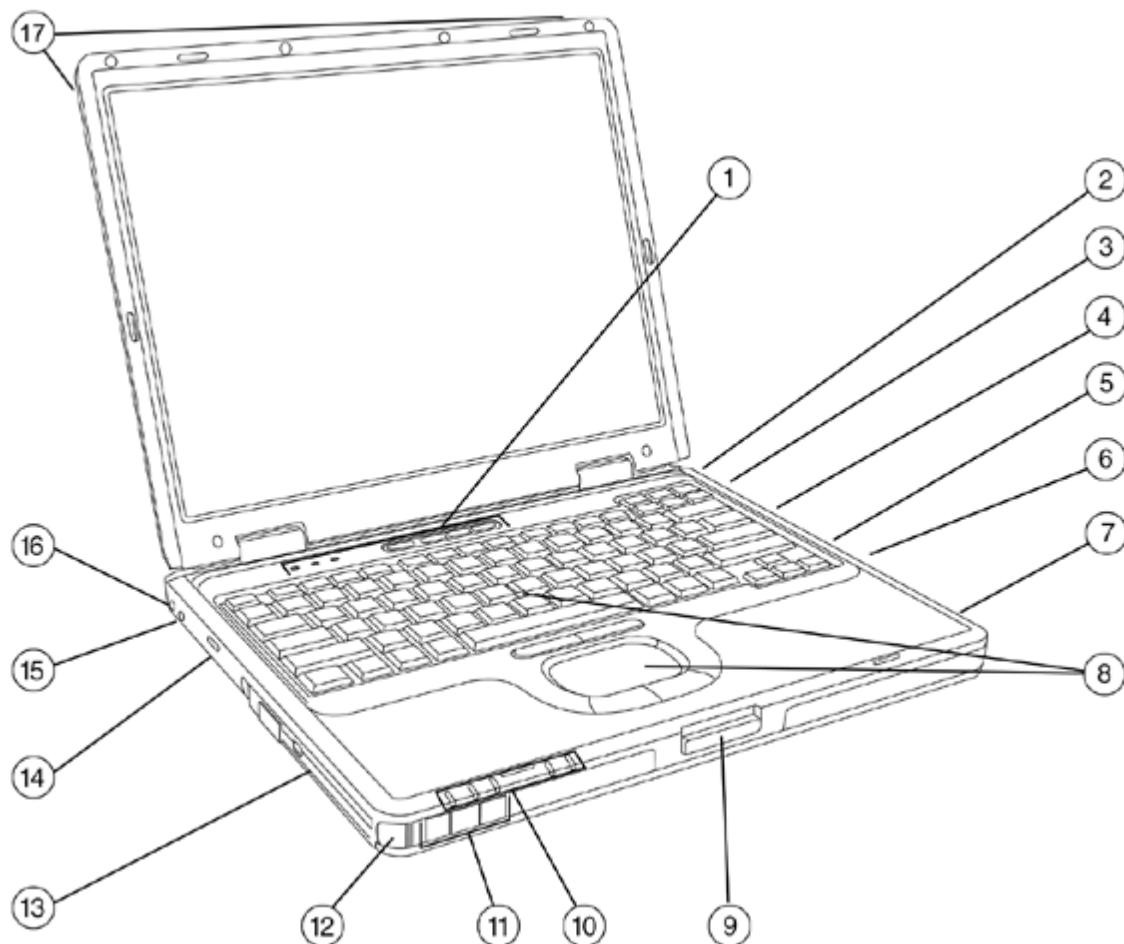
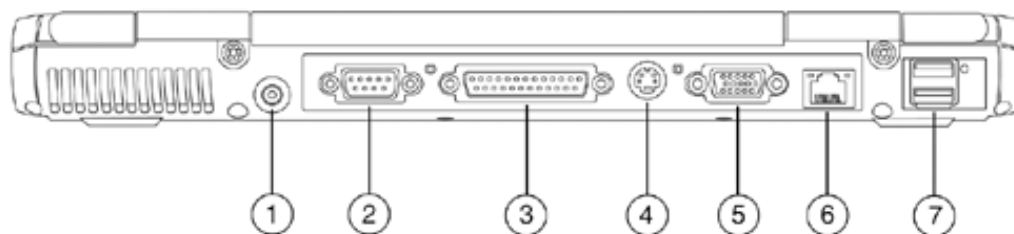


Overview



- | | |
|---|---|
| 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

Overview

- | | |
|-------------|----------------|
| 2. Serial | 6. RJ-45 |
| 3. Parallel | 7. USB 2.0 (2) |
| 4. S-Video | |

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 – 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 <i>One of the following</i>	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.

Standard Features

Keyboard The 101/102-key compatible keyboard features an industry standard, full-width layout with desktop keyboard features, such as the isolated inverted-T cursor control keys, 3x2 editing keys, both left and right control and alt keys, and 11 function keys. The US layout has 84 keys and the International layout 85 keys. Other features include an integrated numeric keypad, hotkeys for instant access to power conservation, 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)

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 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/10x/24x/8x DVD/CD-RW 8x DVD-ROM 24X CD-ROM
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Flash Media Storage	One integrated Secure Digital (SD) slot
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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

Standard Features

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

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
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Audio	Premier Sound 16-bit sound 2 Stereo Speakers Headphone out and microphone jacks
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Software	Preloaded Software	Adobe Acrobat Reader HP Quick Launch Button Software HP Mobile Printing Driver HP Help and Support (XP Only) Synaptics Touchpad Driver Intervideo WinDVD – DVD Player (for optional DVD+RW, DVD/CDRW and DVD drives)*
	Software on CD	Intervideo 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.

Standard Features

System Recovery for Microsoft Windows XP systems only 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

- HP ProtectTools 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
EMV level 1 certification
PC/SC interface support

For more information on HP security solutions refer to <http://www.hp.com/go/security>.

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

Standard Features

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 Zip drive or MultiBay secondary hard drive).
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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, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, and 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 data rate Advanced Encryption Standard (AES) support
HP W400 802.11b/g	Integrated support for 802.11b and g Up to 54mbps data rate 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.

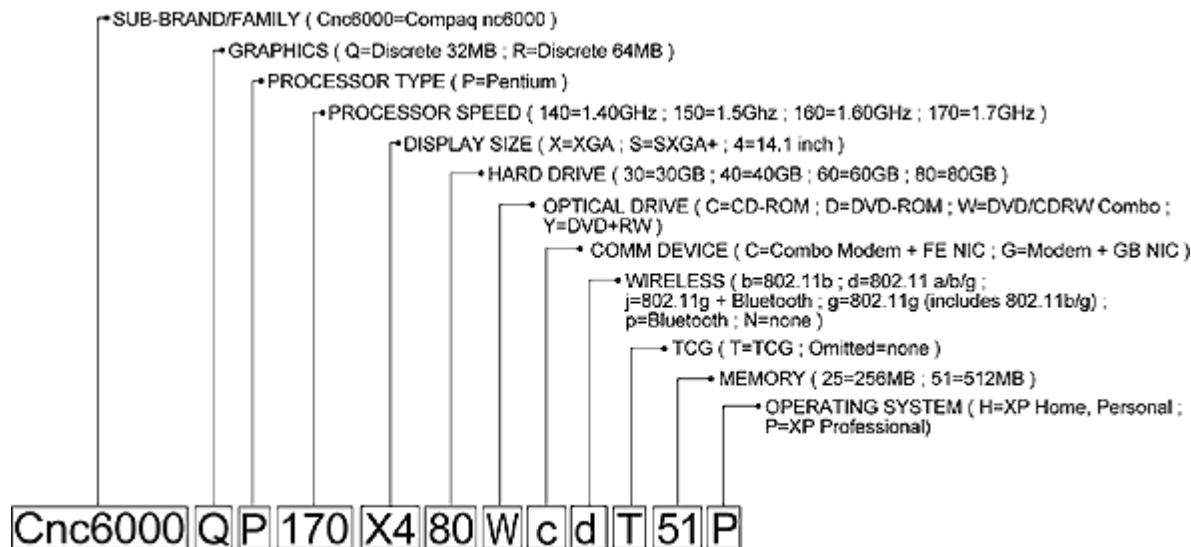
Service and Support

HP Services includes a three-year, Worldwide Limited Warranty.

NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details. <http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp>.

The Etymology of a Model name:

Standard Features



Cnc6000QP160X440W Gn51P
DP894A#XXX

Processor	1.6-GHz Intel Pentium-M processor with 400-MHz Processor Side Bus
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
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

Cnc6000QP170X440WGjT51P
PD468AA#XXX

Processor	Intel Pentium M processor 735 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
Wireless	Intel Pro/Wireless 2200BG 802.11b/g WLAN Bluetooth
Security	TPM embedded security
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

		Compaq PN	HP PN
Memory	1024-MB 333-MHz DDR Memory Upgrade	NA	DC890B
	512-MB 333-MHz DDR Memory Upgrade	NA	DC390B
	256-MB 333-MHz DDR Memory Upgrade	NA	DC389B
MultiBay Hard Drives	60-GB 5400 rpm SMART Hard Drive	278420-B25	DC894A
	40-GB 4200 rpm SMART Hard Drive	263472-B25	DC365A
	30-GB 4200 rpm SMART Hard Drive	212791-B25	DE882A
MultiBay Storage Devices	24X Combo DVD/CD-RW	269089-B25	DC364A
	24X CD-RW	NA	DC921A
	8X DVD Drive	138230-B25	DC352A
	24X Max CD-ROM	298452-B25	DC351A
	Diskette Drive	226935-B25	DC362A
Other Storage Devices	IBM 1-GB Microdrive (PC card Device)	217390-B25	DC379A
	USB Diskette Drive	230330-B25	DC361A
Expansion Bases	Port Replicator	307648-xx2	DC367A
	Advanced Port Replicator	307651-xx2	DC366A
	External MultiBay	217388-001/B31	DC373A#xxx
	Monitor Stand	274407-B25	DC377A
Power	8-Cell Primary High Capacity Lithium-ion Primary Battery	265651-B25	DG105A
	MultiBay Battery		DC889A
Common Power Solutions	External Battery Charger	265603-xxx	DC887A
	AC Adapter 65W	265602-xxx	DC359A
	Auto Power Adapter/Charger	265649-B25	DC360A
	Aircraft Power Adapter	291370-B25	DC899A
	AC Line Cord (10 ft/3.1 m)	217932-xx2	DC851A
Input Devices	External Enhanced III Keyboard (carbon) USB/PS2 Keyboard	118003-009	DC852A
	HP 2 Button Mouse (carbon) USB/PS2 Keyboard 2-button scroll	103180-B23	DC369A
	External 10-Key Numeric Keypad (carbon)	294317-B21	DC854A

Options

Security	Biometric PC Card	146805-B25	DC859A
	Security Cable Lock	294316-B21	DC368A
	HP Smart Card PC Card Reader	135646-B25	DC350A

Carrying Cases	HP Ultra light Case (nylon)	167336-B21	DC853A
	Top Load Leather	NA	DC917A
	Executive Nylon	NA	DC916A
	HP Backpack	NA	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

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 optical) 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		

Technical Specifications

SABS	Yes
UKRSERTCOMPUTER	Yes

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

Primary Lithium-Ion Battery Pack	Dimensions (H x W x L)	0.75 x 3.0 x 5.8 in (1.9 x 7.6 x 14.7 cm)		
	Weight	0.75 lb (0.34 kg)		
	Cells/Type	6-cell Lithium-Ion		
	Energy	Voltage	11.1 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	

Technical Specifications

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		

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	170 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)			

Technical Specifications

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)			

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)			

Technical Specifications

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	

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	

Technical Specifications

30-GB 4200 rpm MultiBay Drive Adapter	Dimensions (H x W x D)	0.5 x 5.21 x 4.97 in (1.27 x 13.25 x 12.61 cm)	
	Weight	0.15 lb (70 g)	
	Drive Weight	0.15 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	Single Track	2.5 ms
	(typical reads, including settling)	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)	

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	

Technical Specifications

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			

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			

Technical Specifications

CD/RW 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	<130 ms CD	
		Full Stroke	<200 ms CD	
	Max data transfer rate	24X CD-ROM	3,600 KB/s	
		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		
	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	
	Max data transfer rate	Full Stroke	<210 ms CD	
			<225 ms DVD	
		24X CD-ROM	3600 KB/s	
	Transfer Mode	8X DVD	10,800 KB/s	
		24X CD-R	3600 KB/s	
		10X CD-RW	1500 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

MultiBay 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

Communications

Technical Specifications

Integrated 10/100/1000 Ethernet Features NIC	<p>10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14)</p> <p>100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30)</p> <p>1000 Mbit/s operation (1000BASE-T; IEEE 802.3z and 802.3ab; IEEE 802.3 clauses 34-42)</p> <p>Auto-Negotiation (Automatic Speed Selection)</p> <p>Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s</p> <p>IEEE 802.1p QoS (Quality of Service) Support</p> <p>IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)</p>
Power Management	<p>ACPI 1.1a compliant -- multiple power modes</p> <p>Situation-sensitive features reduce power consumption</p> <p>NIC Battery Saving Mode (enabled by default)</p>
Performance Features	<p>TCP/IP/UDP Checksum Offload (configurable)</p> <p>Microsoft Large Send Offload (configurable)</p> <p>TCP Segmentation Offload</p> <p>CPU Task Offload</p> <p>Adaptive Interrupts</p>
Manageability	<p>Wake-on-LAN from all Power-Managed States (configurable; Magic Packet and Microsoft Wake-Up Frame)</p> <p>PXE 2.0 Remote Boot</p> <p>Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30))</p> <p>Comprehensive diagnostic and configuration software suite</p> <p>Cable Analyzer</p>
NIC Device Driver Name	Broadcom NetXtreme Gigabit Ethernet
Drivers Available	<p>Microsoft Windows XP</p> <p>Microsoft Windows 2000</p> <p>Linux kernel versions 2.2 and 2.4</p>

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

Technical Specifications

Data Mode Capabilities	<p>High speed 56K modem (a-law, mu-law)</p> <p>V.8bis</p> <p>V.80</p> <p>V44, V.42bis, MNP5 (Compression)</p> <p>V.42 (LAPM, MNP2-4) (Error Correction)</p> <p>V.34 (file date: 10/96)</p> <p>Optional symbol rates:</p> <p>2800, 3429</p> <p>Asymmetric Symbol rates</p> <p>Synchronous primary channel data signaling rates:</p> <p>3600, 31200</p> <p>Automatic rate re-negotiation</p> <p>V.32bis</p> <p>V.32</p> <p>V.23</p> <p>V.22bis</p> <p>V.22</p> <p>V.21</p> <p>Bell 212A</p> <p>Bell 103J</p>
Fax Mode Capabilities	<p>TIA/EIA-578-B (Class 1)</p> <p>T.30, T.4 (Group 3)</p> <p>V.17</p> <p>V.29</p> <p>V.27ter</p> <p>V.21 Channel 2</p>
Command Set	<p>V.250 (Partial)</p> <p>TIA-602</p> <p>Identification: +GMI, +GMM, +GMR</p> <p>Port control: +IPR, +ICF, +IFC, +ILRR</p> <p>Modulation: +MS, +MR, +MA</p> <p>Error control: +ES, +ER, +EB, +ESR, +ETBM</p> <p>Data compression: +DS, +DR</p> <p>V.251</p>

HP W400 802.11b/g WLAN	Wireless LAN Standards	IEEE 802. Part 11b (802.11b) IEEE 802. Part 11g (802.11g)
	Interoperability	Wi-Fi certified (details available at http://www.hp.com/go/notebooks/wlan)
	Frequency Band	2.4 GHz
	Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM
	Security	Supports 64- and 128-bit WEP, WPA, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program).
	Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.

Technical Specifications

Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK	
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)	
Roaming	IEEE 802.11 compliant roaming between 802.11b/g access points.	
Output Power	802.11b: 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	802.11 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	0.035 lb (16 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	32° to 122° F (0° to 50° C)
	Non-operating	-14° to 158° F (-10° to 70° C)
Humidity	Operating	10% to 90%
	Non-operating	5% to 95%
Altitude	Operating	0 to 15,000 ft (4,572 m)
	Non-operating	0 to 40,000 ft (12,192 m)
Configuration Utility	Choice of Configuration Utility: <ul style="list-style-type: none"> • Atheros Client Utility for Microsoft Windows 2000 or XP (required for Cisco Compatible Extensions support) • Microsoft Windows XP Wireless Zero Configuration Utility 	
LED Activity	LED Off – Radio OFF; Solid LED – Radio ON	

*Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation)

HP W500 802.11a/b/g WLAN	Wireless LAN Standards	IEEE 802 Part 11a (802.11a) IEEE 802. Part 11b (802.11b) IEEE 802. Part 11g (802.11g)
	Interoperability	Wi-Fi certified (details available at http://www.hp.com/go/notebooks/wlan)
	Frequency Band	2.4 and 5 GHz
	Data Rates	802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps

Technical Specifications

Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM	
Security	Supports 64- and 128-bit WEP, WPA, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program).	
Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.	
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK	
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)	
Roaming	IEEE 802.11 compliant roaming between 802.11a 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	32° to 122° F (0° to 50° C)
	Non-operating	-14° to 158° F (-10° to 70° C)
Humidity	Operating	10% to 90%
	Non-operating	5% to 95%
Altitude	Operating	0 to 15,000 ft (4,572 m)
	Non-operating	0 to 40,000 ft (12,192 m)
Configuration Utility	Choice of Configuration Utility: <ul style="list-style-type: none"> • 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

Technical Specifications

Configuration Utility	Choice of Configuration Utility: <ul style="list-style-type: none"> • Intel ProSet for Microsoft Windows 2000 or XP (required for Cisco Compatible Extensions support) • Microsoft Windows XP Wireless Network Connection Manager
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 (CCK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation)

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

Technical Specifications

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	0% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
Configuration Utility	Choice of Configuration Utility: <ul style="list-style-type: none"> • Intel PROSet for Microsoft Windows 2000 or XP (required for Cisco Compatible Extensions support) • Microsoft Windows XP Wireless Network Connection Manager 	
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)	

Technical Specifications

Profile Support	General Access Profile Service Discovery Application Profile Serial Port Profile Generic Object Exchange Profile File Transfer Profile Synchronization Profile Dial-Up Networking Profile LAN Access Profile Object Push Profile Hard Copy Cable Replacement Profile Personal Area Networking Profile Human Interface Device Profile
Usage Models	Service Discovery (determine what Bluetooth devices are within range and support authorization) Synchronization PDAs to PCs Portable to Desktop File Transfer File and directory browsing and navigation on another Bluetooth device. File copying Object manipulation – including add, delete, create new folders etc. Wireless link to Corporate LAN using several Bluetooth devices sharing the same Access Point Corporate email, network neighborhood, access to LAN applications, file transfer, ftp, Internet browsing, etc, using TCP/IP Wireless link to WAN thru cell phone Agnostic to WAN technology Send/receive SMS messages Wireless link to Printer Adhoc peer to peer networking (two computers) or Personal Area Networking (PAN) using NDIS (< 7 computers) Adhoc Bluetooth Pico-networking (point to multi-point) Object Push – Business card or appointment exchange Human Interface Devices Wirelessly interface to notebook with mouse, keyboard, etc Printing Wirelessly print to Bluetooth enabled printers
Transmit Power	-6dBm to 4 dBm (Bluetooth Class II)
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

Technical Specifications

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

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