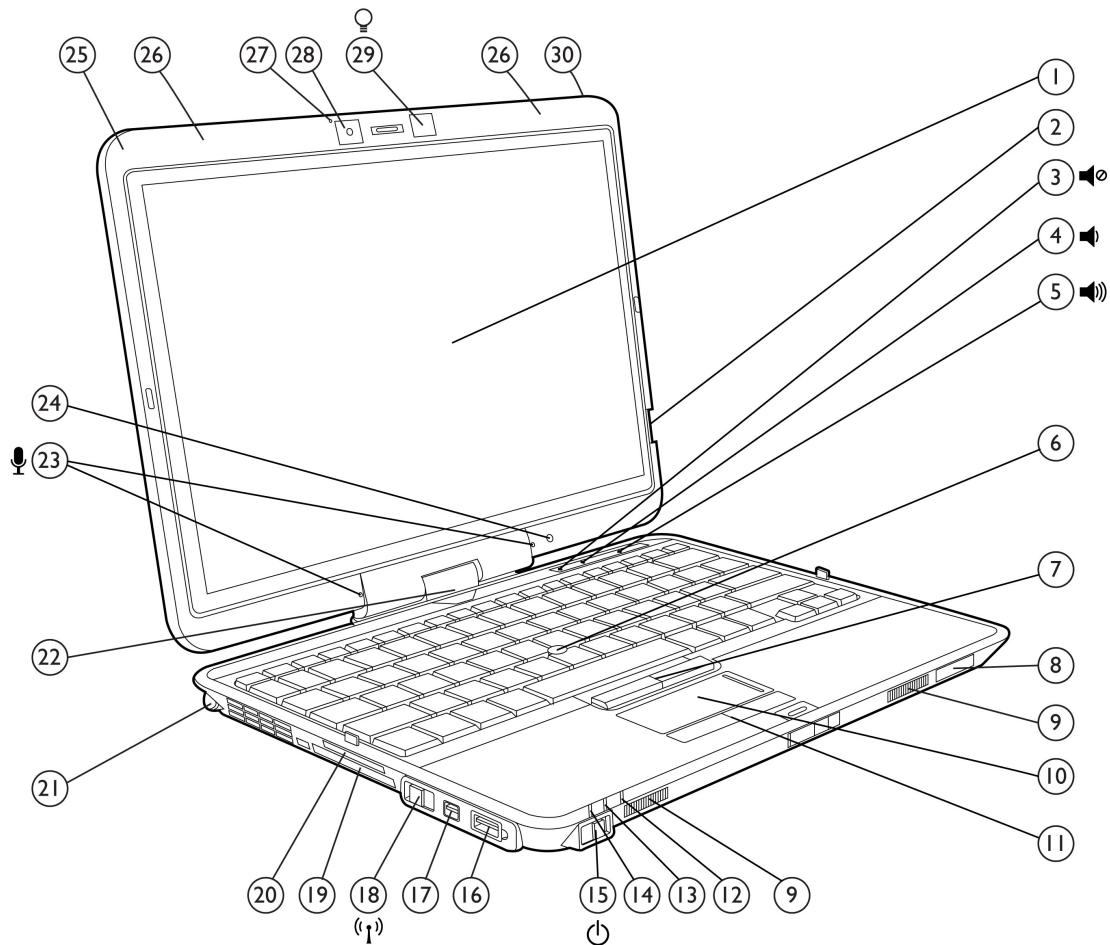
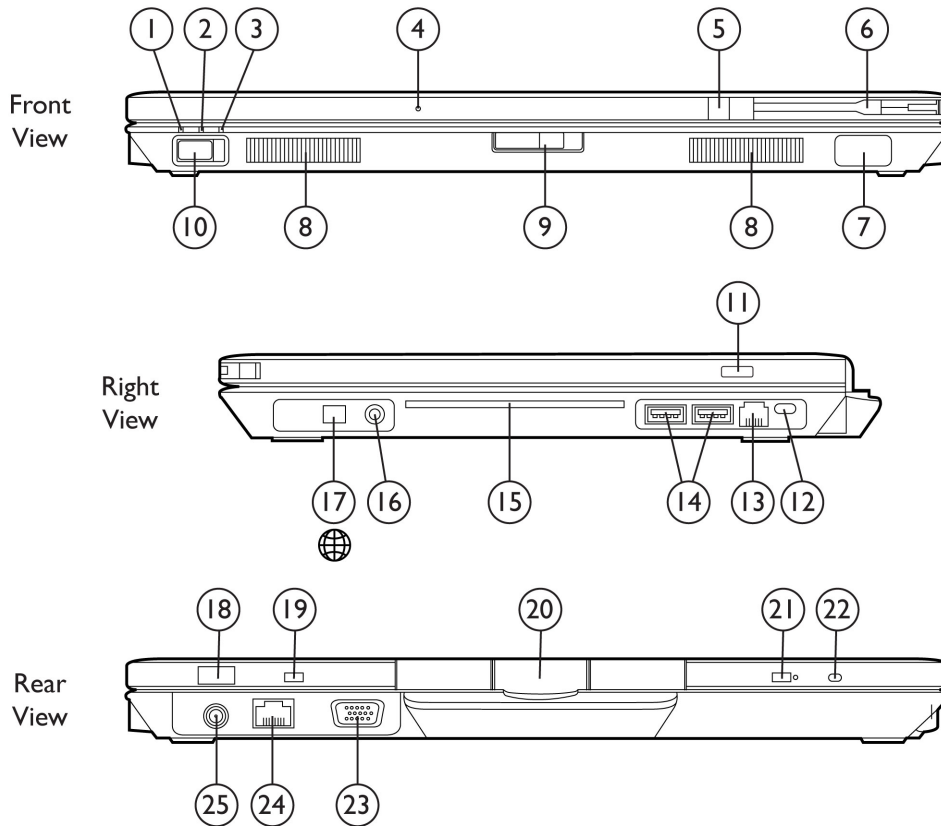


Overview



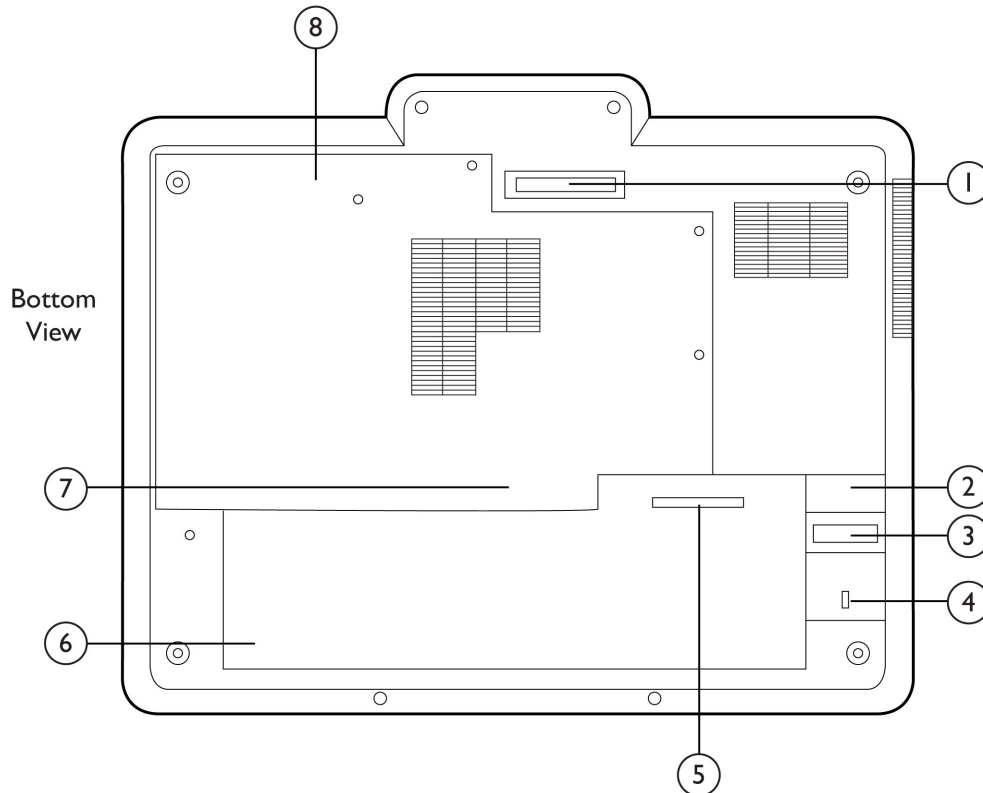
- | | |
|---|--|
| 1. Touch screen | 16. USB 2.0 port (charging) |
| 2. HP Fingerprint Sensor | 17. 1394a port |
| 3. Volume mute button with LED indicator | 18. Wireless on/off with LED indicator |
| 4. Volume down button with LED indicator | 19. ExpressCard/34 slot |
| 5. Volume up button with LED indicator | 20. Secure Digital/MultiMediaCard slot |
| 6. Pointstick | 21. Pen holder |
| 7. Pointstick buttons (2) | 22. Convertible hinge |
| 8. Bluetooth compartment | 23. Dual-microphone array |
| 9. Stereo speakers | 24. Ambient light sensor |
| 10. Touchpad with scroll zone | 25. Internal WWAN antenna |
| 11. Touchpad buttons | 26. Internal WLAN antennas (2) |
| 12. Drive activity / HP 3D DriveGuard LED indicator | 27. Webcam LED indicator |
| 13. Battery charging LED indicator | 28. 720p HD Webcam |
| 14. Power/standby LED indicator | 29. HP Night Light |
| 15. Power switch | 30. External WWAN antenna |

Overview



1. Power/standby LED indicator
2. Battery charging LED indicator
3. Drive activity / HP 3D DriveGuard LED indicator
4. Webcam LED indicator
5. External WWAN antenna button
6. External WWAN antenna
7. Bluetooth compartment
8. Stereo speakers
9. Display release latch
10. Power switch
11. HP Fingerprint Sensor
12. Security lock slot
13. RJ-11/modem port
14. USB 2.0 ports (2)
15. Smart Card reader
16. Combo headphone/mic jack
17. QuickWeb button
18. Jog dial
19. Esc button
20. Convertible Hinge
21. Rotate button
22. Windows security button (ctl-alt-del)
23. VGA/external monitor connector
24. RJ-45/Ethernet port
25. Power connector

Overview



- | | |
|-------------------------------------|---|
| 1. Docking connector | 5. Battery charge level indicator |
| 2. Battery release latch | 6. Battery bay |
| 3. Secondary battery connector | 7. SIM card slot (select units, located inside battery bay) |
| 4. Secondary battery connector door | 8. Hard drive, memory, WLAN, WWAN module compartment |

At A Glance

- Genuine Windows 7 versions or FreeDOS
- Convertible tablet design with the functionality of a business notebook plus the flexibility of a writing tablet with both pen and finger touch input
- 12.1-inch diagonal LED-backlit WXGA ultra wide-viewing angle display with chemically-strengthened glass top cover, pen digitizer, two finger multi-touch screen with gesture support, ambient light sensor, and optional Outdoor View panel
- Full magnesium alloy chassis, chemically-strengthened glass over display
- Designed to meet the military standard Mil-Std-810G for vibration, dust, altitude, and high temperature operation*
- Spill-resistant keyboard with drains
- Choice of 2nd generation Intel® Core™ i7 and i5 processors with Intel Turbo Boost Technology
- Intel Core i7 with vPro and Core i5 with vPro technology (optional)
- Up to 320-GB 7200 rpm, user-removable hard drive protected by HP 3D DriveGuard, or up to 160 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/HSPA Mobile Broadband Module (Gobi 3000) provides GPS functionality (availability expected May, 2011)
 - Integrated Intel Centrino® 802.11 a/b/g/n 2x2, or Broadcom 802.11 a/b/g/n 2x2 or b/g/n 1x1 wireless LAN module

Overview

- Bluetooth® v2.1+EDR
- HP Connection Manager
- New HP 2740p Ultra-Slim Expansion Base with DisplayPort and eSATA port
- Choice of standard 6-cell primary battery with fuel gauge or HP Long Life battery, plus optional external HP 2700 Ultra-Slim Battery
- SRS Premium Sound optimized for high fidelity audio
- Enhanced security features including HP ProtectTools, HP Fingerprint Sensor, TPM 1.2 Embedded Security Chip**, and integrated Smart Card Reader
- New central management software for HP ProtectTools to manage the security of multiple notebooks from a single point
- HP QuickWeb for convenient online access without long boot-up times
- HP DayStarter for display of calendar information during Windows startup
- HP Power Assistant to conserve power, increase battery run-time, monitor power needs, and report workforce power consumption
- 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.

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

*** 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

Processors

2nd Generation Intel Core i7 Processors

Intel Core i7-2620M Processor (2.70 GHz, 4 MB L3 cache, 2 cores/4 threads, 35W)*
Up to 3.40 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 i5-2410M Processor (2.30 GHz, 3 MB L3 cache, 2 cores/4 threads, 35W)* †
Up to 2.90 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
Genuine Windows XP Tablet Edition

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: <http://www.microsoft.com/windows/windows-7/> for details.

** Certain Windows Vista product features require advanced or additional hardware. See: <http://www.microsoft.com/windowsvista/getready/hardwarereqs.msp#x> and <http://www.microsoft.com/windowsvista/getready/capable.msp#x> 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 QM67 Express Chipset

Standard Features

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

Intel Core i5 with vPro and Core i7 with vPro technology is a selectable feature that is available on units configured with select processors, an Intel Centrino® Advanced-N 6205 series 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 (AMT) 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 with a power source, and a direct (non-VPN) corporate network connection which is either cable or wireless LAN.

NOTE: Some functionality of Intel Core i5 with vPro/Core i7 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 Intel Core i5 with vPro/Core i7 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 (Shader 4.1) and OpenGL 3.0 capable

Display

Internal 12.1-inch diagonal LED-backlit WXGA ultra wide viewing angle anti-glare (1280 x 800)
Pen digitizer and multi-touch
Optional Outdoor View*
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
NOTE: Resolutions are dependent upon monitor capability, and resolution and color depth settings.

* Outdoor View is an option that provides enhanced viewing:

- 12% increase in front of screen display brightness with no loss of battery life
- Up to 235% increase in contrast, resulting in better viewability, at wide viewing angles
- 25% less specular reflections in bright light
- 91% less diffuse reflections in bright light
- 67% more contrast in bright sunlight

NOTE: This data is based on typical measurements by the display manufacturer. Actual measurements may vary from panel to panel.

Standard Features

Memory	Standard	DDR3 PC3-10600 SDRAM (1333 MHz) Two SODIMM slots supporting dual-channel memory 2 GB, 4 GB, and 8 GB SODIMMs
	Maximum	Upgradeable 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 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. Availability of 4 GB or more of memory requires Windows Vista Business 64-bit or Linux. With Windows 32-bit operating systems, memory above 3 GB may not all 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 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: 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/HSPA Mobile Broadband Module (availability expected May, 2011) 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

Standard Features

Intel Centrino Advanced-N 6205 (2x2)	Integrated support for 802.11 a, b, g, and n* 2 transmit, 2 receive antennas Up to 300 mbps data rate
Broadcom 43224AGN 802.11a/b/g/n WiFi Adapter	Integrated support for 802.11 a, b, g, and n 2 transmit, 2 receive antennas Up to 300 mbps data rate
Broadcom 4313GN 802.11b/g/n WiFi Adapter	Integrated support for 802.11 b, g, and n 1 transmit, 1 receive antenna Up to 72 mbps 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 802.11n is not allowed, this capability is not enabled (802.11a/b/g only).

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. US 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.

Touch-sensitive controls

Touch-sensitive controls provide easy access to the following features: volume mute, volume down, volume up.

Dual Pointing devices

Dual pointing (Touchpad with scroll zone and Pointstick, each with two pick buttons)
Digital Eraser Pen with tether and clip
Multi-touch screen gestures

Standard Features

Storage

Hard Drives (2.5-inch) 250/320 GB 7200 rpm SMART SATA II Hard Drive

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

* Not available until after initial product introduction.

HP 3D DriveGuard The hard drive is mounted to the notebook frame, reducing the transmission of shock away from 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. The digital accelerometer temporarily halts all data transfer and parks the hard drive when abrupt motion is detected.

Solid State Drives (2.5-inch) 128/160 GB Solid State Drive

External Optical Drives Via optional HP 2740p Ultra-Slim Expansion Base: 9.5mm DVD+/-RW SuperMulti Drive

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/MultiMediaCard slot Supports SD (Secure Digital), MultiMediaCard

Interfaces

ExpressCard/34 slot Supports ExpressCard/34

Smart Card Reader One

External monitor One - VGA

1394a One

Combo headphone/mic jack One

Power connector One

RJ-11/modem One

RJ-45/Ethernet One

USB 2.0 Three (including one charging port)

Docking connector For HP 2740p Ultra-Slim Expansion Base

Secondary battery connector For HP 2700 Ultra-Slim Battery

Standard Features

Audio/Visual

SRS Premium Sound™
Integrated stereo speakers
Integrated dual-microphone array
Touch-sensitive controls for volume up, volume down, and mute
Combo headphone/mic jack

Optional 720p HD webcam

- HD format (widescreen)
- Supports videoconferencing and still image capture
- High quality fixed focus lens
- Video capture at various resolutions up to 1280x720 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 4.0
HP DayStarter
Microsoft Office 2010 preloaded (purchase of a Product Key required to activate a full Office 2010 suite)*
Norton Internet Security 2011**
PDF Complete Special Edition***
Roxio Secure Burn (select models)
Roxio MyDVD 10 SE (select models)
HP Webcam Software (select models)
Skype

Additional software available from the web

HP SoftPaq Download Manager

* Microsoft Office 2010 Preloaded includes reduced functionality versions of Word and Excel. Purchase of Product Key required to activate full Office 2010 suite available at participating resellers/retailers and <http://www.office.com>.

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

*** PDF Complete Special Edition 60 day trial; purchase license afterwards for full functionality.

HP Recovery Manager

Models shipped with Windows 7 include HP Recovery Manager. HP Recovery Manager 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.

Standard Features

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

HP Fingerprint Sensor
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

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.

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

For more information on HP security solutions refer to: <http://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 <http://www.intel.com/technology/anti-theft/>

Standard Features

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 with 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. 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 the user forgets the password, loses the smartcard or cannot use the 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. Provides features similar to the Active Directory version, but for workgroups. Workgroup activation is built into HP ProtectTools, and activation of up to 5 seats is completely free.

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

<http://www.hp.com/products/security>.

Power Supply

External HP 65-watt Smart AC adapter
Power cord included is 1.8 meter (6-foot).
Total length including external AC adapter is 3.66 meter (12 feet).
HP Fast Charge*

*HP Fast Charge recharges your battery up to 90% within 90 minutes when the system is off. Fast Charge does not apply to the optional HP 2700 Ultra-Slim Battery or the HP Long Life Battery.

Battery

Primary Battery

HP 6-cell 44 WHr Li-Ion Primary Battery with fuel gauge LEDs
HP Long Life 6-cell 39 WHr Li-Ion Primary Battery

Optional secondary battery

HP 2700 6-cell 46 WHr Ultra-Slim Battery

Battery Life

HP 6-cell (44 WHr)

Up to 5 hours and 30 minutes

with optional HP 2700 Ultra-Slim Battery Up to 12 hours and 30 minutes

HP 2700 Ultra-Slim Battery

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 www.bapco.com/products/mobilemark2007 for additional details.

System Standby Time

Up to 1 week

Standard Features

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
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Docking (optional)	HP 2740p Ultra-Slim Expansion Base with 9.5mm DVD+/-RW SuperMulti Drive This optional expansion base includes connectors for (3) USB 2.0 ports, eSATA port, DisplayPort, VGA, RJ-45 Ethernet pass thru, Stereo microphone in, stereo headphone out, and DC-in. 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.
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Service and Support	HP Services offers 3-year limited warranty; (3-year limited warranty on HP Long Life Battery – only available with 3-year platform warranty). 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: http://www.hp.com/go/lookuptool . Additional HP Care Pack Services information by product is available at: http://www.hp.com/hps/carepack . NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details. http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp .
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Options

NOTE: Options/capabilities listed in the QuickSpecs represent those capabilities available through Base Units or Build to Order configurations. The various product features and capabilities will vary in terms of configurable vs. aftermarket options (AMOs). There may be options and capabilities available through CTO that are not available as AMOs.

Memory	HP 8 GB (DDR3 1333 MHz) SODIMM	QP013AA#xxx
	HP 2 GB PC3-12800 (DDR3 1600 MHz) SODIMM	H2P63AA
	HP 4 GB PC3-12800 (DDR3 1600 MHz) SODIMM	H2P64AA
	HP 8 GB PC3-12800 (DDR3 1600 MHz) SODIMM	H2P65AA

NOTE: Full availability of 4 GB or more of memory requires Windows Vista Business 64-bit 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. Due to system limitations, DDR3-1600 MHz memory will only be supported at DDR3-1333 MHz.

Storage	HP Mobile USB DVDRW	BU516AA
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Expansion Solutions	HP 2740p Ultra-Slim Expansion Base	WA995AA#xxx
	HP Dual Hinge Notebook Stand	AW661AA#AC3
	HP Display & Notebook Stand	AW662AA#AC3
	HP Adjustable Display Stand	AW663AA#AC3
	HP Adjustable Dual Monitor Stand	AW664AA#AC3

Power	HP 2700 Ultra-Slim Battery	RX932AA
	HP 6-Cell Li-Ion Primary Battery	AH547AA
	HP 65W Smart AC Adapter	ED494AA#xxx
	AC Smart Adapter - 90W	ED495AA#xxx
	HP 65W Slim AC Adapter	AX727AA#xxx
	HP 90W Slim AC Adapter	BT796AA#XXX

Options

Carrying Cases	HP Basic Carrying Case	AJ078AA
	HP Business Nylon Case	BP848AA
	HP Elite Leather Messenger	AX676AA
	HP Elite Slim Top Load Case	AX680AA
	HP Elite Series Designer Tote	AT891AA
	HP Professional Series Carrying Case	AT886AA
	HP Professional Series Backpack	AT887AA
	HP Professional Series Designer Tote	AT889AA
	HP Professional Series Slip Case	AT890AA
	HP Executive Leather Case	RR316AA
	HP Business Nylon Case	BP848AA
	HP Business Nylon Backpack	BP849AA
	HP Basic Carrying Case	AJ078AA
	HP Deluxe 4 Wheel Roller Case	XW576AA
<hr/>		
Security	HP Notebook Combo Lock	AY475AA#xxx
	HP Keyed Cable Lock	BV411AA
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Input/Output Devices	HP Tablet PC Tether/Eraser Pen	PL800A
	HP USB Optical Travel Mouse	RH304AA

Technical Specifications

System Unit	Dimensions (HxWxD)	32.3 mm x 290 mm x 212 mm 1.27 in x 11.42 in x 8.35 in	
	Weight	Starting from 1.8 kg (3.97 lb)* With optional HP 2700 Ultra-Slim Battery from 2.36 kg (5.21 lb)	
		* Weight is based on the configuration using a 160 SSD drive.	
	HP Ultra-Slim Battery Weight	0.56 kg (1.24 lb)	
	NOTE: Height varies depending upon where on the tablet the measurement is made. Starting weight includes 6-cell battery, SSD, 2 GB memory, 802.11 wireless communications module. Weight varies by configuration and components.		
	Stand-Alone Power Requirements (AC Power)	Nominal Operating Voltage	18.5 V
		Average Operating Power	Windows 7 (32-bit) 8.33 W Windows 7 (64-bit) 7.59 W
		Max Operating Power	< 65 W
	Temperature	Operating	0° to 35° C (32° to 95° F) (not writing optical) 5° to 35° C (41° to 95° F) (writing optical)
		Non-operating	-20° to 60° C (-4° to 140° F)
	Relative Humidity	Operating	10% to 90%, non-condensing
		Non-operating	5% to 95%, 38.7° C (101.6° F) 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	-15.24 to 3,048 m (-50 to 10,000 ft)
		Non-operating	-15.24 to 12,192 m (-50 to 40,000 ft)
	Industry Standard Certifications	UL	Yes
		CSA	Yes
		FCC Compliance	Yes
		ENERGY STAR®	Select models*
		EPEAT	Gold**
		ICES	Yes
		GS	Yes
		Australia / NZ A-Tick Compliance	Yes
		CCC	Yes
		Japan VCCI Compliance	Yes
		KCC	Yes
		BSMI	Yes
		CE Marking Compliance	Yes
		BNCI or BELUS	Yes

Technical Specifications

CIT	Yes
GOST	Yes
Saudi Arabian Compliance (ICCP)	Yes
SABS	Yes
UKRSERTCOMPUTER	Yes

* Configurations of the HP EliteBook 2760p that are ENERGY STAR qualified are identified as HP EliteBook 2760p ENERGY STAR on HP websites and on www.energystar.gov.

** EPEAT Gold 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

Technical Specifications

HP 65W Smart AC Adapter	Dimensions	10.6 x 4.7 x 2.8 cm (4.17 x 1.85 x 1.1 in)	
	Weight	280 g (0.62 lb)	
	Input	Input	100 to 240 VAC
		Input Efficiency	87% min at 115 VAC
		Input frequency range	47 to 63 Hz
	Output	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	0° to 40° C (32° to 104° F)
		Non-operating (storage) temperature	-20° to 65° C (-4° to 149° F)
		Altitude	0 to 3,048 m (0 to 10,000 ft)
		Humidity	20% to 80%
EMI and Safety Certifications	Storage Humidity	10% to 90%	
	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.		

HP Long Life 6-cell 39 WHr Lithium-Ion Primary battery	Dimensions (H x W x L)	1.4 x 6.8 x 21.1 cm (0.6 x 2.7 x 8.3 in)	
	Weight (max)	0.291 kg (0.64 lb)	
	Cells/Type	6-cell Lithium-Ion	
	Energy	Watt-hour capacity	39 WHr
	Temperature	Operating (Charging)	0° to 45° C (32° to 113° F)
		Operating (Discharging)	-10° to 60° C (14° to 140° F)
		Non-operating	-20° to 60° C (-4° to 140° F)
Battery Re-Charge Time	System in OFF mode or Standby	2.5 hours	
	System ON	3 to 5 hours (depending on system power consumption)	

Technical Specifications

6-Cell (44 WHr) Lithium-Ion battery (OT06044)	Dimensions (H x W x L)	1.3 x 6.4 x 21.0 cm (0.5 x 2.5 x 8.25 in)	
	Weight (max)	0.282 kg (0.62 lb)	
	Cells/Type	6-cell Lithium-Ion	
	Energy	Watt-hour capacity	44 WHr
	Temperature	Operating (Charging)	0° to 45° C (32° to 113° F)
		Operating (Discharging)	-10° to 60° C (14° to 140° F)
		Non-operating	-20° to 60° C (-4° to 140° F)
	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
Fuel Gauge	When pressed, LEDs light indicating level of charge remaining on battery		

Displays

12.1-inch LED-backlit WXGA UWVA, anti-glare with Digitizer	Active Area (W x H)	26.1 x 16.3 cm (10.3 x 6.4 in)	
	Diagonal Size	30.7 cm (12.1 in)	
	Surface Treatment	Anti-glare	
	Contrast Ratio	400:1 (typical)	
	Refresh Rate	60 Hz	
	Brightness	200 nit (typical)	
	Pixel Resolution	Pitch	0.204 mm
		Format	1280 x 800
		Configuration	RGB Stripe
	Backlight	LED	
PPI	125		
Viewing Angle	±75° Horizontal, ±75° Vertical (minimum)		

Technical Specifications

12.1-inch LED-backlit WXGA UWVA. anti-glare with Digitizer and Outdoor View	Active Area (W x H)	26.1 x 16.3 cm (10.3 x 6.4 in)		
	Diagonal Size	30.7 cm (12.1 in)		
	Surface Treatment	Anti-glare		
	Contrast Ratio	400:1 (typical)		
	Refresh Rate	60 Hz		
	Brightness	200 nit (typical)		
	Pixel Resolution	Pitch	0.204 mm	
		Format	1280 x 800	
		Configuration	RGB Stripe	
	Backlight	LED		
PPI	125			
Viewing Angle	±75° Horizontal, ±75° Vertical (minimum) ±80° Horizontal, ±80° Vertical (typical)			

Internal Storage

320 GB 7200 rpm SATA Hard Drive	Drive Weight	115 g (0.25 lbs)		
	Capacity	320 GB		
	Height	9.5 mm (0.37 in)		
	Width	70 mm (2.75 in)		
	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	0° to 60° C (32° to 140° F) [case temp]			
Features	ATA Security			

Technical Specifications

250 GB 7200 rpm SATA Hard Drive

Drive Weight	115g (0.25 lbs)	
Capacity	250 GB	
Height	9.5 mm (0.37 in)	
Width	70 mm (2.75 in)	
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	0° to 60° C (32° to 140° F) [case temp]	
Features	ATA Security	

128 GB 2.5-inch SATA Solid State Drive

Drive Weight	75 Grams	
Capacity	128 GB	
Height	7 mm (0.276 in)	
Width	70 mm (2.76 in)	
Interface	SATA Gen 2	
Performance	Maximum Sequential Read	Maximum Sequential Write
	250 MB/s	140 MB/s
Logical Blocks	250,069,680	
Operating Temperature	0° to 70°C (32° to 158°F) [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	7 mm (0.276 in)	
Width	70 mm (2.76 in)	
Interface	SATA Gen 2	
Performance	Maximum Sequential Read	Maximum Sequential Write
	250 MB/s	100 MB/s
Logical Blocks	312,581,808	
Operating Temperature	0° to 70°C (32° to 158°F) [case temp]	
Features	ATA Security; ATA-7; SATA 2.6; DIPM; TRIM	

Security

Technical Specifications

HP Fingerprint Sensor	Mobile Voltage Operation	3.0V-3.6V Single Supply
	Operating Temperature	0° - 70°C (32° - 158°F)
	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

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 8023. 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) Large send offload and Giant send offload Receiving Side Scaling MACSec Offload (802.3ae) Intel vPro iSCSI Boot
	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 Virtual Cable Doctor for Ethernet cable status
	Interface	PCI Express 1.1 x1 to fully support ASPM L0s/L1 and CLKREQ. NOTE: Intel 82579 PCIe interface is not PCIe compliant. It operates at half of PCIe specification V1.1 (2.5GT/S) speed.
	NIC Device Driver Name	Intel 82579LM/82579V Ethernet Network Connection

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

Technical Specifications

HP un2430 EV-DO/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), 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
	Form Factor	PCI-Express MiniCard, USB 2.0 interface
	Weight	11.5 g
	Dimensions (Length x Width x Thickness)	51 x 30 x 5 mm (2.01 x 1.18 x 0.18 in)
	Voltage, Operating	3.3v +/- 10%
	Temperature, Operating (from TIA/EIA/IS-98-D)	-30° to 70° C (-22° to 158° F) (full RF performance) -30° to 75° C (-22° to 167° F) (reduced RF performance)
	Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108)	-40° to 85° C (-40° to 185° F)
	Humidity, Non-operating	95% relative humidity for 48 hours @ 85° C (185° F) (non-condensing)
	Configuration Utilities	HP Connection Manager
	LED Activity	LED Off - Radio Off; Solid LED On - Radio On

Technical Specifications

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) UMTS UTRA FDD Bands +24 dBm +4 / -3 dBm (class 3)
	Maximum Power Consumption	2000mA (peak); 600mA (average)
	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)	51 x 30 x 5 mm (2.01 x 1.18 x 0.18 in)
	Voltage, Operating	3.3v +/- 9%
	Temperature, Operating	-10° to 65° C (14° to 149° F) (full RF performance) -10° to 75° C (14° to 167° F) (reduced RF performance)
	Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108)	-30° to 85° C (-22° to 185° F)
	Humidity, Non-operating	85% relative humidity for 48 hours @ 85° C (185° F) (non-condensing)
	Configuration Utilities	HP Connection Manager

Technical Specifications

LED Activity LED Off - Radio Off;
Solid LED On - Radio On

Intel Centrino Advanced-N Wireless LAN Standards 6205

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
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 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 mode³: 35 mW (average)
Radio off: 20 mW (max)

Power Management

ACPI compliant power management
802.11 compliant power saving mode

Receiver Sensitivity⁴

54 Mbps: -76 dBm, 6 Mbps: -92 dBm

Technical Specifications

Antenna Connections	2 U.FL type connectors, 50 ohm nominal impedance	
Form Factor	PCI-Express Half-MiniCard	
Weight	3.4 g (0.0075 lb)	
Dimensions	3.1 x 26.8 x 30.0 mm (0.12 x 1.06 x 1.18 in)	
Operating Voltage	3.3V +/- 9%	
Temperature	Operating	0° to 80° C (32° to 176° F)
	Non-operating	-40° to 80° C (-40° to 176° F)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 90% (non-condensing)
Altitude	Operating	3,048 m (0 to 10,000 ft)
	Non-operating	15,240 m (0 to 50,000 ft)
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 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)
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.

Technical Specifications

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	6 g (0.013 lb)
Dimensions	4.75 x 26.8 x 30 mm (0.19 x 1.06 x 1.18 in)
Operating Voltage	3.3v +/- 10%
Temperature	Operating -10° to 65° C (14° to 149° F) Non-operating -40° to 80° C (-40° to 176° F)
Humidity	Operating 10% to 90% (non-condensing) Non-operating 5% to 95% (non-condensing)
Altitude	Operating 3,048 m (0 to 10,000 ft) Non-operating 15,240 m (0 to 50,000 ft)
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. 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)

Technical Specifications

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 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 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 Sensitivity³	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	6 g (0.013 lb)	
Dimensions	4.75 x 26.8 x 30 mm (0.19 x 1.06 x 1.18 in)	
Operating Voltage	3.3v +/- 10%	
Temperature	Operating	-10° to 65° C (14° to 149° F)
	Non-operating	-40° to 80° C (-40° to 176° F)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	3,048 m (0 to 10,000 ft)
	Non-operating	15,240 m (0 to 50,000 ft)
LED Activity	LED Off - Radio OFF; Solid LED On - Radio ON	

1. [Check latest software/driver release for updates on supported security features.](#)

Technical Specifications

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	30 x 6.5 x 3.25 mm (1.18 x 0.26 x 0.13 in)		
	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		
	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	-20° to 70° C (-4° to 158° F)	
		Non-operating	-40° to 80° C (-40° to 176° F)	
	Humidity	Operating	10% to 90%	
		Non-operating	5% to 95%	

Technical Specifications

Altitude	Operating	4,572 m (15,000 ft)
	Non-operating	12,192 m (40,000 ft)
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}	
	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	9.35 W	9.99 W	9.16 W
Sleep (Energy Star low power mode)	0.92 W	1.2 W	0.89 W
Off	0.53 W	0.83 W	0.55 W

Heat Dissipation*

	115 VAC	230 VAC	100 VAC
Normal Operation	32 BTU/hr	34 BTU/hr	31 BTU/hr
Sleep	3 BTU/hr	4 BTU/hr	3 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



Technical Specifications

(in accordance with
ISO 7779 and ISO 9296)

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	3.0	26
Fixed Disk (random writes)	3.0	26

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 0.13% post consumer recycled plastic (by wt.)

This product is greater than 94.2% recycle-able when properly disposed of at end of life.

Packaging Materials

- External:
 - Corrugated 206 g
- Internal:
 - Polyethylene low density Foam 17 g
 - Molded Pulp 232 g
- The Corrugated packaging material is made from 80% recycled content.
- The Polyethylene low density Foam packaging material is made from 100% recycled content.
- The Molded Pulp packaging material is made from 100% recycled content.

Technical Specifications

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 applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

Nickel finishes that release greater than 0.5 µgrams/cm²/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:

Technical Specifications

<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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