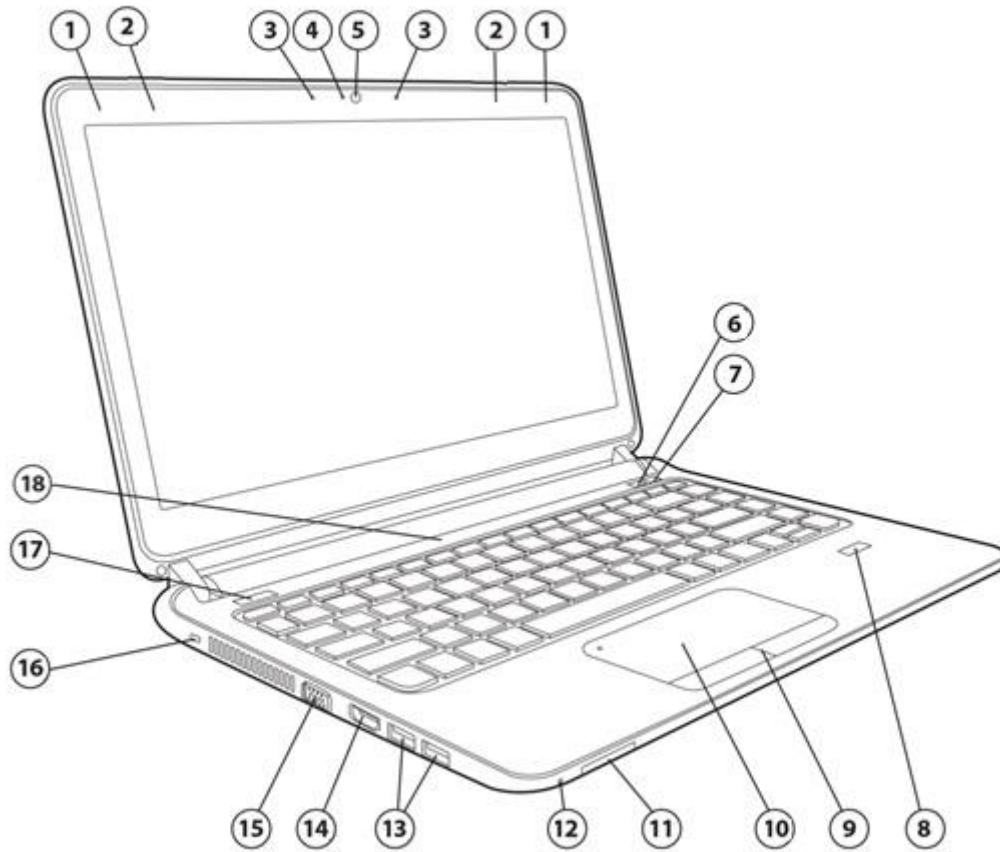


### Overview

#### HP ProBook 430 G2 Notebook PC



#### Front

- |   |                                       |
|---|---------------------------------------|
| 1. WLAN antennas (2)* (select models only)  | 10. Touchpad                          |
| 2. WWAN antennas (2)** (select models only) | 11. Media Card Reader                 |
| 3. Dual-microphone array***                 | 12. Hard drive activity LED indicator |
| 4. Webcam light***                          | 13. USB 3.0 ports (2)                 |
| 5. Optional webcam                          | 14. HDMI port                         |
| 6. Wireless on/off button                   | 15. VGA monitor port                  |
| 7. Speaker mute button                      | 16. Security lock slot                |
| 8. Optional HP Fingerprint Reader           | 17. Power button                      |
| 9. Touchpad pick buttons                    | 18. Speakers (2)                      |

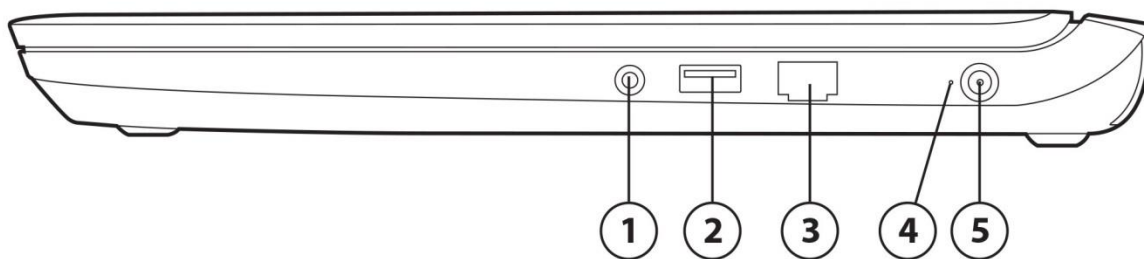
\* The number of WLAN antennas in the displays is determined by the WLAN selected

\*\* The antennas are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas free from obstructions.

\*\*\* Only available with optional webcam.



### Overview

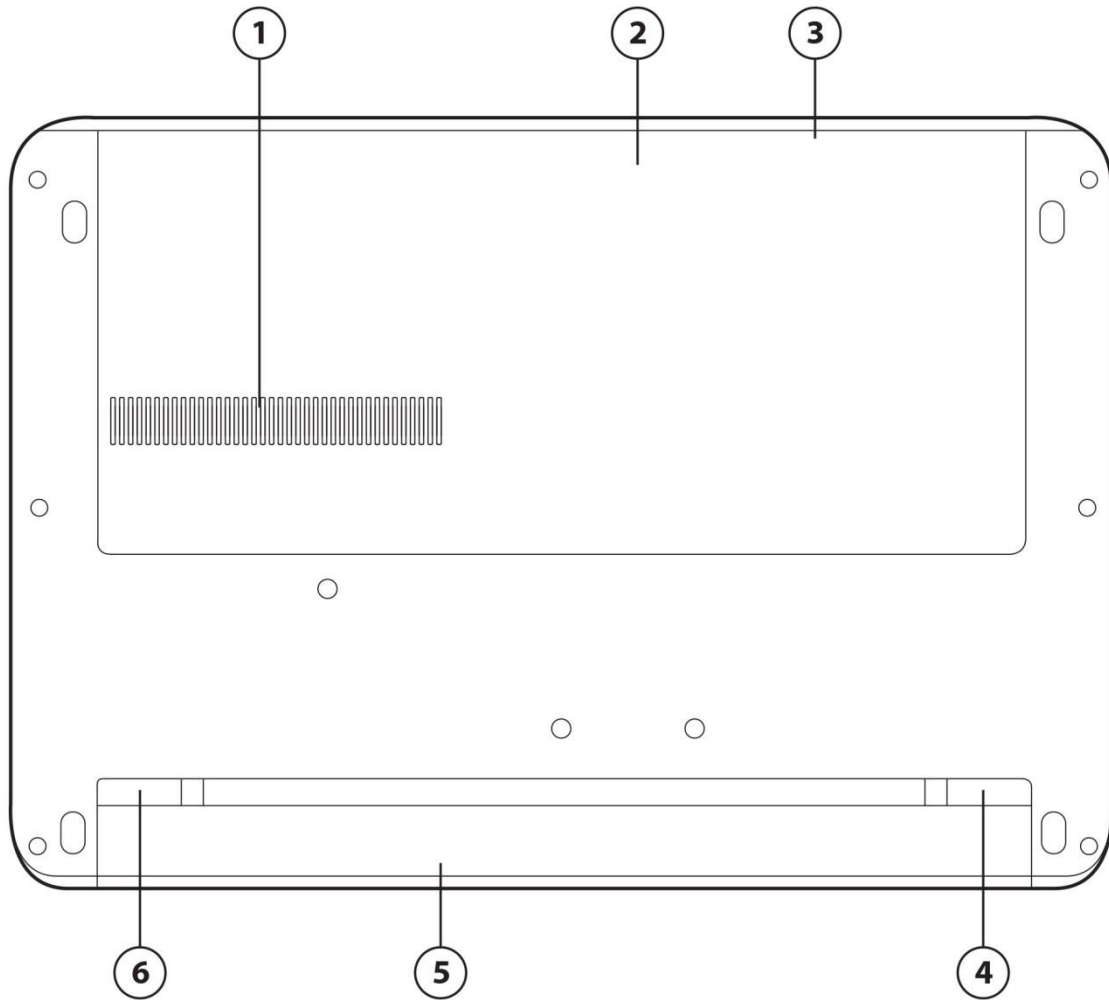


1. Headphone/Microphone Combo Jack
2. USB 2.0 charging (powered) port
3. RJ-45 (network) jack

#### Right

4. AC adapter/Battery light
5. Power connector

### Overview



1. Vent
2. SIM slot
3. Service door

#### Bottom

4. Battery release latch
5. Battery bay
6. Battery release latch



### Overview

#### AT A GLANCE

- Windows 8.1 versions, Windows 7 Professional (available through downgrade rights from Windows 8.1 Pro), Windows 7 versions, Ubuntu Linux or FreeDOS 2.0
- Lighter, durable multi-layer soft touch painted LCD cover and brushed aluminum keyboard deck help keep system looking good longer
- Full-sized, spill-resistant keyboard with a thin layer of Mylar film to prevent minor spills
- Larger Touchpad with gestures support, on/off button with LED indicator
- Enhanced security features including HP Client Security, optional HP Fingerprint Reader, TPM 1.2
- Optional HD webcam with dual-microphone array for video conferencing
- HDMI port for connecting to high-resolution displays; USB 3.0 ports
- DTS Sound+ optimized for high fidelity audio
- Widescreen LED-backlit HD display with 16:9 aspect ratio with 13.3 -inch diagonal HD screen and 13.3 -inch diagonal HD screen with Touch option (available in Summer 2014)
- Choice of 4<sup>th</sup> generation Intel® Dual-Core™ i7, i5, i3 and Celeron™ processors
- Wireless and speaker mute button to conveniently manage the connectivity and speaker.
- Flexible wireless connectivity options:
  - Integrated HP Mobile Broadband Module
  - Integrated 802.11 b/g/n wireless LAN module\*
  - Integrated 802.11 a/b/g/n/AC , a/b/g/n or b/g/n with Bluetooth 4.0 combo card
- Spill-resistant backlit keyboard available on select models (available in Summer 2014)
- Optional 4-cell (40 WHr) HP Long Life battery

**NOTE: See important legal disclosures for all listed specs in their respective features sections.**



### Features

#### PRODUCT NAME

HP ProBook 430 G2 Notebook PC

#### OPERATING SYSTEM

##### Preinstalled

Windows 8.1 Pro 64\*

Windows 8.1 64\*

Windows 7 Professional (available through downgrade rights from Windows 8.1 Pro)\*\*

Windows 7 Professional 64\*\*\*

Ubuntu Linux\*\*\*\*

FreeDOS 2.0

\* Not all features are available in all editions of Windows 8.1. Systems may require upgraded and/or separately purchased hardware, drivers and/or software to take full advantage of Windows 8.1 functionality. See <http://www.microsoft.com> for details.

\*\* This system is preinstalled with Windows® 7 Pro software and also comes with a license and media for Windows 8.1 Pro software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.

\*\*\* 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://windows.microsoft.com/en-us/windows7/products/home> for details.

\*\*\*\* Fingerprint reader, TPM, Touch display and WWAN are not supported

#### PROCESSOR

##### 4<sup>th</sup> generation Intel® Dual-Core™ processors Core i7, i5, and i3

4<sup>th</sup> Generation Intel® Core™ i7-4510U (2.0GHz, 4 MB L3 cache, 2 cores)\*

Up to 3.1GHz with Intel Turbo Boost Technology

4<sup>th</sup> Generation Intel® Core™ i5-4310U (2.0GHz, 3 MB L3 cache, 2 cores)\*

Up to 3.0GHz with Intel Turbo Boost Technology

4<sup>th</sup> Generation Intel® Core™ i5-4210U (1.7GHz, 3 MB L3 cache, 2 cores)\*

Up to 2.7GHz with Intel Turbo Boost Technology

4<sup>th</sup> Generation Intel® Core™ i3-4030U (1.9GHz, 3 MB L3 cache, 2 cores)\*

4<sup>th</sup> Generation Intel® Core™ i3-4005U (1.7GHz, 3 MB L3 cache, 2 cores)\* (Available in Summer 2014)

4<sup>th</sup> Generation Intel® Celeron 2957U (1.4GHz, 2MB L3 cache, 2 cores)\*

\* Multi-Core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. 64-bit computing on Intel® architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers, and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel® 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. 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.

#### GRAPHICS

Integrated:



### Features

- 4<sup>th</sup> Generation Intel® Core™ i7-4510U (2.0GHz, 4 MB L3 cache, 2 cores)/ Intel® HD Graphics 4400
- 4<sup>th</sup> Generation Intel® Core™ i5-4310U (2.0GHz, 3 MB L3 cache, 2 cores)/ Intel® HD Graphics 4400
- 4<sup>th</sup> Generation Intel® Core™ i5-4210U (1.7GHz, 3 MB L3 cache, 2 cores)/ Intel® HD Graphics 4400
- 4<sup>th</sup> Generation Intel® Core™ i3-4030U (1.9GHz, 3 MB L3 cache, 2 cores)/ Intel® HD Graphics 4400
- 4<sup>th</sup> Generation Intel® Core™ i3-4005U (1.7GHz, 3 MB L3 cache, 2 cores)/ Intel® HD Graphics 4400 (Available in Summer 2014)
- 4<sup>th</sup> Generation Intel® Celeron 2957U (1.4GHz, 2 MB L3 cache, 2 cores)/ Intel® HD Graphics

### DISPLAY

#### Internal

13.3" diagonal LED-backlit HD anti-glare (1366 x 768)

13.3" diagonal LED-backlit HD Touch Display is shatter, scratch, and smudge resistant (1366 x 768) (Available in Summer 2014)

#### External

Up to 32-bit per pixel color depth

#### VGA

Port supports resolutions up to 2048 x 1536 external resolution @50 Hz

#### HDMI

Supports direct connection to high-definition displays with up to 1920 x 1200@60Hz resolution and 7-channel audio with one convenient cable (not included)

NOTE: HD content required to view HD images.

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\*/1 TB\* 5400 rpm SMART SATA HDD;

500 GB\* 7200 rpm SMART SATA HDD

500 GB\* 5400 rpm SMART SATA Hybrid SSHD with 8 GB NAND

##### Solid State Drives

120 GB\* M.2 Solid State Drive

128/256 GB\* 2.5" Solid State 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

\* For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8) of system disk is reserved for the system recovery software.

### OPTICAL DRIVES

External Optical Disk Drive



### Features

#### MEMORY

##### Standard

DDR3L 1.35V SDRAM (1600 MHz)

Two SODIMM slots supporting dual-channel memory

2 GB, 4 GB, and 8 GB SODIMMs

##### Maximum

Upgradeable to 16384 MB with optional 8192 MB 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. 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.

##### Broadband Wireless (WWAN)

HP hs3110 HSPA+ Mobile Broadband Module\*,\*\*

HP lt4112 LTE/HSPA+ Gobi™ 4G\*,\*\* Module\*

##### Wireless LAN (WLAN)

Realtek RTL8188EE 802.11b/g/n (1x1) \*\*\*

Realtek RTL8723BE 802.11b/g/n (1x1) with Bluetooth® v4.0 combo\*\*\*

Broadcom BCM943228HMB 802.11 a/b/g/n (2x2) with Bluetooth® v4.0 combo\*

Intel Dual Band Wireless-AC 3160 802.11 a/b/g/n/ac (1x1) with Bluetooth 4.0 combo\*\*\*

Intel Dual Band Wireless-AC 7260 802.11 a/b/g/n/ac (2x2) with Bluetooth 4.0 combo\*\*\*

\* Mobile Broadband is an optional feature and requires factory configuration. Use requires separately purchased service contract. Check with service provider for coverage and availability in your area. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products, and in all regions.

\*\* 4G LTE not available on all products, and in all regions.

\*\*\*Wireless access point and Internet service is required and is not included. Availability of public wireless access points limited.

Note: Supports Bluetooth® v2.1 on Linux operating systems.

##### Communications

Realtek 10/100/1000\*\*\* Ethernet Controller



### Features

**NOTE:** Wireless use requires separately purchased service contract. Check with your local vendor for coverage area and availability in your area.

**NOTE:** Wireless access point and Internet service required. Availability of public wireless access points limited.

\* 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.

### AUDIO/MULTIMEDIA

#### Audio

DTS Sound+

Integrated stereo speakers

Integrated digital microphone (dual-microphone array when equipped with optional webcam)

Function keys for microphone mute, volume up, and volume down

Headphone/Microphone Combo Jack

#### Webcam

Optional 720p HD\* webcam

- HD format (widescreen)
- Supports videoconferencing (non-HD) 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
- Skype-ready \*\*

\* HD content required to view HD images.

\*\* Not offered in China

### KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

#### Keyboard

The HP spill-resistant keyboard and optional HP spill-resistant backlit keyboard are designed using a thin layer of Mylar film under the keyboard. The 101/102-key compatible keyboard features a full-pitch key layout with desktop keyboard features, such as editing keys, both left and right control and alt keys, and function keys. US and International key layouts are available. Optional backlit keyboard is available (available in Summer 2014).

#### Pointing Devices

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

#### Buttons and Function Keys

Separate launch buttons provide easy access to wireless on/off, and volume mute. Function keys provide control of features including: standby mode, display brightness, external display, microphone mute, volume down, volume up, and backlight toggle for backlit keyboard (select models only).

### SOFTWARE AND SECURITY





### Features

#### Software Included

#### Security

##### Windows 8.1

Absolute Persistence Module<sup>1</sup>  
 Device Access Manager with Just In Time Authentication  
 HP File Sanitizer<sup>2</sup>  
 HP Client Security<sup>3</sup>  
 HP SpareKey  
 Microsoft Defender  
 DigitalPersona Fingerprint Driver  
 Validity Fingerprint Driver  
 Hardware Root of Trust  
 HP Automatic DriveLock  
 HP BIOS Protection  
 HP Disk Sanitizer<sup>5</sup>  
 DASH Support  
 HP DriveLock  
 HP SpareKey<sup>6</sup>  
 Hybrid Boot  
 Master Record Security  
 Measured Boot  
 Power On Authentication  
 Pre-Boot Security  
 Secure Boot (Windows 8.1)  
 Secure Erase<sup>7</sup>  
 Touch enabled F10 Setup with virtual KB  
 Cyberlink PowerDVD  
 Cyberlink YouCam BE  
 HP Connection Manager  
 HP GPS and Location<sup>8</sup>  
 HP Mobile Connect<sup>9</sup>  
 HP Wireless Hotspot<sup>10</sup>  
 Intel WiDi Software<sup>11</sup>  
 Intel My WiFi and Wireless Drivers for Microsoft  
 Digital Energy Star Logo W8  
 Getting Started with Windows 8  
 HP 3D DriveGuard  
 HP Ceement  
 HP ePrint Driver<sup>12</sup>  
 HP Hotkey  
 HP PageLift App  
 HP PageLift for Win 7  
 HP Recovery Manager

##### Windows 7

Absolute Persistence Module<sup>1</sup>  
 Device Access Manager with Just In Time Authentication  
 HP File Sanitizer<sup>2</sup>  
 HP Client Security<sup>3</sup>  
 HP SpareKey  
 Microsoft Security Essentials<sup>4</sup>  
 DigitalPersona Fingerprint Driver  
 Validity Fingerprint Driver  
 Hardware Root of Trust  
 HP Automatic DriveLock  
 HP BIOS Protection  
 HP Disk Sanitizer<sup>5</sup>  
 DASH Support  
 HP DriveLock  
 HP SpareKey<sup>6</sup>  
 Hybrid Boot  
 Master Record Security  
 Measured Boot  
 Power On Authentication  
 Pre-Boot Security  
 Secure Boot (Windows 7)  
 Secure Erase<sup>7</sup>  
 Touch enabled F10 Setup with virtual KB  
 Cyberlink PowerDVD  
 Cyberlink YouCam BE  
 HP Connection Manager  
 HP GPS and Location<sup>8</sup>  
 Intel WiDi Software<sup>11</sup>  
 Intel My WiFi and Wireless Drivers for Microsoft  
 Digital Energy Star Logo W8  
 Getting Started with Windows 8  
 HP 3D DriveGuard  
 HP Ceement  
 HP ePrint Driver<sup>12</sup>  
 HP Hotkey  
 HP PageLift App  
 HP PageLift for Win 7  
 HP Recovery Manager

#### MultiMedia

#### Communications

#### HP Value Add Software



### Features

#### 3rd Party

HP Registration App	HP Registration App
HP Setup	HP Setup
HP Softpaq Download Manager	HP Softpaq Download Manager
HP Software Setup	HP Software Setup
HP Support Assistant <sup>13</sup>	HP Support Assistant <sup>13</sup>
HP Recovery Disc Creator (HPRDC)	HP Recovery Disc Creator (HPRDC)
HP Wallpaper	HP Wallpaper
System Default Settings for Win8	System Default Settings for Win8
UEFI System Diagnostics W8	UEFI System Diagnostics W8
Box 50GB Offer Desktop Icon <sup>14</sup>	Box 50GB Offer Desktop Icon <sup>14</sup>
Box App	Box App
Foxit PhantomPDF Express	Foxit PhantomPDF Express
Buy Office	Buy Office

<sup>1</sup>The Absolute Persistence agent is shipped turned off, and will be activated when customers activate a purchased subscription. Subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. The Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit: <http://www.absolute.com/company/legal/agreements/computrace-agreement>. Data Delete is an optional service provided by Absolute Software. If utilized, the Recovery Guarantee is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either obtain a PIN or purchase one or more RSA SecurID tokens from Absolute Software.

<sup>2</sup>For the use cases outlined in the DOD 5220.22-M Supplement. Supports standard Hard Drives. Initial setup required.

<sup>3</sup>Not all features are remotely manageable.

<sup>4</sup>Opt in and internet connection required for updates.

<sup>5</sup>For the use cases outlined in the DOD 5220.22-M Supplement. Does not support Solid State Drives (SSDs). Initial setup required. Web history deleted only in Internet Explorer and Firefox browsers and must be user enabled.

<sup>6</sup>Requires initial user set up.

<sup>7</sup>For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88.

<sup>8</sup>GPS access requires an unobstructed path to multiple satellites. Performance may be affected if/when used inside of buildings, bridges or heavily congested metropolitan areas. Requires separately purchased GPS navigation software available from multiple GPS applications.

<sup>9</sup>Internet access required.

<sup>10</sup> The wireless hotspot application requires an active internet connection and separately purchased data plan. While HP wireless hotspot is active, on-device applications will continue to work and will use the same data plan as the wireless hotspot. Wireless hotspot data usage may incur additional charges. Check with your service provider for plan details. Requires Windows.

<sup>11</sup>Integrated Intel Wi-Di feature is available on select configurations only and requires separately purchased projector, tv or computer monitor with an integrated or external Wi-Di receiver. External Wi-Di receivers connect to the projector, tv or computer monitor via a standard HDMI cable, also sold separately.

<sup>12</sup>Requires an Internet connection to HP web-enabled printer and HP ePrint account registration (for a list of eligible printers, supported documents and image types and other HP ePrint details, see [www.hp.com/go/eprintcenter](http://www.hp.com/go/eprintcenter)). Requires optional broadband module. Broadband use requires separately purchased service contract. Check with service provider for coverage and availability in your area. Separately purchased data plans or usage fees may apply. Print times and connection speeds may vary.

<sup>13</sup>Internet access required.

<sup>14</sup> Offer available on new 2014 HP commercial PC and requires Box registration. Offer subject to change without notice.



### Features

#### Security

##### Standard

HP Client Security  
Microsoft Defender  
Drive Encryption\*  
HP BIOS Protection  
Security lock slot  
TPM 1.2 Embedded Security Chip

##### Optional

Intel Identity Protection\*\*  
HP Fingerprint reader

**NOTE:** The 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 multiple years. Service is limited, check with Absolute for availability outside the U.S.

\* HP Drive Encryption requires Windows. Data is protected prior to Drive Encryption login. Turning the PC off or into hibernate logs out of Drive Encryption and prevents data access.

\*\* Intel Identity Protection feature is only available with Intel Core Processors. Intel® IPT security requires separate Symantec VIP software service subscription and must be activated and configured. Requires a website that uses Symantec VIP Authentication Service and Microsoft® Windows. Intel® and HP assume no liability for lost or stolen data and/or systems or any other damages resulting therefrom.

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

### POWER

#### Power Supply

65W EM Smart AC Adapter  
45W Smart AC Adapter  
45W Smart AC Adapter (two prong) (Japan only) (1.0 m power cord only)  
40W Smart AC Adapter (EMEA only)  
Power cord included is 1.8m (+/- 0.1m) or 1.0m (+/- 0.1m) (1.8m power cord not available in Japan).

#### Primary Battery

4-cell (44 WHr) Lithium-Ion battery  
4-cell (40 WHr) Long Life Lithium-Ion battery

#### Battery Life

#### Configurations with integrated graphics

##### HP ProBook 430 G2

<b>4-cell (44 WHr) battery</b>	Up to 9 hours 30 min*
<b>4-cell (40 WHr) long life battery</b>	Up to 8 hours 30 min*

\*Windows 7 battery life will vary depending on various factors including product model, configuration, loaded applications,



### Features

features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See [www.bapco.com](http://www.bapco.com) for additional details.

#### System Standby Time

**4-cell (44 WHr) battery** Up to 15 days\*\*

**4-cell (40 WHr) long life battery** Up to 14 days\*\*

\*\*Standby life will vary depending on various factors including battery, Memory, CPU, EC and LAN chip. The maximum capacity of the battery will naturally decrease with time and usage.

#### Power Conservation

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

Hibernation

Standby

ACPI compliance

### WEIGHTS & DIMENSIONS

#### Weight

Starting at 3.31 lbs (1.50 kg)

Lightest possible configuration across battery and panel options (HD Panel, Non-Touch, 4-cell (44Whr) Battery, M.2 120GB SSD) at Lightest Weight Configurations (across panel, battery and ODD options, if applicable)

	<b>4-cell (44Whr)</b>
<b>Non-Touch, M.2 SSD</b>	3.31lb/1.50kg
<b>Non-Touch, HDD</b>	3.53lb/1.60kg
<b>Touch, HDD</b>	4.41lb/2.00kg

#### Dimensions (w x d x h)

##### Non-Touch Models

12.83 x 9.19 x 0.79-0.83 in (at rear and at front)

32.6 x 23.35 x 2.0-2.1 cm (at rear and at front)

##### Touch Models

12.83 x 9.21 x 0.84 (front) - 0.89 in (rear)

32.6 x 23.40 x 2.13 (front) - 2.25 cm (rear)

**NOTE:** Height varies depending upon where on the notebook the measurement is made. Weight varies by configuration and components. Starting weight requires optional 120GB M.2 SSD drive.

### PORTS/SLOTS

#### Ports

USB 3.0 – Two



### Features

- USB 2.0 (powered port) – One
- HDMI 1.4a – One
- VGA – One
- Headphone / Microphone Combo Jack – One
- RJ-45 (Ethernet) – One
- Power connector – One

#### **Digital Media Slots**

Multi Media Reader Slot supporting SD, SDHC, SDXC

### SERVICE AND SUPPORT

HP Services offers limited 3-year, 1-year and 90-day 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

<b>Stand-Alone Power Requirements</b> (AC Power)	<b>Nominal Operating Voltage</b>	19 V
	<b>Average Operating Power</b>	19.19 W
	<b>Max Operating Power</b>	35.84W
<b>Temperature</b>	<b>Operating</b>	32° to 95° F (0° to 35° C) (not writing optical) 41° to 95° F (5° to 35° C) (writing optical)
	<b>Non-operating</b>	-4° to 140° F (-20° to 60° C)
<b>Relative Humidity</b>	<b>Operating</b>	10% to 90%, non-condensing
	<b>Non-operating</b>	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
<b>Shock</b>	<b>Operating</b>	40 G, 2 ms, half-sine
	<b>Non-operating</b>	200 G, 2 ms, half-sine
<b>Random Vibration</b>	<b>Operating</b>	0.75 grms
	<b>Non-operating</b>	1.50 grms
<b>Altitude</b> (unpressurized)	<b>Operating</b>	-50 to 10,000 ft (-15.24 to 3,048 m)
	<b>Non-operating</b>	-50 to 40,000 ft (-15.24 to 12,192 m)
<b>Planned Industry Standard Certifications</b>	<b>UL</b>	Yes
	<b>CSA</b>	Yes
	<b>FCC Compliance</b>	Yes
	<b>ENERGY STAR 6.0®</b>	Select models*
	<b>EPEAT</b>	Registered Gold in United States**
	<b>ICES</b>	Yes
	<b>Australia / NZ A-Tick Compliance</b>	Yes
	<b>CCC</b>	Yes
	<b>Japan VCCI Compliance</b>	Yes
	<b>KC</b>	Yes
	<b>BSMI</b>	Yes
	<b>CE Marking Compliance</b>	Yes
	<b>BNCI or BELUS</b>	Yes
	<b>CIT</b>	Yes
	<b>GOST</b>	Yes
	<b>Saudi Arabian Compliance (ICCP)</b>	Yes
	<b>SABS</b>	Yes
	<b>UKRSERTCOMPUTER</b>	Yes

\* Configurations of the HP ProBook 430 G2 that are ENERGY STAR qualified are identified as HP ProBook 430 G2 ENERGY STAR on HP websites and on [www.energystar.gov](http://www.energystar.gov).

\*\* EPEAT registration varies by country. See [www.epeat.net](http://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

#### DISPLAYS

<b>13.3-inch LED HD (1366 x 768) anti-glare</b>	<b>Active Area (W x H)</b>	11.53 x 6.49 in (29.3 x 16.5 cm)		
	<b>Diagonal Size</b>	13.3 in (33.8cm)		
	<b>Surface Treatment</b>	Anti-glare		
	<b>Contrast Ratio</b>	400:1 (typical)		
	<b>Refresh Rate</b>	60 Hz		
	<b>Brightness</b>	200 nit (typical)		
	<b>Pixel Resolution</b>	<b>Pitch</b>	0.215 mm	
		<b>Format</b>	1366 x 768	
		<b>Configuration</b>	RGB Stripe	
	<b>Backlight</b>	LED		
<b>PPI</b>	118 ppi			
<b>Viewing Angle</b>	±30° Horizontal, ±10° Vertical (minimum) 30/30/20/10 (Left/Right/Down/Up) (minimum) or 45/45/35/25 (Left/Right/Down/Up) (typical)			

#### STORAGE AND DRIVES

##### Internal Storage

<b>500 GB* 7200 rpm SATA Hard Drive</b>	<b>Drive Weight</b>	0.25 lbs (115g)		
	<b>Capacity</b>	500 GB		
	<b>Height</b>	0.276 in (7 mm)		
	<b>Width</b>	2.75 in (70 mm)		
	<b>Interface</b>	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ		
	<b>Transfer Rate</b>	<b>Synchronous (maximum)</b>	300 MB/s (Drive Capability)	
	<b>Seek Time</b> (typical reads, including settling)	<b>Single Track</b>	1.5 ms	
		<b>Average</b>	11 ms	
		<b>Maximum</b>	22 ms	
	<b>Rotational Speed</b>	7200 rpm		
<b>Logical Blocks</b>	976,773,168			
<b>Operating Temperature</b>	32° to 140° F (0° to 60° C) [case temp]			
<b>Features</b>	ATA Security			
<b>320 GB* 5400 rpm SATA Hard Drive</b>	<b>Drive Weight</b>	0.22 lb (101 g)		
	<b>Capacity</b>	320 GB		
	<b>Height</b>	0.276 in (7 mm)		
	<b>Width</b>	2.75 in (70 mm)		
	<b>Interface</b>	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ		
	<b>Transfer Rate</b>	<b>Synchronous (maximum)</b>	300 MB/s (Drive Capability)	
	<b>Seek Time</b> (typical reads, including settling)	<b>Single Track</b>	3 ms	
		<b>Average</b>	13 ms	
		<b>Maximum</b>	22 ms	



### Technical Specifications

	settling)	<b>Maximum</b>	24 ms
	<b>Rotational Speed</b>	5400 rpm	
	<b>Logical Blocks</b>	625,142,448	
	<b>Operating Temperature</b>	32° to 140° F (0° to 60° C) [case temp]	
	<b>Features</b>	ATA Security	
<b>500 GB* 5400 rpm SATA Hard Drive</b>	<b>Drive Weight</b>	0.22 lb (101 g)	
	<b>Capacity</b>	500 GB	
	<b>Height</b>	0.276 in (7 mm)	
	<b>Width</b>	2.75 in (70 mm)	
	<b>Interface</b>	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ	
	<b>Transfer Rate</b>	<b>Synchronous (maximum)</b>	300 MB/s (Drive Capability)
	<b>Seek Time</b>	<b>Single Track</b>	3 ms
	(typical reads, including settling)	<b>Average</b>	13 ms
		<b>Maximum</b>	24 ms
		<b>Rotational Speed</b>	5400 rpm
	<b>Logical Blocks</b>	976,773,168	
	<b>Operating Temperature</b>	32° to 140° F (0° to 60° C) [case temp]	
	<b>Features</b>	ATA Security	
<b>750 GB* 5400 rpm SATA Hard Drive</b>	<b>Drive Weight</b>	0.22 lb (101 g)	
	<b>Capacity</b>	750 GB	
	<b>Height</b>	0.276 in (7 mm)	
	<b>Width</b>	2.75 in (70 mm)	
	<b>Interface</b>	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ	
	<b>Transfer Rate</b>	<b>Synchronous (maximum)</b>	300 MB/s (Drive Capability)
	<b>Seek Time</b>	<b>Single Track</b>	3 ms
	(typical reads, including settling)	<b>Average</b>	13 ms
		<b>Maximum</b>	24 ms
		<b>Rotational Speed</b>	5400 rpm
	<b>Logical Blocks</b>	1,465,149,168	
	<b>Operating Temperature</b>	32° to 140° F (0° to 60° C) [case temp]	
	<b>Features</b>	ATA Security	
<b>1 TB* 5400 rpm SATA Hard Drive</b>	<b>Drive Weight</b>	0.254 lb (115 g)	
	<b>Capacity</b>	1 TB	
	<b>Height</b>	0.276 in (7 mm)	
	<b>Width</b>	2.75 in (70 mm)	
	<b>Interface</b>	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ	
	<b>Transfer Rate</b>	<b>Synchronous (maximum)</b>	300 MB/s (Drive Capability)
	<b>Seek Time</b>	<b>Single Track</b>	3 ms
	(typical reads, including settling)	<b>Average</b>	13 ms
		<b>Maximum</b>	24 ms





### Technical Specifications

	<b>Rotational Speed</b>	5400 rpm		
	<b>Logical Blocks</b>	1,953,525,168		
	<b>Operating Temperature</b>	32° to 140° F (0° to 60° C) [case temp]		
	<b>Features</b>	ATA Security		
<b>500 GB* 5400 rpm SMART SATA II Hybrid HDD/SSHD</b>	<b>Drive Weight</b>	0.209 lb (95 g)		
	<b>Capacity</b>	500 GB		
	<b>Height</b>	0.276 in (7 mm)		
	<b>Width</b>	2.76 in (70.1 mm)		
	<b>Interface</b>	ATA-8, SATA 2.6, 6.0 Gb/s, NCQ		
	<b>Transfer Rate</b>	<b>Synchronous (maximum)</b>	600 MB/s (Drive Capability)	
	<b>Seek Time</b> (typical reads, including settling)	<b>Single Track</b>	2 ms	
		<b>Average</b>	12 ms	
		<b>Maximum</b>	NIL ms	
		<b>Rotational Speed</b>	7200 rpm	
	<b>Logical Blocks</b>	976,773,168		
	<b>Operating Temperature</b>	32° to 140° F (0° to 60° C) [case temp]		
	<b>Features</b>	ATA Security		
<b>SATA 6 Gb/s 128 GB*, 2.5- inch Solid State Drive</b>	<b>Drive Weight</b>	73 Grams		
	<b>Capacity</b>	128 GB		
	<b>Height</b>	0.276 in (7 mm)		
	<b>Width</b>	2.76 in (70 mm)		
	<b>Interface</b>	SATA 3 (6 Gb/s)		
	<b>Performance</b>	<b>Maximum Sequential Read</b>	<b>Maximum Sequential Write</b>	
		415 MB/s	175 MB/s	
		<b>Logical Blocks</b>	250,069,680	
		<b>Operating Temperature</b>	32° to 158°F (0° to 70°C) [case temp]	
		<b>Features</b>	ATA Security; ATA-8; SATA 3.0; DIPM; TRIM	
<b>120 GB* M.2 Solid State Drive</b>	<b>Drive Weight</b>	< 10 Grams		
	<b>Capacity</b>	120 GB		
	<b>Height</b>	0.276 in (22 mm)		
	<b>Width</b>	2.76 in (42 mm)		
	<b>Interface</b>	SATA 3 (6 Gb/s)		
	<b>Performance</b>	<b>Maximum Sequential Read</b>	<b>Maximum Sequential Write</b>	
		540 MB/s	480 MB/s	
		<b>Logical Blocks</b>	234,441,648	
		<b>Operating Temperature</b>	32° to 158°F (0° to 70°C) [case temp]	
		<b>Features</b>	ATA Security; ATA-8; SATA 3.0; TRIM	

\* For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB (for Windows 8) of system disk is reserved for system recovery software. **SECURITY**

**HP Fingerprint Reader**    **Mobile Voltage Operation** 3.0V-3.6V Single Supply



### Technical Specifications

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

### NETWORKING/COMMUNICATIONS

<b>Integrated Realtek RTL8161GSH-CH 10/100/1000 NIC</b>	<b>Ethernet Features</b>	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	
	<b>Power Management</b>	ACPI compliant - multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption	
	<b>Performance Features</b>	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling	
	<b>Manageability</b>	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	
	<b>Interface</b>	PCI Express 1.1 to fully support ASPM L0s/L1 and CLKREQ	
	<b>NIC Device Driver Name</b>	Realtek PCIe GBE Ethernet Family Controller	
	<b>HP hs3110 HSPA+ Mobile Broadband Module*</b>	<b>Technology/Operating Bands</b>	CDMA/1xRTT/EvDO: 800MHz (Cell), 1900MHz (PCS) 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



### Technical Specifications

	(UTRA FDD Band V) LTE: 700 MHz (Verizon, Band XIII)
<b>Mobile Operator</b>	Verizon (US only)
<b>Wireless Protocol Standards</b>	GSM/GPRS/EDGE: Class B, Multi-slot class 10 operation, coding schemes CS1 - CS4 and MSC1 - MSC9. CDMA: 1xEVDO Release 0 and Release A, IS-95A, IS-95B, IS-856, IS-2000 UMTS/WCDMA: Release 99 and Release 7 LTE: Power Class III as per 3GPP TS 36.101
<b>Wireless Parametric Standards</b>	Complies with 3GPP specifications Release 8 for LTE
<b>Maximum Data Rates</b>	EvDO (Revision A) - 3.1 Mbps (Download), 1.8 Mbps (Upload) WCDMA (DC-HSPA+) - 42Mbps (Download) LTE (Category 3) - 100 Mbps (Download), 50Mbps (Upload)
<b>GPS</b>	Standalone, Assisted, XTRA
<b>GPS Bands</b>	1575.42 MHz ( $\pm 1.023$ MHz)
<b>Maximum Output Power</b>	GSM/GPRS/EDGE: 32dBm (+/-1) WCDMA: 24dBm (+0.7/-2.3) LTE: +23 dBm (+2.7 dBm/-1.7 dBm) 1xRTT/EvDO: +24 dBm (+0.5 dBm/-1.5 dBm)
<b>Maximum Power Consumption</b>	2700mA (peak)
<b>Power Consumption, Sleep Mode</b>	10 mA
<b>Power Management</b>	USB selective suspend Integrated notebook wireless button
<b>Antenna Type</b>	Dual high efficiency 6 band antennae with spatial diversity, mounted in the display enclosure
<b>Form Factor</b>	PCI-Express MiniCard, USB 2.0 interface
<b>Weight</b>	< 10 g
<b>Dimensions</b> (Length x Width x Thickness)	2.01 x 1.18 x 0.18 in (51 x 30 x 4.5 mm)
<b>Voltage, Operating</b>	3.3v +/- 9%
<b>Temperature, Operating</b>	-4° to 149° F (-20° to 65° C)
<b>Temperature, Non-operating, 96 hours</b> (from MIL-STD 202 Method 108)	-40° to 185° F (-40° to 85° C)
<b>Humidity, Non-operating</b>	85% relative humidity for 48 hours @ 185° F (85° C) (non-condensing)
<b>LED Activity</b>	LED Off - Radio Off; Solid LED On - Radio On

\* Mobile Broadband is an optional feature. Connection requires wireless data service contract, network support, and is not available in all areas. Contact service provider to determine the coverage area and availability. Connection speeds will vary due to location, environment, network conditions, and other factors.

<b>HP It4112 LTE/HSPA+ Gobi™ 4G Module*</b>	<b>Technology/Operating bands</b>	LTE FDD all bands with diversity: 2100 MHz (Band I), 1900 MHz (Band II), 1800 MHz (Band III), 850 MHz (Band V), 2600 MHz (Band VII), 900 MHz (Band VIII), 700 MHz (Band XX, DD800)
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### Technical Specifications

	WCDMA/HSDPA/HSUPA/HSPA+ all bands with diversity: 2100 MHz (Band I), 1900 MHz (Band II), 800 MHz (Band V), 900 MHz (Band VIII) GSM/GPRS/EDGE: 1900 MHz (Band II), 1800 MHz (Band III), 850 MHz (Band V), 900 MHz (Band VIII)
<b>Wireless protocol standards</b>	3GPP Release 8 LTE Specification WCDMA R99, 3GPP Release 5, 6 and 7 UMTS Specification
<b>Wireless parametric standards</b>	Complies with 3GPP specifications Release 8 for LTE
<b>Maximum data rates</b>	LTE (Category 3): 100 Mbps (Download), 50Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21.6 Mbps (Download), 5.76 Mbps (Upload) EDGE: 236.8 kbps (Download), 236.8 kbps (Upload) GPRS: 85.6 kbps(Download), 85.6 kbps (Upload)
<b>GPS</b>	Standalone
<b>GPS bands</b>	1575.42 MHz ( $\pm 1.023$ MHz), GLONASS 1596-1607MHz
<b>Maximum output power</b>	LTE: +23 dBm (+/- 2 dBm) WCDMA: +23.5 dBm (+/- 1 dBm) GPRS Band II, III: +29.5 dBm (+/- 1 dBm) GPRS Band V, VIII: +32.5 dBm (+/- 1 dBm) EGPRS Band II, III: +26.5 dBm (+/-1.5 dBm) EGPRS Band V, VIII: +27.5 dBm (+/-1.5 dBm)
<b>Maximum power consumption</b>	LTE: 1,200 mA (peak); <900 mA (average) WCDMA: 1,100 mA (peak); <800 mA (average) EGPRS: 2,800 mA (peak); <700 mA (average)
<b>Power consumption, sleep mode</b>	3 mA
<b>Power management</b>	USB selective suspend, Integrated notebook wireless button
<b>Antenna type</b>	Dual high efficiency multi-band antennae with spatial diversity
<b>Form Factor</b>	M.2, USB 2.0 interface
<b>Weight</b>	6 g
<b>Dimensions</b> (Length x Width x Thickness)	42 mm x 30 mm x 2.3 mm
<b>Voltage, Operating</b>	3.135 V to 4.4 V (3.3 V +1.1V/-0.165V)
<b>Temperature, operating</b> (from TIA/EIA/IS-98-D)	14° to 131° F (–10° to 55° C)
<b>Temperature, non-operating, 96 hours</b> (from MIL-STD 202 Method 108)	–40° to 185° F (–40° to 85° C)
<b>Humidity, non-operating</b>	95% relative humidity for 48 hours @ 185° F (85° C) (non-condensing)
<b>LED activity</b>	LED Off - Radio Off; Solid LED On - Radio On

\* Mobile Broadband is an optional feature. Connection requires wireless data service contract, network support, and is not available in all areas. Contact service provider to determine the coverage area and availability. Connection speeds will vary due to location, environment, network conditions, and other factors.

**Realtek 802.11 b/g/n (1x1) Wireless LAN Standards** IEEE 802.11b  
IEEE 802.11g



### Technical Specifications

<b>Interoperability</b>	IEEE 802.11n Wi-Fi certified
<b>Frequency Band</b>	2.402 – 2.482 GHz
<b>Data Rates</b>	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: card will support rates for NSS=1 for RX and TX for 20 MHz channels. Short and long guard interval will be supported.
<b>Modulation</b>	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM
<b>Security<sup>1</sup></b>	IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only AES-CCMP: 128 bit in hardware 802.1x authentication types WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. WPA2 certification IEEE 802.11i Cisco Certified Extensions, all versions through V5 WAPI
<b>Network Architecture</b>	Ad-hoc (Peer to Peer)
<b>Models</b>	Infrastructure (Access Point Required)
<b>Roaming</b>	IEEE 802.11 compliant roaming between access points
<b>Output Power<sup>2</sup></b>	13.5 dBm, nominal
<b>Power Consumption</b>	Transmit: 2.0 W (max) Receive: 1.6 W (max) Associated to Access Point, Idle: 250 mW nominal Wireless Button Off: 100 mW nominal Radio disabled: 75 mW nominal
<b>Power Management</b>	ACPI compliant power management 802.11 compliant power saving mode
<b>Receiver Sensitivity<sup>3</sup></b>	802.11b:-95 dBm (1 Mbps), -93 dBm (2 Mbps), -91 dBm (5.5 Mbps), -88 dBm (11 Mbps)  802.11g:-90 dBm (6 Mbps), -89 dBm (9 Mbps), -87 dBm (12 Mbps), -85 dBm (18 Mbps), -82 dBm (24 Mbps), -79 dBm (36 Mbps), -76 dBm (48 Mbps), -74 dBm (54 Mbps)  802.11n:-70dBm (72.2 Mbps)
<b>Antenna type</b>	High efficiency antenna with spatial diversity, mounted in the display enclosure
<b>Form Factor</b>	PCI-Express Half-MiniCard
<b>Dimensions</b>	0.19 x 1.06 x 1.18 in (4.75 x 26.8 x 30 mm)
<b>Operating Voltage</b>	3.3v +/- 9%
<b>Temperature</b>	Operating 14° to 158° F (–10° to 70° C) Non-operating –40° to 176° F (–40° to 80° C)
<b>Humidity</b>	Operating 10% to 90% (non-condensing) Non-operating 5% to 95% (non-condensing)
<b>Altitude</b>	Operating 0 to 10,000 ft (3,048 m)



### Technical Specifications

	Non-operating	0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	LED Off – Radio OFF; Solid LED On – Radio ON	
	<ol style="list-style-type: none"> <li>1. Check latest software/driver release for updates on supported security features.</li> <li>2. Maximum output power may vary by country according to local regulations.</li> <li>3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).</li> </ol>	
<b>Broadcom 802.11a/b/g/n (2x2) + Bluetooth™ 4.0 combo</b>	<b>Wireless LAN Standards</b>	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n
	<b>Interoperability</b>	Wi-Fi certified
	<b>Frequency Band</b>	802.11b/g/n <ul style="list-style-type: none"> <li>• 2.402 – 2.482 GHz</li> </ul> 802.11a/n <ul style="list-style-type: none"> <li>• 4.9 – 4.95 GHz (Japan)</li> <li>• 5.15 – 5.25 GHz</li> <li>• 5.25 – 5.35 GHz</li> <li>• 5.47 – 5.725 GHz</li> <li>• 5.825 – 5.850 GHz</li> <li>• 2.402 – 2.482 GHz</li> </ul>
	<b>Data Rates</b>	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: card will support rates for NSS=1 and NSS=2 for RX and TX for 20 and 40 MHz channels. Short and long guard interval shall be supported.
	<b>Modulation</b>	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM
	<b>Security<sup>1</sup></b>	<ul style="list-style-type: none"> <li>• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only</li> <li>• AES-CCMP: 128 bit in hardware</li> <li>• 802.1x authentication</li> <li>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</li> <li>• WPA2 certification</li> <li>• IEEE 802.11i</li> <li>• Cisco Certified Extensions, all versions through V5</li> <li>• WAPI</li> </ul>
	<b>Network Architecture</b>	Ad-hoc (Peer to Peer)
	<b>Models</b>	Infrastructure (Access Point Required)
	<b>Roaming</b>	IEEE 802.11 compliant roaming between access points
	<b>Output Power<sup>2</sup></b>	<ul style="list-style-type: none"> <li>• 2.4G: +13.5dBm minimum</li> <li>• 5G: +12dBm minimum</li> <li>• Maximum output power must be able to achieve modular</li> </ul>



### Technical Specifications

	regulatory certification with notebooks that have antennas >20cm from the user and peak gain of +3dBi at 2.4GHz and +4dBi at 5GHz
<b>Power Consumption</b>	<p>Transmit: 2.0 W (max)          Receive: 1.6 W (max)          Idle mode (PSP): 250 mW (WLAN Associated)          Idle mode: 100 mW (WLAN unassociated)          Radio disabled: 75 mW</p>
<b>Power Management</b>	ACPI and PCI Express compliant power management
<b>Receiver Sensitivity<sup>3</sup></b>	<p>802.11 compliant power saving mode</p> <p>802.11b:-95 dBm (1 Mbps), -93 dBm (2 Mbps), -91 dBm (5.5 Mbps), -88 dBm (11 Mbps)</p> <p>802.11a/g:-90 dBm (6 Mbps), -89 dBm (9 Mbps), -87 dBm (12 Mbps), -85 dBm (18 Mbps), -82 dBm (24 Mbps), -79 dBm (36 Mbps), -76 dBm (48 Mbps), -74 dBm (54 Mbps)</p> <p>802.11n:-69 dBm (72.2 Mbps), -66 dBm (300 Mbps)</p>
<b>Antenna type</b>	<p>High efficiency antenna with spatial diversity, mounted in the display enclosure</p> <p>Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications</p>
<b>Form Factor</b>	PCI-Express Half-MiniCard
<b>Dimensions</b>	0.19 x 1.06 x 1.18 in (4.75 x 26.8 x 30 mm)
<b>Operating Voltage</b>	3.3v +/- 9%
<b>Temperature</b>	<p>Operating 14° to 158° F (-10° to 70° C)          Non-operating -40° to 176° F (-40° to 80° C)</p>
<b>Humidity</b>	<p>Operating 10% to 90% (non-condensing)          Non-operating 5% to 95% (non-condensing)</p>
<b>Altitude</b>	<p>Operating 0 to 10,000 ft (3,048 m)          Non-operating 0 to 50,000 ft (15,240 m)</p>
<b>LED Activity</b>	LED Off – Radio OFF; Solid LED On – Radio ON
	<ol style="list-style-type: none"> <li>1. Check latest software/driver release for updates on supported security features.</li> <li>2. Maximum output power may vary by country according to local regulations.</li> <li>3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).</li> </ol>
<b>Bluetooth Specification</b>	V4.0 High Speed, V2.1+EDR, backwards compatible with V1.1, 1.2 and 2.0
<b>Number of Available Channels</b>	79 (1 MHz) available channels
<b>Data Rates and Throughput</b>	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



### Technical Specifications

<b>Transmit Power</b>	-6 dBm to 4 dBm (Bluetooth Class II)
<b>Receiver Sensitivity</b>	Better than -80 dBm at 0.1 % raw bit error rate
<b>Power Consumption</b>	Peak (Tx) 330 mW Peak (Rx) 230 mW Sleep <17 mW
<b>Antenna</b>	Internally integrated within module
<b>Range</b>	Up to 33 ft (10 m)
<b>Electrical Interface</b>	USB 2.0 compliant Microsoft Windows Plug and Play compliant
<b>Bluetooth Software Supported</b>	Broadcom Bluetooth for Windows Microsoft Windows Bluetooth Software
<b>Link Topology</b>	Point to Point, Multipoint Pico Nets up to 7 slaves
<b>Security</b>	Full support of Bluetooth Security Provisions
<b>Power Management</b>	Microsoft Windows ACPI, and USB Bus Support Self configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff
<b>Certifications</b>	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
<b>Bluetooth Profiles Supported</b>	Generic Access Profile (GAP) Service Discovery Application Profile (SDAP) Serial Port Profile (SPP) Dial_Up Networking Profile (DUN) Generic Object Exchange Profile (GOEP) Object Push Profile (OPP) File Transfer Profile (FTP) Synchronization Profile (SYNC) Hard Copy Cable Replacement (HCRP) Personal Area Networking Profile (PAN) Human Interface Device Profile (HID) Generic Audio/Video Distribution Profile (GAVDP) Advanced Audio/Video Distribution Profile (A2DP) FAX Profile (FAX) Basic Imaging Profile (BIP) Headset Profile (HSP) Hands Free Profile (HFP) Basic Printing Profile (BPP) VDP (Video Distribution Profile) AVRCP (Audio Video Remote Control Profile)

### AUDIO/MULTIMEDIA - DTS SOUND+

<b>Hardware</b>	<b>Implementation</b>	Realtek ALC3227-CG
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### Technical Specifications

	<b>Function Key Volume Controls</b>	Volume up, volume down, and mute	
	<b>Full Duplex</b>	Yes	
	<b>Microphone In</b>	Stereo	
	<b>Headphone/Line Out</b>	Stereo	
	<b>Integrated Microphone</b>	Yes, dual digital microphone array	
<b>Audio Output Quality</b>	<b>Frequency Response</b>	10 Hz – .454*Fs	
	<b>Signal to Noise Ratio</b>	95 dB (DAC), 88dB (ADC)	
	<b>Total Harmonic Distortion</b>	0.01%	
	<b>Play/Record Sampling Rate(s)</b>	44.1k/48k/96k/192kHz	
	<b>DAC</b>	16, 20 or 24-bit	
	<b>ADC</b>	16, 20 or 24-bit	
	<b>Integrated Stereo Speakers</b>	<b>Power Rating</b>	2 Watts
<b>Impedance</b>		4 Ohms	
 <b>POWER</b>			
<b>HP 65W EM Smart AC Adapter</b>	<b>Dimensions</b>	4.98 x 1.97 x 1.18 in (12.65 x 5.0 x 3.0 cm)	
	<b>Weight</b>	<b>Input</b>	0.62 lb (290 g) max
			90 to 265 VAC
	<b>Output</b>	<b>Input Efficiency</b>	87% min at 115 VAC
		<b>Input frequency range</b>	47 to 63 Hz
		<b>Input AC current</b>	1.7 A at 90 VAC
		<b>Output power</b>	65W
		<b>DC output</b>	19.5V
		<b>Hold-up time</b>	5 msec at 115 VAC input
		<b>Output current limit</b>	<11A, Over voltage protection- 29V max automatic shutdown
	<b>Connector</b>	3 pin/grounded, mates with interchangeable cords	
	<b>Environmental Design</b>	<b>Operating temperature</b>	32° to 95° F (0° to 35° C)
		<b>Non-operating (storage) temperature</b>	-4° to 185° F (-20° to 85° C)
		<b>Altitude</b>	0 to 10,000 ft (0 to 3,048 m)
		<b>Humidity</b>	20% to 95%
<b>Storage Humidity</b>		10% to 95%	
<b>EMI and Safety Certifications</b>	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.		



### Technical Specifications

<b>HP 45W Smart AC Adapter</b>	<b>Dimensions</b>	3.74 x 1.57 x 1.04 in (9.5 x 4.0 x 2.65 cm)	
	<b>Input</b>	90 to 265 VAC	
		<b>Input Efficiency</b>	87.74% min at 115 VAC
		<b>Input frequency range</b>	47 to 63 Hz
	<b>Output</b>	<b>Input AC current</b>	2.31 A at 100 VAC and maximum load
		<b>Output power</b>	45W
		<b>DC output</b>	19.5V +5.0%/-5%
		<b>Hold-up time</b>	5 msec at 115 VAC input
		<b>Output current limit</b>	<8A, Over voltage protection- 29V max automatic shutdown
	<b>Connector</b>	3 pin/grounded, mates with interchangeable cords	
	<b>Environmental Design</b>	<b>Operating temperature</b>	32° to 95° F (0° to 35° C)
		<b>Non-operating (storage) temperature</b>	-4° to 121° F (-20° to 85° C)
		<b>Altitude</b>	0 to 16,405 ft (0 to 5,000 m)
		<b>Humidity</b>	0% to 95%
	<b>EMI and Safety Certifications</b>	<b>Storage Humidity</b>	0% to 95%
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; Reliability - failure rate of less than 0.1% annually within the first three years of operation.			

<b>HP 40W Smart AC Adapter</b>	<b>Dimensions</b>	3.67 x 1.57 x 1.18 in (93 x 40 x 30 mm)
	<b>Weight</b>	8.64 oz (245 g)
	<b>Input</b>	90 to 265 VAC
	<b>Input Efficiency</b>	84% min at 115 VAC
	<b>Input frequency range</b>	47 to 63 Hz
	<b>Input AC current</b>	1.1 A at 90 VAC
	<b>Output</b>	
	<b>Output power</b>	40W
	<b>Output Voltage</b>	19.5V +5.0%/-5.0%
	<b>Output current limit</b>	3.08A
	<b>Environmental design</b>	
	<b>Operating temperature</b>	32° to 95° F (0° to 35° C)
	<b>Non-operating (storage) temperature</b>	-4° to 185° F (-20° to 85° C)
	<b>Altitude</b>	
<b>Humidity</b>	Up to 95%	



### Technical Specifications

	<b>Storage humidity</b>	Up to 95%
	<b>EMI and safety certifications</b>	Worldwide safety and EMC approvals including CE, UL, cUL, GS, Australian Electric Permit, RCM, NOM, CCC, KC, CU, S mark, BSMI, ISC, PSE, PSB, NRcan, Ukraine and SII

<b>4-Cell (44 WHr) Lithium-Ion battery</b>	<b>Dimensions (H x W x L)</b>	0.86 x 1.4 x 8.0 in (2.18 x 3.56 x 27.72 cm)		
	<b>Weight</b>	≤0.551 lb (250 g)		
	<b>Cells/Type</b>	4-cell Lithium-Ion		
	<b>Energy</b>	Voltage	14.8V DC	
		Amp-hour capacity	2850mAh	
		Watt-hour Capacity	44 WHr	
	<b>Temperature</b>	Operating (Charging)	32° to 113° F (0° to 45° C)	
		Operating (Discharging)	14° to 140° F (-10° to 60° C)	
		Non-operating	-4° to 140° F (-20° to 60° C)	
	<b>Battery Re-Charge Time</b>	System in OFF mode or Standby	2.5 hours	
System ON		3 to 5 hours (depending on system power consumption)		
<b>Fuel Gauge LED</b>	No			
<b>Warranty</b>	1 year			
<b>Optional Travel Battery Available</b>	No			

<b>4-cell (40 WHr) Long Life Lithium-Ion battery</b>	<b>Cells/Type</b>	4-cell Lithium-Ion			
	<b>Energy</b>	Watt-hour Capacity	40 WHr		
		<b>Temperature</b>	Operating (Charging)	32° to 113° F (0° to 45° C)	
			Operating (Discharging)	14° to 140° F (-10° to 60° C)	
	<b>Battery Re-Charge Time</b>	Non-operating	-4° to 140° F (-20° to 60° C)		
		System in OFF mode or Standby	2.5 hours		
		System ON	3 to 5 hours (depending on system power consumption)		
	<b>Fuel Gauge LED</b>	No			
	<b>Warranty</b>	3 years			
	<b>Optional Travel Battery Available</b>	No			

### ENVIRONMENTAL DATA

**Eco-Label Certifications & declarations** 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:

- IT ECO declaration
- US ENERGY STAR®
- EPEAT <Gold> registered in the United States. See <http://www.epeat.net> for registration



### Technical Specifications

status in your country.

#### System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.

#### Energy Consumption (in accordance with US ENERGY STAR® test

method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	7.91 W	7.91 W	8.42 W
Normal Operation (Long idle)	6.05 W	6.49 W	5.78 W
Sleep	0.71 W	0.74 W	0.71 W
Off	0.37 W	0.40 W	0.37 W

Note:

Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	27 BTU/hr	27 BTU/hr	29 BTU/hr
Normal Operation (Long idle)	21 BTU/hr	22 BTU/hr	20 BTU/hr
Sleep	2 BTU/hr	3 BTU/hr	2 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 BTU/hr

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

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

	Sound Power (L <sub>WAd</sub> , bels)	Sound Pressure (L <sub>pAm</sub> , decibels)
Typically Configured – Idle	3.1	24
Fixed Disk – Random writes	3.1	24

#### Longevity and Upgrading

This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:

- 3 USB ports
- 1 PC card slot (type I/II)
- 1 ExpressCard/54 slot
- 1 IEEE 1394 Port
- 2 SODIMM memory slots



### Technical Specifications

- Optional expansion base docking station
- 1 multi-bay II storage port
- Interchangeable HDD

Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.

#### Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/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](http://www.epeat.net)
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
- This product contains 0% post-consumer recycled plastic (by wt.)
- This product is xx.x% recycle-able when properly disposed of at end of life.

#### Packaging Materials

<b>External:</b>	PAPER/Corrugated	387.8 g
<b>Internal:</b>	PLASTIC/Polyethylene low density	55.6 g

The plastic packaging material contains at least 75% recycled content.

The corrugated paper packaging materials contains at least 75% recycled content.

#### 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](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



### Technical Specifications

1811:1998, are not used on any product surface designed to be frequently handled or touched by users.

#### Packaging Usage

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.

#### 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/qcreport/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>

#### Country of Origin

China



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

Type	Description	Part #
<b>Cases</b>	HP Essential Top Load Case	H2W17AA
	HP Essential Backpack (up to 15.6")	H1D24AA
	HP Essential Messenger Case (up to 17.3")	H1D25AA
<b>Docking</b>	HP 3005pr USB 3.0 Port Replicator	H1L08AA
<b>Input/Output – Mice</b>	HP Comfort Grip Wireless Mouse	H2L63AA
	HP 3-Button USB Laser Mouse	H4B81AA
	HP USB Optical Travel mouse	RH304AA
<b>Adapters</b>	HP 45W Smart AC Adapter 4.5mm	H6Y88AA
<b>Security</b>	HP UltraSlim Keyed Cable Lock	H4D73AA
<b>Displays</b>	HP ProDisplay P201 20-inch LED Backlit Monitor	C9F26AA
	HP ProDisplay P201m 20-inch LED Backlit Monitor (With Integrated Speakers)	C9F73AA
	HP ProDisplay P221 21.5-inch LED Backlit Monitor	C9E49AA
	HP ProDisplay P231 23-inch LED Backlit Monitor	E4S07AA

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### Summary of Changes

#### Summary of Changes

<b>Date of change:</b>	<b>Version History:</b>		<b>Description of change:</b>
June 9, 2014	From March14 to June14	Added	Environmental data, change log
June 19, 2014	From June 9 June 19	Added	Battery life and changes throughout the document. Added cNumber, date, version number
July 7, 2014	From v4 to v5	Changed	Weights specs
October 29, 2014	From v5 to v6	Removed	<a href="#">Windows 7 Home, Windows 7 Home Premium from OPERATING SYSTEMS</a>

