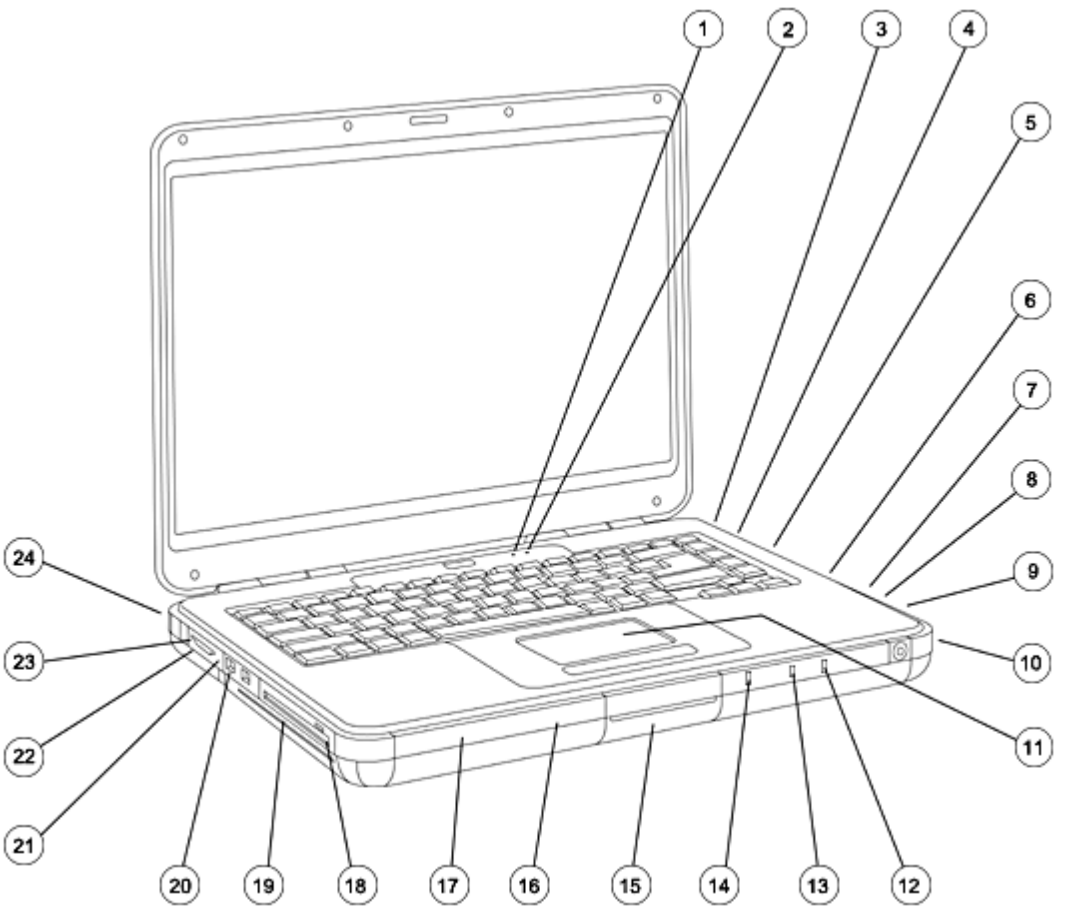
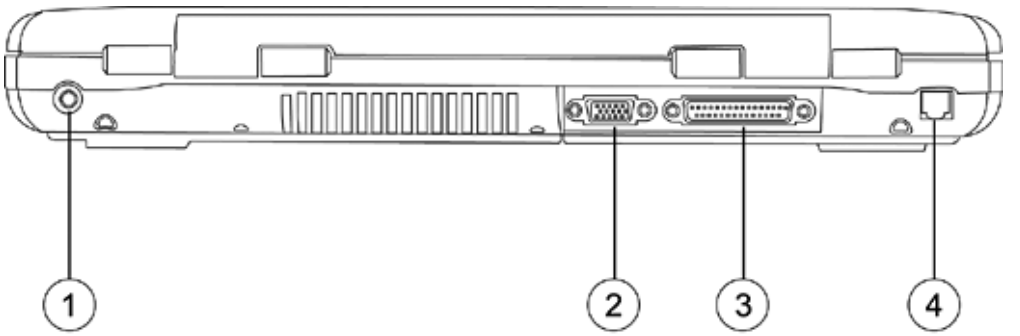
HP Compaq nx9110 and nx9100 Business Notebook

HP recommends Microsoft® Windows® XP Professional



1. CAPS Lock LED
2. Numeric Lock LED
3. S-video port
4. RJ-45 network jack
5. Port Replicator
6. FIR (select models)
7. 1394 (select models)
8. USB 2.0 (1 of 3) Port
9. Microphone jack/audio in
10. Headphone Jack
11. Volume Down/Volume Up/Mute Controls
12. Touchpad
13. Wireless On/Off Button
14. Hard Drive Activity LED
15. Battery Charger LED
16. Display Release Latch
17. Power LED
18. Optical Drive
19. HP USB Digital Drive dock or Diskette Drive (select models)
20. USB 2.0 (2 of 3) ports
21. PC Card Eject Button
22. PC card slot (2 slots on select models)
23. 5 in 1 Digital Media slot (select models)
24. Security cable slot

Overview



1. Power Connector
2. VGA
3. Parallel
4. RJ-11

At A Glance

- Microsoft Windows XP Professional, Microsoft Windows XP Home and Windows 2000 drivers available via web.
- Intel® Pentium® 4 Mobile Processors at 2.4, 2.8, or 3.06 - GHz
  - Intel Pentium 4 Processors at 2.66, 2.8, 3.06 w/HT, 3.2 w/HT - GHz
- ATI Radeon 9000 integrated graphics.
- Support for 14.1-inch, 15.0-inch and 15.4-inch display
- 333-MHz DDR SDRAM 2 SODIMM slots available - upgradeable to 2048 MB
- 30-GB 4200 rpm up to 80-GB 5400 rpm, user-removable hard drives.
- Integrated 10/100 Ethernet NIC
- Touchpad with dedicated up/down scroll and on/off switch.
- Protected by a one-year, Worldwide Limited Warranty – certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.
- Fixed Optical Drives: CD-ROM, DVD, CD-RW/DVD Combo & DVD+RW

What's New

- Microsoft Windows XP Professional, Microsoft Windows XP Home and Windows 2000 drivers available via web.
- 15.4-inch WXGA display with wide-viewing angle
- ATI Mobility Radeon 9000 integrated graphics
- 802.11 a/b/g wireless LAN modules
- Removable HP USB Digital Drive that docks in your notebook
- 5-in-1 Media Reader for quick file sharing
- HP Notebook Expansion Base compatible

What's Special

- Microsoft Windows XP Professional, Microsoft Windows XP Home and Windows 2000 drivers available via web
- Removable HP USB Digital Drive...upgradeable SD media based diskette replacement.
- 15.4-inch WXGA Wide-screen viewing angle.
- Broad range of connectivity support including integrated IEEE-1394, and three USB 2.0 ports.
- 5-in-1 Media Reader for quick file sharing.
- Optional integrated 802.11a/b/g, 802.11b, 802.11 b/g wireless LAN.
- Optional integrated Bluetooth.
- Supports HP Notebook Expansion Base.
- Preinstalled HP Printing drivers (5800 DeskJet wireless Printer, DeskJet Printers, Photosmart Printers) make on-the-go printing quick and easy.

Standard Features

Processors	2.40-GHz Mobile Intel Pentium 4 Processor with 533-MHz Processor Side Bus and 512-KB L2 cache 2.80-GHz Mobile Intel Pentium 4 Processor with 533-MHz Processor Side Bus and 512-KB L2 cache 3.06-GHz Mobile Intel Pentium 4 Processor with 533-MHz Processor Side Bus and 512-KB L2 cache 2.66-GHz Intel Pentium 4 Processor with 533-MHz Processor Side Bus and 512-KB L2 cache 2.80-GHz Intel Pentium 4 Processor with 533-MHz Processor Side Bus and 512-KB L2 cache 3.06-GHz Intel Pentium 4 Processor with 533-MHz Processor Side Bus, with Hyperthreading and 512-KB L2 cache 3.20-GHz Intel Pentium 4 Processor with 800-MHz Processor Side Bus, with Hyperthreading and 512-KB L2 cache	
Operating System *One of the following*	Microsoft Windows XP Professional Microsoft Windows XP Home Microsoft Windows 2000 drivers available via web.	
Chipset	ATI Mobility Radeon 9000 IGP	
Displays	Internal	14.1-inch XGA with 1024x768 resolution (16 M colors) 15.0-inch XGA with 1024x768 resolution (16 M colors) 15.4-inch WXGA wide viewing angle with 1280x800 resolution (16 M colors) 15.4-inch WSXGA+ wide viewing angle with 1680x1050 resolution (16 M colors) 15.4-inch WUXGA wide viewing angle with 1920x1200 resolution (16 M colors)
	External	Up to 32-bit per pixel color depth Supports 640 x 480, 800 x 600, 1024 x 768, 1280 x 768, 1280 x 1024, or 1600 x 1200 resolutions up to 100-Hz refresh rate, dependent upon monitor capability, and resolution and color depth settings
Memory	Standard	Configurable from 128 to 2048-MB 333-MHz DDR SDRAM (SODIMM in slot 1)
Communications	10/100 NIC High speed 56K modem with digital line guard NOTE: Designed only to allow faster downloads from compliant sources. Maximum achievable download transmission rates currently do not reach 56 KB/s, and will vary with line conditions. NOTE: Modem availability is subject to country regulatory approval.	
Keyboard	The 101/102-key compatible keyboard features an industry standard, full-width layout with desktop keyboard features, such as the isolated inverted-T cursor control keys, 3x2 editing keys, both left and right control and alt keys, and 11 function keys. The US layout has 84 keys and the International layout 85 keys. Other features include an integrated numeric keypad, hotkeys for instant access to power conservation, brightness, display selection, and other features, 19.05-mm x 19.05-mm key pitch (center-to-center spacing), 2.5-mm stroke, comfort-dished keycaps, and bright key legends for improved visibility in low light conditions.	

Standard Features

Pointing Device		Touchpad with up/down scroll with on/off switch.
PC Card Slots		nx9100: Two Type II PC Card Slots, which support both 32-bit CardBus and 16-bit PC Cards nx9110: One Type IIPC Card Slot, which supports both 32-bit CardBus and 16-bit PC Cards
Storage	Diskette Drives	Optional Diskette Drive; Dock for HP USB Digital Drive; or no diskette drive (weight saver)
	Hard Drives	30-GB 4200 rpm 40-GB 4200 rpm 60-GB 4200 rpm 80-GB 4200 rpm 60-GB 5400 rpm 80-GB 5400 rpm
	Optical Drives	DVD+RW 24X DVD/CD-RW 8X DVD 24X CD-ROM
	Flash Media Reader	nx9110; 5-1 Media Reader (SD; MMC; Smart Media; Sony Memory Stick and Memory Stick Pro) CAUTION: This notebook PC does not support Memory Stick Duo Cards or Memory Stick Duo Adapters. Inserting one of these cards or adapters into your notebook PC can damage the memory card or adapter and/or the notebook PC.
Multimedia		Two integrated branded stereo speakers External volume and mute controls Stereo Headphone/Line out Stereo Microphone in Software MPEG1 support DVD movie playback software DVD+RW Drive DVD/CD-RW Combo Drive DVD-ROM Drive CD-ROM Drive

Standard Features

Interfaces	PC Card Slot	nx9100: Two Type I/II or 1 Type III nx9110: One Type I/II
	External Monitor	1
	Microphone in	1
	Headphone/Line out	1
	DC Power	1
	RJ-11 (modem)	1
	RJ-45 (NIC)	1
	Infrared Port	nx9100: 1 (4 Mb/s support) (IrDA 4-MB compliant. IR performance will vary depending on performance of IR peripherals and application used.)
	Parallel Port	1
	5 in 1 Media reader	1
	S-video TV out connector	1 (support for NTSC/PAL)
	USB version 2.0 Port	3
	Docking Connector	1
	LED Status Indicators	10 (including 2 LEDs on the RJ-45 plug)
	IEEE-1394	1 (4-pins)
Graphics	ATI Mobility Radeon 9000 (UMA) 16 MB standard with 128-MB system memory 64 MB standard with 256-MB system memory 128 MB standard with 512-MB+ system memory	
Audio	HP Premier Sound 16-bit sound SoundMAX with Pure Audio 2 Stereo Speakers Headphone out and microphone jacks Stereo Headphone/Line out and microphone jack	

Standard Features

Software	**Preinstalled Software**	Adobe Acrobat Reader 6.0 HP Printing Drivers (5800 DeskJet wireless Printer, DeskJet Printers, Photosmart Printers) HP Help and Support (Microsoft Windows XP only) Synaptics Touchpad Driver WinDVD 4.0 – DVD Player (for optional DVD+RW, DVD/CDRW combo and DVD drives)* Symantec Antivirus software NOTE: Symantec Norton Antivirus (Complimentary 60 days Live Update). Sonic RecordNow 6.5 (for optional DVD+RW & DVD/CDRW combo drives)
	Software Provided on CD	WinDVD Creator 2.0 – DVD Authoring (for optional DVD+RW drives)
	Additional Software Available from the Web Microsoft Windows 2000 drivers	
	NOTE: *Software is loaded on the hard drive and must be installed by running the Setup Compaq Software utility.	
System Recovery	Each unit is shipped with a recovery CD kit containing Operating System Recovery and Driver/Application Recovery CDs. These CDs allow users to either recover or repair the notebook operating system and select drivers without losing personal data. The Operating System CD also provides the option of reinstalling the operating system software provided with the notebook.	
Security	Supports a range of standard security features including	
	Standard Features	Configuration Control through F10 set-up Memory Change Alert Setup Password Power-On Password DriveLock Kensington Lock Slot
Power Supply	External 120-watt AC adapter, 6-foot (1.8-meter) power cord included Total length including External AC adapter is 12 ft (3.66 m)	
Battery	**Primary Batteries**	8-cell Lithium-Ion (4.4Ah) – standard. 12-cell Lithium-Ion (4.4Ah) – required for all processors above 3.06 GHz.
Battery Life	8-cell primary Lithium-Ion battery provides up to 2 hours and 33 minutes of battery life. 12-cell primary Lithium-Ion battery provides up to 3 hours and 59 minutes of battery life.	

Standard Features

Notebook Battery Life benchmark results	
HP Compaq nx9000	
Processor/RAM	Intel Pentium 4 2.66 GHz
Hard drive/Mfr.	Fujitsu 60 GB
Video Driver	Radeon 9000 IGP
Resolution/colors	15.4 WXGA
CD-ROM	DVD-ROM
Operating System	Microsoft Windows XP Home, SP1
BIOS release	F08
Battery chemistry	Lithium-Ion
Nominal rating	12 cell, 6600 mAH, 14.8V

BWS Batterymark 2002		Run Date
	3 hours 59 minutes	10/27

Power Management Settings		
Scheme	Portable/Laptop	Comments
Turn off monitor	Never	
Turn off hard disks	3 mins	
System Standby	Never	
Hibernation	Never	
LCD Brightness	Half	
Volume control	Half	

NOTE: Actual results may vary with product model, configuration, and individual usage. Hewlett-Packard testing of a HP Compaq nx9110 with an Intel Pentium 4 2.66 GHz CPU, Windows XP Pro, 15.0-inch WXGA LCD, 512-MB RAM, 60-GB hard drive, 14.8V Lithium-Ion battery, and NIC/modem, achieved an overall BWS Batterymark 2002 score of 3h 59 m (2h 33m with 8-cell battery) Winstone is a registered trademark and BatteryMark is a trademark of Ziff Davis Publishing Holdings Inc. in the U.S. and other countries. Copyright 2002 Ziff Davis Media Inc. All Rights Reserved. System parameters followed test recommendations: panel brightness set to half, but no less than 60 nits, power management scheme - Laptop/Portable, hard drive timer set to 3 minutes, standby and video timers set to never. Wireless (802.11 and Bluetooth) turned off.

NOTE: This test was performed without independent verification by eTesting Labs Inc. eTesting Labs Inc. makes no representations or warranties as to the result of the test. BatteryMark is a trademark of Ziff Davis Publishing Holdings Inc., and affiliate of eTesting Labs Inc., in the U.S. and other countries.

Battery Re-Charge Time	System in OFF mode	3.5 – 4 hours for 12 cell battery
	OR	
	Standby	2 – 3 hours for 8 cell battery
	System On (Dependent on system power consumption)	3.5 – 8 hours

Standard Features

Power Conservation

Hibernation
Instant-on via standby
ACPI compliance
NOTE: Enhanced Intel SpeedStep™ technology support is only on Mobile Intel Pentium-4 processors.

Wireless Devices

Support a broad range of secure, integrated wireless LAN options featuring support for the latest industry standards. Integrated Bluetooth is also an option and can be combined with any one of the supported wireless LAN options.

All integrated wireless LAN options	Wi-Fi certified Cisco Compatible Extensions support Wired Equivalent Privacy (WEP) support up to 128bit keys Wi-Fi Protected Access (WPA) support 802.1x standards support including EAP-TLS, Protected EAP (PEAP) and Cisco-EAP (LEAP) Dual antennas integrated in the display enclosure
HP W500 802.11a/b/g	Integrated support for 802.11a, b and g Up to 54mbps throughput performance Advanced Encryption Standard (AES) support
Broadcom Wireless 802.11b wireless LAN	Integrated support for 802.11b Up to 11mbps throughput performance
Broadcom 54g Maxperformance 802.11b/g WLAN	Integrated support for 802.11 b and g Up to 54mbps throughput performance
Integrated Bluetooth	Designed to the Bluetooth v1.1 specification

Docking

The HP Notebook Expansion Base offers you a desktop experience with a clean, efficient, less-cluttered work environment; improved cable management; and wireless peripherals.

Connect Peripherals

Quickly connect to several peripherals with the Expansion Cable Connector which provides access to six USB 2.0 ports, S-Video TV Out, SP/DIF (Sony/Phillips Digital Interface) headphone-out, RJ-11/Modem pass-through, RJ-45/Ethernet, and serial ports as well as improved cable management and more connectivity options for quick connections to a variety of peripherals, including HP printers, scanners, digital cameras, and external DVD+RW drives.

Service and Support

HP Services includes a one-year, Worldwide Limited Warranty, pick-up or carry-in and toll-free 7 x 24 hardware technical phone support. On-site service* is also available.

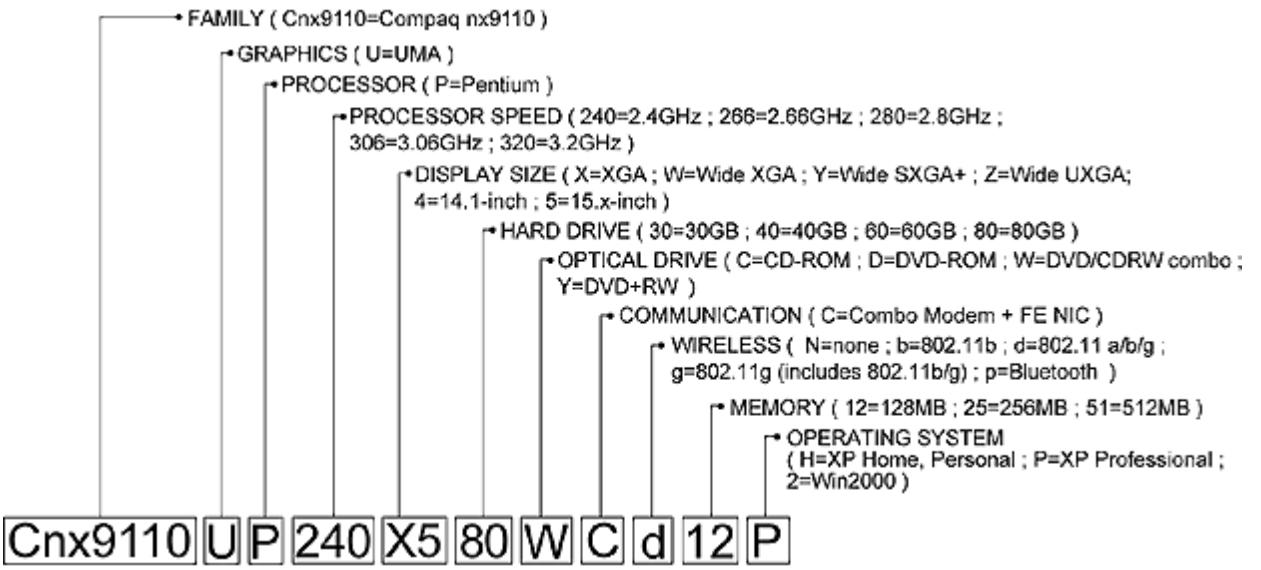
NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details. http://wwss1pro.hp.com/support/warranty_upgrades/product_specific_warranty.asp.

*on-site service available through HP Care Pack Services for US only.

Naming Convention

The Etymology of a Model name:

Standard Features



Accessories Matrix (10/31/03)		Blue Standalone Option Kit Part Number
Storage	HP 5GB PC Card	DF928A
	USB Diskette Drive	DC361A
	HP USB Digital Drive	DL702B
	HP USB Digital Drive + 128MB SD	DL702A
	SD Card Memory (64 MB)	253478-B21
	SD Card Memory (128 MB)	FA135A#AC3
	SD Card Memory (256 MB)	FA136A#AC3
	SD Card Memory (512 MB)	FA184A#AC3
Memory	256-MB DDR RAM (333 MHz)	DC389B
	512-MB DDR RAM (333 MHz)	DC390B
	1024-MB DDR RAM (333 MHz)	DC890B
Expansion	4-port USB 2.0 Hub	DG954A
	HP Notebook Expansion Base with Wireless Keyboard & Mouse	DN936A#xxx
	HP Notebook Expansion Base w/o Wireless Keyboard & Mouse	DN937A#xxx
Power	12-cell Lithium-Ion 4.Xah Battery	DP399A
	120W 3-wire AC Adapter	DC687A#xxx
	135W 3-wire AC Adapter	DR910A#xxx
Carrying Cases	HP Entry Value Carrying Case	DL617A
	HP Top Load Nylon Case	DC915A
	HP Top Load Leather Case	DC917A
	HP Executive Nylon Case	DC916A
	HP Sport Backpack	DG102A
Security	PC Card Smart Card Reader	DC350B
	Security Cable Lock	DC368A
Input/Output Devices	USB Travel Mouse (optical scroll mouse)	F2100A
	External 10-Key Numeric Keypad (PS/2)	DC854A
	USB/PS2 Keyboard	DC852A#xxx
	USB/PS2 Mouse	DC369A
	New Wireless Mouse + Keyboard	DL989A#ABA
	Belkin Dongle-free 1394 PC Card	DD797A

HP Compaq nx9110 and nx9100 Business Notebook

Standard Memory Plus Optional Memory

Support for up to 2048 MB of 333-MHz DDR SDRAM memory is available with the installation of optional DDR SDRAM Memory Kits.

Zero memory on system board
2 Slots total
1 - 128MB, 1-256MB or 512-MB DIMM installed in Slot 1
1-Additional open Memory Slot

NOTE: 1 slot user accessible-located underneath the unit, 1 slot located underneath the keyboard deck.

Memory	Slot 1	Slot 2
256 MB	256 MB	Empty

Standard Memory with Optional Memory Upgrades

Support for up to 2048-MB of SDRAM is available with the installation of optional SDRAM Memory Upgrades.

Memory	Slot 1	Slot 2
128 MB	128 MB	Empty
256 MB	256 MB	Empty
512 MB	256 MB	256 MB
512 MB	512 MB	Empty
768 MB	512 MB	256 MB
1024 MB	1024 MB	Empty
1024 MB	512 MB	512 MB
1280 MB	1024 MB	256 MB
1536 MB	1024 MB	512 MB
2048 MB	1024 MB	1024 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.

Following are memory options available from HP:

- 1024-MB 333-MHz DDR Memory Upgrade DC890B
- 512-MB 333-MHz DDR Memory Upgrade DC390B
- 256-MB 333-MHz DDR Memory Upgrade DC389B

NOTE: 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.

Removable Media Drive Support

System Drive Support	Quantity Supported
1.44-MB Diskette Drive	Up to 1
DVD+RW	Up to 1
DVD/CD-RW Combo Drive	Up to 1
DVD-ROM Drive	Up to 1
CD-ROM Drive	Up to 1

Hard Drive Support

System Drive Support	Quantity Supported	Drive Bay Supported
30-GB 4200 rpm SMART Hard Drive	Up to 1	Dedicated hard drive bay.
40-GB 4200 rpm SMART Hard Drive	Up to 1	Dedicated hard drive bay.
60-GB 4200 rpm SMART Hard Drive	Up to 1	Dedicated hard drive bay.
80-GB 4200 rpm SMART Hard Drive	Up to 1	Dedicated hard drive bay.
60-GB 5400 rpm SMART Hard Drive	Up to 1	Dedicated hard drive bay.
80-GB 5400 rpm SMART Hard Drive	Up to 1	Dedicated hard drive bay.

System Unit	**Dimensions** (HxWxD)	14.1-inch,15.0-inch, and 15.4 TFT panel display support	1.67 x 14.25 x 10.96 in (42.4 x 362 x 278.5 mm)
	Weight	With 8-cell std battery & weight saver	7.515 lb (3.42 kg) with 14.1-inch display 7.731 lb (3.51 kg) with 15.0-inch display 7.786 lb (3.54 kg) with 15.4-inch display
		With 12-cell std battery & diskette drive	8.328 lb (3.79 kg) with 15.4-inch display
		With 12-cell std battery & weight saver	8.040 lb (3.65 kg) with 15.4-inch display
		With 12-cell std battery & garage	8.216 lb (3.73 kg) with 15.4-inch display without Cage device 8.260 lb (3.75 kg) with 15.4-inch display with Cage device
	NOTE: Height varies depending upon where on the notebook the measurement is made. Weight varies by configuration and components.		
	Stand-Alone Power Requirements* (*Power Requirements will vary based on SKU configuration)	Nominal Operating Voltage	14.8V (on 8-cell battery) 14.8V (on 12-cell battery) 18.5V (on AC power)
		Average Operating Power (Estimating Batterymark condition is considered average operating condition)	50W (While system works with Intel Pentium 4 3.2GHz)
		Peak Operating Power (Power user scenario with CPU operating at 75% condition)	100W (While system works with Intel Pentium 4 3.2GHz)
		Power in suspend mode	< 500 mW
		Power in hibernation mode	< 50 mW
	Temperature	Operating	50° to 95° F (10° to 35° C)
		Non-operating	-4° to 140° F (-20° to 60° C)
	Relative Humidity	Operating	10% to 90% relative humidity, non-condensing
		Non-operating	5% to 90% relative humidity, 101.6° F (38.7° C) maximum wet bulb temperature
	Shock	Operating	40 G, 2 ms, half-sine
		Non-operating	240 G, 2 ms, half-sine
	Vibration	Operating	0.5 G, 10 to 500 Hz, 0.5 Oct/Min sweep rate
		Non-operating	1.0 G, 10 to 500 Hz, 0.5 Oct/Min sweep rate
	Maximum Altitude (unpressurized)	Operating	0 to 10,000 ft (3,048 m) (14.7 to 10.1 psia)
		Non-operating	0 to 30,000 ft (9,144 m) (14.7 to 4.4 psia)
	Industry Standard	Blue Angel	No

	Certifications	UL	Yes
		Energy Star	Yes
		Canadian Safety	Yes
		CSA (Canada)	Yes
		TUV GS	Yes
		Nordic Safety	Yes
		Mexican Safety	Yes
		Poland Compliance	Yes
		Australia/NZ Compliance	Yes
		CCC	Yes
		Taiwan Greenmark	Yes
		Japan Compliance	Yes
		MIC	Yes
		BSMI	Yes
		CE Marking Compliance	Yes
		KONCAR	Yes
		GOST	Yes
		SASO	Yes
		SABS	Yes
		UKRSERTCOMPUTER	Yes
External AC Adapter w/PFC	**Weight**	1.39 lb (0.63 kg) (adapter) 0.287 lb (0.13 kg) (power cord)	
	Power Supply (Input)	Operating Voltage	90 to 264 VAC RMS
		Operating Current	2.0 A RMS
		Operating Frequency Range	47 to 63 Hz AC
		Maximum Transient	4/50 kV
External AC Adapter w/o PFC	**Weight**	1.39 lb (0.63 kg) (adapter) 0.287 lb (0.13 kg) (power cord)	
	Power Supply (Input)	Operating Voltage	90 to 264 VAC RMS
		Operating Current	2.5 A RMS
		Operating Frequency Range	47 to 63 Hz AC
		Maximum Transient	4/50 kV

Technical Specifications

Primary Lithium-Ion Battery Pack 12-cell	Dimensions (H x W x L)	6.0 x 4.63 x .81 in (12.24 x 11.76 x 2.06 cm)	
	Weight	1.298 lb (0.59 kg)	
	Cells/Type	12-cell Lithium-Ion	
	Energy	Voltage	14.8V
		Amp-hour capacity	6.6 Ah
		Watt-hour capacity	96Wh
	Temperature	Operating	41° to 113° F (5° to 45° C)
		Non-operating	32° to 140° F (0° to 60° C)
	Battery Re-Charge Time	System in OFF mode or Standby	3.5 - 4 hours
		System ON (depending on system power consumption)	3.5 - 8 hours
Primary Lithium-Ion Battery Pack 8-cell	Dimensions (H x W x L)	6.0 x 4.63 x .81 in (12.24 x 11.76 x 2.06 cm)	
	Weight	1.013 lb (0.46 kg)	
	Cells/Type	8-cell Lithium-Ion	
	Energy	Voltage	14.4 V
		Amp-hour capacity	4.4 Ah
		Watt-hour capacity	65Wh
	Temperature	Operating	41° to 113° F (5° to 45° C)
		Non-operating	32° to 140° F (0° to 60° C)
	Battery Re-Charge Time	System in OFF mode or Standby	2-3 hours
		System ON (depending on system power consumption)	3.5 - 8 hours
14.1-Inch Color TFT XGA Display	Active Area (H x W)	11.2 x 8.4 in (28.6 x 21.4 cm)	
	Diagonal Size	14.1 in (35.7 cm)	
	Mounting	Internal Panel Supports, Side Mounted	
	Number of Colors	16 M	
	Contrast Ratio	250:1 typ	
	Refresh Rate	60 Hz	
	Brightness	150 nit typical (min)	
	Pixel Resolution	Pitch	0.279 x 0.279 mm
		Format	1024 x 768
		Configuration	RGB stripe
	Backlight	CCFT	
	Character Display	80 x 25	
	Total Power Consumption	4W	
	Viewing Angle	±45° Horizontal, +15°/-35° Vertical (typical)	

Technical Specifications

15.0-Inch Color TFT XGA Display	Active Area (H x W)	11.8 x 9.0 in (30.4 x 22.8 cm)	
	Diagonal Size	15.0 in (38.0 cm)	
	Mounting	Internal	
	Number of Colors	16 M	
	Contrast Ratio	250:1 typical	
	Refresh Rate	60 Hz	
	Brightness	150 nit typical	
	Pixel Resolution	Pitch	0.297 x 0.297 mm
		Format	1024 x 768
		Configuration	RGB Stripe
	Backlight	CCFT	
	Character Display	80 x 25	
	Total Power Consumption	5.5 W	
	Viewing Angle	±40° Horizontal, +20°/-40° Vertical (typical)	
15.4-Inch Color TFT WXGA Display with wide viewing angle	Active Area (H x W)	13.0 x 8.1 in (33.1 x 20.7 cm)	
	Diagonal Size	15.4 in (39.1 cm)	
	Mounting	Internal Panel Supports, Side Mounted	
	Number of Colors	Up to 16.8M	
	Contrast Ratio	200:1 typ	
	Refresh Rate	60 Hz	
	Brightness	180 nit typical	
	Pixel Resolution	Pitch	0.259 mm
		Format	1280 x 800
		Configuration	RGB stripe
	Backlight	Edge Lit	
	Character Display	80 x 25	
	Viewing Angle	±65° Horizontal, ±50° Vertical (typical)	
15.4-Inch Color TFT WSXGA+ Display with wide viewing angle	Active Area (H x W)	13.0 x 8.1 in (33.1 x 20.7 cm)	
	Diagonal Size	15.4 in (39.1 cm)	
	Mounting	Internal Panel Supports, Side Mounted	
	Number of Colors	Up to 16.8M	
	Contrast Ratio	200:1	
	Brightness	180nt typ	
	Pixel Resolution	Pitch	0.193 mm
		Format	1680 x 1050
		Configuration	RGB stripe
	Backlight	Edge Lit	
	Character Display	80 x 25	
	Viewing Angle	±65° Horizontal, ±50° Vertical (typical)	

Technical Specifications

15.4-Inch Color TFT WUXGA Display with wide viewing angle	Active Area (H x W)	13.0 x 8.1 in (33.1 x 20.7 cm)	
	Diagonal Size	15.4 in (39.1 cm)	
	Mounting	Internal Panel Supports, Side Mounted	
	Number of Colors	Up to 16.8M	
	Contrast Ratio	300:1	
	Brightness	170nt typ	
	Pixel Resolution	Pitch	0.173 mm
		Format	1920 x 1200
		Configuration	RGB stripe
	Backlight	Edge Lit	
	Character Display	80 x 25	
	Viewing Angle	±55° Horizontal, ±45° Vertical (typical)	

Hard Drives

80-GB 5400 rpm	Drive Weight	0.22 lb (99 g)	
	Capacity	80 GB	
	Height	0.74 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-6	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	13 ms
		Maximum	24 ms
	Rotational Speed	5400 rpm	
	Logical Blocks	156,301,488	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	Features	Security	ATA Security

Technical Specifications

60-GB 5400 rpm	Drive Weight	0.22 lb (99 g)	
	Capacity	60 GB	
	Height	0.374 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-5	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	13 ms
		Maximum	24 ms
	Rotational Speed	5400 rpm	
	Logical Blocks	117,210,240	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	Features	Security	ATA Security
80-GB 4200 rpm	Drive Weight	0.22 lb (99 g)	
	Capacity	80 GB	
	Height	0.74 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-5	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	13 ms
		Maximum	24 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	156,301,488	
	Operating Temperature	41° to 131°F (5° to 55°C)	
	Features	Security	ATA Security

Technical Specifications

60-GB 4200 rpm	Drive Weight	0.22 lb (99 g)	
	Capacity	60 GB	
	Height	0.74 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-5	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	13 ms
		Maximum	24 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	117,210,240	
	Operating Temperature	41° to 131°F (5° to 55°C)	
	Features	Security	ATA Security
40-GB 4200 rpm	Drive Weight	0.22 lb (99 g)	
	Capacity	40 GB	
	Height	0.374 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-5	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	Seek Time (typical reads, including settling)	Single Track	3.0 ms
		Average	13 ms
		Maximum	24 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	78,140,160	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	Features	Security	ATA Security

Technical Specifications

30-GB 4200 rpm	Drive Weight	0.22 lb (99 g)	
	Capacity	30 GB	
	Height	0.374 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-5	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	Seek Time (typical reads, including settling)	Single Track	2.5 ms
		Average	12 ms
		Maximum	23 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	58,605,120	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	Features	Security	ATA Security

CD-ROM Drive	Access Times	Random	<110 ms CD
		Full Stroke	<220 ms CD
	Max data transfer rate	24X CD-ROM	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	
	Supported Media (write)	None	
	Max Media Capacity (read)	700MB	
	Max Media Capacity (write)	None	
	Transport	Tray Loading	

DVD-ROM Drive	Access Times	Random	<100 ms CD
			<125 ms DVD
		Full Stroke	<175 ms CD
			<225 ms DVD
	Max data transfer rate	24X-CD-ROM	3,600 KB/s
		24X-CD-R	3,600 KB/s
		24X-CD-RW	3,600 KB/s
		8X-DVD-ROM	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, DVD-RAM	
	Supported Media (write)	None	
	Max Media Capacity (read)	4.7 GB	
	Max Media Capacity (write)	None	
	Transport	Tray Loading	

DVD+RW Drive	Access Times	Random	<175 ms CD
			<230 ms DVD
		Full Stroke	<285 ms CD
			<335 ms DVD
	Max data transfer rate	24X CD-ROM	3,600 KB/s
		8X DVD	10,800 KB/s
		16X CD-R	2,400 KB/s
		8X CD-RW	1,200 KB/s
		2X DVD+R	2,700 KB/s
		2X DVD+RW	2,700 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, DVD+R, DVD+RW	
	Max Media Capacity (read)	4.7GB	
	Max Media Capacity (write)	4.7GB	
	Transport	Tray Loading	

DVD/CD-RW Combo Drive	Access Times	Random	<110 ms CD
			<130 ms DVD
		Full Stroke	<210 ms CD
			<225 ms DVD
	Max data transfer rate	24X CD-ROM	3,600 KB/s
		24X CD-R	3,600 KB/s
		24X CD-RW	3,600 KB/s
		8X DVD-ROM	10,500 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-R, DVD+R, DVD-RW, DVD+RW, DVD-RAM	
	Supported Media (write)	CD-R, CD-RW	
	Max Media Capacity (read)	4.7GB	
	Max Media Capacity (write)	700MB	
	Transport	Tray Loading	

Diskette Drive	Diskette Size	3.5 in	
	Height	12.7 mm	
	Bytes per Sector	512	
	Sectors per track	High density	18 (1.44 MB)/15 (1.2 MB)
		Low density	9
	Tracks per side	High density	80 (1.44 MB)/80 (1.2 MB)
		Low density	80
	Read/Write heads	2	
	Access Times	Track-to track (high/low)	3 ms/6 ms
		Average (high/low)	94 ms/174 ms
		Settling time	15 ms
		Latency average	100 ms

Technical Specifications

Audio	Hardware	Implementation	AC97 CODEC
		Audio Signal Link to CPU	Audio CODEC (AC) link
		Full Duplex	Yes
		Stereo Inputs	Line In – 20K Impedance (with Port Replicator only) Microphone – 20K Impedance
		Stereo Outputs	Headphone jack, S/PDIF from Port Replicator only
	Audio Output Quality	Frequency Response	20 Hz – 20 kHz
		Signal to Noise Ratio	>90dB
		Total Harmonic Distortion	0.01%
		Noise Floor	-120dB
		Play/Record Sampling Rate(s)	7 kHz – 48 kHz
		AD/DA Resolution	16 bit
	2 Stereo Speakers	Amplifier Power	2-Watts RMS
		Speaker Impedance	4-Ohms

Communications

HP W500 802.11a/b/g WLAN	Wireless LAN Standards	IEEE 802 Part 11a (802.11a) IEEE 802. Part 11b (802.11b) IEEE 802. Part 11g (802.11g)
	Interoperability	Wi-Fi certified (details available at http://www.hp.com/go/notebooks/wlan)
	Frequency Band	2.4 and 5 GHz
	Data Rates	802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM
	Security	64 and 128 bit WEP encryption Support for WiFi Protected Access (WPA) including TKIP, MIC Hardware-accelerated support for the Advanced Encryption Standard (AES; 256-bit encryption) Support for 802.1x authentication types: EAP-TLS, LEAP (Cisco), PEAP (Microsoft implementation); more details available at http://www.hp.com/go/notebooks/wlan. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program).
	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 802.11a and 802.11b/g access points

Output Power	802.11b: 17 dBM (typical) 802.11a/g: 15 dBM (typical)	
Power Consumption	Transmit: 2.0 W (max) Receive: 1.5 W (max) Sleep mode: 20 mW (max)	
Power Management	ACPI compliant power management 802.11 Compliant Power Saving Mode Power Saving Mode selectable through the configuration utility	
Receiver Sensitivity*	54 Mbps: -70 dBm to 1 Mbps: -90 dbm	
Antenna type	High efficiency dual band antenna with polarization diversity, mounted in the display enclosure	
Range**	802.11a – Typical	500 feet – Outdoors Open Area 150 feet – Indoor, Office-environment
	802.11 b – Typical	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
	802.11 g – Typical	1000 feet – Outdoor Open Area 200 feet – Indoor, Office environment
Form Factor	MiniPCI Type IIIA	
Weight	0.036 lb (16.5 g)	
Dimensions	0.19 x 2.00 x 2.35 in (4.8 x 50.95 x 59.75 mm)	
Operating Voltage	3.3v	
Temperature	Operating Non-operating	32° to 122° F (0° to 50° C) -14° to 158° F (-10° to 70° C)
Humidity	Operating Non-operating	10% to 90% 5% to 95%
Altitude	Operating Non-operating	0 to 15,000 ft (4,572 m) 0 to 40,000 ft (12,192 m)
Configuration Utility	Choice of Configuration Utility: • Atheros Client Utility for Microsoft Windows 2000 or XP (required for Cisco Compatible Extensions support) • Microsoft Windows XP Wireless Zero Configuration Utility NOTE: May also be compatible with certain third party software supplicants	
LED Activity	LED Off – Radio OFF; Solid LED – Radio ON	
Agency Approvals	Details at http://www.hp.com/go/notebooks/wlan.	

*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)

** End-user may not obtain typical ranges due to environmental factors such as RF interference, RF signal obstructions, RF absorbing materials, and other RF traffic

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Broadcom 802.11b WLAN	**Wireless LAN Standards**	IEEE 802. Part 11b (802.11b)
	Interoperability	Wi-Fi certified (details available at http://www.hp.com/go/notebooks/wlan)
	Frequency Band	2.4 GHz
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK

Security	64- and 128-bit WEP encryption Support for WiFi Protected Access (WPA) including TKIP, MIC Support for 802.1x authentication types: EAP-TLS, LEAP (Cisco), PEAP (Microsoft implementation); more details available at http://www.hp.com/go/notebooks/wlan. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program).	
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 802.11b/g access points	
Output Power	13.5 dBm (typical)	
Power Consumption	Transmit: 1.0 W (max) Receive: 850 mW (max)	
Power Management	ACPI compliant power management 802.11 Compliant Power Saving Mode Power Saving Mode selectable through the configuration utility	
Receiver Sensitivity*	11 Mbps: -84 dBm to 1 Mbps: -92 dBm	
Antenna type	High efficiency dual band antenna with polarization diversity, mounted in the display enclosure	
Range**	802.11 b – Typical	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
Form Factor	MiniPCI Type IIIA	
Weight	0.027 lb (12 g)	
Dimensions	0.19 x 2.00 x 2.35 in (4.8 x 50.95 x 59.75 mm)	
Operating Voltage	3.3v	
Temperature	Operating Non-operating	32° to 122° F (0° to 50° C) -14° to 158° F (-10° to 70° C)
Humidity	Operating Non-operating	10% to 90% 5% to 95%
Altitude	Operating Non-operating	0 to 15,000 ft (4,572 m) 0 to 40,000 ft (12,192 m)
Configuration Utility	Choice of Configuration Utility: • Broadcom Client Utility for Microsoft Windows 2000 or XP (required for Cisco Compatible Extensions support) • Microsoft Windows XP Wireless Zero Configuration Utility NOTE: May also be compatible with certain third party software supplicants.	
LED Activity	LED Off – Radio OFF; Solid LED – Radio ON	
Agency Approvals	Details at: http://www.hp.com/go/notebooks/wlan.	

* 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)
** End-user may not obtain typical ranges due to environmental factors such as RF interference, RF signal obstructions, RF absorbing materials, and other RF traffic

Technical Specifications

Broadcom 54g Maxperformance 802.11g WLAN	Wireless LAN Standards	IEEE 802. Part 11b (802.11b) IEEE 802. Part 11g (802.11g)	
	Interoperability	Wi-Fi certified (details available at http://www.hp.com/go/notebooks/wlan)	
	Frequency Band	2.4 GHz	
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps	
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM	
	Security	64 and 128 bit WEP encryption Support for WiFi Protected Access (WPA) including TKIP, MIC Hardware-accelerated support for the Advanced Encryption Standard (AES; 256-bit encryption) Support for 802.1x authentication types: EAP-TLS, LEAP (Cisco), PEAP (Microsoft implementation); more details available at http://www.hp.com/go/notebooks/wlan. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program).	
	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 802.11b/g access points	
	Output Power	802.11b: 13.5 dBm (typical) 802.11g: 13.5 dBm (typical)	
	Power Consumption	Transmit: 1.1 W (max) Receive: 900 mW (max)	
	Power Management	ACPI compliant power management 802.11 Compliant Power Saving Mode Power Saving Mode selectable through the configuration utility	
	Receiver Sensitivity*	54 Mbps: -65 dBm to 1 Mbps: -92 dBm	
	Antenna type	High efficiency dual band antenna with polarization diversity, mounted in the display enclosure	
	Range**	802.11 b – Typical	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
		802.11 g – Typical	1000 feet – Outdoor Open Area 200 feet – Indoor, Office environment
	Form Factor	MiniPCI Type IIIA	
	Weight	0.027 lb (12 g)	
	Dimensions	0.19 x 2.00 x 2.35 in (4.8 x 50.95 x 59.75 mm)	
	Operating Voltage	3.3v	
	Temperature	Operating Non-operating	32° to 122° F (0° to 50° C) -14° to 158° F (-10° to 70° C)
	Humidity	Operating Non-operating	10% to 90% 5% to 95%
	Altitude	Operating Non-operating	0 to 15,000 ft (4,572 m) 0 to 40,000 ft (12,192 m)

Configuration Utility	Choice of Configuration Utility: • Broadcom Client Utility for Microsoft Windows 2000 or XP (required for Cisco Compatible Extensions support) • Microsoft Windows XP Wireless Zero Configuration Utility NOTE: May also be compatible with certain third party software supplicants.	
LED Activity	LED Off – Radio OFF; Solid LED – Radio ON	
Agency Approvals	Details at http://www.hp.com/go/notebooks/wlan.	

* 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)
** End-user may not obtain typical ranges due to environmental factors such as RF interference, RF signal obstructions, RF absorbing materials, and other RF traffic

Bluetooth by HP	Form Factor	Integrated USB module	
	Bluetooth	1.1 Compliant	
	Dimensions	1.02 x 0.55 x 0.22 in (26 x 14 x 5.7 mm)	
	Temperature	Operating	-4° to 158° F (-20° to 70° C)
		Non-operating	-40° to 176° F (-40° to 80° C)
	Humidity	10% to 90% operating	
		5% to 95% non operating	
	Altitude	Operating	15,000 ft (4,572 m)
		Non-operating	40,000 ft (12,192 m)
	Plug and Play	USB 1.1 compliant	
		Microsoft Windows Plug and Play compliant	
	Frequency Band	2402 to 2480 MHz	
	Number of Available Channels	79 (1 MHz) available channels	
	Data Rates and throughput	1 Mbps	
		Synchronous Connection Oriented links up to 3, 64 kbps, voice channels	
		Asynchronous Connection Less links 723.2 kbps/57.6 kbps asymmetric or 433.9 kbps symmetric	
	Antenna type	Internally integrated within module	
	Range**	33 ft (10 m)	
	OS Support	Microsoft Windows XP Professional and Home Microsoft Windows 2000	
	Software Stack Supported	User may choose: Microsoft User Interface (Profiles supported: HID, DUN, HCRP) Widcomm User Interface (see profile support below)	

Profile Support	General Access Profile Service Discovery Application Profile Serial Port Profile Generic Object Exchange Profile File Transfer Profile Synchronization Profile Dial-Up Networking Profile LAN Access Profile Object Push Profile Hard Copy Cable Replacement Profile Personal Area Networking Profile Human Interface Device Profile
Usage Models	Service Discovery (determine what Bluetooth devices are within range and support authorization) Synchronization PDAs to PCs Portable to Desktop File Transfer File and directory browsing and navigation on another Bluetooth device. File copying Object manipulation – including add, delete, create new folders etc. Wireless link to Corporate LAN using several Bluetooth devices sharing the same Access Point Corporate email, network neighborhood, access to LAN applications, file transfer, ftp, Internet browsing, etc, using TCP/IP Wireless link to WAN thru cell phone Agnostic to WAN technology Send/receive SMS messages Wireless link to Printer Adhoc peer to peer networking (two computers) or Personal Area Networking (PAN) using NDIS (< 7 computers) Adhoc Bluetooth Pico-networking (point to multi-point) Object Push – Business card or appointment exchange Human Interface Devices Wirelessly interface to notebook with mouse, keyboard, etc Printing Wirelessly print to Bluetooth enabled printers
Transmit Power	-6dBm to 4 dBm (Bluetooth Class II)
Receive Sensitivity	Better than -80 dBM at 0.1 % raw bit error rate
Link Topology	Point to Point, Multipoint Pico Nets up to 7 slaves
Security	Full support of Bluetooth Security Provisions
Network Architecture Models	NAP (Network Access Point) PANU (PAN User) PAN GN (Group Adhoc Network)
Power Requirement	Peak < 270 mW

	Power Management	Microsoft Windows ACPI, and USB Bus Support Wireless EAB On/Off Software On/Off control Self configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff
	Protocols Supported	TCP/IP IPX/SPX UDP
	LED Activity	Solid Blue LED – On LED Off – Power Off
	Certifications	All necessary regulatory approvals for countries we support 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
	** End-user may not obtain typical ranges due to environmental factors such as RF interference, RF signal obstructions, RF absorbing materials, and other RF traffic	
Integrated 10/100 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) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)
	Power Management	ACPI 1.1a compliant -- multiple power modes Situation-sensitive features reduce power consumption
	Manageability	Wake-on-LAN from Standby (configurable; Magic Packet and Microsoft Wake-Up Frame) PXE 2.0 Remote Boot Statistics Gathering (RMON, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30))
	NIC Device Driver Name	Realtek 8101L 10/100 Integrated Controller
	Drivers Available	Windows XP Windows 2000 DOS NDIS2 and ODI

Agere Systems AC'97 Modem	Form Factor	MDC 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	High speed 56K modem (a-law, mu-law) V.8bis V.80 V44, V.42bis, MNP5 (Compression) V.42 (LAPM, MNP2-4) (Error Correction) V.34 (file date: 10/96) Optional symbol rates: 2800, 3429 Asymmetric Symbol rates Synchronous primary channel data signaling rates: 3600, 31200 Automatic rate re-negotiation V.32bis V.32 V.23 V.22bis V.22 V.21 Bell 212A Bell 103J
	Fax Mode Capabilities	TIA-578-S (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

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