Compaq Presario CQ42 Notebook PC and HP G42 Notebook PC

Maintenance and Service Guide

SUMMARY

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; troubleshooting computer problems; 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).

MSG revision history

Revision	Publication date	Description
A	April 2010	Edited this guide to include HP G42 Notebook PC and Compaq CQ42 Notebook PC information only.
B	October 2010	• Added newly supported memory modules to spare parts listings in the following locations: Computer major components on page 20, Mass storage devices on page 29, Sequential part number listing on page 31, Memory module on page 51. • Added newly supported processors to spare parts listings in the following locations: Computer major components on page 20, Mass storage devices on page 29, Sequential part number listing on page 31, Processor on page 83. • Added newly supported system boards to spare parts listings in the following locations: Computer major components on page 20, Mass storage devices on page 29, Sequential part number listing on page 31, System board on page 73.

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1 Product description

Category	Description	HP G42	Compaq Presario CQ42	Compaq Presario CQ42	Compaq Presario CQ42
		UMA	Discrete	UMA Models 150 – 199	UMA Models 100 – 149
Product Name	**Compaq Presario CQ42 Notebook PC**		√	√	√
	HP G42 Notebook PC	√			
Processors	**Intel® Arrandale™**				
	i7-620M, 2.66-GHz, SC turbo, 4-MB L3 cache	√	√	√	
	i5-540M, 2.53-GHz, SC turbo, 3-MB L3 cache	√	√	√	
	i5-520M, 2.4-GHz, SC turbo, 3-MB L3 cache	√	√	√	
	i5-430M 2.26-GHz (turbo to 2.53-GHz) 3-MB L3 cache	√	√	√	
	i3-350M, 2.26-GHz 3-MB L3 cache	√	√	√	
	i3-330M, 2.13-GHz 3-MB L3 cache	√	√	√	
	Intel Pentium™				
	DC T4400, 2.2-GHz, 800-MHz FSB, 1-MB L2 cache				√
	DC T4300, 2.1-GHz, 800-MHz FSB, 1-MB L2 cache				√
	Intel Celeron™				
	DC T3100, 1.9-GHz, 800-MHz FSB, 1-MB L2 cache				√
	DC T3000, 1.8-GHz 800-MHz FSB, 1-MB L2 cache				√
	AMD® Phenom™ II Processor				
	DC N930 QC 2.0 GHz	√	√	√	
	DC N830 Tri-core 2.1Ghz 1.5M L2 35W	√	√	√	

Category	Description	HP G42	Compaq Presario CQ42	Compaq Presario CQ42	Compaq Presario CQ42
		UMA	Discrete	UMA Models 150 – 199	UMA Models 100 – 149
	N620 DDR3-1333 Mhz	√	√	√	
	DC QC P920 1.6Ghz 2M L2 25W	√	√	√	
	DC P820 Tri-Core 1.8Ghz 1.5M L2 25W	√	√	√	
	DC P820 Tri-Core 1.8Ghz 1.5M L2 25W	√	√	√	
	AMD Turion™ II Processor				
	DC N530 DC 2.5GHz L2 35W	√	√	√	
	P520 DDR3-1066 Mh	√	√	√	
	AMD Athlon™ II Processor				
	DC N330 2.3GHz 1M L2 35W	√	√	√	
	P320 DDR3-1066 Mhz	√	√	√	
	AMD Sempron™ II Processor				
	N120 DDR3-1066 Mhz	√	√	√	
Chipset	Intel® HM55 Express	√	√	√	
	Intel® GL40				√
	Southbridge: ICH9m				√
	AMD				
	ATI RS880M (Northbridge)	√		√	
	ATI RS880MD (Northbridge)		√		
	Southbridge - SB820	√	√	√	
Graphics	**Intel UMA (integrated)/HD Graphics** with shared video memory (memory size is dynamic change): • Up to 251 MB on computers with 1024 MB of system memory • Up to 358 MB on computers with more than 2048 MB of system memory	√		√	

Category	Description	HP G42	Compaq Presario CQ42	Compaq Presario CQ42	Compaq Presario CQ42
		UMA	Discrete	UMA Models 150 – 199	UMA Models 100 – 149
	Intel UMA (integrated)/GMA 4500M - GL40 chipset with shared video memory (memory size is dynamic change): • Up to 1759 MB for computers with more than 4096 MB of system memory (64 bit) • Up to 1309 MB for computers with more than 4096 MB of system memory (32 bit) • Up to 1309 MB for computers with more than 3072 MB of system memory • Up to 797 MB for computers with more than 2048 MB system memory • Up to 285 MB for computers with more than 1024 MB of system memory				√
	ATi Discrete PCI Express x 16 Graphics ATi Mobility Radeon Park-LP S3 package (ATI Mobility Radeon™ HD5430 with 512-MB of dedicated video memory (64-MB×16 DDR3, 4 pcs, 800-MHz))		√		
	Support for BD or HD-DVD playback with HD decoder and DX10 support	√	√	√	√
Panel	**35.6-cm** (14.0-in) HD LED BrightView (1366 x 768 resolution)	√	√	√	√
	16:9 wide aspect ratio	√	√	√	√
Memory	2 SODIMM slots	√	√	√	√
	Customer-accessible and upgradable	√	√	√	√
	Supports up to 8 GB of system memory	√	√	√	√
	DDR3, 1066-MHz, dual-channel memory (DDR3 1333 MHz can be downgraded to DDR3 1066 MHz)	√	√	√	
	DDR3, 800-MHz, dual-channel memory (DDR3 1333 MHz can be downgraded to DDR3 800 MHz)				√
	Supports the following configurations:				

Category	Description	HP G42	Compaq Presario CQ42	Compaq Presario CQ42	Compaq Presario CQ42
		UMA	Discrete	UMA Models 150 – 199	UMA Models 100 – 149
	• 4096 MB (2048 MB × 2)	√	√	√	√
	• 3072 MB (1024 MB × 1 + 2048 MB × 1)	√	√	√	√
	• 2048 MB (2048 MB × 1)	√	√	√	√
	• 2048 MB (1024 MB × 2)	√	√	√	√
	• 1024 MB (1024 MB × 1)	√	√	√	√
Hard drives	Supports **9.5-mm**, **6.35-cm** (2.5-in) hard drives	√	√	√	√
	Serial ATA	√	√	√	√
	Supports the following drives:				
	• 640-GB 5400 RPM	√	√	√	
	• 500 GB, 7200 rpm	√	√	√	
	• 320 GB, 7200 rpm	√	√	√	√
	• 250 GB, 7200 rpm	√	√	√	√
	• 160 GB, 7200 rpm	√	√	√	
Optical drives	Fixed (removal of one screw required)	√	√	√	√
	SATA	√	√	√	√
	12.7-mm (0.50-in) tray load	√	√	√	√
	Supports the following drives:				
	• Blu-ray ROM with LightScribe DVD±R/RW SuperMulti DL Drive	√	√	√	
	• Blu-ray ROM DVD±R/RW SuperMulti DL Drive	√	√	√	
	• DVD±R/RW SuperMulti DL Drive with LightScribe	√	√	√	√
	• DVD±R/RW SuperMulti DL Drive	√	√	√	√
Diskette drive	Supports external USB drive only	√	√	√	√
Camera	VGA camera	√	√	√	√
	Fixed (no tilt)	√	√	√	√
	640 × 480 by 24 frames per second	√	√	√	√
Microphone	One microphone, analog	√	√	√	√
Audio	HD audio	√	√	√	√

Category	Description	HP G42	Compaq Presario CQ42	Compaq Presario CQ42	Compaq Presario CQ42
		UMA	Discrete	UMA Models 150 – 199	UMA Models 100 – 149
	Supports Microsoft Premium requirements	√	√	√	√
	Altec Lansing speakers	√	√	√	√
Modem	Support for optional high-speed 56k modem	√	√	√	√
Ethernet	Integrated 10/100 network interface card (NIC)	√	√	√	√
Wireless	**Integrated wireless local area network (WLAN) options by way of wireless module:**				
	Intel Centrino Wireless-N 1000 802.11b/g 1x2	√	√	√	
	Intel Centrino Wireless-N 1000 802.11b/g 1x2 plus Broadcom 2070 Bluetooth 2.1+EDR Adapter	√	√	√	
	Atheros AR9285 802.11b/g/n 1x1 WiFi Adapter	√	√	√	√
	Atheros AR9285 802.11b/g/n 1x1 WiFi Adapter plus Broadcom 2070 Bluetooth 2.1+EDR Adapter	√	√	√	√
	Broadcom 4312G 802.11b/g WiFi Adapter				√
	Broadcom 4312G 802.11b/g WiFi Adapter plus Broadcom 2070 Bluetooth 2.1+EDR Adapter				√
	Realtek RTL8191SE 802.11b/g/n 1x1 WiFi Adapter	√	√	√	√
	Realtek RTL8191SE 802.11b/g/n 1x1 WiFi Adapter plus Broadcom 2070 Bluetooth 2.1+EDR Adapter	√	√	√	√
External media card	5-in-1 Digital Media Slot; supports SD, MMC, MS, Mspro, xD	√	√	√	√
	Single port configured as either HDMI or 5-in-1 Digital Media Slot	√	√	√	
	Supports mini versions of SD, MMC, and MS Duo with adapter (adapter not included)	√	√	√	√
Ports	VGA (Dsub 15-pin) supporting 1600 x 1200 resolution at 75 Hz; disabled when connected to devices through Expansion port 3	√	√	√	√
	Hot plug/unplug and auto detect for wide-aspect or standard-aspect video	√	√	√	√

Category	Description	HP G42	Compaq Presario CQ42	Compaq Presario CQ42	Compaq Presario CQ42
		UMA	Discrete	UMA Models 150 – 199	UMA Models 100 – 149
	HDMI v1.3 supporting 1080p with HDCP key	√	√	√	√
	Single port configured for either HDMI or 5-in-1 card reader	√	√	√	
	USB 2.0 (3)	√	√	√	√
	RJ-11 (modem) with modem option	√	√	√	√
	RJ-45 (Ethernet, with link and activity lights)	√	√	√	√
	Audio-in (mono microphone)	√	√	√	√
	Audio-out (stereo headphone)	√	√	√	√
	Smart-pin AC adapter plug	√	√	√	√
Keyboard/ pointing devices	14.0-inch keyboard	√	√	√	
	TouchPad with 2 buttons and 2-way scroll (taps enabled as default)	√	√	√	
Power requirements	6-cell (47-Wh) 2.20-Ah Li-ion battery	√	√	√	√
	65-W AC adapter with Smart-Pin DC connector	√		√	√
	90-W AC adapter with Smart-Pin DC connector		√		
Security	Security cable slot	√	√	√	√
Operating system	**Preinstalled:**				
	Windows 7 Professional (32 & 64 bit)	√	√	√	
	Windows 7 Home Premium (32 & 64 bit)		√	√	√
	Windows 7 Home Basic (32 & 64 bit)		√	√	
	Windows 7 Starter (32 bit)		√	√	
	Free DOS		√	√	√
	Novell Linux		√	√	
Serviceability	**End-user replaceable parts:**				
	AC adapter	√	√	√	√
	Battery (system)	√	√	√	√
	Hard drive	√	√	√	√
	Memory module	√	√	√	√

Category	Description	HP G42	Compaq Presario CQ42	Compaq Presario CQ42	Compaq Presario CQ42
		UMA	Discrete	UMA Models 150 – 199	UMA Models 100 – 149
	Optical drive	√	√	√	√
	Mini-card device	√	√	√	√

2 External component identification

Identifying the hardware

Components included with the computer may vary by region and model. The illustrations in this chapter identify the standard features on most computer models.

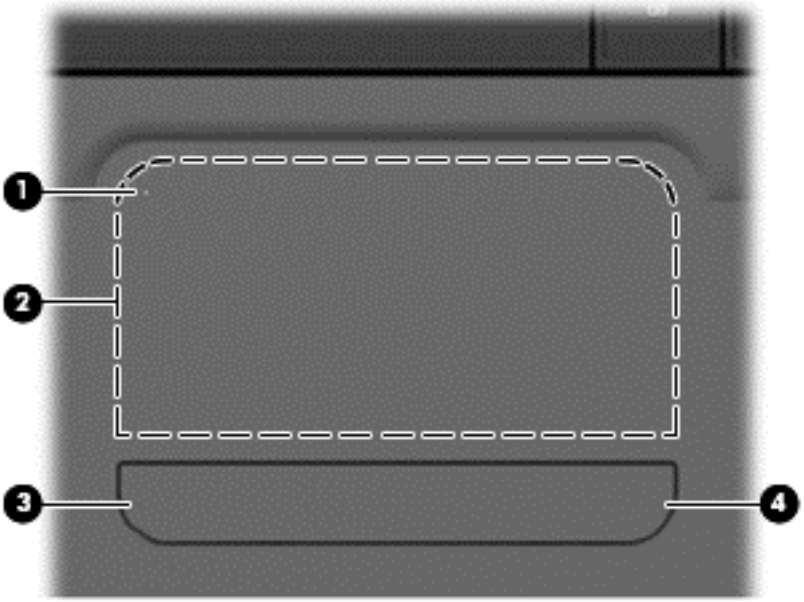
To see a list of hardware installed in the computer, follow these steps:

1. Select **Start > My Computer**.
2. In the left pane of the System Tasks window, select **View system information**.
3. Select **Hardware tab > Device Manager**.

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

Top components

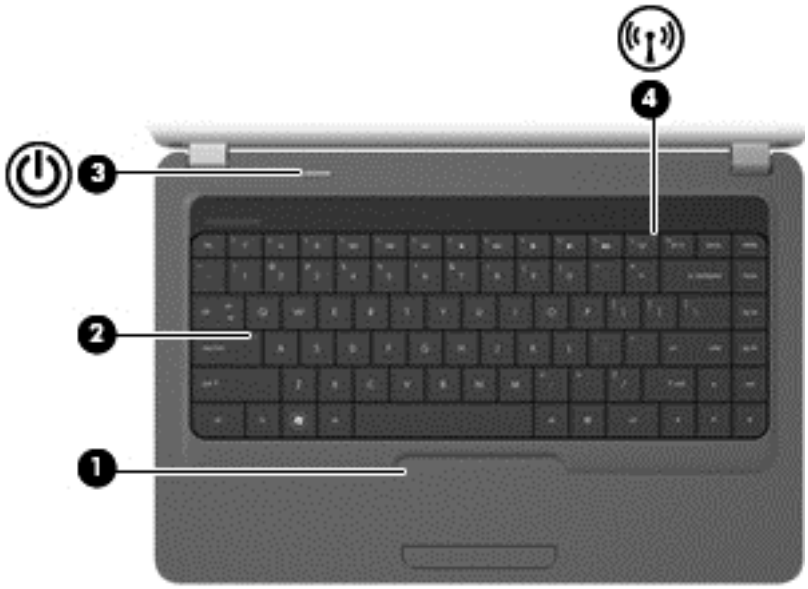
TouchPad



Component		Description
(1)	TouchPad off indicator	To switch the TouchPad zone on and off, quickly double-tap the TouchPad off indicator. **NOTE:** When the TouchPad zone is active, the light is off.
(2)	TouchPad zone	Moves the pointer and selects or activates items on the screen.
(3)	Left TouchPad button	Functions like the left button on an external mouse.
(4)	Right TouchPad button	Functions like the right button on an external mouse.

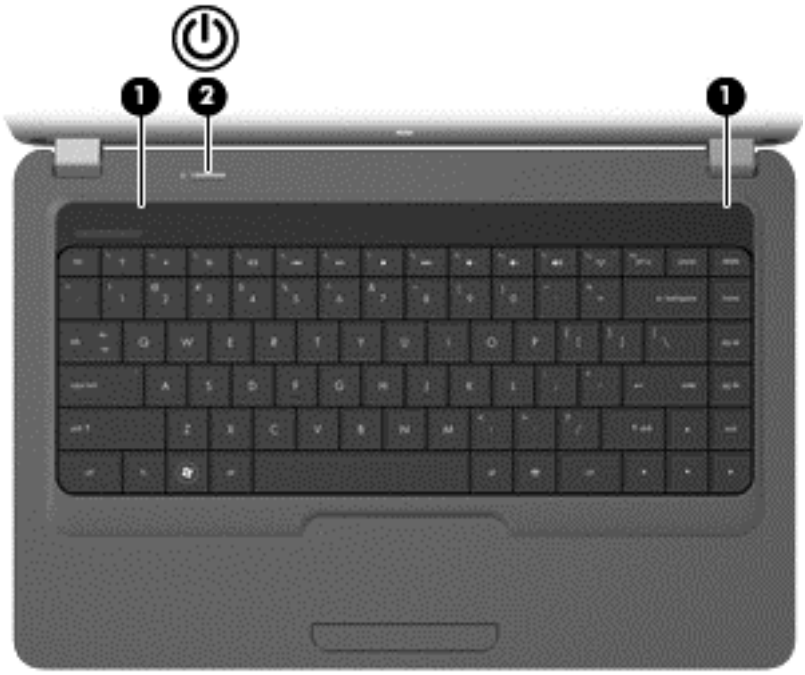
There is an unmarked scroll zone inside the right edge of the TouchPad. To scroll up and down using the TouchPad vertical scroll zone, slide your finger up or down inside the right edge of the TouchPad. For more information about TouchPad features, refer to” Using the TouchPad” section later in this guide.

Lights



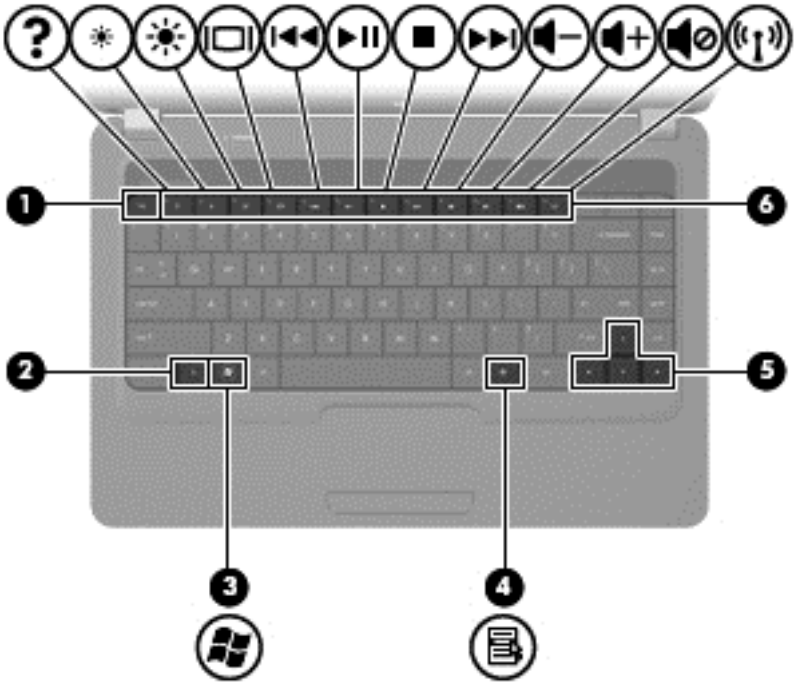
Component			Description
(1)		TouchPad light	• On: The TouchPad is disabled. • Off: The TouchPad is enabled.
(2)		Caps lock light	On: Caps lock is on.
(3)		Power light	• On: The computer is on. • Blinking: The computer is in the Sleep state. • Off: The computer is off or in Hibernation.
(4)		Wireless light	• White: An integrated wireless device, such as a wireless local area network (WLAN) device and/or a Bluetooth® device, is on. • Amber: All wireless devices are off.

Button and speakers



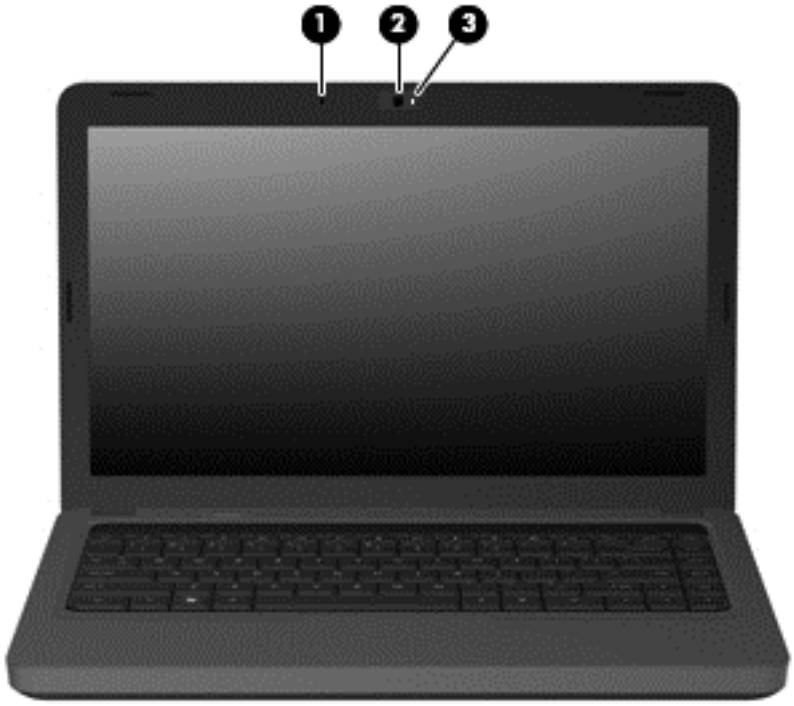
Component		Description
(1)	Speakers (2)	Produce sound.
(2)	Power button	• When the computer is off, press the button to turn on the computer. • When the computer is on, press the button briefly to initiate Sleep. • When the computer is in the Sleep state, briefly press the button to exit Sleep. • When the computer is in Hibernation, briefly press the button to exit Hibernation. 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. To learn more about your power settings, select **Start > Control Panel > System and Security > Power Options**.

Keys



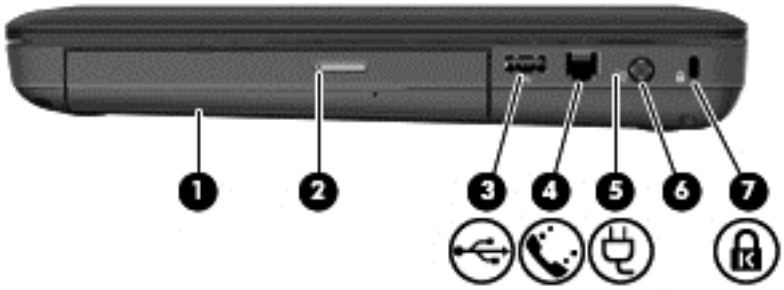
Component		Description
(1)	esc key	Displays system information when pressed in combination with the fn key.
(2)	fn key	Displays system information when pressed in combination with the esc key.
(3)	Windows logo key	Displays the Windows Start menu.
(4)	Windows applications key	Displays a shortcut menu for items beneath the pointer.
(5)	Navigation keys	Navigate using the Up, Down, Left and Right arrow keys.
(6)	Action keys	Execute frequently used system actions.

Display



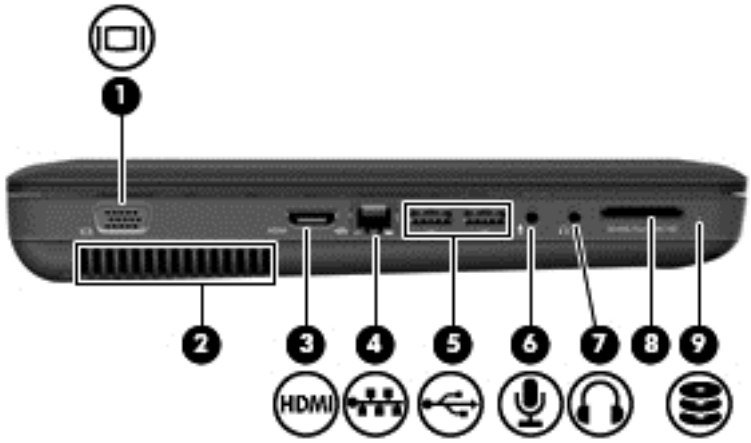
Component		Description
(1)	Internal microphone	Records sound.
(2)	Integrated webcam (select models only)	Records audio and video and captures still photographs.
(3)	Integrated webcam light (select models only)	On: The integrated webcam is in use.

Right-side components



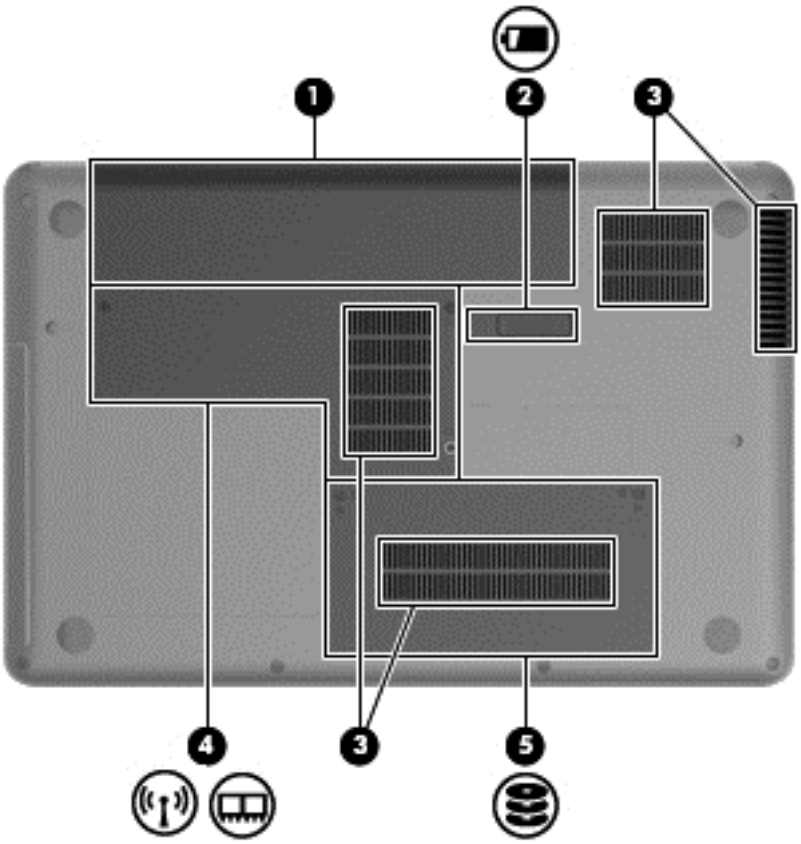
Component		Description
(1)	Optical drive	Reads and writes to optical discs.
(2)	Optical drive light	Blinking: The optical drive is being accessed.
(3)	USB port	Connects an optional USB device.
(4)	RJ-11 (modem) jack (select models only)	Connects a modem cable.
(5)	AC adapter/power/battery light	• White: The computer is connected to external power and the battery is fully charged. • Blinking white: The computer is in the Sleep state. • Amber: A battery is charging.
(6)	Power connector	Connects an AC adapter.
(7)	Security cable slot	Attaches an optional security cable to the computer. **NOTE:** The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.

Left-side components



Component		Description
(1)	External monitor port	Connects an external VGA monitor or projector.
(2)	Vent	Enables airflow to cool internal components. **NOTE:** The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.
(3)	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.
(4)	RJ-45 (network) jack	Connects a network cable.
(5)	USB ports (2)	Connects optional USB devices.
(6)	Audio-in (microphone) jack	Connects an optional computer headset microphone, stereo array microphone, or monaural microphone.
(7)	Audio-out (headphone) jack	Produces sound when connected to optional powered stereo speakers, headphones, earbuds, a headset, or television audio.
(8)	Digital Media Slot (select models only)	Supports the following optional digital card formats: • Memory Stick (MS) • Memory Stick Pro (MSP) • MultiMediaCard (MMC) • Secure Digital (SD) Memory Card • xD-Picture Card (XD)
(9)	Drive light	On: The hard drive is in use.

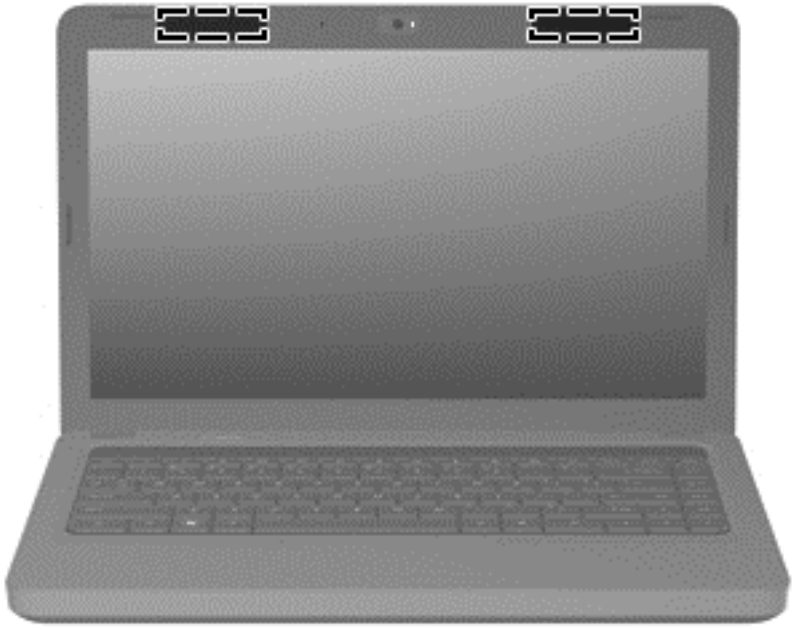
Bottom components



Component			Description
(1)		Battery bay	Holds the battery.
(2)		Battery release latch	Releases the battery from the battery bay.
(3)		Vents (4)	Enable airflow to cool internal components. **NOTE:** The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.
(4)		Memory module compartment	Contains 2 memory module slots and, on select models, the wireless LAN (WLAN) device. **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.
(5)		Hard drive bay	Holds the hard drive.

Wireless antennas

At least 2 antennas send and receive signals from one or more wireless devices. These antennas are not visible from the outside of the computer.



NOTE: 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

Component		Description
(1)	Power cord*	Connects an AC adapter to an AC outlet.
(2)	AC adapter	Converts AC power to DC power.
(3)	Battery*	Powers the computer when the computer is not plugged into external power.

*Power cords vary in appearance by country or region.

⚠ **WARNING!** Connecting the internal analog modem to a digital line can permanently damage the modem. Immediately disconnect the modem cable if you accidentally connect it to a digital line.

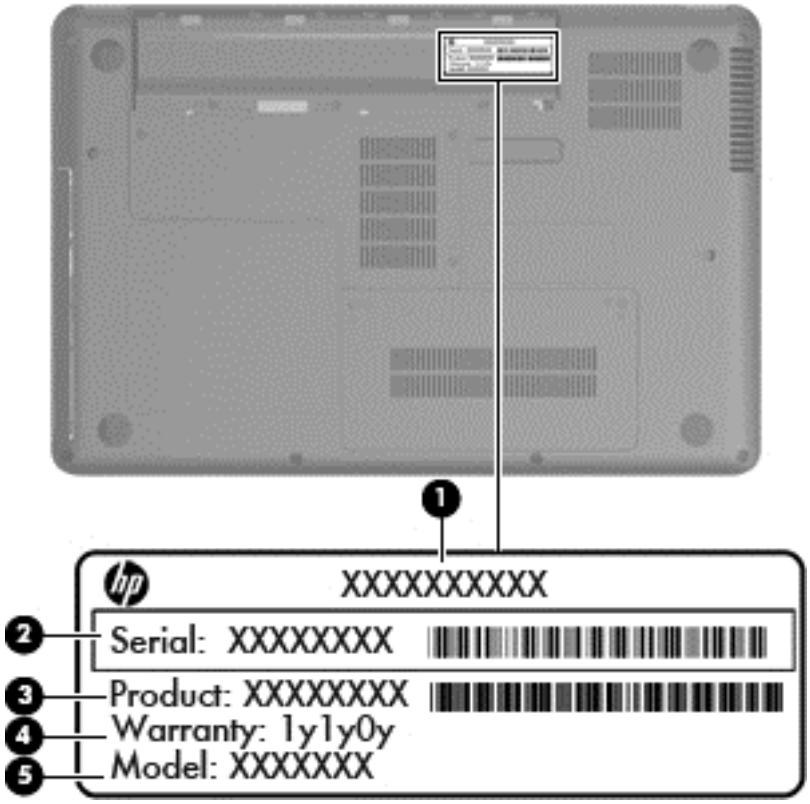
NOTE: Telephone jacks vary by country or region. To use the modem and the modem cable (included with select models only) outside the country or region in which you purchased the computer, you must obtain a country- or region-specific modem cable adapter (included with select models or purchased separately). The modem must be connected to an analog telephone line using a 6-pin, RJ-11 modem cable (included with select models only). Jacks for digital PBX systems may resemble analog telephone jacks, but they are not compatible with the modem.

If the modem cable contains noise suppression circuitry, which prevents interference from TV and radio reception, orient the circuitry end of the cable toward the computer.

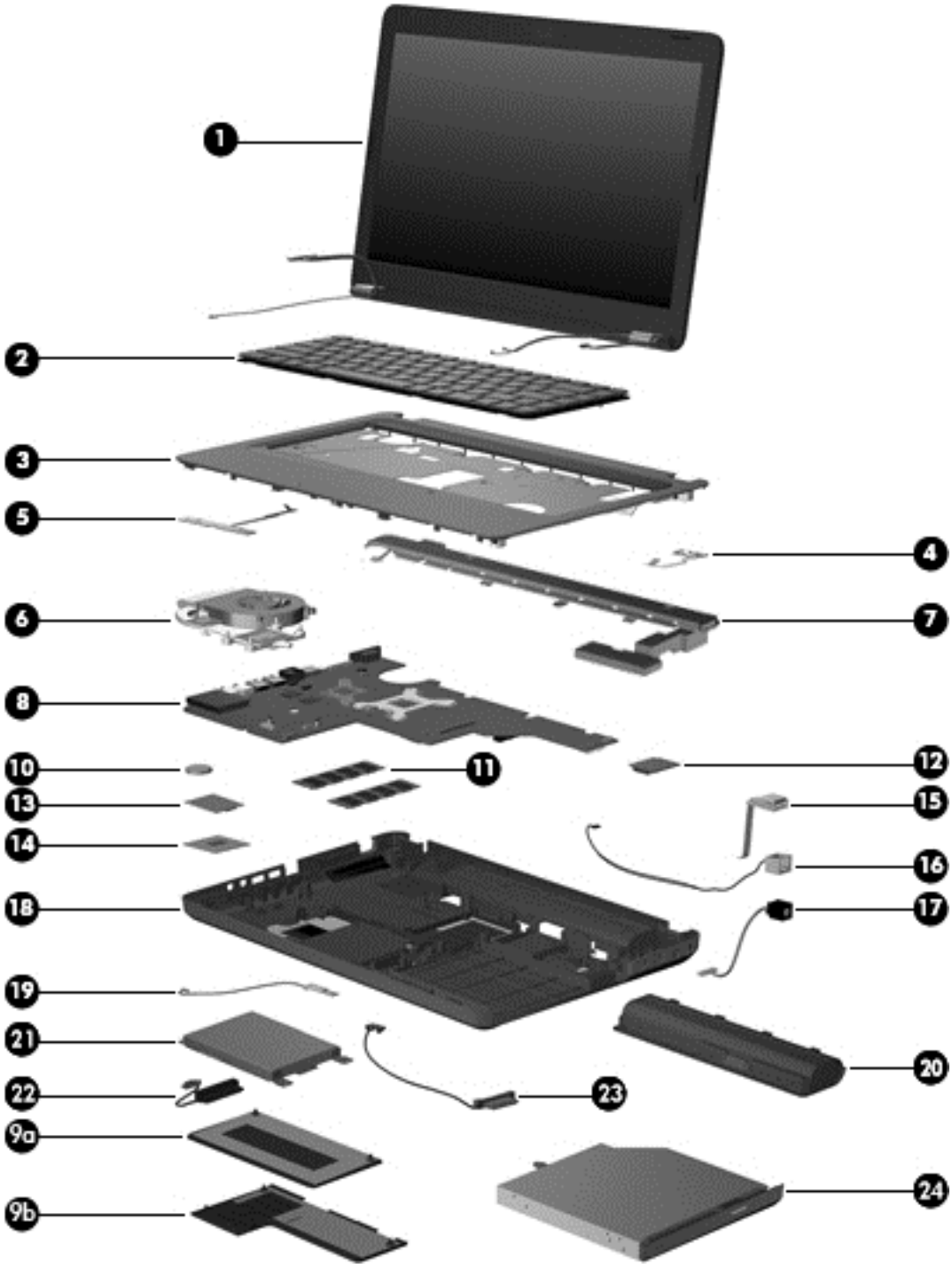
3 Illustrated parts catalog

Serial number location

When ordering parts or requesting information, provide the computer serial number and model number located in the battery bay of the computer.



Computer major components



Item	Description	Spare part number
(1)	**35.6 cm** (14-in)**, WXGA, BrightView display assembly** **NOTE:** See Display assembly components on page 26 for more display assembly internal component spare part information.	
	• For use with integrated microphone and webcam; Presario, matte black	592146-001

Item	Description	Spare part number
	• For use with integrated microphone and webcam; Presario, biscotti	597617-001
	• For use with integrated microphone and webcam; HP, biscotti	600163-001
	• For use with integrated microphone and webcam; HP, silver (for model 1.0 only)	606155-001
	• For use with integrated microphone and webcam; HP, white	606156-001
	• For use with integrated microphone and webcam; HP, charcoal (for model 1.1 only)	622571-001
(2)	**Keyboards**	
	• For use in Brazil (for model 1.1 only)	600175-201
	• For use in English and French Canada	600175-121
	• For use in Latin America	600175-161
	• For use in South Korea	600175-AD1
	• For use in Taiwan	600175-AB1
	• For use in Thailand	600175-281
	• For use in the United States	600175-001
(3)	**Top cover** (includes Touchpad, bracket, button board, and cable)	
	• Matte black color	600181-001
	• Biscotti color	600182-001
	• Silver color	606161-001
	• White color (for model 1.0 only)	606162-001
	• Charcoal color (for model 1.1 only)	622581-001
(4)	**Power button board** (includes cable)	600188-001
(5)	**Touchpad button board** (includes cable)	604603-001
(6)	**Thermal module — fan and heat assembly** (includes thermal material)	
	• For use in models that use Universal Memory Architecture (UMA) graphics subsystem memory	606609-001
	• For use in models that use discrete graphics subsystem memory	606610-001
	• For use in models that use DSC HD545V graphics subsystem memory (for model 1.0 only)	617029-001
(7)	**Speaker assembly** (includes cable)	600189-001
(8)	**System boards** (includes replacement thermal material)	
	• For use in models with DSC HD5430 MDM CR (for model 1.0 only)	592811-001
	• For use in models with UMA graphics subsystem memory,	592808-001
	• For use in models with DSC HD5430 (for model 1.0 only)	592810-001
	• For use in models with UMA graphics subsystem memory and a modem and HDMI card reader	592809-001
	• For use in models with HD545V DSC (for model 1.0 only)	611554-001

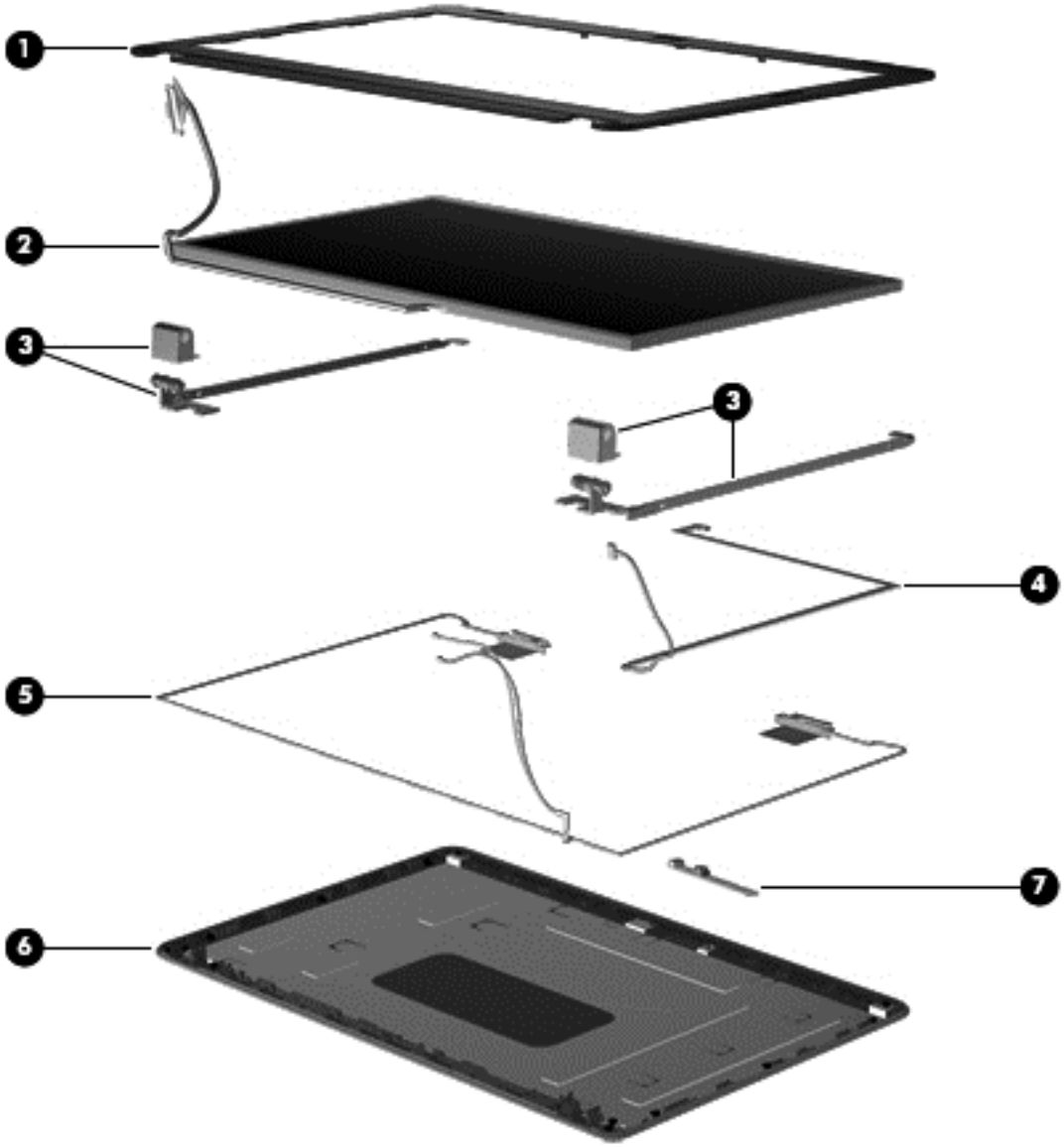
Item	Description	Spare part number
	• For use in models with HD545V DSC CR (for model 1.0 only)	611555-001
	• For use in models with HD5470/512 MB DSC (for model 1.1 only)	616405–001
	• For use in models with HD5470/512 MB DSC HDMI (for model 1.1 only)	616406–001
	• For use in models with HD5470/1G DSC (for model 1.1 only)	616407–001
	• For use in models with HD5470/1G DSC HDMI (for model 1.1 only)	616408–001
(9)	**Plastics Kit** (see Plastics Kit on page 28 for more Plastics Kit information)	600190-001
	(9a) Hard drive compartment cover	
	(9b) Wireless/memory module mini-card compartment cover	
(10)	**RTC battery** (includes mounting adhesive)	602745-001
(11)	**Memory modules**	
	• 2-MB, PC3-10600, 1333-MHz	598856-001
	• 1-MB, PC3-10600, 1333-MHz	598859-001
	• 4-MB, PC3-10600, 1333-MHz (for model 1.1 only)	599092-001
(12)	**Modem module**	
	• High-speed 56K modem for use in all countries and regions except Australia and New Zealand (for model 1.0 only)	510100-001
	• High-speed 56K modem for use in Australia and New Zealand (for model 1.0 only)	510100-011
(13)	**WLAN module**	
	Atheros AR9285 802.11 a/b/g/n 2x2 WiFi adapter	
	• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the United States, and the US Virgin Islands	580101-001

Item	Description	Spare part number
	• Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentian, Armenia, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Barbados, Belgium, Belize, Benin, Bhutan, Bosnia and Herzegovina, Botswana, Brazil, Brunei, Bulgeria, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Costa Rica, Croatia, Cyprus, Czech Republic, Zaire, Denmark, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equitorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guatemala, Guinea, Guinea-Bissa, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Italy, Ivory Coast, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kiribati, Korea-South, Kuwait, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Martinique, Nether Antilles, French Guiana, Aruba, British Virgin Islands, Bermuda, Syria, Guadeloupe, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagaascar, Malawi, Malaysia, Maldives, Mali, Malta, Marshall Islands, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Palau, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Republic of Moldova, Romania, rwanda, Samoa, San Marino, Sao tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, Solomon Islands, Somalia, South Africa, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and Gren, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Timor (East), Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, United Arab Emirates ,United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zambia, and Zimbabwe	580101-002
	Realtek RTL8191SE 802.11b/g/n 1x1 WiFi Adapter	593533-001
	SPS-WLAN BGN + BT HMC Combo Matador	600370-001
	SPS-WLAN 802.11 bgn Shiraz HMC	593836-001
	SPS-WLAN BGN (1x1) + BT HMC Combo Rashi	602992-001
(14)	**Processor** (includes replacement thermal material)	
	• Advanced Micro Devices (AMD) processor P320 DDR3-1066 Mhz	594165-001
	• Advanced Micro Devices (AMD) processor DDR3-1066 Mhz (for model 1.0 only)	594171-001
	• Advanced Micro Devices (AMD) processor P520 DDR3-1066 Mh	594173-001
	• Advanced Micro Devices (AMD) processor DC N330 2.3GHz 1M L2 35W (for model 1.0 only)	594164-001
	• Advanced Micro Devices (AMD) processor DC N530 DC 2.5GHz L2 35W	594172-001
	• Advanced Micro Devices (AMD) processor DC P820 Tri-Core 1.8Ghz 1.5M L2 25W	594167-001
	• Advanced Micro Devices (AMD) processor N620 DDR3-1333 Mhz	594166-001
	• Intel Core 2 Duo Mobile,T4300, 2.1-GHz	572929-001
	• Intel Core 2 Duo Mobile processor T3100 - 1.9-GHz	572925-001
	• Intel Core 2 Duo Mobile processor T3300 2.0-GHz	592399-001
	• Intel Core 2 Duo Mobile processor T4500 2.3-GHz	591880–001
	• Advanced Micro Devices (AMD) processor P320 DDR3-1066 Mhz	594165-001
	• Advanced Micro Devices (AMD) processor DDR3-1066 Mhz (for model 1.0 only)	594171-001
	• Advanced Micro Devices (AMD) processor P520 DDR3-1066 Mh	594173-001

Item	Description	Spare part number
	• Advanced Micro Devices (AMD) processor DC N330 2.3GHz 1M L2 35W (for model 1.0 only)	594164-001
	• Advanced Micro Devices (AMD) processor DC QC P920 1.6Ghz 2M L2 25W	594170-001
	• Advanced Micro Devices (AMD) processor DC N530 DC 2.5GHz L2 35W	594172-001
	• Advanced Micro Devices (AMD) processor DC P820 Tri-Core 1.8Ghz 1.5M L2 25W	594167-001
	• Advanced Micro Devices (AMD) processor N620 DDR3-1333 Mhz	594166-001
	• Advanced Micro Devices (AMD) processor DC N930 QC 2.0 GHz	594169-001
	• Advanced Micro Devices (AMD) processor DC N830 Tri-core 2.1Ghz 1.5M L2 35W	594168-001
	• Advanced Micro Devices (AMD) processor DC P340 2.2GHz L2 25W (for model 1.1 only)	616343-001
	• Advanced Micro Devices (AMD) processor DC N350 2.4GHz L2 35W (for model 1.1 only)	616334-001
	• Advanced Micro Devices (AMD) processor DC P540 DC 2.4GHz L2 25W (for model 1.1 only)	616347-001
	• Advanced Micro Devices (AMD) processor DC N550 DC 2.6GHz L2 35W (for model 1.1 only)	616337-001
	• Advanced Micro Devices (AMD) processor DC N640 DC 2.9Ghz L2 35W (for model 1.1 only)	616344-001
	• Advanced Micro Devices (AMD) processor DC P840 1.9Ghz L2 (for model 1.1 only)	616335-001
	• Advanced Micro Devices (AMD) processor DC N850 2.2Ghz L2 (for model 1.1 only)	616345-001
	• Advanced Micro Devices (AMD) processor DC P940 DC QC 1.7Ghz L2 (for model 1.1 only)	616336-001
	• Advanced Micro Devices (AMD) processor DC P950 QC 2.1Ghz L2 35W (for model 1.1 only)	616346-001
(15)	**USB board** (includes cable)	600631-001
(16)	**Modem (RJ-11) cable** (includes RJ-11 connector with modem cable)	610791-001
(17)	**Power connector cable** (includes power connector and cable)	600630-001
(18)	**Base enclosure** (with modem cable and ODD cable)	
	• For use with HDMI card reader, biscotti	617025-001
	• For use without HDMI card reader, biscotti	617026-001
	• For use with HDMI card reader and without modem module, silver	608912-001
	• For use with HDMI card reader and without modem, white (for model 1.0 only)	608913-001
	• For use with HDMI card reader, matte black	617027-001
	• For use without HDMI card reader, matte black	617028-001
	• For use with HDMI card reader, charcoal (for model 1.1 only)	622579-001
(19)	**Bluetooth module**	537921-001
	Bluetooth module cable (illustrated with Bluetooth module)	602822-001
(20)	**Battery**	

Item	Description	Spare part number
	• 6-cell 47-WH (2.2-Ah) LI-ion	593553-001
	• 6-cell 55-WH (2.55-Ah) LI-ion	593554-001
(21)	**Hard drive** (include hard drive bracket)	
	• 640-GB 5400 RPM	603785-001
	• 500-GB 7200 RPM	600170-001
	• 320-GB 7200 RPM	600169-001
	• 250-GB 7200 RPM	575598-001
	• 160-GB 7200 RPM	600167-001
(22)	**Hard drive cable/adapter** (included with the cable kit; see Mass storage devices on page 29)	610791–001
(23)	**Optical drive cable** (included in the cable kit)	610791-001
(24)	**Optical drives** (12.7 mm, SATA, fixed)	
	• Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, matte black	600173-001
	• Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, biscotti	600174-001
	• Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, silver	608121-001
	• Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, white (for model 1.0 only)	608122-001
	• Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, charcoal (for model 1.1 only)	622577-001
	• DVD±RW SuperMulti DL Drive with LightScribe, matte black	600171-001
	• DVD±RW SuperMulti DL Drive with LightScribe, biscotti	600172-001
	• DVD±RW SuperMulti DL Drive with LightScribe, silver	608119-001
	• DVD±RW SuperMulti DL Drive with LightScribe, white (for model 1.0 only)	608120-001
	• DVD±RW SuperMulti DL Drive with LightScribe, charcoal (for model 1.1 only)	622575-001

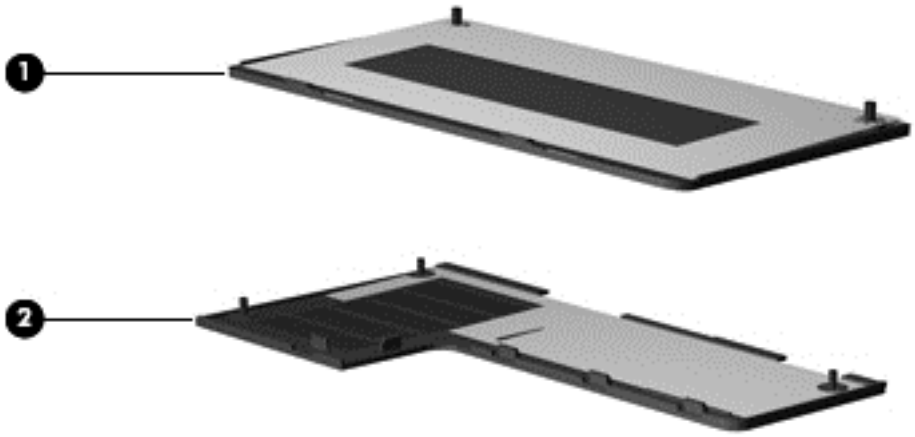
Display assembly components



Item	Description	Spare part number
(1)	**Display bezel**	
	• HP, for use with microphone and webcam	592147-001
	• Presario, for use with microphone and webcam	592148-001
(2)	**35.6 cm** (14-in) high definition, Brightview, display panel (includes display panel cable)	592144-001
(3)	**Display hinge cover**	592150-001
	Display bracket (with hinges)	600627-001
	Display cable kit	592151-001
	Display cable (shown with display panel)	

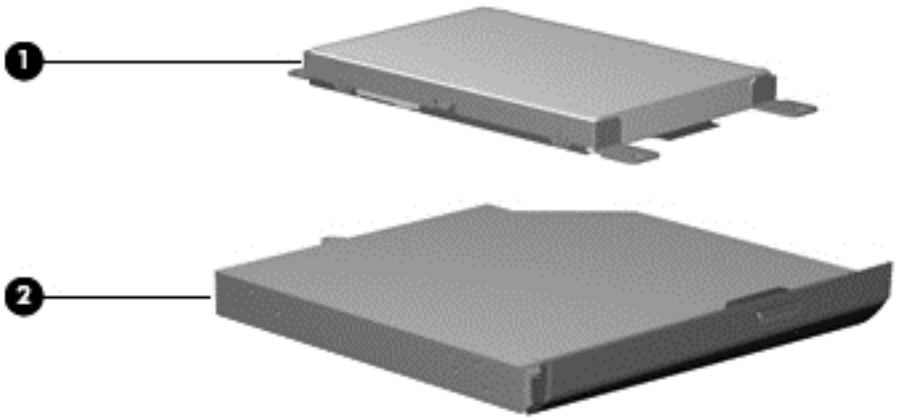
Item	Description	Spare part number
	(4) Webcam cable	
	(5) Antennas and cables	
(6)	**Display back cover**	
	• Presario, matte black	592149-001
	• Presario, biscotti	600164-001
	• HP, biscotti	600165-001
	• HP, silver	606157-001
	• HP, white (for model 1.0 only)	606158-001
	• HP, charcoal (for model 1.1 only)	622573-001
(7)	**Webcam module**	600166-001
	Display screw kit (not illustrated; includes screws and screw covers)	592152-001
	Display rubber display kit (not illustrated)	595198-001

Plastics Kit



Item	Description	Spare part number
	Plastics kit	600190-001
(1)	Hard drive bay cover (includes captive screws)	
(2)	Wireless/memory module mini-card compartment cover (includes captive screw)	

Mass storage devices



Item	Description	Spare part number
(1)	**Hard drive** (include hard drive bracket)	
	• 640–GB 5400 RPM	603785-001
	• 500-GB 7200 RPM	600170-001
	• 320-GB 7200 RPM	600169-001
	• 250-GB 7200 RPM	575598-001
	• 160-GB 7200 RPM	600167-001
	Hard drive hardware kit (contains screws, hard drive bracket, not illustrated)	513771-001
	Hard drive cable/adapter (included in the cable kit)	610791–001
(2)	**Optical drives** (12.7 mm, SATA, fixed)	
	• Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, matte black	600173-001
	• Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, biscotti	600174-001
	• Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, silver	608121-001
	• Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, white (for model 1.0 only)	608122-001
	• Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, charcoal (for model 1.1 only)	622577-001
	• DVD±RW SuperMulti DL Drive with LightScribe, matte black	600171-001
	• DVD±RW SuperMulti DL Drive with LightScribe, biscotti	600172-001
	• DVD±RW SuperMulti DL Drive with LightScribe, silver	608119-001
	• DVD±RW SuperMulti DL Drive with LightScribe, white (for model 1.0 only)	608120-001
	• DVD±RW SuperMulti DL Drive with LightScribe, charcoal (for model 1.1 only)	622575-001

Miscellaneous parts

Description	Spare part number
AC adapters	
• 90-W Smart AC adapter with power factor correction (PFC)	613152-001
• 90-W AC adapter with power factor correction (PFC)	613160-001
• 65-W AC Smart, slim, AC adapter	613153-001
• 65-W Smart power adapter with power factor correction (PFC) for use in India	613161-001
Power cord, AC, 3 wire, black, 1.83-m	
• For use in Argentina	490371-D01
• For use in Australia	490371-011
• For use in Brazil	490371-202
• For use in India	490371-D61
• For use in Italy	490371-061
• For use in North America	490371-001
• For use in South Korea	490371-AD1
• For use in Taiwan	490371-AB1
• For use in Thailand	490371-201
• For use in the People's Republic of China	490371-AA1
• For use in the United Kingdom and Singapore	490371-031
Rubber kit	600184-001
Screw kit	595202-001
• Phillips M2.0x3.0 screw	
• Phillips M2.5x3.0 screw	
• Phillips M2.5x4.0 screw	
• Phillips M2.5x5.0 screw	
• Phillips M2.5x6.5 screw	

Sequential part number listing

Spare part number	Description
490371-001	Power cord, AC, 3-pin, black, 1.83-m, for use in North America
490371-011	Power cord, AC, 3-pin, black, 1.83-m, for use in Australia
490371-031	Power cord, AC, 3-pin, black, 1.83-m, for use in the United Kingdom and Singapore
490371-061	Power cord, AC, 3-pin, black, 1.83-m, for use in Italy
490371-201	Power cord, AC, 3-pin, black, 1.83-m, for use in Thailand
490371-202	Power cord, AC, 3-pin, black, 1.83-m, for use in Brazil
490371-AA1	Power cord, AC, 3-pin, black,1.83-m, for use in the People's Republic of China
490371-AB1	Power cord, AC, 3-pin, black,1.83-m, for use in Taiwan
490371-AD1	Power cord, AC, 3-pin, black,1.83-m, for use in South Korea
490371-D01	Power cord, AC, 3-pin, black,1.83-m, for use in Argentina
490371-D61	Power cord, AC, 3-pin, black,1.83-m, for use in India
510100-001	Modem module, high-speed 56K modem for use in all countries and regions except Australia and New Zealand (for model 1.0 only)
510100-011	Modem module, high-speed 56K modem for use in Australia and New Zealand (for model 1.0 only)
513771-001	Hard drive hardware kit (screws and hard drive bracket)
537921-001	Bluetooth module without cable
575598-001	Hard disk drive, 250-GB 7200 RPM
580101-001	Atheros AR9285 802.11 a/b/g/n 2x2 WiFi adapter for use in Canada, the Cayman Islands, Guam, Puerto Rico, the United States, and the US Virgin Islands
580101-002	Atheros AR9285 802.11 a/b/g/n 2x2 WiFi adapter for use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Barbados, Belgium, Belize, Benin, Bhutan, Bosnia and Herzegovina, Botswana, Brazil, Brunei, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Costa Rica, Croatia, Cyprus, Czech Republic, Zaire, Denmark, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Italy, Ivory Coast, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kiribati, Korea-South, Kuwait, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Martinique, Nether Antilles, French Guiana, Aruba, British Virgin Islands, Bermuda, Syria, Guadeloupe, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Marshall Islands, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Palau, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Republic of Moldova, Romania, Rwanda, Samoa, San Marino, Sao tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, Solomon Islands, Somalia, South Africa, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and Gren, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Timor (East), Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, United Arab Emirates, United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zambia, and Zimbabwe
592144-001	Display panel, **35.6 cm** (14-in) high definition, Brightview

Spare part number	Description
592146-001	**35.6 cm** (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; Presario, matte black
592147-001	Display bezel, HP, for use with microphone and webcam
592148-001	Display bezel, Presario, for use with microphone and webcam
592149-001	Display back cover, Presario, matte black
592150-001	Display hinge cover
592151-001	Display cable kit
592152-001	Display screw kit (not illustrated)
592808-001	For use in system boards with UMA
592809-001	For use in system boards with UMA MDM CR
592810-001	For use in system boards with HD5430 DSC
592811-001	For use in system boards with HD5430 DSC MDM CR
593533-001	Realtek RTL8191SE 802.11b/g/n 1x1 WiFi Adapter
593553-001	Battery, 6-cell 47-WH (2.2-Ah) LI-ion
593554-001	Battery, 6-cell 55-WH (2.55Ah) LI-ion
593836-001	SPS-WLAN 802.11 bgn Shiraz HMC
594164-001	Processor Advanced Micro Devices (AMD) DC N330 2.3GHz 1M L2 35W
594165-001	Processor Advanced Micro Devices (AMD) P320 DDR3-1066 Mhz
594166-001	Processor Advanced Micro Devices (AMD) N620 35W DDR3-1333 Mhz
594167-001	Processor Advanced Micro Devices (AMD) DC P820 Tri-Core 1.8Ghz 1.5M L2 25W
594168-001	Processor Advanced Micro Devices (AMD) DC N830 Tri-core 2.1Ghz 1.5M L2 35W
594169-001	Processor Advanced Micro Devices (AMD) DC N930 QC 2.0 GHz
594170-001	Processor Advanced Micro Devices (AMD) DC QC P920 1.6Ghz 2M L2 25W
594171-001	Advanced Micro Devices (AMD) processor V120 DDR3-1066 Mhz
594172-001	Processor Advanced Micro Devices (AMD) DC N530 2.5GHz DDR3-1333 Mhz
594173-001	Processor Advanced Micro Devices (AMD) P520 DDR3-1066 Mhz
595198-001	Display rubber kit
595202-001	Screw kit
597617-001	**35.6 cm** (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; Presario, biscotti
598856-001	Memory module, 2-GB, PC3 10600, 1333-MHz
598859-001	Memory module, 1-GB, PC3 10600, 1333-MHz
599092-001	Memory module, 4-GB, PC3 10600, 1333-MHz
600163-001	**35.6 cm** (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; HP, biscotti

Spare part number	Description
600164-001	Display back cover, Presario, biscotti
600165-001	Display back cover, HP, biscotti
600166-001	Webcam module
600167-001	Hard disk drive, 160-GB 7200 RPM
600169-001	Hard disk drive, 320-GB 7200 RPM
600170-001	Hard disk drive, 500-GB 7200 RPM
600171-001	Optical drive, DVD±RW SuperMulti DL Drive with LightScribe, matte black
600172-001	Optical drive, DVD±RW SuperMulti DL Drive with LightScribe, biscotti
600173-001	Optical drive, Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, matte black
600174-001	Optical drive, Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, biscotti
600175-001	Keyboard for use in the United States
600175-121	Keyboard for use in English and French Canada
600175-161	Keyboard for use in Latin America
600175-201	Keyboard for use in Brazil
600175-281	Keyboard for use in Thailand
600175-AB1	Keyboard for use in Taiwan
600175-AD1	Keyboard for use in South Korea
600181-001	Top cover (includes Touchpad and bracket, button board, and cable), matte black color
600182-001	Top cover (includes Touchpad and bracket, button board, and cable) , bicotti color
600184-001	Rubber kit
600188-001	Power button board (includes cable)
600189-001	Speaker assembly (includes cable)
600190-001	Plastics kit (with hard drive compartment cover and memory/wireless compartment cover)
600370-001	SPS-WLAN BGN + BT HMC Combo Matador
600627-001	Display bracket (with hinges)
600630-001	Power connector with cable
600631-001	USB board with cable
602745-001	RTC battery
602992-001	SPS-WLAN BGN (1x1) + BT HMC Combo Rashi
603785-001	Hard disk drive, 640-GB 5400 RPM
604603-001	Touchpad board (includes cable)
606155–001	**35.6 cm** (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; HP, silver

Spare part number	Description
606156–001	**35.6 cm** (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; HP, white (for model 1.0 only)
606157–001	Display back cover, HP, silver
606158–001	Display back cover, HP, white (for model 1.0 only)
606161-001	Top cover (includes Touchpad and bracket, button board, and cable) , silver color
606162-001	Top cover (includes Touchpad and bracket, button board, and cable), white color
606609-001	Thermal module (includes fan and heat sink) for use in models that use UMA graphics subsystem memory
606610-001	Thermal module (includes fan and heat sink) for use in models that use discrete graphics subsystem memory
608119-001	Optical drive, DVD±RW SuperMulti DL Drive with LightScribe, silver
608120-001	Optical drive, DVD±RW SuperMulti DL Drive with LightScribe, white
608121-001	Optical drive, Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, silver
608122-001	Optical drive, Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, white
608912-001	Base enclosure (with modem cable and ODD cable) for use with HDMI card reader and without modem module, silver
608913-001	Base enclosure (with modem cable and ODD cable) for use with HDMI card reader and without modem, white
610791-001	Optical drive cable (included in the cable kit)
610791–001	Modem (RJ–11 cable with modem connector included in the cable kit)
610791–001	Hard drive cable/adaptor (included in the cable kit)
611554-001	For use in systems boards with HD545V DSC
611555-001	For use in system boards with HD545V DSC CR
613152-001	65-W Smart AC adapter
613153-001	90-W AC adapter with power factor correction (PFC)
613160-001	90-W AC adapter RC/V EM, with power factor correction (PFC)
613161-001	65-W AC adapter with power factor correction (PFC) for use in India
616334-001	Processor Advanced Micro Devices (AMD) DC N350 2.4GHz 35W
616335-001	Processor Advanced Micro Devices (AMD) P840 1.9GHz
616336-001	Processor Advanced Micro Devices (AMD) DC QC P940 1.7GHz
616337-001	Processor Advanced Micro Devices (AMD) DC N550 2.6GHz 35W
616343-001	Processor Advanced Micro Devices (AMD) DC P340 2.2GHz 25W
616344-001	Processor Advanced Micro Devices (AMD) N640 2.9GHz 35W
616345-001	Processor Advanced Micro Devices (AMD) N850 2.2GHz
616346-001	Processor Advanced Micro Devices (AMD) QC N950 2.1GHz 35W
616347-001	Processor Advanced Micro Devices (AMD) DC P540 2.4GHz 25W

Spare part number	Description
616405–001	System board for use in models with discrete graphics subsystem HD5470/512 MB
616406–001	System board for use in models with discrete graphics subsystem HD5470/512 MB with HDMI card reader
616407–001	System board for use in models with discrete graphics subsystem HD5470/1 G
616408–001	System board for use in models with discrete graphics subsystem HD5470/1 G with HDMI card reader
617025-001	Base enclosure (with modem cable and ODD cable) for use with HDMI card reader, biscotti
617026-001	Base enclosure (with modem cable and ODD cable), biscotti
617027-001	Base enclosure (with modem cable and ODD cable) for use with HDMI card reader, matte black
617028-001	Base enclosure (with modem cable and ODD cable), matte black
617029-001	Thermal module (includes fan and heat sink) for use in models that use DSC HD545v graphics subsystem memory
622571–001	**35.6 cm** (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; HP, charcoal
622573-001	Display back cover, HP, charcoal
622575-001	Optical drive, DVD±RW SuperMulti DL Drive with LightScribe, charcoal
622577-001	Optical drive, Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, charcoal
622579-001	Base enclosure (with modem cable and ODD cable) for use with HDMI card reader, charcoal
622581-001	Top cover (includes Touchpad and bracket, button board, and cable) , charcoal color

4 Removal and replacement procedures

Preliminary replacement requirements

Tools required

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

- Flat-bladed screwdriver
- Magnetic screwdriver
- Phillips P0 and P1 screwdrivers

Service considerations

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

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

Plastic parts

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

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

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

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

Workstation guidelines

Follow these grounding workstation guidelines:

- Cover the workstation with approved static-shielding material.
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use conductive field service tools, such as cutters, screwdrivers, and vacuums.
- When fixtures must directly contact dissipative surfaces, use fixtures made only of static-safe materials.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and Styrofoam.
- Handle ESD-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting or removing connectors or test equipment.

Equipment guidelines

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

- When seated, wear a wrist strap connected to a grounded system. Wrist straps are flexible straps with a minimum of one megohm ±10% resistance in the ground cords. To provide proper ground, wear a strap snugly against the skin at all times. On grounded mats with banana-plug connectors, use alligator clips to connect a wrist strap.
- When standing, use foot straps and a grounded floor mat. Foot straps (heel, toe, or boot straps) can be used at standing workstations and are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use foot straps on both feet with a minimum of one megohm resistance between the operator and ground. To be effective, the conductive 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 75 screws, in 12 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.

Serial number

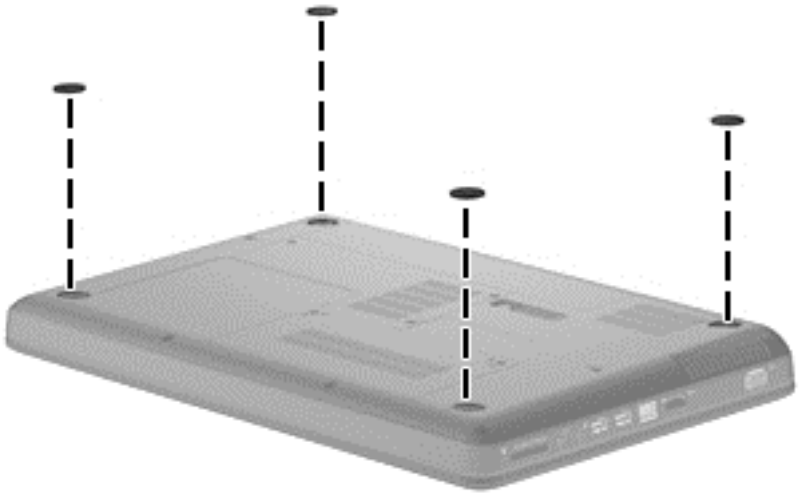
The serial number label, located in the battery bay of the computer, provides important information that you may need when contacting technical support.

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

Computer feet

Description	Spare part number
Rubber Feet Kit	600184-001

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



Battery

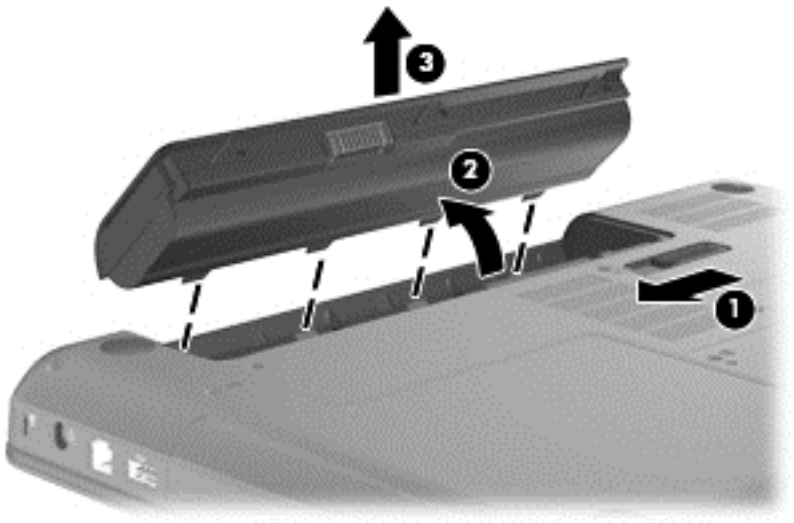
Description	Spare part number
6-cell 55-WH (2.55Ah) LI-ion	593554-001
6-cell 47-WH (2.2-Ah) LI-ion	593553-001

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.
2. Slide the battery release latch **(1)** to release the battery.
3. Pivot the battery **(2)** upward and lift it out of the computer **(3)**.



To insert the battery, insert the rear edge of the battery into the battery bay and pivot the front edge downward until the battery is seated. The battery release latch automatically locks the battery into place.

Hard drive

NOTE: All hard drive spare part kits include a hard drive bracket.

Description	Spare part number
640-GB 5400 RPM	603785-001
500-GB 7200 RPM	600170-001
320-GB 7200 RPM	600169-001
250-GB 7200 RPM	575598-001
160-GB 7200 RPM	600167-001
Hard drive hardware kit (includes screws and hard drive bracket)	513771-001
Hard drive cable/adaptor (included in the cable kit)	610791–001

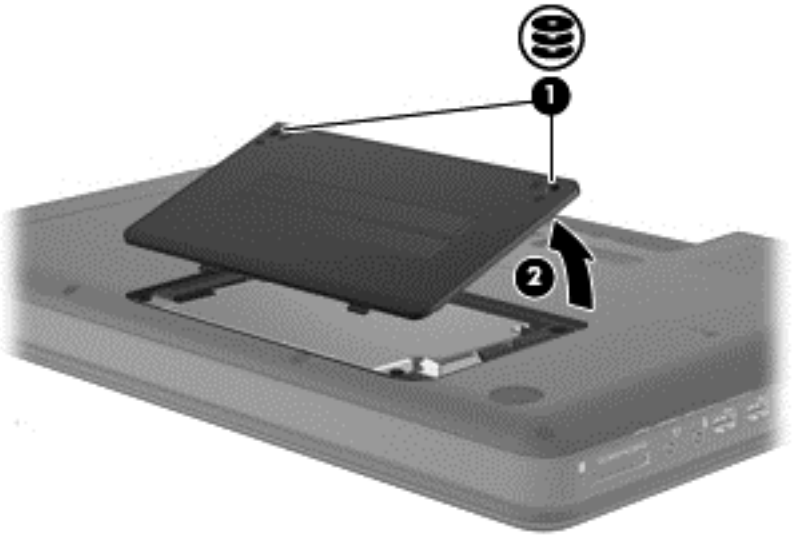
Before removing the hard drive, follow these steps:

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 43).

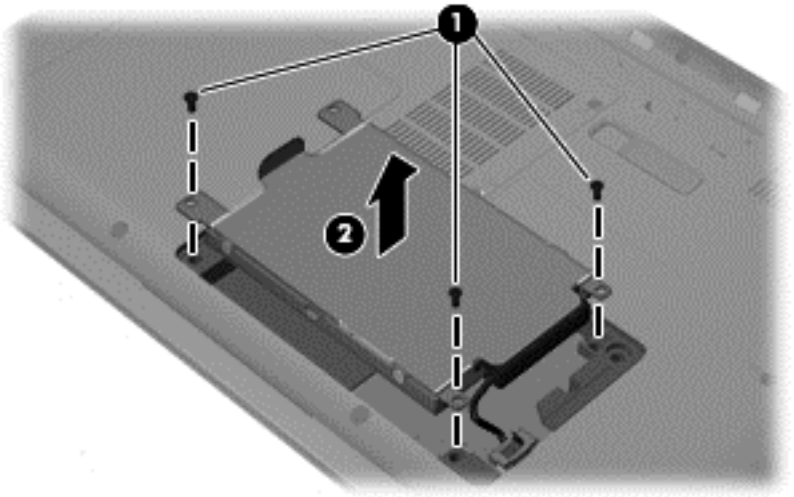
Remove the hard drive:

1. Position the computer with the front toward you.
2. Remove the two Phillips PM2.5×5.0 screws **(1)** that secure the hard drive cover to the computer.

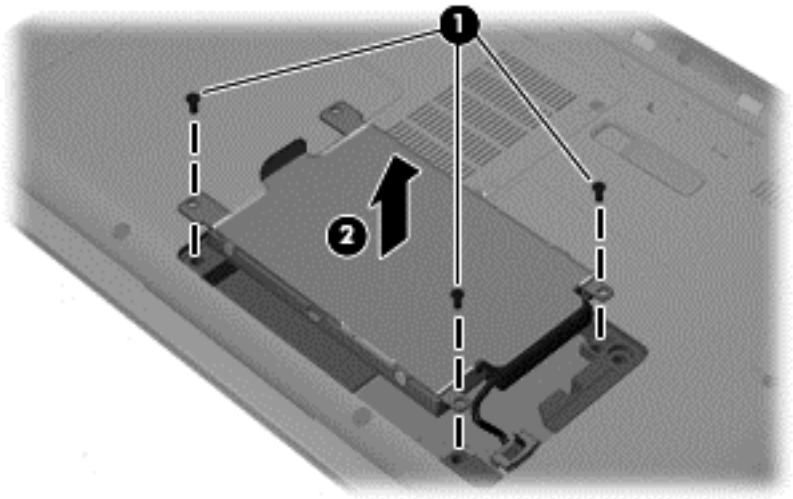
3. Lift the left side of the hard drive cover **(2)**, swing it forward, and remove the cover **(3)**. The hard drive cover is included in the plastics kit, spare part number 600190-001.



4. Remove the three Phillips PM2.5×4.0 screws **(1)** that secure the hard drive to the computer.
5. Use the hard drive bracket to lift the hard drive out **(2)** of the hard drive compartment.



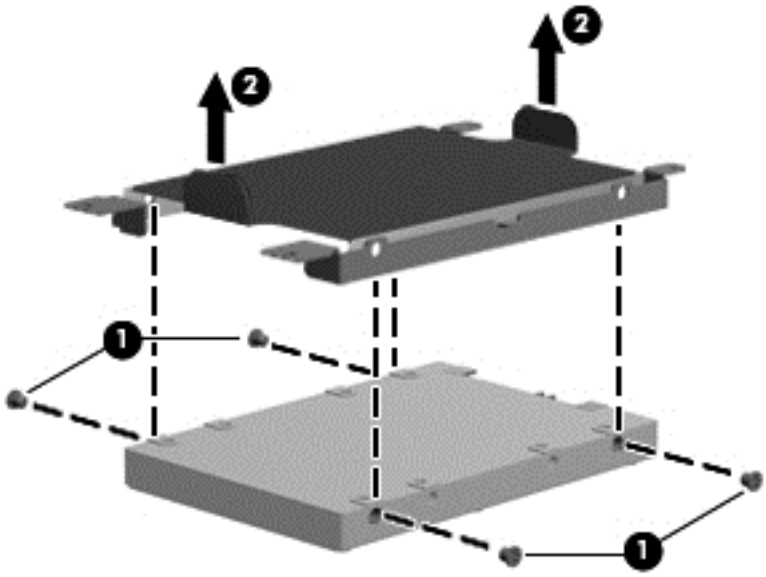
6. Disconnect the hard drive cable from the system board.



7. Remove the hard drive.

8. If it is necessary to replace the hard drive bracket, remove the four Phillips PM3.0×3.0 screws **(1)** that secure the hard drive bracket to the hard drive

9. Lift the bracket **(2)** straight up.



Reverse this procedure to install the hard drive.

Optical drive

Description	Spare part number
DVD±RW SuperMulti DL Drive with LightScribe, matte black	600171-001
DVD±RW SuperMulti DL Drive with LightScribe, biscotti	600172-001
DVD±RW SuperMulti DL Drive with LightScribe, silver	608119-001
DVD±RW SuperMulti DL Drive with LightScribe, white (for model 1.0 only)	608120-001
DVD±RW SuperMulti DL Drive with LightScribe, charcoal (for model 1.1 only)	622575-001
Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, matte black	600173-001
Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, biscotti	600174-001
Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, silver	608121-001
Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, white (for model 1.0 only)	608122-001
Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, charcoal (for model 1.1 only)	622577-001

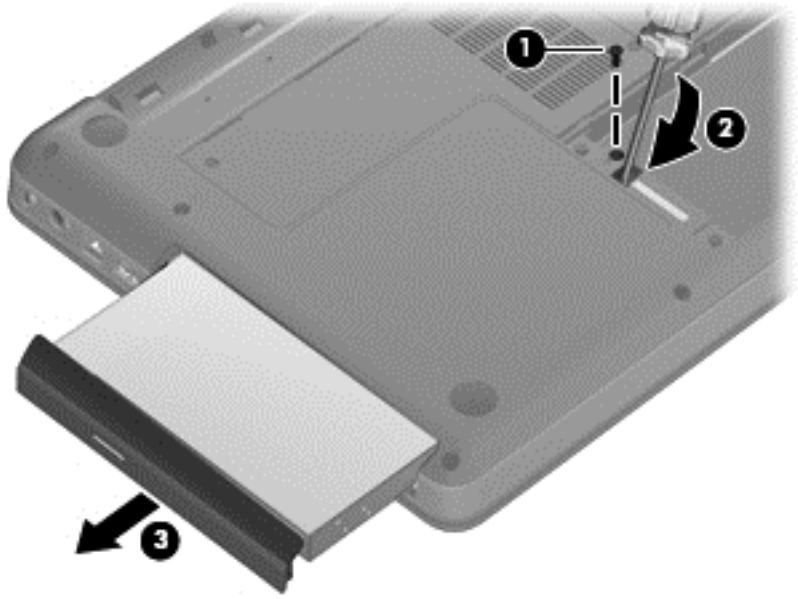
Before removing the optical drive, follow these steps:

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 43).

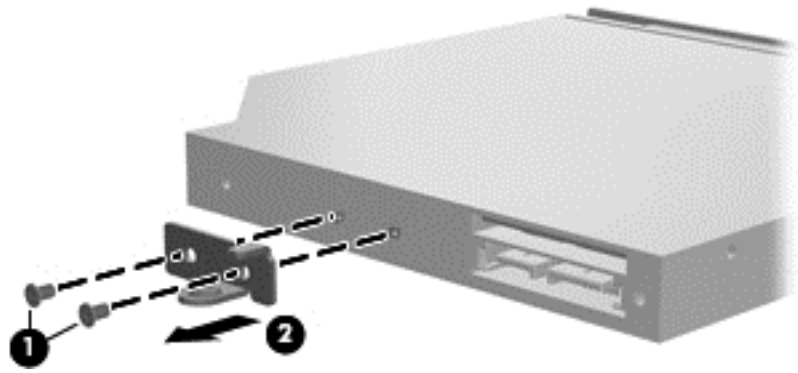
Remove the optical drive:

1. Position the computer upside down with the front toward you.
2. Remove the Phillips PM2.5x5.0 screw **(1)** that secures the optical drive to the computer.
3. Insert a flat-bladed screwdriver or similar tool into the access point through the hard drive compartment **(2)**, and then push the drive bracket to the left to release the optical drive.

4. Remove the optical drive **(3)**.



5. If it is necessary to replace the optical drive bracket, position the optical drive with the optical drive bracket toward you.
6. Remove the two Phillips PM2.0×3.0 screws **(1)** that secure the optical drive bracket to the optical drive.
7. Remove the optical drive bracket **(2)**.



Reverse the above procedure to reassemble and install the optical drive.

WLAN module

Description	Spare part number
Atheros AR9285 802.11 a/b/g/n 2x2 WiFi adapter for use in Canada, the Cayman Islands, Guam, Puerto Rico, the United States, and the US Virgin Islands	580101-001
Atheros AR9285 802.11 a/b/g/n 2x2 WiFi adapter for use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentian, Armenia, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Barbados, Belgium, Belize, Benin, Bhutan, Bosnia and Herzegovina, Botswana, Brazil, Brunei, Bulgeria, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Costa Rica, Croatia, Cyprus, Czech Republic, Zaire, Denmark, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equitorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guatemala, Guinea, Guinea-Bissa, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Italy, Ivory Coast, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kiribati, Korea-South, Kuwait, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Martinique, Nether Antilles, French Guiana, Aruba, British Virgin Islands, Bermuda, Syria, Guadeloupe, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagaascar, Malawi, Malaysia, Maldives, Mali, Malta, Marshall Islands, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Palau, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Republic of Moldova, Romania, rwanda, Samoa, San Marino, Sao tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, Solomon Islands, Somalia, South Africa, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and Gren, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Timor (East), Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, United Arab Emirates ,United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zambia, and Zimbabwe	580101-002
Realtek RTL8191SE 802.11b/g/n 1x1 WiFi Adapter	593533-001
SPS-WLAN BGN + BT HMC Combo Matador	600370-001
SPS-WLAN 802.11 bgn Shiraz HMC	593836-001
SPS-WLAN BGN (1x1) + BT HMC Combo Rashi	602992-001

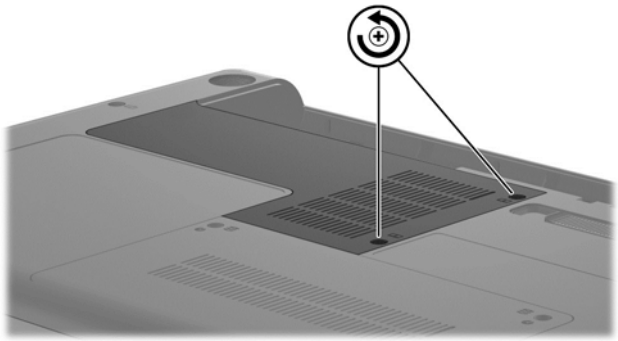
Before removing the WLAN module, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 43).
5. Remove the hard drive cover (see Hard drive on page 44).

Remove the WLAN module:

1. Turn the computer upside down with the front toward you.

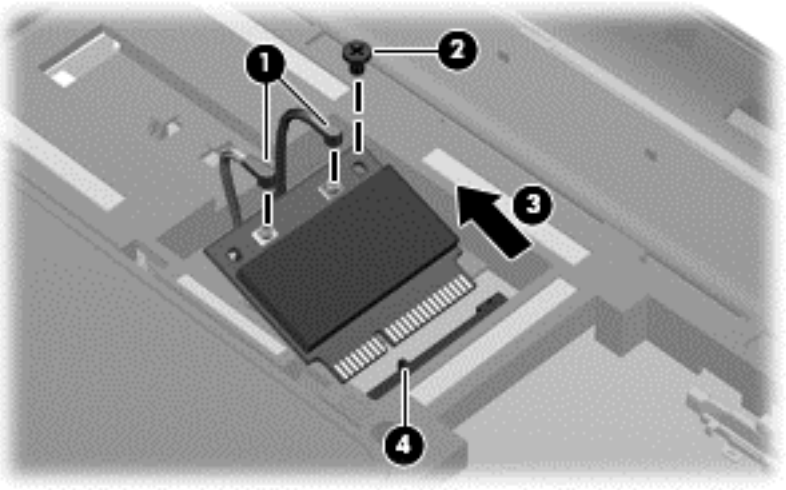
2. Loosen the 2 Phillips PM2.5×5.0 captive screws **(1)** that secure the mini-card compartment cover.



3. Lift the cover off the computer **(2)**. The mini-card compartment cover is included in the plastics kit, spare part number 600190-001.
4. Disconnect the two WLAN antenna cables **(1)** from the WLAN module.
5. Remove the Phillips PM2.0×3.0 screw **(2)** that secures the WLAN module to the computer. (The edge of the module opposite the slot rises away from the computer.)
6. Remove the WLAN module **(3)** by pulling it away from the slot at an angle.

△ **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.

NOTE: WLAN modules are designed with a notch **(4)** to prevent incorrect insertion into the WLAN module slot.



Reverse this procedure to install a WLAN module.

Memory module

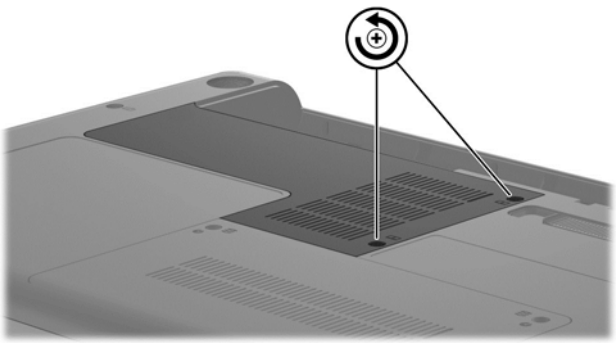
Description	Spare part number
2–GB, PC3 10600, 1333-MHz	598856-001
1-GB, PC3 10600, 1333-MHz	598859-001
4-GB, PC3 10600, 1333-MHz (for model 1.1 only)	599092-001

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 43).

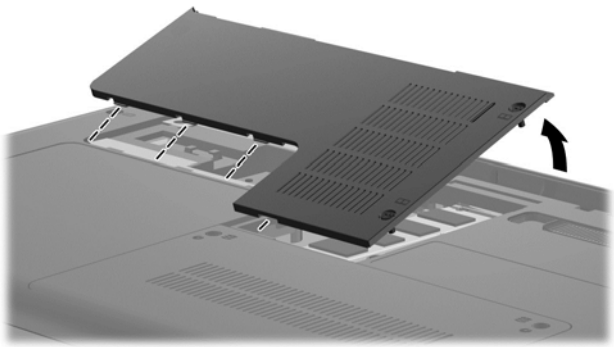
Remove the memory module:

1. Turn the computer upside down with the front toward you.
2. Loosen the two Phillips PM2.5×5.0 captive screws that secure the mini-card compartment cover to the computer.



3. Lift cover off the computer. The mini-card compartment cover is included in the plastics kit, spare part number 600190-001.

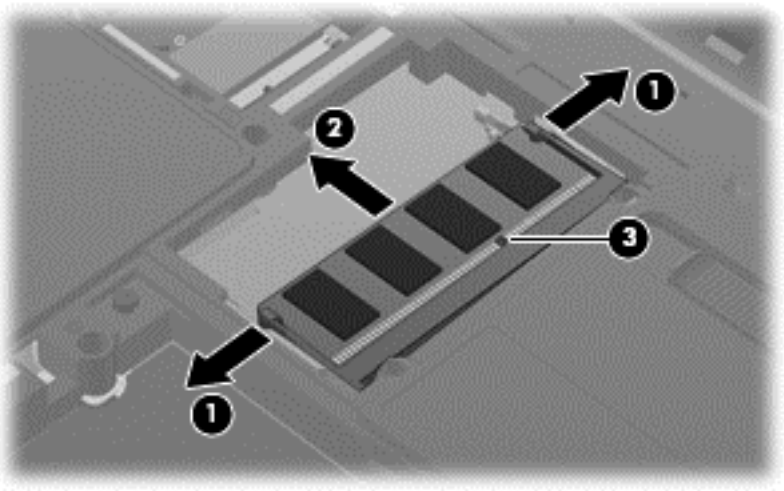
NOTE: Small tabs hold the cover in place. Firmly pull up on the cover to release the tabs.



4. Spread the retaining tabs **(1)** on each side of the memory module slot to release the memory module. (The edge of the module opposite the slot rises away from the computer.)

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

NOTE: 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.

Keyboard

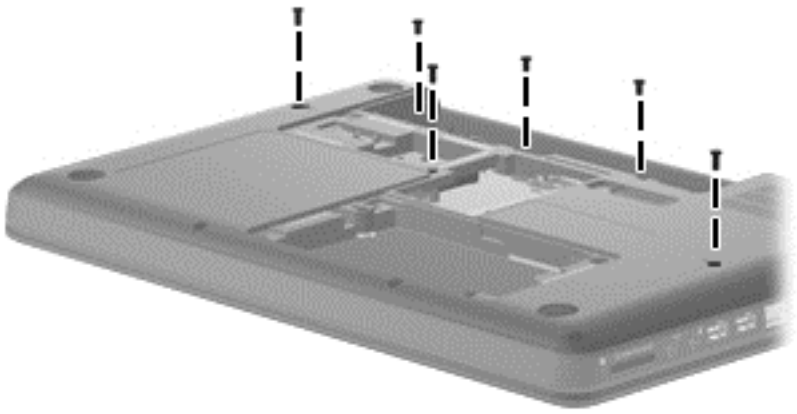
Description	Spare part number
Keyboard for use in Brazil	600175-201
Keyboard for use in English and French Canada	600175-121
Keyboard for use in for use in Latin America	600175-161
Keyboard for use in South Korea	600175-AD1
Keyboard for use in Taiwan	600175-AB1
Keyboard for use in Thailand	600175-281
Keyboard for use in the United States	600175-001

Before removing the keyboard, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 43).
5. Remove the hard drive (see Hard drive on page 44)
6. Remove the mini-card compartment cover (see WLAN module on page 49).

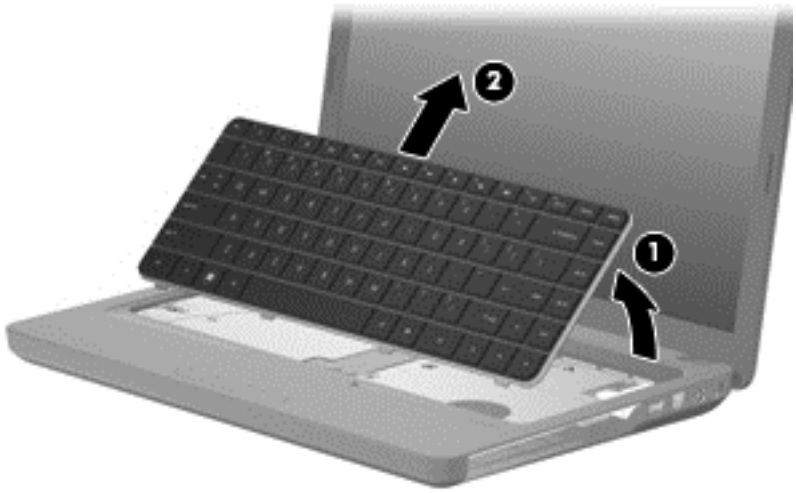
Remove the keyboard:

1. Turn the computer upside down with the front toward you.
2. Remove the six Phillips PM2.5×6.5 screws that secure the keyboard to the computer.

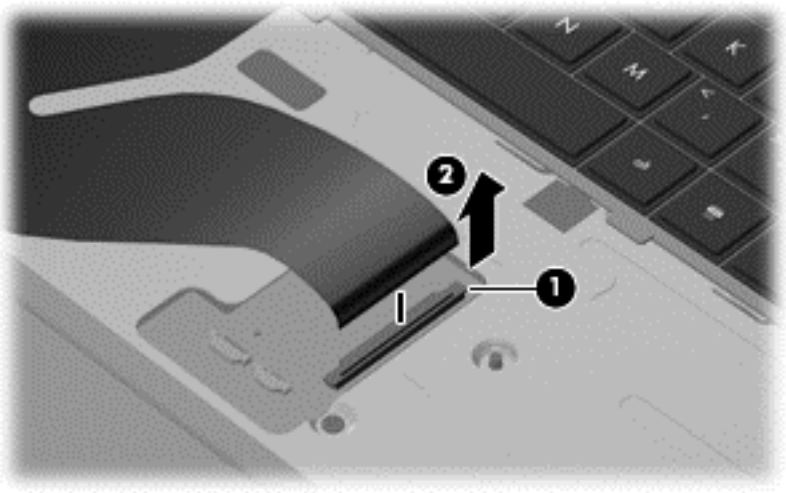


3. Turn the computer display-side up with the front toward you.
4. Open the computer as far as possible.

5. Release the top edge of the keyboard by lifting it up to disengage the keyboard from the tabs on the top cover **(1)**.
6. Slide the top edge of the keyboard back **(2)** until it rests against the display.



7. Release the zero insertion force (ZIF) connector **(1)** to which the keyboard cable is attached and disconnect the keyboard cable **(2)** from the system board.



8. Remove the keyboard.

Reverse this procedure to install the keyboard.

Top cover

Description	Spare part number
Top cover (includes Touchpad and bracket, button board, and cable), matte black	600181-001
Top cover, bicotti	600182-001
Top cover, silver	606161-001
Top cover, white (for model 1.0 only)	606162-001
Top cover, charcoal (for model 1.1 only)	622581-001

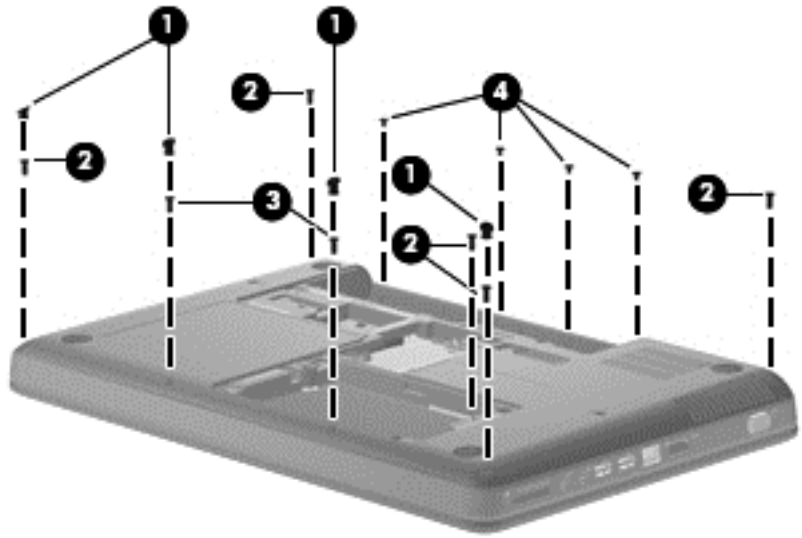
Before removing the switch cover, follow these steps:

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 following components:
   a. Battery (see Battery on page 43).
   b. Optical drive (see Optical drive on page 47).
   c. Keyboard (see Keyboard on page 53).

Remove the switch cover:

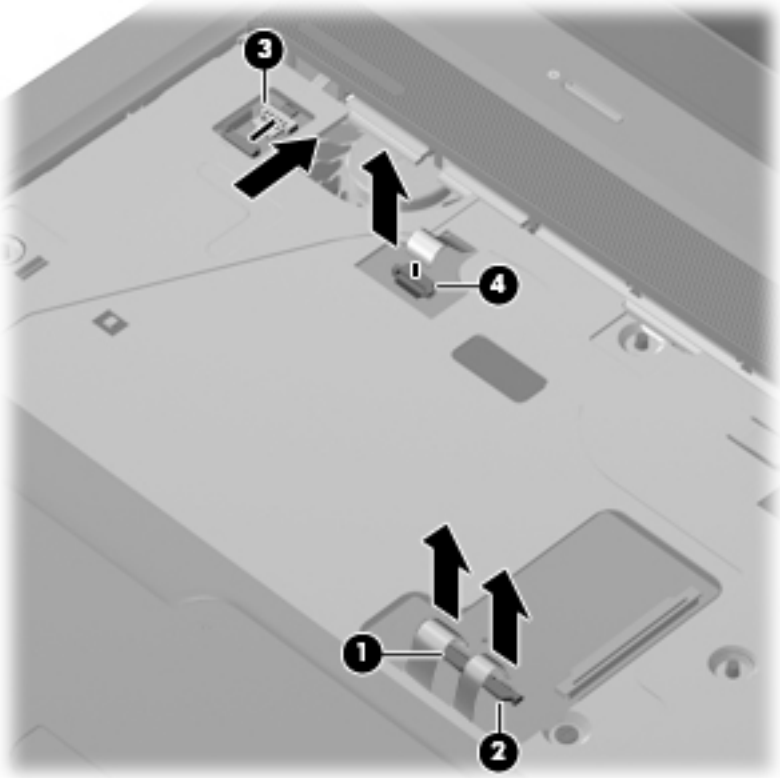
1. Turn the computer upside down with the front toward you.
2. Remove the four screw covers **(1)** at the front edge of the computer.

3. Remove the five Phillips PM2.5×6.5 screws **(2)**, the two Phillips PM2.5x4.0 screws **(3)**, and the four Phillips PM2.5x3.0 screws **(4)** that secure the top cover to the base enclosure.

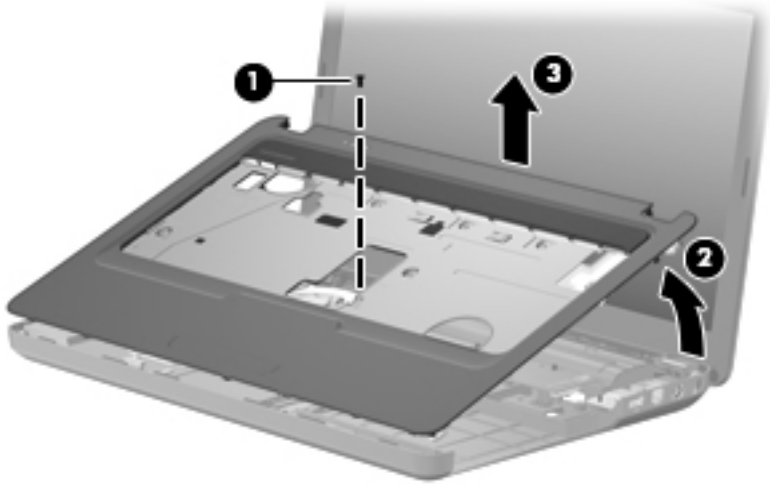


4. Turn the computer display-side up with the front toward you.
5. Open the computer as far as possible.
6. Release the ZIF connector to which the touchpad **(1)** is connected and disconnect the cable from the system board.
7. Release the ZIF connector to which the touchpad button board cable **(2)** is connected and disconnect the cable from the system board.
8. Disconnect the speaker cable **(3)** from the system board.

9. Release the ZIF connector to which the power button board cable **(4)** is connector and disconnect the cable from the system board.



10. Remove the Phillips PM2.5×6.5 screw **(1)** from the top cover, disengage the rear edge of the top cover **(2)** from the base enclosure, and then remove the cover from the computer **(3)**.



Reverse this procedure to install the switch cover.

Speaker assembly

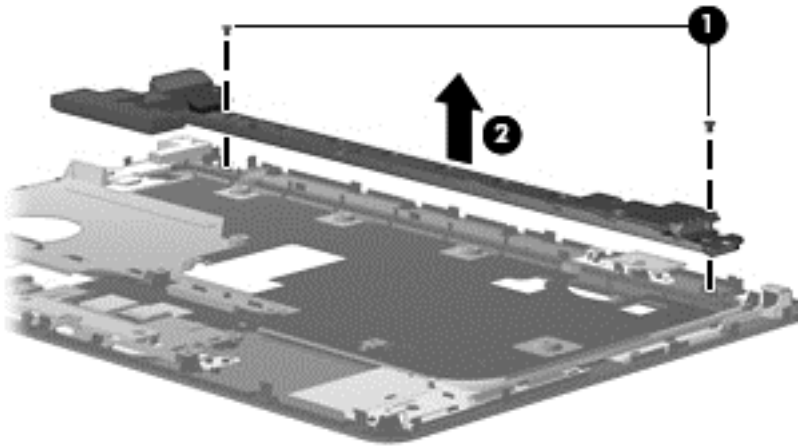
Description	Spare part number
Speaker assembly	600189-001

Before removing the speaker assembly, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 43).
5. Remove the following components:
   a. Optical drive (see Optical drive on page 47)
   b. Keyboard (see Keyboard on page 53)
   c. Top cover (see Top cover on page 55)

Remove the speaker assembly:

1. Turn the top cover upside down.
2. Remove the two Phillips PM2.5×4.0 screws **(1)** that secure the speaker assembly to the computer.
3. Lift the speaker assembly **(2)** straight up to remove it from the top cover.



Reverse this procedure to install the speaker assembly.

Power button board

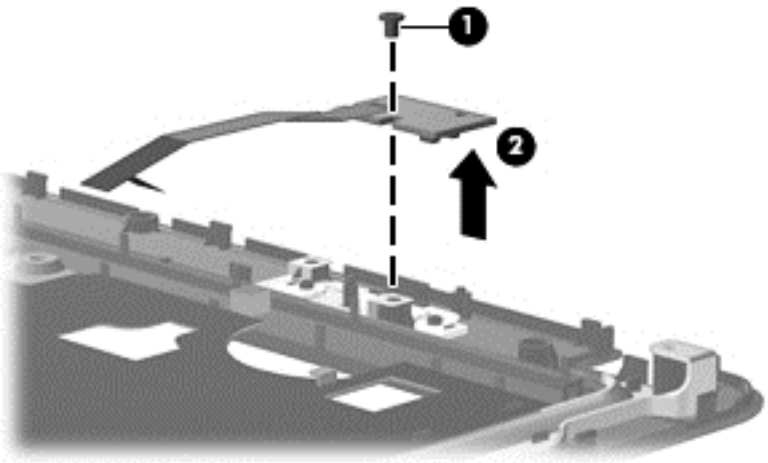
Description	Spare part number
Power button board (with cable)	600188-001

Before removing the power button board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 43).
5. Remove the following components:
   a. Hard drive (see Hard drive on page 44)
   b. Optical drive (see Optical drive on page 47)
   c. Keyboard (see Keyboard on page 53)
   d. Top cover (see Top cover on page 55)

Remove the power button board:

1. Turn the top cover upside down with the rear edge toward you.
2. Remove the Phillips PM2.5×3.0 screw **(1)** that secures the power button board to the top cover.
3. Remove the power button board **(2)**.



TouchPad button board

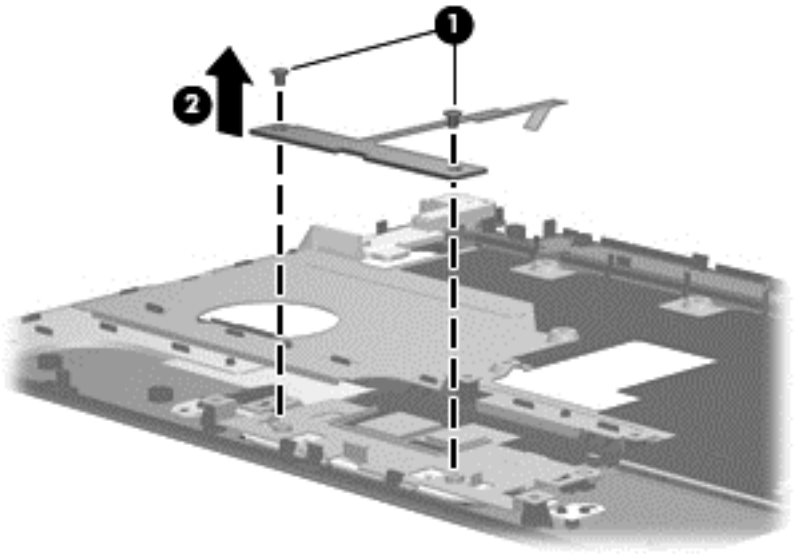
Description	Spare part number
TouchPad button board	604603-001

Before removing the TouchPad button board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 43).
5. Remove the following components:
   a. Hard drive (see Hard drive on page 44)
   b. Optical drive (see Optical drive on page 47)
   c. Keyboard (see Keyboard on page 53)
   d. Top cover (see Top cover on page 55)

Remove the TouchPad button board:

1. Turn the top cover upside down with the front toward you.
2. Remove the two Phillips PM2.5×3.0 screws **(1)** that secure the TouchPad board to the top cover.
3. Remove the TouchPad button board **(2)** from the TouchPad bracket.



Reverse the above procedure to reassemble and install the TouchPad button board.

Modem module

Description	Spare part number
High-speed 56K modem for use in all countries and regions except Australia and New Zealand (for model 1.0 only)	510100-001
High-speed 56K modem for use in Australia and New Zealand (for model 1.0 only)	510100-011
Modem module cable with RJ-11 connector (included in the cable kit)	610791-001

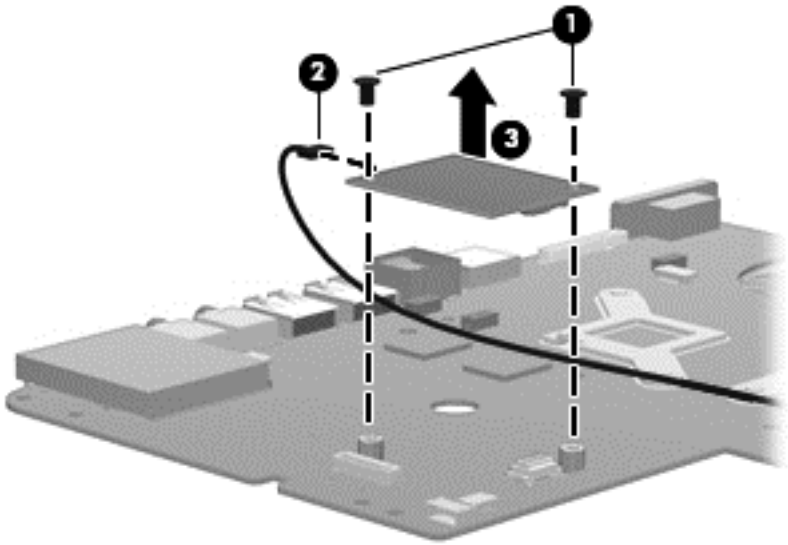
Before removing the modem module, follow these steps:

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 43).
5. Remove the following components:
   a. Hard drive (see Hard drive on page 44)
   b. Optical drive (see Optical drive on page 47)
   c. Keyboard (see Keyboard on page 53)
   d. Top cover (see Top cover on page 55)

Remove the modem module:

1. Turn the computer upright with the front toward you.
2. Remove the two Phillips PM2.0×3.0 screws **(1)** that secure the modem module to the system board.
3. Disconnect the modem module cable **(2)** from the modem module.

4. Lift up on the front of the modem module **(3)** to disconnect it from the system board.



5. Remove the modem module.

Reverse the above procedure to install the modem module, and be sure that the connector on the bottom of the modem module connects firmly into the system board.

Bluetooth module

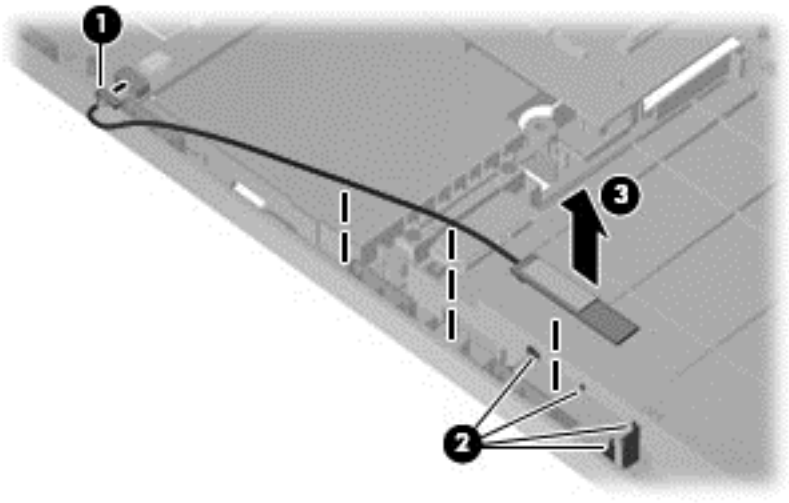
Description	Spare part number
Bluetooth module	537921-001
Bluetooth module cable	602822-001

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 43).
5. Remove the following components:
   a. Hard drive (see Hard drive on page 44)
   b. Optical drive (see Optical drive on page 47)
   c. Keyboard (see Keyboard on page 53)
   d. Top cover (see Top cover on page 55)

Remove the Bluetooth module:

1. Position the computer upright with the front toward you.
2. Disconnect the Bluetooth module cable **(1)** from the system board.
3. Remove the Bluetooth module and cable from the clips in the base enclosure **(2)**.
4. Remove the Bluetooth module **(3)** from the base enclosure.



Reverse the above procedure to install the Bluetooth module.

USB board

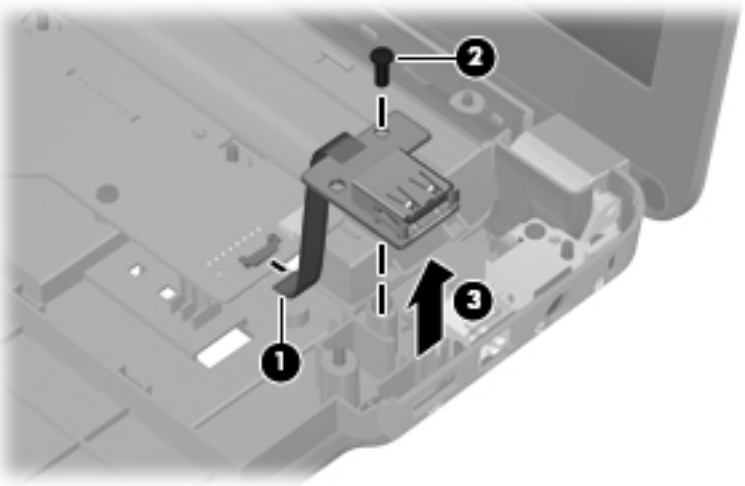
Description	Spare part number
USB board (includes cable)	600631-001

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 43).
5. Remove the following components:
   a. Hard drive (see Hard drive on page 44)
   b. Optical drive (see Optical drive on page 47)
   c. Keyboard (see Keyboard on page 53)
   d. Top cover (see Top cover on page 55)

Remove the USB board:

1. Position the computer upright with the right side toward you.
2. Disconnect the USB board cable **(1)** from the system board.
3. Remove the Phillips PM2.5×3.0 screw **(2)** that secures the USB board to the base enclosure.
4. Lift the USB board **(3)** straight up to remove it from the computer.



Reverse this procedure to install the USB board.

Power connector cable

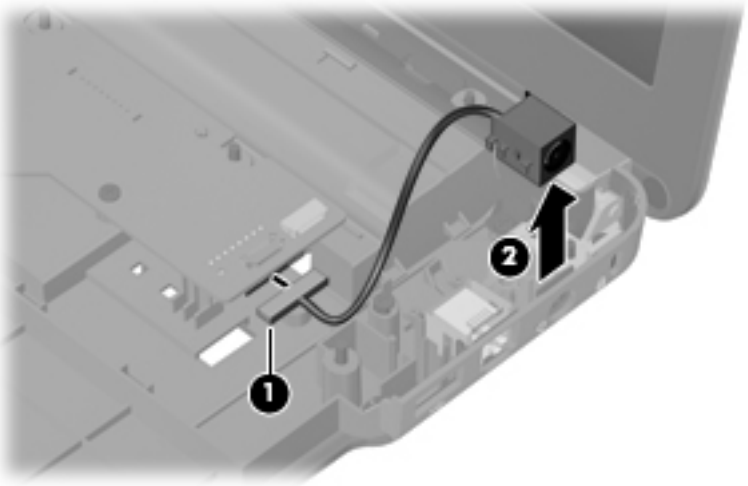
Description	Spare part number
Power connector cable (includes cable and connector)	600630-001

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 43).
5. Remove the following components:
   a. Hard drive (see Hard drive on page 44)
   b. Optical drive (see Optical drive on page 47)
   c. Keyboard (see Keyboard on page 53)
   d. Top cover (see Top cover on page 55))

Remove the power connector cable:

1. Turn the computer upright with the right side toward you.
2. Disconnect the power connector cable **(1)** from the system board.
3. Lift the power connector **(2)** from the clips built into the base enclosure.



4. Remove the cable from the base enclosure.

Reverse this procedure to install the power connector cable.

Display assembly

Description	Spare part number
35.6 cm (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; Presario, matte black	592146-001
35.6 cm (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; Presario, biscotti	597617-001
35.6 cm (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; HP, biscotti	600163-001
35.6 cm (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; HP, silver	606155-001
35.6 cm (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; HP, white (for model 1.0 only)	606156-001
35.6 cm (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; HP, charcoal (for model 1.1 only)	622571-001

Before removing the display assembly, follow these steps:

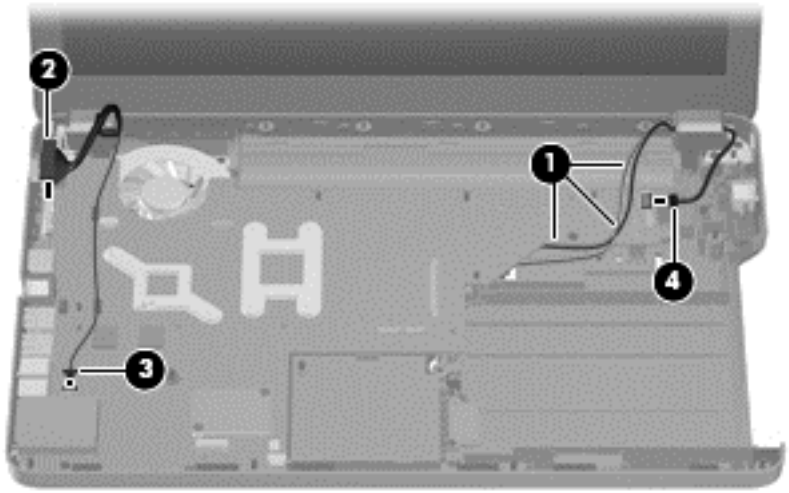
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 43).
5. Disconnect the wireless antenna cables from the WLAN module (see WLAN module on page 49).
6. Remove the following components:
   a. Keyboard (see Keyboard on page 53)
   b. Optical drive (see Optical drive on page 47)
   c. Top cover (see Top cover on page 55)

Remove the display assembly:

1. Turn the computer display-side up, with the front toward you.
2. Open the display as far as possible.
3. Remove the wireless antenna cables **(1)** from the hole and clips built into the base enclosure.
4. Disconnect the display panel cable **(2)** from the system board.
5. Disconnect the microphone cable **(3)** from the system board.

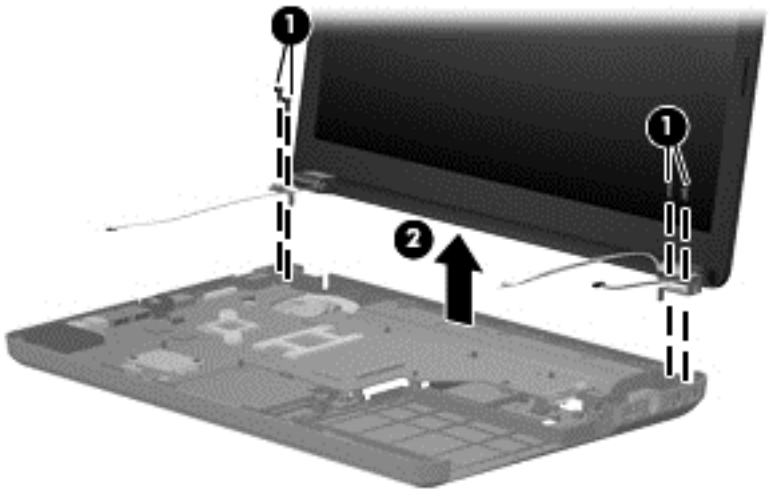
6. Disconnect the webcam cable **(2)** from the system board.

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



7. Remove the four black Phillips PM2.5×6.5 screws **(1)** that secure the display assembly to the computer.

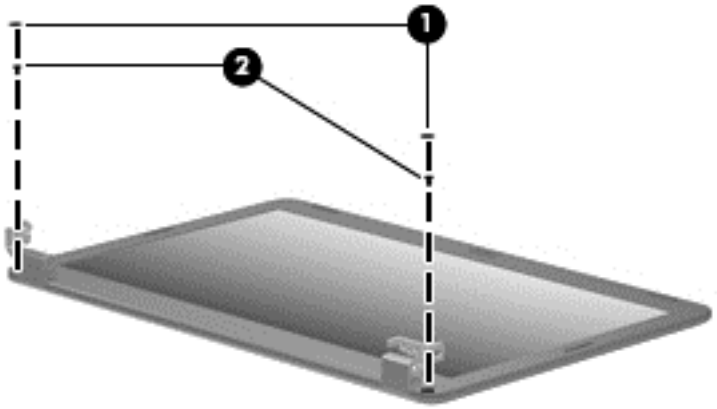
8. Remove the display assembly **(2)**.



9. If it is necessary to replace any of the display assembly internal components, remove the following screw covers and screws. The display screw covers are included in the display screw kit, spare part number 592152-001.

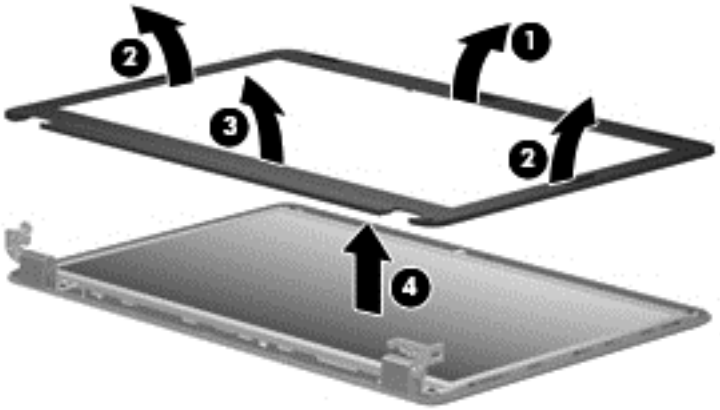
   (1) Two Mylar screw covers on the display bezel bottom edge

   (2) Two Phillips PM2.5×4.0 screws

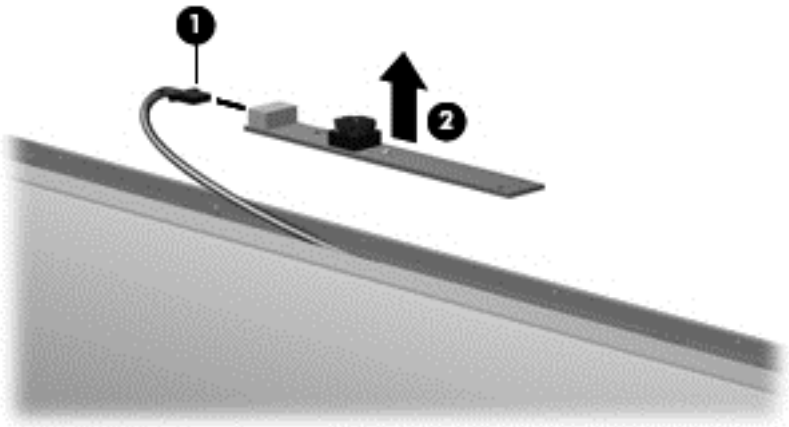


10. Flex the inside edge of the top **(1)**, the left and right sides **(2)**, and the bottom **(3)** of the display bezel until the bezel disengages from the display back cover.

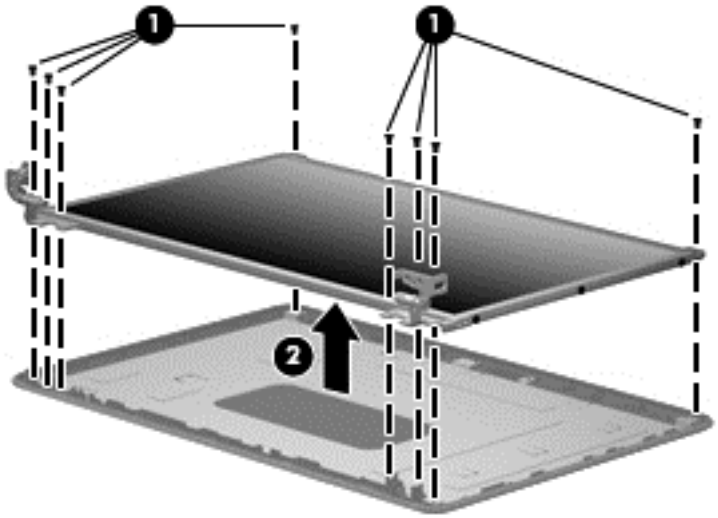
11. Remove the display bezel **(4)**. The display bezel is available using spare part number 592147-001 for HP computers, and 592148-001 for Presario computers.



12. If it is necessary to replace the webcam module, disconnect the webcam cable **(1)** from the module. Lift the webcam from the double-sided tape on the display back cover, and remove the webcam.



13. If it is necessary to replace the display panel, remove the eight Phillips PM2.5×5.0 screws **(1)** that secure the display panel to the display enclosure, and then lift the panel from the enclosure **(2)**. The display panel is available using the spare part number 592144-001.



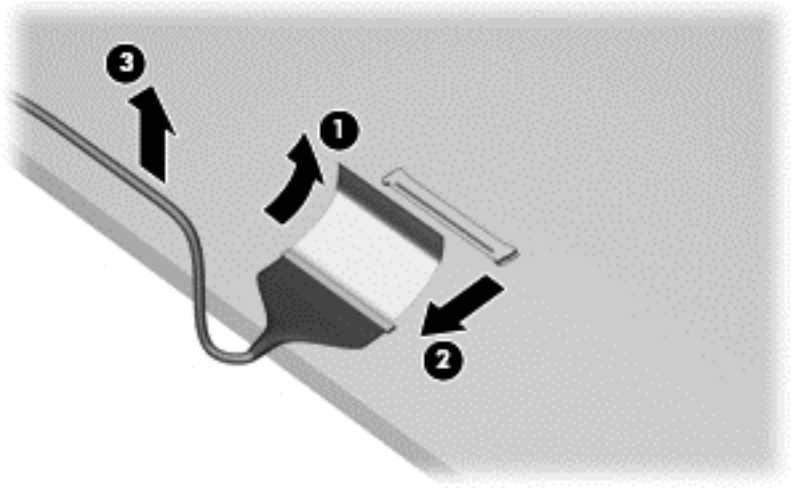
14. If it is necessary to replace the display cable, follow these steps:

    a. Turn the display panel upside down in front of you.

    b. Peel back the tape that secures the cable to the display **(1)**.

    c. Unplug the cable from the display **(2)**.

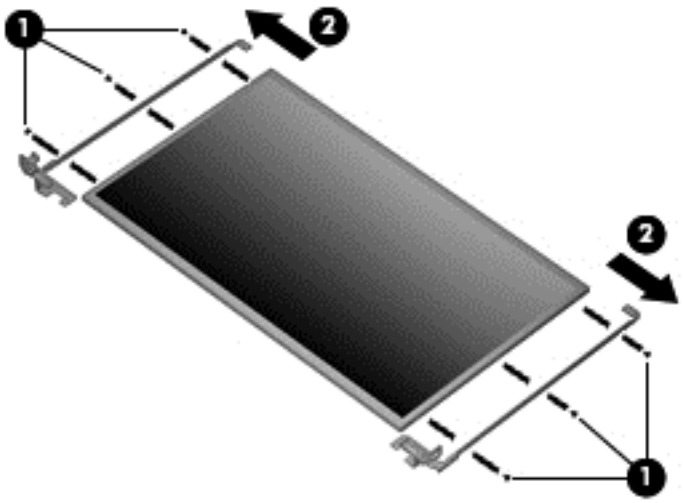
    d. Remove the cable from the display **(3)**.



The display cable is available in the display cable kit, spare part number 592151-001.

15. If it is necessary to replace the display bracket and hinges, remove the Phillips PM2.0×3.0 screws **(1)** that secure each bracket to the display.

16. Remove the display hinges **(2)** from the display. The display bracket and hinge set is available using spare part number 600627-001.

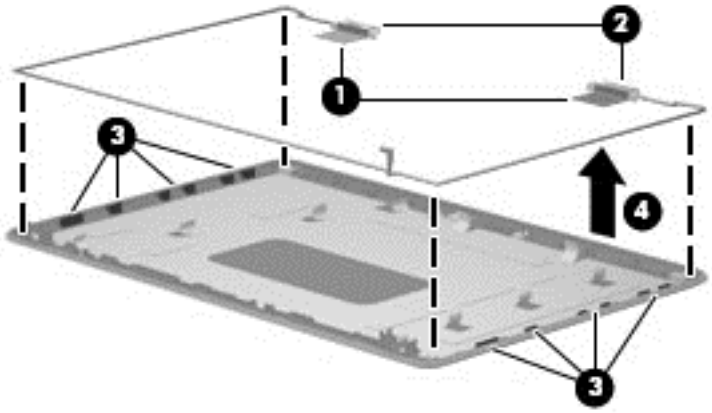


17. If it is necessary to replace the wireless antennas and cables, remove the adhesive strip **(1)** that secures each antenna to the display back cover.

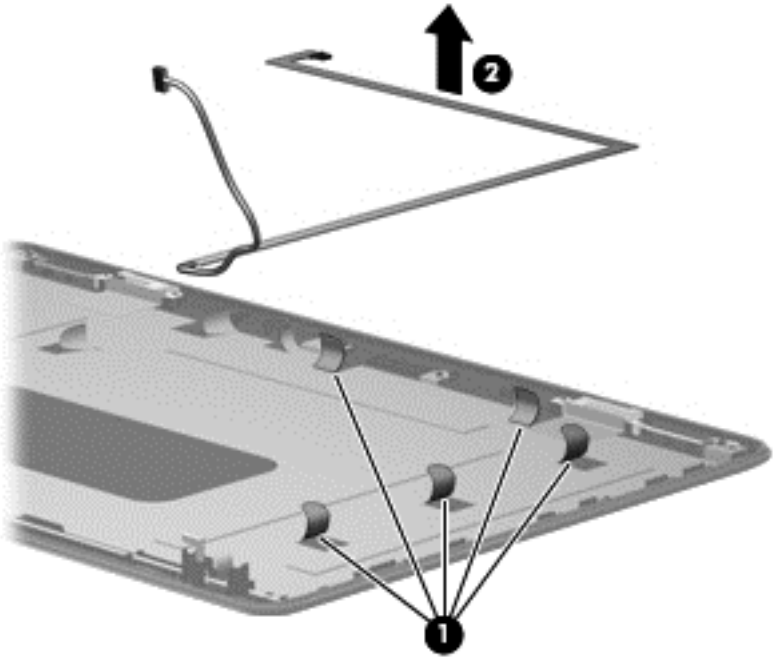
18. Detach the wireless antenna **(2)** from the display back cover .

19. Remove the antenna cables from the clips **(3)** built into the display enclosure.

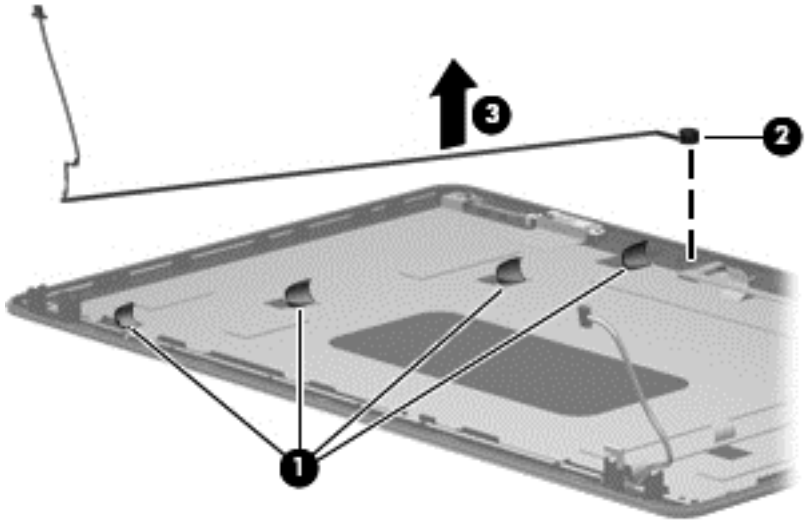
20. Remove the wireless antennas and cables **(4)** from the display enclosure. The wireless antennas and cables are included in the display cable kit, spare part number 592151-001.



21. If it is necessary to remove the webcam cable, remove the cable from the adhesive strips **(1)** along the cable path on the display back cover, and then remove the webcam cable **(2)**. The webcam cable is included in the display cable kit, spare part number 592151-001,



22. If it is necessary to remove the microphone, release the microphone cable from the adhesive strips **(1)** along the cable path on the display back cover, remove the microphone from the clips on the display back cover **(2)**, and then remove the microphone and microphone cable **(3)**. The microphone and cable is included in the display cable kit, spare part number 592151-001,



Reverse this procedure to reassemble and install the display assembly.

System board

Description	Spare part number
System board for use in models with UMA graphics subsystem memory,	592808-001
System board for use in models with DSC HD5430 MDM CR (for model 1.0 only)	592811-001
System board for use in models with DSC HD5430 (for model 1.0 only)	592810-001
System board for use in models with UMA graphics subsystem memory	592809-001
System board for use in models with HD545V DSC (for model 1.0 only)	611554-001
System board for use in models with HD545V DSC CR (for model 1.0 only)	611555-001
System board for use in models with discrete graphics subsystem with HD5470/512 MB (for model 1.1 only)	616405–001
System board for use in models with discrete graphics subsystem with HD5470/512 MB with HDMI card reader (for model 1.1 only)	616406–001
System board for use in models with discrete graphics subsystem with HD5470/1 G (for model 1.1 only)	616407–001
System board for use in models with discrete graphics subsystem with HD5470/1 G with HDMI card reader (for model 1.1 only)	616408–001

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:

- RTC battery (see RTC battery on page 78)
- Memory modules (see Memory module on page 51)
- WLAN module (see WLAN module on page 49)
- Modem module (see Modem module on page 61)

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 43).
5. Remove the following components:
   a. Hard drive (see Hard drive on page 44)
   b. WLAN (see WLAN module on page 49)
   c. Optical drive (see Optical drive on page 47)
   d. Keyboard (see Keyboard on page 53)
   e. Top cover (see Top cover on page 55)

f. Speaker assembly (see Speaker assembly on page 58)

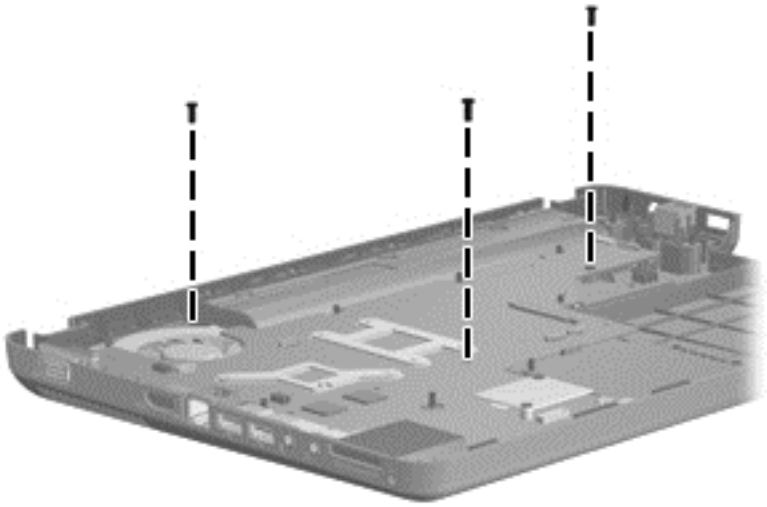
g. Display assembly (see Display assembly on page 66)

h. Top cover (see Top cover on page 55)

Remove the following cables from the system board if still connected:

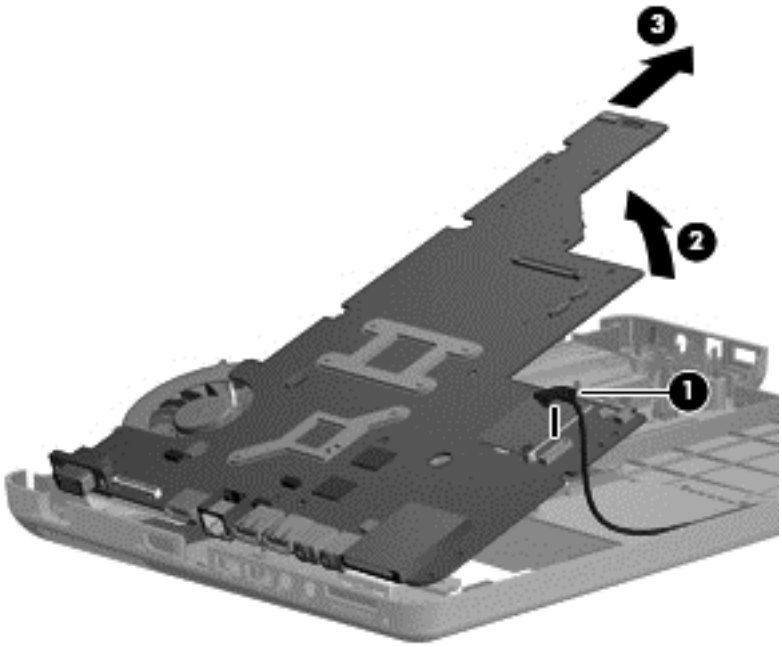
- Power connector cable (see Power connector cable on page 65)
- Bluetooth cable (see Bluetooth module on page 63)
- USB board cable (see USB board on page 64)

1. Turn the computer upright with the right side toward you.
2. Remove the three Phillips PM2.5×3.0 screws that secure the system board to the computer.



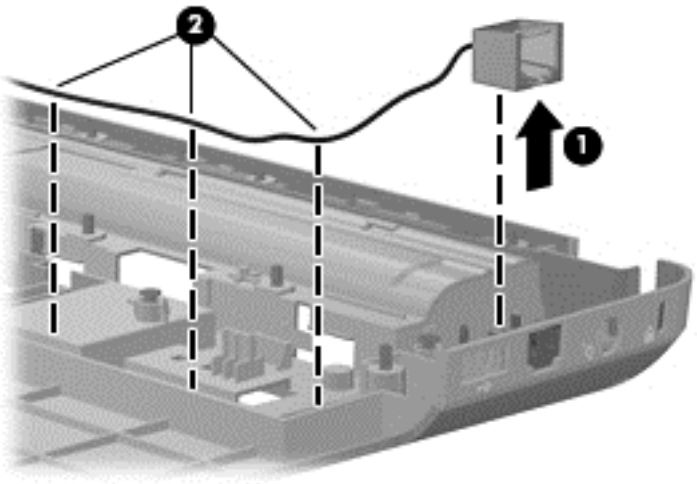
3. Release the optical drive cable **(1)** from the system board.
4. Lift the right side of the system board **(2)**.

5. Release the system board by sliding it to the right at an angle **(3)** until the connectors on the left side of the system board clear the base enclosure, and then remove the system board.



6. If it is necessary to replace the modem module cable, remove the RJ-11 connector **(1)** from the clip built into the base enclosure.

7. Remove the modem module cable **(2)** from the routing channel built into the base enclosure. The modem module cable is available using spare part number 610791-001.



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:

- Fan/heat sink assembly (see Fan/heat sink assembly on page 80)
- Processor (see Processor on page 83)

Reverse the preceding procedure to install the system board.

Optical drive SATA cable and connector

Description	Spare part number
Optical drive cable (included in the cable kit)	610791-001

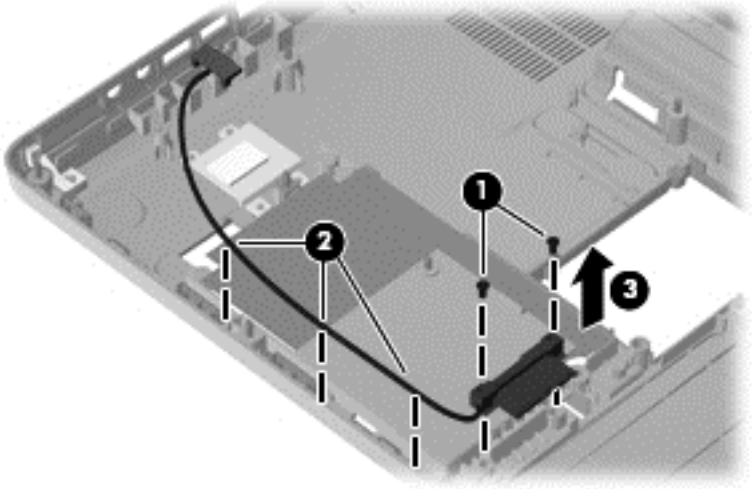
Before removing the optical drive cable, follow these steps:

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 43).
5. Remove the following components:
   a. Hard drive (see Hard drive on page 44)
   b. WLAN (see WLAN module on page 49)
   c. Optical drive (see Optical drive on page 47)
   d. Keyboard (see Keyboard on page 53)
   e. Top cover (see Top cover on page 55)
   f. Speaker assembly (see Speaker assembly on page 58)
   g. Display assembly (see Display assembly on page 66)
   h. System board (see System board on page 73)

Remove the optical drive cable

1. Remove the two Phillips PM2.5×6.0 screws **(1)** that secure the optical drive connector to the system board.

2. Release the cable from the clips on the base enclosure **(2)**, and then remove the cable **(3)**.



RTC battery

Description	Spare part number
RTC battery	602745-001

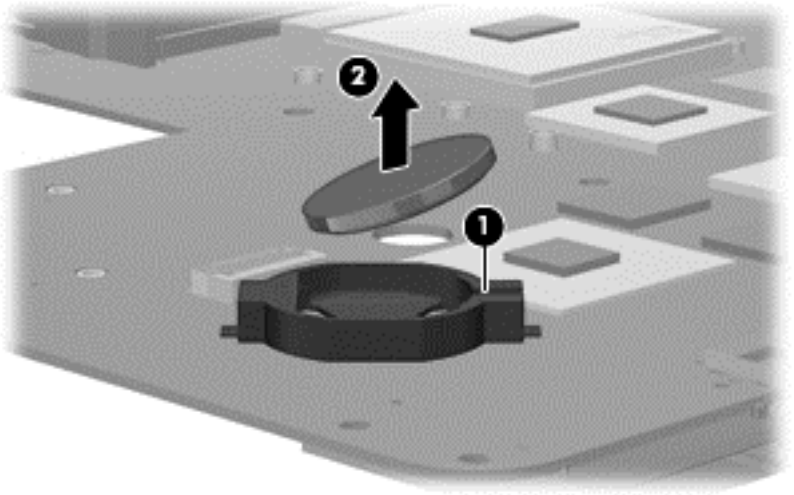
Before removing the RTC battery, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 43).
5. Remove the following components:
   a. Hard drive (see Hard drive on page 44)
   b. WLAN (see WLAN module on page 49)
   c. Optical drive (see Optical drive on page 47)
   d. Keyboard (see Keyboard on page 53)
   e. Top cover (see Top cover on page 55)
   f. Speaker assembly (see Speaker assembly on page 58)
   g. Display assembly (see Display assembly on page 66)
   h. System board (see System board on page 73)

Remove the RTC battery:

1. Turn the system board upside down.
2. Release the RTC battery from the clips on the system board **(1)**.

3. Remove the RTC battery **(2)**.



Reverse this procedure to install the RTC battery.

Fan/heat sink assembly

Description	Spare part number
Fan/heat sink assembly for use in models that use Universal Memory Architecture (UMA) graphics subsystem memory (includes thermal material)	606609-001
Fan/heat sink assembly for use in models that use discrete graphics subsystem memory (includes thermal material)	606610-001
Fan/heat sink assembly for use in models that use DSC HD545V graphics subsystem memory (includes thermal material) (for model 1.0 only)	617029-001

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

Before removing the fan/heat sink assembly, follow these steps:

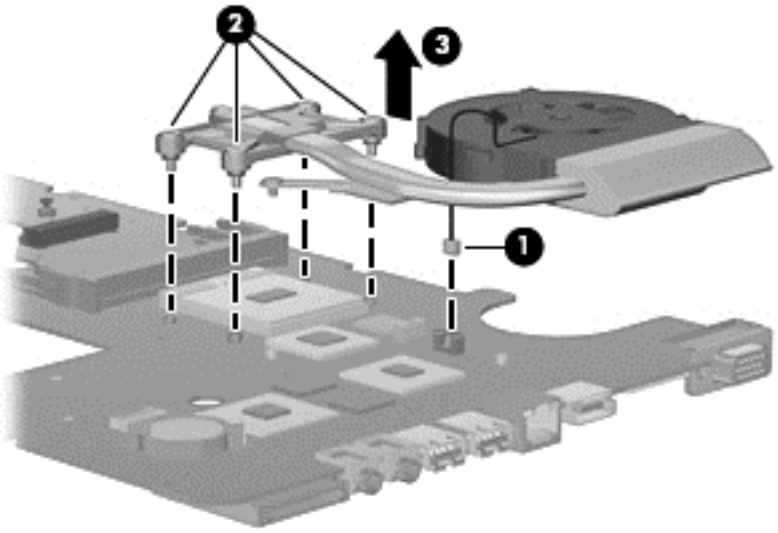
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 43).
5. Remove the following components:
   a. Hard drive (see Hard drive on page 44)
   b. Optical drive (see Optical drive on page 47)
   c. Keyboard (see Keyboard on page 53)
   d. Top cover (see Top cover on page 55)
   e. Speaker assembly (see Speaker assembly on page 58)
   f. Display assembly (see Display assembly on page 66)
   g. System board (see System board on page 73)

Remove the fan/heat assembly (fan/heat sink appearance may vary):

1. Turn the system board upside down.
2. Disconnect the fan cable **(1)** from the system board.
3. Follow the sequence embossed on heat sink to loosen the four Phillips PM2.5×7.0 captive screws **(2)** that secure the fan/heat sink assembly to the system board.

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

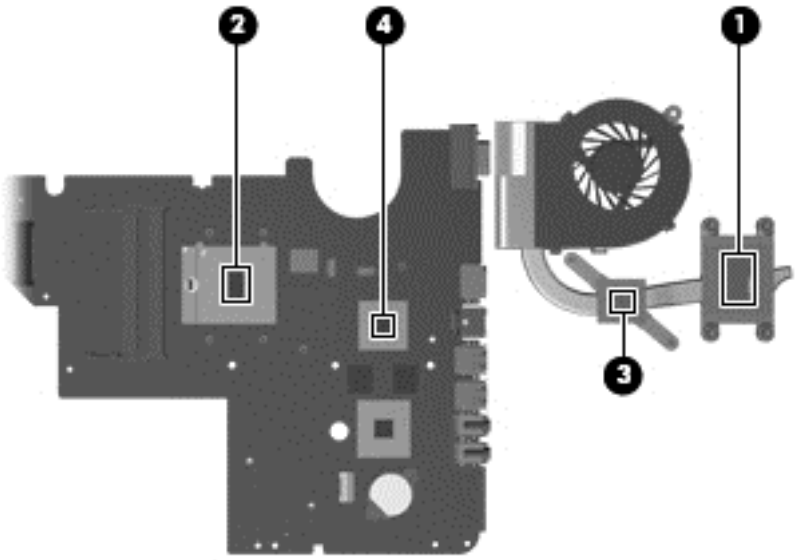
4. Remove the fan/heat sink assembly **(3)**.



The thermal material must be thoroughly cleaned from the surface of the fan/heat sink assembly **(1)**, **(3)** and the processor **(2)** and video components **(4)** each time the fan/heat sink assembly is removed. Thermal pads and thermal paste must be installed on all surfaces before the fan/heat sink assembly is reinstalled.

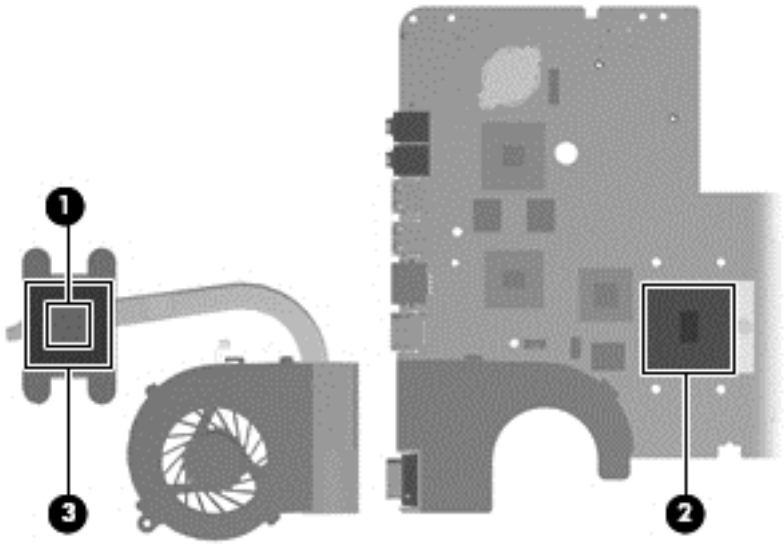
NOTE: Thermal pads and thermal paste are included with all fan/heat sink assembly, system board, and processor spare part kits.

The following illustration shows the locations for thermal material on systems with discrete graphics subsystems.



The thermal material must be thoroughly cleaned from the surface of the fan/heat sink assembly **(1)** and **(3)**, and the processor component **(2)**, each time the fan/heat sink assembly is removed. Thermal pads and thermal paste must be installed on all surfaces before the fan/heat sink assembly is reinstalled.

The following illustration shows the locations for thermal material on systems with UMA graphics subsystems.



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

Processor

NOTE: All processor spare part kits include thermal material.

Description	Spare part number
Processor Advanced Micro Devices (AMD) DC P340 2.2GHz 25W DDR3-1066 Mhz	616343–001
Processor Advanced Micro Devices (AMD) DC N350 2.4GHz 35W DDR3-1066 Mhz	616334–001
Advanced Micro Devices (AMD) processor DC P540 2.4GHz 25W DDR3-1066 Mhz	616347–001
Advanced Micro Devices (AMD) processor DC N550 2.6GHz 35W DDR3-1066 Mhz	616337–001
Advanced Micro Devices (AMD) processor DC N640 2.9GHz 35W	616344–001
Advanced Micro Devices (AMD) processor P8640 1.9GHz	616335–001
Advanced Micro Devices (AMD) processor N850 2.2GHz	616345–001
Advanced Micro Devices (AMD) processor DC QC P940 1.7GHz	616336–001
Advanced Micro Devices (AMD) processor QC P950 2.1GHz 35W	616346–001
Processor Advanced Micro Devices (AMD) P320 DDR3-1066 Mhz	594165-001
Advanced Micro Devices (AMD) processor N120 DDR3-1066 Mhz	594171-001
Advanced Micro Devices (AMD) processor P520 DDR3-1066 Mhz	594173-001
Advanced Micro Devices (AMD) processor DC N330 2.3GHz 1M L2 35W	594164-001
Advanced Micro Devices (AMD) processor DC QC P920 1.6Ghz 2M L2 25W	594170-001
Advanced Micro Devices (AMD) processor DC N530 DC 2.5GHz L2 35W	594172-001
Advanced Micro Devices (AMD) processor DC P820 Tri-Core 1.8Ghz 1.5M L2 25W	594167-001
Advanced Micro Devices (AMD) processor N620 DDR3-1333 Mhz	594166-001
Advanced Micro Devices (AMD) processor DC N930 QC 2.0 GHz	594169-001
Advanced Micro Devices (AMD) processor DC N830 Tri-core 2.1Ghz 1.5M L2 35W	594168-001

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 battery (see Battery on page 43).
5. Remove the following components:
   a. Hard drive (see Hard drive on page 44)
   b. Optical drive (see Optical drive on page 47)
   c. Keyboard (see Keyboard on page 53)

d. Top cover (see Top cover on page 55)

e. Speaker assembly (see Speaker assembly on page 58)

f. Display assembly (see Display assembly on page 66)

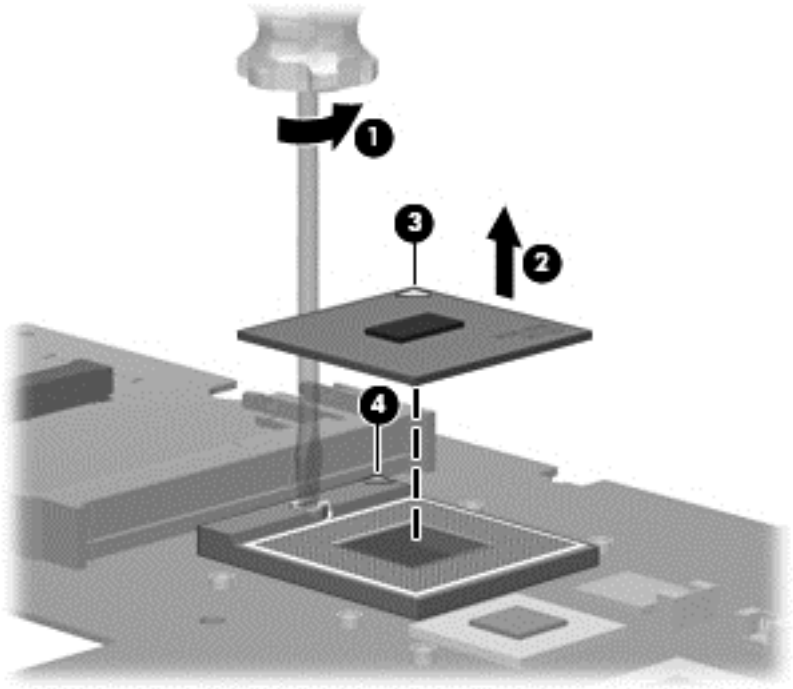
g. System board (see System board on page 73)

h. Fan/heat sink assembly (see Fan/heat sink assembly on page 80)

Remove the processor:

1. Turn the processor locking screw **(1)** one-half turn counterclockwise until you hear a click.
2. Lift the processor **(2)** straight up and remove it.

NOTE: The gold triangle **(3)** on the processor must be aligned with the triangle icon **(4)** embossed on the processor socket when you install the processor.



Reverse this procedure to install the processor.

5 Setup Utility

Computer Setup in Windows 7

To view the drives installed on the computer, select **Start > Computer**.

On models with a secondary hard drive (drive D), the optical drive becomes drive E. The next drive added to the system, such as a new USB drive, will be assigned the next available drive letter.

Starting Setup Utility

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

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

To start Setup Utility:

- Open Setup Utility by turning on or restarting the computer. 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 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.

Using Setup Utility

Changing the language of Setup Utility

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

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

   – or –

   Open 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 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 Setup Utility

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

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

Displaying system information

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

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

   – or –

   Open 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 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 Setup Utility default settings. If Setup Utility is not already running, begin at step 1. If Setup Utility is already running, begin at step 2.

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

   – or –

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

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

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

Exiting Setup Utility

You can exit Setup Utility with or without saving changes.

- To exit Setup Utility and save your changes from the current session:

  If the Setup Utility menus are not visible, press esc to return to the menu display. Then use the arrow keys to select **Exit > Exit Saving Changes**, and then press enter.

- To exit Setup Utility without saving your changes from the current session:

  If the Setup Utility menus are not visible, press esc to return to the menu display. Then use the arrow keys to select **Exit > Exit Discarding Changes**, and then press enter.

After either choice, the computer restarts in Windows.

Setup Utility menus

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

NOTE: 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	• 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 language of Setup Utility.
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.
Fan Always On	Enabled/disable Fan Always On. When enabled, the computer fan will always be on.
Action Keys Mode	Enable/disable Action Keys Mode.
Boot Options	Set the following boot options: • POST hotkey delay (sec.)—Set the delay for the f1, f2, f9, f10, f11, and f12 functions of 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 the internal network adapter. • Boot Order—Set the boot order for: ◦ Notebook Hard Drive ◦ Internal CD/DVD ROM Drive ◦ USB Diskette on Key/USB Hard Disk ◦ USB CD/DVD ROM Drive ◦ USB Floppy ◦ Network Adapter

Diagnostics menu

Select	To do this
Hard Disk Self Test	Run a comprehensive self-test on the hard drive. **NOTE:** On models with two hard drives, this menu option is called the **Primary Hard Disk Self Test**.
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.

Computer Setup in Linux

Starting Computer Setup

Computer Setup is a preinstalled, ROM-based utility that can be used even when the operating system is not working or will not load.

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

NOTE: Pointing devices are not supported in Computer Setup. You must use the keyboard to navigate and make selections.

NOTE: An external keyboard connected by USB can be used with Computer Setup only if USB legacy support is enabled.

To start Computer Setup, follow these steps:

1. Turn on or restart the computer.
2. Before your operating system opens and while the “F10=ROM Based Setup” message is displayed in the lower-left corner of the screen, press f10.

Using Computer Setup

Navigating and selecting in Computer Setup

The information and settings in Computer Setup are accessed from the File, Security, Diagnostics, and System Configuration menus.

1. Open Computer Setup by turning on or restarting the computer, and then pressing f10 while the "F10 = ROM Based Setup" message is displayed in the lower-left corner of the screen.

   Because Computer Setup is not operating system 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 select an item, press enter.
   - To close open dialog boxes and return to the main Computer Setup screen, press esc.
   - To view navigation information, press f1.
   - To change the language, press f2.

2. Select the **File, Security, Diagnostics,** or **System Configuration** menu.
3. To exit Computer Setup, choose one of the following methods:

   - To exit Computer Setup without saving your preferences, use the arrow keys to select **File > Ignore Changes And Exit**. Then follow the instructions on the screen.
   - To save your preferences and exit Computer Setup, use the arrow keys to select **File > Save Changes And Exit**. Then follow the instructions on the screen.

Your preferences go into effect when the computer restarts.

Restoring factory settings in Computer Setup

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

1. Open Computer Setup by turning on or restarting the computer, and then pressing f10 while the "F10 = ROM Based Setup" message is displayed in the lower-left corner of the screen.
2. Use the arrow keys to select **File > Restore Defaults**, and then press enter.
3. When the confirmation dialog box opens, press f10.
4. To save your preferences and exit Computer Setup, use the arrow keys to select **File > Save Changes And Exit**. Then follow the instructions on the screen.

Your preferences go into effect when the computer restarts.

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

Computer Setup menus

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

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

File menu

Select	To do this
System information	• View identification information for the computer. • View specification information for the processor, cache and memory size, and system ROM.
Restore Defaults	Replace the configuration settings in Computer Setup with the original factory settings. (Password settings and security settings are not changed when you restore the factory settings.)
Ignore Changes And Exit	Cancel any changes entered during the current session. Then exit and restart the computer.
Save Changes And Exit	Save any changes entered during the current session. Then exit and restart the computer. Your changes go into effect when the computer restarts.

Security menu

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

Select	To do this
Setup Password	Enter, change, or delete a setup password.
Power-On Password	Enter, change, or delete a power-on password.
Password Options	• Enable/disable stringent security. • Enable/disable the password requirement on computer restart.
DriveLock Passwords	• Enable/disable DriveLock on any computer hard drive. • Enter, change, or disable DriveLock on an optional MultiBay hard drive. **NOTE:** DriveLock settings are accessible only when you enter Computer Setup by turning on (not restarting) the computer.
System IDs	Enter a user-defined computer asset tracking number and ownership tag.
Disk Sanitizer	Run Disk Sanitizer to destroy all existing data on the primary hard drive. The following options are available: • Fast: Runs the Disk Sanitizer erase cycle once. • Optimum: Runs the Disk Sanitizer erase cycle 3 times. • Custom: Allows you to select the desired number of Disk Sanitizer erase cycles from a list. **CAUTION:** If you run Disk Sanitizer, the data on the primary hard drive is destroyed permanently.

Diagnostics menu

Select	To do this
HDD Self-Test Options	Run a comprehensive self-test on any hard drive in the system or on any optional MultiBay hard drive.
Memory Check	Run a comprehensive check on system memory.

System Configuration menu

NOTE: Some of the listed System Configuration options may not be supported by your computer.

Select	To do this
Language	Change the Computer Setup language.
Boot options	• Set an f9, f10, and f12 delay when starting up. • Enable/disable CD-ROM boot. • Enable/disable floppy boot. • Enable/disable internal network adapter boot. • Enable/disable MultiBoot, which sets a boot order that can include most boot devices in the system. • Set the Express Boot Popup delay in seconds. • Set the boot order. ◦ 1st boot device: USB CD-ROM ◦ 2nd boot device: USB floppy ◦ 3rd boot device: USB SuperDisk ◦ 4th boot device: Notebook hard drive ◦ 5th boot device: USB hard disk ◦ 6th boot device: Network controller
Device Configurations	• Swap the functions of the fn key and left ctrl key. • Enable/disable USB legacy support. When enabled, USB legacy support allows the following: ◦ Use of a USB keyboard in Computer Setup even when a your operating system is not running. ◦ Startup from bootable USB devices, including a hard drive, diskette drive, or optical drive connected by a USB port to the computer. • Enable/disable BIOS DMA data transfers. • Enable/disable fan always on while connected to an AC outlet. • Enable/disable data execution prevention. • Enable/disable LAN power saving mode. • Enable/disable SATA Native Mode. • Enable/disable Dual Core CPU. • Enable/disable HDD translation mode.

Select	To do this
Built-in device options	• Enable/disable embedded WLAN Device Radio. • Enable/disable embedded Bluetooth Device Radio. • Enable/disable Network Interface Controller (NIC) • Enable/disable LAN/WLAN Switching. • Enable/disable Wake on LAN. • Enable/disable the integrated camera (webcam)
Port options	• Enable/disable USB port. • Enable/disable ExpressCard slot.

6 Specifications

Computer specifications

Dimensions	
Depth	**22.8** cm (8.98 in)
Width	**34.2 cm** (13.46 in)
Height (front to rear)	**31.5 to 36.5 cm** (1.24 to 1.44 in)
Weight (lowest weight configuration)	< **2.20 kg** (4.85 lbs)
Input power	
Operating voltage	18.5 V dc @ 4.74 A – 90 W
Operating current	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	
Operating	10% to 90%
Nonoperating	5% to 95%
Maximum altitude (unpressurized)	
Operating	**-15 m to 3,048 m** (-50 ft to 10,000 ft)
Nonoperating	**-15 m to 12,192 m** (-50 ft to 40,000 ft)
NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The computer operates well within this range of temperatures.	

35.6-cm (14.0-in) display specifications

Dimensions	
Height	**17.6 cm** (17.6 cm)
Width	**31.1 cm** (12.24 in)
Diagonal	**35.7 cm** (14.06 in)
Number of colors	Up to 16.8 million
Contrast ratio	300:1 (typical)
Brightness	200 nits (typical)
Pixel resolution	
Pitch	0.259 × 0.259 mm
Format	1280 × 800; HD: 1366 × 768
Configuration	RGB vertical stripe
Backlight	LED
Character display	80 × 25
Total power consumption	4.0 W
Viewing angle	±40° horizontal, +120/-40° 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	1.0 ms	1.5 ms	2.0 ms	1.5 ms
Average	14.0 ms	12.0 ms	12.0 ms	11.0 ms
Maximum	22.0 ms	22.0 ms	22.0 ms	22.0 ms
Logical blocks	976,773,168	625,142,448	488,397,168	312,581,808
Disc rotational speed	7200 rpm	7200 rpm	7200 rpm	7200 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.

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

DVD±RW SuperMulti Double-Layer Drive with LightScribe specifications

Applicable disc	
Read	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-RAM
Write	CD-R and CD-RW, DVD+R, DVD+RW, DVD-R, DVD-RW, DVD-RAM
Random access time	
DVD	< 230 ms
CD	< 175 ms
Cache buffer	2 MB
Data transfer rate	
24X CD-ROM	3,600 KB/sec
8X DVD-ROM	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-RAM	6,750 KB/sec
Transfer mode	Multiword DMA Mode

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

Applicable disc	
Read	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-RAM (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
Write	DVD-RAM (Ver.2), DVD+R, DVD-R, CD-R, and CD-ROM
Random access time	
BD	< 230 ms
DVD	< 180 ms
CD	< 180 ms
Cache buffer	8 MB
Data transfer rate	
24X CD-ROM	3,600 KB/sec
8X DVD-ROM	10,800 KB/sec
4X BD	18,000 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-RAM	6,750 KB/sec
1X BD-ROM	4,500 KB/sec
1X BD-R read	4,500 KB/sec
1X BD-RE read	4,500 KB/sec
Transfer mode	Multiword DMA Mode

System resource specifications

You can use Device Manager to get a graphical view of the system resources that control how the devices work on the computer. System resources you can access from Device Manager are direct memory access (DMA) channels, input/output (I/O) ports, interrupt request (IRQ) lines, and memory addresses.

If two devices require the same resource and create a device conflict, you can manually change the resource settings in Device Manager to be sure each setting is unique.

△ **CAUTION:** Improperly changing resource settings can disable your hardware and cause your computer to malfunction or become inoperable. Only users who have expert knowledge of computer hardware and hardware configurations should change resource settings.

To view resource settings in Windows 7 and Windows Vista:

1. Select **Start > Computer**.
2. Click **System properties** near the top of the Computer folder.
3. On the left, click **Device Manager**.
4. On the **View** menu, click one of the following:
   - **Resources by type**
   - **Resources by connection**

To view resource settings in Windows XP:

1. Select **Start > My Computer**, or double-click **My Computer** on the desktop.
2. Under System Tasks, click **View system information**.
3. In the System Properties window, select the **Hardware** tab.
4. Click **Device Manager**.
5. On the **View** menu, click one of the following:
   - **Resources by type**
   - **Resources by connection**

7 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.

NOTE: Computers with a solid-state drive (SSD) 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**, right-click **Computer**, click **Manage**, and then click **Disk Management**. If the partition is present, an HP Recovery drive is listed in the window.

Windows 7

To protect your information, back up your files and folders. In case of system failure, you can use the backup files to restore your computer.

△ **CAUTION:** In the event of a hard drive failure, you cannot use your computer to access the Disaster Recovery utility. Therefore, HP recommends that you download the Disaster Recovery utility SoftPaq, and then extract it to a USB flash drive as soon as possible after software setup. For details, refer to “Downloading and extracting the Disaster Recovery utility” later in this section.

Depending on your computer model, you may have one of the following backup and recovery solutions:

- Roxio BackOnTrack
- HP Recovery Manager

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

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.

NOTE: 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:

NOTE: The external hard drive must be connected to a USB port on the computer, not to a USB port on an external device such as a hub.

- You will need high-quality DVD-R, 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.

  NOTE: Read-write discs, such as CD-RW, DVD±RW, double-layer DVD±RW, and BD-RE (rewritable Blu-ray) discs, are not compatible with the 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 Disk Creation**.
2. Follow the on-screen instructions.

Backing up your information

As you add new software and data files, you should back up your system on a regular basis to maintain a reasonably current backup. Back up your system at the following times:

- At regularly scheduled times

NOTE: Set reminders to back up your information periodically.

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

Note the following when backing up:

- Create system restore points using the Windows® System Restore feature, and periodically copy them to disc.
- Store personal files in the Documents library 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:

  1. Display the screen.
  2. Copy the screen:

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

     To copy the entire screen, press prt sc.
  3. Open a word-processing document, and then select **Edit > Paste**.
  4. Save the document.
- You can back up your information to an optional external hard drive, a network drive, or discs.
- When backing up to discs, use any of the following types of discs (purchased separately): CD-R, CD-RW, DVD+R, DVD-R, or DVD±RW. The discs you use will depend on the type of optical drive installed in your computer.

NOTE: DVDs store more information than CDs, so using them for backup reduces the number of recovery discs required.

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

Using Windows Backup and Restore

To create a backup using Windows Backup and Restore, follow these steps:

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

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

1. Select **Start > All Programs > Maintenance > Backup and Restore**.
2. Follow the on-screen instructions to set up and create a backup.

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

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.

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

You also can create additional restore points to provide increased protection for your 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

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

Create a system restore point

1. Select **Start > Control Panel > System and Security > System**.
2. In the left pane, click **System Protection**.
3. Click the **System Protection** tab.
4. Under **Protection Settings**, select the disk for which you want to create a restore point.
5. Click **Create**.
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 Security > System**.
2. In the left pane, click **System protection**.
3. Click the **System Protection** tab.
4. Click **System Restore**.
5. Follow the on-screen instructions.

Performing a recovery

NOTE: You can recover only files that you have previously backed up. HP recommends that you use HP Recovery Manager to create a set of recovery discs (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.

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

NOTE: 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)

NOTE: Computers with an SSD may not have a recovery partition. If the computer does 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, accessed by pressing 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 –

   - Turn on or restart the computer, and then press esc while the “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen. Then, press f11 while the “Press <F11> for recovery” message is displayed on the screen.
2. Click **System Recovery** in the **Recovery Manager** window.
3. Follow the on-screen instructions.

Linux backup and recovery

Use the instructions in this section if SUSE Linux SLED 11 is installed on your computer.

To protect your information, back up your files and folders. Then if the system fails, you can restore your important files from copies. You can also use the options listed in this section to restore the operating system and programs that were installed at the factory.

△ **CAUTION:** Using f11 completely erases hard drive contents and reformats the hard drive. All files you have created and any software installed on the computer are permanently removed. The f11 recovery tool reinstalls the original operating system and HP programs and drivers that were installed at the factory. Software, drivers, and updates not installed by HP must be manually reinstalled. Personal files must be restored from a backup.

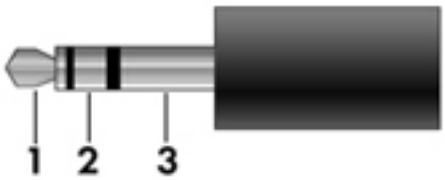
To recover the original hard drive image using f11, follow these steps:

1. If possible, back up all personal files.
2. Restart the computer, and then press f11 while the “Press <F11> for recovery” message is displayed on the screen.
3. Follow the on-screen instructions.

NOTE: If you are unable to boot (start up) your computer from the primary operating system or from the recovery f11 method, you must purchase a *SUSE Linux Enterprise Desktop Operating System* DVD to repair the operating system. For additional information, refer to the *Worldwide Telephone Numbers* booklet, included with the computer.

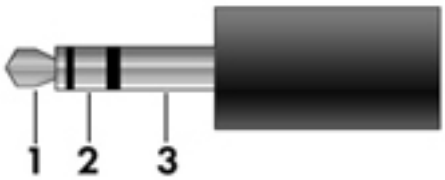
8 Connector pin assignments

Audio-out (headphone)



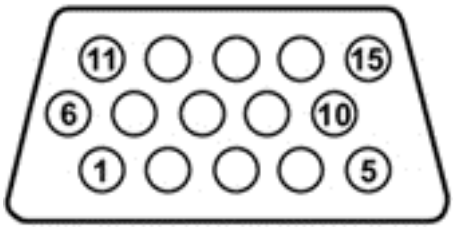
Pin	Signal
1	Audio out, left channel
2	Audio out, right channel
3	Ground

Audio-in (microphone)



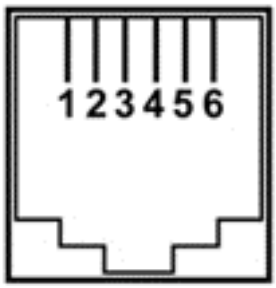
Pin	Signal
1	Audio signal in
2	Audio signal in
3	Ground

External monitor



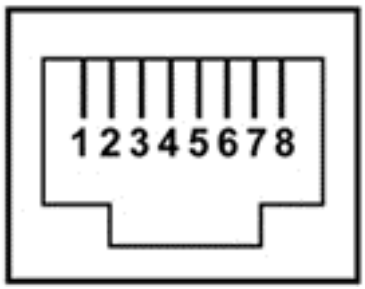
Pin	Signal
1	Red analog
2	Green analog
3	Blue analog
4	Not connected
5	Ground
6	Ground analog
7	Ground analog
8	Ground analog
9	+5 VDC
10	Ground
11	Monitor detect
12	DDC 2B data
13	Horizontal sync
14	Vertical sync
15	DDC 2B clock

RJ-11 (modem)



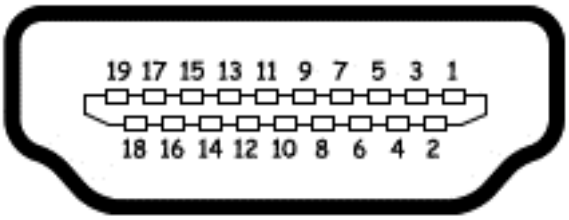
Pin	Signal
1	Unused
2	Tip
3	Ring
4	Unused
5	Unused
6	Unused

RJ-45 (network)



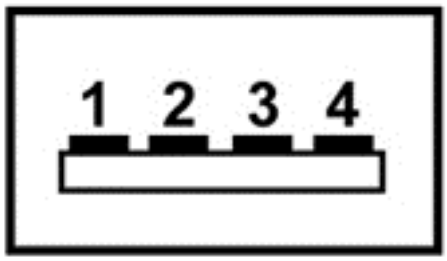
Pin	Signal
1	Transmit +
2	Transmit -
3	Receive +
4	Unused
5	Unused
6	Receive -
7	Unused
8	Unused

HDMI



Pin	Signal
1	TMDS data 2+
2	TMDS data 2 shield
3	TMDS data 2–
4	TMDS data 1+
5	TMDS data 1shield
6	TMDS data 1–
7	TMDS data 0+
8	TMDS data 0 shield
9	TMDS data 0–
10	TMDS clock+
11	TMDS clock shield
12	TMDS clock–
13	CEC
14	No connect
15	DDC clock
16	DDC data
17	Ground
18	+5V power
19	Hot plug detect
20	Shell

Universal Serial Bus



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

9 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 or regions must meet the requirements of the country or region where the computer is used.

Requirements for all countries or regions

The requirements listed below are applicable to all countries or 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 each country or region’s power system.
- 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 or 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.

10 Recycling

Battery

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

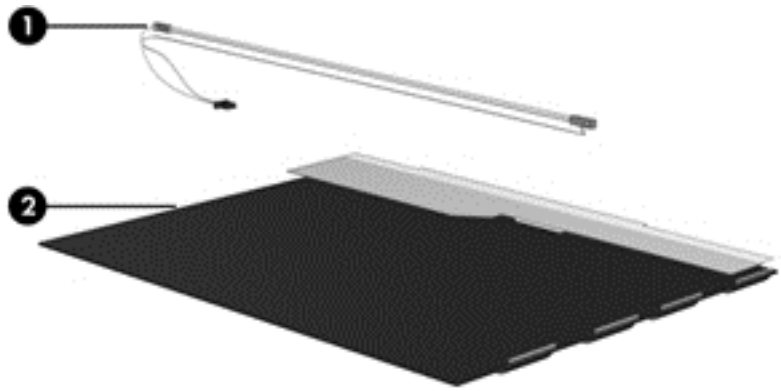
Display

⚠ **WARNING!** The backlight contains mercury. 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.

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

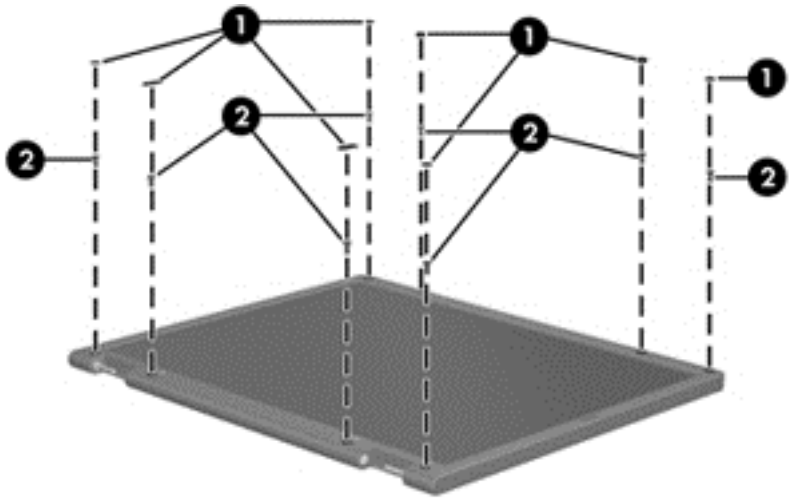
This section provides disassembly instructions for the display assembly. The display assembly must be disassembled to gain access to the backlight **(1)** and the liquid crystal display (LCD) panel **(2)**.



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

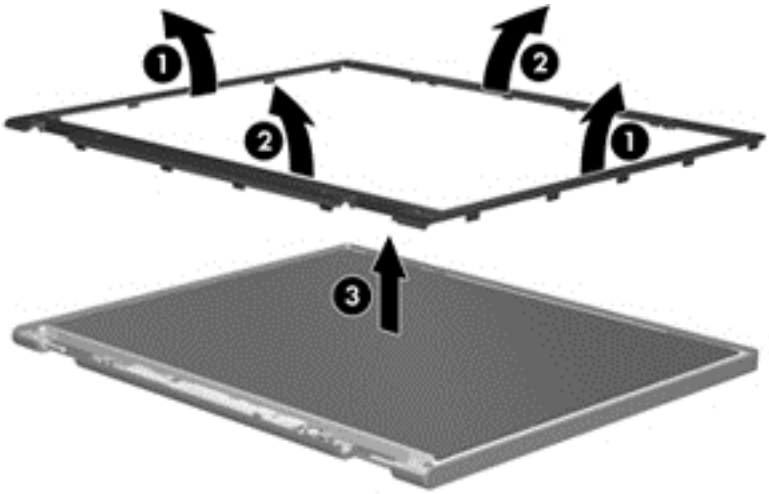
Perform the following steps to disassemble the display assembly:

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

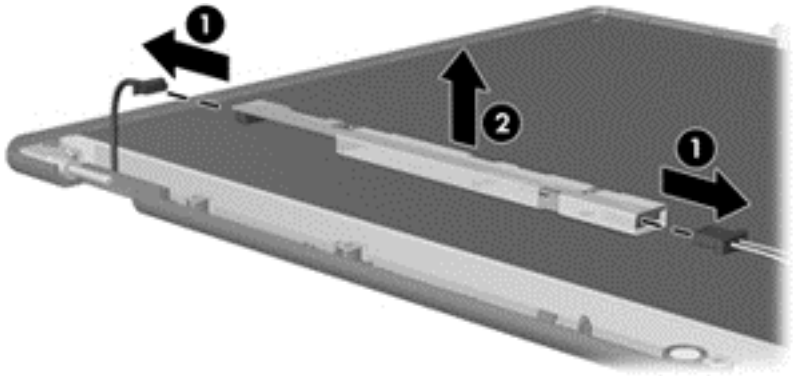


2. Lift up and out on the left and right inside edges **(1)** and the top and bottom inside edges **(2)** of the display bezel until the bezel disengages from the display assembly.

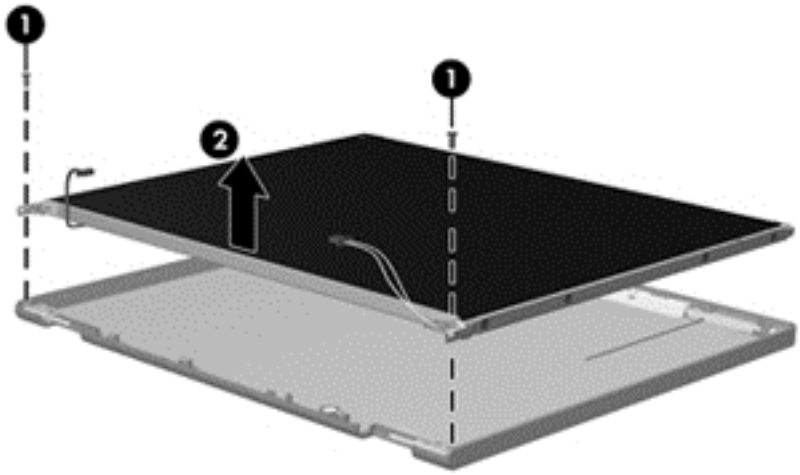
3. Remove the display bezel **(3)**.



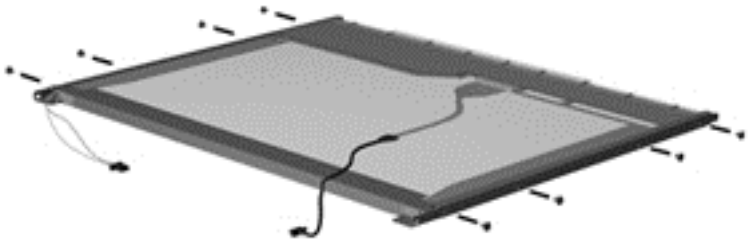
4. Disconnect all display panel cables **(1)** from the display inverter and remove the inverter **(2)**.



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

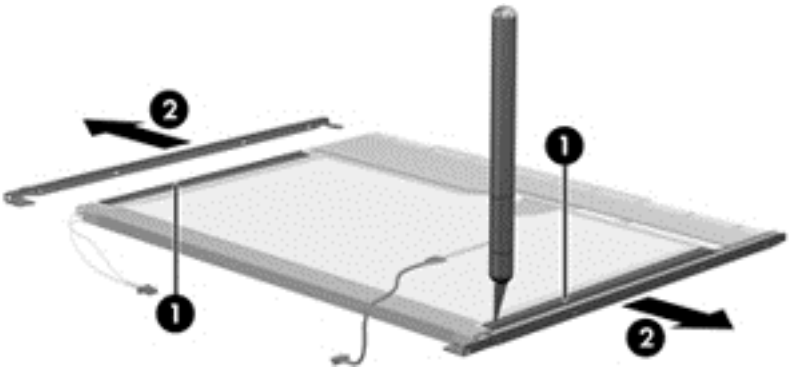


7. Turn the display panel assembly upside-down.
8. Remove all screws that secure the display panel frame to the display panel.

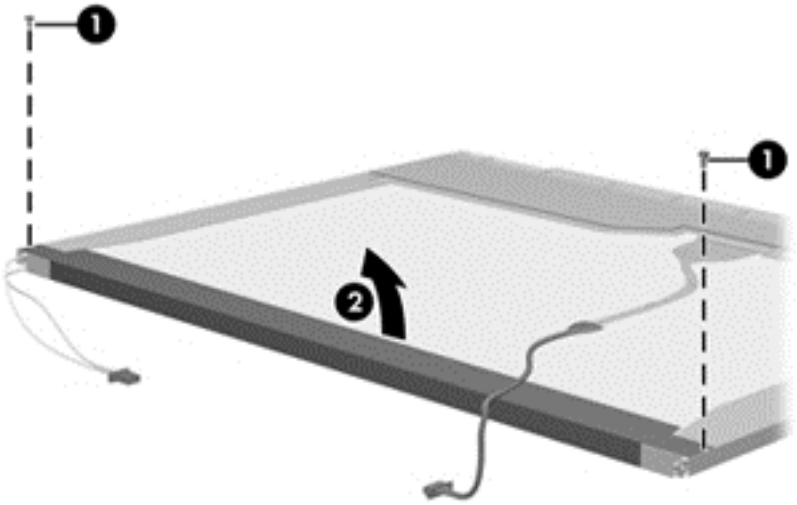


9. Use a sharp-edged tool to cut the tape **(1)** that secures the sides of the display panel to the display panel frame.

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

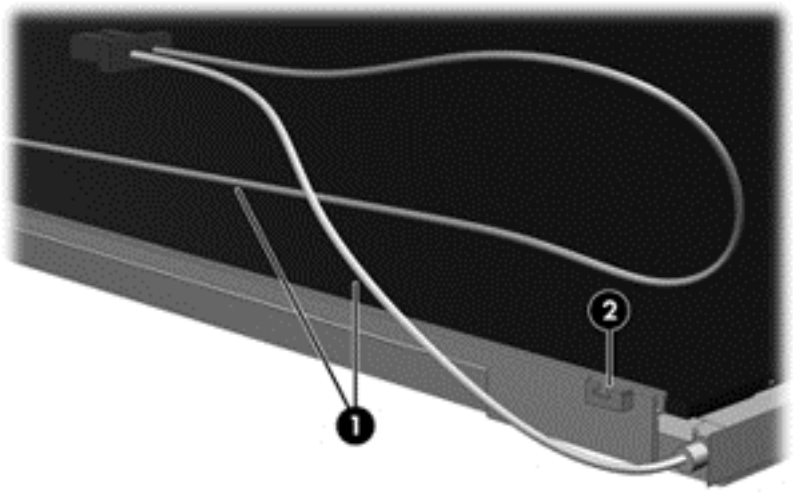


11. Remove the screws **(1)** that secure the backlight cover to the display panel.
12. Lift the top edge of the backlight cover **(2)** and swing it outward.



13. Remove the backlight cover.
14. Turn the display panel right-side up.

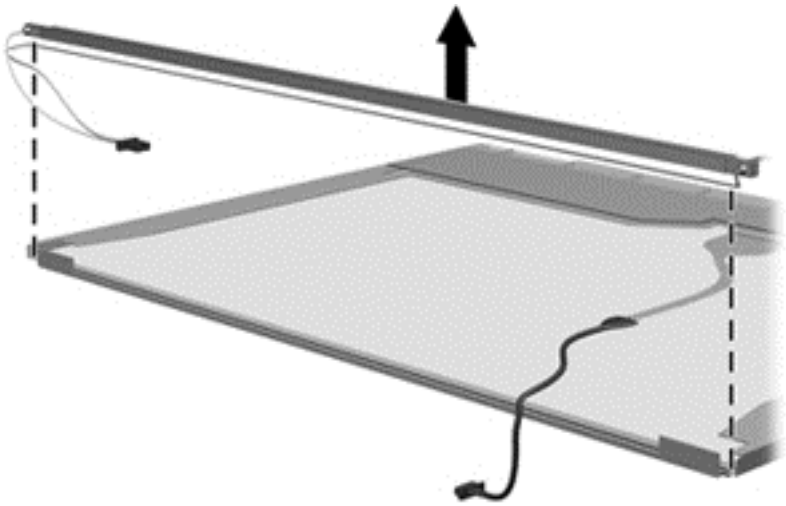
15. Remove the backlight cables **(1)** from the clip **(2)** in the display panel.



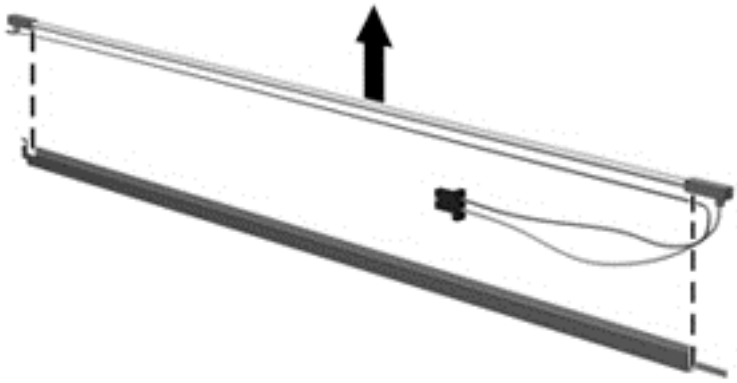
16. Turn the display panel upside-down.

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

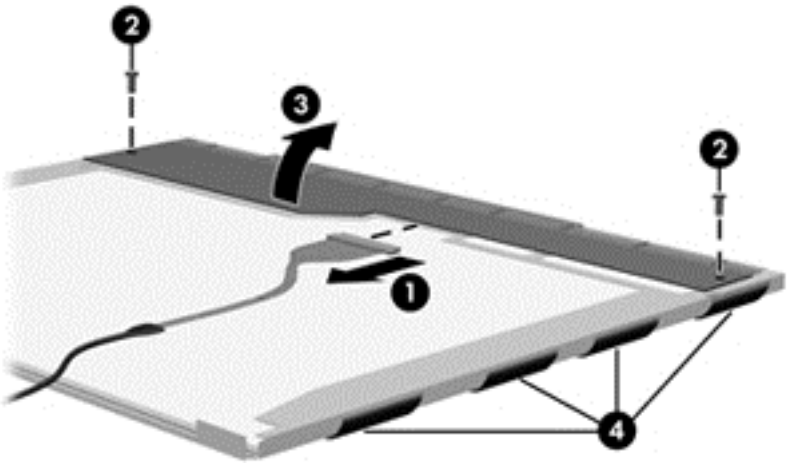
17. Remove the backlight frame from the display panel.



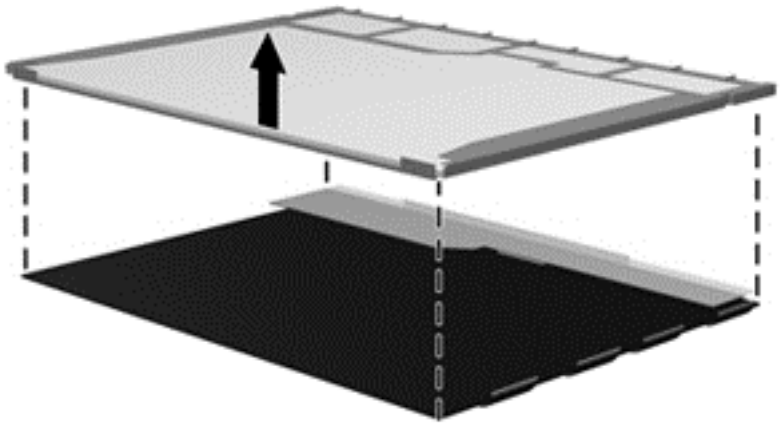
18. Remove the backlight from the backlight frame.



19. Disconnect the display panel cable **(1)** from the LCD panel.
20. Remove the screws **(2)** that secure the LCD panel to the display rear panel.
21. Release the LCD panel **(3)** from the display rear panel.
22. Release the tape **(4)** that secures the LCD panel to the display rear panel.



23. Remove the LCD panel.



24. Recycle the LCD panel and backlight.

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