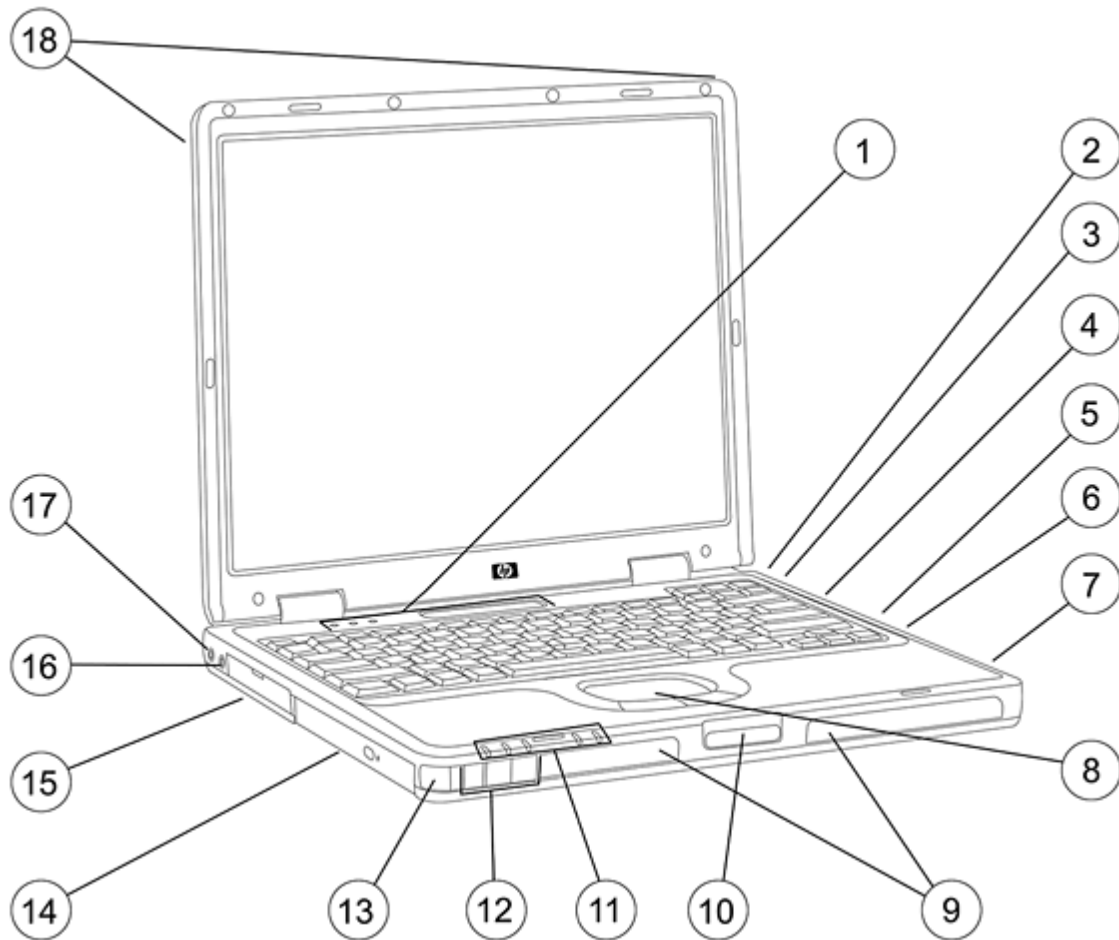


Overview



1. 3 Quick Launch Buttons (Quicklock, Wireless On/Off, Presentation), Power Button, LEDs (Num Lk, Caps Lk, Scroll Lk)

2. Security Lock

3. Bluetooth

4. RJ-11 Port

5. SD Slot

6. PC Card Slots

7. Battery

8. Touchpad

9. Speakers

10. Display Latch

11. Wireless, Power, Charge, Hard Drive, and MultiBay Drive Activity LEDs

12. Mute/Volume buttons

13. Infrared Port

14. MultiBay

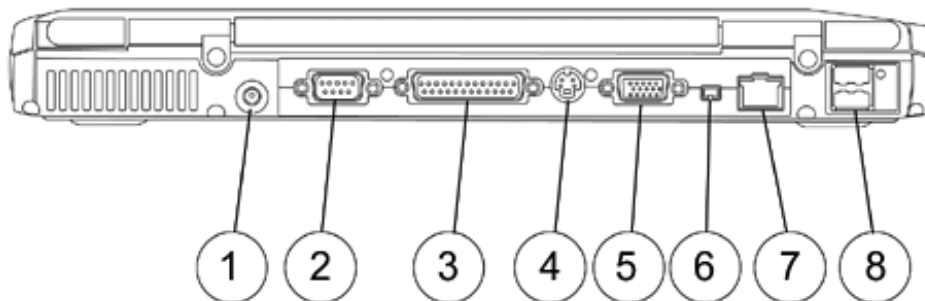
15. Hard Drive

16. Microphone Jack

17. Headphone line-out

18. Dual-Band Display Antennas

Overview



- | | |
|--------------------|----------------|
| 1. Power Connector | 5. VGA |
| 2. Serial | 6. IEEE-1394 |
| 3. Parallel | 7. RJ-45 |
| 4. S-Video | 8. USB 2.0 (2) |

At A Glance

- Microsoft Windows XP Professional, Microsoft Windows XP Home, and SUSE® Linux HP Edition 9.1 preinstalled (Windows 2000 web drivers only)
- Intel® Pentium® M Processors up to 1.8GHz
 - Intel Celeron M up to 1.2GHz
- Intel 855GM chipset with 400MHz processor side bus
- Support for 15.0" XGA or SXGA display
- 266-Mhz DDR SDRAM 2 SODIMM slots available – upgradeable to 2048 MB
- Up to 60-GB 5400rpm, user-removable hard drives.
- 10/100 Ethernet NIC
- Touchpad with right/left button
- Support for MultiBay devices
- Support for Basic Port Replicator and Advanced Port Replicator
- Protected by a one- or three-year, Worldwide Limited Warranty – certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.

What's New

- Microsoft Windows XP Professional, Microsoft Windows XP Home, and SUSE® Linux HP Edition 9.1 preinstalled (Windows 2000 web drivers only)
- Sleek new industrial design with weight starting at 5.75 lb (travel weight) and 1.38-inch thin
- Integrated Intel® Extreme Graphics 2 with up to 64MB dynamically allocated shared system memory for graphics
- Optional integrated 802.11b, 802.11b/g or 802.11a/b/g wireless LAN module
- Support for optional Intel® Centrino™ mobile technology
- Optional integrated Bluetooth
- Integrated Secure Digital (SD) flash media slot
- Integrated IEEE-1394
- 3 easy access buttons provide one touch access to commonly used features

Overview

What's Special

- Broad array of wireless LAN solutions including optional Bluetooth
- Microsoft Windows XP Professional, Microsoft XP Home, and SUSE® Linux HP Edition 9.1 preinstalled (Windows 2000 web drivers only)
- Up to 9 hours battery life with 8-cell standard Li-Ion battery and MultiBay battery.
- Supports 15" XGA & 15" SXGA+ wva
- Flexibility with choice of MultiBay Optical drives & accessories
- Broad range of connectivity support including integrated IEEE-1394
- Integrated Secure Digital (SD) flash media slot

Standard Features

Processors

Intel Pentium M Processor 745* – 1.8 GHz, 2-MB L2 cache, 400-MHz Front Side Bus
 Intel Pentium M Processor 725* - 1.6 GHz, 2-MB L2 cache, 400-MHz Front Side Bus
 Intel Pentium M Processor 715* - 1.5 GHz, 2-MB L2 cache, 400-MHz Front Side Bus
 Intel Pentium M Processor 705* - 1.5 GHz, 1-MB L2 cache, 400-MHz Front Side Bus
 Intel Celeron M Processor 310 - 1.2 GHz with 512-KB L2 cache, 400-MHz Front Side Bus

NOTE: Intel Pentium-M Processors support enhanced Intel SpeedStep™ technology. Processor speed denotes maximum performance mode; processors will run at approximately 600MHz in battery optimization mode.

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

Operating System

One of the following

Microsoft Windows XP Professional
 Microsoft Windows XP Home
 Microsoft Windows 2000 (web drivers only)
 SUSE Linux HP Edition 9.1 preinstalled

Chipset

Intel 855GM chipset with 400-MHz front side bus and enhanced SpeedStep technology

Displays

Internal 15.0-inch TFT XGA with (1024x768) resolution (16M colors)
 15.0-inch TFT SXGA+ wide viewing angle with (1400x1050) resolution (16M 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

NOTE: Durable PC-ABS plastic display enclosure.

Memory

Standard Configurable from 256 to 512-MB 266*-MHz DDR SDRAM (SODIMM in slot 1)
 Maximum 2048-MB 266*-MHz DDR SDRAM (1024-MB SODIMMs in slots 1 and 2)

NOTE: *Uses PC 2700 DDR 333MHz memory module but system will only run at 266MHz.

Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility

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.

Standard Features

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.		
Quick Launch Buttons	The HP Compaq Business Notebook nx5000 has three Quick Launch buttons designed to provide one-touch access to commonly used features including QuickLock, Wireless on/off, and Presentation mode.		
Pointing Device	Touchpad with right/left button		
PC Card Slots	Two Type II/One Type III PC Card Slot which support both 32-bit CardBus and 16-bit PC Cards		
Flash Media Slots	One integrated Secure Digital (SD) slot		
Storage	Diskette Drives	Optional MultiBay Diskette Drive	
	Hard Drives	30-GB 4200 rpm SMART	
		40-GB 4200rpm SMART	
		40-GB 5400 rpm SMART	
		60-GB 5400 rpm SMART	
	Optical Drives	MultiBay	DVD+RW
			24X DVD/CD-RW
			8X DVD
			24X CD-ROM
	Flash Media Storage	One integrated Secure Digital (SD) slot	
Multimedia	HP Premier Sound™ audio Integrated SoundMAX with Pure Audio, 16-bit Sound Blaster Pro-compatible audio Two integrated JBL Pro 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 24X DVD/CD-RW Combo Drive 8X DVD-ROM Drive 24X CD-ROM Drive NOTE: HP Compaq nx5000 does not have internal microphone.		

Standard Features

Interfaces	PC Card Slot	Two Type I/II or 1 Type III
	External Monitor	1
	Microphone in	1
	Headphone/Line out	1
	DC Power	1
	RJ-11 (modem)	1
	RJ-45 (NIC)	1
	Infrared Port	1 (4 Mb/s support) (IrDA 4-MB compliant. IR performance will vary depending on performance of IR peripherals and application used.)
	Enhanced Parallel EPP/ECP	1
	Serial Port	1
	S-video out connector	1 (Support for NTSC/PAL)
	USB version 2.0 Port	2
	Docking Connector	1
	LED Status Indicators	10 (including 2 LEDs on the RJ45 plug)
	IEEE-1394	1 (4-pins)

Graphics	Integrated Intel Extreme Graphics 2 with up to 64 MB of shared system memory for graphics
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Audio	HP Premier Sound 16 bit sound
	SoundMAX with Pure Audio
	2 JBL Pro branded Stereo Speakers
	Headphone out and microphone jacks
	Stereo Headphone/Line out and microphone jack

Software	Preinstalled Software	Adobe Acrobat Reader 6.0 HP Quick Launch Button Software HP Mobile Printing Driver HP Help and Support (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 2003 (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	

Standard Features

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

The HP nx5000 supports a range of standard security features including

Standard Security Features

- Configuration Control through F10 set-up
- Memory Change Alert
- Ownership Tag
- Setup Password
- Power-On Password
- DriveLock
- Kensington Lock Slot

Power Supply

External 65-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

- 6-cell Lithium-Ion (4.4Ah) – standard
- 8-cell Lithium-Ion (4.4Ah) – optional

Secondary Battery (MutliBay)

- 8-cell Lithium-Ion (3.6Ah) – optional

Notebook Battery Life benchmark results

Machine	HP Compaq nx5000	HP Compaq nx5000
Processor Speed	Celeron M – 1.3 GHz	Pentium M – 1.4 GHz
Memory size	512 MB	256 MB
Memory config	DDR	DDR
Graphics adapter/card	Intel 855GM	Intel 855GM
Graphics Memory	Auto	Auto
Resolution and color depth	XGA, 1024x768	XGA, 1024x768
LCD	TFT 14.1"	TFT 14.1"
Hard Drive	30 GB	30 GB
BIOS	F.03	F.03
OS	XP Pro, sp 1	XP Pro, sp 1
Battery	Li-Ion, 14.4V, 4.4Ah, 8-cell, 63Wh	Li-Ion, 14.4V, 4.4Ah, 8-cell, 63Wh
Dimensions in inches (test unit)	12.9" x 10.8" x 1.4"	12.9" x 10.8" x 1.4"
Weight in pounds (w/CD-RW)	5.8(6-cell), 5.9(8-cell)	5.8(6-cell), 5.9(8-cell)
Business Winstone 2004 v.1.0	13.4	10.7
SYSmark 2002	140	142
Internet content creation	157	165
Office productivity	125	122
3DMark2001SE	1776	1884

Standard Features

PCMark2002	—	—
CPU Score	4293	4556
Memory Score	3485	4011
Hard Drive Score	531	492
MobileMark 2002 (8-cell)	4:33	4:53
With MultiBay & 8-cell batteries	—	—
With 6-cell battery	3:20	3:53
Wireless on (802.11 & BT)	3:37	4:45
DVD/full brightness battery test	—	3:14
Jeita Battery Life test (8-cell)	—	4:28
Performance (under battery power)	158	148
Business Winstone 2004 Battery Mark 1.0 (hh:mm)	—	DNF
LCD max. brightness (Av of 5 readings) in nits	155	155
Comments	nx5000's tested are MV level Higher numbers = better performance. MultiBay battery , Li-ion, 14.8V, 3.6Ah, 8-cell 53 Wh 6-cell battery Li-Ion , 10.8V, 4.4Ah, 48Wh Battery Test Settings: LCD brightness set to 7/10 clicks for MobileMark; power management scheme - laptop/portable, timers=never	

NOTE: Actual results may vary with product model, configuration, and individual usage. Hewlett-Packard testing of a HP Compaq nx5000 with an Intel Pentium M 1.6 GHz CPU, Windows XP Pro, 14.1-inch XGA LCD, 512-MB RAM, 30-GB HDD, 14.4V Lithium-Ion battery, and NIC/modem, achieved an overall MobileMark 2002 score of 5h 30 m (4h 16m with 11.4 V 6-cell battery). "BAPCO, MobileMark, and SYSmark are trademarks of Business Applications Performance Corporation. 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: Battery life data above represents Pentium M processors only.

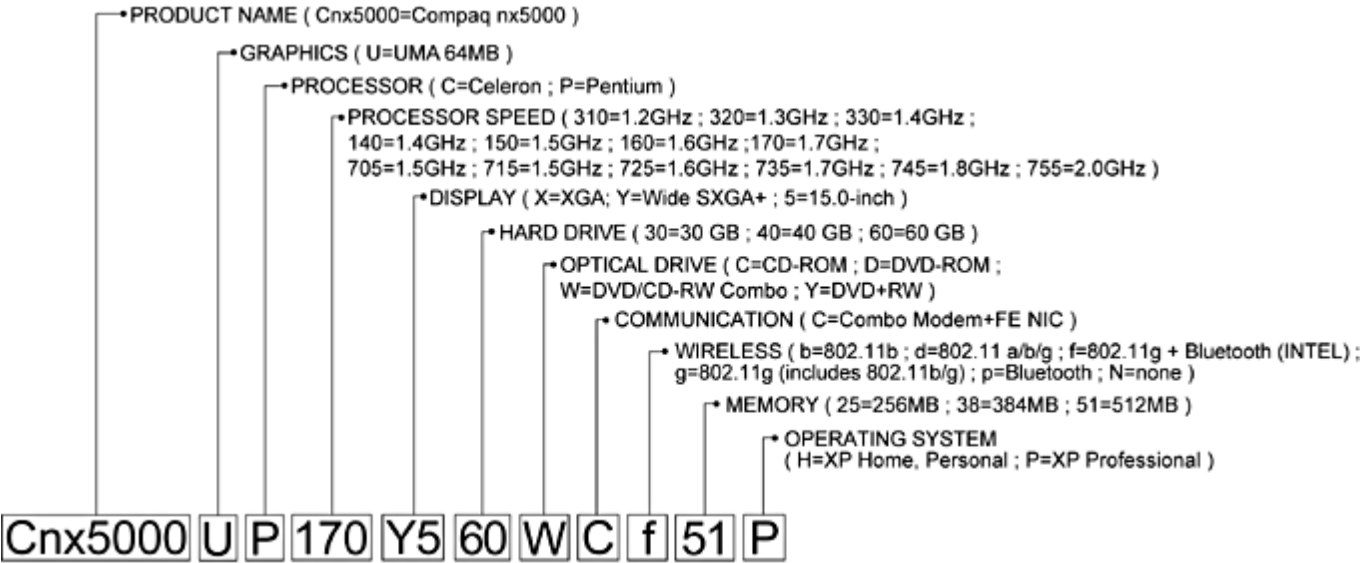
Battery Re-Charge Time **System in OFF mode or Standby** 3 hours
System ON (depending on 3-5 hours system power consumption)

Standard Features

Power Conservation	<p>Supports enhanced Intel SpeedStep Technology (which allows Battery Optimized Mode, Maximum Performance Mode, or Automatic mode)</p> <p>Hibernation</p> <p>Instant-on via standby</p> <p>ACPI compliance</p> <p>NOTE: Enhanced Intel SpeedStep™ technology support is only on Intel Pentium-M processors.</p>
MultiBay Devices	<p>MultiBay devices may be swapped with the system powered on (hot) under Microsoft Windows XP Professional or Windows 2000 (except MultiBay Zip drive or MultiBay secondary hard drive).</p>
Wireless Devices	<p>The HP nx5000 notebook 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.</p> <p>All integrated wireless LAN options</p> <ul style="list-style-type: none"> 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 <p>HP W500 802.11a/b/g</p> <ul style="list-style-type: none"> Integrated support for 802.11a, b and g Up to 54mbps throughput performance Advanced Encryption Standard (AES) support <p>Intel PRO/Wireless 2200BG 802.11b/g wireless LAN</p> <ul style="list-style-type: none"> Intel PRO/Wireless 2200BG network connection supports data transfer rate of up to 54 Mbps and backward compatible with the 802.11b standard <p>Intel PRO/Wireless 2100 802.11b wireless LAN</p> <ul style="list-style-type: none"> Intel Centrino mobile technology Integrated support for 802.11b Up to 11mbps throughput performance <p>NOTE: Wireless access point required and is not included. Availability of public wireless access points limited. Wireless Internet use requires separately purchased Internet service contract.</p> <p>Integrated Bluetooth</p> <ul style="list-style-type: none"> Designed to the Bluetooth v1.1 specification
Docking	<p>Basic Port Replicator and Advanced Port Replicator. HP's basic port replicator and advanced port replicator designs provide simple and convenient port management. Features include 10/100 NIC pass through, legacy parallel and serial ports, DVI, USB 2.0, and an IEEE-1394 port. These docking solutions are designed for expansion and meet a wide range of needs.</p> <p>NOTE: nx5000 does not support 10/100/1000 gigabit NIC. Therefore, there is not support for 10/100/1000 gigabit LAN on the docking solutions.</p>
Service and Support	<p>HP Services includes a one- or three-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.</p> <p>NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details. http://wws1.pro.hp.com/support/warranty_upgrades/product_specific_warranty.asp.</p> <p>*on-site service available through HP Care Pack Services for US only.</p>

Standard Features

Naming Convention The Etymology of a Model name:



Models

Cnx5000UC120X530DCb25P	Processor	1.2 GHz Intel Celeron M
P/N DH946U#ABA	Operating System	Microsoft Windows XP Professional
	Display	15-inch color TFT XGA with (1024x768) resolution (16M colors)
	Cache Memory	512 KB, L2 Cache
	Standard Memory	256 MB (1 DIMM) 266 MHz DDR
	Maximum Memory	2048 MB (266 MHz) DDR
	Hard Drive	30 GB
	Optical Drive	DVD ROM Drive
	Communications	High speed 56K modem, integrated 10/100 NIC Intel Pro/Wireless 2100 802.11b
	Graphics	Integrated Intel Extreme Graphics 2 up to 64MB shared system memory
	Audio	16-bit stereo sound, integrated 2 JBL Pro speakers
	Warranty	One Year

Standard Features

Cnx5000UP150X540WCb51P
P/N PF026UA#ABA

Processor	1.5 GHz Intel Pentium
Operating System	Microsoft Windows XP Professional
Display	15-inch color TFT XGA with (1024x768) resolution (16M colors)
Cache Memory	1024 KB, L2 Cache
Standard Memory	512 MB (2 DIMM) 266 MHz DDR
Maximum Memory	2048 MB (266 MHz) DDR
Hard Drive	40 GB
Optical Drive	DVD/CD-RW ROM Drive
Communications	High speed 56K modem, integrated 10/100 NIC Intel Pro/Wireless 2100 802.11b
Graphics	Integrated Intel Extreme Graphics 2 up to 64MB shared system memory
Audio	16-bit stereo sound, integrated 2 JBL Pro speakers
Warranty	One Year

Cnx5000UP160X560WCg51P
P/N PL528UA#ABA

Processor	Intel Pentium M 725 (1.6GHz, 2-MB L2 cache, 400-MHz Front Side Bus)
Operating System	Microsoft Windows XP Professional
Display	15-inch color TFT XGA with (1024x768) resolution (16M colors)
Cache Memory	2048 KB, L2 Cache
Standard Memory	512 MB (2 DIMM) 266 MHz DDR
Maximum Memory	2048 MB (266 MHz) DDR
Hard Drive	60 GB
Optical Drive	DVD/CD-RW Drive
Communications	High speed 56K modem, integrated 10/100 NIC Intel Pro/Wireless 2200BG 802.11bg
Graphics	Integrated Intel Extreme Graphics 2 up to 64MB shared system memory
Audio	16-bit stereo sound, integrated 2 JBL Pro speakers
Warranty	Three Year

Standard Features

Cnx5000UP150X540WCg51P
P/N PL541UA#ABA

Processor	Intel Pentium M Processor 705 (1.5 GHz, 1-MB L2 cache, 400-MHz Front Side Bus)
Operating System	Microsoft Windows XP Professional
Display	15-inch color TFT XGA with (1024x768) resolution (16M colors)
Cache Memory	1024 KB, L2 Cache
Standard Memory	512 MB (2 DIMM) 266 MHz DDR
Maximum Memory	2048 MB (266 MHz) DDR
Hard Drive	40 GB
Optical Drive	DVD/CD-RW ROM Drive
Communications	High speed 56K modem, integrated 10/100 NIC Intel Pro/Wireless 2200BG 802.11bg
Graphics	Integrated Intel Extreme Graphics 2 up to 64MB shared system memory
Audio	16-bit stereo sound, integrated 2 JBL Pro speakers
Warranty	One Year

Cnx5000UP160X540WCg25P
P/N PL577UA#ABA

Processor	Intel Pentium M 725 (1.6GHz, 2-MB L2 cache, 400-MHz Front Side Bus)
Operating System	Microsoft Windows XP Professional
Display	15-inch color TFT XGA with (1024x768) resolution (16M colors)
Cache Memory	2048 KB, L2 Cache
Standard Memory	256 MB (1 DIMM) 266 MHz DDR
Maximum Memory	2048 MB (266 MHz) DDR
Hard Drive	40 GB
Optical Drive	DVD/CD-RW Drive
Communications	High speed 56K modem, integrated 10/100 NIC Intel Pro/Wireless 2200BG 802.11bg
Graphics	Integrated Intel Extreme Graphics 2 up to 64MB shared system memory
Audio	16-bit stereo sound, integrated 2 JBL Pro speakers
Warranty	One Year

Standard Features

Cnx5000UC120X540WCg25P P/N PR008UA#ABA	Processor	Intel Celeron M Processor 310 (1.2 GHz, 512kB L2 cache, 400MHz FSB)
	Operating System	Microsoft Windows XP Professional
	Display	15-inch color TFT XGA with (1024x768) resolution (16M colors)
	Cache Memory	512KB, L2 Cache
	Standard Memory	256 MB (1 DIMM) 266 MHz DDR
	Maximum Memory	2048 MB (266 MHz) DDR
	Hard Drive	40 GB
	Optical Drive	DVD/CD-RW Drive
	Communications	High speed 56K modem, integrated 10/100 NIC Intel Pro/Wireless 2200BG 802.11bg
	Graphics	Integrated Intel Extreme Graphics 2 up to 64MB shared system memory
	Audio	16-bit stereo sound, integrated 2 JBL Pro speakers
	Warranty	One Year

Options

Memory	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: nx5000 notebook system will run at 266MHz max with DDR 333MHz memory module.	
<hr/>		
MultiBay Hard Drives	80-GB 5400 rpm SMART Hard Drive	DC920A
	60-GB 5400 rpm SMART Hard Drive	DC894A
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MultiBay Storage Devices	DVD+RW	DG189A
	24X Combo DVD/CD-RW	DC364A
	8X DVD Drive	DC352A
	24X Max CD-ROM	DC351A
	Diskette Drive	DC362A
<hr/>		
Other Storage Devices	HP 5GB PC Card	DF928A
	USB Diskette Drive	230330-B25
	HP USB Digital Drive with 128MB SD memory	DL702A
	128MB SD Card Memory	FA135A#AC3
	256MB SD Card Memory	FA136A#AC3
	512MB SD Card Memory	FA184A#AC3
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Expansion Bases	Basic Port Replicator	DC367B#ABA
	Advanced Port Replicator	DC366B#ABA
	HP 4-port USB 2.0 Hub	DG954A
	External MultiBay	DC373A#ABA
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Power	8 Cell High Capacity Lithium-Ion Primary Battery	DG105A
	MultiBay Battery (8-cell)	DC889A
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Common Power Solutions	External Battery Charger	DF933A#ABA
	5 Bay battery charger	DF932A#ABA
	AC Adapter 65W	DC359A#ABA
	Auto Power Adapter/Charger (90W)	DC303C
	Aircraft Power Cables (90W)	DC899A

Options

Input Devices	USB Travel Mouse (optical scroll mouse)	F2100A
	USB/PS2 Mouse	DC369A
	USB/PS2 Keyboard	DC852A#ABA
	New Wireless Mouse & Keyboard	DL989A#ABA
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Security	Security Cable Lock	DC368A
	PC Card Smart Card Reader	DC350B
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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

Memory

HP Compaq nx5000 Business Notebook

Standard Memory Plus Optional Memory
Support for up to 2048 MB of 266-MHz DDR SDRAM memory is available with the installation of optional DDR SDRAM Memory Kits.

- 0-MB of memory on system board
- 2 slots total
- 1- 256-MB or 512-MB DIMM installed in Slot 1
- 1- additional open Memory Slot

NOTE: Two slots user accessible-located underneath the keyboard deck.
NOTE: nx5000 notebook system will run at 266 MHz maximum with DDR 333-MHz memory module.

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
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

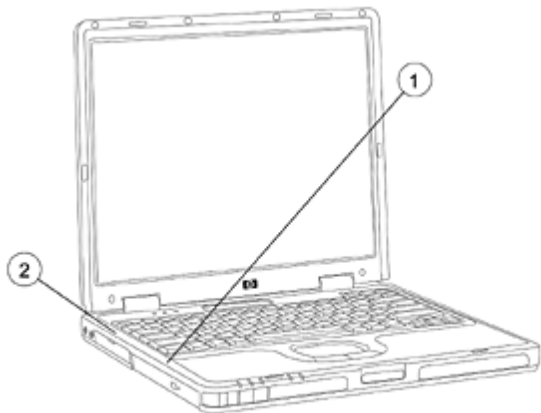
NOTE: This chart does not represent all possible memory configurations. Due to the non industry standard nature of some third-party memory modules, we strongly recommend using only HP branded memory modules to ensure compatibility.

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.

Storage



- 1. MultiBay
- 2. Hard Drive

Removable Media Drive Support

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

NOTE: MultiBay support includes the integrated MultiBay, the External MultiBay, and the Advanced Port Replicator.

Hard Drive Support

System Drive Support	Quantity Supported	Drive Bay Supported
30-GB 4200 rpm SMART Hard Drive	Up to 2	Dedicated hard drive bay and/or MultiBay
40-GB 4200 rpm SMART Hard Drive	Up to 2	Dedicated hard drive bay and/or MultiBay
40-GB 5400 rpm SMART Hard Drive	Up to 2	Dedicated hard drive bay and/or MultiBay
60-GB 5400 rpm SMART Hard Drive	Up to 2	Dedicated hard drive bay and/or MultiBay

Technical Specifications

System Unit	Dimensions (HxWxD)	15.0-inch TFT panel display support	1.38/1.44 x 12.83 x 10.83 in (35.2/36.7 x 326 x 275 mm)
	Weight	With 6-cell std battery & MultiBay weight saver	5.75 lb (2.61 kg) with 15.0-inch display
		With 6-cell std battery & MultiBay DVD-ROM drive	6.21 lb (2.82 kg) with 15.0-inch display
		With 8-cell primary battery & MultiBay DVD-ROM drive	6.41 lb (2.91 kg) with 15.0-inch display
NOTE: Height varies depending upon where on the notebook the measurement is made. Weight varies by configuration and components.			
Stand-Alone Power Requirements	Nominal Operating Voltage		10.8V (on 6-cell battery)
			14.4V (on 8-cell battery)
			18.5V (on AC power)
	Average Operating Power		10.5W (on battery)
			16W (on AC power)
	Peak Operating Power		65W
	Power in suspend mode		< 400 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
Random Vibration	Operating		0.75 grms
	Non-operating		1.50 grms
Altitude	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)
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

Technical Specifications

	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	Weight	0.65 lb (0.29 kg) (adapter)	
		0.29 lb (0.13 kg) (power cord)	
	Power Supply (Input)	Operating Voltage	90 to 264 VAC RMS
		Operating Current	1.6 A RMS
		Operating Frequency Range	47 to 63 Hz AC
		Maximum Transient	4/50 kV
Primary Lithium-Ion Battery Pack	Dimensions (H x W x L)	0.75 x 3.0 x 5.8 in (1.9 x 7.6 x 14.7 cm)	
	Weight	0.75 lb (0.34 kg)	
	Cells/Type	6-cell Lithium-Ion	
	Energy	Voltage	11.1V
		Amp-hour capacity	4.4 Ah
		Watt-hour capacity	48Wh
	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 hours

Technical Specifications

Optional High Capacity Lithium-Ion Battery Pack	Dimensions (H x W x L)	0.75 x 3.0 x 5.8 in (1.9 x 7.6 x 14.7 cm)	
	Weight	0.94 lb/0.43 kg	
	Cells/Type	8-cell Lithium-Ion	
	Energy	Voltage	14.4 V
		Amp-hour capacity	4.4 Ah
		Watt-hour capacity	63Wh
	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 hours

Optional MultiBay Battery Pack	Dimensions (H x W x L)	0.5 x 5.2 x 5.45 in (1.3 x 13.2 x 13.9 cm)	
	Weight (includes caddy)	0.86 lb (0.39 kg)	
	Cells/Type	8-cell Lithium-Ion	
	Energy	Voltage	14.8 V
		Amp-hour capacity	3.6 Ah
		Watt-hour capacity	53Wh
	Temperature	Operating	41° to 113° F (5° to 45° C)
		Non-operating	32° to 140° F (-20° 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 hours

15.0-Inch Color TFT XGA Display	Dimensions (H x W x L)	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	1024x 768
		Configuration	RGB Stripe
	Backlight	CCFT	
	Character Display	80 x 25	
	Total Power Consumption	5.5 W	
	Viewing Angle	±40° degrees Horizontal, +20°/-40° Vertical (typical)	

Technical Specifications

15.0-Inch Color TFT SXGA+ with wide viewing angle Display	Dimensions (H x W x L)	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	0.204 x 0.204 mm
		Format	1400x 1050
		Configuration	RGB Stripe
	Backlight	CCFT	
	Character Display	80 x 25	
	Total Power Consumption	6 W	
	Viewing Angle	±60° degrees Horizontal, +40°/-60° Vertical (typical)	

Hard Drives

60-GB 5400 rpm	MultiBay Drive Adapter	Dimensions (H x W x D)	0.5 x 5.21 x 4.97 in (1.27 x 13.25 x 12.61 cm)
		Weight	0.15 lb (70 g)
	Drive Weight	0.22 lb (102 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)
	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	ATA security	

Technical Specifications

40-GB 5400 rpm	MultiBay Drive Adapter	Dimensions (H x W x D)	0.5 x 5.21 x 4.97 in (.27 x 13.25 x 12.61 cm)
		Weight	0.15 lb (70 g)
	Drive Weight	0.22 lb (102 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)
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	13 ms
		Maximum	24 ms
	Rotational Speed	5400 rpm	
	Logical Blocks	78,140,160	
	Operating Temperature	41° to 131°F (5° to 55°C)	
	Features	ATA security	

40-GB 4200 rpm	MultiBay Drive Adapter	Dimensions (H x W x D)	0.5 x 5.21 x 4.97 in (1.27 x 13.25 x 12.61 cm)
		Weight	0.15 lb (70 g)
	Drive Weight	0.22 lb (102 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)
	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	ATA security	

Technical Specifications

30-GB 4200 rpm	MultiBay Drive Adapter	Dimensions (H x W x D)	0.5 x 5.21 x 4.97 in (1.27 x 13.25 x 12.61 cm)
		Weight	0.15 lb (70 g)
	Drive Weight	0.22 lb (102 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)
	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	ATA security	

Removable Storage Drives – MultiBay

CD-ROM Drive	Dimensions	0.5 x 5.21 x 4.97 in (1.27 x 13.25 x 12.61 cm)
	Weight	0.496 lb (225 g)
	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

Technical Specifications

DVD-ROM Drive	Dimensions	0.5 x 5.21 x 4.97 in (1.27 x 13.25 x 12.61 cm)	
	Weight	0.518 lb (235 g)	
	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	Dimensions	0.5 x 5.21 x 4.97 in (1.27 x 13.25 x 12.61 cm)	
	Weight	0.551 lb (250 g)	
	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
		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	

Technical Specifications

Max Media Capacity (read)	4.7GB
Max Media Capacity (write)	4.7GB
Transport	Tray Loading

DVD/CD-RW Combo Drive

Dimensions	0.5 x 5.21 x 4.97 in (1.27 x 13.25 x 12.61 cm)	
Weight	0.551 lb (250 g)	
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	10,800 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-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	

MultiBay Diskette Drive

Dimensions (H x W x D)	0.5 x 5.21 x 4.97 in (1.27 x 13.25 x 12.61 cm)	
Weight	0.551 lb (250 g)	
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
	Audio Output Quality	Stereo Outputs	Headphone jack, S/PDIF from Port Replicator only
		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 JBL Pro Stereo Speakers	Amplifier Power
			2-Watts RMS
			Speaker Impedance
			4-Ohms

Communications

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
	Power Management	IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)
		ACPI 1.1a compliant -- multiple power modes
		Situation-sensitive features reduce power consumption
		Wake-on-LAN from all Power-Managed States (configurable; Magic Packet and Microsoft Wake-Up Frame)
	Manageability	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
	Drivers Available	Broadcom 440X 10/100 Integrated Controller
		Windows XP
		Windows 2000
		DOS NDIS2 and ODI

Technical Specifications

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 V.44, 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

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

Technical Specifications

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	<table> <tr> <td>802.11a – Typical</td><td>500 feet – Outdoors Open Area 150 feet – Indoor, Office-environment</td></tr> <tr> <td>802.11 b – Typical</td><td>1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment</td></tr> <tr> <td>802.11 g – Typical</td><td>1000 feet – Outdoor Open Area 200 feet – Indoor, Office environment</td></tr> </table>	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
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	<table> <tr> <td>Operating</td><td>32° to 122° F (0° to 50° C)</td></tr> <tr> <td>Non-operating</td><td>-14° to 158° F (-10° to 70° C)</td></tr> </table>	Operating	32° to 122° F (0° to 50° C)	Non-operating	-14° to 158° F (-10° to 70° C)		
Operating	32° to 122° F (0° to 50° C)						
Non-operating	-14° to 158° F (-10° to 70° C)						
Humidity	<table> <tr> <td>Operating</td><td>10% to 90%</td></tr> <tr> <td>Non-operating</td><td>5% to 95%</td></tr> </table>	Operating	10% to 90%	Non-operating	5% to 95%		
Operating	10% to 90%						
Non-operating	5% to 95%						
Altitude	<table> <tr> <td>Operating</td><td>0 to 15,000 ft (4,572 m)</td></tr> <tr> <td>Non-operating</td><td>0 to 40,000 ft (12,192 m)</td></tr> </table>	Operating	0 to 15,000 ft (4,572 m)	Non-operating	0 to 40,000 ft (12,192 m)		
Operating	0 to 15,000 ft (4,572 m)						
Non-operating	0 to 40,000 ft (12,192 m)						

Technical Specifications

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).

Intel Pro/Wireless 2200BG 802.11b/g Network Connection

Form Factor	Mini PCI Type 3B (model WM3B2200BG)
Dual Diversity Antenna	On-board dual diversity switching
Frequency Band	2.4 to 2.497 GHz
Modulation	CCK, DQPSK, DBPSK, OFDM
Wireless Medium	2.4 GHz ISM: Direct Sequence Spread Spectrum (DSSS)
Channels	Full 14 Channel Support. Multinational support with frequency bands and channels compliant to local regulations.
Data Rates	802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps
Indoor Range	100 ft (30 m) @ 11Mbps/300 ft (90 m) @ 1 Mbps
Outdoor Range	400 ft (120 m) @ 11Mbps/1500 ft (460 m) @ 1 Mbps
Transmit Output Power	18 dBm (typical) for 802.11b 15 dBm (typical) for 802.11g (varies with data rate)
Operating Systems	Microsoft Windows XP Professional Microsoft Windows XP Home Edition Microsoft Windows 2000
WECA	WiFi certification for 802.11b, 802.11g
WHQL	Yes
WLAN Standard	IEEE 802.11b, 802.11g
Architecture	Infrastructure or ad hoc (peer-to-peer)
Roaming	IEEE 802.11 compliant for seamless roaming between access points
Security	LEAP, TKIP, 802.1x, EAP-TLS, 128-bit and 64-bit WEP

Intel Pro/Wireless 2100 802.11b WLAN

Wireless LAN Standards	IEEE 802.11b (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

Technical Specifications

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	16 dBm (typical)	
Power Consumption	Transmit: 2.0 W (max) Receive: 1.75 W (max) Sleep mode: 200 mW (max)	
Power Management	ACPI compliant power management 802.11 Compliant Power Saving Mode	
Receiver Sensitivity*	11 Mbps: -82 dBm to 1 Mbps: -89 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	0.026 lb (11.75 g)	
Dimensions	0.20 x 1.75 x 2.34 in (4.9 x 44.6 x 59.8 mm)	
Operating Voltage	3.3v	
Temperature	Operating	32° to 158° F (0° 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	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
Configuration Utility	Choice of Configuration Utility: <ul style="list-style-type: none"> • Intel ProSet 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).

Technical Specifications

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 Edition
		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

Technical Specifications

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

Technical Specifications

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