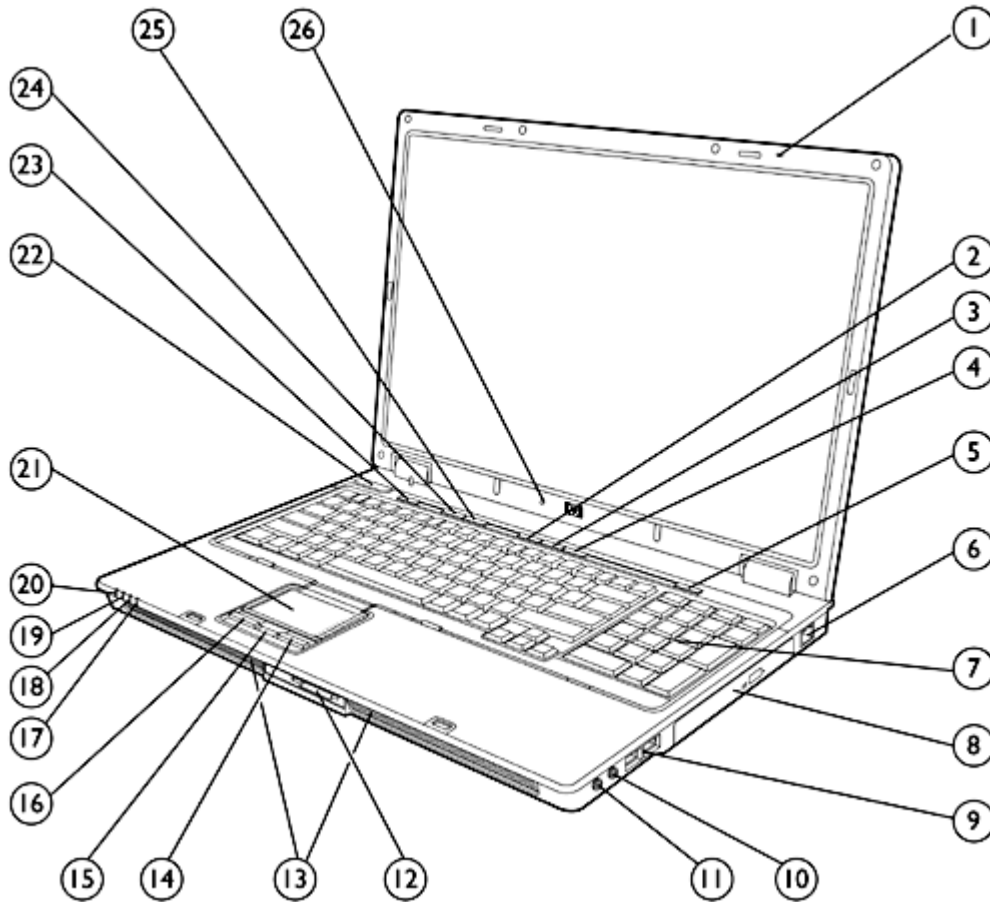


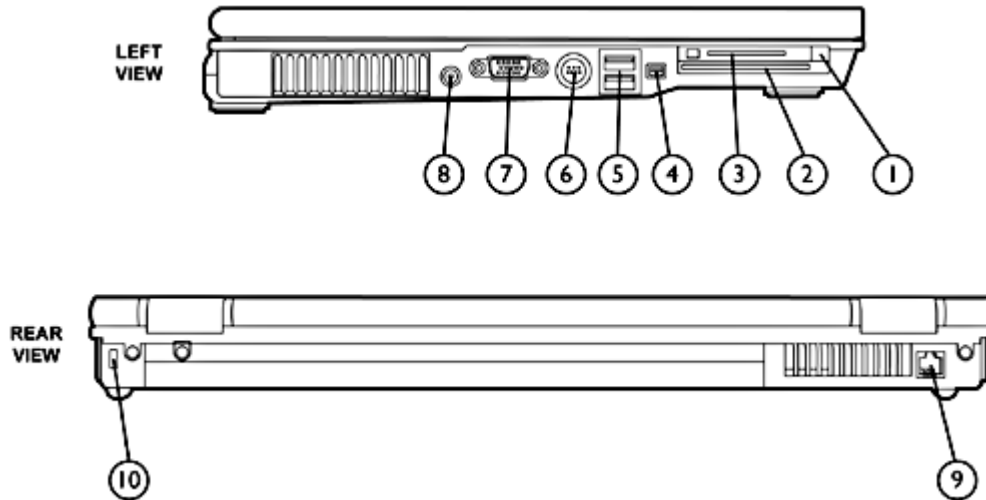
Overview

**HP recommends
Windows Vista® Business**



- | | |
|--------------------------------|---|
| 1. Internal Microphone | 14. Right Touchpad Button |
| 2. Volume Mute Button with LED | 15. Optional Biometric Fingerprint Sensor |
| 3. Volume Down Button | 16. Left Touchpad Button |
| 4. Volume Up Button | 17. Hard Drive Activity LED |
| 5. Calculator Launch Button | 18. Battery Charging LED |
| 6. RJ-45 Port (NIC) | 19. Power/Standby LED |
| 7. Integrated Numeric Keypad | 20. Wireless On/Off LED |
| 8. Integrated Optical Drive | 21. Touchpad with scroll zone |
| 9. 2 USB 2.0 Ports | 22. Power Button with LED |
| 10. Microphone Jack | 23. HP Info Center Button |
| 11. Headphone Jack | 24. Wireless On/Off Button with LED |
| 12. 7-in-1 Media Reader | 25. Presentation Mode Button |
| 13. Stereo Speakers | 26. Ambient Light Sensor |

Overview



- | | |
|---------------------------------|------------------------------|
| 1. PC Card Eject Button | 6. S-Video TV Out |
| 2. Integrated Smart Card Reader | 7. VGA/External Monitor Port |
| 3. PC Card Slot | 8. Power Connector |
| 4. IEEE 1394a Port | 9. RJ-11 Port (Modem) |
| 5. 2 USB 2.0 Ports | 10. Kensington Lock Slot |

At A Glance

- Genuine Windows Vista Business 32, Genuine Windows Vista Home Basic 32, Genuine Windows XP Professional, Genuine Windows XP Home Edition, FreeDOS
- Sleek light-weight design starting at 7.4 lb (3.36 kg) and 1.3 inch (33 mm) thin at front
- 17.0-inch wide screen display
- Intel® Core™ 2 Duo processors and Intel Core Duo processors
- Up to 4GB* of 533- or 667-MHz DDR2 SDRAM, dual channel memory support
- ATI Mobility Radeon X1600 or NVIDIA Quadro NVS 510M graphics controller with 256 MB of discrete video memory
- Up to 120-GB 5400 rpm, user-removable hard drive
- Optional 802.11 a/b/g or 802.11 b/g wireless LAN modules and optional Bluetooth®
- IEEE 1394a Port
- 7-in-1 Media Reader
- Security features include integrated Smart Card Reader, TPM Embedded Security Chip**, and optional Biometric Fingerprint Sensor
- Broadcom NetXtreme Gigabit Ethernet PCI Express Controller
- Protected by a one-year standard parts and labor warranty – certain restrictions and exclusions apply.

* Above 3-GB, all memory may not be available due to system resource requirements.

** TPM module disabled where use is restricted by law; for example, Russia.

Standard Features

Processors

Intel Core 2 Duo Processor T7600 (2.33-GHz, 667-MHz FSB, 4-MB L2 cache)*
Intel Core 2 Duo Processor T7400 (2.16-GHz, 667-MHz FSB, 4-MB L2 cache)*
Intel Core 2 Duo Processor T7200 (2.0-GHz, 667-MHz FSB, 4-MB L2 cache)*
Intel Core 2 Duo Processor T5600 (1.83-GHz, 667-MHz FSB, 2-MB L2 cache)*
Intel Core Duo processor T2600* (2.16-GHz, 667-MHz FSB, 2-MB L2 cache)
Intel Core Duo processor T2500* (2.00-GHz, 667-MHz FSB, 2-MB L2 cache)
Intel Core Duo processor T2400* (1.83-GHz, 667-MHz FSB, 2-MB L2 cache)

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

NOTE: Processor speed denotes maximum performance mode; processors will run at approximately 1 GHz in battery optimization mode.

Operating System

Preinstalled

Genuine Windows Vista Business 32/64†*
Genuine Windows Vista Home Basic 32*
Genuine Windows XP Professional SP2
Genuine Windows XP Home Edition SP2
FreeDOS

Supported

(select drivers available on
<http://www.hp.com>)

Genuine Windows Vista Enterprise†*
Genuine Windows 2000

Certified

SUSE Linux Enterprise Desktop 10 for x86
Novell Linux Desktop 9 SP3 for x86

† At initial boot, either 32- or 64-bit can be selected. This is a one time selection and the other version will be deleted. The 64-bit version is for Intel Core 2 Duo models only.

* Certain Windows Vista product features require advanced or additional hardware.

See <http://www.microsoft.com/windowsvista/getready/hardwarereqs.mspx> and <http://www.microsoft.com/windowsvista/getready/capable.mspx> for details. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit <http://www.windowsvista.com/upgradeadvisor>.

Chipset

Mobile Intel 945PM Express Chipset with 667-MHz front side bus

Graphics

ATI Mobility Radeon X1600 graphics controller with 256 MB of discrete video memory
NVIDIA Quadro NVS 510M graphics controller with 256 MB of discrete video memory
Microsoft DirectX 9 capable

Standard Features

Display	Internal	17.0-inch WXGA+ display with 1440 x 900 resolution 17.0-inch WSXGA+ wide viewing angle display with 1680 x 1050 resolution 17.0-inch WSXGA+ wide viewing angle BrightView display with 1680 x 1050 resolution Ambient light sensor
	External	Up to 32-bit per pixel color depth VGA port supports resolutions up to 2048 x 1536 at 75 Hz, and lower resolutions at up to 100 Hz DVI port in optional HP Docking Station (sold separately) supports resolutions up to 1600 x 1200 at both full and reduced blanking, and 1920 x 1200 at reduced blanking NOTE: Resolutions are dependent upon monitor capability, and resolution and color depth settings.

Memory	Standard	512-MB, 1024-MB or 2048-MB 533-MHz DDR2 SDRAM 512-MB, 1024-MB or 2048-MB 667-MHz DDR2 SDRAM Two SODIMM slots supporting dual channel memory
	Maximum Dual-channel	Upgradeable to 4096-MB maximum (2048-MB SODIMM in slots 1 and 2) Maximized dual-channel performance requires SODIMMs of the same size and speed in both memory slots. NOTE: Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed. Above 3-GB, all memory may not be available due to system resource requirements.

Communications	Integrated Broadcom NetXtreme Gigabit Ethernet PCI Express Controller (10/100/1000 NIC*) with HP Smart Power NIC technology 56K V.92 modem** with digital line guard * The term "10/100/1000" or "Gigabit" Ethernet indicates compliance with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/sec. For high speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required. ** Designed for downloads from 56K modem compliant sources. Maximum achievable download transmission rates currently do not reach 56 KB/s, and will vary with line conditions. Modem availability is subject to country regulatory approval.
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Standard Features

Wireless Devices

Support for a broad range of secure, integrated wireless LAN options featuring support for the latest industry standards. Integrated Bluetooth is also an option (factory configurable only) 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 (Version 4.0) Wired Equivalent Privacy (WEP) support up to 128-bit keys Wi-Fi Protected Access (WPA) and WPA2 support 802.1x authentication support, including EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, and LEAP Advanced Encryption Standard (AES) support WiFi Certified for WPA2, WMM Dual antennas integrated in the display enclosure
Intel PRO/Wireless 3945ABG Network Connection	Intel Centrino mobile technology Integrated support for 802.11a, b and g Up to 54-mbps data rate
Broadcom 4311AG WiFi Adapter	Integrated support for 802.11a, b and g Up to 54-mbps data rate
Broadcom 4311BG WiFi Adapter	Integrated support for 802.11 b and g Up to 54-mbps data rate
HP Integrated Module with Bluetooth 2.0 Wireless Technology	Bluetooth Specification v2.0 compliant Works with a wide range of Bluetooth devices

Keyboard

The 101/102-key compatible keyboard features an industry standard, full-width layout with desktop keyboard features such as isolated inverted-T cursor control keys, left and right control and alt keys, and 12 function keys. Other features include a full numeric keypad, hotkeys for instant access to power conservation, brightness, and other features, 19.05 mm x 19.05 mm key pitch (center-to-center spacing), 3.0 mm stroke, comfort-dished keycaps, and bright key legends for improved visibility in low light conditions.

One-Touch Productivity Buttons

Provide one-touch access to the following features: HP Info Center, Wireless On/Off, Presentation Mode, Volume down, Volume up, Volume Mute, and Calculator Launch.

Pointing Device

Touchpad with scroll zone, two soft-touch pick buttons

Expansion Card Slots

One Type I/II PC Card slot	Supports 32-bit CardBus and 16-bit PC Cards
One Integrated Smart Card Reader	Compatible with ISO 7816 compliant Smart Cards PC/SC interface support

Standard Features

Media Slots	7-in-1 Media Reader	Supports SD (Secure Digital), MultiMediaCard, Memory Stick, Memory Stick Pro, Memory Stick Duo*, Smart Media, card *NOTE: Memory Stick Duo Adapters are required and sold separately. Inserting a Memory Stick Duo Card directly into your notebook could damage the memory card and/or notebook.
Storage	Hard Drives	60-, 80-, 100, 120-GB 5400 rpm SMART SATA 80-, 100-GB 7200 rpm SMART SATA NOTE: These hard drives are customer removable and will withstand multiple insertion/removal cycles. Up to 8 GB is reserved for the system recovery software.
	HP Mobile Data Protection System 3D	Hard drive is mounted directly to the notebook frame, reducing the transmission of shock to the hard drive. Uses three-axis digital motion detection with intelligent sensitivity to help protect the hard drive during normal use from shock and vibration.
	Fixed Optical Drives	DVD/CD-RW Combo DVD+/-RW SuperMulti with Double Layer LightScribe DVD+/-RW with Double Layer
Interfaces	PC Card Slot	One – Type I/II
	Smart Card Reader	One
	External Monitor	One – VGA
	External Microphone	One
	Headphone/Line out	One
	Power Connector	One
	RJ-11 (Modem)	One
	RJ-45 (NIC)	One
	Ambient Light Sensor	One
	IEEE 1394a Port (4-pin)	One
	S-Video TV Out	One (Support for NTSC/PAL)
	USB 2.0	Four
	Docking Connector	One
	Accessory Battery Connector	One
	LED Status Indicators	Twelve

Standard Features

Audio

- ADI High Definition CODEC
- Integrated 16-bit Sound Blaster Pro compatible audio
- Integrated stereo speakers
- Integrated directional microphone
- External volume up, volume down, and mute buttons
- Stereo headphone/line out
- Stereo microphone in

Software	Software	Adobe Acrobat Reader HP Backup and Recovery Manager HP Help and Support HP Mobile Print Driver HP ProtectTools Security Manager: <ul style="list-style-type: none">BIOS Configuration for HP ProtectToolsEmbedded Security for HP ProtectToolsCredential Manager for HP ProtectTools HP Quick Launch Buttons HP Wireless Assistant Sonic Digital Media Plus: <ul style="list-style-type: none">RecordNow! (for optional DVD+/-RW and DVD/CDRW drives)MyDVD (DVD Authoring for optional DVD+/-RW drives) Synaptics Touchpad Driver Symantec Norton Internet Security with complimentary 60-day live update Intervideo WinDVD – DVD Player (for optional DVD+/-RW, DVD/CDRW and DVD drives)
	Additional software available from the Web	Smart Card Security for HP ProtectTools Device Access Manager for HP ProtectTools

HP Backup and Recovery Manager Each unit is shipped with HP Backup and Recovery Manager. HP Backup and Recovery Manager can provide data and system file protection for HP business PCs to enable fast recovery if the system becomes corrupted or if important information is accidentally deleted. HP Backup and Recovery Manager can perform scheduled or manual backups of the entire drive or individual files and folders. Up to 8 GB is reserved for the system recovery software. HP Backup and Recovery Manager can also create software recovery CDs or DVDs (requires optional hardware).

SMBIOS Version 2.4 System Management BIOS, previously known as DMI BIOS, is used to store system management information.

Standard Features

HP ProtectTools Security Manager HP ProtectTools Security Manager is the security platform for business notebooks and desktops. The HP ProtectTools Security Manager is an extensible client security console that delivers enhanced security capabilities through add-on software modules. Modules currently available or planned are:

- Smart Card Security for HP ProtectTools
- BIOS Configuration for HP ProtectTools
- Embedded Security for HP ProtectTools
- Credential Manager for HP ProtectTools
- Device Access Manager for HP ProtectTools

Security	Standard Features	HP ProtectTools Security Manager Configuration Control Hardware Memory Change Alert Ownership Tag Setup Password Power-On Password DriveLock TPM Enhanced DriveLock* HP Disk Sanitizer Enabled for PC Smart Card Kensington Lock Slot Support for Computrace / LoJack for Laptops (must be purchased separately)
	Integrated Smart Card Reader	Compatible with ISO 7816 compliant Smart Cards PC/SC interface support
	TPM 1.2 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 *NOTE: Full functionality of the TPM Embedded Security Chip is available only with Windows XP Professional. TPM module disabled where use is restricted by law; for example, Russia.
	Optional Features	HP Biometric Fingerprint Sensor Biometric sensor for fingerprint authentication, configurable between Touchpad pick buttons

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

Power Supply

HP 90-watt Smart AC Adapter, 6-foot (1.8-meter) power cord included.
Total length including External AC adapter is 12 feet (3.66 meter).
HP Fast Charge Technology*

*Fast Charge Technology recharges your battery up to 90% within 90 minutes when the system is off. Fast Charge Technology does not apply to 12-cell Ultra Capacity batteries.

Standard Features

Battery	Primary Battery	69Wh 8-cell high capacity Lithium-Ion
	Optional HP 8-Cell Extended Life Battery	52Wh 8-cell high capacity Lithium-Ion
	Optional HP 12-Cell Ultra-Capacity Battery	95Wh 12-cell high capacity Lithium-Ion

Battery Life

69Wh 8-cell Primary

Primary Battery	Up to 4 hours
Primary Battery and optional HP 8-Cell Extended Life Battery	Up to 7 hours and 30 minutes
Primary Battery and optional HP 12-Cell Ultra-Capacity Battery	Up to 10 hours

NOTE: Battery life will vary depending on the product configuration, product model, applications loaded on the product, power management settings of the product, and the product features used by the customer. As with all batteries, the maximum capacity of this battery will decrease with time and usage.

System Standby Time

Up to 2 weeks

Power Conservation

Supports enhanced Intel SpeedStep technology with Intel Core Duo processors (allows Battery Optimized Mode, Maximum Performance Mode, or Automatic mode)

HP Smart Power NIC technology

ATI PowerPlay technology

Hibernation

Standby

ACPI compliance

Docking

HP Docking Station

HP Advanced Docking Station

HP's shared docking solutions provide simple and convenient port replication and cable management. Features include Gigabit NIC pass through, modem pass through, legacy parallel and serial ports, DVI, S-video TV out, USB 2.0 ports, integrated security mechanism*, integrated MultiBay II and ExpressCard** slots. These docking solutions are compatible across multiple Business Notebook platforms enabling a lower total cost of ownership.

* HP/Kensington Cable Lock required (purchased separately)

** HP Advanced Docking Station only

Standard Features

Service and Support

HP Services includes a one-year standard parts and labor warranty, pick-up or carry-in, and toll-free 7 x 24 hardware technical phone support (depending on model). On-site service and warranty upgrades 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>.

Select Model(s)

nx9420 EV266AA#ABA	Processor	Intel Core Duo processor T2300* (1.66-GHz, 667-MHz FSB, 2-MB L2 cache)
	Operating System	Genuine Windows XP Professional Edition
	System Memory	512-MB 533-MHz DDR2 SDRAM (1 DIMM)
	Hard Drive	80-GB 5400 rpm SATA
	Optical Drive	DVD/CD-RW Combo
	Display	17.0-inch WXGA+ display with 1440 x 900 resolution
	Graphics	ATI Mobility Radeon X1600 graphics controller with 256 MB of discrete video memory
	Audio	ADI1981HD High Definition CODEC, Line out/headphone and microphone jacks
	Communications	56K Fax/Modem, Integrated Broadcom NetXtreme Gigabit Ethernet PCI Express Controller (10/100/1000 NIC)
	Integrated Wireless	Intel Pro/Wireless 802.11 a/b/g
	TPM Embedded Security Chip	Yes
	Integrated Smart Card Reader	Yes
	HP Biometric Fingerprint Sensor	Yes
	Pointing Device	Touchpad with scroll zone, two soft-touch pick buttons
	Battery	8-cell high capacity Lithium-Ion (68Wh)
	Power	External 90-watt Smart AC Adapter
Warranty	1 Year Worldwide Limited Warranty	

Standard Features

nx9420 EV267AA#ABA	Processor	Intel Core Duo processor T2400* (1.83-GHz, 667-MHz FSB, 2-MB L2 cache)
	Operating System	Genuine Windows XP Professional Edition
	System Memory	512-MB 533-MHz DDR2 SDRAM (1 DIMM)
	Hard Drive	80-GB 5400 rpm SATA
	Optical Drive	DVD+/-RW SuperMulti with Double Layer
	Display	17.0-inch WSXGA+ wide viewing angle display with 1680 x 1050 resolution
	Graphics	ATI Mobility Radeon X1600 graphics controller with 256 MB of discrete video memory
	Audio	ADI1981HD High Definition CODEC, Line out/headphone and microphone jacks
	Communications	56K Fax/Modem, Integrated Broadcom NetXtreme Gigabit Ethernet PCI Express Controller (10/100/1000 NIC)
	Integrated Wireless	Intel Pro/Wireless 802.11 a/b/g
	TPM Embedded Security Chip	Yes
	Integrated Smart Card Reader	Yes
	HP Biometric Fingerprint Sensor	Yes
	Pointing Device	Touchpad with scroll zone, two soft-touch pick buttons
	Battery	8-cell high capacity Lithium-Ion (68Wh)
	Power	External 90-watt Smart AC Adapter
	Warranty	1 Year Worldwide Limited Warranty

nx9420 EV268AA#ABA	Processor	Intel Core Duo processor T2400* (1.83-GHz, 667-MHz FSB, 2-MB L2 cache)
	Operating System	Genuine Windows XP Professional Edition
	System Memory	1024-MB 533-MHz DDR2 SDRAM (1 DIMM)
	Hard Drive	100-GB 5400 rpm SATA
	Optical Drive	DVD+/-RW SuperMulti with Double Layer
	Display	17.0-inch WSXGA+ wide viewing angle BrightView display with 1680 x 1050 resolution
	Graphics	ATI Mobility Radeon X1600 graphics controller with 256 MB of discrete video memory
	Audio	ADI1981HD High Definition CODEC, Line out/headphone and microphone jacks
	Communications	56K Fax/Modem, Integrated Broadcom NetXtreme Gigabit Ethernet PCI Express Controller (10/100/1000 NIC)
	Integrated Wireless	Intel Pro/Wireless 802.11 a/b/g Integrated Bluetooth
	TPM Embedded Security Chip	Yes

Standard Features

Integrated Smart Card Reader	Yes
HP Biometric Fingerprint Sensor	Yes
Pointing Device	Touchpad with scroll zone, two soft-touch pick buttons
Battery	8-cell high capacity Lithium-Ion (68Wh)
Power	External 90-watt Smart AC Adapter
Warranty	1 Year Worldwide Limited Warranty

nx9420
EV269AA#ABA

Processor	Intel Core Duo processor T2500* (2.00-GHz, 667-MHz FSB, 2-MB L2 cache)
Operating System	Genuine Windows XP Professional Edition
System Memory	1024-MB 533-MHz DDR2 SDRAM (1 DIMM)
Hard Drive	80-GB 7200 rpm SATA
Optical Drive	DVD+/-RW SuperMulti with Double Layer
Display	17.0-inch WSXGA+ wide viewing angle display with 1680 x 1050 resolution
Graphics	ATI Mobility Radeon X1600 graphics controller with 256 MB of discrete video memory
Audio	ADI1981HD High Definition CODEC, Line out/headphone and microphone jacks
Communications	56K Fax/Modem, Integrated Broadcom NetXtreme Gigabit Ethernet PCI Express Controller (10/100/1000 NIC)
Integrated Wireless	Intel Pro/Wireless 802.11 a/b/g Integrated Bluetooth
TPM Embedded Security Chip	Yes
Integrated Smart Card Reader	Yes
HP Biometric Fingerprint Sensor	Yes
Pointing Device	Touchpad with scroll zone, two soft-touch pick buttons
Battery	8-cell high capacity Lithium-Ion (68Wh)
Power	External 90-watt Smart AC Adapter
Warranty	1 Year Worldwide Limited Warranty

Standard Features

nx9420 RB547UT#ABA Smart Buy	Processor	Intel Core 2 Duo Processor T5600 (1.83-GHz, 667-MHz FSB, 2-MB L2 cache)*
	Operating System	Genuine Windows XP Professional Edition
	System Memory	512-MB 667-MHz DDR2 SDRAM (1 DIMM)
	Hard Drive	100-GB 5400 rpm SATA
	Optical Drive	DVD/CD-RW Combo
	Display	17.0-inch WXGA+ display with 1440 x 900 resolution
	Graphics	ATI Mobility Radeon X1600 graphics controller with 256 MB of discrete video memory
	Audio	ADI1981HD High Definition CODEC, Line out/headphone and microphone jacks
	Communications	56K Fax/Modem, Integrated Broadcom NetXtreme Gigabit Ethernet PCI Express Controller (10/100/1000 NIC)
	Integrated Wireless	Intel Pro/Wireless 802.11 a/b/g
	TPM Embedded Security Chip	Yes
	Integrated Smart Card Reader	Yes
	HP Biometric Fingerprint Sensor	Yes
	Pointing Device	Touchpad with scroll zone, two soft-touch pick buttons
Battery	8-cell high capacity Lithium-Ion (68Wh)	
Power	External 90-watt Smart AC Adapter	
Warranty	1 Year Worldwide Limited Warranty	

nx9420 RB548UA#ABA	Processor	Intel Core 2 Duo Processor T7200 (2.0-GHz, 667-MHz FSB, 4-MB L2 cache)*
	Operating System	Genuine Windows XP Professional Edition
	System Memory	512-MB 667-MHz DDR2 SDRAM (1 DIMM)
	Hard Drive	100-GB 5400 rpm SATA
	Optical Drive	DVD+/-RW SuperMulti with Double Layer
	Display	17.0-inch WSXGA+ wide viewing angle display with 1680 x 1050 resolution
	Graphics	ATI Mobility Radeon X1600 graphics controller with 256 MB of discrete video memory
	Audio	ADI1981HD High Definition CODEC, Line out/headphone and microphone jacks
	Communications	56K Fax/Modem, Integrated Broadcom NetXtreme Gigabit Ethernet PCI Express Controller (10/100/1000 NIC)
	Integrated Wireless	Intel Pro/Wireless 802.11 a/b/g
	TPM Embedded Security Chip	Yes
	Integrated Smart Card Reader	Yes

Standard Features

HP Biometric Fingerprint Sensor	Yes
Pointing Device	Touchpad with scroll zone, two soft-touch pick buttons
Battery	8-cell high capacity Lithium-Ion (68Wh)
Power	External 90-watt Smart AC Adapter
Warranty	1 Year Worldwide Limited Warranty

nx9420
RB549UT#ABA
Smart Buy

Processor	Intel Core 2 Duo Processor T7200 (2.0-GHz, 667-MHz FSB, 4-MB L2 cache)*
Operating System	Genuine Windows XP Professional Edition
System Memory	1024-MB 667-MHz DDR2 SDRAM (1 DIMM)
Hard Drive	100-GB 5400 rpm SATA
Optical Drive	DVD+/-RW SuperMulti with Double Layer
Display	17.0-inch WSXGA+ wide viewing angle BrightView display with 1680 x 1050 resolution
Graphics	ATI Mobility Radeon X1600 graphics controller with 256 MB of discrete video memory
Audio	ADI1981HD High Definition CODEC, Line out/headphone and microphone jacks
Communications	56K Fax/Modem, Integrated Broadcom NetXtreme Gigabit Ethernet PCI Express Controller (10/100/1000 NIC)
Integrated Wireless	Intel Pro/Wireless 802.11 a/b/g Integrated Bluetooth
TPM Embedded Security Chip	Yes
Integrated Smart Card Reader	Yes
HP Biometric Fingerprint Sensor	Yes
Pointing Device	Touchpad with scroll zone, two soft-touch pick buttons
Battery	8-cell high capacity Lithium-Ion (68Wh)
Power	External 90-watt Smart AC Adapter
Warranty	1 Year Worldwide Limited Warranty

Standard Features

nx9420 RB529UT#ABA Smart Buy	Processor	Intel Core 2 Duo Processor T7400 (2.16-GHz, 667-MHz FSB, 4-MB L2 cache)*
	Operating System	Genuine Windows XP Professional Edition
	System Memory	1024-MB 667-MHz DDR2 SDRAM (1 DIMM)
	Hard Drive	120-GB 5400 rpm SATA
	Optical Drive	DVD+/-RW SuperMulti with Double Layer
	Display	17.0-inch WSXGA+ wide viewing angle BrightView display with 1680 x 1050 resolution
	Graphics	NVIDIA Quadro NVS 510M graphics controller with 256 MB of discrete video memory
	Audio	ADI1981HD High Definition CODEC, Line out/headphone and microphone jacks
	Communications	56K Fax/Modem, Integrated Broadcom NetXtreme Gigabit Ethernet PCI Express Controller (10/100/1000 NIC)
	Integrated Wireless	Intel Pro/Wireless 802.11 a/b/g Integrated Bluetooth
	TPM Embedded Security Chip	Yes
	Integrated Smart Card Reader	Yes
	HP Biometric Fingerprint Sensor	Yes
	Pointing Device	Touchpad with scroll zone, two soft-touch pick buttons
Battery	8-cell high capacity Lithium-Ion (68Wh)	
Power	External 90-watt Smart AC Adapter	
Warranty	1 Year Worldwide Limited Warranty	

nx9420 RB550UA#ABA	Processor	Intel Core 2 Duo Processor T7400 (2.16-GHz, 667-MHz FSB, 4-MB L2 cache)*
	Operating System	Genuine Windows XP Professional Edition
	System Memory	1024-MB 667-MHz DDR2 SDRAM (1 DIMM)
	Hard Drive	100-GB 7200 rpm SATA
	Optical Drive	DVD+/-RW SuperMulti with Double Layer
	Display	17.0-inch WSXGA+ wide viewing angle display with 1680 x 1050 resolution
	Graphics	ATI Mobility Radeon X1600 graphics controller with 256 MB of discrete video memory
	Audio	ADI1981HD High Definition CODEC, Line out/headphone and microphone jacks
	Communications	56K Fax/Modem, Integrated Broadcom NetXtreme Gigabit Ethernet PCI Express Controller (10/100/1000 NIC)
	Integrated Wireless	Intel Pro/Wireless 802.11 a/b/g Integrated Bluetooth
	TPM Embedded Security Chip	Yes

Standard Features

Integrated Smart Card Reader	Yes
HP Biometric Fingerprint Sensor	Yes
Pointing Device	Touchpad with scroll zone, two soft-touch pick buttons
Battery	8-cell high capacity Lithium-Ion (68Wh)
Power	External 90-watt Smart AC Adapter
Warranty	1 Year Worldwide Limited Warranty

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

Options

Memory	512-MB 533-MHz DDR2 SDRAM	PE831A
	1-GB 533-MHz DDR2 SDRAM	PE832A
	512-MB 667-MHz DDR2 SDRAM	EM993AA
	1-GB 667-MHz DDR2 SDRAM	EM994AA
	2-GB 667-MHz DDR2 SDRAM	EM995AA
MultiBay II Storage (9.5-mm) NOTE: Requires HP Advanced Docking Station or HP External MultiBay II	DVD-ROM MultiBay II Drive	PA849A
	Combo DVD/CD-RW MultiBay II Drive	PA850A
	DVD+/-RW SuperMulti with Double Layer MultiBay II Drive	PA851A
	80-GB 5400 rpm MultiBay II Hard Drive	PH357A
Other Storage	HP 80-GB 5400 rpm Primary SATA Hard Drive	ET354AA
	HP SuperMulti (DL) DVD+/-RW LightScribe Drive	ET353AA
	HP USB Digital Drive + 256-MB Secure Digital Card	DL702AA
	HP USB Diskette Drive	DC361B
Communications	Intel PRO/Wireless 3945ABG 802.11 a/b/g WLAN option kit	EX150AA#ABA
Expansion Solutions	HP Docking Station	EN488AA#ABA
	HP Advanced Docking Station	EN489AA#ABA
	HP 3-in-1 NAS Docking Station	EM537AA#ABA
	HP Monitor Stand	PA507A
	HP Adjustable Notebook Stand	PA508A
	HP External MultiBay II (9.5-mm)	PA509A#ABA
	HP 4-port USB 2.0 Hub	DG954A
Power	HP 2-bay Battery Charging Station	DT533A#ABA
	HP 10-bay Battery Charging Station (North America only)	DT534A#ABA
	Battery Adapter kit #1	PK402A
	90W Smart AC Adapter	ED495AA#ABA
	90W Smart Auto Adapter	ED493AA
	65W Air/Auto/AC Combo Adapter	ED993AA#ABA
	Primary 8-cell Battery Pack	PB992A
	HP 8-cell Extended Life Battery	PB993A
HP 12-cell Ultra-Capacity Battery	EJ092AA	

Options

Carrying Cases	HP Executive Leather Case	PA847A
	HP Sport Backpack	DG102A

Security	HP/Kensington Cable Lock	PC766A
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Input/Output Devices	USB/PS2 Keyboard	DC852A#ABA
	USB/PS2 Optical Mouse	DC369A
	HP USB Optical Travel Mouse	F2100A

Memory

Up to 4096 MB* of 533-MHz or 667-MHz DDR2 SDRAM
Two DIMM slots
DIMM sizes supported: 512 MB, 1024 MB, and 2048 MB

- Standard Memory**
- 512 MB (512 MB x 1)
 - 1024 MB (1024 MB x 1 or 512 MB x 2)
 - 2048 MB (1024 MB x 2)
 - 4096 MB* (2048 MB x 2)

Optional Memory Upgrades Support for up to 4096 MB* of memory is available (with the installation of optional DDR2 SDRAM memory kits). Both memory slots are user accessible. Please refer to the Hardware and Software Guide for installation procedures. Maximized dual-channel performance requires SODIMMs of the same size and speed in both memory slots.

Up to	Slot 1	Slot 2
512 MB	512 MB	Empty
1024 MB	1024 MB	Empty
1024 MB	512 MB	512 MB
1280 MB	1024 MB	256 MB
1536 MB	1024 MB	512 MB
2048 MB	1024 MB	1024 MB
4096 MB*	2048 MB	2048 MB

NOTE: This chart does not represent all possible memory configurations. Due to the non-industry standard nature of some third-party memory modules, we strongly recommend using only HP branded memory modules to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

Memory Upgrades	512-MB 533-MHz DDR2 SDRAM	PE831A
	1024-MB 533-MHz DDR2 SDRAM	PE832A
	512-MB 667-MHz DDR2 SDRAM	EM993AA
	1024-MB 667-MHz DDR2 SDRAM	EM994AA
	2048-MB 667-MHz DDR2 SDRAM	EM995AA

* Above 3-GB, all memory may not be available due to system resource requirements.

Storage

Removable Media Drive Support

	Quantity Supported	Drive Bay
LightScribe DVD+/-RW Drive with Double Layer	One	Fixed optical drive bay
DVD+/-RW SuperMulti Drive with Double Layer	One	Fixed optical drive bay
DVD/CD-RW Combo Drive	One	Fixed optical drive bay

Hard Drive Support

	Quantity Supported	Drive Bay
Primary Hard Drives		
100-GB 7200 rpm SMART SATA Hard Drive	One	Dedicated hard drive bay
80-GB 7200 rpm SMART SATA Hard Drive	One	Dedicated hard drive bay
120-GB 5400 rpm SMART SATA Hard Drive	One	Dedicated hard drive bay
100-GB 5400 rpm SMART SATA Hard Drive	One	Dedicated hard drive bay
80-GB 5400 rpm SMART SATA Hard Drive	One	Dedicated hard drive bay
60-GB 5400 rpm SMART SATA Hard Drive	One	Dedicated hard drive bay

Technical Specifications

System Unit	Dimensions (HxWxD)	1.3 in (at front) x 15.5 in x 10.8 in (33 mm (at front) x 393 mm x 275 mm)
	Weight	7.4 lb (3.36 kg)
	NOTE: Height varies depending upon where on the notebook the measurement is made. Weight includes 8-cell battery, 60-GB hard drive, 512-MB memory, 802.11 wireless communications module, and TPM Embedded Security Chip. Weight varies by configuration and components.	
	Stand-Alone Power Requirements	Nominal Operating Voltage 19 V Average Operating Power 38 W Max Operating Power < 90 W
	Temperature	Operating 32° to 95° F (0° 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-condensing Non-operating 5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
	Shock	Operating 125 G, 2 ms, half-sine Non-operating 200 G, 2 ms, half-sine
	Random Vibration	Operating 0.75 grms Non-operating 1.50 grms
	Altitude (unpressurized)	Operating -50 to 10,000 ft (-15.24 to 3,048 m) Non-operating -50 to 40,000 ft (-15.24 to 12,192 m)
	Industry Standard Certifications	Blue Angel No UL Yes Energy Star Compliant Yes CSA Yes ICES Yes GS Yes Australia / NZ A-Tick Compliance Yes CCC Yes Japan VCCI Compliance Yes MIC Yes BSMI Yes CE Marking Compliance Yes BNCI or BELUS Yes Croatian Compliance (CIT) Yes GOST Yes Saudi Arabian Compliance (ICCP) Yes SABS Yes

Technical Specifications

HP 90W Smart AC Adapter	Dimensions	5.24 x 2.28 x 1.1 in (13.3 x 5.8 x 2.9 cm)	
	Weight	0.86 lb (390 g)	
	Input	100 to 240 VAC	
		Input Efficiency	83% min at 115 VAC
		Input frequency range	47 to 63 Hz
		Input AC current	1.5 A at 90 VAC, 0.75 A at 180 VAC PFC Version 2.4 A at 90 VAC, 1.2 A at 180 VAC NON PFC Version
	Output	Output power 65W	90W
		DC output	18.5V
		Hold-up time	5 msec at 115 VAC input
		Output current limit	<11A, Over voltage protection- 29V max automatic shutdown
	Connector	3 pin/grounded, mates with interchangeable cords	
	Environmental Design	Operating temperature	32° to 104° F (0° to 40° C)
		Non-operating (storage) temperature	-4° to 149° F (-20° to 65° C)
		Altitude	0 to 10,000 ft (0 to 3,048 m)
Humidity		20% to 80%	
	Storage Humidity	10% to 90%	
EMI and Safety Certifications	CE Mark – full compliance with LVD and EMC directives; Worldwide safety standards – IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals – C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE; MTBF– over 200,000 hours at 25°C ambient condition.		
Option Kit Contents	90W AC Adapter, power cable, warranty booklet		

Optional HP 12-Cell Ultra-Capacity Battery	Dimensions (H x W x L)	1.3 x 6.0 x 10.6 in (3.33 x 15.25 x 26.88 cm)	
	Weight	1.77 lb (0.803 kg)	
	Cells/Type	12-cell Lithium-Ion	
	Energy	Voltage	14.8V
		Watt-hour Capacity	95Wh
		Amp-hour Capacity	6.45Ah
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 140° F (-10° to 60° C)
		Non-operating	-4° to 140° F (-20° to 60° C)
	Battery Re-Charge Time	Smart Adapter	3 to 4 hours
		System ON	4 to 5 hours (depending on system power consumption)
Fuel Gauge	When pressed, LEDs light indicating level of charge remaining on battery		

Technical Specifications

Optional HP 8-Cell Extended Life Battery	Dimensions (H x W x L)	1.0 x 3.9 x 8.7 in (2.5 x 10.0 x 22.0 cm)		
	Weight	1.00 lb (0.455 kg)		
	Cells/Type	8-cell Lithium-Ion		
	Energy	Voltage	14.4V	
		Watt-hour Capacity	52Wh	
		Amp-hour Capacity	3.6Ah	
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)	
		Operating (Discharging)	14° to 140° F (-10° to 60° C)	
		Non-operating	-4° to 140° F (-20° to 60° C)	
	Battery Re-Charge Time	System in OFF mode or Standby	3 hours	
		System ON	3 to 5 hours (depending on system power consumption)	
		HP Fast Charge Technology	Charges the battery up to 90% within 90 minutes when system is OFF	
	Fuel Gauge	When pressed, LEDs light indicating level of charge remaining on battery		

69Wh Primary 8-Cell Battery	Dimensions (H x W x L)	0.8 x 1.9 x 10.6 in (2.0 x 4.8 x 27.0 cm)		
	Weight	0.980 lb (0.445 kg)		
	Cells/Type	8-cell Lithium-Ion		
	Energy	Voltage	14.4V	
		Watt-hour Capacity	69Wh	
		Amp-hour Capacity	4.8Ah	
	Temperature	Operating (Charging)	32° to 113° F (0° to 45° C)	
		Operating (Discharging)	14° to 140° F (-10° to 60° C)	
		Non-operating	-4° to 140° F (-20° to 60° C)	
	Battery Re-Charge Time	System in OFF mode or Standby	2.5 hours	
		System ON	3 to 5 hours (depending on system power consumption)	
		HP Fast Charge Technology	Charges the battery up to 90% within 90 minutes when system is OFF	

Technical Specifications

17.0-Inch Color TFT WXGA+ Display	Active Area (W x H)	14.5 x 9.0 in (36.7 x 22.9 cm)	
	Diagonal Size	17.0 in (431.8 mm)	
	Surface Treatment	Anti-glare	
	Contrast Ratio	300:1 typical	
	Refresh Rate	60 Hz	
	Brightness	150 nit typical	
	Pixel Resolution	Pitch	0.255 mm
		Format	1440 x 900
		Configuration	RGB Stripe
		Backlight	CCFL
	PPI	100	
	Viewing Angle	±45° Horizontal, ±25° Vertical (typical)	

17.0-Inch Color TFT WSXGA+ Wide Viewing Angle Display	Active Area (W x H)	14.5 x 9.0 in (36.7 x 22.9 cm)	
	Diagonal Size	17.0 in (43.2 cm)	
	Surface Treatment	Anti-glare	
	Contrast Ratio	300:1 typical	
	Refresh Rate	60 Hz	
	Brightness	170 nit typical	
	Pixel Resolution	Pitch	0.219 mm
		Format	1680 x 1050
		Configuration	RGB Stripe
		Backlight	CCFL
	PPI	116	
	Viewing Angle	±75° Horizontal, ±60° Vertical (typical)	

Technical Specifications

17.0-Inch Color TFT WSXGA+ Wide Viewing Angle BrightView Display	Active Area (W x H)	14.5 x 9.0 in (36.7 x 22.9 cm)		
	Diagonal Size	17.0 in (43.2 cm)		
	Surface Treatment	BrightView		
	Contrast Ratio	300:1 typical		
	Refresh Rate	60 Hz		
	Brightness	170 nit typical		
	Pixel Resolution	Pitch	0.219 mm	
		Format	1680 x 1050	
		Configuration	RGB Stripe	
	Backlight	CCFL		
PPI	116			
Viewing Angle	±70° Horizontal, ±60° Vertical (typical)			

Hard Drives

100-GB 7200 rpm SATA	Drive Weight	0.25 lb (113 g)		
	Capacity	100 GB		
	Height	0.37 in (9.5 mm)		
	Width	2.75 in (70 mm)		
	Interface	ATA-7 / SATA 1.0a		
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)	
	Seek Time	Single Track	1 ms	
	(typical reads, including settling)	Average	10 ms	
		Maximum	18 ms	
	Rotational Speed	7200 rpm		
Logical Blocks	195,371,568			
Operating Temperature	41° to 140° F (5° to 60° C) [case temp]			
Features	ATA Security			

Technical Specifications

80-GB 7200 rpm SATA	Drive Weight	0.25 lb (113 g)	
	Capacity	80 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-7 / SATA 1.0a	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	1 ms
		Average	10 ms
		Maximum	18 ms
	Rotational Speed	7200 rpm	
	Logical Blocks	156,301,488	
	Operating Temperature	41° to 140° F (5° to 60° C) [case temp]	
Features	ATA Security		

120-GB 5400 rpm SATA	Drive Weight	0.25 lb (113 g)	
	Capacity	120 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-7 / SATA 1.0a	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	12 ms
		Maximum	24 ms
	Rotational Speed	5400 rpm	
	Logical Blocks	234,441,648	
	Operating Temperature	41° to 140° F (5° to 60° C) [case temp]	
Features	ATA Security		

Technical Specifications

100-GB 5400 rpm SATA	Drive Weight	0.22 lb (101 g)	
	Capacity	100 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-7 / SATA 1.0a	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	13 ms
		Maximum	24 ms
	Rotational Speed	5400 rpm	
	Logical Blocks	195,371,568	
	Operating Temperature	41° to 140° F (5° to 60° C) [case temp]	
Features	ATA Security		

80-GB 5400 rpm SATA	Drive Weight	0.22 lb (101 g)	
	Capacity	80 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-7 / SATA 1.0a	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	13 ms
		Maximum	24 ms
	Rotational Speed	5400 rpm	
	Logical Blocks	156,301,488	
	Operating Temperature	41° to 140° F (5° to 60° C) [case temp]	
Features	ATA Security		

Technical Specifications

60-GB 5400 rpm SATA	Drive Weight	0.22 lb (101 g)	
	Capacity	60 GB	
	Height	0.37 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-7 / SATA 1.0a	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	13 ms
		Maximum	24 ms
	Rotational Speed	5400 rpm	
	Logical Blocks	117,231,408	
	Operating Temperature	41° to 140° F (5° to 60° C) [case temp]	
	Features	ATA Security	

Removable Storage Drives – Fixed Bay

DVD/CD-RW Combo Drive	Access Times	Random	<110 ms CD
			<130 ms DVD
	Max Data Transfer Rate	24X CD-ROM	3,600 KB/s
		8X DVD	10,800 KB/s
		24X CD-R	3,600 KB/s
		24X CD-RW	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, 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	
	Max Media Capacity (read)	8.5 GB	
	Max Media Capacity (write)	700 MB	
	Transport	Tray loading	

Technical Specifications

LightScribe DVD+/-RW Drive with Double Layer	Access Times	Random	<175 ms CD <230 ms DVD
	Max Data Transfer Rate	24X CD-ROM	3,600 KB/s
		8X DVD	10,800 KB/s
		24X CD-R	3,600 KB/s
		16X CD-RW	2,400 KB/s
		8X DVD+R	10,800 KB/s
		4X DVD+RW	5,400 KB/s
		8X DVD-R	10,800 KB/s
		4X DVD-RW	5,400 KB/s
		2.4X DVD+R(9)	2,700 KB/s
Transfer Mode	Multiword DMA Mode 2		
Interface	EIDE		
Supported Media (read)	CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, LightScribe		
Supported Media (write)	CD-R, CD-RW, DVD+R, DVD+RW, DVD-R, DVD-RW		
Max Media Capacity (read)	8.5 GB		
Max Media Capacity (write)	8.5 GB		
Transport	Tray Loading		

DVD+/-RW SuperMulti Drive with Double Layer	Access Times	Random	<175 ms CD <230 ms DVD
	Max Data Transfer Rate	24X CD-ROM	3,600 KB/s
		8X DVD	10,800 KB/s
		24X CD-R	3,600 KB/s
		16X CD-RW	2,400 KB/s
		8X DVD+R	10,800 KB/s
		4X DVD+RW	5,400 KB/s
		8X DVD-R	10,800 KB/s
		4X DVD-RW	5,400 KB/s
		2.4X DVD+R(9)	2,700 KB/s
5X DVD-RAM	6,750 KB/s		
Transfer Mode	Multiword DMA Mode		
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		

Technical Specifications

Supported Media (write)	CD-R, CD-RW, DVD+R, DVD+RW, DVD-R, DVD-RW, DVD-RAM
Max Media Capacity (read)	8.5 GB
Max Media Capacity (write)	8.5 GB
Transport	Tray Loading

HP Biometric Fingerprint Sensor (Optional)	Mobile Voltage Operation	3.0V–3.6V Single Supply
	Operating Temperature	32° – 158°F (0° – 70°C)
	Current Consumption @ 3.3V	Less than 70 mA peak imaging and scrolling Less than 25 mA hardware finger detection Advanced Power Management
	High-Rate Image Capture	Up to 240 image frames /sec
	ESD Resistance	IEC 61000-4-2 Level 4 (±15KV)
	Detection Matrix	192 x 16 Pixels 9.7 mm x 0.81 mm 500 ppi High-Resolution Images

Audio

Hardware	Implementation	ADI1981HD High Definition CODEC
	Volume Controls	Up, down, and mute buttons
	Full Duplex	Yes
	Sound Blaster Pro compatible	Yes
	Microphone Jack	Stereo or mono
	Headphone/Line Out Jack	Stereo

Audio Output Quality	Frequency Response	20 Hz – 20 kHz
	Signal to Noise Ratio	>85 dB
	Total Harmonic Distortion	0.01%
	Noise Floor	-110 dB
	Play/Record Sampling Rate(s)	8 kHz – 48 kHz
	DAC	16, 20 or 24-bit
	ADC	16 or 20-bit

Technical Specifications

Internal Speakers	Power Rating	2 Watts
	Impedance	4 Ohms

Communications

Integrated Broadcom NetXtreme Gigabit Ethernet PCI Express Controller (BCM5753M)	Ethernet Features	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3z and 802.3ab; IEEE 802.3 clauses 34-42) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s IEEE 802.1p QoS (Quality of Service) Support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)
	Power Management	ACPI compliant -- multiple power modes Situation-sensitive features reduce power consumption NIC Battery Saving Mode (enabled by default)
	Performance Features	TCP/IP/UDP Checksum Offload (configurable) TCP Segmentation Offload CPU Task Offload Adaptive Interrupts
	Manageability	Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Cable Analyzer
	Interface	PCI Express x1
	NIC Device Driver Name	Broadcom NetXtreme Gigabit Ethernet
	Drivers Available	Microsoft Windows XP Microsoft Windows 2000

Technical Specifications

V.92 56K Data/Fax Modem Form Factor	MDC 1.5 Daughtercard
Power Management Support	APM Revision 1.2, ACPI
Approvals/Certifications	UL, CSA, NEMKO, CCIB, Industry Canada, FCC Part 68, CTR21, FCC Part 15 Class B, Canadian ICES-003 Class B, C.I.S.P.R.22, Australian ACA, CE Mark, Other Countries
Data Mode Capabilities	V.92 data V.8bis V.80 V44, V.42bis, MNP5 (Compression) V.42 (LAPM, MNP2-4) (Error Correction) Optional symbol rates: 2800, 3429 Asymmetric Symbol rates Synchronous primary channel data signaling rates: 3600, 31200 Automatic rate re-negotiation V.34 V.32bis V.32 V.23 V.22bis V.22 V.21 Bell 212A Bell 103J
Fax Mode Capabilities	TIA/EIA-578-B (Class 1) T.30, T.4 (Group 3) V.17 V.29 V.27ter V.21 Channel 2
Command Set	V.250 (Partial) TIA-602 Identification: +GMI, +GMM, +GMR Port control: +IPR, +ICF, +IFC, +ILRR Modulation: +MS, +MR, +MA Error control: +ES, +ER, +EB, +ESR, +ETBM Data compression: +DS, +DR V.251

Broadcom 4311AG 802.11a/b/g WiFi Adapter	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g
	Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant (details at www.hp.com/go/notebooks/WLAN)

Technical Specifications

Frequency Band	2.4 GHz and 5 GHz	
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps	
Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM	
Security¹	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST, EAP-SIM. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4).	
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 (for CCK)²	17.5 dBm	
Output Power (for OFDM; power varies by data rate)²	15 dBm	
Power Consumption	Transmit: 2.0 W (max) Receive: 1.5 W (max) Idle mode ³ : 390 mW (nominal) Sleep mode: 20 mW (max)	
Power Management	ACPI compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity⁴	54 Mbps: -72 dBm, 11 Mbps: -88 dBm , 1 Mbps: -97 dBm	
Antenna type	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure	
Range	802.11 a – Typical (@6 Mbps)	600 feet – Outdoor Open Area 150 feet – Indoor, Office environment
	802.11 b – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
	802.11 g – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
Form Factor	PCI-Express MiniCard	
Weight	0.026 lb (12 g)	
Dimensions	0.19 x 1.2 x 2.0 in (4.75 x 29.85 x 50.8 mm)	
Operating Voltage	3.3v +/- 10%	
Temperature	Operating	32° to 176° F (0° to 80° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)

Technical Specifications

Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
Configuration Utility⁵	Choice of Configuration Utility:	
	<ul style="list-style-type: none"> • Microsoft Windows XP Wireless Network Connection Manager • Broadcom Wireless Configuration Utility (required for Cisco Compatible Extensions support) 	
LED Activity	LED Off – Radio OFF; Solid LED On – Radio ON	
	<ol style="list-style-type: none"> 1. Check latest software/driver release for updates on supported security features. 2. Maximum output power may vary by country according to local regulations. 3. In Power Save Polling mode. 4. 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). 5. WLAN supplier's client utility is required for Cisco Compatible Extensions support. WLAN may also be compatible with certain third-party software supplicants. 	

Broadcom 4311BG 802.11b/g WiFi Adapter	Wireless LAN Standards	IEEE 802.11b IEEE 802.11g
	Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant (details at 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
	Security¹	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST, EAP-SIM.
		Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4).
	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 (for CKK)²	17.5 dBm
	Output Power (for OFDM; power varies by data rate)²	15 dBm
	Power Consumption	Transmit: 2.0 W (max) Receive: 1.5 W (max) Idle mode ³ : 390 mW (nominal) Sleep mode: 20 mW (max)

Technical Specifications

Power Management	ACPI compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity⁴	54 Mbps: -72 dBm, 11 Mbps: -88 dBm , 1 Mbps: -97 dBm	
Antenna type	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure	
Range	802.11 b – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
	802.11 g – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
Form Factor	PCI-Express MiniCard	
Weight	0.026 lb (12 g)	
Dimensions	0.19 x 1.2 x 2.0 in (4.75 x 29.85 x 50.8 mm)	
Operating Voltage	3.3v +/- 10%	
Temperature	Operating	32° to 176° F (0° to 80° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
Humidity	Operating	10% 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 Utility⁵	Choice of Configuration Utility: <ul style="list-style-type: none"> ● Microsoft Windows XP Wireless Network Connection Manager ● Broadcom Wireless Configuration Utility (required for Cisco Compatible Extensions support) 	
LED Activity	LED Off – Radio OFF; Solid LED On – Radio ON	
	<ol style="list-style-type: none"> 1. Check latest software/driver release for updates on supported security features. 2. Maximum output power may vary by country according to local regulations. 3. In Power Save Polling mode. 4. 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). 5. WLAN supplier's client utility is required for Cisco Compatible Extensions support. WLAN may also be compatible with certain third-party software supplicants. 	

Intel PRO/Wireless 3945ABG 802.11a/b/g Network Connection

Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g
Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant (details at www.hp.com/go/notebooks/WLAN)
Frequency Band	2.4 GHz and 5 GHz
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM
Security¹	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES,

Technical Specifications

	802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST, EAP-SIM.	
	Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4).	
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 (for CKK) ²	15 dBm	
Output Power (for OFDM; power varies by data rate) ²	15 dBm	
Power Consumption	Transmit: 1.8 Watts (max) Receive: 1.4 Watts (max) Idle mode ³ : 150 mW (nominal) Sleep mode: 30 mW (max)	
Power Management	ACPI compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity ⁴	54 Mbps: -72 dBm, 11 Mbps: -88 dBm , 1 Mbps: -97 dBm	
Antenna type	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure	
Range	802.11 a – Typical (@6 Mbps)	600 feet – Outdoor Open Area 150 feet – Indoor, Office environment
	802.11 b – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
	802.11 g – Typical (@1 Mbps)	1200 feet – Outdoor Open Area 300 feet – Indoor, Office environment
Form Factor	PCI-Express MiniCard	
Weight	0.013 lb (6 g)	
Dimensions	0.19 x 1.2 x 2.0 in (4.75 x 29.85 x 50.8 mm)	
Operating Voltage	3.3v +/- 10%	
Temperature	Operating	32° to 176° F (0° to 80° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
Humidity	Operating	10% 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)

Technical Specifications

Configuration Utility⁵

Choice of Configuration Utility:

- Microsoft Windows XP Wireless Network Connection Manager
- Intel PROSet (required for Cisco Compatible Extensions support)

LED Activity

LED Off – Radio OFF; Solid LED On – Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. In Power Save Polling mode.
4. 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).
5. WLAN supplier's client utility is required for Cisco Compatible Extensions support. WLAN may also be compatible with certain third-party software supplicants.

HP Integrated Module with Bluetooth Wireless Technology

Bluetooth Specification	2.0 Compliant
Dimensions	1.02 x 0.55 x 0.22 in (26 x 14 x 5.7 mm)
Frequency Band	2402 to 2480 MHz
Number of Available Channels	79 (1 MHz) available channels
Data Rates and Throughput	3 Mbps data rate; throughput up to 2.17 Mbps Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric
Transmit Power	-6 dBm to 4 dBm (Bluetooth Class II)
Receiver Sensitivity	Better than -80 dBm at 0.1 % raw bit error rate
Power Consumption	Peak (Tx) 264 mW Peak (Rx) 231 mW Sleep <1 mW
Antenna	Internally integrated within module
Range	Up 33 ft (10 m)
Electrical Interface	USB 2.0 compliant Microsoft Windows Plug and Play compliant
OS Support	Microsoft Windows XP Professional and Home Microsoft Windows 2000
Bluetooth Software Supported	Broadcom Bluetooth for Windows Microsoft Windows XP Bluetooth Software
Link Topology	Point to Point, Multipoint Pico Nets up to 7 slaves
Security	Full support of Bluetooth Security Provisions
Power Management	Microsoft Windows ACPI, and USB Bus Support Self configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff
Certifications	All necessary regulatory approvals for supported countries, including: FCC (47 CFR) Part 15C, Section 15.247 & 15.249

Technical Specifications

	ETS 300 328, ETS 300 826
	Low Voltage Directive IEC950
	UL, CSA, and CE Mark
Temperature	Operating -4° to 158° F (-20° to 70° C) Non-operating -40° to 176° F (-40° to 80° C)
Humidity	Operating 10% to 90% Non-operating 5% to 95%
Altitude	Operating 15,000 ft (4,572 m) Non-operating 40,000 ft (12,192 m)
Bluetooth Profiles Supported	(with Bluetooth for Windows 4.0 software) Serial Port Profile (SPP)* Dial-Up Networking (DUN)* Generic Object Exchange Profile (GOEP) Object Push Profile (OPP)* File Transfer Profile (FTP) Synchronization Profile (SYNC) Hard Copy Cable Replacement (HCRP)* Personal Area Networking Profile (PAN)* Human Interface Device Profile (HID)* FAX Profile (FAX) Basic Imaging Profile (BIP) Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

* indicates the profile is also supported by Microsoft Windows XP SP2

Environmental Data	Eco-Label Certifications	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks: <ul style="list-style-type: none">● US Energy Star● US Federal Energy Management Program (FEMP)● Taiwan Green Mark● China Energy Conservation Program● IT ECO declaration
	System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data is based on a "Typically Configured Notebook."

Technical Specifications

Energy Consumption	115 VAC	230 VAC	100 VAC
Normal Operation	38.6 W	38.6 W	38.6 W
Sleep (Energy Star low power mode)	3.7 W	3.5 W	3.7 W
Off	1.45 W	1.45 W	1.45 W
Heat Dissipation*	115 VAC	230 VAC	100 VAC
Normal Operation	131 BTU/hr	131 BTU/hr	131 BTU/hr
Sleep	12.6 BTU/hr	11.9 BTU/hr	12.6 BTU/hr
Off	5 BTU/hr	5 BTU/hr	5 BTU/hr

***NOTE:** Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

This product is in compliance with US executive order 13221, WOL (wake on LAN) disabled.

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	2.8	25.6
Fixed Disk (random writes)	3.5	33.8

Batteries

This product complies with ISO standards:

EU Directive 91/ 157/ EEC
EU Directive 93/ 86/ EEC
EU Directive 98/ 101/ EEC

Batteries used in the product do not contain:

Mercury greater than 5ppm by weight
Cadmium greater than 10ppm by weight
Lead greater than 4000 ppm by weight.

Battery type and chemistry used in the product:

Primary battery
8-cell high-capacity rechargeable Lithium-Ion battery

Real Time Clock battery
CR2025 (coin cell), Lithium

Additional Information

This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive – 2002/95/EC.

This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.

Keyboard complies with ISO standard: ISO 9995, EN 29241-4, and ISO/IEC 15412

Technical Specifications

Input devices of this product comply with ISO 9241, part 9.

Plastics parts weighing over 0.055 pounds (25 grams) used in the product are marked per ISO 11469 and ISO1043.

This product contains 0% recycled materials (by wt.)

This product is greater than 85% recycle-able when properly disposed of at end of life.

Packaging

Packaging Materials

- External:
 - Corrugated Paper – 1.27 lb (574 g)
- Internal:
 - Corrugated Paper – 0.10 lb (45 g)
 - PET Bag/Banding – 0.12 lb (56 g)
- The plastic packaging material is made from 20% recycled content.
- The corrugated paper packaging materials contains at least 80% recycled content.

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (for reference of these limits please refer to the HP General Specification of the Environment

(http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes

Technical Specifications

- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

End-of-life Management and Recycling

HP offers our customers several other options for handling their aging computers while also minimizing the impact on the environment-including product trade-in and leasing services-in addition to recycling services. Please go to: <http://www.hp.com/recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

Hewlett-Packard Corporate Environmental Information

For more information about HP's commitment to the environment:

Global Citizenship Report

<http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>

Environment website

<http://www.hp.com/environment>

Eco-label certifications

<http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html>

ISO 14001 certificates:

<http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html>

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