

### Overview

### HP EliteBook Ultra G1q8 14 inch Notebook AI PC



#### Front

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

### 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 G1q8 14 inch Notebook AI PC

#### OPERATING SYSTEMS

**Preinstalled** Windows® 11 Pro<sup>1</sup>  
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 <sup>2,3,4</sup>	Cores	L3 Cache	Max boost Frequency <sup>4</sup>	Base Frequency	NPU <sup>5</sup> (Qualcomm Snapdragon X Elite)
Qualcomm® Snapdragon® X Plus X1P-42-100 processor	8 cores	6MB	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

##### Non Touch

14-inch diagonal bright-view 2.2K (2240 x 1400) WLED (White LED), Non-Touch<sup>5</sup>, Low Blue Light, Ultra Wide Viewing Angle (UWVA) 300 nits, Direct Bond Cover Glass Panel (DBC GP), 100% sRGB <sup>6,7,8</sup>

##### Touch

14-inch diagonal bright-view 2.2K (2240 x 1400) WLED (White LED), Touch<sup>5</sup>, Low Blue Light, Ultra Wide Viewing Angle (UWVA) 400 nits, Direct Bond Touch Screen Panel (DBTSP), 100% sRGB <sup>6,7,8</sup>

##### Display Size (diagonal)

35.6 cm (14.0")

##### Screen to Body Ratio

87.81%

##### Aspect Ratio

16:10

##### Max Hinge Open Angle

130°

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)**

<b>Docking station model #1</b>	HP USB-C Dock G5
<b>Total number of supported displays (incl.the notebook display)</b>	3
<b>Max.resolutions supported</b>	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.
<b>Dock Connectors</b>	1x HDMI 2.0, 2x DisplayPort 1.4
<b>Technical limitations</b>	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 <sup>9</sup>

512 GB PCIe® Gen4x4 NVMe™ SSD <sup>9</sup>

512 GB PCIe® NVMe™ QLC <sup>9</sup>

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**

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

**Memory**

16GB LPDDR5x-8448 (1 x 16 GB) 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 <sup>10,11</sup>

Qualcomm FastConnect 7800 Wi-Fi 7 BT5.4 High Band Simultaneous (HBS) Network Adapter <sup>10,11</sup>

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 compatible Windows 11 OS, compatible processor, and separately purchased Wi-Fi 7 router to support backwards compatibility 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<sup>12</sup>

myHP<sup>13</sup>

HP Sure Sense<sup>14</sup>

Phishing Protection browser plugin

#### Security Management

HP Wolf Pro Security NGAV<sup>15</sup>

#### 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](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 <sup>16</sup>

**Battery**

HP Long Life 3 cell, 59Whr Polymer <sup>17,18</sup>

**Battery Recharge Time**

50% in 30 minutes <sup>19</sup>

**Power Cord**

3-wired plug- 1.0m <sup>16</sup>

**Battery Life**

Up to 26 hours with 59 whr battery (HP Long Life 3-Cell, 59 Whr Polymer, Snapdragon® X Plus X1P-42-100, Display set to 200 nits display, 16GB LPDDR5x memory, 512 GB SSD) <sup>20</sup>

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 up to 50% within 30 minutes when the system is off or in standby mode when used with the power adapter provided with the notebook. 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 90% capacity, charging speed 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**<sup>22</sup>

Starting at 2.97 lbs

Starting at 1.349 kg

**Product Dimensions (w x d x h)**<sup>23</sup>

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)**<sup>24</sup>

12-15" boxes (305mm height): 1200mm x 1000mm x 1080mm

22 Weight will vary by configuration and components.

23. 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.

24. 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>.<sup>25</sup>

25. 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 <sup>26</sup>
Low Blue Light	Yes
WW RoHS	Yes
MIL-STD 810H Testing	Yes <sup>27</sup>

26. 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.

27. 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.

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

<b>14.0 in 2.2K (2240 x 1400) BrightView UWVA WLED+LBL sRGB 100 300 DBC GP eDP 1.4+PSR2 60Hz flat VAZ LCD Panel</b>	<b>Outline Dimensions (W x H x D)</b>	306.85 x 197.27 (max) w/o PCB 306.85 x 204.95 (max) w/ PCB
	<b>Active Area</b>	301.55 x 188.47 (typ)
	<b>Weight</b>	230g (max)
	<b>Diagonal Size</b>	14
	<b>Surface Treatment</b>	Bright View
	<b>Touch Enabled</b>	No
	<b>Contrast Ratio</b>	1200:1(typ)
	<b>Refresh Rate</b>	60 Hz
	<b>Brightness</b>	300 nits <sup>1</sup>
	<b>Pixel Resolution - Format</b>	2240 x 1400 (2.2K)
	<b>Backlight</b>	WLED
	<b>Pixel Resolution - configuration</b>	RGB
	<b>Color Gamut Coverage</b>	sRGB 100%
	<b>Color Depth</b>	8 bits
	<b>Viewing Angle</b>	UWVA 89/89/89/89
<b>Low Blue Light</b>	Yes	
<b>Power Consumption (W, EBL@ 150nits max/ 200nits max)</b>	2.5 (max) / 3.1 (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.

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

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

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

### Technical Specifications

#### NETWORKING/COMMUNICATIONS

<b>Qualcomm Wi-Fi 6E WCN6856 + BT 5.3<sup>1</sup></b>	<b>Wireless LAN Standards</b>	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
	<b>Interoperability</b>	WFA Certification ID: WFA127487
	<b>Frequency Band</b>	<ul style="list-style-type: none"> <li>• 802.11b/g/n/ax 2.402 – 2.482 GHz</li> <li>• 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</li> </ul>
	<b>Data Rates</b>	<ul style="list-style-type: none"> <li>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11ac : MCS0 ~ MCS9, (20MHz, 40MHz, 80MHz, 160MHz)</li> <li>• 802.11ax : MCS0 ~ MCS13, (20MHz, 40MHz, 80MHz, 160MHz)</li> <li>• 802.11b: 1, 2, 5.5, 11 Mbps</li> <li>• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11n: MCS 0 ~ MCS 15, (20MHz, 40MHz)</li> </ul>
	<b>Modulation</b>	Direct Sequence Spread Spectrum 4096AM, 1024QAM, 16-QAM, 256-QAM, 64-QAM, BPSK, CCK, Direct Sequence Spread Spectrum, OFDM, QPSK
	<b>Security<sup>2</sup></b>	<ul style="list-style-type: none"> <li>• 802.1x authentication</li> <li>• AES-CCMP: 128 bit in hardware</li> <li>• IEEE 802.11i</li> <li>• IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only</li> <li>• WAPI</li> <li>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</li> <li>• WPA2 certification</li> <li>• WPA3 (personal) certification</li> </ul>
	<b>Network Architecture Models</b>	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	<b>Roaming</b>	IEEE 802.11 compliant roaming between access points
	<b>Output Power<sup>3</sup></b>	<ul style="list-style-type: none"> <li>• 802.11b : +18dBm minimum</li> <li>• 802.11g : +14.5dBm minimum</li> <li>• 802.11a : +14dBm minimum</li> <li>• 802.11n HT20(2.4GHz) : +16dBm minimum</li> <li>• 802.11n HT40(2.4GHz) : +13.5dBm minimum</li> <li>• 802.11n HT20(5GHz) : +13.5dBm minimum</li> <li>• 802.11n HT40(5GHz) : +13dBm minimum</li> </ul>

### Technical Specifications

- 802.11ac VHT80(5GHz) : +12.5dBm minimum
- 802.11ac VHT160(5GHz) : +11 dBm 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<sup>4</sup>

- 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

<b>Certifications</b>	FCC (47 CFR) Part 15C/E, Section 15.247, 15.249, 15.407; ETSI 300 328, ETSI 301 893, ETSI 303 687
<b>Bluetooth® Profiles Supported</b>	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

<b>Qualcomm Wi-Fi 7 WCN7851 + BT5.4<sup>1</sup></b>	<b>Wireless LAN Standards</b>	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
	<b>Interoperability</b>	WFA Certification ID: WFA129484
	<b>Frequency Band</b>	<ul style="list-style-type: none"> <li>• 802.11b/g/n/ax/be 2.402 – 2.482 GHz</li> <li>• 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</li> </ul>
	<b>Data Rates</b>	<ul style="list-style-type: none"> <li>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11ac : MCS0 ~ MCS9, (20MHz, 40MHz, 80MHz, 160MHz)</li> <li>• 802.11ax : MCS0 ~ MCS13, (20MHz, 40MHz, 80MHz, 160MHz)</li> <li>• 802.11be : MCS0 ~ MCS13, (20MHz, 40MHz, 80MHz, 160MHz, 320MHz)</li> <li>• 802.11b: 1, 2, 5.5, 11 Mbps</li> <li>• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11n: MCS 0 ~ MCS 15, (20MHz, 40MHz)</li> </ul>
	<b>Modulation</b>	Direct Sequence Spread Spectrum 4096QAM, 1024QAM, 16-QAM, 256-QAM, 64-QAM, BPSK, CCK, Direct Sequence Spread Spectrum, OFDM, QPSK
	<b>Security<sup>2</sup></b>	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
	<b>Network Architecture Models</b>	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	<b>Roaming</b>	IEEE 802.11 compliant roaming between access points
	<b>Output Power<sup>3</sup></b>	2.4GHz (MIMO, typical): <ul style="list-style-type: none"> <li>• 802.11b : +18dBm</li> <li>• 802.11g : +16dBm</li> <li>• 802.11n/ac/ax (HT20/VHT20/HE20) : +13dBm</li> <li>• 802.11n/ac/ax (HT40/VHT40/HE40) : +11.5dBm 5GHz (MIMO, typical):</li> <li>• 802.11a : +15dBm</li> <li>• 802.11n/ac/ax (HT20/VHT20/HE20) : +11 dBm</li> <li>• 802.11n/ac/ax (HT40/VHT40/HE40) : +11 dBm</li> <li>• 802.11ac/ax (VHT80/HE80) : +11 dBm</li> <li>• 802.11ax HE160 : +11 dBm</li> </ul>

## Technical Specifications

	6GHz (MIMO, typical):
	<ul style="list-style-type: none"> <li>• 802.11ax HE20 : +10dBm</li> <li>• 802.11ax HE40 : +10dBm</li> <li>• 802.11ax HE80 : +10dBm</li> <li>• 802.11ax HE160 : +10dBm</li> <li>• 802.11be EHT320 : +9dBm</li> </ul>
<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>• Transmit mode : 4.2 W</li> <li>• Receive mode : 2.5 W</li> <li>• Idle mode (PSP) : 180 mW (WLAN Associated)</li> <li>• Idle mode: 50 mW (WLAN unassociated)</li> <li>• Connected Standby/Modern Standby : 10 mW</li> <li>• Radio disabled : 8 mW</li> </ul>
<b>Power Management</b>	ACPI and PCI Express compliant power management
<b>Receiver Sensitivity<sup>4</sup></b>	2.4GHz (SISO): <ul style="list-style-type: none"> <li>•802.11b, 11Mbps : -89.25dBm maximum</li> <li>• 802.11g, 54Mbps : -75.75dBm maximum</li> <li>• 802.11n, MCS7 : -72.75dBm maximum</li> <li>• 802.11ac, MCS9 : -67.25dBm maximum</li> <li>•802.11ax, MCS11(HE40): -60.75dBm maximum</li> </ul> 5GHz (SISO): <ul style="list-style-type: none"> <li>• 802.11a, 54Mbps : -74.75dBm maximum</li> <li>• 802.11n, MCS07 : -71.75dBm maximum</li> <li>• 802.11ac, MCS9 : -60.25dBm maximum</li> <li>•802.11ax, MCS11(HE80/HE160): -53.75dBm maximum</li> </ul> 6GHz (SISO): <ul style="list-style-type: none"> <li>•802.11ax, MCS13 : -46.75dBm maximum</li> <li>•802.11be, MCS13(EHT320): -44.25dBm maximum</li> </ul>
<b>Antenna type</b>	Vendor: WNC/HONGBO
<b>Form Factor</b>	M.2 2230
<b>Dimensions</b>	22.0 ± 0.15 × 30.0 ± 0.15 mm/height: 2.38 mm (maximum)
<b>Weight</b>	Type 2230: 2.6
<b>Operating Voltage</b>	3.3 v +/- 5 %; 1.8 v +/- 5 %
<b>HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3/5.4 Wireless Card Technology</b>	
<b>Bluetooth® Specification</b>	4.0/4.1/4.2/5.0/5.1/5.2/5.3/5.4 Compliant
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
<b>Data Rates and Throughput</b>	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)
<b>Transmit Power</b>	The Bluetooth® component shall operate as a Class I Bluetooth® device with a maximum transmit power of + 14 dBm for BR.
<b>Power Consumption</b>	Peak (Tx): 330 mW Peak (Rx): 230 mW Selective Suspend: 17 mW
<b>Bluetooth® Software Supported Link Topology</b>	Microsoft Windows Bluetooth® Software
<b>Power Management</b>	Microsoft Windows ACPI

### Technical Specifications

<b>Certifications</b>	FCC (47 CFR) Part 15C/E, Section 15.247, 15.249, 15.407; ETSI 300 328, ETSI 301 893, ETSI 303 687
<b>Bluetooth® Software Supported</b>	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 compatible Windows 11 OS, compatible processor, and separately purchased Wi-Fi 7 router to support backwards compatibility 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

<b>HP 65W USB Type-C® Slim Straight adapter</b>	<b>Dimensions (H x W x D)</b>	3.819 x 2.106 x 0.827 in (9.7 x 5.35 x 2.1 cm)
	<b>Weight</b>	200g(+/-10g) (Not including power cord. Power cord varies by country.)
	<b>Input Voltage</b>	100-240Vac
	<b>Input Efficiency</b>	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
	<b>Input Frequency Range</b>	47-63Hz
	<b>Input AC current</b>	Max. 1.6 A at 90 Vac
	<b>Output power</b>	5V/15W 9V/27W 12V/60W 15V/65W 20V/65W
	<b>DC output</b>	5V/9V/12V/15V/20V
	<b>Hold-up time</b>	100% load 5ms at 115 Vac input
	<b>Output current limit</b>	< 8.0A
	<b>AC Connector</b>	C6
	<b>DC Connector</b>	USB Type C
	<b>DC Cable Material</b>	PVC
	<b>Environmental Design</b>	<b>Operating temperature</b> 32°F to 95°F (0° to 35°C) <b>Non-operating (storage) temperature</b> -4°F to 185°F (-20° to 85°C) <b>Altitude</b> 0 to 16,400 ft (0 to 5000m) <b>Humidity</b> 20% to 95% <b>Storage Humidity</b> 10% to 95%
	<b>EMI and Safety Certifications</b>	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

<b>HP 3-cell Long Life Li-Ion (59Whr)<sup>1</sup></b>	<b>Weight</b>	0.215 kg +/-10 g (0.473 lb)
	<b>Cells/Type</b>	3cell Lithium-Ion Polymer cell / 448078
	<b>Energy</b>	<b>Voltage</b> 11.58V
		<b>Amp-hour capacity</b> 35.11Ah
		<b>Watt-hour capacity<sup>1</sup></b> 59.19Wh
<b>Temperature</b>		<b>Operating (Charging)</b> 32° to 113° F (0° to 45° C)
		<b>Operating (Discharging)</b> 14° to 140° F (-10° to 60° C)
		<b>Optional Travel Battery Available</b> No

1. Recharges up to 50% within 30 minutes when the system is off or in standby mode when used with the power adapter provided with the notebook. 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 90% capacity, charging speed will return to normal. Charging time may vary +/-10% due to System tolerance.

### Technical Specifications

#### AUDIO

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

---

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

Type	Description	Part Number	
<b>Cases</b>	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	
	<b>Commodity</b>	HP USB DVD-Writer External ODD	F2B56AA
	<b>Docking</b>	HP USB-C Dock G5	5TW10AA
	<b>Keyboard/Combo</b>	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	
<b>Mouse</b>	HP 125 Wired Mouse	265A9AA	
	HP 320M Wired Mouse	9VA80AA	
	HP Creator Black 935 Wireless Mouse	1D0K8AA	
	HP 128 Laser Wired Mouse	265D9AA	
<b>Adapter</b>	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
<b>Hub</b>	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
<b>Power</b>	HP USB-C 65W Laptop Charger	671R3AA
<b>Video</b>	HP USB-A 325 Webcam	53X27AA
	HP Streaming 965 Webcam	695J5AA
	HP 625 Webcam	6Y7L1AA

---

### Change Log

<b>Date of change:</b>	<b>Version History:</b>		<b>Description of change:</b>
September 20, 2024	V1 to V2	Updated	Display Section

© Copyright 2024 HP Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Core, Thunderbolt and vPro are trademarks or registered trademarks of Corporation or its subsidiaries in the United States and other countries. DisplayPort™ and the DisplayPort™ logo are trademarks owned by the Video Electronics Standards Association (VESA®) in the United States and other countries. USB Type-C® and USB-C® are trademarks of USB Implementers Forum. ENERGY STAR is a registered trademark of the U.S. Environmental Protection Agency. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.