

Overview

HP ProBook x360 11 G2 EE Notebook PC



Front Right

- | | | | |
|----|--------------------------|-----|--|
| 1. | WLAN antennas (2) | 8. | USB 3.1 Gen 1 port |
| 2. | Internal microphones (2) | 9. | USB Type-C™ (Data only) |
| 3. | User-facing webcam LED | 10. | Micro SD card reader |
| 4. | User-facing 720p webcam | 11. | ClickPad |
| 5. | Power connector | 12. | World-facing 1080p webcam (select models only) |
| 6. | Ethernet (RJ-45) port | 13. | World-facing webcam LED (select models only) |
| 7. | HDMI v1.4b | | |

Overview

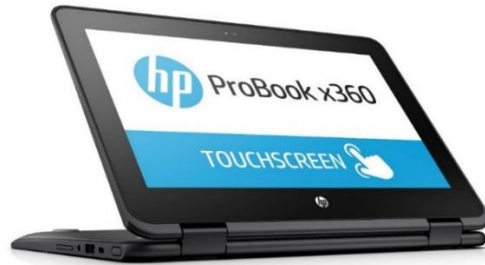


Front Left

- | | | | |
|----|--------------------|----|-----------------------------------|
| 1. | Power button | 4. | Headphone / Microphone Combo Jack |
| 2. | Security lock slot | 5. | Volume button |
| 3. | USB 3.1 Gen 1 Port | | |

Overview

Stand Mode



Tablet Mode



Tent Mode



Overview

AT A GLANCE

- Weight starting at TBD lbs (TBD kg) and 20.8 cm (8.19 in) thin
- This flexible 360° hinge converts to laptop, tablet, tent, or stand mode easily
- Passed the MIL-STD 810G testing¹ with rugged features such as co-molded rubber trim, and spill- and pick-resistant keyboard
- Optional dual camera system for project-based learning
- Optional HP Active Pen provides an authentic digital inking experience
- Pre-installed with Windows 10 Pro 64 or Windows 10 Home 64
- Powered by 7th Generation Intel® processors
- 29.46 cm (11.6") diagonal HD SVA eDP LED slim touch screen
- Up to 256 GB SATA-3 Solid State Drive storage options
- Up to 8 GB system memory for enhanced memory management
- Reliable connectivity with Intel® Dual Band Wireless-AC 7265 802.11 a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo WLAN for learning and collaboration beyond the classroom
- Built-in ports include: Ethernet (RJ-45), USB 3.1 Gen 1, USB Type-C™ (Data only), and HDMI 1.4b port for connecting to high-resolution displays
- Enhanced security TPM 2.0 discrete chip
- Battery life up to 13 hours

1. MIL STD 810G is not intended to demonstrate fitness for U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Damage under the MIL STD test conditions or any accidental damage requires an optional HP Accidental Damage Protection Care Pack.

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

Features

PRODUCT NAME

HP ProBook x360 11 G2 EE Notebook PC

OPERATING SYSTEM

Preinstalled Windows 10 Pro 64¹
Windows 10 Home 64¹
Windows 10 Pro (National Academic License)²
Windows 10 Home Single Language 64¹

Web supported Windows 10 Enterprise 64¹

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>.
2. Some devices for academic use will automatically be updated to Windows 10 Pro Education with the Windows 10 Anniversary Update. Features vary; see <https://aka.ms/ProEducation> for Windows 10 Pro Education feature information

PROCESSORS

Processors

Intel® Core™ M3-7Y30 with Intel® Graphics 615 (1 GHz, up to 2.6 GHz, 4 MB cache, 2 cores)¹
Intel® Core™ i5-7Y54 with Intel® Graphics 615 (1.2 GHz, up to 3.2 GHz, 4 MB cache, 2 cores)¹

Processor Family

7th Generation Intel® Core™ M3 processor (M3-7Y30 model)
7th Generation Intel® Core™ i5 processor (i5-7Y54 model)

NOTE: In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on <http://www.support.hp.com>.

1. Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering is not a measurement of higher performance.

CHIPSET

Chipset is integrated with processor

GRAPHICS

Integrated

Intel® HD Graphics 615¹

1. HD content required to view HD images.

Features

DISPLAY

Internal

29.46 cm (11.6") diagonal HD SVA eDP LED slim touch screen with user-facing camera (1366 x 768)¹ with Corning® Gorilla® Glass 4

External

Up to 32-bit per pixel color depth

HDMI²

HDMI v1.4b supporting: up to 3840 x 2160 @ 30 Hz

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

1. HD content required to view HD images.
2. HDMI cable sold separately.

STORAGE AND DRIVES

Primary Storage¹

M.2 (NGFF) 2280 Solid State Drive

128 GB SATA-3 SS TLC Solid State Drive²

256 GB SATA-3 SS TLC Solid State Drive²

1. For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software.
2. Not available with eMMC storage.

MEMORY

Standard

LPDDR3-1866 (Transfer rates up to 1866 MT/s)

Supports up to 8 GB max on-board (Not Customer Accessible)

Supports Dual Channel memory

Configurations

4096 MB Total System Memory (8 GB 128 M x 32 x 2, Qty 4)

8192 MB Total System Memory (16 GB 256 M x 16 x 4, Qty 4)

Maximum Memory

8 GB

Features

NETWORKING/COMMUNICATIONS

Wireless¹

Intel® Dual Band Wireless-AC 7265 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo

Communications

Realtek Ethernet (10/100/1000) GbE NIC²

1. 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.
2. 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

HP Audio

Two integrated stereo speaker

Headphone / microphone in combo jack

Webcam¹

User Facing Camera

1 MP HD Webcam @ 1280 x 720p²

Located on display

Dual digital mic

World Facing Camera

2 MP FHD Webcam @ 1920 x 1080p²

Located on keyboard deck (option only available with touch display configurations)

NOTE: Both webcams are fix focus.

1. Internet access required.
2. HD content required to view HD images.

Features

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS/PEN

Keyboard

Full-sized, minor spill and pick-resistant

Function Keys

F1 - Blank
F2 - Clickpad Enable/Disable
F3 - Sleep
F4 - Display Switching
F5 - Audio Mute/Unmute
F6 - Volume <down>
F7 - Volume <up>
F8 - Mic Mute/Unmute
F9 - Brightness <down>
F10 - Brightness <up>
F11 - Blank
F12 - Wireless On/Off

ClickPad

Multitouch gestures enabled
Default on: 2-finger scroll, pinch
Support Windows 10 modern Trackpad gestures
Taps enabled as default

Pen

Optional HP Active Pen ¹

[1.Sold separately or as an optional feature.](#)

SOFTWARE AND SECURITY

BIOS

HP BIOSphere Gen3¹
HP DriveLock | HP Automatic DriveLock
BIOS Update via Network
Master Boot Record Security
Power On Authentication
Secure Erase²
Absolute Persistence Module³
Pre-boot Authentication

HP Value Add Software

HP ePrint Driver + JetAdvantage⁴
HP Hotkey Support - CMIT
HP Recovery Manager
HP Jumpstart
HP Support Assistant
HP Noise Cancellation Software

Features

Microsoft Products

Buy Office
Bing Search
Skype⁵

Manageability

HP System Software Manager (SSM)⁶
HP BIOS Config Utility (BCU)⁶
LANDESK Management⁷

For more information on HP Client Management Solutions refer to: <http://www.hp.com/go/clientmanagement>.

HP School Pack

- HP Adaptive Learning created by Fishtree
- HP Simple Sign-on created by Classlink
- HP Classroom Manager Student Edition¹⁰
- SparkVue
- Codecademy
- Corinth Classroom
- HP Prime Graphing Calculator
- Curriculum Matrix/CMX
- Oxford University Press Advanced Learners English Dictionary

Security

Trusted Platform Module (TPM) 2.0

1. Available only on business PCs with HP BIOS.

2. For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88.

3. Absolute 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.

4. 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 <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.

5. Skype is not offered in China.

6. Not preinstalled, however available for download at <http://www.hp.com/go/clientmanagement>

8. Subscription required.

10. HP Classroom Manager for Teachers is required and sold separately for control and device locking from the teacher's Windows desktop console; no locking and control functionality originates from HP Classroom Manager for Student. Control and device locking originate from the teacher's Windows desktop console.

Features

POWER

Power Supply¹

HP 45W Smart AC adapter
HP 65W EM Smart AC adapter

Primary Battery

HP Long Life 3-cell, 41 Whr Li-Ion Prismatic battery

Power Cord

Power cord is 3.2 feet (1 meter)

Battery life²

Up to 13 hours

NOTE: Battery is internal and not replaceable by customer.

Charging Time: 90 mins to 90% when the system is off or in standby mode. Power adapter with a minimum capacity of 45 watts is required

System Standby Time³

TBD

1. Availability may vary by country.

2. Windows 10 MM14 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 for additional details.

3. Talk, standby, and usage times are approximate and depend on the network configuration, the usage pattern of an individual user, and the configuration of the handheld. Use of some internal wireless capabilities, backlight will significantly decrease battery run time

WEIGHTS & DIMENSIONS

Weight**Touch**

Starting at 3.19 lbs (1.45 kg)

Dimensions (w x d x h)

20.795 x 30.24 x 1.99 cm

8.14 x 11.88 x 0.78 in

NOTE: Weight varies by configuration and components.

Features

PORTS/SLOTS

Ports

- 1 USB 3.1 Type-C™ (Data transfer only)
- 2 USB 3.1 Gen 1
- 1 AC power connector
- 1 HDMI
- 1 RJ-45
- 1 Headphone/microphone combo jack

HP Multi-Format Digital Media Reader

Support micro SD/SDHC/SDXC up to UHS-104

NOTE: All cables are sold separately.

ENVIRONMENTAL & INDUSTRY

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: <ul style="list-style-type: none"> • IT ECO declaration • US ENERGY STAR® • EPEAT® 2019 Silver in U.S. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information. 		
	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, 50Hz
	Normal Operation (Short idle)	3.79 W	4.77 W	3.73 W
	Normal Operation (Long idle)	2.29 W	2.76 W	2.24 W
	Sleep	0.29 W	0.38 W	0.29 W
	Off	0.24 W	0.32 W	0.24 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		

Features

	(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, 50Hz
Normal Operation (Short idle)	13 BTU/hr	16 BTU/hr	13 BTU/hr
Normal Operation (Long idle)	8 BTU/hr	9 BTU/hr	8 BTU/hr
Sleep	1 BTU/hr	1 BTU/hr	1 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 _{WAd} , bels)	Sound Pressure (L _{pAm} , decibels)	
Typically Configured – Idle	2.6	15	
Fixed Disk – Random writes	2.6	15	
Longevity and Upgrading	<p>This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:</p> <ul style="list-style-type: none"> • 3 USB ports • 1 PC card slot (type I/II) • 1 ExpressCard/54 slot • 1 IEEE 1394 Port • 2 SODIMM memory slots • Optional expansion base docking station • 1 multi-bay II storage port • Interchangeable HDD?? <p>Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.</p>		
Batteries	<p>This battery(s) in this product comply with EU Directive 2006/66/EC</p> <p>Batteries used in the product do not contain: Mercury greater the 1ppm by weight</p>		

Features

		Cadmium greater than 20ppm by weight	
		Battery size: CR2032 (coin cell) Battery type: Lithium	
Additional Information		<ul style="list-style-type: none"> 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 1680.1 (EPEAT) standard at the Silver level, see 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 98.5% recycle-able when properly disposed of at end of life. 	
Packaging Materials	External:	PAPER/Corrugated	318g
	Internal:	PLASTIC/Polyethylene Expanded - EPE	25g
		PLASTIC/Polyethylene low density – LDPE	18g
		PLASTIC/Polypropylene - PP	3g
	The plastic packaging material contains at least 50% recycled content.		
	The corrugated paper packaging materials contains at least 75% recycled content.		
Material Usage	<p>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):</p> <ul style="list-style-type: none"> 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 Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user. Ozone Depleting Substances Polybrominated Biphenyls (PBBs) Polybrominated Biphenyl Ethers (PBBEs) Polybrominated Biphenyl Oxides (PBBOs) Polychlorinated Biphenyl (PCB) Polychlorinated Terphenyls (PCT) 		

Features

		<ul style="list-style-type: none"> • Polyvinyl Chloride (PVC) – except for wires and cables, has been voluntarily removed from most applications. • Radioactive Substances • Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
	<p>Packaging Usage</p>	<p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> • 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.
	<p>End-of-life Management and Recycling</p>	<p>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.</p> <p>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.</p>
	<p>HP, Inc. Corporate Environmental Information</p>	<p>For more information about HP's commitment to the environment:</p> <p>Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842 http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf</p>

Features

SYSTEM UNIT

Temperature	Operating	41° to 95° F (5° to 35° C)
	Non-operating	-4° to 140° F (-20° to 60° C)
Relative Humidity	Operating	10% to 90%, non-condensing
	Non-operating	5% to 95%, non-condensing

SERVICE AND SUPPORT

HP Services offers a 1-year limited warranties and 90 day software support options depending on country. Batteries have a default one year limited warranty. On-site service and extended coverage is also available. HP Care Pack Services¹ are optional extended service contracts that go beyond the standard limited 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/cpc>.

1. HP Services offers 3-year and 1-year limited warranties and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as the platform. On-site service and extended coverage is also available. HP Care Pack Services are optional extended service contracts that go beyond the standard limited 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/cpc>.

Technical Specifications

DISPLAYS

Note: All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

29.4 cm (11.6") diagonal HD SVA slim LED touch screen (1366 x 768)	Outline Dimensions	278.5 x 168.5 (mm) max	
	Active Area	256.13 x 144.0 (mm)	
	Weight	360 g max	
	Diagonal Size	11.6 (inch)	
	Contrast Ratio	300:1 (typical)	
	Refresh Rate	60 Hz	
	Brightness	220 nits	
	Pixel Resolution	Format	1366 x 768 (HD)
		Configuration	RGB
	Interface	eDP 1.2	
	PPI	135 ppi	
	Backlight	LED	
	Color Gamut Coverage	45%	
	Color depth	6 bit	
Viewing Angle	SVA 45/45/25/35		
Pen Enabled	Yes		

Technical Specifications

STORAGE

128 GB SATA-3 Solid State Drive TLC	Drive Weight	10 grams		
	Capacity	128 GB		
	Height	0.09 in (2.3 mm)		
	Width	0.87 in (22 mm)		
	Interface	ATA-8, SATA 3.0		
	Performance	Sequential Read	Sequential Write	
		Between 520 MB/s and 530 MB/s	Between 380 MB/s and 500 MB/s	
	Logical Blocks	250,069,680		
	Operating Temperature	32° to 158°F (0° to 70°C) [case temp]		
	Features	ATA Security; ATA-8; SATA 3.0; DIPM; TRIM; DVESLP		
256 GB SATA-3 Solid State Drive TLC	Drive Weight	10 grams		
	Capacity	256 GB		
	Height	0.09 in (2.3 mm)		
	Width	0.87 in (22 mm)		
	Interface	ATA-8, SATA 3.0		
	Performance	Sequential Read	Sequential Write	
		Up to 515 MB/s	Up to 490 MB/s	
	Logical Blocks	500,118,192		
	Operating Temperature	32° to 158°F (0° to 70°C) [case temp]		
	Features	ATA Security; ATA-8; SATA 3.0; DIPM; TRIM; DVESLP		

Technical Specifications

NETWORKING/COMMUNICATIONS

Intel® Dual Band Wireless-AC 7265 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo

Wireless LAN Standards	<ul style="list-style-type: none"> IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n <ul style="list-style-type: none"> • 2.402 – 2.482 GHz <p>Note:</p> <p>The FCC has declared as of January 1, 2015 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.</p>
	802.11a/n <ul style="list-style-type: none"> • 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 <p>Note: Indonesia no support this band)</p>
Data Rates	<ul style="list-style-type: none"> • 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)
Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Security¹	<ul style="list-style-type: none"> • IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i

Technical Specifications

	<ul style="list-style-type: none">• Cisco Certified Extensions, all versions through CCX4 and CCX Lite• WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power²	<ul style="list-style-type: none">• 802.11b : +16dBm minimum• 802.11g : +14dBm minimum• 802.11a : +14dBm minimum• 802.11n HT20(2.4GHz) : +14dBm minimum• 802.11n HT40(2.4GHz) : +12dBm minimum• 802.11n HT20(5GHz) : +14dBm minimum• 802.11n HT40(5GHz) : +12dBm minimum
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Idle mode (PSP): 180 mW (WLAN Associated) Idle mode: 50 mW (WLAN unassociated) Connect Standby: 10 mW (WLAN+BT) Radio disabled: 5 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity³	802.11b, 1Mbps : -94dBm maximum 802.11b, 11Mbps : -86dBm maximum 802.11g, 6Mbps : -88dBm maximum 802.11g, 54Mbps : -74dBm maximum 802.11a, 6Mbps : -88dBm maximum 802.11a, 54Mbps : -74dBm maximum 802.11n, MCS07 : -69dBm maximum 802.11n, MCS15 : -66dBm maximum 802.11ac, 1SS, MCS-0 : -86dBm maximum 802.11ac, 1SS, MCS-9 : -61dBm maximum 802.11ac, 2SS, MCS-0 : -83dBm maximum

Technical Specifications

	802.11ac, 2SS, MCS-9 : -58dBm maximum	
Antenna type	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	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm	
	Or	
	Type 1630 : 2.3 x 16.0 x 30.0 mm	
Weight	Type 2230 : 2.8g	
	Or	
	Type 1630 : 2g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating	14° to 158° F (–10° to 70° C)
	Non-operating	–40° to 176° F (–40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF; LED White – Radio ON	

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

HP Integrated Module with Bluetooth 4.0/4.1/4.2 Wireless Technology

Bluetooth Specification	4.0/4.1/4.2 Compliant
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Technical Specifications

Frequency Band	2402 to 2480 MHz												
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)												
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)												
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.												
Receiver Sensitivity	<table border="1" data-bbox="742 966 1404 1218"> <thead> <tr> <th>Modulation</th> <th>0.01% BER</th> <th>0.001% BER</th> </tr> </thead> <tbody> <tr> <td>GFSK</td> <td>-80 dBm</td> <td>-70 dBm</td> </tr> <tr> <td>$\pi/4$-DQPSK</td> <td>-80 dBm</td> <td>-70 dBm</td> </tr> <tr> <td>8DPSK</td> <td>-80 dBm</td> <td>-70 dBm</td> </tr> </tbody> </table>	Modulation	0.01% BER	0.001% BER	GFSK	-80 dBm	-70 dBm	$\pi/4$ -DQPSK	-80 dBm	-70 dBm	8DPSK	-80 dBm	-70 dBm
Modulation	0.01% BER	0.001% BER											
GFSK	-80 dBm	-70 dBm											
$\pi/4$ -DQPSK	-80 dBm	-70 dBm											
8DPSK	-80 dBm	-70 dBm											
Legacy													
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW												
Range	Legacy Up to 33 ft (10 m) BLE Up to 99 ft (30 m)												
Electrical Interface	USB 2.0 compliant												
Bluetooth Software Supported	Microsoft Windows Bluetooth Software												
Link Topology													
Electrical Interface	Point to Point, Multipoint Pico Nets up to 7 slaves												
Bluetooth Software Supported	Full support of Bluetooth Security Provisions												
Security													
Power Management	Microsoft Windows ACPI, and USB Bus Support												

Technical Specifications

Certifications	Self-configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff
Security	All necessary regulatory approvals for supported countries, including:
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Bluetooth Profiles Supported	
Power Management	ETS 300 328, ETS 300 826
Certifications	Low Voltage Directive IEC950
	UL, CSA, and CE Mark
Certifications	Serial Port Profile (SPP) ^{1,2} Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN) ^{1,1} Generic Object Exchange Profile (GOEP) ^{1,2} Object Push Profile (OPP) ^{1,2} Hard Copy Cable Replacement (HCRP) ^{1,2} Personal Area Networking Profile (PAN) ^{1,0} Human Interface Device Profile (HID) ^{1,0} Hands Free Profile (HFP) ^{1.5/1.6} Advanced Audio Distribution Profile (A2DP) ^{1.3}
Bluetooth Profiles Supported	Audio Video Remote Control Profile (AVRCP) ^{1.3/1.4}
Bluetooth V4.1/V4.2 support feature	V4.1: ESR5/6/7 compliant
	V4.2: ESR8 compliant, LE Secure Connection – Basic.

Technical Specifications

POWER

HP 45 Watt Smart AC adapter	Dimensions (H x W x D)	95x40x26.5mm	
	Weight	200g +/- 10g	
	Input	Input Efficiency	87.74 % at 115 Vac and 88.4 % at 230Vac
		Input frequency range	47 ~ 63 Hz
		Input AC current	Max. 1.4 A at 90 Vac
	Output	Output power	45W
		DC output	19.5V
		Hold-up time	5ms at 115 Vac input
		Output current protection	<8.0A
	Connector	C6 (3pin/with grounded, with Smart ID DC connector)	
	Environmental Design	Operating temperature	32oF to 95oF (0oto 35oC)
		Non-operating (storage) temperature	-4oF to 185oF (-20oto 85oC)
		Altitude	0 to 16,400 ft (0 to 5000m)
		Humidity	20% to 95%
		Storage Humidity	10% to 95%
	EMI and Safety Certifications	<p>*CE Mark - full compliance with LVD and EMC directives</p> <p>* 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.</p> <p>* MTBF - over 200,000 hours at 25°C ambient condition.</p>	
	Dimensions (H x W x D)	127.0x51.0x30.0mm	

Technical Specifications

HP 65W EM Smart AC Adapter	Weight	350g +/- 10g	
	Input		
		Input Efficiency	88.0 % at 115 Vac and 89.0 % at 230Vac
		Input frequency range	47 ~ 63 Hz
		Input AC current	Max. 1.7 A at 90 Vac
	Output	Output power	65W
		DC output	19.5V
		Hold-up time	5ms at 115 Vac input
		Output current protection	<11.0A
	Connector	C6 (3pin/with grounded, with Smart ID DC connector)	
	Environmental Design	Operating temperature	32oF to 95oF (0oto 35oC)
		Non-operating (storage) temperature	-4oF to 185oF (-20oto 85oC)
		Altitude	0 to 16,400 ft (0 to 5000m)
		Humidity	20% to 95%
		Storage Humidity	10% to 95%
	EMI and Safety Certifications	*CE Mark - full compliance with LVD and EMC directives	
		* Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE.	
		* MTBF - over 200,000 hours at 25°C ambient condition.	
	Cells/Type	3-cell Prismatic	

Technical Specifications

Watt-hour capacity	41Whr
Temperature	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)

HP 3-cell Li-Ion Prismatic Battery (41 WHr)

Warranty	Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as the platform
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NOTE: Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as the platform.

COUNTRY OF ORIGIN

China

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

Type	Description	Part Number
Carrying Cases	HP Essential Top Load Case (up to 15.6")	H2W17AA#xxx
	HP Essential Backpack (up to 15.6")	H1D24AA
	HP Slim Top Load	F3W15AA
	HP Slim Backpack	F3W16AA
	HP ProBook x360 Protective Case	1JS00AA
Docking	HP USBC Travel Dock	T0K29AA
	HP Elite USBC Dock	X7W54AA#xxx
	HP 3005pr USB3 Port Replicator	Y4H06AA
Input/Output	HP Slim USB Keyboard & Mouse Bundle	T6T83AA#xxx
	HP 3-Button Laser Mouse	H4B81AA#xxx
	HP 2.4GHz Wireless Mouse	L0Z84AA#xxx
	HP Slim Wireless keyboard and mouse	T6L04AA#xxx
	HP HDMI to VGA Adapter	H4F02AA
	HP Stereo USB Headset	T1A67AA
	HP Stereo 3.5mm Headset	T1A66AA
	HP Active Pen with Spare Tips PN	1FH00AA#xxx
Power	HP 45W Smart AC Adapter 4.5mm	H6Y88AA#xxx
	HP 65W Smart AC Adapter	H6Y89AA#xxx
	HP Notebook Powerbank	N9F71AA#xxx
Storage	HP External USB Optical Drive	F2B56AA
Security	HP Keyed Cable Lock 10mm	T1A62AA
Monitors	HP S140u 14-inch USB Portable Monitor	G8R65AA
	HP ProDisplay P240va 23.8-inch Monitor	N3H14AA
	HP EliteDisplay E230t 23-inch Touch Monitor	W2Z50AA

Summary of Changes

Date of change	Version History	Description of change
April 13, 2017	V1	Quickspec Launched
April 20, 2017	V1 to V2	At a glance section updated, Battery life and Weight updated
April 26, 2017	V2 to V3	Processor Section updated (i5 coming soon note removed)
April 19, 2017	V3 to V4	Dimensions updated
July 6, 2017	V4 to V5	System Unit section added
October 2, 2017	V5 to V6	Touchpoint removed
November 8, 2017	V6 to V7	Options and Accessories Section updated
March 20, 2018	V7 to V8	Display section updated
May 4, 2018	V8 to V9	Environmental tab
June 4, 2019	V9 to V10	Updated EPEAT

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