with 15.6-in Presario CQ-61 display (includes microphone and webcam)	534993-001
	For use with 15.6-in Presario CQ-61 display (includes microphone)	534995-001
(2)	Webcam module (webcam module cable included in Display Panel Cable Kit, 534077-001)	531202-001
(3)	High Definition display panel (includes display panel and backlight cables)	
	For use only with 16-in display	531216-001
	For use only with 15.6-in display	517842-001
(4)	Display panel bracket (includes left and right brackets)	
	For use with 16-in display panels	530996-001
	For use with 15.6-in display panels	530995-001
	Display Panel Cable Kit with webcam cable (not illustrated)	534077-001
(5)	Display Hinge Kit (includes left and right display hinges)	530993-001
(6)	Wireless Antenna Kit (includes wireless antenna transceivers and cable)	
(7)	Microphone and caps lock cable (includes receiver and cable)	531203-001
(8)	Display enclosure (includes logo)	
	For use only with HP G61 computer models	530990-001
	For use only with Presario CQ61 computer models	530989-001
	Display Rubber Kit (not illustrated, includes display bezel rubber screw covers)	530999-001
	Display Screw Kit (not illustrated)	531201-001
	■ Phillips PM2.5x5.0 screw	
	■ Phillips PM2.0x3.0 screw	
	■ Phillips PM2.5x6.5 screw	

Plastics Kit



Item	Description	Spare part number
Plastics Kit:		513517-001
❶	Hard drive cover (includes 4 captive screws, secured by C-clips)	
❷	Wireless module compartment cover (includes 1 captive screw, secured by a C-clip)	

Mass storage devices



Item	Description	Spare part number
❶	Hard drive (includes connector and bracket)	
	500-GB, 5400-rpm	517848-001
	320-GB, 5400-rpm	517847-001
	250-GB, 5400-rpm	517846-001
	160-GB, 5400-rpm	517845-001
	Hard Drive Hardware Kit (not illustrated, includes connector, bracket, and screws)	531204-001
❷	Optical drive (includes bezel and bracket)	
	DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive with LightScribe	517850-001
	Blu-ray ROM with LightScribe DVD±R/RW SuperMulti Double-Layer Drive	517852-001

Miscellaneous parts

Description	Spare part number
AC adapter:	
65-W AC adapter	463958-001
90-W AC adapter	463955-001
Cable Kit	531211-001
■ Audio cable	
■ Num lock cable	
■ Power button cable	
■ RJ-11 cable	
■ TouchPad cable	
■ USB cable	
Modem	
56K V.92 data/fax modem for use in the United States (select models only)	510100-001
56K V.92 data/fax modem for use in Australia (select models only)	510100-011
Power cord (for use with both HP G61 and Presario CQ 61 computer models)	
For use in Argentina	490371-D01
For use in Australia	490371-011
For use in Brazil	490371-201
For use in Denmark	490371-081
For use in Europe	490371-021
For use in India	490371-D61
For use in Israel	490371-BB1
For use in Italy	490371-061
For use in Japan	490371-291
For use in North America	430971-001
For use in the People's Republic of China	490371-AA1
For use in South Africa	490371-AR1
For use in South Korea	490371-AD1
For use in Switzerland	490371-111
For use in Taiwan	490371-AB1
For use in the United Kingdom and Singapore	490371-031
Screw Kit	531212-001
■ Phillips PM2.5x4.0 screw	
■ Phillips PM2.0x3.0 screw	
■ Phillips PM2.5x6.5 screw	
Drop in Box (DIB)	
HP carrying case	418162-001
Wired headset	371693-001
Wireless laser mouse (includes wireless receiver)	430958-001

Sequential part number listing

Spare part number	Description number
371693-001	Wired headset
418162-001	HP carrying case
430958-001	Wireless laser mouse (includes wireless receiver)
449729-001	RTC battery
459263-001	Broadcom BCM4312 802.11b/g WLAN module for use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States
459263-002	Broadcom BCM4312 802.11b/g WLAN module for use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea- Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe
459339-003	Atheros AR2425 802.11b/g WLAN module for use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States
459339-004	Atheros AR2425 802.11b/g WLAN module for use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea- Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe

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Spare part number	Description number
463955-001	90-W AC adapter
463598-001	65-W AC adapter
480985-001	Intel Wi-Fi 5100 802.11 a/b/g/n WLAN module for use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe
482260-001	Atheros AR9280 802.11a/g/n WLAN module for use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States
482260-002	Atheros AR9280 802.11a/g/n WLAN module for use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe
482957-001	Intel Wi-Fi 5100 802.11 a/b/g for use in Russia, Ukraine, and Pakistan
483113-001	Bluetooth module (for Bluetooth cable see "Cable Kit" on page 13)
490371-001	Power cord for use in the United States with both HP G61 and Presario CQ61 computer models
490371-011	Power cord for use in Australia with both HP G61 and Presario CQ 61 computer models
490371-021	Power cord for use in Europe with both HP G61 and Presario CQ 61 computer models
490371-031	Power cord for use in the United Kingdom and Singapore with both HP G61 and Presario CQ 61 computer models

(Continued)

Spare part number	Description number
490371-061	Power cord for use in Italy with both HP G61 and Presario CQ 61 computer models
490371-081	Power cord for use in Denmark with both HP G61 and Presario CQ 61 computer models
490371-111	Power cord for use in Sweden with both HP G61 and Presario CQ 61 computer models
490371-201	Power cord for use in Brazil with both HP G61 and Presario CQ 61 computer models
490371-291	Power cord for use in Japan with both HP G61 and Presario CQ 61 computer models
490371-AA1	Power cord for use in the People's Republic of China with both HP G61 and Presario CQ 61 computer models
490371-AB1	Power cord for use in Taiwan with both HP G61 and Presario CQ 61 computer models
490371-AD1	Power cord for use in South Korea with both HP G61 and Presario CQ 61 computer models
490371-AR1	Power cord for use in South Africa with both HP G61 and Presario CQ 61 computer models
490371-BB1	Power cord for use in Israel with both HP G61 and Presario CQ 61 computer models
490371-D01	Power cord for use in Argentina with both HP G61 and Presario CQ 61 computer models
490371-D61	Power cord for use in India with both HP G61 and Presario CQ 61 computer models
507960-001	Intel Core2 Duo P8700 2.53-GHz processor (3-MB L2 cache, 1066-MHz FSB)
507965-001	Intel Core2 Duo P7450 2.13-GHz processor (3-MB L2 cache, 1066-MHz FSB)
509549-001	Intel Pentium T3400 2.16-GHz processor (1-MB L2 cache, 667-MHz FSB)
510100-001	56K V.92 data/fax modem (select models only, for use in the United States)
510100-011	56K V.92 data/fax modem (select models only, for use in Australia)
513592-001	Intel Core2 Duo T6400 2.06-GHz processor (2-MB L2 cache, 800-MHz FSB)
513593-001	Intel Core2 Duo T6600 2.2-GHz processor (2-MB L2 cache, 800-MHz FSB)
513 599-001	Intel Pentium T4200 2.0-GHz processor (1-MB L2 cache, 800-MHz FSB)
513775-001	Battery, 6-cell, 2.20-Ah, 47-Wh
517832-001	GM45 UMA system board (includes Digital Media Slot and replacement thermal material)
517833-001	GM47 UMA system board (includes Digital Media Slot and replacement thermal material)
517834-001	GM47 UMA system board (includes Digital Media Slot, HDMI port, and replacement thermal material)
517835-001	GL40 UMA system board (includes Digital Media Slot, HDMI port, and replacement thermal material)
517836-001	GL40 UMA system board (includes Digital Media Slot and replacement thermal material)
517837-001	PM45 Discrete system board (includes Digital Media Slot, HDMI port, and replacement thermal material)
517838-001	PM45 Discrete system material (includes Digital Media Slot, and replacement thermal material)
517839-001	GM45 UMA system board (includes Digital Media Slot, HDMI port, and replacement thermal material)
517842-001	High Definition display panel with both display panel and backlight cables (for use only with 16-in computer)
517843-001	1-GB memory module (PC2-6400, 667-MHz, DDR2)
517844-001	2-GB memory module (PC2-6400, 800-MHz, DDR2)
517845-001	160-GB hard drive
517846-001	250-GB hard drive
517847-001	320-GB hard drive
517848-001	500-GB hard drive

(Continued)

Spare part number	Description number
517850-001	DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive with LightScribe
517852-001	Blu-ray ROM with LightScribe DVD±RW SuperMulti Double-Layer Drive
517865-001	Keyboard for use in the United States (includes keyboard cable)
517865-031	Keyboard for use in the United Kingdom (includes keyboard cable)
517865-041	Keyboard for use in Germany (includes keyboard cable)
517865-051	Keyboard for use in France (includes keyboard cable)
517865-061	Keyboard for use in Italy (includes keyboard cable)
517865-071	Keyboard for use in Spain (includes keyboard cable)
517865-091	Keyboard for use in Norway (includes keyboard cable)
517865-121	Keyboard for use in Canada (includes keyboard cable)
517865-131	Keyboard for use in Portugal (includes keyboard cable)
517865-141	Keyboard for use in Turkey (includes keyboard cable)
517865-151	Keyboard for use in Greece (includes keyboard cable)
517865-161	Keyboard for use in Latin America (includes keyboard cable)
517865-171	Keyboard for use in Saudi Arabia s (includes keyboard cable)
517865-201	Keyboard for use in Brazil (includes keyboard cable)
517865-211	Keyboard for use in Hungary (includes keyboard cable)
517865-221	Keyboard for use in the Czech Republic (includes keyboard cable)
517865-251	Keyboard for use in Russia (includes keyboard cable)
517865-281	Keyboard for use in Thailand (includes keyboard cable)
517865-291	Keyboard for use in Japan (includes keyboard cable)
517865-A41	Keyboard for use in Europe (includes keyboard cable)
517865-AB1	Keyboard for use in Taiwan (includes keyboard cable)
517865-AD1	Keyboard for use in South Korea (includes keyboard cable)
517865-B31	Keyboard for international use (includes keyboard cable)
517865-BB1	Keyboard for use in Israel (includes keyboard cable)
517865-BG1	Keyboard for use in Switzerland (includes keyboard cable)
518436-001	Atheros 802.11 b/g/n WLAN module for use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States

(Continued)

Spare part number	Description number
518436-002	Atheros 802.11 b/g/n WLAN module for use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kiribati, Kuwait, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, Qatar, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Syria, Taiwan, Tajikistan, Tanzania, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe
518437-001	Atheros 802.11 a/b/g/n WLAN module for use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States
518437-002	Atheros 802.11 a/b/g/n WLAN module for use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kiribati, Kuwait, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, Qatar, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Syria, Taiwan, Tajikistan, Tanzania, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe
519898-001	Intel Celeron-M 585 2.0-GHz processor (1-MB L2 cache, 667-MHz FSB)
530977-001	16-in HD, light-emitting diode display assembly for Presario CQ61 computer models (includes webcam and cable, microphone and cable, and logo)
530978-001	15.6-in HD, light-emitting diode display assembly for Presario CQ61 computer models (includes webcam and cable, microphone and cable, and logo)
530979-001	15.6-in HD, light-emitting diode display assembly for Presario CQ61 computer models (includes microphone and cable, and logo)

(Continued)

Spare part number	Description number
530981-001	16-in HD, light-emitting diode display assembly for HP G61 computer models (includes webcam and cable, microphone and cable, and logo)
530982-001	15.6-in HD, light-emitting diode display assembly for HP G61 computer models (includes webcam and cable, microphone and cable, and logo)
530983-001	15.6-in HD, light-emitting diode display assembly for HP G61 computer models (includes microphone and cable, and logo)
530989-001	Display enclosure for use with Presario CQ61 computer models
530990-001	Display enclosure for use with HP G61 computer models
530992-001	Display bezel for use with 15.6-in HP G61 display panel (includes microphone)
530993-001	Display Hinge Kit (includes left and right display hinges)
530995-001	Display panel bracket (includes left and right brackets) for use with 15.6-in display panel
530996-001	Display panel bracket (includes left and right brackets) for use with 16-in display panel
530999-001	Display Rubber Kit (includes display bezel rubber screw covers)
531201-001	Display Screw Kit
531202-001	Display webcam module (without cable)
531203-001	Microphone with cable
531204-001	Hard Drive Hardware Kit (includes connector, bracket, and screws)
531205-001	Base enclosure for use only with computer models equipped with a Digital Media Slot and HDMI port
531206-001	Power button board
531207-001	Switch cover
531208-001	Audio board (includes audio board cable)
531209-001	Speakers for use in all countries and regions except India (includes left and right speakers and cables)
521210-001	Fan/heat sink assembly for use with UMA systems (includes replacement thermal material)
531211-001	Cable Kit
531212-001	Screw Kit
531213-001	Rubber Kit (includes 6 rubber feet)
531215-001	Power button board
531216-001	HD display panel for use only with 16-in display
531220-001	Fan/heat sink assembly for use with discrete systems (includes replacement thermal material)
531517-001	Plastics Kit
531866-001	USB board
532324-001	Celeron T1600 1.66-GHz processor (1-MB L2 cache, 667-MHz FSB)
533465-001	Power connector cable
534077-001	Display Cable Kit
534078-001	Display bezel for use only with 16-in HP G61 computer models (includes microphone and webcam)
534084-001	Celeron T1700 1.83-GHz processor (1-MB L2 cache, 667-MHz FSB)
534419-001	Celeron 900 2.20-GHz processor (1-MB L2 cache, 667-MHz FSB)
534992-001	Display bezel for use only with 15.6-in HP G61 computer models (includes microphone)

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Spare part number	Description number
534993-001	Display bezel for use with 15.6-in Presario CQ-61 computer models (includes microphone and webcam)
534994-001	Display bezel for use with 16-in Presario CQ-61 computer models (includes microphone and webcam)
534995-001	Display bezel for use only with 15.6-in Presario CQ-61 computer models (includes microphone)
537850-001	Power connector cable
537851-001	TouchPad on/off button board (includes cables)
537852-001	TouchPad
570246-001	GL40 UMA system board for use with select UMA computer models (includes built-in modem, Digital Media Slot, HDMI port and replacement thermal material)
572082-001	Speakers (include left and right speakers and cables) for use in India only
573076-001	Intel Core2 Duo P7550 2.26-GHz processor (3-MB L2 cache, 1066-MHz FSB)
572928-001	Intel Core2 Duo T6500 2.10-GHz processor (3-MB L2 cache, 1066-MHz FSB)

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.



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

Plastic parts



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

Cables and connectors



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

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

Drive handling



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

- Before removing or inserting a hard drive, shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
 - Before handling a drive, be sure that you are discharged of static electricity. While handling a drive, avoid touching the connector.
 - Before removing a diskette drive or optical drive, be sure that a diskette or disc is not in the drive and be sure that the optical drive tray is closed.
 - Handle drives on surfaces covered with at least one inch of shock-proof foam.
 - Avoid dropping drives from any height onto any surface.
 - After removing a hard drive, an optical drive, or a diskette drive, place it in a static-proof bag.
 - Avoid exposing a hard drive to products that have magnetic fields, such as monitors or speakers.
 - Avoid exposing a drive to temperature extremes or liquids.
 - If a drive must be mailed, place the drive in a bubble pack mailer or other suitable form of protective packaging and label the package "FRAGILE."
-

Grounding guidelines

Electrostatic discharge damage

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

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

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



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

- Keep components in their electrostatic-safe containers until you are ready to install them.
 - Use nonmagnetic tools.
 - Before touching an electronic component, discharge static electricity by using the guidelines described in this section.
 - Avoid touching pins, leads, and circuitry. Handle electronic components as little as possible.
 - If you remove a component, place it in an electrostatic-safe container.
-

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



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

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

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

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

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

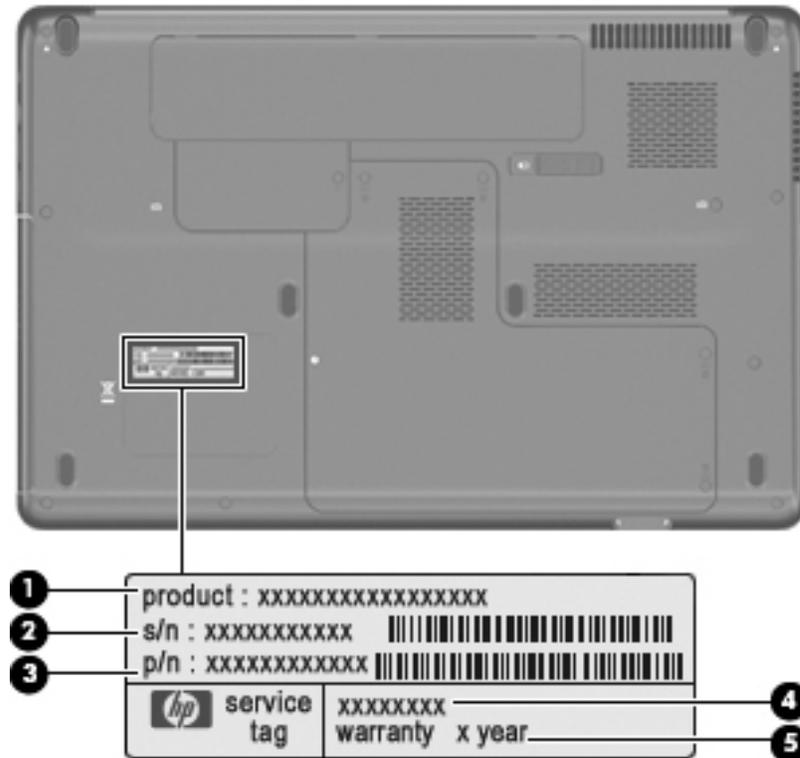
Component replacement procedures

This chapter provides removal and replacement procedures.

There are as many as 62 screws, in 7 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

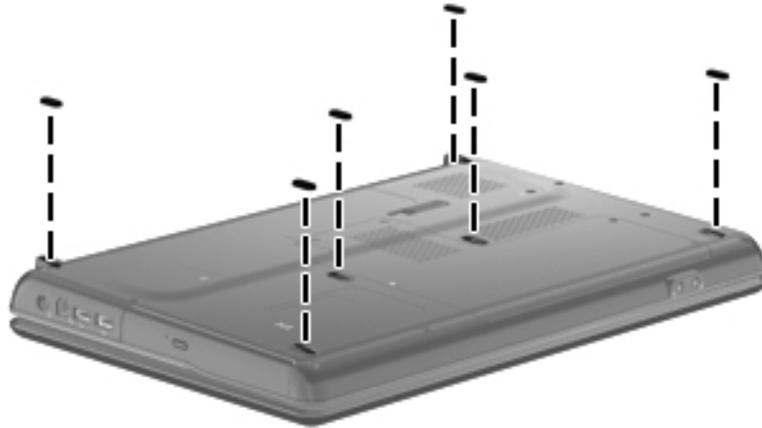
When ordering parts or requesting information, provide the computer serial number and model number located on the service tag.



Item	Component	Description
❶	Product name	This is the product name affixed to the front of the computer.
❷	Serial number (s/n)	This is an alphanumeric identifier that is unique to each product.
❸	Part number/Product number (p/n)	This number provides specific information about the product's hardware components. The part number helps a service technician to determine what components and parts are needed.
❹	Model description	This is the alphanumeric identifier used to locate documents, drivers, and support for the computer.
❺	Warranty period	This number describes the duration of the warranty period for the computer.

Computer feet

The computer feet are adhesive-backed rubber pads. The feet are included in the Rubber Kit, spare part number 531213-001. There are 6 rubber feet that attach to the base enclosure in the locations illustrated below.



Battery

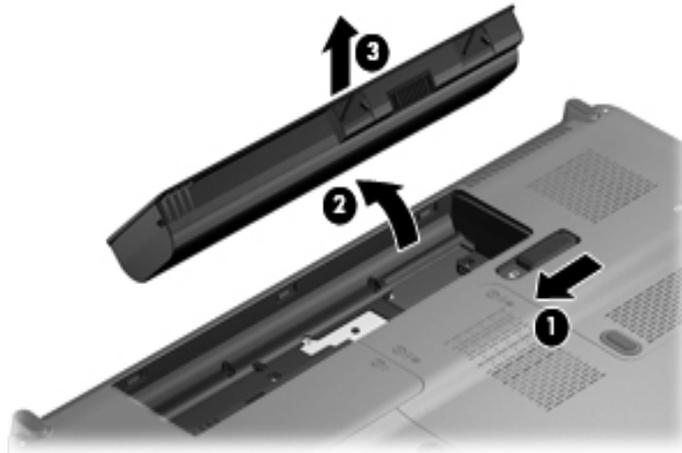
Description	Spare part number
6 cell, 2.20-Ah, 47-Wh battery	513775-001

Before disassembling the computer, follow these steps:

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

Remove the battery:

1. Turn the computer upside down on a flat surface, with the battery bay toward you.
2. Slide the battery release latch **1** to release the battery.
3. Pivot the battery **2** upward and remove it **3** from the computer.



Install the battery by inserting it into the battery bay and pressing it down until you hear a click.

Optical drive



The optical drive spare part kit includes an optical drive bezel and optical drive bracket.

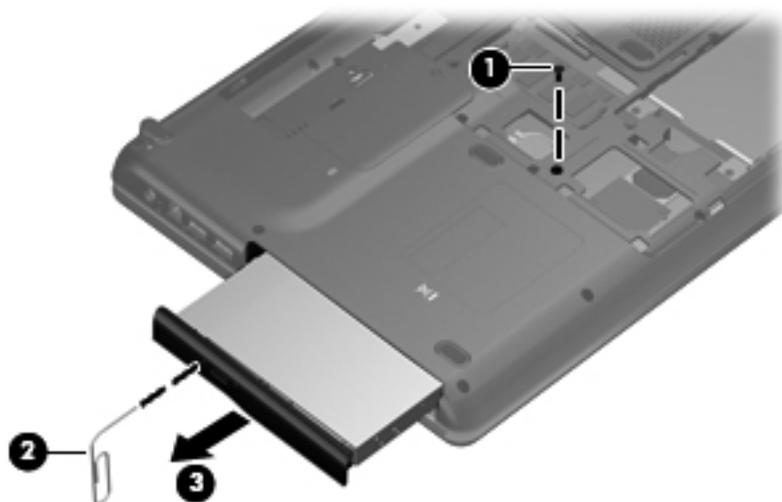
Description	Spare part number
DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive with LightScribe	517850-001
Blu-ray ROM with LightScribe DVD±R/RW SuperMulti Double-Layer Drive	517852-001

Before removing the optical 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 4-7).

Remove the optical drive:

1. Position the computer with the left side toward you.
2. Remove the Phillips PM2.5×7.0 screw ❶ that secures the optical drive to the computer.
3. If needed, insert a thin tool, such as a paper clip ❷, into the release access. (The disc tray is partially ejected from the optical drive.)
4. Grasp the bezel and slide the optical drive ❸ out of the computer.



5. If it is necessary to replace the optical drive bracket, position the optical drive with the rear toward you.
6. Remove the 2 Phillips PM2.0×3.0 screws ❶ that secure the optical drive bracket to the optical drive.
7. Remove the optical drive bracket ❷.



Reverse this procedure to reassemble and install an optical drive.

Hard drive



The hard drive spare part kit includes a hard drive bracket and hard drive connector. The hard drive bracket and hard drive connector, as well as the hard drive bracket screws, are also available in the Hard Drive Hardware Kit.

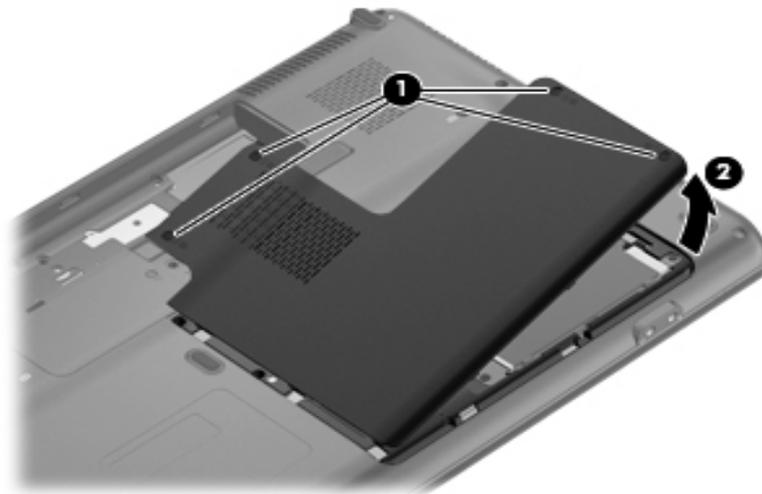
Description	Spare part number
500-GB, 5400-rpm hard drive	517848-001
320-GB, 5400-rpm hard drive	517847-001
200-GB, 5400-rpm hard drive	517846-001
160-GB, 5400-rpm hard drive	517845-001
Hard Drive Hardware Kit	531204-001

Before removing the hard drive, follow these steps:

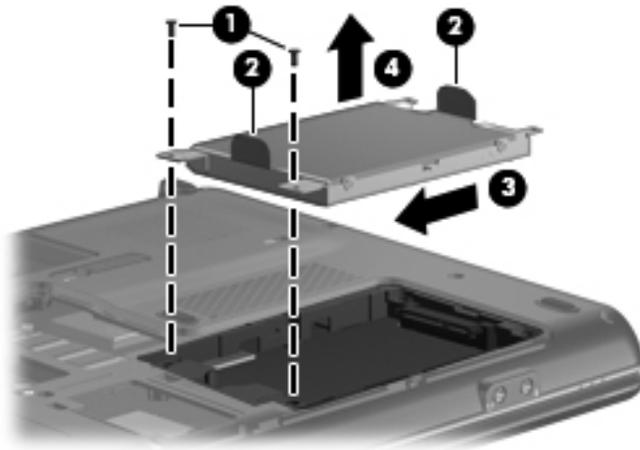
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [“Battery” on page 4-7](#)).

Remove the hard drive:

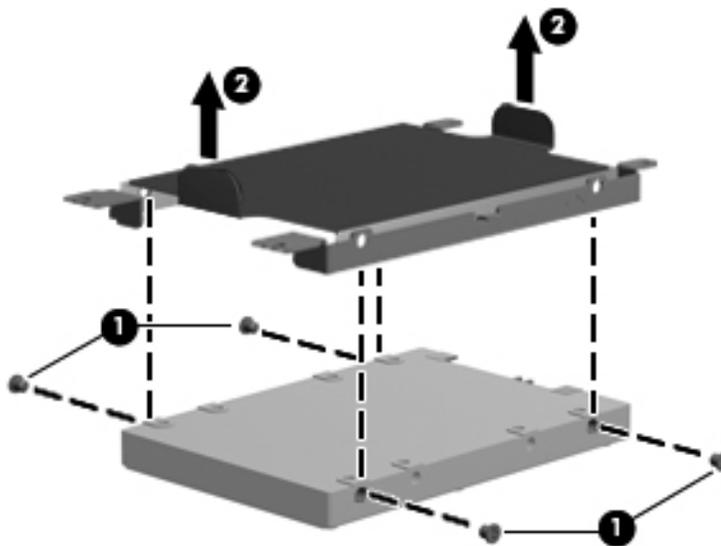
1. Loosen the 4 Phillips PM2.5×6.0 captive screws ❶ that secure the hard drive cover to the computer.
2. Lift the right side of the hard drive cover ❷, swing it up and to the left, and remove the cover. The hard drive cover is included in the Plastics Kit, spare part number 531517-001.



3. Remove the 2 Phillips PM2.5×7.0 screws ❶ that secure the hard drive to the computer.
4. Grasp the Mylar tabs ❷ on the hard drive, and then slide the hard drive to the left to disconnect it from the system board ❸.
5. Remove the hard drive ❹ from the hard drive bay.



6. If it is necessary to replace the hard drive bracket, remove the 2 Phillips PM3.0×4.0 hard drive bracket screws ❶ from each side of the hard drive.
7. Grasp the 2 attached Mylar tabs ❷ and pull the bracket straight up to remove it from the hard drive.



Reverse this procedure to reassemble and install the hard drive.

RTC battery

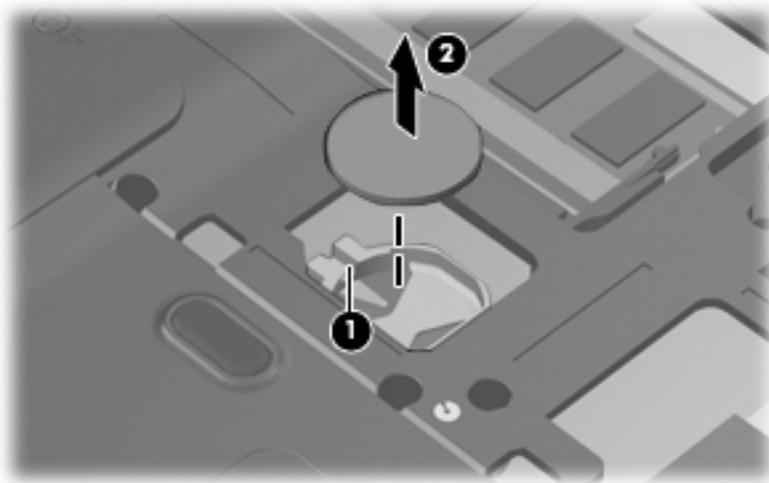
Description	Spare part number
RTC battery	449729-001

Before removing the battery, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (“Battery” on page 4-7).
5. Remove the hard drive cover (see “Hard drive” on page 4-10).

Remove the RTC battery:

1. Use a sharp, non-conductive tool to release the clip ❶ that secures the battery to the system board.
2. Lift the battery ❷ out of the computer.



Reverse this procedure to install the RTC battery.

Memory module

Description	Spare part number
Memory module, 1-GB, PC2-6400	517843-001
Memory module, 2-GB, PC2-6400	517844-001

Before removing the memory module, follow these steps:

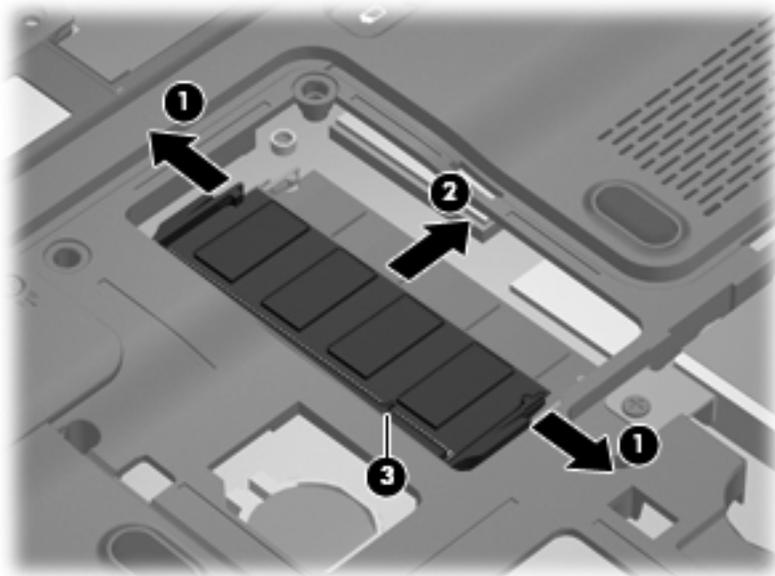
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [“Battery” on page 4-7](#)).
5. Remove hard drive cover (see [“Hard drive” on page 4-10](#)).

Remove the memory module:

1. Spread the retaining tabs **1** away from the memory module. (The edge of the module opposite the slot rises away from the computer.)
2. Remove the memory module **2** by pulling the module away from the slot at an angle.



Memory modules are designed with a notch **3** to prevent incorrect insertion into the memory module slot.



Reverse this procedure to install a memory module.

Wireless module

Description	Spare part number
Atheros AR2425 802.11b/g WLAN module	459339-003
Atheros AR2425 802.11b/g WLAN module	459339-004
Broadcom BCM4312 802.11b/g WLAN module	459263-001
Broadcom BCM4312 802.11b/g WLAN module	459263-002
Atheros AR9280 802.11a/b/g/n WLAN module	482260-001
Atheros AR9280 802.11a/b/g/n WLAN module	482260-002
Intel Wi-Fi 5100 802.11 a/b/g WLAN module	482957-001
Intel Wi-Fi 5100 802.11 a/b/g/n WLAN module	480985-001
Atheros 802.11 b/g/n WLAN module	518436-001
Atheros 802.11 b/g/n WLAN module	518436-002
Atheros 802.11 a/b/g/n WLAN module	518437-001
Atheros 802.11 a/b/g/n WLAN module	518437-002

Before removing the WLAN module, follow these steps:

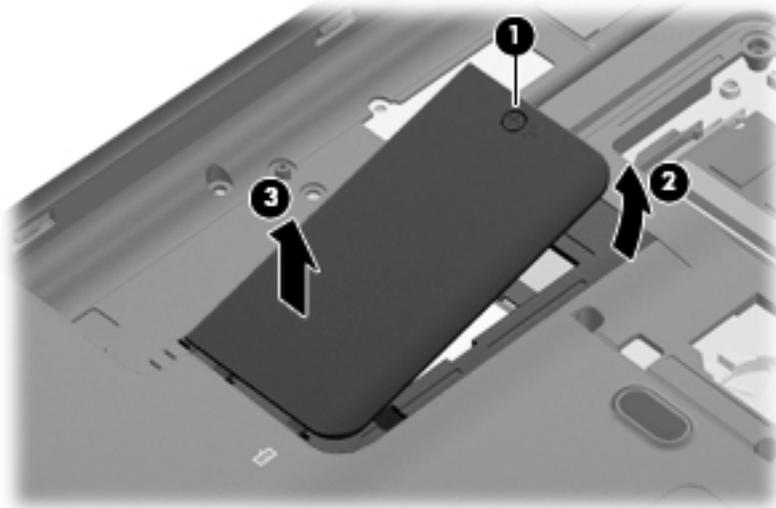
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [“Battery” on page 4-7](#)).

Remove the wireless module:



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

1. Loosen the Phillips PM2.5×6.0 captive screw ❶ that secures the wireless compartment cover to the computer.
2. Lift the right side of the cover ❷, swing it to the left, and lift up to remove it ❸. The wireless compartment cover is included in the Plastics Kit, spare part number 531517-001.

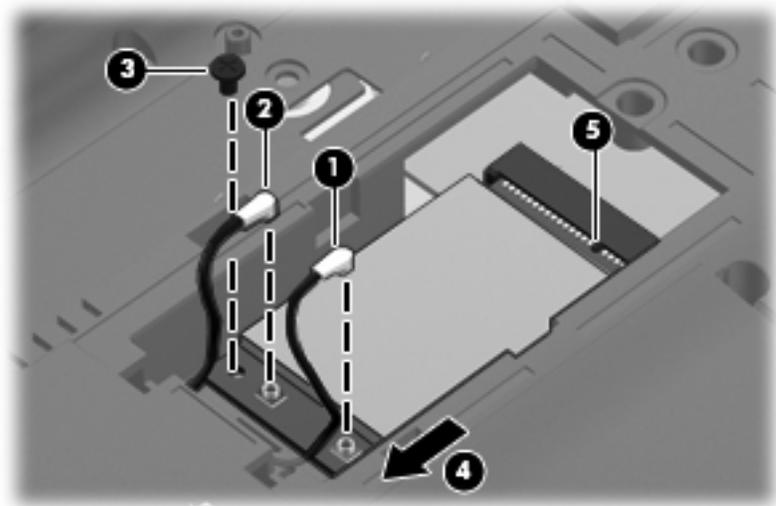


3. Disconnect the main antenna cable ❶ and the auxiliary antenna cable ❷ from the wireless module.

 The black WLAN antenna cable (marked “1”) is connected to the WLAN module “Main” terminal. The white WLAN antenna cable (marked “2”) is connected to the WLAN module “Aux” terminal.

4. Remove the Phillips PM2.0×3.0 screw ❸ that secures the WLAN module to the computer. (The edge of the module opposite the slot rises away from the computer.)
5. Remove the WLAN module ❹ by pulling the module away from the slot at an angle.

 WLAN modules are designed with a notch ❺ to prevent incorrect insertion.



Reverse this procedure to install the wireless module.

Modem

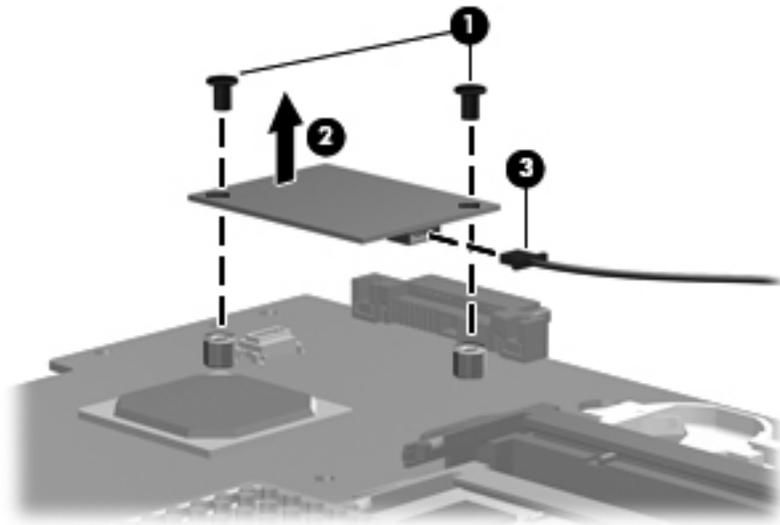
Description	Spare part number
Modem 56K V.92 data/fax modem (select models only, for use in the United States)	510100-001
Modem 56K V.92 data/fax modem (select models only, for use in Australia)	510100-011

Before removing the modem, 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 4-7](#))
5. Remove the hard drive cover (see [“Hard drive” on page 4-10](#)).

Remove the modem:

1. Remove the 2 Phillips PM2.0×3.0 screws ❶ that secure the modem to the computer.
2. Lift up the modem from the computer ❷ and disconnect the modem cable ❸ from the modem.



Reverse this procedure to install the modem.

Keyboard

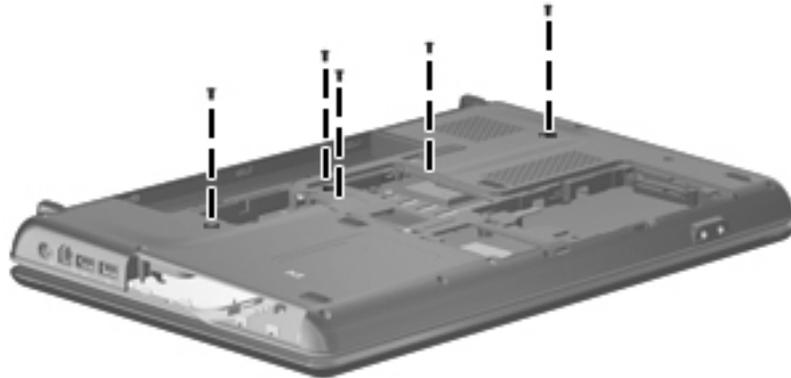
Description	Spare part number
Keyboard for use in Belgium	517865-A41
Keyboard for use in Brazil	517865-201
Keyboard for use in Canada	517865-121
Keyboard for use in the Czech Republic	517865-221
Keyboard for use in France	517865-051
Keyboard for use in Germany	517865-041
Keyboard for use in Greece	517865-151
Keyboard for use in Hungary	517865-211
Keyboard for International use	517865-B31
Keyboard for use in Israel	517865-BB1
Keyboard for use in Italy	517865-061
Keyboard for use in Japan	517865-291
Keyboard for use in Norway	517865-091
Keyboard for use in Latin America	517865-161
Keyboard for use in Portugal	517865-131
Keyboard for use in Russia	517865-251
Keyboard for use in Saudi Arabia	517865-171
Keyboard for use in South Korea	517865-AD1
Keyboard for use in Spain	517865-071
Keyboard for use in Switzerland	517865-111
Keyboard for use in Thailand	517865-281
Keyboard for use in Taiwan	517865-AB1
Keyboard for use in Turkey	517865-141
Keyboard for use in the United Kingdom	517865-031
Keyboard for use in the United States	517865-001

Before removing the keyboard, follow these steps:

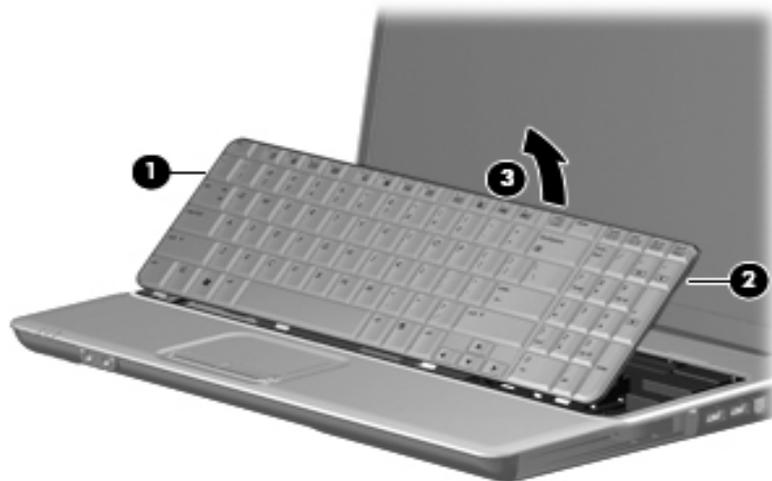
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery ([“Battery” on page 4-7](#)).
5. Remove the hard drive cover (see [“Hard drive” on page 4-10](#)).
6. Remove the hard wireless module cover (see [“Wireless module” on page 4-14](#)).

Remove the keyboard:

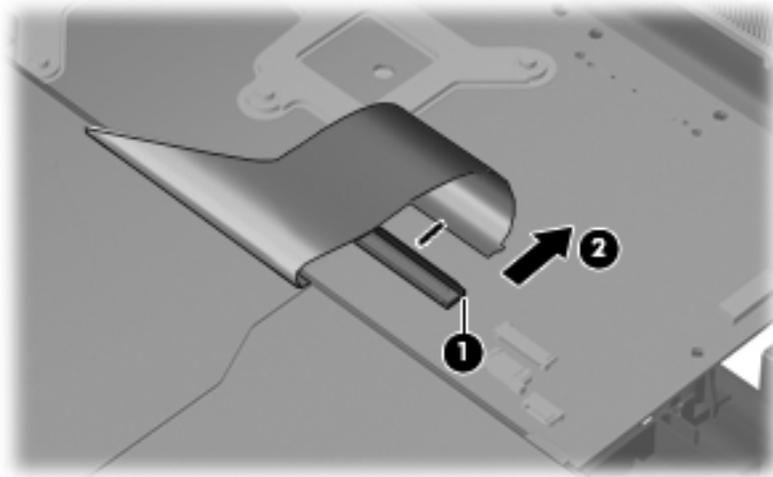
1. Turn the computer upside down, with the front toward you.
2. Remove the 5 Phillips PM2.5×7.0 screws that secure the keyboard to the computer.



3. Turn the computer right-side up, with the front toward you.
4. Open the computer as far as possible.
5. Release the tabs along the left **1** and right **2** edges of the keyboard using a thin flat-bladed screwdriver.
6. Lift the rear edge of the keyboard **3**, and rotate it forward until it rests upside down on the TouchPad.



7. Release the zero insertion force (ZIF) connector ❶ to which the keyboard cable is attached, and then disconnect the keyboard cable ❷ from the system board.



8. Remove the keyboard.

Reverse this procedure to install the keyboard.

Switch cover

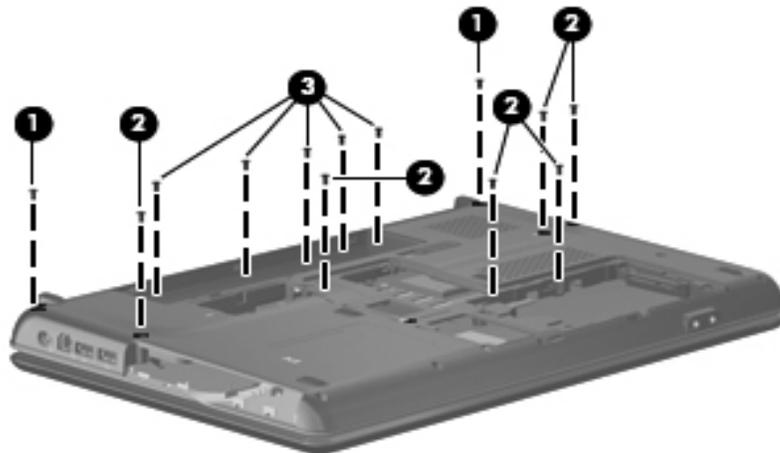
Description	Spare part number
Switch cover	531207-001

Before removing the switch 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 (“[Battery](#)” on page 4-7).
5. Remove the hard drive (“[Hard drive](#)” on page 4-10).
6. Remove the wireless module (“[Wireless module](#)” on page 4-14).
7. Remove the keyboard (“[Keyboard](#)” on page 4-17).

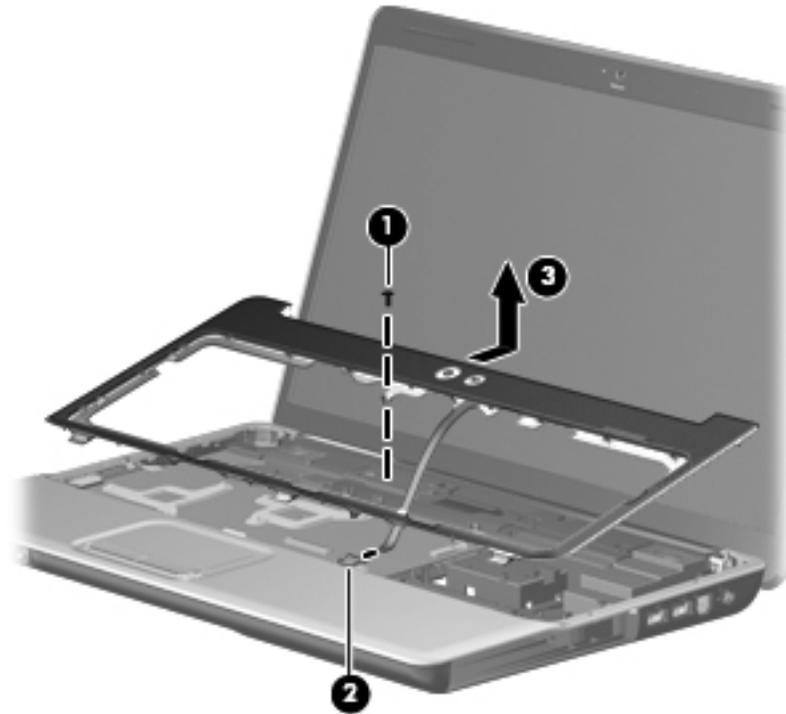
Remove the switch cover:

1. In the battery bay, remove the 2 Phillips PM 2.5×8.0 screws ❶, 6 Phillips PM2.5×7.0 screws ❷, and the 5 Phillips PM2.5×5.0 screws ❸ that secure the cover to the computer. The switch cover screws are identified by a triangle icon embossed on the base enclosure.



2. Turn the computer right-side up, with the front toward you.
3. Open the computer as far as possible.

4. Remove the Phillips PM2.5×6.0 screw ❶ that secures the switch cover to the computer.
5. Release the ZIF connector cable ❷ .
6. Slide the switch cover ❸ toward the display panel until it disengages from the top cover, and then lift up to remove the switch cover.



Reverse this procedure to install the switch cover.

Power button board

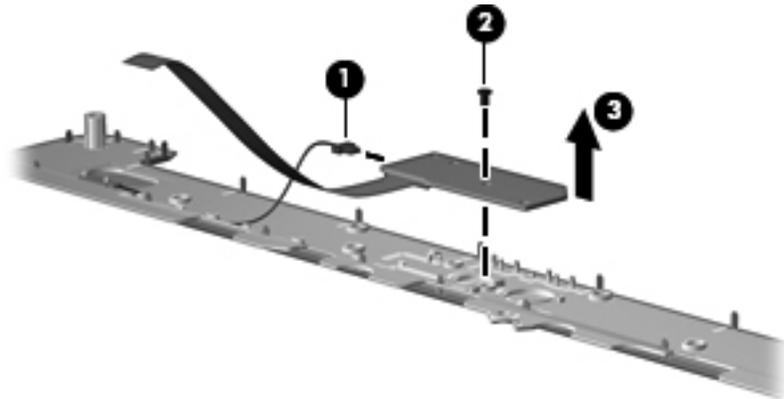
Description	Spare part number
Power button board	531215-001

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 4-7](#)).
5. Disconnect the wireless antenna cables from the wireless module (see [“Wireless module” on page 4-14](#)).
6. Remove the keyboard (see [“Keyboard” on page 4-17](#)).
7. Remove the switch cover (see [“Switch cover” on page 4-20](#)).

Remove the power button board:

1. Disconnect the power button board cable ❶ from the power button board.
2. Remove the Phillips PM2.0×3.0 screw ❷ that secures the power button board to the switch cover.
3. Remove the power button board ❸.



Reverse this procedure to install the power button board.

Display assembly

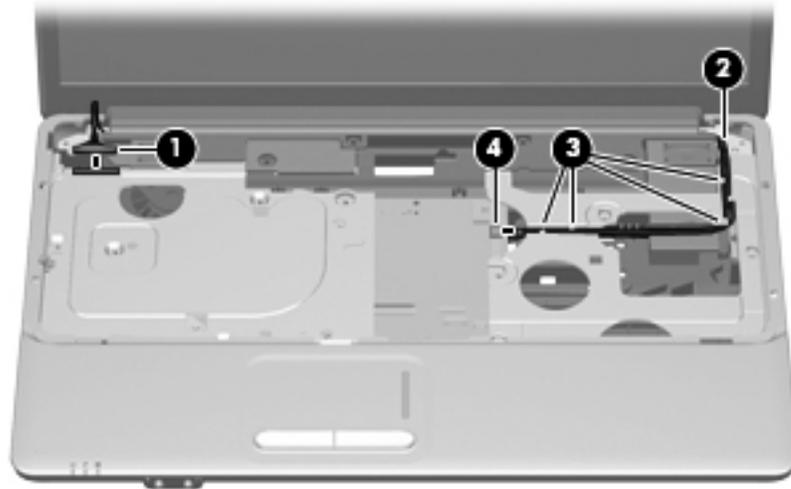
Description	Spare part number
16-inch High Definition, light-emitting diode display assembly for HP G61 computer models (includes webcam module and cable, 2 WLAN antenna transceivers and cables, microphone and cable, and logo)	530981-001
16-inch High Definition, light-emitting diode display assembly for Presario G61 computer models (includes webcam module and cable, 2 WLAN antenna transceivers and cables, microphone and cable, and logo)	530977-001
15.6-inch High Definition, light-emitting diode display assembly for Presario CQ61 computer models (includes microphone and cable, and logo)	530979-001
15.6-inch High Definition, light-emitting diode display assembly for Presario CQ61 computer models (includes webcam module and cable, 2 WLAN antenna transceivers and cables, microphone and cable, and logo)	530978-001
15.6-inch High Definition, light-emitting diode display assembly for HP G61 computer models (includes microphone and cable, and logo)	530983-001
15.6-inch High Definition, light-emitting diode display assembly for HP G61 computer models (includes webcam module and cable, 2 WLAN antenna transceivers and cables, microphone and cable, and logo)	530982-001

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 4-7](#)).
5. Disconnect the wireless antenna cables from the wireless module (see [“Wireless module” on page 4-14](#)).
6. Remove the keyboard (see [“Keyboard” on page 4-17](#)).
7. Remove the switch cover (see [“Switch cover” on page 4-20](#)).

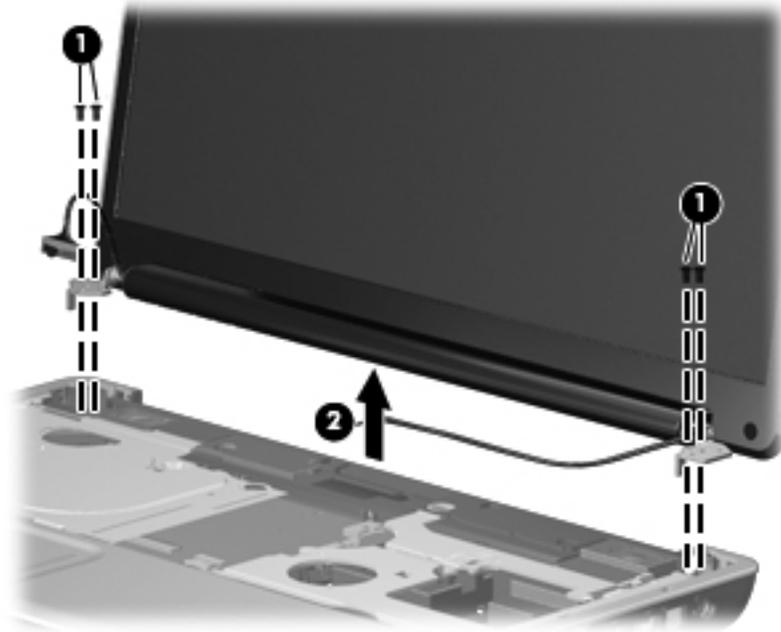
Remove the display assembly:

1. Pull the antenna cables through the opening in the top cover ❶ and disengage the cables from the clip in the routing channel leading to the display hinge.
2. Disconnect the display panel cable ❷ from the system board and remove it from its routing channel.
3. Disconnect the microphone cable ❸ from the system board and release it from the clips that attach it to the top cover.
4. Remove the caps lock LED ❹ from its mounting clips on the top cover.

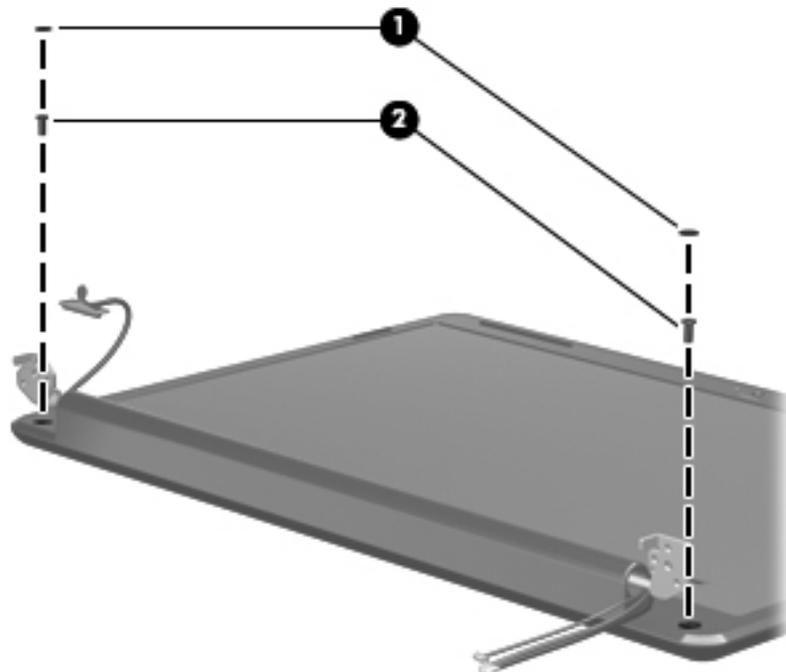


CAUTION: Support the display assembly when removing the following screws. Failure to support the display assembly can result in damage to the display assembly and other computer components.

5. Remove the 4 Phillips PM2.5×7.0 screws ❶ securing the display hinges to the computer.
6. Lift the display panel ❷ straight up to remove it.



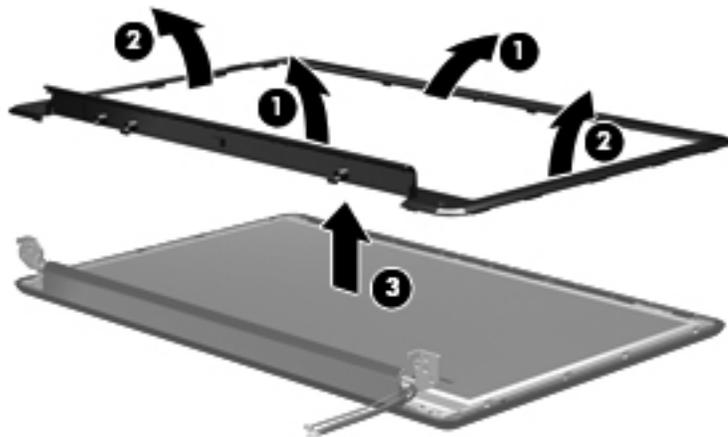
7. If it is necessary to replace the display bezel or any of the display assembly internal components, remove the following screw covers and screws:
 - ❶ Two rubber screw covers on the display bezel bottom edge. The display rubber screw covers are included in the Display Rubber Kit, spare part number 530999-001.
 - ❷ Two Phillips PM2.5×7.0 screws on the display bezel bottom edge.



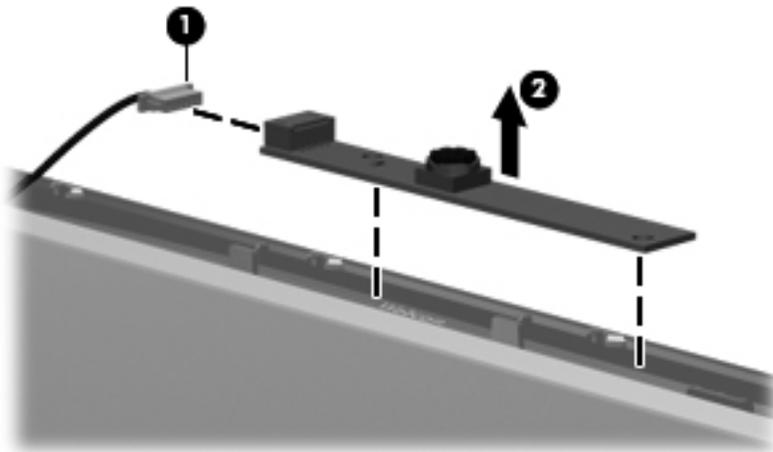
8. Flex the inside edges of the bezel at the top and bottom ①, and the left and right sides ②, until the bezel disengages from the display enclosure.
9. Remove the display bezel ③.

The following display bezels are available:

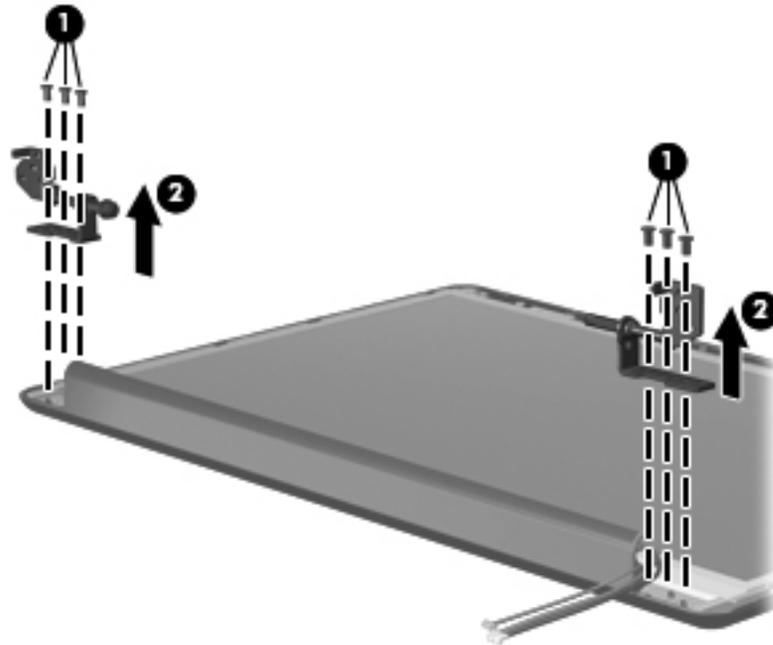
- ❑ For use only with 16-inch HP G61 computer models equipped with a webcam module and microphone, spare part number 530478-001.
- ❑ For use only with 16-inch Presario CQ61 computer models equipped with a webcam module and microphone, spare part number 534994-001.
- ❑ For use only with 15.6-inch HP G61 computer models equipped with a webcam module and microphone, spare part number 530992-001.
- ❑ For use only with 15.6-inch HP G61 computer models equipped with a microphone, spare part number 534992-001.
- ❑ For use only with 15.6-inch Presario CQ61 computer models equipped with a webcam module and microphone, spare part number 534993-001.
- ❑ For use only with 15.6-inch Presario CQ61 computer models equipped with a microphone, spare part number 534995-001.



10. If it is necessary to replace the webcam module, lift the webcam module as far from the display enclosure as the webcam module cable allows.
11. Disconnect the webcam module cable ① from the webcam module, and remove the webcam module ②. The webcam module is available using spare part number 531202-001.



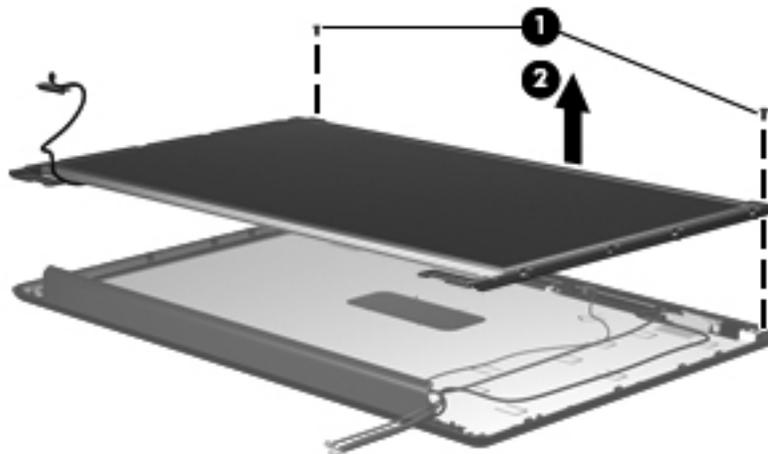
12. If it is necessary to replace the display hinges, remove the 3 Phillips PM2.5×6.0 screws ❶ that secure each hinge to the display enclosure.
13. Remove the display hinges ❷. The display hinges are available in the Display Hinge Kit, spare part number 530993-001.



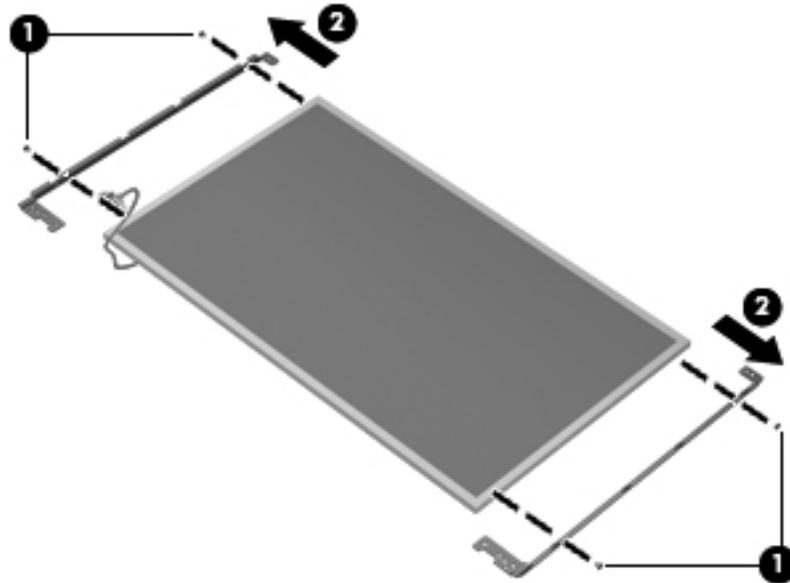
14. If it is necessary to replace the display panel, remove the 2 Phillips PM2.5×6.0 screws ❶ that secure the display panel to the display enclosure.
15. Remove the display panel ❷ from the display enclosure.

The following display panels are available:

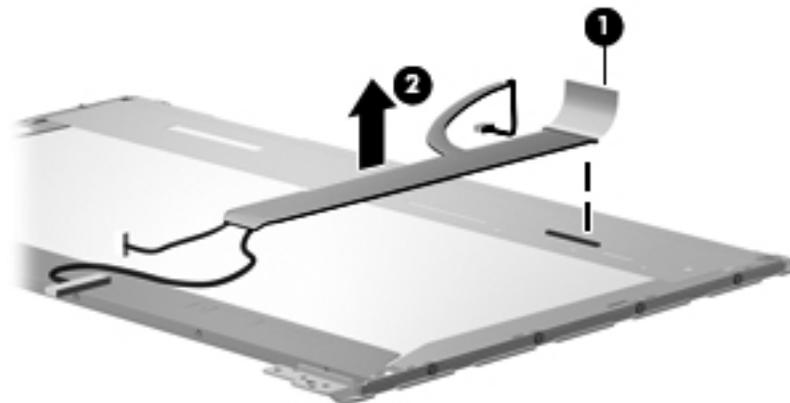
- ❑ For use with 16-inch display, spare part number 531216-001
- ❑ For use with 15.6-inch display, spare part number 517842-001.



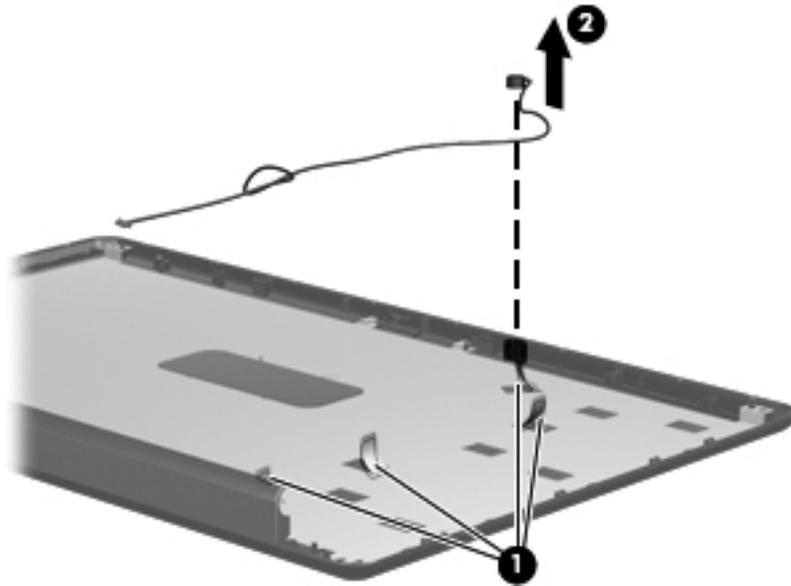
16. If it is necessary to replace the display panel brackets, remove the 2 Phillips PM2.0×3.0 screws ❶ that secure each bracket to the display panel.
17. Remove the display panel brackets ❷ from the display panel. The display panel brackets for the 16-inch display are available using spare part number 530996-001, and for the 15.6-inch display using spare part number 530995-001.



18. If it is necessary to replace the display panel cable, which is attached to the back of the display panel with clear adhesive tape ❶ to release the cable from its connector. The display panel cable kit includes the camera module cable and is available using spare part number 534077-001.
19. Remove display panel cable ❷.



20. If it is necessary to replace the microphone, release the microphone from its mounting clips ❶.
21. Lift and remove the microphone cable ❷. The microphone with cable is available using spare part number 531203-001.



Reverse this procedure to reassemble and install the display assembly.

Top cover

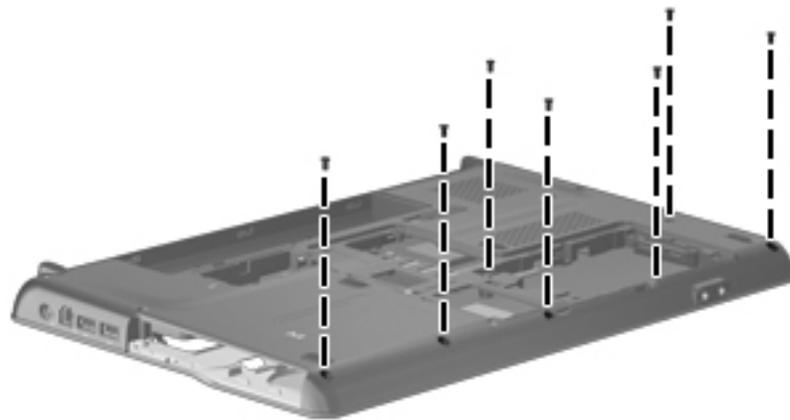
Description	Spare part number
Top cover (includes TouchPad, and button board)	531206-001

Before removing the top cover, follow these steps:

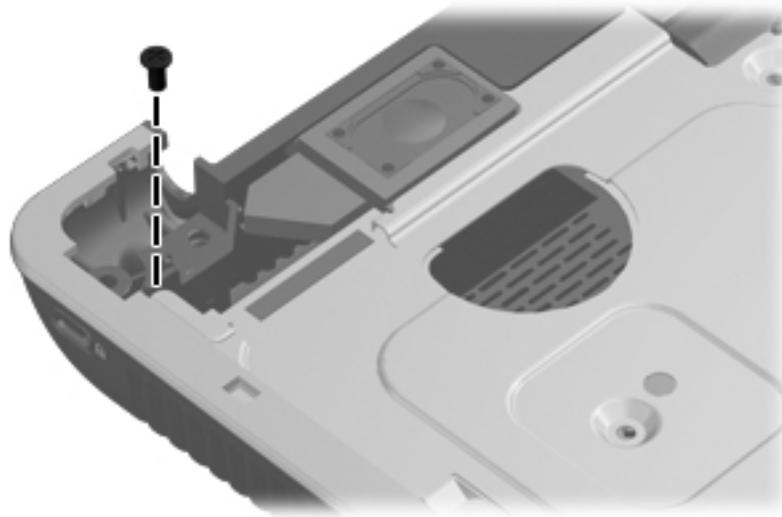
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [“Battery” on page 4-7](#)).
5. Remove the following components:
 - a. Optical drive (see [“Optical drive” on page 4-8](#))
 - b. Hard drive (see [“Hard drive” on page 4-10](#))
 - c. Keyboard (see [“Keyboard” on page 4-17](#))
 - d. Switch cover (see [“Switch cover” on page 4-20](#))
 - e. Power button board (see [“Power button board” on page 4-22](#))
 - f. Display assembly (see [“Display assembly” on page 4-23](#))

Remove the top cover:

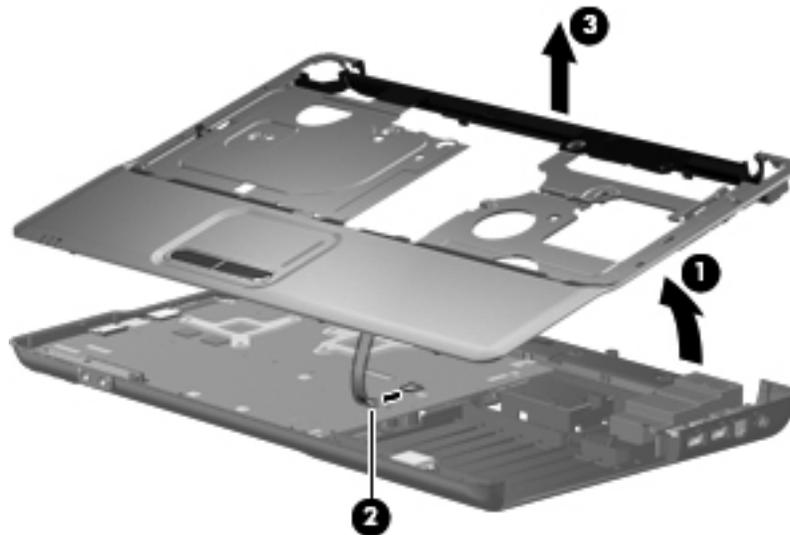
1. Turn the computer upside down, with the front toward you.
2. Remove the 7 Phillips PM2.5×7.0 screws that secure the top cover to the computer.



3. Turn the computer right-side up, with the front facing you.
4. Remove the Phillips PM2.5×6.0 screw that secures the top cover to the computer.



5. Lift the rear edge of the top cover ❶ until the top cover disengages from the base enclosure.
6. Release the LIF connector ❷ for the two TouchPad cables from the system board .
7. Remove the top cover ❸.



The TouchPad is glued to the top cover and is included with the top cover spare part.

Reverse this procedure to install the top cover.

Audio board

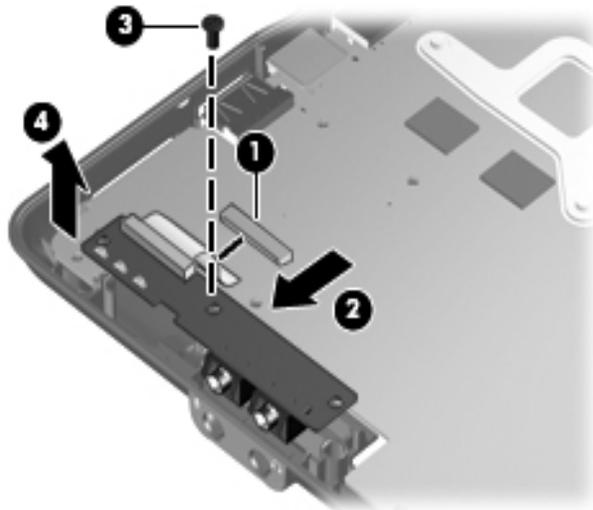
Description	Spare Part Number
Audio board (includes audio board cable)	531208-001

Before removing the audio 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 4-7](#)).
5. Remove the following components:
 - a. Optical drive (see [“Optical drive” on page 4-8](#))
 - b. Hard drive (see [“Hard drive” on page 4-10](#))
 - c. Keyboard (see [“Keyboard” on page 4-17](#))
 - d. Switch cover (see [“Switch cover” on page 4-20](#))
 - e. Power button board (see [“Power button board” on page 4-22](#))
 - f. Display assembly (see [“Display assembly” on page 4-23](#))

Remove the audio board:

1. Release the ZIF connector **1** to which the audio board cable is attached, and disconnect the audio board cable **2** from the system board.
2. Remove the Phillips PM2.5×6.0 screw **3** that secures the audio board to the base enclosure.
3. Remove the audio board **4**.



Reverse this procedure to install the audio board.

Speakers

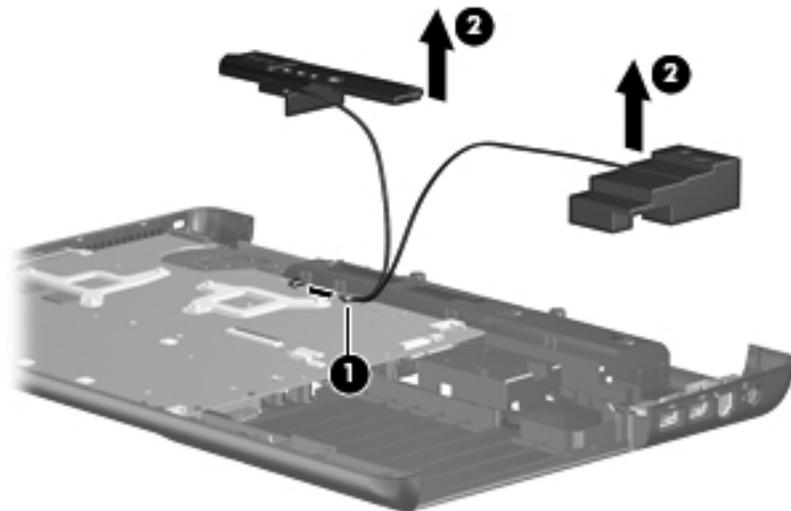
Description	Spare Part Number
Speakers for use in India only	572082-001
Speakers for use in all countries and regions except India	531209-001

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 4-7](#)).
5. Remove the following components:
 - a. Optical drive (see [“Optical drive” on page 4-8](#))
 - b. Hard drive see ([“Hard drive” on page 4-10](#))
 - c. Keyboard (see [“Keyboard” on page 4-17](#))
 - d. Switch cover (see [“Switch cover” on page 4-20](#))
 - e. Power button board (see [“Power button board” on page 4-22](#))
 - f. Display assembly (see [“Display assembly” on page 4-23](#))
 - g. Top cover (see [“Top cover” on page 4-30](#))

Remove the speakers:

1. Disconnect the speaker cable from the system board ❶.
2. Remove the speakers ❷.



Reverse this procedure to install the speakers.

USB board

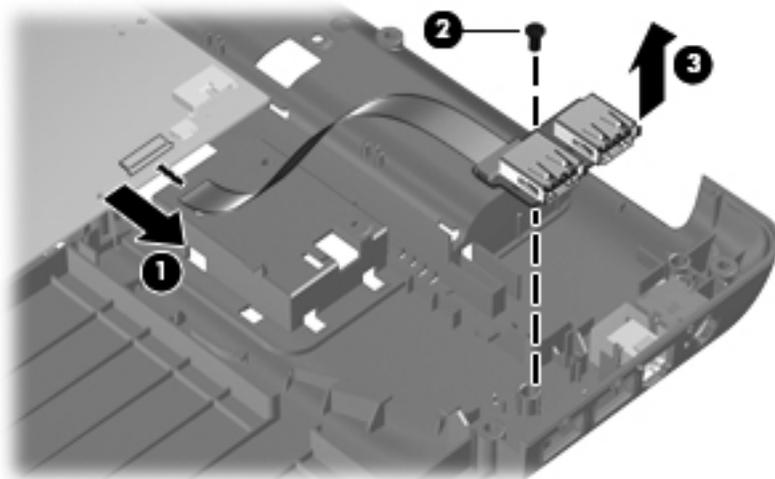
Description	Spare part number
USB board	531866-001

Before removing the USB 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 4-7](#)).
5. Remove the following components:
 - a. Optical drive see ([“Optical drive” on page 4-8](#))
 - b. Hard drive (see [“Hard drive” on page 4-10](#))
 - c. Keyboard (see [“Keyboard” on page 4-17](#))
 - d. Switch cover (see [“Switch cover” on page 4-20](#))
 - e. Power button board (see [“Power button board” on page 4-22](#))
 - f. Display assembly (see [“Display assembly” on page 4-23](#))
 - g. Top cover (see [“Top cover” on page 4-30](#))

Remove the USB board:

1. Disconnect the USB board cable ❶ from the system board.
2. Remove the Phillips PM2.5×60 screw ❷ from the system board.
3. Lift the USB board ❸ straight up to remove it from the computer.



Reverse this procedure to install a USB board.

Bluetooth module

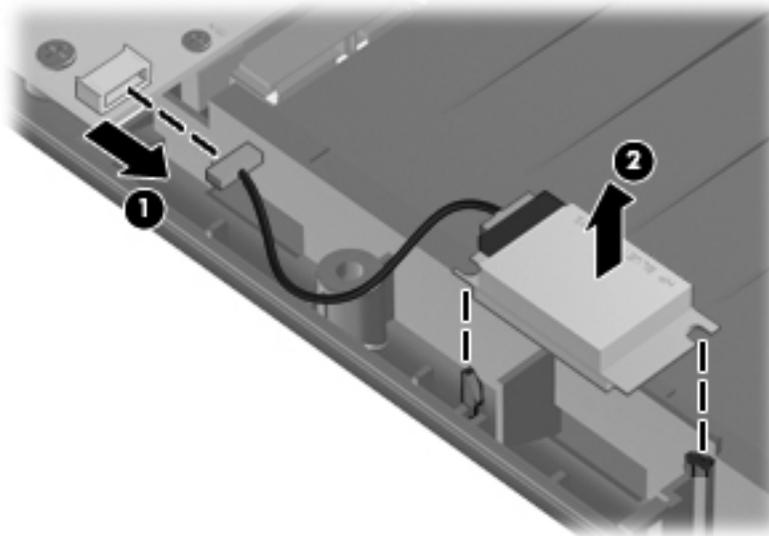
Description	Spare Part Number
Bluetooth module	483113-001
Bluetooth module cable	

Before removing the Bluetooth 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 4-7](#)).
5. Remove the following components:
 - a. Optical drive (see [“Optical drive” on page 4-8](#))
 - b. Hard drive (see [“Hard drive” on page 4-10](#))
 - c. Keyboard (see [“Keyboard” on page 4-17](#))
 - d. Switch cover (see [“Switch cover” on page 4-20](#))
 - e. Power button board (see [“Power button board” on page 4-22](#))
 - f. Display assembly (see [“Display assembly” on page 4-23](#))
 - g. Top cover (see [“Top cover” on page 4-30](#))

Remove the Bluetooth module:

1. Disconnect the Bluetooth module cable ❶ from the system board.
2. Remove the Bluetooth module ❷.



Reverse this procedure to install the Bluetooth module.

System board



The system board spare part kit includes UMA or discrete graphics subsystem memory, built-in modem, and replacement thermal material.

Description	Spare part number
GM45 UMA system board (built-in modem, Digital Media Slot, and replacement thermal material)	517832-001
GM45 UMA system board (built-in modem, Digital Media Slot, HDMI port, and replacement thermal material)	517839-001
GL40 UMA system board (built-in modem, Digital Media Slot, and replacement thermal material)	517836-001
GL40 UMA system board (built-in modem, Digital Media Slot, HDMI port, and replacement thermal material)	517835-001
GL40 UMA system board (built-in modem, Digital Media Slot, HDMI port, and replacement thermal material)	570246-001
PM45 discrete system board (built-in modem, Digital Media Slot, HDMI port, and replacement thermal material)	517837-001
PM45 discrete system board PM45 (built-in modem, Digital Media Slot, and replacement thermal material)	517838-001

Before removing the system board, follow these steps:

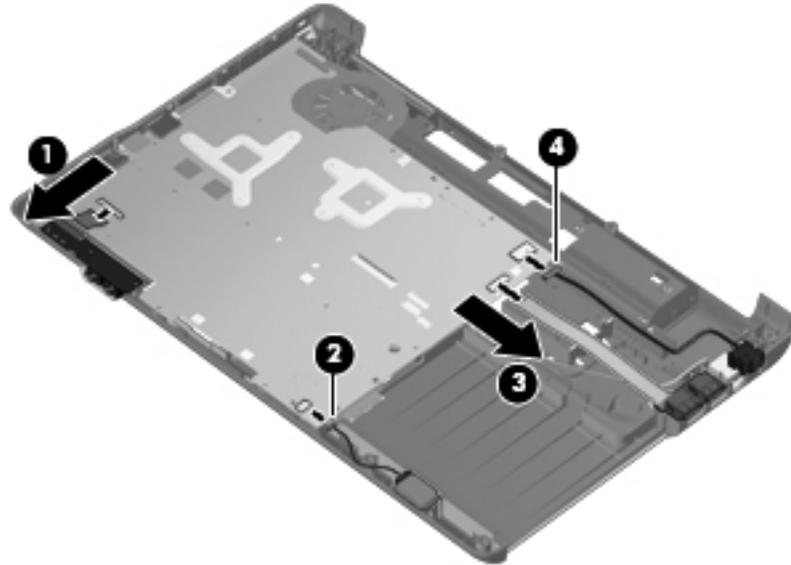
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [“Battery” on page 4-7](#)).
5. Remove the following components:
 - a. Optical drive (see [“Optical drive” on page 4-8](#))
 - b. Hard drive (see [“Hard drive” on page 4-10](#))
 - c. Keyboard (see [“Keyboard” on page 4-17](#))
 - d. Switch cover (see [“Switch cover” on page 4-20](#))
 - e. Power button board (see [“Power button board” on page 4-22](#))
 - f. Display assembly (see [“Display assembly” on page 4-23](#))
 - g. Top cover (see [“Top cover” on page 4-30](#))

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:

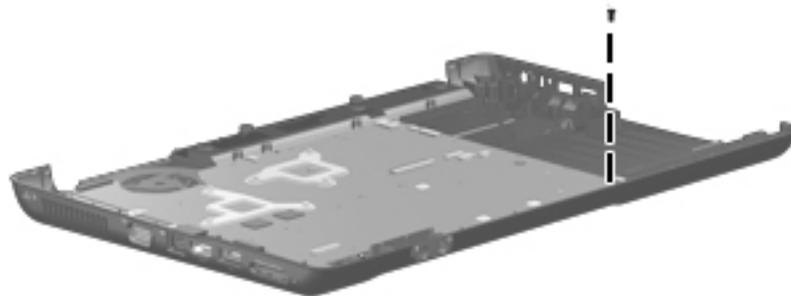
- Memory module (see [“Memory module” on page 4-13](#))
- Wireless module (see [“Wireless module” on page 4-14](#))
- Fan/heat sink assembly (see [“Fan/heat sink assembly” on page 4-38](#))
- Processor (see [“Processor” on page 4-42](#))

Remove the system board:

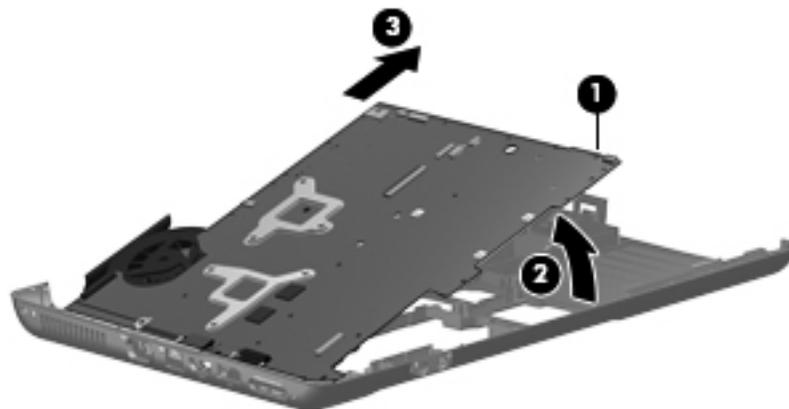
1. Disconnect the USB board cable ❶ from its mounting clip in the base enclosure.
2. Disconnect the Bluetooth cable ❷ from the system board.
3. Disconnect the RJ-11 cable ❸ from the system board.
4. Disconnect the power connector cable ❹ from the system board.



5. Remove the Phillips PM2.5×6.0 screw that secures the system board to the base enclosure.



6. Grasp the right edge ❶ of the system board.
7. Lift the system board ❷, and pull it away from the base enclosure ❸ at an angle.



Reverse this procedure to install the system board.

Fan/heat sink assembly

Description	Spare part number
Fan/heat sink assembly (includes replacement thermal material) for use only with computer models with UMA graphics subsystem memory	531210-001
Fan/heat sink assembly (includes replacement thermal material) for use only with computer models with discrete graphics subsystem memory	531220-001

Before removing the fan/heat sink 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 4-7](#)).
5. Remove the following components:
 - a. Optical drive (see [“Optical drive” on page 4-8](#))
 - b. Hard drive (see [“Hard drive” on page 4-10](#))
 - c. Keyboard (see [“Keyboard” on page 4-17](#))
 - d. Switch cover (see [“Switch cover” on page 4-20](#))
 - e. Power button board (see [“Power button board” on page 4-22](#))
 - f. Display assembly (see [“Display assembly” on page 4-23](#))
 - g. Top cover (see [“Top cover” on page 4-30](#))
 - h. Bluetooth module (see [“Bluetooth module” on page 4-35](#))
 - i. System board (see [“System board” on page 4-36](#))

Remove the fan/heat sink assembly:



Due to the adhesive quality of the thermal material located between the fan/heat sink assembly and system board components, you may need to move the fan/heat sink assembly from side to side to detach the assembly.

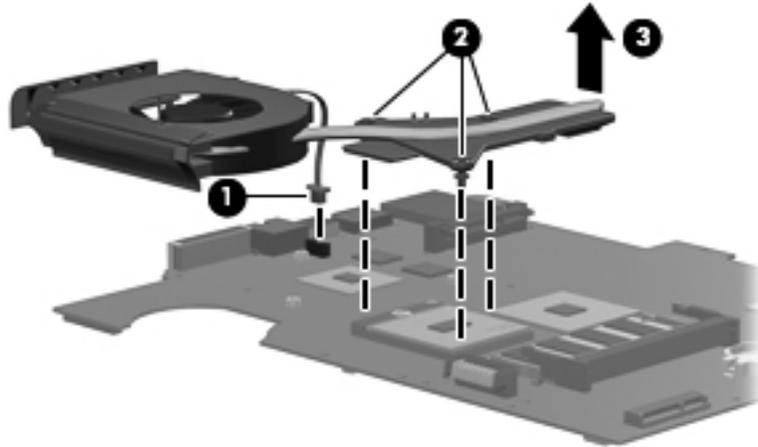


CAUTION: To avoid damage to the processor, loosen the fan/heat sink assembly screws in the sequence indicated on the heat sink assembly. Likewise, tighten the screws in the same sequence when installing the fan/heat sink assembly.



Steps 1 through 4 apply only to computer models equipped with graphics subsystems having UMA memory.

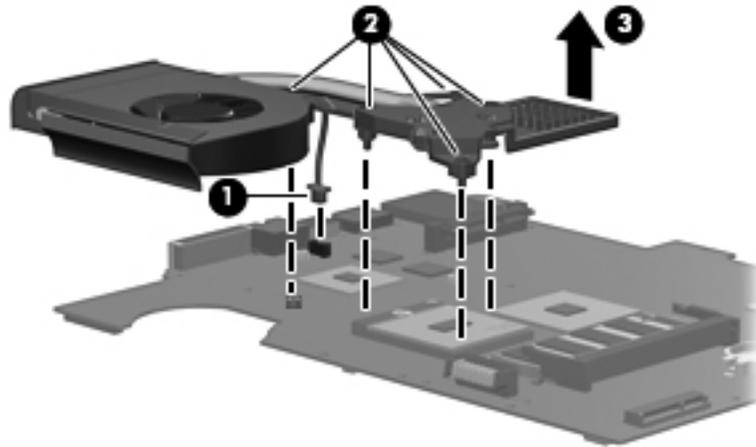
1. Turn the system board right-side up, with the front toward you.
2. Disconnect the fan cable ❶ from the system board.
3. Following the 1, 2, 3 sequence stamped into the fan/heat sink assembly, loosen the 3 Phillips PM2.5×6.0 spring-loaded captive screws ❷ that secure the fan/heat sink assembly.
4. Remove the fan/heat sink assembly ❸ by lifting it straight up.





Steps 5 through 8 apply only to computer models equipped with graphics subsystems having discrete memory.

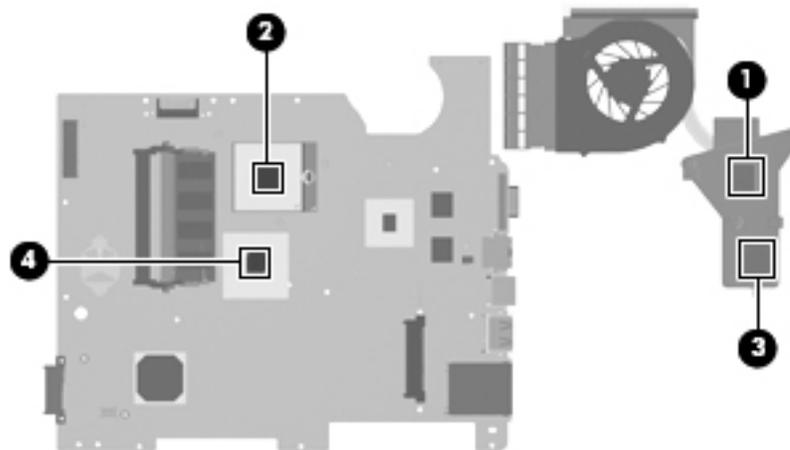
5. Turn the system board right-side up, with the front toward you.
6. Disconnect the fan cable from the system board ❶.
7. Loosen the 5 Phillips PM2.5×6.0 spring-loaded captive screws ❷ that secure the fan/heat sink assembly.
8. Remove the fan/heat sink assembly ❸ by lifting it straight up.



The following illustration shows the replacement thermal material locations for computer models graphics subsystems having UMA memory



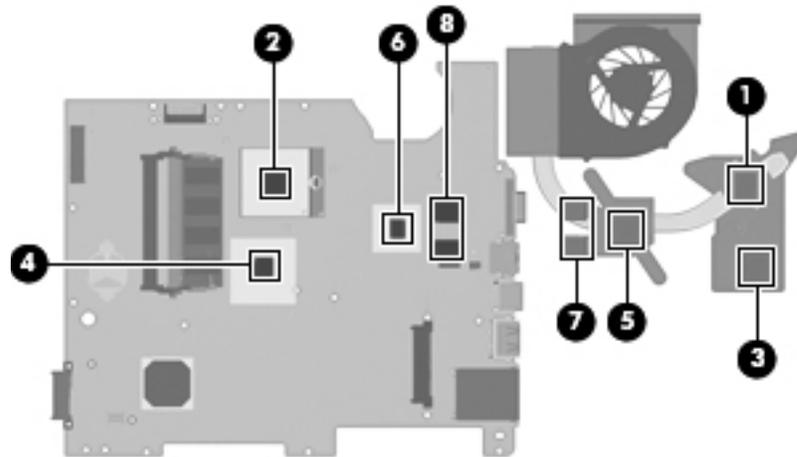
The thermal material must be thoroughly cleaned from the surfaces of the fan/heat sink assembly and the system board components each time the fan/heat sink assembly is removed. Thermal grease is located on the section of the fan/heat sink assembly ❶ that services the processor ❷. A thermal pad is located on the section of the fan/heat sink assembly ❸ that services the Northbridge chip ❹. Replacement thermal grease and pads are included in spare parts kits for all system boards, fan/heat sink assemblies, and processors.



The following illustration shows the replacement thermal material locations for computer models equipped with graphics subsystems with discrete memory.



The thermal material must be thoroughly cleaned from the surfaces of the fan/heat sink assembly and the system board components each time the fan/heat sink assembly is removed. Thermal grease is located on the section of the fan/heat sink assembly **1** that services the processor **2**. A thermal pad is located on the section of the fan/heat sink assembly **3** that services the Northbridge chip **4**. Thermal pads are also located on intermediate sections of the fan/heat sink assembly **5** and **7** that service components **6** and **8** on the system board. Replacement thermal grease and pads are included with all system board, fan/heat sink assembly, and processor spare part kits.



Reverse this procedure to install the fan/heat sink assembly.

Processor



The processor spare part kit includes replacement thermal material.

Description	Spare part number
Intel Core2 Duo P8700 2.53-GHz processor (3-MB L2 cache)	507960-001
Intel Core2 Duo P7450 2.13-GHz processor (3-MB L2 cache)	507965-001
Intel Core2 Duo T6600 2.20-GHz processor (3-MB L2 cache)	513593-001
Intel Core2 Duo T6400 2.06-GHz processor (3-MB L2 cache)	513592-001
Intel Pentium T3400 2.16-GHz processor (1-MB L2 cache)	509549-001
Intel Pentium T4200 2.06-GHz processor (2-MB L2 cache)	531599-001
Intel Celeron-M 585 2.16-GHz processor (1-MB L2 cache)	519898-001
Intel Celeron T1700 1.83-GHz processor (1-MB L2 cache)	534084-001
Intel Celeron T1600 1.66-GHz processor (1-MB L2 cache)	532324-001

Before removing the processor, follow these steps:

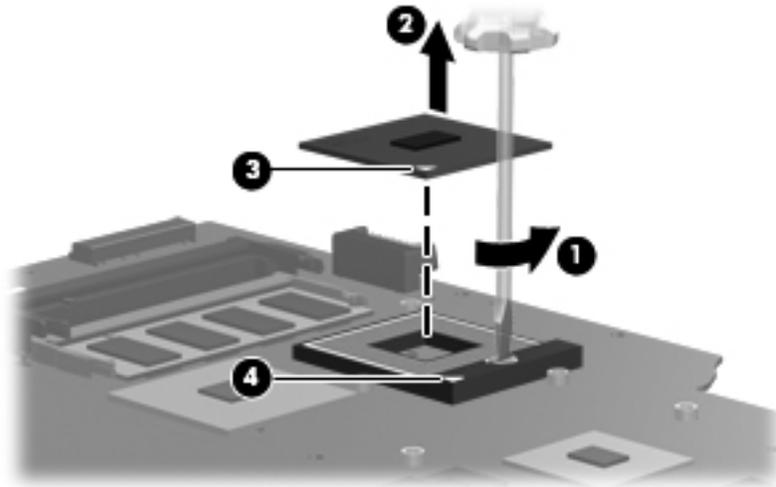
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the following components:
 - a. Remove the battery (see [“Battery” on page 4-7](#))
 - b. Optical drive (see [“Optical drive” on page 4-8](#))
 - c. Hard drive (see [“Hard drive” on page 4-10](#))
 - d. Keyboard (see [“Keyboard” on page 4-17](#))
 - e. Switch cover (see [“Switch cover” on page 4-20](#))
 - f. Power button board (see [“Power button board” on page 4-22](#))
 - g. Display assembly (see [“Display assembly” on page 4-23](#))
 - h. Top cover (see [“Top cover” on page 4-30](#))
 - i. Bluetooth module (see [“Bluetooth module” on page 4-35](#))
 - j. System board (see [“System board” on page 4-36](#))
 - k. Fan/heat sink assembly (see [“Fan/heat sink assembly” on page 4-38](#))

Remove the processor:

1. Use a flat-bladed screwdriver to turn the processor locking screw ❶ one-half turn counterclockwise until you hear a click.
2. Lift the processor ❷ straight up and remove it.



When you install the processor, the gold triangle on the processor ❸ must be aligned with the triangle embossed on the processor slot ❹.



Reverse this procedure to install the processor.

Power connector cable

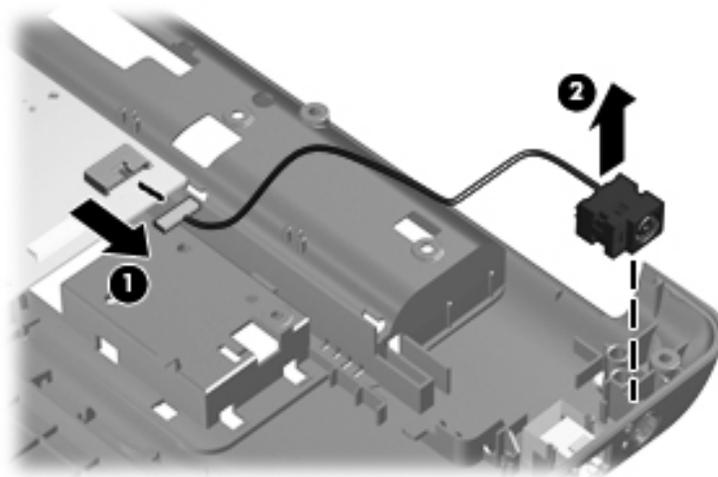
Description	Spare Part Number
Power connector cable	537850-001

Before removing the power connector cable, 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 4-7](#)).
5. Remove the following components:
 - a. Optical drive (see [“Optical drive” on page 4-8](#))
 - b. Hard drive (see [“Hard drive” on page 4-10](#))
 - c. Keyboard (see [“Keyboard” on page 4-17](#))
 - d. Switch cover (see [“Switch cover” on page 4-20](#))
 - e. Power button board (see [“Power button board” on page 4-22](#))
 - f. Display assembly (see [“Display assembly” on page 4-23](#))
 - g. Top cover (see [“Top cover” on page 4-30](#))

Remove the power connector cable.

1. To remove the power connector cable, disconnect the cable connector ❶ from the system board.
2. Remove the power connector cable by lifting it straight up from the base enclosure ❷.



Reverse this procedure to install the power connector cable.

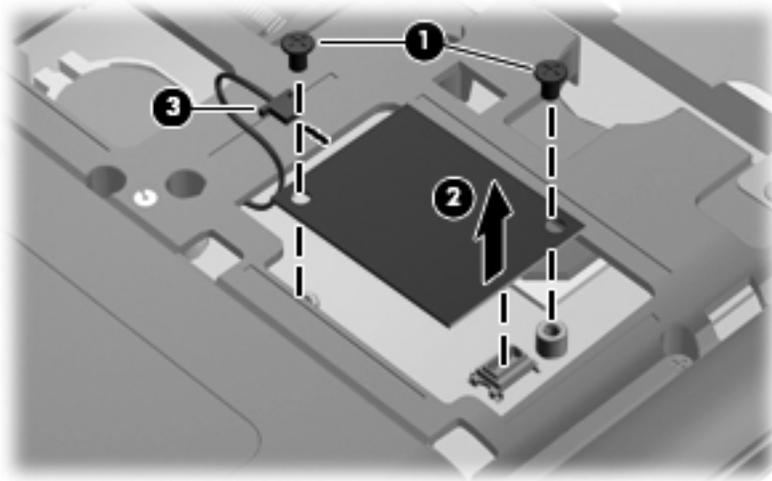
RJ-11 connector

Before removing the RJ-11 connector, follow these steps:

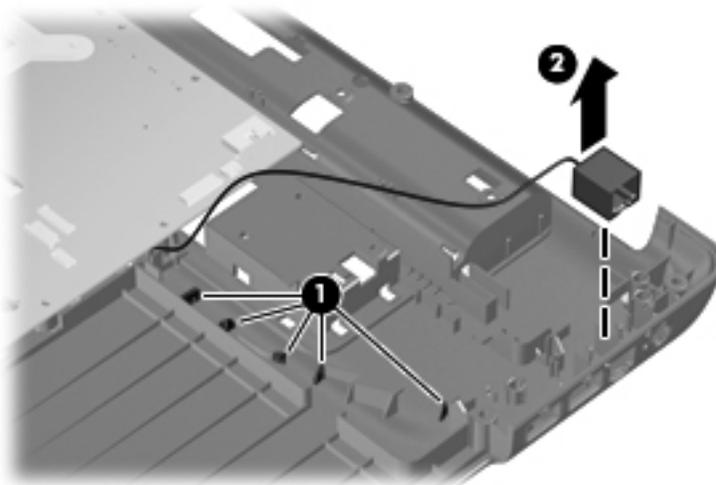
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [“Battery” on page 4-7](#)).
5. Remove the following components:
 - a. Optical drive (see [“Optical drive” on page 4-8](#))
 - b. Hard drive (see [“Hard drive” on page 4-10](#))
 - c. Keyboard (see [“Keyboard” on page 4-17](#))
 - d. Switch cover (see [“Switch cover” on page 4-20](#))
 - e. Power button board (see [“Power button board” on page 4-22](#))
 - f. Display assembly (see [“Display assembly” on page 4-23](#))
 - g. Top cover (see [“Top cover” on page 4-30](#))

Remove the RJ-11 connector

1. Remove the 2 screws ❶ that secure the modem to the base enclosure.
2. Lift the modem ❷ up, and then disconnect the RJ-11 connector cable ❸.



3. Remove the cable from the clips ❶, and then lift the connector straight up ❷ and out of the computer.



Reverse this procedure to install the RJ-11 connector.

Starting Setup Utility

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



The fingerprint reader (select models only) cannot be used to access the Setup Utility.

The utility reports information about the computer and provides settings for startup, security, and other preferences. To start the Setup Utility:



CAUTION: Open the Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press **f10**.

– or –

1. Open the Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press **esc**.
2. When the Startup Menu is displayed, press **f10**.

Changing the language of the Setup Utility

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

1. Open the Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press **f10**.

– or –

Open the Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press **esc**. When the Startup Menu is displayed, press **f10**.

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

Your change goes into effect immediately.

Navigating and selecting in the Setup Utility

Because the 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 the Setup Utility is open, press **f1**.

Displaying system information

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

1. Open the Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press **f10**.
– or –
Open the Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press **esc**. When the Startup Menu is displayed, press **f10**.
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 the 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 the Setup Utility is not already running, begin at step 1. If the Setup Utility is already running, begin at step 2.

1. Open the Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press **f10**.
– or –
Open the Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press **esc**. When the Startup Menu is displayed, press **f10**.
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 the 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.



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

Exiting Setup Utility

You can exit the Setup Utility with or without saving changes.

- To exit the 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 the 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

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



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

Main menu

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, system BIOS, and keyboard controller version (select models only).

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.
Button Sound (select models only)	Enable/disable the capacitive button tapping sound.
Virtualization Technology (select models only)	Enable/disable the processor Virtualization Technology.
Processor C6 State (select models only)	Enable/disable the processor C6 sleep state.
LAN Power Saving (select models only)	Enable/disable LAN Power Saving. When enabled, saves power when the computer is in DC mode.
Card Reader/1394 Power Saving (select models only)	Enable/disable Card Reader/1394 Power Saving. When enabled, saves power when the computer is in DC mode.
Fan Always On	Enabled/disable Fan Always On. When enabled, the computer fan will always be on.
Boot Options	<p>Set the following boot options:</p> <ul style="list-style-type: none"> ■ f9 and f10 Delay (sec.)—Set the delay for the f9 and f10 functions of the Setup Utility in intervals of 5 seconds each (0, 5, 10, 15, 20). ■ CD-ROM boot—Enable/disable boot from CD-ROM. ■ Floppy boot—Enable/disable boot from diskette. ■ Internal Network Adapter boot—Enable/disable boot from Internal Network Adapter. ■ Boot Order—Set the boot order for: <ul style="list-style-type: none"> <input type="checkbox"/> USB Floppy <input type="checkbox"/> Internal CD/DVD ROM Drive <input type="checkbox"/> Processor C6 sleep state (select models only) <input type="checkbox"/> USB CD/DVD ROM drive <input type="checkbox"/> Hard drive <input type="checkbox"/> USB Diskette on Key <input type="checkbox"/> USB Hard drive <input type="checkbox"/> Network adapter

Diagnostics menu

Select	To do this
Hard Disk Self Test	<p>Run a comprehensive self-test on the hard drive.</p> <p> On models with two hard drives, this menu option is called the Primary Hard Disk Self Test.</p>
Secondary Hard Disk Self Test (select models only)	Run a comprehensive self-test on a secondary hard drive.
Memory Test	Run a diagnostic test on the system memory.

Specifications

Computer specifications

	Metric	U.S.
Dimensions		
Width	37.8 cm	14.9 in
Depth	25.2 cm	9.9 in
Height (front)	3.51 cm	1.39 in
Height (rear)	4.12 cm	1.62
Weight		
Equipped with 6-cell battery and optical drive	2.75 kg	6.06 lbs
Input power		
Operating voltage	18.5 V dc @ 3.5 A - 65 W or 19.0 V dc @ 4.74 A - 90 W	
Operating current	3.5 A or 4.74 A	
Temperature		
Operating (not writing to optical disc)	0°C to 35°C	32°F to 95°F
Operating (writing to optical disc)	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Relative humidity (noncondensing)		
Operating	10% to 90%	10% to 90%
Nonoperating	5% to 95%	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
 Applicable product safety standards specify thermal limits for plastic surfaces. The computer operates well within this range of temperatures.		

16-inch WXGA display specifications

	Metric	U.S.
Dimensions		
Height	21.4 cm	8.4 in
Width	36.5 cm	14.4 in
Diagonal	40.6 cm	16 in
Number of colors	Up to 16.8 million	
Contrast ratio	600:1	
Brightness	200 nits typical	
Pixel resolution		
Pitch	0.259 x 0.259 mm	
Format	1366 x 900	
Configuration	RGB vertical strip	
Backlight	CCFT	
Character display	80 x 25	
Total power consumption	6.5 w	
Viewing angle	+/-45° horizontal, +15/-35 vertical typical	

15.6-inch WXGA display specifications

	Metric	U.S.
Dimensions		
Height	21.0 cm	8.27 in
Width	35.9 cm	14.1 in
Diagonal	39.51 cm	15.6 in
Number of colors	Up to 16.8 million	
Contrast ratio	500:1	
Brightness	200 nits typical	
Pixel resolution		
Pitch	0.259 x 0.259 mm	
Format	1368 x 768	
Configuration	RGB vertical strip	
Backlight	CCFT	
Character display	80 x 25	
Total power consumption	6.5 w	
Viewing angle	+/-45° horizontal, +15/-35 vertical typical	

Hard drive specifications

	500-GB*	320-GB*	250-GB*	160-GB*
Dimensions				
Height	9.5 mm	9.5 mm	9.5 mm	9.5 mm
Width	70 mm	70 mm	70 mm	70 mm
Weight	101 g	101 g	101 g	101 g
Interface type	SATA	SATA	SATA	SATA
Transfer rate	100 MB/sec	100 MB/sec	100 MB/sec	100 MB/sec
Security	ATA security	ATA security	ATA security	ATA security
Seek times (typical read, including setting)				
Single track	3 ms	3 ms	3 ms	3 ms
Average	13 ms	13 ms	13 ms	13 ms
Maximum	24 ms	24 ms	24 ms	24 ms
Logical blocks	976, 773, 168	625,142, 448	488, 376,120	312, 560, 340
Disc rotational speed	5400 rpm	5400 rpm	5400 rpm	5400 rpm
Operating temperature	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.



Certain restrictions and exclusions apply. Contact technical support for details.

DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive with LightScribe specifications

Applicable disc	Read:	Write:
	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-system memory	CD-R and CD-RW DVD+R, DVD+RW, DVD-R, DVD-RW, DVD-system memory
Access time	CD	DVD
Random	< 175 ms	< 230 ms
Cache buffer	2 MB	
Data transfer rate		
24X CD-ROM	3,600 KB/sec	
8X DVD	10,800 KB/sec	
24X CD-R	3,600 KB/sec	
16X CD-RW	2,400 KB/sec	
8X DVD+R	10,800 KB/sec	
4X DVD+RW	5,400 KB/sec	
8X DVD-R	10,800 KB/sec	
4X DVD-RW	5,400 KB/sec	
2.4X DVD+R(9)	2,700 KB/sec	
5X DVD-system memory	6,750 KB/sec	

Blu-ray ROM with LightScribe DVD±R/RW SuperMulti Double-Layer Drive specifications

Applicable disc	Read:	Write:
	BD-ROM, BD-ROM-DL, BD-R, BD-R-DL, BD-RE, BD-RE-DL, DVD-ROM, DVD+R, DVD+R-DL, DVD+RW, DVD-R, DVD-R-DL, DVD-RW, DVD-system memory (Ver.2), CD-DA, CD-ROM (Mode 1 and mode 2), CD-ROM XA (Mode 2, form 1 and form 2), Photo CD (Single and multiple sessions), CD Extra, CD-R, CD-RW, and CD-TEXT	DVD-system memory (Ver.2), DVD+R, DVD-R, CD-R, and CD-RW
Access time	BD	DVD
Random	< 230 ms	< 180 ms
Cache buffer	4.5 MB	
Data transfer rate		
2X BD-system memory	9 MB/sec	
8X DVD	2,400 KB/sec	
16X CD-R	2,400 KB/sec	
16X CD-RW	2,400 KB/sec	

System DMA specifications

Hardware DMA	System function
DMA0	Not applicable
DMA1*	Not applicable
DMA2*	Not applicable
DMA3	Not applicable
DMA4	Direct memory access controller
DMA5*	Available for PC Card
DMA6	Not assigned
DMA7	Not assigned

*PC Card controller can use DMA 1, 2, or 5.

System interrupt specifications

Hardware IRQ	System function
IRQ0	System timer
IRQ1	Standard 101-/102-Key or Microsoft® Natural Keyboard
IRQ2	Cascaded
IRQ4	COM1
IRQ6	Diskette drive
IRQ7*	Parallel port
IRQ8	System CMOS/real-time clock
IRQ9*	Microsoft ACPI-compliant system
IRQ12	Synaptics PS/2 TouchPad
IRQ13	Numeric data processor
IRQ14	Primary IDE channel
IRQ15	Secondary IDE channel

*Default configuration; audio possible configurations are IRQ5, IRQ7, IRQ9, IRQ10, or none.

 PC Cards may assert IRQ3, IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11, or IRQ15. Either the infrared or the serial port may assert IRQ3 or IRQ4.

System I/O address specifications

I/O address (hex)	System function (shipping configuration)
000 - 00F	DMA controller no. 1
010 - 01F	Unused
020 - 021	Interrupt controller no. 1
022 - 024	Opti chipset configuration registers
025 - 03F	Unused
02E - 02F	87334 "Super I/O" configuration for CPU
040 - 05F	Counter/timer registers
044 - 05F	Unused
060	Keyboard controller
061	Port B
062 - 063	Unused
064	Keyboard controller
065 - 06F	Unused
070 - 071	NMI enable/RTC
072 - 07F	Unused
080 - 08F	DMA page registers
090 - 091	Unused

(Continued)

I/O address (hex)	System function (shipping configuration)
092	Port A
093 - 09F	Unused
0A0 - 0A1	Interrupt controller no. 2
I/O Address (hex)	System Function (shipping configuration)
0A2 - 0BF	Unused
0C0 - 0DF	DMA controller no. 2
0E0 - 0EF	Unused
0F0 - 0F1	Coprocessor busy clear/reset
0F2 - 0FF	Unused
100 - 16F	Unused
170 - 177	Secondary fixed disk controller
178 - 1EF	Unused
1F0 - 1F7	Primary fixed disk controller
1F8 - 200	Unused
201	JoyStick (decoded in ESS1688)
202 - 21F	Unused
220 - 22F	Entertainment audio
230 - 26D	Unused
26E - 26	Unused
278 - 27F	Unused
280 - 2AB	Unused
2A0 - 2A7	Unused
2A8 - 2E7	Unused
2E8 - 2EF	Reserved serial port
2F0 - 2F7	Unused
2F8 - 2FF	Infrared port
300 - 31F	Unused
320 - 36F	Unused
370 - 377	Secondary diskette drive controller
378 - 37F	Parallel port (LPT1/default)
380 - 387	Unused
388 - 38B	FM synthesizer-OPL3
38C - 3AF	Unused
3B0 - 3BB	VGA
3BC - 3BF	Reserved (parallel port/no EPP support)
3C0 - 3DF	VGA
3E0 - 3E1	PC Card controller in CPU
3E2 - 3E3	Unused

(Continued)

I/O address (hex)	System function (shipping configuration)
3E8 - 3EF	Internal modem
3F0 - 3F7	“A” diskette controller
3F8 - 3FF	Serial port (COM1/default)
CF8 - CFB	PCI configuration index register (PCIDIVO-1)
CFC - CFF	PCI configuration data register (PCIDIVO-1)

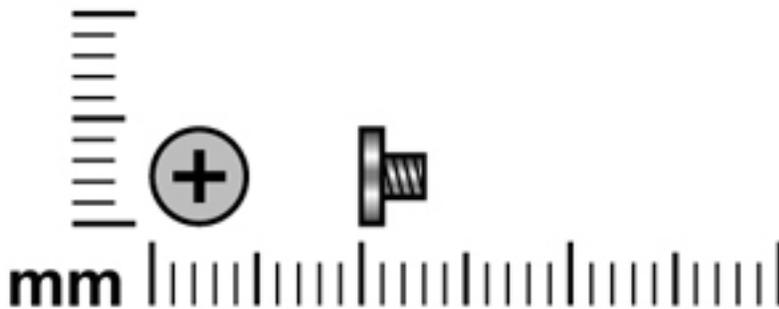
System memory map specifications

Size	Memory address	System function
640 KB	00000000-0009FFFF	Base memory
128 KB	000A0000-000BFFFF	Video memory
48 KB	000C0000-000CBFFF	Video BIOS
160 KB	000C8000-000E7FFF	Unused
64 KB	000E8000-000FFFFF	System BIOS
15 MB	00100000-00FFFFFF	Extended memory
58 MB	04800000-07FFFFFF	Super extended memory
58 MB	04800000-07FFFFFF	Unused
2 MB	08000000-080FFFFF	Video memory (direct access)
4 GB	08200000-FFFEFFFF	Unused
64 KB	FFFF0000-FFFFFFFF	System BIOS

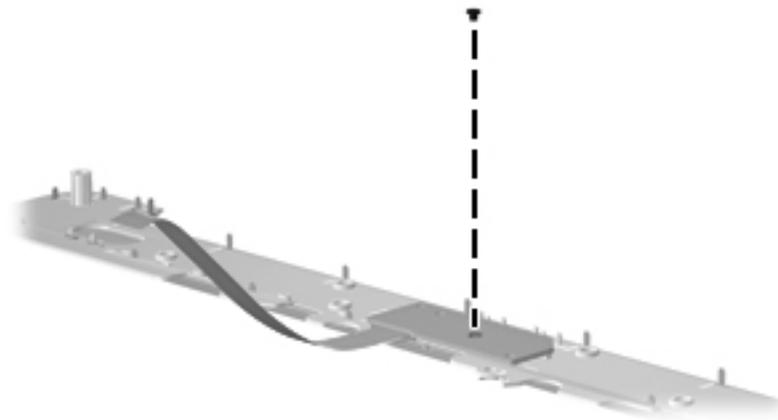
Screw listing

This section provides specification and reference information for the screws used in the computer. All screws listed in this section are available in the Screw Kit, spare part number 531212-001.

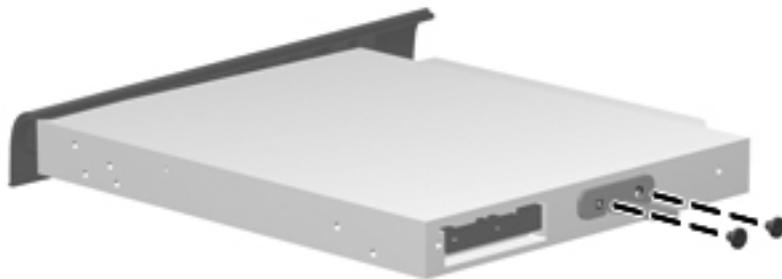
Phillips PM2.0×3.0 screw



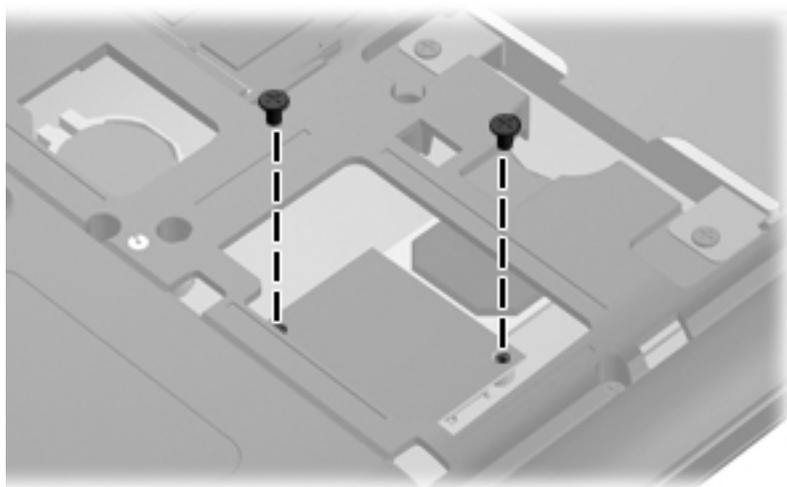
Color	Quantity	Length	Thread	Head diameter
Black	10	3.0 mm	2.0 mm	4.0 mm



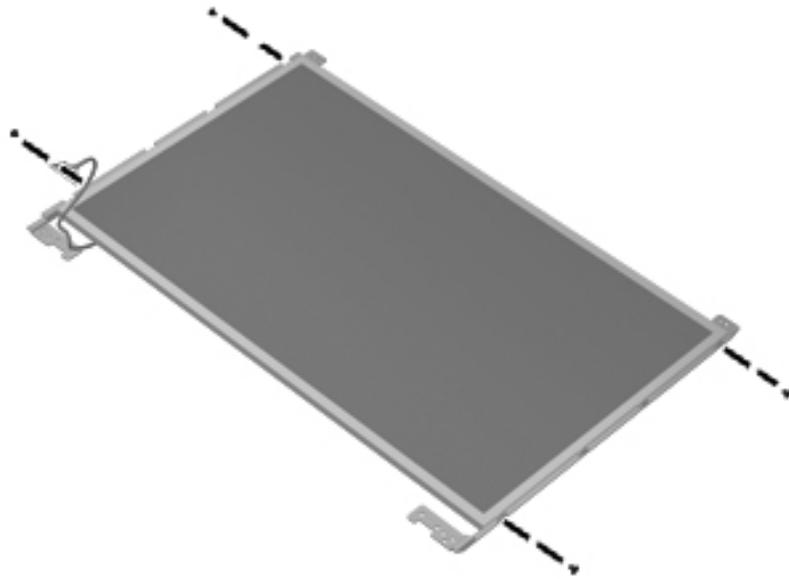
Where used: 1 screw that secures the power button board to the computer



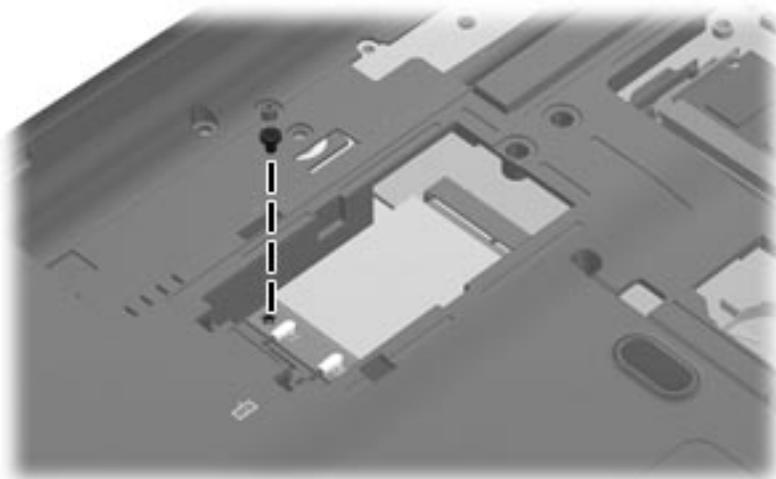
Where used: 2 screws that secure the optical drive bracket to the optical drive



Where used: 2 screws that secure the modem to the computer

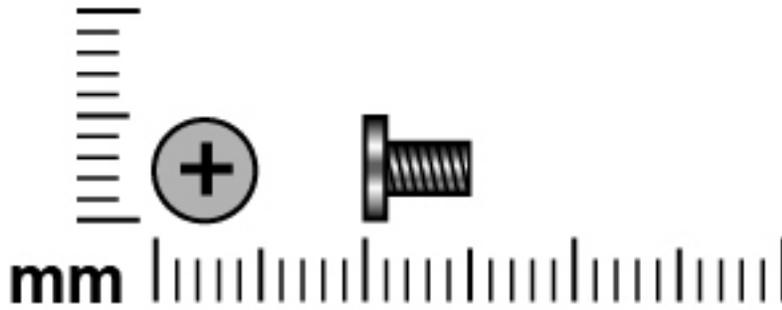


Where used: 4 screws that secure the display bracket to the display panel

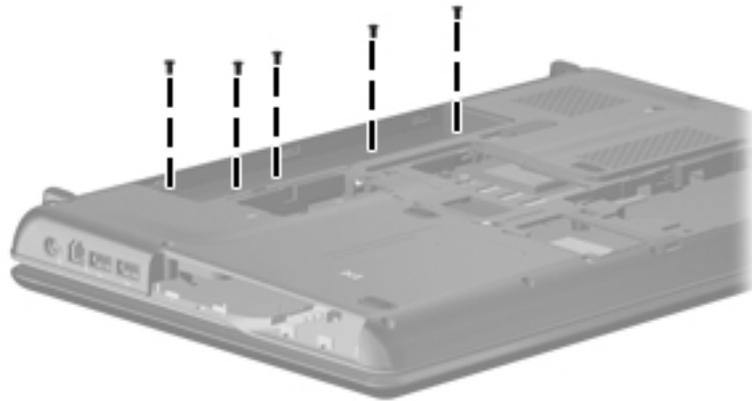


Where used: 1 screw that secures the WLAN module to the computer

Phillips PM2.5×5.0 screw

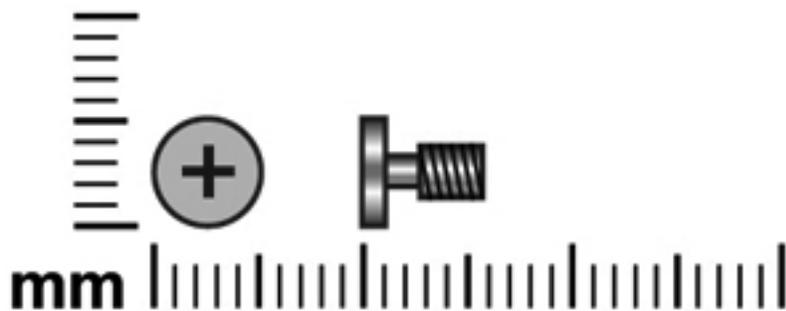


Color	Quantity	Length	Thread	Head diameter
Black	5	5.0 mm	2.5 mm	5.0 mm

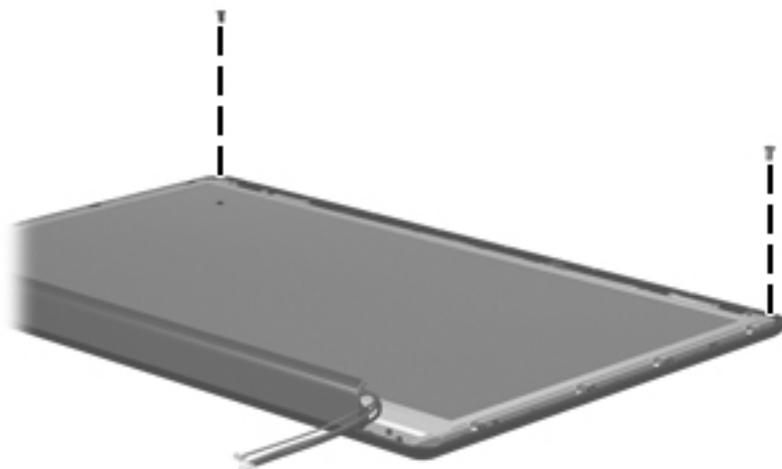


Where used: 5 screws that secure the switch cover to the computer

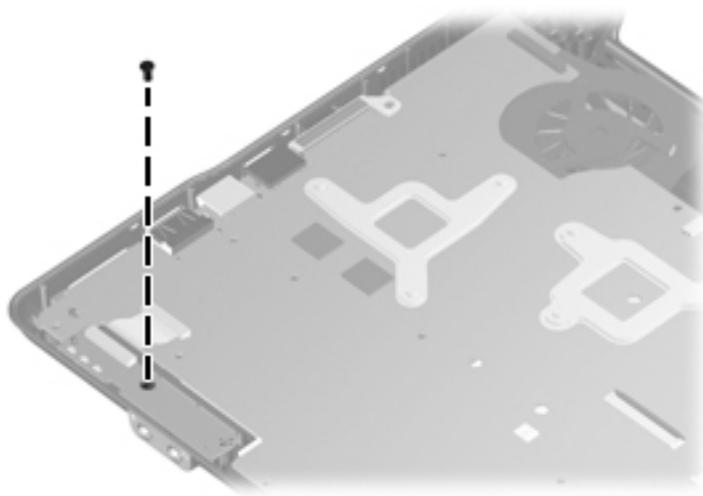
Phillips PM2.5×6.0 screw



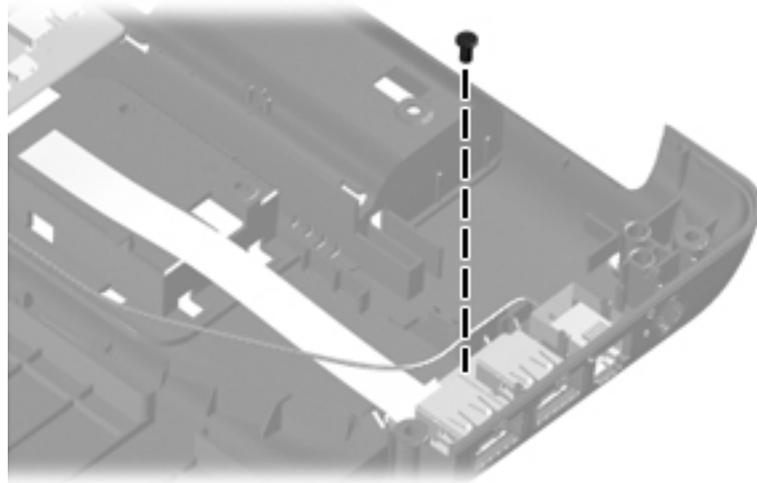
Color	Quantity	Length	Thread	Head diameter
Black	14	6.0 mm	2.5 mm	5.0 mm



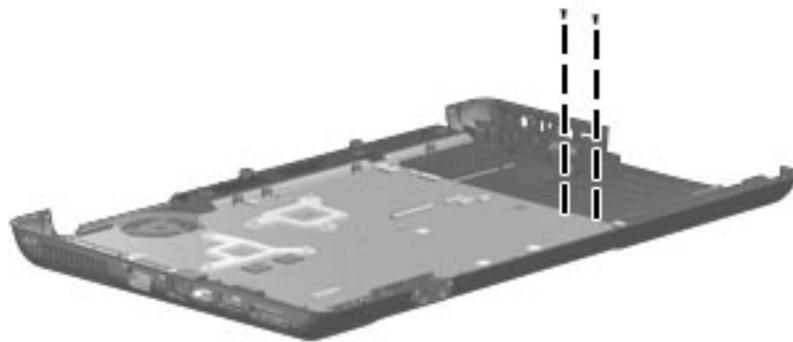
Where used: 2 screws that secure the display panel to the display



Where used: 1 screw that secures the audio board to the base enclosure



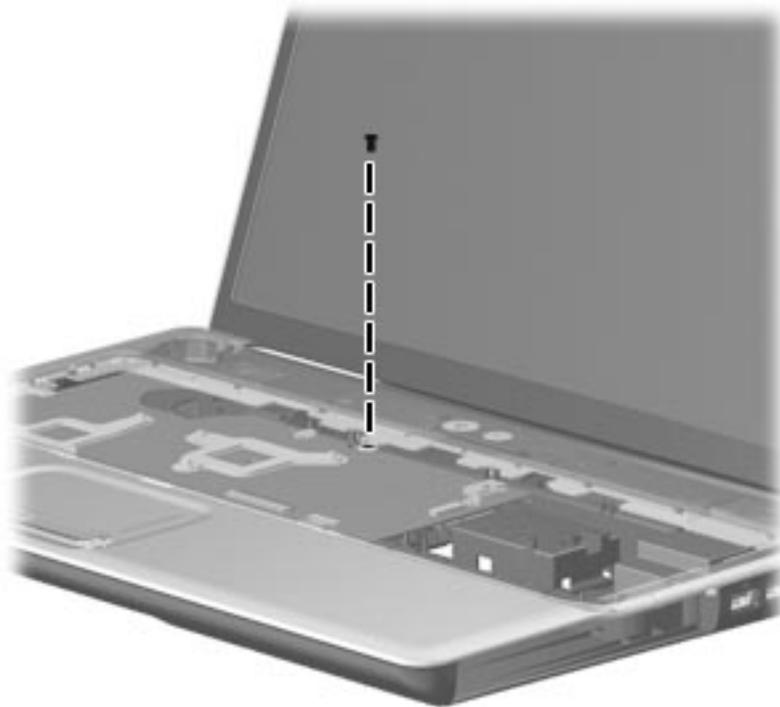
Where used: 1 screw that secures the USB board to the base enclosure



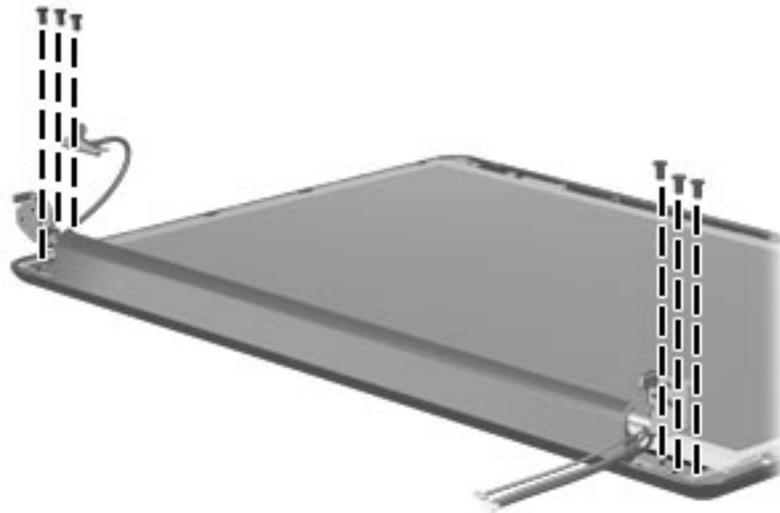
Where used: 2 screws that secure the system board to the base enclosure



Where used: 1 screw that secures the top cover to the computer

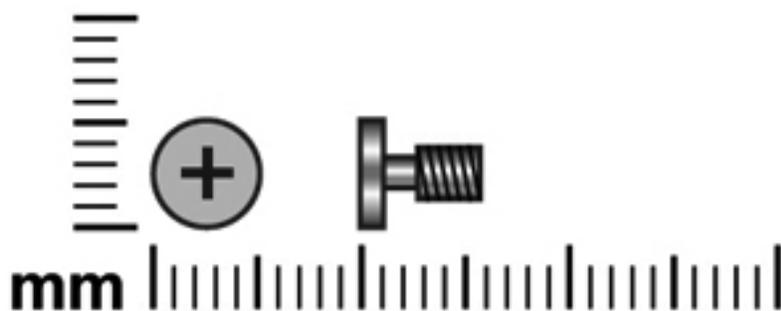


Where used: 1 screw that secures the switch cover to the computer

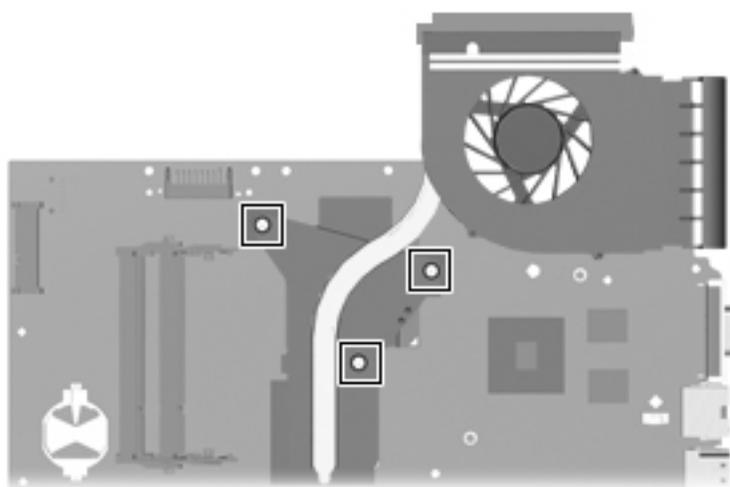


Where used: 6 screws that secure the display hinges to the display enclosure

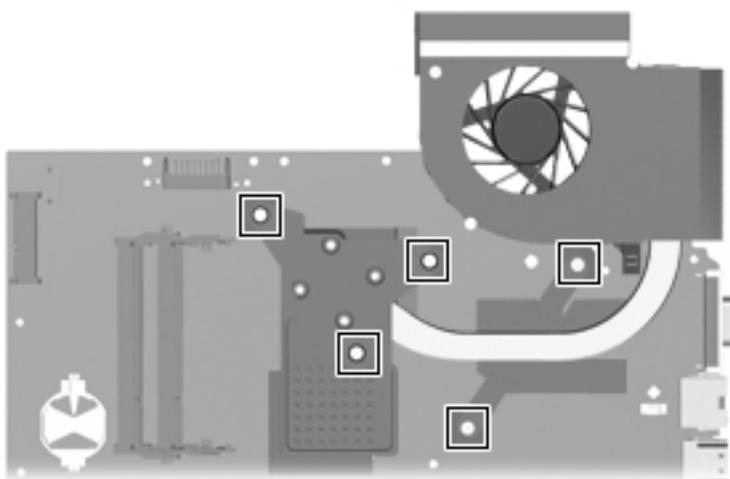
Phillips PM2.5×6.0 captive screw



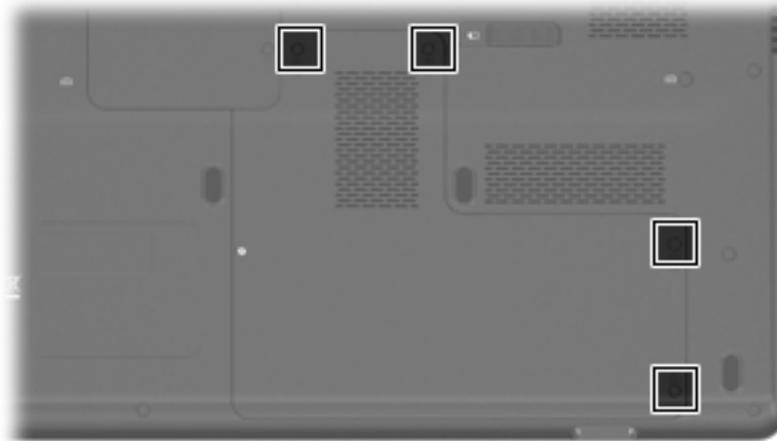
Color	Quantity	Length	Thread	Head diameter
Silver	13	6.0 mm	2.5 mm	5.0 mm



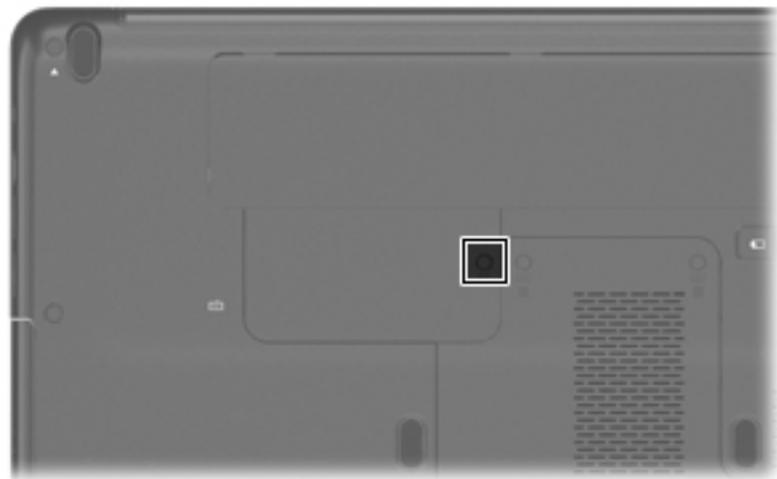
Where used: 3 screws that secure the fan/heat sink assembly to the base enclosure (screws are secured by C-clips) on computer models equipped with graphics subsystems having UMA memory



Where used: 5 screws that secure the fan/heat sink assembly to the base enclosure (screws are secured by C-clips) on computer models equipped with graphics subsystems having discrete memory

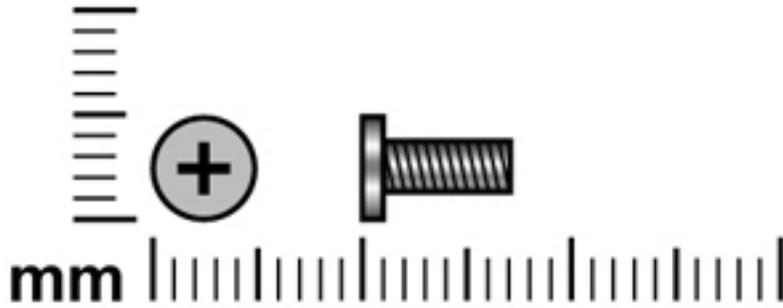


Where used: 4 screws that secure the hard drive cover to the base enclosure

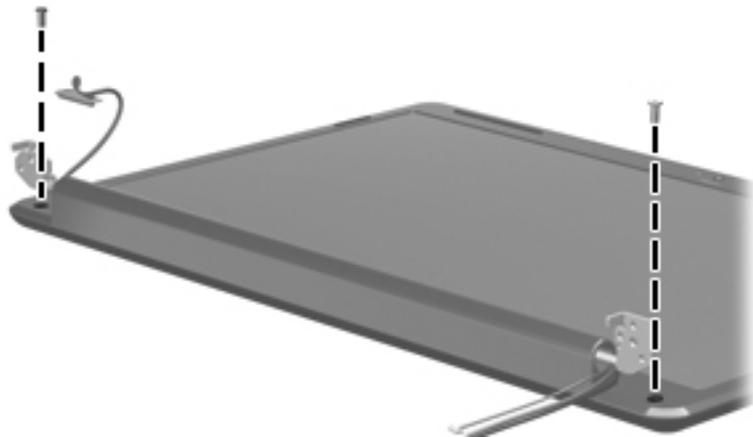


Where used: 1 screw that secures the WLAN cover to the base enclosure

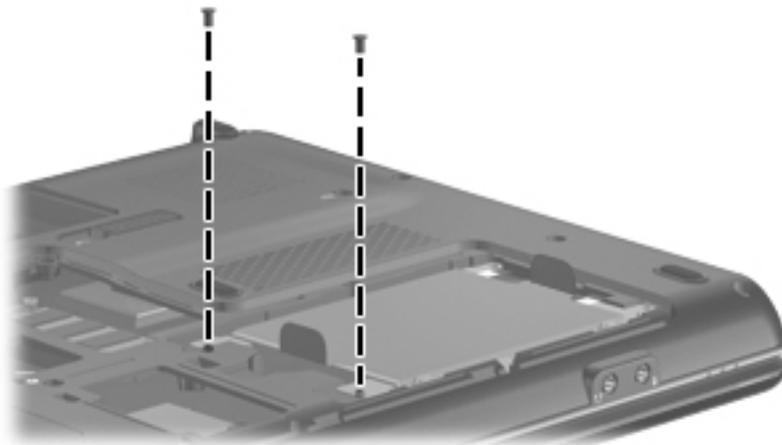
Phillips PM2.5×7.0 screw



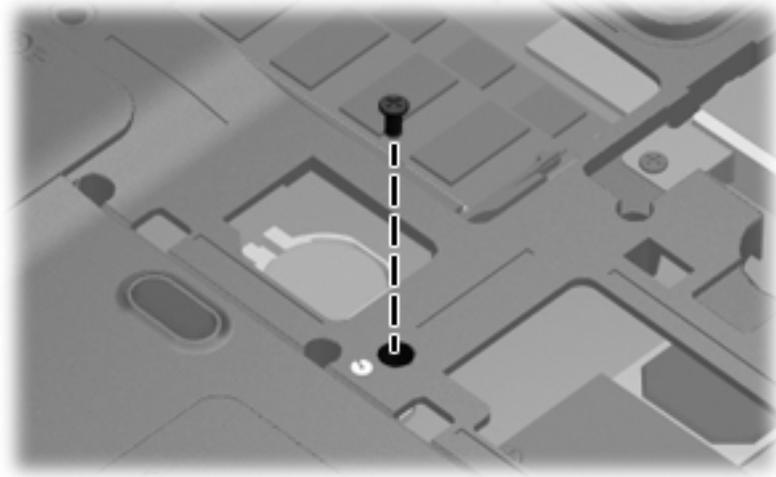
Color	Quantity	Length	Thread	Head diameter
Black	33	7.0 mm	2.5 mm	5.0 mm



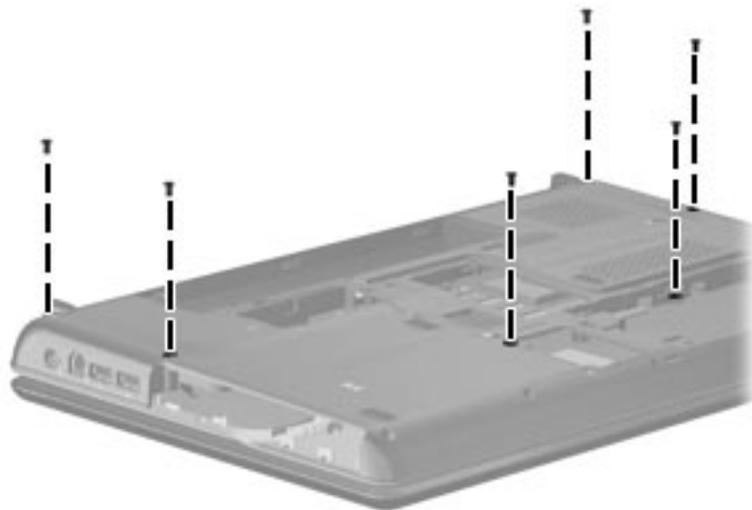
Where used: 2 screws that secure the display bezel to the display



Where used: 2 screws that secure the hard drive to the computer



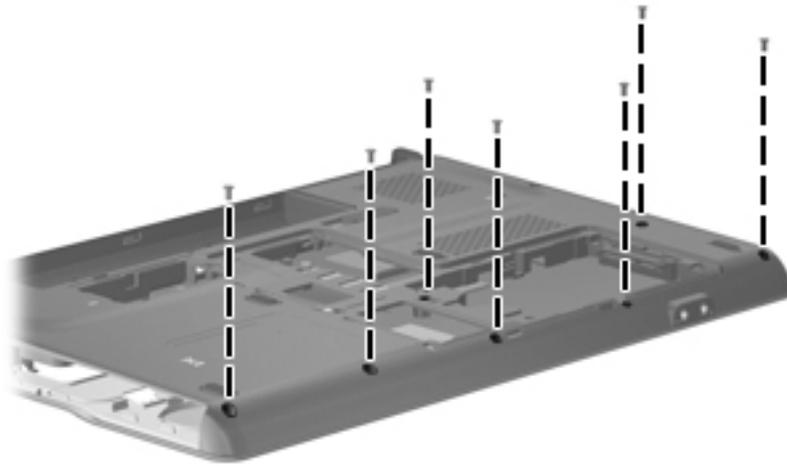
Where used: 1 screw that secures the optical drive to the computer



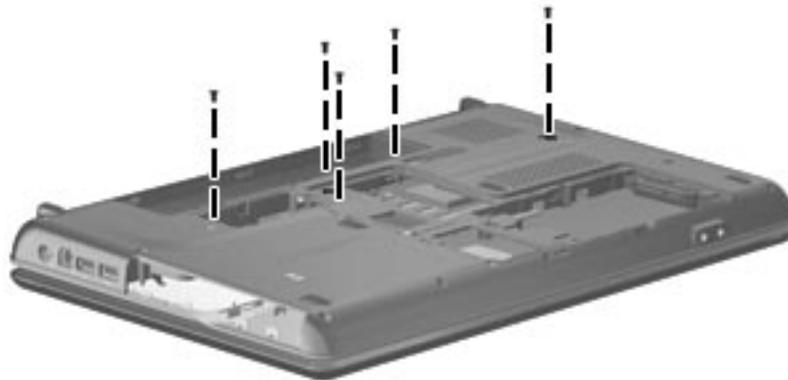
Where used: 6 screws that secure the switch cover to the computer



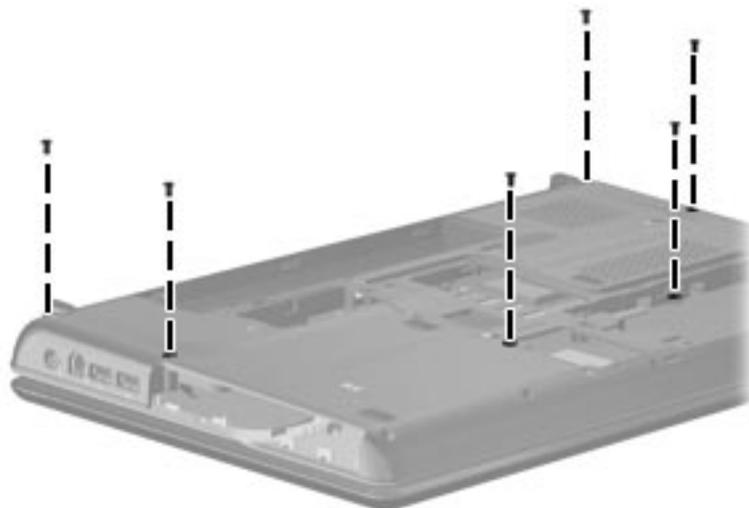
Where used: 4 screws that secure the display hinges to the computer



Where used: 7 screws that secure the top cover to the computer

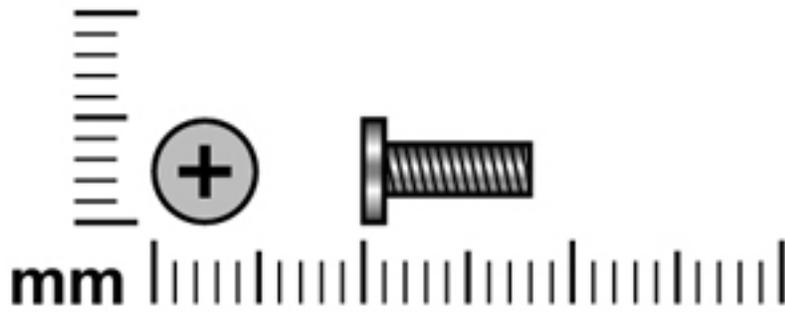


Where used: 5 screws that secure the keyboard to the computer

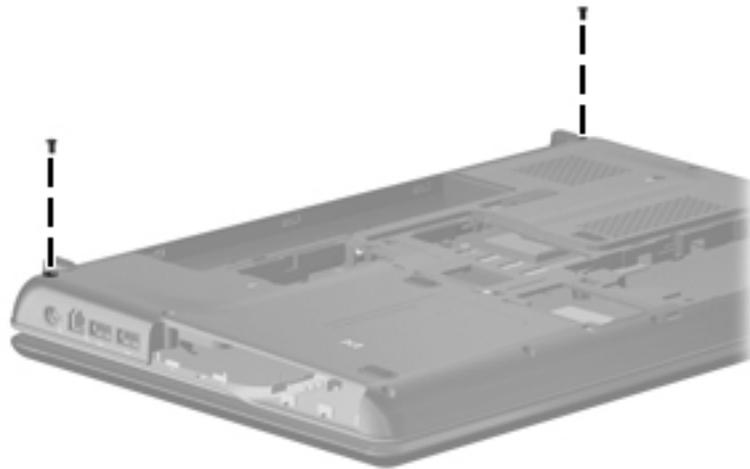


Where used: 6 screws that secure the switch cover to the computer

Phillips PM2.5×8.0 screw

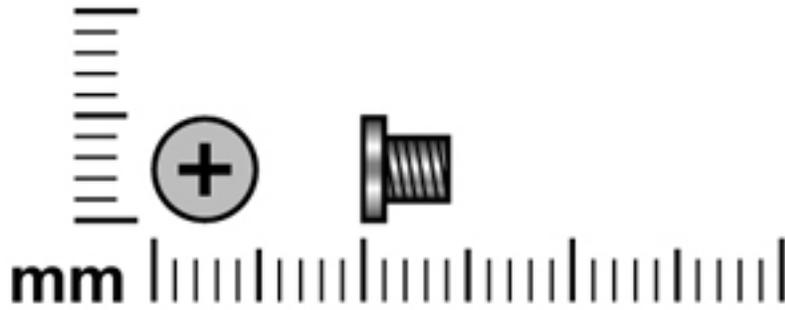


Color	Quantity	Length	Thread	Head diameter
Black	2	8.0 mm	2.5 mm	5.0 mm

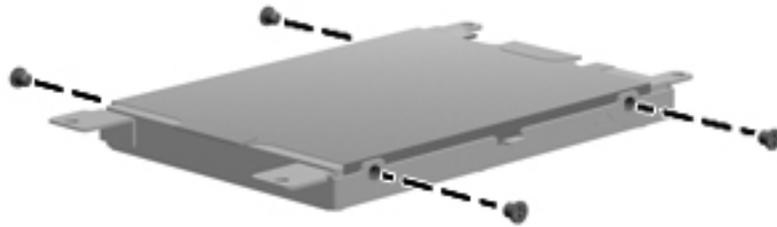


Where used: 2 screws that secure the switch cover to the computer

Phillips PM3.0×4.0 screw



Color	Quantity	Length	Thread	Head diameter
Black	4	4.0 mm	3.0 mm	5.0 mm



Where used: 4 screws that secure the hard drive bracket to the hard drive.

Backup and recovery

Recovery after a system failure is as complete as your most current backup. HP recommends that you create recovery discs immediately after software setup. As you add new software and data files, you should continue to back up your system on a regular basis to maintain a reasonably current backup.

Tools provided by the operating system and HP Recovery Manager software are designed to help you with the following tasks for safeguarding your information and restoring it in case of a system failure:

- Creating a set of recovery discs (Recovery Manager software feature). Recovery discs are used to start up (boot) your computer and restore the operating system and software programs to factory settings in case of system failure or instability.
- Backing up your information regularly to protect your important system files.
- Creating system restore points (operating system feature). System restore points allow you to reverse undesirable changes to your computer by restoring the computer to an earlier state.
- Recovering a program or driver (Recovery Manager software feature). This feature helps you reinstall a program or driver without performing a full system recovery.
- Performing a full system recovery (Recovery Manager software feature). With Recovery Manager, you can recover your full factory image if you experience system failure or instability. Recovery Manager works from a dedicated recovery partition (select models only) on the hard drive or from recovery discs you create.



If your computer includes a solid-state drive (SSD), you may not have a recovery partition. Recovery discs have been included for computers that do not have a partition. Use these discs to recover your operating system and software. To check for the presence of a recovery partition, select **Start > Computer**. If the partition is present, an HP Recovery drive is listed in the Hard Disk Drives section of the window.

Creating recovery discs

HP recommends that you create recovery discs to be sure that you can restore your system to its original factory state if you experience serious system failure or instability. Create these discs after setting up the computer for the first time.

Handle these discs carefully and keep them in a safe place. The software allows the creation of only one set of recovery discs.



If your computer does not include an internal 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.

Note the following guidelines before creating recovery discs:

- You will need high-quality DVD-R, double-layer DVD-R, DVD+R, double-layer DVD+R, BD-R (writable Blu-ray), or CD-R discs. All these discs are purchased separately. DVDs and BDs have a much higher capacity than CDs. If you use CDs, up to 20 discs may be required, whereas only a few DVDs or BDs are required.
 -  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 Recovery Manager software.
- The computer must be connected to AC power during this process.

- Only one set of recovery discs can be created per computer.
- 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. The next time you open Recovery Manager, you will be prompted to continue the disc creation process.

To create a set of recovery discs:

1. Select **Start > All Programs > Recovery Manager > Recovery Manager**.

Recovery Manager opens.

2. Click **Advanced Options**.



If you are operating the computer on battery power, you will be prompted to connect to AC power before you can go to the next step.

3. Click **Recovery disc creation**, and then click **Next**.
4. Follow the on-screen instructions.

When to back up

- On a regularly scheduled basis
 -  Set reminders to back up your information periodically.
- Before the computer is repaired or restored
- Before you add or modify hardware or software

Backup suggestions

- Create a set of recovery discs using Recovery Manager.
- Create system restore points using the Windows System Restore feature, and periodically copy them to disc.
- Store personal files in the Documents folder and back up this folder periodically.
- Back up templates stored in their associated programs.
- 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 reset your preferences.

To copy the screen and paste it into a word-processing document, follow these steps:

- a. Display the screen.
- b. Copy the screen:
 - To copy only the active window, press **alt+fn+prt sc**.
 - To copy the entire screen, press **fn+prt sc**.
- c. Open a word-processing document, and then select **Edit > Paste**.

Using system restore points

When you back up your system, you are creating a system restore point. 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 made to your system.



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 system files and settings.

When to create restore points

- Before you add or extensively modify software or hardware
- Periodically, whenever the system is performing optimally



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 Maintenance > System**.
2. In the left pane, click **System Protection**.
3. Click the **System Protection** tab.
4. Under **Automatic restore points**, select the disk for which you want to create a restore point.
5. Click **Create**.

The System Protection window opens.

6. 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 Maintenance > System**.
2. In the left pane, click **System protection**.
3. Click the **System Protection** tab.
4. Click the **System Restore** button, and then click **Next**.

The System Restore window opens.

5. Follow the on-screen instructions.

Performing a recovery



You can recover only files that you have previously backed up. HP recommends that you use Recovery Manager to create an entire drive backup as soon as you set up your computer.

Recovery Manager software allows you to repair or restore the system if you experience system failure or instability. Recovery Manager works from recovery discs or from a dedicated recovery partition (select models only) on the hard drive. However, if your computer includes a solid-state drive (SSD), you may not have a recovery partition. If that is the case, recovery discs have been included with your computer. Use these discs to recover your operating system and software.



Windows has its own built-in repair features, such as System Restore and driver roll-back capabilities. If you have not already tried these features, try them before using Recovery Manager.



Recovery Manager recovers 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.

Recovering from the recovery discs

To restore the system from the recovery discs:

1. Back up all personal files.
2. Insert the first recovery disc into the optical drive and restart the computer.
3. Follow the on-screen instructions.

Recovering from the dedicated recovery partition (select models only)



If your computer includes an SSD, you may not have a recovery partition. You will not be able to recover using this procedure. Recovery discs have been included for computers that do not have a partition. Use these discs to recover your operating system and software.

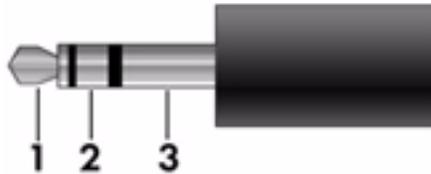
On some models, you can perform a recovery from the partition on the hard drive from either the Start button or **f11**. This restores the computer to its factory condition.

To restore the system from the partition, follow these steps:

1. Access Recovery Manager in either of the following ways:
 - Select **Start > All Programs > Recovery Manager > Recovery Manager**.
 - or –
 - Restart the computer and press **f11** while the “Press <F11> for recovery” message is displayed on the screen. Then select **Recovery Manager**.Recovery Manager opens.
2. Click **Advanced Options**.
3. Click **System recovery**, and then click **Next**.
4. Follow the on-screen instructions.

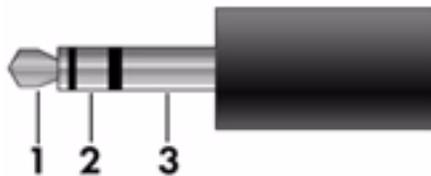
Connector pin assignments

Audio-in (microphone)



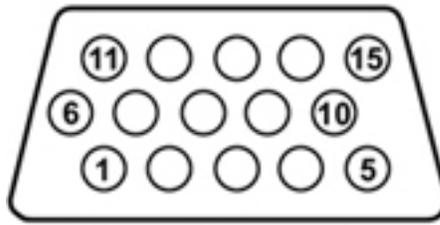
Pin	Signal
1	Audio signal in
2	Audio signal in
3	Ground

Audio-out (headphone)



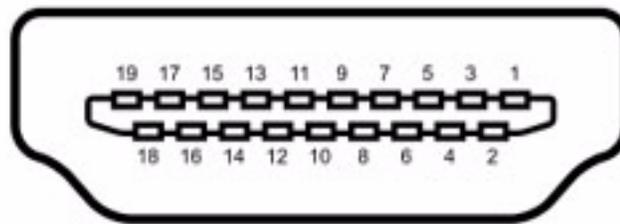
Pin	Signal
1	Audio out, left channel
2	Audio out, right channel
3	Ground

External monitor



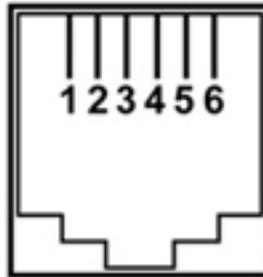
Pin	Signal
1	Red analog
2	Green analog
3	Blue analog
4	Not connected
5	Ground
6	Ground analog
7	Ground analog
8	Ground analog
9	+5 VDC
10	Ground
11	Monitor detect
12	DDC 2B data
13	Horizontal sync
14	Vertical sync
15	DDC 2B clock

HDMI



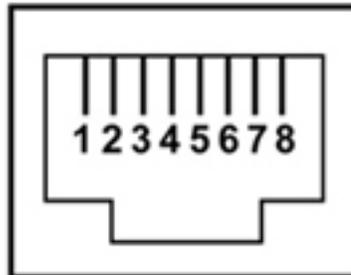
Pin	Signal
1	Transition minimized differential signal (TDMS) data 2+
2	Transition minimized differential signal (TDMS) data 2 shield
3	Transition minimized differential signal (TDMS) data 2-
4	Transition minimized differential signal (TDMS) data 1+
5	Transition minimized differential signal (TDMS) data 1 shield
6	Transition minimized differential signal (TDMS) data 1 shield
7	Transition minimized differential signal (TDMS) data 0+
8	Transition minimized differential signal (TDMS) data 0 shield
9	Transition minimized differential signal (TDMS) data 0-
10	Transition minimized differential signal (TDMS) Clock +
11	Transition minimized differential signal (TDMS) data clock shield
12	Transition minimized differential signal (TDMS) data clock-
13	Consumer electronics control (CEC)
14	Not connected
15	Display data channel (DDC) clock
16	Display data channel (DDC) data
17	Ground
18	+5V Power
19	Hot plug detect

RJ-11 (modem)



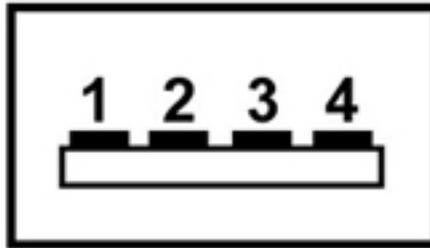
Pin	Signal
1	Unused
2	Tip
3	Ring
4	Unused
5	Unused
6	Unused

RJ-45 (network)



Pin	Signal
1	Transmit +
2	Transmit -
3	Receive +
4	Unused
5	Unused
6	Receive -
7	Unused
8	Unused

Universal Serial Bus



Pin	Signal
1	+5 VDC
2	Data -
3	Data +
4	Ground

Power cord set requirements

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

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

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

Requirements for all countries and regions

The requirements listed below 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	CCC	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.

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. Exercise caution 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.

 **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.eiae.org>.

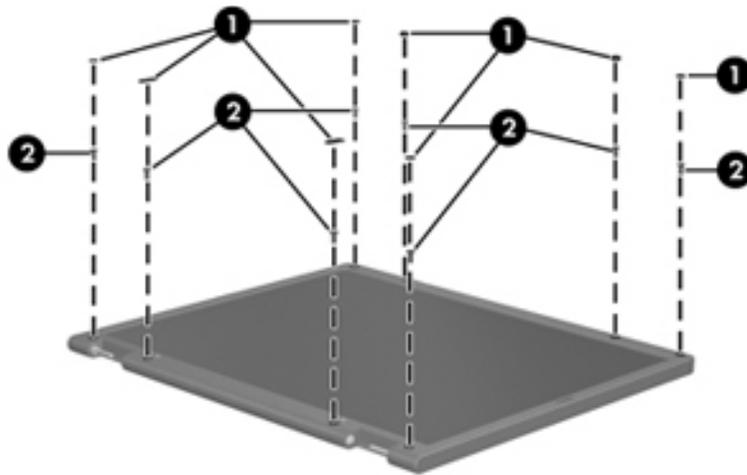
This section provides disassembly instructions for the display assembly. The display assembly must be disassembled to gain access to the backlight ❶ and the liquid crystal display (LCD) panel ❷.



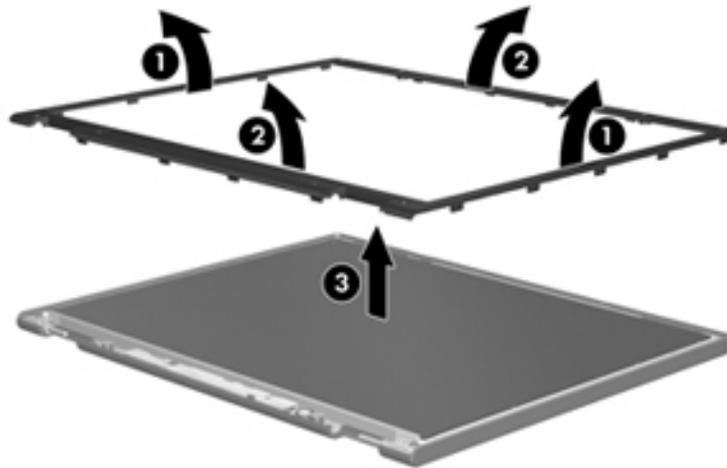
 The procedures provided in this chapter are general disassembly instructions. Specific details, such as screw sizes, quantities, and locations, and component shapes and sizes, can vary from one computer model to another.

Perform the following steps to disassemble the display assembly:

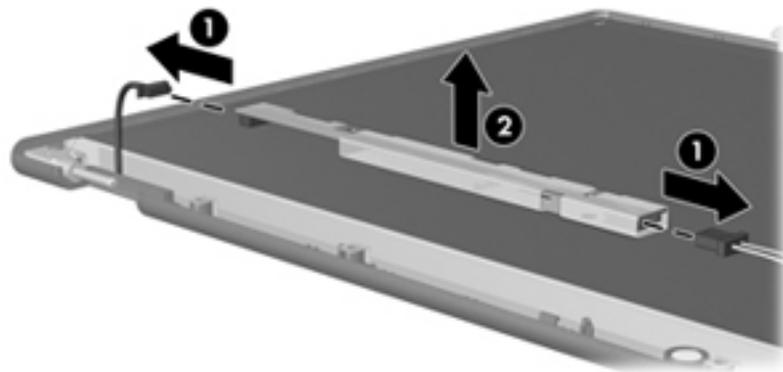
1. Remove all screw covers ① and screws ② that secure the display bezel to the display assembly.



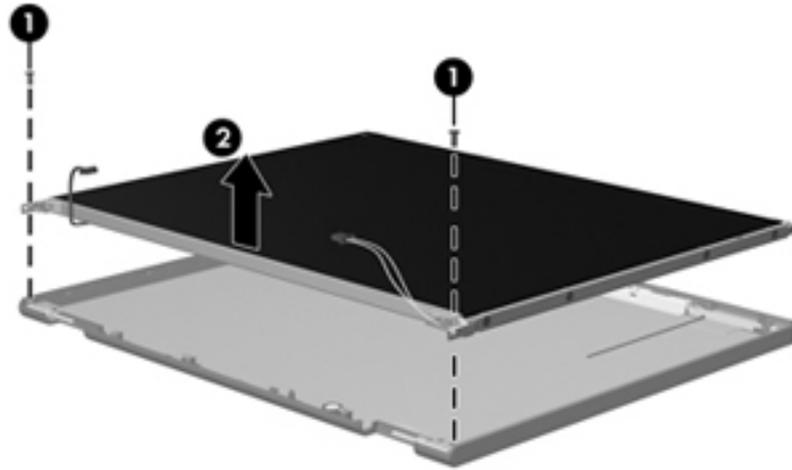
2. Lift up and out on the left and right inside edges ① and the top and bottom inside edges ② of the display bezel until the bezel disengages from the display assembly.
3. Remove the display bezel ③.



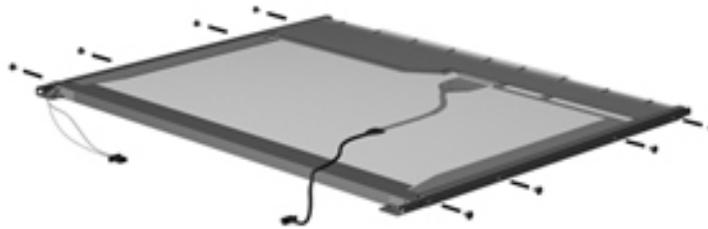
4. Disconnect all display panel cables ① from the display inverter and remove the display inverter ②.



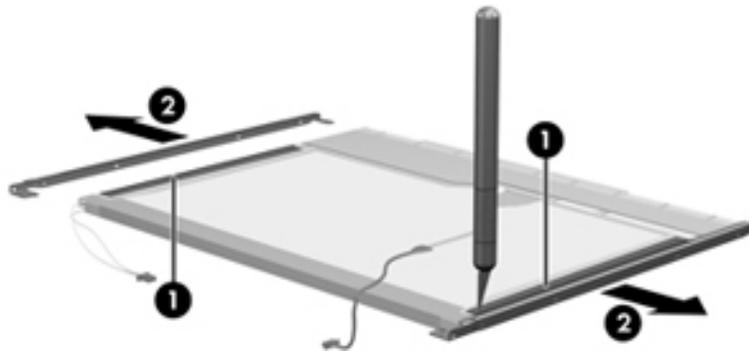
5. Remove all screws ❶ that secure the display panel assembly to the display enclosure.
6. Remove the display panel assembly ❷ from the display enclosure.



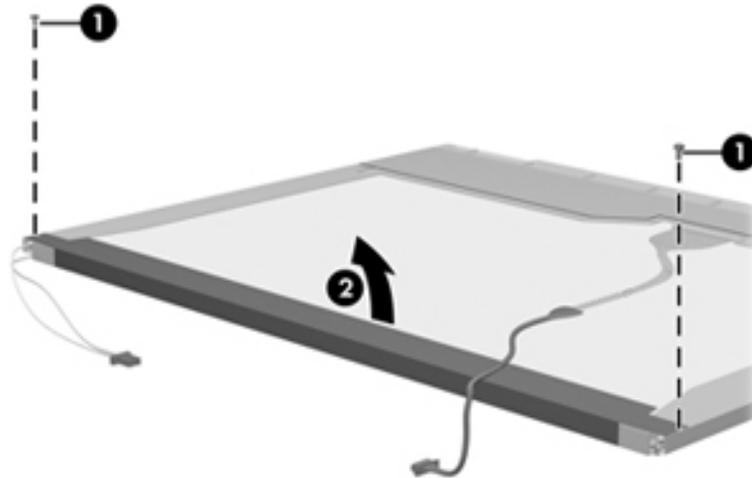
7. Turn the display panel assembly upside down.
8. Remove all screws that secure the display panel frame to the display panel.



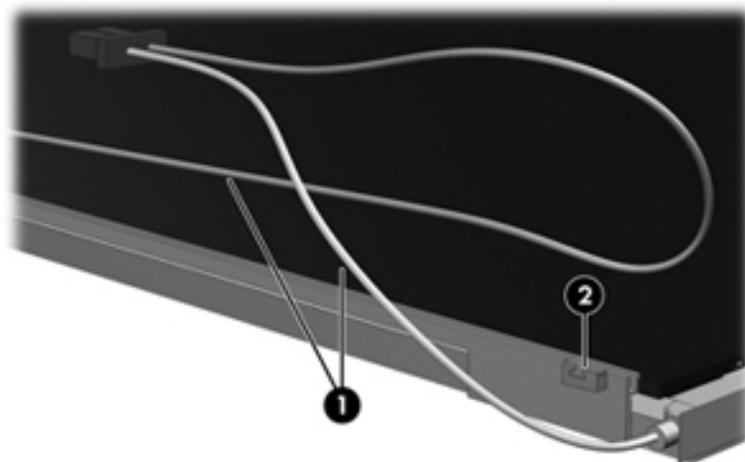
9. Use a sharp-edged tool ❶ to cut the tape ❷ that secures the sides of the display panel to the display panel frame.
10. Remove the display panel frame ❷ from the display panel.



11. Remove the screws ❶ that secure the backlight cover to the display panel.
12. Lift the top edge of the backlight cover ❷ and swing it outward.



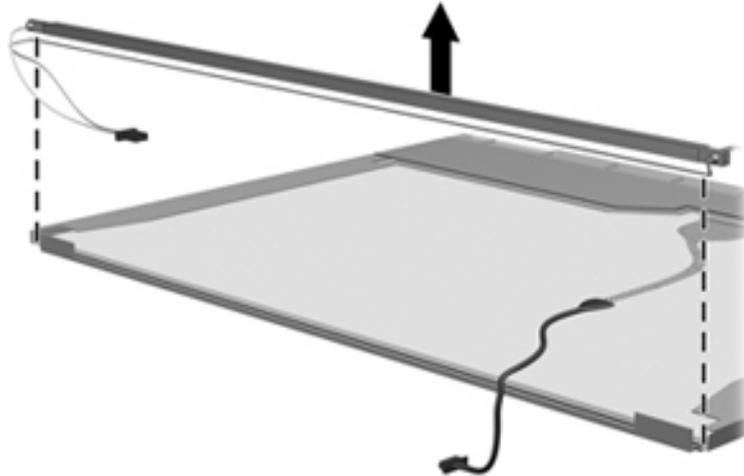
13. Remove the backlight cover.
14. Turn the display panel right-side up.
15. Remove the backlight cables ❶ from the clip ❷ in the display panel.



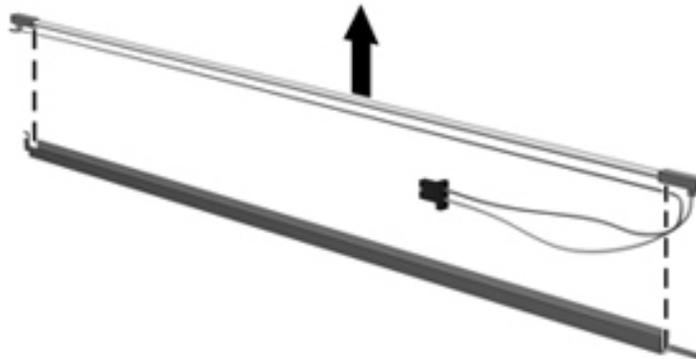
16. Turn the display panel upside down.
17. Remove the backlight frame from the display panel.



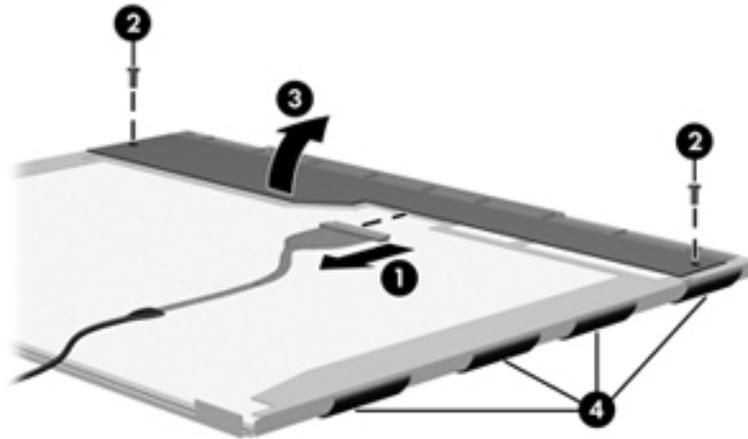
WARNING: The backlight contains mercury. Exercise caution when removing and handling the backlight to avoid damaging this component and causing exposure to the mercury.



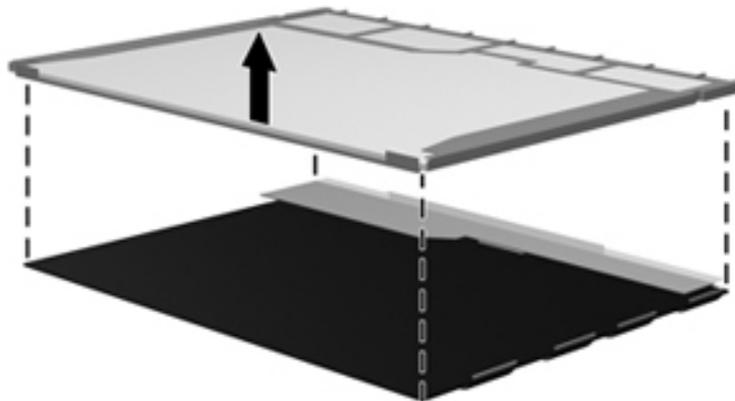
18. Remove the backlight from the backlight frame.



19. Disconnect the display cable ❶ from the LCD panel.
20. Remove the screws ❷ that secure the LCD panel to the display rear panel.
21. Release the LCD panel ❸ from the display rear panel.
22. Release the tape ❹ 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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