Overview

HP EliteBook Ultra G1q 14 inch Notebook AI PC



Front

1. IR LED
2. Internal Microphone (2)
3. IR Camera
4. Webcam
5. Webcam LED
6. Camera Shutter
7. Touchpad

Overview



Sides

1. USB4 with USB Type-C® 40Gbps signaling rate
2. USB Type-C® 10Gbps signaling rate
3. Headphone/microphone combo jack
4. USB-A 3.2 Gen2 (support charging)

Technical Specifications

PRODUCT NAME

HP EliteBook Ultra G1q 14 inch Notebook AI PC

OPERATING SYSTEMS

Preinstalled

Windows® 11 Pro[1]
Windows® 11 Home - HP recommends Windows 11 Pro for business

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 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

Processor [2,3,4]	Cores	L3 Cache	Max boast Frequency [4]	Base Frequency	NPU [5] (Qualcomm Snapdragon X Elite)
Qualcomm Snapdragon Snapdragon® X Elite X1E-78-100 processor	12 cores	8MB	3.40 GHz	3.40 GHz	Up to 45 TOPs

Processor Family

Qualcomm® Snapdragon™ processor

2. Multi-Core 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 Is not a measurement of clock speed.
3. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
4. Max Boost clock frequency performance varies depending on hardware, software and overall system configuration.
5. Features and software that require a NPU may require software purchase, subscription or enablement by a software or platform provider, and third party software may have specific configuration or compatibility requirements. Potential NPU inferencing performance varies by use, configuration, and other factors.

Technical Specifications

GRAPHICS

Supports
Qualcomm® Adreno™ Graphics

DISPLAY

Touch
14.0 in 2.2K (2240 x 1400) Bright View UWVA WLED+LBL sRGB 100 300 DBTSP eDP 1.4+PSR2 Low-Power flat VAZ LCD Panel [6,7,8]

4.0 in 2.2K (2240 x 1400) Bright View UWVA WLED+LBL sRGB 100 400 DBTSP eDP 1.4+PSR2 Low-Power flat VAZ LCD Panel [6,7,8]

Display Size (diagonal)
35.6 cm (14.0")

Screen to Body Ratio
87.81%

Aspect Ratio
16:10

6 HD content required to view HD images.
7. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
8. Actual brightness will be lower with touchscreen

Technical Specifications

DOCKING (Sold Separately)

Docking station model #1	HP USB-C Dock G5
Total number of supported displays (incl.the notebook display)	3
Max.resolutions supported	Multi-Function Mode: (2) 5k @ 30Hz and (1) 4k UHD @ 30Hz on any port. High-Resolution Mode: (2) 5k @ 60Hz on DisplayPort ports and (1) 4k UHD @ 60Hz on HDMI port.
Dock Connectors	1x HDMI 2.0, 2x DisplayPort 1.4
Technical limitations	Maximum resolution and display support is dependent on the maximum capability of the notebook. Highest resolution with dual displays is two 8K@ 60Hz host in High Resolution mode. Three maximum displays supported are two 5K@ 30 Hz on DP ports plus one 4K UHD@ 30 Hz on HDMI in Multi-function mode. The highest resolution for a non-Thunderbolt host in Multi-function mode is a single 5K dual cable (using both DP ports) + (1) 4K on HDMI port.

Technical Specifications

STORAGE AND DRIVES

Primary Storage

1 TB PCIe® Gen4x4 NVMe™ SSD [9]
512 GB PCIe® Gen4x4 NVMe™ SSD [9]
512 GB PCIe® NVMe™ QLC [9]

9. For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB of disk is reserved for system recovery software.

Technical Specifications

MEMORY

Maximum Memory
32GB LPDDR5x-8448 (1 x 32GB) MT/s RAM

Memory
16GB LPDDR5x-8448 (1 x 16 GB) MT/s RAM
32GB LPDDR5x-8448 (1 x 32GB) MT/s RAM

Memory Slots
Memory soldered down LPDDR5x,
System runs at: 8448 MT/s Supports Dual Channel Memory Slot(s) are non-accessible / non-upgradable

Technical Specifications

NETWORKING/COMMUNICATIONS

WLAN

Qualcomm FastConnect 6900 Wi-Fi 6E BT5.3 Dual Band Simultaneous (DBS) WiFiCx Network Adapter [10,11]
Qualcomm FastConnect 7800 Wi-Fi 7 BT5.4 High Band Simultaneous (HBS) Network Adapter [10,11]

10. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.
11. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires Windows 11 24H2, select processor, and a Wi-Fi 7 router, sold separately. Wi-Fi 7 is backwards compatible with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported. The specification for 802.11BE is a draft specification and is not final. If the final specification differs from the draft specification, it may affect the ability of the device to communicate with other 802.11BE devices.

AUDIO/MULTIMEDIA

Audio

Audio by Poly Studio
Integrated dual array microphone

Speaker Power

8 Ohm/1W per dual speaker

Camera

5MP+Infrared camera

Technical Specifications

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
Full-size, backlit, Atmosphere Blue color keyboard HP Imagepad

Pointing Device
Clickpad with Image Sensor

Function Keys
ESC - System information
F1 - Display Switching
F2 - Opens the Calculator
F3 - Brightness Down
F4 - Brightness Up
F5 - Blank or Backlit Toggle
F6 - Audio Mute
F7 - Volume Down
F8 - Volume Up
F9 - Mic Mute
F10 - Play and Pause
F11 - HP Programmable Key
F12 - Snipping Mode

Technical Specifications

SOFTWARE AND SECURITY

Software
Adobe Offer[12]
myHP[13]
HP Sure Sense[14]
Phishing Protection browser plugin

Security Management
HP Wolf Pro Security NGAV[15]

1st Source
Model: sTPM (a.k.a SPU TPM)
To support Pluton TPM (sTPM, uses Qualcomm SPU running Microsoft firmware)

Does the BIOS implement the ISO/IEC 19678:2015 (formerly NIST 800-147) guidelines?: Yes
UEFI version: 2.9
Class:3

12. Click on Adobe icon in the start menu to take advantage of a 30 day trial membership of select Adobe software. The software is tied to the device and is not transferrable. You may also choose to enter your payment details to auto-renew and continue to use the software beyond the 30 day trial. See Adobe for complete details.
13. myHP requires Windows 10 or higher OS.
14. HP Sure Sense is available on select HP PCs with Windows 10 Pro and higher and is not available with Windows10 Home.
15. HP Wolf Pro Security NGAV one (1) year license is included on HP EliteBook Ultra G1q. The HP Wolf Pro Security NGAV 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 NGAV is effective upon 4 months after the date the HP Product was shipped by HP and will continue for the term communicated to you at purchase and in your order confirmation email (“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 Wolf Pro Security at no additional cost with no future software updates or HP Support. Notwithstanding the foregoing, the license shall expire no later than one year after the fixed term the subject license ends.

Technical Specifications

POWER

Power Supply
HP 65W USB Type-C® Slim Straight adapter [16]

Battery
HP Long Life 3 cell, 59Whr Polymer [17,18]

Battery Recharge Time
50% in 30 minutes [19]

Power Cord
3-wired plug- 1.0m [16]

Battery Life
Up to 26 hours with 59 whr battery (HP Long Life 3-Cell, 59 Whr Polymer, Snapdragon® X Elite X1E-78-100, Display set to 200 nits display, 16GB LPDDR5x memory, 512 GB SSD)[20]

16. Availability may vary by country.
17. Battery is internal and not replaceable by customer. Serviceable by warranty.
18. 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.
19. Recharges your battery up to 50% within 30 minutes when the system is off or in standby mode.
• Power adapter minimum of 65 watts required for battery capacities 56Whr or less.
• Power adapter minimum of 100 watts required for battery capacities greater than 56Whr and less than 83Whr.
• Power adapter minimum of 120 watts required for battery capacities greater than 83Whr and less than 100Whr.
After charging has reached 50% capacity, charging will return to normal. Charging time may vary +/-10% due to System tolerance.
20. Battery life based on video playback, 2.2k (2240 x 1400) resolution, 200 nits brightness, system audio level as image default, player audio level at 18%, played full-screen from local storage, headphone attached or through speaker (if no audio jack port), wireless on but not connected. Actual battery life will vary depending on configuration and maximum capacity will naturally decrease with time and usage.

Technical Specifications

WEIGHTS & DIMENSIONS

Product Weight[21]
Starting at 2.97 lbs
Starting at 1.349 kg

Product Dimensions (w x d x h) [22]
312.9 mm (W) x 223.5 mm (D) x 8.47 mm (front)/ 11.23 mm (rear)
Maximum height 14.4 (mm)

Pallet Dimensions (w x d x h) [23]
12-15" boxes (305mm height): 1200mm x 1000mm x 1080mm

21 Weight will vary by configuration and components.
22. Front height measurement is near the front edge where the chassis bottom cover taper begins. Back height measurement is near the back edge where the chassis bottom cover taper ends.
23. Product packaging size varies based on options chosen. Please contact your HP representative for your packaging size details. For detailed packaging information, access the HP Commercial Notebooks Packaging Guide.

Technical Specifications

PORTS/SLOTS

Left side

1 USB4 Type-C® 40Gbps signaling rate; 1 USB Type-C® 10Gbps signaling rate

Right side

1 USB-A 3.2 Gen2 (support charging)

1 headphone/microphone combo jack

Technical Specifications

SERVICE AND SUPPORT

1-year warranty and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty. 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.[24]

24. 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)	
Nominal Operating Voltage	20
Max Operating Power	UMA 65W
Temperature	
Operating	Operating: 5° to 35° C (41° to 95° F)
Non-operating	Non-operating: -20° to 60° C (-4° to 140° F)
Relative Humidity	
Operating	Operating: 10% to 90%
Non-operating	Non-operating: 5% to 95 %
Altitude (unpressurized)	
Operating	Operating: -15m to 3,048 m (-50 ft to 10,000 ft)
Non-operating	Non-Operating: -15m to 12,192 m (-50 ft to 40,000 ft)
Planned Industry Standard Certifications	
Regulatory Model Number	TPN-W163
CSA/UL 62368-1	Yes (UL62368-1 only)
ENERGY STAR®	Yes
FCC/ICES/CISPR/VCCI	Yes
CE MARKING	Yes
GS Mark	No
China CCC/SRRC/CEL	Yes
Taiwan BSMI/NCC	Yes
Korea KCC/KC/KES	Yes
Ukraine NSoC/TEC	No
EAEU Compliance	No
Saudi Arabian Compliance	No
TCO	Yes
EPEAT Gold in United States	Yes [25]
Low Blue Light	Yes
WW RoHS	Yes
MIL-STD 810H Testing	Yes [26]

25. 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.
26. MIL STD 810H testing is not intended to demonstrate fitness for U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Accidental damage requires an optional HP Accidental Damage Protection Care Pack.

Technical Specifications

DISPLAYS

1. Actual brightness will be lower with touchscreen.

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

14.0 in 2.2K (2240 x 1400) Bright View UWVA WLED+LBL sRGB 100 300 DBTSP eDP 1.4+PSR2 Low-Power flat VAZ LCD Panel	**Outline Dimensions (W x H x D)**	306.85 x 197.27 (max) w/o PCB 306.85 x 204.95 (max) w/ PCB
	Active Area	301.59 x 188.5 (typ)
	Weight	195 (max)
	Diagonal Size	14
	Surface Treatment	Bright View
	Touch Enabled	Yes
	Contrast Ratio	1200:1(typ)
	Refresh Rate	60 Hz
	Brightness	300 nits [1]
	Pixel Resolution - Format	2240 x 1400 (2.2K)
	Backlight	WLED
	Pixel Resolution - configuration	RGB
	Color Gamut Coverage	sRGB 100%
	Color Depth	8 bits
	Viewing Angle	UWVA 89/89/89/89
	Low Blue Light	Yes
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	1.5 (max) / 1.8 (max)

14.0 in 2.2K (2240 x 1400) Bright View UWVA WLED+LBL sRGB 100 400 DBTSP eDP 1.4+PSR2 Low-Power flat VAZ LCD Panel	**Outline Dimensions (W x H x D)**	306.85 x 197.27 (max) w/o PCB 306.85 x 204.95 (max) w/ PCB
	Active Area	301.59 x 188.5 (typ)
	Weight	195 (max)
	Diagonal Size	14
	Surface Treatment	Bright View
	Touch Enabled	Yes
	Contrast Ratio	1200:1(typ)
	Refresh Rate	60 Hz
	Brightness	400 nits [1]
	Pixel Resolution - Format	2240 x 1400 (2.2K)
	Backlight	WLED
	Pixel Resolution - configuration	RGB
	Color Gamut Coverage	sRGB 100%
	Color Depth	8 bits
	Viewing Angle	UWVA 89/89/89/89
	Low Blue Light	Yes
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	1.5 (max) / 1.8 (max)

Technical Specifications

STORAGE AND DRIVES

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 1TB 2280 PCIe-4x4 NVMe Three Layer Cell	**Form Factor**	M.2 2280
	Capacity	1 TB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	7000 MB/s ±20%
	Maximum Sequential Write	7000 MB/s ±20%
	Logical Blocks	2,000, 409, 264
	Features	Pyrite 2.0; TRIM; L1.2

SSD 512GB 2280 PCIe NVMe	**Form Factor**	M.2 2280
	Capacity	512 GB
	NAND Type	QLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	4400 MB/s ±20%
	Maximum Sequential Write	4400 MB/s ±20%
	Logical Blocks	1,000, 215, 216
	Features	Pyrite 2.0; TRIM; L1.2

SSD 512GB 2280 PCIe-4x4 NVMe Three Layer Cell	**Form Factor**	M.2 2280
	Capacity	512GB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	6600 MB/s ±20%
	Maximum Sequential Write	5100 MB/s ±20%
	Logical Blocks	1,000, 215, 216
	Features	Pyrite 2.0; TRIM; L1.2

Technical Specifications

NETWORKING/COMMUNICATIONS

Qualcomm Wi-Fi 6E WCN6856 + BT 5.3[1]	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11ac IEEE 802.11ax IEEE 802.11b IEEE 802.11d IEEE 802.11e IEEE 802.11g IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11n
	Interoperability	WFA Certification ID: WFA127487
	Frequency Band	• 802.11b/g/n/ax 2.402 – 2.482 GHz • 802.11a/n/ac/ax 5.15 – 5.25 GHz 5.25 – 5.35 GHz 5.47 – 5.725 GHz 5.825 – 5.850 GHz 5.955 – 6.415 GHz 6.435 – 6.515 GHz 6.535 – 6.875 GHz 6.895 – 7.115 GHz
	Data Rates	• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11ac : MCS0 ~ MCS9, (20MHz, 40MHz, 80MHz, 160MHz) • 802.11ax : MCS0 ~ MCS13, (20MHz, 40MHz, 80MHz, 160MHz) • 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, 40MHz)
	Modulation	Direct Sequence Spread Spectrum 4096AM, 1024QAM, 16-QAM, 256-QAM, 64-QAM, BPSK, CCK, Direct Sequence Spread Spectrum, OFDM, QPSK
	Security[2]	• 802.1x authentication • AES-CCMP: 128 bit in hardware • IEEE 802.11i • IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only • WAPI • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • WPA3 (personal) certification
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[3]	• 802.11b : +18dBm minimum • 802.11g : +14.5dBm minimum • 802.11a : +14dBm minimum • 802.11n HT20(2.4GHz) : +16dBm minimum • 802.11n HT40(2.4GHz) : +13.5dBm minimum • 802.11n HT20(5GHz) : +13.5dBm minimum • 802.11n HT40(5GHz) : +13dBm minimum

Technical Specifications

	• 802.11ac VHT80(5GHz) : +12.5dBm minimum • 802.11ac VHT160(5GHz) : +11dBm minimum • 802.11ax HE40(2.4GHz) : +10.5dBm minimum • 802.11ax HE80(5GHz) : +8dBm minimum • 802.11ax HE160(5GHz) : +7.5dBm minimum • 802.11ax HE80(6GHz) : +8dBm minimum • 802.11ax HE160(6GHz) : +7.5dBm minimum
Power Consumption	• Transmit mode: 2.7 W • Receive mode: 1.6 W • Idle mode (PSP): 180 mW (WLAN Associated) • Idle mode: 50 mW (WLAN unassociated) • Connected Standby/Modern Standby : 10 mW • Radio disabled: 8 mW
Power Management	ACPI and PCI Express compliant power management
Receiver Sensitivity[4]	• 802.11b, 1Mbps : -95.75dBm maximum • 802.11b, 11Mbps : -87.25dBm maximum • 802.11a/g, 6Mbps : -93.75dBm maximum • 802.11a/g, 54Mbps : -75.75dBm maximum • 802.11n, MCS07 : -73.75dBm maximum • 802.11n, MCS15 : -73.75dBm maximum • 802.11ac, MCS0(VHT80) : -87.75dBm maximum • 802.11ac, MCS9(VHT80) : -63.75dBm maximum • 802.11ac, MCS9(VHT160) : -61.25dBm maximum • 802.11ax, MCS11(HE40): -60.25dBm maximum • 802.11ax, MCS11(HE80): -55.75dBm maximum • 802.11ax, MCS11(HE160): -53.25dBm maximum
Antenna type	Vendor: WNC/HONGBO
Form Factor	M.2 2230
Dimensions	22.0 ± 0.15 × 30.0 ± 0.15 mm/height: 2.38 mm (maximum)
Weight	Type 2230: 2.5 g
Operating Voltage	3.3 v +/- 5 %; 1.8 v +/- 5 %
HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology	
Bluetooth® Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3 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 I Bluetooth® device with a maximum transmit power of + 14 dBm for BR.
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

Technical Specifications

Certifications	FCC (47 CFR) Part 15C/E, Section 15.247, 15.249, 15.407; ETSI 300 328, ETSI 301 893, ETSI 303 687
Bluetooth® Profiles Supported	Based on Microsoft Windows Bluetooth® Software

1. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.
2. Check latest software/driver release for updates on supported security features.
3. 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.
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).

Technical Specifications

Qualcomm Wi-Fi 7 WCN7851 + BT5.4[1]	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11ac IEEE 802.11ax IEEE 802.11be IEEE 802.11b IEEE 802.11d IEEE 802.11e IEEE 802.11g IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11n
	Interoperability	WFA Certification ID: WFA129484
	Frequency Band	• 802.11b/g/n/ax/be 2.402 – 2.482 GHz • 802.11a/n/ac/ax/be 5.15 – 5.25 GHz 5.25 – 5.35 GHz 5.47 – 5.725 GHz 5.825 – 5.850 GHz 5.925 – 7.125 GHz
	Data Rates	• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11ac : MCS0 ~ MCS9, (20MHz, 40MHz, 80MHz, 160MHz) • 802.11ax : MCS0 ~ MCS13, (20MHz, 40MHz, 80MHz, 160MHz) • 802.11be : MCS0 ~ MCS13, (20MHz, 40MHz, 80MHz, 160MHz, 320MHz) • 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, 40MHz)
	Modulation	Direct Sequence Spread Spectrum 4096QAM, 1024QAM, 16-QAM, 256-QAM, 64-QAM, BPSK, CCK, Direct Sequence Spread Spectrum, OFDM, QPSK
	Security[2]	802.1x authentication AES-CCMP: 128 bit in hardware IEEE 802.11i IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only WAPI WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. WPA2 certification WPA3 certification
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[3]	2.4GHz (MIMO, typical): • 802.11b : +18dBm • 802.11g : +16dBm • 802.11n/ac/ax (HT20/VHT20/HE20) : +13dBm • 802.11n/ac/ax (HT40/VHT40/HE40) : +11.5dBm 5GHz (MIMO, typical): • 802.11a : +15dBm • 802.11n/ac/ax (HT20/VHT20/HE20) : +11dBm • 802.11n/ac/ax (HT40/VHT40/HE40) : +11dBm • 802.11ac/ax (VHT80/HE80) : +11dBm • 802.11ax HE160 : +11dBm

Technical Specifications

	6GHz (MIMO, typical): • 802.11ax HE20 : +10dBm • 802.11ax HE40 : +10dBm • 802.11ax HE80 : +10dBm • 802.11ax HE160 : +10dBm • 802.11be EHT320 : +9dBm
Power Consumption	• Transmit mode : 4.2 W • Receive mode : 2.5 W • Idle mode (PSP) : 180 mW (WLAN Associated) • Idle mode: 50 mW (WLAN unassociated) • Connected Standby/Modern Standby : 10 mW • Radio disabled : 8 mW
Power Management	ACPI and PCI Express compliant power management
Receiver Sensitivity[4]	2.4GHz (SISO): •802.11b, 11Mbps : -89.25dBm maximum • 802.11g, 54Mbps : -75.75dBm maximum • 802.11n, MCS7 : -72.75dBm maximum • 802.11ac, MCS9 : -67.25dBm maximum •802.11ax, MCS11(HE40): -60.75dBm maximum 5GHz (SISO): • 802.11a, 54Mbps : -74.75dBm maximum • 802.11n, MCS07 : -71.75dBm maximum • 802.11ac, MCS9 : -60.25dBm maximum •802.11ax, MCS11(HE80/HE160): -53.75dBm maximum 6GHz (SISO): •802.11ax, MCS13 : -46.75dBm maximum •802.11be, MCS13(EHT320): -44.25dBm maximum
Antenna type	Vendor: WNC/HONGBO
Form Factor	M.2 2230
Dimensions	22.0 ± 0.15 × 30.0 ± 0.15 mm/height: 2.38 mm (maximum)
Weight	Type 2230: 2.6
Operating Voltage	3.3 v +/- 5 %; 1.8 v +/- 5 %
HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3/5.4 Wireless Card Technology	
Bluetooth® Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3/5.4 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 I Bluetooth® device with a maximum transmit power of + 14 dBm for BR.
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

Technical Specifications

Certifications	FCC (47 CFR) Part 15C/E, Section 15.247, 15.249, 15.407; ETSI 300 328, ETSI 301 893, ETSI 303 687
Bluetooth® Software Supported	Based on Microsoft Windows Bluetooth® Software

1. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires Windows 11 24H2, select processor, and a Wi-Fi 7 router, sold separately. Wi-Fi 7 is backwards compatible with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported. The specification for 802.11BE is a draft specification and is not final. If the final specification differs from the draft specification, it may affect the ability of the device to communicate with other 802.11BE devices.
2. Check latest software/driver release for updates on supported security features.
3. 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.
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).

Technical Specifications

POWER

HP 65W USB Type-C® Slim Straight adapter	**Dimensions (H x W x D)**	3.819 x 2.106 x 0.827 in (9.7 x 5.35 x 2.1 cm)	
	Weight	200g(+/-10g) (Not including power cord. Power cord varies by country.	
	Input Voltage	100-240Vac	
	Input Efficiency	81.50% min at 115 Vac/ 230 Vac @5.00V 86.70% min at 115 Vac/ 230 Vac @9.00V 88.00% min at 115 Vac/ 230 Vac @12.00V 89.00% min at 115 Vac/ 230 Vac @15.00V 89.00% min at 115 Vac/ 230 Vac @20.00V	
	Input Frequency Range	47-63Hz	
	Input AC current	Max. 1.6 A at 90 Vac	
	Output power	5V/15W 9V/27W 12V/60W 15V/65W 20V/65W	
	DC output	5V/9V/12V/15V/20V	
	Hold-up time	100% load 5ms at 115 Vac input	
	Output current limit	< 8.0A	
	AC Connector	C6	
	DC Connector	USB Type C	
	DC Cable Material	PVC	
	Environmental Design	**Operating temperature**	32°Fto 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 IEC62368-1 : 2018, EN62368-1:2014+A11, UL 62368-1 Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, CU(EAC), EAEU, KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC	

Technical Specifications

HP 3-cell Long Life Li-Ion (59WHr) [1]	**Weight**	0.215 kg +/-10 g (0.473 lb)	
	Cells/Type	3cell Lithium-Ion Polymer cell / 448078	
	Energy	**Voltage**	11.58V
		Amp-hour capacity	35.11Ah
		Watt-hour capacity[1]	59.19Wh
	Temperature	**Operating (Charging)**	32˚ to 113˚ F (0˚ to 45˚ C)
		Operating (Discharging)	14˚ to 140˚ F (-10˚ to 60˚ C)
		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

AUDIO

HD Stereo Codec	Qualcomm WCD9385
Audio I/O Ports	3.5mm Headset: CTIA only
Internal Speaker Amplifier	Qualcomm Aqstic WSA8845 x 2
Multi-streaming Capable	Yes
Sampling	48KHz/16 bits
Internal Speaker	Yes

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

Type	Description	Part Number
Cases	HP 115 15.6 Laptop Backpack	8DV45AA
	HP 215 15.6 Laptop Backpack	35L98AA
	HP 225 15.6 Laptop Backpack	2P7U6AA
	HP 235 15.6 Laptop Backpack	35M00AA
	HP 315 15.6 Laptop Backpack	35L97AA
	HP Campus blue Backpack	7K0E5AA
	HP Campus green Backpack	7K0E4AA
	HP Campus XL Marble Stone Backpack	7K0E2AA
	HP Campus XL Tie Dye Backpack	7K0E3AA
	HP Prelude 15.6 Backpack	1E7D6AA
	HP Prelude 15.6 Top Load	1E7D7AA
	HP Prelude Pro Recycled 15.6 Backpack	1X644AA
	HP Prelude Pro Recycled 15.6 Top Load	1X645AA
	HP Renew Business 14.1 Laptop Bag	3E5F9AA
	HP Renew Business 14.1 Laptop Sleeve	3E2U7AA
	HP Renew Business 15.6 Laptop Bag	3E5F8AA
	HP Renew Business 17.3 Laptop Backpack	3E2U5AA
	HP Renew Business 17.3 Laptop Bag	3E2U6AA
	HP Renew Executive 14.1 Laptop Sleeve	6B8Y3AA
	HP Renew Executive 16 Laptop Backpack	6B8Y1AA
	HP Renew Executive 16 Laptop Bag	6B8Y2AA
	HP Travel 25 Liter 15.6 Iron Gray Laptop Backpack	6H2D8AA
	HP Travel 18 Liter 15.6 Iron Gray Laptop Backpack	6H2D9AA
Commodity	HP USB DVD-Writer External ODD	F2B56AA
Docking	HP USB-C Dock G5	5TW10AA
Keyboard/Combo	HP 225 Wired Mouse and Keyboard Combo	286J4AA
	HP Wired Desktop 320MK Mouse and Keyboard	9SR36AA
	HP 125 Wired Keyboard	266C9AA
	HP 320K USB Wired Keyboard	9SR37AA
	HP 405 Multi-Device Backlit Wired Keyboard	7N7C1AA
Mouse	HP 125 Wired Mouse	265A9AA
	HP 320M Wired Mouse	9VA80AA
	HP Creator Black 935 Wireless Mouse	1D0K8AA
	HP 128 Laser Wired Mouse	265D9AA
Adapter	HP USB-C to DisplayPort Adapter G2	8Y8Y1AA
	HP USB-C to HDMI 2.0 Adapter	1WC36AA
	HP USB-C to RJ45 Adapter G2	4Z527AA
	HP USB-C to VGA Adapter	N9K76AA

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

	HP USB 3.0 to Gigabit RJ45 Adapter G2	4Z7Z7AA
Hub	HP USB-C Travel Hub G3 86S97AA	86S97AA
	HP 4K USB-C Multiport Hub 6G843AA	6G843AA
	HP Universal USB-C Multiport Hub 50H55AA	50H55AA
	HP USB-C™ G2 Travel Dock 7PJ38AA	7PJ38AA
Power	HP USB-C 65W Laptop Charger	671R3AA
Video	HP USB-A 325 Webcam	53X27AA
	HP Streaming 965 Webcam	695J5AA
	HP 625 Webcam	6Y7L1AA

Change Log

Date of change:	Version History:		Description of change:
19th June, 2024	V1 to V2	Updated Updated Updated Deleted Updated	Networking / Communications Section Displays Section Ports / Slots Section Storage Section Options and Accessories
21st June, 2024	V2 to V3	Removed	Networking / Communications Section
24th June 2024	V3 to V4	Removed Updated	Networking / Communications Section Power Section
25th June 2024	V4 to V5	Updated	System Unit Section
27th June 2024	V5 to V6	Removed	Networking / Communications Section Copyright Section
28th June 2024	V6 to V7	Removed	Display Section
1st July 2024	V7 to V8	Updated	Operating System Section
18th July, 2024	V8 to V9	Updated	Processor Section
19th July, 2024	V9 to V10	Updated	Processor Section
27th August, 2024	V10 to V11	Updated	Display Section Power Section
4th September, 2024	V11 to V12	Updated	Callout Section Memory Section Power Section
11th September, 2024	V12 to V13	Updated	Memory Section

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