Overview

HP recommends
Windows Vista® Business
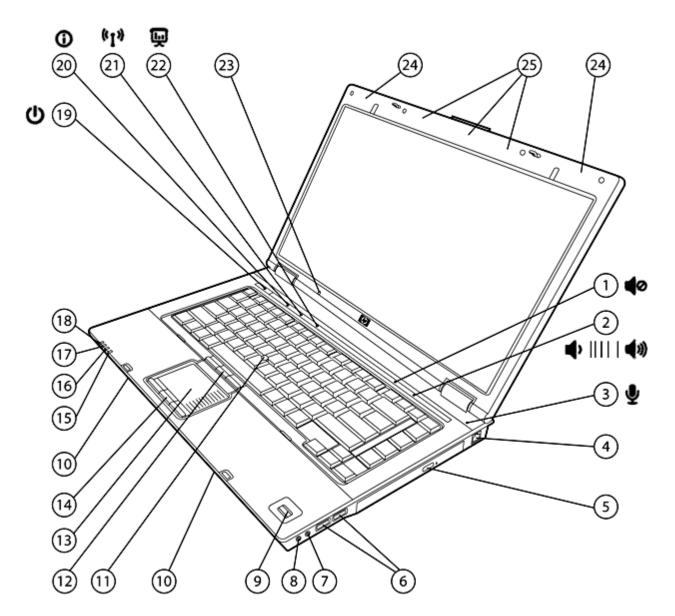

1. Volume mute button with LED indicator
2. Volume scroll zone with up/down LED indicators
3. Integrated microphone
4. RJ-11/modem port
5. Optical drive
6. 2 USB 2.0 ports
7. Stereo microphone in
8. Stereo headphone/line out
9. HP Fingerprint Sensor
10. Integrated stereo speakers
11. Pointstick
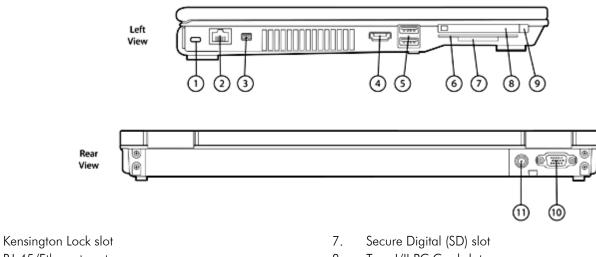
14. Touchpad buttons, three
15. Hard drive / optical drive activity / HP 3D DriveGuard LED
16. Battery charging LED
17. Power/standby LED
18. Wireless on/off LED
19. Power button with LED
20. HP Info / HP QuickLook button with LED indicator
21. Wireless on/off button with LED indicator
22. HP Presentation button with LED indicator
23. Ambient Light Sensor
24. Two WWAN antennas (with WWAN option)

Overview

12. Pointstick buttons, three
13. Touchpad with scroll zone

25. Three WLAN antennas (with WLAN option)

1. Kensington Lock slot
2. RJ-45/Ethernet port
3. 1394a port
4. HDMI port
5. 2 USB 2.0 ports
6. Integrated Smart Card Reader

7. Secure Digital (SD) slot
8. Type I/II PC Card slot
9. PC Card eject button
10. VGA/external monitor connector
11. Power connector

At A Glance

- Genuine Windows Vista Business*, Genuine Windows XP Professional, or FreeDOS
- Thin, lightweight design starting at 6.1 lb and 1.1-inch thin at front
- Intel® Centrino® Pro processor technology capable, with Intel Core™ 2 Duo processors
- NVIDIA Quadro FX 570M graphics with up to 256MB dedicated memory (512 MB TurboCache), or ATI Mobility FireGL™ V5600 from AMD with up to 256 MB dedicated memory (512 MB HyperMemory)
- Flexible wireless connectivity options:
  - Integrated HP ev2210 1xEVDO-A or HP hs2300 HSDPA Broadband Wireless module
  - Integrated 802.11 a/b/g/draft-n, a/b/g, or b/g wireless LAN module
  - Bluetooth®
- DirectX 10 support and Dual Link DVI (available through optional docking) provides faster rendering capabilities and support for ultra-high resolution monitors
- HDMI high definition video/audio port
- Optional Blu-Ray DVD+/-RW SuperMulti DL Drive
- Widescreen 15.4-inch diagonal display with wide-viewing angle (select models), Ambient Light Sensor and HP Privacy Filter support
- Enhanced security features including integrated Smart Card Reader, Drive Encryption for HP ProtectTools, HP Fingerprint Sensor, TPM 1.2
- HP QuickLook for instant access to email, calendar, and contact information (Microsoft Vista Required)
- Up to 160-GB 5400 rpm or 100-GB 7200 rpm user-removable hard drive with HP 3D DriveGuard protection
- Enhanced reliability with HP DuraKeys, HP DuraFinish , and magnesium alloy display enclosures and support structures
- Touch-sensitive controls for HP Info Center, HP QuickLook, wireless on/off, HP Presentation button, volume up, volume down, and mute
- Up to 4 GB of 667-MHz DDR2 SDRAM, dual channel memory support
- Integrated Intel Gigabit Network Connection (10/100/1000 NIC)
- Enhanced dual pointing devices (touchpad with scroll zone and pointstick)
- Secure Digital (SD) slot

Overview

* At initial boot, either 32- or 64-bit can be selected. This is a one time selection and the other version will be deleted.

Standard Features

Processors	Intel Core 2 Duo Processor T7700 (2.40-GHz, 800-MHz FSB, 4-MB L2 cache)*
	Intel Core 2 Duo Processor T7500 (2.20-GHz, 800-MHz FSB, 4-MB L2 cache)*
	Intel Core 2 Duo Processor T7300 (2.00-GHz, 800-MHz FSB, 4-MB L2 cache)*
	Intel Core 2 Duo Processor T7100 (1.80-GHz, 800-MHz FSB, 2-MB L2 cache)*
	* Intel's numbering is not a measurement of higher performance.
	NOTE: Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.

Operating System	Preinstalled	Genuine Windows Vista Business†*
		Genuine Windows XP Professional
		FreeDOS
	Supported	Genuine Windows Vista Enterprise*
		Genuine Windows 2000
	Certified	SuSE Linux Enterprise Desktop 10

† At initial boot, either 32- or 64-bit can be selected. This is a one time selection and the other version will be deleted.
* Certain Windows Vista product features require advanced or additional hardware. See http://www.microsoft.com/windowsvista/getready/hardwarereqs.mspx and http://www.microsoft.com/windowsvista/getready/capable.mspx for details. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit http://www.windowsvista.com/upgradeadvisor.

Chipset	Mobile Intel PM965 with 800-MHz front side bus

Intel Centrino Pro processor technology capable	Intel Centrino Pro processor technology is a selectable feature that is available on units configured with an Intel Wireless WiFi Link 4965AGN or 4965AG. It provides advances in remote manageability, security, energy efficient performance, and wireless connectivity. Intel Active Management Technology (AMT) offers built-in manageability and proactive security for networked notebook PCs, even when they are powered off* or when the operating system is inoperable. It can help identify threats before they reach the operating system, isolate infected systems, and update PCs regardless of their power state.
	*Requires a Windows operating system, network hardware and software, connection with a power source, and a direct (non-VPN) corporate network connection which is either cable or wireless LAN.
	NOTE: Some functionality of Intel Centrino Pro, such as Intel AMT and Intel Virtualization technology, requires additional 3rd party software in order to run. Availability of future "virtual appliances" applications for Centrino Pro processor technology is dependant on 3rd party software providers. Compatibility of this generation of Centrino Pro technology-based hardware with future "virtual appliances" and Microsoft Windows Vista operating system is to be determined.

Graphics	NVIDIA Quadro FX 570M graphics with up to 256MB dedicated memory (512 MB TurboCache), or ATI Mobility FireGL V5600 graphics with up to 256 MB dedicated memory (512 MB HyperMemory)* Microsoft DirectX 10 support
	*Indicates dedicated video memory and shared system memory. Up to 1024 MB HyperMemory is available with Windows Vista when installed system memory is 3 GB or more.

Standard Features

Display	Internal	15.4-inch diagonal WSXGA+ anti-glare wide-viewing angle (1680 x 1050 resolution) 15.4-inch WUXGA anti-glare wide-viewing angle (1920 x 1200 resolution) Ambient light sensor Integrated lid switch HP Privacy Filter support
	External	Up to 32-bit per pixel color depth **VGA** port supports resolutions up to 2048 x 1536 at 75 Hz, and lower resolutions at up to 100 Hz **HDMI** 1.2 port supports direct connection to high-definition displays with up to 1920 x 1080 resolution and 7-channel audio with one convenient cable (not included). **DVI** port in optional HP Docking Station (sold separately) supports resolutions up to 1920 x 1200 for single-link DVI monitors and up to 2560 x 1600 for dual-link DVI monitors. NOTE: Resolutions are dependent upon monitor capability, and resolution and color depth settings.

Memory	Standard	1024-MB, 2048-MB, or 4096-MB 667-MHz DDR2 SDRAM; two SODIMM slots supporting dual channel memory
	Maximum	Upgradeable to 4096-MB with 2048-MB SODIMM in slots 1 and 2
	Dual-channel	Maximized dual-channel performance requires SODIMMs of the same size and speed in both memory slots. Above 3-GB, all memory may not be available due to system resource requirements.

NOTE: Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed. Above 3-GB, all memory may not be available due to system resource requirements.

Communications	Integrated Intel Gigabit Network Connection (10/100/1000 NIC)* 56K V.92 modem**

* The term "10/100/1000" or "Gigabit" Ethernet indicates compliance with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

** Designed for downloads from 56K modem compliant sources. Maximum achievable download transmission rates currently do not reach 56 KB/s, and will vary with line conditions. Modem availability is subject to country regulatory approval.

QuickSpecs

HP Compaq 8510w Mobile Workstation

Standard Features

Wireless Devices	Support for a broad range of secure, integrated wireless LAN and wireless WAN options featuring support for the latest industry standards. Wireless LAN is factory configurable or available as an option to be added later. Broadband Wireless (WWAN) requires Windows Vista Business or Windows XP Professional and is available in select countries as a standard, factory configurable feature only. Integrated Bluetooth is also available (factory configurable only) and can be combined with any of the supported wireless LAN and wireless WAN options.
HP ev2210 1xEVDO-A Broadband Wireless Module	Integrated WWAN module connects to the Verizon Wireless BroadbandAccess and NationalAccess networks (US only) Supports CDMA 1xEVDO-A, 1xRTT connections at 800 and 1900 MHz. NOTE: Separately purchased Verizon Wireless service is required. For details, go to http://www.hp.com/go/broadbandwireless. Two 850/900/1800/1900/2100-MHz antennas integrated in the top of the display panel support current and future WWAN technologies
HP hs2300 HSDPA Broadband Wireless Module	Integrated WWAN module that provides connection to GSM, GPRS, EDGE, UMTS, and HSDPA mobile networks in many countries. Currently available for the AT&T Broadbandconnect network in the U.S. (supports international roaming). NOTE: Separately purchased mobile network operator service is required. Two 850/900/1800/1900/2100-MHz antennas integrated in the top of the display panel support current and future WWAN technologies.
All 802.11a/b/g integrated wireless LAN options	Wi-Fi certified Cisco Compatible Extensions support (Version 4.0) with Microsoft Windows XP Wired Equivalent Privacy (WEP) support up to 128-bit keys Wi-Fi Protected Access (WPA) and WPA2 support 802.1x authentication support, including EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, and LEAP Advanced Encryption Standard (AES) support WiFi certified for WPA2, WMM Three antennas integrated in the display enclosure
Intel Wireless WiFi Link 4965AGN	Integrated support for 802.11a, b, g, and draft-n Up to 300-mbps data rate
Intel Wireless WiFi Link 4965AG	Integrated support for 802.11 a, b and g Up to 54-mbps data rate
Broadcom 4311AG 802.11a/b/g WiFi Adapter	Integrated support for 802.11 a, b and g Up to 54-mbps data rate
HP Integrated Module with Bluetooth Wireless Technology	Bluetooth Specification v2.0 compliant Works with a wide range of Bluetooth devices

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QuickSpecs

Standard Features

Keyboard	The 101/102-key compatible keyboard features an industry standard, full-pitch key layout with desktop keyboard features, such as the isolated inverted-T cursor control keys, editing keys, both left and right control and alt keys, and 12 function keys. US and International key layouts are available. Other features include an integrated numeric keypad, hotkeys for instant access to power conservation, brightness, and other features, 19-mm x 19-mm key pitch (center-to-center spacing), 2.5-mm stroke, and comfort-dished keycaps.

HP DuraKeys is a clear coating applied over the notebook keyboard that helps protect the finish and the printed characters on the keys. HP DuraFinish helps protect the finish on the keyboard deck, graphics, and icons from normal wear and tear. |

Touch-sensitive controls	Touch-sensitive controls provide easy access to the following features: HP Info Center, HP QuickLook, wireless on/off, HP Presentation button, external volume up, volume down, and mute

Pointing device	Enhanced dual pointing devices (touchpad with scroll zone and pointstick, both with three pick buttons)

Expansion card slots	1 Type I/II PC Card slot	Supports 32-bit CardBus and 16-bit PC Cards
	Integrated Smart Card Reader	Compatible with ISO 7816 compliant Smart Cards
PC/SC interface support
	Secure Digital slot	Supports SD (Secure Digital), MMC (MultiMedia Card)

Storage	Primary Storage Device	120/160-GB 5400 rpm SMART SATA
80/100-GB 7200 rpm SMART SATA

NOTE: Hard drives are customer removable and will withstand multiple insertion/removal cycles. Up to 10 GB is reserved for the system recovery software.

	HP 3D DriveGuard	The hard drive is mounted directly to the notebook frame, reducing the transmission of shock away from the hard drive. Uses three-axis digital motion detection with intelligent sensitivity to help protect the hard drive during normal use from shock and vibration. The digital accelerometer temporarily halts all data transfer and parks the hard drive when abrupt motion is detected.
	Optical drives	DVD-ROM Drive
DVD/CD-RW Combo Drive
DVD+/-RW SuperMulti DL Drive
DVD+/-RW SuperMulti DL LightScribe Drive
Blu-Ray Disc DVD+/-RW SuperMulti DL Drive

NOTE: Optical drive is user replacable with HP option. Requires single screw removal.

Standard Features

Interfaces	PC Card slot	One Type I/II PC Card slot
	Smart Card Reader	One
	Secure Digital (SD) slot	One
	External Monitor	One – VGA
	1394a	One – 4-pin connector
	Stereo microphone in	One
	Stereo headphone/line out	One
	Power connector	One
	RJ-11/modem	One
	RJ-45/Ethernet	One
	HDMI	One – 1.2 compatible
	USB 2.0	Four
	Docking connector	One
	Secondary battery connector	One
	LED status indicators	Fifteen

Audio	High Definition Audio support w/24-bit DAC
	Integrated stereo speakers
	Integrated microphone
	Touch-sensitive controls for volume up, volume down, and mute
	Stereo headphone/line out
	Stereo microphone in

Software	Preinstalled software with Windows Vista or Windows XP	PDF Complete
		HP Backup and Recovery Manager
		HP Help and Support Center
		HP QuickLook (Windows Vista only)
		HP OpenView Radia Management Agent
		HP Performance Tuning Framework
		HP Universal Print Driver
		HP ProtectTools Security Manager:
		BIOS Configuration for HP ProtectTools
		Credential Manager for HP ProtectTools
		Device Access Manager for HP ProtectTools
		Drive Encryption for HP ProtectTools
		Embedded Security for HP ProtectTools
		HP Quick Launch Buttons
		HP Wireless Assistant
		Microsoft Office Ready with 60-day Office Professional 2007 Trial Edition (select models)
		Roxio Creator 9 (for optional DVD+/-RW and DVD/CDRW drives)
		Synaptics Touchpad Driver
		Symantec Norton Internet Security with complimentary 60-day live update
		Intervideo WinDVD – DVD/Blu-Ray Disc Player
	Software provided on disc	Roxio Creator 9 (for optional Blu-Ray Disc drives)

Standard Features

	Additional software available from the web	HP Client Manager Java Card Security for HP ProtectTools

Workstation ISV Certifications	**MCAD** (Mechanical CAD/Architectural Engineering and Construction)	AutoDesk AutoCAD AutoDesk Inventor AutoDesk Revit Bentley Microstation Dassault Catia V5 UGS I-DEAS NX 10 UGS I-DEAS NX 11 UGS/PLM Unigraphics NX, NX2, NX3 PTC Pro/E 2001 Mechanica PTC Pro/E Wildfire Mechanica MSC.Patran UGS Solidedge Solidworks ICEM Surf CoCreate OneSpace Designer SensAble PTC DV Mockup
	DCC (Digital Content Creation)	Discreet 3DS MAX/Combustion Alias Maya Alias Studio Tools Avid SoftImage XSI/3D Avid Express Pro Adobe Premiere/After Effects
	GIS (Geographic Information Systems)	ESRI ArcGIS 9
	Oil and Gas	SMT Landmark/GeoGrpahix EDS Roxar Schlumberger/Petrel

HP Performance Tuning Framework	HP Performance Tuning Framework (PTF) enables optimal configuration of HP Mobile Workstations delivering stability and best performance. HP PTF will guide your system setup allowing a "custom" configuration that best matches the workstation to user requirements.

HP Backup and Recovery Manager	Each unit is shipped with HP Backup and Recovery Manager. HP Backup and Recovery Manager can provide data and system file protection for HP business PCs to enable fast recovery if the system becomes corrupted or if important information is accidentally deleted. HP Backup and Recovery Manager can perform scheduled or manual backups of the entire drive or individual files and folders. Up to 10 GB of the hard drive is reserved for the system recovery software. HP Backup and Recovery Manager can also create software recovery CDs or DVDs (requires optional CD-RW or DVD+/-RW hardware).

QuickSpecs

Standard Features

SMBIOS Version 2.4	System Management BIOS, previously known as DMI BIOS, is used to store system management information.

HP ProtectTools Security Manager — HP ProtectTools Security Manager is the security platform for business notebooks and desktops. The HP ProtectTools Security Manager is an extensible client security console that delivers enhanced security capabilities through add-on software modules. Modules currently available are:

- BIOS Configuration for HP ProtectTools
- Credential Manager for HP ProtectTools
- Device Access Manager for HP ProtectTools
- Drive Encryption for HP ProtectTools
- Embedded Security for HP ProtectTools
- Java Card Security for HP ProtectTools

Security

Standard Features:
HP ProtectTools Security Manager
HP Fingerprint Sensor
Integrated Smart Card Reader
Configuration Control Hardware
Memory Change Alert
Ownership Tag
Setup Password
Power-On Password
TPM 1.2 Embedded Security Chip*
TPM Enhanced DriveLock*
HP Disk Sanitizer
HP 3D DriveGuard
Kensington Lock Slot
Support for Computrace / LoJack for Laptops (must be purchased separately)

Optional Features: HP Privacy Filter — Narrows viewing area so that screen data is visible only to persons directly in front of the monitor

* TPM module disabled where use is restricted by law; for example, Russia and China.
For more information on HP security solutions refer to http://www.hp.com/go/security.

Power Supply — External 90-watt Smart AC adapter, 6-foot power cord included.
Total length including external AC adapter is 12 feet.
HP Fast Charge*

*HP Fast Charge recharges your battery up to 90% within 90 minutes when the system is off. HP Fast Charge does not apply to 12-cell Ultra-Capacity batteries.

Battery

Primary battery	8-cell (73 WHr) Lithium-Ion battery
Optional HP Extended Life Battery	8-cell (52 WHr) high capacity Lithium-Ion battery
Optional HP Ultra-Capacity Battery	12-cell (95 WHr) high capacity Lithium-Ion battery

Standard Features

Battery Life	Primary battery	Up to 5 hours
	Primary battery and optional HP Extended Life Battery	Up to 9 hours
	Primary battery and optional HP Ultra-Capacity Battery	Up to 11 hours and 45 minutes

NOTE: The listed battery life measurements were taken on models running Microsoft Windows XP Professional. Battery life will vary depending on the product configuration, product model, applications loaded on the product, power management settings of the product, and the product features used by the customer. As with all batteries, the maximum capacity of this battery will decrease with time and usage.

System Standby Time	Up to 2 weeks

Power Conservation	NVIDIA PowerMizer 7.0 technology or ATI PowerPlay technology
	Hibernation
	Standby
	ACPI compliance

Docking and Stands

HP 3-in-1 NAS Docking Station
HP Advanced Docking Station
HP Docking Station
HP Standard Monitor Stand
HP Adjustable Notebook Stand
HP External MultiBay II

HP's shared docking solutions provide simple and convenient port replication and cable management. Features include Gigabit NIC pass through, modem pass through, legacy parallel and serial ports, S-video TV out, composite video, Dual Link DVI-D, USB 2.0 ports, integrated security mechanism*, integrated MultiBay II and ExpressCard** slots. These docking solutions are compatible across multiple Business Notebook platforms enabling a lower total cost of ownership.

* HP/Kensington Cable Lock required (purchased separately)
** HP 3-in-1 NAS Docking Station and HP Advanced Docking Station only

Service and Support

HP Services offers limited 3-year, onsite warranty service.
1-year limited warranty on primary battery. Warranty upgrades are also available. For HP Care Pack services see http://www.hp.com/go/lookuptool.

NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details. http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp

Select Model(s)

Standard Features

8510w RM256UT#ABA Smart Buy		
	Processor	Intel Core 2 Duo Processor T7300 (2.00-GHz, 800-MHz FSB, 4-MB L2 cache)*
	Operating System	Genuine Windows Vista Business**
	System Memory	2048-MB 667-MHz DDR2 SDRAM (1 DIMM)
	Hard Drive	120-GB 7200 rpm SATA HDD
	Display	15.4-inch diagonal WSXGA+ anti-glare wide-viewing angle (1680 x 1050 resolution)
	Graphics	NVIDIA Quadro FX 570M graphics with up to 256MB dedicated memory (512 MB TurboCache)
	Audio	High Definition Audio w/24-bit DAC line out/headphone and microphone jacks integrated microphone
	Communications	56K Modem Integrated Intel Gigabit Network Connection (10/100/1000 NIC)
	Integrated Wireless	Intel Wireless WiFi Link 4965AG
	Integrated Security	TPM 1.2 Embedded Security Chip HP Fingerprint Sensor
	Pointing Device	Touchpad with scroll zone and pointstick, both with three pick buttons
	Optical Drive	DVD+/-RW SuperMulti DL LightScribe Drive
	Battery	8-cell (73 WHr) Lithium-Ion
	Power	External 90-watt Smart AC adapter
	Warranty	3/3/3

8510w RM257UA#ABA Regional		
	Processor	Intel Core 2 Duo Processor T7300 (2.00-GHz, 800-MHz FSB, 4-MB L2 cache)*
	Operating System	Genuine Windows Vista Business**
	System Memory	2048-MB 667-MHz DDR2 SDRAM (1 DIMM)
	Hard Drive	120-GB 7200 rpm SATA HDD
	Display	15.4-inch diagonal WSXGA+ anti-glare wide-viewing angle (1680 x 1050 resolution)
	Graphics	NVIDIA Quadro FX 570M graphics with up to 256MB dedicated memory (512 MB TurboCache)
	Audio	High Definition Audio w/24-bit DAC line out/headphone and microphone jacks integrated microphone
	Communications	56K Modem Integrated Intel Gigabit Network Connection (10/100/1000 NIC)
	Integrated Wireless	Intel Wireless WiFi Link 4965AG HP Integrated Module with Bluetooth Wireless Technology
	Integrated Security	TPM 1.2 Embedded Security Chip HP Fingerprint Sensor
	Pointing Device	Touchpad with scroll zone and pointstick, both with three pick buttons
	Optical Drive	DVD+/-RW SuperMulti DL Drive
	Battery	8-cell (73 WHr) Lithium-Ion
	Power	External 90-watt Smart AC adapter
	Warranty	3/3/3

Standard Features

8510w RM258UA#ABA Regional	Processor	Intel Core 2 Duo Processor T7500 (2.20-GHz, 800-MHz FSB, 4-MB L2 cache)*
	Operating System	Genuine Windows Vista Business**
	Intel Centrino Pro processor technology	Enabled
	System Memory	2048-MB 667-MHz DDR2 SDRAM (1 DIMM)
	Hard Drive	120-GB 7200 rpm SATA HDD
	Display	15.4-inch WUXGA anti-glare wide-viewing angle (1920 x 1200 resolution)
	Graphics	NVIDIA Quadro FX 570M graphics with up to 256MB dedicated memory (512 MB TurboCache)
	Audio	High Definition Audio w/24-bit DAC line out/headphone and microphone jacks integrated microphone
	Communications	56K Modem Integrated Intel Gigabit Network Connection (10/100/1000 NIC)
	Integrated Wireless	Intel Wireless WiFi Link 4965AGN HP Integrated Module with Bluetooth Wireless Technology
	Integrated Security	TPM 1.2 Embedded Security Chip HP Fingerprint Sensor
	Pointing Device	Touchpad with scroll zone and pointstick, both with three pick buttons
	Optical Drive	Blu-Ray Disc DVD+/-RW SuperMulti DL Drive
	Battery	8-cell (73 WHr) Lithium-Ion
	Power	External 90-watt Smart AC adapter
	Warranty	3/3/3

8510w RM286UA#ABA Regional	Processor	Intel Core 2 Duo Processor T7500 (2.20-GHz, 800-MHz FSB, 4-MB L2 cache)*
	Operating System	Genuine Windows Vista Business**
	Intel Centrino Pro processor technology	Enabled
	System Memory	2048-MB 667-MHz DDR2 SDRAM (1 DIMM)
	Hard Drive	120-GB 7200 rpm SATA HDD
	Display	15.4-inch WUXGA anti-glare wide-viewing angle (1920 x 1200 resolution)
	Graphics	NVIDIA Quadro FX 570M graphics with up to 256MB dedicated memory (512 MB TurboCache)
	Audio	High Definition Audio w/24-bit DAC line out/headphone and microphone jacks integrated microphone
	Communications	56K Modem Integrated Intel Gigabit Network Connection (10/100/1000 NIC)
	Integrated Wireless	Intel Wireless WiFi Link 4965AGN HP Integrated Module with Bluetooth Wireless Technology
	Integrated Security	TPM 1.2 Embedded Security Chip HP Fingerprint Sensor
	Pointing Device	Touchpad with scroll zone and pointstick, both with three pick buttons
	Optical Drive	DVD+/-RW SuperMulti DL LightScribe Drive
	Battery	8-cell (73 WHr) Lithium-Ion
	Power	External 90-watt Smart AC adapter
	Warranty	3/3/3

Standard Features

8510w RM259UT#ABA Smart Buy	Processor	Intel Core 2 Duo Processor T7500 (2.20-GHz, 800-MHz FSB, 4-MB L2 cache)*
	Operating System	Genuine Windows Vista Business**
	Intel Centrino Pro processor technology	Enabled
	System Memory	2048-MB 667-MHz DDR2 SDRAM (1 DIMM)
	Hard Drive	100-GB 7200 rpm SATA HDD
	Display	15.4-inch WUXGA anti-glare wide-viewing angle (1920 x 1200 resolution)
	Graphics	NVIDIA Quadro FX 570M graphics with up to 256MB dedicated memory (512 MB TurboCache)
	Audio	High Definition Audio w/24-bit DAC line out/headphone and microphone jacks integrated microphone
	Communications	56K Modem Integrated Intel Gigabit Network Connection (10/100/1000 NIC)
	Integrated Wireless	Intel Wireless WiFi Link 4965AGN HP Integrated Module with Bluetooth Wireless Technology
	Integrated Security	TPM 1.2 Embedded Security Chip HP Fingerprint Sensor
	Pointing Device	Touchpad with scroll zone and pointstick, both with three pick buttons
	Optical Drive	Blu-Ray Disc DVD+/-RW SuperMulti DL Drive
	Battery	8-cell (73 WHr) Lithium-Ion
	Power	External 90-watt Smart AC adapter
	Warranty	3/3/3

8510w RM287UA#ABA Regional	Processor	Intel Core 2 Duo Processor T7500 (2.20-GHz, 800-MHz FSB, 4-MB L2 cache)*
	Operating System	Genuine Windows XP Professional
	System Memory	2048-MB 667-MHz DDR2 SDRAM (1 DIMM)
	Hard Drive	120-GB 7200 rpm SATA HDD
	Display	15.4-inch WUXGA anti-glare wide-viewing angle (1920 x 1200 resolution)
	Graphics	NVIDIA Quadro FX 570M graphics with up to 256MB dedicated memory (512 MB TurboCache)
	Audio	High Definition Audio w/24-bit DAC line out/headphone and microphone jacks integrated microphone
	Communications	56K Modem Integrated Intel Gigabit Network Connection (10/100/1000 NIC)
	Integrated Wireless	Intel Wireless WiFi Link 4965AGN HP Integrated Module with Bluetooth Wireless Technology
	Integrated Security	TPM 1.2 Embedded Security Chip HP Fingerprint Sensor
	Pointing Device	Touchpad with scroll zone and pointstick, both with three pick buttons
	Optical Drive	DVD+/-RW SuperMulti DL LightScribe Drive
	Battery	8-cell (73 WHr) Lithium-Ion
	Power	External 90-watt Smart AC adapter
	Warranty	3/3/3

Standard Features

* Intel's numbering is not a measurement of higher performance.
** At initial boot, either 32- or 64-bit can be selected. This is a one time selection and the other version will be deleted.

QuickSpecs

HP Compaq 8510w Mobile Workstation

Options

Memory	HP 512-MB (DDR2 667 MHz) SODIMM	EM993AA
	HP 1-GB (DDR2 667 MHz) SODIMM	EM994AA
	HP 2-GB (DDR2 667 MHz) SODIMM	EM995AA

MultiBay II Storage	HP MultiBay II DVD-ROM Drive	PA849A
(9.5-mm)*	HP MultiBay II DVD/CD-RW Combo Drive	PA850A
	HP MultiBay II DVD+/-RW SuperMulti DL Drive	PA851A
	HP 80-GB 5400rpm MultiBay II Hard Drive	PH357A
	* Requires HP 3-in-1 NAS Docking Station, HP Advanced Docking Station, or HP External MultiBay II	

Other Storage	HP 80-GB 5400rpm Primary SATA Hard Drive	ET354AA
	HP 120-GB 5400rpm Primary SATA Hard Drive	RT080AA
	DVD+/-RW SuperMulti DL LightScribe Drive	ET353AA
	HP Notebooks USB Diskette Drive	DC361B

Communications	Intel Wireless WiFi Link 4965AGN option kit	RT081AA#ABA

Expansion Solutions	HP Docking Station with Smart Adapter	EN488AA#ABA
	HP Advanced Docking Station with Smart Adapter	EN489AA#ABA
	HP 3-in1 NAS Docking Station	EM537AA#ABA
	HP Standard Monitor Stand	PA507A
	HP Adjustable Notebook Stand	PA508A
	HP External MultiBay II	PA509A#ABA

Power	HP 2-Bay Battery Charging Station (North America)	DT533A#ABA
	HP 10-Bay Battery Charging Station (North America)	DT534A#ABA
	HP Battery Adapter Kit	PK402A
	HP 90W Smart AC Adapter	ED495AA#xxx
	HP 90W Smart Auto Adapter	ED493AA
	HP 65W AC/Auto/Air Combo Smart Adapter	ED993AA#ABA
	HP 8-Cell Li-Ion Primary Battery	PB992A
	HP 8-cell Extended Life Battery	PB993A
	HP 12-cell Ultra-Capacity Battery	EJ092AA

QuickSpecs

Options

Carrying Cases	HP Value Nylon Case	RR314AA
	HP Universal Nylon Case	RR315AA
	HP Executive Leather Case	RR316AA
	HP Deluxe Nylon Backpack	RR317AA
	HP Universal Messenger Bag	GD404AA
	HP Deluxe Roller Case	GD405AA

Security	HP PC Card Smart Card Reader with Java Card	EL347AA
	HP ProtectTools Java Card – 10 units	EL348AA
	HP/Kensington MicroSaver Security Lock	PC766A

Input/Output Devices	HP PS/2 Keyboard & Mouse Bundle*	RC464AA#xxx
	HP USB Keyboard & Mouse Bundle	RC465AA#xxx
	HP USB/PS2 Optical 2-Button Scroll Mouse	DC369A
	HP USB Optical Travel Mouse	RH304AA
	HP Bluetooth PC Card Mouse	RJ316AA

* Requires HP Docking Station, HP Advanced Docking Station, or HP 3-in-1 NAS Docking Station

Memory

667-MHz DDR2 SDRAM
Two DIMM slots supporting dual channel memory
DIMM sizes supported: 512 MB, 1024 MB, 2048 MB

Standard Memory
- 1024 MB (1024 MB x 1 or 512 MB x 2)
- 2048 MB (2048 MB x 1 or 1024 MB x 2)
- 4096 MB (2048 MB x 2)

Optional Memory Upgrades

Support for up to 4096 MB of memory with the installation of optional DDR2 SDRAM memory kits. Both memory slots are user accessible. Please refer to the Hardware and Software Guide for installation procedures. Maximized dual-channel performance requires SODIMMs of the same size and speed in both memory slots.

Up to	Slot 1	Slot 2
1024 MB	1024 MB	Empty
2048 MB	1024 MB	1024 MB
4096 MB	2048 MB	2048 MB

NOTE: This chart does not represent all possible memory configurations. Due to the non-industry standard nature of some third-party memory modules, we strongly recommend using only HP branded memory modules to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed. Above 3-GB, all memory may not be available due to system resource requirements.

Memory Upgrades

HP 512-MB (DDR2 667 MHz) SODIMM	EM993AA
HP 1024-MB (DDR2 667 MHz) SODIMM	EM994AA
HP 2048-MB (DDR2 667 MHz) SODIMM	EM995AA

Storage

Optical Drive Support

	Quantity Supported	Drive Bay
DVD-ROM Drive	One	Fixed optical drive bay
DVD/CD-RW Combo Drive	One	Fixed optical drive bay
DVD+/-RW SuperMulti DL Drive	One	Fixed optical drive bay
DVD+/-RW SuperMulti DL LightScribe Drive	One	Fixed optical drive bay
Blu-Ray Disc DVD+/-RW SuperMulti DL Drive	One	Fixed optical drive bay

Primary Storage Device

	Quantity Supported	Drive Bay
Hard Drives		
160-GB 5400 rpm SMART SATA Hard Drive	One	Dedicated hard drive bay
120-GB 5400 rpm SMART SATA Hard Drive	One	Dedicated hard drive bay
100-GB 7200 rpm SMART SATA Hard Drive	One	Dedicated hard drive bay
80-GB 7200 rpm SMART SATA Hard Drive	One	Dedicated hard drive bay

QuickSpecs

Technical Specifications

System Unit	Dimensions (HxWxD)	1.1 in (at front) x 14.0 in x 10.24 in	
	Weight	Starting from 6.1 lb	

NOTE: Height varies depending upon where on the notebook the measurement is made. Starting weight includes 8-cell battery, hard drive, 512-MB memory, 802.11 wireless communications module, Bluetooth, and optical drive. Weight varies by configuration and components.

	Stand-Alone Power Requirements	Normal Operating Voltage	18.5 V
		Average Operating Power	12.5 W
		Max Operating Power	< 90 W
	Temperature	Operating	32° to 95° F (0° to 35° C) (not writing optical)
			41° to 95° F (5° to 35° C) (writing optical)
		Non-operating	-4° to 140° F (-20° to 60° C)
	Relative Humidity	Operating	10% to 90%, non-condensing
		Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
	Shock	Operating	125 G, 2 ms, half-sine
		Non-operating	200 G, 2 ms, half-sine
	Random Vibration	Operating	0.75 grms
		Non-operating	1.50 grms
	Altitude (unpressurized)	Operating	-50 to 10,000 ft (-15.24 to 3,048 m)
		Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)
	Industry Standard Certifications	UL	Yes
		CSA	Yes
		FCC Compliance	Yes
		ENERGY STAR® 4.0	Yes
		ICES	Yes
		GS	Yes
		Australia / NZ A-Tick Compliance	Yes
		CCC	Yes
		Japan VCCI Compliance	Yes
		MIC	Yes
		BSMI	Yes
		CE Marking Compliance	Yes
		BELLIS	Yes
		CIT	Yes
		GOST	Yes
		Saudi Arabian Compliance (ICCP)	Yes
		SABS	Yes
		UKRSERTCOMPUTER	Yes

For accessibility information on HP products, please visit http://www.hp.com/accessibility.

Technical Specifications

HP 90W Smart AC Adapter			
	Dimensions	5.24 x 2.28 x 1.1 in (13.3 x 5.8 x 2.9 cm)	
	Weight	0.86 lb (390 g)	
	Input	100 to 240 VAC	
		Input Efficiency	83% min at 115 VAC
		Input frequency range	47 to 63 Hz
		Input AC current	1.5 A at 90 VAC, 0.75 A at 180 VAC PFC Version
			2.4 A at 90 VAC, 1.2 A at 180 VAC NON PFC Version
	Output	Output power	90W
		DC output	18.5V
		Hold-up time	5 msec at 115 VAC input
		Output current limit	<11A, Over voltage protection- 29V max automatic shutdown
	Connector	3 pin/grounded, mates with interchangeable cords	
	Environmental Design	Operating temperature	32° to 104° F (0° to 40° C)
		Non-operating (storage) temperature	–4° to 149° F (–20° to 65° C)
		Altitude	0 to 10,000 ft (0 to 3,048 m)
		Humidity	20% to 80%
		Storage Humidity	10% to 90%
	EMI and Safety Certifications	CE Mark – full compliance with LVD and EMC directives; Worldwide safety standards – IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals – C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE; MTBF- over 200,000 hours at 25°C ambient condition.	

Optional HP Ultra-Capacity Battery			
	Dimensions (H x W x L)	1.3 x 6.0 x 10.6 in (3.33 x 15.25 x 26.88 cm)	
	Weight	1.77 lb (0.803 kg)	
	Cells/Type	12-cell Lithium-Ion	
	Energy	Watt-hour Capacity	95Wh
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 140° F (–10° to 60° C)
		Non-operating	–4° to 140° F (–20° to 60° C)
	Battery Re-Charge Time	Smart Adapter	3 to 4 hours
		System ON	4 to 5 hours (depending on system power consumption)
	Fuel Gauge	When pressed, LEDs light indicating level of charge remaining on battery	

Technical Specifications

Optional HP Extended Life Battery	Dimensions (H x W x L)	1.0 x 3.9 x 8.7 in (2.5 x 10.0 x 22.0 cm)	
	Weight	1.00 lb (0.455 kg)	
	Cells/Type	8-cell Lithium-Ion	
	Energy	Watt-hour Capacity	52Wh
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 140° F (–10° to 60° C)
		Non-operating	–4° to 140° F (–20° to 60° C)
	Battery Re-Charge Time	System in OFF mode or Standby	3 hours
		System ON	3 to 5 hours (depending on system power consumption)
		HP Fast Charge	Charges the battery up to 90% within 90 minutes when system is OFF
	Fuel Gauge	When pressed, LEDs light indicating level of charge remaining on battery	

8-Cell (73WHr) Lithium-Ion battery	Dimensions (H x W x L)	0.8 x 1.9 x 10.6 in (2.0 x 4.8 x 27.0 cm)	
	Weight	0.980 lb (0.445 kg)	
	Cells/Type	8-cell Lithium-Ion	
	Energy	Watt-hour Capacity	73Wh
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 140° F (–10° to 60° C)
		Non-operating	–4° to 140° F (–20° to 60° C)
	Battery Re-Charge Time	System in OFF mode or Standby	2.5 hours
		System ON	3 to 5 hours (depending on system power consumption)
		HP Fast Charge	Charges the battery up to 90% within 1.5 hours when system is OFF

15.4-inch WUXGA wide-viewing angle, anti-glare	Dimensions (W x H)	13.0 x 8.1 in (33.1 x 20.7 cm)	
	Diagonal Size	15.4 in (39.1 cm)	
	Surface Treatment	Anti-glare	
	Contrast Ratio	300:1 (typical)	
	Refresh Rate	60 Hz	
	Brightness	200 nit (typical)	
	Pixel Resolution	Pitch	0.173 mm
		Format	1920 x 1200
		Configuration	RGB stripe
	Backlight	CCFL	
	PPI	147	
	Viewing Angle	±60° Horizontal, ± 50° Vertical (minimum)	

Technical Specifications

15.4-inch WSXGA+ wide-viewing angle, anti-glare	Dimensions (W x H)	13.0 x 8.1 in (33.1 x 20.7 cm)	
	Diagonal Size	15.4 in (39.1 cm)	
	Surface Treatment	Anti-glare	
	Contrast Ratio	300:1 (typical)	
	Refresh Rate	60 Hz	
	Brightness	200 nit (typical)	
	Pixel Resolution	Pitch	0.197 mm
		Format	1680 x 1050
		Configuration	RGB stripe
	Backlight	CCFL	
	PPI	129	
	Viewing Angle	±60° Horizontal, ± 50° Vertical (minimum)	

15.4-inch WXGA anti-glare	Active Area (W x H)	13.0 x 8.1 in (33.1 x 20.7 cm)	
	Diagonal Size	15.4 in (39.1 cm)	
	Surface Treatment	Anti-glare	
	Contrast Ratio	300:1 (typical)	
	Refresh Rate	60 Hz	
	Brightness	200 nit (typical)	
	Pixel Resolution	Pitch	0.259 mm
		Format	1280 x 800
		Configuration	RGB stripe
	Backlight	CCFL	
	PPI	98	
	Viewing Angle	±30° Horizontal, ±10° Vertical (minimum)	

Hard Drives

100-GB 7200 rpm SATA	Drive Weight	0.25 lb (113 g)	
	Capacity	100 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-7 / SATA 1.0a	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	1 ms
		Average	10 ms
		Maximum	18 ms
	Rotational Speed	7200 rpm	
	Logical Blocks	195,371,568	
	Operating Temperature	41° to 140° F (5° to 60° C) [case temp]	
	Features	ATA Security	

Technical Specifications

80-GB 7200 rpm SATA	Drive Weight	0.25 lb (113 g)	
	Capacity	80 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-7 / SATA 1.0a	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	1 ms
		Average	10 ms
		Maximum	18 ms
	Rotational Speed	7200 rpm	
	Logical Blocks	156,301,488	
	Operating Temperature	41° to 140° F (5° to 60° C) [case temp]	
	Features	ATA Security	

160-GB 5400 rpm SATA	Drive Weight	0.22 lb (101 g)	
	Capacity	160 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-7 / SATA 1.0a	
	Transfer Rate	**Synchronous** (maximum)	100 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	**Single Track**	3 ms
		Average	13ms
		Maximum	24 ms
	Rotational Speed	5400 rpm	
	Logical Blocks	312,581,808	
	Operating Temperature	41° to 140° F (5° to 60° C) [case temp]	
	Features	ATA Security	

120-GB 5400 rpm SATA	Drive Weight	0.22 lb (101 g)	
	Capacity	120 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-7 / SATA 1.0a	
	Transfer Rate	**Synchronous** (maximum)	100 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	**Single Track**	3 ms
		Average	13ms
		Maximum	24 ms
	Rotational Speed	5400 rpm	
	Logical Blocks	234,441,648	
	Operating Temperature	41° to 140° F (5° to 60° C) [case temp]	
	Features	ATA Security	

Technical Specifications

Optical Drives – Fixed

DVD-ROM Drive	Access Times	Random	<116 ms CD
			<125 ms DVD
	Max Data Transfer Rate	24X CD-ROM	3,600 KB/s
		8X-DVD	10,800 KB/s
	Transfer Mode	Multiword DMA Mode 2	
	Interface	EIDE	
	Supported Media (read)	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW	
	Supported Media (write)	None	
	Max Media Capacity (read)	4.7 GB	
	Transport	Tray Loading	

DVD/CD-RW Combo Drive	Access Times	Random	<110 ms CD
			<130 ms DVD
	Max Data Transfer Rate	24X CD-ROM	3,600 KB/s
		8X DVD	10,800 KB/s
		24X CD-R	3,600 KB/s
		24X CD-RW	3,600 KB/s
	Transfer Mode	Multiword DMA Mode 2	
	Interface	EIDE	
	Supported Media (read)	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW	
	Supported Media (write)	CD-R, CD-RW	
	Max Media Capacity (read)	8.5 GB	
	Max Media Capacity (write)	700 MB	
	Transport	Tray loading	

Technical Specifications

DVD+/-RW SuperMulti DL Drive	Access Times	Random	<175 ms CD <230 ms DVD
	Max Data Transfer Rate	24X CD-ROM	3,600 KB/s
		8X DVD	10,800 KB/s
		24X CD-R	3,600 KB/s
		16X CD-RW	2,400 KB/s
		8X DVD+R	10,800 KB/s
		4X DVD+RW	5,400 KB/s
		8X DVD-R	10,800 KB/s
		4X DVD-RW	5,400 KB/s
		2.4X DVD+R(9)	2,700 KB/s
		5X DVD-RAM	6,750 KB/s
	Transfer Mode	Multiword DMA Mode	
	Interface	EIDE	
	Supported Media (read)	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM	
	Supported Media (write)	CD-R, CD-RW, DVD+R, DVD+RW, DVD-R, DVD-RW, DVD-RAM	
	Max Media Capacity (read)	8.5 GB	
	Max Media Capacity (write)	8.5 GB	
	Transport	Tray Loading	

DVD+/-RW SuperMulti DL LightScribe Drive	Access Times	Random	<175 ms CD <230 ms DVD
	Max Data Transfer Rate	24X CD-ROM	3,600 KB/s
		8X DVD	10,800 KB/s
		24X CD-R	3,600 KB/s
		16X CD-RW	2,400 KB/s
		8X DVD+R	10,800 KB/s
		4X DVD+RW	5,400 KB/s
		8X DVD-R	10,800 KB/s
		4X DVD-RW	5,400 KB/s
		2.4X DVD+R(9)	2,700 KB/s
		5X DVD-RAM	6,750 KB/s
	Transfer Mode	Multiword DMA Mode	
	Interface	EIDE	
	Supported Media (read)	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM	

Technical Specifications

	Supported Media (write)	CD-R, CD-RW, DVD+R, DVD+RW, DVD-R, DVD-RW, DVD-RAM, LightScribe	
	Max Media Capacity (read)	8.5 GB	
	Max Media Capacity (write)	8.5 GB	
	Transport	Tray Loading	

Blu-Ray Disc DVD+/-RW SuperMulti DL Drive	**Access Times**	Random	<140 ms CD-ROM
			<160 ms DVD-ROM
			<300 ms BD-ROM
	Max Data Transfer Rate	24X CD-ROM	3,600 KB/s
		8X DVD-ROM	10,800 KB/s
		8X CD-R	1,200 KB/s
		8X CD-RW	1,200 KB/s
		8X DVD+R	10,800 KB/s
		4X DVD+RW	5,400 KB/s
		8X DVD-R	10,800 KB/s
		4X DVD-RW	5,400 KB/s
		2.4X DVD+R(9)	2,700 KB/s
		5X DVD-RAM	6,750 KB/s
		1X BD-ROM	4,500 KB/s
		1X BD-R	4,500 KB/s
		1X BD-RE	4,500 KB/s
	Transfer Mode	Multiword DMA Mode	
	Interface	EIDE	
	Supported Media (read)	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW. DVD-RAM, BD-ROM, BD-R, BD-RE	
	Supported Media (write)	CD-R, CD-RW, DVD+R, DVD+R(9), DVD+RW, DVD-R, DVD-R(9), DVD-RW, DVD-RAM, BD-R, BD-RE	
	Max Media Capacity (read)	50.0 GB	
	Max Media Capacity (write)	50.0 GB	
	Transport	Tray Loading	

Security

Technical Specifications

HP Fingerprint Sensor	Mobile Voltage Operation	3.0V–3.6V Single Supply
	Operating Temperature	32° – 158°F (0° – 70°C)
	Current Consumption @ 3.3V	Less than 70 mA peak imaging and scrolling Less than 25 mA hardware finger detection Advanced Power Management
	High-Rate Image Capture	Up to 240 image frames /sec
	ESD Resistance	IEC 61000-4-2 Level 4 (±15KV)
	Detection Matrix	192 x 16 Pixels 9.7mm x 0.81mm 500 ppi High-Resolution Images

Audio

Hardware	Implementation	ADI1981HD High Definition CODEC
	Volume Controls	Volume up, volume down, and mute
	Full Duplex	Yes
	Sound Blaster Pro compatible	Yes
	Microphone In	Stereo
	Headphone/Line Out	Stereo
	Integrated Microphone	Yes

Audio Output Quality	Frequency Response	20 Hz – 20 kHz
	Signal to Noise Ratio	>85 dB
	Total Harmonic Distortion	0.01%
	Noise Floor	-110 dB
	Play/Record Sampling Rate(s)	8 kHZ – 48kHz
	DAC	16, 20 or 24-bit
	ADC	16 or 20-bit

Integrated Stereo Speakers	Power Rating	2 Watts
	Impedance	4 Ohms

Communications

Technical Specifications

Integrated Intel Gigabit Network Connection (10/100/1000 NIC)	Ethernet Features	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3z and 802.3ab; IEEE 802.3 clauses 34-42) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s IEEE 802.1p QoS (Quality of Service) Support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)
	Power Management	ACPI compliant -- multiple power modes Situation-sensitive features reduce power consumption
	Performance Features	TCP/IP/UDP Checksum Offload (configurable)
	Manageability	Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Intel Advanced Management Technology (iAMT)
	Interface	PCI Express x1
	NIC Device Driver Name	Intel 82566MM Gigabit Network Connection
	Drivers Available	Microsoft Windows Vista Microsoft Windows XP
V.92 56K Data/Fax Modem	Form Factor	MDC 1.5 Daughtercard
	Power Management Support	APM Revision 1.2, ACPI
	Approvals/ Certifications	UL, CSA, NEMKO, CCIB, Industry Canada, FCC Part 68, CTR21, FCC Part 15 Class B, Canadian ICES-003 Class B, C.I.S.P.R.22, Australian ACA, CE Mark, Other Countries
	Data Mode Capabilities	V.92 data V.8bis V.80 V44, V.42bis, MNP5 (Compression) V.42 (LAPM, MNP2-4) (Error Correction) **Optional symbol rates:** 2800, 3429 Asymmetric Symbol rates

Technical Specifications

		Synchronous primary channel data signaling rates: 3600, 31200 Automatic rate re-negotiation V.34 V.32bis V.32 V.23 V.22bis V.22 V.21 Bell 212A Bell 103J
	Fax Mode Capabilities	TIA/EIA-578-B (Class 1) T.30, T.4 (Group 3) V.17 V.29 V.27ter V.21 Channel 2
	Command Set	V.250 (Partial) TIA-602 Identification: +GMI, +GMM, +GMR Port control: +IPR, +ICF, +IFC, +ILRR Modulation: +MS, +MR, +MA Error control: +ES, +ER, +EB, +ESR, +ETBM Data compression: +DS, +DR V.251
HP ev2210 1xEVDO-A Broadband Wireless Module	Band and Power Class	0 (North American Cellular) – Class III; 1 (North American PCS) – Class II
	Wireless Protocol Standards	CDMA 1x Release A; IS-95A, IS-95B, IS-2000
	Wireless Parametric Standards	Meets or exceeds TIA/EIA IS-98-D
	Interoperability	CDG 22 (TIA/EIA/IS-95-A) CDG 53(TIA/EIA/IS-95-B) C.S0031 (TIA/EIA/IS-2000) CDG 64 (TIA/EIA/IS-2000) C.S0032 (TIA/EIA/IS-866)
	Frequency Band	Dual Band: 800 MHz (Cellular) and 1900 MHz (PCS)
	Data Rates (Packet Mode)	IS-856 rates up to 3.1 Mbps IS-2000 data rates up to 1.8 Mbps
	Maximum Output Power	24dBm (+/-1)
	Power Consumption (maximum)	500mA
	Power Consumption, Sleep Mode	1.7mA – 3.5mA
	Power Management	USB selective suspend CDMA slotted mode sleep and dormant modes
	Antenna Type	High efficiency dual band antennae with spatial diversity, mounted in the display enclosure

Technical Specifications

	Form Factor	PCI-Express MiniCard
	Weight	0.35 oz (10 g)
	Dimensions (Length x Width x Thickness)	2.01 x 1.18 x 0.18 in (51 x 30 x 4.5 mm)
	Voltage, Operating	3.3v +/- 10%
	Temperature, Operating (from TIA/EIA/IS-98-D)	–22° to 140° F (–30° to 60° C) (full RF performance) –22° to 167° F (–30° to 75° C) (reduced RF performance)
	Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108)	–40° to 185° F (–40° to 85° C)
	Humidity, Non-operating	85% relative humidity for 48 hours @ 185° F (85° C) (non-condensing)
	Configuration Utilities	Verizon Wireless VZAccess Manager
	LED Activity	LED Off – Radio Off; Solid LED On – Radio On
HP hs2300 HSDPA Broadband Wireless Module	Frequency Bands and Power Class	850/1900/2100MHz WCDMA Power class 3 (+24dBm) 850MHz GSM/GPRS/EDGE 900MHz GSM/GPRS/EDGE, 1800MHz GSM/GPRS/EDGE 1900MHz GSM/GPRS/EDGE EDGE E2 power GPRS/EDGE Multislot Class 12 GPRS PCS/DCS power class 1 GSM power class 4
	Wireless Protocol Standards	GPRS/EDGE: 3GPP R99 GERAN P1 WCDMA Release 5 (R5) High-Speed Downlink Packet Access (HSDPA) 3.6Mbps GSM Phase 2+
	Wireless Parametric Standards	Complies with 3GPP specifications
	Additional Standards Compliance	FCC parts 15/22/24, CE, Microsoft WHQL, R&TTE directive 1999/5/EC (health, safety, EMC, spectrum), GCF-CC (Module), European Union Directive 2002/95/EC (restrictions of the use of certain Hazardous Substances (RoHS) in electronic equipment), Infrastructure Interoperability Testing (IOT)
	Data Rates (Packet Mode)	Designed maximum data rate: EDGE 118 kbps UL / 236 kbps DL UMTS 384 kbps UL / 384 kbps DL HSDPA 384 kbps UL / 3.6 Mbps DL
	Chipset and Module	Qualcomm MSM6280 chipset; Sierra Wireless MC8775 module
	Maximum Output Power	32 dBm (+/-2) GSM/EDGE GMSK mode
	Power Consumption (maximum)	800mA
	Power Consumption, Sleep Mode	4 – 8mA

Technical Specifications

	Power Management	USB Selective Suspend sleep and standby mode
	Antenna Type	High efficiency 5- band antennae, mounted in the display enclosure
	Form Factor	PCI-Express MiniCard
	Weight	0.35 oz (10 g)
	Dimensions (Length x Width x Thickness)	2.01 x 1.18 x 0.18 in (51 x 30 x 4.5 mm)
	Voltage, Operating	3.3v +/- 10%
	Temperature, Operating	–22° to 140° F (–30° to 60° C) (full RF performance) –22° to 167° F (–30° to 75° C) (reduced RF performance)
	Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108)	–40° to 185° F (–40° to 85° C)
	Humidity, Non-operating	85% relative humidity for 48 hours @ 185° F (85° C) (non-condensing)
	LED Activity	LED Off – Radio Off; Solid LED On – Radio On
	Configuration Utilities	Varies per country and mobile network operator

Intel Wireless WiFi Link 4965AG	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g
	Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Windows 2000 and XP (details at http://www.hp.com/go/notebooks/WLAN)
	Frequency Band	2.4 GHz and 5 GHz
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM
	Security[1]	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES (support for key sizes of 128, 192, and 256 bits), 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows 2000 and XP only.
	Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
	Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power (for CKK)[2]	15 dBm
	Output Power (for OFDM; power varies by data rate)[2]	15 dBm

Technical Specifications

Power Consumption	Transmit: 1.6 Watts (average) Receive: 1.1 Watts (average) Idle mode[3]: 30 mW (average) Radio off: 20 mW (max)	
Power Management	ACPI compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity[4]	54 Mbps: -74 dBm, 6 Mbps: -90 dBm	
Antenna Connections	2 U.FL type connectors, 50 ohm nominal impedance	
Range	802.11 a – Typical (@6 Mbps)	600 feet – Outdoor Open Area 150 feet – Indoor, Office environment
	802.11 b – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
	802.11 g – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
Form Factor	PCI-Express MiniCard	
Weight	0.013 lb (6 g)	
Dimensions	0.19 x 1.2 x 2.0 in (4.75 x 29.85 x 50.8 mm)	
Operating Voltage	3.3V +/- 9%, 1.5V +/- 5%	
Temperature	Operating Non-operating	32° to 176° F (0° to 80° C) –40° to 176° F (–40° to 80° C)
Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 90% (non-condensing)
Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)

Configuration Utility[5]   Microsoft Windows 2000 or XP
        Choice of Configuration Utility:

- Microsoft Windows XP Wireless Network Connection Manager
- Intel PROSet for Microsoft Windows 2000 or XP (required for Cisco Compatible Extensions support)

Microsoft Windows Vista

- Microsoft Windows Vista Wireless Network Connection Manager

LED Activity   LED Off – Radio OFF; Solid LED On – Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. In Power Save Polling mode and on battery power.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows 2000 or XP. WLAN may also be compatible with certain third-party software supplicants.

Intel Wireless WiFi Link 4965AGN	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n (draft 1.02)

Technical Specifications

Interoperability	Wi-Fi certified (802.11abg only) Cisco Compatible Extensions Program compliant (802.11abg only) with Microsoft Windows 2000 and XP (details at http://www.hp.com/go/notebooks/WLAN) Tested with wireless access points from several major manufacturers (details at http://www.hp.com/go/notebooks/WLAN/draft-n)
Frequency Band	2.4 GHz and 5 GHz
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n (draft): 66 possible data rates, ranging from 6 Mbps to 300 Mbps, depending on the combination of Bandwidth, Modulation Coding Scheme, and Guard Interval used, as defined in IEEE 802.11n (draft) specification
Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM
Security[1]	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES (support for key sizes of 128, 192, and 256 bits), 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows 2000 and XP only.
Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power (for CKK)[2]	15 dBm
Output Power (for OFDM; power varies by data rate)[2]	15 dBm
Power Consumption	Transmit: 2.3 Watts (average, with two spatial streams) Receive: 1.9 Watts (average with three receive chains) Idle mode[3]: 30 mW (average) Radio off: 20 mW (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[4]	300 Mbps: -68 dBm, 54 Mbps: -74 dBm, 6 Mbps: -90 dBm
Antenna Connections	3 U.FL type connectors, 50 ohm nominal impedance
Range	802.11 a – Typical (@6 Mbps) — 600 feet – Outdoor Open Area / 150 feet – Indoor, Office environment 802.11 b – Typical (@1 Mbps) — 1200 feet – Outdoor Open Area / 300 feet – Indoor, Office environment 802.11 g – Typical (@1 Mbps) — 1200 feet – Outdoor Open Area / 300 feet – Indoor, Office environment
Form Factor	PCI-Express MiniCard
Weight	0.013 lb (6 g)
Dimensions	0.19 x 1.2 x 2.0 in (4.75 x 29.85 x 50.8 mm)
Operating Voltage	3.3V +/- 9%, 1.5V +/- 5%

Technical Specifications

Temperature	Operating	32° to 176° F (0° to 80° C)
	Non-operating	–40° to 176° F (–40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 90% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)

Configuration Utility[5]   Microsoft Windows 2000 or XP
 Choice of Configuration Utility:

- Microsoft Windows XP Wireless Network Connection Manager
- Intel PROSet for Microsoft Windows 2000 or XP (required for Cisco Compatible Extensions support)

Microsoft Windows Vista

- Microsoft Windows Vista Wireless Network Connection Manager

LED Activity   LED Off – Radio OFF; Solid LED On – Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. In Power Save Polling mode and on battery power.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows 2000 or XP. WLAN may also be compatible with certain third-party software supplicants.

Broadcom 4311AG 802.11a/b/g WiFi Adapter	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g
	Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Windows 2000 and XP (details at http://www.hp.com/go/notebooks/WLAN)
	Frequency Band	2.4 GHz and 5 GHz
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM
	Security[1]	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4).
	Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
	Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points

Technical Specifications

Output Power (for CKK)[2]   17.5 dBm

Output Power (for OFDM; 15 dBm
power varies by data
rate)[2]

Power Consumption	Transmit: 2.0 W (max) Receive: 1.5 W (max) Idle mode[3]: 390 mW (nominal) Sleep mode: 20 mW (max)	
Power Management	ACPI compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity[4]	54 Mbps: -72 dBm, 11 Mbps: -88 dBm , 1 Mbps: -97 dBm	
Antenna type	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure	
Range	802.11 a – Typical (@6 Mbps)	600 feet – Outdoor Open Area 150 feet – Indoor, Office environment
	802.11 b – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
	802.11 g – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
Form Factor	PCI-Express MiniCard	
Weight	0.026 lb (12 g)	
Dimensions	0.19 x 1.2 x 2.0 in (4.75 x 29.85 x 50.8 mm)	
Operating Voltage	3.3v +/- 10%	
Temperature	Operating Non-operating	32° to 176° F (0° to 80° C) -40° to 176° F (-40° to 80° C)
Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)

Configuration Utility[5]   Microsoft Windows 2000 or XP
    Choice of Configuration Utility:

- Microsoft Windows XP Wireless Network Connection Manager
- Broadcom Wireless Configuration Utility (required for Cisco Compatible Extensions support)

Microsoft Windows Vista

- Microsoft Windows Vista Wireless Network Connection Manager

LED Activity   LED Off – Radio OFF; Solid LED On – Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. In Power Save Polling mode.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows 2000 or XP. WLAN may also be compatible with certain third-party software supplicants.

HP Integrated Module   **Bluetooth Specification**   2.0 Compliant

Technical Specifications

with Bluetooth Wireless Technology		
Dimensions	1.02 x 0.55 x 0.22 in (26 x 14 x 5.7 mm)	
Frequency Band	2402 to 2480 MHz	
Number of Available Channels	79 (1 MHz) available channels	
Data Rates and Throughput	3 Mbps data rate; throughput up to 2.17 Mbps	
	Synchronous Connection Oriented links up to 3, 64 kbps, voice channels	
	Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric	
Transmit Power	-6 dBm to 4 dBm (Bluetooth Class II)	
Receiver Sensitivity	Better than -80 dBM at 0.1 % raw bit error rate	
Power Consumption	Peak (Tx) 264 mW	
	Peak (Rx) 231 mW	
	Sleep <1 mW	
Antenna	Internally integrated within module	
Range	Up 33 ft (10 m)	
Electrical Interface	USB 2.0 compliant	
	Microsoft Windows Plug and Play compliant	
OS Support	Genuine Windows Vista	
	Genuine Windows XP	
	Genuine Windows 2000	
Bluetooth Software Supported	Broadcom Bluetooth for Windows	
	Microsoft Windows XP Bluetooth Software	
Link Topology	Point to Point, Multipoint Pico Nets up to 7 slaves	
Security	Full support of Bluetooth Security Provisions	
Power Management	Microsoft Windows ACPI, and USB Bus Support	
	Self configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff	
Certifications	All necessary regulatory approvals for supported countries, including:	
	FCC (47 CFR) Part 15C, Section 15.247 & 15.249	
	ETS 300 328, ETS 300 826	
	Low Voltage Directive IEC950	
	UL, CSA, and CE Mark	
Temperature	Operating	-4° to 158° F (-20° to 70° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
Humidity	Operating	10% to 90%
	Non-operating	5% to 95%
Altitude	Operating	15,000 ft (4,572 m)
	Non-operating	40,000 ft (12,192 m)

QuickSpecs

HP Compaq 8510w Mobile Workstation

Technical Specifications

Bluetooth Profiles Supported	(with Bluetooth for Windows 4.0 software)

Serial Port Profile (SPP)*

Dial-Up Networking (DUN)*

Generic Object Exchange Profile (GOEP)

Object Push Profile (OPP)*

File Transfer Profile (FTP)

Synchronization Profile (SYNC)

Hard Copy Cable Replacement (HCRP)*

Personal Area Networking Profile (PAN)*

Human Interface Device Profile (HID)*

FAX Profile (FAX)

Basic Imaging Profile (BIP)

Headset Profile (HSP)

Hands Free Profile (HFP)

Advanced Audio Distribution Profile (A2DP)

* indicates the profile is also supported by Microsoft Windows XP SP2

Environmental Data

Eco-Label Certifications
This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- ENERGY STAR 4.0
- US Federal Energy Management Program (FEMP)
- "TED" ECO declaration
- Korean Eco Label
- EPEAT Silver Rating

System Configuration
The configuration used for the Energy Consumption and Declared Noise Emissions data is based on a "Typically Configured Notebook"

Energy Consumption	115 VAC	230 VAC	100 VAC
Normal Operation	15.4 W	15.7 W	15.4 W
Sleep (Energy Star low power mode)	0.48 W	0.56 W	0.47 W
Off	0.87 W	0.95 W	0.86 W

Heat Dissipation*	115 VAC	230 VAC	100 VAC
Normal Operation	52.544 BTU/hr	53.568 BTU/hr	52.544 BTU/hr
Sleep	1.637 BTU/hr	1.91 BTU/hr	1.603 BTU/hr
Off	2.968 BTU/hr	3.241 BTU/hr	2.934 BTU/hr

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

This product is in compliance with US executive order 13221, WOL (wake on LAN) disabled.

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	2.7	19
Operating mode (HDD)	2.8	26

Technical Specifications

Batteries	This product complies with ISO standards:

- EU Directive 91/ 157/ EEC
- EU Directive 93/ 86/ EEC
- EU Directive 98/ 101/ EEC

Batteries used in the product do not contain:

- Mercury greater the 5ppm by weight
- Cadmium greater than 10ppm by weight
- Lead greater than 4000 ppm by weight.

The battery type and chemistry used in the product is:
CR2032 (coin cell), Lithium
8 cell rechargeable Lithium-Ion battery

Additional information: This product is in compliance with the EU Restrictions of Hazardous Substances (RoHS) Directive – 2002/95/EC.

This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.

Keyboard complies with ISO standard: ISO 9995, EN 29241-4, and ISO/IEC 15412

Input devices of this product comply with ISO 9241, part 9.

Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.

This product contains 0% recycled materials (by wt.)

This product is greater than 95% recyclable when properly disposed of at end of life.

Packaging Materials

- External:
  - Corrugated / Paper – 1 lb (453 g)
- Internal:
  - EPE Foam – 0.15 lb (70 g)
  - LDPE Bag – 0.01 lb (5 g)
- The corrugated paper packaging materials contains at least 40% recycled content.

Technical Specifications

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (for reference of these limits please refer to the HP General Specification of the Environment (http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

End-of-life Management and Recycling

HP offers our customers several other options for handling their aging computers while also minimizing the impact on the environment—including product trade-in and leasing services-in addition to recycling services.

Please go to: http://www.hp.com/recycle
or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

Technical Specifications

Hewlett-Packard Corporate Environmental Information	For more information about HP's commitment to the environment: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Environment website http://www.hp.com/environment Eco-label certifications http://www.hp.com/hpinfo/globalcitizenship/ environment/productdesign/ecolabels.html ISO 14001 certificates: http://www.hp.com/hpinfo/globalcitizenship/ environment/operations/envmanagement.html