Notebook Tour

Document Part Number: 430225-001

January 2007

This guide explains the computer hardware features.

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1

Components

This chapter explains the hardware features of the computer.

To see a list of hardware installed in the computer:

1. Select **Start > Computer > System properties**.
2. In the left task pane, click **Device Manager**.

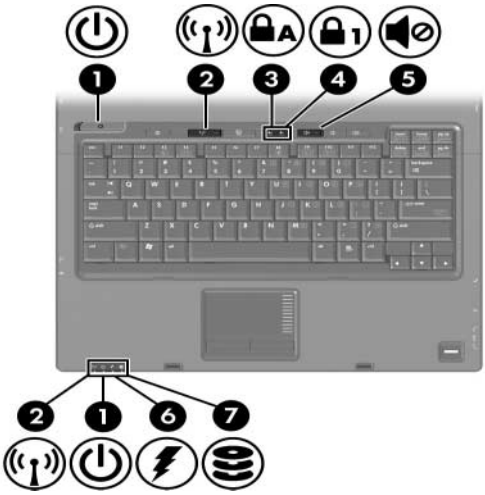
You can also add hardware or modify your device configurations using Device Manager.

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

Top components

Lights

Refer to the illustration that most closely matches your computer.



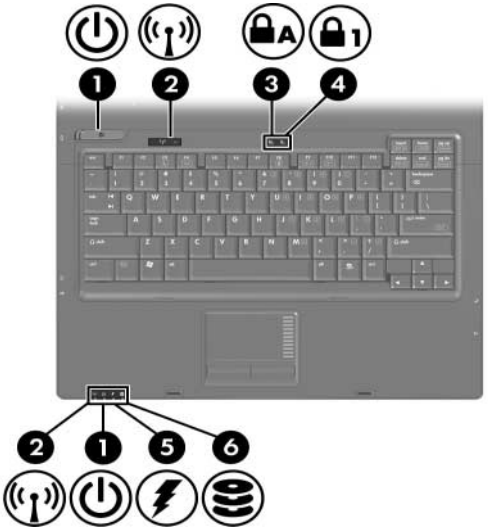
Component	Description
❶ Power lights* (2)	On: The computer is on. Blinking: The computer is in the Sleep state. Blinking rapidly: An AC adapter with a higher power rating should be connected. Off: The computer is off or in Hibernation.

(Continued)

Component		Description
❷	Wireless lights† (2)	On: An integrated wireless device, such as a wireless local area network (WLAN) device, a wireless wide-area network (WWAN), and/or a Bluetooth® device, is turned on.
❸	Caps lock light	On: Caps lock is on.
❹	Num lock light	On: Num lock is on or the embedded numeric keypad is enabled.
❺	Volume mute light	On: Computer sound is turned off.
❻	Battery light	Amber: A battery pack is charging. Green: A battery pack is close to full charge capacity. Blinking amber: A battery pack that is the only available power source has reached a low battery level. When the battery reaches a critical battery level, the battery light begins blinking rapidly. Off: If the computer is plugged into an external power source, the light is turned off when all batteries in the computer are fully charged. If the computer is not plugged into an external power source, the light stays off until the battery reaches a low battery level.
❼	Drive light	Blinking: The hard drive or optical drive is being accessed.

*There are 2 power lights. Both display the same information. The light on the power button is visible only when the computer is open; the other power light is always visible on the front of the computer.

†There are 2 wireless lights. Both display the same information. The light on the wireless button is visible only when the computer is open; the other wireless light is always visible on the front of the computer.



Component		Description
❶	Power lights* (2)	On: The computer is on. Blinking: The computer is in the Sleep state. Blinking rapidly: An AC adapter with a higher power rating should be connected. Off: The computer is off or in Hibernation.
❷	Wireless lights† (2)	On: An integrated wireless device, such as a wireless local area network (WLAN) device, a wireless wide-area network (WWAN), and/or a Bluetooth device, is turned on.
❸	Caps lock light	On: Caps lock is on.

(Continued)

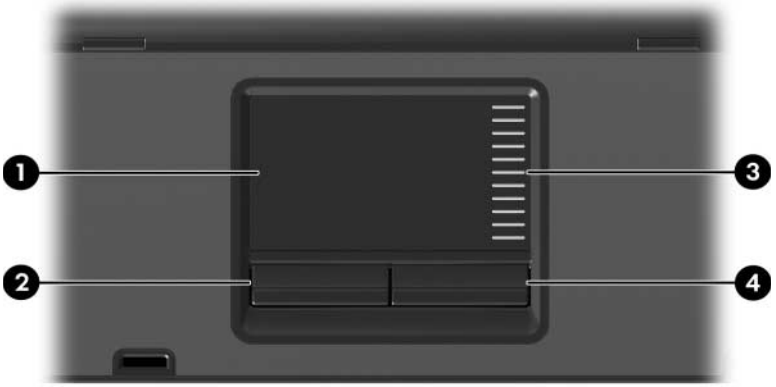
Component		Description
❹	Num lock light	On: Num lock is on or the embedded numeric keypad is enabled.
❺	Battery light	Amber: A battery pack is charging. Green: A battery pack is close to full charge capacity. Blinking amber: A battery pack that is the only available power source has reached a low battery level. When the battery reaches a critical battery level, the battery light begins blinking rapidly. Off: If the computer is plugged into an external power source, the light is turned off when all batteries in the computer are fully charged. If the computer is not plugged into an external power source, the light stays off until the battery reaches a low battery level.
❻	Drive light	Blinking: The hard drive or optical drive is being accessed.

*There are 2 power lights. Both display the same information. The light on the power button is visible only when the computer is open; the other power light is always visible on the front of the computer.

†There are 2 wireless lights. Both display the same information. The light on the wireless button is visible only when the computer is open; the other wireless light is always visible on the front of the computer.

Pointing devices

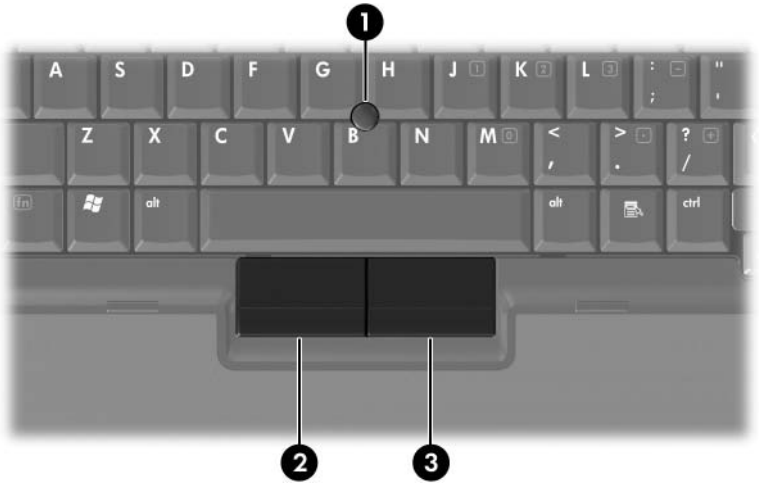
TouchPad (select models only)



Component		Description
❶	TouchPad*	Moves the pointer and selects or activates items on the screen. Can be set to perform other mouse functions, such as scrolling, selecting, and double-clicking.
❷	Left TouchPad button*	Functions like the left button on an external mouse.
❸	TouchPad scroll zone	Scrolls up or down.
❹	Right TouchPad button*	Functions like the right button on an external mouse.

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

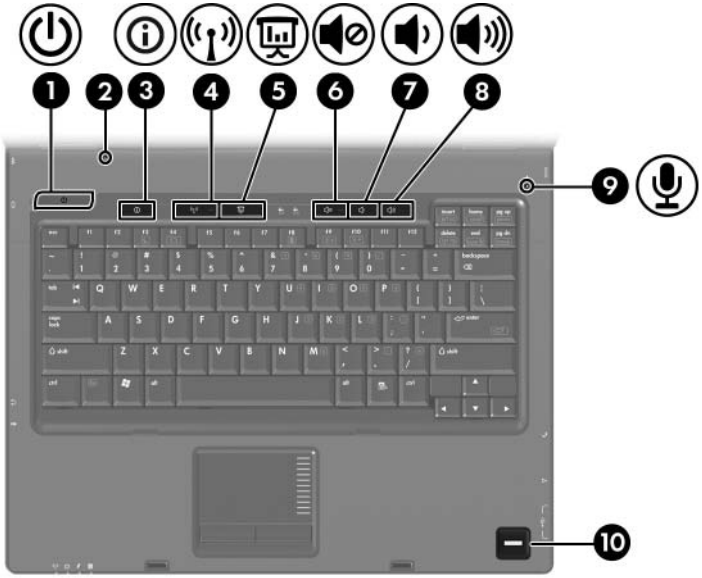
Pointing stick (select models only)



Component		Description
❶	Pointing stick	Moves the pointer and selects or activates items on the screen.
❷	Left pointing stick button	Functions like the left button on an external mouse.
❸	Right pointing stick button	Functions like the right button on an external mouse.

Buttons, switches and readers

Refer to the illustration that most closely matches your computer.

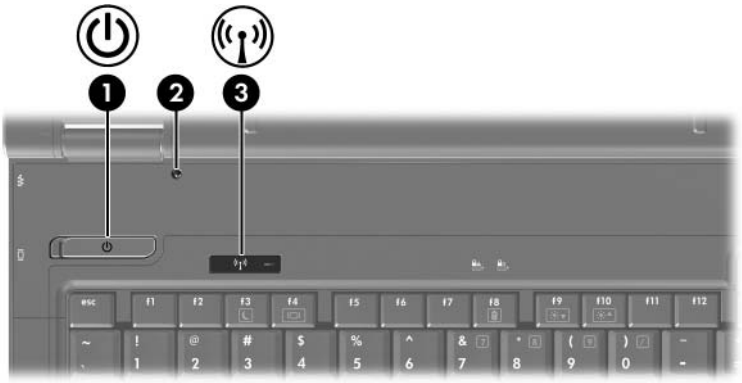


Component		Description
1	Power button	When the computer is off, press the power button to turn on the computer. If the computer has stopped responding and Windows® shutdown procedures cannot be used, press and hold the power button for at least 5 seconds to turn off the computer. To learn more about your power settings, select **Start > Control Panel > System and Maintenance > Power Options**.

(Continued)

Component		Description
❷	Display switch	Initiates the Sleep state if the display is closed while the computer is on.
❸	Info Center button	Launches Info Center, which enables you to open various software solutions.
❹	Wireless button*	Turns the wireless feature on or off, but does not create a wireless connection.
	✎ To establish a wireless connection, a wireless network must already be set up.	
❺	Presentation button	Starts the Presentation feature.
❻	Volume mute button	Mutes and restores computer sound.
❼	Volume down button	Decreases computer volume.
❽	Volume up button	Increases computer volume.
❾	Internal microphone	Records sound.
❿	Fingerprint reader	Allows a fingerprint logon to Windows, instead of a password logon.

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



Component		Description
❶	Power button	When the computer is off, press the power button to turn on the computer. If the computer has stopped responding and Windows® shutdown procedures cannot be used, press and hold the power button for at least 5 seconds to turn off the computer. To learn more about your power settings, select **Start > Control Panel > System and Maintenance > Power Options**.
❷	Display switch	Initiates the Sleep state if the display is closed while the computer is on.
❸	Wireless button*	Turns the wireless feature on or off, but does not create a wireless connection.
	✎ To establish a wireless connection, a wireless network must already be set up.	

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

Keys

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

Component		Description
❶	**esc** key	Displays system information when pressed in combination with the **fn** key.
❷	**fn** key	Executes frequently used system functions when pressed in combination with a function key or the **esc** key.
❸	Windows logo key	Displays the Windows Start menu.
❹	Windows applications key	Displays a shortcut menu for items beneath the pointer.

(Continued)

Component		Description
❺	Embedded numeric keypad keys	Can be used like the keys on an external numeric keypad.
❻	Function keys	Execute frequently used system functions when pressed in combination with the **fn** key.

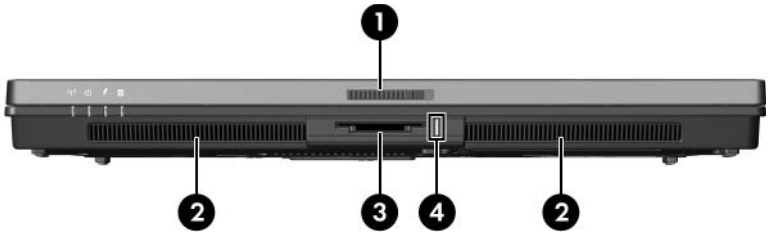
✎ Refer to the table in "Hotkey quick reference" for a description of each hotkey.

Hotkey quick reference

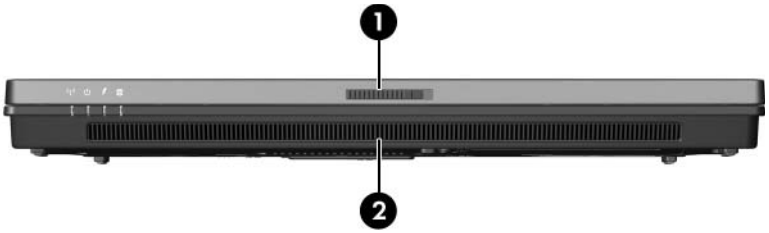
To perform this function	Press
Initiate Sleep.	**fn+f3**
Exit Sleep	Power button
Alternate between computer display and external display	**fn+f4**
Display battery information	**fn+f8**
Clear battery information	**fn+f8**
Decrease screen brightness	**fn+f9**
Increase screen brightness	**fn+f10**
Display system information	**fn+esc**
Clear system information	**fn+esc** or press **enter**

Front components

Refer to the illustration that most closely matches your computer.



Component		Description
1	Display release latch	Opens the computer.
2	Speakers (2)	Produce system sound.
3	Digital Media Slot	Supports 7 optional digital card formats: SD (Secure Digital) Memory Card, MultiMediaCard, Memory Stick, Memory Stick Pro, Memory Stick Duo (with adapter), SmartMedia card, and xD-Picture Card.
4	Digital Media Slot light	On: A digital card is being accessed.



Component		Description
1	Display release latch	Opens the computer.
2	Speakers (2)	Produce system sound.

Rear components

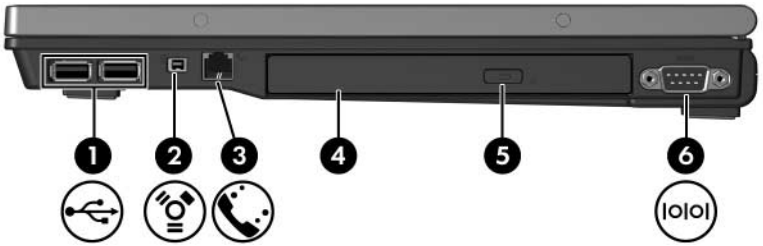
Refer to the illustration that most closely matches your computer.

Component		Description
❶	Security cable slot	Attaches an optional security cable to the computer.
	△ The security cable is designed to act as a deterrent, but may not prevent the computer from being mishandled or stolen.	
❷	Power connector	Connects an AC adapter.
❸	Parallel port	Connects an optional printer.
❹	S-Video-out jack	Connects an optional S-Video device such as a television, VCR, camcorder, overhead projector, or video capture card.

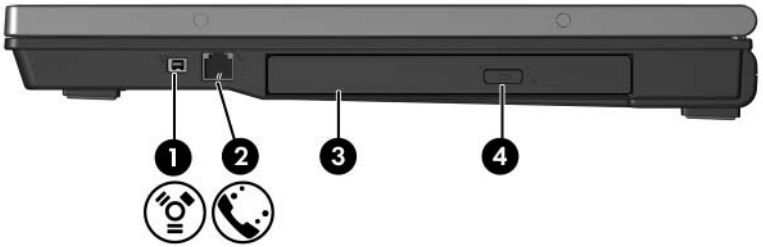
Component		Description
❶	Security cable slot	Attaches an optional security cable to the computer.
	△ The security cable is designed to act as a deterrent, but may not prevent the computer from being mishandled or stolen.	
❷	Power connector	Connects an AC adapter.

Right-side components

Refer to the illustration that most closely matches your computer.



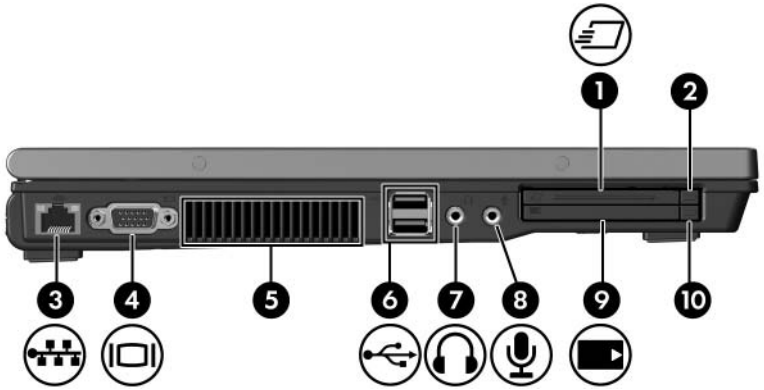
Component		Description
❶	USB ports (2)	Connect optional USB devices.
❷	1394 port	Connects an optional IEEE 1394 device, such as a camcorder.
❸	RJ-11 (modem) jack	Connects a modem cable.
❹	Optical drive	Reads an optical disc.
❺	Optical drive button	Releases the media tray.
❻	Serial port	Connects an optional serial device.



Component		Description
❶	1394 port	Connects an optional IEEE 1394 device, such as a camcorder.
❷	RJ-11 (modem) jack	Connects a modem cable.
❸	Optical drive	Reads an optical disc.
❹	Optical drive button	Releases the media tray.

Left-side components

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



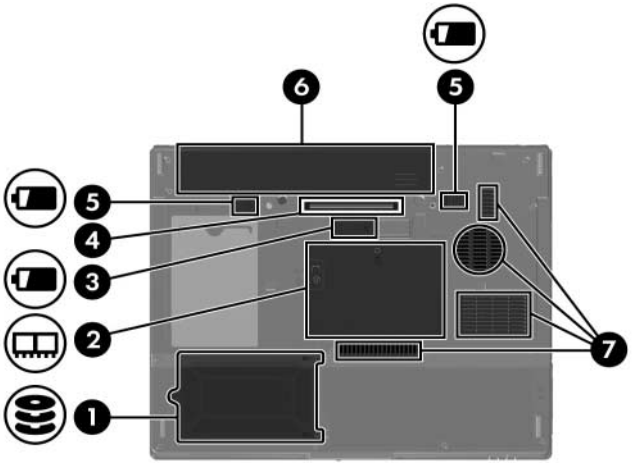
Component		Description
❶	ExpressCard slot (select models only)	Supports optional ExpressCard/54 or ExpressCard/34 cards.
❷	ExpressCard slot eject button	Ejects the ExpressCard from the ExpressCard slot.
❸	RJ-45 (network) jack	Connects a network cable.
❹	External monitor port	Connects an external monitor.

(Continued)

Component		Description
❺	Vent	Enables airflow to cool internal components.
	⚠ To prevent overheating, do not obstruct 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 thick rugs or clothing, to block airflow.	
	✎ 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.	
❻	USB ports (2)	Connect optional USB devices.
❼	Audio-out (headphone) jack	Produces system stereo sound when connected to optional powered stereo speakers, headphones, ear buds, a headset, or television audio.
❽	Audio-in (microphone) jack	Connects an optional headset microphone or a monaural microphone.
❾	PC Card slot	Supports optional Type I, Type II, or Type III 32-bit (CardBus) or 16-bit PC Cards. Some models may be shipped with a smart card reader instead.
❿	PC Card slot eject button	Ejects the PC Card from the PC Card slot.

Bottom components

Refer to the illustration that most closely matches your computer.



Component		Description
❶	Hard drive bay	Holds the hard drive.
❷	Expansion memory module and Mini Card compartment	Contains the expansion memory module slot and a wireless LAN device (select models only).
	To prevent an unresponsive system and the display of a warning message, replace with only a Mini Card device authorized for use in the computer by the governmental agency that regulates wireless devices in your country. If you replace the device and then receive a warning message, remove the device to restore computer functionality. Then contact Customer Care through Help and Support.	

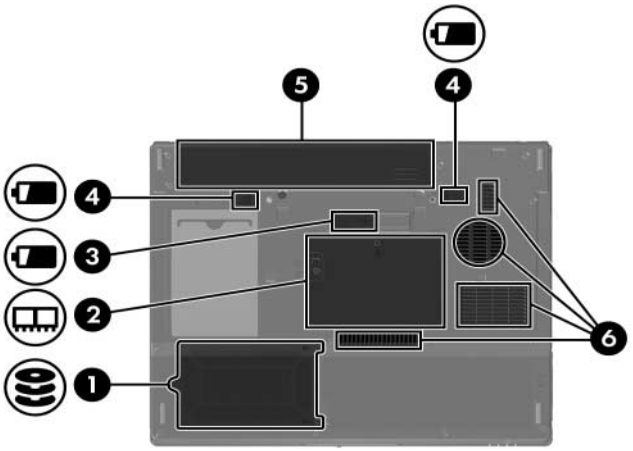
(Continued)

Component		Description
❸	Accessory battery connector	Connects an optional accessory battery pack.
❹	Docking connector	Connects the computer to an optional docking device.
❺	Primary battery pack release latches (2)	Release the primary battery pack from the battery bay.
❻	Battery bay	Holds the primary battery pack.
❼	Vents (4)*	Enable airflow to cool internal components.

△ To prevent overheating, do not obstruct 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 thick rugs or clothing, to block airflow.

✎ 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.

*Depending on your computer model, the vents on the computer may vary in number and location.



Component		Description
❶	Hard drive bay	Holds the hard drive.
❷	Expansion memory module and Mini Card compartment	Contains the expansion memory module slot and a wireless LAN device (select models only).
	△ To prevent an unresponsive system and the display of a warning message, replace with only a Mini Card device authorized for use in the computer by the governmental agency that regulates wireless devices in your country. If you replace the device and then receive a warning message, remove the device to restore computer functionality. Then contact Customer Care through Help and Support.	
❸	Accessory battery connector	Connects an optional accessory battery pack.
❹	Primary battery pack release latches (2)	Release the primary battery pack from the battery bay.

(Continued)

Component		Description
❺	Battery bay	Holds the primary battery pack.
❻	Vents (4)*	Enable airflow to cool internal components.

△ To prevent overheating, do not obstruct 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 thick rugs or clothing, to block airflow.

✎ 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.

*Depending on your computer model, the vents on the computer may vary in number and location.

WLAN antennae

Two wireless antennae inside the display enclosure send and receive wireless device signals over wireless local area networks (WLANs). These 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 your country's section of the *Regulatory, Safety and Environmental Notices* located in Help and Support.

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

WWAN antennae (select models only)

The availability of the WWAN antennae vary by region and country.

Two wireless antennae inside the display enclosure allow you to connect to a wireless wide-area network (WWAN), and then to the Internet, using the integrated HP Broadband Wireless module and service from a supported cellular network operator.

For more information on HP Broadband Wireless and how to sign up for service, refer to the *HP Broadband Wireless Getting Started* guide that shipped with your computer.

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

Additional hardware components

Component		Description
❶	HP Smart AC Adapter	Converts AC power to DC power.
❷	Power cord*	Connects an AC adapter to an AC outlet.
❸	Battery pack*	Powers the computer when the computer is not plugged into external power.
❹	Modem cable*	Connects the internal modem to an RJ-11 telephone jack or to a country-specific modem adapter.

*Modem cables, battery packs, and power cords vary in appearance by region and country.

Labels

The labels affixed to the computer provide information you may need when you troubleshoot system problems or travel internationally with the computer.

- Service tag—Provides the product brand and series name, serial number (s/n), and product number (p/n) of the computer. Have this information available when you contact Customer Care. The service tag label is affixed to the bottom of the computer.
- Microsoft® Certificate of Authenticity—Contains the Windows Product Key. You may need the Product Key to update or troubleshoot the operating system. This certificate is affixed to the bottom of the computer.
- Regulatory label—Provides regulatory information about the computer. The regulatory label is affixed to the bottom of the computer.
- Modem approval label—Provides regulatory information about the modem and lists the agency approval markings required by some of the countries in which the modem has been approved for use. You may need this information when traveling internationally. The modem approval label is affixed to the bottom of the computer.
- Wireless certification label(s)—Provide information about optional wireless devices and the approval markings of some of the countries in which the devices have been approved for use. An optional device may be a wireless local area network (WLAN) device, a wireless wide-area network (WWAN) device, or an optional Bluetooth® device. If your computer model includes one or more wireless devices, one certification label per wireless device is included with your computer. You may need this information when traveling internationally. The WLAN and Bluetooth wireless certification labels are affixed inside the expansion memory module compartment. The WWAN certification label is affixed inside the battery compartment.

2

Specifications

The following sections provide information on the operating environment specifications and power specifications of the computer.

Operating environment

The operating environment information in the following table may be helpful if you plan to use or transport the computer in extreme environments.

Factor	Metric	U.S.
Temperature		
Operating (not writing to optical disc)	0°C to 35°C	32°F to 95°F
Operating (writing to optical disc)	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Relative humidity (noncondensing)		
Operating	10% to 90%	10% to 90%
Nonoperating	5% to 95%	5% to 95%
Maximum altitude (unpressurized)		
Operating (14.7 to 10.1 psia*)	-15 m to 3,048 m	-50 ft to 10,000 ft
Nonoperating (14.7 to 4.4 psia*)	-15 m to 12,192 m	-50 ft to 40,000 ft

*Pounds per square inch absolute (psia) is another unit of measurement for altitude.

Rated input power

The power information in this section may be helpful if you plan to travel internationally with your computer.

The computer operates on DC power, which can be supplied by an AC or a DC power source. Although the computer can be powered from a stand-alone DC power source, it should be powered only with an AC adapter or a DC power cord supplied by or approved for an HP computer.

The computer is capable of accepting DC power within the following specifications.

Input power	Rating
Operating voltage	18.5 V dc @ 3.5 A - 65 W
Operating current	3.5 A

This product is designed for IT power systems in Norway with phase-to-phase voltage not exceeding 240 V rms.

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Notebook Tour
First Edition: January 2007
Document Part Number: 430225-001