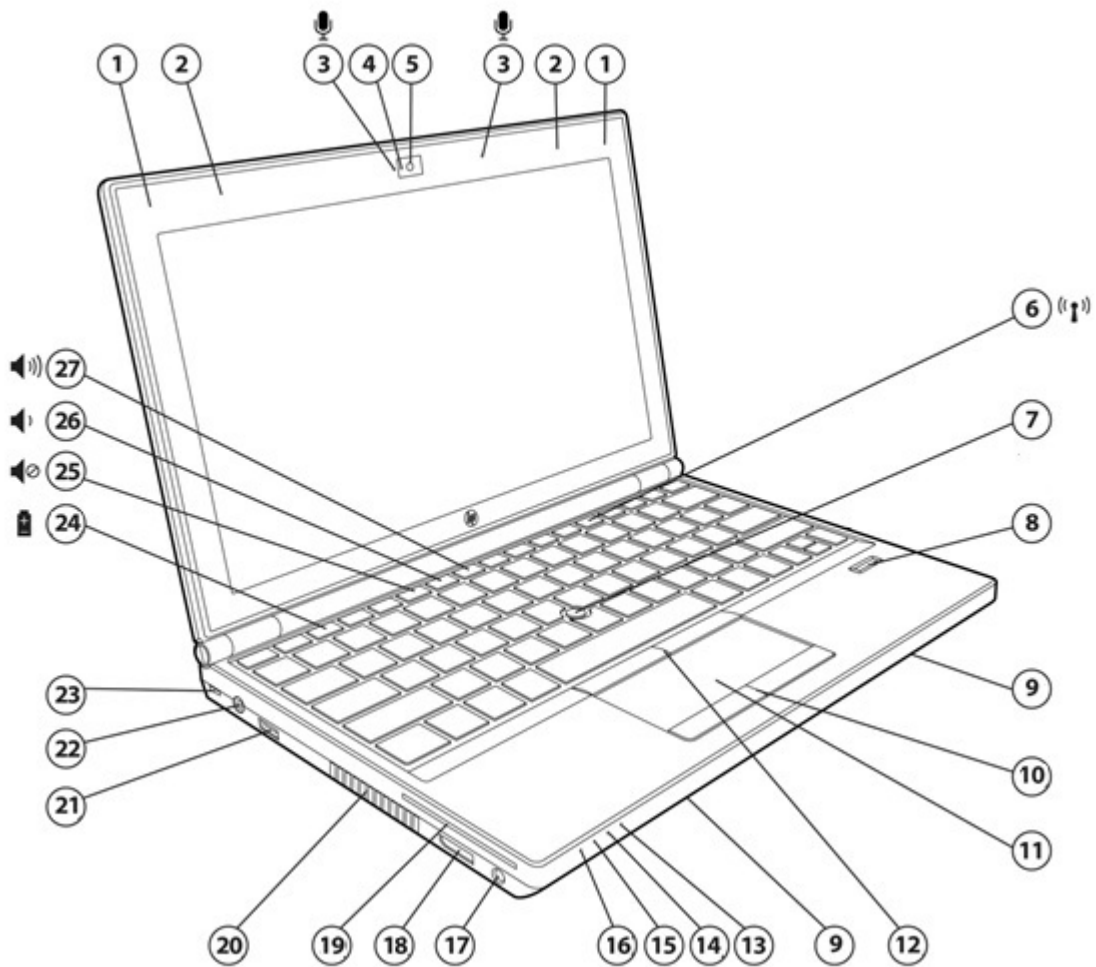


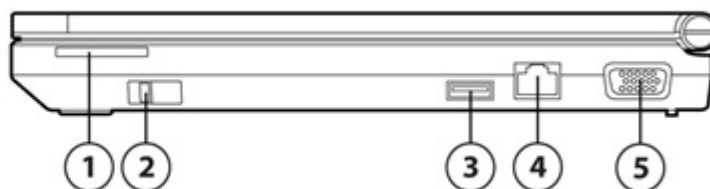
Overview



- | | |
|---|---|
| 1. WLAN antennas (2) | 15. Power/standby LED indicator |
| 2. WWAN antennas (2) | 16. Wireless on/off LED indicator |
| 3. Dual-microphone array* | 17. Audio-out (headphone) jack/Audio-in (microphone) jack |
| 4. Webcam LED indicator (with optional webcam) | 18. DisplayPort |
| 5. Optional 720p HD webcam | 19. Smart card reader |
| 6. Wireless on/off button with LED indicator | 20. Vent |
| 7. Pointstick | 21. USB 3.0 port |
| 8. Optional HP Fingerprint Sensor | 22. Power connector |
| 9. Stereo speakers | 23. Security cable slot |
| 10. Touchpad pick buttons | 24. HP Power Assistant function key |
| 11. Touchpad | 25. Volume mute function key |
| 12. Pointstick buttons (2) | 26. Volume down function key |
| 13. Drive activity / HP 3D DriveGuard LED indicator | 27. Volume up function key |
| 14. Battery charging LED indicator | |

Overview

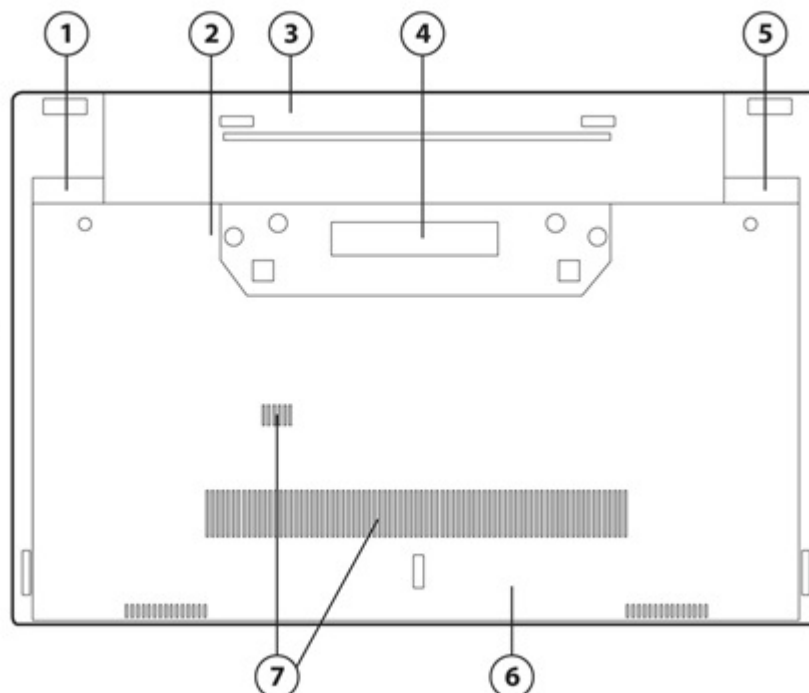
Right View



1. Media Card Reader
2. Power on
3. USB 3.0 charging port

4. RJ-45 (network) jack
5. External monitor port

Bottom View



1. Service cover release
2. SIM card slot (in battery bay)
3. Battery bay
4. Docking station connector

5. Battery release latch
6. Hard drive bay and memory module compartments
7. Vents

Overview

At A Glance

- Genuine Windows® 7 versions or FreeDOS
- 3rd Generation Intel® Core™ i7, i5 and i3 Dual-Core™ with Turbo Boost Technology
- 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
- Integrated Intel® HD Graphics 4000
- Widescreen LED-backlit HD display (1366 x 768)
- Full sized, Chiclet, spill-resistant keyboard with drains
- Touchpad with scroll zone and gestures support
- 1.04 Inch (26.5 mm) thin profile
- Weight starting at 2.89 lb (1.31 kg)
- High Definition Audio with SRS Premium Sound PRO, stereo speakers, integrated dual-microphone array and optional 720p HD Webcam
- Easily hot dock with one of the optional HP docking stations
- Choice of 6-cell or 4-cell battery to customize weight, run-time, and battery life to your needs
- Security features including a Security lock slot and TPM 1.2 Embedded Security Chip
- Wireless connectivity:
 - Optional integrated wireless mobile broadband module support
 - Integrated Intel® Centrino® 802.11 a/b/g/n 2x2, Intel 802.11a/b/g/n 2x2 with Bluetooth® v4.0 combo, Atheros 802.11a/b/g/n 2x2 with Bluetooth® v4.0 combo, Broadcom 801.11b/g/n 1x1 with Bluetooth® v4.0 combo
 - Bluetooth®
- Choice of 7200 rpm user-removable hard drive up to 750 GB with HP 3D DriveGuard protection, or 128/180 GB Solid State Drive or 256 GB SED Solid State Drive
- Standard commercial 1 year warranty

Features

OPERATING SYSTEM

Preinstalled Genuine Windows® 7 Professional 32*
Genuine Windows 7 Professional 64*
Genuine Windows 7 Home Premium 32*
Genuine Windows 7 Home Premium 64*
Genuine Windows 7 Home Basic 32*
FreeDOS

Supported Genuine Windows 7 Enterprise 32*
Genuine Windows 7 Enterprise 64*
Genuine Windows 7 Ultimate 32*
Genuine Windows 7 Ultimate 64*
Genuine Windows XP Professional 32

Certified SUSE Linux Enterprise Desktop

* Not all features are available in all editions of Windows 7. This system may require upgraded and/or separately purchased hardware to take full advantage of Windows 7 functionality. See <http://www.microsoft.com/windows/windows-7/> for details.

PROCESSOR

3rd Generation Intel® Core™ i7-3667U (2.0 GHz, 3 MB L3 cache, 2 cores)*

Up to 3.20 GHz with Intel Turbo Boost Technology

3rd Generation Intel® Core™ i5-3427U (1.8 GHz, 3 MB L3 cache, 2 cores)*

Up to 2.80 GHz with Intel Turbo Boost Technology

3rd Generation Intel® Core™ i5-3317U (1.7 GHz, 3 MB L3 cache, 2 cores)*†

Up to 2.60 GHz with Intel Turbo Boost Technology

† Not available with vPro

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

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

CHIPSET

Mobile Intel® QM77 Express (vPro support)*

*Some functionality of Intel vPro, 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 vPro technologies is dependent on 3rd party software providers. Compatibility with future "virtual appliances", Microsoft Windows required.

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 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 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 third- 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 third- party software providers. Compatibility with future "virtual appliances" is yet to be determined.

GRAPHICS

Integrated:
Intel® HD Graphics 4000

DISPLAY

Internal
11.6" diagonal LED-backlit HD anti-glare (1366 x 768)
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.

STORAGE AND DRIVES

Primary Storage Bay

Hard Drives
320/500/750 GB 7200 rpm SMART SATA II
500 GB 7200 rpm SMART SATA II Self Encrypting Drive

HP 3D DriveGuard (Windows only)

The hard drive is mounted directly to the notebook frame, reducing the transmission of shock to the hard drive

Solid State Drive

128/180 GB SATA III
256 GB SATA III Self Encrypting Drive

NOTE: Up to 19 GB is reserved for the system recovery software.

Features

MEMORY

Standard

DDR3 SDRAM (1600 MHz)*
Two SODIMM slots supporting dual-channel memory
2 GB, 4 GB, and 8 GB SODIMMs

Maximum

Upgradeable to 16384MB with optional 8192 MB SODIMMs in slots 1 and 2

* Maximum memory speed supported by the system may be 1333 MHz or 1066 MHz.

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. With Windows Starter 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.

NETWORKING/COMMUNICATIONS

Wireless

Support for a broad range of secure, integrated wireless LAN and wireless WAN options featuring support for the latest industry standards. Broadband Wireless (WWAN) requires a Windows operating system and is available in select countries as a standard, factory configurable feature only. 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

HP hs2350 HSPA+ Mobile Broadband Module

HP un2430 EV-DO/HSPA Mobile Broadband Module

HP It2522 LTE/EV-DO Mobile Broadband Module (not available at product introduction) - U.S. only

HP It2523 LTE/HSPA+ Mobile Broadband Module (not available at product introduction) - U.S./Canada only

All 802.11 integrated wireless LAN options

Intel® Centrino Advanced-N 6205 (2x2)

Intel® 802.11a/b/g/n 2x2 with Bluetooth® v4.0 combo

Atheros 802.11a/b/g/n 2x2 with Bluetooth® v4.0 combo

Broadcom 801.11b/g/n 1x1 with Bluetooth® v4.0 combo

HP Integrated Module with Bluetooth 4.0+EDR Wireless Technology

Communications

Integrated Intel® 82579LM Gigabit* Network Connection (vPro configurations)

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.

Features

AUDIO/MULTIMEDIA

Audio

SRS Premium Sound PRO™

Integrated stereo speakers

Integrated dual-microphone array

Button for volume mute; function keys for volume up and down

Combo headphone/microphone jack

Webcam

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

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

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.

Backlit Keyboard

The standard backlit keyboard for low light environments is toggled on and off with a function key. The standard backlit keyboard for low light environments is toggled on and off with a function key.

Pointing Devices

Touchpad with gestures support, on/off button with LED indicator, two-way scroll, two pick buttons

SOFTWARE AND SECURITY

Preinstalled Software with Windows Operating System

Microsoft® Office 2010 Preloaded; Purchase Key

Microsoft® Office 2010 Starter Preloaded; Purchase Key,

Microsoft® Office Home and Student; Purchase Key,

Microsoft® Office Home and Business; Purchase Key,

Microsoft® Office Professional; Purchase Key

Security

Standard

HP ProtectTools Security Manager (standard modules include)

- Credential Manager
- Central Management capable*
- Computrace** Pro
- Device Access Manager
- Drive Encryption
- Face Recognition (webcam configurations only)

Microsoft Security Essentials

Smart Card Reader



Features

TPM 1.2 Embedded Security Chip***
HP Disk Sanitizer
Security lock slot
Support for Intel® AT****

Optional

HP Fingerprint Sensor

* In order to deploy and receive updated policies, the client needs to be connected to the network server and requires separately purchased DigitalPersona Pro software. System access may not prevent users from logging into the system on the first attempt if policy updates haven't yet been received and applied. Requires Microsoft Windows.

** Computrace agent is shipped turned off, and must be activated by customers when they purchase a subscription. Subscriptions can be purchased for terms ranging from one to five years. Service is limited, check with Absolute for availability outside the U.S.

*** 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/>

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

POWER

Power Supply

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

Primary Battery

HP 6-cell Prismatic Battery (48 WHr)
HP 4-cell Prismatic Battery (30 WHr)

Battery Life*

HP EliteBook 2170p (Hard Drive)

6-cell (48 WHr)	Up to 8 hours and 15 minutes
4-cell (30 WHr)	Up to 4 hours and 30 minutes

HP EliteBook 2170p (Solid State Drive)

6-cell (48 WHr)	Up to 10 hours
4-cell (30 WHr)	Up to 5 hours and 30 minutes

System Standby Time

Up to 1 week

*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 <http://www.bapco.com/products/mobilemark2007> for additional details.

Power Conservation

Hibernation
Standby
ACPI compliance

Features

ENVIRONMENTAL

US ENERGY STAR®

IT ECO Declaration

EPEAT – TBD where HP registers commercial notebook products. See <http://www.epeat.net> for registration status in your country.

NOTE: 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.

WEIGHTS & DIMENSIONS

Weight

Starting at 2.89 lbs (1.31 kg) (with 4-cell battery)

Starting at 3.12 lbs (1.42 kg) (with 6-cell battery)

Dimensions (w x d x h)

11.50 x 7.56 x 1.04 in (at front)

29.2 x 19.2 x 2.65 cm (at front)

NOTE: Height varies depending upon where on the notebook the measurement is made. Weight varies by configuration and components. Lowest weight includes 4-cell battery, solid state drive, 1 SODIMM, and no optical drive. Weight varies by configuration and components.

PORTS/SLOTS

Ports

DisplayPort 1.1a – One

VGA – One

RJ-45 (Ethernet) – One

Headphone/Microphone Combo Jack – One

Power Connector – One

Docking Connector – One

USB 3.0 – One

USB 3.0 Charge Port – One

Digital Media Slots

5 in 1 Secure Digital/MMC Slot

SERVICE AND SUPPORT

HP Services offers limited 3 year and 1 year warranty options depending on country; 1 year limited warranty on primary battery; 3 year limited warranty on HP Long Life Battery (only available with 3 year platform warranty). 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>

Technical Specifications

SYSTEM UNIT

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	40 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)
Planned Industry Standard Certifications	UL	Yes
	CSA	Yes
	FCC Compliance	Yes
	ENERGY STAR®	Select models*
	EPEAT	Registered TBD in United States**
	ICES	Yes
	Australia / NZ A-Tick Compliance	Yes
	CCC	Yes
	Japan VCCI Compliance	Yes
	KC	Yes
	BSMI	Yes
	CE Marking Compliance	Yes
	BNCI or BELUS	Yes
	CIT	Yes
	GOST	Yes
	Saudi Arabian Compliance (ICCP)	Yes
SABS	Yes	
UKRSERTCOMPUTER	Yes	

* Configurations of the HP EliteBook 2170p that are ENERGY STAR qualified are identified as HP EliteBook 2170p ENERGY STAR on HP websites and on www.energystar.gov.

** EPEAT registration varies by country. See www.epeat.net for registration status by country. EPEAT status listed above applies to U.S.

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

Technical Specifications

DISPLAY

11.6-inch LED HD (1366 x 768) Anti-glare	Active Area	9.88 x 5.67 in (25.61 x 14.40 cm)		
	Dimensions (W x H)	11.53 x 6.49 in (29.3 x 16.5 cm)		
	Diagonal Size	11.6 in (29.46 cm)		
	Surface Treatment	Anti-glare		
	Contrast Ratio	300:1 (typical)		
	Refresh Rate	60 Hz		
	Brightness	200 nit (typical)		
	Pixel Resolution	Format	1366 x 768	
		Configuration	RGB Stripe	
	Backlight	LED		
Viewing Angle	40/40/15/30 (Left/Right/Down/Up) (typical)			

STORAGE AND DRIVES

Internal Storage

750 GB 7200 rpm SATA Hard Drive	Drive Weight	0.22 lb (101 g)		
	Capacity	750 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	300 MB/s (Drive Capability)	
		(maximum)		
	Seek Time	Single Track	1.5 ms	
	(typical reads, including settling)	Average	11 ms	
		Maximum	22 ms	
Rotational Speed	7200 rpm			
Logical Blocks	1,465,149,168			
Operating Temperature	32° to 140° F (0° to 60° C) [case temp]			
Features	ATA Security			

Technical Specifications

500 GB 7200 rpm SATA Hard Drive	Drive Weight	0.25 lbs (115g)		
	Capacity	500 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	976,773,168		
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]		
	Features	ATA Security		

500 GB 7200 rpm SMART SATA II Self Encrypting Drive	Drive Weight	0.25 lbs (115g)		
	Capacity	500 GB		
	Height	0.37 in (9.5 mm)		
	Width	2.50 in (63.5 mm)		
	Interface	ATA-8, SATA 2.6, 3.0 Gb/s		
	Transfer Rate	Synchronous (maximum)	300 MB/s (Drive Capability)	
	Seek Time (typical reads, including settling)	Single Track	1 ms	
		Average	12 ms	
		Maximum	20 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		

Technical Specifications

SATA 6 Gb/s 256 GB, 2.5-inch SATA SED Solid State Drive	Drive Weight	73 Grams	
	Capacity	256 GB	
	Height	0.276 in (7 mm)	
	Width	2.76 in (70 mm)	
	Interface	SATA 3 (6 Gb/s)	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		Up to 460 MB/s	Up to 260 MB/s
	Logical Blocks	500,118,192	
Operating Temperature	32° to 158°F (0° to 70°C) [case temp]		
Features	ATA Security; ATA-8 compliant; SATA 3.0; DIPM; TRIM		

SATA 6 Gb/s 180 GB, 2.5-inch Solid State Drive	Drive Weight	78 Grams	
	Capacity	180 GB	
	Height	0.276 in (7 mm)	
	Width	2.76 in (70 mm)	
	Interface	SATA Gen 3 (6 Gb/s)	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		550 MB/s	520 MB/s
	Logical Blocks	351,651,888	
Operating Temperature	32° to 158°F (0° to 70°C) [case temp]		
Features	ATA Security; ATA-8, SATA 3.0; DIPM; TRIM		

SATA 6 Gb/s 128 GB, 2.5-inch Solid State Drive	Drive Weight	73 Grams	
	Capacity	128 GB	
	Height	0.276 in (7 mm)	
	Width	2.76 in (70 mm)	
	Interface	SATA 3 (6 Gb/s)	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		415 MB/s	175 MB/s
	Logical Blocks	250,069,680	
Operating Temperature	32° to 158°F (0° to 70°C) [case temp]		
Features	ATA Security; ATA-8; SATA 3.0 DIPM; TRIM		

NETWORKING/COMMUNICATIONS

Technical Specifications

Intel® 82579LM Gigabit Ethernet Features Network Connection

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)
 Large send offload and Giant send offload
 Receiving Side Scaling
 MACSec Offload (802.3ae)

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 T.31
	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)	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

Intel Centrino Advanced-N 6205 (2x2)	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n
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Technical Specifications

Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Windows 7, 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 mode ³ : 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
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)

Technical Specifications

- 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.

Intel Centrino Advanced -N 6235 802.11a/g/n (2x2) Bluetooth v4.0 Combo Adaptor	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n
	Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Windows 7 (details at: http://www.hp.com/go/notebooks/WLAN)
	Frequency Band	2.4 GHz and 5 GHz
	Data Rates	802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: 300 Mbps
	Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM
	Security	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP, LEAP, and EAP-FAST. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 5) with Microsoft Windows 7.
	Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
	Media Access Protocol	CSMA/CA (Collision Avoidance)
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power	13.5 dBm , nominal
	Power Consumption	Idle associated: 250 mW Idle unassociated: 100 mW Radio disabled: 75mW Transmit: 2.0 W (max) Receive: 1.6 W (max)
	Power Management	ACPI compliant power management 802.11 compliant power saving mode
	Receiver Sensitivity	54 Mbps: -74 dBm, 11 Mbps: -88 dBm , 1 Mbps: -95 dBm
Antenna type	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure	
Form Factor	PCI-Express Half-MiniCard 1.2	
Weight	0.008 lb (3.7 g)	
Dimensions	1.06 x 1.18 x 0.19 in (26.80 x 30.00 x 4.75 mm)	
Operating Voltage	3.3v +/- 10%	

Technical Specifications

Temperature	Operating	14° to 158° F (-10° to 70° 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	Amber LED - Radio OFF; White LED - Radio ON	

Bluetooth 4.0 Wireless Technology	Bluetooth Specification	2.1+EDR, 3.0+HS, 4.0 Compliant	
	Dimensions	1.06 x 1.18 x 0.19 in (26.80 x 30.00 x 4.75 mm)	
	Frequency Band	2402 to 2480 MHz	
	Number of Available Channels	79 (1 MHz) available channels	
	Data Rates and Throughput	3 Mbps data rate; throughput up to 2.17 Mbps	
		Synchronous Connection Oriented links up to 3, 64 kbps, voice channels	
		Asynchronous Connection Less links 2.17 Mbps/177.1 kbps asymmetric or 1306.9 kbps symmetric	
	Transmit Power	Max 4 dBm (Bluetooth Class II); Max +10 dBm (Bluetooth 4.0)	
	Receiver Sensitivity	Better than -80 dBm at 0.1 % raw bit error rate	
	Power Consumption	Receive 230mW Peak Operating 330mW USB Selective Suspend 17mW	
	Antenna	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure	
	Range	Up to 30 ft (9.14 m)	
	Electrical Interface	USB 2.0 compliant Microsoft Windows Plug and Play compliant	
	Bluetooth Software Supported	Motorola 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	14° to 158° F (-10° 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	10,000 ft (3,048 m)
		Non-operating	50,000 ft (15,240 m)
	Bluetooth Profiles Supported	Serial Port Profile (SPP) ¹ Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN) ^{1,2}	

Technical Specifications

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)

HP Integrated Module with Bluetooth 4.0+EDR Wireless Technology	Bluetooth Specification	4.0+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, voice channels Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric
	Transmit Power	-1.5 dBm to 4 dBm (Bluetooth Class II)
	Receiver Sensitivity	Better than -20 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 -14° to 158° F (-10° to 70° C) Non-operating -40° to 212° F (-40° to 100° C)
	Humidity	Operating 0% to 90% Non-operating 0% to 95%
	Altitude	Operating 15,000 ft (4,572 m) Non-operating 40,000 ft (12,192 m)



Technical Specifications

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}
	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

AUDIO/MULTIMEDIA

Audio Hardware	SRS Premium Sound™ PRO	
	Implementation	IDT 92HD80 High Definition CODEC
	Function Key Volume Controls	Volume up, volume down
	Mute Button	Volume mute button with LED indicator
	Full Duplex	Yes
	Microphone In	Stereo
	Headphone/Line Out	Stereo
	Integrated Microphone	Yes, dual digital microphone array

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

Internal Stereo Speaker	Power Rating	2 Watts
	Impedance	4 ohms

POWER



Technical Specifications

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

HP 4-cell (45 WHr) Lithium-Ion Primary battery	Dimensions (h x w x l)	0.6 x 2.1 x 8.1 in (1.4 x 5.2 x 20.6 cm)	
	Weight	0.44 lb (0.199 kg)	
	Cells/Type	4-cell Lithium-Ion	
	Energy Temperature	Watt-hour capacity	45 WHr
		Operating (Charging)	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 122° F (-10° to 50° C)
		Non-operating	-4° to 122° F (-20° to 50° C)
		Battery Re-Charge Time	System in OFF or Standby Mode
		System ON	3 to 5 hours
	Warranty	1 year	

Technical Specifications

HP 4-cell Prismatic Battery (30 WHr)	Dimensions	0.6 x 2.1 x 8.1 in (1.3 x 4.5 x 22.2 cm)	
	Weight	0.44 lb (210g)	
	Cells/Type	4-cell Lithium-Ion	
	Energy	Voltage	14.8V
		Amp-hour capacity	2.0Ah
		Watt-hour capacity	30 WHr
		Temperature	Operating (Charging)
	Operating (Discharging)		14° to 122° F (-10° to 50° C)
	Non-operating		-4° to 122° F (-20° to 50° C)
	Battery Re-Charge Time	System in OFF or Standby Mode	2.5 hours
System ON		3 to 5 hours	
Warranty	1 year		

ENVIRONMENTAL

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 – TBD where HP registers commercial notebook products. See <http://www.epeat.net> for registration status in your country.

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>

Options and Accessories (sold separately and availability may vary by country)

Type	Description	Part #
Cases	HP Business Slim Top Load Case	H2W13AA
	HP Business Nylon Backpack	BP849AA
Docking	HP 90W Docking Station	A7E32AA
	HP 230W Docking Station	A7E34AA
	HP 120W Advanced Docking Station	A7E36AA
	HP 230W Advanced Docking Station	A7E38AA
	HP Dual Hinge Notebook Stand	AW661AA
	HP Display and Notebook Stand	AW662AA
Input/Output – Mice	HP 2.4 GHz Wireless Optical Mobile Mouse	LX732AA
	HP Wireless Mobile Mouse	H2L63AA
	HP USB Essential Keyboard/Mouse	H2S75AA
Adapters	HP 90W Slim Adapter	BT796AA
	HP 90W Smart AC/Auto/Air Combo Adapter	ED493AA
Power	HP MI06 Battery (2170p)	TBD
Storage - External Storage	HP Mobile USB DVDRW	A2U57AA
Health and Education	HP 20-Notebook Managed Charging Cart	QL489AA
	HP 20-Notebook Charging Cart	QL488AA
	HP 30-Notebook Managed Charging Cart	QL490AA
	HP Pocket Whiteboard	A0X37AA
Security	HP Docking Station Cable Lock	AU656AA

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