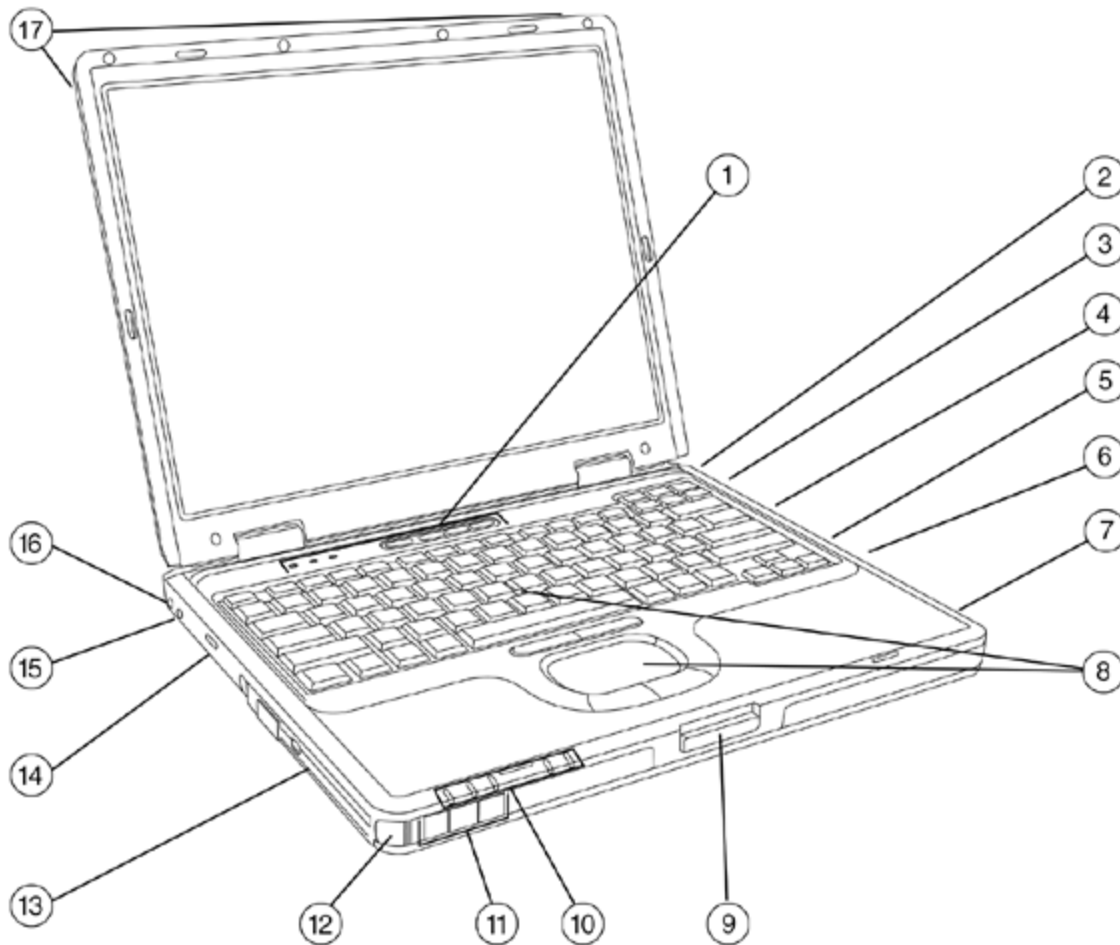
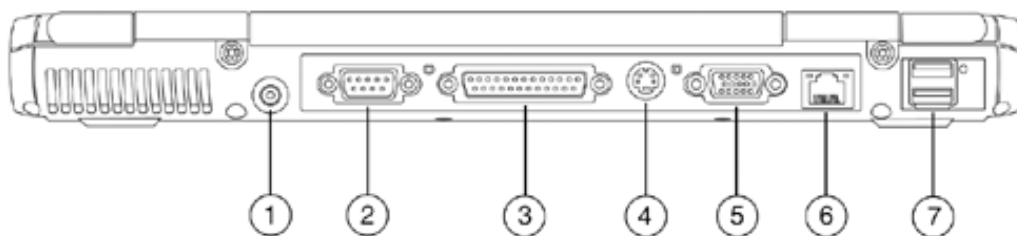


### Overview



- |   |   |
|---|---|
| 1. 3 Quick Launch Buttons (Quicklock, Wireless On/Off, Presentation), Power Button, LEDs (Num Lk, Caps Lk, Scroll Lk) | 10. Wireless, Power, Charge, Hard Drive, and MultiBay Drive Activity LEDs |
| 2. Security Lock  | 11. Volume Buttons  |
| 3. Bluetooth  | 12. Infrared Port   |
| 4. RJ-11 Port   | 13. MultiBay  |
| 5. SD Slot  | 14. Hard Drive  |
| 6. PC Card Slots  | 15. Microphone  |
| 7. Battery  | 16. Headphone   |
| 8. Dual Pointing Devices  | 17. Wireless LAN Antennas   |
| 9. Display Latch  |   |



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

### Overview

#### At A Glance

- Microsoft Windows XP Professional – and limited localizations of Windows XP Home Edition preinstalled
- Intel® Pentium® M Processors
  - Intel 855PM chipset with 400MHz processor side bus
- 256-MB DDR SDRAM upgradeable to 2048 MB
- Up to 80-GB 5400rpm, user-removable hard drives.
- Gigabit Ethernet NIC
- Dual pointing devices
- Support for 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 & 3150 certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.

#### What's New

- Microsoft Windows XP Professional – and limited localizations of Windows XP Home Edition preinstalled
- 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 optional Intel® Centrino™ technology
- 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 Li-Ion battery.
- 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

### 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 Pentium M processor 715 – 1.5GHz, 2MB L2 cache, 400MHz Front Side Bus (FSB)  
Intel Pentium M processor 1.4, 1.5, 1.6 or 1.7 GHz – 1 MB L2 cache, 400-MHz 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

One of the following

Microsoft Windows XP Professional  
Microsoft Windows XP Home (limited localizations)

#### 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- 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**

<b>Diskette Drives</b>	Optional MultiBay Diskette Drive
<b>Hard Drives</b>	30-GB 4200 rpm SMART 40-GB 5400 rpm SMART 60-GB 5400 rpm SMART 80-GB 5400 rpm SMART
<b>NOTE:</b> The HP nc6000 hard drives are customer removable and will withstand multiple insertion/removal cycles.	
<b>Optical Drives</b>	MultiBay 4X DVD+RW 24x/24x/24x/8x DVD/CD-RW 8x DVD-ROM 24X CD-ROM DVD+/-RW
<b>Flash Media Storage</b>	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**

<b>PC Card Slot</b>	Two Type II or 1 Type III
<b>External Monitor</b>	1
<b>Microphone in</b>	1
<b>DC Power</b>	1
<b>RJ-11 (modem)</b>	1
<b>RJ-45 (NIC)</b>	1
<b>Infrared Port</b>	1 (4 Mb/s support) (IrDA 4-MB compliant. IR performance will vary depending on performance of IR peripherals and application used.)
<b>Enhanced Parallel EPP/ECP</b>	1
<b>Serial Port</b>	1
<b>S-video out connector</b>	1 (Support for NTSC/PAL)
<b>USB version 2.0 Port</b>	2
<b>Docking Connector</b>	1
<b>LED Status Indicators</b>	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**

<b>Preloaded Software</b>	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)*
<b>Software on CD</b>	WinDVD Creator – DVD Authoring (for optional DVD+RW drives) Roxio Easy CD Creator (for optional DVD+RW, DVD/CDRW and CD-RW drives)
<b>Additional software available from the Web</b>	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.

<b>Standard Security Features</b>	Configuration Control Hardware Memory Change Alert Ownership Tag Setup Password Power-On Password DriveLock Enabled for PC SmartCard options Kensington Lock Slot				
<b>Optional Security Features</b>	<table border="0"> <tr> <td style="vertical-align: top;"><b>Embedded Security Chip</b></td> <td>Designed to the Trusted Computing Group (TCG) standard Microsoft Crypto API and PKCS#11 software interface support RSA Secured Partner program certification</td> </tr> <tr> <td style="vertical-align: top;"><b>Integrated Smart Card reader</b></td> <td>Compatible with ISO 7816 compliant Smart Cards PC/SC interface support</td> </tr> </table>	<b>Embedded Security Chip</b>	Designed to the Trusted Computing Group (TCG) standard Microsoft Crypto API and PKCS#11 software interface support RSA Secured Partner program certification	<b>Integrated Smart Card reader</b>	Compatible with ISO 7816 compliant Smart Cards PC/SC interface support
<b>Embedded Security Chip</b>	Designed to the Trusted Computing Group (TCG) standard Microsoft Crypto API and PKCS#11 software interface support RSA Secured Partner program certification				
<b>Integrated Smart Card reader</b>	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>.

### 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.

---

<b>Battery Re-Charge Time</b>	<b>System in OFF mode or Standby</b>	3 hours
	<b>System ON</b> (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 Zip drive or MultiBay secondary hard drive).

---

### 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.

<b>All integrated wireless LAN options</b>	Wi-Fi certified Cisco Compatible Extensions support Wired Equivalent Privacy (WEP) support up to 128-bit keys Wi-Fi Protected Access (WPA) support 802.1x standards support including EAP-TLS, Protected EAP (PEAP) and Cisco-EAP (LEAP) Dual antennas integrated in the display enclosure
<b>HP W500 802.11a/b/g</b>	Integrated support for 802.11a, b and g Up to 54mbps throughput performance Advanced Encryption Standard (AES) support
<b>HP W400 802.11b/g</b>	Integrated support for 802.11b and g Up to 54mbps throughput performance Advanced Encryption Standard (AES) support
<b>Intel PRO/Wireless 2100 802.11b wireless LAN</b>	Intel® Centrino™ mobile technology Integrated support for 802.11b Up to 11mbps throughput performance
<b>Intel PRO/Wireless 2200 802.11 b/g wireless LAN</b>	Intel® Centrino™ mobile technology Integrated support for 802.11b and g Up to 11mbps throughput performance
<b>Integrated Bluetooth</b>	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.

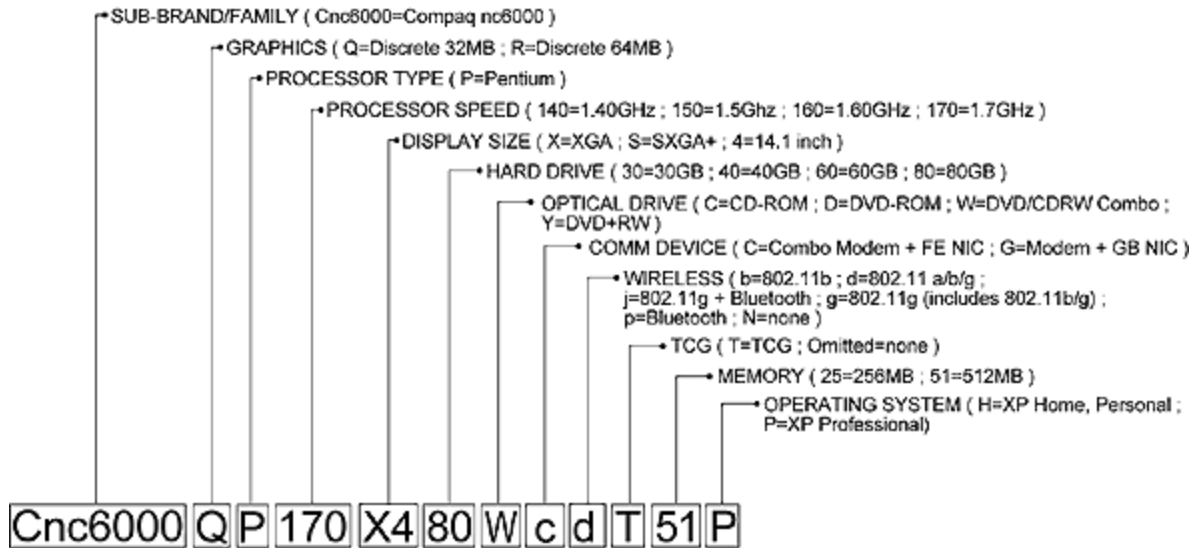
#### Service and Support

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:



Cnc6000QP160X440Wgn25P  
PD469AA#XXX

<b>Processor</b>	Intel Pentium M processor 725 – 1.6GHz, 2MB L2 cache, 400MHz Front Side Bus (FSB)
<b>Operating System</b>	Microsoft Windows XP Professional
<b>Cache</b>	1024 KB L2 cache
<b>System Memory</b>	Standard 256-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)
<b>Hard Drive</b>	40GB 5400 RPM
<b>Display</b>	14-inch color TFT XGA with (1024x768) resolution (up to 16.7M colors internal)
<b>Graphics</b>	ATI MOBILITY RADEON 9600 graphics controller Hardware support for DirectX 9.0 4X AGP
<b>Video Memory</b>	32MB
<b>Audio</b>	Premier Sound 16-bit sound, Line out/headphone and microphone jacks
<b>Optical Drive</b>	DVD
<b>Communications</b>	High speed 56K modem, Integrated 10/100/1000 NIC
<b>Integrated Wireless</b>	Not included – available as an option
<b>Embedded Security Chip</b>	No
<b>Integrated Smart Card Reader</b>	No
<b>Pointing Device</b>	Dual pointing devices (both Point stick and Touchpad)
<b>Battery</b>	6-cell Lithium-Ion battery
<b>Power</b>	External 65W adapter
<b>Warranty</b>	3/3/0



### Standard Features

Cnc6000QP160X440WGn51P  
PD467AA#XXX

<b>Processor</b>	Intel Pentium M processor 725 – 1.6GHz, 2MB L2 cache, 400MHz Front Side Bus (FSB)
<b>Operating System</b>	Microsoft Windows XP Professional
<b>Cache</b>	1024 KB L2 cache
<b>System Memory</b>	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)
<b>Hard Drive</b>	40GB 5400 RPM
<b>Display</b>	14-inch color TFT XGA with (1024x768) resolution (up to 16.7M colors internal)
<b>Graphics</b>	ATI MOBILITY RADEON 9600 graphics controller Hardware support for DirectX 9.0 4X AGP
<b>Video Memory</b>	32MB
<b>Audio</b>	Premier Sound 16-bit sound, Line out/headphone and microphone jacks
<b>Optical Drive</b>	DVD/CD-RW Combo
<b>Communications</b>	High speed 56K modem, Integrated 10/100/1000 NIC
<b>Integrated Wireless</b>	Not included – available as an option
<b>Embedded Security Chip</b>	No
<b>Integrated Smart Card Reader</b>	No
<b>Pointing Device</b>	Dual pointing devices (both Point stick and Touchpad)
<b>Battery</b>	6-cell Lithium-Ion battery
<b>Power</b>	External 65W adapter
<b>Warranty</b>	3/3/0

### Standard Features

Cnc6000QP160X440WGn51P  
DP894A#XXX

<b>Processor</b>	1.6-GHz Intel Pentium-M processor with 400-MHz Processor Side Bus
<b>Operating System</b>	Microsoft Windows XP Professional
<b>Cache</b>	1024 KB L2 cache
<b>System Memory</b>	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)
<b>Hard Drive</b>	40GB 5400 RPM
<b>Display</b>	14-inch color TFT XGA with (1024x768) resolution (up to 16.7M colors internal)
<b>Graphics</b>	ATI MOBILITY RADEON 9600 graphics controller Hardware support for DirectX 9.0 4X AGP
<b>Video Memory</b>	32MB
<b>Audio</b>	Premier Sound 16-bit sound, Line out/headphone and microphone jacks
<b>Optical Drive</b>	DVD/CD-RW Combo
<b>Communications</b>	High speed 56K modem, Integrated 10/100/1000 NIC
<b>Integrated Wireless</b>	Not included – available as an option
<b>Embedded Security Chip</b>	No
<b>Integrated Smart Card Reader</b>	No
<b>Pointing Device</b>	Dual pointing devices (both Point stick and Touchpad)
<b>Battery</b>	6-cell Lithium-Ion battery
<b>Power</b>	External 65W adapter
<b>Warranty</b>	3/3/0

### Standard Features

Cnc6000QP170X440WGjT51P  
PD468AA#XXX

<b>Processor</b>	Intel Pentium M processor 735 1.7GHz, 2MB L2 cache, 400MHz Front Side Bus (FSB)
<b>Operating System</b>	Microsoft Windows XP Professional
<b>Cache</b>	2048 KB L2 cache
<b>System Memory</b>	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)
<b>Hard Drive</b>	40GB 5400 RPM
<b>Display</b>	14-inch color TFT XGA with (1024x768) resolution (up to 16.7M colors internal)
<b>Graphics</b>	ATI MOBILITY RADEON 9600 graphics controller Hardware support for DirectX 9.0 4X AGP
<b>Video Memory</b>	32MB
<b>Audio</b>	Premier Sound 16-bit sound, Line out/headphone and microphone jacks
<b>Optical Drive</b>	DVD/CD-RW Combo
<b>Communications</b>	High speed 56K modem, Integrated 10/100/1000 NIC
<b>Integrated Wireless</b>	Intel Pro/Wireless 2200BG 802.11 b/g WLAN Bluetooth
<b>Embedded Security Chip</b>	Yes
<b>Integrated Smart Card Reader</b>	No
<b>Pointing Device</b>	Dual pointing devices (both Point stick and Touchpad)
<b>Battery</b>	6-cell Lithium-Ion battery
<b>Power</b>	External 65W adapter
<b>Warranty</b>	3/3/0

### Options

<b>Memory</b>	1024-MB 333-MHz DDR Memory Upgrade	DC890B
	512-MB 333-MHz DDR Memory Upgrade	DC390B
	256-MB 333-MHz DDR Memory Upgrade	DC389B
<b>MultiBay Hard Drives</b>	80-GB 5400 rpm SMART Hard Drive	DC920A
	60-GB 5400 rpm SMART Hard Drive	DC894A
	40-GB 4200 rpm SMART Hard Drive	DC365A
	40-GB USB External HDD	DQ549A
<b>MultiBay Storage Devices</b>	24X Combo DVD/CD-RW	DC364A
	8X DVD Drive	DC352A
	DVD+RW	DG189A
	8X DVD±RW Drive	DG189B
	Diskette Drive	DC362A
<b>Other Storage Devices</b>	USB Diskette Drive	DC361B
	HP USB Digital Drive	DL702B
	HP USB Digital Drive with 128MB SD Memory	DL702A
<b>Expansion Bases</b>	Basic Port Replicator	DC367B#XXX
	Advanced Port Replicator	DC366B#XXX
	External MultiBay	DC373A#XXX
	Monitor Stand	DC377A
<b>Power</b>	8-Cell Primary High Capacity Lithium-ion Primary Battery	DG105A
	MultiBay Battery	DC889A
<b>Communication</b>	W500 WLAN 802.11a/b/g kit	DR469A#xxx
	W500 WLAN 802.11a/b/g kit for GR/SP/BLG/SW	PA426A#xxx
	HP Integrated Module with Bluetooth Wireless	DQ883A
<b>Common Power Solutions</b>	External Single Battery Charger	DF933A#XXX
	AC Adapter 65W	DC359A#XXX
	90W Aircraft Power Cables	DC899A
	AC Line Cord (10 ft/3.1 m)	DC851B
<b>Input Devices</b>	HP 2 Button Mouse (Carbon)	DC369A
	HP Travel Mouse	F2100A
	External 10-Key Numeric Keypad (carbon)	DC854A
<b>Security</b>	Security Cable Lock	DC368A
	HP Smart Card PC Card Reader	DC350B

### Options

#### Carrying Cases

HP Entry Value Case	DL617A
Top Load Leather	DC917A
Nylon Value	DE642A
Executive Nylon	DC916A
HP Backpack	DG102A

### Memory

#### Standard Memory Plus Optional Memory

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

- 0-MB of memory on system board
- 2 Slots total
- 1-256MB 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
<b>Primary Hard Drives</b>		
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

<b>System Unit</b>	<b>Dimensions (HxWxD)</b>	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)
	<b>Weight</b>	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)
<b>NOTE:</b> Height varies depending upon where on the notebook the measurement is made. Weight varies by configuration and components.			
<b>Stand-Alone Power Requirements</b>	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
<b>Temperature</b>	Operating		50° to 95° F (10° to 35° C) (not writing optical) 41° to 95° F (5° to 35° C) (writing optical)
	Non-operating		-4° to 140° F (-20° to 60° C)
<b>Relative Humidity</b>	Operating		10% to 90%
	Non-operating		5% to 90%
<b>Shock</b>	Operating		50g, 2ms, half-sine
	Non-operating		175g, 2ms, half-sine
<b>Random Vibration</b>	Operating		0.75 grms
	Non-operating		1.50 grms
<b>Maximum Altitude (unpressurized)</b>	Operating		-50 to 10, 000 ft
	Non-operating		-50 to 40, 000 ft
<b>Industry Standard Certifications</b>	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



### Technical Specifications

<b>External AC Adapter</b>	<b>Weight</b>	0.65 lb (0.29 kg) (adapter) 0.29 lb (0.13 kg) (power cord)							
	<b>Power Supply (Input)</b>	<table> <tr> <td>Operating Voltage</td> <td>90 to 264 VAC RMS</td> </tr> <tr> <td>Operating Current</td> <td>1.6 A RMS</td> </tr> <tr> <td>Operating Frequency Range</td> <td>47 to 63 Hz AC</td> </tr> <tr> <td>Maximum Transient</td> <td>4/50 kV</td> </tr> </table>	Operating Voltage	90 to 264 VAC RMS	Operating Current	1.6 A RMS	Operating Frequency Range	47 to 63 Hz AC	Maximum Transient
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								

<b>Primary Lithium-Ion Battery Pack</b>	<b>Dimensions (H x W x L)</b>	0.75 x 3.0 x 5.8 in (1.9 x 7.6 x 14.7 cm)	
	<b>Weight</b>	0.75 lb (0.34 kg)	
	<b>Cells/Type</b>	6-cell Lithium-Ion	
	<b>Energy</b>	Voltage	11.1 V
		Amp-hour capacity	4.4 Ah
		Watt-hour capacity	48Wh
	<b>Temperature</b>	Operating	41° to 113° F (5° to 45° C)
		Non-operating	32° to 140° F (-20° to 60° C)
	<b>Battery Re-Charge Time</b>	System in OFF mode or Standby	2-3 hours
		System ON	3-5 hours
(depending on system power consumption)			

<b>Optional High Capacity Lithium-Ion Battery Pack</b>	<b>Dimensions (H x W x L)</b>	0.75 x 3.0 x 5.8 in (1.9 x 7.6 x 14.7 cm)	
	<b>Weight (includes caddy)</b>	0.94 lb (0.43 kg)	
	<b>Cells/Type</b>	8-cell Lithium-Ion	
	<b>Energy</b>	Voltage	14.4 V
		Amp-hour capacity	4.4Ah
		Watt-hour capacity	63Wh
	<b>Temperature</b>	Operating	41° to 113° F (5° to 45° C)
		Non-operating	32° to 140° F (-20° to 60° C)
	<b>Battery Re-Charge Time</b>	System in OFF mode or Standby	2-3 hours
		System ON	3-5 hours
(depending on system power consumption)			

<b>Optional MultiBay Battery Pack</b>	<b>Dimensions (H x W x L)</b>	0.5 x 5.2 x 5.45 in (1.3 x 13.2 x 13.9 cm)	
	<b>Weight (includes caddy)</b>	0.86 lb (0.39 kg)	
	<b>Cells/Type</b>	8-cell Lithium-Ion	
	<b>Energy</b>	Voltage	14.8 V
		Amp-hour capacity	3.6 Ah
		Watt-hour capacity	53Wh
	<b>Temperature</b>	Operating	41° to 113° F (5° to 45° C)
		Non-operating	32° to 140° F (-20° to 60° C)
	<b>Battery Re-Charge Time</b>	System in OFF mode or Standby	2-3 hours
		System ON (depending on system power consumption)	3-5 hours

### Technical Specifications

<b>14.1-Inch Color TFT XGA Display</b>	<b>Dimensions (H x W x L)</b>	11.2 x 8.4 in (28.6 x 21.4 cm)	
	<b>Diagonal Size</b>	14.1 in (35.7 cm)	
	<b>Mounting</b>	Internal	
	<b>Number of Colors</b>	16 M	
	<b>Contrast Ratio</b>	250:1 typical	
	<b>Refresh Rate</b>	60 Hz	
	<b>Brightness</b>	160 nit typical	
		<b>NOTE:</b> Brightness is listed as an average measurement and may vary among panels.	
	<b>Pixel Resolution</b>	Pitch	0.279 x 0.279 mm
		Format	1024 x 768
		Configuration	RGB Stripe
	<b>Backlight</b>	CCFT	
	<b>Character Display</b>	80 x 25	
<b>Total Power Consumption</b>	4 W		
<b>Viewing Angle</b>	±45° Horizontal, +15°/-35° Vertical (typical)		

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

### Technical Specifications

#### Hard Drives

<b>80-GB 5400 rpm</b>	<b>MultiBay Drive Adapter</b>	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)
	<b>Drive Weight</b>	0.22 lb (102 g)	
	<b>Capacity</b>	80 GB	
	<b>Height</b>	0.74 in (9.5 mm)	
	<b>Width</b>	2.75 in (70 mm)	
	<b>Interface</b>	ATA-5, ATA security	
	<b>Transfer Rate</b>	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	<b>Seek Time</b>	Single Track	2.5 ms
	(typical reads, including settling)	Average	12 ms
		Maximum	23 ms
	<b>Rotational Speed</b>	5400 rpm	
	<b>Logical Blocks</b>	156,301,488	
<b>Operating Temperature</b>	41° to 131° F (5° to 55° C)		

<b>60-GB 5400 rpm</b>	<b>MultiBay Drive Adapter</b>	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)
	<b>Drive Weight</b>	0.22 lb (102 g)	
	<b>Capacity</b>	60 GB	
	<b>Height</b>	0.74 in (9.5 mm)	
	<b>Width</b>	2.75 in (70 mm)	
	<b>Interface</b>	ATA-5	
	<b>Transfer Rate</b>	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	<b>Seek Time</b>	Single Track	3 ms
	(typical reads, including settling)	Average	13 ms
		Maximum	24 ms
	<b>Rotational Speed</b>	5400 rpm	
	<b>Logical Blocks</b>	117,210,240	
<b>Operating Temperature</b>	41° to 131° F (5° to 55° C)		
<b>Features</b>	Security	ATA Security	

### Technical Specifications

<b>40-GB 5400 rpm</b>	<b>MultiBay Drive Adapter</b>	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)
	<b>Drive Weight</b>	0.21 lb (99 g)	
	<b>Capacity</b>	40 GB	
	<b>Height</b>	0.74 in (9.5 mm)	
	<b>Width</b>	2.75 in (70 mm)	
	<b>Interface</b>	ATA-5	
	<b>Transfer Rate</b>	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	<b>Seek Time</b> (typical reads, including settling)	Single Track	3 ms
		Average	13 ms
		Maximum	24 ms
	<b>Rotational Speed</b>	5400 rpm	
	<b>Logical Blocks</b>	78,140,160	
<b>Operating Temperature</b>	41° to 131° F (5° to 55° C)		
<b>Features</b>	Security	ATA Security	

<b>30-GB 4200 rpm</b>	<b>MultiBay Drive Adapter</b>	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)
	<b>Drive Weight</b>	0.15 lb (99 g)	
	<b>Capacity</b>	30 GB	
	<b>Height</b>	0.74 in (9.5 mm)	
	<b>Width</b>	2.75 in (70 mm)	
	<b>Interface</b>	ATA-5	
	<b>Transfer Rate</b>	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	<b>Seek Time</b> (typical reads, including settling)	Single Track	2.5 ms
		Average	12 ms
		Maximum	23 ms
	<b>Rotational Speed</b>	4200 rpm	
	<b>Logical Blocks</b>	58,605,120	
<b>Operating Temperature</b>	41° to 131° F (5° to 55° C)		

### Technical Specifications

#### Removable Storage Drives - MultiBay

---

<b>CD-ROM Drive</b>	<b>Dimensions</b>	0.5 x 5.22 x 5.46 in (1.35 x 13.28 x 13.88 cm)		
	<b>Weight</b>	0.496 lb (225 g)		
	<b>Access Times</b>	Random	<110 ms CD	
		Full Stroke	<220 ms CD	
	<b>Max data transfer rate</b>	24X CD-ROM	3,600 KB/s	
	<b>Transfer Mode</b>	Multiword DMA Mode 2		
	<b>Interface</b>	EIDE		
	<b>Supported Media (read)</b>	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW		
	<b>Supported Media (write)</b>	None		
	<b>Media Capacity</b>	650MB		
	<b>Transport</b>	Tray Loading		

---

<b>DVD-ROM Drive</b>	<b>Dimensions</b>	0.5 x 5.22 x 5.46 in (1.35 x 13.28 x 13.88 cm)		
	<b>Weight</b>	0.518 lb (235 g)		
	<b>Access Times</b>	Random	<110 ms CD	
			<125 ms DVD	
		Full Stroke	<175 ms CD	
		<225 ms DVD		
	<b>Max data transfer rate</b>	24X-CD-R	3,600 KB/s	
		10X-CD-RW	1,500 KB/s	
	<b>Transfer Mode</b>	Multiword DMA Mode 2		
	<b>Interface</b>	EIDE		
	<b>Supported Media (read)</b>	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM		
<b>Supported Media (write)</b>	None			
<b>Media Capacity</b>	4.7 GB			
<b>Transport</b>	Tray Loading			

---

### Technical Specifications

<b>DVD+RW Drive</b>	<b>Dimensions</b>	0.5 x 5.22 x 5.46 in (1.35 x 13.28 x 13.88 cm)		
	<b>Weight</b>	0.551 lb (250 g)		
	<b>Access Times</b>	Random	<175 ms CD	<230 ms DVD
		Full Stroke	<285 ms CD	<335 ms DVD
		<b>Max data transfer rate</b>		
		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	
	<b>Transfer Mode</b>	Multiword DMA Mode 2		
	<b>Interface</b>	EIDE		
	<b>Supported Media (read)</b>	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW		
	<b>Supported Media (write)</b>	CD-R, CD-RW, DVD+R, DVD+RW		
<b>Media Capacity</b>	4.7 GB			
<b>Transport</b>	Tray Loading			

<b>CD/RW Drive</b>	<b>Dimensions</b>	0.5 x 5.22 x 5.46 in (1.35 x 13.28 x 13.88 cm)		
	<b>Weight</b>	0.518 lb (235 g)		
	<b>Access Times</b>	Random	<130 ms CD	
		Full Stroke	<200 ms CD	
	<b>Max data transfer rate</b>	24X CD-ROM	3,600 KB/s	
		24X CD-R	3,600 KB/s	
		10X CD-RW	1,500 KB/s	
	<b>Transfer Mode</b>	Multiword DMA Mode 2		
	<b>Interface</b>	EIDE		
	<b>Supported Media (read)</b>	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW		
	<b>Supported Media (write)</b>	CD-R, CD-RW, DVD+R, DVD+RW		
	<b>Media Capacity</b>	4.7 GB		
	<b>Transport</b>	Tray Loading		

### Technical Specifications

<b>DVD/CD-RW</b>	<b>Dimensions</b>	0.5 x 5.46 x 5.23 in (1.35 x 13.88 x 13.28 cm)		
	<b>Weight</b>	0.551 lb (250 g)		
	<b>Access Times</b>	<b>Random</b>	<110 ms CD	
			<130 ms DVD	
		<b>Full Stroke</b>	<210 ms CD	
			<225 ms DVD	
	<b>Max data transfer rate</b>	24X CD-ROM	3600 KB/s	
		8X DVD	10,800 KB/s	
		24X CD-R	3600 KB/s	
		24X CD-RW	3600 KB/s	
	<b>Transfer Mode</b>	Multiword DMA Mode 2		
	<b>Interface</b>	EIDE		
	<b>Supported Media (read)</b>	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM		
	<b>Supported Media (write)</b>	CD-R, CD-RW		
<b>Max Media Capacity (read)</b>	4.7GB			
<b>Max Media Capacity (write)</b>	700MB			
<b>Transport</b>	Tray loading			

<b>DVD+/-RW Drive</b>	<b>Dimensions</b>	0.5 x 5.46 x 5.23 in (1.35 x 13.88 x 13.28 cm)		
	<b>Weight</b>	0.551 lb (250 g)		
	<b>Access Times</b>	<b>Random</b>	<175 ms CD	
			<230 ms DVD	
		<b>Full Stroke</b>	<285 ms CD	
			<335 ms DVD	
	<b>Max data transfer rate</b>	24x CD-ROM	3,600 KB/s	
		8x DVD	10,800 KB/s	
		16x CD-R	2,400 KB/s	
		10x CD-RW	1,500 KB/s	
		4x DVD+R	5,400 KB/s	
		4x DVD+RW	5,400 KB/s	
		4x DVD-R	5,400 KB/s	
		2x DVD+RW	2,700 KB/s	
<b>Transfer Mode</b>	Multiword DMA Mode 2			
<b>Interface</b>	EIDE			
<b>Supported Media (read)</b>	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW			
<b>Supported Media (write)</b>	CD-R, CD-RW, DVD+R, DVD+RW, DVD-R, DVD-RW			
<b>Max Media Capacity (read)</b>	4.7GB			
<b>Max Media Capacity (write)</b>	4.7GB			
<b>Transport</b>	Tray Loading			

### Technical Specifications

<b>MultiBay Diskette Drive</b>	<b>MultiBay Drive</b>	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)
	<b>Diskette Size</b>	3.5 in	
	<b>Height</b>	12.7 mm	
	<b>Bytes per Sector</b>	512	
	<b>Sectors per track</b>	High density	18 (1.44 MB)/15 (1.2 MB)
		Low density	9
	<b>Tracks per side</b>	High density	80 (1.44 MB)/80 (1.2 MB)
		Low density	80
	<b>Read/Write heads</b>	2	
	<b>Access Times</b>	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

---

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

---

<b>Audio Output Quality</b>	<b>Frequency Response</b>	20 Hz - 20 kHz
	<b>Signal to Noise Ratio</b>	>94dB
	<b>Total Harmonic Distortion</b>	0.01%
	<b>Noise Floor</b>	-120dB
	<b>Play/Record Sampling Rate(s)</b>	7 kHz - 48 kHz
	<b>AD/DA Resolution</b>	16 bit

---

<b>Two Stereo Speakers</b>	<b>Amplifier Power</b>	2-Watts RMS
	<b>Speaker Impedance</b>	4-Ohms

---

### Technical Specifications

#### Communications

---

<b>Integrated 10/100/1000 NIC</b>	<b>Ethernet Features</b>	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)
	<b>Power Management</b>	ACPI 1.1a compliant -- multiple power modes Situation-sensitive features reduce power consumption NIC Battery Saving Mode (enabled by default)
	<b>Performance Features</b>	TCP/IP/UDP Checksum Offload (configurable) Microsoft Large Send Offload (configurable) TCP Segmentation Offload CPU Task Offload Adaptive Interrupts
	<b>Manageability</b>	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
	<b>NIC Device Driver Name</b>	Broadcom NetXtreme Gigabit Ethernet
	<b>Drivers Available</b>	Microsoft Windows XP Microsoft Windows 2000 Linux kernel versions 2.2 and 2.4

---

### Technical Specifications

<b>Agere Systems AC'97 Modem</b>	<b>Form Factor</b>	MDC Daughtercard
	<b>Power Management Support</b>	APM Revision 1.2, ACPI
	<b>Approvals/Certifications</b>	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
	<b>Data Mode Capabilities</b>	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) <b>Optional symbol rates:</b> 2800, 3429 Asymmetric Symbol rates <b>Synchronous primary channel data signaling rates:</b> 3600, 31200 Automatic rate re-negotiation V.32bis V.32 V.23 V.22bis V.22 V.21 Bell 212A Bell 103J
	<b>Fax Mode Capabilities</b>	TIA/EIA-578-B (Class 1) T.30, T.4 (Group 3) V.17 V.29 V.27ter V.21 Channel 2
	<b>Command Set</b>	V.250 (Partial) TIA-602 Identification: +GMI, +GMM, +GMR Port control: +IPR, +ICF, +IFC, +ILRR Modulation: +MS, +MR, +MA Error control: +ES, +ER, +EB, +ESR, +ETBM Data compression: +DS, +DR V.251



### Technical Specifications

#### 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)

HP W500 802.11a/b/g WLAN	<b>Wireless LAN Standards</b>	IEEE 802 Part 11a (802.11a) IEEE 802. Part 11b (802.11b) IEEE 802. Part 11g (802.11g)	
	<b>Interoperability</b>	Wi-Fi certified (details available at <a href="http://www.hp.com/go/notebooks/wlan">http://www.hp.com/go/notebooks/wlan</a> )	
	<b>Frequency Band</b>	2.4 and 5 GHz	
	<b>Data Rates</b>	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	
	<b>Modulation</b>	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM	
	<b>Security</b>	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 <a href="http://www.hp.com/go/notebooks/wlan">http://www.hp.com/go/notebooks/wlan</a> . Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program).	
	<b>Sub-channels</b>	Multinational support with frequency bands and channels compliant to local regulations.	
	<b>Media Access Protocol</b>	CSMA/CA (Collision Avoidance) with ACK	
	<b>Network Architecture Models</b>	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)	
	<b>Roaming</b>	IEEE 802.11 compliant roaming between 802.11a and 802.11b/g access points	
	<b>Output Power</b>	802.11b: 17 dBm (typical) 802.11g: 15 dBm (typical)	
	<b>Power Consumption</b>	Transmit: 2.0 W (max) Receive: 1.5 W (max) Sleep mode: 20 mW (max)	
	<b>Power Management</b>	ACPI compliant power management 802.11 Compliant Power Saving Mode Power Saving Mode selectable through the configuration utility	
	<b>Receiver Sensitivity*</b>	54 Mbps: -70 dBm to 1 Mbps: -90 dbm	
	<b>Antenna type</b>	High efficiency dual band antenna with polarization diversity, mounted in the display enclosure	
	<b>Range</b>	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
	<b>Form Factor</b>	MiniPCI Type IIIA	
	<b>Weight</b>	0.036 lb (16.5 g)	
	<b>Dimensions</b>	0.19 x 2.00 x 2.35 in (4.8 x 50.95 x 59.75 mm)	
	<b>Operating Voltage</b>	3.3v	
<b>Temperature</b>	<b>Operating</b>	32° to 122° F (0° to 50° C)	
	<b>Non-operating</b>	-14° to 158° F (-10° to 70° C)	
<b>Humidity</b>	<b>Operating</b>	10% to 90%	
	<b>Non-operating</b>	5% to 95%	
<b>Altitude</b>	<b>Operating</b>	0 to 15,000 ft (4,572 m)	
	<b>Non-operating</b>	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)

---







### Technical Specifications

<b>Configuration Utility</b>	Choice of Configuration Utility: <ul style="list-style-type: none"> <li>● Intel ProSet for Microsoft Windows 2000 or XP (required for Cisco Compatible Extensions support)</li> <li>● Microsoft Windows XP Wireless Zero Configuration Utility</li> </ul> <p><b>NOTE:</b> May also be compatible with certain third party software suppliers.</p>
<b>LED Activity</b>	LED Off – Radio OFF; Solid LED – Radio ON
<b>Agency Approvals</b>	Details at <a href="http://www.hp.com/go/notebooks/wlan">http://www.hp.com/go/notebooks/wlan</a>
	*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

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

<b>Usage Models</b>	Service Discovery (determine what Bluetooth devices are within range and support authorization) <b>Synchronization</b> PDAs to PCs Portable to Desktop <b>File Transfer</b> 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 <b>Access Point</b> 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 <b>Human Interface Devices</b> Wirelessly interface to notebook with mouse, keyboard, etc <b>Printing</b> Wirelessly print to Bluetooth enabled printers
<b>Transmit Power</b>	-6dBm to 4 dBm (Bluetooth Class II)
<b>Receiver Sensitivity</b>	Better than -80 dBm at 0.1 % raw bit error rate
<b>Link Topology</b>	Point to Point, Multipoint Pico Nets up to 7 slaves
<b>Security</b>	Full support of Bluetooth Security Provisions
<b>Network Architecture Models</b>	Ad-hoc (Peer to Peer) Infrastructure (Access Points Required)
<b>Power Requirement</b>	<b>Peak</b> < 270 mW
<b>Power Management</b>	Microsoft Windows ACPI, and USB Bus Support Wireless EAB On/Off Software On/Off control Self configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff
<b>Protocols Supported</b>	TCP/IP IPX/SPX UDP
<b>LED Activity</b>	Solid Blue LED – On LED Off – Power Off
<b>Certifications</b>	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

Copyright ©2005 Hewlett-Packard Development Company, L.P.

All rights reserved. Microsoft, Windows and Windows NT are registered trademarks or trademarks of Microsoft Corporation in the U.S. and/or other countries. Pentium, the Intel Inside Logo, and SpeedStep are registered trademarks or trademarks of Intel Corporation in the U.S. and/or other countries. Bluetooth is a trademark of Bluetooth SIG, Inc., in the U.S. and other countries. BatteryMark is a trademark of Ziff Davis Publishing Holdings Inc., and affiliate of eTesting Labs Inc., in the U.S. and other countries.

\* Intel's numbering is not a measurement of higher performance. All other product names mentioned herein may be trademarks of their respective companies.

The information contained herein is subject to change without notice and is provided "as is" without warranty of any kind. The warranties for HP products are set forth in the express limited warranty statements accompanying such products. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.