



# 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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First Edition: April 2010

Document Part Number: 594158-002

## Safety warning notice

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

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# Table of contents

<b>1 Product description .....</b>	<b>1</b>
<b>2 External component identification .....</b>	<b>8</b>
Identifying the hardware .....	8
Top components .....	9
TouchPad .....	9
Lights .....	10
Button and speakers .....	11
Keys .....	12
Display .....	13
Right-side components .....	14
Left-side components .....	15
Bottom components .....	16
Wireless antennas .....	17
Additional hardware components .....	18
<b>3 Illustrated parts catalog .....</b>	<b>19</b>
Serial number location .....	19
Computer major components .....	20
Display assembly components .....	27
Plastics Kit .....	29
Mass storage devices .....	30
Miscellaneous parts .....	31
Sequential part number listing .....	32
<b>4 Removal and replacement procedures .....</b>	<b>38</b>
Preliminary replacement requirements .....	38
Tools required .....	38
Service considerations .....	38
Plastic parts .....	38
Cables and connectors .....	39
Drive handling .....	39
Grounding guidelines .....	40

Electrostatic discharge damage .....	40
Packaging and transporting guidelines .....	41
Workstation guidelines .....	41
Equipment guidelines .....	42
Component replacement procedures .....	43
Serial number .....	43
Computer feet .....	44
Battery .....	45
Hard drive .....	46
Optical drive .....	49
WLAN module .....	51
Memory module .....	54
Keyboard .....	56
Top cover .....	58
Speaker assembly .....	61
Power button board .....	62
TouchPad button board .....	63
Modem module .....	65
Bluetooth module .....	67
USB board .....	69
Power connector cable .....	71
Display assembly .....	73
System board .....	80
Optical drive SATA cable and connector .....	83
RTC battery .....	85
Fan/heat sink assembly .....	87
Processor .....	90
<b>5 Setup Utility .....</b>	<b>93</b>
Computer Setup in Windows 7 .....	93
Starting Setup Utility .....	93
Using Setup Utility .....	94
Changing the language of Setup Utility .....	94
Navigating and selecting in Setup Utility .....	94
Displaying system information .....	95
Restoring default settings in Setup Utility .....	95
Exiting Setup Utility .....	96
Setup Utility menus .....	96
Main menu .....	96
Security menu .....	96
System Configuration menu .....	97
Diagnostics menu .....	97
Computer Setup in Linux .....	99

Starting Computer Setup .....	99
Using Computer Setup .....	99
Navigating and selecting in Computer Setup .....	99
Restoring factory settings in Computer Setup .....	100
Computer Setup menus .....	101
File menu .....	101
Security menu .....	102
Diagnostics menu .....	102
System Configuration menu .....	103
<b>6 Specifications .....</b>	<b>105</b>
Computer specifications .....	105
35.6-cm (14.0-in) display specifications .....	106
Hard drive specifications .....	107
DVD±RW SuperMulti Double-Layer Drive with LightScribe specifications .....	108
Blu-ray ROM with LightScribe DVD±R/RW SuperMulti DL Drive specifications .....	109
System resource specifications .....	110
<b>7 Backup and recovery .....</b>	<b>111</b>
Windows 7 .....	111
Creating recovery discs .....	112
Backing up your information .....	113
Using Windows Backup and Restore .....	114
Using system restore points .....	115
When to create restore points .....	115
Create a system restore point .....	115
Restore to a previous date and time .....	115
Performing a recovery .....	115
Recovering from the recovery discs .....	116
Recovering from the dedicated recovery partition (select models only) .....	116
Linux backup and recovery .....	117
<b>8 Connector pin assignments .....</b>	<b>118</b>
Audio-out (headphone) .....	118
Audio-in (microphone) .....	118
External monitor .....	119
RJ-11 (modem) .....	120
RJ-45 (network) .....	120
HDMI .....	121
Universal Serial Bus .....	122
<b>9 Power cord set requirements .....</b>	<b>123</b>
Requirements for all countries or regions .....	123

Requirements for specific countries or regions ..... 124

**10 Recycling ..... 125**

    Battery ..... 125

    Display ..... 125

**Index ..... 131**



# 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
<b>Product Name</b>	<b>Compaq Presario CQ42 Notebook PC</b>		√	√	√
	<b>HP G42 Notebook PC</b>	√			
<b>Processors</b>	<b>Intel® Arrandale™</b>				
	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	√	√	√	
	<b>Intel Pentium™</b>				
	DC T4400, 2.2-GHz, 800-MHz FSB, 1-MB L2 cache				√
	DC T4300, 2.1-GHz, 800-MHz FSB, 1-MB L2 cache				√
	<b>Intel Celeron™</b>				
	DC T3100, 1.9-GHz, 800-MHz FSB, 1-MB L2 cache				√
	DC T3000, 1.8-GHz 800-MHz FSB, 1-MB L2 cache				√
	<b>AMD® Phenom™ II Processor</b>				
	DC N930 QC 2.0 GHz	√	√	√	

Category	Description	HP G42	Compaq Presario CQ42	Compaq Presario CQ42	Compaq Presario CQ42
		UMA	Discrete	UMA Models 150 – 199	UMA Models 100 – 149
	DC N830 Tri-core 2.1Ghz 1.5M L2 35W	√	√	√	
	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	√	√	√	
	<b>AMD Turion™ II Processor</b>				
	DC N530 DC 2.5GHz L2 35W	√	√	√	
	P520 DDR3-1066 Mh	√	√	√	
	<b>AMD Athlon™ II Processor</b>				
	DC N330 2.3GHz 1M L2 35W	√	√	√	
	P320 DDR3-1066 Mhz	√	√	√	
	<b>AMD Sempron™ II Processor</b>				
	N120 DDR3-1066 Mhz	√	√	√	
<b>Chipset</b>	Intel® HM55 Express	√	√	√	
	Intel® GL40				√
	Southbridge: ICH9m				√
	<b>AMD</b>				
	ATI RS880M (Northbridge)	√		√	
	ATI RS880MD (Northbridge)		√		
	Southbridge - SB820	√	√	√	
<b>Graphics</b>	<b>Intel UMA (integrated)/HD Graphics</b> with shared video memory (memory size is dynamic change):	√		√	
	<ul style="list-style-type: none"> <li>Up to 251 MB on computers with 1024 MB of system memory</li> <li>Up to 358 MB on computers with more than 2048 MB of system memory</li> </ul>				

Category	Description	HP G42	Compaq Presario CQ42	Compaq Presario CQ42	Compaq Presario CQ42
		UMA	Discrete	UMA Models 150 – 199	UMA Models 100 – 149
	<b>Intel UMA (integrated)/GMA 4500M - GL40 chipset</b> with shared video memory (memory size is dynamic change): <ul style="list-style-type: none"> <li>Up to 1759 MB for computers with more than 4096 MB of system memory (64 bit)</li> <li>Up to 1309 MB for computers with more than 4096 MB of system memory (32 bit)</li> <li>Up to 1309 MB for computers with more than 3072 MB of system memory</li> <li>Up to 797 MB for computers with more than 2048 MB system memory</li> <li>Up to 285 MB for computers with more than 1024 MB of system memory</li> </ul>				√
	<b>ATi Discrete PCI Express x 16 Graphics</b>  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))		√		
	<b>Support for BD or HD-DVD playback with HD decoder and DX10 support</b>	√	√	√	√
<b>Panel</b>	<b>35.6-cm</b> (14.0-in) HD LED BrightView (1366 x 768 resolution)	√	√	√	√
	16:9 wide aspect ratio	√	√	√	√
<b>Memory</b>	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)	√	√	√	

Category	Description	HP G42	Compaq Presario CQ42	Compaq Presario CQ42	Compaq Presario CQ42
		UMA	Discrete	UMA Models 150 – 199	UMA Models 100 – 149
	DDR3, 800-MHz, dual-channel memory (DDR3 1333 MHz can be downgraded to DDR3 800 MHz)				√
	Supports the following configurations:				
	• 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)	√	√	√	√
<b>Hard drives</b>	Supports <b>9.5-mm, 6.35-cm</b> (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	√	√	√	
<b>Optical drives</b>	Fixed (removal of one screw required)	√	√	√	√
	SATA	√	√	√	√
	<b>12.7-mm</b> (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	√	√	√	√
<b>Diskette drive</b>	Supports external USB drive only	√	√	√	√
<b>Camera</b>	VGA camera	√	√	√	√

Category	Description	HP G42	Compaq Presario CQ42	Compaq Presario CQ42	Compaq Presario CQ42
		UMA	Discrete	UMA Models 150 – 199	UMA Models 100 – 149
	Fixed (no tilt)	√	√	√	√
	640 × 480 by 24 frames per second	√	√	√	√
<b>Microphone</b>	One microphone, analog	√	√	√	√
<b>Audio</b>	HD audio	√	√	√	√
	Supports Microsoft Premium requirements	√	√	√	√
	Altec Lansing speakers	√	√	√	√
<b>Modem</b>	Support for optional high-speed 56k modem	√	√	√	√
<b>Ethernet</b>	Integrated 10/100 network interface card (NIC)	√	√	√	√
<b>Wireless</b>	<b>Integrated wireless local area network (WLAN) options by way of wireless module:</b>				
	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	√	√	√	√
<b>External media card</b>	5-in-1 Digital Media Slot; supports SD, MMC, MS, Mspro, xD	√	√	√	√

Category	Description	HP G42	Compaq Presario CQ42	Compaq Presario CQ42	Compaq Presario CQ42
		UMA	Discrete	UMA Models 150 – 199	UMA Models 100 – 149
	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)	√	√	√	√
<b>Ports</b>	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	√	√	√	√
	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	√	√	√	√
<b>Keyboard/ pointing devices</b>	14.0-inch keyboard	√	√	√	
	TouchPad with 2 buttons and 2-way scroll (taps enabled as default)	√	√	√	
<b>Power requirements</b>	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		√		
<b>Security</b>	Security cable slot	√	√	√	√
<b>Operating system</b>	<b>Preinstalled:</b>				
	Windows 7 Professional (32 & 64 bit)	√	√	√	

Category	Description	HP G42	Compaq Presario CQ42	Compaq Presario CQ42	Compaq Presario CQ42
		UMA	Discrete	UMA Models 150 – 199	UMA Models 100 – 149
	Windows 7 Home Premium (32 & 64 bit)		√	√	√
	Windows 7 Home Basic (32 & 64 bit)		√	√	
	Windows 7 Starter (32 bit)		√	√	
	Free DOS		√	√	√
	Novell Linux		√	√	
<b>Serviceability</b>	<b>End-user replaceable parts:</b>				
	AC adapter	√	√	√	√
	Battery (system)	√	√	√	√
	Hard drive	√	√	√	√
	Memory module	√	√	√	√
	Optical drive	√	√	√	√
	Mini-card device	√	√	√	√

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## 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:

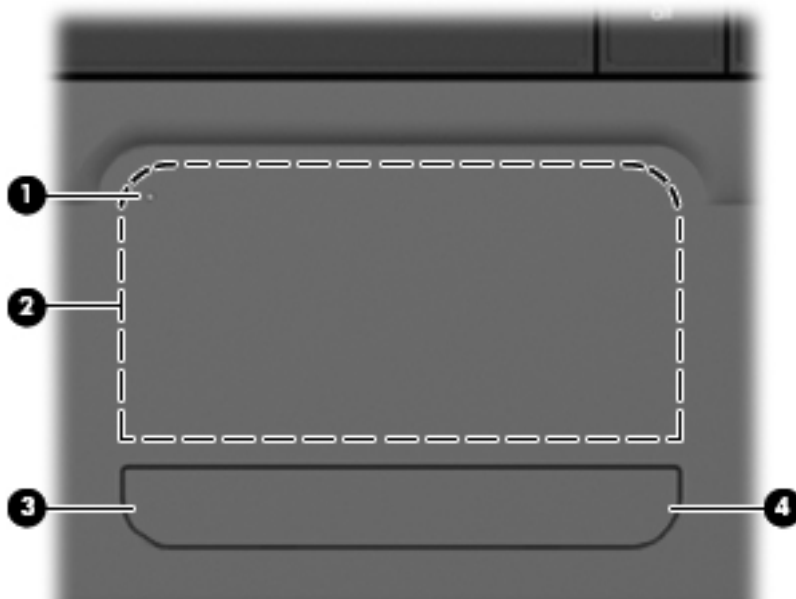
1. Select **Start > My Computer**.
2. In the left pane of the System Tasks window, select **View system information**.
3. Select **Hardware tab > Device Manager**.


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



# Top components

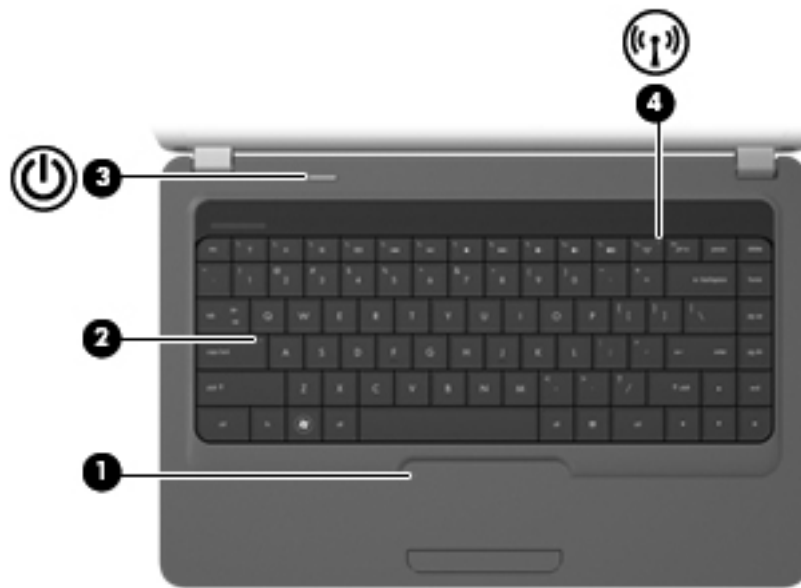
## TouchPad





Component		Description
(1)	 TouchPad off indicator	To switch the TouchPad zone on and off, quickly double-tap the TouchPad off indicator.  <b>NOTE:</b> 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



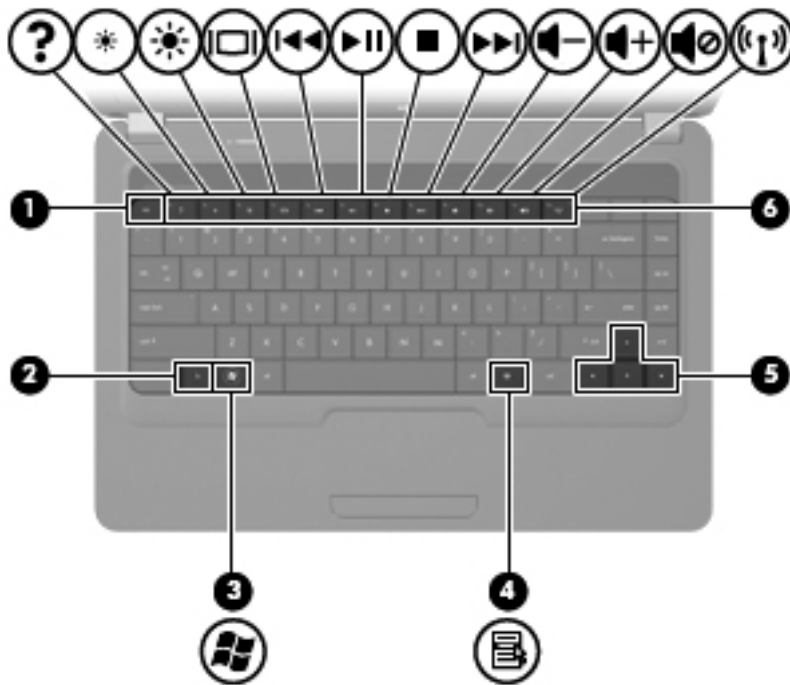
Component		Description
(1)	TouchPad light	<ul style="list-style-type: none"> <li>On: The TouchPad is disabled.</li> <li>Off: The TouchPad is enabled.</li> </ul>
(2)	Caps lock light	On: Caps lock is on.
(3)	 Power light	<ul style="list-style-type: none"> <li>On: The computer is on.</li> <li>Blinking: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



# Button and speakers



Component		Description
(1)	Speakers (2)	Produce sound.
(2)	Power button	<ul style="list-style-type: none"><li>• When the computer is off, press the button to turn on the computer.</li><li>• When the computer is on, press the button briefly to initiate Sleep.</li><li>• When the computer is in the Sleep state, briefly press the button to exit Sleep.</li><li>• When the computer is in Hibernation, briefly press the button to exit Hibernation.</li></ul> <p>If the computer has stopped responding and Windows® shutdown procedures are ineffective, press and hold the power button for at least 5 seconds to turn off the computer.</p> <p>To learn more about your power settings, select <b>Start &gt; Control Panel &gt; System and Security &gt; Power Options</b>.</p>

## Keys



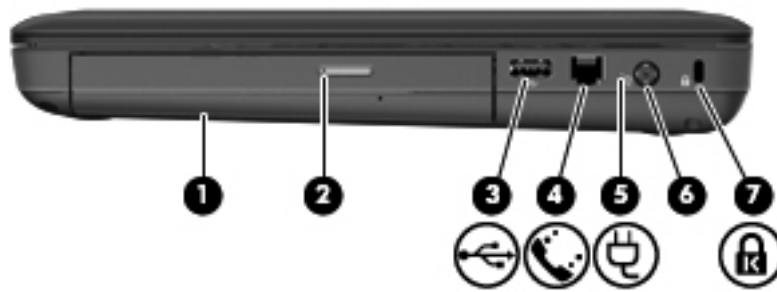
Component		Description
(1)	<code>esc</code> key	Displays system information when pressed in combination with the <code>fn</code> key.
(2)	<code>fn</code> key	Displays system information when pressed in combination with the <code>esc</code> key.
(3)	 Windows logo key	Displays the Windows Start menu.
(4)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




# Display



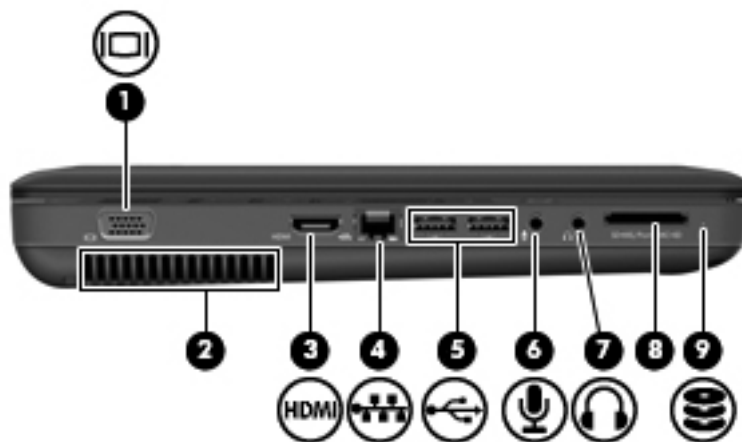
Component		Description
(1)	Internal microphone	Records sound.
(2)	Integrated webcam (select models only)	Records audio and video and captures still photographs.
(3)	Integrated webcam light (select models only)	On: The integrated webcam is in use.







## Right-side components



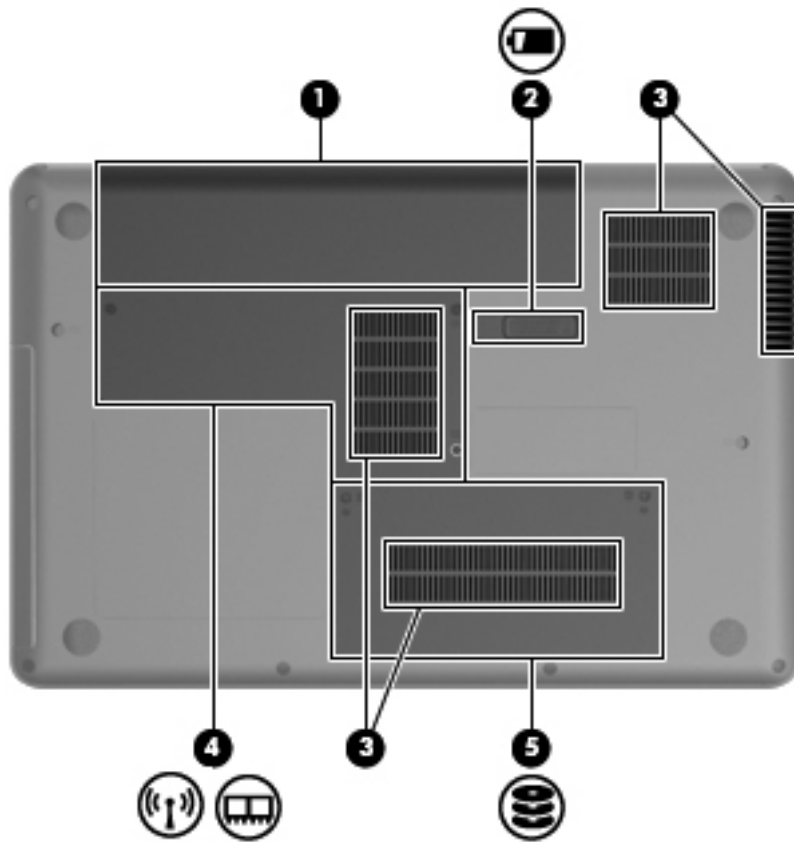
Component		Description
(1)	Optical drive	Reads and writes to optical discs.
(2)	Optical drive light	Blinking: The optical drive is being accessed.
(3)	 USB port	Connects an optional USB device.
(4)	RJ-11 (modem) jack (select models only)	Connects a modem cable.
(5)	AC adapter/power/battery light	<ul style="list-style-type: none"><li>White: The computer is connected to external power and the battery is fully charged.</li><li>Blinking white: The computer is in the Sleep state.</li><li>Amber: A battery is charging.</li></ul>
(6)	 Power connector	Connects an AC adapter.
(7)	 Security cable slot	Attaches an optional security cable to the computer.  <b>NOTE:</b> 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. <b>NOTE:</b> 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: <ul style="list-style-type: none"> <li>• Memory Stick (MS)</li> <li>• Memory Stick Pro (MSP)</li> <li>• MultiMediaCard (MMC)</li> <li>• Secure Digital (SD) Memory Card</li> <li>• xD-Picture Card (XD)</li> </ul>
(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.  <b>NOTE:</b> 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.  <b>CAUTION:</b> 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.



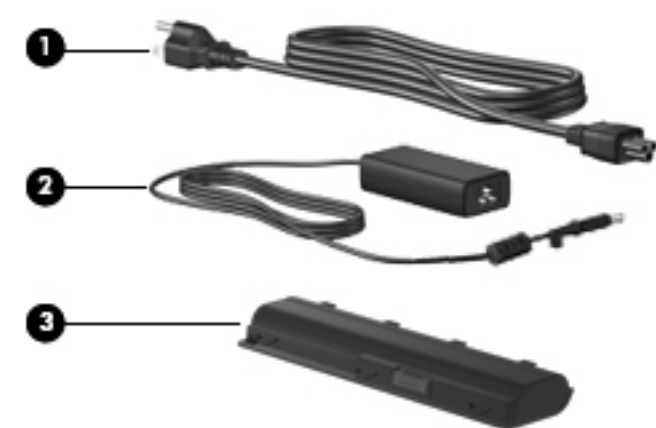
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 **NOTE:** For optimal transmission, keep the areas immediately around the antennas free from obstructions.

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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.

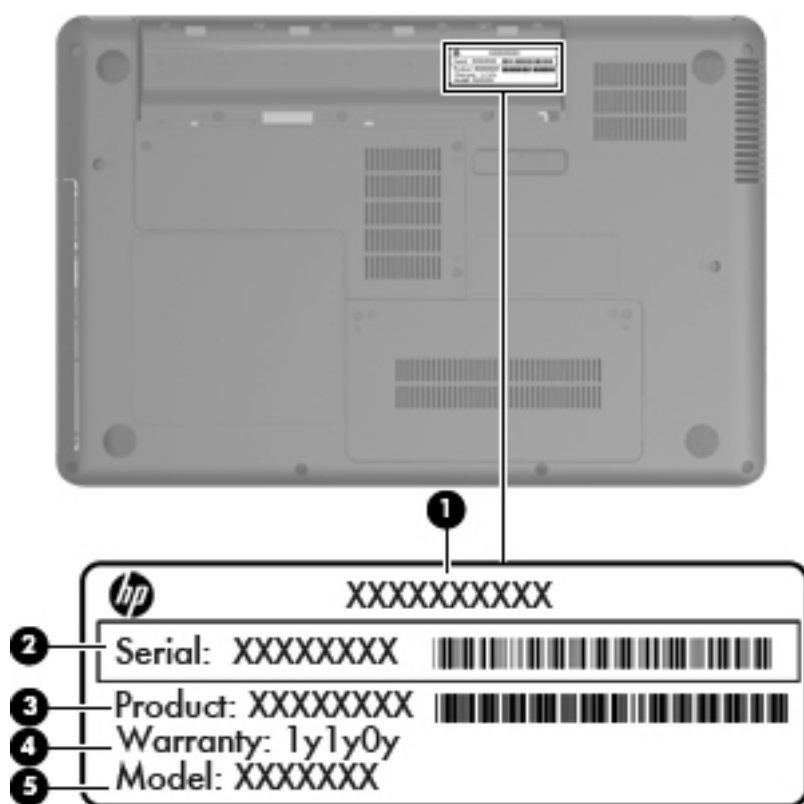
- ⚠ WARNING!** Connecting the internal analog modem to a digital line can permanently damage the modem. Immediately disconnect the modem cable if you accidentally connect it to a digital line.
- 📝 NOTE:** Telephone jacks vary by country or region. To use the modem and the modem cable (included with select 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.

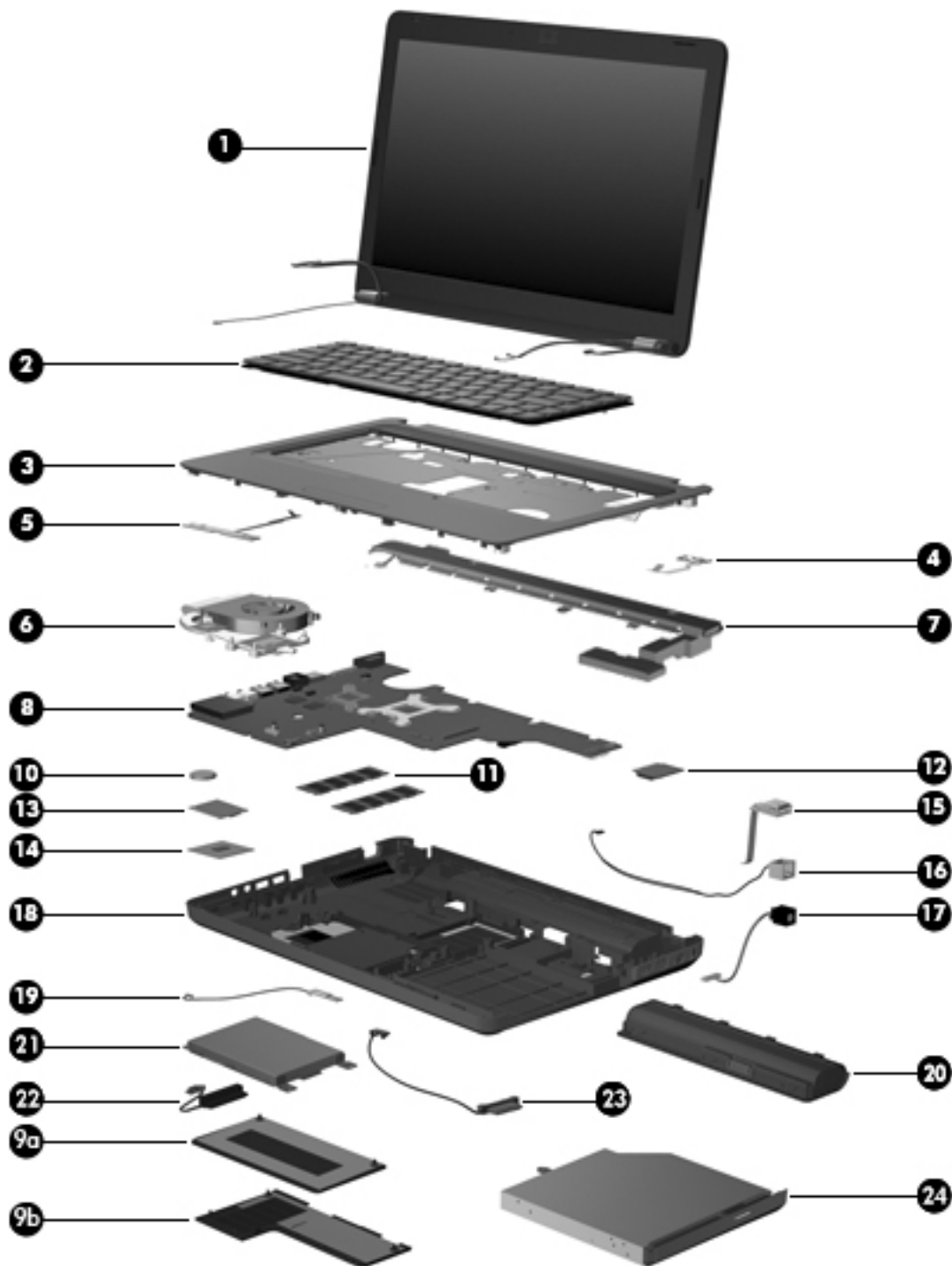
## 3 Illustrated parts catalog

### 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	
	<b>NOTE:</b> See <a href="#">Display assembly components on page 27</a> for more display assembly internal component spare part information.	
	<ul style="list-style-type: none"><li>For use with integrated microphone and webcam; Presario, matte black</li></ul>	592146-001

Item	Description	Spare part number
	<ul style="list-style-type: none"> <li>For use with integrated microphone and webcam; Presario, biscotti</li> </ul>	597617-001
	<ul style="list-style-type: none"> <li>For use with integrated microphone and webcam; HP, biscotti</li> </ul>	600163-001
	<ul style="list-style-type: none"> <li>For use with integrated microphone and webcam; HP, silver</li> </ul>	606155-001
	<ul style="list-style-type: none"> <li>For use with integrated microphone and webcam; HP, white</li> </ul>	606156-001
<b>(2)</b>	<b>Keyboards</b>	
	<ul style="list-style-type: none"> <li>For use in Brazil</li> </ul>	600175-201
	<ul style="list-style-type: none"> <li>For use in English and French Canada</li> </ul>	600175-121
	<ul style="list-style-type: none"> <li>For use in Latin America</li> </ul>	600175-161
	<ul style="list-style-type: none"> <li>For use in South Korea</li> </ul>	600175-AD1
	<ul style="list-style-type: none"> <li>For use in Taiwan</li> </ul>	600175-AB1
	<ul style="list-style-type: none"> <li>For use in Thailand</li> </ul>	600175-281
	<ul style="list-style-type: none"> <li>For use in the United States</li> </ul>	600175-001
<b>(3)</b>	<b>Top cover</b> (includes Touchpad, bracket, button board, and cable)	
	<ul style="list-style-type: none"> <li>Matte black color</li> </ul>	600181-001
	<ul style="list-style-type: none"> <li>Biscotti color</li> </ul>	600182-001
	<ul style="list-style-type: none"> <li>Silver color</li> </ul>	606161-001
	<ul style="list-style-type: none"> <li>White color</li> </ul>	606162-001
<b>(4)</b>	<b>Power button board</b> (includes cable)	600188-001
<b>(5)</b>	<b>Touchpad button board</b> (includes cable)	604603-001
<b>(6)</b>	<b>Thermal module — fan and heat assembly</b> (includes thermal material)	
	<ul style="list-style-type: none"> <li>For use in models that use UMA graphics subsystem memory and the Intel® GL40 chipset</li> </ul>	606573-001
	<ul style="list-style-type: none"> <li>For use in models that use Universal Memory Architecture (UMA) graphics subsystem memory</li> </ul>	606609-001
	<ul style="list-style-type: none"> <li>For use in models that use Universal Memory Architecture (UMA) graphics subsystem memory</li> </ul>	595832-001
	<ul style="list-style-type: none"> <li>For use in models that use discrete graphics subsystem memory</li> </ul>	595833-001
	For use in models that use discrete graphics subsystem memory	606610-001
	Thermal module (includes fan and heat sink) for use in models that use discrete graphics subsystem memory	617024-001
	For use in models that use DSC HD545V graphics subsystem memory	617029-001
<b>(7)</b>	<b>Speaker assembly</b> (includes cable)	600189-001
<b>(8)</b>	<b>System boards</b> (includes replacement thermal material)	
	<ul style="list-style-type: none"> <li>For use in models with discrete graphics subsystem</li> </ul>	595181-001

Item	Description	Spare part number
	For use in models with discrete graphics subsystem	615577-001
	For use in models with discrete graphics subsystem	615578-001
	<ul style="list-style-type: none"> <li>For use in models with Unified Memory Architecture (UMA) graphics subsystem</li> </ul>	595182-001
	<ul style="list-style-type: none"> <li>For use in models with discrete graphics subsystem and HDMI card reader</li> </ul>	595183-001
	<ul style="list-style-type: none"> <li>For use in models with UMA graphics subsystem and HDMI card reader</li> </ul>	595184-001
	<ul style="list-style-type: none"> <li>For use in models with UMA graphics subsystem memory, Intel® GL40 chipset, and HDMI card reader</li> </ul>	605140-001
	For use in models with UMA graphics subsystem memory,	592808-001
	For use in models with DSC HD5430 MDM CR	592811-001
	For use in models with DSC HD5430	592810-001
	For use in models with UMA graphics subsystem memory,	592809-001
	For use in models with HD545V DSC	611554-001
	For use in models with HD545V DSC CR	611555-001
	For use in models with HD5430/1G DSC	608823-001
	For use in models with HD5430/1G DSC HDMI	608824-001
<b>(9)</b>	<b>Plastics Kit</b> (see <a href="#">Plastics Kit on page 29</a> for more Plastics Kit information)	600190-001
	<b>(9a)</b> Hard drive compartment cover	
	<b>(9b)</b> Wireless/memory module mini-card compartment cover	
<b>(10)</b>	<b>RTC battery</b> (includes mounting adhesive)	602745-001
<b>(11)</b>	<b>Memory modules</b>	
	<ul style="list-style-type: none"> <li>2048-MB, PC3-10600, 1333-MHz</li> </ul>	598859-001
	<ul style="list-style-type: none"> <li>1024-MB, PC3-10600, 1333-MHz</li> </ul>	598856-001
<b>(12)</b>	<b>Modem module</b>	
	<ul style="list-style-type: none"> <li>High-speed 56K modem for use in all countries and regions except Australia and New Zealand</li> </ul>	510100-001
	<ul style="list-style-type: none"> <li>High-speed 56K modem for use in Australia and New Zealand</li> </ul>	510100-011
<b>(13)</b>	<b>WLAN module</b>	
	<b>Atheros AR9285 802.11 a/b/g/n 2x2 WiFi adapter</b>	
	<ul style="list-style-type: none"> <li>For use in Canada, the Cayman Islands, Guam, Puerto Rico, the United States, and the US Virgin Islands</li> </ul>	580101-001

Item	Description	Spare part number
	<ul style="list-style-type: none"> <li>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</li> </ul>	580101-002
	<b>Intel Centrino Wireless-N 1000 802.11b/g/n 1x2</b>	593530-001
	<b>Broadcom 4312G 802.11b/g WiFi Adapter (halogen free)</b>	
	<ul style="list-style-type: none"> <li>For use in Canada, Cayman Islands, Guam, Puerto Rico, the United States, and the U.S. Virgin Islands</li> </ul>	582562-001

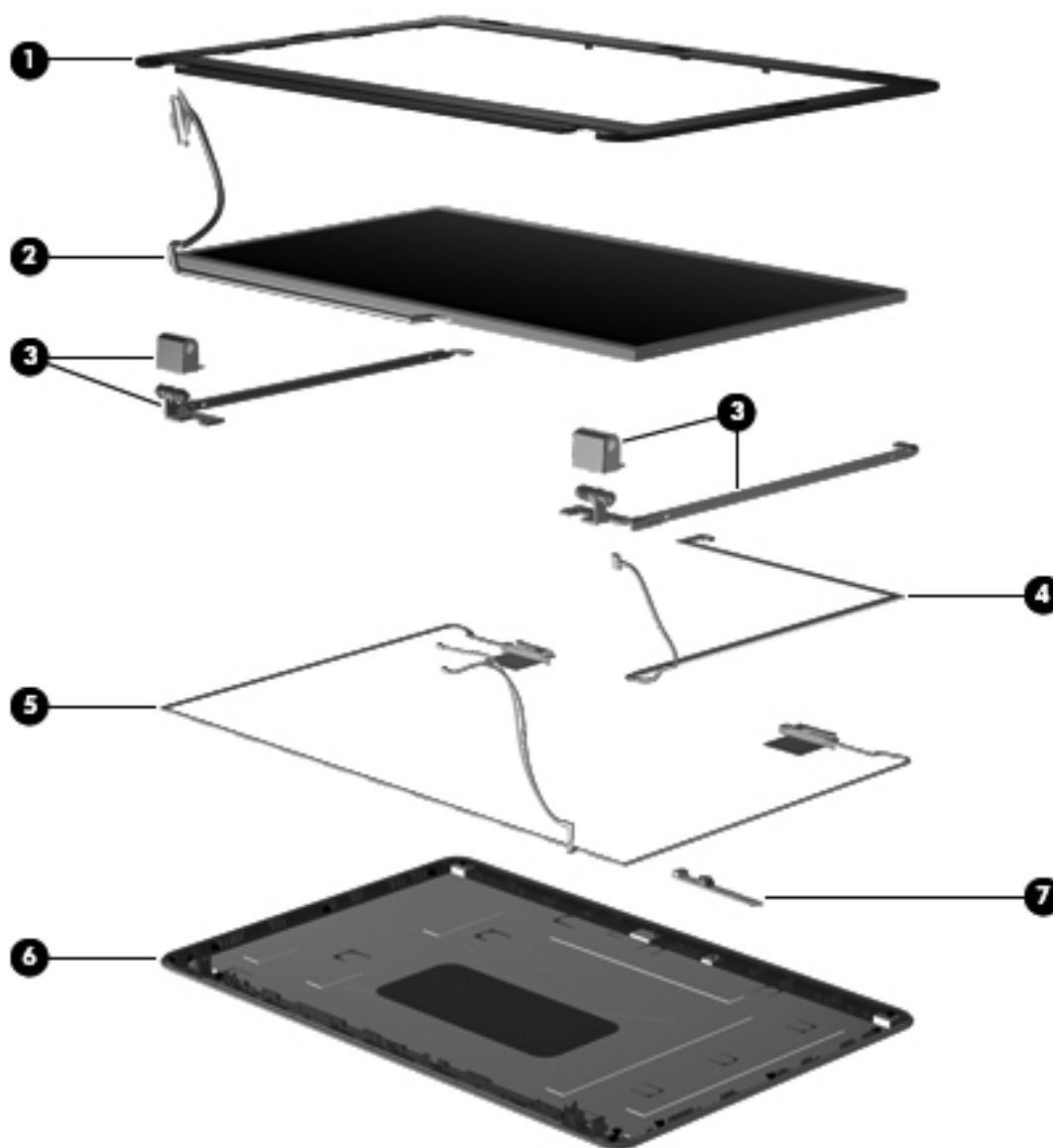
Item	Description	Spare part number
	<ul style="list-style-type: none"> <li>For use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, The Bahamas, Bahrain, Bangladesh, Barbados, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, The British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Costa, Rica, Croatia, Cyprus, The Czech Republic, Denmark, Djibouti, Dominica, The Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equitorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French, Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissa, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Italy, The Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, The Maldives, Mali, Malta, The Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, The Nether Antilles, The Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, The Philippines, Poland, Portugal, Puerto Rico, The Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe Saudi Arabia, Senegal, Serbia and Montenegro, The Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, The Solomon Islands, Somalia, South Africa, Spain, Sri Lanka, St. Kitts &amp; Nevis, St. Lucia, St. Vincent and Gren, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, The United Arab Emirates, The United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia and Zimbabwe</li> </ul>	582562-002
	<b>Realtek RTL8191SE 802.11b/g/n 1x1 WiFi Adapter</b>	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
<b>(14)</b>	<b>Processor</b> (includes replacement thermal material)	
	<ul style="list-style-type: none"> <li>Intel Arrandale Core 620M 2.26-GHz</li> </ul>	587259-001
	<ul style="list-style-type: none"> <li>Intel Arrandale 540M 2.53-GHz</li> </ul>	594188-001
	<ul style="list-style-type: none"> <li>Intel Arrandale 520M 2.4-GHz</li> </ul>	594187-001
	<ul style="list-style-type: none"> <li>Intel Arrandale i5-430M 2.26-GHz</li> </ul>	597624-001
	<ul style="list-style-type: none"> <li>Intel Arrandale i3-350M 2.26-GHz</li> </ul>	597623-001
	<ul style="list-style-type: none"> <li>Intel Arrandale i3-330M 2.13-GHz</li> </ul>	597622-001
	Intel Arrandale P6000 1.86.53-GHz	613586-001
	Intel Arrandale i5-450M 2.4GHz	613585-001
	Intel Arrandale i3-370M 2.4GHz	613584-001
	Intel Celeron 900,2.2GHz	534419-001
	<ul style="list-style-type: none"> <li>Intel Core 2 Duo Mobile processor T3000, 1.8-GHz</li> </ul>	572926-001
	<ul style="list-style-type: none"> <li>Intel Core 2 Duo Mobile processor T4400 - 2.2-GHz</li> </ul>	584296-001



Item	Description	Spare part number
	<ul style="list-style-type: none"> <li>Intel Core 2 Duo Mobile,T4300, 2.1-GHz</li> </ul>	572929-001
	<ul style="list-style-type: none"> <li>Intel Core 2 Duo Mobile processor T3100 - 1.9-GHz</li> </ul>	572925-001
	<ul style="list-style-type: none"> <li>Intel Core 2 Duo Mobile processor T3300 2.0-GHz</li> </ul>	592399-001
	<ul style="list-style-type: none"> <li>Intel Core 2 Duo Mobile processor T4500 2.3-GHz</li> </ul>	591880-001
	<ul style="list-style-type: none"> <li>Advanced Micro Devices (AMD) processor P320 DDR3-1066 Mhz</li> </ul>	594165-001
	<ul style="list-style-type: none"> <li>Advanced Micro Devices (AMD) processor DDR3-1066 Mhz</li> </ul>	594171-001
	<ul style="list-style-type: none"> <li>Advanced Micro Devices (AMD) processor P520 DDR3-1066 Mh</li> </ul>	594173-001
	<ul style="list-style-type: none"> <li>Advanced Micro Devices (AMD) processor DC N330 2.3GHz 1M L2 35W</li> </ul>	594164-001
	<ul style="list-style-type: none"> <li>Advanced Micro Devices (AMD) processor DC QC P920 1.6Ghz 2M L2 25W</li> </ul>	594170-001
	<ul style="list-style-type: none"> <li>Advanced Micro Devices (AMD) processor DC N530 DC 2.5GHz L2 35W</li> </ul>	594172-001
	<ul style="list-style-type: none"> <li>Advanced Micro Devices (AMD) processor DC P820 Tri-Core 1.8Ghz 1.5M L2 25W</li> </ul>	594167-001
	<ul style="list-style-type: none"> <li>Advanced Micro Devices (AMD) processor N620 DDR3-1333 Mhz</li> </ul>	594166-001
	<ul style="list-style-type: none"> <li>Advanced Micro Devices (AMD) processor DC N930 QC 2.0 GHz</li> </ul>	594169-001
	<ul style="list-style-type: none"> <li>Advanced Micro Devices (AMD) processor DC N830 Tri-core 2.1Ghz 1.5M L2 35W</li> </ul>	594168-001
<b>(15)</b>	<b>USB board</b> (includes cable)	600631-001
<b>(16)</b>	<b>Modem (RJ-11) cable</b> (includes RJ-11 connector with modem cable)	610791-001
<b>(17)</b>	<b>Power connector cable</b> (includes power connector and cable)	600630-001
<b>(18)</b>	<b>Base enclosure</b> (with modem cable and ODD cable)	
	<ul style="list-style-type: none"> <li>For use with HDMI card reader and without modem module, biscotti</li> </ul>	600177-001
	<ul style="list-style-type: none"> <li>For use without HDMI card reader and with modem module, biscotti</li> </ul>	600178-001
	<ul style="list-style-type: none"> <li>For use with HDMI card reader and without modem module, silver</li> </ul>	608912-001
	<ul style="list-style-type: none"> <li>For use with HDMI card reader and without modem, white</li> </ul>	608913-001
	<ul style="list-style-type: none"> <li>For use with HDMI card reader without modem, matte black</li> </ul>	600179-001
	<ul style="list-style-type: none"> <li>For use without HDMI card reader and with modem module, matte black</li> </ul>	600180-001
<b>(19)</b>	<b>Bluetooth module</b>	537921-001
	<b>Bluetooth module cable</b> (illustrated with Bluetooth module)	602822-001
<b>(20)</b>	<b>Battery</b>	
	<ul style="list-style-type: none"> <li>6-cell 47-WH (2.2-Ah) Li-ion</li> </ul>	593553-001
	<ul style="list-style-type: none"> <li>6-cell 55-WH (2.55-Ah) Li-ion</li> </ul>	593554-001
<b>(21)</b>	<b>Hard drive</b> (include hard drive bracket)	
	<ul style="list-style-type: none"> <li>640-GB 5400 RPM</li> </ul>	615808-001
	<ul style="list-style-type: none"> <li>500-GB 7200 RPM</li> </ul>	600170-001

Item	Description	Spare part number
	<ul style="list-style-type: none"> <li>320-GB 7200 RPM</li> </ul>	600169-001
	<ul style="list-style-type: none"> <li>250-GB 7200 RPM</li> </ul>	575598-001
	<ul style="list-style-type: none"> <li>160-GB 7200 RPM</li> </ul>	600167-001
(22)	<b>Hard drive cable/adaptor</b> (included with the cable kit; see <a href="#">Mass storage devices on page 30</a> )	610791-001
(23)	<b>Optical drive cable</b> (included in the cable kit)	610791-001
(24)	<b>Optical drives</b> (12.7 mm, SATA, fixed)	
	<ul style="list-style-type: none"> <li>Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, matte black</li> </ul>	600173-001
	<ul style="list-style-type: none"> <li>Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, biscotti</li> </ul>	600174-001
	<ul style="list-style-type: none"> <li>Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, silver</li> </ul>	608121-001
	<ul style="list-style-type: none"> <li>Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, white</li> </ul>	608122-001
	<ul style="list-style-type: none"> <li>DVD±RW SuperMulti DL Drive with LightScribe, matte black</li> </ul>	600171-001
	<ul style="list-style-type: none"> <li>DVD±RW SuperMulti DL Drive with LightScribe, biscotti</li> </ul>	600172-001
	<ul style="list-style-type: none"> <li>DVD±RW SuperMulti DL Drive with LightScribe, silver</li> </ul>	608119-001
	<ul style="list-style-type: none"> <li>DVD±RW SuperMulti DL Drive with LightScribe, white</li> </ul>	608120-001

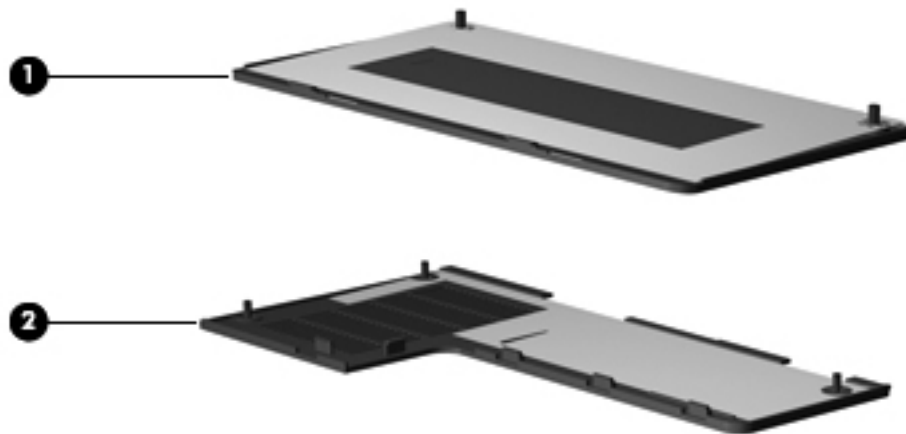
## Display assembly components



Item	Description	Spare part number
(1)	<b>Display bezel</b>	
	<ul style="list-style-type: none"> <li>HP, for use with microphone and webcam</li> </ul>	592147-001
	<ul style="list-style-type: none"> <li>Presario, for use with microphone and webcam</li> </ul>	592148-001
(2)	<b>35.6 cm (14-in) high definition, Brightview, display panel (includes display panel cable)</b>	592144-001
(3)	<b>Display hinge cover</b>	592150-001
	<b>Display bracket (with hinges)</b>	600627-001
	<b>Display cable kit</b>	592151-001

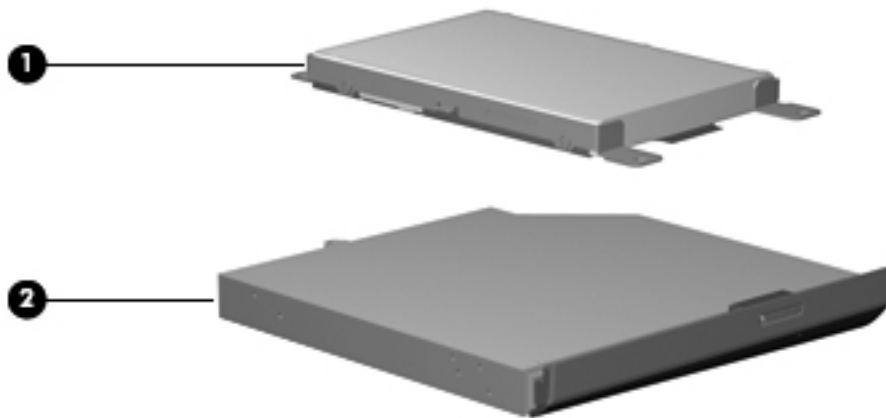
Item	Description	Spare part number
	Display cable (shown with display panel)	
	<b>(4)</b> Webcam cable	
	<b>(5)</b> Antennas and cables	
<b>(6)</b>	<b>Display back cover</b>	
	<ul style="list-style-type: none"> <li>Presario, matte black</li> </ul>	592149-001
	<ul style="list-style-type: none"> <li>Presario, biscotti</li> </ul>	600164-001
	<ul style="list-style-type: none"> <li>HP, biscotti</li> </ul>	600165-001
	<ul style="list-style-type: none"> <li>HP, silver</li> </ul>	606157-001
	<ul style="list-style-type: none"> <li>HP, white</li> </ul>	606158-001
<b>(7)</b>	<b>Webcam module</b>	600166-001
	<b>Display screw kit</b> (not illustrated; includes screws and screw covers)	592152-001
	<b>Display rubber display kit</b> (not illustrated)	595198-001

## Plastics Kit



Item	Description	Spare part number
	<b>Plastics kit</b>	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)	<b>Hard drive</b> (include hard drive bracket)	
	<ul style="list-style-type: none"> <li>640-GB 5400 RPM</li> </ul>	615808-001
	<ul style="list-style-type: none"> <li>500-GB 7200 RPM</li> </ul>	600170-001
	<ul style="list-style-type: none"> <li>320-GB 7200 RPM</li> </ul>	600169-001
	<ul style="list-style-type: none"> <li>250-GB 7200 RPM</li> </ul>	575598-001
	<ul style="list-style-type: none"> <li>160-GB 7200 RPM</li> </ul>	600167-001
	<b>Hard drive hardware kit</b> (contains screws, hard drive bracket, not illustrated)	600191-001
	<b>Hard drive cable/adaptor</b> (included in the cable kit)	610791-001
(2)	<b>Optical drives</b> (12.7 mm, SATA, fixed)	
	<ul style="list-style-type: none"> <li>Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, matte black</li> </ul>	600173-001
	<ul style="list-style-type: none"> <li>Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, biscotti</li> </ul>	600174-001
	<ul style="list-style-type: none"> <li>Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, silver</li> </ul>	608121-001
	<ul style="list-style-type: none"> <li>Blu-ray Disc ROM LightScribe with SuperMulti DVD±R/RW Double-Layer, white</li> </ul>	608122-001
	<ul style="list-style-type: none"> <li>DVD±RW SuperMulti DL Drive with LightScribe, matte black</li> </ul>	600171-001
	<ul style="list-style-type: none"> <li>DVD±RW SuperMulti DL Drive with LightScribe, biscotti</li> </ul>	600172-001
	<ul style="list-style-type: none"> <li>DVD±RW SuperMulti DL Drive with LightScribe, silver</li> </ul>	608119-001
	<ul style="list-style-type: none"> <li>DVD±RW SuperMulti DL Drive with LightScribe, white</li> </ul>	608120-001

## Miscellaneous parts

Description	Spare part number
<b>AC adapters</b>	
• 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
<b>Power cord, AC, 3 wire, black, 1.83-m</b>	
• 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
<b>Rubber kit</b>	600184-001
<b>Screw kit</b>	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
510100-011	Modem module, high-speed 56K modem for use in Australia and New Zealand
534419-001	Intel Celeron 900, 2.2GHz
537921-001	Bluetooth module without cable
572925-001	Processor, Intel Core 2 Duo Mobile processor T3100 - 1.9-GHz
572926-001	Processor, Intel Core 2 Duo Mobile processor T3000, 1.8-GHz
572929-001	Processor, Intel Core 2 Duo Mobile, T4300, 2.1-GHz
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



Spare part number	Description
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
582562-001	Broadcom 4312G 802.11b/g WiFi adapter for use in Canada, Cayman Islands, Guam, Puerto Rico, the United States, and the U.S. Virgin Islands
582562-002	Broadcom 4312G 802.11b/g WiFi adapter for use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, The Bahamas, Bahrain, Bangladesh, Barbados, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, The British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Costa, Rica, Croatia, Cyprus, The Czech Republic, Denmark, Djibouti, Dominica, The Dominican Republic, East Timor , Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French, Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Italy, The Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, The Maldives, Mali, Malta, The Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, The Nether Antilles, The Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, The Philippines, Poland, Portugal, Puerto Rico, The Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe Saudi Arabia, Senegal, Serbia and Montenegro, The Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, The Solomon Islands, Somalia, South Africa, Spain, Sri Lanka, St. Kitts & Nevis, St. Lucia, St. Vincent and Gren, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, The United Arab Emirates, The United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia and Zimbabwe
584296-001	Processor, Intel Core 2 Duo Mobile processor T4400 - 2.2-GHz
587259-001	Processor, Intel Arrandale Core 620M 2.26-GHz
591880-001	Processor, Intel Core 2 Duo Mobile processor T4500 2.3-GHz
592144-001	Display panel, <b>35.6 cm</b> (14-in) high definition, Brightview
592146-001	<b>35.6 cm</b> (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; Presario, matte black

<b>Spare part number</b>	<b>Description</b>
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)
592399-001	Processor, Intel Core 2 Duo Mobile processor T3300 2.0-GHz
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
593530-001	Intel Centrino Wireless-N 1000 802.11b/g/n 1x2
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	ProcessorAdvanced Micro Devices (AMD) N620 DDR3-1333 Mhz
594187-001	Processor, Intel Arrandale 520M 2.4-GHz
594167-001	Processor Advanced Micro Devices (AMD) DC P820 Tri-Core 1.8Ghz 1.5M L2 25W
594188-001	Processor, Intel Arrandale 540M 2.53-GHz
594168-001	Processor Advanced Micro Devices (AMD) DC N830 Tri-core 2.1Ghz 1.5M L2 35W
595181-001	System board (includes replacement thermal material) for use in models with discrete graphics subsystem
594169-001	Processor Advanced Micro Devices (AMD) DC N930 QC 2.0 GHz
595182-001	System board (includes replacement thermal material) for use in models with Unified Memory Architecture (UMA) graphics subsystem
594170-001	Processor Advanced Micro Devices (AMD) DC QC P920 1.6Ghz 2M L2 25W
595183-001	System board (includes replacement thermal material) for use in models with discrete graphics subsystem and HDMI card reader
594171-001	Processor Advanced Micro Devices (AMD) N120 DDR3-1066 Mhz
595184-001	System board (includes replacement thermal material) for use in models with UMA graphics subsystem and HDMI card reader

Spare part number	Description
594172-001	Processor Advanced Micro Devices (AMD) DC N530 DC 2.5GHz L2 35W
595198-001	Display rubber kit
594173-001	Processor Advanced Micro Devices (AMD) P520 DDR3-1066 Mhz
595202-001	Screw kit
595832-001	Thermal module (includes fan and heat sink) for use in models that use Universal Memory Architecture (UMA) graphics subsystem memory
595833-001	Thermal module (includes fan and heat sink) for use in models that use discrete graphics subsystem memory
597617-001	<b>35.6 cm</b> (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; Presario, biscotti
597622-001	Processor, Intel Arrandale i3-330M 2.13-GHz
597623-001	Processor, Intel Arrandale i3-350M 2.26-GHz
597624-001	Processor, Intel Arrandale i5-430M 2.26-GHz
598856-001	Memory module, 2048-MB, PC3 10600, 1333-MHz
598859-001	Memory module, 1024-MB, PC3 10600, 1333-MHz
600163-001	<b>35.6 cm</b> (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; HP, biscotti
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

Spare part number	Description
600177-001	Base enclosure (with modem cable and ODD cable) for use with HDMI card reader and without modem module, biscotti
600178-001	Base enclosure (with modem cable and ODD cable) for use without HDMI card reader and with modem module, biscotti
600179-001	Base enclosure (with modem cable and ODD cable) for use with HDMI card reader without modem, matte black
600180-001	Base enclosure (with modem cable and ODD cable) for use without HDMI card reader and with modem module, matte black
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) , biscotti 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)
600191-001	Hard drive hardware kit (screws and hard drive bracket)
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
602822-001	Bluetooth cable
602992-001	SPS-WLAN BGN (1x1) + BT HMC Combo Rashi
604603-001	Touchpad board (includes cable)
605140-001	System board (includes replacement thermal material) for use in models with UMA graphics subsystem memory, Intel® GL40 chipset, and HDMI card reader
606155-001	<b>35.6 cm</b> (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; HP, silver
606156-001	<b>35.6 cm</b> (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; HP, white
606157-001	Display back cover, HP, silver
606158-001	Display back cover, HP, white
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
606573-001	Thermal module (includes fan and heat sink) for use in models that use UMA graphics subsystem memory and the Intel® GL40 chipset

<b>Spare part number</b>	<b>Description</b>
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
608823-001	For use in models with discrete graphics subsystem HM55 HD5430/1G
608824-001	For use in models with discrete graphics subsystem HDMI HD5430/1G
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)
613152-001	65-W Smart AC adapter
611554-001	For use in systems boards with HD545V DSC
611555-001	For use in system boards with HD545V DSC CR
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
613584-001	Intel Arrandale i3-370M 2.4GHz
613585-001	Intel Arrandale i5-450M 2.4GHz
613586-001	Intel Arrandale P6000 1.86.53-GHz
615577-001	For use in models with discrete graphics subsystem HM55 HD545V
615578-001	For use in models with discrete graphics subsystem HM55 HDMI HD545V
615808-001	Hard disk drive, 640-GB 5400 RPM
617024-001	Thermal module (includes fan and heat sink) for use in models that use DSC HD545V subsystem memory
617029-001	Thermal module (includes fan and heat sink) for use in models that use DSC HD545v graphics subsystem memory

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## 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.

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

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#### 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."

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## Grounding guidelines

### Electrostatic discharge damage

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

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

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

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

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

Use nonmagnetic tools.

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

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

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

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

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

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



## Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

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

## Workstation guidelines

Follow these grounding workstation guidelines:

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

## Equipment guidelines

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

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

The following grounding equipment is recommended to prevent electrostatic damage:

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

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

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

# Component replacement procedures

This chapter provides removal and replacement procedures.

There are as many as 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.

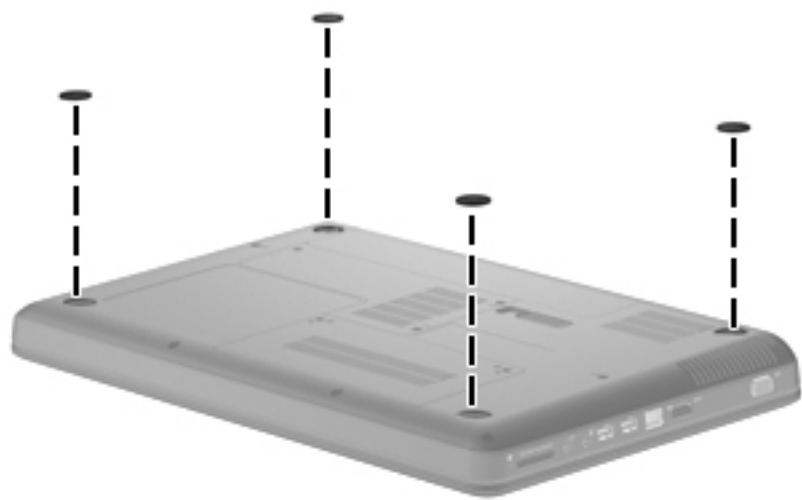


(1) Product name	(4) Warranty period
(2) Serial number	(5) Model description (select models)
(3) Product number	

# 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

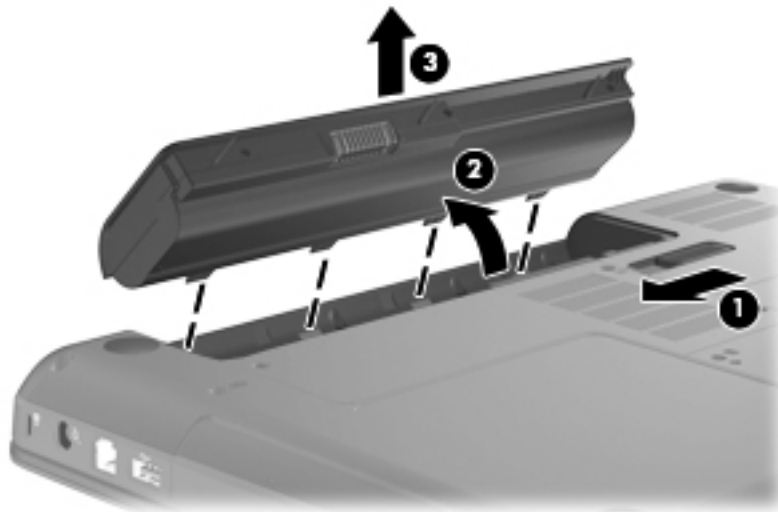
Description	Spare part number
6-cell 55-WH (2.55Ah) Li-ion	593554-001
6-cell 47-WH (2.2Ah) Li-ion	593553-001

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	615808-001
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)	600191-001
Hard drive cable/adaptor (included in the cable kit)	610791-001

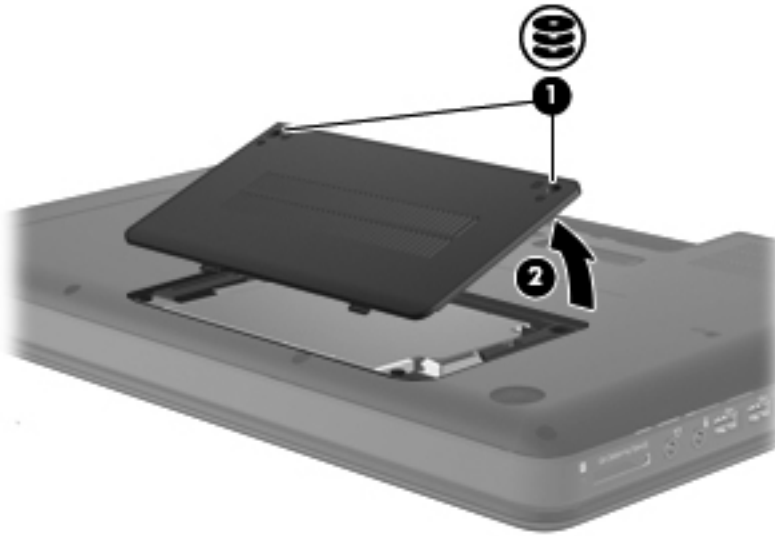
Before removing the hard drive, follow these steps:

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 45](#)).

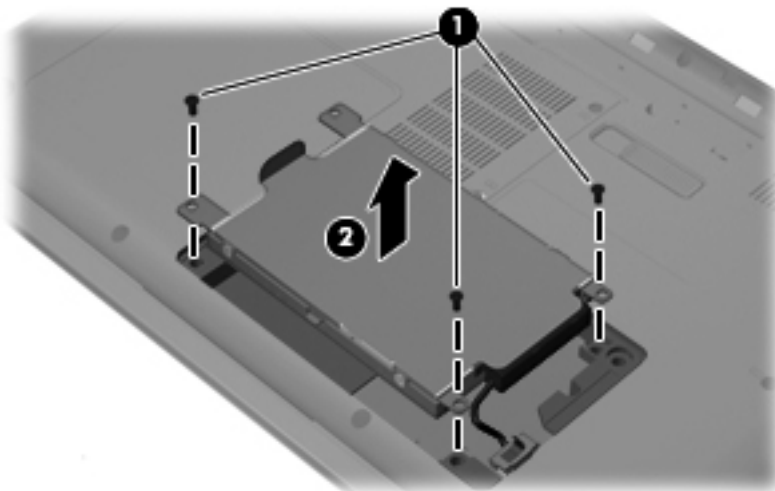
Remove the hard drive:

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.

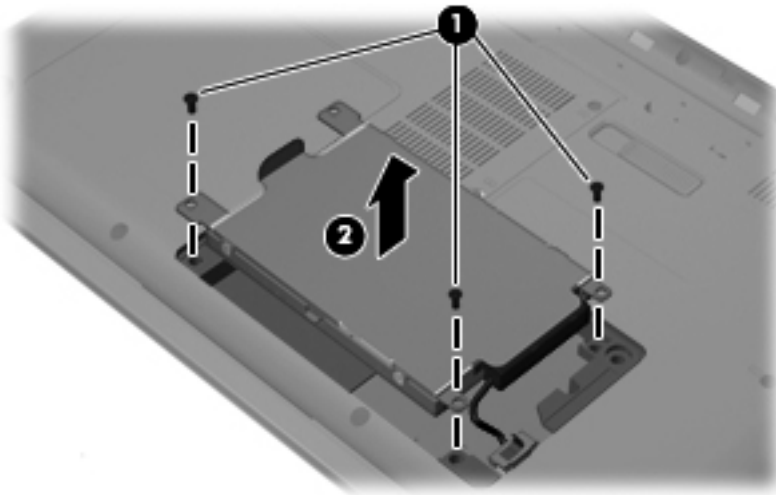
3. Lift the left side of the hard drive cover **(2)**, swing it forward, and remove the cover **(3)**. The hard drive cover is included in the plastics kit, spare part number 600190-001.



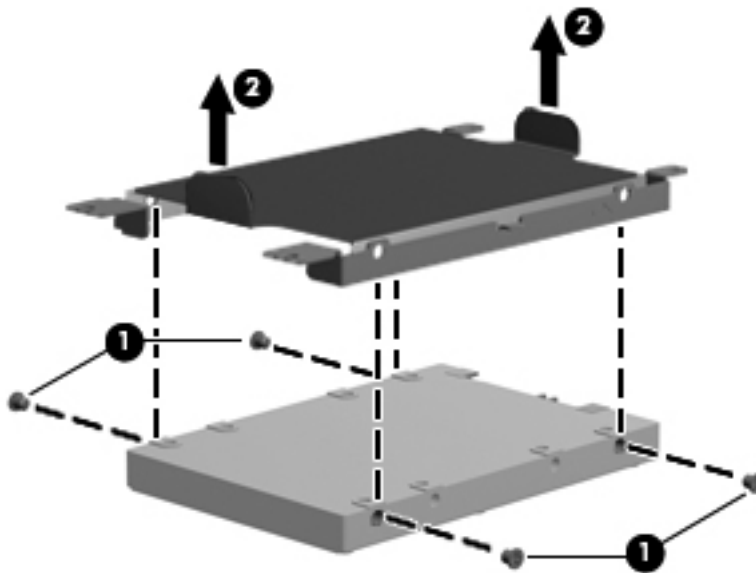
4. Remove the three Phillips PM2.5×4.0 screws **(1)** that secure the hard drive to the computer.
5. Use the hard drive bracket to lift the hard drive out **(2)** of the hard drive compartment.



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	608120-001
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	608122-001

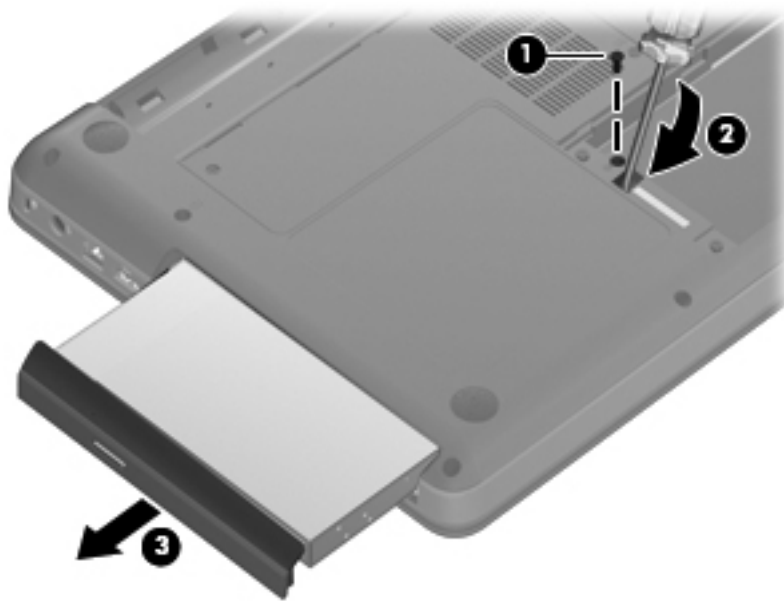
Before removing the optical drive, follow these steps:

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 45](#)).

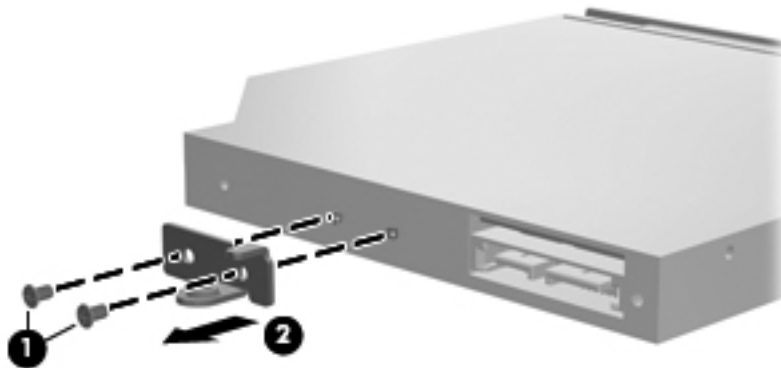
Remove the optical drive:

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, 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	580101-002
Intel Centrino Wireless-N 1000 802.11b/g/n 1x2	593530-001
Broadcom 4312G 802.11b/g WiFi Adapter for use in Canada, Cayman Islands, Guam, Puerto Rico, the United States, and the U.S. Virgin Islands	582562-001
Broadcom 4312G 802.11b/g WiFi Adapter for use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, The Bahamas, Bahrain, Bangladesh, Barbados, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, The British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Costa Rica, Croatia, Cyprus, The Czech Republic, Denmark, Djibouti, Dominica, The Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Italy, The Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, The Maldives, Mali, Malta, The Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, The Nether Antilles, The Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, The Philippines, Poland, Portugal, Puerto Rico, The Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia and Montenegro, The Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, The Solomon Islands, Somalia, South Africa, Spain, Sri Lanka, St. Kitts & Nevis, St. Lucia, St. Vincent and Gren, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, The United Arab Emirates, The United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia and Zimbabwe	582562-002
Realtek RTL8191SE 802.11b/g/n 1x1 WiFi Adapter	593533-001

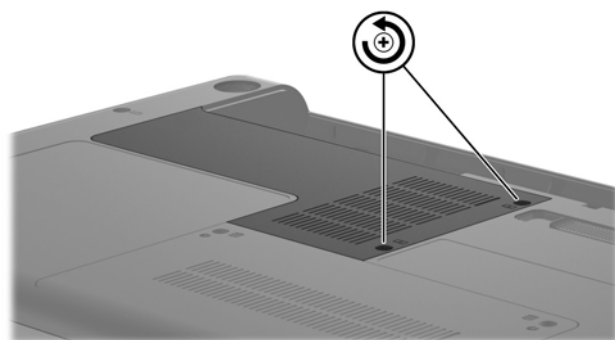
Description	Spare part number
SPS-WLAN BGN + BT HMC Combo Matador	600370-001
SPS-WLAN 802.11 bgn Shiraz HMC	593836-001
SPS-WLAN BGN (1x1) + BT HMC Combo Rashi	602992-001

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 45](#)).
5. Remove the hard drive cover (see [Hard drive on page 46](#)).

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.

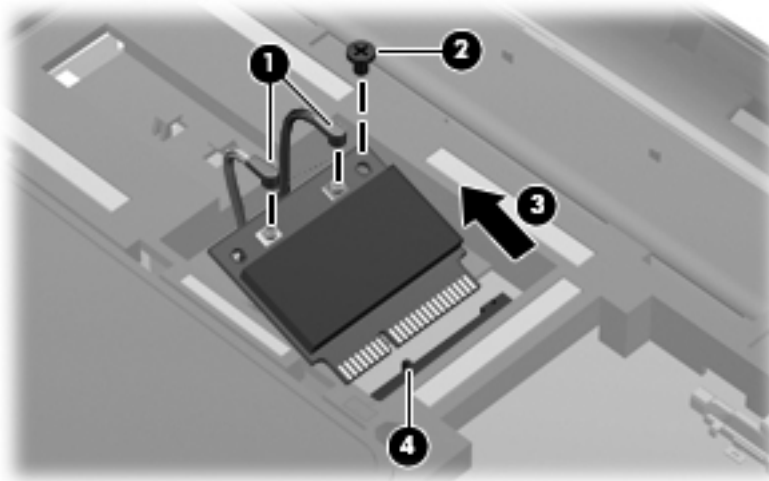


3. Lift the cover off the computer **(2)**. The mini-card compartment cover is included in the plastics kit, spare part number 600190-001.
4. Disconnect the two WLAN antenna cables **(1)** from the WLAN module.
5. Remove the Phillips PM2.0×3.0 screw **(2)** that secures the WLAN module to the computer. (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

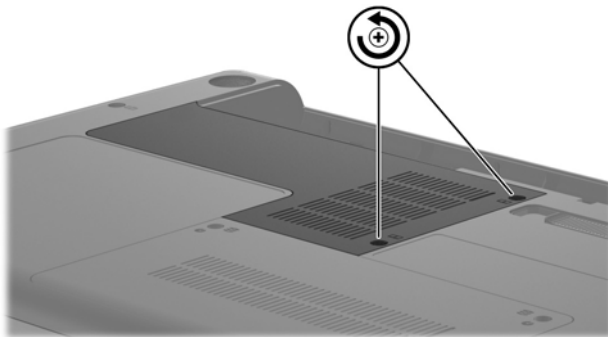
Description	Spare part number
2048-MB, PC3 10600, 1333-MHz	598856-001
1024-MB, PC3 10600, 1333-MHz	598859-001

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 45](#)).

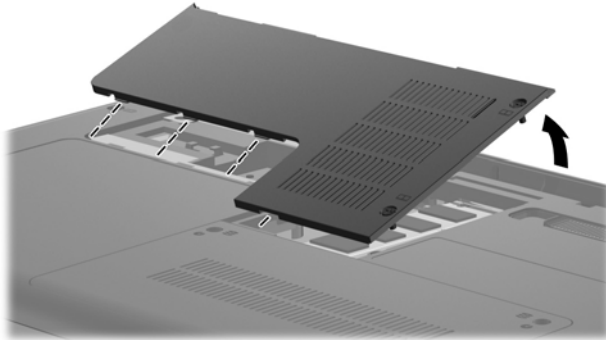
Remove the memory module:

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.




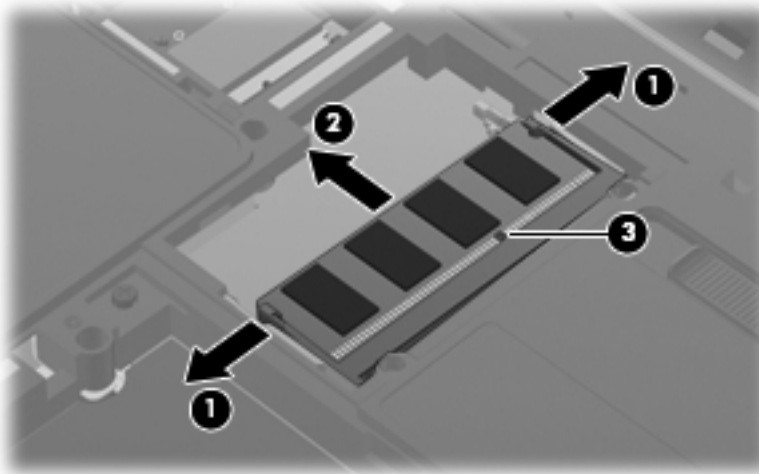
3. Lift cover off the computer. The mini-card compartment cover is included in the plastics kit, spare part number 600190-001.

 **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

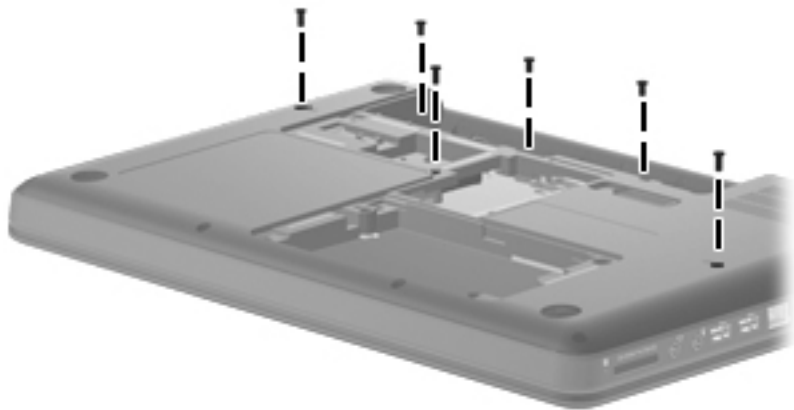
Description	Spare part number
Keyboard for use in Brazil	600175-201
Keyboard for use in English and French Canada	600175-121
Keyboard for use in for use in Latin America	600175-161
Keyboard for use in South Korea	600175-AD1
Keyboard for use in Taiwan	600175-AB1
Keyboard for use in Thailand	600175-281
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 45](#)).
5. Remove the hard drive (see [Hard drive on page 46](#)).
6. Remove the mini-card compartment cover (see [WLAN module on page 51](#)).

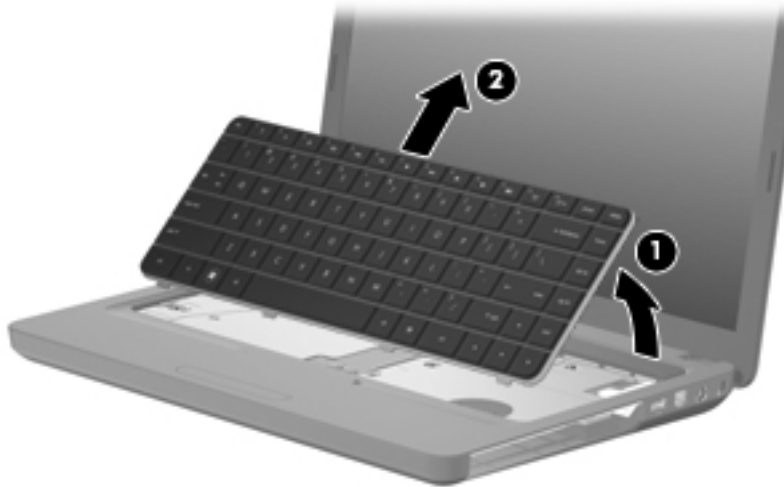
Remove the keyboard:

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.

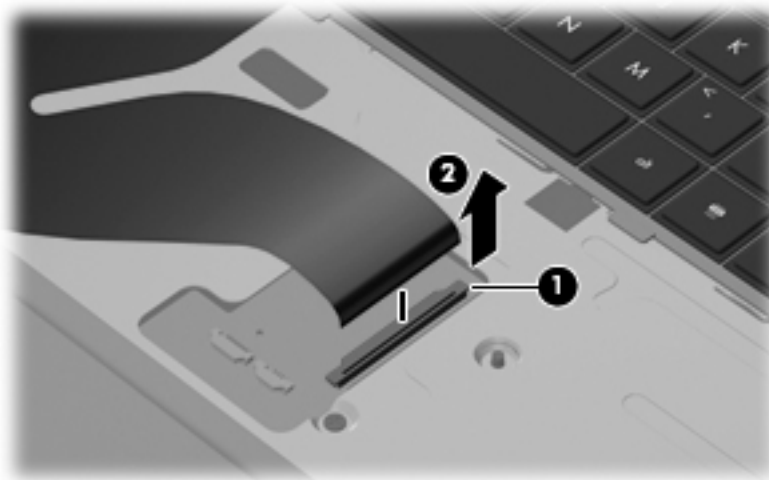




3. Turn the computer display-side up with the front toward you.
4. Open the computer as far as possible.
5. Release the top edge of the keyboard by lifting it up to disengage the keyboard from the tabs on the top cover **(1)**.
6. Slide the top edge of the keyboard back **(2)** until it rests against 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	606162-001

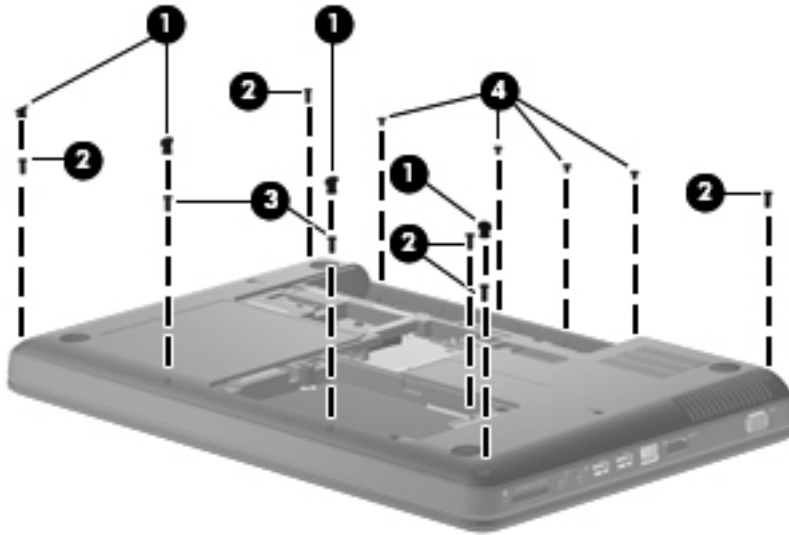
Before removing the switch cover, follow these steps:

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 45](#)).
  - b. Optical drive (see [Optical drive on page 49](#)).
  - c. Keyboard (see [Keyboard on page 56](#)).

Remove the switch cover:

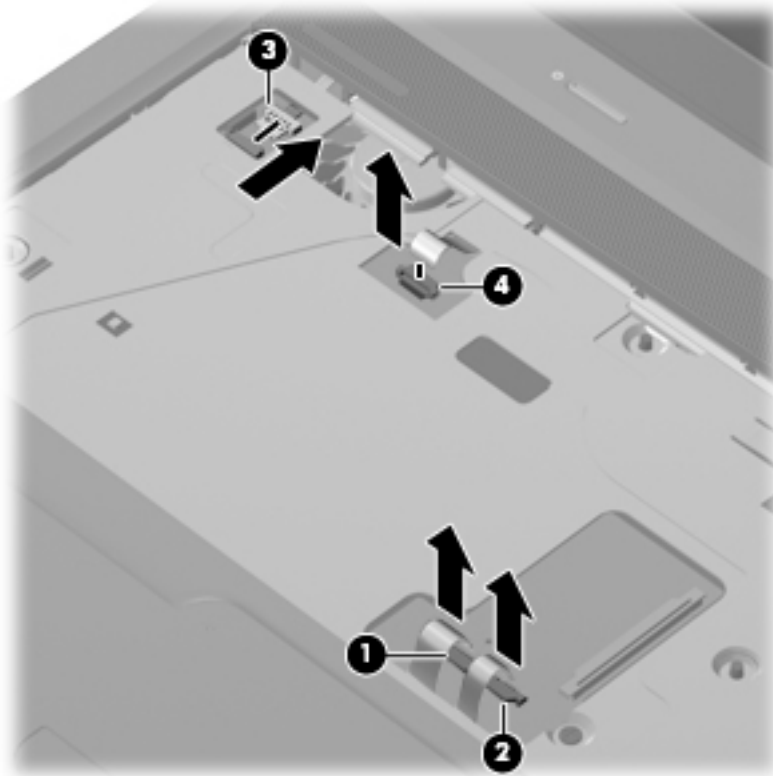
1. Turn the computer upside down with the front toward you.
2. Remove the four screw covers **(1)** at the front edge of the computer.

3. Remove the five Phillips PM2.5×6.5 screws **(2)**, the two Phillips PM2.5×4.0 screws **(3)**, and the four Phillips PM2.5×3.0 screws **(4)** that secure the top cover to the base enclosure.

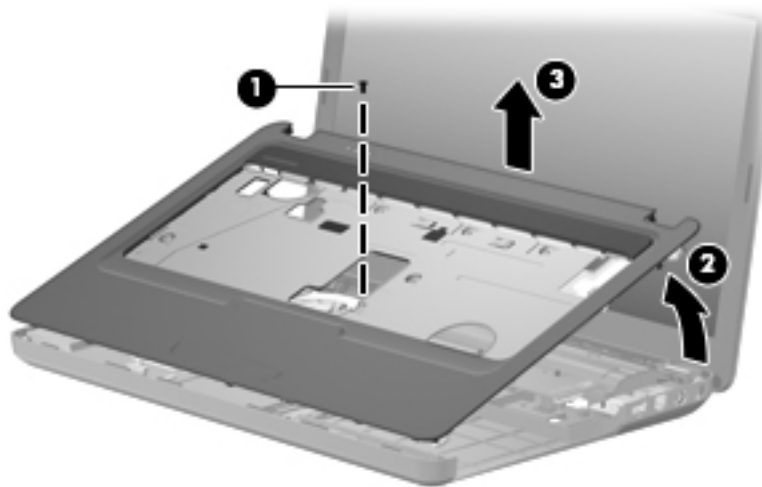


4. Turn the computer display-side up with the front toward you.
5. Open the computer as far as possible.
6. Release the ZIF connector to which the touchpad **(1)** is connected and disconnect the cable from the system board.
7. Release the ZIF connector to which the touchpad button board cable **(2)** 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 PM2.5x6.5 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

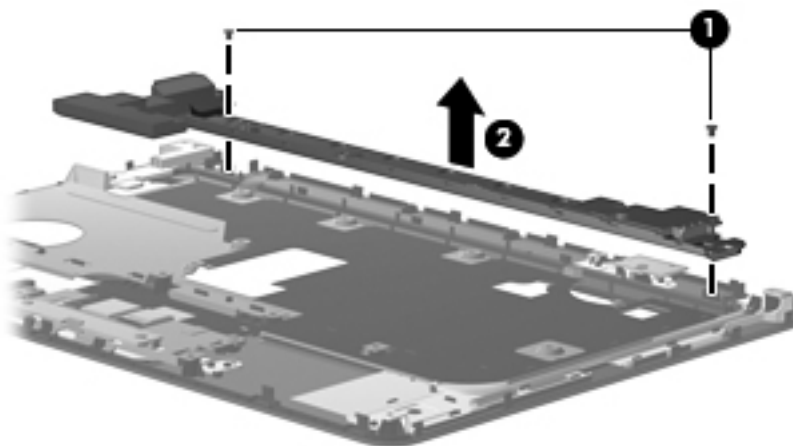
Description	Spare part number
Speaker assembly	600189-001

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 45](#)).
5. Remove the following components:
  - a. Optical drive (see [Optical drive on page 49](#))
  - b. Keyboard (see [Keyboard on page 56](#))
  - c. Top cover (see [Top cover on page 58](#))

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

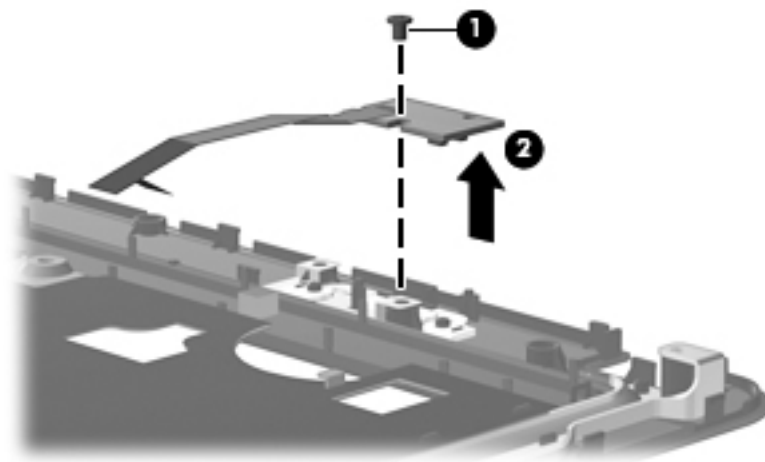
Description	Spare part number
<b>Power button board</b> (with cable)	600188-001

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 45](#)).
5. Remove the following components:
  - a. Hard drive (see [Hard drive on page 46](#))
  - b. Optical drive (see [Optical drive on page 49](#))
  - c. Keyboard (see [Keyboard on page 56](#))
  - d. Top cover (see [Top cover on page 58](#))

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

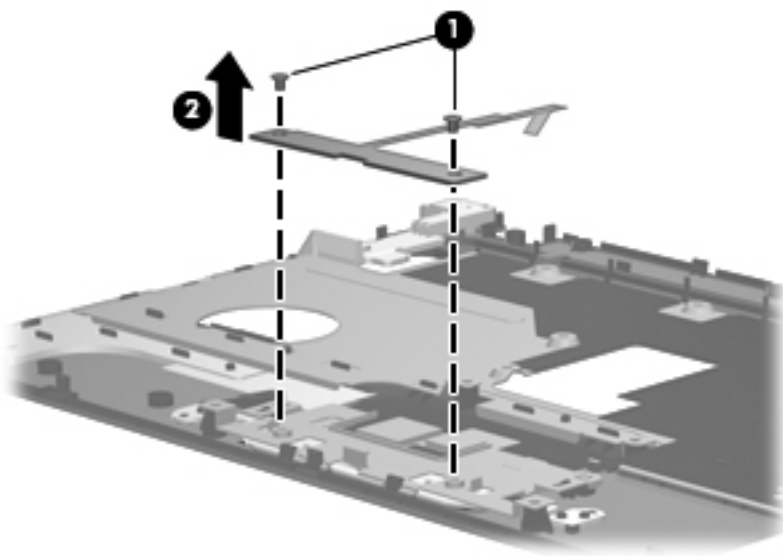
Description	Spare part number
TouchPad button board	604603-001

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 45](#)).
5. Remove the following components:
  - a. Hard drive (see [Hard drive on page 46](#))
  - b. Optical drive (see [Optical drive on page 49](#))
  - c. Keyboard (see [Keyboard on page 56](#))
  - d. Top cover (see [Top cover on page 58](#))

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	510100-001
High-speed 56K modem for use in Australia and New Zealand	510100-011
Modem module cable with RJ-11 connector (included in the cable kit)	610791-001

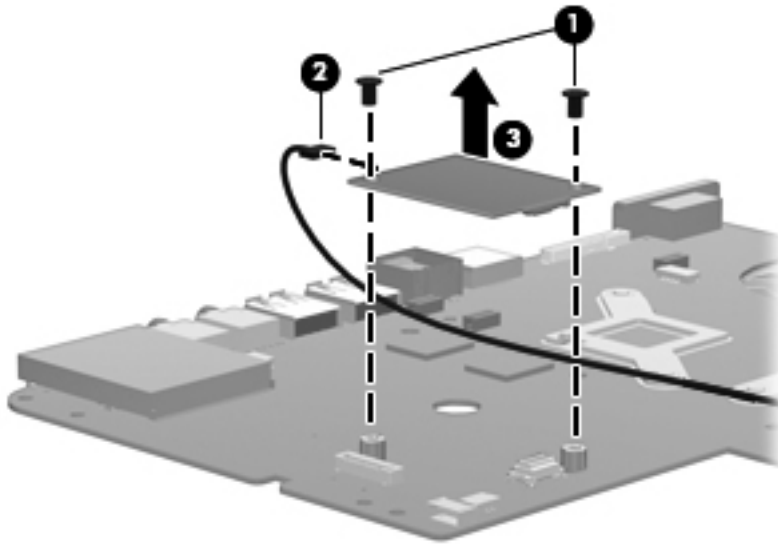
Before removing the modem module, follow these steps:

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 45](#)).
5. Remove the following components:
  - a. Hard drive (see [Hard drive on page 46](#))
  - b. Optical drive (see [Optical drive on page 49](#))
  - c. Keyboard (see [Keyboard on page 56](#))
  - d. Top cover (see [Top cover on page 58](#))

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

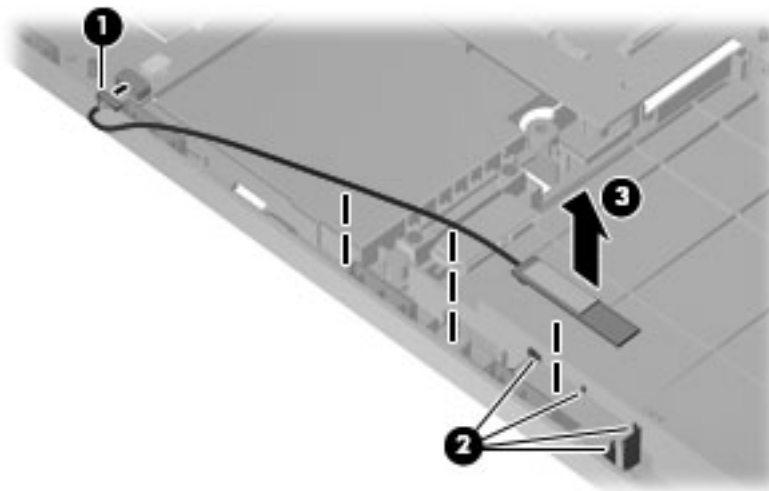
Description	Spare part number
Bluetooth module	537921-001
Bluetooth module cable	602822-001

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 45](#)).
5. Remove the following components:
  - a. Hard drive (see [Hard drive on page 46](#))
  - b. Optical drive (see [Optical drive on page 49](#))
  - c. Keyboard (see [Keyboard on page 56](#))
  - d. Top cover (see [Top cover on page 58](#))

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

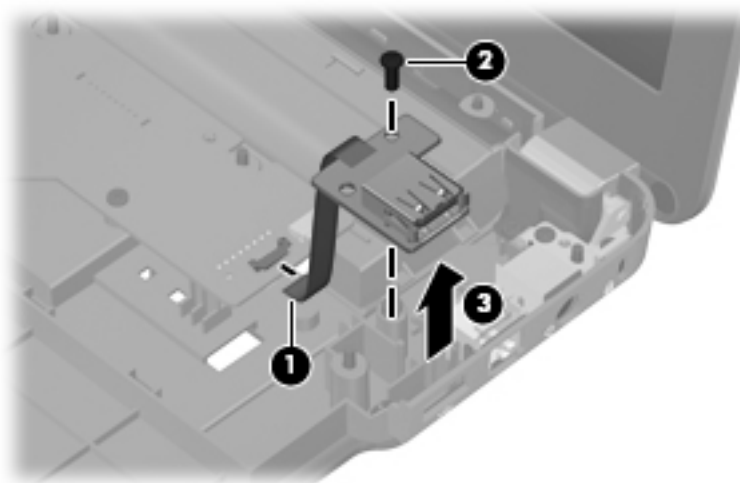
Description	Spare part number
USB board (includes cable)	600631-001

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 45](#)).
5. Remove the following components:
  - a. Hard drive (see [Hard drive on page 46](#))
  - b. Optical drive (see [Optical drive on page 49](#))
  - c. Keyboard (see [Keyboard on page 56](#))
  - d. Top cover (see [Top cover on page 58](#))

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

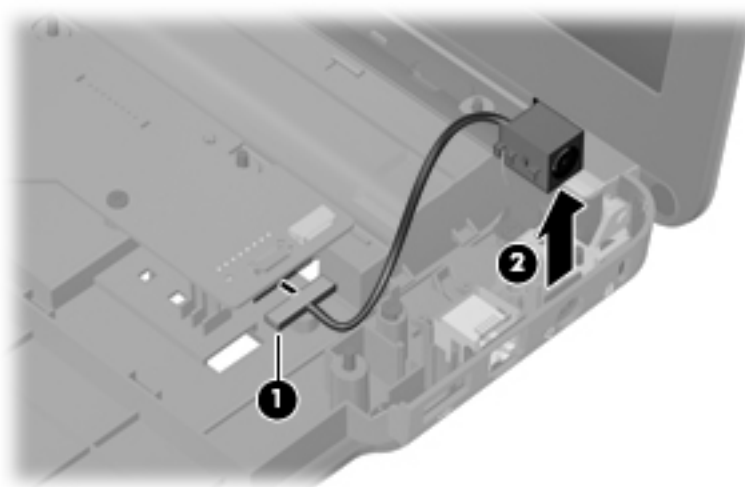
Description	Spare part number
Power connector cable (includes cable and connector)	600630-001

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 45](#)).
5. Remove the following components:
  - a. Hard drive (see [Hard drive on page 46](#))
  - b. Optical drive (see [Optical drive on page 49](#))
  - c. Keyboard (see [Keyboard on page 56](#))
  - d. Top cover (see [Top cover on page 58](#)))

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
<b>35.6 cm</b> (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; Presario, matte black	592146-001
<b>35.6 cm</b> (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; Presario, biscotti	597617-001
<b>35.6 cm</b> (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; HP, biscotti	600163-001
<b>35.6 cm</b> (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; HP, silver	606155-001
<b>35.6 cm</b> (14-in) WXGA Brightview display assembly for use with integrated microphone and webcam; HP, white	606156-001

Before removing the display assembly, follow these steps:

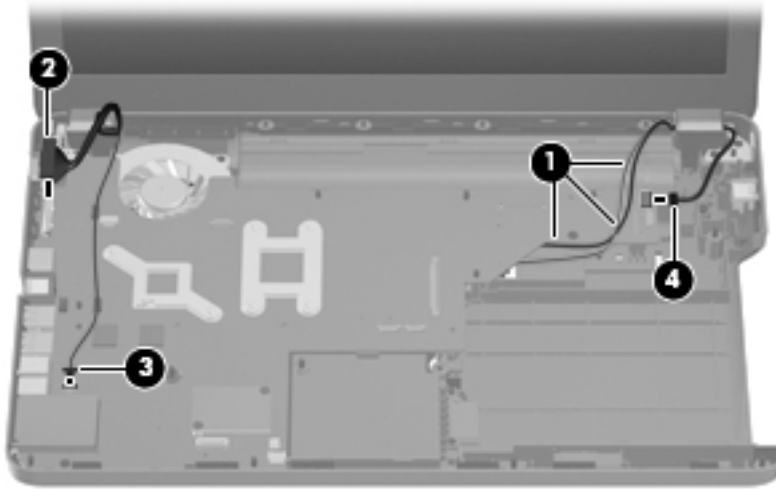
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 45](#)).
5. Disconnect the wireless antenna cables from the WLAN module (see [WLAN module on page 51](#)).
6. Remove the following components:
  - a. Keyboard (see [Keyboard on page 56](#))
  - b. Optical drive (see [Optical drive on page 49](#))
  - c. Top cover (see [Top cover on page 58](#))

Remove the display assembly:

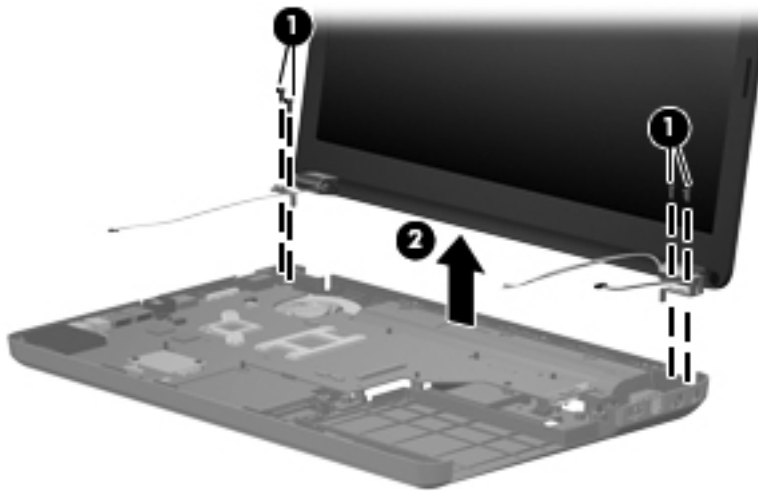
1. Turn the computer display-side up, with the front toward you.
2. Open the display as far as possible.
3. Remove the wireless antenna cables **(1)** from the hole and clips built into the base enclosure.
4. Disconnect the display panel cable **(2)** from the system board.
5. Disconnect the microphone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



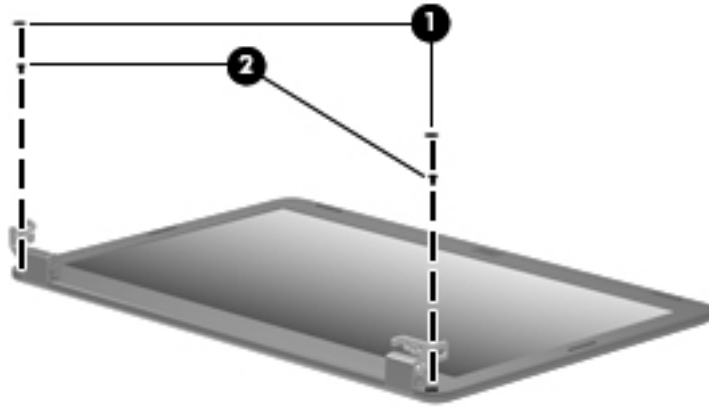
7. Remove the four black Phillips PM2.5×6.5 screws (1) that secure the display assembly to the computer.
8. Remove the display assembly (2).



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.

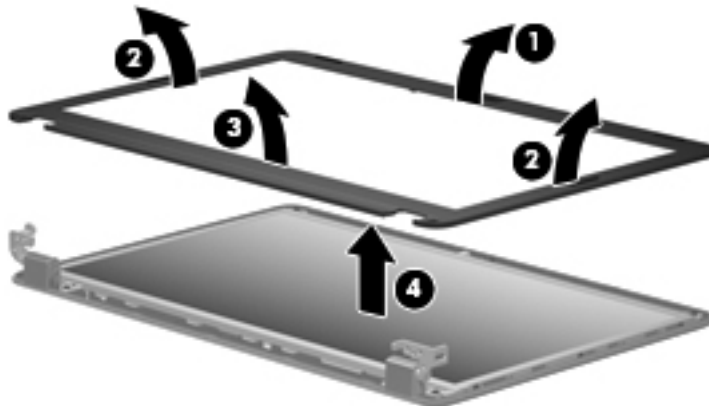
(1) Two Mylar screw covers on the display bezel bottom edge

(2) Two Phillips PM2.5×4.0 screws

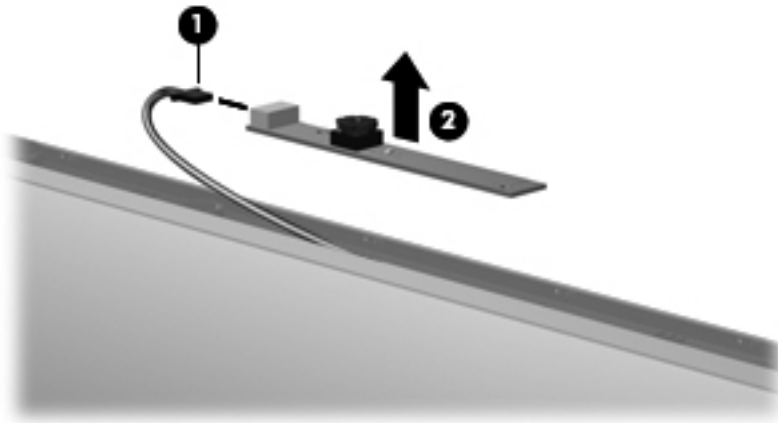


10. Flex the inside edge of the top (1), the left and right sides (2), and the bottom (3) of the display bezel until the bezel disengages from the display back cover.

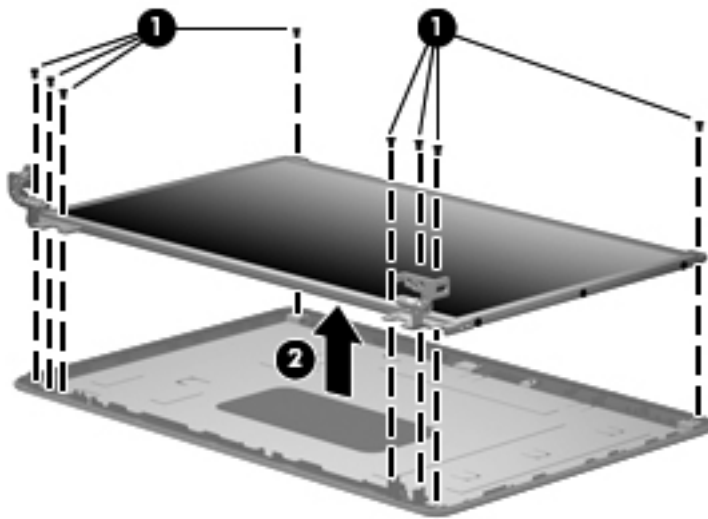
11. Remove the display bezel (4). The display bezel is available using spare part number 592147-001 for HP computers, and 592148-001 for Presario computers.



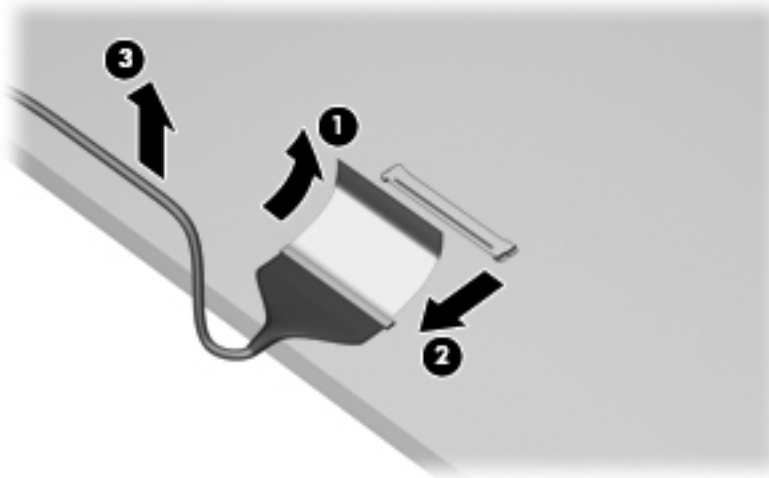
- 12.** If it is necessary to replace the webcam module, disconnect the webcam cable **(1)** from the module. Lift the webcam from the double-sided tape on the display back cover, and remove the webcam.



- 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.

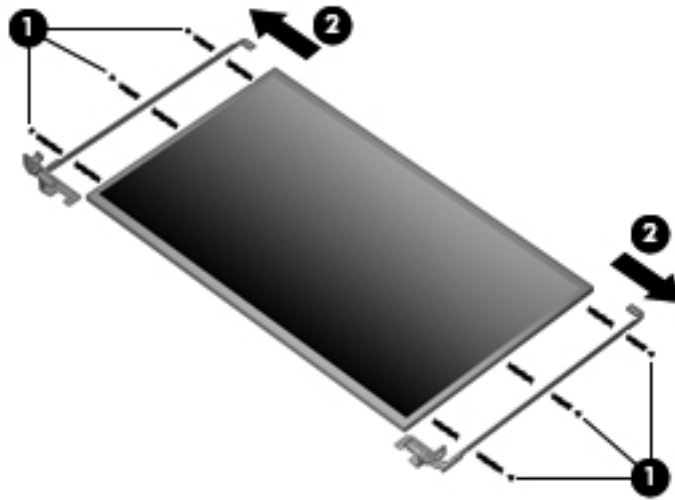


- 14.** If it is necessary to replace the display cable, follow these steps:
- a.** Turn the display panel upside down in front of you.
  - b.** Peel back the tape that secures the cable to the display **(1)**.
  - c.** Unplug the cable from the display **(2)**.
  - d.** Remove the cable from the display **(3)**.



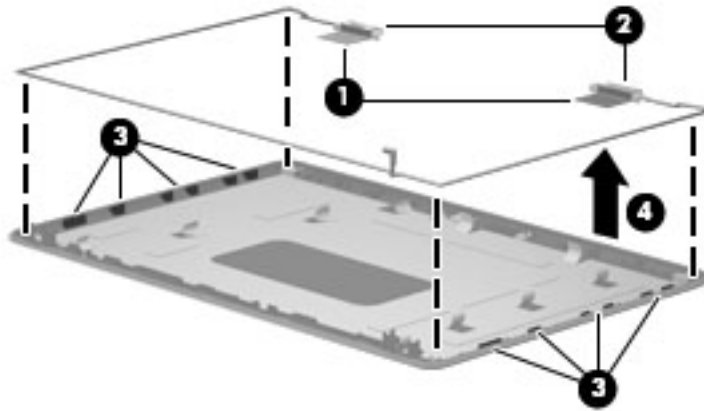
The display cable is available in the display cable kit, spare part number 592151-001.

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.

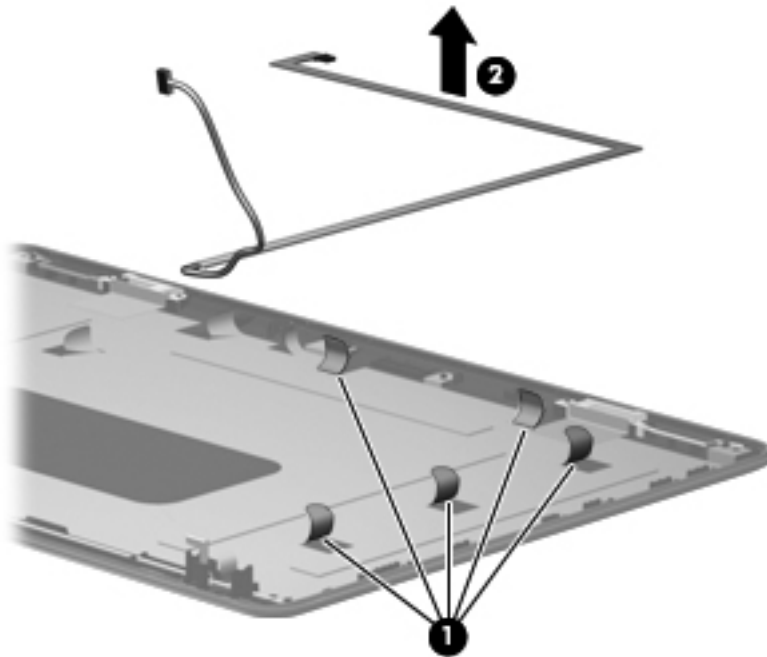


17. If it is necessary to replace the wireless antennas and cables, remove the adhesive strip **(1)** that secures each antenna to the display back cover.
18. Detach the wireless antenna **(2)** from the display back cover .
19. Remove the antenna cables from the clips **(3)** built into the display enclosure.

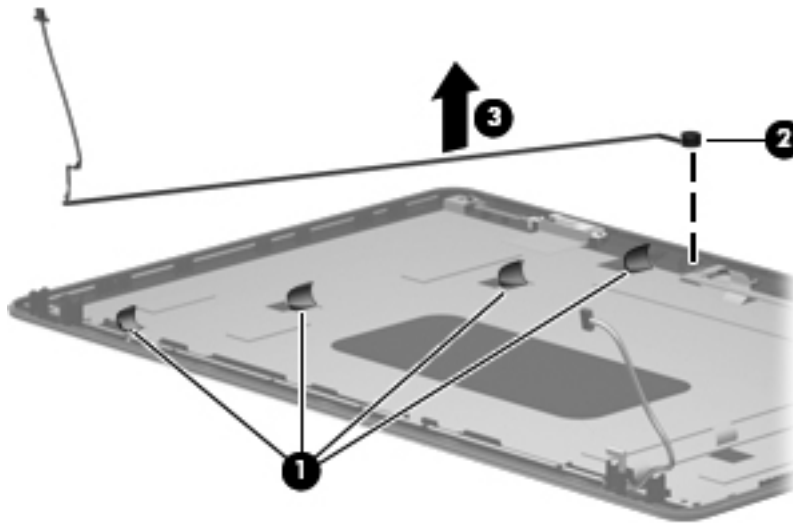
- 20.** Remove the wireless antennas and cables **(4)** from the display enclosure. The wireless antennas and cables are included in the display cable kit, spare part number 592151-001.



- 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 discrete graphics subsystem	595181-001
System board for use in models with Unified Memory Architecture (UMA) graphics subsystem	595182-001
System board for use in models with discrete graphics subsystem and HDMI card reader	595183-001
System board for use in models with UMA graphics subsystem and HDMI card reader	595184-001
System board for use in models with UMA graphics subsystem memory, Intel® GL40 chipset, and HDMI card reader	605140-001
For use in models with UMA graphics subsystem memory,	592808-001
For use in models with DSC HD5430 MDM CR	592811-001
For use in models with DSC HD5430	592810-001
For use in models with UMA graphics subsystem memory,	592809-001
For use in models with HD545V DSC	611554-001
For use in models with HD545V DSC CR	611555-001
For use in models with discrete graphics subsystem HM55 HD5430/1G	608823-001
For use in models with discrete graphics subsystem HDMI HD5430/1G	608824-001
For use in models with discrete graphics subsystem with HM55 HD545V	615577-001
For use in models with discrete graphics subsystem with HM55 HDMI HD545V	615578-001

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 85](#))
- Memory modules (see [Memory module on page 54](#))
- WLAN module (see [WLAN module on page 51](#))
- Modem module (see [Modem module on page 65](#))

Before removing the system board, follow these steps:

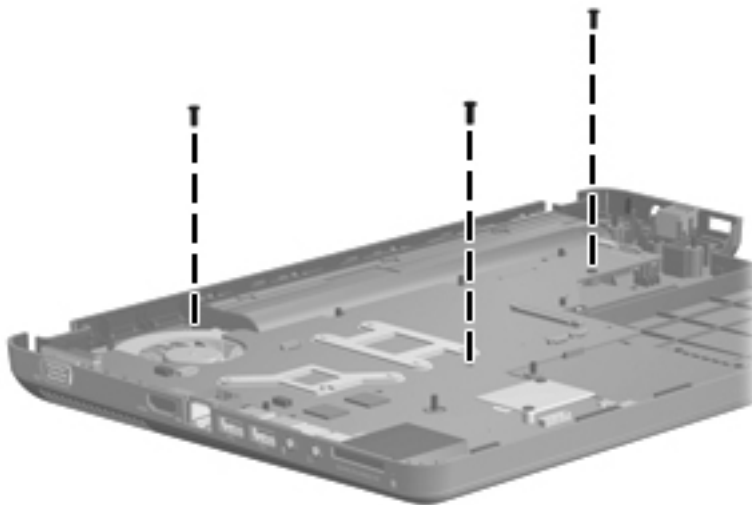
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord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



4. Remove the battery (see [Battery on page 45](#)).
5. Remove the following components:
  - a. Hard drive (see [Hard drive on page 46](#))
  - b. WLAN (see [WLAN module on page 51](#))
  - c. Optical drive (see [Optical drive on page 49](#))
  - d. Keyboard (see [Keyboard on page 56](#))
  - e. Top cover (see [Top cover on page 58](#))
  - f. Speaker assembly (see [Speaker assembly on page 61](#))
  - g. Display assembly (see [Display assembly on page 73](#))
  - h. Top cover (see [Top cover on page 58](#))

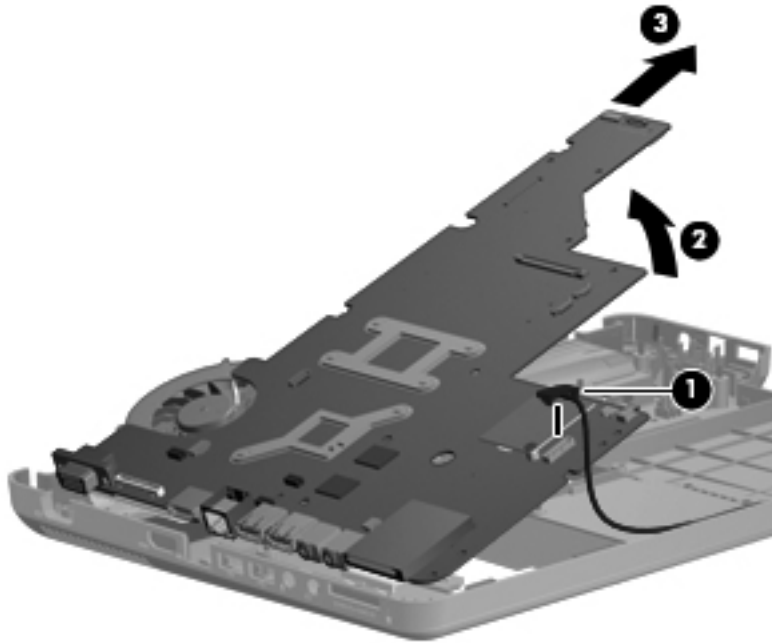
Remove the following cables from the system board if still connected:

- Power connector cable (see [Power connector cable on page 71](#))
  - Bluetooth cable (see [Bluetooth module on page 67](#))
  - USB board cable (see [USB board on page 69](#))
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.

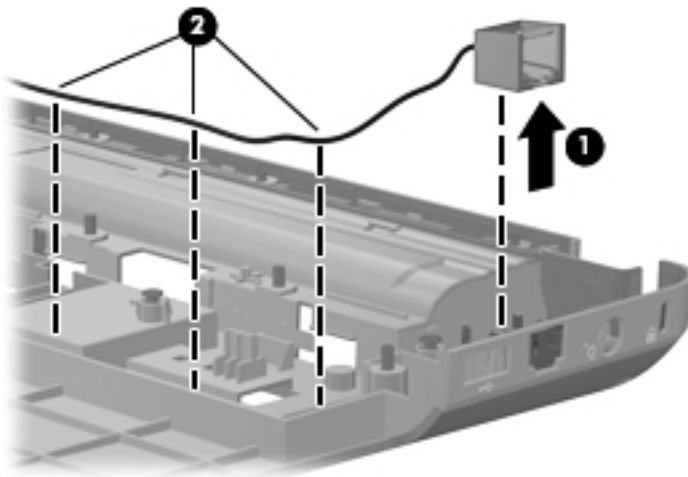


3. Release the optical drive cable **(1)** from the system board.
4. Lift the right side of the system board **(2)**.

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 87](#))
- Processor (see [Processor on page 90](#))

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

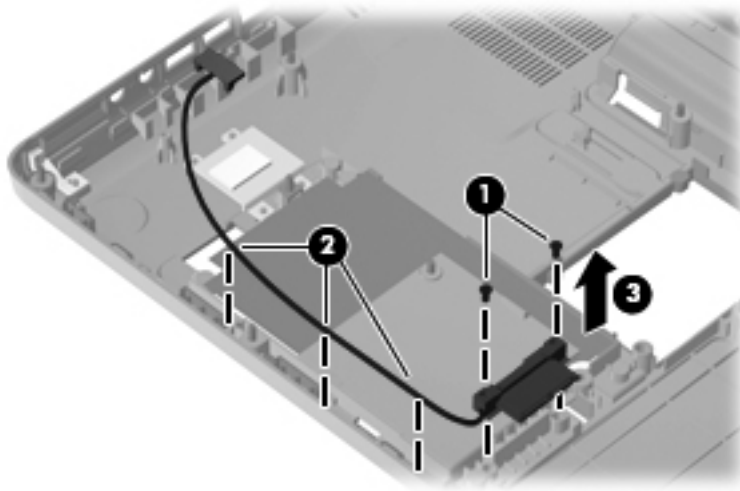
Before removing the optical drive cable, follow these steps:

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 45](#)).
5. Remove the following components:
  - a. Hard drive (see [Hard drive on page 46](#))
  - b. WLAN (see [WLAN module on page 51](#))
  - c. Optical drive (see [Optical drive on page 49](#))
  - d. Keyboard (see [Keyboard on page 56](#))
  - e. Top cover (see [Top cover on page 58](#))
  - f. Speaker assembly (see [Speaker assembly on page 61](#))
  - g. Display assembly (see [Display assembly on page 73](#))
  - h. System board (see [System board on page 80](#))

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

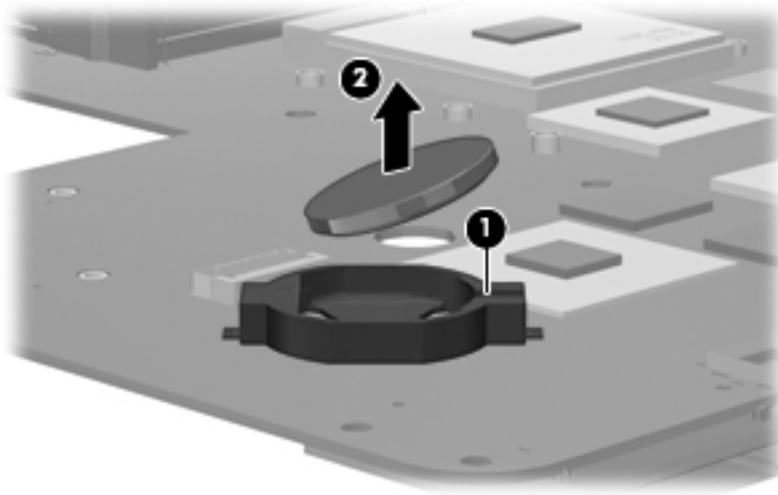
Before removing the RTC battery, follow these steps:

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 45](#)).
5. Remove the following components:
  - a. Hard drive (see [Hard drive on page 46](#))
  - b. WLAN (see [WLAN module on page 51](#))
  - c. Optical drive (see [Optical drive on page 49](#))
  - d. Keyboard (see [Keyboard on page 56](#))
  - e. Top cover (see [Top cover on page 58](#))
  - f. Speaker assembly (see [Speaker assembly on page 61](#))
  - g. Display assembly (see [Display assembly on page 73](#))
  - h. System board (see [System board on page 80](#))

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 replacement material)	595832-001
Fan/heat sink assembly for use in models that use discrete graphics subsystem memory (includes thermal material)	595833-001
Fan/heat sink assembly for use in models that use and UMA graphics subsystem memory and the Intel® GL40 chipset (includes thermal material)	606573-001
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)	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:

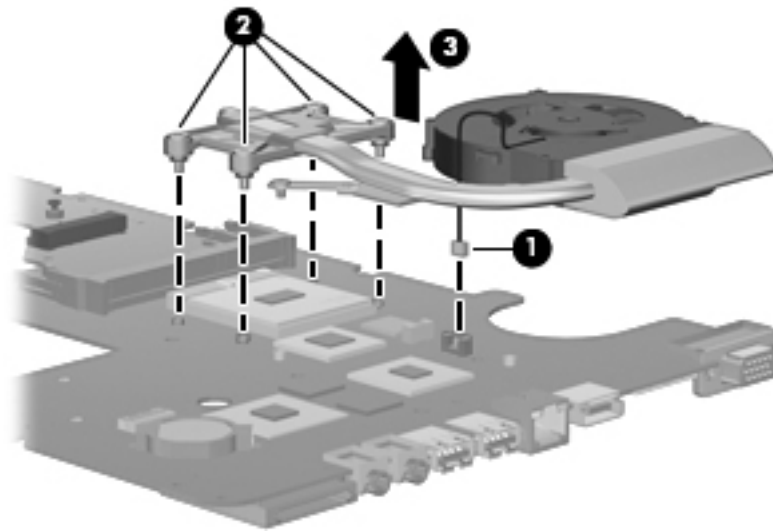
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see [Battery on page 45](#)).
5. Remove the following components:
  - a. Hard drive (see [Hard drive on page 46](#))
  - b. Optical drive (see [Optical drive on page 49](#))
  - c. Keyboard (see [Keyboard on page 56](#))
  - d. Top cover (see [Top cover on page 58](#))
  - e. Speaker assembly (see [Speaker assembly on page 61](#))
  - f. Display assembly (see [Display assembly on page 73](#))
  - g. System board (see [System board on page 80](#))

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)**.

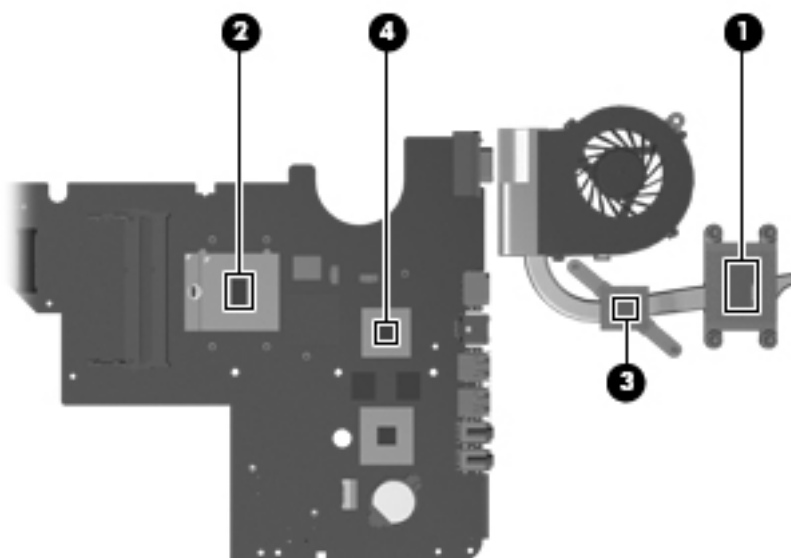


The thermal material must be thoroughly cleaned from the surface of the fan/heat sink assembly **(1)**, **(3)** and the processor **(2)** and video components **(4)** each time the fan/heat sink assembly is removed. Thermal pads and thermal paste must be installed on all surfaces before the fan/heat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

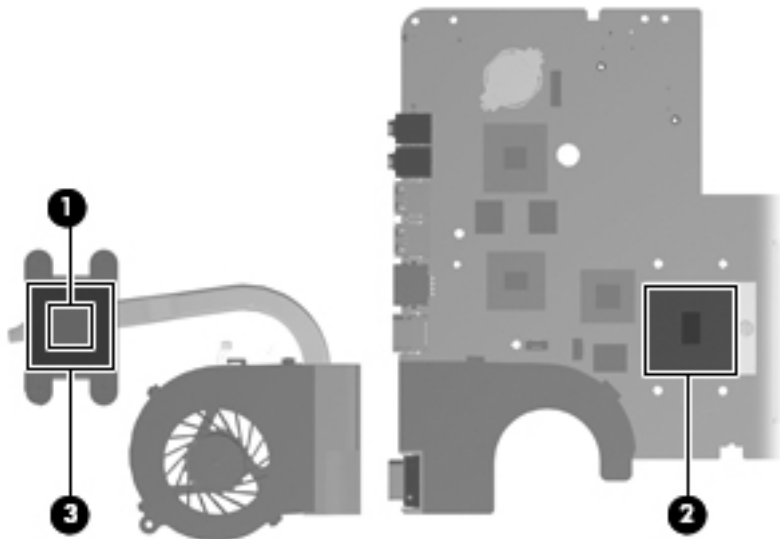
The following illustration shows the locations for thermal material on systems with discrete graphics subsystems.





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
Intel Arrandale Core 620M 2.26-GHz	587259-001
Intel Arrandale 540M 2.53-GHz	594188-001
Intel Arrandale 520M 2.4-GHz	594187-001
Intel Arrandale i5-430M 2.26-GHz	597624-001
Intel Arrandale i3-350M 2.26-GHz	597623-001
Intel Arrandale 370M, 2.4 GHz	613586-001
Intel Arrandale i5-450M 2.4GHz	613585-001
Intel Arrandale 3-370M 2.4GHz	613584-001
Intel Celeron 900,2.2GHz	534419-001
Intel Arrandale i3-330M 2.13-GHz	597622-001
Intel Core 2 Duo Mobile processor T3000, 1.8-GHz	572926-001
Intel Core 2 Duo Mobile processor T4400 - 2.2-GHz	584296-001
Intel Core 2 Duo Mobile,T4300, 2.1-GHz	572929-001
Intel Core 2 Duo Mobile processor T3100 - 1.9-GHz	572925-001
Processor, Intel Core 2 Duo Mobile processor T4500 2.3-GHz	591880-001
Intel Core 2 Duo Mobile processor T3300 2.0-GHz	592399-001
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:

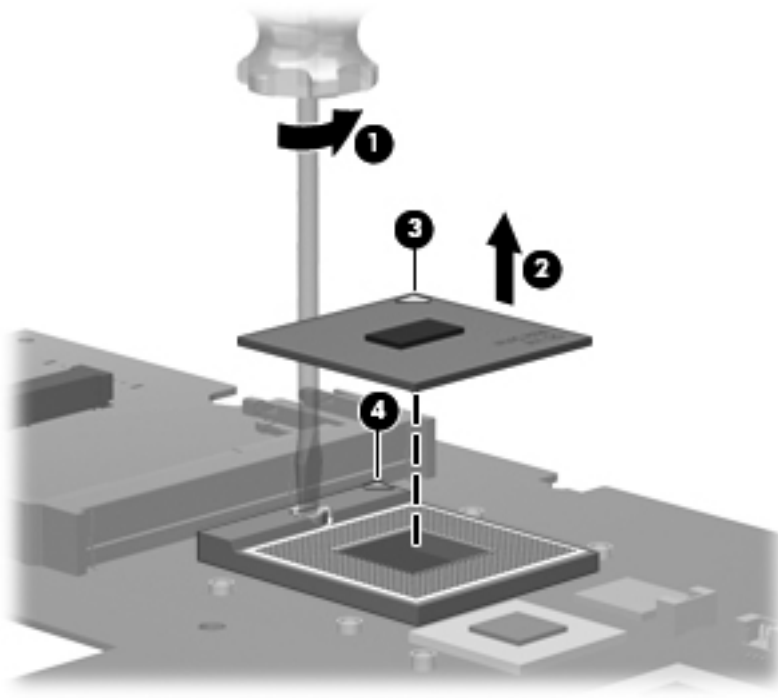
- 1.** Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
- 2.** Disconnect all external devices connected to the computer.
- 3.** Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
- 4.** Remove the battery (see [Battery on page 45](#)).
- 5.** Remove the following components:
  - a.** Hard drive (see [Hard drive on page 46](#))
  - b.** Optical drive (see [Optical drive on page 49](#))
  - c.** Keyboard (see [Keyboard on page 56](#))
  - d.** Top cover (see [Top cover on page 58](#))
  - e.** Speaker assembly (see [Speaker assembly on page 61](#))
  - f.** Display assembly (see [Display assembly on page 73](#))
  - g.** System board (see [System board on page 80](#))
  - h.** Fan/heat sink assembly (see [Fan/heat sink assembly on page 87](#))

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	<ul style="list-style-type: none"><li>• View and change the system time and date.</li><li>• View identification information about the computer.</li><li>• View specification information about the processor, memory size, system BIOS, and keyboard controller version (select models only).</li></ul>

### 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	Enable/disable Fan Always On. When enabled, the computer fan will always be on.
Action Keys Mode	Enable/disable Action Keys Mode.
Boot Options	<p>Set the following boot options:</p> <ul style="list-style-type: none"><li>• POST hotkey delay (sec.)—Set the delay for the <b>f1</b>, <b>f2</b>, <b>f9</b>, <b>f10</b>, <b>f11</b>, and <b>f12</b> functions of Setup Utility in intervals of 5 seconds each (0, 5, 10, 15, 20).</li><li>• CD-ROM Boot—Enable/disable boot from CD-ROM.</li><li>• Floppy Boot—Enable/disable boot from diskette.</li><li>• Internal Network Adapter Boot—Enable/disable boot from the internal network adapter.</li><li>• Boot Order—Set the boot order for:<ul style="list-style-type: none"><li>◦ Notebook Hard Drive</li><li>◦ Internal CD/DVD ROM Drive</li><li>◦ USB Diskette on Key/USB Hard Disk</li><li>◦ USB CD/DVD ROM Drive</li><li>◦ USB Floppy</li><li>◦ Network Adapter</li></ul></li></ul>

## Diagnostics menu


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

Select	To do this
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	<ul style="list-style-type: none"><li>• View identification information for the computer.</li><li>• View specification information for the processor, cache and memory size, and system ROM.</li></ul>
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	<ul style="list-style-type: none"><li>• Enable/disable stringent security.</li><li>• Enable/disable the password requirement on computer restart.</li></ul>
DriveLock Passwords	<ul style="list-style-type: none"><li>• Enable/disable DriveLock on any computer hard drive.</li><li>• Enter, change, or disable DriveLock on an optional MultiBay hard drive.</li></ul> <p><b>NOTE:</b> DriveLock settings are accessible only when you enter Computer Setup by turning on (not restarting) the computer.</p>
System IDs	Enter a user-defined computer asset tracking number and ownership tag.
Disk Sanitizer	<p>Run Disk Sanitizer to destroy all existing data on the primary hard drive. The following options are available:</p> <ul style="list-style-type: none"><li>• Fast: Runs the Disk Sanitizer erase cycle once.</li><li>• Optimum: Runs the Disk Sanitizer erase cycle 3 times.</li><li>• Custom: Allows you to select the desired number of Disk Sanitizer erase cycles from a list.</li></ul> <p><b>CAUTION:</b> If you run Disk Sanitizer, the data on the primary hard drive is destroyed permanently.</p>

## 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	<ul style="list-style-type: none"><li>• Set an <b>f9</b>, <b>f10</b>, and <b>f12</b> delay when starting up.</li><li>• Enable/disable CD-ROM boot.</li><li>• Enable/disable floppy boot.</li><li>• Enable/disable internal network adapter boot.</li><li>• Enable/disable MultiBoot, which sets a boot order that can include most boot devices in the system.</li><li>• Set the Express Boot Popup delay in seconds.</li><li>• Set the boot order.<ul style="list-style-type: none"><li>◦ 1st boot device: USB CD-ROM</li><li>◦ 2nd boot device: USB floppy</li><li>◦ 3rd boot device: USB SuperDisk</li><li>◦ 4th boot device: Notebook hard drive</li><li>◦ 5th boot device: USB hard disk</li><li>◦ 6th boot device: Network controller</li></ul></li></ul>
Device Configurations	<ul style="list-style-type: none"><li>• Swap the functions of the <b>fn</b> key and left <b>ctrl</b> key.</li><li>• Enable/disable USB legacy support. When enabled, USB legacy support allows the following:<ul style="list-style-type: none"><li>◦ Use of a USB keyboard in Computer Setup even when a your operating system is not running.</li><li>◦ Startup from bootable USB devices, including a hard drive, diskette drive, or optical drive connected by a USB port to the computer.</li></ul></li><li>• Enable/disable BIOS DMA data transfers.</li><li>• Enable/disable fan always on while connected to an AC outlet.</li><li>• Enable/disable data execution prevention.</li><li>• Enable/disable LAN power saving mode.</li><li>• Enable/disable SATA Native Mode.</li><li>• Enable/disable Dual Core CPU.</li><li>• Enable/disable HDD translation mode.</li></ul>

Select	To do this
Built-in device options	<ul style="list-style-type: none"> <li>• Enable/disable embedded WLAN Device Radio.</li> <li>• Enable/disable embedded Bluetooth Device Radio.</li> <li>• Enable/disable Network Interface Controller (NIC)</li> <li>• Enable/disable LAN/WLAN Switching.</li> <li>• Enable/disable Wake on LAN.</li> <li>• Enable/disable the integrated camera (webcam)</li> </ul>
Port options	<ul style="list-style-type: none"> <li>• Enable/disable USB port.</li> <li>• Enable/disable ExpressCard slot.</li> </ul>



# 6 Specifications

## Computer specifications

Dimensions	
Depth	<b>22.8 cm</b> (8.98 in)
Width	<b>34.2 cm</b> (13.46 in)
Height (front to rear)	<b>31.5 to 36.5 cm</b> (1.24 to 1.44 in)
<b>Weight</b> (lowest weight configuration)	<b>&lt; 2.20 kg</b> (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)	<b>0°C to 35°C</b> (32°F to 95°F)
Operating (writing to optical disc)	<b>5°C to 35°C</b> (41°F to 95°F)
Nonoperating	<b>-20°C to 60°C</b> (-4°F to 140°F)
Relative humidity	
Operating	10% to 90%
Nonoperating	5% to 95%
Maximum altitude (unpressurized)	
Operating	<b>-15 m to 3,048 m</b> (-50 ft to 10,000 ft)
Nonoperating	<b>-15 m to 12,192 m</b> (-50 ft to 40,000 ft)
<b>NOTE:</b> 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

<b>Dimensions</b>	
Height	<b>17.6 cm</b> (17.6 cm)
Width	<b>31.1 cm</b> (12.24 in)
Diagonal	<b>35.7 cm</b> (14.06 in)
<b>Number of colors</b>	Up to 16.8 million
<b>Contrast ratio</b>	300:1 (typical)
<b>Brightness</b>	200 nits (typical)
<b>Pixel resolution</b>	
Pitch	0.259 × 0.259 mm
Format	1280 × 800; HD: 1366 × 768
Configuration	RGB vertical stripe
<b>Backlight</b>	LED
<b>Character display</b>	80 × 25
<b>Total power consumption</b>	4.0 W
<b>Viewing angle</b>	±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

<b>Applicable disc</b>	
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
<b>Random access time</b>	
DVD	< 230 ms
CD	< 175 ms
<b>Cache buffer</b>	2 MB
<b>Data transfer rate</b>	
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
<b>Transfer mode</b>	Multiword DMA Mode

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

<b>Applicable disc</b>	
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
<b>Random access time</b>	
BD	< 230 ms
DVD	< 180 ms
CD	< 180 ms
<b>Cache buffer</b>	8 MB
<b>Data transfer rate</b>	
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
<b>Transfer mode</b>	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.

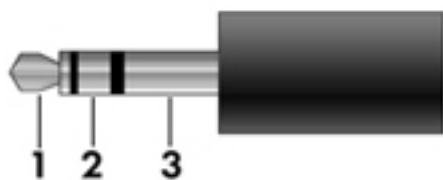
---

📝 **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.

---

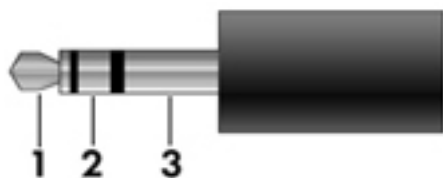
## 8 Connector pin assignments

### Audio-out (headphone)



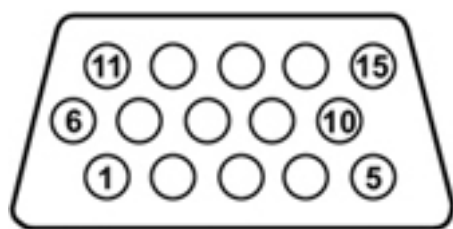
Pin	Signal
1	Audio out, left channel
2	Audio out, right channel
3	Ground

### Audio-in (microphone)



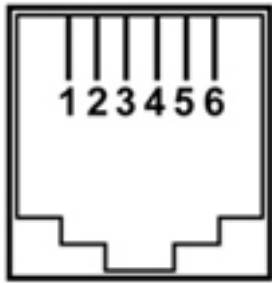
Pin	Signal
1	Audio signal in
2	Audio signal in
3	Ground

# External monitor



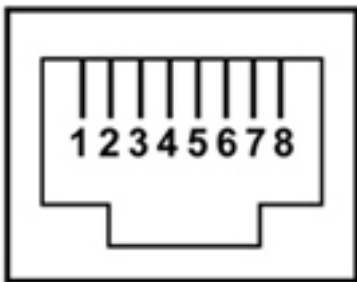
Pin	Signal
1	Red analog
2	Green analog
3	Blue analog
4	Not connected
5	Ground
6	Ground analog
7	Ground analog
8	Ground analog
9	+5 VDC
10	Ground
11	Monitor detect
12	DDC 2B data
13	Horizontal sync
14	Vertical sync
15	DDC 2B clock

## RJ-11 (modem)



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

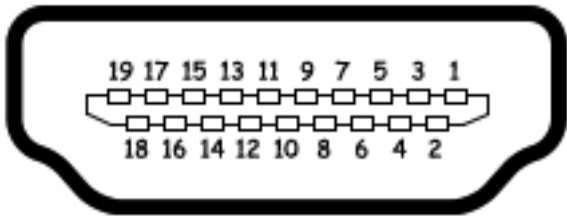
## RJ-45 (network)



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

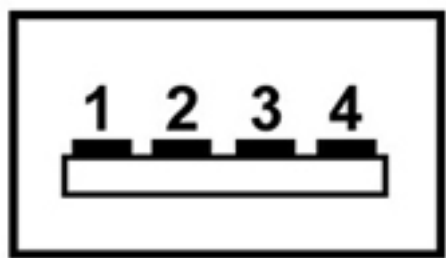


# HDMI



Pin	Signal
1	TMDS data 2+
2	TMDS data 2 shield
3	TMDS data 2-
4	TMDS data 1+
5	TMDS data 1 shield
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-mm<sup>2</sup> 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-mm<sup>2</sup> 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-mm<sup>2</sup> 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-mm<sup>2</sup> 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)**.



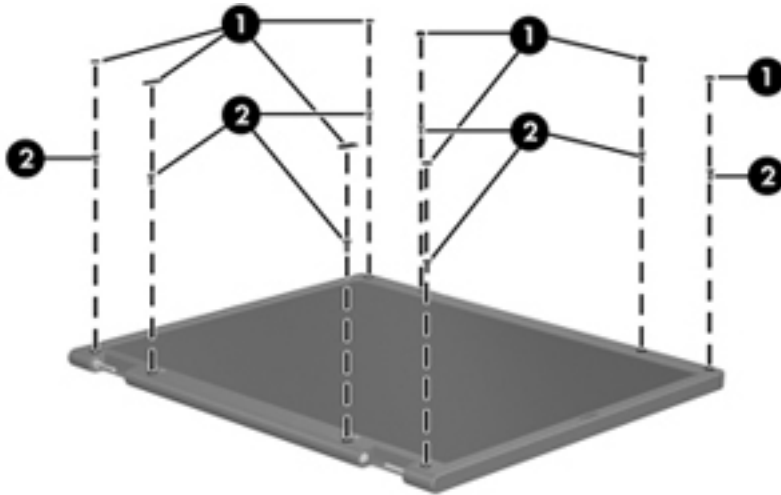
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📄 **NOTE:** The procedures provided in this chapter are general disassembly instructions. Specific details, such as screw sizes, quantities, and locations, and component shapes and sizes, can vary from one computer model to another.

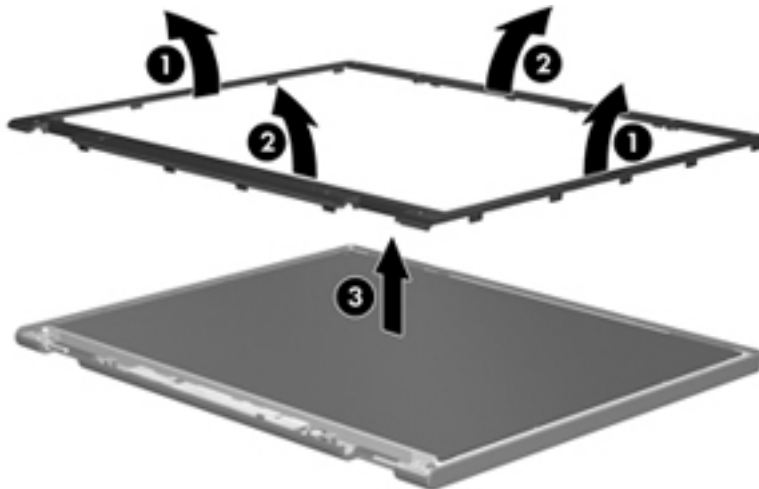
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Perform the following steps to disassemble the display assembly:

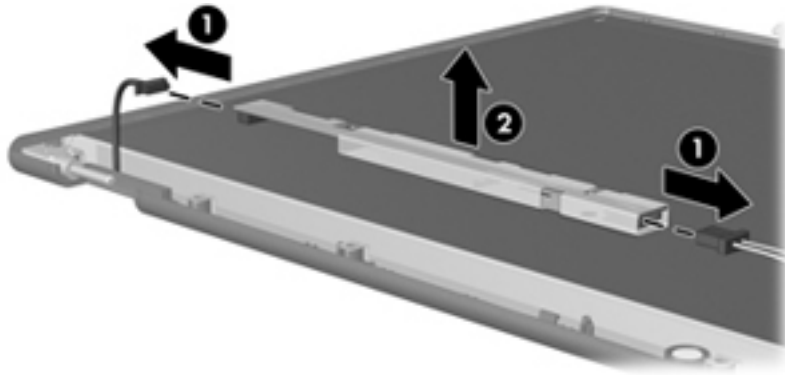
1. Remove all screw covers **(1)** and screws **(2)** that secure the display bezel to the display assembly.



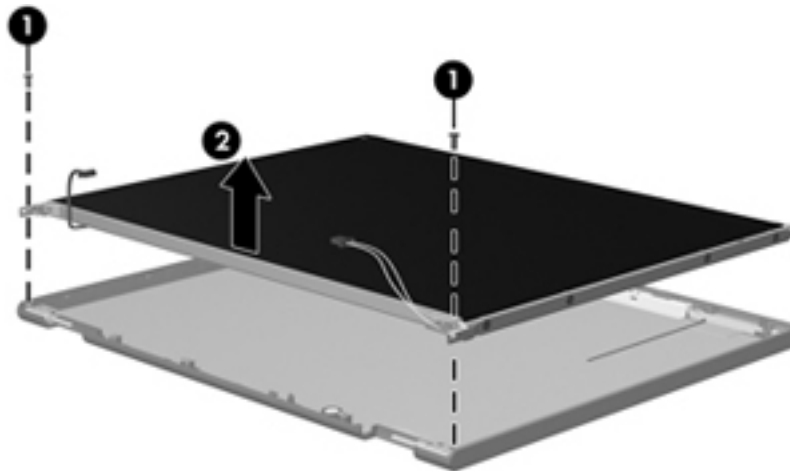
2. Lift up and out on the left and right inside edges **(1)** and the top and bottom inside edges **(2)** of the display bezel until the bezel disengages from the display assembly.
3. Remove the display bezel **(3)**.



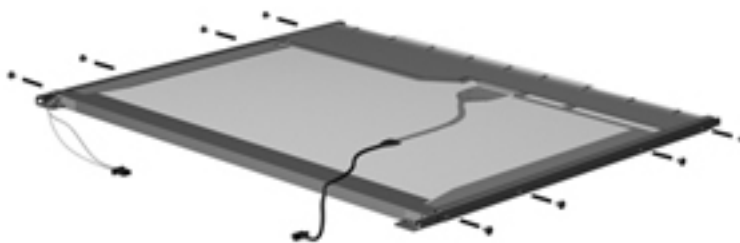
4. Disconnect all display panel cables **(1)** from the display inverter and remove the inverter **(2)**.



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.

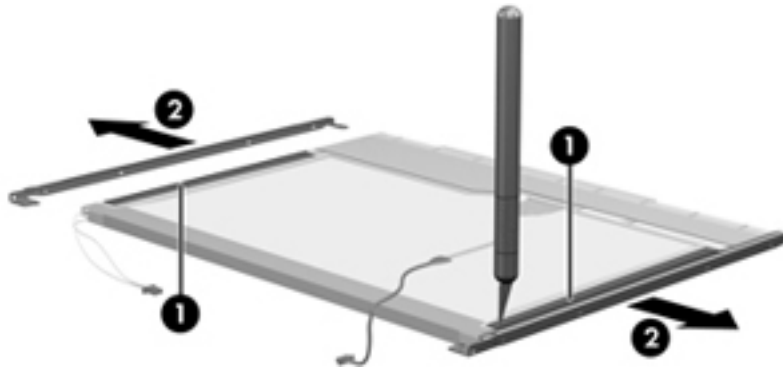


7. Turn the display panel assembly upside-down.
8. Remove all screws that secure the display panel frame to the display panel.



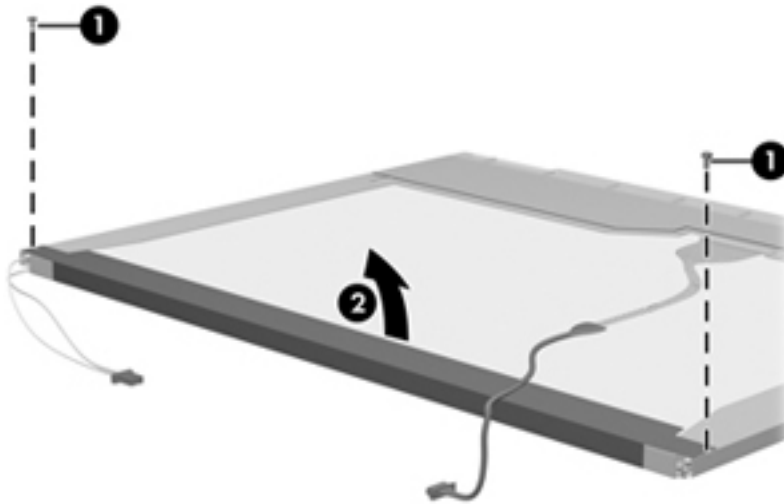
9. Use a sharp-edged tool to cut the tape **(1)** that secures the sides of the display panel to the display panel frame.

- 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.

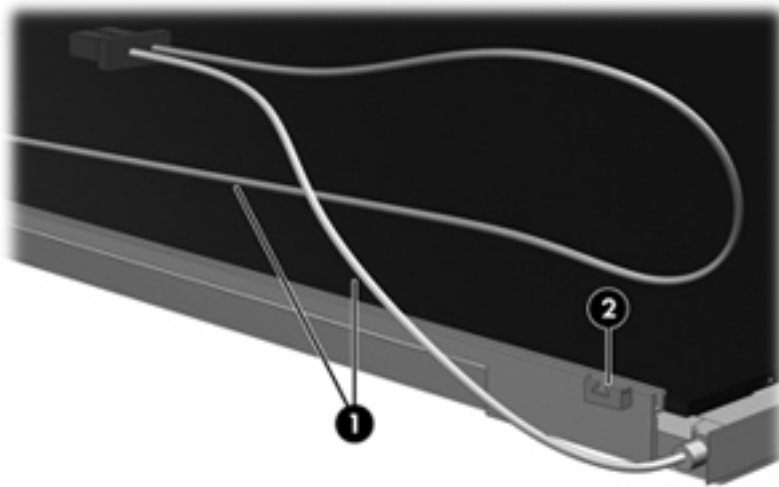


- 13.** Remove the backlight cover.

- 14.** Turn the display panel right-side up.



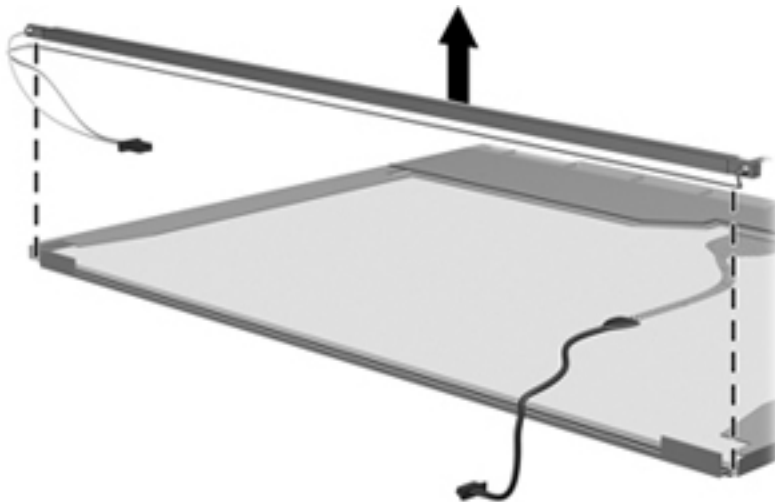
- 15.** Remove the backlight cables **(1)** from the clip **(2)** in the display panel.



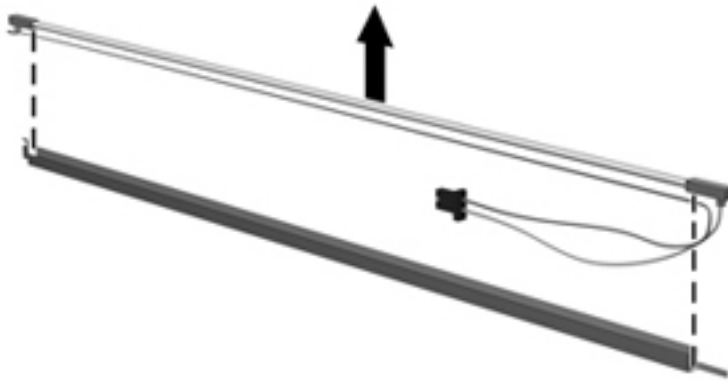
- 16.** Turn the display panel upside-down.

⚠ **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.

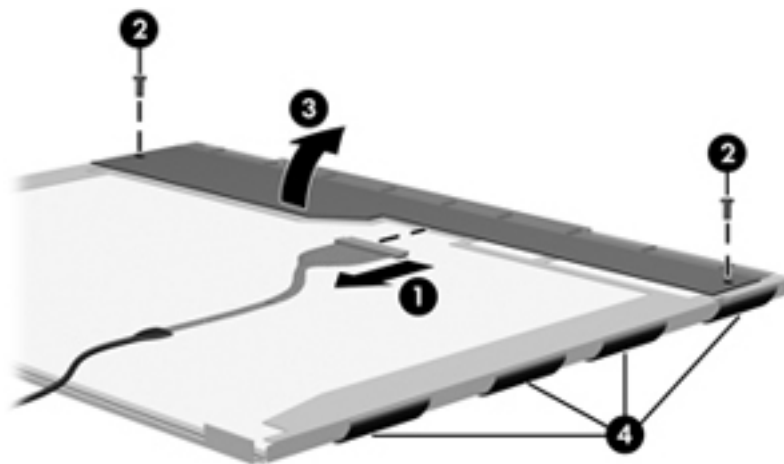


**19.** Disconnect the display panel cable **(1)** from the LCD panel.

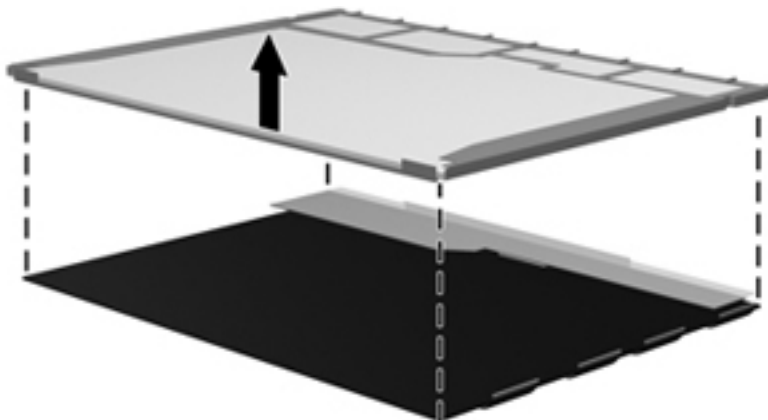
**20.** Remove the screws **(2)** that secure the LCD panel to the display rear panel.

**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.

# Index

## Symbols/Numerics

1394 Power Saving 97

## A

AC adapter  
    identifying 18  
AC adapter, spare part  
    numbers 31  
administrator password 96  
antenna  
    removal 77  
antennas 17  
applications key, Windows 12  
audio, product description 5  
audio-in jack, pin  
    assignments 118  
audio-out jack, pin  
    assignments 118

## B

backing up  
    customized window, toolbar,  
        and menu bar settings 113  
    personal files 113  
    templates 113  
base enclosure, spare part  
    number 25  
battery  
    removal 45  
    spare part numbers 25, 45  
battery bay, identifying 16  
battery release latch,  
    identifying 16  
battery, identifying 18  
bays  
    battery 16  
    hard drive 16  
BD/DVD $\pm$ R/RW Super Multi  
    Double-Layer Combo Drive  
    removal 49

bezel  
    illustrated 20  
    spare part number 27, 75  
Blu-ray Disc ROM LightScribe with  
    SuperMulti DVD $\pm$ R/RW Double-  
    Layer  
    spare part number 26, 30, 49  
Blu-ray ROM with LightScribe DVD  
     $\pm$ R/RW SuperMulti DL Drive  
    specifications 109  
Bluetooth module  
    removal 67  
    spare part number 25, 67  
boot options 97, 103  
boot order 97, 103  
button sound 97  
buttons  
    power 11  
    TouchPad right/left 9

## C

cable kit, spare part number 26  
cables, service considerations 39  
camera module  
    removal 76  
    spare part number 76  
camera, product description 4  
caps lock light, identifying 10  
Card Reader Power Saving 97  
changing the language of Setup  
    Utility 94  
chipset, product description 2  
compartments  
    memory module 16  
components  
    additional hardware 18  
    bottom 16  
    front 8  
    left-side 15

    right-side 14  
    top 9  
computer feet  
    locations 44  
    spare part number 44  
Computer Setup  
    accessing 99  
    Diagnostics menu 102  
    File menu 101  
    navigating and selecting 99  
    restoring factory settings 100  
    Security menu 102  
    System Configuration  
        menu 103  
    using 99  
computer specifications 105  
connector pin assignments  
    audio-in 118  
    audio-out 118  
    external monitor 119  
    HDMI 121  
    headphone 118  
    microphone 118  
    modem 120  
    monitor 119  
    network 120  
    RJ-11 120  
    RJ-45 120  
    Universal Serial Bus (USB) 122  
connector, power 14  
connectors, service  
    considerations 39  
cord, power 18

## D

Diagnostics menu 97, 102  
Digital Media Slot light,  
    identifying 15  
Digital Media Slot, identifying 15

- diskette drive
  - precautions 39
  - product description 4
- display assembly
  - removal 73
  - spare part number 20, 73
- display back cover
  - spare part number 28
- display bezel
  - illustrated 20
  - spare part number 27, 75
- display bracket and hinge
  - removal 77
  - spare part number 77
- display cable kit
  - spare part number 27
- display component recycling 125
- display components
  - illustrated 20
  - spare part numbers 20
- display enclosure
  - illustrated 20
- display hinge kit, spare part number 27
- display inverter
  - illustrated 20
- display panel
  - illustrated 20
  - product description 3
  - removal 76
  - spare part number 27, 76
- Display screw kit, spare part number 28
- display specifications 106
- displaying system information 95
- drives
  - boot order 97, 103
  - preventing damage 39
- DVD/CD-RW Combo Drive
  - precautions 39
  - removal 49
- DVD±RW and CD-RW Combo Drive
  - precautions 39
  - removal 49
- DVD±RW SuperMulti DL Drive with LightScribe
  - spare part numbers 26, 30, 49

- DVD±RW SuperMulti Double-Layer Drive with LightScribe
  - specifications 108

## E

- electrostatic discharge 40
- esc key, identifying 12
- Ethernet, product description 5
- exiting Setup Utility 96
- external media cards, product description 5
- external monitor port
  - pin assignments 119
- external monitor port, identifying 15

## F

- f11 116
- fan always on 97
- fan/heat sink assembly
  - removal 82
  - spare part number 21, 82
- feet
  - locations 44
  - spare part number 44
- File menu 101
- fn key, identifying 12
- front components 8
- full system recovery 111
- function keys, identifying 12

## G

- graphics, product description 2
- grounding equipment and methods 42

## H

- hard drive
  - precautions 39
  - product description 4
  - removal 46
  - spare part numbers 25, 30, 46
  - specifications 107
- hard drive bay, identifying 16
- hard drive cover
  - illustrated 29
  - removal 47
- hard drive hardware kit, spare part number 30
- hard drive self test 97

- HDMI 15
- HDMI port, pin assignments 121
- headphone jack, pin assignments 118

## I

- inverter
  - illustrated 20

## J

- jacks
  - RJ-11 (modem) 14
  - RJ-45 (network) 15

## K

- keyboard
  - product description 6
  - removal 56
  - spare part numbers 21, 56
- keys
  - esc 12
  - fn 12
  - function 12
  - navigation 12
  - Windows applications 12
  - Windows logo 12

## L

- LAN Power Saving 97
- language support 97
- latch, battery release 16
- legacy support, USB 99, 103
- light
  - power 10
- lights
  - caps lock 10
  - Digital Media Slot 15
  - optical drive 14
  - webcam 13
  - wireless 10

## M

- Main menu 96
- mass storage devices, spare part numbers 26
- memory module
  - product description 3
  - removal 54
  - spare part numbers 22, 54
- memory module compartment, identifying 16

- memory test 98
- microphone (internal),
  - identifying 13
- microphone jack, pin
  - assignments 118
- microphone, product
  - description 5
- mini-card compartment cover
  - illustrated 29
  - removal 55
  - spare part number 55
- model name 1
- modem cable
  - noise suppression circuitry 18
- modem jack, pin
  - assignments 120
- modem module
  - product description 5
  - removal 65
  - spare part number 22, 65
- modem module cable
  - removal 82
- monitor port, external 15
- monitor port, pin
  - assignments 119

## N

- navigating in Setup Utility 94
- navigation keys, identifying 12
- network jack, pin
  - assignments 120
- noise suppression circuitry
  - modem cable 18

## O

- ODD cable
  - removal 83
  - spare part number 83
- operating system, product
  - description 6
- optical drive
  - identifying 14
  - precautions 39
  - product description 4
  - removal 49
  - spare part
    - numbers 26, 30, 49
    - specifications 108, 109
- optical drive light, identifying 14

## P

- packing guidelines 41
- passwords 96, 102
- performing a recovery 115
- plastic parts 38
- Plastics kit
  - contents 29
  - spare part number 29
- plastics kit
  - spare part number 22
- pointing device, product
  - description 6
- ports
  - external monitor 15
  - HDMI 15
  - product description 6
  - USB 14, 15
- power button board
  - removal 62
  - spare part number 62
- power button, identifying 11
- power connector cable
  - removal 71
  - spare part number 25, 71
- power connector, identifying 14
- power cord set requirements 123
- power cord, identifying 18
- power cord, spare part
  - numbers 31
- power light, identifying 10
- power requirements, product
  - description 6
- power-on password 96
- processor
  - product description 1
  - removal 82
  - spare part numbers 24, 82
- Processor C6 State 97
- product description
  - audio 5
  - camera 4
  - chipset 2
  - diskette drive 4
  - display panel 3
  - Ethernet 5
  - external media cards 5
  - graphics 2
  - hard drives 4
  - keyboard 6
  - memory module 3

- microphone 5
- modem module 5
- operating system 6
- optical drives 4
- pointing devices 6
- ports 6
- power requirements 6
- processors 1
- product name 1
- security 6
- serviceability 7
- wireless 5

product name 1

## R

- recovering a program or
  - driver 111
- recovering from the dedicated
  - recovery partition 116
- recovering from the recovery
  - discs 116
- recovery discs 111, 112
- Recovery Manager 111, 116
- recovery partition 111
- recovery, system 116
- removal/replacement
  - preliminaries 38
  - procedures 43
- restore points 115
- restoring default settings 95
- RJ-11 (modem) jack,
  - identifying 14
- RJ-11 jack, pin assignments 120
- RJ-45 (network) jack,
  - identifying 15
- RJ-45 jack, pin assignments 120
- RTC battery
  - removal 80
  - spare part number 22, 80
- Rubber Feet Kit, spare part
  - number 44

## S

- secondary hard drive self test 98
- security cable slot, identifying 14
- Security menu 96, 102
- security, product description 6
- selecting in Setup Utility 94
- serial number 19, 43
- service considerations 38

- serviceability, product
  - description 7
- setup utility
  - Diagnostics menu 102
  - File menu 101
  - navigating and selecting 99
  - restoring factory settings 100
  - Security menu 102
  - System Configuration menu 103
- slots
  - Digital Media 15
  - memory module 16
  - security cable 14
- solid-state drive (SSD) 111, 116
- speaker assembly
  - removal 61
  - spare part number 21, 61
- speakers, identifying 11
- specifications
  - Blu-ray ROM with LightScribe DVD±R/RW SuperMulti DL Drive 109
  - computer 105
  - display 106
  - DVD ±RW SuperMulti Double-Layer Drive with LightScribe 108
  - hard drive 107
  - optical drive 108, 109
  - system resources 110
- starting Setup Utility 93
- static-shielding materials 42
- stringent security 102
- supported discs 112
- system board
  - removal 80
  - spare part numbers 21, 80
- System Configuration menu 97, 103
- system failure or instability 111
- system fan 103
- system information 96, 101
- system recovery 116
- system resources 110
- system restore points 111, 115

## T

- thermal paste, replacement 88, 89

- tools required 38
- top cover
  - removal 58
  - spare part number 21, 58
- TouchPad
  - buttons 9
  - identifying 9
  - removal 63
- TouchPad button board
  - spare part number 63
- TouchPad zone
  - identifying 9
- transporting guidelines 41

## U

- Universal Serial Bus (USB) port, pin assignments 122
- USB board
  - removal 69
  - spare part number 25, 69
- USB legacy support 99, 103
- USB ports, identifying 14, 15
- using Setup Utility 94
- using system restore 115

## V

- vents, identifying 15, 16
- Virtualization Technology 97

## W

- webcam
  - identifying 13
- webcam light, identifying 13
- Webcam module
  - spare part number 28
- Windows applications key, identifying 12
- Windows logo key, identifying 12
- wireless antenna
  - removal 77
- wireless antennas 17
- wireless antennas and cables
  - removal 78
  - spare part number 78
- wireless antennas and cables, spare part number 78
- wireless light 10
- wireless, product description 5

- wireless/memory module
  - compartment cover
    - removal 52
    - spare part number 52
- WLAN module
  - removal 51
  - spare part numbers 22, 51
- workstation guidelines 41

