

Product: 2008 HP Pavilion dv4 Entertainment PC Service Repair Workshop Manual
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HP Pavilion dv4 Entertainment PC Maintenance and Service Guide



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Safety warning notice

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

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1 Product description

Category	Description	Intel processors with discrete graphics subsystem	Intel processors with UMA graphics subsystem	AMD processors with UMA graphics subsystem
Product Name	HP Pavilion dv4 Entertainment PC	√	√	√
Processors	Intel® Core™ Duo with 1066-MHz front side bus (FSB)			
	T9600 2.8-GHz processor with 6-MB L2 cache	√	√	
	T9550 2.66-GHz processor with 6-MB L2 cache	√	√	
	T9400 2.53-GHz processor with 6-MB L2 cache	√	√	
	P8700 2.53-GHz processor with 3-MB L2 cache	√	√	
	P8600 2.4-GHz processor with 3-MB L2 cache	√	√	
	P8400 2.26-GHz processor with 3-MB L2 cache	√	√	
	T5900 2.2-GHz processor with 2-MB L2 cache	√	√	
	P7450 2.13-GHz processor with 3-MB L2 cache	√	√	
	P7350 2.0-GHz processor with 3-MB L2 cache	√	√	
	T6600 2.2-GHz processor with 3-MB L2 cache	√	√	
	T6400 2.06-GHz processor with 3-MB L2 cache	√	√	
	T5800 2.0-GHz processor with 2-MB L2 cache	√	√	
	Intel Pentium® Dual-Core			
	T4200 2.0-GHz processor with 4-MB L2 cache	√	√	
	T3400 2.16-GHz processor with 1-MB L2 cache	√	√	

Category	Description	Intel processors with discrete graphics subsystem	Intel processors with UMA graphics subsystem	AMD processors with UMA graphics subsystem
	T3200 2.00-GHz processor with 1-MB L2 cache	√	√	
	Intel Celeron®			
	T1600 1.66-GHz processor with 2-MB L2 cache	√	√	
	AMD Turion™ Ultra Dual-Core/35W			
	ZM-86 2.4-GHz processor with 2-MB L2 cache			√
	ZM-84 2.3-GHz processor with 2-MB L2 cache			√
	ZM-82 2.2-GHz processor with 2-MB L2 cache			√
	ZM-80 2.1-GHz processor with 2-MB L2 cache			√
	AMD Turion Dual-Core/35W			
	RM-74 2.2-GHz processor with 1-MB L2 cache			√
	RM-72 2.1-GHz processor with 1-MB L2 cache			√
	RM-70 2.0-GHz processor with 1-MB L2 cache			√
	AMD Athlon™ x2 Dual-Core/35W			
	QL-64 2.1-GHz processor with 1-MB L2 cache			√
	QL-62 2.0-GHz (1-MB L2 cache)			√
	QL-60 1.9-GHz processor with 1-MB L2 cache			√
	AMD Sempron™ x2 Single-Core/35W			
	SI-42 2.1-GHz processor with 512-KB L2 cache			√
	SI-40 2.0-GHz processor with 512-KB L2 cache			√
Chipset	Northbridge: Intel PM45	√		
	Northbridge: Intel GM45		√	
	Northbridge: Intel GL40	√	√	
	Southbridge: Intel ICH9m	√	√	
	Northbridge: AMD M780G			√
	Southbridge: AMD SB700			√

Category	Description	Intel processors with discrete graphics subsystem	Intel processors with UMA graphics subsystem	AMD processors with UMA graphics subsystem
Graphics	nVidia Discrete PCI Express x 64 Graphics ✓ <ul style="list-style-type: none"> nVidia GeForce9200M GS (NB9M-GE-S) with 256 MB of dedicated video memory (32MB x 16 DDR2 x 4 PCs) with 256 MB of video memory when system memory is less than 1 GB (64 MB + 192 MB Turbo cache) nVidia GeForce9200M GS (NB9M-GE-S) with 512 MB of dedicated video memory (64MB x 16 DDR2 x 4 PCs) with 512 MB of video memory when system memory is less than 1 GB (64 MB + 448 MB Turbo cache) <p>System design supports up to 55-W GPU requirement.</p>			
	AMD Internal Graphics with Layout "Sideport" memory			✓
	UMA nVidia <p>Unified Memory Architecture (UMA) with shared video memory (ATI Radeon HD 3200 Graphics):</p> <ul style="list-style-type: none"> Up to 251 MB on computers with 1024 MB of system memory Up to 358 MB on computers with 2048 MB of system memory <p>Memory size is a dynamic change.</p>			✓
Panel	Display panel options:	✓	✓	✓
	<ul style="list-style-type: none"> 14.1-inch, WXGA LED with BrightView 14.1-inch, WXGA with BrightView 14.1-inch, WXGA, Anti-Glare with Flushed Glass (1280 x 800) 			

Category	Description	Intel processors with discrete graphics subsystem	Intel processors with UMA graphics subsystem	AMD processors with UMA graphics subsystem
Memory	2 SODIMM slots	√	√	√
	Customer-accessible/upgradable			
	DDRII PC2-5300 (800-MHz)			
	Supports up to 4 GB of system RAM			
	Supports the following configurations:			
	4096 MB (2048 × 2)	√	√	√
3072 MB (2048 × 1, 1024 × 1)	√	√	√	
2048 MB (2048 × 1)	√	√	√	
2048 MB (1024 × 2)	√	√	√	
1024 MB (1024 × 1)	√	√	√	
Hard drives	Supports all 9.5-mm SATA, 2.5-inch hard drives	√	√	√
	Swappable bay support, hot plug and play			
	Supports the following drives:	√	√	√
	<ul style="list-style-type: none"> • 500-GB, 5400-rpm • 400-GB, 5400-rpm • 320-GB, 5400-rpm • 250-GB, 5400-rpm • 160-GB, 5400-rpm • 120-GB, 5400-rpm 			
Optical drives	Swappable bay SATA, 12.7mm tray load	√	√	√
	8× DVD±RW DL SuperMulti	√	√	√
	DVD±RW DL LightScribe SuperMulti	√	√	√
	Blu-ray ROM DVD±R/RW SuperMulti DL Drive	√	√	√
	Blu-ray ROM with LightScribe DVD ±R/RW SuperMulti DL Drive	√	√	
Webcam	Low-light, VGA camera, fixed (no tilt) with activity light	√	√	√
	640×480 by 24 frames per second			
Microphone	2 integrated omnidirectional digital microphones	√	√	√

Category	Description	Intel processors with discrete graphics subsystem	Intel processors with UMA graphics subsystem	AMD processors with UMA graphics subsystem
	Dual array microphones with software (beam forming, echo cancellation, noise suppression)	√	√	√
Audio	HD audio	√	√	√
	Supports Windows Vista® Premium Logo requirements	√	√	√
	Pavilion-branded Altec Lansing speakers	√	√	√
Modem	56K V.92 data/fax modem	√	√	√
	Supports all worldwide certification requirements	√	√	√
	Modem cable not included	√	√	√
Ethernet	Integrated Gigabit 10/100/1000 network interface card (NIC)	√		√
	Integrated 10/100 network interface card (NIC)		√	√
Wireless	Integrated wireless (WLAN and WWAN) options:			
	Intel WiFi Link 5100 Wireless ABG and Bluetooth with 2 antennae	√	√	
	Intel WiFi Link 5100 with 2 antennae	√	√	
	Broadcom 4321AGN Wi-Fi Adapter (802.11a/b/g/n) + Bluetooth with 2 antennae	√	√	√
	Broadcom 4321AGN Wi-Fi Adapter (802.11a/b/g/n) with 2 antennae	√	√	√
	Broadcom 802.11a/b/g/n with 2 antennae			√
	Broadcom 802.11a/b/g/n with Bluetooth and 2 antennae			√
	54g 802.11b/g with 2 antennae	√	√	
	54g 802.11b/g with Bluetooth and 2 antennae	√	√	
	2 WWAN 5-band antennae built into display assembly	√	√	
	Subscriber identity module (SIM) security (customer-accessible in battery bay)	√	√	

Category	Description	Intel processors with discrete graphics subsystem	Intel processors with UMA graphics subsystem	AMD processors with UMA graphics subsystem
	Support for the following WWAN formats: <ul style="list-style-type: none"> • Evolution-data optimized (EVDO) • High-speed downlink packet access (HSDPA) 	√	√	
Integrated TV tuner	TV tuner antenna and cable for both DVB-T and ATSC/NTSC	√	√	
	Integrated NTSC/ATSC/QAM Hybrid TV tuner (not available with WWAN)	√	√	
	Integrated Analog/DVB-T TV tuner (not available with WWAN)	√	√	
	Integrated DVB-T TV tuner (not available with WWAN)	√	√	
External card expansion	One ExpressCard54 slot	√	√	√
	Digital Media Slot, supports SD, MMC, MS, MSpro, xD	√	√	√
Internal card expansion	2 mini full-size PCI slots	√	√	√
Ports	Audio-in (stereo microphone)	√	√	√
	Audio-out (2) (stereo headphones)	√	√	√
	AC Adapter (smart pin)	√	√	√
	Consumer infrared	√	√	√
	eSATA (third USB port)	√	√	√
	HDMI	√	√	√
	MCX	√	√	√
	RJ-11 (modem)	√	√	√
	RJ-45 (Ethernet, includes link and activity lights)	√	√	√
	USB (3)	√	√	√
	VGA (Dsub 15-pin)	√	√	√
Docking	Expansion port 3 supports HP xb4 Docking Station and HP Notebook QuickDock	√	√	√
Keyboard/TouchPad	14.1-inch keyboard	√	√	√
	TouchPad (supports 2-way scroll with legend)	√	√	√

Category	Description	Intel processors with discrete graphics subsystem	Intel processors with UMA graphics subsystem	AMD processors with UMA graphics subsystem
Power requirements	12-cell 2.20-Ah Li-ion battery	√	√	√
	6-cell 2.55-Ah Li-ion battery	√	√	√
	6-cell 2.20-Ah Li-ion battery	√	√	√
	65-W AC adapter with localized cable plug support (2-wire plug with ground pin, supports 2-pin DC connector)		√	√
	90-W AC adapter with localized cable plug support (2-wire plug with ground pin, supports 2-pin DC connector)	√		√
	Standard commercial smart pin	√	√	√
Security	Security cable slot	√	√	√
	Fingerprint reader	√	√	√
Operating system	Preinstalled:			
	Windows Vista Business (32-bit)	√	√	√
	Windows Vista Home Basic (32-bit)	√	√	√
	Windows Vista Premium (32- and 64-bit)	√	√	√
	Windows Vista Ultimate (64-bit)	√	√	
Serviceability	End-user replaceable parts:			
	AC adapter	√	√	√
	Battery (system)	√	√	√
	Hard drive	√	√	√
	Memory module	√	√	√
	Optical drive	√	√	√
	Mini Card components	√	√	√

2 External component identification

Top components

TouchPad

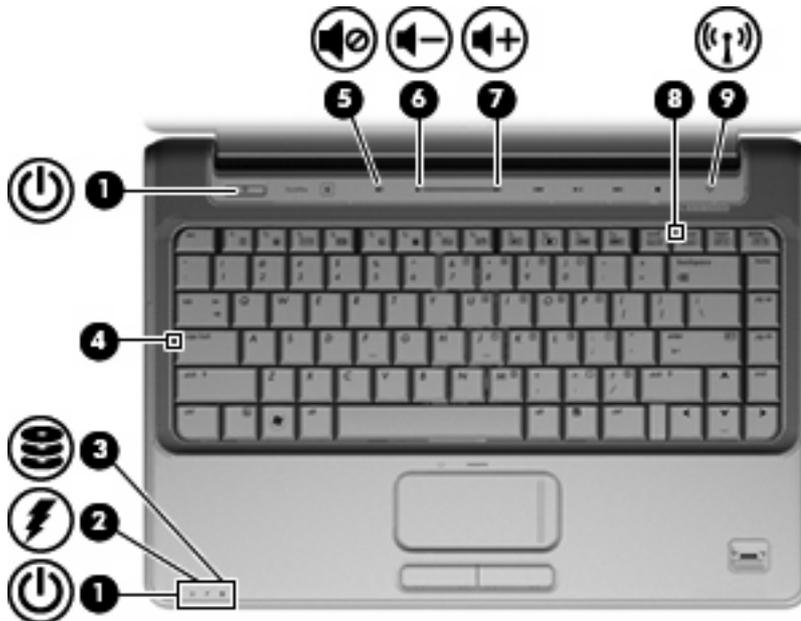


Component	Description
(1) TouchPad light	<ul style="list-style-type: none">• White: TouchPad is enabled.• Amber: TouchPad is disabled.
(2) TouchPad*	Moves the pointer and selects or activates items on the screen.
(3) Left TouchPad button*	Functions like the left button on an external mouse.
(4) TouchPad on/off button	Enables/disables the TouchPad.
(5) TouchPad vertical scroll zone*	Scrolls up or down.
(6) Right TouchPad button*	Functions like the right button on an external mouse.

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

Lights

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



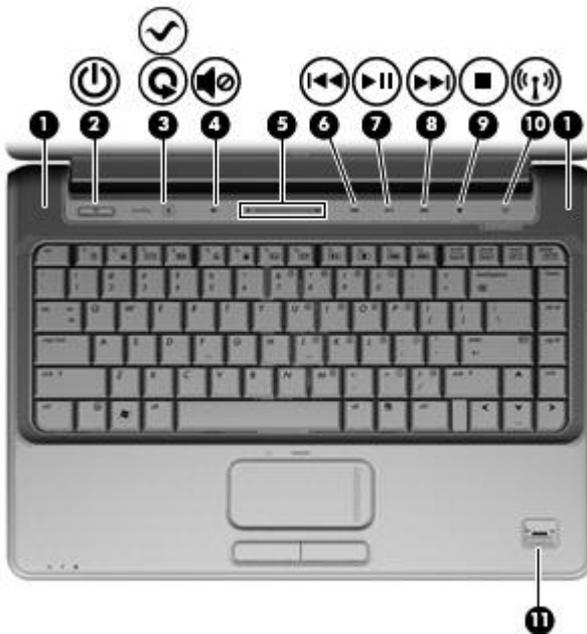
Component	Description
(1) Power lights (2)*	<ul style="list-style-type: none"> On: The computer is on. Blinking: The computer is in the Sleep state. Off: The computer is off or in Hibernation.
(2) Battery light	<ul style="list-style-type: none"> On: A battery is charging. Blinking: A battery that is the only available power source has reached a low battery level or a critical battery level. Off: If the computer is plugged into an external power source, the light is turned off when all batteries in the computer are fully charged. If the computer is not plugged into an external power source, the light stays off until the battery reaches a low battery level.
(3) Drive light	<ul style="list-style-type: none"> Blinking: The hard drive or optical drive (select models only) is being accessed. On: HP ProtectSmart Hard Drive Protection has temporarily parked the internal hard drive, and if present, the hard drive in the SmartBay.
(4) Caps lock light	On: Caps lock is on.
(5) Volume mute light	<ul style="list-style-type: none"> White: Computer sound is turned on. Amber: Computer sound is turned off.
(6) Volume down light	On: The volume scroll zone is being used to decrease speaker volume.
(7) Volume up light	On: The volume scroll zone is being used to increase speaker volume.

Component	Description
(8) Num lock light	On: Num lock is on or the embedded numeric keypad is enabled.
(9) Wireless light	<ul style="list-style-type: none"> Blue: An integrated wireless device, such as a wireless local area network (WLAN) device and/or a Bluetooth® device, is on. Amber: All wireless devices are off.

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

Buttons, speakers, and fingerprint reader

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



Component	Description
(1) Speakers (2)	Produce sound.

Component	Description
(2) Power button*	<ul style="list-style-type: none"> • When the computer is off, press the button to turn on the computer. • When the computer is on, briefly press the button to initiate Sleep. • When the computer is in the Sleep state, briefly press the button to exit Sleep. • When the computer is in Hibernation, briefly press the button to exit Hibernation.
	<p>If the computer has stopped responding and Windows® shutdown procedures are ineffective, press and hold the power button for at least 5 seconds to turn off the computer.</p>
	<p>To learn more about your power settings, select Start > Control Panel > System and Maintenance > Power Options.</p>
(3) Media button	<ul style="list-style-type: none"> • Launches the MediaSmart program (for models with MediaSmart preinstalled). • Launches the QuickPlay program (for models with QuickPlay preinstalled). • Launches the DVDPlay program (for models with DVDPlay preinstalled).
	<p>NOTE: If the computer has been set up to require a logon password, you may be asked to log on to Windows. MediaSmart, QuickPlay, or DVDPlay launches after you log on. Refer to the MediaSmart, QuickPlay, or DVDPlay software Help for more information.</p>
(4) Volume mute button	Mutes and restores speaker sound.
(5) Volume scroll zone	Adjusts speaker volume. Slide your finger to the left to decrease volume and to the right to increase volume. You can also tap the minus sign on the scroll zone to decrease volume, or tap the plus sign on the scroll zone to increase volume.
(6) Previous/rewind button	<ul style="list-style-type: none"> • Plays the previous track or chapter when the button is pressed once. • Rewinds media when the button is pressed simultaneously with the fn key.
(7) Play/pause button	Plays or pauses media.
(8) Next/fast forward button	<ul style="list-style-type: none"> • Plays the next track or chapter when the button is pressed once. • Fast forwards media when pressed simultaneously with the fn key.
(9) Stop button	Stops playback.
(10) Wireless button	<p>Turns the wireless feature on or off but does not establish a wireless connection.</p> <p>NOTE: A wireless network must be set up in order to establish a wireless connection.</p>

Component	Description
(11) Fingerprint reader (select models only)	Allows a fingerprint logon to Windows, instead of a password logon.

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

Keys

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



Component	Description
(1) <code>esc</code> key	Displays system information when pressed in combination with the <code>fn</code> key.
(2) <code>fn</code> key	Executes frequently used system functions when pressed in combination with a function key or the <code>esc</code> key.
(3) Windows logo key	Displays the Windows Start menu.
(4) Windows applications key	Displays a shortcut menu for items beneath the pointer.
(5) Embedded numeric keypad keys	Can be used like the keys on an external numeric keypad.
(6) Function keys	Execute frequently used system functions when pressed in combination with the <code>fn</code> key.

Display

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



Component	Description
(1) Internal display switch	Turns off the display if the display is closed while the computer is turned on.
(2) Internal digital dual array microphones (2)	Record sound.
(3) Integrated webcam light (select models only)	On: The integrated webcam is in use.
(4) Integrated webcam (select models only)	Records video and captures still photographs.

Front components



Component	Description
(1) Power light	<ul style="list-style-type: none"> On: The computer is on. Blinking: The computer is in the Sleep state. Off: The computer is off or in Hibernation.
(2) Battery light	<ul style="list-style-type: none"> On: A battery is charging. Blinking: A battery that is the only available power source has reached a low battery level or a critical battery level. Off: If the computer is plugged into an external power source, the light is turned off when all batteries in the computer are fully charged. If the computer is not plugged into an external power source, the light stays off until the battery reaches a low battery level.
(3) Drive light	<ul style="list-style-type: none"> Blinking: The hard drive or optical drive (select models only) is being accessed. On: HP ProtectSmart Hard Drive Protection has temporarily parked the internal hard drive, and if present, the hard drive in the SmartBay.
(4) Consumer infrared lens	Receives a signal from the HP Remote Control (select models only).
(5) Audio-in (microphone) jack	Connects an optional computer headset microphone, stereo array microphone, or monaural microphone.
(6) Audio-out (headphone) jacks (2)	Produce sound when connected to optional powered stereo speakers, headphones, ear buds, a headset, or television audio.

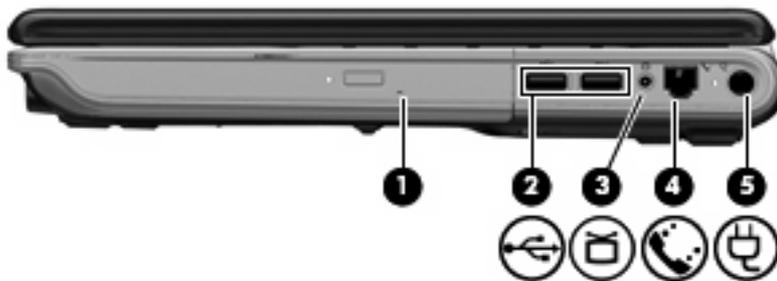
Rear component



Component	Description
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.

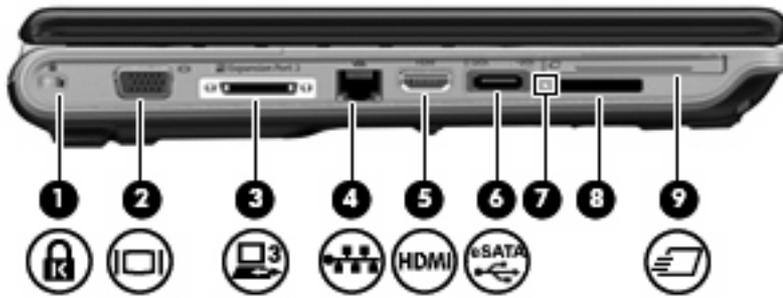
Right-side components

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



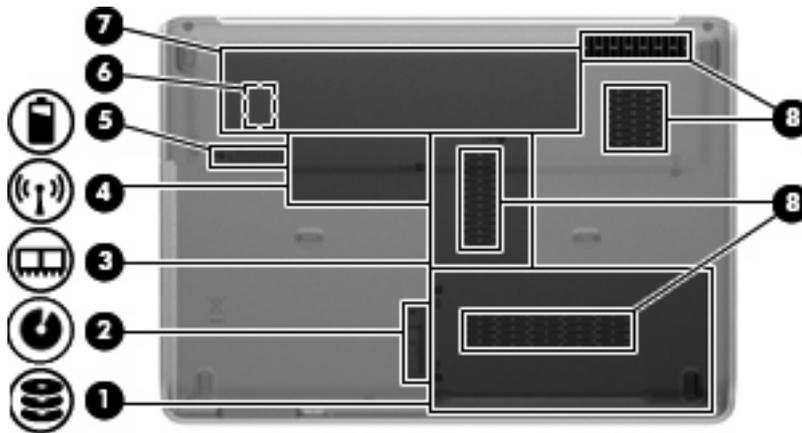
Component	Description
(1) SmartBay	Supports an optical drive or hard drive.
(2) USB ports (2)	Connect optional USB devices.
(3) TV antenna/cable jack (select models only)	Connects a TV antenna, a digital cable device, or a satellite device that receives standard or high-definition TV broadcasts.
(4) RJ-11 (modem) jack (select models only)	Connects a modem cable.
(5) Power connector	Connects an AC adapter.

Left-side components



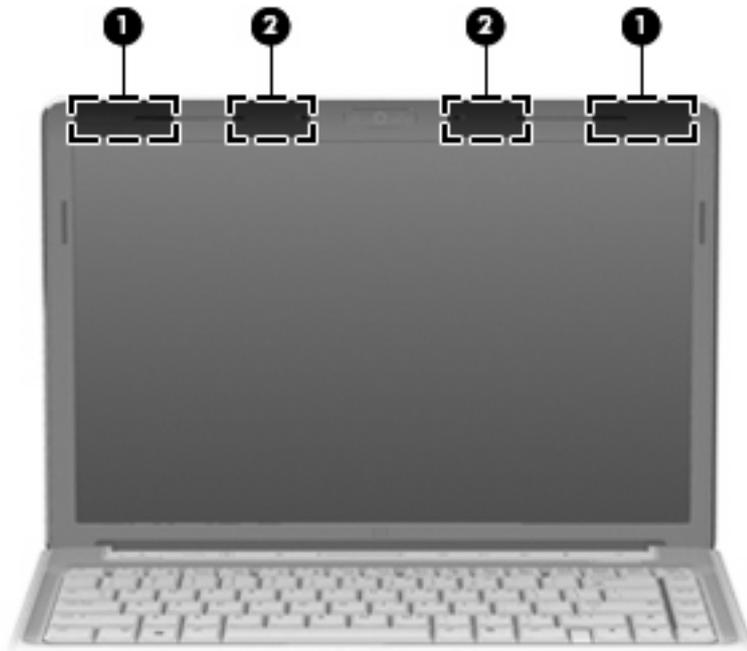
Component	Description
(1) Security cable slot	Attaches an optional security cable to the computer. NOTE: The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.
(2) External monitor port	Connects an external VGA monitor or projector.
(3) Expansion port 3	Connects the computer to an optional docking device or optional expansion product. NOTE: The computer has only one expansion port. The term <i>expansion port 3</i> describes the type of expansion port.
(4) RJ-45 (network) jack	Connects a network cable.
(5) HDMI port	Connects an optional video or audio device, such as a high-definition television, or any compatible digital or audio component.
(6) eSATA/USB port	Connects high-performance eSATA components, such as an eSATA external hard drive, or connect an optional USB device.
(7) Digital Media Slot light	On: A digital card is being accessed.
(8) Digital Media Slot	Supports the following optional digital card formats: <ul style="list-style-type: none"> • Memory Stick (MS) • Memory Stick Pro (MSP) • MultiMediaCard (MMC) • Secure Digital (SD) Memory Card • xD-Picture Card (XD)
(9) ExpressCard slot	Supports optional ExpressCard/54 cards.

Bottom components



Component	Description
(1) Hard drive and WLAN module compartment	<p>Holds the hard drive and the wireless LAN (WLAN) module.</p> <p>CAUTION: To prevent an unresponsive system, replace the wireless module only with a wireless module authorized for use in the computer by the governmental agency that regulates wireless devices in your country or region. If you replace the module and then receive a warning message, remove the module to restore computer functionality, and then contact technical support through Help and Support.</p>
(2) SmartBay release latch	Releases the SmartBay module.
(3) Memory module compartment	Contains the 2 memory module slots.
(4) Mini Card compartment	<p>On select models, holds a wireless WAN (WWAN) module and/or the TV tuner card.</p> <p>CAUTION: To prevent an unresponsive system, replace the wireless module only with a wireless module authorized for use in the computer by the governmental agency that regulates wireless devices in your country or region. If you replace the module and then receive a warning message, remove the module to restore computer functionality, and then contact technical support through Help and Support.</p>
(5) Battery release latch	Releases the battery from the battery bay.
(6) SIM slot (select models only)	Contains a subscriber identity module (SIM). The SIM slot is located inside the battery bay.
(7) Battery bay	Holds the battery.
(8) Vents (4)	<p>Enable airflow to cool internal components.</p> <p>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.</p>

Wireless antennae



Component	Description
(1) WWAN antennae (2)*	Send and receive wireless signals to communicate with wireless wide-area networks (WWAN).
(2) WLAN antennae (2)*	Send and receive wireless signals to communicate with wireless local area networks (WLAN).

*The antennae are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennae 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.

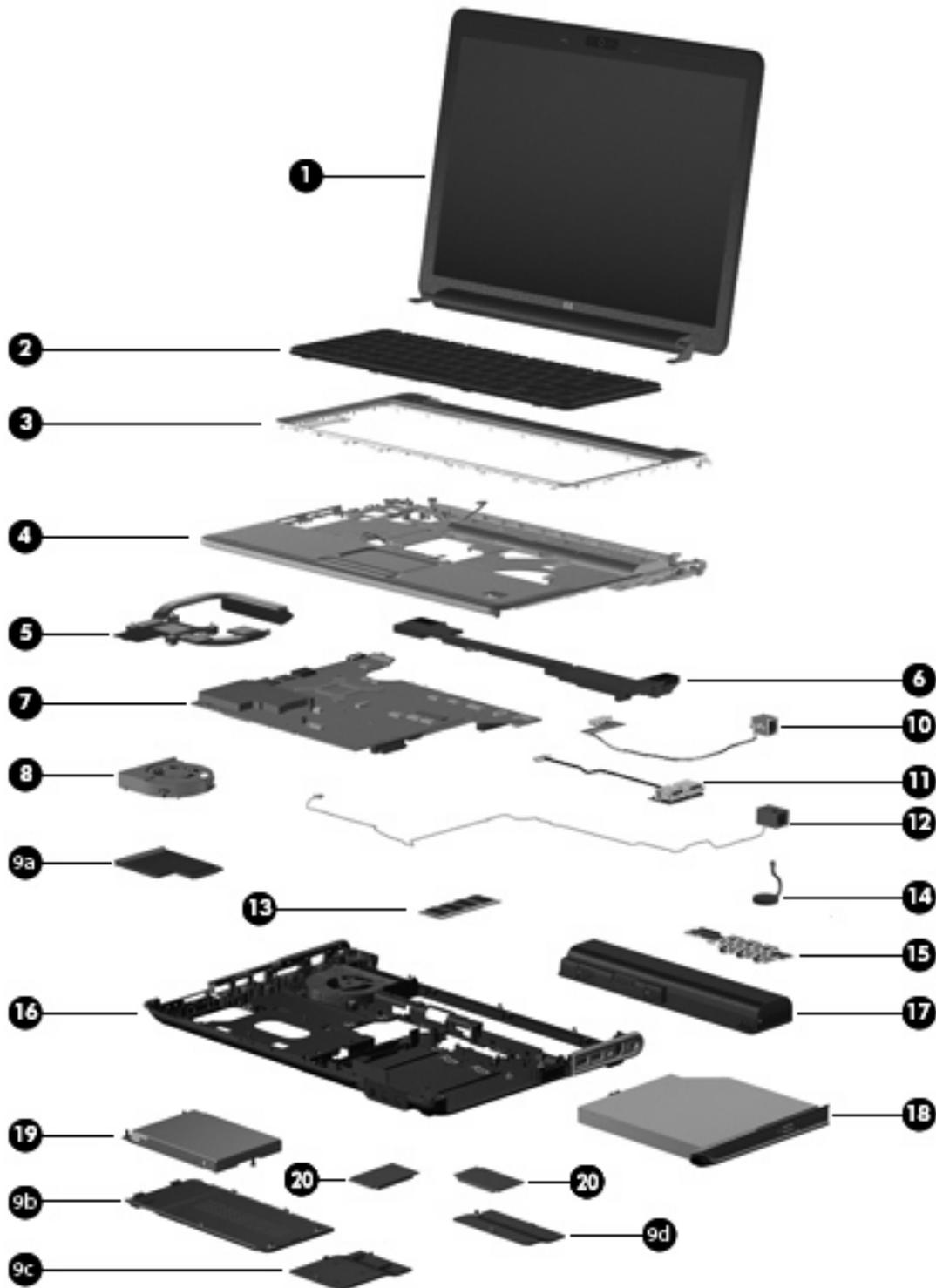
3 Illustrated parts catalog

Serial number location

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



Computer major components



Item	Description	Spare part number
(1)	Display assemblies (see Display assembly components on page 25 for display assembly spare part component information)	

Item	Description	Spare part number
(2)	Keyboards	
	NOTE: For a comprehensive list of keyboard spare part numbers, see the Sequential part number listing on page 36 .	
	For use with standard computer models	486901-xxx
	For use only with bronze-colored computer models	508119-xx1
	For use in blue-colored computer models	508120-xx1
	For use in blue-colored computer models only in the United States	507319-001
(3)	Keyboard covers	
	<ul style="list-style-type: none"> For use with standard computer models 	486852-001
	<ul style="list-style-type: none"> For use with bronze-colored computer models 	495663-001
	<ul style="list-style-type: none"> For use with standard computer models 	512231-001
	<ul style="list-style-type: none"> For use with bronze-colored computer models 	512232-001
(4)	Top covers (include TouchPad and TouchPad cable)	
	<ul style="list-style-type: none"> Equipped with a fingerprint reader (includes fingerprint reader board and cable) 	486830-001
	<ul style="list-style-type: none"> Not equipped with a fingerprint reader 	488105-001
	<ul style="list-style-type: none"> For bronze-colored computer models equipped with a fingerprint reader 	495661-001
	<ul style="list-style-type: none"> For bronze-colored computer models not equipped with a fingerprint reader 	495662-001
	<ul style="list-style-type: none"> For use in blue-colored computer models 	502579-001
(5)	Heat sink (includes thermal material)	
	<ul style="list-style-type: none"> For use in models with Intel processors and UMA graphics subsystems 	486838-001
	<ul style="list-style-type: none"> For use in models with AMD processors and UMA graphics subsystems 	492260-001
(6)	Speaker assembly	486837-001
(7)	System boards (include thermal material)	
	For use in computer models with Intel processors:	
	<ul style="list-style-type: none"> On models equipped with a 256-MB discrete graphics subsystem 	486723-001
	<ul style="list-style-type: none"> On models equipped with a 512-MB discrete graphics subsystem 	496730-001
	<ul style="list-style-type: none"> On models equipped with a UMA graphics subsystem 	486724-001
	For use in computer models with AMD processors:	
	<ul style="list-style-type: none"> With QuickPlay 	488238-001
	<ul style="list-style-type: none"> With MediaSmart 	511858-001
(8)	Fan (includes thermal material)	486844-001
(9)	Plastics Kit (see Plastics Kit on page 28 for Plastics Kit spare part component information)	486833-001
(9a)	ExpressCard slot bezel	
(9b)	Hard drive bay cover	