Overview

HP Elite Folio 13.5 inch 2-in-1 Notebook PC

1. ALS sensor
2. IR LEDs
3. Web cam
4. Privacy camera shutter
5. Web cam LED

Left

6. Clickpad
7. Side-facing speaker
8. Top-facing speaker
9. SuperSpeed USB Type-C® 5 Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)

Overview

Right

1. Power Button
2. Top-facing speaker
3. Side-facing speaker

Overview

1. Audio jack
2. SuperSpeed USB Type-C® 5 Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)

1. Nano SIM Card Slot

Overview

AT A GLANCE

- Windows 11 Pro, or other Windows OS preinstalled
- Designed for seamless work and life in a fluid new form factor featuring vegan leather and recycled magnesium
- Powered by a Qualcomm® Snapdragon™ processor
- Featuring all-day battery life
- The new HP Elite Slim Active Pen has a dedicated storage garage above the keyboard where it is constantly charging and ready whenever you are
- Choice of displays with up to an incredible 88.3% screen-to-body ratio:
  - 13.5" diagonal, 3:2 WUXGA+, 400 nits, ALS
  - 13.5" diagonal, 3:2 WUXGA+ Sure View Reflect, 1000 nits, ALS
- Supports fast charging (90% in 90 minutes)
- Weight starting at 2.92 lb (1.32 kg)
- Height starting at 16.1 mm
- Wi-Fi® 6 offered as default with up to 5G WWAN with 4x4 antennas and built-in optional eSIM
- Designed for the modern IT citizen with Microsoft 365, Mobile Device Manageability (MDM) tools, modern and cloud-based applications and Windows Autopilot deployment
- Control your privacy with a mechanical shutter via the HP Privacy Camera on the user-facing webcam with hybrid IR capabilities
- Fast forward, rewind and play with the tap of a button thanks to the new media function keys on the quiet, sleek keyboard alongside a full-size clickpad
- Four top- and side-facing speakers with audio by Bang & Olufsen speakers provide extreme clarity
- Undergoes MIL-STD 810H tests[1]
- Standard commercial 1year limited warranty with extended service available with optional HP Care Packs

1. 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.

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

Technical Specifications

PRODUCT NAME

HP Elite Folio 13.5 inch 2-in-1 Notebook PC

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 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]

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

Qualcomm® Snapdragon™ 8cx Gen 2 with Adreno™ 690 Graphics (up to 3.0 GHz burst frequency, 4 MB L3 cache, 8 cores, 8 threads) [3,4,5]

Processor Family
Qualcomm® Snapdragon™ processor

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. Qualcomm's numbering, branding and/or naming is not a measurement of clock speed.
4. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
5. Burst clock frequency performance varies depending on hardware, software and overall system configuration.

CHIPSET

Chipset is integrated with processor

GRAPHICS

Integrated
Qualcomm® Adreno™ 690 Graphics

Technical Specifications

DISPLAY

Touch
34.3 cm (13.5") diagonal, WUXGA+ (1920 x 1280), touch, IPS, BrightView, Corning® Gorilla® Glass 5, 400 nits, 100% sRGB, ALS, HD IR Hybrid camera [6,7,8,9]
34.3 cm (13.5") diagonal, WUXGA+ (1920 x 1280), touch, IPS, BrightView Corning® Gorilla® Glass 5, 1000 nits, 100% sRGB, HP Sure View Reflect integrated privacy screen, ALS, HD IR Hybrid camera [6,7,8,9,10]

DisplayPort™ 1.4 PHY compliance
Supports up to 2 external displays in addition to native display: One max 4K (3840 x 2160) resolution at 30Hz, second max WQXGA (2560 x 1440) resolution at 60Hz

Displays support
Supports dual display through the dock[11]

6. HD content required to view HD images.
7. Sold separately or as an optional feature.
8. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
9. Actual brightness will be lower with touchscreen or Sure View.
10. HP Sure View is optional and must be configured at purchase.
11. HDR monitors are not supported

STORAGE AND DRIVES

Primary M.2 Storage
128 GB PCIe® NVMe™ SS TLC SSD [12]
256 GB PCIe® Gen3x4 NVMe™ SS TLC SSD [12]
512 GB PCIe® Gen3x4 NVMe™ SS TLC SSD [12]

12. 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.

MEMORY

Maximum Memory
16 GB LPDDR4X-4266 SDRAM (2 x 8 GB) [13]

Memory
16 GB LPDDR4X-4266 SDRAM (2 x 8 GB) [13]
8 GB LPDDR4X-4266 SDRAM (2 x 4 GB) [13]

Memory Slots
Memory soldered down
LPDDR4X, system runs at 2133
Supports Dual Channel Memory [31]

13. All slots are non-accessible / non-upgradeable.
31. Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

Technical Specifications

NETWORKING/COMMUNICATIONS

WLAN
Qualcomm® Wi-Fi CERTIFIED 6™ QCA6390 (2x2) and Bluetooth® 5.1 combo[14]

WWAN
Qualcomm® Snapdragon™ X20 LTE modem[15]
Qualcomm® Snapdragon™ X55 5G modem-RF system [16]

Miracast
Native Miracast Support[17]

14. 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.
15. 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.
16. 5G module is an optional feature that must be configured at purchase. AT&T and T-Mobile networks supported in the U.S. Module designed for 5G networks as carriers deploy Evolved-Universal Terrestrial Radio Access New Radio Dual Connectivity (ENDC) with both 100Mhz of 5G NR and LTE channel bandwidth, using 256QAM 4x4 as defined by 3GPP, requires activation and separately purchased service contract. Check with service provider for coverage and availability in your area. Connection, upload and download speeds will vary due to network, location, environment, network conditions, and other factors. 5G not available on all products, in all regions. Backwards compatible to 4G LTE and 3G HSPA technologies. 5G module planned to be available in select countries, where carrier supported.
17. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.

AUDIO/MULTIMEDIA

Audio
HP Bang & Olufsen Audio
Microphones (Multi Array with 2x mics front facing)
Premium stereo speakers (4x)[18]

Webcam
User facing HD hybrid IR camera [19]

18. Auto audio switching is not supported.
19. HD content required to view HD images.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
HP Quiet Keyboard, Backlit, Spill-resistant, with HP Dura Keys

Pointing Device
Glass Clickpad with Microsoft Precision Touchpad Default Gestures Support

Function Keys
F1 - Display switching
F2 - Blank or Sure View
F3 - Brightness down
F4 - Brightness up
F5 - Audio mute
F6 - Volume down

Technical Specifications

F7 - Volume up
F8 - Backward (Media control)
F9 - Play/Stop (Media control)
F10 - Forward (Media control)
F11 - Keyboard backlight
F12 - Airplane mode

Hidden Function Keys
Fn+R= Break
Fn+S= Sys Rq
Fn+W= Pause

SOFTWARE AND SECURITY

Software
HP QuickDrop [20]
HP PC Hardware Diagnostics UEFI - ARM
ENERGY STAR® UWP
Bing Search for IE11
IE Home
Wacom Pen app
WW-BTB Host End Block
Buy Microsoft Office (Sold separately)

20. 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.

Technical Specifications

POWER

Power Supply
HP Smart 65 W USB Type-C slim adapter [21]

Primary Battery
HP Long Life 4-cell, 46 Wh Li-ion polymer [22,23]
HP Fast Charge Technology (Up to 90% in 90 mins) [24]

Power Cord
C5 Sticker, Premium 1.0m

Battery Life
Up to 25 hours and 45 minutes[25]

Battery Weight
0.48 lb
218 g

21. Availability may vary by country.
22. Battery is internal and not replaceable by customer. Serviceable by warranty.
23. 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.
24. Recharges the battery up to 90% within 90 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 90% capacity, charging will return to normal. Charging time may vary +/-10% due to System tolerance.
25. Battery life tested by HP using continuous FHD video playback, 1080p (1920x1080) resolution, 150 nits brightness, system audio level at 16%, player audio level at 100%, played full-screen from local storage, headphone attached, wireless on but not connected. Actual battery life will vary depending on configuration and maximum capacity will naturally decrease with time and usage.

WEIGHTS & DIMENSIONS

Product Weight
Starting at 2.92 lb [26]
Starting at 1.32 kg [26]

Product Dimensions (w x d x h)
11.75 x 9.03 x 0.63 in
29.86 x 22.96 x 1.61 cm

26. Weight will vary by configuration.

Technical Specifications

PORTS/SLOTS

Ports

2 SuperSpeed USB Type-C® 5 Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)
Nano SIM Slot (Push push, available on configurations with WWAN only) [27]
3.5mm audio jack (Mic combo)

27. All units have a SIM card slot and icon but units that do not support WWAN are shipped with a non-removable SIM slot plug.

SERVICE AND SUPPORT

HP Services offers 1-year limited warranties and 90-day software limited warranty options depending on country. Batteries have a default one-year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as the platform. 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. [28]

28. 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

Stand-Alone Power Requirements (AC Power)	**Integrated graphics**	Yes
	Discrete Graphics	N/A
	Max Operating Power	<65W
Temperature	**Operating**	32° to 95° F (0° to 35° C) (not writing optical)
	Non-operating	41° to 95° F (5° to 35° C) (writing optical)
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**	40G, 2ms, half sine wave
	Non-operating	240G, 2ms, half sine wave
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	N/A
	ENERGY STAR®	Yes [29]
	EPEAT	Yes [30]
	ICES	N/A
	Australia	Yes
	NZ A-Tick Compliance	Yes
	CCC	Yes
	Japan VCCI Compliance	Yes
	KC	N/A
	BSMI	N/A
	CE Marking Compliance	Yes
	BNCI or BELUS	N/A
	CIT	N/A
	GOST	N/A
	Saudi Arabian Compliance (ICCP)	N/A
	SABS	N/A

29. Configurations of the HP Elite Folio 13.5 inch 2-in-1 Notebook PCthat are ENERGY STAR® qualified are identified as HP Elite Folio 13.5 inch 2-in-1 Notebook PC ENERGY STAR on HP websites and on http://www.energystar.gov.
30. 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

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

1. Actual brightness will be lower with touchscreen or Sure View.

Panel LCD 13.5-in WUXGA+ (1920 x 1280) BrightView WLED UWVA sRGB 100% cg 400nits eDP 1.4+PSR2 ultra slim NB2Z	**Outline Dimensions (W x H x D)**	291.20 x 200.0 x 2.05 (panel) (mm) max
	Active Area	284.8896 x 189.9264 (mm)
	Weight	187 g max.
	Diagonal Size	13.5 inch
	Thickness	3.85 (Panel + PCB) (mm) max.
	Interface	eDP 1.4
	Surface Treatment	Bright-View (BV)
	Touch Enabled	No
	Contrast Ratio	1500:1 (typical)
	Refresh Rate	60Hz
	Brightness	400 nit typical (Panel Only)*
	Pixel Resolution	1920 x 1280 (WUXGA+)
	Format of LCD Pixel Arrangement	RGB
	Backlight	LED
	Color Gamut Coverage	100% sRGB
	Color Depth	8 bits
	Viewing Angle	UWVA 85/85/85/85
LCD 13.5 in WUXGA+ BrightView UWVA sRGB 100 1000 eDP 1.4+PSR PrivacyG4 NB2Y bent Panel	**Outline Dimensions (W x H x D)**	290.19 x 199.97 max.
	Active Area	284.89 x 189.93 typ.
	Weight	225 g max.
	Diagonal Size	13.5 inch
	Thickness	2.2mm / 3.9mm max. (PCB)
	Interface	eDP
	Surface Treatment	BrightView (BV)
	Touch Enabled	No
	Contrast Ratio	1500:1
	Refresh Rate	60 Hz
	Brightness [1]	1000 nits
	Pixel Resolution	1920 x 1080 (FHD)
	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

NETWORKING/COMMUNICATIONS

Qualcomm® Wi-Fi CERTIFIED 6™ QCA6390 (2x2) and Bluetooth® 5.1 combo (802.11ax 2x2, supporting gigabit data rate)[1,2]	**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	Features Wi-Fi 6 technology
	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 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 WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[4]	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

Technical Specifications

	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[5]	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	SiP Module
Dimensions	1.1 x 8.75 x 7.0 mm
Weight	0.19g
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

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)
Signaling DATA RATE	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

Technical Specifications

	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	Microsoft Windows Bluetooth Software
Supported 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 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	A/V Remote Control Profile Advanced Audio Distribution Profile Dial Up Networking Profile Generic A/V Distribution Profile Generic Access Profile Generic Attribute Profile Hands-Free Profile Hard Copy Replacement Profile 1.2 HID over GATT Profile Object Push Profile Personal Area Network Profile Scan Parameters Profile Serial Port Profile

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. 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
3. Check latest software/driver release for updates on supported security features.
4. 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.
5. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

Technical Specifications

Qualcomm® Snapdragon™ X20 LTE modem[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), 700 (Band 12), 700 (Band 13), 700 (B14) MHz, 700 (Band 17), 850 (Band 18), 850 (Band 19), 800 (Band 20), 1900 (B25) MHz, 850 (Band 26), 700 (Band 28) MHz, 700 (Band 29), 2300 (Band 30), 1400 (B32) MHz, 2100 (Band 66) MHz TDD LTE: 2600 (Band 38), 1900 (Band 39), 2400 (Band 40), 2500 (Band 41) MHz, 3500 (Band 42), 3700 (Band 43) MHz, 5000 (B46) MHz HSPA+: 2100 (Band 1), 1900 (Band 2), 1700 (Band 4), 850 (Band 5), 900 (Band 8) MHz
	Wireless protocol standards	3GPP Release 12 LTE Specification DL-CAT.16, DL 100MHz BW throughput up to 978Mbps; UL-CAT.13 40MHz throughput up to 150Mbps 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: 978 Mbps (Download), 150 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)	Transmit mode2.0 W 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

Qualcomm® Snapdragon™ X55 5G modem-RF system[1]	**Technology/Operating bands**	WCDMA/HSDPA/HSUPA/HSPA+ operating bands: Band 1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL) Band 2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL) Band 4: 1710 to 1755 MHz (UL), 2110 to 2155 MHz (DL) Band 5: 824 to 849 MHz (UL), 869 to 894 MHz (DL) Band 6: 830 to 840 MHz (UL), 875 to 885 MHz (DL) Band 8: 880 to 915 MHz (UL), 925 to 960 MHz (DL) Band 9: 1750 to 1785 MHz (UL), 1845to 1880 MHz (DL) Band 19: 830 to 845 MHz (UL), 875 to 890 MHz (DL) LTE FDD/TDD operating bands: Band 1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL) Band 2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL) Band 3: 1710 to 1785 MHz (UL), 1805 to 1880 MHz (DL) Band 4: 1710 to 1755 MHz (UL), 2110 to 2155 MHz (DL) Band 5: 824 to 849 MHz (UL), 869 to 894 MHz (DL) Band 7: 2500 to 2570 MHz (UL), 2620 to 2690 MHz (DL) Band 8: 880 to 915 MHz (UL), 925 to 960 MHz (DL) Band 12: 699 to 716 MHz (UL), 729 to 746 MHz (DL) Band 13: 777 to 787 MHz (UL), 746 to 756 MHz (DL) Band 14: 788 to 798 MHz (UL), 758 to 768 MHz (DL) Band 17: 704 to 716 MHz (UL), 734 to 746 MHz (DL) Band 18: 815 to 830 MHz (UL), 860 to 875 MHz (DL) Band 19: 830 to 845 MHz (UL), 875 to 890 MHz (DL) Band 20: 832 to 862 MHz (UL), 791 to 821 MHz (DL) Band 25: 1850 to 1915 MHz (UL), 1930 to 1995 MHz (DL) Band 26: 814 to 849 MHz (UL), 859 to 894 MHz (DL) Band 28: 703 to 748 MHz (UL), 758 to 803 MHz (DL) Band 29: 717 to 728 MHz (DL) Band 30: 2305 to 2315 MHz (UL) 2350 to 2360 MHz (DL) Band 34: 2010 to 2025 MHz (UL/DL) Band 38: 2570 to 2620 MHz (UL/DL) Band 39: 1880 to 1920 MHz (UL/DL) Band 40: 2300 to 2400 MHz (UL/DL) Band 41: 2496 to 2690 MHz (UL/DL) Band 42: 3400 to 3600 MHZ (UL/DL) Band 46: 5150 to 5925 MHZ (DL) Band 48: 3550 to 3700 MHZ (UL/DL) Band 66: 1710 to 1800 MHz (UL), 2110 to 2200 MHz (DL) 5GNR Sub 6GHZ n1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL) n2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL) n3: 1710 to 1785 MHz (UL), 1805 to 1880 MHz (DL) n5: 824 to 849 MHz (UL), 869 to 894 MHz (DL) n7: 2500 to 2570 MHz (UL), 2620 to 2690 MHz (DL) n8: 880 to 915 MHz (UL), 925 to 960 MHz (DL) n12: 699 to 716 MHz (UL), 729 to 746 MHz (DL) n20: 832 to 862 MHz (UL), 791 to 821 MHz (DL) n28: 703 to 748 MHz (UL), 758 to 803 MHz (DL) n41: 2496 to 2690 MHz (UL/DL) n66: 1710 to 1800 MHz (UL), 2110 to 2200 MHz (DL) n71: 663 to 698 MHz (UL), 617 to 652 MHz (DL) n77: 3300 to 4200 MHz (UL/DL) n78: 3300 to 3800 MHz (UL/DL) n79: 4400 to 5000 MHz (UL/DL)
	Wireless protocol standards	5GNR Air Interface l 3GPP Rel15 5G NR sub-6 LTE Rel14

Technical Specifications

	20 layers and 2 Gbps downlink (DL) throughput – 4 × 4 MIMO across 5x CA 200 Mbps uplink (UL) throughput – 40 MHz ULCA and 256 QAM WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification
GPS	Standalone, A-GPS (MS-A, MS-B)
GPS bands	GPS: L1 (1575.42MHz) GLONASS: L1 (1602MHz) BeidouB1(1561.098MHz) Galileo E1 (1575.42)
Maximum data rates	5G sub 6G: 3.8 Gbps LTE: ue-CategoryDL 20, (DL: 2 Gbps) ue-CategoryUL 18, (UL: 200 Mbps) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload)
Maximum output power	LTE: 23 dBm in all band except B41 LTE B41 HPUE = 26dBm HSPA+: 23.5 dBm
Maximum power consumption	5G Sub 6: 2500 mA LTE: 1,300 mA (peak); 1100 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average)
Form Factor	M.2, 3042-S3 Key B
Weight	8 g
Dimensions (Length x Width x Thickness)	42 mm × 30 mm × 2.6 mm

1. 5G module is an optional feature that must be configured at purchase. AT&T and T-Mobile networks supported in the U.S. Module designed for 5G networks as carriers deploy Evolved-Universal Terrestrial Radio Access New Radio Dual Connectivity (ENDC) with both 100Mhz of 5G NR and LTE channel bandwidth, using 256QAM 4x4 as defined by 3GPP, requires activation and separately purchased service contract. Check with service provider for coverage and availability in your area. Connection, upload and download speeds will vary due to network, location, environment, network conditions, and other factors. 5G not available on all products, in all regions. Backwards compatible to 4G LTE and 3G HSPA technologies. 5G module planned to be available in select countries, where carrier supported.

Technical Specifications

STORAGE[1]

1. 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.

SSD 256GB 2280 M2 PCIe-3x4 SS NVMe TLC	**Form Factor**	M.2 2280
	Capacity	256 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	2800 ~ 3500 MB/s
	Maximum Sequential Write	1400 ~ 2200 MB/s
	Logical Blocks	500118192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	ATA Security; TRIM; L1.2

SSD 512GB 2280 M2 PCIe-3x4 SS NVMe TLC	**Form Factor**	M.2 2280
	Capacity	512 GB
	NAND Type	TLC
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.02 lb (10 g)
	Interface	PCIe NVMe Gen3X4
	Maximum Sequential Read	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

Technical Specifications

SSD 128GB 2280 PCIe-3x2 Three Layer Cell	**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
	Maximum Sequential Read	1400 ~ 2100 MB/s
	Maximum Sequential Write	800 ~ 1200 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

Technical Specifications

POWER

HP AC Adapter 65 Watt nPFC Slim USB Type-C Straight 1.0m	**Dimensions**	88x53.5x21mm	
	Weight	unit: 220g +/- 10g	
	Input	100 to 240 VAC	
		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	**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	Eg: *CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1, EN60950-1 and/or EN62368-1, UL60950-1 and/or UL62368-1, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.	

Technical Specifications

MA 4-cell Long Life Li-Ion (46 Wh)	**Dimensions**	3.25 x 127.2 x 260.9 mm
	Weight	218 g
	Cells/Type	4cell Lithium-Ion Polymer cell / 2662C0
	Voltage	7.7V
	Amp-hour capacity	6.0AH (min)/ 6.18AH (typical)
	Watt-hour capacity	46Wh [1]
	Operating (Charging)	0~45°C
	Operating (Discharging)	0~45°C
	Fuel Gauge LED	N/A
	Warranty	3 years
	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.

Technical Specifications

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))[1] • 14.55% post-consumer recycled plastic[2] • External Power Supply 90% Efficiency • Low halogen[3] • Outside Box and corrugated cushions are 100% sustainably sourced and recyclable[4] • Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable[5] • Recycled Plastic cushions[6] • Bulk packaging available 1. Percentage of ocean-bound plastic contained in each component varies by product 2. Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard. 3. External power supplies, WWAN modules, power cords, cables and peripherals excluded. 4. 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers. 5. Fiber cushions made from 100% recycled wood fiber and organic materials. 6. Plastic cushions are made from >90% recycled plastic.		
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)	4.02 W	4.27 W	4.15 W
Normal Operation (Long idle)	1.39 W	1.47 W	1.39 W
Sleep	1.39 W	1.47 W	1.39 W
Off	0.19 W	0.22 W	0.18 W
	Note:		

Technical Specifications

	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 Dissipatio*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 50Hz**
Normal Operation (Short idle)	13 BTU/hr	13 BTU/hr	13 BTU/hr
Normal Operation (Long idle)	4 BTU/hr	5 BTU/hr	4 BTU/hr
Sleep	4 BTU/hr	5 BTU/hr	4 BTU/hr
Off	1 BTU/hr	1 BTU/hr	1 BTU/hr
	*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.		

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)
Typically Configured – Idle	2.6	14.3
Fixed Disk – Random writes	2.6	14.2
Optical Drive – Sequential reads	2.6	14.3

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 14.55% recycle-able when properly disposed of at end of life.

Packaging Materials	**External:**	PAPER/Corrugated	288 g
		PAPER/corrugated	
	Internal:	PAPER/Molded pulp	240 g
		PLASTIC/Polyethylene low density	5 g
		PAPER/paper	19 g
		PAPER/paper	4 g
		PLASTIC/polyester	8 g

Technical Specifications

		PLASTIC/polypropylene	3 g
	The plastic packaging material contains at least 49% recycled content.		
	The corrugated paper packaging materials contains at least 49% 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)		

Technical Specifications

Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
End-of-life Management and Recycling	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

COUNTRY OF ORIGIN

China

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

Type	Description	Part #
Cases	HP Executive 14.1 Slim Top load	6KD04AA
	HP Executive 15.6 Top Load	6KD06AA
	HP Executive 15.6 Backpack	6KD07AA
	HP 14” Recycled Top Load	7ZE83AA
	HP Prelude Pro Recycle Backpack	1X644AA
	HP Prelude Pro Recycle Top Load	1X645AA
Docking	HP USB Type-C® Dock G5	5TW10AA
Input/Output	HP Elite Presenter Mouse	2CE30AA
	HP Premium Travel Mouse	1D0K2AA
	HP Premium Comfort Mouse	1D0K8AA
	USB-C USB 3.0	N2Z63AA#xxx
	USB-C to RJ45	V7W66AA
Power	HP Essential Power Bank	3TB55AA
	HP 65W USB-C Auto Adapter	5TQ76aquíAA

Summary of Changes

Date of change:	Version History:		Description of change:
February 17, 2021	V1 to V2	Update	Environmental Data Update
May 25, 2021	V2 to V3	Update	Processor section
July 16, 2021	V3 to V4	Update	Battery Life section and Footnote
September 2, 2021	V4 to V5	Update	Wireless WWAN, WLAN and specs in Networking section, Adapter data
September 8, 2021	V5 to V6	Update	Display Port™ 1.4 PHY compliance
November 11, 2021	V6 to V7	Update	Windows 10 with Free upgrade to Windows 11 when available in OS section and footnote.
December 13, 2021	V7 to V8	Update	OS footnote and Wi-Fi 6 footnotes