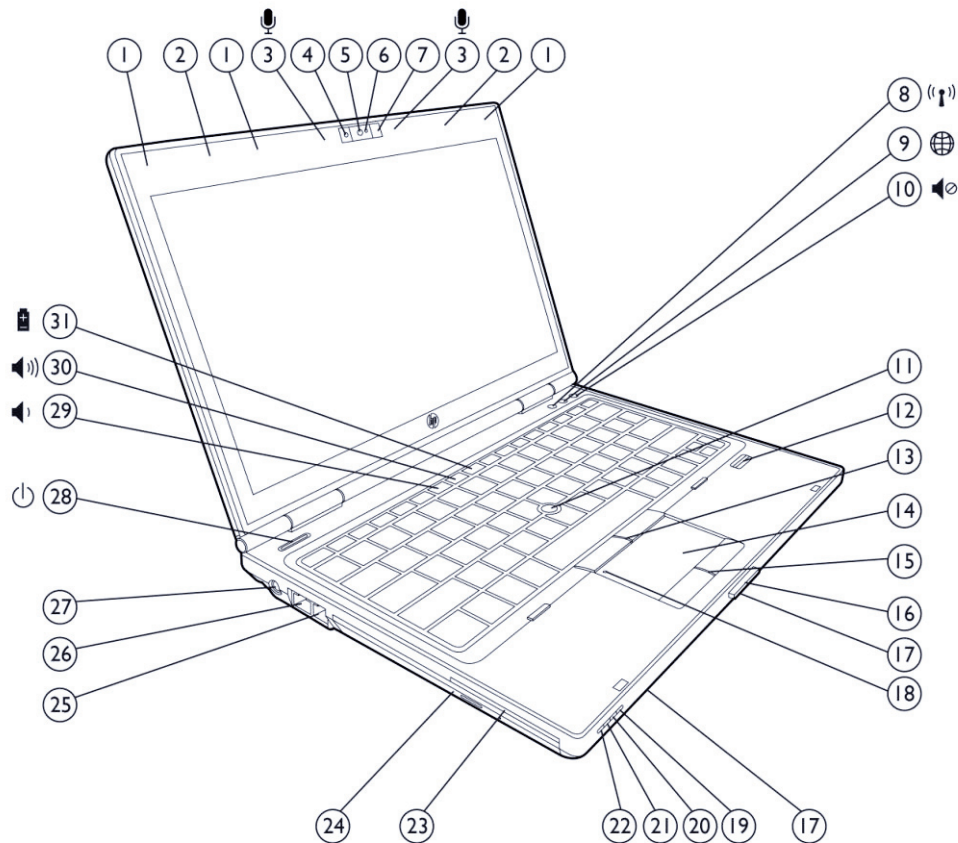


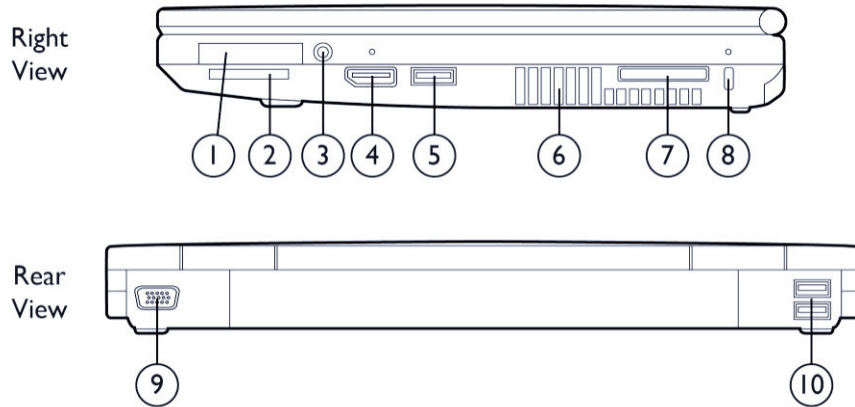
Overview

HP EliteBook 2560p Notebook PC

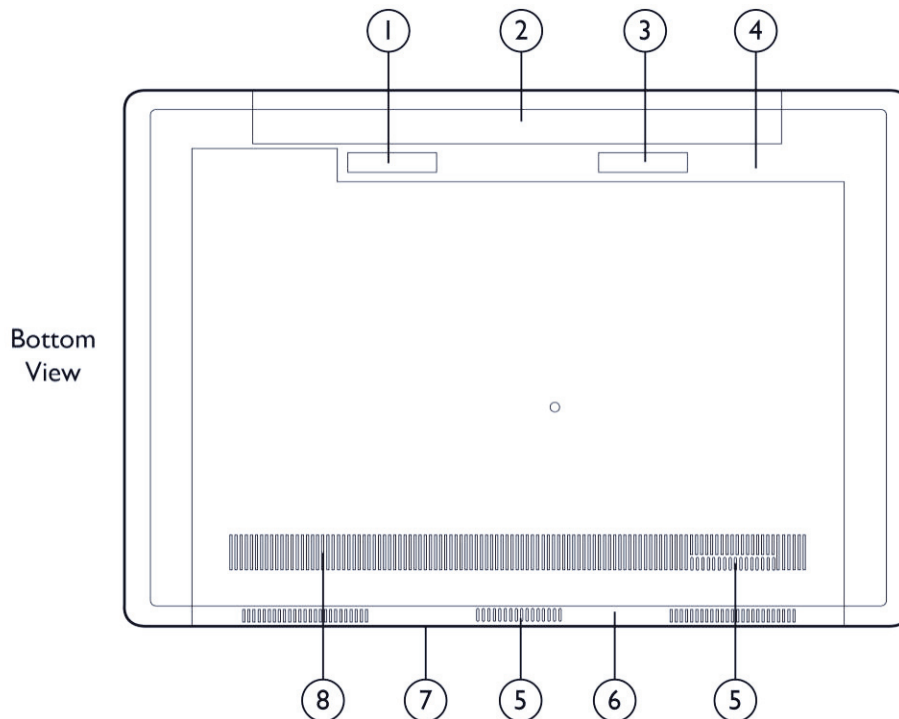


- | | |
|---------------------------------------------------|---------------------------------------------------|
| 1. WLAN antennas (3) | 17. Stereo Speakers |
| 2. WWAN antennas (2) | 18. Touchpad on/off button with LED indicator |
| 3. Dual-microphone array | 19. Drive activity/HP 3D DriveGuard LED indicator |
| 4. Webcam LED indicator | 20. Battery charging LED indicator |
| 5. Optional HD Webcam | 21. Power/standby LED indicator |
| 6. HP Night Light button and ambient light sensor | 22. Wireless on/off LED indicator |
| 7. HP Night Light | 23. Integrated Smart Card Reader |
| 8. Wireless on/off button with LED indicator | 24. Optical drive or weight saver |
| 9. HP QuickWeb button with LED indicator | 25. Optional RJ-11/modem port |
| 10. Volume mute button with LED indicator | 26. RJ-45/Ethernet port |
| 11. Pointstick | 27. Power connector |
| 12. Optional HP Fingerprint Sensor | 28. Power button with LED indicator |
| 13. Pointstick buttons (2) | 29. Volume down function key |
| 14. Touchpad with scroll zone | 30. Volume up function key |
| 15. Touchpad buttons (2) | 31. HP Power Assistant function key |
| 16. Display release button | |

Overview



- | | |
|------------------------------------|-----------------------------------------------|
| 1. ExpressCard/34 slot | 6. Vent |
| 2. Secure Digital/MMC slot | 7. Docking connector |
| 3. Combo headphone/microphone jack | 8. Kensington Lock slot |
| 4. DisplayPort | 9. VGA connector (external monitor/projector) |
| 5. eSATA/USB 2.0 combo port | 10. 2 USB 2.0 ports |



- | | |
|------------------------------------------------------------|------------------------------------------------------------------------|
| 1. Bottom cover release latch | 5. Stereo Speakers |
| 2. Battery bay | 6. Bluetooth compartment |
| 3. Battery release latch | 7. Hard drive, memory, and wireless compartments
under bottom cover |
| 4. SIM slot for WWAN (select models)
inside battery bay | 8. Vents |

Overview

At A Glance

- Genuine Windows® 7 versions or FreeDOS
- 12.5-inch diagonal LED-backlit HD display, ambient light sensor
- Industrial, business rugged HP DuraCase construction features a full magnesium alloy chassis, wear-resistant HP DuraFinish, precision aluminum-alloy hinges, and cast titanium-alloy display latches; designed to meet the military standard Mil-Std-810G for vibration, dust, altitude, and high temperature operation*
- Spill-resistant keyboard with drains
- Choice of an Intel® Core™ i7 or Core i5 standard voltage processor for maximum performance
- Intel vPro technology (optional) enables you to remotely monitor, diagnose, and repair PCs over the network, even if a system's OS is inoperable or it is powered off
- Optional fixed optical drive or weight saver
- Choice of 5400 rpm or 7200 rpm 2.5-inch hard drive up to 500 GB, with HP 3D DriveGuard protection; or 128/160/256 GB Solid State Drive
- Flexible wireless connectivity options:
 - Integrated HP hs2340 HSPA+ Mobile Broadband module connects to both HSPA and HSPA+ (UMTS) networks and provides GPS functionality
 - Integrated HP un2430 EV-DO/HSDPA Mobile Broadband module (Gobi™ 3000) provides GPS functionality
 - Integrated Intel® Centrino® 802.11 a/b/g/n 2x2 or a/b/g/n 3x3, or Broadcom 802.11 a/b/g/n 2x2 or b/g/n 1x1 wireless LAN module
 - Bluetooth v2.1+EDR
- Choice of 9-cell or 6-cell battery, including HP Long Life battery, to customize weight, run-time, and battery life to your needs
- HP Power Assistant to conserve power, increase battery run-time, monitor power needs, and report workforce power consumption
- Integrated Intel HD Graphics 3000
- SRS Premium Sound optimized for high fidelity audio
- Security features including HP ProtectTools, with central management across HP and non-HP client PCs
- Separate launch buttons for easy access to the following features: wireless on/off, HP QuickWeb, and volume mute
- HP DayStarter for display of calendar information during Windows startup
- DisplayPort for high resolution support
- Optional HP 2560 Series Docking Station provides additional DisplayPort, eSATA port, four additional USB ports (one charging), audio in/out ports, RJ-45, VGA, power connector, and HP Docking Station Cable Lock
- Optional HD Webcam
- Dual pointing devices (touchpad with scroll zone and pointstick)
- HP Night Light
- ExpressCard/34 slot
- Secure Digital/MMC slot
- BFR/PVC-free**, ENERGY STAR qualified and EPEAT Gold registered in the U.S. EPEAT status varies by country- please see epeat.net.

* Testing was not intended to demonstrate fitness for DOD contracts requirements or for military use. Test results are not a guarantee of future performance under these test conditions.

** Meeting the industry definition of 'BFR/PVC-free' per the iNEMI Position Statement on "Low Halogen" Electronics. Plastic parts incorporated into the chassis generally contain < 1000 ppm (0.1%) of bromine or chlorine. Printed circuit board and substrate laminates generally contain < 1500 ppm (0.15%) of total bromine and chlorine. Service parts after purchase may not be BFR/PVC-free. External accessories, including power supplies, power cords, and peripherals as well as the following customer-configurable internal components: ATT SIM card are not BFR/PVC-free.



Standard Features (availability may vary by country)

Processors

2nd Generation Intel Core i7 Processors

Intel Core i7-2640M Processor (2.80 GHz, 4 MB L3 cache, 2 cores/4 threads, 35W)*
Up to 3.50 GHz with Intel Turbo Boost Technology

2nd Generation Intel Core i5 Processors

Intel Core i5-2540M Processor (2.60 GHz, 3 MB L3 cache, 2 cores/4 threads, 35W)*
Up to 3.30 GHz with Intel Turbo Boost Technology

Intel Core i5-2520M Processor (2.50 GHz, 3 MB L3 cache, 2 cores/4 threads, 35W)*
Up to 3.20 GHz with Intel Turbo Boost Technology

Intel Core i5-2450M Processor (2.50 GHz, 3 MB L3 cache, 2 cores/4 threads, 35W)* †
Up to 3.10 GHz with Intel Turbo Boost Technology

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

† Not available with vPro.

NOTE: Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.

Operating System

Preinstalled

Genuine Windows 7 Professional 32*
Genuine Windows 7 Professional 64*
Genuine Windows 7 Home Premium 64*
FreeDOS

Supported

Genuine Windows 7 Enterprise 32*
Genuine Windows 7 Enterprise 64*
Genuine Windows 7 Ultimate 32*
Genuine Windows 7 Ultimate 64*
Genuine Windows Vista Enterprise 32**
Genuine Windows Vista Enterprise 64**
Genuine Windows Vista Business 32**
Genuine Windows Vista Business 64**
Genuine Windows XP Professional 32

Certified

SUSE Linux Enterprise Desktop 11

* System may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality. See: www.microsoft.com/windows/windows-7/ for details.

Chipset

Mobile Intel QM67 Express Chipset

Intel Core i5 processor with vPro/Core i7 processor with vPro technology capable

Intel Core i5 processor with vPro and Core i7 processor with vPro technology is a selectable feature that is available on units configured with select processors, an Intel Centrino Advanced-N or Ultimate-N WLAN module and a preinstalled Windows operating system. It provides advances in remote manageability, security, energy efficient performance, and wireless connectivity. Intel Active Management Technology 7.0 (iAMT) offers built-in manageability and proactive security for networked notebook PCs, even when they are powered off or when the operating system is inoperable*. It can help identify threats before they reach the network, isolate infected systems, and update PCs regardless of their power state.

*Requires a Windows operating system, network hardware and software, connection to a power source, and a direct (non-VPN) corporate network connection, which is either through a cable or a wireless LAN.



Standard Features (availability may vary by country)

NOTE: Some functionality of Intel Core i5 processor with vPro/Core i7 processor with vPro technology, such as Intel Active Management technology and Intel Virtualization technology, requires additional 3rd party software in order to run. Availability of future "virtual appliances" applications for the Intel Core i5 processor with vPro/Core i7 processor with vPro technology is dependent on 3rd party software providers. Compatibility with future "virtual appliances" is yet to be determined.

Graphics

Intel HD Graphics 3000
Microsoft DirectX 10.1 (with Shader Model 4.1) and OpenGL 3.0 capable

Display

Internal 12.5-in. diagonal LED-backlit HD anti-glare (1366 x 768 resolution)
Ambient Light Sensor
HP Privacy Filter support

External Up to 32-bit per pixel color depth
DisplayPort supports resolutions up to 2560 x 1600, 30-bit color depth at 60 Hz, and full HD (1920 x 1080) monitors, 24-bit color depth at 120 Hz
VGA port supports resolutions up to 2048 x 1536 at 75 Hz, and lower resolutions at up to 100 Hz
NOTE: Resolutions are dependent upon monitor capability, and resolution and color depth settings.

Memory

Standard PC3-10600 DDR3 SDRAM (1333 MHz)
Two SODIMM slots supporting dual-channel memory
2 GB, 4 GB, and 8 GB SODIMMs

Maximum Upgradable to 16 GB with 8 GB SODIMMs in slots 1 and 2

Dual channel Maximized dual-channel performance requires SODIMMs of the same size and speed in both memory channels.

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. Full availability of 4 GB or more of memory requires a Windows 64-bit operating system or Linux. With Windows 32-bit operating systems, the amount of usable memory is dependent upon your configuration, so that above 3 GB all memory may not be available due to system resource requirements.

Communications

Integrated Intel 82579LM Gigabit* Network Connection
56K V.92 modem**

* The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. 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.

Wireless devices

Support for a broad range of secure, integrated wireless LAN and wireless WAN options



Standard Features (availability may vary by country)

featuring support for the latest industry standards. Mobile broadband (WWAN) requires a Windows operating system and is available in select countries as a standard, factory-configurable feature or as an option to be added later. Integrated Bluetooth is also available (factory configurable only) and can be combined with any of the supported wireless LAN and wireless WAN options.

Mobile broadband options

Two 850/900/1575/1700/1800/1900/2100 MHz antennas integrated in the top of the display panel support current and future WWAN technologies.

NOTE: A separately purchased mobile network operator service is required.

HP hs2340 HSPA+ Mobile Broadband module

Integrated mobile broadband module that provides connectivity to both HSPA and HSPA+ (UMTS) networks. It also provides standalone, Internet and network assisted GPS functionality for various mapping applications and security applications such as Computrace Pro for HP ProtectTools.

HP un2430 EV-DO/HSDPA Mobile Broadband module (Gobi™ 3000)

Integrated mobile broadband module with Gobi global mobile Internet technology that provides connectivity to both CDMA (EVDO) and UMTS (HSPA) networks. It also provides GPS functionality for various mapping applications and security applications such as Computrace LoJack Pro Premium for HP ProtectTools.

All 802.11 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) and WPA2 support

802.1x authentication support, including EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, and LEAP

Advanced Encryption Standard (AES) support

Dual antennas integrated in the display enclosure

Intel Centrino Ultimate-N 6300 (3x3)

Integrated support for 802.11 a, b, g, and n*

3 transmit, 3 receive antennas

Up to 450 Mb/s data rate

Intel Centrino Advanced-N 6205 (2x2)

Integrated support for 802.11 a, b, g, and n*

2 transmit, 2 receive antennas

Up to 300 Mb/s data rate

Broadcom 43224AGN 802.11 a/b/g/n WiFi Adapter

Integrated support for 802.11 a, b, g, and n

2 transmit, 2 receive antennas

Up to 300 Mb/s data rate

Broadcom 4313GN 802.11 b/g/n WiFi Adapter

Integrated support for 802.11 b, g, and n

1 transmit, 1 receive antenna

Up to 72 Mb/s data rate

HP Integrated Module with Bluetooth 2.1+EDR Wireless Technology

Bluetooth Specification v2.1+EDR compliant

Works with a wide range of Bluetooth devices

* In countries where 802.11 n is not allowed, this capability is not enabled (802.11 a/b/g only).



Standard Features (availability may vary by country)

Keyboard

The HP spill-resistant keyboard is designed using a thin layer of Mylar film under the keyboard and a drain system that funnels fluid through a hole in the bottom of the notebook. This minimizes the risk of damage to sensitive components underneath. The 101-/102-key compatible keyboard features an industry standard, full-pitch key layout with desktop keyboard features, such as the isolated inverted-T cursor control keys, editing keys, both left and right control and alt keys, and 12 function keys. U.S. and International key layouts are available. Other features include an integrated numeric keypad, hotkeys for instant access to power conservation, brightness, and other features, 19 mm x 19 mm key pitch (center-to-center spacing), 2.0 mm stroke, and comfort-dished keycaps.

HP Night Light shines directly on keyboard for low-light conditions.

Launch buttons and function keys

Separate launch buttons provide easy access to the following features: wireless on/off, HP QuickWeb, and volume mute. Function keys provide control of the following features, including: standby mode, external display, volume down, volume up, HP Power Assistant, and display brightness.

Dual Pointing devices

Touchpad with on/off button, two-way scroll, gestures, two pick buttons
Pointstick with two additional pointstick buttons

Internal Storage

Hard drives

320/500 GB 5400 rpm SMART SATA II
250/320/500 GB 7200 rpm SMART SATA II
320 GB 7200 rpm SMART SATA II self encrypting drive (optional)

NOTE: These hard drives are customer removable and will withstand multiple insertion/removal cycles. Up to 20 GB is reserved for the system recovery software.

HP 3D DriveGuard (Windows only)

The 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 from shock and vibration during normal use. The digital accelerometer temporarily halts all data transfer and parks the hard drive when abrupt motion is detected.

Solid State Drive

128/160/256 GB

Optical Drive

9.5 mm SATA optical drive DVD+/-RW SuperMulti DL Drive
DVD-ROM Drive

-or-

Weight Saver

Expansion card slots

ExpressCard/34 slot Supports ExpressCard/34

Integrated Smart Card Reader Compatible with ISO 7816 compliant Smart Cards
PC/SC interface support

Secure digital/MMC slot Supports Secure Digital (SD), Multimedia Card (MMC) (MultiMedia Card)

Interfaces

External monitor

Two - (1) DisplayPort, (1) VGA



Standard Features (availability may vary by country)

Combo headphone/microphone jack	One
Power connector	One
RJ-11/modem	One
RJ-45/Ethernet	One
USB 2.0	Two (including one charging port)
eSATA/USB 2.0 combo	One
Docking connector	For HP 2560 Series Docking Station

Audio/Visual

SRS Premium Sound™
Integrated stereo speakers
Integrated dual-microphone array
Button for volume mute; function keys for volume up and down
Combo headphone/microphone jack

HD webcam

- HD format (widescreen)
- Supports web casting and still image capture
- High quality fixed focus lens
- Video capture at various resolutions up to 1280 x 720 resolution (720p) and up to 30fps
- M-JPEG compression supports higher frame rates for video capture and videoconferencing
- Improved low-light sensitivity
- Improved dynamic range

Software

Preinstalled software with Windows operating system

HP Recovery Manager
HP Support Assistant
HP ProtectTools Security Manager
HP ProtectTools for Central Management
HP Hotkey Support
HP QuickWeb
HP Power Assistant
HP Connection Manager
HP DayStarter
Microsoft Office 2010 preloaded; Purchase Key*
Norton Internet Security 2011**
PDF Complete Special Edition***
Intervideo WinDVD - DVD Player (select models)
Roxio Secure Burn (select models)
Roxio MyDVD 10 SE (select models)
HP Webcam software (select models)
Skype



Standard Features (availability may vary by country)

Additional software available from the Web HP SoftPaq Download Manager

* Includes reduced functionality versions of Word and Excel. Purchase of a Product Key required to activate the full Office 2010 suite and is available at participating resellers/retailers and www.office.com.

** Norton Internet Security 2011 includes 60 days of complimentary live updates; a subscription is required for live updates thereafter. Internet access is required to receive updates.

*** PDF Complete Special Edition 60-day trial; a license must be purchased afterwards for full functionality.

HP Recovery Manager

Models shipped with Windows 7 include HP Recovery Manager, which enables fast recovery of the factory preinstalled image if the system becomes corrupted or if important system files are accidentally deleted. Up to 20 GB of the hard drive is reserved for the system recovery software.

Security

Standard features HP ProtectTools Security Manager (standard modules include)

- Credential Manager
- Computrace* Pro
- Device Access Manager
- Drive Encryption
- Face Recognition (webcam configurations only)
- File Sanitizer
- Privacy Manager
- Embedded Security

Integrated Smart Card Reader

Enhanced Pre-Boot Security (Multiuser/Multifactor)

HP SpareKey

One-Step Logon

TPM 1.2 Embedded Security Chip**

HP Disk Sanitizer

Security lock slot

Support for Intel AT***

Optional features

HP Fingerprint Sensor

Enhanced sensor scans the fingerprint to uniquely identify and authenticate a person.

HP Privacy Filter

Narrows viewing area so that screen data is visible only to persons directly in front of the monitor.

Computrace* Pro for HP ProtectTools with GPS Tracking

Subscription-based security solution providing the ability to track, initiate physical recovery, conduct asset management, and perform remote data delete by utilizing GPS technology. GPS functionality requires HP Mobile Broadband Module.

* The Computrace agent is shipped turned off, and must be activated by customers when they purchase a subscription with terms ranging from one to five years.



Standard Features (availability may vary by country)

**The TPM module is disabled in locations where use is restricted by law, for example, Russia and China.

For more information on HP security solutions refer to: www.hp.com/products/security.

*** Intel AT security requires a separately purchased Absolute Computrace service subscription and must be activated and configured. Check with Absolute for availability in your country. Intel and HP assume no liability for lost or stolen data and/or systems or any other damages resulting therefrom. See www.intel.com/technology/anti-theft/

HP ProtectTools Security Manager with Central Management

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. The ProtectTools modules are available on the hard drive (also downloadable from the Web) and can be configured in Software Setup.

HP ProtectTools is centrally manageable and has the capability to manage notebooks from a single point. HP ProtectTools is management ready out of the box, in partnership with Digital Persona. Features address requirements that customers expect from a centrally managed security solution such as user provisioning, credential reset, and credential revocation.

HP ProtectTools provides two separate management solutions, targeted at the enterprise and the SMB:

- Digital Persona Pro AD: Designed for the enterprise customer, this solution integrates with Active Directory and gives IT managers the ability to provision users, create login policies based on passwords, biometrics, or smartcards. Management features also include remote credential recovery in case a user forgets their password, loses their smartcard or cannot use their fingerprint reader for any reason. In addition, advanced auditing capabilities are also built in. Digital Persona Pro AD is available now.
- Digital Persona Pro Workgroup: Designed for the small business customer. This solution provides features similar to the Active Directory version, but for workgroups. Workgroup activation is built into HP ProtectTools, and activation of up to five seats is completely free.

For more information on Central Management for HP ProtectTools, refer to:

www.hp.com/products/security.

Power supply

External HP 65 W Smart AC adapter
Power cord included is 6 ft (1.8 m).
Total length, including external AC adapter, is 12 ft (3.66 m).
HP Fast Charge*

*HP Fast Charge recharges your battery up to 90% within 90 minutes when the system is off. Fast Charge Technology does not apply to 9-cell primary batteries.

Battery

Primary battery

HP 9-cell 100 WHr Lithium-ion primary battery
HP 6-cell 62 WHr Lithium-ion primary battery

HP Long Life 6-cell 55 WHr Lithium-ion primary battery



Standard Features (availability may vary by country)

Battery life **HP 9-cell primary battery** Up to 14 hours and 15 minutes

HP 6-cell primary battery Up to 8 hours and 30 minutes

NOTE: Battery life will vary depending on the product model, configuration, loaded applications, features, use, wireless functionality and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See MobileMark07 battery benchmark at www.bapco.com/products/mobilemark2007 for additional details.

System standby time Up to 1 week

Power conservation Supports enhanced Intel SpeedStep technology (allows Battery-Optimized mode, Maximum Performance mode, or Automatic mode)

Intel Display Power Saving technology

Hibernation

Standby

ACPI compliance

Docking and stands HP 2560 Docking Station
HP USB 2.0 Docking Station
HP Essential USB 2.0 Port Replicator
HP LAN and USB Travel Hub

NOTE: Some HP Docking stations may not support every feature of some HP Notebook models. Please refer to the individual docking station documentation for specific information about supported features.

Service and support HP Services offers limited 3-year and 1-year warranty options; 1-year limited warranty on primary battery. On-site service and warranty upgrades are also available. HP Care Pack Services extend service contracts beyond the standard warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: www.hp.com/go/lookuptool. Additional HP Care Pack Services information by product is available at: www.hp.com/services/carepack.

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



Options (availability may vary by country)

Memory	HP 1 GB (DDR3 1333 MHz) SODIMM	AT911AA#xxx
	HP 2 GB (DDR3 1333 MHz) SODIMM	AT912AA#xxx
	HP 4 GB (DDR3 1333 MHz) SODIMM	AT913AA#xxx
	HP 8 GB (DDR3 1333 MHz) SODIMM	QP013AA#xxx
Storage	HP 250GB Pocket Media Drive	FE477AA
	HP Mobile USB DVD	XQ543AA
	HP Mobile USB DVDRW	BU516AA
	HP Mobile Blu-ray USB DVDRW	XQ546AA
Expansion solutions	HP 2560 Series Docking Station	TBD
	HP USB 2.0 Docking Station	AY052AA#xxx
	HP Essential USB 2.0 Port Replicator	AQ731AA#xxx
	HP LAN and USB Travel Hub	BM868AA#xxx
Power	HP 65W Smart AC Adapter	ED494AA#xxx
	HP 90W Smart AC/Auto/Air Combo Adapter	AJ652AA#xxx
	HP 65W Slim AC Adapter	AX727AA#xxx
	HP 90W Slim AC Adapter	BT796AA#XXX
Carrying cases	HP Basic Carrying Case	AJ078AA
	HP Business Nylon Case	BP848AA
	HP Professional Slim Top Load Case	AY530AA
Security	HP Notebook Combo Lock	AY475AA#xxx
	HP Keyed Cable Lock	BV411AA
	HP 12.5-inch Display Privacy Filter	QA216AA
Input/Output devices	HP USB Optical Travel Mouse	RH304AA
	HP USB/PS2 Optical 2-Button Scroll Mouse	DC369A
	HP USB Keyboard & Mouse Bundle	RC465AA#xxx
	HP Notebook Projection Companion	AX325AA#xxx



Technical Specifications

System unit	Dimensions (HxWxD)	1.08 in (at front) x 12.02 in. x 8.23 in. 27.4 mm (at front) x 305.2 mm x 209.0 mm 1.29 in (32.8 mm) height at rear
	Weight	Starting at 4.02 lb (1.82 kg) with weight saver (no optical drive) Starting at 4.24 lb (1.92 kg) with optical drive
NOTE: Height varies depending upon where on the notebook the measurement is made. Weight varies by configuration and components. Weight includes 6-cell battery and wireless LAN.		
Stand-alone power requirements (AC Power)	Nominal operating voltage	18.5 V
	Average operating power	TBD W
	Max operating power	< 65 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	UL	Yes
	CSA	Yes
	FCC Compliance	Yes
	ENERGY STAR®	Select models*
	EPEAT	Gold target**
	ICES	Yes
	GS	Yes
	Australia / NZ A-Tick Compliance	Yes
	CCC	Yes
	Japan VCCI Compliance	Yes
	KCC	Yes
	BSMI	Yes
	CE Marking Compliance	Yes
	BNCL or BELUS	Yes
CIT	Yes	
GOST	Yes	



Technical Specifications

Saudi Arabian Compliance (ICCP)	Yes
SABS	Yes
UKRSERTCOMPUTER	Yes

* Configurations of the HP EliteBook 2560p that are ENERGY STAR qualified are identified as HP EliteBook 2560p ENERGY STAR on HP websites and on www.energystar.gov.

** EPEAT TBD Registered in U.S. EPEAT registration varies by country. See www.epeat.net for registration status by country.

NOTE: For accessibility information on HP products, please visit: <http://www.hp.com/accessibility>.

Audio	SRS Premium Sound	
Hardware	Implementation	IDT 92HD87 High Definition CODEC
	Touch-Sensitive Volume Controls	Volume up, volume down, and mute
	Full Duplex	Yes
	Microphone In	Stereo
	Headphone/Line Out	Stereo
	Integrated Microphone	Yes, dual digital microphone array when equipped with optional webcam
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 – 48kHz
	DAC	16, 20 or 24-bit
	ADC	16 or 20-bit
Integrated Stereo Speakers	Power Rating	2 Watts
	Impedance	4 Ohms
Power		
HP 65W Smart AC Adapter	Dimensions	4.17 x 1.85 x 1.1 in (10.6 x 4.7 x 2.8 cm)
	Weight	0.62 lb (280 g)
	Input	100 to 240 VAC
	Input Efficiency	87% min at 115 VAC



Technical Specifications

Output	Input frequency range	47 to 63 Hz
	Input AC current	1.7 A at 90 VAC, 0.85 A at 180 VAC
	Output power	65W
	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.	

Displays

12.5-inch LED-backlit HD anti-glare	Active Area (W x H)	10.63 x 6.4 in (27.7 x 15.6 cm)		
	Diagonal Size	12.5 in (31.75 cm)		
	Surface Treatment	Anti-glare		
	Contrast Ratio	400:1 (typical)		
	Refresh Rate	60 Hz		
	Brightness	200 nit (typical)		
	Pixel Resolution	Pitch	0.2025 mm	
		Format	1366 x 768	
		Configuration	RGB Stripe	
	Backlight	LED		
	PPI	125		
	Viewing Angle	±30° Horizontal, ±10° Vertical (minimum) SVA 30/30/20/10 (Left/Right/Down/Up) (minimum) or 45/45/35/25 (Left/Right/Down/Up) (typical)		

Internal Storage

500 GB 7200 rpm SATA Hard Drive	Drive Weight	0.25 lbs (115g)
	Capacity	500 GB
	Height	0.37 in (9.5 mm)



Technical Specifications

Width	2.75 in (70 mm)	
Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ	
Transfer Rate	Synchronous (maximum)	300 MB/s (Drive Capability)
Seek Time (typical reads, including settling)	Single Track	1.5 ms
	Average	11 ms
	Maximum	22 ms
Rotational Speed	7200 rpm	
Logical Blocks	976,773,168	
Operating Temperature	32° to 140° F (0° to 60° C) [case temp]	
Features	ATA Security	

320 GB 7200 rpm SATA Hard Drive

Drive Weight	0.25 lbs (115 g)	
Capacity	320 GB	
Height	0.37 in (9.5 mm)	
Width	2.75 in (70 mm)	
Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ	
Transfer Rate	Synchronous (maximum)	300 MB/s (Drive Capability)
Seek Time (typical reads, including settling)	Single Track	1.5 ms
	Average	11 ms
	Maximum	22 ms
Rotational Speed	7200 rpm	
Logical Blocks	625,142,448	
Operating Temperature	32° to 140° F (0° to 60° C) [case temp]	
Features	ATA Security	

256 GB 2.5-inch SATA Solid State Drive

Drive Weight	73 Grams (max)	
Capacity	256 GB	
Height	0.276 in (7 mm)	
Width	2.76 in (70 mm)	
Interface	SATA Gen 2	
Performance	Maximum Sequential Read	Maximum Sequential Write
	Up to 265 MB/s	Up to 220 MB/s
Logical Blocks	500,118,192	
Operating	32° to 158°F (0° to 70°C) [case temp]	



Technical Specifications

	Temperature Features	ATA Security; ATA-7 compliant; SATA 2.6; DIPM; TRIM		
250 GB 7200 rpm SATA Hard Drive	Drive Weight	0.25 lbs (115g)		
	Capacity	250 GB		
	Height	0.37 in (9.5 mm)		
	Width	2.75 in (70 mm)		
	Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ		
	Transfer Rate	Synchronous (maximum)	300 MB/s (Drive Capability)	
	Seek Time (typical reads, including settling)	Single Track	1.5 ms	
		Average	11 ms	
		Maximum	22 ms	
	Rotational Speed	7200 rpm		
Logical Blocks	488,397,168			
Operating Temperature	32° to 140° F (0° to 60° C) [case temp]			
	Features	ATA Security		
128 GB 2.5-inch SATA Solid State Drive	Drive Weight	75 Grams		
	Capacity	128 GB		
	Height	0.276 in (7 mm)		
	Width	2.76 in (70 mm)		
	Interface	SATA Gen 2		
	Performance	Maximum Sequential Read	250 MB/s	
		Maximum Sequential Write	140 MB/s	
	Logical Blocks	250,069,680		
	Operating Temperature	32° to 158°F (0° to 70°C) [case temp]		
		Features	ATA Security; ATA-7; SATA 2.6; DIPM; TRIM	
160 GB 2.5-inch SATA Solid State Drive	Drive Weight	78 Grams		
	Capacity	160 GB		
	Height	0.276 in (7 mm)		
	Width	2.76 in (70 mm)		
	Interface	SATA Gen 2		
	Performance	Maximum Sequential Read	250 MB/s	
		Maximum Sequential Write	100 MB/s	
	Logical Blocks	312,581,808		
	Operating Temperature	32° to 158°F (0° to 70°C) [case temp]		



Technical Specifications

Features

ATA Security; ATA-7; SATA 2.6; DIPM; TRIM

Optical Drives

DVD-ROM Drive

Access Times

Random < 140 ms CD (typical)
< 160 ms DVD (typical)

Max Data Transfer Rate

24X CD-ROM
8X-DVD

Transfer Mode

UDMA Mode 5

Interface

Gen 1 SATA

Supported Media (read)

CD-DA, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM

Supported Media (write)

None

Max Media Capacity (read)

8.5GB

Transport

Tray Loading

DVD+/-RW SuperMulti DL Drive

Access Times

Random <140ms CD (typical)
< 160 ms DVD (typical)

Max Data Transfer Rate

24X CD-ROM
8X DVD
24X CD-R
24X CD-RW
8X DVD+R
8X DVD+RW
8X DVD-R
6X DVD-RW
6X - DVD+R Dual Layer
6X - DVD-R Dual Layer
5X DVD-RAM

Transfer Mode

UDMA Mode 5

Interface

Gen 1 SATA

Supported Media (read)

CD-DA, 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

CD-R, CD-RW, DVD+R, DVD+RW, DVD-R, DVD-RW, DVD-RAM,



Technical Specifications

(write) DVD+R DL, DVD-R DL

Max Media Capacity 8.5 GB

(read)

Max Media Capacity 8.5 GB

(write)

Transport Tray Loading

HP 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

Security

Communications

Intel® 82579LM Gigabit Network Connection

Ethernet Features 10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14)
100 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 802.3ab; IEEE 802.3. Clauses 40)
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 802.1q VLAN support
IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)
IEEE 802.3az EEE(Energy Efficient Ethernet)
Jumbo Frame 9K
Auto MDI/MDIX Crossover cable detection

Power Management ACPI compliant - multiple power modes
Energy Detect Low Power Mode(Green Ethernet)

Performance Features TCP/IP/UDP Checksum Offload (configurable)
Protocol Offload(ARP & NS)



Technical Specifications

	<p>Large send offload and Giant send offload</p> <p>Receiving Side Scaling</p> <p>MACSec Offload (802.3ae)</p> <p>Intel vPro</p> <p>iSCSI Boot</p>
Manageability	<p>Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only)</p> <p>PXE 2.1 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>Virtual Cable Doctor for Ethernet cable status</p>
Interface	<p>PCI Express 1.1 x1 to fully support ASPM L0s/L1 and CLKREQ.</p> <p><i>NOTE: Intel 82579 PCIe interface is not PCIe compliant. It operates at half of PCIe specification V1.1 (2.5GT/S) speed.</i></p>
NIC Device Driver Name	Intel 82579LM/82579V Ethernet Network Connection

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	<p>V.92 data</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>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.34</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>



Technical Specifications

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

HP un2430 EV-DO/HSDPA Mobile Broadband Module (Gobi™ 3000)

Technology/Operating Bands	GSM/GPRS/EDGE: 850MHz(Cell), 900MHz(EGSM), 1800MHz(DCS), 1900MHz (PCS) UMTS/WCDMA with receive diversity: 2100MHz (UTRA FDD Band I), 1900MHz (UTRA FDD Band II), AWS (UTRA FDD Band IV), 900MHz(UTRA FDD Band VIII), 850MHz (UTRA FDD Band V) 1xEVDO/1xRTT with receive diversity: 850MHz (Band Class0-Cell), 1900MHz (Band Class1-PCS)
Wireless Protocol Standards	GSM/GPRS/EDGE: Class A, Multi-slot class 10 operation, coding schemes CS1 - CS4 and MSC1 - MSC9. UMTS/WCDMA: Release 99 and Release 6 CDMA: 1xEVDO Release 0 and Release A, IS-95A, IS-95B, IS-856, IS-2000
Wireless Parametric Standards	Meets or exceeds TIA/EIA IS-98-D
Maximum Data Rates	UMTS (HSPA) - 14.4 Mbps (Download), 5.76Mbps (Upload) CDMA (EVDO Release A) - 3.1 Mbps (Download), 1.8Mbps (Upload)
GPS	Standalone GPS enabled gpsOneXTRATM™
GPS Bands	L1 - 1575.42 MHz
Maximum Output Power	GSM/GPRS/EDGE: 32dBm (+/-1) WCDMA: 24dBm (+0.7/-2.3) CDMA: 24dBm (+0.7/-2)
Maximum Power Consumption	2750mA (peak); 1100mA (average)
Power Consumption, Idle Not Connected	20 mA
Power Management	USB selective suspend Integrated notebook wireless button
Antenna Type	Dual high efficiency 5 band antennae with spatial diversity, mounted in the display enclosure



Technical Specifications

Form Factor	PCI-Express MiniCard, USB 2.0 interface
Weight	11.5 g
Dimensions (Length x Width x Thickness)	2.01 x 1.18 x 0.18 in (51 x 30 x 5 mm)
Voltage, Operating	3.3v +/- 10%
Temperature, Operating (from TIA/EIA/IS-98-D)	-22° to 158° F (-30° to 70° C) (full RF performance) -22° to 167° F (-30° to 75° C) (reduced RF performance)
Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108)	-40° to 185° F (-40° to 85° C)
Humidity, Non-operating	95% relative humidity for 48 hours @ 185° F (85° C) (non-condensing)
Configuration Utilities	HP Connection Manager
LED Activity	LED Off - Radio Off; Solid LED On - Radio On

HP hs2340 HSPA+ Mobile Broadband Module	Technology/Operating Bands	GSM/GPRS/EDGE: 850MHz(Cell), 900MHz(EGSM), 1800MHz(DCS), 1900MHz (PCS) UMTS/WCDMA with receive diversity: 2100MHz (UTRA FDD Band I), 1900MHz (UTRA FDD Band II), 900MHz(UTRA FDD Band VIII), 850 MHz (UTRA FDD Band V)
	Wireless Protocol Standards	GSM/GPRS/EDGE: Class B, Multi-slot class 10 operation, coding schemes CS1 - CS4 and MSC1 - MSC9. UMTS/WCDMA: Release 99 and Release 7 Advanced Receiver Type 3i
	Wireless Parametric Standards	Complies with 3GPP specifications
	Maximum Data Rates	UMTS (HSPA) - 21 Mbps (Download), 5.76Mbps (Upload)
	GPS	Standalone, A-GPS (Internet- and Network assisted)
	GPS Bands	1575.42 MHz (± 1.023 MHz)
	Maximum Output Power	GSM/EDGE GSM850 & GSM900 bands GPRS: +33 dBm ± 2 dBm (class 4) EGPRS: +27 dBm ± 3 dBm (class E2) DCS1800 & PCS1900 bands GPRS: +30 dBm ± 2 dBm (class 1) EGPRS: +26 dBm +4 / -3 dBm (class E2)
	Maximum Power	UMTS UTRA FDD Bands +24 dBm +4 / -3 dBm (class 3) 2000mA (peak); 600mA (average)



Technical Specifications

Consumption	
Power Consumption, Sleep Mode	5 mA
Power Management	USB selective suspend Integrated notebook wireless button
Antenna Type	Dual high efficiency 5 band antennae with spatial diversity, mounted in the display enclosure
Form Factor	PCI-Express MiniCard, USB 2.0 interface
Weight	< 12 g
Dimensions (Length x Width x Thickness)	2.01 x 1.18 x 0.18 in (51 x 30 x 5 mm)
Voltage, Operating	3.3v +/- 9%
Temperature, Operating	14° to 149° F (-10° to 65° C) (full RF performance) 14° to 167° F (-10° to 75° C) (reduced RF performance)
Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108)	-22° to 185° F (-30° to 85° C)
Humidity, Non-operating	85% relative humidity for 48 hours @ 185° F (85° C) (non-condensing)
Configuration Utilities	HP Connection Manager
LED Activity	LED Off - Radio Off; Solid LED On - Radio On

Intel Centrino Advanced-N 6205	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n*
		* In countries where 802.11n is not allowed, this capability is not enabled.
	Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Windows Vista and XP (details at: http://www.hp.com/go/notebooks/WLAN)
	Frequency Band	2.4 GHz and 5GHz
	Antenna Structure	2 transmit; 2 receive (2x2)
	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 802.11n: 66 possible data rates, ranging from 6 Mbps to 300 Mbps, depending on the combination of Bandwidth, Modulation Coding Scheme, and Guard Interval used, as defined in IEEE 802.11n specification
	Modulation	Direct Sequence Spread Spectrum



Technical Specifications

Security ¹	DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM Authentication: WPA and WPA2, 802.1x (EAP_TLS, TTLS, PEAP, LEAP, EAP-FAST) Authentication Protocols: PAP, CHAP, TLS, GTC, MS-CHAP, MS-CHAPv2 Encryption: 64 and 128-bit WEP, AES-CCMP, CKIP, TKIP Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows Vista and XP only.
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 2.4GHz band Access Points
Output Power (for CCK and OFDM) ²	17 dBm max
Power Consumption	Transmit: 2.3 Watts (max, with two spatial streams) Receive: 1 Watt (max with two spatial streams) Idle mode ³ : 35 mW (average) Radio off: 20 mW (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity ⁴	54 Mbps: -76 dBm, 6 Mbps: -92 dBm
Antenna Connections	2 U.FL type connectors, 50 ohm nominal impedance
Form Factor	PCI-Express Half-MiniCard
Weight	0.0075 lb (3.4 g)
Dimensions	0.12 x 1.06 x 1.18 in (3.1 x 26.8 x 30.0 mm)
Operating Voltage	3.3V +/- 9%
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 90% (non-condensing)
Altitude	Operating 0 to 10,000 ft (3,048 m) Non-operating 0 to 50,000 ft (15,240 m)
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.



Technical Specifications

3. In Power Save Polling mode and on battery power.
4. 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).
5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista.

Intel Centrino Ultimate-N 6300	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n*
		* In countries where 802.11n is not allowed, this capability is not enabled.
	Interoperability	Wi-Fi certified (802.11bgn only) Cisco Compatible Extensions Program compliant (802.11bgn only) with Microsoft Windows Vista and XP (details at: http://www.hp.com/go/notebooks/WLAN)
	Frequency Band	2.4 GHz and 5GHz
	Antenna Structure	3 transmit; 3 receive (3x3)
	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 802.11n: many possible data rates, ranging from 6 Mbps to 450 Mbps, depending on the combination of Bandwidth, Modulation Coding Scheme, and Guard Interval used, as defined in IEEE 802.11n specification
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM
	Security¹	Authentication: WPA and WPA2, 802.1x (EAP_TLS, TTLS, PEAP, LEAP, EAP-FAST) Authentication Protocols: PAP, CHAP, TLS, GTC, MS-CHAP, MS-CHAPv2 Encryption: 64 and 128-bit WEP, AES-CCMP, CKIP, TKIP Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows Vista and XP only.
	Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
	Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
	Network	Ad-hoc (Peer to Peer)



Technical Specifications

Architecture Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between Access Points
Output Power (for CCK and OFDM) ²	17 dBm max
Power Consumption	Transmit: 2.4 Watts (max, with three spatial streams) Receive: 1.4 Watts (max with three spatial streams) Idle mode ³ : 35 mW (average) Radio off: 20 mW (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity ⁴	54 Mbps: -76 dBm, 6 Mbps: -92 dBm
Antenna Connections	3 U.FL type connectors, 50 ohm nominal impedance
Form Factor	PCI-Express Half-MiniCard
Weight	0.0075 lb (3.4 g)
Dimensions	0.12 x 1.06 x 1.18 in (3.1 x 26.8 x 30.0 mm)
Operating Voltage	3.3V +/- 9%
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 90% (non-condensing)
Altitude	Operating 0 to 10,000 ft (3,048 m) Non-operating 0 to 50,000 ft (15,240 m)
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 and on battery power.
4. 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).
5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista.

**Broadcom
43224AGN
802.11a/b/g/n
WiFi Adapter**

Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n*
Interoperability	Wi-Fi certified (802.11abg only) Cisco Compatible Extensions Program compliant (802.11abg only) with Microsoft Windows Vista and XP (details at: http://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 802.11n: 6, 6.5, 9, 12, 13, 13.5, 18, 19.5, 24, 26, 27, 36, 39, 40.5, 48, 52, 54, 58.5, 65, 78, 81, 104, 108, 117, 121.5, 130, 135, 162, 216, 243, 270, 300 Mbps
Frequency Support	20 MHz: 2.4 GHz and 5 GHz bands 40 MHz: 2.4 GHz and 5 GHz bands
Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM
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. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows Vista and XP only.
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 dBm , nominal
Output Power (for OFDM; power varies by data rate) ²	15 dBm , nominal
Power Consumption	Idle associated: 250 mW Idle unassociated: 150 mW Transmit/Receive 20 MHz channel: 2.0 W (max) Transmit/Receive 40 MHz channel: 2.0 W (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity³	270 Mbps: -61dBm, , 54 Mbps: -72 dBm, 11 Mbps: -85 dBm , 1 Mbps: -92 dBm
Antenna type	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure
Form Factor	PCI-Express Half-MiniCard
Weight	0.013 lb (6 g)
Dimensions	0.19 x 1.06 x 1.18 in (4.75 x 26.8 x 30 mm)



Technical Specifications

Operating Voltage	3.3v +/- 10%	
Temperature	Operating	14° to 149° F (-10° to 65° 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)
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. 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). 4. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista. 	

Broadcom 4313GN 802.11b/g/n WiFi Adapter	Wireless LAN Standards	IEEE 802.11b IEEE 802.11g IEEE 802.11n
	Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Win7, Vista and XP (details 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 802.11n: 6.5, 7.2, 13, 14.4, 19.5, 21.7, 26, 28.9, 39, 43.3, 52, 57.8, 58.5, 65, 72.2Mbps
	Frequency Support	20 MHz: 2.4 GHz bands
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM
	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. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows Vista and XP only.
	Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
	Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
	Network Architecture	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)



Technical Specifications

Models	
Roaming	IEEE 802.11 compliant roaming between access points
Output Power (for CCK) ²	17 dBm , nominal
Output Power (for OFDM; power varies by data rate) ²	15 dBm , nominal
Power Consumption	Idle associated: 250 mW avg (CLKREQ enabled) Idle unassociated: 425 mW avg Transmit/Receive 20 MHz channel: 5.5 W (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity ³	72.2 Mbps: -71dBm
Antenna type	High efficiency dual band antenna with spatial diversity, usually mounted in the display enclosure
Form Factor	PCI-Express Half-MiniCard
Weight	0.013 lb (6 g)
Dimensions	0.19 x 1.06 x 1.18 in (4.75 x 26.8 x 30 mm)
Operating Voltage	3.3v +/- 10%
Temperature	Operating 14° to 149° F (-10° to 65° 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)
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. 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).4. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista and Win7.

HP Integrated Module with Bluetooth 2.1+EDR Wireless Technology	Bluetooth Specification	2.1+EDR Compliant
	Dimensions	1.18 x 0.26 x 0.13 in (30 x 6.5 x 3.25 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,



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	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
Bluetooth Software Supported	Broadcom Bluetooth for Windows Microsoft Windows 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 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	Serial Port Profile (SPP) ¹ Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN) ^{1,2} Generic Object Exchange Profile (GOEP) ^{1,2} Object Push Profile (OPP) ^{1,2} File Transfer Profile (FTP) Synchronization Profile (SYNC) Hard Copy Cable Replacement (HCRP) ^{1,2} Personal Area Networking Profile (PAN) ^{1,2} Human Interface Device Profile (HID) ^{1,2,3}



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- FAX Profile (FAX)
- Basic Imaging Profile (BIP)²
- Headset Profile (HSP)
- Hands Free Profile (HFP)
- Advanced Audio Distribution Profile (A2DP)

1. indicates the profile is supported by Microsoft Windows XP SP2
2. indicates the profile is part of Windows Vista

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:

- US ENERGY STAR®
- IT ECO declaration
- EPEAT - Gold where HP registers commercial notebook products. See <http://www.epeat.net> for registration status in your country.

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Convertible Mini tower Desktop model is based on a "Typically Configured Notebook"

Energy Consumption	115 VAC	230 VAC	100 VAC
Normal Operation	7.9 W	8.38 W	7.78 W
Sleep (Energy Star low power mode)	0.71 W	0.87 W	0.7 W
Off	0.65 W	0.81 W	0.65 W
Heat Dissipation*	115 VAC	230 VAC	100 VAC
Normal Operation	27 BTU/hr	29 BTU/hr	27 BTU/hr
Sleep	2 BTU/hr	3 BTU/hr	2 BTU/hr
Off	2 BTU/hr	3 BTU/hr	2 BTU/hr

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

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	2.9	19.4
Fixed Disk	2.9	20.3



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(random writes)

System fan is usually off except when charging the battery

Batteries

This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:

- Mercury greater than 5ppm by weight
- Cadmium greater than 10ppm by weight

The battery type and chemistry used in the product is:

CR2032 (coin cell), Li-ion

6-cell high capacity Lithium-Ion battery (optional 8 cell available)

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.

This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).

This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net

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

This product contains 0.22% post consumer recycled plastic (by wt.)

This product is greater than 93.3% recycle-able when properly disposed of at end of life.

Packaging Materials

- External:
 - Corrugated 115 g
 - CANON bags - several layers 5 g
 - Corrugated Carton 360 g
- Internal:
 - Polyethylene low density 15 g
 - Molded Pulp 160 g
- The Corrugated packaging material is made from 80% recycled content.
- The CANON bags - several layers packaging material is made from 80% recycled content.
- The Corrugated Carton packaging material is made from 80% recycled content.



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- The Polyethylene low density packaging material is made from 60% recycled content.
- The Molded Pulp packaging material is made from 60% 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
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- 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



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applications.

- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
- Nickel finishes that release greater than 0.5 $\mu\text{grams}/\text{cm}^2/\text{week}$, measured according to EN 1811:1998, are not used on any product surface designed to be frequently handled or touched by users.

End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/recyclers>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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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