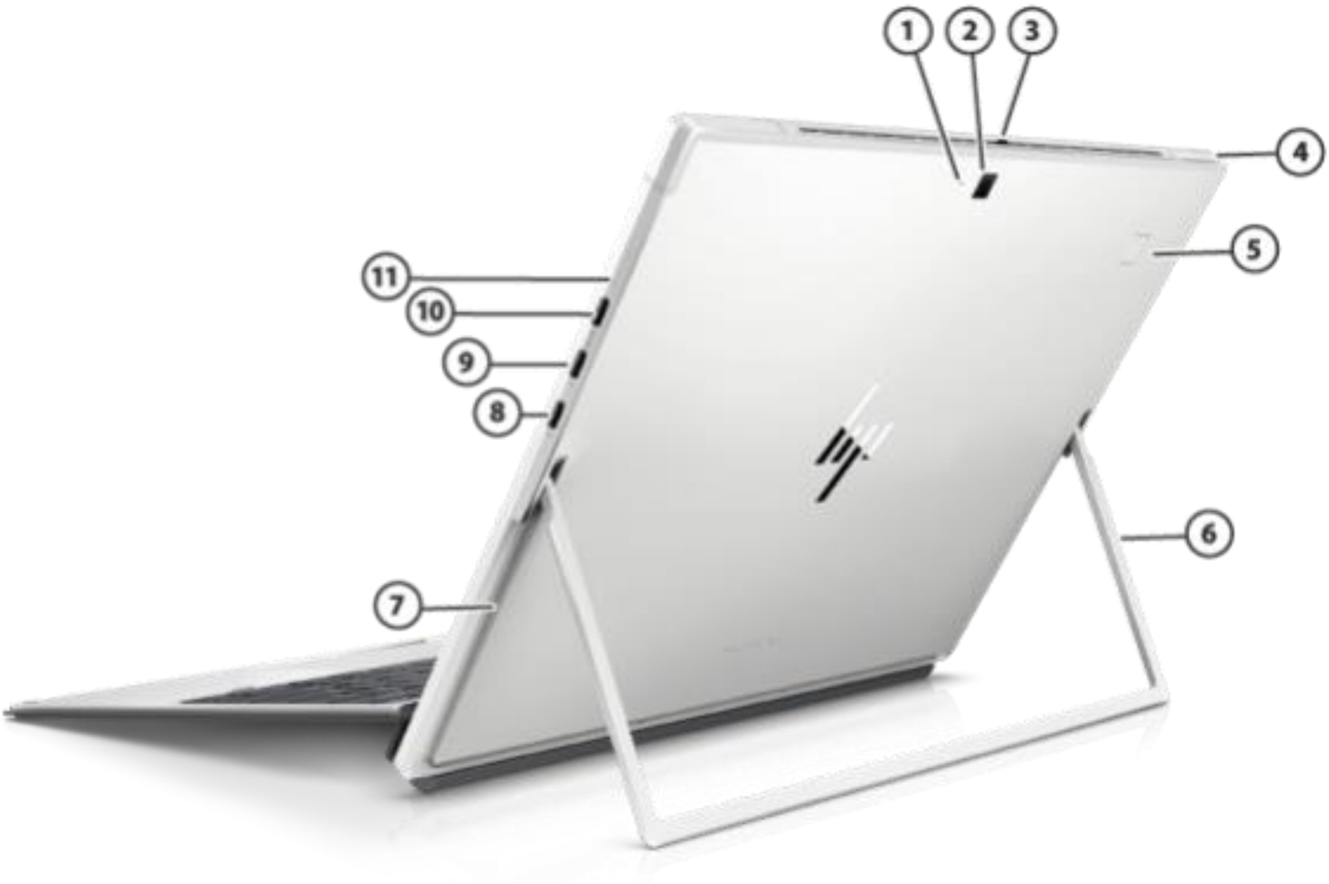
Overview

HP Elite x2 G8

Left

1.	Ambient Light Sensor	**7.**	Optional Premium Keyboard
2.	FHD Camera LED	**8.**	Glass Clickpad
3.	FHD and IR Cameras	**9.**	Nano Security Lock Slot (Lock Sold Separately.)
4.	IR Camera LED	**10.**	Volume Up/Volume Down
5.	Speakers	**11.**	Audio Combo Jack
6.	Magnetic Pen Attach Area		

Overview



Right

1. World-facing Microphone
2. Rear-Facing 8 MP Camera
3. Privacy Camera Shutter
4. Power Button
5. HP Fingerprint Sensor (select models)[36]
6. Kickstand
7. Nano SIM Card Slot (Available with WWAN configurations only)
8. Thunderbolt™ 4 with USB4™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4) [1]
9. Thunderbolt™ 4 with USB4™ Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4) [1]
10. SuperSpeed USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)
11. Charging LED

[1] SuperSpeed USB 20Gbps is not available with Thunderbolt™ 4.

Overview

AT A GLANCE

- Windows 11 Pro, other Windows OS or FreeDOS preinstalled
- Designed for professionals who desire freedom to work anywhere without compromising on productivity, security, or privacy
- HP Elite x2 G8 delivers PC productivity and enterprise-friendly features in a stunningly crafted and versatile detachable design
- Clean with select household cleaning wipes [1]
- Post-consumer recycled content used in display bezel, speaker enclosure, and battery frame
- Powered with 11th Gen Intel® Core™ i3, i5, i7 U-Series processors with optional vPro®, Thunderbolt™ 4, Intel® Iris® X^e Graphics
- Up to 2 TB PCIe NVMe SSD and up to 16 GB LPDDR4 dual channel memory
- Choice of displays (all touch-enabled with Corning® Gorilla® Glass 5):
  - 13" diagonal 3kx2k (3000 x 2000), IPS, 450 nits, 72% NTSC
  - 13" diagonal, WUXGA+ (1920 x 1280), IPS, 400 nits, 72% NTSC
  - 13" diagonal, WUXGA+ (1920 x 1280), IPS, 1000 nits, 72% NTSC with HP Sure View Integrated Privacy Screen Gen3
- Software applications that enhance productivity and take care of you including HP Quick Drop, HP Programmable Key, HP Easy Clean, and HP WorkWell
- Immersive collaboration experience with dual premium stereo speakers, DNN Noise Suppression, HP Dynamic Audio, HP Sound Calibration, Front-facing 2MP + IR and rear-facing 8 MP cameras
- Enterprise grade security and manageability features including TPM2.0, HP Sure Start self-healing BIOS, HP Client Security, Self-Encrypting storage drives, Dual HP Privacy Camera, optional HP Sure View Gen3, optional Fingerprint reader, HP Manageability Integration Kit and HP Image Assistant.
- Connectivity anywhere with Wi-Fi® 6, optional 4G LTE, built-in Tile, and USB-C® docking (dock sold separately)
- Undergoes MIL-STD 810H testing[2]
- Premium spill resistant, backlit keyboard with HP Programmable Key, Clickpad, and HP Durakey (optional).
- Battery life up to 11 hours
-

1. The chassis, ports, keyboards and displays the HP Chromebook x360 11 G4 EE, HP Chromebook x360 11MK G3 EE, HP Chromebook 11 G9 EE, HP Chromebook 11MK G9 EE, HP Chromebook 14 G7 and the HP ProBook x360 11 G7 EE have been tested to 1,000 wipes with Windex® Original Glass & Surface Wipes and Clorox® Disinfecting Wipes with EPA Registration Number 5813-79. See user guide for cleaning instructions.
2. MIL-STD 810H is not intended to demonstrate fitness of U.S. Department of Defense 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.
3. Windows 10 MM18 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.

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

Technical Specifications

PRODUCT NAME

HP Elite x2 G8

OPERATING SYSTEM

Preinstalled
Windows 11 Pro [2]
Windows 11 Pro Education [2]
Windows 11 Home – HP recommends Windows 11 Pro for business [2]
Windows 11 Home Single Language – HP recommends Windows 11 Pro for business [2]
Windows 11 Pro (Windows 11 Enterprise available with a Volume Licensing Agreement) [2]
Windows 10 Pro [1,2]
Windows 10 Pro Education [1,2]
Windows 10 Home – HP recommends Windows 11 Pro for business [1,2]
Windows 10 Home Single Language – HP recommends Windows 11 Pro for business [1,2]
Windows 10 Pro (Windows 10 Enterprise available with a Volume Licensing Agreement) [1,2]
FreeDOS

1. Device comes with Windows 10 and a free Windows 11 upgrade or may be preloaded with Windows 11. Upgrade timing may vary by device. Features and app availability may vary by region. Certain features require specific hardware (see Windows 11 Specifications).
2. 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 is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.

PROCESSORS

Intel® Core™ i7-1165G7 (up to 4.7 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 4 cores) [3,4 5,6]
Intel® Core™ i7-1185G7 (up to 4.8 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 4 cores), supports Intel® vPro® Technology [3,4 5,6]
Intel® Core™ i5-1135G7 (up to 4.2 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores) [3,4 5,6]
Intel® Core™ i5-1145G7 (up to 4.4 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores), supports Intel® vPro® Technology[3,4 5,6]
Intel® Core™ i3-1125G4 with Intel® UHD Graphics (up to 3.7 GHz with Intel® Turbo Boost Technology, 8 MB L3 cache, 4 cores) [3,4 5,6]

Processor Family
11th Generation Intel® Core™ i7 processor (i7- 1185G7, i7- 1165G7)[6]
11th Generation Intel® Core™ i5 processor (i5-1145G7, i5-1135G7) [6]
11th Generation Intel® Core™ i3 processor (i3-1125G4) [6]

3. 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.
4. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
5. Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See

Technical Specifications

http://www.intel.com/technology/turboboost for more information.

6. 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

GRAPHICS

Integrated
Intel® Iris® X^e Graphics[7]
Intel® UHD Graphics

Supports [8]
Support HD decode, DirectX12

7. Intel® Iris® X^e Graphics capabilities require system to be configured with Intel® Core™ i5 or i7 processors and dual channel memory. Intel® Iris® X^e Graphics with Intel® Core™ i5 or i7 processors and single channel memory will only function as UHD graphics.
8. FHD/HD content required to view FHD/HD images.

DISPLAY

Touch
33 cm (13") diagonal, 3Kx2K (3000 x 2000), touch, IPS, BrightView, Corning® Gorilla® Glass 5, 450 nits, 72% NTSC[8,9,10]
33 cm (13") diagonal, WUXGA+ (1920 x 1280), touch, IPS, BrightView, Corning® Gorilla® Glass 5, 400 nits, 72% NTSC [8,9,10]
33 cm (13") diagonal, WUXGA+ (1920 x 1280), touch, IPS, BrightView, Corning® Gorilla® Glass 5, 1000 nits, 72% NTSC, HP Sure View Integrated Privacy Screen Gen3[8,9,10,46]

8. FHD / HD content required to view HD images.
9. Actual brightness will be lower with touchscreen or Sure View.
10. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
46. HP Sure View G3 integrated privacy screen is an optional feature that must be configured at purchase and is designed to function in landscape orientation.

Technical Specifications

STORAGE AND DRIVES

Primary M.2 Storage
2 TB PCIe® NVMe™ TLC SSD[11]
1 TB PCIe® NVMe™ TLC SSD [11]
512 GB PCIe® NVMe™ TLC SSD [11]
256 GB PCIe® NVMe™ TLC SSD [11]
128 GB PCIe® NVMe™ TLC SSD [11]

512 GB PCIe® NVMe™ Value SSD [11]
256 GB PCIe® NVMe™ Value SSD [11]

512 GB PCIe® NVMe™ SED TLC SS [11]
256 GB PCIe® NVMe™ SED TLC SS [11]

512 GB Intel® PCIe® NVMe™ QLC SSD with 32 GB Intel® Optane™ memory H10[11,12,13]

11.For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10 and 11) is reserved for system recovery software.
12. Intel® Optane™ memory H10 only for Intel® PCIe® NVMe™ QLC M.2 SSD.
13. Intel® Optane™ memory system acceleration does not replace or increase the DRAM in your system. Requires 8th Gen or higher Intel® Core™ processor, BIOS version with Intel® Optane™ supported, Windows 10 64-bit, and an Intel® Rapid Storage Technology (Intel® RST) driver.

MEMORY

Maximum Memory
16 GB LPDDR4x-4266 SDRAM

Memory
16 GB LPDDR4x-4266 SDRAM (2 x 8 GB)
8 GB LPDDR4x-4266 SDRAM (2 x 4 GB)

Memory Slots[14]
Memory Soldered Down
Supports Dual Channel Memory
For Intel® Core™ i5 or i7 processors, system runs at 4266
For Intel® Core™ i3 processor, system runs at 3733

14. All slots are non-accessible / non-upgradeable.

Technical Specifications

NETWORKING/COMMUNICATIONS

WLAN
Intel® Wi-Fi 6 AX201 (2x2) and Bluetooth® 5 combo, vPro® [15,16]
Intel® Wi-Fi 6 AX201 (2x2) and Bluetooth® 5 combo, non-vPro® [15]

WWAN
Intel® XMM™ 7360 LTE-Advanced Cat 9[17]

Miracast
Compatible with Miracast-certified devices.[18]

15. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs..
16. For full Intel® vPro™ functionality, Windows, a vPro supported processor, vPro enabled chipset, vPro enabled WLAN card and discrete TPM 2.0 are required. See https://www.intel.com/content/www/us/en/architecture-and-technology/vpro/vproplatform-general.html
17. WWAN module is an optional feature, requires factory configuration 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.
18. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.

AUDIO/MULTIMEDIA

Audio
Audio by Bang & Olufsen
2 Premium stereo speakers (74dB)
Realtek ALC3292 Audio codec and 2 NXP TFA9894 discrete amplifiers
3 Integrated microphones including one world-facing

Speaker Power
1W/4Ohm

Camera
User-facing FHD + IR camera (front)[8]
World-facing 8MP camera (rear)
Both cameras have integrated privacy shutter

Sensors
Ambient light sensor
Hall sensor
Gyroscope
Magnetometer
Accelerometer

8. FHD/HD content required to view HD images.

Technical Specifications

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
HP Premium Keyboard, Backlit, Spill Resistant, HP Dura Keys

Pointing Device
Clickpad with multi-touch gesture support

Function Keys
F1 - Display Switching
F2 - Sure View On/Off (functionality works only when configured with an HP Sure View display)
F3 - Brightness Down
F4 - Brightness Up
F5 - Speaker Mute
F6 - Volume Down
F7 - Volume Up
F8 - Mic Mute
F9 - Backlit Toggle
F10 - Blank
F11 - Airplane Mode
F12 - HP Command Center (Programmable Key)
Num Lock
Insert
Print Screen
Delete

Hidden Function Keys
Fn+R - Break
Fn+S - Sys Rq
Fn+C - Scroll Lock
Fn+E - Insert
Fn+W - Pause

SOFTWARE AND SECURITY

Software
HP Connection Optimizer[19]
HP Hotkey Support
myHP
HP Support Assistant[20]
HP QuickDrop[21]
HP Noise Cancellation Software
Touchpoint Customizer for Commercial
HP Notifications
HP Privacy Settings
HP Wireless Button Driver
HP Power Manager
HP WorkWell
Tile App[22]
HP PC Hardware Diagnostics Windows
Microsoft Defender
Buy Microsoft Office (Sold separately)
HP Smart Support [46]

Manageability Features
HP Driver Packs (download)[23]
HP Manageability Integration Kit Gen4 (download)[24]
HP Client Catalog (download)
HP Client Management Script Library (download)
HP Image Assistant (download)

Security Management
HP Wolf Pro Security Edition[25]
HP Client Security Manager Gen7[26]
HP Sure Sense[27]
HP Sure Click[28]
HP Sure Run Gen4[29]
HP Sure Recover Gen4[30]
HP Sure Start Gen6[31]
HP Sure Admin[32]
HP Tamper Lock
HP BIOSphere Gen6[33]
BIOS Update via Network
HP Secure Erase[34]
Absolute Persistence Module[35]
HP Drive Lock & Automatic Drive Lock
TPM 2.0 Embedded Security Chip (Common Criteria EAL4+ Certified) (FIPS 140-2 Level 2 Certified)
HP Fingerprint Sensor (Select models)[36]

19. HP Connection Optimizer requires Windows 10.
20. HP Support Assistant internet access required.

Technical Specifications

21. HP Quick Drop requires Internet access and Windows 10 PC preinstalled with HP QuickDrop app and either an Android device (phone or tablet) running Android 7 or higher with the Android HP QuickDrop app, and /or an iOS device (phone or tablet) running iOS 12 or higher with the iOS HP QuickDrop app.
22. Tile requires Windows 10. Some features require optional subscription to Tile Premium. Ring feature not available on HP Elite G8 Laptops. Tile application for Windows 10 available for download from the Windows Store. Mobile phone app available for download from App Store and Google Play. Requires iOS 11 and greater or Android 6.0 and greater see https://support.thetileapp.com/hc/en-us/articles/200424778 for more information. HP Tile will function as long as the PC has battery power
23. HP Driver Packs not preinstalled, however available for download at http://www.hp.com/go/clientmanagement.
24. HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html.
25. HP Wolf Pro Security Edition (including HP Sure Click Pro and HP Sure Sense Pro) is available preloaded on select SKUs and, depending on the HP product purchased, includes a paid 1-year or 3-year license. The HP Wolf Pro Security Edition software is licensed under the license terms of the HP Wolf Security Software - End-User license Agreement (EULA) that can be found at: https://support.hp.com/us-en/document/ish_3875769-3873014-16 as that EULA is modified by the following: “7. Term. Unless otherwise terminated earlier pursuant to the terms contained in this EULA, the license for the HP Wolf Pro Security Edition (HP Sure Sense Pro and HP Sure Click Pro) is effective upon activation and will continue for either a twelve (12) month or thirty-six (36) month license term (“Initial Term”). At the end of the Initial Term you may either (a) purchase a renewal license for the HP Wolf Pro Security Edition from HP.com, HP Sales or an HP Channel Partner, or (b) continue using the standard versions of HP Sure Click and HP Sure Sense at no additional cost with no future software updates or HP Support.
26. HP Client Security Manager Gen7 requires Windows and is available on the select HP Elite and Pro PCs.
27. HP Sure Sense is available on select HP PCs and is not available with Windows10 Home.
28. HP Sure Click requires Windows 10. See https://bit.ly/2PrLT6A_SureClick for complete details.
29. HP Sure Run Gen4 is available on select HP PCs and requires Windows 10.
30. HP Sure Recover Gen4 is available on select HP PCs and requires Windows 10 and an open network connection. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data. Network based recovery using Wi-Fi is only available on PCs with Intel Wi-Fi Module
31. HP Sure Start Gen6 is available on select HP PCs and requires Windows 10.
32. HP Sure Admin requires Windows 10, HP BIOS, HP Manageability Integration Kit from http://www.hp.com/go/clientmanagement and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store.
33. HP BIOSphere Gen6 requires Windows 10 and is available on select HP Pro and Elite PCs. Features may vary depending on the platform and configurations.
34. HP Secure Erase for the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.
35. Absolute firmware module is shipped turned off and can only be activated with the purchase a license subscription and full activation of the software agent. License subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. Certain conditions apply. For full details visit: https://www.absolute.com/about/legal/agreements/absolute/.
36. HP Fingerprint sensor is an optional feature that must be configured at purchase.
46. HP Smart Support is available to commercial customers through your HP Service Representative and HP Factory Configuration Services; or it can be downloaded at: http://www.hp.com/smart-support. HP Smart Support automatically collects the telemetry necessary upon initial boot of the product to deliver device-level configuration data and health insights.

Technical Specifications

POWER

Power Supply
HP Smart 65 W USB Type-C slim adapter[37]
HP Smart 65 W USB Type-C standard adapter[37]

Power Cord
Premium 1m power cord
Conventional 1m power cord

Primary Battery
HP Long Life 2-cell, 47Wh polymer[38,39]
HP Fast Charging (50% in 30 minutes) with no impact to battery recharge longevity [40]

Battery Life
Up to 11 hours[47]

Battery Weight
0.190kg

37. Availability may vary by country.
38. Battery is internal and not replaceable by customer. Serviceable by warranty.
39. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors.
40. Recharges your battery up to 50% within 30 minutes when the system is off or in standby mode. Power adapter with a minimum capacity of 65 watts is required. After charging has reached 50% capacity, charging will return to normal. Charging time may vary +/-10% due to System tolerance.
47. Windows 10 MM18 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.

Technical Specifications

WEIGHTS & DIMENSIONS

Product Weight[41]
Tablet only: Starting at 1.83 lbs
Tablet + KB: Starting at 2.58 lbs

Tablet only: Starting at 0.82 kg
Tablet + KB: Starting at 1.17 kg

Product Dimensions (w x d x h)
Tablet only: 11.39 x 8.5 x 0.35 in
Tablet + KB: 11.39 x 8.74 x 0.56 in

Tablet only: 28.93 x 21.58 x 0.88 cm
Tablet + KB: 28.93 x 22.19 x 1.42 cm

41. Weight will vary by configuration. Does not include power adapter.

PORTS

2 Thunderbolt™ 4 with USB4 Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)[42]
1 SuperSpeed USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)
1 Headphone/microphone combo jack

42. SuperSpeed USB 20Gbps is not available with Thunderbolt™ 4.

Technical Specifications

SERVICE AND SUPPORT

1-year and 3-year limited warranties and 90-day software limited warranty options depending on country. Batteries have a default one-year limited warranty except for HP Long Life batteries which will follow the one or three year warranty of 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. [43]

[43] 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

SYSTEM UNIT

Regulatory Model Number: HSN-C11C	
Stand-Alone Power Requirements (AC Power)	
Nominal Operating Voltage	19 V
Discrete Graphics	N/A
Max Operating Power	UMA<65W
Temperature	
Operating	32° to 95° F (0° to 35° C)
Non-operating	41° to 95° F (5° to 35° C)
Relative Humidity	
Operating	10% to 90%, non-condensing
Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
Shock	
Operating	40 G, 2 ms, half-sine
Non-operating	200 G, 2 ms, half-sine
Random Vibration	
Operating	0.75 grms
Non-operating	1.50 grms
Altitude (unpressurized)	
Operating	-50 to 10,000 ft (-15.24 to 3,048 m)
Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)
Planned Industry Standard Certifications	
UL	Yes
CSA	Yes
FCC Compliance	Yes
ENERGY STAR®	ENERGY STAR® 8.0 [44]
EPEAT®	EPEAT® Gold in United States [45]
ICES	Yes
Australia /	Yes
NZ A-Tick Compliance	Yes
CCC	Yes
Japan VCCI Compliance	Yes
KC	Yes
BSMI	Yes
CE Marking Compliance	Yes
BNCI or BELUS	Yes
CIT	Yes
GOST	Yes
Saudi Arabian Compliance (ICCP)	Yes
SABS	Yes

44. Configurations of the HP Elite x2 G8 that are ENERGY STAR® qualified are identified as HP Elite x2 G8 ENERGY STAR on HP websites and on http://www.energystar.gov.
45. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit http://www.epeat.net for more information.

Technical Specifications

DISPLAYS

1. Actual brightness will be lower with touchscreen or Sure View.
Note: All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

13" diagonal WUXGA+ (1920 x 1280), Touch, IPS, BrightView, Corning® Gorilla® Glass 5, 400 nits, 72% NTSC	**Outline Dimensions (W x H x D)**	277.748 x 193.2 max. (w/ P-cover)
	Active Area	272.448 x 181.632
	Weight	200 g (max)
	Diagonal Size	13.0 in
	Thickness	2.0 (panel) /3.9 (panel + PCB) max.
	Interface	eDP 1.4
	Surface Treatment	BrightView
	Touch Enabled	Yes
	Contrast Ratio	1500:1
	Refresh Rate	60 Hz
	Brightness [1]	400 nits
	Pixel Resolution	1920 x 1280
	Format of LCD Pixel Arrangement	RGB
	Backlight	LED
	Color Gamut Coverage	100% sRGB
	Color Depth	8 bits
	Viewing Angle	85/85/85/85

13" diagonal 3kx2k (3000 x 2000), Touch, IPS, BrightView, Corning® Gorilla® Glass 5, 450 nits, 72% NTSC	**Outline Dimensions (W x H x D)**	279.3 x 193.0 mm (max.)
	Active Area	274.5 x 183 mm (max.)
	Weight	160 g (max.)
	Diagonal Size	13.0 in
	Thickness	1.8(panel side)/3.9(PCBA side) mm(max.)
	Interface	eDP 1.4a + PSR (4 lane) (MBO support)
	Surface Treatment	BrightView
	Touch Enabled	Yes
	Contrast Ratio	1800:1
	Refresh Rate	60Hz
	Brightness[1]	450 nits
	Pixel Resolution	3000 x 2000
	Format of LCD Pixel Arrangement	RGB
	Backlight	LED
	Color Gamut Coverage	
	Color Depth	8bits
	Viewing Angle	UWVA 85/85/85/85

Technical Specifications

13" diagonal WUXGA+ (1920 x 1280), Touch, IPS, BrightView, Corning® Gorilla® Glass 5, 1000 nits, 72% NTSC with HP Sure View Integrated Privacy Screen Gen3	**Outline Dimensions (W x H x D)**	277.748 x 193.2 mm (max)
	Active Area	272.448 x 181.632 mm
	Weight	190 g (max)
	Diagonal Size	13.0 in
	Thickness	3.9 mm (max)
	Interface	eDP 1.4 + PSR (4 lane)
	Surface Treatment	BrightView
	Touch Enabled	Yes
	Contrast Ratio	2000:1
	Refresh Rate	60 Hz
	Brightness[1]	1000 nits
	Pixel Resolution	1920 x 1280
	Format of LCD Pixel Arrangement	RGB
	Backlight	LED
	Color Gamut Coverage	100% sRGB
	Color Depth	8 bits
	Viewing Angle	UWVA 85/85/85/85

Technical Specifications

STORAGE

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10 and 11) is reserved for system recovery software.

128 GB PCIe® NVMe™ 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	PCIe NVMe Gen3X2
	Maximum Sequential Read	1300 ~ 2047 MB/s
	Maximum Sequential Write	630 ~ 800 MB/s
	Logical Blocks	250,069,680
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security; DIPM; TRIM; DEVSLP
1 TB PCIe® NVMe™ TLC	**Form Factor**	M.2 2280
	Capacity	1 TB
	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	3100 ~ 3500 MB/s
	Maximum Sequential Write	2700 ~ 3200 MB/s
	Logical Blocks	2,000,409,264
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security; TRIM; L1.2
256 GB PCIe® 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	2800 ~ 3500 MB/s
	Maximum Sequential Write	1400 ~ 2200 MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security; TRIM; L1.2

Technical Specifications

256 GB PCIe® NVMe™ Value	**Form Factor**	M.2 2280
	Capacity	256 GB
	NAND Type	Value
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3
	Maximum Sequential Read	2100 ~ 2200 MB/s
	Maximum Sequential Write	900 ~ 1400 MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security (optional); TRIM; L1.2
256 GB PCIe® NVMe™ SED 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	2800 ~ 3500 MB/s
	Maximum Sequential Write	1663 ~ 2200 MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security (option); TCG Opal 2.0; TRIM; L1.2
512 GB PCIe® NVMe™ TLC SSD	**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	3100 ~ 3500 MB/s
	Maximum Sequential Write	2400 ~ 2956 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
512 GB PCIe® NVMe™ Value	**Form Factor**	M.2 2280
	Capacity	512 GB
	NAND Type	Value

	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3
	Maximum Sequential Read	1500 ~ 3500 MB/s
	Maximum Sequential Write	1000 ~ 1600 MB/s
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security (optional); TRIM; L1.2
512 GB Intel® PCIe® NVMe™ QLC SSD with 32 GB Intel® Optane™ memory H10	**Form Factor**	M.2 2280
	Capacity	512 GB
	NAND Type	QLC+3D XPoint
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3X2X2
	Maximum Sequential Read	Up to 2400 MB/s
	Maximum Sequential Write	Up to 1300 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
512 GB PCIe® NVMe™ Self Encrypting Drive 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	3100 ~ 3500 MB/s
	Maximum Sequential Write	2400 ~ 2956 MB/s
	Logical Blocks	1,000,215,215
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security (option); TCG Opal 2.0; TRIM; L1.2

Technical Specifications

2 TB PCIe® NVMe™ TLC	**Form Factor**	M.2 2280
	Capacity	2 TB
	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 Gen3X2
	Maximum Sequential Read	2900 ~ 3500 MB/s
	Maximum Sequential Write	2100 ~ 2000 MB/s
	Logical Blocks	3,907,029,168
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security. TRIM; L1.2

Technical Specifications

NETWORKING

Intel® Wi-Fi 6[1] AX201 + Bluetooth® 5 (802.11ax 2x2, supporting gigabit data rate[5]) (vPro®)	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi certified
	Frequency Band	• 802.11b/g/n/ax 2.402 – 2.482 GHz • 802.11a/n/ac/ax 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	• 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, ,80MHz & 160MHz) • 802.11ax: MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz)
	Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
	Security[3]	• 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 • WPA3 certification • IEEE 802.11i • WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[2]	• 802.11b: +18.5dBm minimum • 802.11g: +17.5dBm minimum • 802.11a: +18.5dBm minimum • 802.11n HT20(2.4GHz): +15.5dBm minimum • 802.11n HT40(2.4GHz): +14.5dBm minimum • 802.11n HT20(5GHz): +15.5dBm minimum

	• 802.11n HT40(5GHz): +14.5dBm minimum • 802.11ac VHT80(5GHz): +11.5dBm minimum • 802.11ac VHT160(5GHz): +11.5dBm minimum • 802.11ax HT40(2.4GHz): +10dBm minimum • 802.11ax VHT160(5GHz): +10dBm minimum
Power Consumption	• Transmit mode:2.0 W • Receive mode:1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode: 50 mW (WLAN unassociated) • Connected Standby/Modern Standby: 10mW • Radio disabled: 8 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[4]	• 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 • 802.11ax, MCS11(HT40): -59dBm maximum • 802.11ax, MCS11(VHT160): -58.5dBm 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 with CNVi Interface
Dimensions	Type 1216: 1.67 x 12.0 x 16.0 mm
Weight	Type 126: 1.3g
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 OFF – Radio ON

HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1 Wireless Technology

Bluetooth Specification	4.0/4.1/4.2/5.0/5.1 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 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 + 9.5 dBm for BR and EDR.
Power Consumption	Peak (Tx): 330 mW Peak (Rx): 230 mW Selective Suspend: 17 mW
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 300 826 Low Voltage Directive IEC950 UL, 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

1. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs.
2. The FCC has declared as of September 1, 2014 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.
3. Check latest software/driver release for updates on supported security features.
4. 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).
5. Wi-Fi 6 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.

Technical Specifications

Intel® Wi-Fi 6[1] AX201 + Bluetooth® 5 (802.11ax 2x2, supporting gigabit data rate[5]) (non-vPro®)	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi certified
	Frequency Band	• 802.11b/g/n/ax 2.402 – 2.482 GHz • 802.11a/n/ac/ax 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	• 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, ,80MHz & 160MHz) • 802.11ax: MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz)
	Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
	Security[3]	• 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 • WPA3 certification • IEEE 802.11i • WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[2]	• 802.11b: +18.5dBm minimum • 802.11g: +17.5dBm minimum • 802.11a: +18.5dBm minimum • 802.11n HT20(2.4GHz): +15.5dBm minimum • 802.11n HT40(2.4GHz): +14.5dBm minimum • 802.11n HT20(5GHz): +15.5dBm minimum • 802.11n HT40(5GHz): +14.5dBm minimum • 802.11ac VHT80(5GHz): +11.5dBm minimum

	• 802.11ac VHT160(5GHz): +11.5dBm minimum • 802.11ax HT40(2.4GHz): +10dBm minimum • 802.11ax VHT160(5GHz): +10dBm minimum	
Power Consumption	• Transmit mode 2.0 W • Receive mode 1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode 50 mW (WLAN unassociated) • Connected Standby 10mW • Radio disabled 8 mW	
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity[4]	• 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 • 802.11ax, MCS11(HT40): -59dBm maximum • 802.11ax, MCS11(VHT160): -58.5dBm 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 with CNVi Interface	
Dimensions	Type 1216: 1.67 x 12.0 x 16.0 mm	
Weight	Type 126: 1.3g	
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 OFF – Radio ON	

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Bluetooth Specification	4.0/4.1/4.2/5.0 Compliant
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Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
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Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 9.5 dBm for BR and EDR.

Technical Specifications

Power Consumption	Peak (Tx): 330 mW Peak (Rx): 230 mW Selective Suspend: 17 mW
Bluetooth Software Supported Link Topology	Microsoft Windows Bluetooth Software
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 IEC950 UL, 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)

1. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs.
2. The FCC has declared as of September 1, 2014 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.
3. Check latest software/driver release for updates on supported security features.
4. 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).
5. Wi-Fi 6 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.

Technical Specifications

Intel® XMM™ 7360 LTE-Advanced[1]	**Technology/Operating bands**	FDD LTE: LTE: 2100 (Band 1), 1900 (Band 2), 1800 (Band 3), 1700 (Band 4), 850 (Band 5), 2600 (Band 7), 900 (Band 8), 1400 (Band 11), 700 (Band 12), 700 (Band 13) 700 (Band 17), 850 (Band 18), 850 (Band 19), 800 (Band 20), 1450 (Band 21), 850 (Band 26) 700 (Band 28) MHz, 700 (Band 29), 2300 (Band 30), 2100 (Band 66) MHz TDD LTE: 2600 (Band 38), 1900 (Band 39), 2300 (Band 40), 2500 (Band 41) MHz HSPA+: 2100 (Band 1), 1900 (Band 2), 1700 (Band 4), 850 (Band 5), 900 (Band 8) MHz
	Wireless protocol standards	3GPP Release 11 LTE Specification CAT.9, MAX 60MHz aggregation BW WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification
	GPS	Standalone, A-GPS (MS-B and LTO)
	GPS bands	GPS 1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz, Beidou 1561.098 ± 2.046 MHz
	Maximum data rates	LTE: 450 Mbps (DL 3CA), 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	6 g
	Dimensions (Length x Width x Thickness)	42 x 30 x 2.3 mm

1. WWAN module is an optional feature, requires factory configuration 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.

Technical Specifications

POWER

HP Smart 65 W USB Type-C slim adapter	**Dimensions**	88x53.5x21mm
	Weight	unit: 200g +/- 10g
	Input	
	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 @ 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	
	Output power	65W
	DC output	5V/9V/12V/15V/20V
	Hold-up time	5ms at 115 Vac input
	Output current limit	<8.0A
	Connector	
	Connector	USB Type C®
	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	5% to 95%
	Storage Humidity	5% to 95%
	EMI and Safety Certifications	*CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-1 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.

Technical Specifications

HP Smart 65 W USB Type-C standard adapter	**Dimensions**	90.0x51x28.5mm
	Weight	unit: 250g +/- 10g
	Input	
	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 @ 12V/5A 89% min at 115 Vac/ 230Vac @ 15V/4.33A 89% min at 115 Vac/ 230Vac @ 20V/3.25A
	Input frequency range	47 ~ 63Hz
	Input AC current	1.6 A at 90 VAC and maximum load
	Output	
	Output power	65W
	DC output	5V/9V/12V/15V/20V
	Hold-up time	5ms at 115 Vac input
	Output current limit	8.0A Max.
	Connector	USB Type-C®
	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	*CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-1 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.

Technical Specifications

HP Long Life 2-cell, 47 Wh[1] polymer	**Dimensions**	5.11 X 84.00 X 238.14 mm
	Weight	0.190 kg
	Cells/Type	2 cell Lithium-Ion Polymer cell / 4473A9
	Energy	ED700 platform
	Voltage	7.7V
	Amp-hour capacity	6.15Ah
	Watt-hour capacity	47 Wh
	Temperature	5° to 40° C
	Operating (Charging)	32° to 113° F (0° to 45° C)
	Operating (Discharging)	14° to 122° F (-10° to 60° C)
	Fuel Gauge LED	N/A
	Warranty	3-year
	Optional Travel Battery Available	No

1. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors

ENVIRONMENTAL DATA

Eco-Label Certifications & declarations	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks: • IT ECO declaration • US ENERGY STAR® • US Federal Energy Management Program (FEMP) • EPEAT® Gold registered in the United States. See http://www.epeat.net for registration status in your country. • TCO 8.0 • China Energy Conservation Program (CECP) • China State Environmental Protection Administration (SEPA) • Taiwan Green Mark • Korea Eco-label • Japan PC Green label*		
Sustainable Impact Specifications	• Ocean-bound plastic in (part(s)) • 30% post-consumer recycled plastic • External Power Supply 90% Efficiency • Low halogen • Outside Box and corrugated cushions are 100% sustainably sourced and recyclable • Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable • Bulk packaging available		
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 (Sort idle)	4.40 W	4.39 W	4.29 W
Normal Operation (Long idle)	0.58 W	0.63 W	0.59 W
Sleep	0.58 W	0.63 W	0.59 W
Off	0.36 W	0.38 W	0.35 W
	Note: Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.		

Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 50Hz**
Normal Operation (Short idle)	15 BTU/hr	15 BTU/hr	15 BTU/hr
Normal Operation (Long idle)	2 BTU/hr	2 BTU/hr	2 BTU/hr
Sleep	2 BTU/hr	2 BTU/hr	2 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 BTU/hr
	*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.		

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)
Typically Configured – Idle	2.7	16.3
Fixed Disk – Random writes	2.7	16.2
Optical Drive – Sequential reads	2.7	16.2

Longevity and Upgrading	This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the spare parts are available throughout the warranty period and or for up to "5" years after the end of production.
Additional Information	• This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. • This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. • This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). • This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see http://www.epeat.net • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product is 94.0% recycle-able when properly disposed of at end of life.

Packaging Materials	**External:**	PAPER/Corrugated	398 g
	Internal:	PLASTIC/polyester	9 g
		PAPER/Molded pulp	205 g
	The plastic packaging material contains at least 0% recycled content.		
	The corrugated paper packaging materials contains at least 99% recycled content.		
RoHS Compliance	HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our		

	products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam. We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products. We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve. To obtain a copy of the HP RoHS Compliance Statement, see HP RoHS position statement.
Material Usage	This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html): • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Bis(2-Ethylhexyl) phthalate (DEHP) • Benzyl butyl phthalate (BBP) • Dibutyl phthalate (DBP) • Diisobutyl phthalate (DIBP) • 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)
Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

Technical Specifications

End-of-life Management and Recycling	HP offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.
HP, Inc. Corporate Environmental Information	For more information about HP's commitment to the environment: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html 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 and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf
footnotes	• Percentage of ocean-bound plastic contained in each component varies by product • Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard. • External power supplies, WWAN modules, power cords, cables and peripherals excluded. • 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers. • Fiber cushions made from 100% recycled wood fiber and organic materials. • Plastic cushions are made from >90% recycled plastic.

FINGERPRINT READER

Model: Synaptics FS7605 area touch fingerprint sensor
Mobile Voltage Operation: 2.7V to 3.3V
Operating Temperature: 0-60°C
Current Consumption Image: 100mA
Low Latency Wait For Finger: 30uA
Capture Rate: 30 cm/sec
ESD Resistance: IEC 61000-4-2 4B (±15KV)
Detection Matrix: 200*1 (Plus another secondary line) / 508 dpi / 10mm sensor area
FRR (False Reject Rate) / FAR (False Acceptance Rate): FRR ~ 1% @ 1:50K FAR

COUNTRY OF ORIGIN

China

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

Category	Description	Part Number
Cases	HP Executive 14.1 Slim Top load	6KD04AA
	HP Executive 15.6 Top Load	6KD06AA
	HP Executive 15.6 Backpack	6KD07AA
Docking	HP USB-C Mini Dock	1PM64AA, 1PM64UT, 1PM64ET
	HP USB-C Travel Dock G2	7PJ38AA,7PJ38UT,7PJ38ET
Input/Output	HP Bluetooth Travel Bluetooth Mouse	6SP30AA,6SP30UT,6SP30ET
	HP Comfort Grip USB Wireless Mouse	H2L63AA, H2L63UT
	HP Presenter Bluetooth 4.2 Bluetooth Mouse	2CE30AA,2CE30UT,2CE30ET
	HP USB 320M Wired Mouse	9VA80AA,9VA80UT,9VA80ET
	HP USB Premium USB Mouse	1JR32AA#ABA,1JR32UT
	HP USB Premium Wireless Mouse	1JR31AA,1JR31UT
	HP USB Travel USB Mouse	G1K28AA, G1K28ET
	HP Wireless 2.4GHz X4000	H3T50AA, H3T50UT
	HP Multi-Device 635 Black Wireless Mouse	1D0K2AA
	HP Creator 935 Black Wireless Mouse	1D0K8AA
	HP WL USB Keyboard	T6U20AA, T6U20UT
	HP Slim Wireless Keyboard and Mouse	T6L04AA, T6L04UT
	HP Wireless USB Premium Keyboard	Z9N41AA, Z9N41AT
	HP 225 Wired Mouse and Keyboard Combo	286J4AA
	HP Wireless Rechargeable 950MK Mouse and Keyboard	3M165AA, 3M165UT
	HP 235 WL Mouse and Keyboard Combo	1Y4D0AA, 1Y4D0UT
	HP Wired Desktop 320MK Mouse and Keyboard	9SR36AA, 9SR36UT, 9SR36ET
	HP Wired Desktop 320K Keyboard	9SR37AA, 9SR37UT, 9SR37ET
	HP Wired Desktop 320M Mouse	9VA80AA, 9VA80UT, 9VA80ET
	HP 125 Wired Keyboard	266C9AA, 266C9UT, 266C9ET
	HP 225 Wired Mouse and Keyboard Combo	286J4AA, 286J4UT, 286J4ET
	HP Wired Mouse	265A9AA, 265A9UT, 265A9ET
	HP LSR Wired Mouse	265D9AA, 265D9UT, 265D9UT
	HP USB-C to HDMI 2.0 Adapter	2PC54AA,1WC36UT,1WC36AA
	HP USB-C to RJ45 Adapter	V8Y76AA, V7W66AA, V7W66UT
	HP USB-C to USB-A Adapter	N2Z63AA, N2Z63UT
	HP USB-C to VGA Adapter	P7Z54AA, N9K76AA, N9K76AA, N9K76UT
Power	HP 45W USB-C G2 AC Power Adapter	1HE07AA,1HE07UT
	HP 45W USB-C LC AC Power Adapter	1MZ01AA
	HP 65W USB-C AC Power Adapter	X7W50AA, 1HE08AA, 1HE08UT
	HP 65W USB-C Travel Slim AC Power Adapter	3PN48AA, 3PN48UT
	HP USB-C Essential Power Bank	3TB55AA,3TB55UT
Security	HP Nano Cable Lock	1AJ39AA,1AJ39UT
	HP SureKey Standard/Nano/Wedge Cable Lock	6UW42AA,6UW42UT

Summary of Changes

Date of change	**Version History**	**Update**	**Description of change:**
April 15, 2021	V1 to V2	Update	Battery Life
April 20, 2021	V2 to V3	Add	Environmental Data
May 6, 2021	V3 to V4	Add	HP S
May 24, 2021	V4 to V5	Update	Product Dimensions/System Unit
May 27, 2021	V5 to V6	Update	HP Pro Security Edition to HP Wolf Pro Security Edition
September 7, 2021	V6 to V7	Update	Networking and Power specs
November 11, 2021	V7 to V8	Update	Windows 10 with Free upgrade to Windows 11 when available in OS section and footnote.
December 13, 2021	V8 to V9	Update	OS footnotes and Wi-Fi 6 footnotes