

Overview

HP EliteBook x360 1030 G3



- 1. IR Camera LEDs
- 2. Internal microphones
- 3. IR camera
- 4. FHD Camera
- 5. Webcam LED
- 6. HDMI port (Cable not included.)

Left

- 7. Nano Security lock slot (Lock sold separately.)
- 8. USB Type-C™ with Thunderbolt™
- 9. USB Type-C™ with Thunderbolt™
- 10. Volume up/down
- 11. Touch fingerprint sensor
- 12. Glass clickpad

Overview



1. WWAN SIM (Nano)
2. Power button

Right

3. Audio combo jack
4. USB 3.1 Gen 1 charging port

Overview

AT A GLANCE

- All metal CNC Aluminum chassis that is .62 inches (1.58 cm) thin and with a starting weight of 2.76 lbs. (1.25 Kg)
- A 360° convertible notebook with 4 usage modes
- Choice of 8th Generation Intel® Core™ i5, i7 Processors with integrated Intel® HD 620 Graphics
- Display choices include 33.78 cm (13.3") diagonal IPS FHD touch screen or UHD touch screen. Brightness choices up to 700 Nits. Optional Anti-glare screen available. Get added protection in open or public places with the optional HP Sure View integrated privacy screen.
- Ultimate connectivity with 4G/LTE WWAN, WLAN, USB Type-C™, USB Type-A, HDMI and Thunderbolt™ Docking
- Innovative world-facing third mic improves inbound ambient noise cancellation
- Engage teams, clients, and vendors with the crystal-clear audio by Bang & Olufsen and the high-performance HP Premium Collaboration Keyboard
- The new optional HP Rechargeable Active Pen
- Never forget your password with your choice of simple authentication methods, including the IR camera for face recognition and Touch Fingerprint Sensor for Windows Hello
- Choice of solid state drives up to 2 TB
- DDR3 small m Memory up to 16 GB
- Up to 18 hours of battery life¹
- Preinstalled with Windows 10 versions
- Passed MIL-STD 810g testing²

1. 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.

2. MIL-STD-810G testing is pending and is conducted on select HP products. Testing is not intended to demonstrate fitness of U.S. Department of Defense (DoD) contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. 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 EliteBook x360 1030 G3

OPERATING SYSTEM

Preinstalled	Windows 10 Pro 64 ¹ Windows 10 Home 64 ¹
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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/>.

PROCESSORS

Intel® Core™ i5-8250U with Intel® UHD Graphics 620 (1.6 GHz base frequency, up to 3.4 GHz with Intel® Turbo Boost Technology, 6 MB cache, 4 cores)^{2,3,4}

Intel® Core™ i5-8350U vPro™ processor with Intel® UHD Graphics 620 (1.7 GHz base frequency, up to 3.6 GHz with Intel® Turbo Boost Technology, 6 MB cache, 4 cores)^{2,3,4}

Intel® Core™ i7-8550U with Intel® UHD graphics 620 (1.8 GHz base frequency, up to 4 GHz with Intel® Turbo Boost Technology, 8 MB cache, 4 cores)^{2,3,4}

Intel® Core™ i7-8650U vPro™ processor with Intel® UHD graphics 620 (1.9 GHz base frequency, up to 3.9 GHz with Intel® Turbo Boost Technology, 8 MB cache, 4 cores)^{2,3,4}

Processor Family

8th Generation Intel® Core™ i5 processor (i5-8350U, i5-8250U models)

8th Generation Intel® Core™ i7 processor (i7-8650U, i7-8550U models)

2. 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, branding and/or naming is not a measurement of higher performance.

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

4. 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>.

CHIPSET

Chipset is integrated with processor.

Features

GRAPHICS

Integrated

Intel® UHD Graphics 620⁵

5. HD content required to view HD images.

DISPLAY

Touch

33.8 cm (13.3") diagonal 4K IPS eDP + PSR BrightView LED-backlit touch screen, direct bonded with Corning® Gorilla® Glass 4, 500 cd/m², 72% NTSC (3840 x 2160)^{6,7,8}

HP Sure View Integrated Privacy Screen 13.3" (13.3) diagonal FHD IPS eDP + PSR anti-glare LED-backlit touch screen, direct bonded with Corning® Gorilla® Glass 4, 700 cd/m², 72% NTSC (1920 x 1080)^{6,7,8,9}

HP Sure View Integrated Privacy Screen 33.8 cm (13.3") diagonal FHD IPS eDP + PSR BrightView LED-backlit touch screen, direct bonded with Corning® Gorilla® Glass 4, 700 cd/m², 72% NTSC (1920 x 1080)^{6,7,8,9}

33.8 cm (13.3") diagonal FHD IPS eDP + PSR anti-glare LED-backlit touch screen, direct bonded with Corning® Gorilla® Glass 4, 400 cd/m², 72% NTSC (1920 x 1080)^{6,7,8}

33.8 cm (13.3") diagonal FHD IPS eDP + PSR BrightView LED-backlit touch screen, direct bonded with Corning® Gorilla® Glass 4, 400 cd/m², 72% NTSC (1920 x 1080)^{6,7,8}

Displays support

Supports privacy filter

Supports narrow bezel

Direct Bonding 100% Attach

6 HD content required to view HD images.

7. Sold separately or as an optional feature.

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

9. HP Sure View integrated privacy screen is an optional feature that must be configured at purchase.

Features

STORAGE AND DRIVES

Primary M.2 Storage

M.2 (2280) Solid State Drive

118 GB PCIe® Gen3x2 NVMe™ M.2 SS (Intel® Optane™)¹⁰

128 GB SATA-3 SS TLC¹⁰

256 GB PCIe® NVMe™ SS Value¹⁰

256 GB PCIe® Gen3x4 NVMe™ SS TLC¹⁰

256 GB SATA TLC SED OPAL 2¹⁰

360 GB PCIe® Gen3x4 NVMe™ SS TLC (Intel®)¹⁰

512 GB PCIe® Gen3x4 NVMe™ SS TLC¹⁰

512 GB PCIe® Gen3x4 NVMe™ SS TLC Opal 2¹⁰

1 TB PCIe® Gen3x4 NVMe™ SS TLC¹⁰

2 TB PCIe® Gen3x4 NVMe™ SS TLC¹⁰

10. 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.

MEMORY

Maximum Memory

16 GB LPDDR3-2133 SDRAM

Memory

8 GB LPDDR3-2133 SDRAM

16 GB LPDDR3-2133 SDRAM

Memory Slots

System runs at 2133

Memory soldered down (customer non-accessible)

Supports Dual Channel Memory

NETWORKING/COMMUNICATIONS

WLAN

Intel® Dual Band Wireless-AC 8265 802.11 a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 4.2 Combo, vPro™¹¹

Intel® Dual Band Wireless-AC 8265 802.11 a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 4.2 Combo, non-vPro™¹¹

WWAN

HP lt4132 LTE/HSPA+ 4G Mobile Broadband Module¹²

Intel XMM 7360 LTE-Advanced (CAT9)¹²

Qualcomm Snapdragon X12 LTE-Advanced (CAT9)¹²

NFC

NXP NPC300 Near Field Communication Module

Miracast

Support for Miracast¹³

Features

11. Wireless access point and Internet service required and sold separately. 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.
 12. WWAN is an optional feature and requires separately purchased service contract. Check with service provider for coverage and availability in your area. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products, in all regions.
 13. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.
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AUDIO/MULTIMEDIA

Audio

Audio by Bang & Olufsen
Integrated 3 Multi Array Microphone
4 Premium Speakers with discrete amps (79Db)

Camera

FHD Camera⁶
IR Camera⁶

6. HD content required to view HD images.
-

Features

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard

Full size
HP Premium Colaboration Keyboard
Backlit
DuraKeys
Spill-resistant

Pointing Device

Clickpad (glass cover) with multi-touch gestures enabled, taps enabled as default
Microsoft Precision Touchpad Default Gestures Support

Function Keys

F1 - F1 - Display Switching
F2 - Sure View (blank if not supported)
F3 - Brightness Down
F4 - Brightness up
F5 - Audio Mute
F6 - Volume Down
F7 - Volume Up
F8 - Mic Mute
F9 - Kybd Backlight
F10 - NumLock
F11 - Wireless
F12 - Calendar
Share/Present
Pick Up/Accept/ Answer/Hold
Hang Up/Decline/ Reject
Delete

Hidden Function Keys

Fn+E - Insert
Fn+W - Pause

Sensors

Accelerometer
Magnetometer
Gyro
ALS (ambient light sensor)*
Hall Sensor

*ALS is disabled when Privacy Mode is turned on

Features

SOFTWARE AND SECURITY

Preinstalled Software

BIOS

- HP BIOSphere Gen4 ¹⁴
- HP Drive Lock & Automatic Drive Lock
- BIOS Update via Network
- Master Boot Record Security
- Power On Authentication
- Secure Erase ¹⁵
- Absolute Persistence Module ¹⁶
- Pre-boot Authentication
- HP Wireless Wakeup

Software

- HP Native Miracast Support ¹³
- HP LAN-Wireless Protection
- HP ePrint Driver + JetAdvantage ¹⁷
- HP Hotkey Support - CMIT
- HP Recovery Manager
- HP Jumpstart
- HP Support Assistant ¹⁸
- HP Noise Cancellation Software
- Buy Office (Sold separately)

Manageability Features

- HP Driver Packs ¹⁹
- HP System Software Manager (SSM)
- HP BIOS Config Utility (BCU)
- HP Client Catalog
- HP Manageability Integration Kit Gen2 ²⁰
- Ivanti Management Suite ²¹

Client Security Software

- HP Client Security Suite Gen4 ²² including:
 - HP Security Manager ²³ (Including Credential Manager, HP Password Manager, HP Spare Key)
 - HP Fingerprint Sensor
 - HP Device Access Manager
 - HP Power On Authentication
 - Microsoft Defender ²⁴

Features

Security Management

Secure Erase ¹⁵

TPM 2.0 Embedded Security Chip shipped with Windows 10 (Common Criteria EAL4+ Certified)

SATA 0,1 port disablement (viaBIOS)

RAID configurations ²⁶

Serial, USB enable/disable (viaBIOS)

Power-on password (viaBIOS)

Setup password (viaBIOS)

Support for chassis padlocks and cable lock devices

Integrated hood sensor

HP Sure Click ²⁷

HP Sure Start Gen4 ²⁵

HP Sure Run ²⁸

HP Sure Recover ²⁹

Security

MD5 Hash: Please follow the instructions below to access MD5 Hash.

WWAN: TBD

WLAN: TBD

Is the BIOS on this notebook ISO/IEC 19678:2015 (formerly NIST 800-147) compliant?:

Yes / No

UEFI version:

13. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.

14. HP BIOSphere Gen4 requires Intel® or AMD® 8th Gen processors. Features may vary depending on the platform and configurations.

15. Secure Erase for the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method.

16. 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.

17. HP ePrint Driver 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>). Print times and connection speeds may vary.

18. HP Support Assistant requires Windows and Internet access.

19. HP Driver Packs not preinstalled, however available for download at <http://www.hp.com/go/clientmanagement>.

20. HP Manageability Integration Kit can be downloaded from <http://www.hp.com/go/clientmanagement>.

21. Ivanti Management Suite subscription required.

22. HP Client Security Suite Gen 4 requires Windows and Intel® or AMD® 8th generation processors.

Features

- 23. HP Password Manager requires Internet Explorer or Chrome or FireFox. Some websites and applications may not be supported. User may need to enable or allow the add-on / extension in the internet browser.
- 24. Microsoft Defender Opt in and internet connection required for updates.
- 25. HP Sure Start Gen4 is available on HP EliteBook products equipped with Intel® 8th generation processors.
- 26. RAID configuration is optional and does require a second hard drive.
- 27. HP Sure Click is available on select HP platforms and supports Microsoft® Internet Explorer, Google Chrome, and Chromium™. Supported attachments include Microsoft Office (Word, Excel, PowerPoint) and PDF files in read only mode. Check <http://h20195.www2.hp.com/v2/GetDocument.aspx?docname=4AA7-0922ENW> for all compatible platforms as they become available.
- 28. HP Sure Run is available on HP Elite products equipped with 8th generation Intel® or AMD® processors.
- 29. HP Sure Recover is available on HP Elite PCs with 8th generation Intel® or AMD processors and requires an open, wired network connection. Not available on platforms with multiple internal storage drives, Intel® Optane™. You must back up important files, data, photos, videos, etc. before use to avoid loss of data.

Features

POWER

Power Supply

65 W USB Type-C™ AC adapter

Primary Battery

HP Long Life 4-cell, 56.2 Wh Li-ion³⁰
Supports battery fast charge

Power Cord

Power cord included is 1.0 m (+/- 0.1 m)

Battery Life

Up to 18 hours (With FHD panel)³¹
Up to 11 hours (With 4K panel)³¹

30. Battery is internal and not replaceable by customer. Serviceable by warranty.

31. 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 <http://www.bapco.com> for additional details.

WEIGHTS & DIMENSIONS

Weight

Starting at 2.76 lb³²
Starting at 1.25 kg³²

Dimensions (w x d x h)

12.04 x 8.07 x 0.62 in
30.58 x 20.5 x 1.58 cm

32. Weight will vary by configuration.

Features

PORTS/SLOTS

Ports

- 2 Thunderbolt™ (USB Type-C™ connector)
- 1 USB 3.1 Gen 1 (Charging)
- 1 HDMI 1.4³³
- 1 External Nano SIM slot for WWAN
- 1 Headphone/microphone combo

33. HDMI cable sold separately.

SERVICE AND SUPPORT

HP Services offers a 1-year limited warranty and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty. Long Life batteries will have same warranty as the platform. Refer to <http://www.hp.com/support/batterywarranty/> for additional battery information. 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>.³⁴

34. HP Care Packs are sold separately. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit <http://www.hp.com/go/cpc>. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

Technical Specifications

ENVIRONMENTAL & INDUSTRY

HP EliteBook x360 1030 G3 Notebook PC

Eco-Label Certifications & declarations	<p>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:</p> <ul style="list-style-type: none"> • IT ECO declaration • US ENERGY STAR® • EPEAT® 2019 Gold registered in the United States. 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	<p>The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a Typically Configured Notebook.</p>		
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	6.09 W	6.27 W	6.12 W
Normal Operation (Long idle)	3.16 W	3.24 W	3.13 W
Sleep	0.82 W	0.84W	0.80 W
Off	0.30 W	0.34 W	0.29 W
	<p>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.</p>		
Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	21 BTU/hr	21 BTU/hr	21 BTU/hr
Normal Operation (Long idle)	11 BTU/hr	11 BTU/hr	11 BTU/hr
Sleep	3 BTU/hr	3 BTU/hr	3 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 BTU/hr
	<p>NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.</p>		

Technical Specifications

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	3.7	29
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> <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 Cadmium greater than 20ppm by weight</p> <p>Battery size: CR2032 (coin cell) Battery type: Lithium</p>	
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 Gold level in the U.S. See http://www.epeat.net for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options • 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 95.1% recycle-able when properly disposed of at end of life. 	
Packaging Materials	External: PAPER/Corrugated	341 g
	Internal: PLASTIC/Polyethylene Expanded - EPE	44 g
		9 g
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 	

Technical Specifications

	<ul style="list-style-type: none"> • 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)
<p>Packaging Usage</p>	<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) • 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)
<p>End-of-life Management and Recycling</p>	<p>HP Inc. 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>Global Citizenship Report</p>

Technical Specifications

	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://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K_Certificate.pdf and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf
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DISPLAYS

Panel LCD 13.3 inch FHD (1920x1080) BrightView WLED UWVA 72% NTSC 400nits eDP 1.3+PSR ultraslim NB bent	Outline Dimensions (W x H x D) 299.76 x 177.24 max. (FPC folding included) Active Area 293.76 x 165.24 Weight 170g max. Diagonal Size 13.3" Thickness 2.0mm / 4.0mm (PCB) max. Interface eDP 1.3 w/ PSR (2 lane) Surface Treatment BV Touch Enabled Yes Contrast Ratio 800:1 Refresh Rate 60Hz Brightness 400nits typ. Pixel Resolution 1920x1280 Format of LCD Pixel Arrangement RGB strip Backlight LED Color Gamut Coverage 72% of NTSC Color Depth 6 bits Viewing Angle UWVA 85/85/85/85
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NOTE: All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

Technical Specifications

Panel LCD 13.3 inch FHD (1920x1080) Anti-Glare WLED UWVA 72% NTSC 700nits eDP 1.3+PSR ultraslim NB Privacy	Outline Dimensions (W x H x D)	300.56 x 178.39 mm (max.)
	Active Area	293.86 x 165.34 mm (max.)
	Weight	205g (max.)
	Diagonal Size	13.3"
	Thickness	2.0 mm / 3.9 mm (max.)
	Interface	eDP 1.4a
	Surface Treatment	Anti-Glare
	Touch Enabled	Yes
	Contrast Ratio	Sharing mode, 600:1 (typ.) Privacy mode, 150:1 (typ.)
	Refresh Rate	120Hz
	Brightness	Sharing mode, 700 nits (typ.) Privacy mode, 320 nits (typ.)
	Pixel Resolution	1920x1080
	Format of LCD Pixel Arrangement	RGB strip
	Backlight	LED
	Color Gamut Coverage	Sharing mode, 72% of NTSC Privacy mode, 60% of NTSC
	Color Depth	6 bits + Hi FRC
Viewing Angle	Sharing mode, CR >10, L/R/U/D, 85/85/85/85 (typ.) Privacy mode CR>2, L/R/U/D, 50/50/85/85 (typ.)	

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

Panel LCD 13.3 inch UHD (3840x2160) BrightView WLED UWVA 72% NTSC 500nits eDP 1.3+PSR ultraslim NB bent	Outline Dimensions (W x H x D)	299.26 x 177.51 (FPC folding included)
	Active Area	293.76 x 165.24 mm
	Weight	190g max.
	Diagonal Size	13.3"
	Thickness	2.0mm / 4.0mm (PCB) max.
	Interface	eDP 1.4a PSR (4 lane)
	Surface Treatment	BV
	Touch Enabled	Yes
	Contrast Ratio	1400:1
	Brightness	500nits typ.

Technical Specifications

Pixel Resolution	3840 x 2160 (UHD)
Format of LCD Pixel Arrangement	RGB strip
Backlight	LED
Color Gamut Coverage	72% of NTSC
Color Depth	8 bits
Viewing Angle	UWVA 85/85/85/85

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

Technical Specifications

STORAGE

SSD 128GB 2280 M2 SATA-3 TLC	Form Factor	M.2 2280
	Capacity	128 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	ATA-8, SATA 3.0
	Maximum Sequential Read	Up To 520 MB/s
	Maximum Sequential Write	Up To 450 MB/s
	Logical Blocks	250,069,680
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	DIPM; TRIM; DEVSLP

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 50 GB (for Windows 10) of system disk is reserved for the system recovery software.

SSD 256 GB 2280 M2 PCIe-3x4 SS NVMe TLC	Form Factor	M.2 2280
	Capacity	256 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (<10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	Up To 2600 MB/s
	Maximum Sequential Write	Up To 900 MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	TRIM; L1.2

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 50 GB (for Windows 10) of system disk is reserved for the system recovery software.

SSD 256 GB 2280 M2 SATA-3 Self Encrypted OPAL2 Three Layer Cell	Form Factor	M.2 2280
	Capacity	256 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)

Technical Specifications

Weight	0.02 lb (<10 g)
Interface	ATA-8, SATA 3.0
Maximum Sequential Read	530 MB/s~ 560 MB/s
Maximum Sequential Write	500 MB/s~ 530 MB/s
Logical Blocks	500,118,192
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
Features	ATA Security; TCG Opal 2.0, DIPM; TRIM; DEVSLP

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 50 GB (for Windows 10) of system disk is reserved for the system recovery software.

SSD 256 GB 2280 PCIe NVMe Value	Form Factor	M.2 2280
	Capacity	360 GB
	NAND Type	MLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	Up To 1700 MB/s
	Maximum Sequential Write	Up To 600 MB/s
	Logical Blocks	703,282,608
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	TRIM; L1.2

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 50 GB (for Windows 10) of system disk is reserved for the system recovery software.

SSD 360 GB 2280 PCIe-3x4 NVMe Three Layer Cell	Form Factor	0.02 lb (10 g)
	Capacity	360 GB
	NAND Type	MLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	Up To 1700 MB/s
	Maximum Sequential Write	Up To 600 MB/s
	Logical Blocks	703,282,608

Technical Specifications

Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
Features	TRIM; L1.2

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 50 GB (for Windows 10) of system disk is reserved for the system recovery software.

SSD 512 GB 2280 M2 PCIe-3x4 SS NVMe TLC	Form Factor	M.2 2280
	Capacity	512 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (<10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	2800 MB/s~ 2900 MB/s
	Maximum Sequential Write	1000 MB/s~ 1800 MB/s
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
Features	ATA Security, TRIM; L1.2	

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 50 GB (for Windows 10) of system disk is reserved for the system recovery software.

SSD 512 GB 2280 M2 SATA-3 Three Layer Cell Federal Information Processing Standard	Form Factor	M.2 2280
	Capacity	512 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	ACS-3, SATA 3.2
	Maximum Sequential Read	Up To 530 MB/s
	Maximum Sequential Write	Up To 400 MB/s
	Logical Blocks	1,000,215,216
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
Features	TCG Opal 2.0; FIPS, DIPM; TRIM; DEVSLP	

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 50 GB (for Windows 10) of system disk is reserved for the system recovery software.

Technical Specifications

SSD 512 GB 2280 PCIe-3x4 NVMe Self Encrypted OPAL2 Three Layer Cell	Drive Weight	0.02 lb (10 g)
	Capacity	512 GB
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	Up To 2900 MB/s
	Maximum Sequential Write	Up To 1400 MB/s
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	TCG Opal2, TRIM; L1.2

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 50 GB (for Windows 10) of system disk is reserved for the system recovery software.

SSD 1TB 2280 PCIe-3x4 NVMe Three Layer Cell single-sided	Form Factor	0.02 lb (10 g)
	Capacity	1TB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	Up To 2900 MB/s
	Maximum Sequential Write	Up To 2000 MB/s
	Logical Blocks	2,000,409,263
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
Features	TRIM; L1.2	

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 50 GB (for Windows 10) of system disk is reserved for the system recovery software.

Technical Specifications

SSD 2TB 2280 PCIe-3x4 NVMe Three Layer Cell single-sided	Form Factor	M.2 2280
	Capacity	2TB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	Up To 2900 MB/s
	Maximum Sequential Write	Up To 2100 MB/s
	Logical Blocks	3,907,029,168
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security, DIPM; TRIM; DEVSLP

NOTE: For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 50 GB (for Windows 10) of system disk is reserved for the system recovery software.

Technical Specifications

NETWORKING/COMMUNICATIONS

Intel 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo¹ Vpro	Wireless LAN Standards	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 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
	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
	Security³	<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 • 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 : +14dBm minimum • 802.11g : +12dBm minimum • 802.11a : +12dBm minimum • 802.11n HT20(2.4GHz) : +12dBm minimum • 802.11n HT40(2.4GHz) : +12dBm minimum • 802.11n HT20(5GHz) : +10dBm minimum • 802.11n HT40(5GHz) : +10dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum
	Power Consumption	<ul style="list-style-type: none"> • Transmit mode 2.0 W • Receive mode 1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode 50 mW (WLAN unassociated)

Technical Specifications

	<ul style="list-style-type: none"> • Connected Standby 10mW • Radio disabled 8 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity ³	802.11b, 1Mbps : -93.5dBm maximum 802.11b, 11Mbps : -84dBm maximum 802.11a/g, 6Mbps : -86dBm maximum 802.11a/g, 54Mbps : -72dBm maximum 802.11n, MCS07 : -67dBm maximum 802.11n, MCS15 : -64dBm maximum 802.11ac, MCS0 : -84dBm maximum 802.11ac, MCS9 : -59dBm 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
Weight	Type 2230 : 2.8g
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
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

Technical Specifications

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.
Power Consumption	Peak (Tx) 330 mWPeak (Rx) 230 mWSelective Suspend 17 mW
Electrical Interface	USB 2.0 compliant
Bluetooth Software Supported	Microsoft Windows Bluetooth Software
Link Topology	
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management Certifications	ETS 300 328, ETS 300 826Low Voltage Directive IEC950UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)
Security & Manageability	Intel® vPro™ support with appropriate Intel® chipset components

Intel 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo¹ Non-Vpro	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac
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Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n • 2.402 – 2.482 GHz

802.11a/n	• 4.9 – 4.95 GHz (Japan)
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Technical Specifications

	<ul style="list-style-type: none"> • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz
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)
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Roaming	IEEE 802.11 compliant roaming between access points
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Technical Specifications

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LED Activity	LED Amber – Radio OFF; LED White – Radio ON

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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.
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Electrical Interface	USB 2.0 compliant
Bluetooth Software Supported	Microsoft Windows Bluetooth Software
Link Topology	

Technical Specifications

Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management Certifications	ETS 300 328, ETS 300 826 Low Voltage Directive IEC950UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)
HP It4132 LTE/HSPA+ 4G Mobile Broadband Module¹	<p>Technology/Operating bands</p> <p>LTE: 2100 (Band 1), 1900 (Band 2), 1800 (Band 3) MHz, 850 (Band 5), 2600 (Band 7), 900 (Band 8) MHz, 800 (Band 20), 700 (Band 28) MHz.</p> <p>HSPA+: 2100 (Band 1), 1900 (Band 2), 850 (Band 5), 900 (Band 8) MHz</p> <p>E-GPRS: 1900 (Band 2), 1800 (Band 3), 850 (Band 5), 900 (Band 8) MHz</p> <p>Wireless protocol standards</p> <p>3GPP Release 10 LTE Specification CAT.4, 20MHz BW WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification E-GPRS: Class B, Multi-slot class 12, coding schemes CS1 - CS4 and MSC1 - MSC9</p> <p>GPS</p> <p>Standalone, A-GPS (MS-B and LTO)</p> <p>GPS bands</p> <p>1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz</p> <p>Maximum data rates</p> <p>LTE: 150 Mbps (Download), 50 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload) EDGE: 236.8 kbps (Download), 236.8 kbps (Upload) GPRS: 85.6 kbps(Download), 85.6 kbps (Upload)</p> <p>Maximum output power</p> <p>LTE: 23 dBm HSPA+: 23.5 dBm E-GPRS 1900/1800: 26 dBm E-GPRS 900/850: 27 dBm</p>

Technical Specifications

	GPRS 1900/1800: 29.5 dBm GPRS 900/850: 32.5 dBm
Maximum power consumption	LTE: 1,200 mA (peak); 900 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average) E-GPRS: 2,600 mA (peak); 500 mA (average)
Form Factor	M.2, 3042-S3 Key B
Weight	6 g
Dimensions (Length x Width x Thickness)	42 x 30 x 2.3 mm

1. Mobile Broadband is an optional feature. Connection requires wireless data service contract, network support, and is not available in all areas. Contact service provider to determine the coverage area and availability. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products or in all countries.

HP lt4210 4G Module¹	Technology/Operating bands	LTE: 2100 (Band 1), 1900 (Band 2), 1800 (Band 3), 1700/2100 (Band 4), 850 (Band 5), 2600 (Band 7), 900 (Band 8), 700 (Band 12 lower), 700 (Band 13 upper), 700 (Band 17 lower), 800 (Band 20), 700 (Band 28). HSPA+: 2100 (Band 1), 1900 (Band 2), 1700/2100 (Band 4), 850 (Band 5), 900 (Band 8) MHz
	Wireless protocol standards	3GPP Release 10 LTE Specification CAT.4, 20MHz BW, WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification 1xEVDO Release 0, A and B. E-GPRS: Class B, Multi-slot class 12, coding schemes CS1 - CS4 and MSC1 - MSC9
	GPS	Standalone, A-GPS (MS-A, MS-B and XTRA)
	GPS bands	1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz
	Maximum data rates	LTE: 150 Mbps (Download), 50 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload) CDMA 1xRTT: 153.6 kbps (Download), 153.6 kbps (Upload) EVDO Rel.A: 3.1 Mbps (Download), 1.8 Mbps (Upload) EVDO Rel.B: 14.7 Mbps (Download), 5.4Mbps (Upload) EDGE: 236.8 kbps (Download), 236.8 kbps (Upload) GPRS: 85.6 kbps(Download), 85.6 kbps (Upload)
	Maximum output power	LTE: 23 dBm HSPA+: 23.5 dBm 1xRTT/EVDO: 24dBm E-GPRS 1900/1800: 26 dBm E-GPRS 900/850: 27 dBm GPRS 1900/1800: 29.5 dBm

Technical Specifications

GPRS 900/850: 32.5 dBm

Maximum power consumption

LTE: 1,200 mA (peak); 900 mA (average)
 HSPA+: 1,100 mA (peak); 800 mA (average)
 1xRTT/EVDO: 1,000 mA (peak); 700 mA (average)
 E-GPRS: 2,800 mA (peak); 500 mA (average)

Form Factor

M.2, 3042-S3 Key B

Weight

6.2 g

**Dimensions
 (Length x Width x
 Thickness)**

42 30 x 2.3 mm

1. Mobile Broadband is an optional feature. Connection requires wireless data service contract, network support, and is not available in all areas. Contact service provider to determine the coverage area and availability. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products or in all countries.

Intel® XMM™ 7360 LTE-Advanced CAT9¹

Technology/Operating bands

FDD LTE: 2100 (Band 1), 1900 (Band 2), 1800 (Band 3), 1700/2100 (Band 4), 850 (Band 5), 2600 (Band 7), 900 (Band 8), 1400 (Band 11), 700 (Band 12 lower), 700 (Band 13 upper), 700 (Band 17 lower), 850 (Band 18 lower), 850 (Band 19 upper), 800 (Band 20), 1400 (Band 21), 850 (Band 26), 700 (Band 28), 700 (Band 29 RX only), 2300 (Band 30), 1700/2100 (Band 66).

TDD LTE: 2600 (Band 38), 1900 (Band 39), 2400 (Band 40), 2500 (Band 41).

HSPA+: 2100 (Band 1), 1900 (Band 2), 1700/2100 (Band 4), 850 (Band 5), 900 (Band 8) MHz

Wireless protocol standards

3GPP Release 11 LTE Specification CAT.9, DL 60MHz BW throughput up to 450Mbps; UL 20MHz throughput up to 50Mbps WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification

GPS

Standalone, A-GPS (MS-A, MS-B)

GPS bands

1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz, Beidou 1561.098 MHz

Technical Specifications

Maximum data rates	LTE: 450 Mbps (Download), 50 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload)
Maximum output power	LTE: 23 dBm HSPA+: 23.5 dBm
Maximum power consumption	LTE: 1,200 mA (peak); 900 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average)
Form Factor	M.2, 3042-S3 Key B
Weight	5.8g
Dimensions (Length x Width x Thickness)	30 x 2.3 mm

1. [Mobile Broadband is an optional feature. Connection requires wireless data service contract, network support, and is not available in all areas. Contact service provider to determine the coverage area and availability. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products or in all countries.](#)

Near Field Communications Controller (optional)	Dimensions (L x W x H)	Module 17 mm by 10 mm by 2.0 mm
	Chipset	NPC300
	System interface	I2C
	NFC RF standards	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 ISO/IEC 18092 ECMA-340 NFCIP-1 Target and Initiator ECMA-320 NFCIP-2
	NFC Forum Support	Tag Type 1, Type 2, Type3 and Type 4, NFCIP-1 and NFCIP-2
	Reader (PCD-VCD) Mode (1)	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 MIFARE 1K MIFARE 4K MIFARE DESFire FeliCa Jewel and Topaz cards

Technical Specifications

Card Emulation (PICC-VICC) Mode (1) ISO/IEC 14443 A
ISO/IEC 14443 B and B'
MIFARE
FeliCa

Frequency 13.56 MHz

NFC Modes Supported Reader/Writer, Peer-to-Peer

Raw RF Data Rates 106, 212, 424, 848 kbps

Operating temperature 0°C to 70°C

Storage temperature -20°C to 125°C

Humidity 10-90% operating

Supply Operating voltage 2.97 to 5.5 Volts

I/O Voltage 1.8V or 3.3V

Power Consumption (Booster enable, VBAT= 3.3V, VCC_BOOST = 5V) **Mode** Power Consumption, Typical

Polling 7.3 mA

Detected Test Tag Type 1 32.9 mA

Detected Test Tag Type 2 70.7 mA

Detected Test Tag Type 3 79.2 mA

Detected Test Tag Type 4 64.9 mA

Antenna Antenna connector, 0.5mm pitch, 7 connector FPC. Antenna matching is external to module.

Technical Specifications

POWER

AC Adapter 65 Watt nPFC Slim USB type C Straight 1.8m (MissPiggy)	Dimensions	88.0x53.5x21.0mm
	Weight	220g +/- 10g
	Input	100 to 240 VAC
	Input Efficiency	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec: 5V : 81.5% 9V : 86.7% 12V : 88.0% 15V : 89.0% 20V : 89.0%
	Input frequency range	48 ~ 63 Hz
	Input AC current	Max. 1.7 A at 90 VAC
	Output power	5V/15W 9V/27W 12V/60W 15V/65W 20V/65W
	DC output	5V / 9V / 12V / 15V / 20V
	Hold-up time	5ms at 115 Vac input
	Output current limit	< 8.0A
Connector	USB Type-C	
Environmental Design	Operating temperature	32° to 95° F (0° to 35° C)
	Non-operating (storage) temperature	-4° to 185° F (-20° to 85° C)
	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- IEC950, EN60950, UL1950, Class 1, SELV; Agency approvals- C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCIB, NOM-1 NYCE; MTBF- over 200,000 hours at 25°C ambient condition.

Technical Specifications

Battery ME 4 Cell WHr 50 Long Life -PL Fast Charge	Dimensions (H x W x L)	4.0 x 96.62 x 231.8 mm (0.157 x 3.804 x 9.126 inch)
	Weight	0.188kg (0.415 lb)
	Cells/Type	4cell Lithium-Ion Polymer cell / 385784
	Energy	Voltage 8.8V/7.7V
		Amp-hour capacity 6.175Ah(min.)/6.5Ah(typ.)
		Watt-hour capacity 47.5Wh(min.)/50Wh(typ.)
	Temperature	Operating (Charging) 32° to 113° F (0° to 45° C)
		Operating (Discharging) 14° to 122° F (-10° to 60° C)
	Fuel Gauge LED	No
	Optional Travel Battery Available	No

COUNTRY OF ORIGIN

China

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

Type	Description	Part #
Cases	HP Slim Ultrabook Top Load	F3W15AA#xxx
	HP Exec Midnight 15.6" Backpack	1KM16AA#xxx
Docking	HP Thunderbolt Dock 120W G2	2UK37AA#xxx
	HP TB Dock G2 w/ Combo Cable	3TR87AA#xxx
	HP TB Dock 120W G2 w/ Audio	3YE87AA#xxx
	HP Thunderbolt Dock Audio Module	3AQ21AA
	HP TB Dock 120W G2 cable	3XB94AA
	HP TB Dock G2 combo cable	3XB96AA
	HP USB-C Universal Dock	1MK33AA#xxx
	HP USB-C Universal Dock w/4.5mm Adapter	2UF95AA
	HP USB-C Universal Dock NF	3DV65AA
	HP USB-C Dock G4	3FF69AA#xxx
	HP USB-C Mini Dock	1PM64AA#xxx
	HP USB Travel Dock	T0K30AA#xxx
	HP Elite 90W Thunderbolt 3 Dock	1DT93AA#xxx
	HP Hot Desk Stand (up to 32" monitor)	W3Z73AA#xxx
	HP Hot Desk Stand Monitor Arm (for use with W3Z73AA; supports two 24" monitors)	W3Z74AA#xxx
Input/Output	HP Slim Wireless Keyboard and Mouse	T6L04AA#xxx
	HP Slim USB Keyboard and Mouse	T6T83AA#xxx
	HP Wireless (Link-5) Keyboard	T6U20AA#xxx
	HP USB Essential Keyboard and Mouse	H6L29AA#xxx
	HP Conferencing Keyboard	K8P74AA#xxx
	HP USB Collaboration Keyboard	Z9N38AA#xxx
	HP Wireless Collaboration Keyboard	Z9N39AA#xxx
	HP Comfort Grip Wireless Mouse	H2L63AA#xxx
	HP X4000b Bluetooth Mouse	H3T50AA#xxx
	HP 3-Button USB Laser Mouse	H4B81AA#xxx
	HP USB Travel Mouse	G1K28AA#xxx
	HP Ultra Mobile Wireless Mouse	H6F25AA#xxx
	HP Slim Bluetooth Mouse	F3J92AA#xxx
	HP Wireless Premium Mouse	1JR31AA#xxx
	HP USB Premium Mouse	1JR32AA#xxx
	HP Elite Presenter Mouse	2CE30AA#xxx
	HP Stereo 3.5mm Headset	T1A66AA#xxx
	HP Stereo USB Headset	T1A67AA#xxx
	HP USB-C to USB 3.0 Adapter	N2Z63AAA#xxx
	HP USB-C to USB-A Hub	Z6A00AA#xxx
HP USB-C to DP	N9K78AA#xxx	
HP USB-C to VGA	N9K76AA#xxx	
HP USB-C to RJ45 Adapter	V7W66AA	

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

	HP HDMI to DVI	F5A28AA#xxx
	HP HDMI to VGA	H4F02AA#xxx
	HP USB 3.0 to Gigabit Adapter	N7P47AA#xxx
	HP Rechargeable Active Pen	4KL69AA
	HP USB-C to USB-A Hub	Z6A00AA#xxx
Power	HP 65W USB-C Power Adapter	1HE08AA#xxx
	HP 65W USB-C Slim Power Adapter	3PN48AA
	HP USB-C Notebook Power Bank	1TZ86AA#xxx
Memory	HP 4 GB DDR4-2666 SODIMM	TBD
	HP 8 GB DDR4-2666 SODIMM	TBD
	HP 16 GB DDR4-2666 SODIMM	TBD
Storage	HP USB External DVDRW Drive	F2B56AA#xxx
Security	HP Nano Keyed Cable Lock	1AJ39AA
	HP Nano Dual-Head Keyed Cable Lock	1AJ41AA
UCC	HP UC Speaker Phone	K7V16AA#xxx
	HP UC Wired Headset	K7V17AA#xxx
	HP UC Wireless Mono Headset	W3K08AA#xxx
	HP UC Wireless Duo Headset	W3K09AA#xxx
Displays	HP EliteDisplay E243 23.8-inch Monitor	1FH47AA
	HP EliteDisplay E273q 27-inch QHD Monitor	1FH52AA
	HP EliteDisplay E273m 27-inch Collaboration Monitor	1FH51AA
	HP EliteDisplay S240n 23.8-inch Monitor	W9A88AA
	HP EliteDisplay S270n 27-inch 4K Monitor	2PD37AA

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

Docking station model	Total number of supported displays (incl. the notebook display)	Max. resolutions supported	Dock Connectors	Technical limitations
HP Elite 120W TB3 Dock	3	Dual 4K @ 60Hz	2xDP, 1xVGA, 1xTB,	Dual 4k only with one display in to DP and + TB port or USB-C alt mode + TB port
HP Elite USB-C Dock G4	3	Dual 2K @ 60Hz	1xUSB-C alt-mode	
HP USB-C Universal Dock	3	Single 4K @ 60Hz (3840 x 1440)	1xHDMI, 2xDP	
HP USB-C Travel Dock	2	Dual 4K @ 60Hz	2xDP	Single external display Only HDMI or VGA at the time
HP USB-C Mini Dock	2	Single 5K @ 60Hz	1xHDMI, 1xVGA	Single external display Only HDMI or VGA at the time

Summary of Changes

Date of change:	Version History:		Description of change:
June 12, 2018	V1 to V2	Updated	Touch enabled displays section
June 28, 2018	V2 to V3	Added	Environmental tab
July 5, 2018	V3 to V4	Updated	Sensors section footnote
July 11, 2018	V4 to V5	Updated	Warranty
August 6, 2018	V5 to V6	Removed	Software Velocity
August 23, 2018	V6 to V7	Updated	WWAN section
August 31, 2018	V7 to V8	Added	Networking section and Audio sections
November 2, 2018	V8 to V9	Updated	At a glance Passed MIL-STD
December 10, 2018	V9 to V10	Updated	Memory section
February 12, 2019	V10 to V11	Updated	Active Pen
June 7, 2019	V11 to v12	Updated	EPEAT
July 3, 2019	V12 to V13	Updated	Color Gamut
January 15, 2020	V13 to V14	Removed	Ultraslim Docking

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