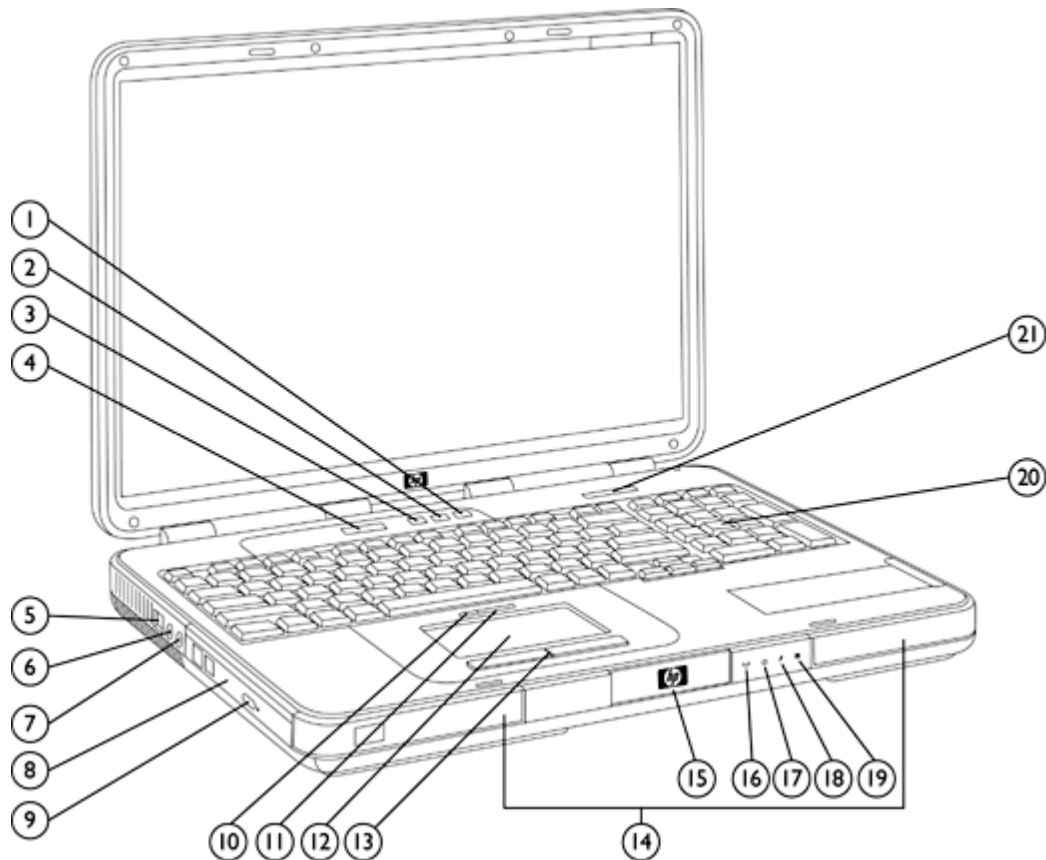


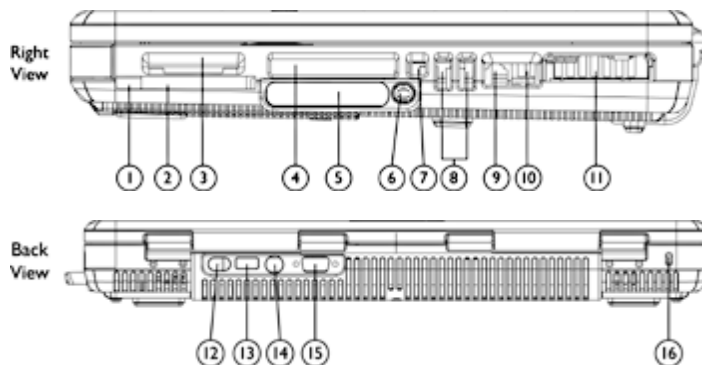
## Overview



1. Volume Mute Button
2. Volume Up Button
3. Volume Down Button
4. Power/Standby Button
5. USB 2.0 Port
6. Microphone Jack
7. Headphone Jack
8. Optical Drive
9. Optical Drive Release Button
10. Touchpad On/Off LED
11. Touchpad On/Off Button

12. Touchpad with 4-way scroll zones
13. Left/Right Touchpad Buttons
14. Stereo Speakers
15. Display Release Button
16. Wireless On/Off LED
17. Power/Standby LED
18. Hard Drive Activity LED
19. Battery Charging LED
20. Full Numeric Keypad
21. Wireless On/Off Button with LED

### Overview



1. PC Card Eject Button
2. PC Card Slot
3. 6-in-1 Media Slot
4. ExpressCard Slot
5. Digital Drive Bay
6. Digital Drive Eject Button
7. IEEE 1394 Port
8. 2 USB 2.0 Ports
9. RJ-11 Port (Modem)
10. RJ-45 Port (NIC)
11. Expansion Port 2 (Docking Connector)
12. Power Connector
13. USB 2.0 Port
14. S-Video TV Out
15. VGA/External Monitor Port
16. Kensington Lock Slot

### At A Glance

- Intel® Pentium® 4 processor with Hyper-Threading Technology
- Genuine Windows® XP Professional
- Intel 915P Express Chipset
- 17-inch WXGA+ or WSXGA+ panel with 140-degree wide viewing angle and 16:10 aspect ratio
- PCI Express mobile discrete graphics controller using ATI® MOBILITY™ RADEON® X600 with 128MB dedicated video memory or ATI MOBILITY RADEON X300 with 64MB dedicated video memory
- 400-MHz DDR2 SDRAM, two SODIMM slots, upgradeable to 2048 MB
- 40, 60, 100-GB 4200 rpm Hard Drives; 80-GB, 100-GB 5400 rpm Hard Drive; 60-GB 7200 rpm Hard Drive
- Integrated 802.11b/g or 802.11a/b/g wireless LAN module
- Integrated 6-in-1 media slot
- ExpressCard/54 slot
- Integrated IEEE-1394
- Full size keyboard with separate numeric keypad
- 10/100/1000 Ethernet NIC
- 12-cell standard Li-Ion battery
- Touchpad with right/left button and 4-way vertical scroll bar
- Protected by a one-year, worldwide limited warranty - certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.

### Standard Features

<b>Processor</b>	<p>Intel Pentium 4 processor 650* with HT Technology (3.4-GHz, 800-MHz FSB, 2-MB L2 cache, SpeedStep®)</p> <p>Intel Pentium 4 processor 640* with HT Technology (3.2-GHz, 800-MHz FSB, 2-MB L2 cache, SpeedStep)</p> <p>Intel Pentium 4 processor 630* with HT Technology (3.0-GHz, 800-MHz FSB, 2-MB L2 cache, SpeedStep)</p> <p>Intel Pentium 4 processor 560* with HT Technology (3.6-GHz, 800-MHz FSB, 1-MB L2 cache)</p> <p>Intel Pentium 4 processor 550* with HT Technology (3.4-GHz, 800-MHz FSB, 1-MB L2 cache)</p> <p>Intel Pentium 4 processor 540* with HT Technology (3.2-GHz, 800-MHz FSB, 1-MB L2 cache)</p> <p>Intel Pentium 4 processor 530* with HT Technology (3.0-GHz, 800-MHz FSB, 1-MB L2 cache)</p> <p>* Intel's numbering is not a measurement of higher performance.</p> <p><b>Disclaimer:</b> Speeds listed for Intel processors are maximum performance levels on AC power. The processor speed is reduced to approximately 75% on battery power to optimize battery life. Please go to <a href="http://www.hp.com">http://www.hp.com</a> for more details on battery life conservation.</p>
<b>Operating System</b>	<p>Pre-installed Genuine Windows XP Professional Edition (Microsoft Windows 2000 drivers available on <a href="http://www.hp.com">www.hp.com</a>)</p>
<b>Chipset</b>	<p>Intel 915P Express Chipset</p>
<b>Display</b>	<p>17.0-inch WXGA+ display with 1440 x 900 resolution and 16M colors, 140-degree viewing angle, 16:10 aspect ratio</p> <p>17.0-inch WSXGA+ BrightView display with 1680 x 1050 resolution and 16M colors, 140-degree viewing angle, 16:10 aspect ratio</p> <p><b>NOTE:</b> Durable PC-ABS plastic display enclosure.</p> <p><b>External</b> 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 <b>NOTE:</b> Resolutions are dependent upon monitor capability, and resolution and color depth settings.</p>
<b>Memory</b>	<p><b>Standard</b> 512MB or 1024MB standard, 400-MHz DDR2 SDRAM standard; two SODIMM slots</p> <p><b>Maximum</b> Upgradeable to 2048 MB maximum (1024MB in slots 1 and 2)</p> <p><b>Dual-channel</b> Maximized dual-channel performance requires SODIMMs of the same size and speed in both memory slots.</p> <p><b>NOTE:</b> Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility.</p>

### Standard Features

#### Communications

Integrated 10/100/1000 Ethernet NIC  
Integrated 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.

#### Wireless Devices

The HP Compaq nx9600 Notebook PC supports 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.

<b>All integrated wireless LAN options</b>	Wi-Fi certified Cisco Compatible Extensions support Wired Equivalent Privacy (WEP) support up to 128-bit 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
<b>Broadcom 802.11a/b/g WLAN</b>	Integrated support for 802.11a, b and g Up to 54mbps data rate Advanced Encryption Standard (AES) support
<b>Broadcom 802.11b/g WLAN</b>	Integrated support for 802.11b and g Up to 54mbps data rate Advanced Encryption Standard (AES) support
<b>Integrated Bluetooth</b>	Bluetooth Specification v1.2 compliant Works with a wide range of Bluetooth devices

#### 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, both left and right control and alt keys, and 12 function keys. Other features include a full numeric keypad, hotkeys for instant access to power conservation, brightness, 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.

#### Pointing Device

Touchpad with right/left button and 4-way scroll (vertical and horizontal)

#### Expansion Slots

One Type I/II PC Card slot that supports both 32-bit CardBus and 16-bit PC Cards  
One ExpressCard/54 Slot

#### Media Slots

<b>6-in-1 media slot</b>	Supports SD (Secure Digital), MMC (MultiMedia Card), Memory Stick, Memory Stick Pro, Smart Media, xD-Picture card <b>CAUTION:</b> 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.
<b>HP USB Digital Drive Bay</b>	Supports HP USB Digital Drive

## Standard Features

Storage	Hard Drives	40-, 60-, 100-GB 4200 rpm SMART 80-, 100-GB 5400 rpm SMART 60-GB 7200 rpm SMART
	Fixed Optical Drives	DVD/CD-RW Combo DVD+/-RW DVD+/-RW with Double Layer Technology LightScribe DVD+/-RW with Double Layer Technology

Multimedia	Integrated 16-bit Sound Blaster Pro-compatible audio Integrated 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+/-RW with Double Layer Technology LightScribe DVD+/-RW with Double Layer Technology <b>NOTE:</b> No internal microphone.
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Interfaces	PC Card slot	One – Type I/II
	ExpressCard/54 slot	One
	External monitor	One – VGA
	External microphone	One
	Headphone/line out	One
	RJ-11 (Modem)	One
	RJ-45 (NIC)	One
	S-video TV out	One (support for NTSC/PAL)
	USB 2.0	Four
	IEEE-1394	One
	LED status indicators	Nine
	Docking connector	One
	Power connector	One

Graphics	Choice of ATI MOBILITY RADEON X300 with 64MB dedicated video memory ATI MOBILITY RADEON X600 with 128MB dedicated video memory
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Audio	SoundMAX audio with Pure Audio noise reduction Integrated stereo speakers Headphone out and microphone jacks
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### Standard Features

<b>Software</b>	<b>Preloaded Software</b>	Adobe Acrobat Reader Altiris Local Recovery* HP Quick Launch Button Software HP Mobile Printing Driver HP Help and Support Synaptics Touchpad Driver WinDVD - DVD Player* Symantec Norton Antivirus with complimentary 60-day Live Update Sonic RecordNow!*
	<b>Software on CD</b>	WinDVD Creator - DVD Authoring (on models with DVD+/-RW drives)
	* Software is loaded on the hard drive and must be installed by running the Setup Software utility.	

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**Altiris Local Recovery** Provides data and system file protection for HP business PCs to enable fast recovery of information that is accidentally deleted or if the system becomes corrupted. Designed for disconnected or seldom-connected users, Local Recovery protects your HP computer's data and system state by taking scheduled snapshots, which are then stored in a protected area on the local hard disk. System backup and disaster recovery is now simple and fast for all users, regardless of connectivity. For more information and to download, please refer to the HP website at <http://www.hp.com/go/easydeploy>.

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**System Recovery** Each unit is shipped with a recovery kit containing Operating System Recovery and Driver/Application Recovery discs. These discs allow users to either recover or repair the notebook operating system and select drivers without losing personal data. The Operating System disc also provides the option of reinstalling the operating system software provided with the notebook.

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<b>Security</b>	<b>Standard Features</b>	Configuration control through F10 Setup utility Memory Change Alert Ownership Tag Setup Password Power-on Password DriveLock Kensington Lock Slot
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**Power Supply** External AC adapter, 6-foot (1.8-meter) power cord included  
180 Watt  
Total length (including external AC adapter) is 12 feet (3.66 m)

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**Battery** 12-cell Lithium-Ion (6.6Ah) – one-year warranty

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**Battery Life** Up to 1 hour 45 minutes  
**NOTE:** 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.

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**System Standby Time** Up to 1 week

## Standard Features

**Power Conservation**      Hibernation  
Instant-on via Standby  
ACPI compliance

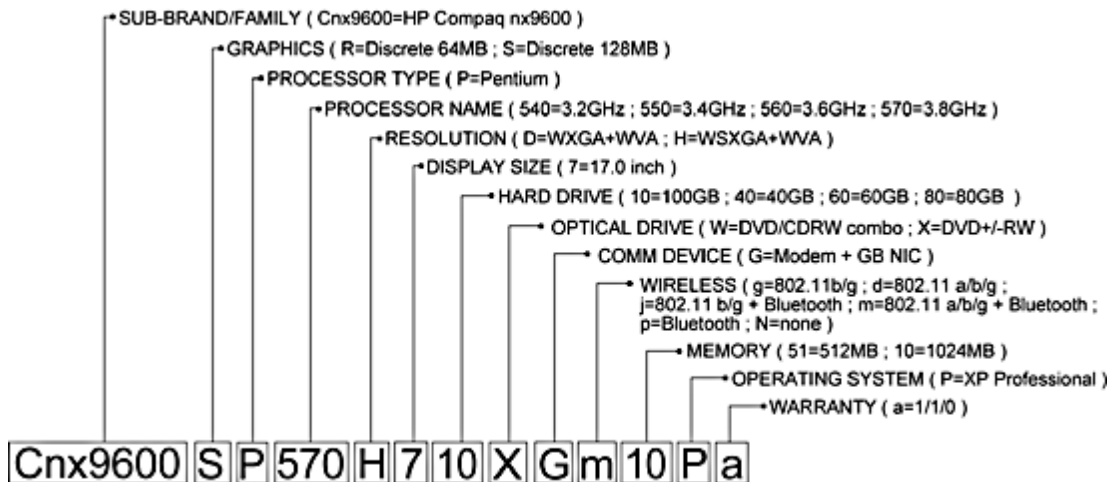
**Docking**                    HP xb2000 Notebook Expansion Base design provides simple and convenient port management. Features include three USB 2.0 ports, S-Video and composite out, S/PDIF (Sony/Philips® digital interface), microphone jack, I/R receiver/window, headphone out, RJ-11 (supported via pass-through cable), RJ-45/Ethernet, serial ports. Its height-adjustable, elevated, eye-level viewing, plus wireless keyboard and mouse, and integrated speakers will make your computing supremely comfortable without compromising your mobility.

**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://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp>.

\*Available through HP Care Pack Services for U.S. only.

**Naming Convention**      The Etymology of a Model name:



### Standard Features

#### Models

Cnx9600RP530D780WGg51Pa PZ472UA#ABA	<b>Processor</b>	Intel Pentium 4 processor 530* with HT Technology (3.0-GHz, 800-MHz FSB, 1-MB L2 cache)
	<b>Operating System</b>	Genuine Windows XP Professional
	<b>Cache</b>	2048 KB L2 cache
	<b>System Memory</b>	Standard      512-MB 400-MHz DDR SDRAM (512-MB SODIMM in slot 1)
		Maximum      2-GB 400-MHz DDR SDRAM (1-GB SODIMM in slots 1 and 2)
	<b>Hard Drive</b>	80GB 5400 RPM
	<b>Display</b>	17-inch color TFT WXGA with 1440 x 900 resolution (up to 16.7M colors internal)
	<b>Graphics</b>	ATI Mobility Radeon X300
	<b>Video Memory</b>	64MB
	<b>Audio</b>	SoundMAX audio with Pure Audio noise reduction with headphone and microphone jacks
	<b>Fixed Optical Drive</b>	DVD/CD-RW Combo
	<b>Communications</b>	56K modem, integrated 10/100/1000 NIC
	<b>Integrated Wireless</b>	Broadcom Wireless 802.11b/g WLAN
	<b>Pointing Device</b>	Keyboard and Touchpad
<b>Battery</b>	12-cell Lithium-Ion battery	
<b>Power</b>	External 180W adapter	
<b>Warranty</b>	1/1/0	

Cnx9600RP630D780WGg51Pa PZ109UA#ABA	<b>Processor</b>	Intel Pentium 4 processor 630* with HT Technology (3.0-GHz, 800-MHz FSB, 2-MB L2 cache)
	<b>Operating System</b>	Genuine Windows XP Professional
	<b>Cache</b>	2048 KB L2 cache
	<b>System Memory</b>	Standard      512-MB 400-MHz DDR SDRAM (512-MB SODIMM in slot 1)
		Maximum      2-GB 400-MHz DDR SDRAM (1-GB SODIMM in slots 1 and 2)
	<b>Hard Drive</b>	80GB 5400 RPM
	<b>Display</b>	17-inch color TFT WXGA with 1440 x 900 resolution (up to 16.7M colors internal)
	<b>Graphics</b>	ATI Mobility Radeon X300
	<b>Video Memory</b>	64MB
	<b>Audio</b>	SoundMAX audio with Pure Audio noise reduction with headphone and microphone jacks
	<b>Fixed Optical Drive</b>	DVD/CD-RW Combo
	<b>Communications</b>	56K modem, integrated 10/100/1000 NIC
	<b>Integrated Wireless</b>	Broadcom Wireless 802.11b/g WLAN
	<b>Pointing Device</b>	Keyboard and Touchpad

### Standard Features

<b>Battery</b>	12-cell Lithium-Ion battery
<b>Power</b>	External 180W adapter
<b>Warranty</b>	1/1/0

Cnx9600RP640H780XGg51Pa  
PZ506UA#ABA

<b>Processor</b>	Intel Pentium 4 processor 640* with HT Technology (3.2-GHz, 800-MHz FSB, 2-MB L2 cache)
<b>Operating System</b>	Genuine Windows XP Professional
<b>Cache</b>	2048 KB L2 cache
<b>System Memory</b>	Standard 512-MB 400-MHz DDR SDRAM (512-MB SODIMM in slot 1) Maximum 2-GB 400-MHz DDR SDRAM (1-GB SODIMM in slots 1 and 2)
<b>Hard Drive</b>	80GB 5400 RPM
<b>Display</b>	17-inch color TFT WSXGA+ BrightView with 1680 x 1050 resolution (up to 16.7M colors internal)
<b>Graphics</b>	ATI Mobility Radeon X300
<b>Video Memory</b>	64MB
<b>Audio</b>	SoundMAX audio with Pure Audio noise reduction with headphone and microphone jacks
<b>Fixed Optical Drive</b>	DVD +/- RW
<b>Communications</b>	56K modem, integrated 10/100/1000 NIC
<b>Integrated Wireless</b>	Broadcom Wireless 802.11b/g WLAN
<b>Pointing Device</b>	Keyboard and Touchpad
<b>Battery</b>	12-cell Lithium-Ion battery
<b>Power</b>	External 180W adapter
<b>Warranty</b>	1/1/0

Cnx9600SP640H780XGg10Pa US  
PZ516UA#ABA

<b>Processor</b>	Intel Pentium 4 processor 640* with HT Technology (3.2-GHz, 800-MHz FSB, 2-MB L2 cache)
<b>Operating System</b>	Genuine Windows XP Professional
<b>Cache</b>	2048 KB L2 cache
<b>System Memory</b>	Standard 1024-MB 400-MHz DDR SDRAM (512-MB SODIMM in slot 1 and slot 2) Maximum 2-GB 400-MHz DDR SDRAM (1-GB SODIMM in slots 1 and 2)
<b>Hard Drive</b>	80GB 5400 RPM
<b>Display</b>	17-inch color TFT WSXGA+ BrightView with 1680 x 1050 resolution (up to 16.7M colors internal)
<b>Graphics</b>	ATI Mobility Radeon X600
<b>Video Memory</b>	128MB
<b>Audio</b>	SoundMAX audio with Pure Audio noise reduction with headphone and microphone jacks
<b>Fixed Optical Drive</b>	DVD +/- RW
<b>Communications</b>	56K modem, integrated 10/100/1000 NIC

### Standard Features

Integrated Wireless	Broadcom Wireless 802.11b/g WLAN
Pointing Device	Keyboard and Touchpad
Battery	12-cell Lithium-Ion battery
Power	External 180W adapter
Warranty	1/1/0

Cnx9600SP560H710XGg10Pa  
PR763AA#ABA

Processor	Intel Pentium 4 processor 560* with HT Technology (3.6-GHz, 800-MHz FSB, 1-MB L2 cache)
Operating System	Genuine Windows XP Professional
Cache	2048 KB L2 cache
System Memory	Standard 1024-MB 400-MHz DDR SDRAM (512-MB SODIMM in slot 1 and slot 2) Maximum 2-GB 400-MHz DDR SDRAM (1-GB SODIMM in slots 1 and 2)
Hard Drive	100GB 4200 RPM
Display	17-inch color TFT WSXGA+ BrightView with 1680 x 1050 resolution (up to 16.7M colors internal)
Graphics	ATI Mobility Radeon X600
Video Memory	128MB
Audio	SoundMAX audio with Pure Audio noise reduction with headphone and microphone jacks
Fixed Optical Drive	DVD+/-RW
Communications	56K modem, integrated 10/100/1000 NIC
Integrated Wireless	Broadcom Wireless 802.11b/g WLAN
Pointing Device	Keyboard and Touchpad
Battery	12-cell Lithium-Ion battery
Power	External 180W adapter
Warranty	1/1/0

Cnx9600SP650H710XGg10Pa  
PZ108UA#ABA

Processor	Intel Pentium 4 processor 650* with HT Technology (3.4-GHz, 800-MHz FSB, 2-MB L2 cache)
Operating System	Genuine Windows XP Professional
Cache	2048 KB L2 cache
System Memory	Standard 1024-MB 400-MHz DDR SDRAM (512-MB SODIMM in slot 1 and slot 2) Maximum 2-GB 400-MHz DDR SDRAM (1-GB SODIMM in slots 1 and 2)
Hard Drive	100GB 5400 RPM
Display	17-inch color TFT WSXGA+ BrightView with 1680 x 1050 resolution (up to 16.7M colors internal)
Graphics	ATI Mobility Radeon X600
Video Memory	128MB
Audio	SoundMAX audio with Pure Audio noise reduction with headphone and microphone jacks

## Standard Features

<b>Fixed Optical Drive</b>	DVD+/-RW
<b>Communications</b>	56K modem, integrated 10/100/1000 NIC
<b>Integrated Wireless</b>	Broadcom Wireless 802.11b/g WLAN
<b>Pointing Device</b>	Keyboard and Touchpad
<b>Battery</b>	12-cell Lithium-Ion battery
<b>Power</b>	External 180W adapter
<b>Warranty</b>	1/1/0

\* Intel's numbering is not a measurement of higher performance.

### Options

Storage	HP USB Floppy Drive	DC361B
	HP USB Digital Drive + 128MB SD Card	DL702A
	HP 40GB USB 2.0 HDD	DQ549A
Memory	1024-MB 533-MHz DDR2 memory upgrade	PE832A
	512-MB 533-MHz DDR2 memory upgrade	PE831A
	256-MB 533-MHz DDR2 memory upgrade	PE830A
Docking Solutions	HP xb2000 Notebook Expansion Base with wireless keyboard and mouse	PD948A#ABA
	HP 4-port USB 2.0 Hub	DG954A
Power	12-cell secondary battery	DP399A
	180W AC Adapter	DC688A#ABA
Carrying Cases	HP Sport Backpack	DG102A
	Universal Roller Notebook Case	DQ791A
Security	PCMCIA Smart Card Reader (with SW & card)	DC350B
	HP Kensington Security Cable Lock	PC766A
Input Devices	USB Travel Mouse (optical scroll mouse)	F2100A
	USB/PS2 Keyboard	DC852A
	USB/PS2 Mouse	DC369A
	Wireless Mouse + Keyboard	DL989A#ABA
	Rechargeable Wireless Optical Mouse	DU960A
	Keyboard 102-Key - USB, PS/2 (Carbon)	DC852A#ABA
	Ultra Mini Optical Mouse with Retractable Cord	PF725A
	USB, PS/2 Keyboard & Mouse	DM687A#ABA

## Memory

Up to 2048 MB of 400-MHz DDR2 SDRAM memory

Two DIMM slots

DIMM sizes supported: 256 MB, 512 MB, or 1024 MB

Maximized dual-channel performance requires SODIMMs of the same size and speed in both memory slots.

### Standard Memory

- 512 MB (512 MB x 1 or 256 MB x 2)
- 1024 MB (512 MB x 2)

### Optional Memory Upgrades

Support for up to 2048 MB of memory is available (with the installation of optional DDR2 SDRAM memory upgrade kits)

Memory	Slot 1	Slot 2
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. If you mix memory speeds, the system will perform at the lower memory speed.

Following are memory options available from HP:

1024-MB 533-MHz DDR2 memory upgrade

PE832A

512-MB 533-MHz DDR2 memory upgrade

PE831A

256-MB 533-MHz DDR2 memory upgrade

PE830A

## Storage

### Removable Media Drive Support

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System Drive Support	Quantity Supported	Drive Bay Supported
DVD +/- RW	Up to one	Fixed bay
DVD/CD-RW Combo	Up to one	Fixed bay

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### Hard Drive Support

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System Drive Support	Quantity Supported	Drive Bay Supported
60-GB 7200 rpm SMART hard drive	Up to one	Dedicated hard drive bay
80- or 100-GB 5400 rpm SMART hard drive	Up to one	Dedicated hard drive bay
40-, 60-, or 100-GB 4200 rpm SMART hard drive	Up to one	Dedicated hard drive bay

## Technical Specifications

<b>System Unit</b>	<b>Dimensions (HxWxD)</b>	1.99 x 15.67 x 11.14 in (5.05 x 39.8 x 28.3 cm)	
	<b>Weight</b>	9.3 lb (4.22 kg)	
<b>NOTE:</b> Height varies depending upon where on the notebook the measurement is made. Weight varies by configuration and components.			
<b>Stand-Alone Power Requirements</b>	<b>Nominal Operating Voltage</b>	19 V	
	<b>Average Operating Power</b>	71 W	
	<b>Max Operating Power</b>	< 180 W	
<b>Temperature</b>	<b>Operating (not writing optical)</b>	32° to 95° F (0° to 35° C)	
	<b>Operating (writing optical)</b>	41° to 95° F (5° to 35° C)	
	<b>Non-operating</b>	-0.4° to 140° F (-18° to 60° C)	
<b>Relative Humidity</b>	<b>Operating</b>	10% to 90% relative humidity, non-condensing	
	<b>Non-operating</b>	5% to 95%, 101.6° F (38.7° C) maximum wetbulb temperature	
<b>Shock</b>	<b>Operating</b>	75 G, 2 ms, half-sine	
	<b>Non-operating</b>	200 G, 2 ms, half-sine	
<b>Random Vibration</b>	<b>Operating</b>	0.75 grms	
	<b>Non-operating</b>	1.50 grms	
<b>Maximum Altitude (unpressurized)</b>	<b>Operating</b>	-50 to 10,000 ft (-15.24 to 3,048 m)	
	<b>Non-operating</b>	-50 to 40,000 ft (-15.24 to 12,192 m)	
<b>Industry Standard Certifications</b>	<b>Blue Angel</b>	No	
	<b>UL</b>	Yes	
	<b>Energy Star</b>	Yes	
	<b>Canadian Safety</b>	Yes	
	<b>ICES</b>	Yes	
	<b>CSA (Canada)</b>	Yes	

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<b>External AC Adapter</b>	<b>Weight</b>	<b>Adapter</b>	1.98 lb (0.90 kg)
		<b>Power cord</b>	0.35 lb (0.16 kg)
<b>Power Supply (Input)</b>		<b>Operating voltage</b>	90 to 264 VAC RMS
		<b>Operating current</b>	2.9A RMS
		<b>Operating frequency range</b>	47 to 63 Hz AC
		<b>Maximum transient</b>	4/50 kV

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### Technical Specifications

Lithium-Ion Battery Pack 12 cell	Dimensions (H x W x L)	0.8 x 4.4 x 5.8 in (2.0 x 11.2 x 14.75 cm)		
	Weight	1.35 lb (0.615 kg)		
	Cells/Type	12-cell Lithium-Ion		
	Energy	Voltage	14.8V	
		Amp-hour capacity	6.6 Ah	
		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	System in OFF mode or Standby	3.0 hours	
		System ON (depending on system power consumption)	4 to 6+ hours	
	Fuel Gauge LED	No		
	Warranty	1 year		
Optional Travel Battery Available	No			

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17.0-Inch Color TFT WXGA+ Wide Viewing Angle 16:10 Display	Dimensions (W x H)	15.0 x 9.6 in (38.2 x 24.5 cm)		
	Diagonal Size	17.0 in (431.8 mm)		
	Mounting	Side Mount		
	Number of Colors	262144		
	Contrast Ratio	250:1 typical		
	Refresh Rate	60 Hz		
	Brightness	150 nit typical		
	Pixel Resolution	Pitch	0.255 x 0.255 mm	
		Format	1440 x 900	
		Configuration	RGB Stripe	
	Backlight	CCFT		
	Character Display	80 x 25		
	Total Power Consumption	6.28 W (typical)		
Viewing Angle	±65° degrees Horizontal, ±50° Vertical (typical)			

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## Technical Specifications

17.0-Inch Color TFT WSXGA+ BrightView Wide Viewing Angle 16:10 Display	Dimensions (W x H)	15.0 x 9.6 in (38.2 x 245 cm)		
	Diagonal Size	17.0 in (431.8 mm)		
	Mounting	Side Mount		
	Number of Colors	262144		
	Contrast Ratio	250:1 typical		
	Refresh Rate	60 Hz		
	Brightness	180 nit typical		
	Pixel Resolution	Pitch	0.255 x 0.255 mm	
		Format	1440 x 900	
		Configuration	RGB Stripe	
	Backlight	CCFT		
	Character Display	80 x 25		
	Total Power Consumption	6.28 W (typical)		
	Viewing Angle	±75° degrees Horizontal, ±60° Vertical (typical)		

## Hard Drives

60-GB 7200 rpm	Drive Weight	0.25 lb (113 g)		
	Capacity	60 GB		
	Height	0.37 in (9.5 mm)		
	Width	2.75 in (70 mm)		
	Interface	ATA-6		
	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	117,210,240		
Operating Temperature	41° to 131° F (5° to 55° C)			
Features	Security	ATA Security		

### Technical Specifications

100-GB 5400 rpm	Drive Weight	0.22 lb (99 g)	
	Capacity	100 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-6	
	Transfer Rate	<b>Synchronous</b> (maximum) 100 MB/s (Drive Capability)	
	Seek Time (typical reads, including settling)	<b>Single Track</b>	3 ms
		<b>Average</b>	13 ms
		<b>Maximum</b>	24 ms
	Rotational Speed	5400 rpm	
	Logical Blocks	1,935,371,568	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	Features	<b>Security</b> ATA Security	

80-GB 5400 rpm	Drive Weight	0.22 lb (99 g)	
	Capacity	80 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-6	
	Transfer Rate	<b>Synchronous</b> (maximum) 100 MB/s (Drive Capability)	
	Seek Time (typical reads, including settling)	<b>Single Track</b>	3 ms
		<b>Average</b>	13 ms
		<b>Maximum</b>	24 ms
	Rotational Speed	5400 rpm	
	Logical Blocks	156,301,488	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	Features	<b>Security</b> ATA Security	

100-GB 4200 rpm	Drive Weight	0.22 lb (99 g)	
	Capacity	100 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-6	
	Transfer Rate	<b>Synchronous</b> (maximum) 100 MB/s (Drive Capability)	
	Seek Time (typical reads, including settling)	<b>Single Track</b>	3 ms
		<b>Average</b>	13 ms
		<b>Maximum</b>	24 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	195,371,568	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	Features	<b>Security</b> ATA Security	

## Technical Specifications

60-GB 4200 rpm	Drive Weight	0.22 lb (99 g)	
	Capacity	60 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-5	
	Transfer Rate	<b>Synchronous</b> (maximum) 100 MB/s (Drive Capability)	
	Seek Time (typical reads, including settling)	<b>Single Track</b>	3 ms
		<b>Average</b>	13 ms
		<b>Maximum</b>	24 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	117,210,240	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	Features	<b>Security</b> ATA Security	

40-GB 4200 rpm	Drive Weight	0.22 lb (99 g)	
	Capacity	40 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-5	
	Transfer Rate	<b>Synchronous</b> (maximum) 100 MB/s (Drive Capability)	
	Seek Time (typical reads, including settling)	<b>Single Track</b>	3 ms
		<b>Average</b>	13 ms
		<b>Maximum</b>	24 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	78,140,160	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	Features	<b>Security</b> ATA Security	

## Removable Storage Drives – Fixed Bay

## Technical Specifications

DVD+/-RW Drive with Double Layer Technology	Access Times	Random	<175 ms CD <230 ms DVD
and	Max data transfer rate	24X CD-ROM	3,600 KB/s
		8X DVD	10,800 KB/s
LightScribe DVD+/-RW Drive with Double Layer Technology		24X CD-R	3,600 KB/s
		10X CD-RW	1,500 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
	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, DVD-R, DVD-RW	
	Max Media Capacity (read)	8.5 GB	
	Max Media Capacity (write)	4.7GB	
	Transport	Tray Loading	

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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
		10x CD-RW	1,500 KB/s
		4x DVD+R	5,400 KB/s
		4x DVD+RW	5,400 KB/s
		4x DVD-R	5,400 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, DVD-R, DVD-RW	

## Technical Specifications

<b>Max Media Capacity (read)</b>	4.7GB
<b>Max Media Capacity (write)</b>	4.7GB
<b>Transport</b>	Tray Loading

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<b>DVD/CD-RW Combo Drive</b>	<b>Access Times</b>	<b>Random</b>	<110 ms CD <130 ms DVD	
		<b>Full Stroke</b>	<210 ms CD <225 ms DVD	
		<b>Max data transfer rate</b>	<b>24X CD-ROM</b>	3,600 KB/s
			<b>24X CD-R</b>	3,600 KB/s
	<b>24X CD-RW</b>		3,600 KB/s	
	<b>8X DVD-ROM</b>		10,800 KB/s	
	<b>Transfer Mode</b>	Multiword DMA Mode 2		
	<b>Interface</b>	EIDE		
	<b>Supported Media (read)</b>	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		
	<b>Supported Media (write)</b>	CD-R, CD-RW		
	<b>Max Media Capacity (read)</b>	4.7GB		
	<b>Max Media Capacity (write)</b>	700MB		
<b>Transport</b>	Tray Loading			

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## Audio

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<b>Hardware</b>	<b>Implementation</b>	AC97 CODEC	
	<b>Audio Signal Link to CPU</b>	Audio CODEC (AC) link	
	<b>Full Duplex</b>	Yes	
	<b>Stereo Inputs</b>	Line In – 20K Impedance (with Port Replicator only)	
		Microphone – 20K Impedance	
<b>Stereo Outputs</b>	Headphone jack, S/PDIF from Port Replicator only		

### Technical Specifications

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
Two Stereo Speakers	Amplifier Power	2-Watts RMS
	Speaker Impedance	4-Ohms

### Communications

Integrated 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 802.3x 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 all Power-Managed States (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)) Comprehensive diagnostic and configuration software suite
		NIC Device Driver Name	Realtek RTL8110S Ethernet Controller
		Drivers Available	Windows XP DOS NDIS2 and ODI

## Technical Specifications

Integrated Conexant 56K ACLink Modem	Form Factor	MDC
	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 (a-law, mu-law) K56flex (a-law, mu-law) V.8bis V.80 V44.bis, MNP5 (Compression) V42.bis, MNP5 (Compression) V.42 (LAPM, MNP2-4) (Error Correction) V.34 (file date: 10/96) <b>Optional symbol rates:</b> 2800, 3429 Asymmetric Symbol rates <b>Synchronous primary channel data signaling rates:</b> 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



## Technical Specifications

### Configuration Utility

Choice of Configuration Utility:

- Broadcom Wireless Configuration Utility
- Microsoft Windows XP Wireless Zero Configuration Utility

**NOTE:** Broadcom Wireless Configuration Utility required for Cisco Compatible Extensions support. May also be compatible with certain third-party software supplicants.

### LED Activity

LED Off – Radio OFF; Solid LED – Radio ON

\* 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

Broadcom 802.11 a/b/g WLAN	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g
	Interoperability	Wi-Fi certified (details available at <a href="http://www.hp.com/go/notebooks/wlan">http://www.hp.com/go/notebooks/wlan</a> )
	Frequency Band	2.4 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	Supports 64 and 128 bit WEP, WPA, hardware-accelerated AES, 802.1x types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP. 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	17.5 dBm +/- 1.5 dB (CKK) 13.5 dBm +/- .5 dB (OFDM)
	Power Consumption	Transmit: 2.0 W (max) Receive: 1.5 W (max) Idle: 248 mW (nominal) Sleep: 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: -72 dBm to 1 Mbps: -94 dBm
	Antenna type	High efficiency dual band antenna with diversity, mounted in the display enclosure

### Technical Specifications

Range**	<b>802.11 a – Typical</b>	1000 feet – Outdoor Open Area 300 feet – Indoor, Office environment
	<b>802.11 b – Typical</b>	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
	<b>802.11 g – Typical</b>	1000 feet – Outdoor Open Area 250 feet – Indoor, Office environment
Form Factor	MiniPCI Type IIIA	
Weight	0.035 lb (16 g)	
Dimensions	0.19 x 2.00 x 2.3 in (4.8 x 50.95 x 59.75 mm)	
Operating Voltage	3.3v	
Temperature	<b>Operating</b>	32° to 122° F (0° to 50° C)
	<b>Non-operating</b>	-14° to 158° F (-10° to 70° C)
Humidity	<b>Operating</b>	10% to 90%
	<b>Non-operating</b>	5% to 95%
Altitude	<b>Operating</b>	0 to 15,000 ft (4,572 m)
	<b>Non-operating</b>	0 to 40,000 ft (12,192 m)
Configuration Utility	Choice of Configuration Utility: <ul style="list-style-type: none"> <li>• Broadcom Wireless Configuration Utility</li> <li>• Microsoft Windows XP Wireless Zero Configuration Utility</li> </ul>	

**NOTE:** Broadcom Wireless Configuration Utility required for Cisco Compatible Extensions support. 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	1.2 Compliant	
Dimensions	1.02 x 0.55 x 0.22 in (26 x 14 x 5.7 mm)	
Temperature	<b>Operating</b>	-4° to 158° F (-20° to 70° C)
	<b>Non-operating</b>	-40° to 176° F (-40° to 80° C)
Humidity	10% to 90% operating	
	5% to 95% non operating	
Altitude	<b>Operating</b>	15,000 ft (4,572 m)
	<b>Non-operating</b>	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	

### Technical Specifications

<b>Data Rates and throughput</b>	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
<b>Antenna type</b>	Internally integrated within module
<b>Range</b>	33 ft (10 m)
<b>OS Support</b>	Microsoft Windows XP Professional and Home Microsoft Windows 2000
<b>Bluetooth Software Supported</b>	Widcomm <i>Bluetooth for Windows</i> Microsoft Windows XP Bluetooth
<b>Profile Support<sup>1</sup></b>	Serial Port Profile (SPP) Dial-Up Networking (DUN) <sup>2</sup> Generic Object Exchange Profile (GOEP) Object Push Profile (OPP) <sup>2</sup> File Transfer Profile (FTP) Synchronization Profile (SYNC) Hard Copy Cable Replacement (HCRP) <sup>2</sup> Personal Area Networking Profile (PAN) <sup>2</sup> Human Interface Device Profile (HID) <sup>2</sup> FAX Profile (FAX) Basic Imaging Profile (BIP) Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP) <sup>3</sup>
<sup>1</sup> Profile support is for Bluetooth for Windows Version 3.0 except as noted.	
<sup>2</sup> Profile is supported by Microsoft Windows XP SP2 Bluetooth software.	
<sup>3</sup> A2DP profile requires Bluetooth for Windows Version 4.0.	
<b>Transmit Power</b>	-6dBm to 4 dBm (Bluetooth Class II)
<b>Receiver Sensitivity</b>	Better than -80 dBm at 0.1 % raw bit error rate
<b>Link Topology</b>	Point to Point, Multipoint Pico Nets up to 7 slaves
<b>Security</b>	Full support of Bluetooth Security Provisions
<b>Network Architecture Models</b>	Ad-hoc (Peer to Peer) Infrastructure (Access Points Required)
<b>Power Requirement</b>	<b>Peak</b> < 264 mW (transmit) < 231 mW (receive) < 1 mW (sleep)
<b>Power Management</b>	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
<b>Protocols Supported</b>	TCP/IP IPX/SPX UDP
<b>LED Activity</b>	Solid Blue LED - On LED Off - Power Off

### Technical Specifications

#### 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

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