QuickSpecs

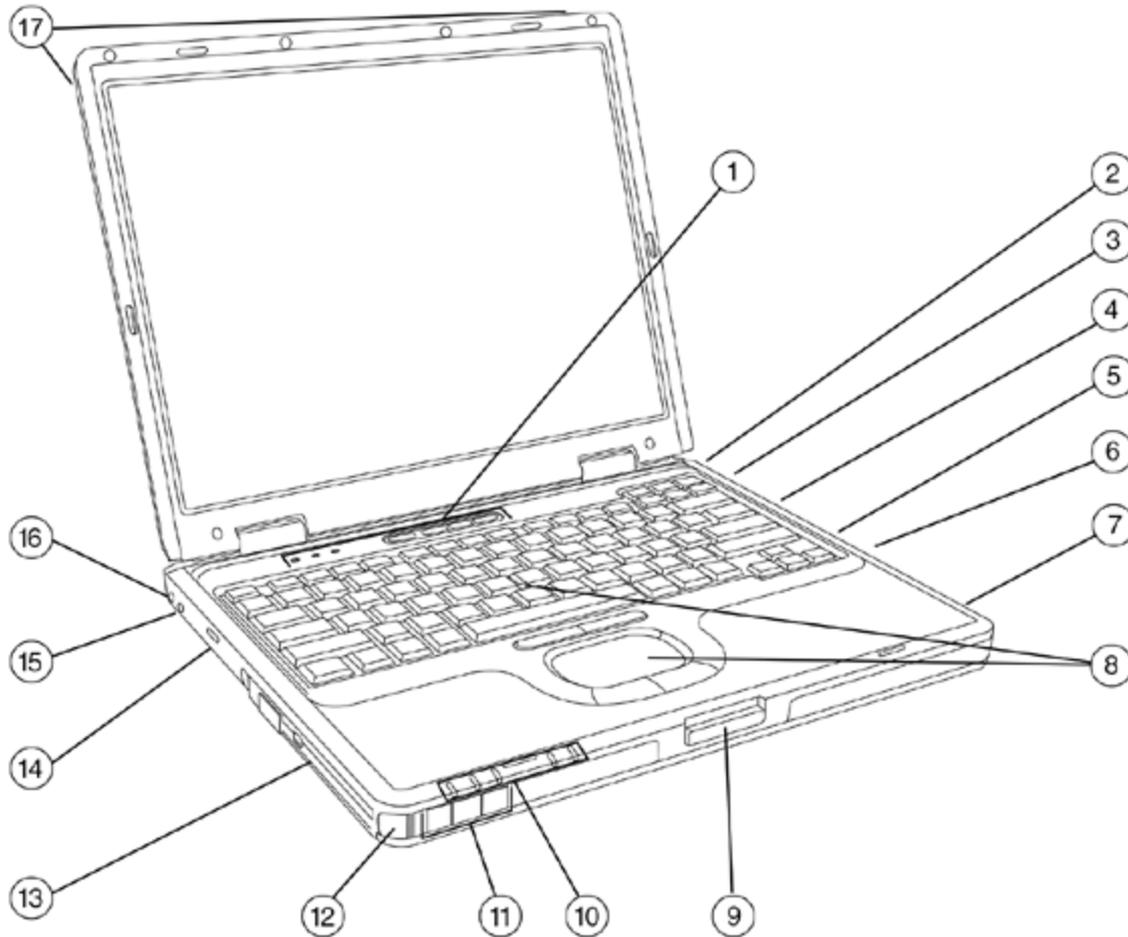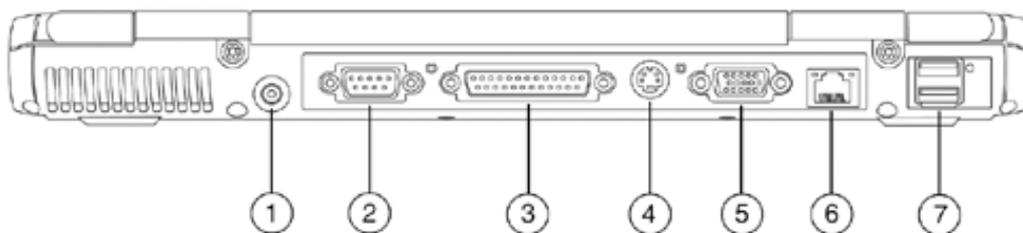*Overview*

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. Dual Pointing Devices
9. Display Latch
10. Wireless, Power, Charge, Hard Drive, and MultiBay Drive Activity LEDs
11. Volume Buttons
12. Infrared Port
13. MultiBay
14. Hard Drive
15. Microphone
16. Headphone
17. Wireless LAN Antennas

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

Overview

At A Glance

- Microsoft Windows XP Professional
- Intel® Pentium® M Processors
  - Intel 855PM chipset with 400MHz processor side bus
- From 256-MB DDR SDRAM to 2048 MB
- Up to 80-GB (5400 rpm), user-removable hard drives
- Gigabit Ethernet NIC
- Dual pointing devices
- Support for swappable MultiBay devices
- Magnesium alloy display enclosure
- Common Port Replicator and Advanced Port Replicator with Gigabit NIC pass-through
- Protected by a 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
- Sleek new industrial design weighing 4.96 lb (travel weight) and 1.27-inch thin
- ATI MOBILITY RADEON 9600 graphics controller with 32 or 64MB of Video RAM
- Optional integrated 802.11b, 802.11 b/g, and 802.11 a/b/g wireless LAN modules
- Support for Intel® Centrino™ technology (model dependent)
- Optional integrated Bluetooth
- Integrated Secure Digital (SD) flash media slot
- Security features include optional integrated Smart Card reader or optional HP Protect Tools Embedded Security

What's Special

- Flexible wireless LAN solutions
- Choice of optional integrated Smart Card reader or Embedded Security features
- Integrated Secure Digital (SD) flash media slot
- Up to 5 hours battery life with 6-cell (standard via BTO) Li-Ion battery, 8-cell battery also available for increased productivity
- HP Mobile Printing driver makes on-the-go printing quick and easy
- Support for Common Port Replicator and Advanced Port Replicator docking solutions with Gigabit NIC pass-through

QuickSpecs

Standard Features

Processors	Intel Pentium M processor 755* – 2.0GHz, 2MB L2 cache, 400 MHz Front Side Bus (FSB)	
	Intel Pentium M processor 745 – 1.8GHz, 2MB L2 cache, 400MHz Front Side Bus (FSB)	
	Intel Pentium M processor 735 – 1.7GHz, 2MB L2 cache, 400MHz Front Side Bus (FSB)	
	Intel Pentium M processor 725 – 1.6GHz, 2MB L2 cache, 400MHz Front Side Bus (FSB)	
	Intel 855PM Chipset	

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

Operating System Microsoft Windows XP Professional
Microsoft Windows XP Home (model dependent)

Chipset Intel 855PM Chipset with 400MHz processor side bus and enhanced SpeedStep technology

Display	Internal	14.1-inch TFT XGA with (1024x768) resolution (16M colors) 14.1-inch TFT SXGA+ 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

Memory	Standard	256-MB or 512-MB (333-MHz) DDR SDRAM (SODIMM in slot 1)
	Maximum	2048-MB (333-MHz) DDR SDRAM (1024-MB SODIMMs in slots 1 and 2)

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

Communications 10/100/1000 NIC
High speed 56K modem with digital line guard

NOTE: Designed only to allow faster downloads from high speed 56K modem 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, volume, 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.

Quick Launch Buttons The HP Compaq Business Notebook nc6000 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 Dual pointing devices (both Pointstick and Touchpad)

Standard Features

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 (5400 rpm) SMART
		60-GB (5400 rpm) SMART
		60-GB (7200 rpm) SMART
		80-GB (5400 rpm) SMART

NOTE: The HP nc6000 hard drives are customer removable and will withstand multiple insertion/removal cycles.

	Optical Drives	MultiBay 4X DVD+RW
		24x/24x/24x/8x DVD/CD-RW
		8x DVD-ROM
		24X CD-ROM
	Flash Media Storage	One integrated Secure Digital (SD) slot

Multimedia	Premier Sound™ audio
	Integrated 16-bit Sound Blaster Pro-compatible audio
	Two integrated stereo speakers and microphone
	External volume and mute controls
	Stereo Headphone-out
	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
	DVD+/-RW Drive

Interfaces	**PC Card Slot**	Two Type II or 1 Type III
	External Monitor	1
	Microphone in	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	8

Standard Features

Graphics	ATI MOBILITY RADEON 9600 graphics controller with 32 or 64-MB DDR SDRAM 4X AGP Hardware support for DirectX 9.0 ATI *Powerplay* Technology

Audio	Premier Sound 16-bit sound 2 Stereo Speakers Headphone out and microphone jacks

Software	**Preloaded Software**	Adobe Acrobat Reader HP Quick Launch Button Software HP Mobile Printing Driver HP Help and Support (XP Only) Synaptics Touchpad Driver WinDVD – DVD Player (for optional DVD+RW, DVD/CDRW and DVD drives)*
	Software on CD	WinDVD Creator – DVD Authoring (for optional DVD+RW drives Roxio Easy CD Creator (for optional DVD+RW, DVD/CDRW and CD-RW drives)
	Additional software available from the Web	HP Client Manager Software HP ProtectTools Embedded Security Manager HP ProtectTools Smart Card Security Manager HP Setup Utility
	*NOTE: Software is loaded on the hard drive and must be installed by running the Software Setup 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.

Client Management Software	In December 2003, Insight Manager was replaced by HP Systems Insight Manager Software (SIM). HP SIM will use WMI to retrieve client system information. A HP SIM connector will be available for the HP Client Manager Software beginning in 2Q/2004. For more information and to download HP Client Manager Software, please refer to the HP website at http://www.hp.com/go/easydeploy.

Security	The HP nc6000 supports a range of standard as well as optional security features including the optional Embedded Security chip and optional integrated Smart Card reader.	
	Standard Security Features	Configuration Control Hardware Memory Change Alert Ownership Tag Setup Password Power-On Password DriveLock Enabled for PC SmartCard options Kensington Lock Slot
	Optional Security Features	**Embedded Security Chip** — Designed to the Trusted Computing Group (TCG) standard Microsoft Crypto API and PKCS#11 software interface support RSA Secured Partner program certification
		Integrated Smart Card reader — Compatible with ISO 7816 compliant Smart Cards PC/SC interface support
	For more information on HP security solutions refer to http://www.hp.com/go/security.	

QuickSpecs

Standard Features

Power Supply	External 65 watt AC adapter, 6-foot (1.8-meter) power cord included. Total length including External AC adapter is 12 feet (3.66 meter).

Battery

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

Secondary Battery (MultiBay)
8-cell Lithium-Ion (3.6Ah) – optional

Battery Life

The HP Compaq Business Notebook nc6000 6-cell primary Lithium-Ion battery provides up to 5 hours of battery life.
The HP Compaq Business Notebook nc6000 8-cell optional primary high capacity Lithium-Ion battery provides up to 6.5 hours of battery life.

NOTE: Actual results may vary with product model, configuration, and individual usage. Hewlett-Packard testing of a HP Compaq nc6000 with an Intel Pentium M processor 735 1.7 GHz CPU, Windows XP Pro, 14.1-inch XGA LCD, 512-MB RAM, 40-GB HDD, 6-cell Lithium-Ion battery, and NIC/modem, achieved an overall Business Winstone® 2002 BatteryMark score of 5h 12m Business Winstone 2002 BatteryMark Version 1.0 units. 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 50%, power management scheme – Laptop/Portable, hard drive, standby and video timers set to never, not external devices connected and all wireless turned off.
NOTE: Actual results may vary with product model, configuration, and individual usage. Hewlett-Packard testing of a HP Compaq nc6000 with an Intel Pentium M processor 735 1.7 GHz CPU, Windows XP Pro, 14.1-inch XGA LCD, 512-MB RAM, 40-GB HDD, 8-cell Lithium-Ion battery, and NIC/modem, achieved an overall Business Winstone® 2002 BatteryMark score of 6h 53m Business Winstone 2002 BatteryMark Version 1.0 units. 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 50%, power management scheme – Laptop/Portable, hard drive, standby and video timers set to never, not external devices connected and all wireless turned off.

Battery Re-Charge Time

System in OFF mode or Standby	3 hours
System ON (depending on system power consumption)	3-5 hours

Power Conservation

Supports enhanced Intel SpeedStep technology (which allows Battery Optimized Mode, Maximum Performance Mode, or Automatic mode)

Hibernation

ATI PowerPlay technology

Instant-on via standby

ACPI compliance

MultiBay Devices

MultiBay devices may be swapped with the system powered on (hot) under Microsoft Windows XP Professional or Windows 2000 (except MultiBay secondary hard drive).

QuickSpecs

Standard Features

Wireless Devices	The HP nc6000 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.

All integrated wireless LAN options	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
HP W500 802.11a/b/g	Integrated support for 802.11a, b and g Up to 54mbps throughput performance Advanced Encryption Standard (AES) support
Intel PRO/Wireless 2100 802.11b wireless LAN	Intel® Centrino™ mobile technology Integrated support for 802.11b Up to 11mbps throughput performance
Intel PRO/Wireless 2200 802.11 b/g wireless LAN	Intel® Centrino™ mobile technology Integrated support for 802.11b and g Up to 11mbps throughput performance
Integrated Bluetooth	Designed to the Bluetooth v1.1 specification

Docking	Port Replicator and Advanced Port Replicator. HP's common port replicator and advanced port replicator designs provide simple and convenient port management. Features include Gigabit NIC pass through, legacy parallel and serial ports, DVI, USB 2.0, and a 1394* port. These docking solutions are compatible across multiple Business Notebook platforms enabling a lower total cost of ownership. NOTE:* The HP Compaq Business Notebook nc6000 does not support 1394 when docked.

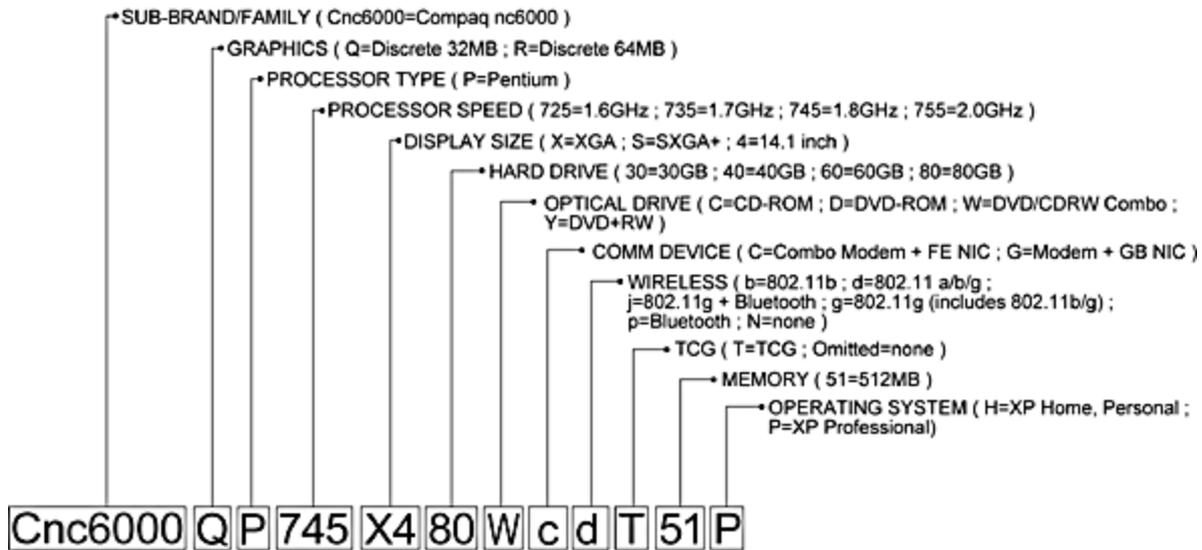| Service and Support	HP Services includes a three-year, Worldwide Limited Warranty, pick-up or carry-in and toll-free 7 x 24 hardware technical phone support. On-site service or a one-year warranty are also available, NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details. http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp.

Standard Features

The Etymology of a Model name:

- SUB-BRAND/FAMILY (Cnc6000=Compaq nc6000)
- GRAPHICS (Q=Discrete 32MB ; R=Discrete 64MB)
- PROCESSOR TYPE (P=Pentium)
- PROCESSOR SPEED (725=1.6GHz ; 735=1.7GHz ; 745=1.8GHz ; 755=2.0GHz)
- DISPLAY SIZE (X=XGA ; S=SXGA+ ; 4=14.1 inch)
- HARD DRIVE (30=30GB ; 40=40GB ; 60=60GB ; 80=80GB)
- OPTICAL DRIVE (C=CD-ROM ; D=DVD-ROM ; W=DVD/CDRW Combo ; Y=DVD+RW)
- COMM DEVICE (C=Combo Modem + FE NIC ; G=Modem + GB NIC)
- WIRELESS (b=802.11b ; d=802.11 a/b/g ; j=802.11g + Bluetooth ; g=802.11g (includes 802.11b/g) ; p=Bluetooth ; N=none)
- TCG (T=TCG ; Omitted=none)
- MEMORY (51=512MB)
- OPERATING SYSTEM (H=XP Home, Personal ; P=XP Professional)

| Cnc6000 | Q | P | 745 | X4 | 80 | W | c | d | T | 51 | P |

Models

Cnc6000QP745X460WCd51Pe
PG401UA#ABA

Processor		Intel Pentium M processor 745 *1.8GHz, 2MB L2 cache, 400MHz Front Side Bus (FSB)*
Operating System		Microsoft Windows XP Professional
Cache		2048 KB L2 cache
System Memory	Standard	512-MB (333-MHz) DDR SDRAM (512-MB SODIMM in slot 1)
	Maximum	2-GB (333-MHz) DDR SDRAM (1-GB SODIMM in slots 1 and 2)
Hard Drive		60GB (5400 RPM)
Display		14-inch color TFT XGA with (1024x768) resolution (up to 16.7M colors internal)
Graphics		ATI MOBILITY RADEON 9600 graphics controller Hardware support for DirectX 9.0
Video Memory		32MB
Audio		Premier Sound 16-bit sound, Line out/headphone and microphone jacks
Optical Drive		DVD/CD-RW Combo
Communications		High speed 56K modem, Integrated 10/100/1000 NIC
Integrated Wireless		802.11 a/b/g + Bluetooth
Embedded Security Chip		Yes
Integrated Smart Card Reader		NA
Pointing Device		Dual pointing devices (both Pointstick and Touchpad)
Battery		6-cell Lithium-Ion battery
Power		External 65W adapter
Warranty		3/3/0

Standard Features

Cnc6000QP170X440WGjT51Pe	Processor	Intel Pentium M processor 735
PD468AA#ABA		*1.7GHz, 2MB L2 cache, 400MHz Front Side Bus (FSB)*
	Operating System	Microsoft Windows XP Professional
	Cache	2048 KB L2 cache
	System Memory	Standard 512-MB (333-MHz) DDR SDRAM (512-MB SODIMM in slot 1)
		Maximum 2-GB (333-MHz) DDR SDRAM (1-GB SODIMM in slots 1 and 2)
	Hard Drive	40GB (5400 RPM)
	Display	14-inch color TFT XGA with (1024x768) resolution (up to 16.7M colors internal)
	Graphics	ATI MOBILITY RADEON 9600 graphics controller Hardware support for DirectX 9.0 4X AGP
	Video Memory	32MB
	Audio	Premier Sound 16-bit sound, Line out/headphone and microphone jacks
	Optical Drive	DVD/CD-RW Combo
	Communications	High speed 56K modem, Integrated 10/100/1000 NIC
	Integrated Wireless	Intel Pro/Wireless 2200BG – 2.11b/g WLAN Bluetooth
	Embedded Security Chip	Yes
	Integrated Smart Card Reader	NA
	Pointing Device	Dual pointing devices (both Point stick and Touchpad)
	Battery	6-cell Lithium-Ion battery
	Power	External 65W adapter
	Warranty	3/3/0

QuickSpecs

Standard Features

Cnc6000QP160X440WGn25Pe		
PD469AA#ABA		

Processor	Intel Pentium M processor 725	
	1.6GHz, 2MB L2 cache, 400MHz Front Side Bus (FSB)	
Operating System	Microsoft Windows XP Professional	
Cache	1024 KB L2 cache	
System Memory	Standard	256-MB (333-MHz) DDR SDRAM (256-MB SODIMM in slot 1)
	Maximum	2-GB (333-MHz) DDR SDRAM (1-GB SODIMM in slots 1 and 2)
Hard Drive	40GB (5400 RPM)	
Display	14-inch color TFT XGA with (1024x768) resolution (up to 16.7M colors internal)	
Graphics	ATI MOBILITY RADEON 9600 graphics controller Hardware support for DirectX 9.0 4X AGP	
Video Memory	32MB	
Audio	Premier Sound 16-bit sound, Line out/headphone and microphone jacks	
Optical Drive	DVD	
Communications	High speed 56K modem, Integrated 10/100/1000 NIC	
Integrated Wireless	NA – available as an option	
Embedded Security Chip	NA	
Integrated Smart Card Reader	NA	
Pointing Device	Dual pointing devices (both Point stick and Touchpad)	
Battery	6-cell Lithium-Ion battery	
Power	External 65W adapter	
Warranty	3/3/0	

Standard Features

Cnc6000QP160X440WGn51Pe
PD467AA#ABA

Processor	Intel Pentium M processor 725	
	1.6GHz, 2MB L2 cache, 400MHz Front Side Bus (FSB)	
Operating System	Microsoft Windows XP Professional	
Cache	1024 KB L2 cache	
System Memory	Standard	512-MB (333-MHz) DDR SDRAM (512-MB SODIMM in slot 1)
	Maximum	2-GB (333-MHz) DDR SDRAM (1-GB SODIMM in slots 1 and 2)
Hard Drive	40GB (5400 RPM)	
Display	14-inch color TFT XGA with (1024x768) resolution (up to 16.7M colors internal)	
Graphics	ATI MOBILITY RADEON 9600 graphics controller Hardware support for DirectX 9.0 4X AGP	
Video Memory	32MB	
Audio	Premier Sound 16-bit sound, Line out/headphone and microphone jacks	
Optical Drive	DVD/CD-RW Combo	
Communications	High speed 56K modem, Integrated 10/100/1000 NIC	
Integrated Wireless	NA – available as an option	
Embedded Security Chip	NA	
Integrated Smart Card Reader	NA	
Pointing Device	Dual pointing devices (both Point stick and Touchpad)	
Battery	6-cell Lithium-Ion battery	
Power	External 65W adapter	
Warranty	3/3/0	

Standard Features

Cnc6000QP160X440WGg51Pe
PL639UA#ABA

Processor	Intel Pentium M processor 725 *1.6GHz, 2MB L2 cache, 400MHz Front Side Bus (FSB)*	
Operating System	Microsoft Windows XP Professional	
Cache	1024 KB L2 cache	
System Memory	Standard	512-MB (333-MHz) DDR SDRAM (256-MB SODIMMs in slots1 & 2)
	Maximum	2-GB (333-MHz) DDR SDRAM (1-GB SODIMM in slots 1 and 2)
Hard Drive	40GB (5400 RPM)	
Display	14-inch color TFT XGA with (1024x768) resolution (up to 16.7M colors internal)	
Graphics	ATI MOBILITY RADEON 9600 graphics controller Hardware support for DirectX 9.0 4X AGP	
Video Memory	32MB	
Audio	Premier Sound 16-bit sound, Line out/headphone and microphone jacks	
Optical Drive	DVD	
Communications	High speed 56K modem, Integrated 10/100/1000 NIC	
Integrated Wireless	Intel PRO/Wireless 2200BG 802.11b/g WLAN	
Embedded Security Chip	NA	
Integrated Smart Card Reader	NA	
Pointing Device	Dual pointing devices (both Point stick and Touchpad)	
Battery	6-cell Lithium-Ion battery	
Power	External 65W adapter	
Warranty	3/3/0	

Standard Features

Cnc6000QP755X460WGkT51Pe
PL644UA#ABA

Processor		Intel Pentium M processor 755 *2.0GHz, 2MB L2 cache, 400MHz Front Side Bus (FSB)*
Operating System		Microsoft Windows XP Professional
Cache		1024 KB L2 cache
System Memory	Standard	512-MB (333-MHz) DDR SDRAM (512-MB SODIMM in slot 1)
	Maximum	2-GB (333-MHz) DDR SDRAM (1-GB SODIMM in slots 1 and 2)
Hard Drive		60GB (5400 RPM)
Display		14-inch color TFT XGA with (1024x768) resolution (up to 16.7M colors internal)
Graphics		ATI MOBILITY RADEON 9600 graphics controller Hardware support for DirectX 9.0 4X AGP
Video Memory		32MB
Audio		Premier Sound 16-bit sound, Line out/headphone and microphone jacks
Optical Drive		DVD/CD-RW Combo
Communications		High speed 56K modem, Integrated 10/100/1000 NIC
Integrated Wireless		Intel PRO/Wireless 2200BG 802.11b/g WLAN + Bluetooth
Embedded Security Chip		Yes
Integrated Smart Card Reader		NA
Pointing Device		Dual pointing devices (both Point stick and Touchpad)
Battery		6-cell Lithium-Ion battery
Power		External 65W adapter
Warranty		3/3/0

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
MultiBay Hard Drives	80-GB (5400 rpm) SMART Hard Drive	DC920A
	60-GB (5400 rpm) SMART Hard Drive	DC894A
	40-GB (5400 rpm) SMART Hard Drive	263472-B25
MultiBay Storage Devices	DVD+RW Drive	DG189A
	24X Combo DVD/CD-RW Drive	DC364A
	8X DVD Drive	DC352A
	24X Max CD-ROM Drive	DC351A
	Diskette Drive	DC362A
Other Storage Devices	USB Digital Drive with 128MB SDRAM	DL702A
	USB Diskette Drive	230330-B25/ DC361B
Expansion Bases	Port Replicator	DC367B#ABA
	Advanced Port Replicator	DC366B#ABA
	External MultiBay	DC373A#ABA
	Monitor Stand	DC377A
Power	8-Cell Primary High Capacity Lithium-ion Primary Battery	DG105A
	MultiBay Battery	DC889A
Common Power Solutions	External Battery Charger	DF933A#ABA
	AC Adapter 65W	DC359A#ABA
	Auto Power Adapter/Charger	DC303B
	Aircraft Power Adapter	DC899A
	AC Line Cord (10 ft/3.1 m)	DC851B#ABA
Input Devices	Wireless Keyboard & Mouse	DL989A#ABA
	Keyboard & Mouse budle USB/PS2	DM687A#ABA
	External Keyboard (carbon) USB/PS2	DC852A#ABA
	2 Button Mouse (carbon) USB/PS2	DC369A
Security	Security Cable Lock	DC368A
	HP Smart Card PC Card Reader	DC350B

QuickSpecs

Options

Carrying Cases	Top Load Nylon	DC915A
	Top Load Leather	DC917A
	Executive Nylon	DC916A
	HP Backpack	DG102A

QuickSpecs

Memory

Standard Memory Plus Optional Memory

Support for up to 2048 MB (333-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

Memory	Slot 1	Slot 2
	512 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.

Up to	Slot 1	Slot 2
512 MB	512 MB	Empty
1024 MB	512 MB	512 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:

Memory Upgrades	HP PN
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

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

Hard Drive Support

System Drive Support	Quantity Supported	Drive Bay Supported
Primary Hard Drives		
30-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
80-GB (5400 rpm) SMART Hard Drive	Up to 2	Dedicated hard drive bay and/or MultiBay

Technical Specifications

System Unit			
	Dimensions (HxWxD)	14.1-inch TFT panel display	1.27/1.34 x 12.51 x 10.31 in (32.3/34.1 x 317.6 x 262.0 mm)
	Weight	With 6-cell std battery & MultiBay weight saver	4.962 lb (2.250 kg)
		With 6-cell std battery & MultiBay DVD-ROM drive	5.423 lb (2.460 kg)

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 (6-cell) 14.4 V (8-cell)
		Average Operating Power	10.5 W
		Peak Operating Power	65 W
		Power in suspended mode	<400 mW
		Power in hibernation mode	<50mW
	Temperature	Operating	50° to 95° F (10° to 35° C) (not writing opitical)
			41° to 95° F (5° to 35° C) (writing optical)
		Non-operating	-4° to 140° F (-20° to 60° C)
	Relative Humidity	Operating	10% to 90%
		Non-operating	5% to 90%
	Shock	Operating	50g, 2ms, half-sine
		Non-operating	175g, 2ms, half-sine
	Random Vibration	Operating	0.75 grms
		Non-operating	1.50 grms
	Maximum Altitude (unpressurized)	Operating	-50 to 10, 000 ft
		Non-operating	-50 to 40, 000 ft
	Industry Standard Certifications	Blue Angel	No
		UL	Yes
		Energy Star	Yes
		Canadian Safety	Yes
		TUV GS	Yes
		Nordic Safety	Yes
		Mexican Safety	Yes
		Poland Compliance	Yes
		Australia / NZ Compliance	Yes
		CCC	Yes
		Japan Compliance	Yes
		MIC	Yes
		BSMI	Yes
		CE Marking Compliance	Yes
		KONCAR	Yes
		GOST	Yes
		SASO	Yes
		SABS	Yes
		UKRSERTCOMPUTER	Yes

QuickSpecs

Technical Specifications

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 Lithiurn-Ion	
	Energy	Voltage	11.1 V
		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 (-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

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 (includes caddy)	0.94 lb (0.43 kg)	
	Cells/Type	8-cell Lithium-Ion	
	Energy	Voltage	14.4 V
		Amp-hour capacity	4.4Ah
		Watt-hour capacity	63Wh
	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

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

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Technical Specifications

14.1-Inch Color TFT XGA Display	**Dimensions** (H x W x L)	11.2 x 8.4 in (28.6 x 21.4 cm)	
	Diagonal Size	14.1 in (35.7 cm)	
	Mounting	Internal	
	Number of Colors	16 M	
	Contrast Ratio	250:1 typical	
	Refresh Rate	60 Hz	
	Brightness	160 nit typical	
		NOTE: Brightness is listed as an average measurement and may vary among panels.	
	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	4 W	
	Viewing Angle	±45° Horizontal, +15°/-35° Vertical (typical)	

14.1-Inch Color TFT SXGA+	**Dimensions** (H x W x L)	11.2 x 8.4 in (28.6 x 21.4 cm)	
	Diagonal Size	14.1 in (35.7 cm)	
	Mounting	Internal	
	Number of Colors	16 M	
	Contrast Ratio	250:1 typical	
	Refresh Rate	60 Hz	
	Brightness	180 nit typical	
		NOTE: Brightness is listed as an average measurement and may vary among panels.	
	Pixel Resolution	Pitch	0.204 x 0.204 mm
		Format	1400 x 1050
		Configuration	RGB Stripe
	Backlight	CCFT	
	Character Display	80 x 25	
	Total Power Consumption	4 W	
	Viewing Angle	±40° Horizontal, +20°/-40° Vertical (typical)	

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Technical Specifications

Hard Drives

80-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	80 GB	
	Height	0.74 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-5, ATA security	
	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	5400 rpm	
	Logical Blocks	156,301,488	
	Operating Temperature	41° to 131° F (5° to 55° C)	

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	0.74 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	5400 rpm	
	Logical Blocks	117,210,240	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	Features	Security	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 (1.27 x 13.25 x 12.61 cm)
		Weight	0.15 lb (70 g)
	Drive Weight	0.21 lb (99 g)	
	Capacity	40 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	5400 rpm	
	Logical Blocks	78,140,160	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	Features	Security	ATA Security

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	0.15 lb (99 g)	
	Capacity	30 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	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)	

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Technical Specifications

Removable Storage Drives - MultiBay

CD-ROM Drive	Dimensions	0.5 x 5.22 x 5.46 in (1.35 x 13.28 x 13.88 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	
	Media Capacity	650MB	
	Transport	Tray Loading	

DVD-ROM Drive	Dimensions	0.5 x 5.22 x 5.46 in (1.35 x 13.28 x 13.88 cm)	
	Weight	0.518 lb (235 g)	
	Access Times	Random	<110 ms CD
			<125 ms DVD
		Full Stroke	<175 ms CD
			<225 ms DVD
	Max data transfer rate	24X-CD-R	3,600 KB/s
		10X-CD-RW	1,500 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-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM	
	Supported Media (write)	None	
	Media Capacity	4.7 GB	
	Transport	Tray Loading	

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Technical Specifications

DVD+RW Drive	Dimensions	0.5 x 5.22 x 5.46 in (1.35 x 13.28 x 13.88 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
		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	
	Media Capacity	4.7 GB	
	Transport	Tray Loading	

DVD/CD-RW	Dimensions	0.5 x 5.46 x 5.23 in (1.35 x 13.88 x 13.28 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	3600 KB/s
		8X DVD	10,800 KB/s
		24X CD-R	3600 KB/s
		24X CD-RW	3600 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)	CD-R, CD-RW	
	Max Media Capacity (read)	4.7GB	
	Max Media Capacity (write)	700MB	
	Transport	Tray loading	

Technical Specifications

Diskette Drive	MultiBay Drive	Dimensions (H x W x D)	0.5 x 5.22 x 5.46 in (1.35 x 13.28 x 13.88 cm)
		Weight	0.51 lb (230 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

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)
	Mono Inputs	Microphone - 20K Imped
	Stereo Outputs	Headphone jack, S/PDIF from Port Replicator only

Audio Output Quality	Frequency Response	20 Hz - 20 kHz
	Signal to Noise Ratio	>94dB
	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

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Technical Specifications

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 802.1p QoS (Quality of Service) Support 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 NIC Battery Saving Mode (enabled by default)
	Performance Features	TCP/IP/UDP Checksum Offload (configurable) Microsoft Large Send Offload (configurable) TCP Segmentation Offload CPU Task Offload Adaptive Interrupts
	Manageability	Wake-on-LAN from all Power-Managed States (configurable; Magic Packet and Microsoft Wake-Up Frame) PXE 2.0 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Cable Analyzer
	NIC Device Driver Name	Broadcom NetXtreme Gigabit Ethernet
	Drivers Available	Microsoft Windows XP Microsoft Windows 2000 Linux kernel versions 2.2 and 2.4

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
		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/EIA-578-B (Class 1) T.30, T.4 (Group 3) V.17 V.29 V.27ter V.21 Channel 2
	Command Set	V.250 (Partial) TIA-602 Identification: +GMI, +GMM, +GMR Port control: +IPR, +ICF, +IFC, +ILRR Modulation: +MS, +MR, +MA Error control: +ES, +ER, +EB, +ESR, +ETBM Data compression: +DS, +DR V.251
HP 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.

Technical Specifications

	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) 802.11g: 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)

Technical Specifications

Intel PRO/Wireless 2100 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 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 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
		802.11 b – Typical 1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
	Form Factor	MiniPCI Type IIIB
	Weight	0.026 lb (11.75 g) max
	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: • 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

Intel PRO/Wireless 2200BG 802.11b/g WLAN	Wireless LAN Standards	IEEE 802.11b IEEE 802. 11g
	Interoperability	Wi-Fi certified (details available at http://www.hp.com/go/notebooks/wlan)
	Frequency Band	2.402 - 2.494 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 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 access points.
	Output Power	16 ±2 dBM for CCK 11 +6/-1 dBM for OFDM (power varies by data rate) Maximum output power may vary by country according to local regulations
	Power Consumption	Transmit: 1.8 Watts (max) Receive: 1.0 Watts (max) Idle mode: 75mW, nominal
	Power Management	ACPI compliant power management 802.11 Compliant Power Saving Mode
	Receiver Sensitivity*	54 Mbps: -72 dBm, 11 Mbps: -84 dBm , 1 Mbps: -94 dBm
	Antenna type	High efficiency dual band antenna with polarization diversity, mounted in the display enclosure

	Range (typical)	Outdoor	1200 feet at 1 Mbps 250 feet at 54 Mbps
		Indoor	300 feet at 1 Mbps 50 feet at 54 Mbps
	Form Factor	MiniPCI Type IIIB	
	Weight	0.026 lb (11.75 g) (max)	
	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 Non-operating	32° to 158° F (0° to 70° C) -40° to 176° F (-40° to 80° C)
	Humidity	Operating Non-operating	0 to 90% (non-condensing) 5 to 95% (non-condensing)
	Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)

Technical Specifications

	Configuration Utility	Choice of Configuration Utility:

- 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).

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	

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)	
Receiver 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	Ad-hoc (Peer to Peer) Infrastructure (Access Points Required)	
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