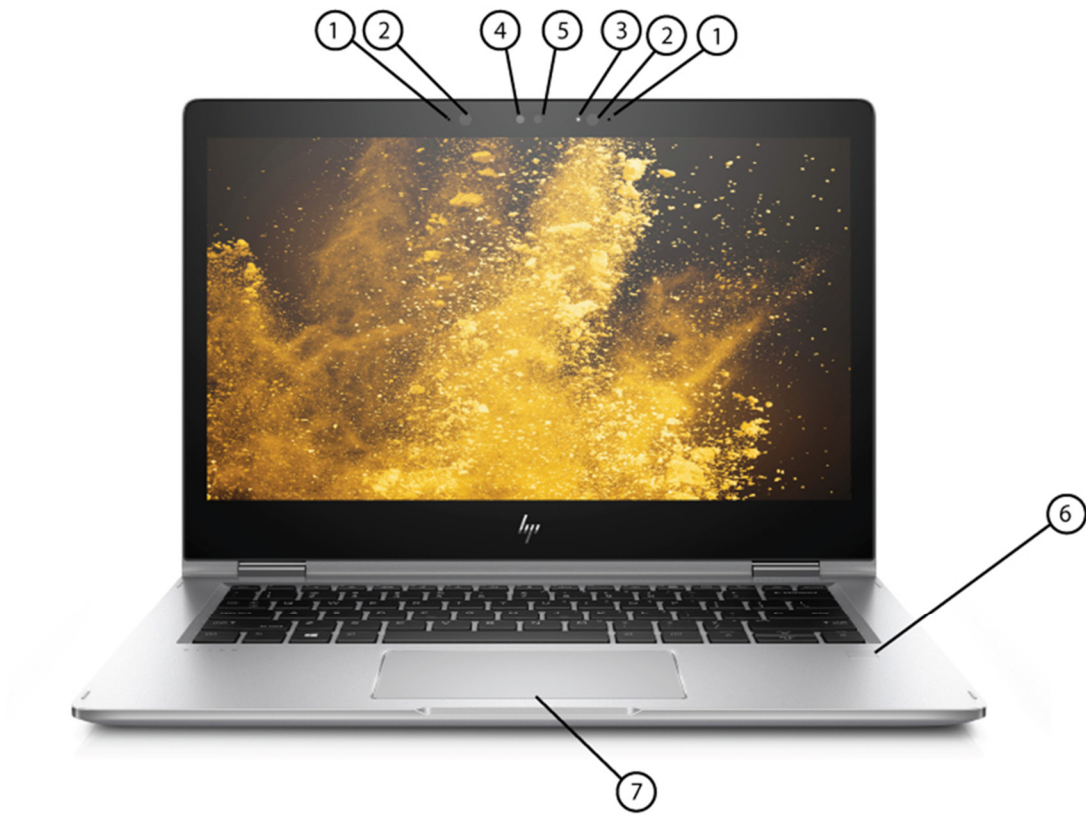


QuickSpecs

Overview

HP EliteBook x360 1030 G2



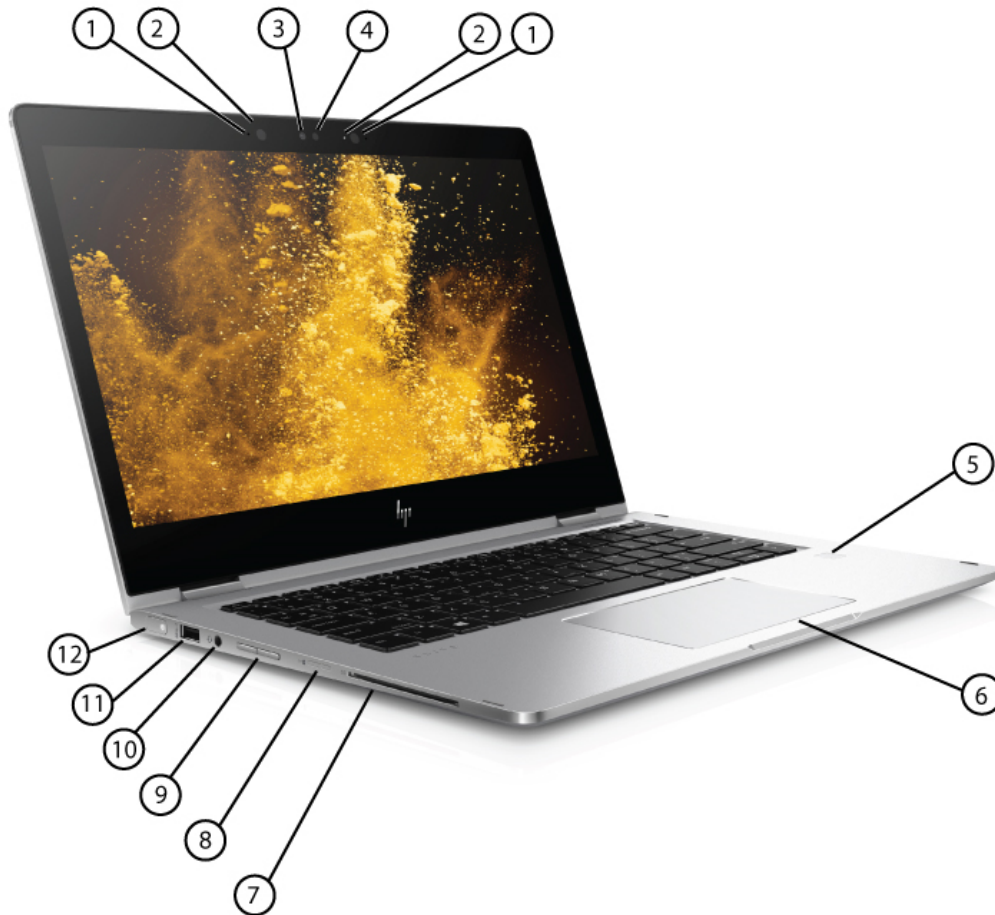
Front

- | | | | |
|----|--------------------------|----|--------------------------|
| 1. | Internal microphones (2) | 5. | IR camera |
| 2. | IR emitters(2) | 6. | Touch Fingerprint sensor |
| 3. | Webcam LED | 7. | Glass Clickpad |
| 4. | Webcam | | |



QuickSpecs

Overview



- 1. Internal microphones (2)
- 2. IR emitters(2)
- 3. Webcam
- 4. IR camera
- 5. Touch Fingerprint sensor
- 6. Glass Clickpad

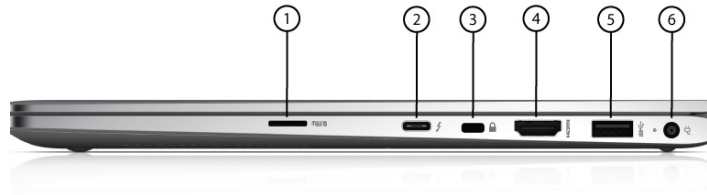
Right

- 7. Smart card reader
- 8. WWAN SIM
- 9. Volume up/ down
- 10. Audio combo jack
- 11. USB 3.1 Gen 1 (charging)
- 12. Power button



QuickSpecs

Overview



Left

- | | |
|----------------------------------|--------------------|
| 1. Micro SD slot | 4. HDMI port |
| 2. USB Type-C™ with Thunderbolt™ | 5. USB 3.1 Gen 1 |
| 3. Security lock slot | 6. Power connector |



Conferencing Keyboard



QuickSpecs

Overview

Stand Mode



QuickSpecs

Overview

At A Glance

- Pre-installed with Windows 10 editions, FreeDOS 2.0 and NeoKylin Linux® 64
- All metal CNC Al chassis that is .59 inches (1.49 cm) thin
- Pending MIL STD 810G tests ¹
- Powered by 7th Generation Intel® Core™ processors
- Choice of SSD storage drives up to 512 GB, including PCIe NVMe
- Weight starting at 2.82 lbs (1.28 kg)
- Connect without dongles using full size ports including USB, USB-C™, and HDMI 1.4 for connecting to high-resolution displays
- Large ClickPad with gestures support
- 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 (requires Windows 10), as well as the integrated Smart Card Reader
- Optional full size HP Active Pen with App Launch, designed with Wacom technology
- HP 720p HD webcam, dual array microphones, and integrated premium stereo speakers for video audio and conferencing
- Engage teams, clients, and vendors with the crystal-clear audio by Bang & Olufsen and the high-performance HP Premium Collaboration Keyboard

1. MIL STD 810G testing is pending and 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 EliteBook x360 1030 G2

OPERATING SYSTEM

Preinstalled

- Windows 10 Pro 64¹
- Windows 10 Pro 64 (National Academic only)²
- Windows 10 Home 64¹
- Windows 10 Home Single Language 64¹
- FreeDOS 2.0
- NeoKylin Linux 64

Web supported Windows 10 Enterprise 64¹

NOTE: Your product does not support Windows 8 or Windows 7

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. Not all features are available in all editions or versions of Windows 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

Intel® Core™ i5-7200U with Intel HD Graphics 620 (2.5 GHz, up to 3.1 GHz with Intel Turbo Boost Technology, 3 MB cache, 2 cores)
Intel® Core™ i5-7300U with Intel HD Graphics 620 (2.6 GHz, up to 3.5 GHz with Intel Turbo Boost Technology, 3 MB cache, 2 cores)
Intel® Core™ i7-7600U with Intel HD Graphics 620 (2.9 GHz, up to 3.9 GHz with Intel Turbo Boost Technology, 4 MB cache, 2 cores)

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. 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.



Features

CHIPSET

Chipset is integrated with processor

GRAPHICS

Integrated

Intel® HD¹ Graphics 620 with shared video memory

1. [HD content required to view HD images.](#)

DISPLAY

Internal

33.8 cm (13.3") diagonal FHD UWVA ultra slim touch screen (1920 x 1080) with Corning® Gorilla® Glass¹

33.8 cm (13.3") diagonal UHD UWVA ultra slim touch screen (3840 x 2160) with Corning® Gorilla® Glass^{1,3}

HP Sure View Integrated Privacy Screen

33.8 cm (13.3") diagonal FHD UWVA ultra slim eDP touch screen (1920 x 1080) with Corning® Gorilla® Glass^{1,4}

External

TBD

HDMI²

HDMI 1.4

1. [HD content required to view HD images.](#)
2. [HDMI cable sold separately.](#)
3. [Planned to be available in March 2017.](#)
4. [Planned to be available in April 2017.](#)

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

Optional Docking Solutions¹

HP Elite Thunderbolt 3 Dock

HP Executive Travel Hub

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

STORAGE AND DRIVES

Primary Storage¹

Supports M.2 SS/DS 2280 Solid State Drive

128 GB SATA-3 Value Solid State Drive

256 GB SATA-3 Solid State Drive TLC (Opal2)

360 GB Solid State Drive PCIe NVMe ([Planned to be available March 2017](#))

512 GB SATA-3 Solid State Drive TLC (FIPS) ([Planned to be available March 2017](#))

256 GB PCIe Gen3x4 NVMe Solid State Drive TLC



Features

512 GB PCIe Gen3x4 NVMe Solid State Drive TLC

1. For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 MB (for Windows 10) is reserved for system recovery software.

MEMORY

Standard

Memory soldered down
DDR4 – 2133 (Transfer rates up to 2133 MT/s)
Supports Dual Channel Memory
On board (Customer non-accessible)

Configurations

4 GB (i5 only)
8 GB
16 GB (i7 only)

Maximum

16 GB DDR4-2133 SDRAM

NETWORKING/COMMUNICATIONS

Broadband Wireless (WWAN)^{1,2,3}

HP lt4132 LTE/HSPA+ 4G Mobile Broadband
HP hs3210 HSPA Mobile Broadband

Wireless LAN (WLAN)^{1,2}

Intel® Dual Band 802.11a/b/g/n/ac (2x2) and Bluetooth® 4.2 Combo (non-vPro)
Intel® Dual Band 802.11a/b/g/n/ac (2x2) and Bluetooth® 4.2 Combo (vPro)

WPAN

Bluetooth® 4.2 supported via Combo card

Communications

Optional Near Field Communication (NFC)²
Compatible with Miracast-certified devices⁴

1. 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.

2. Sold separately or as an optional feature.

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

4. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming media players that also support Miracast. You can use Miracast to share what you're doing on your PC and present a slide show. For more information: <http://windows.microsoft.com/en-us/windows-8/project-wireless-screen-miracast>



Features

AUDIO/MULTIMEDIA

Audio

Audio by Bang & Olufsen
Four integrated premium stereo speakers
Dual microphone array

Camera

IR/RGB camera (standard on all models)
720p HD webcam^{1,2}

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

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard

Backlit
DuraKeys

Function Keys

F1 - Blank
F2 - Brightness Down
F3 - Brightness Up
F4 - Display Switch
F5 - Speaker Mute
F6 - Volume Down
F7 - Volume Up
F8 - Mic Mute
F9 - Kybd Backlight
F10 - NumLock
F11 - Wireless
F12 - Calendar
>
> Present/Share
> Call Answer
> Call End
> Delete

ClickPad

ClickPad (Glass Cover)
Taps enabled as default
Gestures enabled by default



Features

SOFTWARE AND SECURITY

Preinstalled Software

HP BIOSphere¹
HP Sure Start Gen3¹⁰
HP DriveLock | HP Automatic DriveLock
BIOS Update via Network
Master Boot Record Security
Power On Authentication
Secure Erase²
Pre-boot Authentication

Communication

HP Mobile Connect Pro³
Native Miracast Support⁴

HP Value Add Software

HP ePrint Driver + JetAdvantage⁵
HP Hotkey Support
HP Support Assistant
HP Jumpstart
HP Noise Cancellation Software

Manageability

HP Driver Packs⁶
HP SoftPaq Download Manager (SDM)
HP System Software Manager (SSM)⁶
HP BIOS Config Utility (BCU)⁶
HP Client Catalog⁶
HP Manageability Integration Kit for Microsoft SCCM⁶
HP Image Assistant⁶
LANDESK Management⁷
For more information on HP Client Management Solutions refer to: <http://www.hp.com/go/clientmanagement>.

Microsoft Products

Buy Office
Bing Search
Skype⁸

Security

HP Client Security
- HP Security Manager (including Credential Manager and Password Manager)
- HP Drive Lock
- HP Touch Fingerprint Sensor
- HP Password Manager
- Absolute Persistence Module⁹
- Power On Authentication
Microsoft Defender
TPM 1.2/2.0
Security lock slot¹¹
Supports IR "Hello" facial recognition via Windows 10



Features

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. HP Mobile Connect is only available on preconfigured devices with WWAN. For geographic availability refer to www.hp.com/go/mobileconnect
4. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming media players that also support Miracast. You can use Miracast to share what you're doing on your PC and present a slide show. For more information: <http://windows.microsoft.com/en-us/windows-8/project-wireless-screen-miracast>
5. 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). 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.
6. Not preinstalled, however available for download at <http://www.hp.com/go/clientmanagement>
7. Subscription required.
8. Skype is not offered in China.
9. 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: <https://www.absolute.com/en/about/legal/agreements/absolute>. 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.
10. Available on HP EliteBook products equipped with Intel® 7th generation processors
11. Cable not included.

POWER

Power Supply¹

HP 65W Smart AC adapter
HP 65W EM Smart AC adapter
HP 65W Smart USB Type-C™ AC adapter

1. Availability may vary by country.

Primary Battery

HP Long Life 3 cell, 57 Wh Li-on polymer
Supports battery fast charge

NOTE: Battery is internal and not replaceable by customer.

Power Cord

TBD

Battery life¹

Up to 16 hours and 30 minutes

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



Features

System Standby Time

TBD

WEIGHTS & DIMENSIONS

Weight¹

Weight starting at 2.82 lbs (1.28 kg)

1. Weight varies by configuration and components.

Dimensions (w x d x h)

31.69 x 21.85 x 1.49 cm

12.48 x 8.6 x .59 in

PORTS/SLOTS

Ports

- 1 USB Type-C™ with Thunderbolt™
- 2 USB 3.1 Gen 1 (1 charging)
- 1 HDMI 1.4
- 1 external micro SIM
- 1 AC power
- 1 Headphone/microphone combo jack

Slots

Micro-SD Card Reader

NOTE: All cables are sold separately.

SERVICE AND SUPPORT

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. 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>.

1. Sold separately or as an optional feature.
2. 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. 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. 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>.



Features



Technical Specifications

DISPLAYS

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

33.8 cm (13.3") diagonal FHD UWVA ultra slim touch screen (1920 x 1080) with Corning® Gorilla® Glass	Outline Dimensions (W x H x D)	300.56 x 187.57 (max.) x 2.2 (max) mm
	Active Area	293.76 x 165.24 mm
	Weight	160g max.
	Diagonal Size	13.3"
	Surface Treatment	BV
	Touch enabled	Yes
	Contrast Ratio	800:1 (typ - BV)
	Refresh Rate	60Hz
	Brightness	300 nit typ (Panel Only)
	Pixel Resolution	Format 1920 x 1080 (FHD) Configuration RGB
	Interface	eDP 1.3 w/ PSR
	LCD Mode	IPS/FFS/AHVA
	PPI	166
	Viewing Angle	UWVA 85/85/85/85
33.8 cm (13.3") diagonal UHD UWVA ultra slim touch screen (3840 x 2160) with Corning® Gorilla® Glass	Outline Dimensions (W x H x D)	299.76 x 187.17 (max.) x 2.2(max.) mm
	Active Area	293.76 x 165.24 mm
	Weight	190g max. (TBD)
	Diagonal Size	13.3"
	Surface Treatment	BV
	Touch enabled	Yes
	Contrast Ratio	1400:1 (typ) - BV
	Refresh Rate	60Hz
	Brightness	340nits typ (Panel Only)
	Pixel Resolution	Format 3840 x 2160 (UHD) Configuration RGB
	Interface	eDP 1.3 PSR
	LCD Mode	IPS/FFS/AHVA
	PPI	331
	Viewing Angle	UWVA 85/85/85/85



Technical Specifications

STORAGE AND DRIVES

128 GB SATA-3 Value Solid State Drive	Drive Weight	0.01 lb (6 g) ~ 0.02 lb (10 g)	
	Capacity	128 GB	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	ATA-8, SATA 3.0	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		Up To 535 MB/s	Up To 515 MB/s
	Logical Blocks	250,069,680	
256 GB SATA-3 TLC Self-Encrypting Solid State Drive (Opal 2)	Drive Weight	M.2 2280	
	Capacity	256 GB	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	ATA-8, SATA 3.0	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		Up to 530 MB/s	Up to 515 MB/s
	Logical Blocks	500,118,192	
256 GB PCIe Gen3x4 NVMe TLC Solid State Drive	Drive Weight	M.2 2280	
	Capacity	256 GB	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	PCIe NVMe Gen3X4	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		Up to 2600 MB/s	Up to 900 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	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	ATA Security (Option); TRIM; L1.2	



Technical Specifications

512 GB PCIe Gen3x4 NVMe TLC Solid State Drive	Drive Weight	M.2 2280	
	Capacity	512 GB	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	PCIe NVMe Gen3X4	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		Up to 2600 MB/s	Up to 1400 MB/s
	Logical Blocks	1,000,215,216	
360 GB SATA-3 TLC Solid State Drive	Drive Weight	0.02 lb (10 g)	
	Capacity	360 GB	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	PCIe NVMe Gen3X4	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		Up to 1,700 MB/s	Up to 600 MB/s
	Logical Blocks	703,282,608	
512 GB SATA-3 TLS FIPS Solid State Drive	Drive Weight	0.02 lb (10 g)	
	Capacity	512G GB	
	Height	0.09 in (2.3 mm)	
	Width	0.87 in (22 mm)	
	Interface	ACS-3, SATA 3.2	
	Performance	Maximum Sequential Read	Maximum Sequential Write
		Up To 530 MB/s	Up To 400 MB/s
	Logical Blocks	1,000,215,216	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	ATA Security (Option); TRIM; L1.2	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	ATA Security; TRIM; L1.2	
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]	
	Features	ATA Security; TCG Opal 2.0; FIPS; DIPM; TRIM; DEVSLP	



Technical Specifications

NETWORKING/COMMUNICATIONS

HP It4132 LTE/HSPA+ 4G Mobile Broadband Module

Technology/Operating bands	<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>
Wireless protocol standards	<p>3GPP Release 10 LTE Specification CAT.4, 20MHz BW WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification</p> <p>E-GPRS: Class B, Multi-slot class 12, coding schemes CS1 - CS4 and MSC1 - MSC9</p>
GPS	Standalone, A-GPS (MS-B and LTO)
GPS bands	1575.42 MHz \pm 1.023 MHz, GLONASS 1596-1607MHz
Maximum data rates	<p>LTE: 150 Mbps (Download), 50 Mbps (Upload)</p> <p>DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload)</p> <p>HSPA+: 21Mbps (Download), 5.76 Mbps (Upload)</p> <p>EDGE: 236.8 kbps (Download), 236.8 kbps (Upload)</p> <p>GPRS: 85.6 kbps(Download), 85.6 kbps (Upload)</p>
Maximum output power	<p>LTE: 23 dBm</p> <p>HSPA+: 23.5 dBm</p> <p>E-GPRS 1900/1800: 26 dBm</p> <p>E-GPRS 900/850: 27 dBm</p> <p>GPRS 1900/1800: 29.5 dBm</p> <p>GPRS 900/850: 32.5 dBm</p>
Maximum power consumption	LTE: 1,200 mA (peak); 900 mA (average)



Technical Specifications

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 42 x 30 x 2.3 mm
(Length x Width x Thickness)

* 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 hs3210 HSPA+ Mobile Broadband Module*

Technology/Operating bands HSPA+: 2100 (Band1), 1900 (Band 2), 850 (Band 5), 900 (Band 8) MHz
E-GPRS: 1900 (Band 2), 1800 (Band 3), 850 MHz (Band 5), 900 (Band 8) MHz

Wireless protocol standards WCDMA R99, 3GPP Release 5, 6 and 7 UMTS Specification
E-GPRS: Class B, Multi-slot class 33, coding schemes CS1 - CS4 and MSC1 - MSC9

Maximum data rates HSPA+: 21.6 Mbps (Download), 5.76 Mbps (Upload)
E-GPRS: 296 kbps (Download), 236.8 kbps (Upload)
GPRS: 107 kbps (Download), 85.6 kbps (Upload)

Maximum output power HSPA+: 24 dBm
E-GPRS 1800/1900: 26 dBm
E-GPRS 850/900: 27 dBm
GPRS 1800/1900: 30 dBm
GPRS 850/900: 33 dBm

Maximum power consumption HSPA+: 1,100 mA (peak); 800 mA (average)
E-GPRS: 2,800 mA (peak); 700 mA (average)

Form Factor M.2, 2242-S3 Key B

Weight 6 g



Technical Specifications

Dimensions 1.65 x 8.66 x 0.09 in (42 x 22 x 2.38 mm)
(Length x Width x Thickness)

* 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.

Intel® Dual Band 802.11a/b/g/n/ac (2x2) and Bluetooth® 4.2 Combo

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 <p>Note: 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>
Data Rates	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>
Modulation	802.11b: 1, 2, 5.5, 11 Mbps
	802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
Security¹	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)
	Direct Sequence Spread Spectrum
	BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
	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.



Technical Specifications

	<ul style="list-style-type: none"> 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 : +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



Technical Specifications

	802.11ac, 1SS, MCS-9 : -61dBm maximum
	802.11ac, 2SS, MCS-0 : -83dBm maximum
	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
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy : 0~79 (1 MHz/CH)



Technical Specifications

Data Rates and Throughput

BLE : 0~39 (2 MHz/CH)

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

Legacy

Modulation	0.01% BER	0.001% BER
GFSK	-80 dBm	-70 dBm
$\pi/4$ -DQPSK	-80 dBm	-70 dBm
8DPSK	-80 dBm	-70 dBm

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

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



Technical Specifications

Bluetooth Profiles Supported

Power Management ETS 300 328, ETS 300 826

Certifications Low Voltage Directive IEC950

UL, CSA, and CE Mark

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}

Certifications

Hard Copy Cable Replacement (HCRP)^{1.2}

Personal Area Networking Profile (PAN)^{1.0}

Bluetooth Profiles Supported

Human Interface Device Profile (HID)^{1.0}

Hands Free Profile (HFP)^{1.5/1.6}

Advanced Audio Distribution Profile (A2DP)^{1.3}

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.

Intel® Dual Band 802.11a/b/g/n/ac (2x2) and Bluetooth® 4.2 Combo

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

- 2.402 – 2.482 GHz

Note: The FCC has declared as of January 1, 2015 products that utilize passive scanning on channel 12/13 and are capable of



Technical Specifications

transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.

	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	<p>Direct Sequence Spread Spectrum</p> <p>BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM</p>
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 • Cisco Certified Extensions, all versions through CCX4 and CCX Lite • WAPI
Network Architecture Models	<p>Ad-hoc (Peer to Peer)</p> <p>Infrastructure (Access Point Required)</p>
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	<p>Transmit: 2.0 W (max)</p> <p>Receive: 1.6 W (max)</p> <p>Idle mode (PSP): 180 mW (WLAN Associated)</p>



Technical Specifications

	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 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%



Technical Specifications

Temperature	Operating	14° to 158° F (–10° to 70° C)
	Non-operating	–40° to 176° F (–40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF; LED White – Radio ON	

4. [Check latest software/driver release for updates on supported security features.](#)
5. [Maximum output power may vary by country according to local regulations.](#)
6. [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 \(OFDM modulation\).](#)

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Receiver Sensitivity			
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	GFSK	-80 dBm	-70 dBm
	π/4-DQPSK	-80 dBm	-70 dBm
	8DPSK	-80 dBm	-70 dBm
Power Consumption	Peak (Tx) 330 mW		
	Peak (Rx) 230 mW		
	Selective Suspend 17 mW		



Technical Specifications

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
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:
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Power Management	ETS 300 328, ETS 300 826
Certifications	Low Voltage Directive IEC950
	UL, CSA, and CE Mark
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	Service Discovery Application Profile (SDAP)
	Dial-Up Networking (DUN) ^{1,1}
	Generic Object Exchange Profile (GOEP) ^{1,2}
	Object Push Profile (OPP) ^{1,2}
Certifications	Hard Copy Cable Replacement (HCRP) ^{1,2}
	Personal Area Networking Profile (PAN) ^{1,0}
Bluetooth Profiles Supported	Human Interface Device Profile (HID) ^{1,0}
	Hands Free Profile (HFP) ^{1.5/1.6}
	Advanced Audio Distribution Profile (A2DP) ^{1.3}
	Audio Video Remote Control Profile (AVRCP) ^{1.3/1.4}



Technical Specifications

Bluetooth V4.1/V4.2 support V4.1: ESR5/6/7 compliant feature

V4.2: ESR8 compliant, LE Secure Connection – Basic.

POWER

HP 65W Smart AC adapter

Dimensions	107.0x47.0x30.0mm
Weight	250g +/- 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 limit <11.0A
Connector	C6 (3pin/with grounded, with Smart ID DC connector)
Environmental Design	Operating temperature 32°F to 95°F (0°to 35°C) Non-operating (storage) temperature -4°F 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	Eg: *CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.

HP 65W EM Smart AC adapter

Dimensions	127.0x51.0x30.0mm
Weight	350g +/- 10g
Input	Input Efficiency 88.0 % at 115 Vac and 89.0 % at 230Vac



Technical Specifications

Output	Input frequency range	47 ~ 63 Hz
	Input AC current	Max. 1.7 A at 90 Vac
	Output power	65W
	DC output	19.5V
	Hold-up time	5ms at 115 Vac input
	Output current limit	<11.0A
Connector	C6 (3pin/with grounded, with Smart ID DC connector)	
Environmental Design	Operating temperature	32°F to 95°F (0°to 35°C)
	Non-operating (storage) temperature	-4°F 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	Eg:	
	*CE Mark - full compliance with LVD and EMC directives	
	* Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE.	
	* MTBF - over 200,000 hours at 25°C ambient condition.	
HP 65W Smart USB Type-C™ AC adapter	Dimensions	74x74x28.5mm
	Weight	245g +/- 10g
Output	Input Efficiency	81.5% min at 115 Vac/ 230Vac @ 5V/3A 86.7% min at 115 Vac/ 230Vac @ 9V/3A 88% min at 115 Vac/ 230Vac @ 10V/5A 88% min at 115 Vac/ 230Vac @ 12V/5A 89% min at 115 Vac/ 230Vac @ 15V/4.33A 89% min at 115 Vac/ 230Vac @ 20V/3.25A
	Input frequency range	47 ~ 63 Hz
	Input AC current	1.7 A at 90 VAC and maximum load
	Output power	65W
	DC output	5V/9V/10V/12V/15V/20V
	Hold-up time	5ms at 115 Vac input
Connector	Output current limit	<8.0A
	USB Type C	
Environmental Design	Operating temperature	32°Fto 95°F (0°to 35°C)
	Non-operating (storage) temperature	-4°Fto 185°F (-20°to 85°C)
	Altitude	0 to 16,400 ft (0 to 5000m)
	Humidity	5% to 95%
	Storage Humidity	5% to 95%



Technical Specifications

EMI and Safety Certifications

Eg:

*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 100,000 hours at 25°C ambient condition.

**HP Long Life 3 cell,
57 Wh Li-on polymer**

Dimensions (H x W x L)

6.3mm x 110.05mm x 259.8mm

Weight

250g

Cells/Type

3cell Lithium-Ion

Energy

Voltage

11.55V

Amp-hour capacity

4935mAh

Watt-hour Capacity

57Whr

Temperature

Operating (Charging)

32° to 113° F (0° to 45° C)

Operating (Discharging)

14° to 122° F (-10° to 60° C)

-4° to 122° F (-20° to 60° C)

Battery Re-Charge Time

Non-operating

**System in OFF mode or
Standby**

< 5 hours

System ON

Need system side power/EE confirm

Fuel Gauge LED

No

**Optional Travel Battery
Available**

N/A

ENVIRONMENTAL

TBD

COUNTRY OF ORIGIN

China



Options and Accessories (Sold separately and availability may vary by country.)

Category	Description	Part Number
Cases	HP Business Slim Top Load	H5M91AA
	HP Business Backpack	H5M90AA
Docking	HP USB-C Travel Dock	T0K29AA#xxx
	HP Elite Thunderbolt 3 Dock	P5Q54AA#xxx
	HP Hot Desk Stand	W3Z73AA
	HP Hot Desk Stand Monitor Arm	W3Z74AA
Input/Output	HP USB-C to RJ45	V7W66AA#xxx
	HP USB to Gigabit RJ45 Adapter	N7P47AA#xxx
	HP USB-C to VGA Adapter	N9K76AA
	HP USB-C to HDMI Adapter	N9K77AA
	HP USB-C to DisplayPort Adapter	N9K78AA
	HP Stereo 3.5mm Headset	T1A66AA
	HP Stereo USB Headset	T1A67AA
	HP Comfort Grip Wireless Mouse	H2L63AA
	HP Slim USB Keyboard and Mouse	T6T83AA
	HP Wireless (Link-5) Keyboard	T6U20AA
	HP USB Optical Travel mouse	G2K28AA
	HP 65W Smart AC Power Adapter (4.5mm)	H6Y89AA#xxx
Power		
Storage	HP External USB Optical Drive	F2B56AA
Security	HP Keyed Cable Lock 10mm	T1A62AA
	HP Dual Head Keyed Cable Lock	T1A64AA
UCC	HP Conferencing Keyboard	K8P74AA#xxx
	HP Speaker Phone	K7V16AA
	HP Wired Headset	K7V17AA
Displays	HP S270c 27" Curved Monitor	K1M38AA#ABA
	HP E230t 23" Touch Monitor	W2Z50AA#ABA



Date of change	Version History		Description of change

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