HP Mini 5101

Maintenance and Service Guide

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Safety warning notice

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

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1 Product description

Category	Description
Product name	HP Mini 5101
Processor	Intel® Atom™ N280 1.66-GHz processor, 512-KB Level 2 cache, 533-MHz front-side bus (FSB)
	Intel Atom N270 1.6-GHz processor, 512-KB Level 2 cache, 533-MHz front-side bus (FSB)
Chipset	Northbridge: Intel 945GSE; 533-MHz bus speed
	Southbridge: Intel ICH7M
Graphics	Intel® Graphics Media Accelerator 950
	Universal Memory Architecture (UMA) graphics subsystem
Panel	Wide-aspect 16:9 ratio panels All display assemblies include 1 webcam, 2 microphones, and 2 wireless local-area network (WLAN) antenna transceivers/cables. (WWAN is optional.)
	10.1-inch high-definition AntiGlare LED
	10.1-inch standard-definition AntiGlare LED
Memory	One customer-accessible/upgradable memory module slot
	Supports up to 2 GB of system memory
	PC2-5300, 533-MHz, DDR2
	Supports the following configurations:
	• 2048-MB total system memory (2048 × 1) **NOTE:** Not supported by computers with Windows® XP Home SP3, ultra low-cost personal computer (ULCPC) edition installed.
	• 1024-MB total system memory (1024 × 1)
Hard drive	Supports all 9.5-mm, 6.35-cm (2.50-inch) parallel SATA hard drives
	320-GB, 7200-RPM
	250-GB, 7200-RPM
	160-GB, 7200-RPM
Optical drive	Supports external USB optical drives only
Diskette drive	Supports external USB diskette drives only

Category	Description
Audio/Visual	High-definition (HD) audio
	Integrated speakers (2)
	Fixed integrated stereo microphones (2)
	Fixed integrated 2-MP webcam
Modem	Supports external USB modems only
Ethernet	Integrated 10/100/1000 Wake On LAN network interface card (NIC)
Wireless	2 WLAN antennas built into display assembly
	Integrated 802/11/a/b/g/n WLAN module
	Integrated WWAN (optional) **NOTE:** Not supported by computers with Linux installed.
	Integrated WPAN Bluetooth® module
External media cards	Media Card Reader with push-push technology supporting: • MultiMediaCard (MMC) • Secure Digital (SD) Memory Card
Ports	Audio-in (stereo microphone)
	Audio-in/out (microphone/stereo headphone)
	Audio-in (microphone)
	RJ-45 (Ethernet, includes link and activity lights)
	USB (3)
	VGA hot-plug external monitor
	3-pin AC power
Keyboard/pointing device	92% keyboard
	TouchPad, with 2 TouchPad buttons and 2-way scrolling (taps enabled as default)
Power requirements	65-W Smart AC adapter with localized cable plug support AC adapter connector on cable
	6-cell lithium-polymer (Li-Pol) battery (2.55-Ah, 55-Wh), 6-hour target life
	4-cell prismatic battery (2.55-Ah, 29-Wh), 3-hour target life
Security	Supports HP Kensington Security Lock
Operating system	**Preinstalled:**
	Windows® XP Home SP3, ultra low-cost personal computer (ULCPC) edition
	Windows Vista® Business 32 SP1 (with XP Pro image)
	SUSE Linux SLED 11
Serviceability	**Customer Self-Replacement (CSR):**
	AC adapter

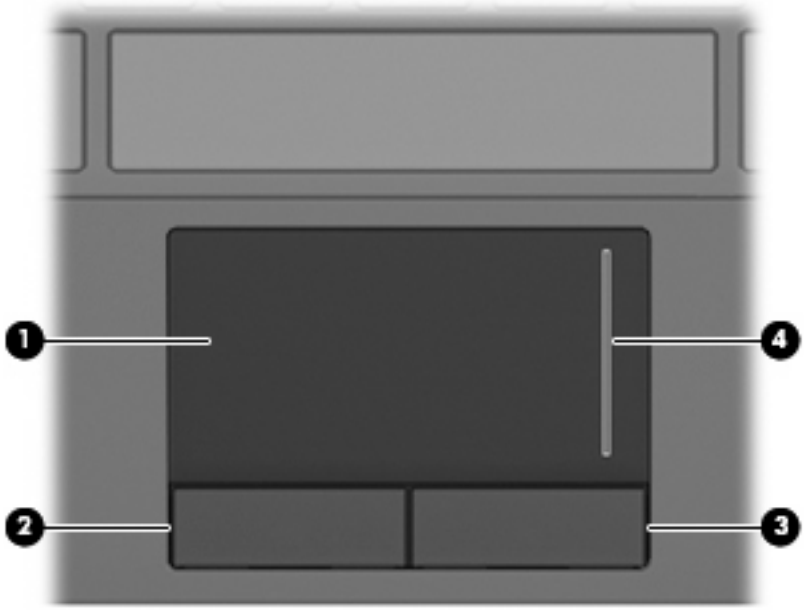
Category	Description
	Battery (system)
	Memory module
	Keyboard
	WLAN
	Hard drive

2 External component identification

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

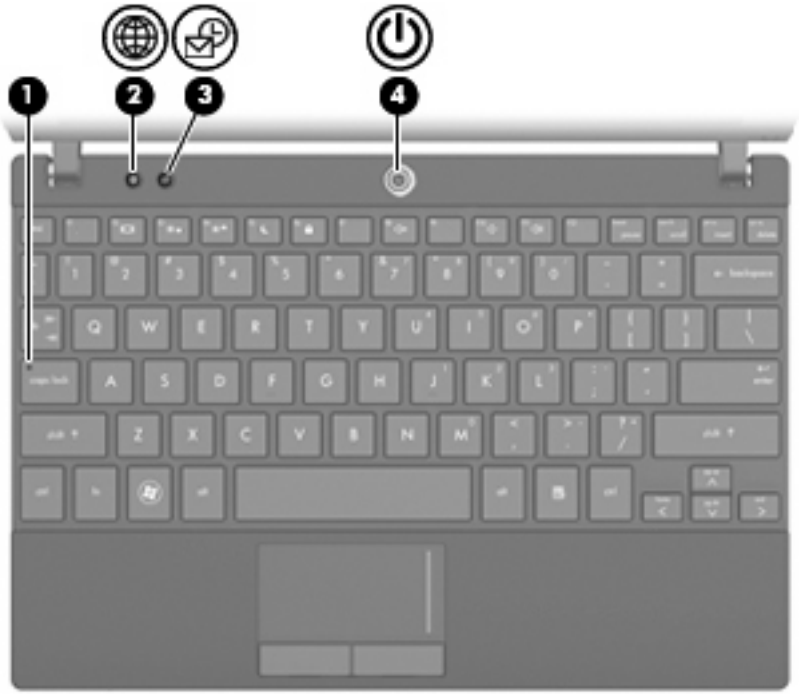
Top components

TouchPad



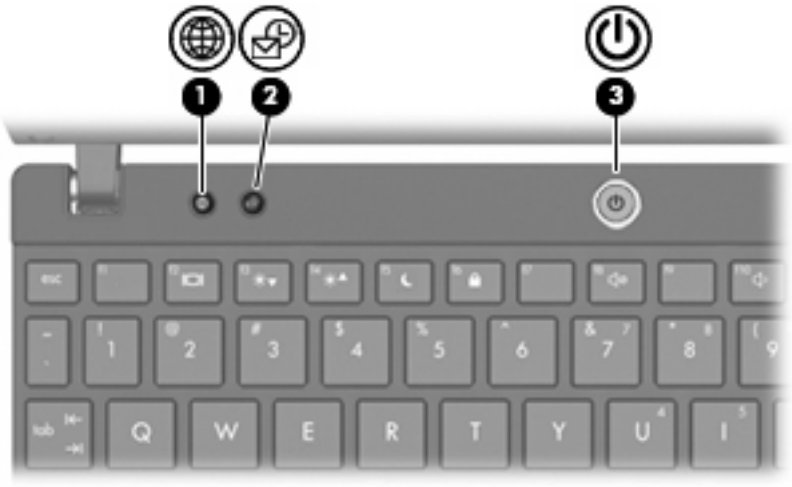
Component		Description
(1)	TouchPad	Moves the pointer and selects or activates items on the screen.
(2)	Left TouchPad button	Functions like the left button on an external mouse.
(3)	Right TouchPad button	Functions like the right button on an external mouse.
(4)	TouchPad scroll zone	Scrolls up or down.

Lights



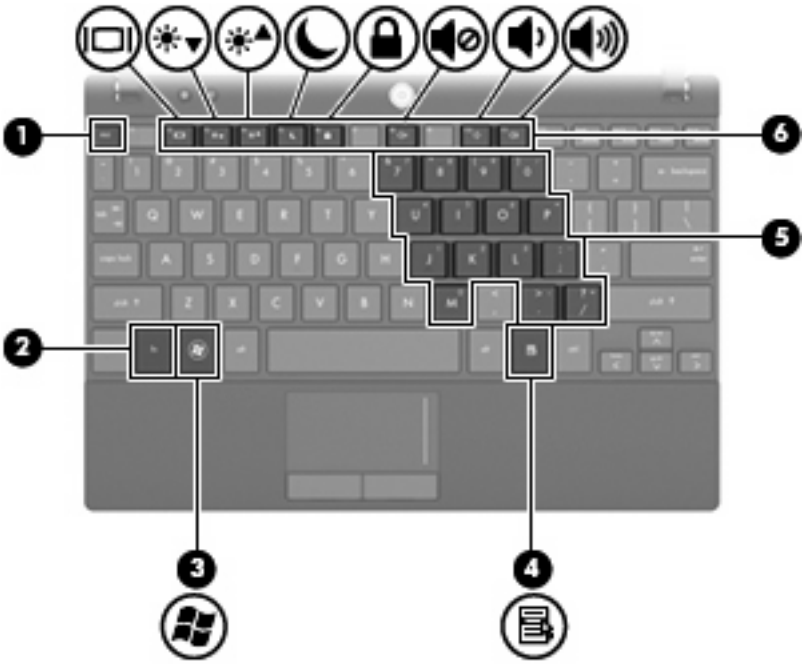
Component		Description
(1)	Caps lock light	On: Caps lock is on.
(2)	Quick Launch Web light	On: The default Internet browser is being launched.
(3)	Quick Launch Mail light	On: The default mail application is being launched.
(4)	Power light	• On: The computer is on. • Blinking: The computer is in the Sleep or Standby state. • Off: The computer is off or in Hibernation.

Buttons



Component		Description
(1)	Quick Launch Web button	Opens the default Internet browser when the computer is on.
(2)	Quick Launch Mail button	Opens the default mail application when the computer is on.
(3)	Power button	• When the computer is off, press the button to turn on the computer. • When the computer is on, press the button to shut down the computer. • When the computer is in the Sleep or Standby state, press the button briefly to exit. • When the computer is in Hibernation, press the button briefly to exit Hibernation. If the computer has stopped responding and Windows shutdown procedures are ineffective, press and hold the power button for at least 5 seconds to turn off the computer.

Keys

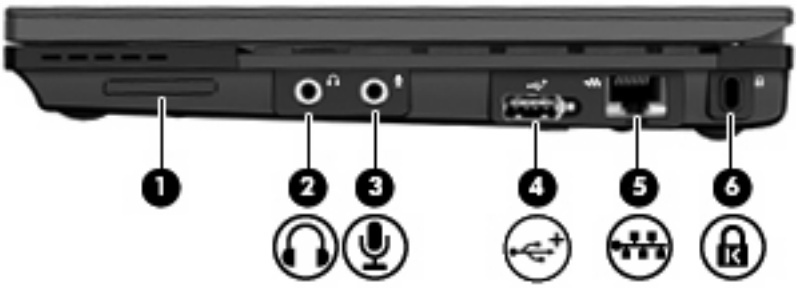


Component		Description
(1)	esc key	Displays system information when pressed in combination with the fn key. **NOTE:** Only available on computers with a Windows operating system installed.
(2)	fn key	Displays system information when pressed in combination with the esc key. **NOTE:** Only available on computers with a Windows operating system installed.
(3)	Windows logo key	Displays the Windows Start menu. **NOTE:** Only available on computers with a Windows operating system installed.
(4)	Windows applications key	Displays a shortcut menu for items beneath the pointer. **NOTE:** Only available on computers with a Windows operating system installed.
(5)	Embedded numeric keypad keys	Can be used like the keys on an external numeric keypad.
(6)	Function keys	Execute the action represented by the icon on the key.

Front components

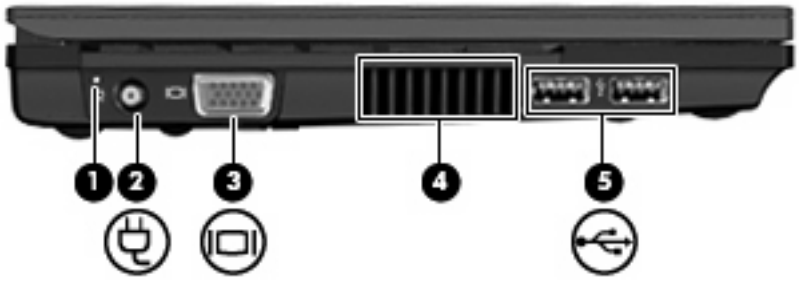
Component		Description
(1)	Drive light	Blinking: The hard drive is being accessed.
(2)	Wireless light	• Blue: An integrated wireless device, such as a wireless local area network (WLAN) device and/or a Bluetooth® device, is on. • Amber: All wireless devices are off. **NOTE:** The wireless light turns amber when the computer turns on and all wireless devices are off.
(3)	Wireless switch	Turns the wireless feature on or off, but does not create a wireless connection. **NOTE:** To establish a wireless connection, a wireless network must already be set up.
(4)	Speakers (2)	Produce sound.

Right-side components



Component		Description
(1)	SD Card Reader	Supports the following optional digital card formats: • MultiMediaCard (MMC) • Secure Digital (SD) Memory Card
(2)	Audio-out (headphone) jack	Produces sound when connected to optional powered stereo speakers, headphones, ear buds, a headset, or television audio. **NOTE:** When a device is connected to the headphone jack, the computer speakers are disabled.
(3)	Audio-in (microphone) jack	Connects an optional computer headset microphone, stereo array microphone, or monaural microphone.
(4)	Powered USB port	Provides power to a USB device, such as an optional external optical drive, if used with a powered USB cable.
(5)	RJ-45 (network) jack	Connects a network cable.
(6)	Security cable slot	Attaches an optional security cable to the computer. **NOTE:** The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.

Left-side components

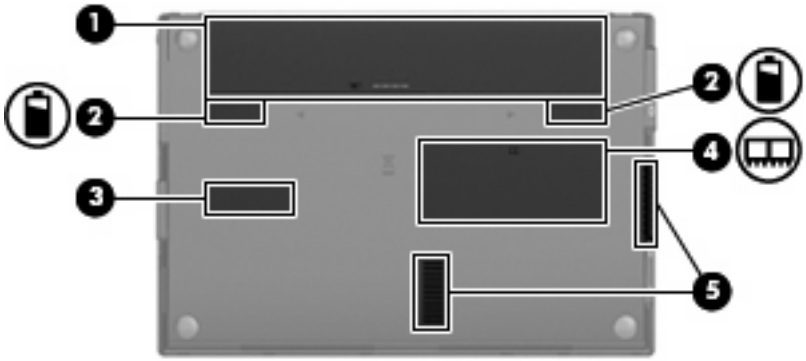


Component		Description
(1)	Battery light	• Amber: A battery is charging. • Blue: A battery is close to full charge capacity. • Blinking amber: A battery that is the only available power source has reached a low battery level. When the battery reaches a critical battery level, the battery light begins blinking rapidly. • Off: If the computer is plugged into an external power source, the light turns off when all batteries in the computer are fully charged. If the computer is not plugged into an external power source, the light stays off until the battery reaches a low battery level.
(2)	Power connector	Connects an AC adapter.
(3)	External monitor port	Connects an external VGA monitor or projector.
(4)	Vent	Enables airflow to cool internal components. **NOTE:** The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.
(5)	USB ports (2)	Connect optional USB devices.

Display components

Component		Description
(1)	Webcam light	On: The webcam is in use.
(2)	Webcam	Records audio and video and captures still photographs.
(3)	Internal microphones (2)	Record sound. **NOTE:** If there is a microphone icon next to each microphone opening, your computer has internal microphones.
(4)	Speakers (2)	Produce sound.

Bottom components



Component		Description
(1)	Battery bay	Holds the battery.
(2)	Battery release latches (2)	Release the battery from the battery bay.
(3)	Service tag	Provides the product brand and series name, serial number (s/n), and product number (p/n) of your computer. Have this information available when you contact technical support.
(4)	Memory module compartment	Contains the memory module slot.
(5)	Vents (2)	Enable airflow to cool internal components. **NOTE:** The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.

Wireless antennas

On select computer models, at least 2 antennas send and receive signals from one or more wireless devices. These antennas are not visible from the outside of the computer.

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

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

3 Illustrated parts catalog

Service tag

When ordering parts or requesting information, provide the computer serial number and model description provided on the service tag:

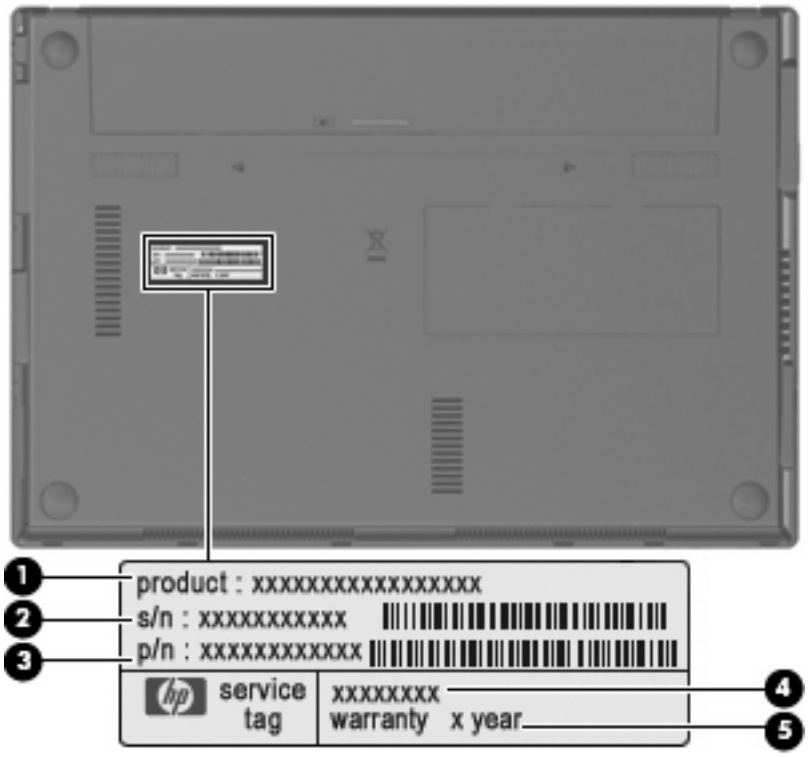
(1) Product name: This is the product name affixed to the front of the device.

(2) Serial number (s/n): This is an alphanumeric identifier that is unique to each product.

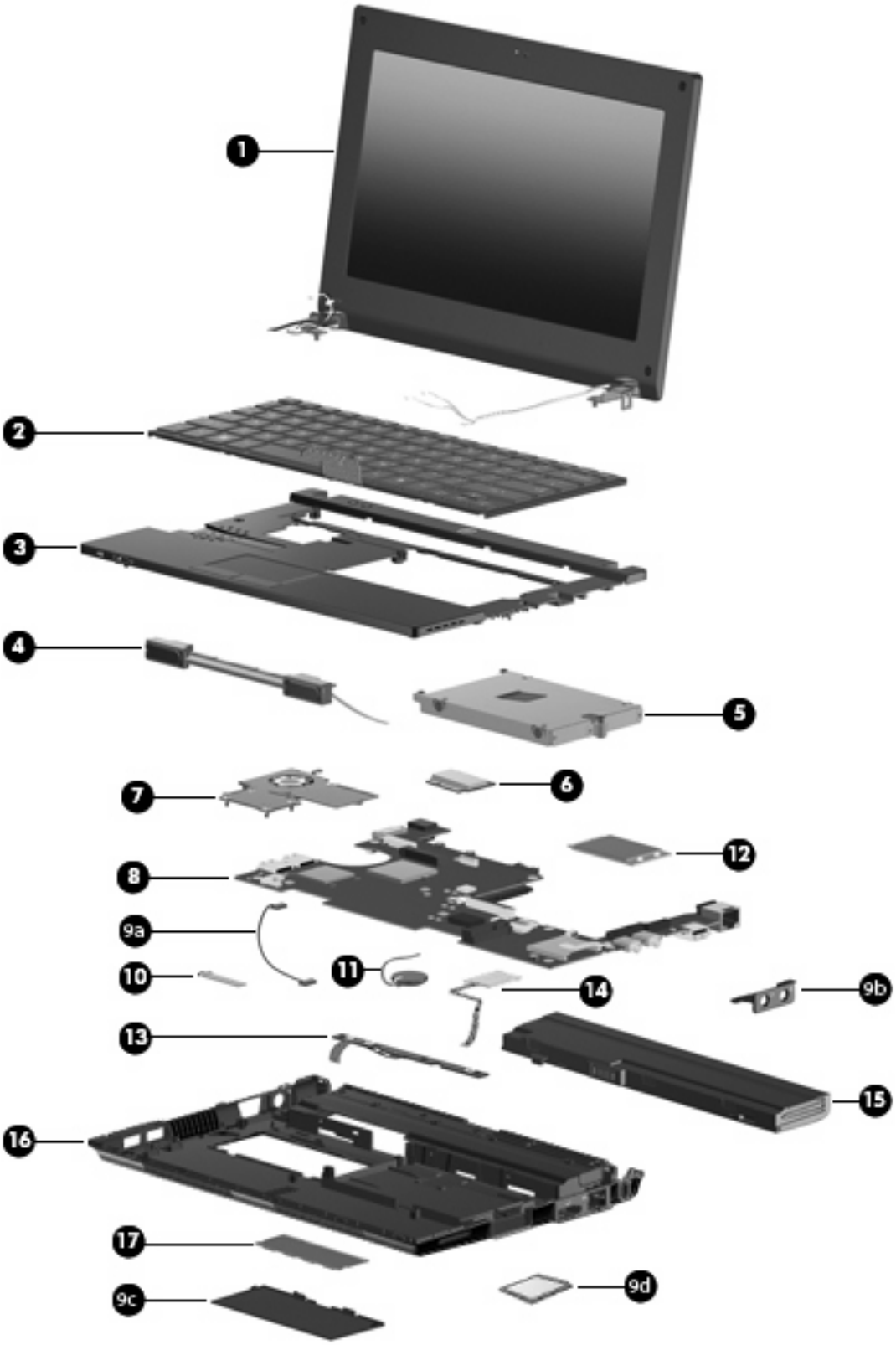
(3) Part number/Product number (p/n): This number provides specific information about the product's hardware components. The part number helps a service technician to determine what components and parts are needed.

(4) Model description: This is the alphanumeric identifier used to locate documents, drivers, and support for the device.

(5) Warranty period: This number describes the duration of the warranty period for the device.



Device major components

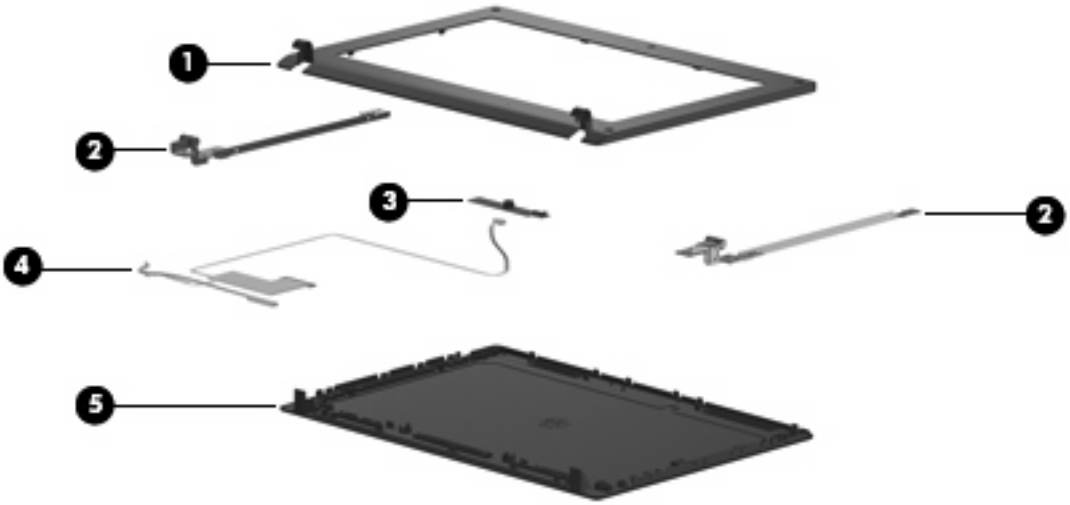


Item	Description	Spare part number
(1)	**Display assembly** (includes 1 webcam, 2 microphones, and 2 WLAN antenna transceivers/ cables; WWAN is optional) See Display assembly components on page 19 for a comprehensive list of display assembly spare parts.	
	• 10.1-inch, high-definition, AntiGlare display assembly with webcam (includes WWAN)	580616-001
	• 10.1-inch, high-definition, AntiGlare display assembly with webcam	577969-001
	• 10.1-inch, standard-definition, AntiGlare display assembly with webcam (includes WWAN)	580615-001
	• 10.1-inch, standard-definition, AntiGlare display assembly with webcam	577968-001
(2)	**Keyboard**	
	• For use only in Belgium	578364-A41
	• For use only in Brazil	578364-201
	• For use only in Bulgaria	578364-261
	• For use only in the Czech Republic	578364-221
	• For use only in Denmark	578364-081
	• For use only in Europe	578364-B31
	• For use only in France	578364-051
	• For use only in French Canada	578364-121
	• For use only in Finland, and Sweden	578364-B71
	• For use only in Germany	578364-041
	• For use only in Greece	578364-DJ1
	• For use only in Hungary	578364-211
	• For use only in Iceland	578364-DD1
	• For use only in Israel	578364-BB1
	• For use only in Italy	578364-061
	• For use only in Japan	578364-291
	• For use only in Latin America	578364-161
	• For use only in Norway	578364-091
	• For use only in Portugal	578364-131
	• For use only in Russia	578364-251
	• For use only in Saudi Arabia	578364-171
	• For use only in Slovakia	578364-231
	• For use only in Slovenia	578364-BA1
	• For use only in South Korea	578364-AD1
	• For use only in Spain	578364-071

Item	Description	Spare part number
	• For use only in Switzerland	578364-BG1
	• For use only in Taiwan	578364-AB1
	• For use only in Thailand	578364-281
	• For use only in Turkey	578364-141
	• For use only in the United Kingdom	578364-031
	• For use only in the United States	578364-001
(3)	**Top cover** (includes TouchPad)	577926-001
(4)	**Speaker assembly** (includes cable)	577967-001
(5)	**Hard drive** **NOTE:** Each hard drive spare part kit includes a bracket and screws.	
	• 320-GB, 7200-RPM	577974-001
	• 250-GB, 7200-RPM	577973-001
	• 160-GB, 7200-RPM	577972-001
(6)	**WLAN module**	
	802.11/a/b/g/n WLAN module	
	• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	504664-001
	• For use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	504664-002
	• For international use	480985-001
(7)	**Fan and heat sink assembly** (includes replacement thermal material)	577924-001
(8)	**System board** (includes processor and replacement thermal material)	

Item	Description	Spare part number
	• Includes Intel Atom N280 1.66-GHz processor, 512-KB Level 2 cache, 533-MHz front-side bus (FSB)	577921-001
	• Includes Intel Atom N270 1.6-GHz processor, 512-KB Level 2 cache, 533-MHz front-side bus (FSB)	585464-001
	Plastics Kit with Bluetooth cable	577966-001
(9a)	Bluetooth cable	
(9b)	Actuator cover	
(9c)	Memory module compartment cover	
(9d)	Blank for Media Card Reader	
(10)	**Bluetooth module**	537921-001
(11)	**RTC battery**	507707-001
(12)	**WWAN module** **NOTE:** Not supported by computers with Linux installed.	
	• HP un2400 Mobile Broadband Module (select models only)	483377-002
	• WWAN module for use only in the People's Republic of China	571888-001
(13)	**Power button board** (includes cable)	577922-001
(14)	**SIM module** (includes cable)	577923-001
(15)	**Battery**	
	• 6-cell lithium-polymer (Li-Pol) battery (2.55-Ah, 55-Wh)	579027-001
	• 4-cell prismatic battery (2.55-Ah, 29-Wh)	579026-001
(16)	**Base enclosure** (includes 4 rubber device feet)	577925-001
(17)	**Memory module** (PC2-5300, 533-MHz, DDR2)	
	• 2048-MB (Not supported by computers with Windows® XP Home SP3, ultra low-cost personal computer (ULCPC) edition installed.)	577971-001
	• 1024-MB	577970-001

Display assembly components



Item	Description	Spare part number
(1)	**Display bezel**	577929-001
(2)	**Display Hinge Kit** (Includes left and right display panel hinges)	577930-001
(3)	**Webcam module**	577927-001
(4)	**Display panel/webcam cable**	
	• For use in high-definition display assembly	577932-001
	• For use in standard-definition display assembly	577931-001
(5)	**Display enclosure** (includes logo)	577928-001
	Display Cable Kit (not illustrated, includes microphone assembly cable, WLAN antennas, and WWAN antennas)	577933-001

Miscellaneous parts

Description	Spare part number
65-W, 3-pin Smart AC adapter	463958-001
65-W, 3-pin Smart AC adapter for use in India	577170-001
Power cord	
• For use in Argentina	490371-D01
• For use in Australia	490371-011
• For use in Brazil	490371-201
• For use in Denmark	490371-081
• For use in Europe	490371-021
• For use in India	490371-D61
• For use in Israel	490371-BB1
• For use in Italy	490371-061
• For use in Japan	490371-291
• For use in North America	490371-001
• For use in the People's Republic of China	490371-AA1
• For use in Singapore and the United Kingdom	490371-031
• For use in South Africa	490371-AR1
• For use in South Korea	490371-AD1
• For use in Switzerland	490371-111
• For use in Taiwan	490371-AB1
Rubber Kit (contains 10 rubber device feet—5 front and 5 rear)	578361-001
Screw Kit	578362-001

Sequential part number listing

Spare part number	Description
463958-001	65-W, 3-pin Smart AC adapter
480985-001	802.11/a/b/g/n WLAN module for international use
483377-002	HP un2400 Mobile Broadband Module (select models only) **NOTE:** Not supported by computers with Linux installed.
490371-001	Power cord for use in North America
490371-011	Power cord for use in Australia
490371-021	Power cord for use in Europe
490371-031	Power cord for use in Singapore and the United Kingdom
490371-061	Power cord for use in Italy
490371-081	Power cord for use in Denmark
490371-111	Power cord for use in Switzerland
490371-201	Power cord for use in Brazil
490371-291	Power cord for use in Japan
490371-AA1	Power cord for use in the People's Republic of China
490371-AB1	Power cord for use in Taiwan
490371-AD1	Power cord for use in South Korea
490371-AR1	Power cord for use in South Africa
490371-BB1	Power cord for use in Israel
490371-D01	Power cord for use in Argentina
490371-D61	Power cord for use in India
504664-001	802.11/a/b/g/n WLAN module for use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States

Spare part number	Description
504664-002	802.11/a/b/g/n WLAN module for use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe
507707-001	RTC battery
537921-001	Bluetooth module
571888-001	WWAN module for use only in the People's Republic of China (Not supported by computers with Linux installed.)
577170-001	65-W, 3-pin Smart AC adapter
577921-001	System board, includes Intel Atom N280 1.66-GHz processor, 512-KB Level 2 cache, 533-MHz front-side bus (FSB) (includes thermal replacement material)
577922-001	Power button board (includes cable)
577923-001	SIM module (includes cable)
577924-001	Fan and heat sink assembly (includes thermal replacement material)
577925-001	Base enclosure (includes 4 rubber device feet)
577926-001	Top cover (includes TouchPad)
577927-001	Webcam module
577928-001	Display enclosure (includes logo)
577929-001	Display bezel
577930-001	Display hinge kit (Includes left and right display panel hinges)
577931-001	Display panel/webcam cable for use with standard-definition display assembly
577932-001	Display panel/webcam cable for use with high-definition display assembly
577933-001	Display Cable Kit (includes microphone assembly cable, WLAN antennas, and WWAN antennas)
577966-001	Plastics Kit with Bluetooth cable
577967-001	Speaker assembly (includes cable)
577968-001	10.1-inch, standard-definition, AntiGlare display assembly with webcam (includes 2 microphones, and 2 WLAN antenna transceivers/cables)

Spare part number	Description
577969-001	10.1-inch, high-definition, AntiGlare display assembly with webcam (includes 2 microphones, and 2 WLAN antenna transceivers/cables)
577970-001	1024-MB memory module (PC2-5300, 533-MHz, DDR2)
577971-001	2048-MB memory module (PC2-5300, 533-MHz, DDR2) (Not supported by computers with Windows® XP Home SP3, ultra low-cost personal computer (ULCPC) edition installed.)
577972-001	160-GB, 7200-RPM hard drive (includes bracket and screws)
577973-001	250-GB, 7200-RPM hard drive (includes bracket and screws)
577974-001	320-GB, 7200-RPM hard drive (includes bracket and screws)
578361-001	Rubber Kit (contains 10 rubber device feet—5 front and 5 rear)
578362-001	Screw Kit
578364-001	Keyboard for use only in the United States
578364-031	Keyboard for use only in the United Kingdom
578364-041	Keyboard for use only in Germany
578364-051	Keyboard for use only in France
578364-061	Keyboard for use only in Italy
578364-071	Keyboard for use only in Spain
578364-081	Keyboard for use only in Denmark
578364-091	Keyboard for use only in Norway
578364-121	Keyboard for use only in French Canada
578364-131	Keyboard for use only in Portugal
578364-141	Keyboard for use only in Turkey
578364-161	Keyboard for use only in Latin America
578364-171	Keyboard for use only in Saudi Arabia
578364-201	Keyboard for use only in Brazil
578364-211	Keyboard for use only in Hungary
578364-221	Keyboard for use only in the Czech Republic
578364-231	Keyboard for use only in Slovakia
578364-251	Keyboard for use only in Russia
578364-261	Keyboard for use only in Bulgaria
578364-281	Keyboard for use only in Thailand
578364-291	Keyboard for use only in Japan
578364-A41	Keyboard for use only in Belgium
578364-AB1	Keyboard for use only in Taiwan

Spare part number	Description
578364-AD1	Keyboard for use only in South Korea
578364-B31	Keyboard for use only in Europe
578364-B71	Keyboard for use only in Finland, and Sweden
578364-BA1	Keyboard for use only in Slovenia
578364-BB1	Keyboard for use only in Israel
578364-BG1	Keyboard for use only in Switzerland
578364-DD1	Keyboard for use only in Iceland
578364-DJ1	Keyboard for use only in Greece
579026-001	4-cell prismatic battery (2.55-Ah, 29-Wh)
579027-001	6-cell lithium-polymer (Li-Pol) battery (2.55-Ah, 55-Wh)
580615-001	10.1-inch, standard-definition, AntiGlare display assembly with webcam and WWAN (includes 2 microphones, and 2 WLAN antenna transceivers/cables)
580616-001	10.1-inch, high-definition, AntiGlare display assembly with webcam and WWAN (includes 2 microphones, and 2 WLAN antenna transceivers/cables)
585464-001	System board, includes Intel Atom N270 1.6-GHz processor, 512-KB Level 2 cache, 533-MHz front-side bus (FSB) (includes replacement thermal material)

4 Removal and replacement procedures

Preliminary replacement requirements

Tools required

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

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

Service considerations

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

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

Plastic parts

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

Cables and connectors

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

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

Drive handling

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

Before removing or inserting a hard drive, shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device on, and then shut it down through the operating system.

Before handling a drive, be sure that you are discharged of static electricity. While handling a drive, avoid touching the connector.

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

Avoid dropping drives from any height onto any surface.

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

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

Avoid exposing a drive to temperature extremes or liquids.

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

Grounding guidelines

Electrostatic discharge damage

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

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

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

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

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

Use nonmagnetic tools.

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

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

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

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

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

Typical electrostatic voltage levels

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

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

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

Workstation guidelines

Follow these grounding workstation guidelines:

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

Equipment guidelines

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

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

The following grounding equipment is recommended to prevent electrostatic damage:

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

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

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

Component replacement procedures

This chapter provides removal and replacement procedures.

There are as many as 65 screws, in 9 different sizes, that must be removed, replaced, or loosened when servicing the device. Make special note of each screw size and location during removal and replacement.

Service tag

When ordering parts or requesting information, provide the computer serial number and model description provided on the service tag:

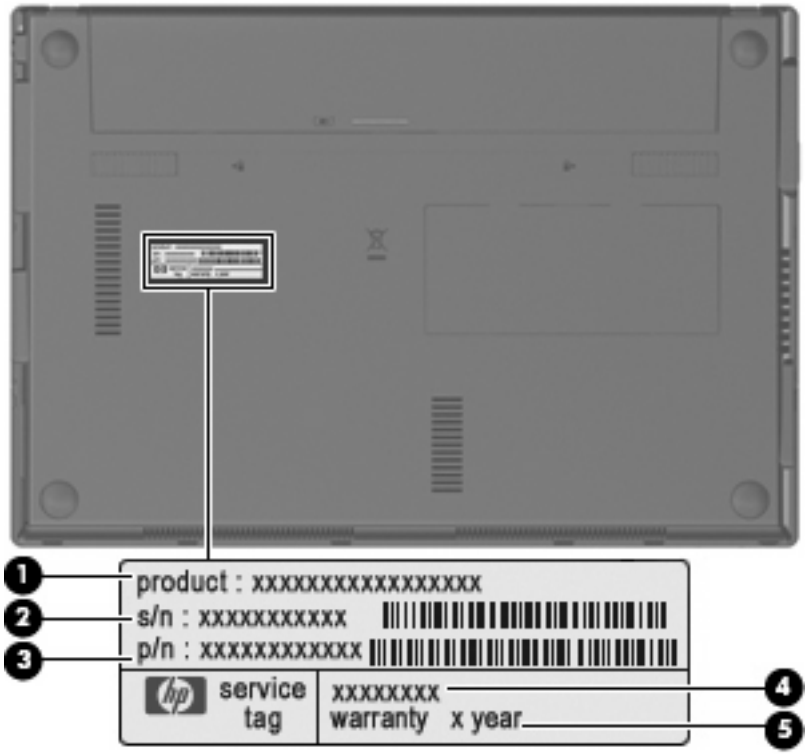
(1) Product name: This is the product name affixed to the front of the device.

(2) Serial number (s/n): This is an alphanumeric identifier that is unique to each product.

(3) Part number/Product number (p/n): This number provides specific information about the product's hardware components. The part number helps a service technician to determine what components and parts are needed.

(4) Model description: This is the alphanumeric identifier used to locate documents, drivers, and support for the device.

(5) Warranty period: This number describes the duration of the warranty period for the device.



Device feet

The device feet are adhesive-backed rubber pads. The rear feet are attached and the front feet are tethered to the bottom of the base enclosure.

NOTE: The front and rear device feet are not interchangeable. Due to the adhesive nature of the rubber pads, they should be replaced after removal.

Description	Spare part number
Rubber Kit (contains 10 rubber device feet—5 front and 5 rear)	578361-001

Battery

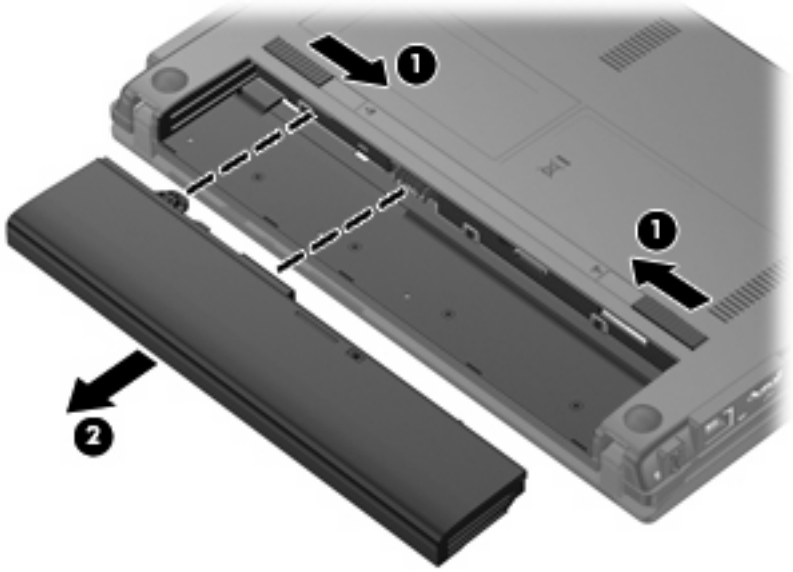
Description	Spare part number
6-cell lithium-polymer (Li-Pol) battery (2.55-Ah, 55-Wh)	579027-001
4-cell prismatic battery (2.55-Ah, 29-Wh)	579026-001

Before removing the battery, follow these steps:

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

Remove the battery:

1. Turn the device upside-down on a flat surface, with the battery bay toward you.
2. Slide the battery release latches **(1)** to release the battery.
3. Remove the battery **(2)**.



Reverse this procedure to install a battery.

SIM

NOTE: This section applies only to device models with WWAN capability.

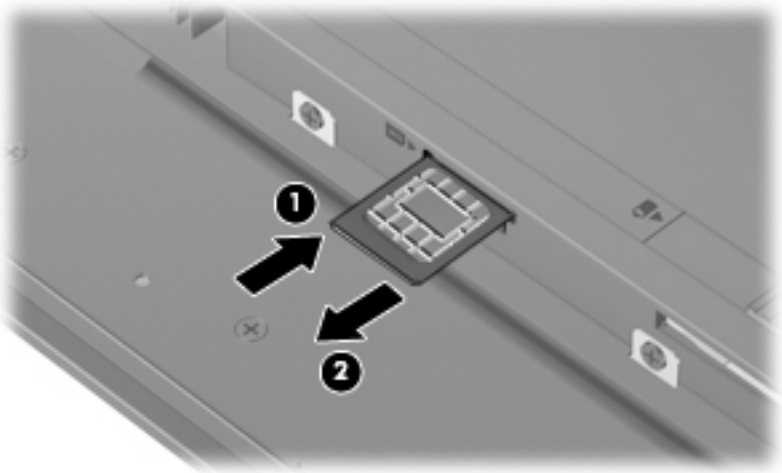
NOTE: If there is a SIM inserted in the SIM slot, it must be removed before disassembling the computer. Be sure that the SIM is reinserted in the SIM slot after reassembling the computer.

Before removing the SIM, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 32).

Remove the SIM:

1. Press in on the SIM **(1)**. (The module is partially ejected from the SIM slot.)
2. Remove the SIM **(2)** from the SIM slot.



Reverse this procedure to insert the SIM.

Memory module

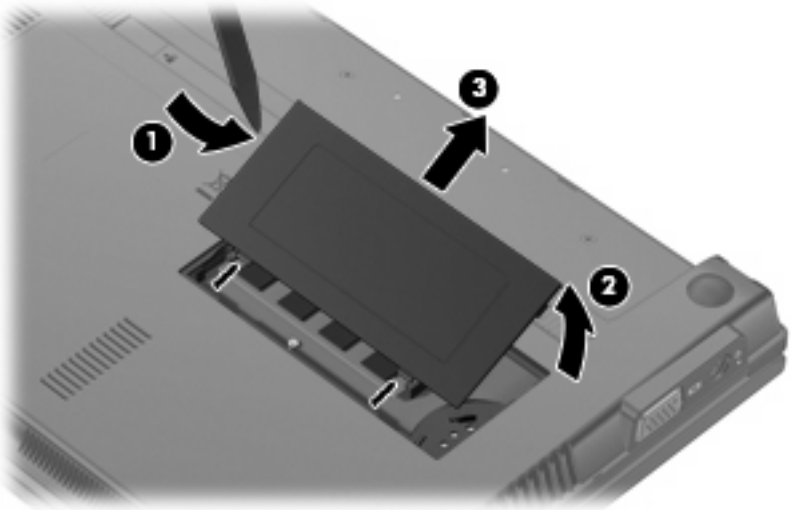
Description	Spare part number
2048-MB, PC2-5300, 533-MHz, DDR2 (Not supported by computers with Windows® XP Home SP3, ultra low-cost personal computer (ULCPC) edition installed.)	577971-001
1024-MB, PC2-5300, 533-MHz, DDR2	577970-001

Before removing the memory module, follow these steps:

1. Shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the device.
3. Disconnect the power from the device by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the device.
4. Remove the battery (see Battery on page 32).
5. If your device has WWAN capability, remove the SIM (see SIM on page 33).

Remove the memory module:

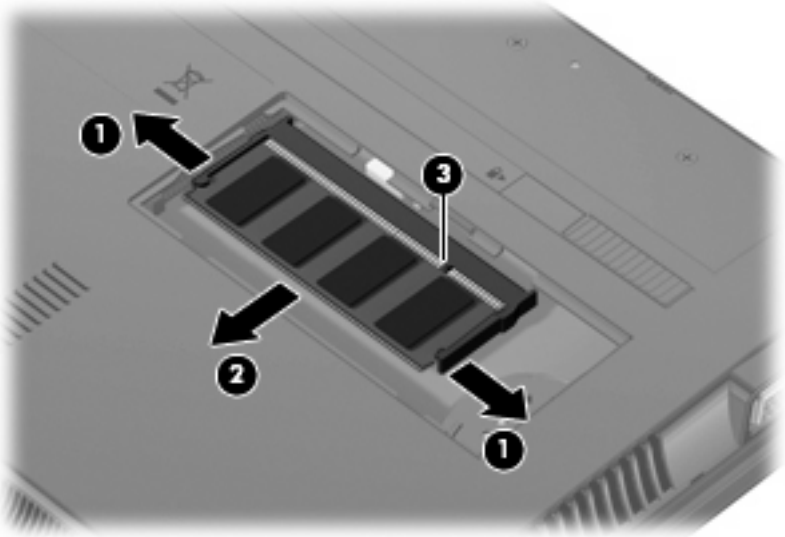
1. Use a fingernail or other flexible tool **(1)** to release the memory module compartment cover from the computer.
2. Swing the cover up and away from the outside of the computer **(2)**, and then remove the cover **(3)**.



3. Spread the retaining tabs **(1)** on each side of the memory module slot to release the memory module. (The module tilts up.)

4. Remove the memory module **(2)** by pulling the module 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

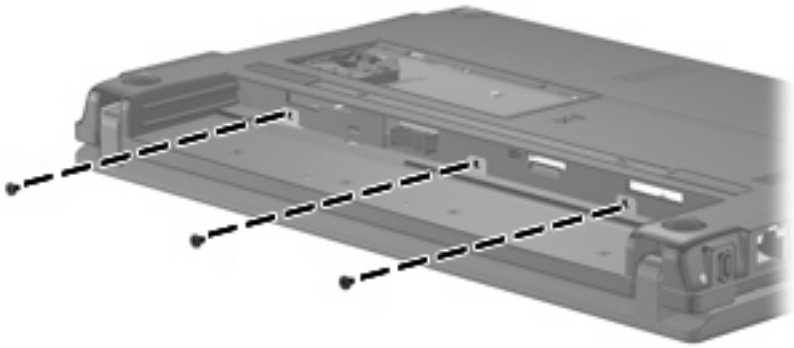
Description	Spare part number
For use only in Belgium	578364-A41
For use only in Brazil	578364-201
For use only in Bulgaria	578364-261
For use only in the Czech Republic	578364-221
For use only in Denmark	578364-081
For use only in Europe	578364-B31
For use only in France	578364-051
For use only in French Canada	578364-121
For use only in Finland, and Sweden	578364-B71
For use only in Germany	578364-041
For use only in Greece	578364-DJ1
For use only in Hungary	578364-211
For use only in Iceland	578364-DD1
For use only in Israel	578364-BB1
For use only in Italy	578364-061
For use only in Japan	578364-291
For use only in Latin America	578364-161
For use only in Norway	578364-091
For use only in Portugal	578364-131
For use only in Russia	578364-251
For use only in Saudi Arabia	578364-171
For use only in Slovakia	578364-231
For use only in Slovenia	578364-BA1
For use only in South Korea	578364-AD1
For use only in Spain	578364-071
For use only in Switzerland	578364-BG1
For use only in Taiwan	578364-AB1
For use only in Thailand	578364-281
For use only in Turkey	578364-141
For use only in the United Kingdom	578364-031
For use only in the United States	578364-001

Before removing the keyboard, follow these steps:

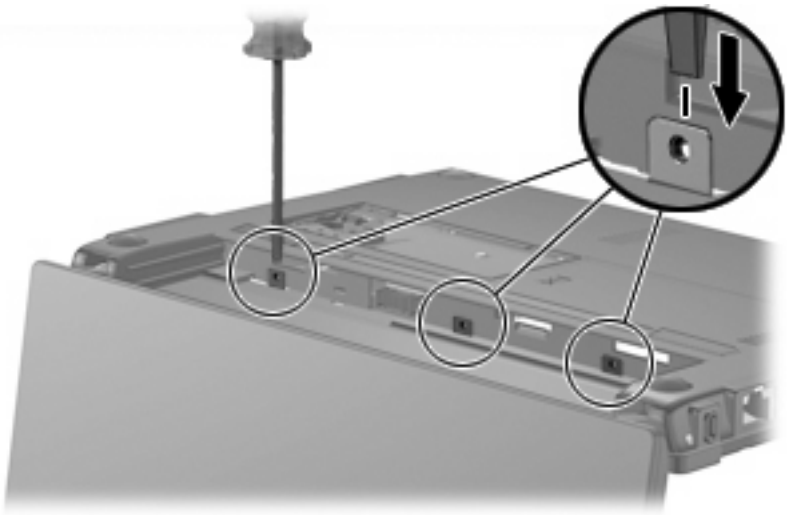
1. Shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the device.
3. Disconnect the power from the device by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the device.
4. Remove the battery (see Battery on page 32).
5. If your device has WWAN capability, remove the SIM (see SIM on page 33).

Remove the keyboard:

1. Remove the 3 Phillips PM2.0×3.0 screws that secure the keyboard to the device.



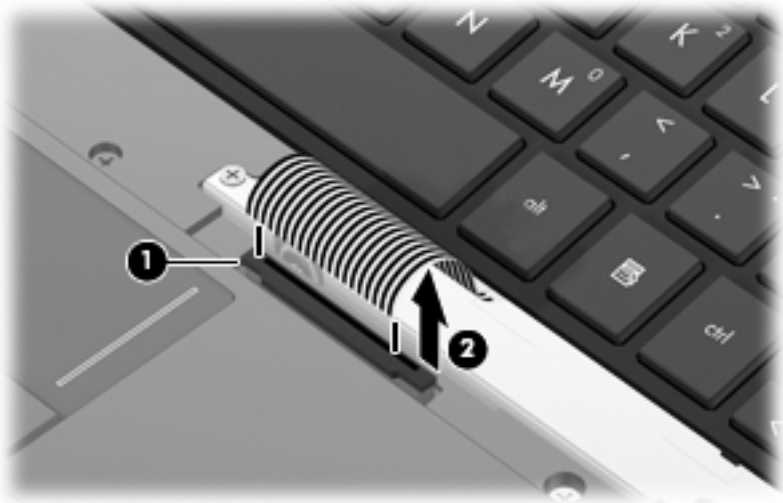
2. Open the display 90 degrees.
3. Use a tool to push the screw tabs directly down to release the keyboard.



4. Turn the device right-side up, and then lift up on the top and left edges **(1)** of the keyboard until the keyboard releases completely.

5. Swing the keyboard forward **(2)**, and slide the keyboard back until its top edge rests on the display assembly **(3)**.

6. Release the zero insertion force (ZIF) connector **(1)** to which the keyboard cable is attached.
7. Disconnect the cable **(2)**.



8. Remove the keyboard.

Reverse this procedure to install the keyboard.

Hard drive

NOTE: Each hard drive spare part kit includes a bracket and screws.

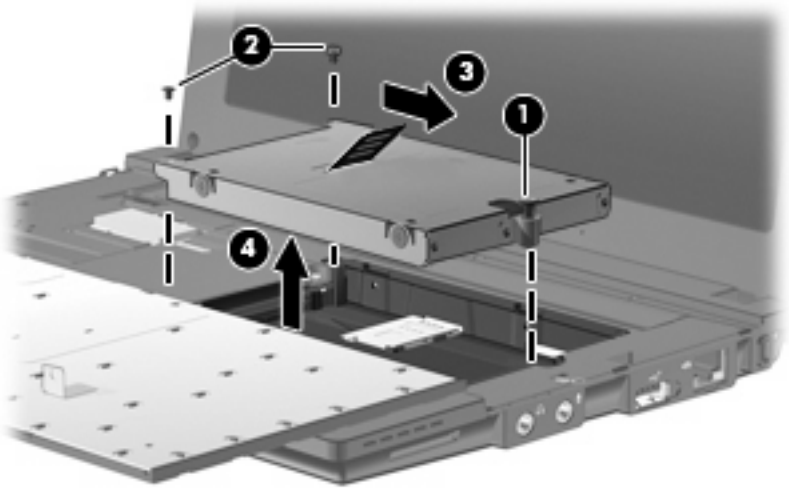
Description	Spare part number
320-GB, 7200-RPM	577974-001
250-GB, 7200-RPM	577973-001
160-GB, 7200-RPM	577972-001

Before removing the hard drive, follow these steps:

1. Shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the device.
3. Disconnect the power from the device by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the device.
4. Remove the battery (see Battery on page 32).
5. If your device has WWAN capability, remove the SIM (see SIM on page 33).
6. Remove the keyboard (see Keyboard on page 36).

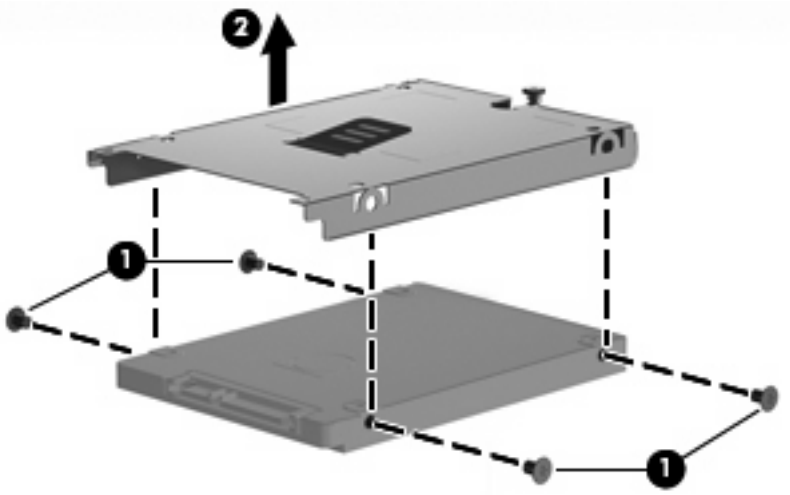
Remove the hard drive:

1. Loosen the Phillips PM2.5×11.0 captive screw **(1)**, and remove the 2 Phillips PM2.0×3.0 screws **(2)** that secure the hard drive assembly to the base enclosure.
2. Use the Mylar tab to slide the assembly to the right **(3)** to disconnect it, and remove the assembly **(4)**.



3. Remove the 4 Phillips SP2.0×3.0 screws **(1)** that secure the hard drive bracket to the hard drive.

4. Using the Mylar tab, lift the bracket **(2)** away from the hard drive.



Reverse this procedure to install a hard drive.

WLAN module

Description	Spare part number
802.11/a/b/g/n WLAN module	
• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	504664-001
• For use in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, the People's Republic of China, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	504664-002
• For international use	480985-001

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

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

Before removing the WLAN module, follow these steps:

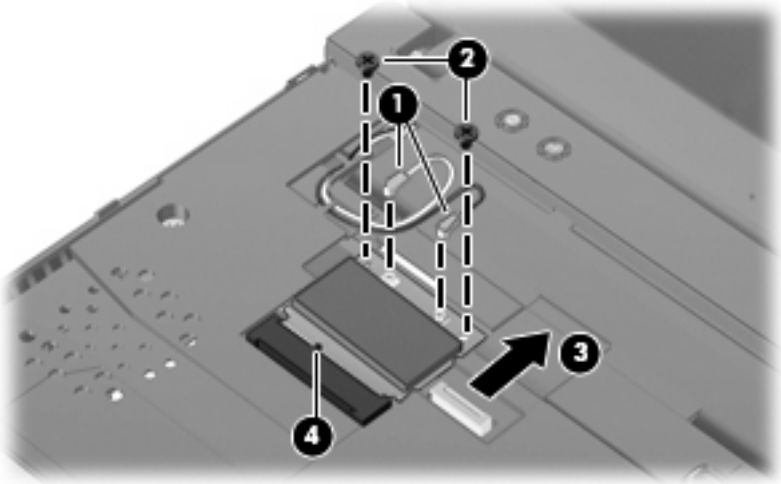
1. Shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the device.
3. Disconnect the power from the device by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the device.
4. Remove the battery (see Battery on page 32).

5. If your device has WWAN capability, remove the SIM (see SIM on page 33).
6. Remove the following components:
   a. Keyboard (see Keyboard on page 36)
   b. Hard drive (see Hard drive on page 39)

Remove the WLAN module:

1. Disconnect the wireless antenna cables **(1)** from the terminals on the WLAN module.
2. Remove the 2 Phillips PM2.0×4.0 screws **(2)** that secure the WLAN module to the system board. (The module tilts up.)
3. Remove the WLAN module **(3)** by pulling the module away from the slot at an angle.

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



Reverse this procedure to install the WLAN module.

SIM module

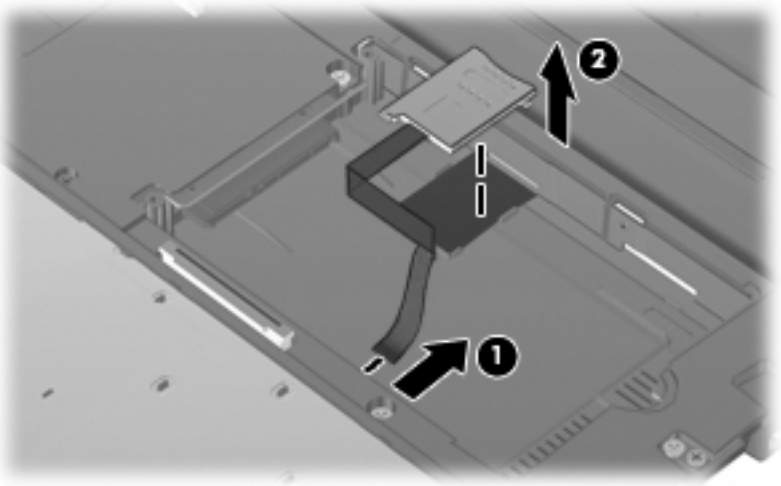
Description	Spare part number
SIM module (includes cable)	577923-001

Before removing the SIM module, follow these steps:

1. Shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the device.
3. Disconnect the power from the device by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the device.
4. Remove the battery (see Battery on page 32).
5. Remove the SIM (see SIM on page 33).
6. Remove the Keyboard (see Keyboard on page 36).
7. Remove the Hard drive (see Hard drive on page 39).

Remove the SIM module:

☐ Disconnect the LIF cable **(1)** from the computer, and remove the SIM module **(2)**.



Reverse this procedure to install the SIM module.

Top cover

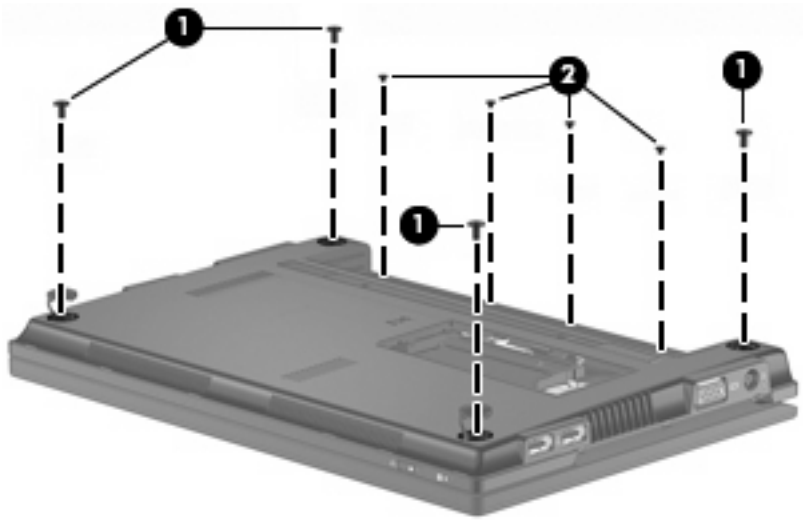
Description	Spare part number
Top cover (includes TouchPad)	577926-001

Before removing the top cover, follow these steps:

1. Shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the device.
3. Disconnect the power from the device by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the device.
4. Remove the battery (see Battery on page 32).
5. If your device has WWAN capability, remove the SIM (see SIM on page 33).
6. Remove the memory module (see Memory module on page 34).
7. Remove the keyboard (see Keyboard on page 36).
8. Remove the hard drive (see Hard drive on page 39).

Remove the top cover:

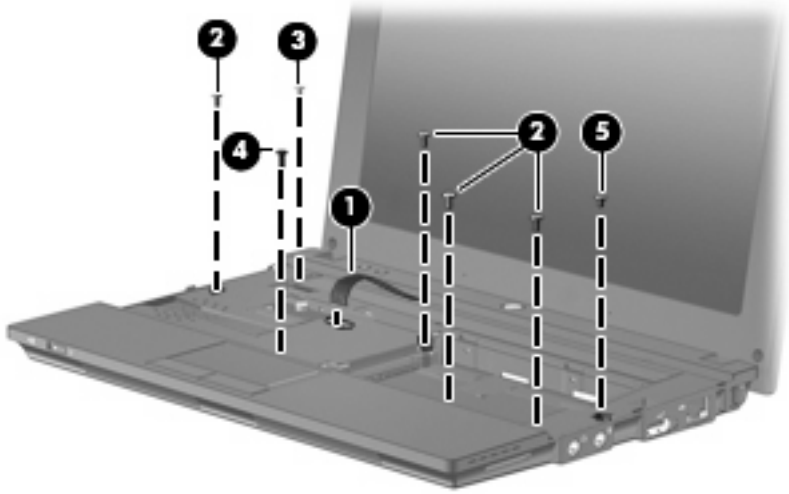
1. Turn the device upside down, with the front toward you.
2. Use a thin, flat tool to release the 4 rubber device feet.
3. Remove the 4 Torx T8 2.5×5.0 screws **(1)**, and the 4 Phillips PM2.0×3.0 screws **(2)** that secure the top cover to the base enclosure.



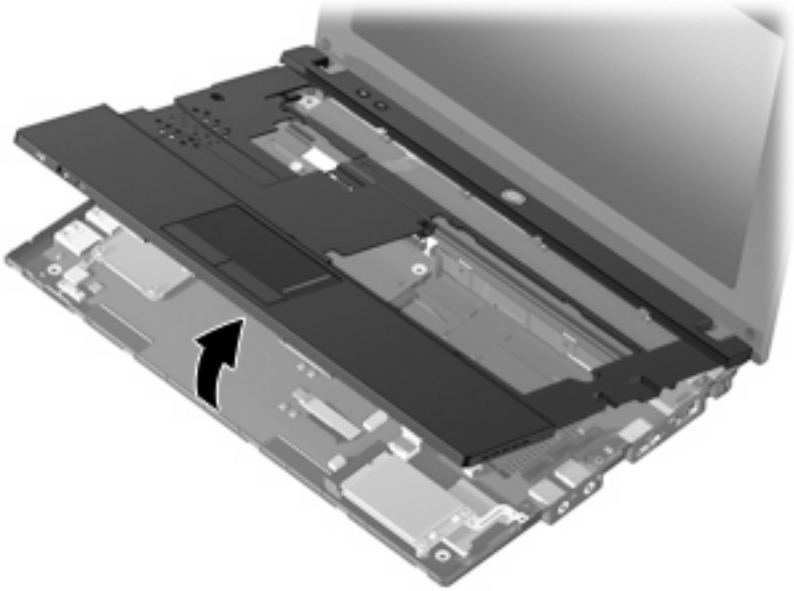
4. Turn the device right-side up, with the front toward you.
5. Open the device as far as possible.
6. Release the ZIF connector **(1)** that connects the button board cable to the system board.

7. Remove the following screws that secure the top cover to the base enclosure:

   - **(2)** - 4 Phillips BP2.0×6.0
   - **(3)** - 1 Phillips BP2.0×7.0
   - **(4)** - 1 Phillips SP2.0×2.0
   - **(5)** - 1 Phillips BP2.0×2.0

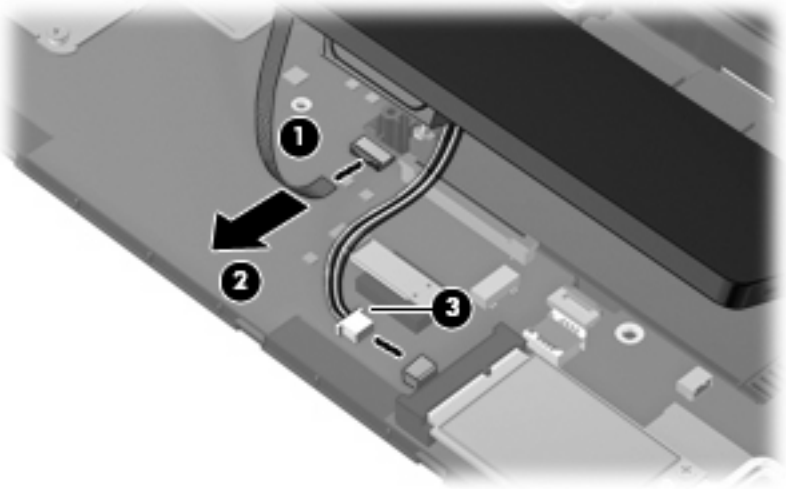


8. Lift the outside edge of the top cover, and swing it up.



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

10. Disconnect the speaker cable **(3)** from the system board, and then remove the top cover.



Reverse this procedure to install the top cover.

Speaker

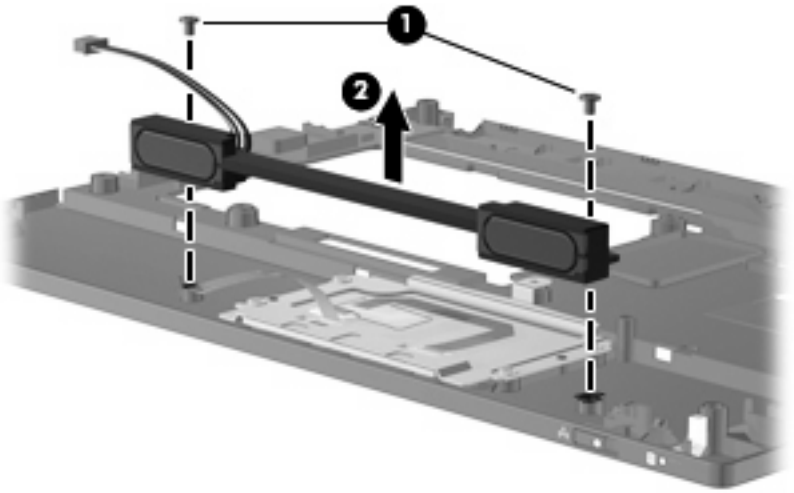
Description	Spare part number
Speaker assembly (includes cable)	577967-001

Before removing the speaker assembly, follow these steps:

1. Shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the device.
3. Disconnect the power from the device by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the device.
4. Remove the battery (see Battery on page 32).
5. If your device has WWAN capability, remove the SIM (see SIM on page 33).
6. Remove the memory module (see Memory module on page 34).
7. Remove the keyboard (see Keyboard on page 36).
8. Remove the hard drive (see Hard drive on page 39).
9. Remove the top cover (see Top cover on page 44).

Remove the speaker assembly:

1. Turn the top cover upside down, with the front toward you.
2. Remove the 2 Phillips PMP2.0×3.0 screws **(1)** that secure the assembly to the top cover, and remove the speaker assembly **(2)**.



Reverse this procedure to install the speaker assembly.

WWAN module

NOTE: Not supported by computers with Linux installed.

Description	Spare part number
HP un2400 Mobile Broadband Module (select models only)	483377-002
WWAN module for use only in the People's Republic of China	571888-001

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

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

Before removing the WWAN module, follow these steps:

1. Shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the device.
3. Disconnect the power from the device by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the device.
4. Remove the battery (see Battery on page 32).
5. Remove the SIM (see SIM on page 33).
6. Remove the following components:
   a. Keyboard (see Keyboard on page 36)
   b. Hard drive (see Hard drive on page 39)
   c. Top cover (see Top cover on page 44)

Remove the WWAN module:

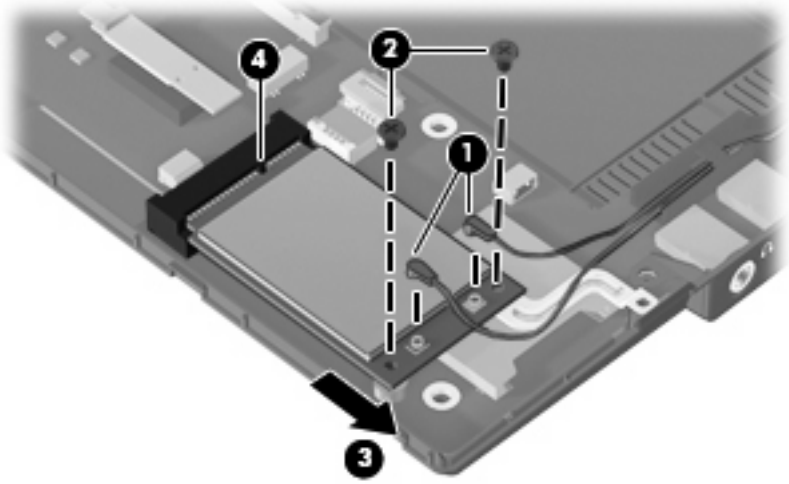
1. Disconnect the wireless antenna cables **(1)** from the terminals on the WWAN module.

   NOTE: The red WWAN antenna cable is connected to the WWAN module “Main” terminal. The blue WWAN antenna cable is connected to the WWAN module “Aux” terminal.

2. Remove the 2 Phillips PM2.0×4.0 screws **(2)** that secure the WWAN module **(3)** to the system board. (The module tilts up.)

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

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



Reverse this procedure to install the WWAN module.

Bluetooth module

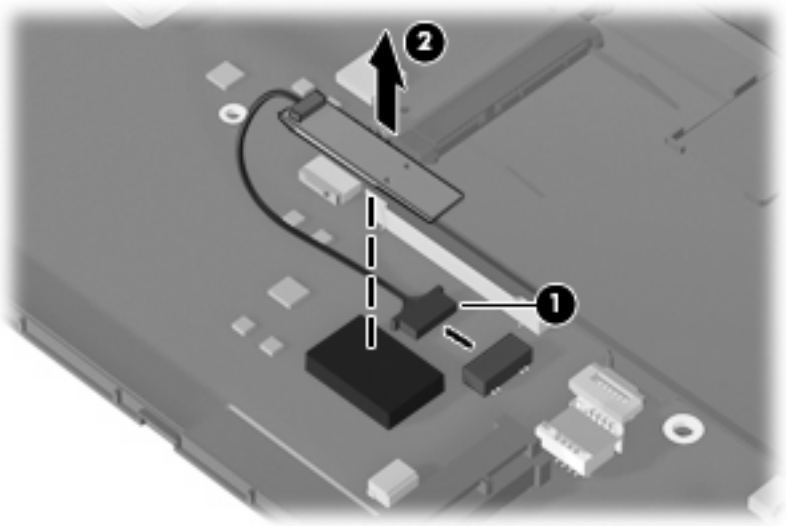
Description	Spare part number
Bluetooth module	537921-001

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 32).
5. If your device has WWAN capability, remove the SIM (see SIM on page 33).
6. Remove the following components:
   a. Keyboard (see Keyboard on page 36)
   b. Hard drive (see Hard drive on page 39)
   c. Top cover (see Top cover on page 44)

Remove the Bluetooth module:

1. Disconnect the Bluetooth module cable **(1)**.
2. Release the Bluetooth module from the adhesive pad to which it is affixed **(2)**, and remove the Bluetooth module.



Reverse this procedure to install the Bluetooth module.

Power button board

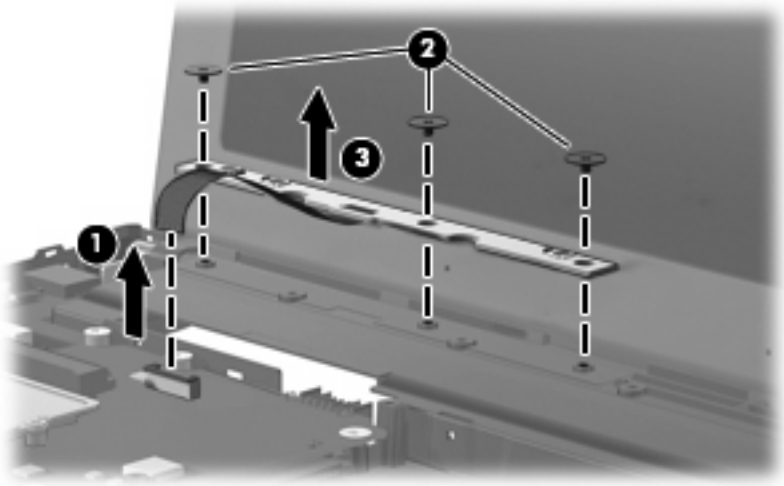
Description	Spare part number
Power button board (includes cable)	577922-001

Before removing the power button board, follow these steps:

1. Shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the device.
3. Disconnect the power from the device by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the device.
4. Remove the battery (see Battery on page 32).
5. If your device has WWAN capability, remove the SIM (see SIM on page 33).
6. Remove the following components:
   a. Keyboard (see Keyboard on page 36)
   b. Hard drive (see Hard drive on page 39)
   c. Top cover (see Top cover on page 44)

Remove the power button board:

1. Disconnect the power button board cable **(1)**.
2. Remove the 3 Phillips PM2.0×2.0 broadhead screws **(2)** that secure the power button board to the base enclosure.
3. Remove the power button board **(3)**.



Reverse this procedure to install the power button board.

Display assembly

Description	Spare part number
Display assembly (includes 1 webcam, 2 microphones, and 2 WLAN antenna transceivers/cables; WWAN is optional)	
• 10.1-inch, high-definition, AntiGlare display assembly with webcam (includes WWAN)	580616-001
• 10.1-inch, high-definition, AntiGlare display assembly with webcam	577969-001
• 10.1-inch, standard-definition, AntiGlare display assembly with webcam (includes WWAN)	580615-001
• 10.1-inch, standard-definition, AntiGlare display assembly with webcam	577968-001
Display bezel	577929-001
Display Hinge Kit (Includes left and right display panel hinges)	577930-001
Webcam module	577927-001
Display panel/webcam cable	
• For use with high-definition display assembly	577932-001
• For use with standard-definition display assembly	577931-001
Display Cable Kit (includes microphone assembly cable, WLAN antennas, and WWAN antennas)	577933-001
Display enclosure (includes logo)	577928-001

Before removing the display assembly, follow these steps:

1. Shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the device.
3. Disconnect the power from the device by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the device.
4. Remove the battery (see Battery on page 32).
5. If your device has WWAN capability, remove the SIM (see SIM on page 33).
6. Remove the following components:
   a. Keyboard (see Keyboard on page 36)
   b. Hard drive (see Hard drive on page 39)
   c. Top cover (see Top cover on page 44)

Remove the display assembly:

1. Disconnect the following cables and grounding tape from the system board:

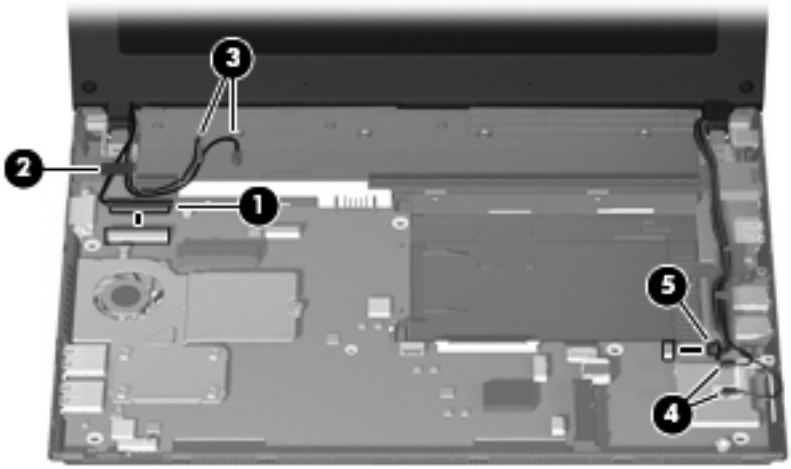
   (1) Display panel cable

   (2) Display panel cable grounding tape

   (3) WLAN cables

   (4) WWAN cables (select models only)

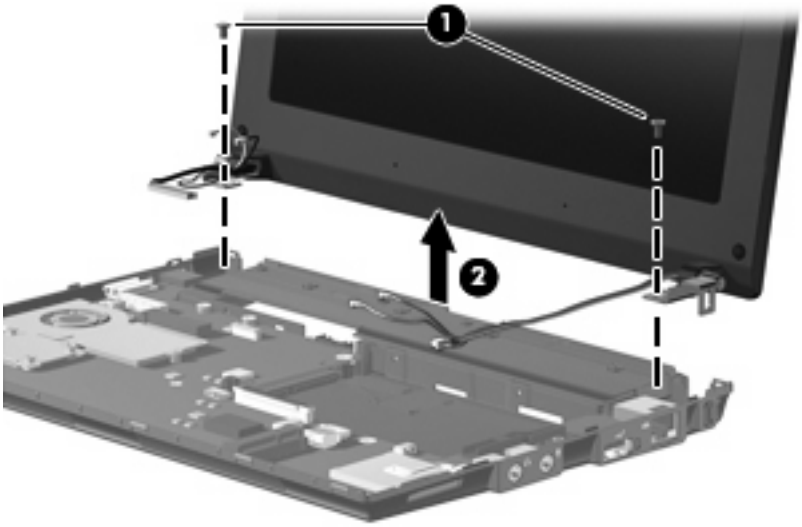
   (5) Microphone cable



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

2. Remove the 2 Phillips PM2.5×6.0 screws **(1)** that secure the display assembly to the device.

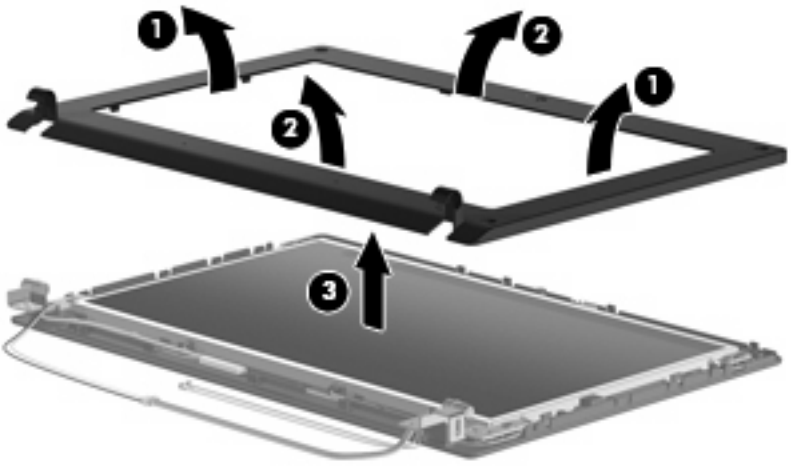
3. Remove the display assembly **(2)**.



4. If it is necessary to replace the display bezel, perform the following steps:

   a. Flex the inside edges of the left and right sides **(1)**, and then the top and bottom **(2)** of the display bezel until the bezel disengages from the display enclosure.

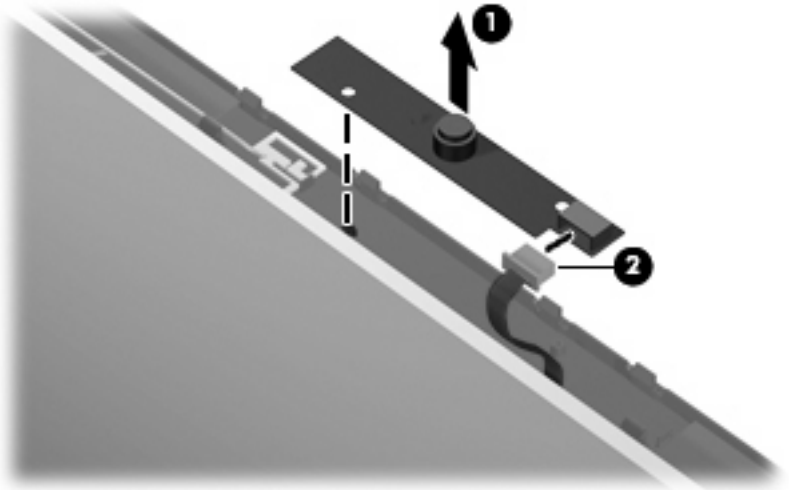
b. Remove the display bezel **(3)**.



5. If it is necessary to replace the webcam module, perform the following steps:

a. Lift the webcam **(1)**.

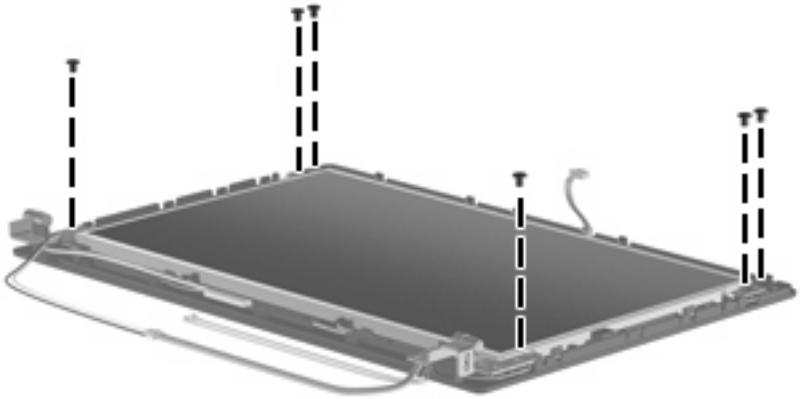
b. Disconnect the webcam cable **(2)** from the webcam.



c. Remove the webcam.

6. If it is necessary to replace the display panel/webcam cable, perform the following steps:

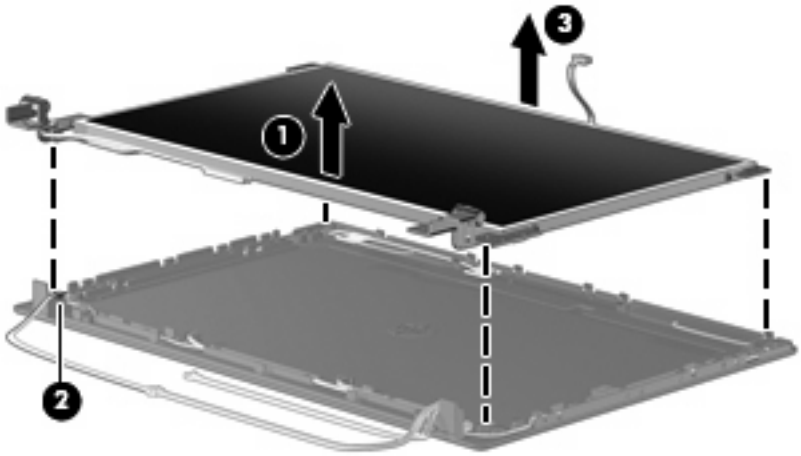
   a. Remove the 6 Phillips PM2.5×5.0 screws that secure the display panel to the display enclosure.



   b. Lift the display panel up from the display enclosure **(1)**.

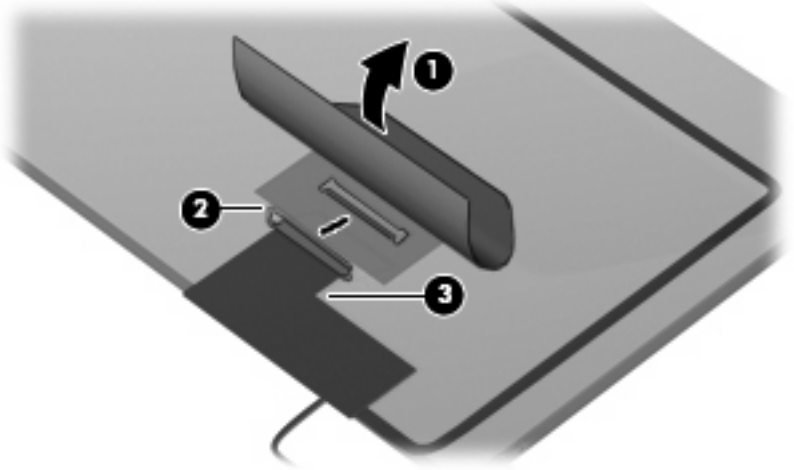
   c. Disengage the display panel cable **(2)** from the left hinge clip.

   d. Remove the display panel **(3)** from the display enclosure.

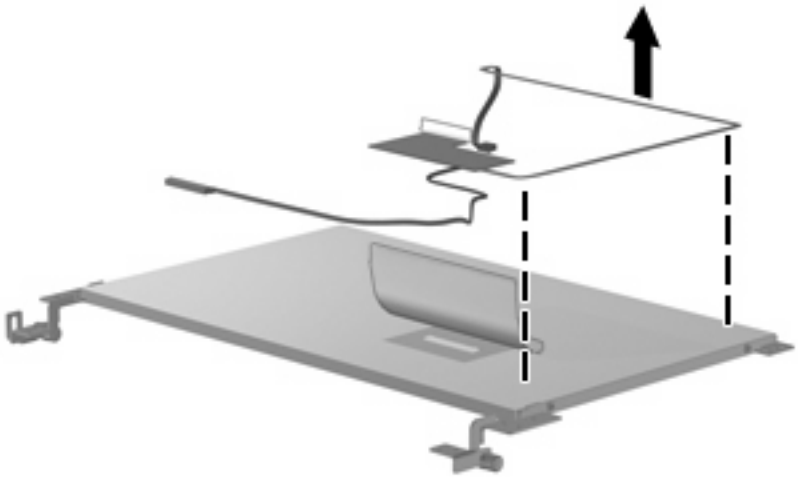


   e. Turn the display panel over, and peel back the Mylar protection **(1)** on the back of the display panel.

f. Lift the adhesive strip **(2)** that secures the cable to the back of the display panel, and disconnect the display panel/webcam cable **(3)**.



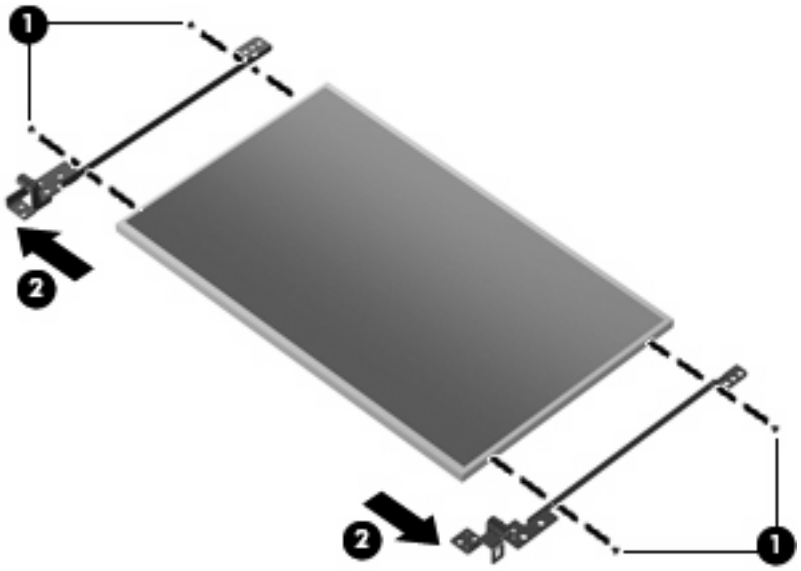
g. Remove the display panel/webcam cable.



7. If it is necessary to replace the display hinges, perform the following steps:

   a. Remove the 2 Phillips PM2.0×3.0 screws **(1)** that secure each hinge to the display panel.

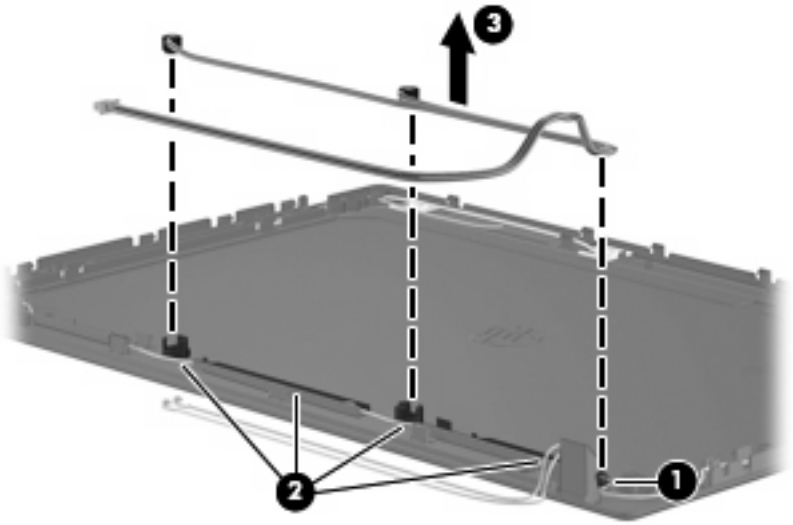
b. Remove the hinges **(2)**.



8. If it is necessary to replace the microphone receiver, perform the following steps:

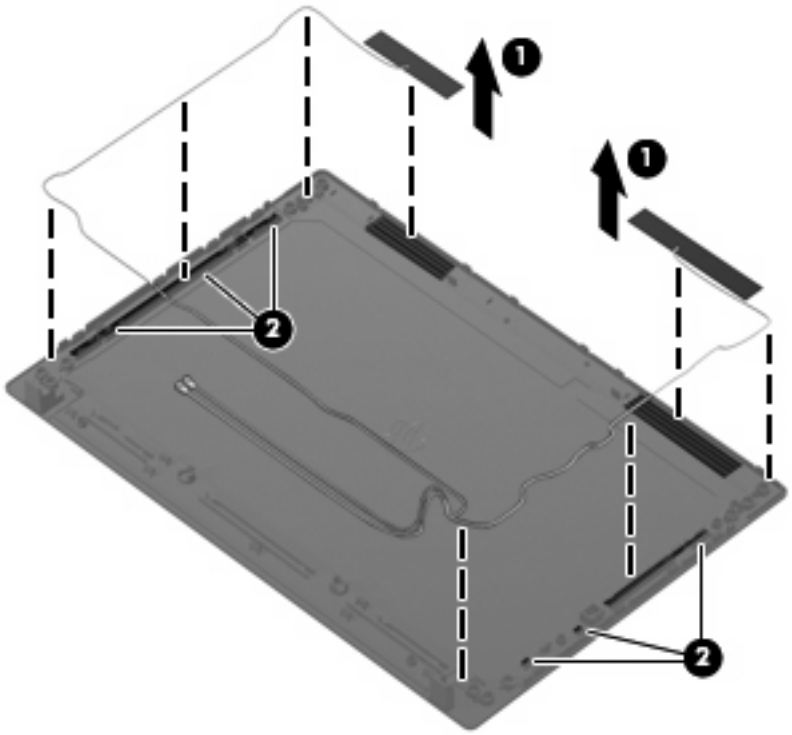
a. Release the microphone receiver from the clip **(1)** that secures it to the display enclosure.

b. Pull the receiver through the tabs **(2)**, and remove the microphone receiver **(3)**.



9. If it is necessary to replace the wireless antenna transceivers and cables, perform the following steps:

   a. Detach the cables from the adhesive **(1)**, and then route them through the clips **(2)** that secure them to the display enclosure.



   b. Remove the wireless antenna transceivers and cables.

Reverse this procedure to reassemble and install the display assembly.

System board

Description	Spare part number
System board (includes processor and replacement thermal material)	
• Includes Intel Atom N280 1.66-GHz processor, 512-KB Level 2 cache, 533-MHz front-side bus (FSB)	577921-001
• Includes Intel Atom N270 1.6-GHz processor, 512-KB Level 2 cache, 533-MHz front-side bus (FSB)	585464-001

Before removing the system board, follow these steps:

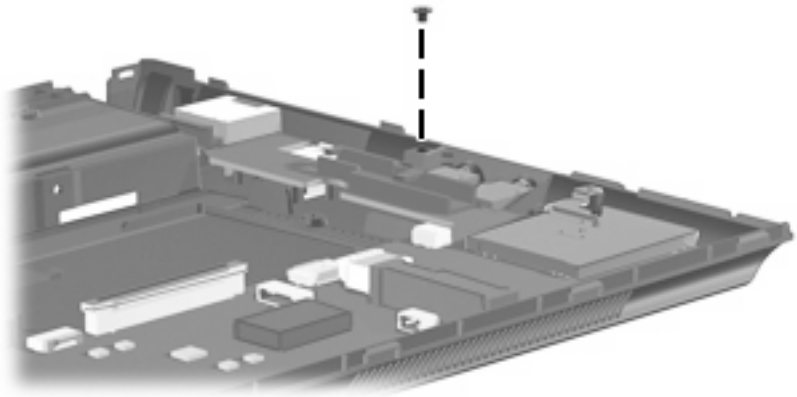
1. Shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the device.
3. Disconnect the power from the device by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the device.
4. Remove the battery (see Battery on page 32).
5. If your device has WWAN capability, remove the SIM (see SIM on page 33).
6. Remove the following components:
   a. Keyboard (see Keyboard on page 36)
   b. Hard drive (see Hard drive on page 39)
   c. Top cover (see Top cover on page 44)
   d. Display assembly (see Display assembly on page 52)

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

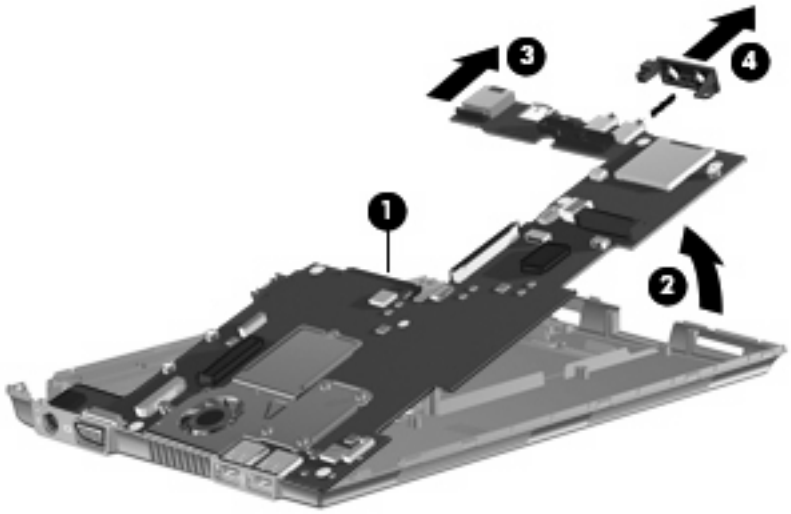
- WLAN module (see WLAN module on page 41)
- WWAN module, if included (see WWAN module on page 48)
- Bluetooth module (see Bluetooth module on page 50)

Remove the system board:

1. Remove the Phillips PM2.0×3.0 screw that secures the system board to the base enclosure.



2. Grasp the system board at the midpoint of the board **(1)**, and tilt it up to the left **(2)**.
3. Pull the system board **(3)** out to the right at an angle to remove it, and remove the actuator cover **(4)**.



Reverse the procedure to install the system board.

RTC battery

Description	Spare part number
RTC battery	507707-001

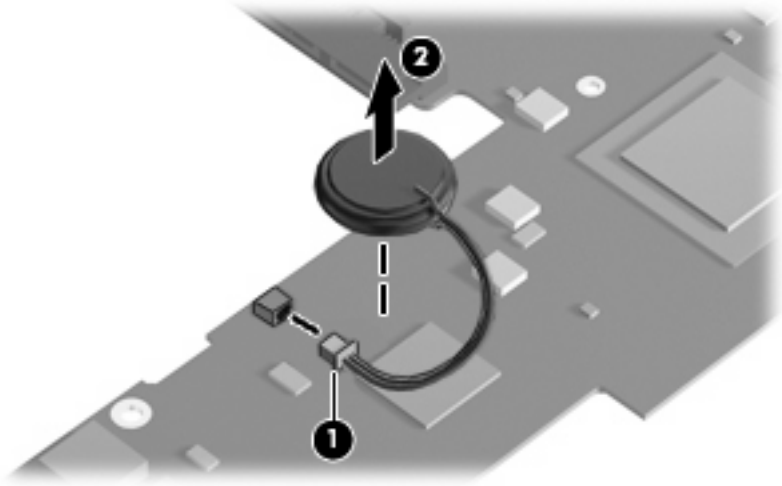
Before removing the real-time clock (RTC) battery, follow these steps:

1. Shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the device.
3. Disconnect the power from the device by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the device.
4. Remove the battery (see Battery on page 32).
5. If your device has WWAN capability, remove the SIM (see SIM on page 33).
6. Remove the Keyboard (see Keyboard on page 36).
7. Remove the Hard drive (see Hard drive on page 39).
8. Remove the Top cover (see Top cover on page 44).
9. Remove the Display assembly (see Display assembly on page 52).
10. Remove the System board (see System board on page 59).

Remove the RTC battery:

1. Turn the system board upside down.
2. Disconnect the RTC battery cable **(1)** from the system board.
3. Detach the RTC battery **(2)** from the system board.

NOTE: The RTC battery is attached to the system board with double-sided tape.



Reverse this procedure to install the RTC battery.

Fan and heat sink assembly

Description	Spare part number
Fan and heat sink assembly (includes replacement thermal material)	577924-001

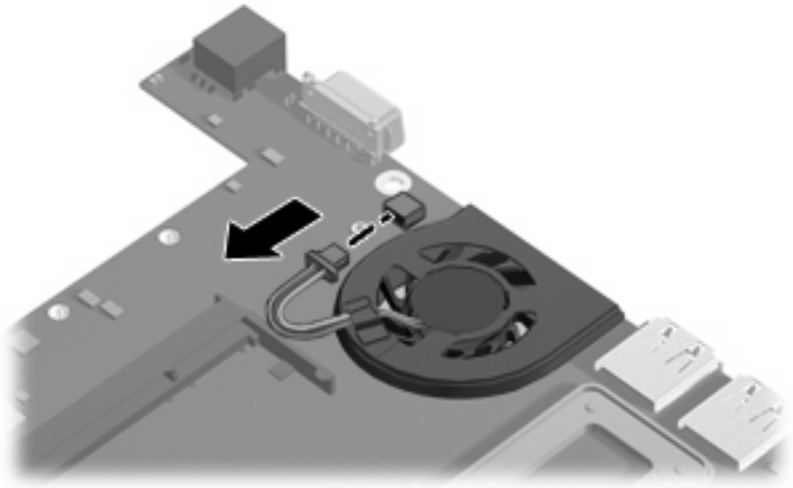
NOTE: To properly ventilate the device, allow at least a 7.6-cm (3-inch) clearance on the left side of the device. The device uses an electric fan for ventilation. The fan is controlled by a temperature sensor and is designed to turn on automatically when high temperature conditions exist. These conditions 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 device.

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

1. Shut down the device. If you are unsure whether the device is off or in Hibernation, turn the device on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the device.
3. Disconnect the power from the device by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the device.
4. Remove the battery (see Battery on page 32).
5. If your device has WWAN capability, remove the SIM (see SIM on page 33).
6. Remove the following components:
   a. Keyboard (see Keyboard on page 36)
   b. Hard drive (see Hard drive on page 39)
   c. Top cover (see Top cover on page 44)
   d. Display assembly (see Display assembly on page 52)
   e. System board (see System board on page 59)

Remove the fan and heat sink assembly:

1. Disconnect the fan cable from the system board.

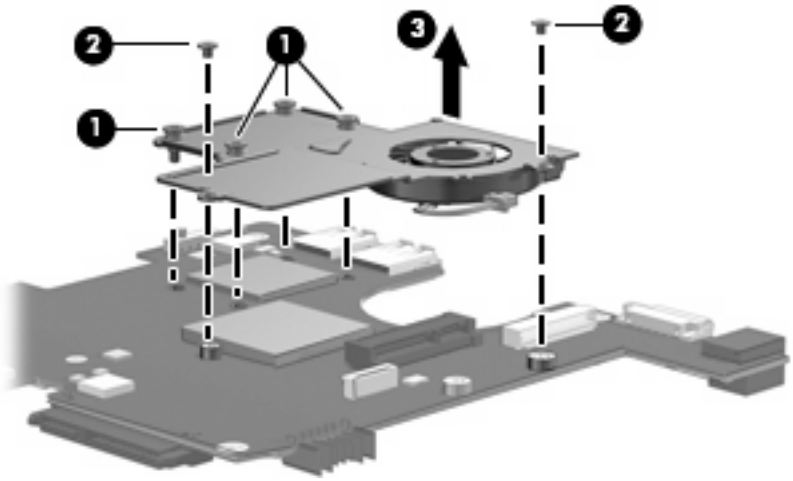


2. Loosen the 4 Phillips PM2.0×7.0 captive screws **(1)** that secure the fan and heat sink assembly to the system board.

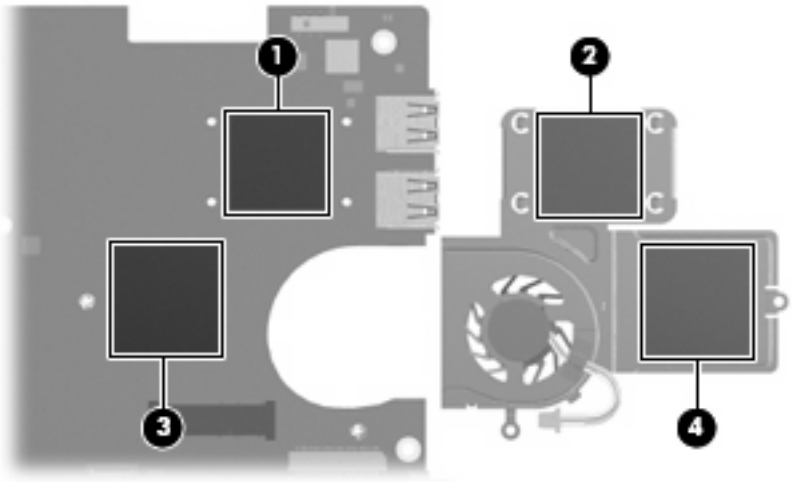
NOTE: The screws are numbered 1 through 4. Follow this order when removing the screws.

3. Remove the 2 Phillips PM2.0×3.0 screws **(2)** that secure the fan and heat sink assembly to the system board.

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



NOTE: The thermal material must be thoroughly cleaned from the surfaces of the fan and heat sink assembly and the system board each time the fan and heat sink assembly is removed. Thermal paste is used on the processor **(1)** and **(3)**, and thermal tape is used on the Northbridge chip **(2)** and **(4)**. Replacement thermal material is included with all fan and heat sink assembly, and system board spare part kits.



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

5 Computer Setup

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 the Computer Setup options.

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

File menu

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

Security menu

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

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

Diagnostics menu

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

System Configuration menu

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

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

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

6 Specifications

Device specifications

	Metric	U.S.
Dimensions		
Depth	16.67 cm	6.56 in
Width	26.17 cm	10.30 in
Height	2.52 cm	0.99 in
Weight		
10.1-in. LCD, equipped with a 3-cell battery, hard drive, 1-GB memory, WLAN module, and 2 wireless antennas	1.11 kg	2.45 lb
10.1-in. LCD, equipped with a 3-cell battery,solid-state drive, 1-GB memory, WLAN module, and 2 wireless antennas	1.09 kg	2.40 lb
Input power		
Operating voltage	19 V dc @ 1.58 A – 30 W	
Operating current	1.58 A	
Temperature		
Operating	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 65°C	-4°F to 149°F
Relative humidity (noncondensing)		
Operating	10% to 90%	
Nonoperating	0% to 95%	
Maximum altitude (unpressurized)		
Operating	-15 m to 3,048 m	-50 ft to 10,000 ft
Nonoperating	-15 m to 12,192 m	-50 ft to 40,000 ft

NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The device operates well within this range of temperatures.

10.1-inch, AntiGlare display specifications

	Metric	U.S.
Dimensions		
Height	23.45 cm	9.23 in
Width	14.30 cm	5.62 in
Diagonal	25.55 cm	10.05 in
Number of colors	262,144	
Contrast ratio	400:1 (typical)	
Brightness	200 nits (typical)	
Pixel resolution		
Pitch	0.2175 × 0.2175 mm	
Format	1024 × 576	
Configuration	RGB vertical stripe	
Backlight	Edge lit	
Character display	80 × 25	
Total power consumption	3.2 W	
Viewing angle	+/-45° horizontal, +15/-35° vertical (typical)	

Hard drive specifications

Dimensions	
Height	9.5 mm
Width	70 mm
Weight	101 g
Interface type	PATA
Transfer rate	100 MB/sec
Security	ATA security
Seek times (typical read, including setting)	
Single track	3 ms
Average	13 ms
Maximum	24 ms
Logical blocks	117,210,240
Disc rotational speed	4200 rpm
Operating temperature	
* 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.	

System DMA specifications

Hardware DMA	System function
DMA0	Not applicable
DMA1	Not applicable
DMA2	Not applicable
DMA3	Not applicable
DMA4	Direct memory access controller

System interrupt specifications

Hardware IRQ	System function
IRQ0	System timer
IRQ1	Standard 101-/102-key or Microsoft® Natural PS/2 Keyboard
IRQ8	System CMOS/real-time clock
IRQ9 *	Microsoft ACPI-compliant system
IRQ12	Synaptics PS/2 TouchPad
IRQ13	Numeric data processor
IRQ14	Primary IDE channel
IRQ15	Intel® 82801G (ICH7 Family) SMBus Controller—27DA
IRQ16	Broadcom 802.11b/g WLAN no. 2
	Intel 82801G (ICH7 Family) PCI Express Root Port—27D0
	Intel 82801G (ICH7 Family) USB Universal Host Controller—27CB
	Microsoft UAA Bus Driver for High Definition Audio
	Mobile Intel 945 Express Chipset Family
IRQ17	Intel 82801G (ICH7 Family) PCI Express Root Port—27D2
IRQ18	Intel 82801G (ICH7 Family) USB Universal Host Controller—27CA
IRQ19	Intel 82801G (ICH7 Family) USB Universal Host Controller—27C9
IRQ23	Intel 82801G (ICH7 Family) USB Universal Host Controller—27C8
	Intel 82801G (ICH7 Family) USB2 Enhanced Host Controller—27CC
* Default configuration	

System I/O address specifications

I/O address (hex)	System function (shipping configuration)
000 - 00F	DMA controller
000 - CF7	PCI bus
010 - 01F	Motherboard resources
020 - 021	Programmable interrupt controller
022 - 03F	Motherboard resources
040 - 043	System timer
044 - 05F	Motherboard resources
060 - 060	Standard 101-/102-key or Microsoft® Natural PS/2 Keyboard
061 - 061	System speaker
062 - 062	Microsoft ACPI-Compliant Embedded Controller
063- 063	Motherboard resources
064 - 064	Standard 101-/102-key or Microsoft Natural PS/2 Keyboard
065 - 065	Motherboard resources
066 - 066	Microsoft ACPI-Compliant Embedded Controller
067 - 06F	Motherboard resources
070 - 071	System CMOS/real-time clock
072 - 07F	Motherboard resources
080 - 080	Motherboard resources
081 - 083	DMA controller
084 - 086	Motherboard resources
087 - 087	DMA controller
088 - 088	Motherboard resources
089 - 08B	DMA controller
08C - 08E	Motherboard resources
08F - 08F	DMA controller
090 - 09F	Motherboard resources
0A0 - 0A1	Programmable interrupt controller
0A2 - 0BF	Motherboard resources
0C0 - 0DF	DMA controller
0E0 - 0EF	Motherboard resources
0F0 - 0FF	Numeric data processor
1F0 - 1F7	Primary IDE channel
274 - 277	ISAPNP Read Data Port

I/O address (hex)	System function (shipping configuration)
279 - 279	ISAPNP Read Data Port
3B0 - 3BB	Mobile Intel® 945 Express Chipset Family
3C0 - 3DF	Mobile Intel 945 Express Chipset Family
3F6 - 3F6	Primary IDE channel
400 - 41F	Intel 82801G (ICH7 Family) SMBus Controller—27DA
480 - 4BF	Motherboard resources
4D0 - 4D1	Motherboard resources
500 - 501	Motherboard resources
800 - 87F	Motherboard resources
A79 - A79	ISAPNP Read Data Port
0D00 - FFFF	PCI bus
D480 - D49F	Intel 82801G (ICH7 Family) USB Universal Host Controller—27C8
D800 - D81F	Intel 82801G (ICH7 Family) USB Universal Host Controller—27CA
D880 - D89F	Intel 82801G (ICH7 Family) USB Universal Host Controller—27C9
DC00 - DC1F	Intel 82801G (ICH7 Family) USB Universal Host Controller—27C8
DC80 - DC87	Mobile Intel 945 Express Chipset Family
E000 - EFFF	Intel 82801G (ICH7 Family) PCI Express Root Port—27D2
FFA0 - FFAF	Intel 82801G (ICH7 Family) Ultra ATA Storage Controllers—27DF

System memory map specifications

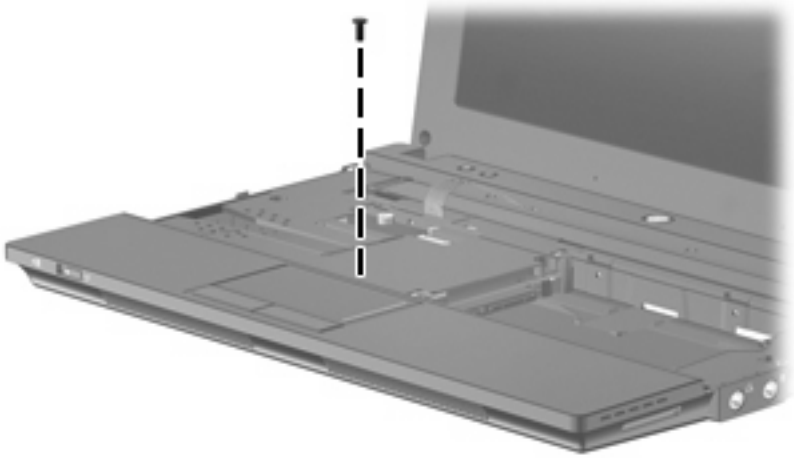
Memory address	System function
00000000 - 0009FFFF	System board
000A0000 - 000BFFFF	Mobile Intel® 945 Express Chipset Family
000A0000 - 000BFFFF	PCI bus
000C0000 - 000CFFFF	System board
000D0000 - 000DFFFF	PCI bus
000E0000 - 000FFFFF	System board
00100000 - 3F7FFFFF	System board
3F800000 - DFFFFFFF	PCI bus
D0000000 - DFFFFFFF	Mobile Intel 945 Express Chipset Family
E0000000 - E3FFFFFF	Motherboard resources
E4000000 - FED8FFFF	PCI bus
FE880000 - FE8FFFFF	Mobile Intel 945 Express Chipset Family
FE937C00 - FE937FFF	Intel 82801G (ICH7 Family) USB2 Enhanced Host Controller—27CC
FE938000 - FE93BFFF	Microsoft® UAA Bus Driver for High Definition Audio
FE940000 - FE97FFFF	Mobile Intel 945 Express Chipset Family
FE980000 - FE9FFFFF	Mobile Intel 945 Express Chipset Family
FEA00000 - FEAFFFFF	Intel 82801G (ICH7 Family) PCI Express Root Port—27D0
FEAFC000 - FEAFFFFF	Broadcom 802.11b/g WLAN
FEB00000 - FEBFFFFF	Intel 82801G (ICH7 Family) PCI Express Root Port—27D2
FEC00000 - FEC00FFF	Motherboard resources
FED13000 - FED19FFF	System board
FED1C000 - FED1FFFF	Motherboard resources
FED20000 - FED3FFFF	Motherboard resources
FED40000 - FED8FFFF	Motherboard resources
FED90000 - FFFFFFFF	System board
FEE00000 - FEE00FFF	Motherboard resources

7 Screw listing

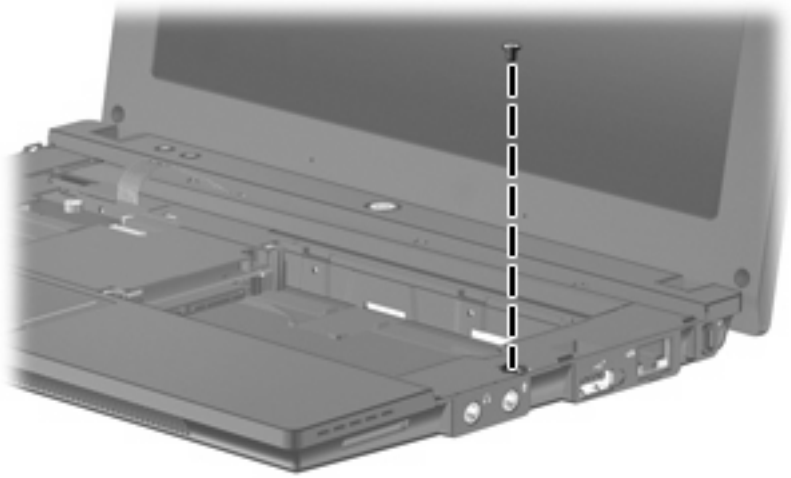
This section provides specification and reference information for the screws and screw locks used in the device. All screws listed in this section are available in the Screw Kit, spare part number 578362-001.

Phillips PM2.0×2.0 screw

Color	Quantity	Length	Thread	Head diameter
Silver	1	2.0 mm	2.0 mm	1.0 mm
Black	1	2.0 mm	2.0 mm	1.0 mm

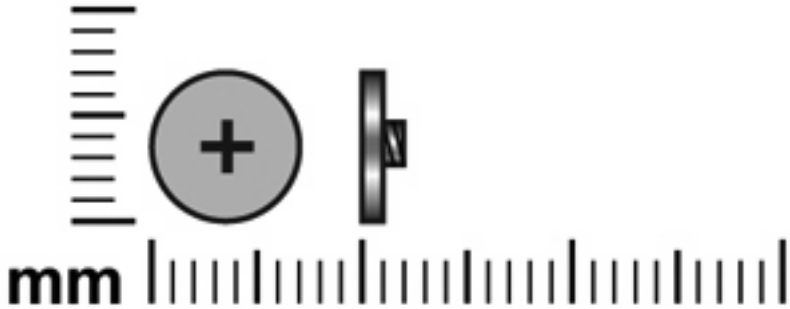


Where used: One screw that secures the top cover to the base enclosure

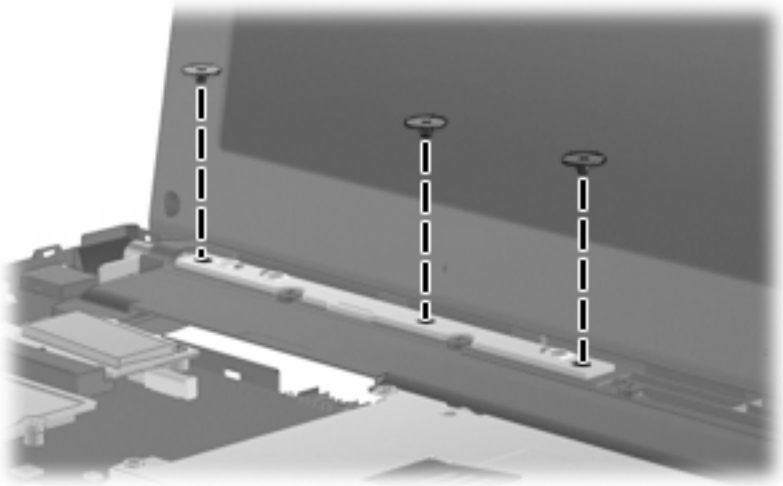


Where used: One screw that secures the top cover to the base enclosure.

Phillips PM2.0×2.0 broadhead screw



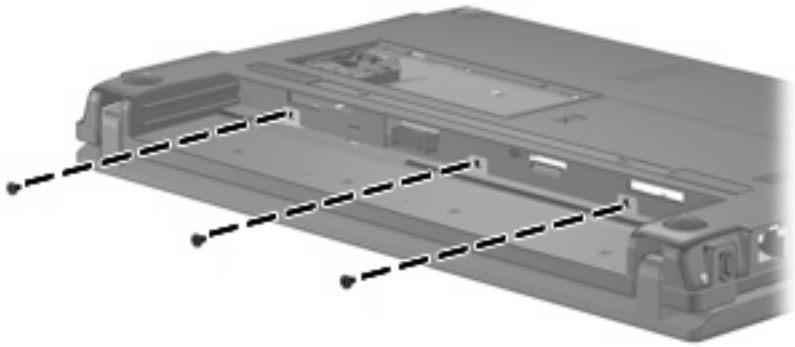
Color	Quantity	Length	Thread	Head diameter
Black	3	2.0 mm	2.0 mm	1.0 mm



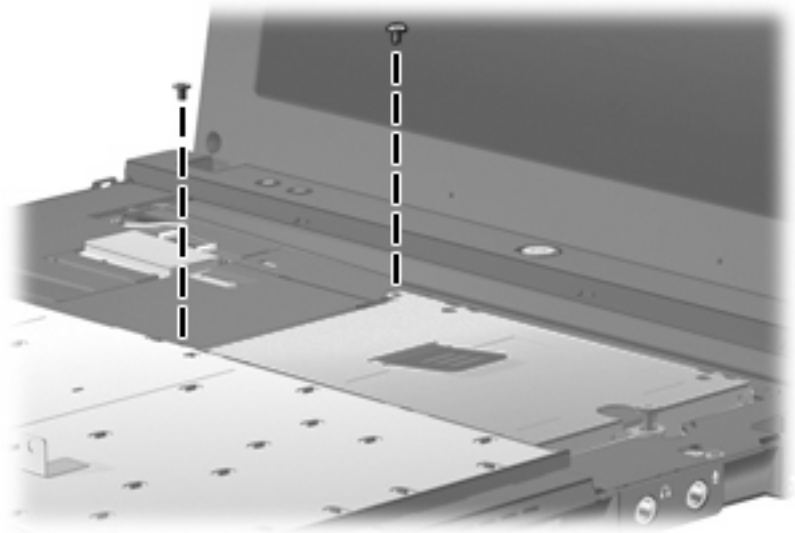
Where used: 3 screws that secure the power button board to the base enclosure

Phillips PM2.0×3.0 screw

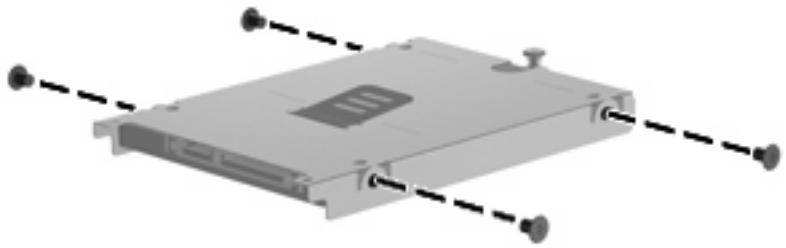
Color	Quantity	Length	Thread	Head diameter
Silver	3	3.0 mm	2.0 mm	4.0 mm
Black	19	3.0 mm	2.0 mm	4.0 mm



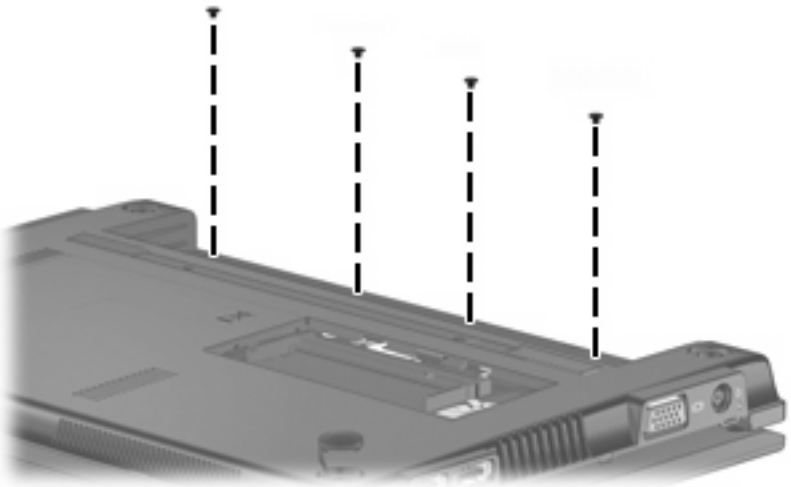
Where used: 3 screws that secure the keyboard to the device



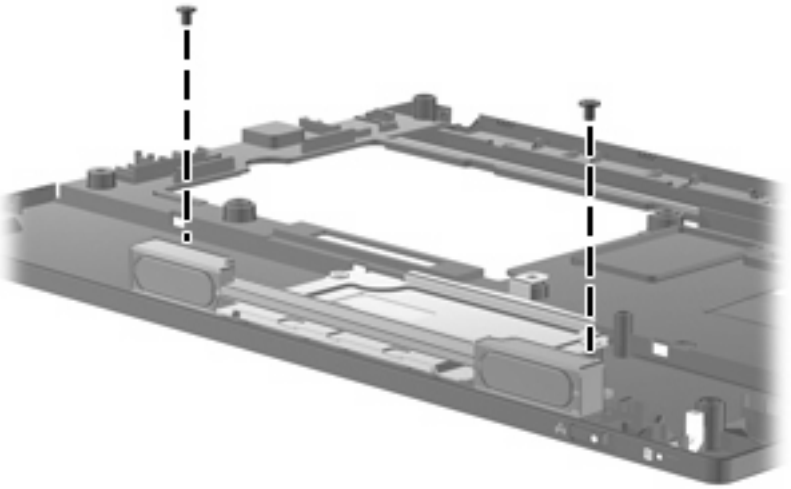
Where used: 2 screws that secure the hard drive to the system board



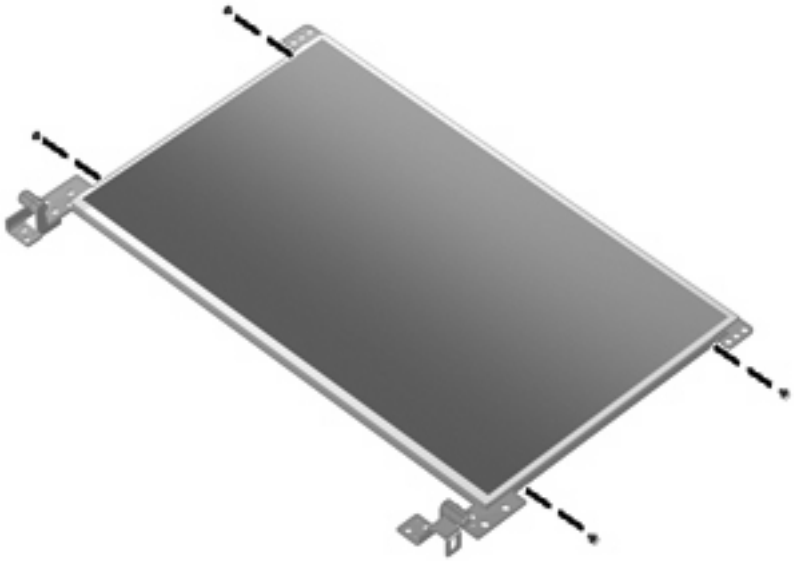
Where used: 4 screws that secure the hard drive bracket to the hard drive



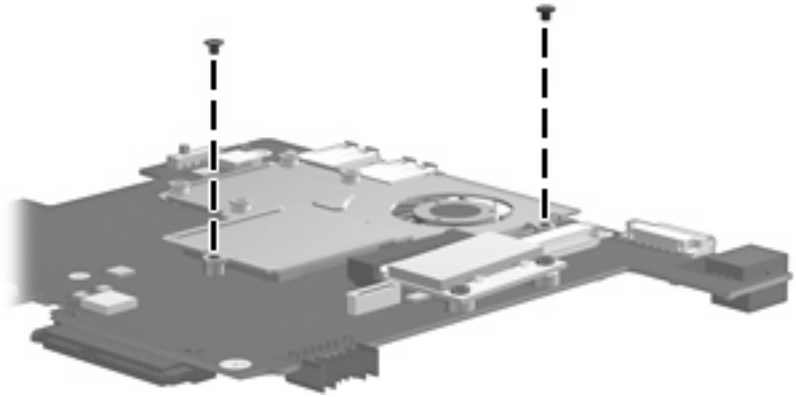
Where used: 4 screws that secure the top cover to the base enclosure



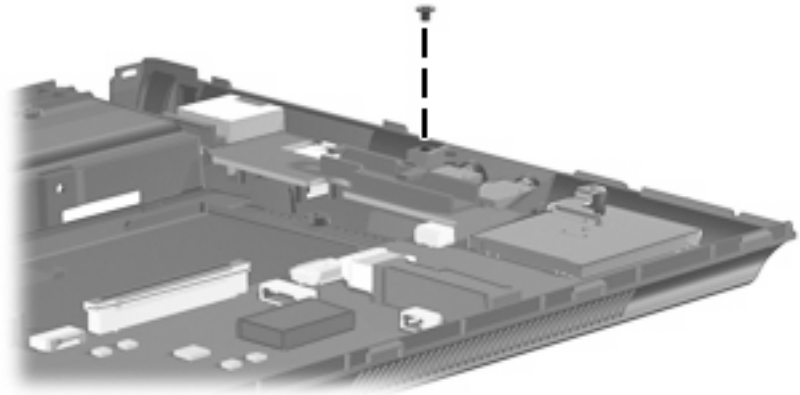
Where used: 2 screws that secure the speaker assembly to the top cover



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

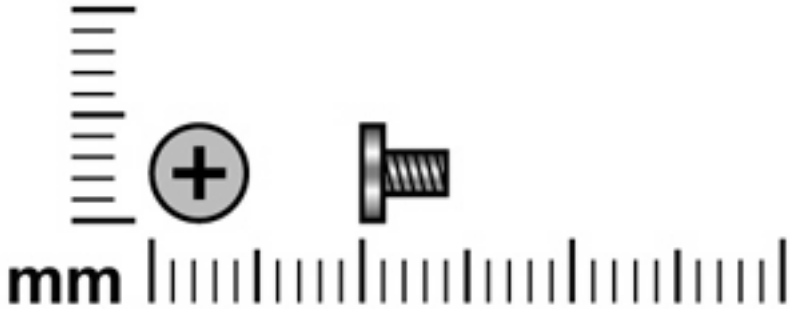


Where used: 2 screws that secure the fan and heat sink assembly to the system board

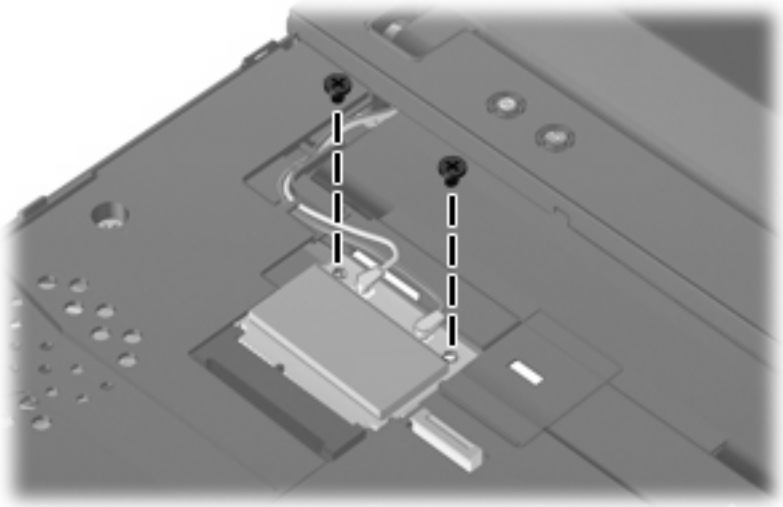


Where used: One screw that secures the system board to the base enclosure

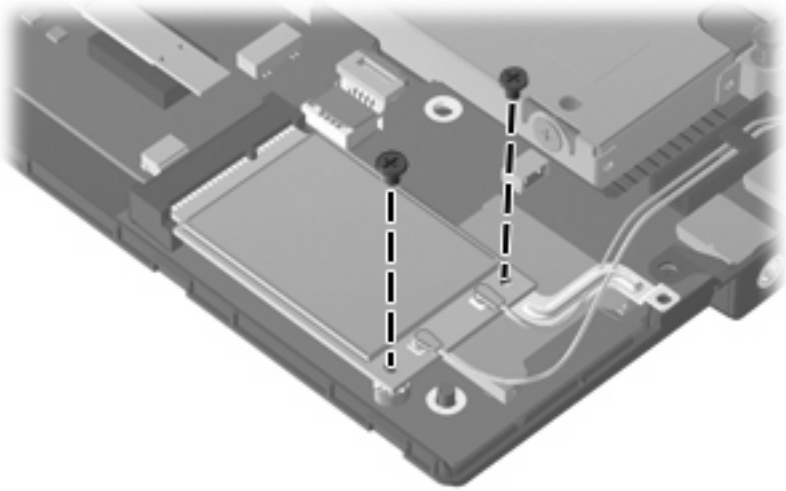
Phillips PM2.0×4.0 screw



Color	Quantity	Length	Thread	Head diameter
Silver	4	4.0 mm	2.0 mm	4.0 mm

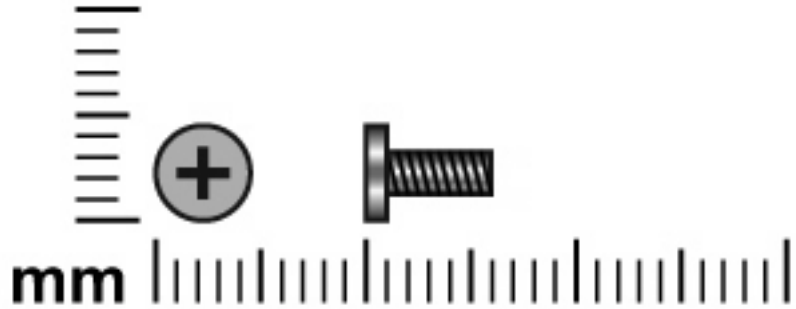


Where used: 2 screws that secure the WLAN module to the system board

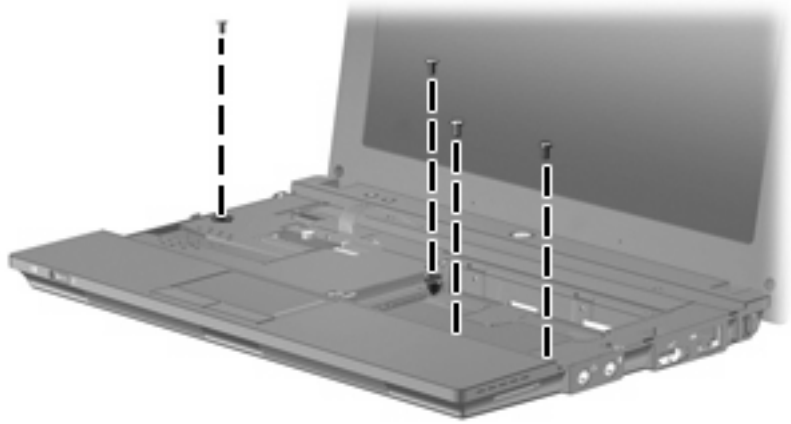


Where used: 2 screws that secure the WWAN module to the system board

Phillips PM2.0×6.0 screw

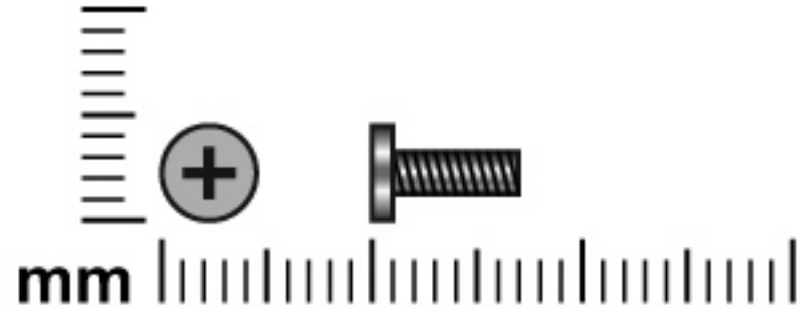


Color	Quantity	Length	Thread	Head diameter
Silver	4	6.0 mm	2.0 mm	4.5 mm

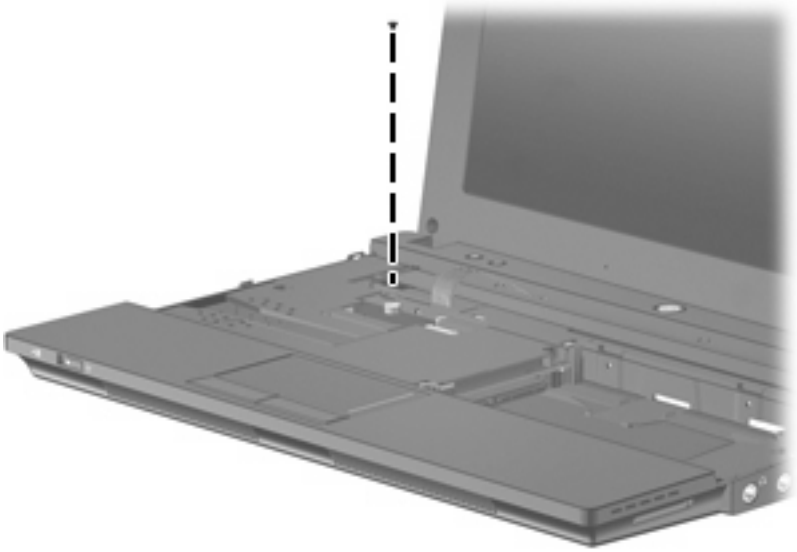


Where used: 4 screws that secure the top cover to the base enclosure

Phillips PM2.0×7.0 screw

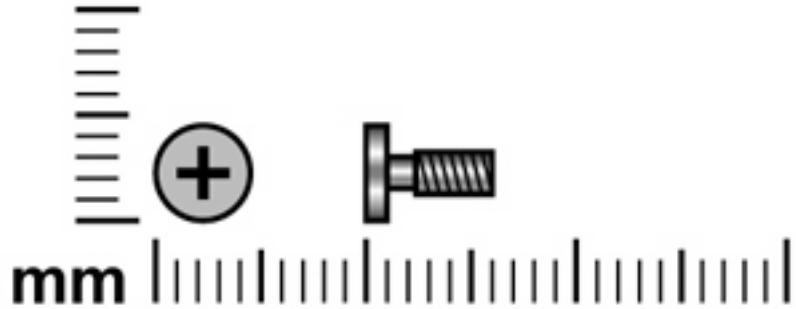


Color	Quantity	Length	Thread	Head diameter
Silver	1	7.0 mm	2.0 mm	4.5 mm

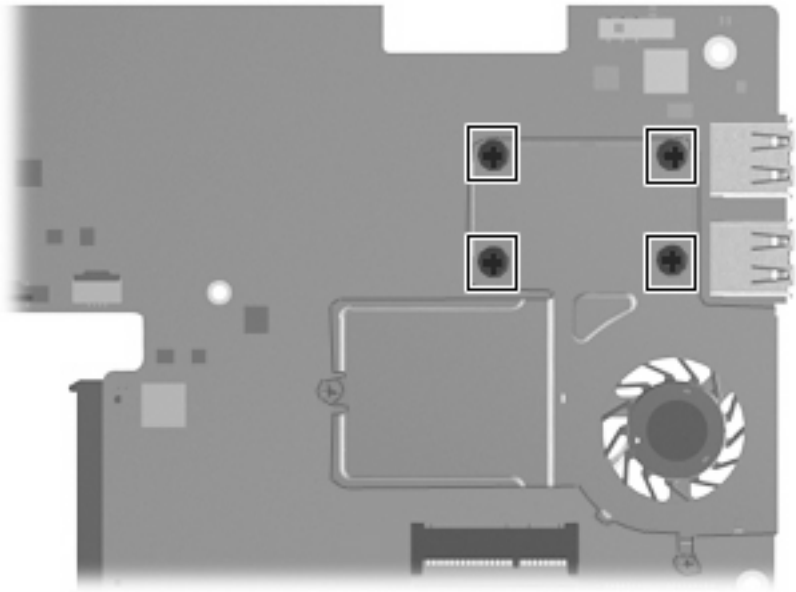


Where used: One screw that secures the top cover to the base enclosure

Phillips PM2.0×7.0 captive screw

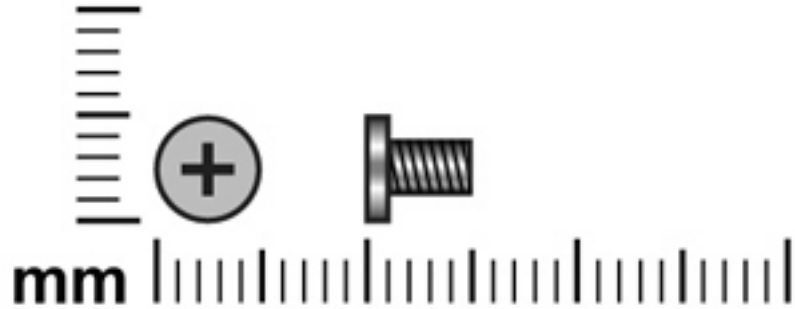


Color	Quantity	Length	Thread	Head diameter
Black	4	7.0 mm	2.0 mm	4.0 mm

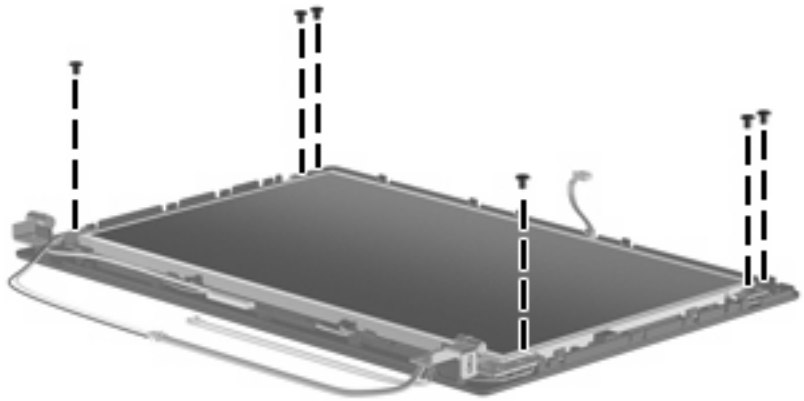


Where used: 4 captive screws, with C-clips, that secure the fan and heat sink assembly to the system board

Phillips PM2.5×5.0 screw

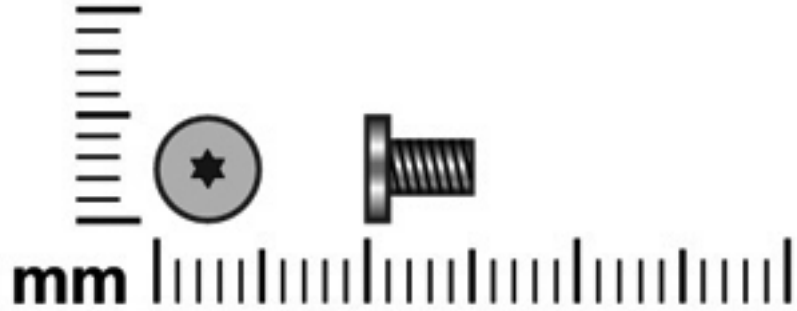


Color	Quantity	Length	Thread	Head diameter
Silver	6	5.0 mm	2.5 mm	4.5 mm

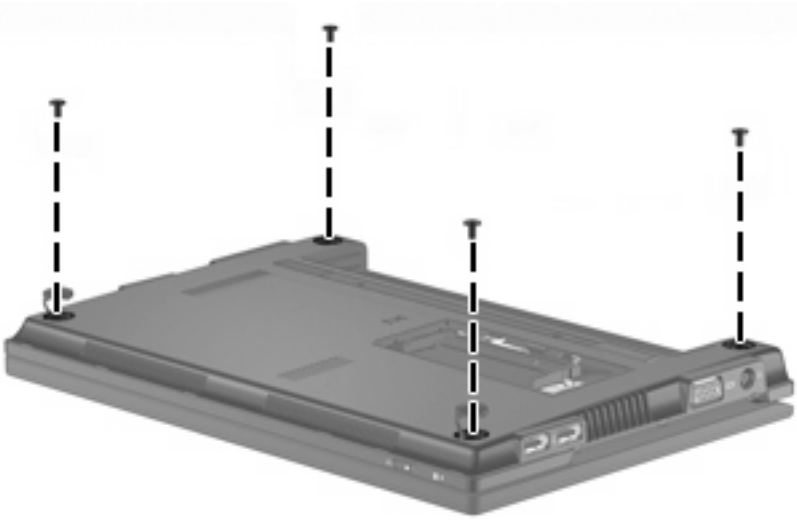


Where used: 6 screws that secure the display panel to the display enclosure

Torx T8M2.5×5.0 screw

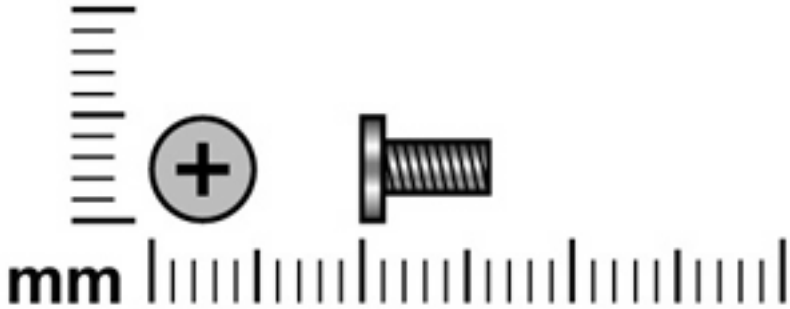


Color	Quantity	Length	Thread	Head diameter
Black	4	5.0 mm	2.5 mm	4.5 mm

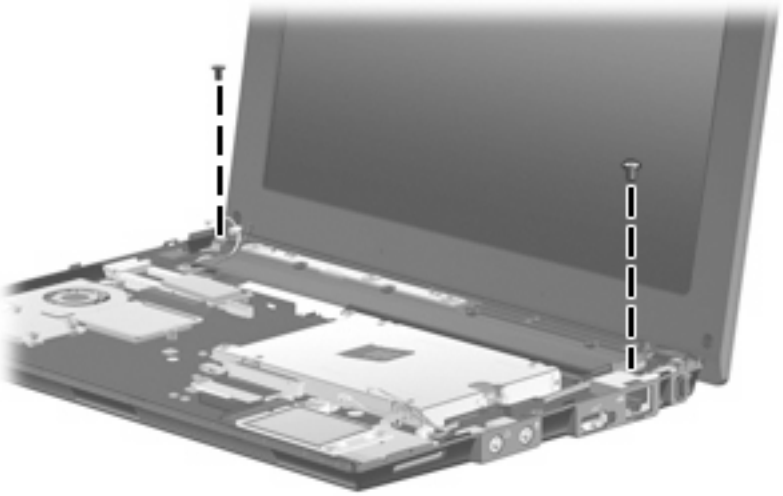


Where used: 4 screws that secure the top cover to the base enclosure

Phillips PM2.5×6.0 screw

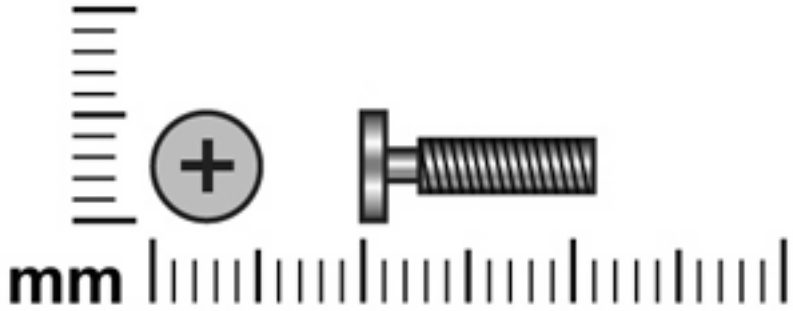


Color	Quantity	Length	Thread	Head diameter
Black	2	6.0 mm	2.5 mm	4.0 mm

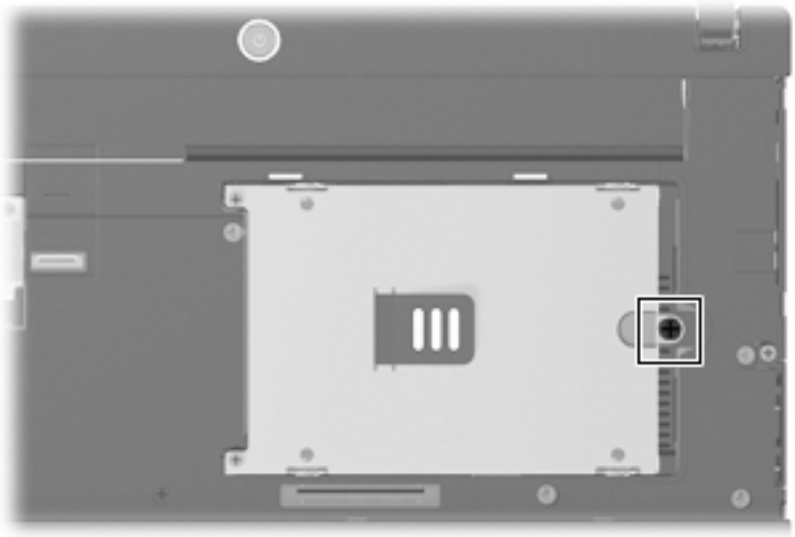


Where used: 2 screws that secure the display assembly and top cover to the device

Phillips PM2.5×11.0 captive screw



Color	Quantity	Length	Thread	Head diameter
Black	1	11.0 mm	2.5 mm	4.0 mm



Where used: One captive screw, with a C-clip, that secures the hard drive bracket to the base enclosure

8 Backup and recovery

Select the section in this chapter that applies to the operating system installed on your computer.

SUSE Linux 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.

Windows Vista backup and recovery

Use the instructions in this section if Windows Vista is installed on your computer.

To protect your information, use the Backup and Restore Center to back up individual files and folders, back up your entire hard drive (select models only), or create system restore points. In case of system failure, you can use the backup files to restore the contents of your computer.

Windows Vista® provides the following advanced backup and recovery options:

- Backing up individual files and folders
- Backing up the entire hard drive (select models only)
- Scheduling automatic backups (select models only)
- Creating system restore points
- Recovering individual files
- Restoring the computer to a previous state
- Recovering information using recovery tools

NOTE: For instructions on these procedures, go to Help and Support.

Backing up

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

Note the following when backing up:

- Store personal files in the Documents folder, and back it up regularly.
- Back up templates that are stored in their associated programs.
- Save customized settings that appear in a window, toolbar, or menu bar by taking a screen shot of your settings. The screen shot can be a time-saver if you have to reset your preferences.

To create a screen shot:

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

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

   To copy the entire screen, press fn+prt sc.
3. Open a word-processing document, and then select **Edit > Paste**.

The screen image is added to the document.

4. Save the document.

- When backing up to discs, use any of the following types of discs (purchased separately): CD-R, CD-RW, DVD+R, DVD+R DL, DVD-R, DVD-R DL, or DVD±RW. The discs you use will depend on the type of optional external optical drive you use.

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

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

To create a backup using Backup and Restore Center, 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. Click **Start > All Programs > Maintenance > Backup and Restore Center**.
2. Follow the on-screen instructions to back up your entire computer (select models only) or your files.

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.

Recovering

In case of system failure, use the f11 recovery tool to recover your original hard drive image.

NOTE: The image includes the Windows® operating system and software programs 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 operating system and HP programs and drivers that were installed at the factory. Software not installed at the factory must be reinstalled. Personal files must be restored from a backup.

1. If possible, back up all personal files.
2. If possible, check for the presence of the HP Recovery partition. To find the partition, click **Start > Computer**.

NOTE: If the HP Recovery partition has been deleted, you will need to recover your operating system and programs using the *Windows Vista Operating System* and the *Driver Recovery* discs (purchased separately). For additional information, contact technical support by selecting **Start > Help and Support > Contact support**.

3. 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.
4. Press f11 while the “Press f11 for recovery” message is displayed on the screen.
5. Follow the on-screen instructions.

NOTE: Windows Vista provides additional recovery tools through the operating system. For additional information, go to Help and Support.

NOTE: If you are unable to boot (start up) your computer, you must purchase a *Windows Vista Operating System* DVD to reboot the computer and repair the operating system. For additional information, contact technical support by selecting **Start > Help and Support > Contact support**.

Windows XP backup and recovery

Use the instructions in this section if Windows XP is installed on your computer.

To protect your information, use the Windows® Backup utility to back up files and folders or create recovery points. In case of system failure, you can use the backup files to restore your computer.

NOTE: Windows Backup utility is available only on the notebooks with the Windows XP Professional operating system. If your notebook has Windows XP Home, you can back up your personal files to a USB external hard drive (purchased separately).

Windows XP Professional provides the following advanced backup and recovery options:

- Backing up individual files and folders
- Backing up all files and folders
- Scheduling automatic backups (select models only)
- Scheduling automatic backups
- Creating recovery points
- Recovering information

NOTE: For instructions on these procedures, go to Help and Support.

Backing up

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

In Windows XP Professional, use the Windows Backup utility to create a backup. Click **Start > All Programs > Accessories > System Tools > Backup**. Follow the on-screen instructions to back up your files.

In Windows XP Home, copy data files to a USB external hard drive (purchased separately).

Recovering

In case of system failure or instability, use the *Operating System* disc and the *Driver Recovery* discs that are included with the computer to recover your operating system and programs.

CAUTION: The recovery process reformats and completely erases the hard drive. All files you have created and any software installed on the computer are permanently removed. The recovery process reinstalls the original operating system as well as software and drivers. Software, drivers, and updates not installed by HP must be manually reinstalled. Personal files must be restored from a backup.

1. If possible, back up all personal files.
2. Shut down the computer.
3. Insert the *Operating System* disc into an optional external optical drive.
4. Turn on the computer.
5. Follow the on-screen instructions to install the operating system.

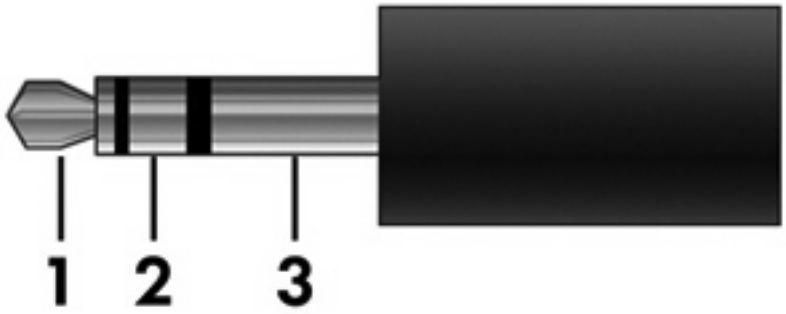
6. After the operating system is installed, remove the *Operating System* disc and insert the *Driver Recovery* disc.

7. Follow the on-screen instructions to install the drivers and programs.

NOTE: For additional information, go to Help and Support.

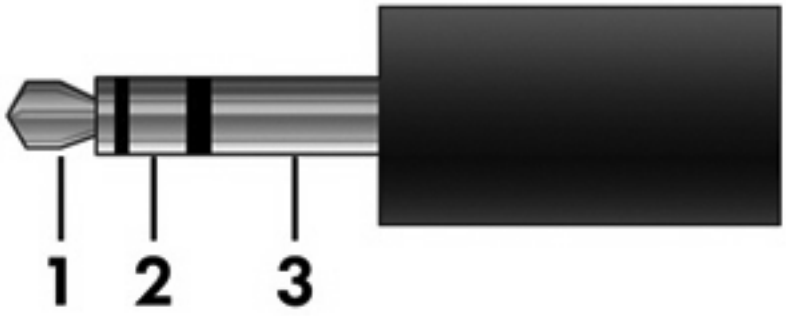
9 Connector pin assignments

Audio-in (microphone)



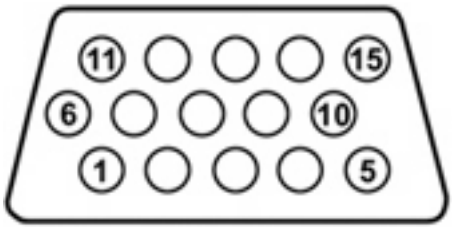
Pin	Signal
1	Audio signal in
2	Audio signal in
3	Ground

Audio-out (headphone)



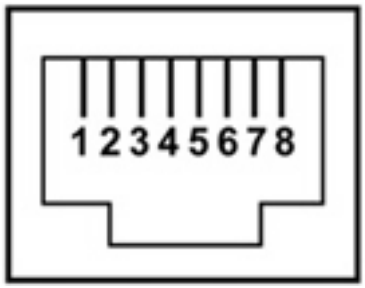
Pin	Signal
1	Audio out, left channel
2	Audio out, right channel
3	Ground

External monitor



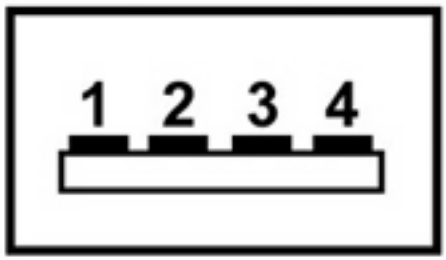
Pin	Signal
1	Red analog
2	Green analog
3	Blue analog
4	Not connected
5	Ground
6	Ground analog
7	Ground analog
8	Ground analog
9	+5 VDC
10	Ground
11	Monitor detect
12	DDC 2B data
13	Horizontal sync
14	Vertical sync
15	DDC 2B clock

RJ-45 (network)



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

Universal Serial Bus



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

10 Power cord set requirements

The wide range input feature of the device 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 device meets the requirements for use in the country or region where the equipment is purchased.

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

Requirements for all countries and regions

The requirements listed below are applicable to all countries and regions:

- The length of the power cord set must be at least 1.5 m (5.0 ft) and no more than 2.0 m (6.5 ft).
- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country or region where the power cord set will be used.
- The power cord sets must have a minimum current capacity of 10 amps and a nominal voltage rating of 125 or 250 V AC, as required by the power system of each country or region.
- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with the appliance inlet on the back of the device.

Requirements for specific countries and regions

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

1. The flexible cord must be Type HO5VV-F, 3-conductor, 1.0-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.

2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.

3. The appliance coupler, flexible cord, and wall plug must bear a “T” mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00-mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.

4. The flexible cord must be Type RVV, 3-conductor, 0.75-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.

5. The flexible cord must be Type VCTF, 3-conductor, 0.75-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.

11 Recycling

Battery

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

Display

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

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

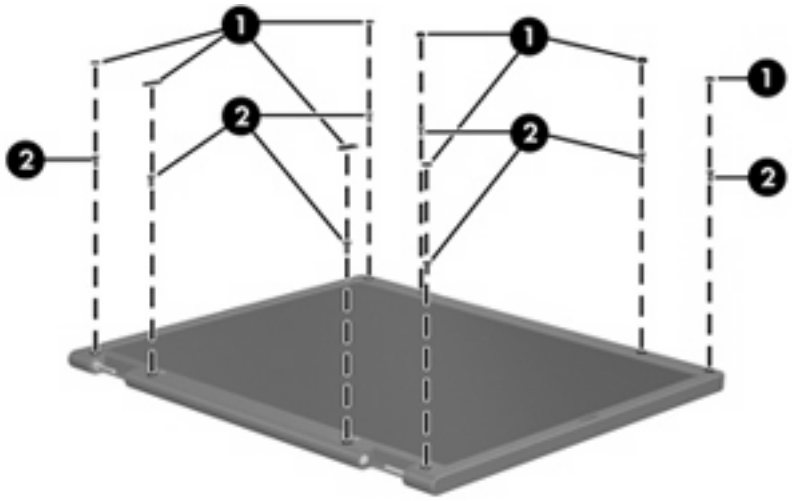
NOTE: **Materials Disposal**. This HP product contains mercury in the backlight in the display assembly that might require special handling at end-of-life. Disposal of mercury may be regulated because of environmental considerations. For disposal or recycling information, contact your local authorities,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

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

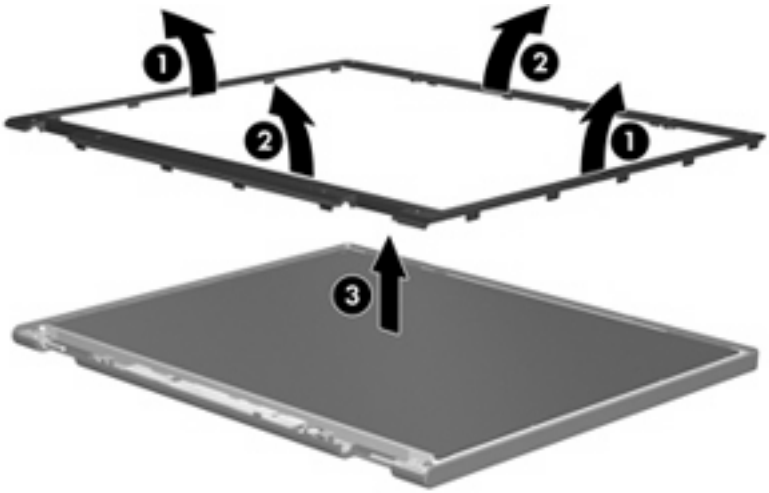
NOTE: The procedures provided in this chapter are general disassembly instructions. Specific details, such as screw sizes, quantities, and locations, and component shapes and sizes, can vary from one computer model to another.

Perform the following steps to disassemble the display assembly:

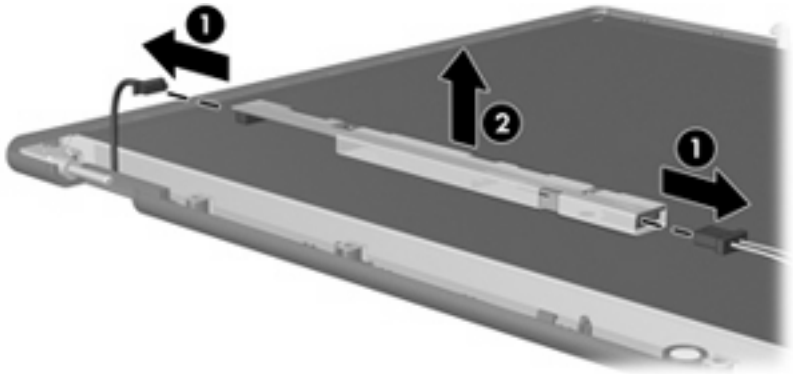
1. Remove all screw covers **(1)** and screws **(2)** that secure the display bezel to the display assembly.



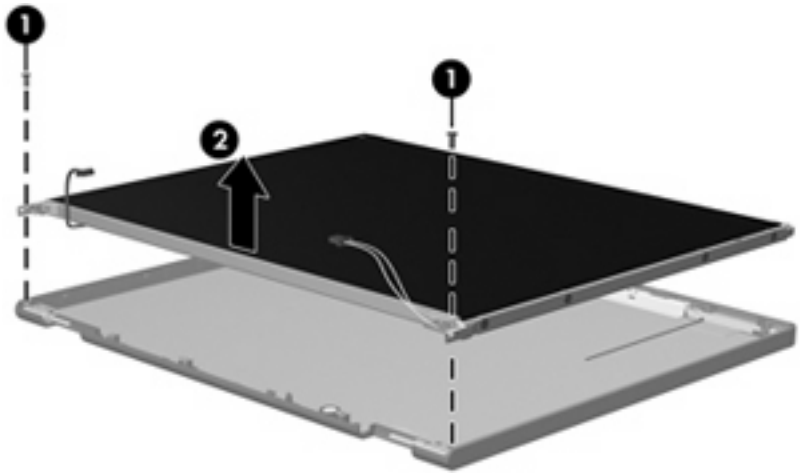
2. Lift up and out on the left and right inside edges **(1)** and the top and bottom inside edges **(2)** of the display bezel until the bezel disengages from the display assembly.
3. Remove the display bezel **(3)**.



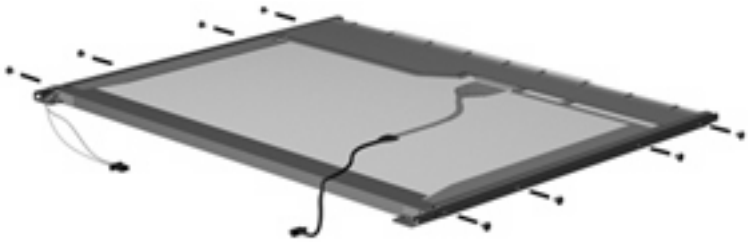
4. Disconnect all display panel cables **(1)** from the display inverter and remove the inverter **(2)**.



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

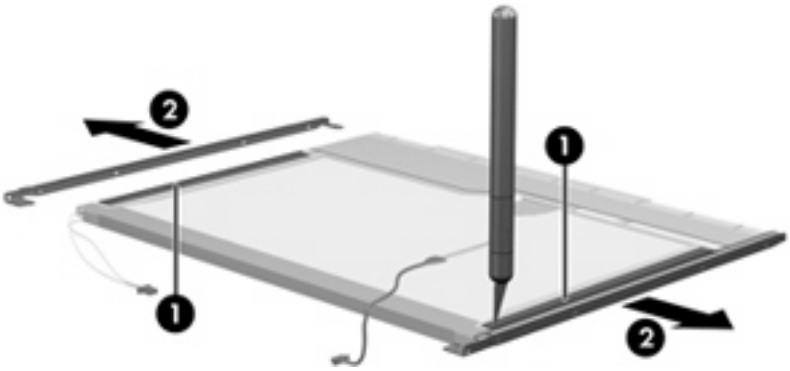


7. Turn the display panel assembly upside down.
8. Remove all screws that secure the display panel frame to the display panel.

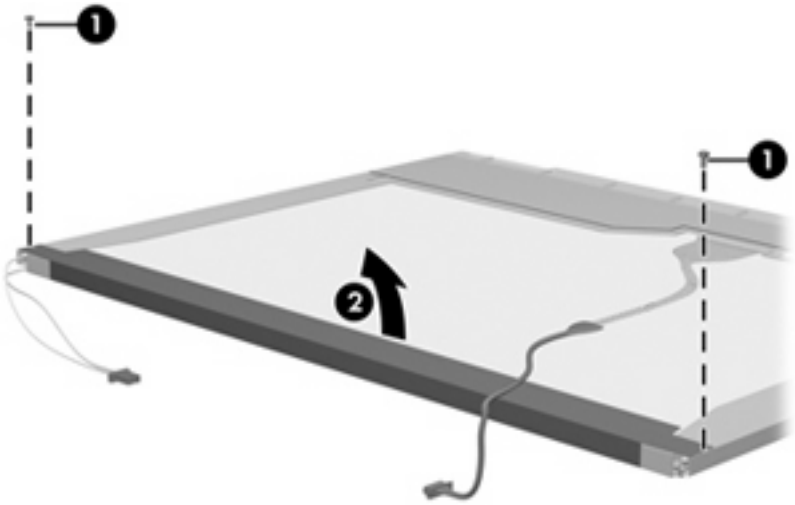


9. Use a sharp-edged tool to cut the tape **(1)** that secures the sides of the display panel to the display panel frame.

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

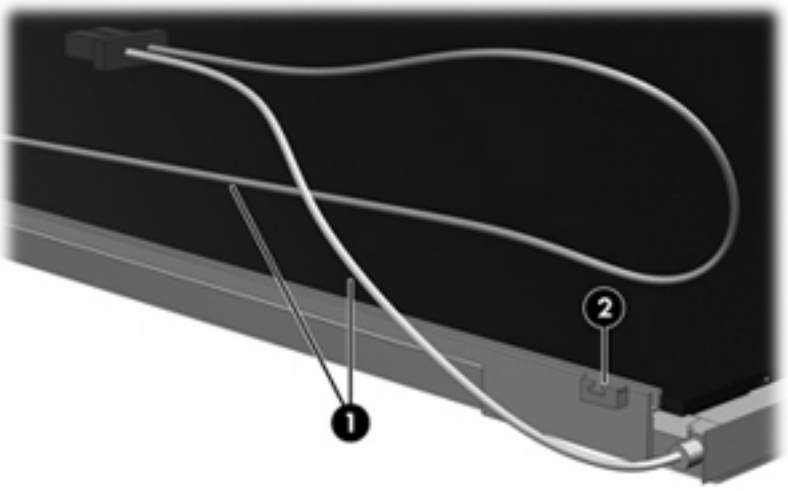


11. Remove the screws **(1)** that secure the backlight cover to the display panel.
12. Lift the top edge of the backlight cover **(2)** and swing it outward.



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

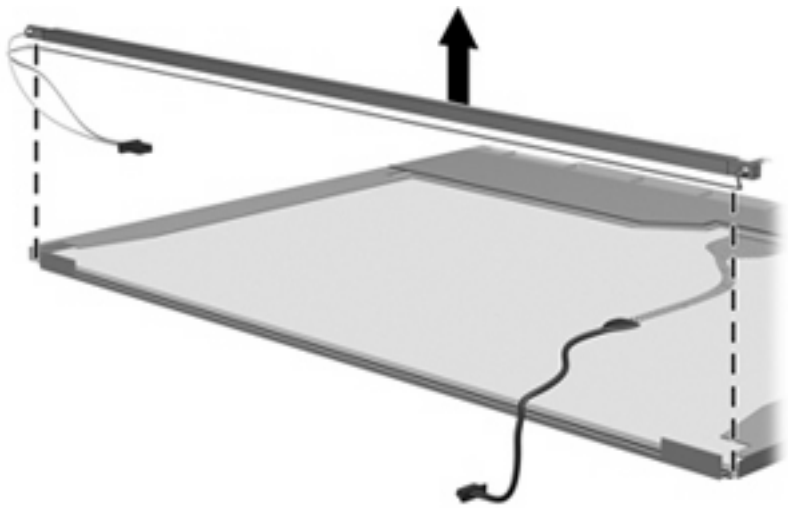
15. Remove the backlight cables **(1)** from the clip **(2)** in the display panel.



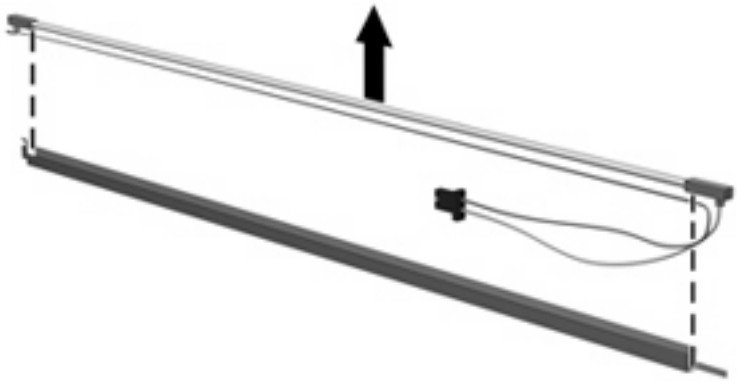
16. Turn the display panel upside down.

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

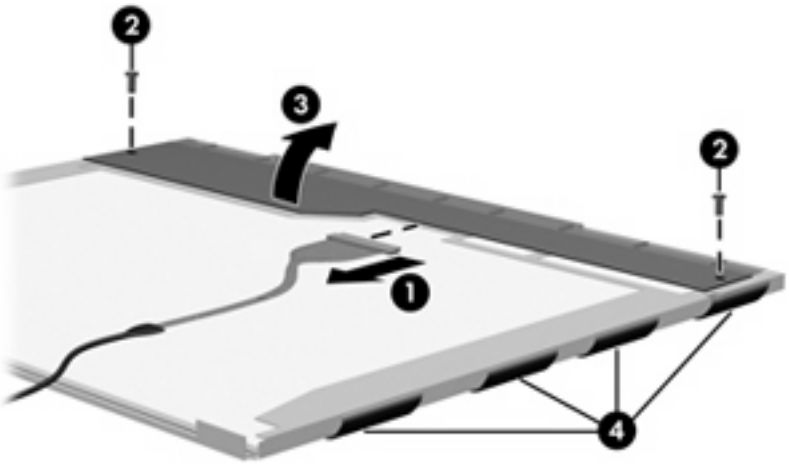
17. Remove the backlight frame from the display panel.



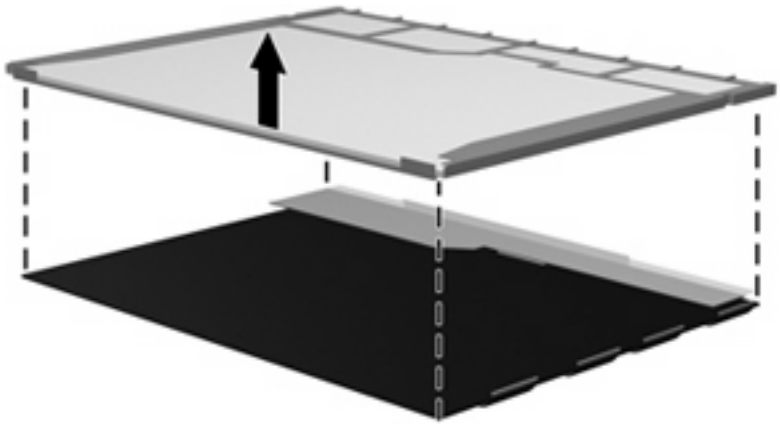
18. Remove the backlight from the backlight frame.



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



23. Remove the LCD panel.



24. Recycle the LCD panel and backlight.

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