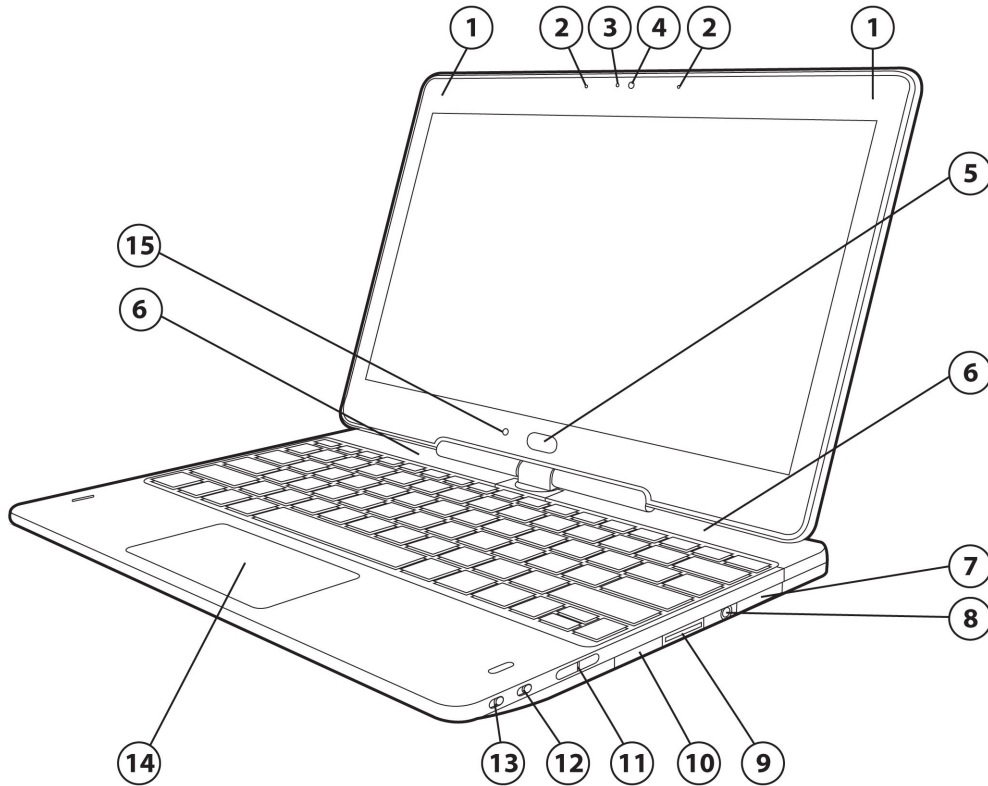


### Overview

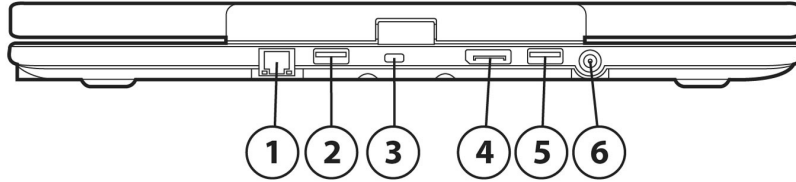


#### Front, Right

- |                           |                           |
|---------------------------|---------------------------|
| 1. WLAN antennas          | 9. MicroSD slot           |
| 2. Dual-microphone array  | 10. Speaker               |
| 3. Webcam LED             | 11. Volume up/down button |
| 4. 720p HD Webcam         | 12. Rotation lock button  |
| 5. Home button            | 13. Power button          |
| 6. WWAN antennas*         | 14. Clickpad image sensor |
| 7. Side docking connector | 15. Ambient light sensor  |
| 8. Audio jack             |                           |

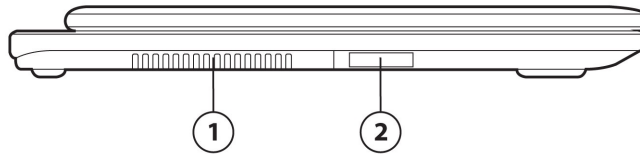
\* WWAN module available as AMO in May 2014. All WWAN modules listed are available preconfigured. Only the HP Lt4112 LTE/HSPA+ Mobile Broadband Module is sold separately as an optional feature. WWAN use requires separately purchased service contract. Check with service provider for coverage and availability in your area. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE is not available in all regions and requires Windows.

### Overview



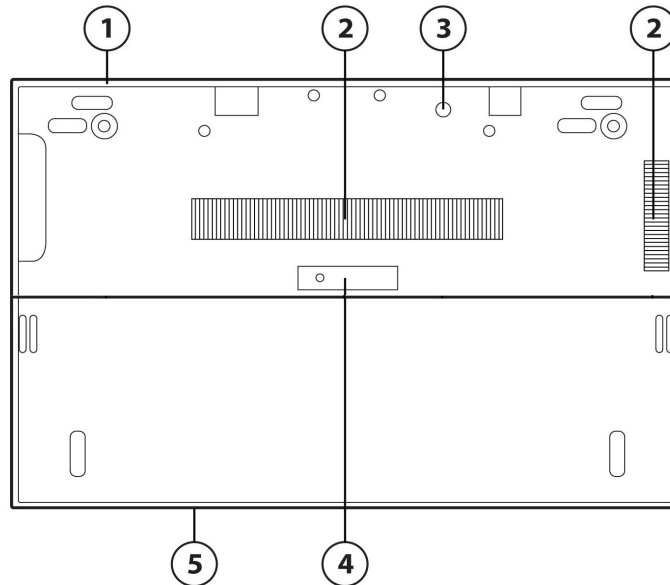
#### Rear

- 1. RJ-45 (Ethernet) jack
- 2. USB 3.0 port
- 3. Security lock slot
- 4. DisplayPort 1.2
- 5. USB 3.0 charging port
- 6. Power connector



#### Left

- 1. Vent
- 2. Speaker



#### Bottom

- 1. Service cover
- 2. Vents
- 3. Near Field Communication (NFC) antenna
- 4. Battery bay cover release latch
- 5. Battery bay

### Overview

#### At A Glance

- Windows 8.1 Pro 64, Windows 8.1 64, Windows 7 Professional 64 (available through downgrade rights from Windows 8.1 Pro 64), Windows 7 Professional 64, Windows 7 Home Premium 64, or FreeDOS 2.0
- 11.6-inch diagonal LED-backlit, ultra-slim, HD UWVA display (1366 x 768) with capacitive multi-touch screen
- Industrial, business rugged HP DuraCase construction features a full magnesium alloy chassis, wear-resistant HP DuraFinish, and stainless steel hinges
- Full-sized backlit, spill-resistant keyboard with bottom-case drain
- Clickpad image sensor
- Choice of 4th Generation Intel® Core™ i7, i5 Core with Turbo Boost Technology or 4th Generation Intel® Core™ i3 Core
- Intel vPro technology 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 (vPro not available with Core i3-4010U or Core i5-4200U.)
- Choice of up to 256 GB M.2 Solid State Drive or 256 GB SED M.2 Solid State Drive
- Flexible wireless connectivity options:
  - Integrated WWAN modules with GPS support (optional, available March 2014)
  - Integrated Intel 802.11 (2x2) a/b/g/n ac, or a/b/g/n with Bluetooth 4.0 combo card
  - Integrated Intel 802.11 a/b/g/n (2x2) wireless LAN module
- 6-cell polymer long life battery (44 WHr)
- Integrated Intel HD 4400 Graphics
- Integrated 720p HD Webcam
- DTS Studio Sound with integrated stereo speakers and dual microphone array
- Security features including HP Client Security, Common Criteria Certified Discrete TPM 1.2 Embedded Security Chip, and security lock slot
- Separate launch buttons for easy access to the following features: Windows, power, rotation lock, volume up and down
- DisplayPort v1.2 for high resolution support
- Optional HP 2013 UltraSlim docking station
- Sensors include Gyroscope, Accelerometer, Compass, Ambient Light Sensor, Near Field Communication (NFC)
- microSD slot

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

### Features

#### PRODUCT NAME

HP EliteBook Revolve 810 G2 Tablet

#### OPERATING SYSTEM

##### Preinstalled

Windows 8.1 Pro 64\*  
Windows 8.1 64\*  
Windows 7 Professional 64 (available through downgrade rights from Windows 8.1 Pro 64)\*\*  
Windows 7 Professional 64\*\*\*  
Windows 7 Home Premium 64\*\*\*  
FreeDOS 2.0

##### Supported

Windows 8.1 Enterprise 64\*  
Windows 7 Professional 32\*\*\*  
Windows 7 Enterprise 32\*\*\*  
Windows 7 Enterprise 64\*\*\*  
Windows 7 Ultimate 32\*\*\*  
Windows 7 Ultimate 64\*\*\*  
Windows 7 Home Premium 32\*\*\*  
Windows 7 Home Basic 32\*\*\*  
Windows 7 Home Basic 64\*\*\*

\* 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/>

\*\* This system is preinstalled with Windows® 7 Pro software and also comes with a license and media for Windows 8 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

\*\* Systems 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\*

4th Generation Intel® Core™ i7-4600U with Intel HD Graphics 4400 (2.1 GHz, 4 MB L3 cache, 2 cores, 15 W)\*  
Up to 3.3 GHz with Intel Turbo Boost Technology\*\*

4th Generation Intel® Core™ i5-4300U with Intel HD Graphics 4400 (1.9 GHz, 3 MB L3 cache, 2 cores, 15 W)\*  
Up to 2.9 GHz with Intel Turbo Boost Technology

4th Generation Intel® Core™ i5-4200U with Intel HD Graphics 4400 (1.6 GHz, 3 MB L3 cache, 2 cores, 15 W)\*  
Up to 2.6 GHz with Intel Turbo Boost Technology\*\*

4th Generation Intel® Core™ i3-4010U with Intel HD Graphics 4400 (1.7 GHz, 3 MB L3 cache, 2 cores, 15 W)\*

\* 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.

\*\* Intel® Turbo Boost technology requires a PC with a processor with Intel Turbo Boost capability. Intel Turbo Boost performance varies depending on hardware, software and overall system configuration. See [www.intel.com/technology/turboboost](http://www.intel.com/technology/turboboost) for more information.

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

### Features

#### CHIPSET

Mobile Intel® QM87 (vPro support available with Core i7-4600 or Core i5-4300)

#### 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 9.0 (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 this technology, such as Intel® Active management technology and Intel Virtualization technology, requires additional 3rd party software in order to run. Availability of future "virtual appliances" applications for Intel vPro technology is dependent on 3rd party software providers. Microsoft Windows required. For hard drives, GB = 1 billion bytes. Actual formatted capacity is less. Up to 30 GB for Windows 8 is reserved for system recovery software.

#### GRAPHICS

Integrated:

UMA: Intel HD Graphics 4400

#### DISPLAY

##### Internal

11.6-inch diagonal LED-backlit, anti-glare, HD\* AG UWVA Touchpanel (1366 x 768)

- Ultra- Wide-viewing angle
- LVDS - low voltage differential signaling
- Capacitive multitouch screen with digitizer
- Tough, durable Corning Gorilla Glass 3

##### External

Up to 32-bit per pixel color depth

##### DisplayPort v1.2

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

##### Number of Supported Displays

Number of Displays with 2013 UltraSlim Docking Station

UMA

Discrete

EliteBook Revolve 810 G2

3

n/a

### Features

\* HD content required to view HD images.

**NOTE:** Resolutions are dependent upon monitor capability, and resolution and color depth settings.

### STORAGE AND DRIVES

#### Solid State Drive

128/180/256 GB M.2 Solid State Drives

256 GB SED M.2 Solid State Drive

**NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 30 GB (for Windows 8.1) of system disk is reserved for the system recovery software.

### MEMORY

#### Standard

DDR3L PC3-12800 SDRAM (1600 MHz)

One SODIMM slot supporting dual-channel memory plus 4 GB soldered down

4 GB and 8 GB SODIMMs

#### Maximum

Upgradeable to 12288 MB with optional 8192 MB SODIMM in slot 1 and 4096 MB soldered down

#### Dual-channel

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

**NOTE:** Maximum memory capacities assume Windows 64-bit operating systems. With Windows 32-bit operating systems, memory above 3 GB may not all be available due to system resource requirements.

**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.

### 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 as both a factory configurable and after-market option and can be combined with any of the supported wireless LAN and wireless WAN options.

#### Broadband Wireless (WWAN)

HP hs3110 HSPA+ Mobile Broadband\*

HP lt4111 LTE/EV-DO/HSPA+ Mobile Broadband Module\*, \*\* (US)

HP lt4112 LTE/HSPA+ Mobile Broadband Module\*, \*\*, \*\*\* (EMEA, APJ)

#### Wireless LAN (WLAN)

Intel Dual Band Wireless-AC 7260 802.11 ac (2x2) WiFi + BT 4.0 combo\*\*\*\*, \*\*\*\*\*

Intel Dual Band Wireless-N 7260AN 802.11 a/b/g/n (2x2) WiFi + BT 4.0 combo\*\*\*\*

Intel Dual Band Wireless-N 7260NB 802.11 a/b/g/n (2x2) WiFi\*\*\*\*

\* WWAN module available as AMO in May 2014. All WWAN modules listed are available preconfigured. Only the HP lt4112 LTE/HSPA+ Mobile Broadband Module is sold separately as an optional feature. WWAN use requires separately purchased service contract. Check with service provider for coverage and availability in your area. Connection speeds will vary due to location,

### Features

environment, network conditions, and other factors. 4G LTE is not available in all regions and requires Windows.

\*\* 4G LTE not available on all products, in all regions and only available on products featuring Intel processors.

\*\*\* Sold separately or as an optional feature.

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

\*\*\*\*\* The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ac WLAN devices.

### Communications

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

\* 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 Studio Sound

Integrated stereo speakers

Integrated microphone (dual-microphone array)

Buttons for volume up and down

Headphone/microphone combo jack

### Webcam

Integrated 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

### Features

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

##### Keyboard

The HP backlit, 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.

##### Pointing Devices

Clickpad image sensor

##### Buttons and Function Keys

Function keys are:

F1 - Ambient Light Sensor

F2 - Battery Gauge

F3 - Sleep

F4 - Display Switching

F5 - Speaker Mute

F6 - Volume Down

F7 - Volume Up

F8 - mic mute

F9 - Brightness Down

F10 - Brightness Up

F11 - Backlit keyboard

F12 - WiFi toggle

#### SENSORS

Accelerometer

Compass

Ambient Light Sensor

Near Field Communication (NFC)

#### SOFTWARE AND SECURITY

##### Preinstalled Software with Windows Operating System

##### Security

HP Client Security (incl. Cred Mgr and Password Mgr)

HP Drive Encryption<sup>2</sup>

HP Device Access Manager with Just In Time Authentication

HP File Sanitizer

HP Trust Circles Standard<sup>3</sup>

Absolute Data Protect

Computrace<sup>1</sup>

Microsoft Defender

Microsoft Security Essentials<sup>4</sup>



### Features

Privacy Manager (Web only)  
Validity Fingerprint Driver  
HP BIOS with Sure Start<sup>5</sup>

#### **BIOS Features**

HP Sure Start<sup>5</sup>  
HP BIOS Protection<sup>6</sup> (Follow NIST 800-147, 155 Guidelines)  
HP Automatic Drive Lock  
HP DriveLock  
HP SpareKey<sup>8</sup>  
Update via Network  
Power On Authentication  
Pre-Boot Security  
HP Disk Sanitizer<sup>7</sup> (Not for SSD)  
Master Record Security (backup/restore)  
Secure Erase<sup>9</sup> (SSD & HDD)  
Measured Boot  
Hybrid Boot  
Secure Boot  
Absolute Persistence Module (for all Absolute products) <sup>1</sup>

#### **HP Value Add**

HP Ceement  
Digital ENERGY STAR<sup>®</sup> Logo W8  
Getting Started with Windows 8  
HP 3D DriveGuard  
HP ePrint Driver<sup>10</sup>  
HP Firmware & Driver Installer  
HP Hotkey Support  
HP Manageability  
HP PageLift App  
HP PageLift Desktop App  
HP Performance Advisor  
HP Quick Start  
HP Recovery Manager  
HP Registration App  
HP Remote Graphics  
HP Setup  
HP Software Setup  
HP Support Assistant  
HP Recovery Disc Creator (HPRDC)  
HP WallPaper  
Internet Explorer 9  
Internet Explorer 10  
IE Home  
System Default Settings for Win8  
UEFI System Diagnostics W8  
Wireless Button Driver

#### **3rd Party**

Adobe<sup>®</sup> Flash Player (Commercial)

### Features

- Amazon Kindle App
- PDF Complete, Corporate Edition
- Box.Net (UK only)
- Box 50GB CMIT Cloud Offer
- BTB Host and ISP Stub
- BTB Host End Block
- Bing Search for IE9
- Bing Search for IE10
- Netflix App
- Skype Desktop App<sup>11</sup>
- Skype App<sup>11</sup>

#### Microsoft Products

- Buy Office
- Lync Optimized<sup>12</sup>

<sup>1</sup> The Absolute Persistence agent is shipped turned off, and is activated with customer purchase of a subscription. Service may be limited. Check with Absolute for availability outside the U.S. The optional subscription service of Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit:

<http://www.absolute.com/company/legal/agreements/computrace-agreement>. If Data Delete is utilized, the Recovery Guarantee payment is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either create a PIN or purchase one or more RSA SecurID tokens from Absolute Software

<sup>2</sup> 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. Drive encryption planned to be available in October 2013.

<sup>3</sup> HP Trust Circles Standard, when included, allows up to 5 Trust Circles with up to 5 contacts in each Trust Circle. Optional Trust Circles Professional required for unrestricted number of Trust Circles and members contacts. Trust Circles Reader is available to allow a contact to participate in an invited Trust Circle. Requires Windows.

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

<sup>5</sup> HP Sure Start is available only on EliteBook 800 and Workstation ZBook series products. HP Tools partition with HP BIOS required for automatic recovery.

<sup>6</sup> May require a manual recovery step for recovery if all copies of BIOS are compromised or deleted.

<sup>7</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>8</sup> Requires initial user set up.

<sup>9</sup> For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88.

<sup>10</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>11</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>12</sup>Lync software is sold separately. Requires internet access.

#### Security

##### Standard

- Common Criteria EAL4+ Augmented Certified Discrete TPM 1.2 Embedded Security Chip
- Security lock slot
- HP Sure Start
- HP BIOS (BIOS Protection)<sup>8</sup>
- Secure Erase<sup>1</sup>

### Features

Computrace Persistence<sup>2</sup>  
DriveLock and Automatic DriveLock  
Preboot Security  
Master Boot Record recovery (Windows 7 only)  
HP Client Security Software:

- Drive Encryption
- Credential Manager
- Password Manager
- Absolute Data Protect (Windows 8 and 8.1 only)<sup>6</sup>
- Computrace (Windows 7 only)<sup>7</sup>
- Face Recognition<sup>6</sup>
- One Step Logon
- SpareKey<sup>3</sup>

Device Access Manager with Just In Time Authentication  
Embedded Security (Windows 7 only)  
Privacy Manager (Windows 7 only)  
Microsoft Security Essentials (Windows 7 only)<sup>4</sup>  
DigitalPass (Windows 7 only)  
Central Management capable<sup>5</sup>

#### Optional

HP Combo Lock

<sup>1</sup> For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88.

<sup>2</sup> Computrace agent is shipped turned off, and must be activated by customers when they purchase a subscription. Subscriptions can be purchased for terms ranging for multiple years. Service is limited, check with Absolute for availability outside the U.S

<sup>3</sup> Requires initial user setup.

<sup>4</sup> Opt-in and Internet connection required for updates

<sup>5</sup> 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.

<sup>6</sup> HP Revolve with Windows 8 and 8.1 includes includes a 4 year license of Absolute Data Protect to locate your device, lock and prevent unauthorized access and remotely delete personal data. See <http://www.absolute.com/landing/2012/computrace-hp> for complete details. Absolute Data Protect agent is shipped turned off, and must be activated by customers. Service may be limited, check with Absolute for availability outside the U.S. The optional subscription service of Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit: <http://www.absolute.com/company/legal/agreements/computrace-agreement>. If Data Delete is utilized, the Recovery Guarantee payment is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either create a PIN or purchase one or more RSA SecurID tokens from Absolute Software.

<sup>7</sup> HP Revolve with Windows 7 includes the Computrace agent, shipped turned off, and is activated with customer purchase of a subscription. Service may be limited. Check with Absolute for availability outside the U.S. The optional subscription service of Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit: <http://www.absolute.com/company/legal/agreements/computrace-agreement>. If Data Delete is utilized, the Recovery Guarantee payment is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either create a PIN or purchase one or more RSA SecurID tokens from Absolute Software.

<sup>8</sup>May require a manual recovery step for recovery if all copies of BIOS are compromised or deleted.

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

### Features

#### Management

LANDesk Management Suite (optional)<sup>1, 2</sup>

LANDesk Security Suite(optional)<sup>1, 2</sup>

HP System Software Manager (available at no charge as a download from the web)

HP Softpaq Download Manager (available at no charge as a download from the web)

<sup>1</sup> Sold separately or as an optional feature.

<sup>2</sup> LANDesk software is sold separately. Managed devices must be connected to the management server. Location based functionality requires active LANDesk maintenance service. Wipe functionality performs a "Windows 8 Reset" and requires Windows 8. Lock performs a Windows "Lock Computer."

### POWER

#### Power Supply

External HP 45W Slim Smart AC Adapter

External 65W EM Smart AC Adapter (Asia, PRC, India only)

Power cord is configurable; either 3.2 feet or 6 feet (1.0 or 1.8 meter)

#### Primary Battery

HP 6-cell polymer long life (44WHr)

#### Battery Life

HP 6-cell polymer long life battery (44WHr)

Up to 10 Hours 45 minutes\*

#### System Standby Time

Up to 137 hours

#### Power Conservation

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

Intel Display Power Saving technology

Hibernation

Standby

ACPI compliance

\* Windows 7 battery life will vary depending on various factors including 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 [www.bapco.com](http://www.bapco.com) for additional details.

### ENVIRONMENTAL

- US ENERGY STAR<sup>®</sup>
- IT ECO declaration
- EPEAT<sup>®</sup> Gold registered in the U.S. (with Microsoft OS). EPEAT status varies by country- please see [epeat.net](http://epeat.net) for registration status in your country.
- US Federal Energy Management Program (FEMP)

### Features

#### WEIGHTS & DIMENSIONS

**Weight**

Starting at 3.08 lb (1.40 kg) (weight will vary by configuration)

**Dimensions** (w x d x h)

8.34 x 11.22 x 0.80 in (at front) / 212 x 285 x 22.2 mm (at front)

**NOTE:** Height varies depending upon where on the notebook the measurement is made. Weight varies by configuration and components. Weight includes 6-cell battery, lightest SSD, and 1 SODIMM.

#### PORTS/SLOTS

**Ports**

DisplayPort – One (v1.2)

Stereo headphone/microphone combo jack – One

Power Connector – One

Side Docking Connector – One

RJ-45 (Ethernet) – One

USB 3.0 – One

USB 3.0 Charging – One

**Digital Media Slots**

microSD Media Reader Slot – supports SD, SDHC, SDXC

#### SERVICE AND SUPPORT

Limited, 90-day warranty, depending on country); 1 and 3 year limited warranty options available. 3-year limited warranty on battery. Optional HP Care Pack Services are extended service contracts which go beyond your standard warranties. For more details visit: <http://www.hp.com/go/cpc>

**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 (AC Power)</b>	<b>Nominal Operating Voltage</b>	110/220 V
	<b>Average Operating Power</b>	10.2 W
	<b>Max Operating Power</b>	< 45 W
<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 (unpressurized)</b>	<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®</b>	Select models*
	<b>EPEAT</b>	Gold**
	<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	

### Technical Specifications

\* Configurations of the HP EliteBook Revolve 810 G2 that are ENERGY STAR qualified are identified as HP EliteBook Revolve 810 G2 ENERGY STAR on HP websites and on [www.energystar.gov](http://www.energystar.gov).

\*\* EPEAT® Gold registered in the U.S. See [www.epeat.net](http://www.epeat.net) for registration status by country.

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

### DISPLAYS

<b>11.6-inch diagonal LED HD Active Area (1366 x 768)</b>	<b>Active Area</b>	9.88 x 5.67 in (25.61 x 14.40 cm)	
	<b>Dimensions (W x H)</b>	11.53 x 6.49 in (29.3 x 16.5 cm)	
	<b>Diagonal Size</b>	11.6 in (29.46 cm)	
	<b>Contrast Ratio</b>	300:1 (typical)	
	<b>Refresh Rate</b>	60 Hz	
	<b>Brightness</b>	400 nit (typical)	
	<b>Pixel Resolution</b>	<b>Format</b>	1366 x 768
		<b>Configuration</b>	RGB Stripe
	<b>Backlight</b>	LED	
	<b>Viewing Angle</b>	40/40/15/30 (Left/Right/Down/Up) (typical)	

### STORAGE AND DRIVES

#### Internal Storage

<b>128 GB* M.2 Solid State Drive</b>	<b>Drive Weight</b>	10 grams	
	<b>Capacity</b>	128 GB	
	<b>Height</b>	0.091 in (2.3 mm)	
	<b>Width</b>	0.87 in (22 mm)	
	<b>Interface</b>	SATA 3 (6 Gb/s)	
	<b>Performance</b>	<b>Maximum Sequential Read</b>	<b>Maximum Sequential Write</b>
		Up to 515 MB/s	Up to 465 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	

### Technical Specifications

<b>180 GB* M.2 Solid State Drive</b>	<b>Drive Weight</b>	10 grams	
	<b>Capacity</b>	180 GB	
	<b>Height</b>	0.091 in (2.3 mm)	
	<b>Width</b>	0.87 in (22 mm)	
	<b>Interface</b>	SATA Gen 3 (6 Gb/s)	
	<b>Performance</b>	<b>Maximum Sequential Read</b>	<b>Maximum Sequential Write</b>
		Up to 540 MB/s	Up to 490 MB/s
	<b>Logical Blocks</b>	351,651,888	
	<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>256 GB* M.2 Solid State Drive</b>	<b>Drive Weight</b>	10 grams	
	<b>Capacity</b>	256 GB	
	<b>Height</b>	0.091 in (2.3 mm)	
	<b>Width</b>	0.87 in (22 mm)	
	<b>Interface</b>	SATA Gen 3 (6 Gb/s)	
	<b>Performance</b>	<b>Maximum Sequential Read</b>	<b>Maximum Sequential Write</b>
		Up to 515 MB/s	Up to 465 MB/s
	<b>Logical Blocks</b>	500,118,192	
	<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>180 GB* M.2 SED Solid State Drive</b>	<b>Drive Weight</b>	10 Grams	
	<b>Capacity</b>	180 GB	
	<b>Height</b>	0.091 in (2.3 mm)	
	<b>Width</b>	0.87 in (22 mm)	
	<b>Interface</b>	SATA 3 (6 Gb/s)	
	<b>Performance</b>	<b>Maximum Sequential Read</b>	<b>Maximum Sequential Write</b>
		Up to 540 MB/s	Up to 490 MB/s
	<b>Logical Blocks</b>	351,651,888	
	<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; TCG Opal 1.0		

\* For solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 30 GB (for Windows 8.1) of system disk is reserved for the system recovery software.



### Technical Specifications

#### NETWORKING/COMMUNICATIONS

<b>Intel® 82579LM Gigabit Network Connection</b>	<b>Ethernet Features</b>	<p>10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14)            100 10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14)            100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30)            1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023. Clauses 40)            Auto-Negotiation (Automatic Speed Selection)            Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s            IEEE 802.1p QoS (Quality of Service) Support            IEEE 802.1q VLAN support            IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)            IEEE 802.3az EEE(Energy Efficient Ethernet)            Jumbo Frame 9K            Auto MDI/MDIX Crossover cable detection</p>
	<b>Power Management</b>	ACPI compliant - multiple power modes
	<b>Performance Features</b>	<p>Energy Detect Low Power Mode(Green Ethernet)            TCP/IP/UDP Checksum Offload (configurable)            Protocol Offload( ARP &amp; NS)            Large send offload and Giant send offload            Receiving Side Scaling            MACSec Offload (802.3ae)            Intel vPro            iSCSI Boot</p>
	<b>Manageability</b>	<p>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</p>
	<b>Interface</b>	<p>PCI Express 1.1 x1 to fully support ASPM L0s/L1 and CLKREQ.  <b>NOTE:</b> Intel 82579 PCIe interface is not PCIe compliant. It operates at half of PCIe specification V1.1 (2.5GT/S) speed.</p>
	<b>NIC Device Driver Name</b>	Intel 82579LM/82579V Ethernet Network Connection
<b>HP hs3110/3114 HSPA+ Mobile Broadband Module*</b>	<b>Technology/Operating Bands</b>	<p>Modes: WCDMA/HSDPA/HSUPA/HSPA+/AWS/GSM/EDGE/GPRS            Penta-band WCDMA/HSDPA/HSUPA/HSPA+/AWS: 850/900/1900/2100/AWS MHz            GSM/GPRS/EDGE: 850/900/1800/1900 MHz</p>
	<b>Wireless Protocol Standards</b>	<p>GSM/GPRS/EDGE: Class B, Multi-slot class 33, coding schemes CS1 - CS4 and MSC1 - MSC9.            UMTS/WCDMA: Release 99 and Release 7            Advanced Receiver Type 3i</p>
	<b>GPS</b>	GPS Standalone, A-GPS: L1 (Internet- and Network assisted)
	<b>Wireless parametric standards</b>	Complies with 3GPP specifications

### Technical Specifications

<b>Maximum data rates</b>	GPRS/EDGE: Multi-slot Class 33, Class B WCDMA PS: UL (384 kbps) / DL (384 kbps) UL/DL HSPA: UL (5.76 Mbps)/ DL (7.2 Mbps) UL/DL HSPA+: UL (5.76 Mbps)/ DL (21Mbps)
<b>Maximum output power</b>	WCDMA/HSPA/HSPA+ 2100/1900/900/850/AWS MHz: +24dBm (Power Class 3) GPRS 1900/1800 MHz: +30dBm (Power Class 1) GPRS 900/850 MHz: +33dBm (Power Class 4) EDGE 1900/1800 MHz: +26dBm (Power Class E2) EDGE 900/850 MHz: +27dBm (Power Class E2)
<b>Maximum power consumption</b>	2500mA (peak); 600mA (average)
<b>Power consumption, sleep mode</b>	3.6 mA
<b>Power management</b>	USB selective suspend, Connected Standby Integrated notebook wireless button
<b>Antenna type</b>	Dual high efficiency 5 band antennae with spatial diversity, mounted in the display enclosure
<b>Form Factor</b>	M.2 Socket 2, USB 2.0 interface high speed
<b>Weight</b>	<6 g
<b>Dimensions</b> (Length x Width x Thickness)	2.01 x 1.18 x 0.18 in (42 x 30 x 2.3 mm)
<b>SIM card supply voltage</b>	1.8 V/3.0 V UICC (SIM/UICC/USIM)
<b>Voltage, Operating</b>	3.135V~4.4V (3.3 V recommended)
<b>Temperature, Operating</b>	14° to 131° F (-10° to 55° C) (Normal operation) -4° to 158° F (-20° to 70° C) (Extended operation)
<b>Temperature, storage</b>	-40° to 185° F (-40° to 85° C)
<b>Humidity</b>	LED Off - Radio Off; Solid LED On - Radio On
<b>Configuration utilities</b>	HP Connection Manager
<b>LED Activity</b>	LED Off - Radio Off; Solid LED On - Radio On

\* Mobile Broadband is an optional feature sold separately or as an add on 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.

#### HP It4111 LTE/EV-DO/HSPA+ 4G WWAN\*

<b>Technology/Operating Bands</b>	LTE FDD all bands with diversity: 1900 MHz (Band II) <sup>1</sup> , 1700/2100MHz (Band IV (AWS), 850 MHz (Band V), 700MHz (Band XIII), 700MHz (Band XVII), 1900MHz G Block (Band XXV) WCDMA/HSDPA/HSUPA/HSPA+: all bands with diversity: 2100 MHz (Band I), 1900 MHz (Band II) , AWS 1700/2100MHz (Band IV), 850 MHz (Band V), 800 MHz (Band VIII) GSM/GPRS/EDGE: 1900 MHz, 1800 MHz , 850 MHz , 900 MHz CDMA: Cellular 800MHz (BC0), PCS 1900MHz (BC1)
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### Technical Specifications

<b>Wireless Protocol Standards</b>	3GPP Release 8 LTE Specification WCDMA R99, 3GPP Release 5, 6 and 7 UMTS Specification EVDO Release 0 and Release A
<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 GPS, A-GPS, GPS XTRA
<b>GPS Bands</b>	1575.42 MHz (± 1.023 MHz), GLONASS 1596-1607MHz
<b>Maximum Output Power</b>	LTE: +23 dBm (+/- 1 dBm) WCDMA: +23 dBm (+/- 1 dBm) GSM850/900, GMSK: +32dBm (+/- 1dBm) GSM850/900, 8PSK: +27dBm (+/- 1dBm) DCS1800 / PCS 1900, GMSK: +29dBm (+/- 1dBm) DCS1800 / PCS 1900, 8PSK: +26dBm (+/- 1dBm) CDMA: +24dBm (+/- 1dBm)
<b>Maximum Power Consumption</b>	LTE: 1,200 mA (peak); <900 mA (average) WCDMA: 1,100 mA (peak); <800 mA (average) EGPRS: 2,500 mA (peak); <700 mA (average)
<b>Power Consumption, Sleep Mode</b>	2 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, 3042-S3 Key B
<b>Weight</b>	6 g
<b>Dimensions</b> (Length x Width x Thickness)	42 mm × 30 mm × 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)	-13° to 140° F (-25° to 60° 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

<sup>1</sup> 1900 MHz (Band II) and 850 MHz (Band V) not supported at launch but support planned in a future firmware update.

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

### Technical Specifications

<b>Gobi 4G Module*</b>	<b>Bands</b>	MHz (Band III), 850 MHz (Band V), 2600 MHz (Band VII), 900 MHz (Band VIII), 800 MHz (Band XX, DD800) WCDMA/HSDPA/HSUPA/HSPA+ all bands with diversity: 2100 MHz (Band I), 1900 MHz (Band II), 850 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 ( $\pm$ 2 dBm) WCDMA: +23.5 dBm ( $\pm$ 1 dBm) GPRS Band II, III: +29.5 dBm ( $\pm$ 1 dBm) GPRS Band V, VIII: +32.5 dBm ( $\pm$ 1 dBm) EGPRS Band II, III: +26.5 dBm ( $\pm$ 1.5 dBm) EGPRS Band V, VIII: +27.5 dBm ( $\pm$ 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

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

### Technical Specifications

<b>Intel Dual Band Wireless-N 7260AN 802.11 a/b/g/n (2x2) WiFi + Bluetooth 4.0 Combo Adaptor*</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                      2.402 - 2.482 GHz 802.11a/n                        4.9 - 4.95 GHz (Japan) 5.15 - 5.25 GHz 5.25 - 5.35 GHz 5.47 - 5.725 GHz 5.825 - 5.850 GHz
	<b>Antenna Structure</b>	2 transmit; 2 receive (2x2)
	<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 CCK, BPSK, QPSK, 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 CCX4 and CCX Lite</li> <li>● WAPI</li> </ul>
	<b>Sub-channels</b>	Multinational support with frequency bands and channels compliant to local regulations.
	<b>Network Architecture Models</b>	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	<b>Roaming</b>	IEEE 802.11 compliant roaming between band 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> </ul>
	<b>Power Consumption</b>	Transmit: 2.0 Watts Receive: 1.6 Watts Idle mode <sup>3</sup> : 250 mW (WLAN Associated) Idle mode: 100 mW (WLAN unassociated) Radio off: 75 mW
	<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
	<b>Receiver Sensitivity<sup>4</sup></b>	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)

### Technical Specifications

	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: -69 dBm (150 Mbps), -66 dBm (300 Mbps)
<b>Antenna Connections</b>	2 U.FL type connectors (output impedance of 50 ± 2 ohms)
<b>Form Factor</b>	PCI-Express Half-MiniCard
<b>Dimensions</b>	0.12 x 1.06 x 1.18 in (3.1 x 26.8 x 30.0 mm)
<b>Weight</b>	3.1g
<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) 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. In Power Save Polling mode and on battery power.</li> <li>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).</li> <li>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.</li> </ol>
	<b>HP Integrated Module with Bluetooth 4.0+EDR Wireless Technology</b>
<b>Bluetooth Specification</b>	4.0+EDR Compliant
<b>Dimensions</b>	1.18 x 0.26 x 0.13 in (30 x 6.5 x 3.25 mm)
<b>Frequency Band</b>	2402 to 2480 MHz
<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
<b>Transmit Power</b>	-1.5 dBm to 4 dBm (Bluetooth Class II)
<b>Receiver Sensitivity</b>	Better than -20 dBm at 0.1 % raw bit error rate
<b>Power Consumption</b>	Peak (Tx) 264 mW Peak (Rx) 231 mW Sleep <1 mW
<b>Antenna</b>	Internally integrated within module

### Technical Specifications

<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>	Serial Port Profile (SPP) <sup>1</sup> Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN) <sup>1,2</sup> Generic Object Exchange Profile (GOEP) <sup>1,2</sup> Object Push Profile (OPP) <sup>1,2</sup> File Transfer Profile (FTP) Synchronization Profile (SYNC) Hard Copy Cable Replacement (HCRP) <sup>1,2</sup> Personal Area Networking Profile (PAN) <sup>1,2</sup> Human Interface Device Profile (HID) <sup>1,2</sup> FAX Profile (FAX) Basic Imaging Profile (BIP) <sup>2</sup> 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

\* Wireless access point and internet service required. Availability of public wireless access points limited.

### Intel Dual Band Wireless-N 7260NB 802.11 a/b/g/n (2x2) WiFi Adapter\*

<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 802.11a/n
	2.402 - 2.482 GHz 4.9 - 4.95 GHz (Japan) 5.15 - 5.25 GHz 5.25 - 5.35 GHz 5.47 - 5.725 GHz 5.825 - 5.850 GHz

### Technical Specifications

<b>Antenna Structure</b>	2 transmit; 2 receive (2x2)
<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 CCK, BPSK, QPSK, 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 CCX4 and CCX Lite</li><li>● WAPI</li></ul>
<b>Sub-channels</b>	Multinational support with frequency bands and channels compliant to local regulations.
<b>Network Architecture Models</b>	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
<b>Roaming</b>	IEEE 802.11 compliant roaming between band 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></ul>
<b>Power Consumption</b>	Transmit: 2.0 Watts Receive: 1.6 Watts Idle mode <sup>3</sup> : 250 mW (WLAN Associated) Idle mode: 100 mW (WLAN unassociated) Radio off: 75 mW
<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
<b>Receiver Sensitivity<sup>4</sup></b>	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)  802.11b:-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:-69 dBm (150 Mbps), -66 dBm (300 Mbps)
<b>Antenna Connections</b>	2 U.FL type connectors (output impedance of 50 ± 2 ohms)
<b>Form Factor</b>	PCI-Express Half-MiniCard
<b>Dimensions</b>	0.12 x 1.06 x 1.18 in (3.1 x 26.8 x 30.0 mm)
<b>Weight</b>	3.1g



### Technical Specifications

<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)
	Non-operating	0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	LED Amber - 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.

\* Wireless access point and internet service required. Availability of public wireless access points limited.

**Intel Dual Band Wireless-AC 7260 802.11 ac (2x2) WiFi + BT 4.0 combo Adapter\***

<b>Wireless LAN Standards</b>	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac
<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>
<b>Data Rates</b>	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>Modulation</b>	<ul style="list-style-type: none"> <li>● 802.11b: 1, 2, 5.5, 11 Mbps</li> <li>● 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>● 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>● 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)</li> <li>● 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)</li> </ul>
	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-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> </ul>

### Technical Specifications

	<ul style="list-style-type: none"> <li>• WPA2 certification</li> <li>• IEEE 802.11i</li> <li>• Cisco Certified Extensions, all versions through CCX4 and CCX Lite</li> <li>• WAPI</li> </ul>
<b>Network Architecture Models</b>	Network Architecture Models
<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 regulatory certification with notebooks that have antennas &gt;20cm from the user and peak gain of +3dBi at 2.4GHz and +4dBi at 5GHz</li> </ul>
<b>Power Consumption</b>	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
<b>Power Management</b>	ACPI and PCI Express 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)  802.11a/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)  802.11n: -69 dBm (72.2 Mbps), -66 dBm (300 Mbps)
<b>Antenna Connections</b>	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
<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>Weight</b>	3.1g
<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) Non-operating 0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	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.

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).

### Technical Specifications

#### Bluetooth Specification

V4.0 High Speed, V2.1+EDR, backwards compatible with V1.1, 1.2 and 2.0

**Number of Available Channels** 79 (1 MHz) available channels

**Data Rates and Throughput** 3 Mbps data rate; throughput up to 2.17 Mbps

Synchronous Connection Oriented links up to 3, 64 kbps, voice channels

Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric

**Transmit Power** -6 dBm to 4 dBm (Bluetooth Class II)

**Receiver Sensitivity** Better than -80 dBm at 0.1 % raw bit error rate

**Power Consumption** Peak (Tx) 330 mW  
Peak (Rx) 230 mW  
Sleep <17 mW

**Antenna** Internally integrated within module

**Range** Up to 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

**Bluetooth Profiles Supported** 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)

### Technical Specifications

Hands Free Profile (HFP)  
Basic Printing Profile (BPP)  
VDP (Video Distribution Profile)  
AVRCP (Audio Video Remote Control Profile)

\* Wireless access point and internet service required. Availability of public wireless access points limited. The specifications for the 802.11ac WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the notebook to communicate with other 802.11ac WLAN devices

### AUDIO/MULTIMEDIA

<b>Audio</b>	<b>DTS Studio Sound</b> (Windows OS only)	
<b>Hardware</b>	<b>Implementation</b>	IDT 92HD91 High Definition CODEC
	<b>Function Key Volume Controls</b>	Volume up, volume down, and mute
	<b>Mute Buttons</b>	Playback and Record mute buttons with LED indicator
	<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 when equipped with optional webcam
<b>Audio Output Quality</b>	<b>Frequency Response</b>	20 Hz – 20 kHz
	<b>Signal to Noise Ratio</b>	>85 dB
	<b>Total Harmonic Distortion</b>	0.01%
	<b>Noise Floor</b>	-110 dB
	<b>Play/Record Sampling Rate(s)</b>	8 kHz - 48kHz
	<b>DAC</b>	16, 20 or 24-bit
	<b>ADC</b>	16 or 20-bit
<b>Integrated Stereo Speakers</b>	<b>Power Rating</b>	1 Watt
	<b>Impedance</b>	8 Ohms

### POWER

### Technical Specifications

<b>HP 45W Slim Smart AC Adapter</b>	<b>Dimensions (H x W x D)</b>	96.0 x 49.5 x 22.4 mm	
	<b>Input</b>	90 to 265 VAC	
		Input Efficiency	87% min at 115 VAC/230VAC
		Input frequency range	47 to 63 Hz
	<b>Output</b>	Input AC current	1.4 A at 90 VAC and maximum load
		Output power	45W
		DC output	19.5V
		Hold-up time	5 msec at 115 VAC input
		Output current limit	<8A, Over voltage protection- 29V max automatic shutdown
	<b>Connector</b>	3 pin/grounded, mates with 7.4mm barrel type Smart ID DC connector	
	<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 10,000 ft (0 to 2,000 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 65W Slim Smart AC Adapter EM</b>	<b>Dimensions (H x W x D)</b>	126.0 x 50.0 x 30.0 mm	
	<b>Input</b>	90 to 265 VAC	
		Input Efficiency	87% min at 115 VAC/230VAC
		Input frequency range	47 to 63 Hz
	<b>Output</b>	Input AC current	1.7 A at 90 VAC and maximum load
		Output power	65W
		DC output	19.5V
		Hold-up time	5 msec at 115 VAC input
		Output current limit	<11A, Over voltage protection- 29V max automatic shutdown
	<b>Connector</b>	3 pin/grounded, mates with 7.4mm barrel type Smart ID DC connector	
	<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>Storage Humidity</b>	0% to 95%	

### Technical Specifications

<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; Reliability - failure rate of less than 0.1% annually within the first three years of operation.
<b>HP 45W Slim Smart AC Adapter non-slim</b>	<b>Dimensions (H x W x D)</b> 95.0 x 40.0 x 26.5mm
	<b>Input</b> 90 to 265 VAC
	Input Efficiency 88% min at 115 VAC / 89% min at 230VAC
	Input frequency range 47 to 63 Hz
	Input AC current 1.4 A at 90 VAC and maximum load
	<b>Output</b> Output power 45W
	DC output 19.5V
	Hold-up time 5 msec at 115 VAC input
	Output current limit <8A, Over voltage protection- 29V max automatic shutdown
	<b>Connector</b> 3 pin/grounded, mates with 7.4mm barrel type Smart ID DC connector
	<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>Storage Humidity</b> 0% 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; Reliability - failure rate of less than 0.1% annually within the first three years of operation.

### Technical Specifications

<b>HP 6-cell (44 WHr) Polymer Primary battery</b>	<b>Dimensions</b> (H x W x L)	11.09 x 4.05 x 0.54 in (28.156 x 10.282 x 1.365 cm)	
	<b>Weight</b> (max)	0.308 kg	
	<b>Cells/Type</b>	6-cell Polymer	
	<b>Energy</b>	Voltage	11.1V
		Amp-hour capacity	4.0Ah
		Watt-hour capacity	44Wh
	<b>Temperature</b>	Operating (Charging)	32° to 113° F (0° to 45° C)
		Operating (Discharging)	14° to 140° F (-10° to +0° C)
		Non-operating	-4° to 140° F (-20° to 60° C)
	<b>Battery Re-Charge Time</b>	System in OFF or Standby Mode	2.5 hours (This depends on system setting)
		System ON	3-5 hours (This depends on system setting)
	<b>Fuel Gauge LED</b>	No	
	<b>Optional Travel Battery Available</b>	No	

### 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:

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

**System Configuration** The configuration used for the Energy Consumption and Declared Noise Emissions data is based on a "Typically Configured Notebook"

<b>Energy Consumption (in accordance with US ENERGY STAR® test method)</b>	<b>115 VAC</b>	<b>230 VAC</b>	<b>100 VAC</b>
Normal Operation	3.07 W	3.40 W	2.96 W
Sleep	0.64 W	0.68 W	0.64 W
Off	0.49 W	0.54 W	0.49 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.

### Technical Specifications

Heat Dissipation*	115 VAC	230 VAC	100 VAC
Normal Operation	10 BTU/hr	12 BTU/hr	10 BTU/hr
Sleep	2 BTU/hr	2 BTU/hr	2 BTU/hr
Off	2 BTU/hr	2 BTU/hr	2 BTU/hr

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

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

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	2.9	26
Fixed Disk (random writes)	2.9	26

#### Batteries

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

Batteries used in the product do not contain:

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

Battery size: CR2025 (coin cell)

Battery type: Lithium

#### 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 17.6 % post-consumer recycled plastic (by wt.)
- This product is 92.4 % recycle-able when properly disposed of at end of life.

#### Packaging Materials

- External:
  - PAPER/Corrugated - 340 g
- Internal:
  - PLASTIC/Polyethylene low density - 25 g
  - PLASTIC/EPE-Expanded Polyethylene - 80 g
  - PLASTIC/PET - 500 g
  - OTHER/OTHER - 1450 g
- The plastic packaging material contains at least 30 % recycled content.
- The corrugated paper packaging materials contains at least 30% recycled content.



### Technical Specifications

#### MATERIAL USAGE

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at <http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf>):

- 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/cm<sup>2</sup>/week, measured according to EN 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.

### Technical Specifications

#### **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>

#### **COUNTRY OF ORIGIN**

China

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

Type	Description	Part #
<b>Memory</b>	HP 2GB DDR3 1600 PC3-12800 SODIMM	H2P63AA#xxx
	HP 4GB DDR3 1600 PC3-12800 SODIMM	H2P64AA#xxx
	HP 8GB DDR3 1600 PC3-12800 SODIMM	H2P65AA#xxx
<b>Cases</b>	HP Slim Ultrabook Messenger (up to 15.6" x .88"/22/5mm)	F3W14AA
	HP Slim Ultrabook Top Load (up to 15.6" x .88"/22/5mm)	F3W15AA
	HP Slim Ultrabook Backpack (up to 15.6" x .88"/22/5mm)	F3W16AA
	HP Essential Top Load Case (up to 15.6")	H2W17AA#xxx
	HP Essential Backpack (up to 15.6")	H1D24AA
	HP Essential Messenger Case (up to 17.3")	H1D25AA
	HP Professional Series Carrying Case (up to 15.6")	H4J90AA
	HP Professional Series Carrying Case TSA (up to 15.6")	H4J92AA
	HP Professional Series Backpack (up to 15.6")	H4J93AA
HP Professional Leather Case (up to 17.3")	H4J94AA	
HP Business Slim Top Load (up to 14.1" x .75" thick)	H2T13AA	
<b>Docking</b>	HP 2013 UltraSlim Docking Station	D9Y32AA#xxx
	HP Dual Hinge II Notebook Stand	E8F99AA#xxx
	HP Display and Notebook Stand II	E8G00AA#xxx
	HP Adjustable Dual Monitor Stand	AW664AA#xxx
	HP Adjustable Display Stand	AW663AA#xxx
	HP LCD Monitor Stand	QM196AA
	HP USB 2.0 Port Replicator	H1L07AA#xxx
	HP USB 3.0 Port Replicator	H1L08AA#xxx
<b>Input/Output - Mice</b>	HP USB Optical Travel mouse	RH304AA
	HP Wireless Mobile Mouse	H2L63AA
	HP USB Essential Keyboard/Mouse	H2S75AA
	HP X6000 Mouse	H2L62AA#XXX
	HP 3-button USB Laser Mouse	H4B81AA
	HP X4000b Bluetooth Mouse	H3T50AA#xxx
<b>Input/Output - Keyboard</b>	HP Stylish Wireless KB/Mouse	H4B79AA
	HP Stylish USB KB/Mouse	H4B80AA
	HP Slim BT Keyboard US	H4Q44AA#ABA
<b>Input/Output - Other</b>	HP USB Ethernet Adapter	XZ613AA#ABA
	USB Graphics Adapter (DBU PL)	NL571AA

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

<b>Adapters</b>	HP DP to HDMI 1.4 Adapter	F3W43AA
	90W Slim Combo Adapter	H4A41AA#xxx
	90W w/USB Universal Adapter	H4A43AA#ABA
	90W Smart AC/Auto/Air Combo Adapter	AJ652AA#xxx
	90W Smart Auto/Truck Adapter	ED493AA
	HP Smart 65W Travel AC Adapter	AU155AA#xxx
	HP 65W Slim Adapter	AX727AA#xxx
	65W Smart AC Adapter	ED494AA#xxx
	90W Smart AC Adapter	ED495AA#xxx
	90W Slim Adapter	BT796AA#xxx
<b>Storage - External Storage</b>	HP External USB Optical Drive	F2B56AA
<b>Platform Battery</b>	HP OD06XL Long Life Notebook Battery	H6L25AA
<b>Health and Education</b>	20 Notebook Managed Charging Cart	QL489AA#xxx
	20 Notebook Charging Cart	QL488AA
	30 Notebook Managed Charging Cart	QL490AA
	30 Notebook Charging Cart	H4F31AA#ABA
<b>Security</b>	HP Docking Station Cable Lock	AU656AA#xxx
	HP UltraSlim Keyed Cable Lock	H4D73AA
<b>Monitors</b>	HP U160 15.6-inch LED Backlit Monitor	C4M77AA or D4T56AA#xxx (check region for which sku is available)
	HP EliteDisplay E271i 27-inch IPS LED Monitor	D7Z72AA/A8/AS/AT
	HP EliteDisplay E231 23-inch LED Monitor	C9V75AA/A8/AS/AT
	HP EliteDisplay E201 20-inch LED Monitor	C9V73AA/A8/AS/AT
	HP ProDisplay P221 21.5" LED Monitor	C9E49AA/A8/AS/AT
	HP ProDisplay P201 20" LED Monitor	C9F26AA/A8/AS/AT

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

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