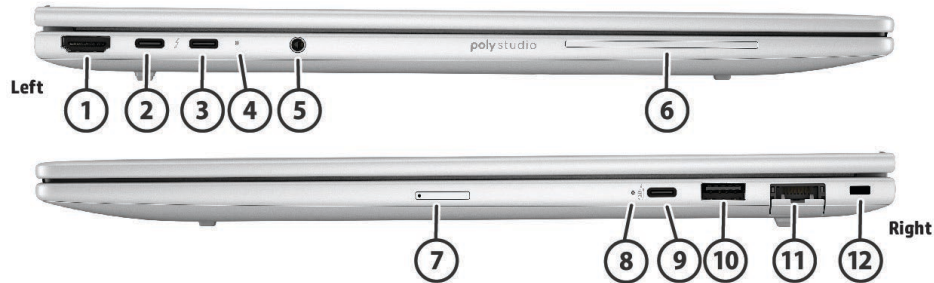


## HP EliteBook 8 G1a 16 inch Notebook AI PC



### Front

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



### Sides

1	HDMI 2.1	7	Nano SIM card slot (Optional)
2	Thunderbolt™ 4 with Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 2.1) <sup>1</sup>	8	LED Indicator
3	Thunderbolt™ 4 with Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 2.1) <sup>1</sup>	9	USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)
4	Power Indicator LED	10	USB Type-A® 5Gbps signaling rate (Powered)
5	Headphone/mic combo jack	11	Drop Jaw RJ-45 (Optional) <sup>2</sup>
6	Smart Card Reader (Optional)	12	Security lock slot (Integrated)

1. USB 20Gbps signaling rate is not available with Thunderbolt™ 4. Actual throughput may vary.

2. RJ-45 port must be configured at time of purchase and is not available in all regions.

### PRODUCT NAME

HP EliteBook 8 G1a 16 inch Notebook AI PC

### OPERATING SYSTEM

FreeDOS

Windows 11 Home - HP recommends Windows 11 Pro for business <sup>1</sup>

Windows 11 Home Single Language - HP recommends Windows 11 Pro for business <sup>1</sup>

Windows 11 Pro (Windows 11 Enterprise available with a Volume Licensing Agreement) <sup>1</sup>

Windows 11 Pro <sup>1</sup>

Windows 11 Pro Education <sup>1</sup>

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	Threads	L3 Cache	Max Boost Frequency	Base Frequency	Pro	NPU
AMD Ryzen™ 7 PRO - 250	8 cores	16	16 MB	5.10 GHz	3.30 GHz	X	16 TOPS
AMD Ryzen™ 7- 250	8 cores	16	16 MB	5.10 GHz	3.30 GHz		16 TOPS
AMD Ryzen™ 5 PRO - 230	6 cores	12	16 MB	4.90 GHz	3.50 GHz	X	16 TOPS
AMD Ryzen™ 5- 230	6 cores	12	16 MB	4.90 GHz	3.50 GHz		16 TOPS

#### Processor Family

AMD Ryzen™ 7 PRO - processor

AMD Ryzen™ 7- processor

AMD Ryzen™ 5 PRO - processor

AMD Ryzen™ 5- processor

2. 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. AMD's numbering is not a measurement of clock speed.

3. AMD Max Boost frequency performance varies depending on hardware, software and overall system configuration.

4. 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.



### GRAPHICS

#### Integrated

AMD Radeon™ Graphics

#### Supported Protocols

HDMI 2.1

#### Displays supported (including Internal display; dock may be required)

Up to 4



### DISPLAY

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

Availability may vary by country

#### Non-Touch

40.6 cm (16") diagonal, WUXGA (1920 x 1200), LCD, UWVA, Anti-Glare, Low Blue Light, 800 nits, sRGB 100%, HP Sure View 5<sup>5</sup>

40.6 cm (16") diagonal, 2.5K (2560 x 1600), LCD, 120Hz (VRR), UWVA, Anti-Glare, WLED+Low Blue Light, 400 nits, Adobe 100% + DCI-P3 100%

40.6 cm (16") diagonal, WUXGA (1920 x 1200), LCD, UWVA, Anti-Glare, WLED+Low Blue Light, 400 nits, Low Power, sRGB 100%

40.6 cm (16") diagonal, WUXGA (1920 x 1200), LCD, UWVA, Anti-Glare, WLED, 300 nits, sRGB 62.5%

#### Touch

40.6 cm (16") diagonal, WUXGA (1920 x 1200), LCD, Touch, UWVA, Anti-Glare, WLED, 300 nits, sRGB 62.5%

#### Display Size (Diagonal)

40.6 cm (16")

#### Screen to Body Ratio

89.3%

#### Aspect Ratio

16:10

#### Max Hinge Open Angle

169 ± 3° (from 172°)

5. HP Sure View integrated privacy screen is an optional feature that must be configured at purchase and is designed to function in landscape orientation.



### DOCKING (SOLD SEPARATELY)

<b>Docking station model #1</b>	HP Thunderbolt 4 100W G6 Dock
<b>Total number of supported displays (incl. the notebook display)</b>	4
<b>Max. resolutions supported</b>	(4) 4K @60Hz* (2) 4K @ 120Hz* (3) QHD @ 120Hz* (1) QHD @ 360Hz*
<b>Dock Connectors</b>	1x HDMI 2.1, 2x DisplayPort 1.4, 1x Thunderbolt 4
<b>HP Quick Connect Support</b>	Yes
<b>Technical limitations</b>	HP Quick Connect is supported on this platform. *Requires DisplayPort 1.4 support with Display Stream Compression (DSC). Bluetooth required for HP Quick Connect. HP Quick Connect available on select HP notebooks. Maximum resolution and display support is dependent on the maximum capability of the notebook.  Maximum of (4) displays with maximum resolution of 5K@ 30Hz running  Thunderbolt Hosts: Maximum resolution possible is dual 8K displays @ 60Hz running Thunderbolt host or running a non-Thunderbolt host in high resolution mode @30Hz Non-Thunderbolt hosts: The highest resolution for dual displays running a non-Thunderbolt host in multi-function mode is (1) 5K dual cable (using both DP ports) +(1) 4K on USB-C DP port Non-Thunderbolt hosts support (3) displays with a maximum resolution of (2) 5K single cable + (1) 4K UHD @ 60 Hz in high resolution mode. In multi-function mode the maximum resolution for (3) displays is (2) 5K single cable @ 30Hz + (1) 4K UHD @ 30Hz.
<b>Docking station model #2</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.



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<b>Docking station model #3</b>	HP Thunderbolt™ 120W G4 Dock
<b>Total number of supported displays (incl. the notebook display)</b>	4
<b>Max. resolutions supported</b>	Quad 4K @60Hz Dual 8K single cable@30 for Thunderbolt hosts or USB-C hosts DisplayPort 1.4 with Display Stream Compression in High-Resolution Mode
<b>Dock Connectors</b>	2x HDMI 2.0, 2x DisplayPort 1.4, 1x Thunderbolt 4, 1x USB-C 3.2 Gen 2 DisplayPort
<b>Technical limitations</b>	Maximum resolution and display support is dependent on the maximum capability of the notebook.  Thunderbolt Hosts: Maximum of (4) displays with maximum resolution of 5K@ 30Hz running Thunderbolt host. Maximum resolution possible is dual 8K displays @ 60Hz running Thunderbolt host or running a non-Thunderbolt host in high resolution mode @30Hz Non-Thunderbolt hosts: The highest resolution for dual displays running a non-Thunderbolt host in multi-function mode is (1) 5K dual cable (using both DP ports) +(1) 4K on USB-C DP port Non-Thunderbolt hosts support (3) displays with a maximum resolution of (2) 5K single cable + (1) 4K UHD @ 60 Hz in high resolution mode. In multi-function mode the maximum resolution for (3) displays is (2) 5K single cable @ 30Hz + (1) 4K UHD @ 30Hz.

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### STORAGE AND DRIVES

#### Storage

2 TB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell <sup>6</sup>

1 TB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell <sup>6</sup>

1 TB PCIe® NVMe™ SSD Value <sup>6</sup>

512 GB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell <sup>6</sup>

512 GB PCIe® Gen4x4 NVMe™ Self Encrypted OPAL2 SSD Three Layer Cell <sup>6</sup>

512 GB PCIe® NVMe™ SSD Value <sup>6</sup>

256 GB PCIe® NVMe™ Self Encrypted OPAL2 SSD Value <sup>6</sup>

256 GB PCIe® NVMe™ SSD Value <sup>6</sup>

6. For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 32 GB is reserved for system recovery software.

### MEMORY

#### Maximum Memory

64GB DDR5-5600 MT/s (2 x 32 GB) <sup>7</sup>

#### Memory

64GB DDR5-5600 MT/s (2 x 32 GB) <sup>7</sup>

32GB DDR5-5600 MT/s (1 x 32 GB) <sup>7</sup>

32GB DDR5-5600 MT/s (2 x 16 GB) <sup>7</sup>

24GB DDR5-5600 MT/s (2 x 12 GB) <sup>7</sup>

16GB DDR5-5600 MT/s (1 x 16 GB) <sup>7</sup>

16GB DDR5-5600 MT/s (2 x 8 GB) <sup>7</sup>

8GB DDR5-5600 MT/s (1 x 8 GB) Memory <sup>7</sup>

#### Memory Slots

2 SODIMM

System runs at 5600 MT/s

Supports Dual Channel Memory(optional).

The memory is accessible/upgradeable by IT or self-maintainers only

<sup>7</sup>. 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.



### NETWORKING /COMMUNICATIONS

Items below may be optional.

#### Ethernet

Realtek RTL8111EPP 1GbE Ethernet Controller

#### WLAN

Qualcomm® Fast Connect 7800 Wi-Fi 7 Bluetooth® 5.4 AIM-T WW WLAN <sup>8</sup>

Mediatek MT7925 Wi-Fi 7 Bluetooth® 5.4 AIM-T WW WLAN <sup>8</sup>

Mediatek RZ616 Wi-Fi 6E Bluetooth® 5.3 AIM-T WLAN <sup>8</sup>

#### WWAN

HP 5G Sub-6 CAT19 <sup>9</sup>

HP 4G CAT19 <sup>10</sup>

#### LPWAN

Qualcomm 9205 LTE-M (CAT-M1 fSVC) <sup>11</sup>

#### NFC

NFC Mirage WNC XRAV-1

#### Miracast

Native Miracast Support <sup>12</sup>

8. 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.

9. 5G module is optional. WWAN-ready configuration must be selected at purchase to add WWAN at a later date. Module designed for 5G NR NSA (non-standalone) 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. Module requires activation and separately purchased service contract. Check with service provider for coverage and availability in your area. Data connection, upload and download speeds will vary due to network, location, environment, network conditions, and other factors. Backwards compatible to 4G LTE and 3G HSPA technologies. 5G module planned to be available in select platforms and select countries, where carrier supported.

10. 4G module is optional. WWAN-ready configuration must be selected at purchase to add WWAN at a later date. 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. 4G LTE not available on all products, in all regions.

11. LPWAN (also called Mobile Narrowband) support HP Protect & Trace with Wolf Connect service through the subscription term, but do not support mobile broadband use.

12. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.



### AUDIO/MULTIMEDIA

Privacy panel is only available on select models.

#### Audio

Audio by Poly Studio

2 Integrated stereo speakers

Discrete Amplifiers

2 Integrated dual array microphone

#### Speaker Power

1W / 8 ohm per speaker

#### Camera

5MP camera, 5MP camera with Image Signal Processing (ISP) and AI Presence Detection, IR camera

#### Sensor

Ambient Light Sensor

Color Sensor with Ambient Light Sensing (optional)

Fingerprint Sensor (optional)

Hall Effect Sensor

HP Sure Platform

HP Tamper Lock <sup>13</sup>

Thermal Sensor

[13. HP Tamper Lock must be enabled by the customer or your administrator.](#)

### KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

#### Keyboard

HP Premium Keyboard, with numeric keypad, spill-resistant, backlit, Durakey, keyboard.

HP Premium Keyboard, with numeric keypad, spill-resistant, Privacy, backlit, Durakey, keyboard.

HP Premium Keyboard, with numeric keypad, spill-resistant, Durakey, keyboard.

#### Pointing Device

Clickpad

Microsoft Precision Touchpad Default Gestures Support

Multi-touch gesture support

#### Function Keys

ESC - System information

F1 - Display Switching

F2 - Blank or Privacy

F3 - Brightness Down

F4 - Brightness Up

F5 - Blank or Keyboard Backlight

F6 - Audio Mute

F7 - Volume Down

F8 - Volume Up

F9 - Mic Mute

F10 - Play and Pause

F11 - Programmable Key

F12 - Print Screen

Power Button (with LED)

Insert

Delete

Home

End

Page up

Page down

Microsoft Copilot <sup>14</sup>

#### Hidden Function Keys

Fn+R - Break, Fn+S - Sys Rq, Fn+C - Scroll Lock

[14. May require Windows Update or app download from the Microsoft Store. Microsoft Copilot is NOT available in China, Russia, Belarus, and embargoed regions Cuba, Iran, North Korea, Crimea.](#)



### SOFTWARE AND SECURITY

#### Application Software

Buy Microsoft Office (Sold Separately)  
HP Connection Optimizer  
Edge Customization  
HP Hotkey Support  
HP Mac Address Manager  
HP Notifications  
HP PC Hardware Diagnostics UEFI  
HP PC Hardware Diagnostics Windows  
HP Privacy Settings  
HP Services Scan <sup>15</sup>  
HP Smart Support <sup>16</sup>  
HP Support Assistant <sup>17</sup>  
myHP  
HSA Fusion for Commercial  
HSA Telemetry for Commercial  
Poly Lens <sup>18</sup>  
Poly Camera Pro

#### Manageability Features

HP Client Catalog ([download](#)) <sup>19</sup>  
HP Client Management Script Library ([download](#)) <sup>20</sup>  
HP Cloud Recovery <sup>21</sup>  
HP Connect for Microsoft Endpoint Manager  
HP Driver Packs ([download](#)) <sup>22</sup>  
HP Image Assistant ([download](#)) <sup>23</sup>  
HP Manageability Integration Kit ([download](#)) <sup>24</sup>  
HP Power Manager with Battery Health Manager ([download](#)) <sup>25</sup>

#### Security Features

Secured-Core PC Enable  
Windows Hello Enhanced Sign-In Security (ESS)  
HP Wolf Security for Business which includes: <sup>26</sup>  
HP Tamper Lock  
HP Sure Admin <sup>27</sup>  
HP Sure Click <sup>28</sup>  
HP Sure Recover <sup>29</sup>  
HP Sure Run <sup>30</sup>  
HP Sure Sense <sup>31</sup>  
HP Sure Start <sup>32</sup>



### Security- TPM

Model: Nuvoton NPCT760HACYX

Firmware Version: 7.2.4.0

TCG TPM 2.0

FIPS 140-2 Compliant: Yes

### BIOS

Absolute Persistence Module <sup>33</sup>

Audio Permanent Disable

HP BIOS Recovery

HP Fingerprint Sensor <sup>34</sup>

BIOS Update via Network

HP BIOSphere Gen6 <sup>35</sup>

HP DriveLock & Automatic DriveLock

HP Secure Erase <sup>36</sup>

HP Wake on WLAN

### Smartcard Reader

Model number: Alcorlink AK9563E66-GAF-GR (QFN)

FIPS 140-2 Compliant: Yes

### IPv6 Support

Yes

### FirstNet Certified

Yes

**Does the BIOS implement the ISO/IEC 19678:2015 (formerly NIST 800-147) guidelines?:** Yes

### UEFI version: 2.7b

HP BIOS UEFI Specification Level version 2.9 supported with BIOS update

### Class: 3

15. HP Services Scan is preinstalled and/or provided thru Windows Update and checks for service entitlement on each hardware device and downloads the applicable software agent automatically. To disable this feature, please follow the instructions at <http://www.hpdaas.com/requirements>. The HP Insights agent is a telemetry and analytics platform that provides critical data around devices and applications and is not sold as a standalone service. HP follows stringent GDPR privacy regulations and is ISO27001, ISO27701, ISO27017 and SOC2 Type2 certified for Information Security. Internet access with connection to the HP Insights agent is required. For full system requirements, please visit <http://www.hpdaas.com/requirements>. Not available in China.

16. HP Smart Support requires the HP Insights agent to be installed. For more information about how to enable or to download HP Smart Support, please visit <http://www.hp.com/smart-support>. HP Services Scan is preinstalled and/or provided thru Windows Update and will check entitlement on each hardware device to determine if an HP Insights agent-enabled service has been purchased, and will download applicable software automatically. HP Insights agent is a telemetry and analytics platform that provides critical data around devices and



applications and is not sold as a standalone service. HP follows stringent GDPR privacy regulations and is ISO27001, ISO27701, ISO27017 and SOC2 Type2 certified for Information Security. Internet access is required. For full system requirements or to disable this feature, please visit <https://www.hpdaas.com/requirements>.

17. HP Support Assistant is available on Windows. For more information, please visit <https://support.hp.com/us-en/help/hp-support-assistant>.

18. Poly Lens Desktop requires a Windows OS.

19. HP Client Catalog not preinstalled, however available for download at (<https://www.hp.com/us-en/solutions/client-management-solutions.html#tab=manageability-tools>)

20. HP Client Management Script Library (<https://www.hp.com/us-en/solutions/client-management-solutions.html#tab=manageability-tools>).

21. HP Cloud Recovery is available for Z by HP, HP Elite and Pro desktops and laptops PCs with Intel® or AMD processors and requires an open, network connection. Note: You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Detail please refer to: <https://support.hp.com/us-en/computer>.

22. HP Driver Packs not preinstalled, however available for download at <http://www.hp.com/go/clientmanagement>.

23. HP Image Assistant not preinstalled, however available for download at (<https://ftp.ext.hp.com/pub/caps-softpaq/cmit/HPIA.html>),

24. HP Manageability Integration Kit not preinstalled, however available for downloaded from <https://www.hp.com/us-en/solutions/client-management-solutions.html#tab=manageability-tools>.

25. HP Power Manager with Battery Health can be downloaded by entering your system information here: [https://support.hp.com/in-en/document/ish\\_4449597-3519507-16](https://support.hp.com/in-en/document/ish_4449597-3519507-16).

26. HP Wolf Security for Business requires Windows 10 or 11 Pro or higher, includes various HP security features and is available on HP Pro, Elite, RPOS and Workstation products. See product details for included security features.

27. HP Sure Admin requires HP G8 or newer platforms, Windows 10 or higher, HP BIOS, HP Manageability Kit or KMS Service from <http://www.hp.com/go/clientmanagement> and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store.

28. HP Sure Click requires Windows 10 and higher. See [https://bit.ly/2PrLT6A\\_SureClick](https://bit.ly/2PrLT6A_SureClick) for complete details.

29. HP Sure Recover is available on select HP PCs and requires Windows 10 or 11 and an open network connection. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data. HP Sure Recover Gen6 with Embedded Reimaging is an optional feature on select HP PCs which requires Windows 10 or 11 must be configured at purchase. You must back up important files, data, photos, videos, etc. before use to avoid loss of data.

30. HP Sure Run is available on select HP PCs and requires Windows 10 and higher.

31. HP Sure Sense requires Windows 10 and higher. See product specifications for availability. On units with WWAN shipping to China, HP Sure Sense is only available via Softpaq download.

32. HP Sure Start is available on select HP PCs and requires Windows 10 and higher.

33. Absolute Persistence firmware module is shipped turned off and can only be activated with the purchase a license subscription and full activation of the software agent. License subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. Certain conditions apply. For full details visit:

<https://www.absolute.com/about/legal/agreements/absolute/>.

34. HP Fingerprint Reader is an optional feature that requires Windows 10 or 11 and must be configured at purchase.

35. HP BIOSphere Gen6 features may vary depending on the platform and configuration.

36. HP Secure Erase implements the methods outlined in the National Institute of Standards and Technology Special Publication 800-88r "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.



### POWER

Power supply availability may vary by country.

Battery is internal. Serviceable by warranty.

#### Power Supply

HP 100W Slim USB Type-C® AC power adapter

HP 65W Standard USB Type-C® AC power adapter

HP 65W USB Type-C® Gallium Nitride AC power adapter

HP 65W Slim USB Type-C® AC power adapter

HP 65W Standard USB Type-C® Halogen Free AC power adapter

#### Power Cord

3-wired plug- 1.0m

#### Battery

HP Long Life 3 cell, 62Whr Polymer

HP Long Life 8 cell, 77Whr Polymer

Compliant with UL 1642/2054 Standard

#### Battery Recharge Time

Supports battery HP Fast Charge: approximately 50% in 30 minutes <sup>37</sup>

#### Battery life

Up to 16 hours 30 minutes with 62Whr battery (AMD HWPT R7, UMA graphic, brightness set to 250nits on a 16-inch WUXGA 400nits LP LCD display, 2x8GB DDR5 memory, 256GB SSD) <sup>38</sup>

Up to 20 hours 00 minutes with 77Whr battery (AMD HWPT R7, UMA graphic, brightness set to 250nits on a 16-inch WUXGA 400nits LP LCD display, 2x8GB DDR5 memory, 256GB SSD) <sup>38</sup>

<sup>37</sup>. 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.

<sup>38</sup>. Mobile Mark 25 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See <http://www.bapco.com> for additional details.



### WEIGHT & DIMENSIONS

#### Product Weight

Starting at 1.69 kg (3.73 lb) with 62.00 Wh battery

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

#### Product Dimensions (w x d x h)

359.00 mm (W) x 250.00 mm (D) x 11.55 mm (front)/ 15.50 mm (rear) (14.13 in (W) x 9.84 in (D) x 0.45 in (front)/ 0.61 in (rear))

Maximum height 21.65 mm (0.85)

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.

#### Packaging and Pallet Dimensions

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](#).



### PORTS/SLOTS

#### Left side

- 2 x Thunderbolt™ 4 with Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 2.1) <sup>39</sup>
- 1 x HDMI 2.1
- 1 x headphone/mic combo jack
- 1 x Smart Card Reader (Optional)

#### Right side

- 1 x USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)
- 1 x USB Type-A® 5Gbps signaling rate (Powered)
- 1 x RJ45 Ethernet port (Optional) <sup>40</sup>
- 1 x Nano SIM card slot (Optional)
- 1 x Security lock slot (Integrated)

39. USB 20Gbps signaling rate is not available with Thunderbolt™ 4. Actual throughput may vary.

40. RJ-45 port must be configured at time of purchase and is not available in all regions.

### SERVICE AND SUPPORT

1-year warranty and 90 day software limited warranty options depending on country. HP Worldwide Limited Warranty for the battery is aligned with the warranty period of the HP Hardware Product. 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>40</sup>

40. 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.



### SYSTEM UNIT

#### Stand-Alone Power Requirements (AC Power)

Nominal Operating Voltage	20.0V
Max Operating Power	UMA 100W Discrete W

#### Temperature

Operating	0° to 35° C (32° to 95° F) System performance may be reduced above 32°C (89.6°F)
Non-operating	-20° to 60° C (-4° to 140° F) System performance may be reduced above 32°C (89.6°F)

#### Relative Humidity

Operating	10% to 90 % (non-condensing)
Non-operating	5% to 95 %, 38.7° C (101.6° F) maximum wet bulb temperature

#### Shock

Operating	40 G, 2 ms, half-sine
Non-operating	240 G, 2 ms, half-sine

#### Random Vibration

Operating	1.043 grms
Non-operating	3.500 grms

#### Altitude (unpressurized)

Operating	3048 m (10000 ft)
Non-operating	12192 m (40000 ft)

#### Industry Standard Certifications

Regulatory Model Number	HSN-I63C-6
CSA/UL 62368-1	Yes
UL 62368-1	Yes
ENERGY STAR®	Yes <sup>41</sup>
FCC/ICES/CISPR/VCCI	Yes
CE MARKING	Yes
GS Mark	Yes

Related commodity should comply with ISO 9241 Standards.

China CCC/SRRC/CEL	Yes
Taiwan BSMI/NCC	Yes
Korea KCC/KC/KES	Yes
Ukraine NSoC/TEC	Yes
EAEU Compliance	Yes
Saudi Arabian Compliance	Yes
TCO	Yes
EPEAT Gold	Yes <sup>42</sup>
Low Blue Light	Yes
WW RoHS	Yes
CECP	TBD

These are requirements from the Category PM, which usually occur after RTP. At this stage, no requests have been received yet.



Medical EMC: IEC 60601-1-2:2014 EN60601-1-2: Yes

2015

SEPA

TBD

These are requirements from the Category PM, which usually occur after RTP.

At this stage, no requests have been received yet.

MIL-STD Testing

Yes <sup>43</sup>

41. Configurations that are ENERGY STAR® qualified are identified as ENERGY STAR on HP websites and on <http://www.energystar.gov>

42. 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.

43. MIL STD 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.



### DISPLAYS

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

Availability may vary by country

**16.0 cm (6.3") diagonal,  
WUXGA (1920 x 1200), LCE,  
UWVA, Anti-Glare, WLED, 300  
nits, sRGB 62.5%**

<b>Active Area</b>	344.6784 x 215.424 mm (typ)
<b>Dimensions (W x H)</b>	350.680 x 226.070 mm (max)
<b>Weight</b>	390 g (max)
<b>Diagonal Size</b>	16 inch
<b>Surface Treatment</b>	Anti-Glare
<b>Touch Enabled</b>	No
<b>Contrast Ratio</b>	1,000:1 (typ)
<b>Refresh Rate</b>	60 Hz (typ)
<b>Brightness</b>	300 nits (typ)
<b>Pixel Resolution</b>	RGB
<b>Pixel Resolution - Format</b>	1920 x 1200 (WUXGA)
<b>Aspect Ratio</b>	16:10
<b>Backlight</b>	WLED
<b>Color Gamut Coverage</b>	sRGB 62.5%
<b>Color Depth</b>	8 bit
<b>Viewing Angle</b>	UWVA 89/89/89/89
<b>Low Blue Light</b>	No
<b>Power Consumption</b>	2.7 W (max) / 3.4 W (max)

**16.0 cm (6.3") diagonal, 2.5K  
(2560 x 1600), LCD, 120Hz  
(VRR), UWVA, Anti-Glare,  
WLED+Low Blue Light, 400  
nits, Adobe 100% + DCI-P3  
100%**

<b>Active Area</b>	344.6784 x 215.424 mm (typ)
<b>Dimensions (W x H)</b>	349.98 x 224.82 mm (max)
<b>Weight</b>	280 g (max)
<b>Diagonal Size</b>	16 inch
<b>Surface Treatment</b>	Anti-Glare
<b>Touch Enabled</b>	No
<b>Contrast Ratio</b>	2,000:1 (typ)
<b>Refresh Rate</b>	120 Hz (typ)
<b>Brightness</b>	400 nits (typ)
<b>Pixel Resolution</b>	RGB
<b>Pixel Resolution - Format</b>	2560 x 1600 (2.5K)
<b>Aspect Ratio</b>	16:10
<b>Backlight</b>	WLED
<b>Color Gamut Coverage</b>	Adobe RGB 100% + DCI-P3 100%
<b>Color Depth</b>	8 bit
<b>Viewing Angle</b>	UWVA 89/89/89/89
<b>Low Blue Light</b>	Yes
<b>Power Consumption</b>	2.5 W (max) / 3.0 W (max)



**16.0 cm (6.3") diagonal,  
WUXGA (1920 x 1200), LCD,  
UWVA, Anti-Glare, WLED+Low  
Blue Light, 400 nits, Low  
Power, sRGB 100%**

<b>Active Area</b>	344.678 x 215.424 mm (typ)
<b>Dimensions (W x H)</b>	350.680 x 226.470 mm (max)
<b>Weight</b>	330 g (max)
<b>Diagonal Size</b>	16 inch
<b>Surface Treatment</b>	Anti-Glare
<b>Touch Enabled</b>	No
<b>Contrast Ratio</b>	1,000:1 (typ)
<b>Refresh Rate</b>	60 Hz (typ)
<b>Brightness</b>	400 nits (typ)
<b>Pixel Resolution</b>	RGB
<b>Pixel Resolution - Format</b>	1920 x 1200 (WUXGA)
<b>Aspect Ratio</b>	16:10
<b>Backlight</b>	WLED
<b>Color Gamut Coverage</b>	sRGB 100%
<b>Color Depth</b>	8 bit
<b>Viewing Angle</b>	UWVA 89/89/89/89
<b>Low Blue Light</b>	Yes
<b>Power Consumption</b>	1.60 W (max) / 1.95 W (max)

**16.0 cm (6.3") diagonal,  
WUXGA (1920 x 1200), LCD,  
UWVA, Anti-Glare, Low Blue  
Light, 800 nits, sRGB 100%, HP  
Sure View 5**

<b>Active Area</b>	344.680 x 215.420 mm (typ)
<b>Dimensions (W x H)</b>	349.980 x 224.82 mm (max)
<b>Weight</b>	310 g (max)
<b>Diagonal Size</b>	16 inch
<b>Surface Treatment</b>	Anti-Glare
<b>Touch Enabled</b>	No
<b>Contrast Ratio</b>	1,500 : 1 (typ)
<b>Refresh Rate</b>	60 Hz (typ)
<b>Brightness</b>	800 nits (typ)
<b>Pixel Resolution</b>	RGB
<b>Pixel Resolution - Format</b>	1920 x 1200 (WUXGA)
<b>Aspect Ratio</b>	16:10
<b>Backlight</b>	WLED
<b>Color Gamut Coverage</b>	sRGB 100%
<b>Color Depth</b>	8 bit
<b>Viewing Angle</b>	UWVA 89/89/89/89
<b>Low Blue Light</b>	Yes
<b>Power Consumption</b>	1.93 W (max) / 2.38 W (max)

**16.0 cm (6.3") diagonal,  
WUXGA (1920 x 1200), LCD,  
Touch, UWVA, Anti-Glare,  
WLED, 300 nits, sRGB 62.5%**

<b>Active Area</b>	344.680 x 215.420 mm (typ)
<b>Dimensions (W x H)</b>	350.680 x 226.070 mm (max)
<b>Weight</b>	400 g (max)
<b>Diagonal Size</b>	16 inch
<b>Surface Treatment</b>	Anti-Glare
<b>Touch Enabled</b>	Yes



<b>Contrast Ratio</b>	1,000 : 1 (typ)
<b>Refresh Rate</b>	60 Hz (typ)
<b>Brightness</b>	300 nits (typ)
<b>Pixel Resolution</b>	RGB
<b>Pixel Resolution - Format</b>	1920 x 1200 (WUXGA)
<b>Aspect Ratio</b>	16:10
<b>Backlight</b>	WLED
<b>Color Gamut Coverage</b>	sRGB 62.5%
<b>Color Depth</b>	8 bit
<b>Viewing Angle</b>	UWVA 89/89/89/89
<b>Low Blue Light</b>	No
<b>Power Consumption</b>	2.43 W (max) / 3.03 W (max)



### STORAGE

#### 2 TB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell <sup>1</sup>

<b>Form Factor</b>	M.2 2280
<b>Capacity</b>	2TB
<b>NAND Type</b>	TLC
<b>Weight</b>	10 g (0.02 lb)
<b>Interface</b>	PCIe NVMe Gen4X4
<b>Sequential Read</b>	6400 MB/s ±20%
<b>Sequential Write</b>	5000 MB/s ±20%
<b>Logical Blocks</b>	4,000,797,360
<b>Features</b>	Pyrite 2.0; TRIM; L1.2 Not all features are available in all versions.

#### 1 TB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell <sup>1</sup>

<b>Form Factor</b>	M.2 2280
<b>Capacity</b>	1TB
<b>NAND Type</b>	TLC
<b>Weight</b>	10 g (0.02 lb)
<b>Interface</b>	PCIe NVMe Gen4X4
<b>Sequential Read</b>	6400 MB/s ±20%
<b>Sequential Write</b>	5000 MB/s ±20%
<b>Logical Blocks</b>	2,000,409,264
<b>Features</b>	Pyrite 2.0; TRIM; L1.2 Not all features are available in all versions.

#### 1 TB PCIe® NVMe™ SSD Value <sup>1</sup>

<b>Form Factor</b>	M.2 2280
<b>Capacity</b>	1TB
<b>NAND Type</b>	Value
<b>Weight</b>	10 g (0.02 lb)
<b>Interface</b>	PCIe NVMe Gen4X4
<b>Sequential Read</b>	2200 MB/s ±20%
<b>Sequential Write</b>	1600 MB/s ±20%
<b>Logical Blocks</b>	2,000,409,264
<b>Features</b>	Pyrite 2.0; TRIM; L1.2 Not all features are available in all versions.

#### 512 GB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell <sup>1</sup>

<b>Form Factor</b>	M.2 2280
<b>Capacity</b>	512GB
<b>NAND Type</b>	TLC
<b>Weight</b>	10 g (0.02 lb)
<b>Interface</b>	PCIe NVMe Gen4X4
<b>Sequential Read</b>	6400 MB/s ±20%
<b>Sequential Write</b>	3500 MB/s ±20%
<b>Logical Blocks</b>	1,000,215,215
<b>Features</b>	Pyrite 2.0; TRIM; L1.2 Not all features are available in all versions.



<b>512 GB PCIe® Gen4x4 NVMe™ Self Encrypted OPAL2 SSD Three Layer Cell</b> <sup>1</sup>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	512GB
	<b>NAND Type</b>	TLC
	<b>Weight</b>	10 g (0.02 lb)
	<b>Interface</b>	PCIe NVMe Gen4X4
	<b>Sequential Read</b>	6400 MB/s ±20%
	<b>Sequential Write</b>	3500 MB/s ±20%
	<b>Logical Blocks</b>	1,000,215,215
	<b>Features</b>	TCG Opal 2.0; TRIM; L1.2
		Not all features are available in all versions.

<b>512 GB PCIe® NVMe™ SSD Value</b> <sup>1</sup>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	512 GB
	<b>NAND Type</b>	Value
	<b>Weight</b>	10 g (0.02 lb)
	<b>Interface</b>	PCIe NVMe Gen4X4
	<b>Sequential Read</b>	2200 MB/s ±20%
	<b>Sequential Write</b>	1000 MB/s ±20%
	<b>Logical Blocks</b>	1,000,215,215
	<b>Features</b>	Pyrite 2.0; TRIM; L1.2
		Not all features are available in all versions.

<b>256 GB PCIe® NVMe™ Self Encrypted OPAL2 SSD Value</b> <sup>1</sup>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	256 GB
	<b>NAND Type</b>	Value
	<b>Weight</b>	10 g (0.02 lb)
	<b>Interface</b>	PCIe NVMe Gen4X4
	<b>Sequential Read</b>	2000 MB/s ±20%
	<b>Sequential Write</b>	900 MB/s ±20%
	<b>Logical Blocks</b>	500,118,192
	<b>Features</b>	TCG Opal 2.0; TRIM; L1.2
		Not all features are available in all versions.

<b>256 GB PCIe® NVMe™ SSD Value</b> <sup>1</sup>	<b>Form Factor</b>	M.2 2280
	<b>Capacity</b>	256 GB
	<b>NAND Type</b>	Value
	<b>Weight</b>	10 g (0.02 lb)
	<b>Interface</b>	PCIe NVMe Gen4X4
	<b>Sequential Read</b>	2000 MB/s ±20%
	<b>Sequential Write</b>	900 MB/s ±20%
	<b>Logical Blocks</b>	500118192
	<b>Features</b>	Pyrite 2.0; TRIM; L1.2
		Not all features are available in all versions.



1. For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 32 GB is reserved for system recovery software.



### NETWORKING / COMMUNICATION

<p><b>Mediatek RZ616 Wi-Fi 6E</b> <b>Bluetooth® 5.3 AIM-T WLAN<sup>1,2</sup></b></p>	<p><b>Wireless LAN Standards</b></p>	<p>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 802.11j IEEE 802.11k IEEE 802.11mc IEEE 802.11n IEEE 802.11r IEEE 802.11v IEEE 802.11w</p>
	<p><b>Interoperability</b></p>	<p>Wi-Fi certified</p>
	<p><b>Frequency Band</b></p>	<p>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 5.925 – 7.125 GHz</p>
	<p><b>Data Rates</b></p>	<p>802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11ac: MCS0~MCS9, (20MHz, 40MHz, 80MHz, 160MHz) 802.11ax: MCS0~MCS11, (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: MCS0~MCS15, (20MHz, 40MHz)</p>
	<p><b>Modulation</b></p>	<p>1024QAM, 16-QAM, 256-QAM, 64-QAM, BPSK, CCK, Direct Sequence Spread Spectrum, OFDM, QPSK</p>
	<p><b>Security</b></p>	<p>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</p>
	<p><b>Network Architecture Models</b></p>	<p>Ad-hoc (Peer to Peer)</p>



<b>Roaming</b>	Infrastructure (Access Point Required) IEEE 802.11 compliant roaming between access points
<b>Output Power</b>	2.4GHz (MIMO, typical): <ul style="list-style-type: none"><li>• 802.11b : +18dBm</li><li>• 802.11g : +16.5dBm</li><li>• 802.11n/ac/ax (HT20/VHT20/HE20) : +16dBm</li><li>• 802.11n/ac/ax (HT40/VHT40/HE40) : +12.5dBm</li></ul> 5GHz (MIMO, typical): <ul style="list-style-type: none"><li>• 802.11a : +13dBm</li><li>• 802.11n/ac/ax (HT20/VHT20/HE20) : +13.5dBm</li><li>• 802.11n/ac/ax (HT40/VHT40/HE40) : +12.5dBm</li><li>• 802.11ac/ax (VHT80/HE80) : +11.5dBm</li><li>• 802.11ax HE160 : +11.5dBm</li></ul> 6GHz LPI mode (MIMO, typical):: <ul style="list-style-type: none"><li>• 802.11a : 0dBm</li><li>• 802.11ax HE20 : +1dBm</li><li>• 802.11ax HE40 : +4dBm</li><li>• 802.11ax HE80 : +7dBm</li><li>• 802.11ax HE160 : +7.5dBm</li></ul>
<b>Power Consumption</b>	Transmit mode : 2.5 W Receive mode : 2.0 W Idle mode (PSP) : 180 mW (WLAN Associated) Idle mode: 50 mW (WLAN unassociated) Connected Standby/Modern Standby : 10 mW Radio disabled : 8 mW
<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
<b>Receiver Sensitivity<sup>3</sup></b>	2.4GHz (SISO): <ul style="list-style-type: none"><li>• 802.11b, 11Mbps : -82dBm maximum</li><li>• 802.11g, 54Mbps : -71dBm maximum</li><li>• 802.11n, MCS7 : -64dBm maximum</li><li>• 802.11ac, MCS9 : -52dBm maximum</li><li>• 802.11ax, MCS11(HT40): -49dBm maximum</li></ul> 5GHz (SISO): <ul style="list-style-type: none"><li>• 802.11a, 54Mbps : -71dBm maximum</li><li>• 802.11n, MCS07 : -64dBm maximum</li><li>• 802.11ac, MCS9 : -52dBm maximum</li><li>• 802.11ax, MCS11(HE80/HE160): -46dBm maximum</li></ul> 6GHz (SISO): <ul style="list-style-type: none"><li>• 802.11a, 54Mbps : -71dBm maximum</li><li>• 802.11n, MCS7 : -64dBm maximum</li><li>• 802.11ac, MCS9 : -52dBm maximum</li><li>• 802.11ax, MCS11(HE160): -46dBm maximum</li></ul>



<b>Antenna type</b>	High efficiency antenna with spatial diversity Two embedded tri-band 2.4/5/6 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications
<b>Form Factor</b>	PCI-Express M.2 MiniCard
<b>Dimensions</b>	30.00 x 22.00 x 2.30 mm (1.18 x 0.87 x 0.09 inch)
<b>Weight</b>	1. Type 2230: 2.8 g
<b>Operating Voltage</b>	3.3 v +/- 9 %
<b>Integrated Bluetooth® specifications</b>	
<b>Bluetooth® Specification</b>	4.0/4.1/4.2/5.0/5.1/5.2/5.3 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 1.5 Bluetooth device with a maximum transmit power of + 14 dBm and 10 dBm for BR and EDR, respectively.
<b>Power Consumption</b>	Peak (Tx): 330 mW Peak (Rx): 230 mW Selective Suspend: 17 mW
<b>Bluetooth® Software</b>	Microsoft Windows Bluetooth Software
<b>Supported Link Topology</b>	
<b>Power Management</b>	Microsoft Windows ACPI, and USB Bus Support
<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>	2Mbps LE Advanced Audio Distribution Profile (A2DP) Basic Imaging Profile (BIP) Bluetooth 4.1 -ESR 5/6/7 Compliance Bluetooth 4.2 ESR08 Compliance Bluetooth 5.2 Bluetooth 5.3 wireless card Channel Selection Algo Encryption key size control enhancements ESR9/10 Compliance FAX Profile (FAX) Hands Free Profile (HFP) Headset Profile (HSP) LE Advertisement Extensions



- LE Data Packet Length Extension
- LE Dual Mode
- LE L2CAP Connection Oriented Channels
- LE Link Layer
- LE Link Layer Ping
- LE Long Range
- LE Low Duty Cycle Directed Advertising
- LE Privacy 1.2 –Extended Scanner Filter Policies
- LE Privacy 1.2 –Link Layer Privacy
- LE Secure Connection- Basic/Full
- Limited High Duty Cycle Non-Connectable Advertising
- Periodic Advertisement interval
- Train Nudging & Interlaced Scan
- Windows Bluetooth profiles support

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. Wi-Fi 6E is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately.

3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

**Mediatek MT7925 Wi-Fi 7  
Bluetooth® 5.4 AIM-T WW  
WLAN<sup>1</sup>**

**Wireless LAN Standards**

- IEEE 802.11a
- IEEE 802.11ac
- IEEE 802.11ax
- IEEE 802.11b
- IEEE 802.11be
- IEEE 802.11d
- IEEE 802.11e
- IEEE 802.11g
- IEEE 802.11h
- IEEE 802.11i
- IEEE 802.11k
- IEEE 802.11n
- IEEE 802.11r
- IEEE 802.11v

**Interoperability  
Frequency Band**

- Wi-Fi certified
- 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
	5.955 – 6.415 GHz
	6.435 – 6.515 GHz
	6.535 – 6.875 GHz
	6.895 – 7.115 GHz
<b>Data Rates</b>	802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11ac: MCS0~MCS9, (20MHz, 40MHz, 80MHz, 160MHz) 802.11ax: MCS0~MCS11, (20MHz, 40MHz, 80MHz, 160MHz) 802.11b: 1, 2, 5.5, 11 Mbps 802.11be: MCS0~13, (20MHz, 40MHz, 80MHz, 160MHz) 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: MCS0~MCS15, (20MHz, 40MHz)
<b>Modulation</b>	1024QAM, 16-QAM, 256-QAM, 4096-QAM, 64-QAM, BPSK, CCK, Direct Sequence Spread Spectrum, OFDM, QPSK
<b>Security</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 (personal) 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</b>	<ul style="list-style-type: none"> <li>• 802.11b, 1Mbps : +17dBm minimum</li> <li>• 802.11g, 6Mbps : +16dBm minimum</li> <li>• 802.11a, 6Mbps : +17dBm minimum</li> <li>• 802.11n, MCS7(HT20) : +14dBm minimum</li> <li>• 802.11n, MCS7(HT40) : +13.5dBm minimum</li> <li>• 802.11ac MCS9(VHT20) : 13.5dBm minimum</li> <li>• 802.11ac MCS9(VHT40) : +13.5dBm minimum</li> <li>• 802.11ac MCS9(VHT80) : +12.5dBm minimum</li> <li>• 802.11ac MCS9(VHT160) : +10.5dBm minimum</li> <li>• 802.11ax MCS11(HE20)(6GHz) : +11.5dBm minimum</li> <li>• 802.11ax MCS11(HE40)(6GHz) : +7.5dBm minimum</li> <li>• 802.11ax MCS11(HE80)(6GHz) : +7.5dBm minimum</li> <li>• 802.11ax MCS11(HE160)(6GHz) : +7.5dBm minimum</li> <li>• 802.11be MCS13(EHT20)(6GHz) : +11.5dBm</li> <li>• 802.11be MCS13(EHT40)(6GHz) : +7.5dBm</li> <li>• 802.11be MCS13(EHT80)(6GHz) : +7.5dBm</li> <li>• 802.11be MCS13(EHT160)(6GHz) : +6.5dBm</li> </ul>
<b>Power Consumption</b>	Transmit mode : 2.7 W



	<p>Receive mode : 1.8 W</p> <p>Idle mode (PSP) : 180 mW (WLAN Associated)</p> <p>Idle mode: 50 mW (WLAN unassociated)</p> <p>Connected Standby/Modern Standby : 10 mW</p> <p>Radio disabled : 8 mW</p>
<b>Power Management</b>	ACPI and PCI Express compliant power management; 802.11 compliant power saving mode
<b>Receiver Sensitivity<sup>2</sup></b>	<ul style="list-style-type: none"> <li>•802.11b, 1Mbps : -93.5dBm maximum</li> <li>•802.11b, 11Mbps : -85dBm maximum</li> <li>•802.11a/g, 6Mbps : -90.5dBm maximum</li> <li>•802.11a/g, 54Mbps : -72.5dBm maximum</li> <li>•802.11n, MCS0(HT20) : -90dBm maximum</li> <li>•802.11n, MCS7(HT20) : -71.5dBm maximum</li> <li>•802.11n, MCS0(HT40) : -88.5dBm maximum</li> <li>•802.11n, MCS7(HT40) : -68.5dBm maximum</li> <li>•802.11ac, MCS9(VHT20) : -88.5dBm maximum</li> <li>•802.11ac, MCS9(VHT40) : -65.5dBm maximum</li> <li>•802.11ac, MCS9(VHT80) : -60.5dBm maximum</li> <li>•802.11ac, MCS9(VHT160) : -58.5dBm maximum</li> <li>•802.11ax, MCS11(HE20)(6GHz) : -59.5dBm maximum</li> <li>•802.11ax, MCS11(HE40)(6GHz) : -56.5dBm maximum</li> <li>•802.11ax, MCS11(HE80)(6GHz) : -53.5dBm maximum</li> <li>•802.11ax, MCS11(HE160)(6GHz) : -51.5dBm maximum</li> <li>•802.11be, MCS13(EHT20)(6GHz) : -55.5dBm maximum</li> <li>•802.11be, MCS13(EHT40)(6GHz) : -53.5dBm maximum</li> <li>•802.11be, MCS13(EHT80)(6GHz) : -51.5dBm maximum</li> <li>•802.11be, MCS13(EHT160)(6GHz) : -48.5dBm maximum</li> </ul>
<b>Antenna type</b>	<p>High efficiency antenna with spatial diversity, mounted in the display enclosure</p> <p>Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications</p>
<b>Form Factor</b>	PCI-Express M.2 MiniCard
<b>Dimensions</b>	30.00 x 22.00 x 2.30 mm (1.18 x 0.87 x 0.09 inch)
<b>Weight</b>	1. Type 2230: 2.8 g
<b>Operating Voltage</b>	3.3 v +/- 9 %
<b>Integrated Bluetooth® specifications</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 +15.5 dBm for BR and +13dBm for EDR.
<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, and USB Bus Support
<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>	2Mbps LE Advanced Audio Distribution Profile (A2DP) Basic Imaging Profile (BIP) Channel Selection Algo Encryption key size control enhancements ESR9/10 Compliance FAX Profile (FAX) Hands Free Profile (HFP) Headset Profile (HSP) LE Advertisement Extensions LE Data Packet Length Extension LE Dual Mode LE L2CAP Connection Oriented Channels LE Link Layer LE Link Layer Ping LE Long Range LE Low Duty Cycle Directed Advertising LE Privacy 1.2 –Extended Scanner Filter Policies LE Privacy 1.2 –Link Layer Privacy LE Secure Connection- Basic/Full Limited High Duty Cycle Non-Connectable Advertising Train Nudging & Interlaced Scan

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 OS, 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.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).



<p><b>Qualcomm® Fast Connect 7800</b></p> <p><b>Wi-Fi 7 Bluetooth® 5.4 AIM-T</b></p> <p><b>WW WLAN<sup>1</sup></b></p>	<p><b>Wireless LAN Standards</b></p>	<p>IEEE 802.11a</p> <p>IEEE 802.11ac</p> <p>IEEE 802.11ax</p> <p>IEEE 802.11b</p> <p>IEEE 802.11be</p> <p>IEEE 802.11d</p> <p>IEEE 802.11e</p> <p>IEEE 802.11g</p> <p>IEEE 802.11h</p> <p>IEEE 802.11i</p> <p>IEEE 802.11k</p> <p>IEEE 802.11n</p> <p>IEEE 802.11r</p> <p>IEEE 802.11v</p>
	<p><b>Interoperability</b></p> <p><b>Frequency Band</b></p>	<p>Wi-Fi certified</p> <p>802.11b/g/n/ax</p> <p>2.402 – 2.482 GHz</p> <p>802.11a/n/ac/ax</p> <p>4.9 – 4.95 GHz (Japan)</p> <p>5.15 – 5.25 GHz</p> <p>5.25 – 5.35 GHz</p> <p>5.47 – 5.725 GHz</p> <p>5.825 – 5.850 GHz</p> <p>5.955 – 6.415 GHz</p> <p>6.435 – 6.515 GHz</p> <p>6.535 – 6.875 GHz</p> <p>6.895 – 7.115 GHz</p>
	<p><b>Data Rates</b></p>	<p>802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</p> <p>802.11ac : MCS0 ~ MCS9, (20MHz, 40MHz, 80MHz, 160MHz)</p> <p>802.11ax : MCS0 ~ MCS11, (20MHz, 40MHz, 80MHz, 160MHz)</p> <p>802.11b: 1, 2, 5.5, 11 Mbps</p> <p>802.11be : MCS0~13, (20MHz, 40MHz, ,80MHz, 160MHz, 320MHz)</p> <p>802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</p> <p>802.11n: MCS 0 ~ MCS 15, (20MHz, 40MHz)</p>
	<p><b>Modulation</b></p>	<p>1024QAM, 16-QAM, 256-QAM, 4096QAM, 64-QAM, BPSK, CCK, Direct Sequence Spread Spectrum, OFDM, QPSK</p>
	<p><b>Security</b></p>	<p>802.1x authentication</p> <p>AES-CCMP: 128 bit in hardware</p> <p>IEEE 802.11i</p> <p>IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only</p> <p>WAPI</p> <p>WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</p> <p>WPA2 certification</p>



<b>Network Architecture Models</b>	WPA3 (personal) certification Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
<b>Roaming</b>	IEEE 802.11 compliant roaming between access points
<b>Output Power</b>	<ul style="list-style-type: none"> <li>• 802.11b, 1Mbps : +17dBm minimum</li> <li>• 802.11g, 6Mbps : +16dBm minimum</li> <li>• 802.11a, 6Mbps : +17dBm minimum</li> <li>• 802.11n, MCS7(HT20) : +14dBm minimum</li> <li>• 802.11n, MCS7(HT40) : +13.5dBm minimum</li> <li>• 802.11ac MCS9(VHT20) : 13.5dBm minimum</li> <li>• 802.11ac MCS9(VHT40) : +13.5dBm minimum</li> <li>• 802.11ac MCS9(VHT80) : +12.5dBm minimum</li> <li>• 802.11ac MCS9(VHT160) : +10.5dBm minimum</li> <li>• 802.11ax MCS11(HE20)(6GHz) : +11.5dBm minimum</li> <li>• 802.11ax MCS11(HE40)(6GHz) : +7.5dBm minimum</li> <li>• 802.11ax MCS11(HE80)(6GHz) : +7.5dBm minimum</li> <li>• 802.11ax MCS11(HE160)(6GHz) : +7.5dBm minimum</li> <li>• 802.11be MCS13(EHT20)(6GHz) : 11.5dBm</li> <li>• 802.11be MCS13(EHT40)(6GHz) : 7.5dBm</li> <li>• 802.11be MCS13(EHT80)(6GHz) : 7.5dBm</li> <li>• 802.11be MCS13(EHT160)(6GHz) : 6.5dBm</li> <li>• 802.11be MCS13(EHT320)(6GHz) : 4.5dBm</li> </ul>
<b>Power Consumption</b>	Transmit mode : 3.1 W Receive mode : 1.8 W Idle mode (PSP) : 180 mW (WLAN Associated) Idle mode: 50 mW (WLAN unassociated) Connected Standby/Modern Standby : 10 mW Radio disabled : 8 mW
<b>Power Management</b>	ACPI and PCI Express compliant power management; 802.11 compliant power saving mode
<b>Receiver Sensitivity<sup>2</sup></b>	<ul style="list-style-type: none"> <li>• 802.11b, 1Mbps : -93.5dBm maximum</li> <li>• 802.11b, 11Mbps : -85dBm maximum</li> <li>• 802.11a/g, 6Mbps : -90.5dBm maximum</li> <li>• 802.11a/g, 54Mbps : -72.5dBm maximum</li> <li>• 802.11n, MCS0(HT20) : -90dBm maximum</li> <li>• 802.11n, MCS7(HT20) : -71.5dBm maximum</li> <li>• 802.11n, MCS0(HT40) : -88.5dBm maximum</li> <li>• 802.11n, MCS7(HT40) : -68.5dBm maximum</li> <li>• 802.11ac, MCS9(VHT20) : -88.5dBm maximum</li> <li>• 802.11ac, MCS9(VHT40) : -65.5dBm maximum</li> <li>• 802.11ac, MCS9(VHT80) : -60.5dBm maximum</li> <li>• 802.11ac, MCS9(VHT160) : -58.5dBm maximum</li> <li>• 802.11ax, MCS11(HE20)(6GHz) : -59.5dBm maximum</li> <li>• 802.11ax, MCS11(HE40)(6GHz) : -56.5dBm maximum</li> </ul>



<b>Antenna type</b>	<ul style="list-style-type: none"> <li>• 802.11ax, MCS11(HE80)(6GHz) : -53.5dBm maximum</li> <li>• 802.11ax, MCS11(HE160)(6GHz) : -51.5dBm maximum</li> <li>• 802.11be, MCS13(EHT20)(6GHz) : -55.5dBm maximum</li> <li>• 802.11be, MCS13(EHT40)(6GHz) : -53.5dBm maximum</li> <li>• 802.11be, MCS13(EHT80)(6GHz) : -51.5dBm maximum</li> <li>• 802.11be, MCS13(EHT160)(6GHz) : -48.5dBm maximum</li> <li>• 802.11be, MCS13(EHT320)(6GHz) : -45.5dBm maximum</li> </ul> <p>High efficiency antenna with spatial diversity</p> <p>Two embedded tri-band 2.4/5/6 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications</p>
<b>Form Factor</b>	PCI-Express M.2 MiniCard
<b>Dimensions</b>	30.00 x 22.00 x 2.35 mm (1.18 x 0.87 x 0.09 inch)
<b>Weight</b>	1. Type 2230: 3.1 g
<b>Operating Voltage</b>	3.3 v +/- 9 %
<b>Integrated Bluetooth® specifications</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 +15.5 dBm for BR and +13dBm for EDR.
<b>Power Consumption</b>	Peak (Tx): 330 mW Peak (Rx): 230 mW Selective Suspend: 17 mW
<b>Bluetooth® Software</b>	Microsoft Windows Bluetooth Software
<b>Supported Link Topology</b>	
<b>Power Management</b>	Microsoft Windows ACPI, and USB Bus Support
<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>	2Mbps LE Advanced Audio Distribution Profile (A2DP) Basic Imaging Profile (BIP) Bluetooth 4.1 -ESR 5/6/7 Compliance Bluetooth 4.2 ESR08 Compliance Bluetooth 5.2 Bluetooth 5.3 wireless card

- Channel Selection Algo
- Encryption key size control enhancements
- ESR9/10 Compliance
- FAX Profile (FAX)
- Hands Free Profile (HFP)
- Headset Profile (HSP)
- LE Advertisement Extensions
- LE Data Packet Length Extension
- LE Dual Mode
- LE L2CAP Connection Oriented Channels
- LE Link Layer
- LE Link Layer Ping
- LE Long Range
- LE Low Duty Cycle Directed Advertising
- LE Privacy 1.2 –Extended Scanner Filter Policies
- LE Privacy 1.2 –Link Layer Privacy
- LE Secure Connection- Basic/Full
- Limited High Duty Cycle Non-Connectable Advertising
- Periodic Advertisement interval
- Train Nudging & Interlaced Scan
- Windows Bluetooth profiles support

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 OS, 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.Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

### HP 5G Sub-6 CAT19

#### Technology/Operating bands

WCDMA/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 8: 880 to 915 MHz (UL), 925 to 960 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 43: 3400 to 3800 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)
	Band 71: 663 to 698 MHz (UL), 617 to 652 MHz (DL)
<b>Wireless protocol standards</b>	5G NR Air Interface 3GPP Rel15 5G NR sub-6 LTE Rel15 3GPP Release 8 UMTS Specification
<b>GPS</b>	Standalone/A-GPS (MS-A, MS-B)
<b>GPS bands</b>	GPS L1 (1575.42MHz), GLONASS L1 (1602MHz), Beidou B1 (1561.098MHz), Galileo E1 (1575.42MHz), QZSS (1575.42MHz)
<b>Maximum data rates</b>	SA 5G/NR sub-6 Peak: 4.67 Gbps(Download), 1.25 Gbps(Upload)
<b>Maximum output power</b>	HSPA+: 23.5 dBm LTE (all bands except B41): 23.0 dBm (Not support HPUE) NR (all band except n41, n77, n78, n79): 23.0 dBm (Not support HPUE) NR n41, n77, n78, n79 HPUE: 26.0 dBm (Support HPUE)
<b>Maximum power consumption</b>	5G Sub 6: 3,500 mA LTE: 2,500 mA (peak); mA (average)
<b>Form Factor</b>	M.2; 3052-S3 Key B
<b>Weight</b>	8.6 g (0.303 oz)
<b>Dimensions (Length x Width x Thickness)</b>	30.00 x 52.00 x 2.30 mm (1.18 x 2.05 x 0.09 inch)
<b>embedded eSIM</b>	Yes



1. 5G module is optional. WWAN-ready configuration must be selected at purchase to add WWAN at a later date. Module designed for 5G NR NSA (non-standalone) 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. Module requires activation and separately purchased service contract. Check with service provider for coverage and availability in your area. Data connection, upload and download speeds will vary due to network, location, environment, network conditions, and other factors. Backwards compatible to 4G LTE and 3G HSPA technologies. 5G module planned to be available in select platforms and select countries, where carrier supported.

### HP 4G CAT19

#### Technology/Operating bands

#### WCDMA/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 8: 880 to 915 MHz (UL), 925 to 960 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)

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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 43: 3400 to 3800 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)

Band 71: 663 to 698 MHz (UL), 617 to 652 MHz (DL)



<b>Wireless protocol standards</b>	LTE Rel15 3GPP Release 8 UMTS Specification
<b>GPS</b>	Standalone/A-GPS (MS-A, MS-B)
<b>GPS bands</b>	GPS L1 (1575.42MHz), GLONASS L1 (1602MHz), Beidou B1 (1561.098MHz), Galileo E1 (1575.42MHz), QZSS (1575.42MHz)
<b>Maximum data rates</b>	UE Category DL 19 (1.6 Gbps Download) , UE Category UL 18 (211 Mbps Upload)
<b>Maximum output power</b>	LTE (all bands except B41): 23.0 dBm (Not support HPUE)
<b>Maximum power consumption</b>	LTE: 2,500 mA (peak)
<b>Form Factor</b>	M.2; 3052-S3 Key B
<b>Weight</b>	8.4 g (0.296 oz)
<b>Dimensions (Length x Width x Thickness)</b>	30.00 x 52.00 x 2.30 mm (1.18 x 2.05 x 0.09 inch)
<b>embedded eSIM</b>	Yes

1. Mobile Broadband is an optional feature. Connection requires wireless data service contract, network support, and is not available in all areas. Contact service provider to determine the coverage area and availability. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products or in all countries.

<b>NFC Mirage WNC XR4V-1</b>	<b>Dimensions (L x W x H)</b>	17.00 x 10.00 x 2.00 mm (0.67 x 0.39 x 0.08 inch)
	<b>Chipset</b>	NPC300
	<b>System interface</b>	I2C
	<b>NFC RF standards</b>	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 ISO/IEC 18092 ECMA-340 NFCIP-1 Target and Initiator ECMA-320 NFCIP-2
	<b>NFC Forum Support</b>	Type 1, Type 2, Type 3 / Type 4, NFCIP-1 / NFCIP-2
	<b>Reader (PCD-VCD) Mode</b>	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 MIFARE 1K MIFARE 4K MIFARE DESFire FeliCa Jewel and Topaz
	<b>Card Emulation (PICC-VICC) Mode</b>	ISO/IEC 14443 A ISO/IEC 14443 B and B' MIFARE FeliCa
	<b>Frequency</b>	13.56 MHz
	<b>NFC Modes Supported</b>	Reader/Writer, Peer-to-Peer
	<b>Raw RF Data Rates</b>	106 kbps, 212 kbps, 424 kbps, 848 kbps



<b>Operating temperature</b>	Operating: 0 °C to 70 °C (32 °F to 158 °F) Storage: -20 °C to 125 °C (-4 °F to 257 °F)
<b>Storage temperature</b>	Operating: 10% - 90% (non-condensing) Non-Operating: 5% - 95% (non-condensing)
<b>Humidity</b>	Operating: 10% - 90% (non-condensing) Non-Operating: 5% - 95% (non-condensing)
<b>Supply Operating voltage</b>	4.35 to 5.25 Volts
<b>I/O Voltage</b>	1.8V or 3.3V
<b>Power Consumption (Booster enable, VBAT= 3.3V, VCC_BOOST = 5V)</b>	Booster enable, VBAT= 3.3V, VCC_BOOST = 5V
<b>Mode</b>	Power Consumption, Typical
<b>Polling</b>	7.3 mA
<b>Detected Test Tag Type 1</b>	Total 283.8 mA Net Module 236.8 mA
<b>Detected Test Tag Type 2</b>	Total 288.8 mA Net Module 241.8 mA
<b>Detected Test Tag Type 3</b>	Total 287.7 mA Net Module 240.7 mA
<b>Detected Test Tag Type 4</b>	Total 282.3 mA Net Module 235.3 mA
<b>Antenna</b>	Antenna connector, 0.5mm pitch, 7 connector FPC. Antenna matching is external to module.

1. Mobile Broadband is an optional feature. Connection requires wireless data service contract, network support, and is not available in all areas. Contact service provider to determine the coverage area and availability. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products or in all countries.

<b>Realtek RTL8111EPP 1GbE Ethernet Controller</b>	<b>Connector</b>	RJ-45
	<b>System Interface</b>	PCI (Intel proprietary) + SMBus/ USB
	<b>Data rates supported</b>	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14), 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30), 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 802.3 clauses 40),
	<b>IEEE Compliance</b>	IEEE 802.1p QoS (Quality of Service) Support, IEEE 802.1q VLAN support, IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable), IEEE 802.3az EEE (Energy Efficient Ethernet),
	<b>Performance</b>	TCP/IP/UDP Checksum Offload (configurable); Protocol Offload (ARP & NS); Large send offload and Giant send offload; Jumbo Frame 9K; Receiving Side Scaling;
	<b>Power consumption</b>	Cable Disconnection: 25mW 100Mbps Full Run: 450mW 1000bp Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW



	<b>Power Management</b>	<p>WoL Disable(S3/S4/S5): 25mW ACPI compliant – multiple power modes; Situation-sensitive features reduce power consumption; Advanced link down power saving for reducing link down power consumption;</p>
	<b>Management Interface IT Manageability</b>	<p>Auto MDI/MDIX Crossover cable detection Wake-on-LAN from modern standby or sleep state (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only); PXE 2.1 Remote Boot; Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30));</p>
	<b>Security &amp; Manageability</b>	<p>Support DASH 1.1 compliant/Software KVM ASF 2.0</p>
<b>Qualcomm 9205 LTE-M (CAT-M1 fSVC) <sup>1</sup></b>	<b>Technology/Operating bands</b>	<p>FDD LTE: 1700/2100 (Band 4), 1700/2100 (Band 66), 1800 (Band 3), 1900 (Band 2), 1900 (Band 25), 2100 (Band 1), 700 (Band 12 lower), 700 (Band 13 upper), 700 (Band 14 upper), 700 (Band 28), 700 (band 85), 800 (Band 20), 800 (Band 27), 850 (Band 18 lower), 850 (Band 19 upper), 850 (Band 26), 850 (Band 5), 900 (Band 8) MHz</p>
	<b>Wireless protocol standards</b>	<p>GSM/GPRS/EGPRS: 1800, 1900, 850, 900 MHz 3GPP TS 21.111 V10.0.0: USIM and IC card requirements 3GPP TS 27.005 V10.0.1: Use of Data Terminal Equipment - Data Circuit terminating Equipment (DTE - DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS) 3GPP TS 27.007 V10.0.8: AT command set for User Equipment (UE) 3GPP TS 31.102 V10.11.0: Characteristics of the Universal Subscriber Identity Module (USIM) application 3GPP TS 31.11 V10.16.0: Universal Subscriber Identity Module (USIM) Application Toolkit (USAT) 3GPP TS 36.124 V10.3.0: Electro Magnetic Compatibility (EMC) requirements for mobile terminals and ancillary equipment 3GPP TS 36.521-1 V14.3.0: User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Conformance testing 3GPP TS 51.010-1 V10.5.0: Mobile Station (MS) conformance specification; Part 1: Conformance specification 3GPP TS 51.011 V4.15.0: Specification of the Subscriber Identity Module -Mobile Equipment (SIM-ME) interface</p>
<b>GPS GPS bands</b>	<b>GPS GPS bands</b>	<p>Standalone GPS/Beidou/GLONASS/A-GPS (XTRA) 1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz, Beidou 1561.098 MHz</p>
	<b>Maximum data rates</b>	<p>LTE FDD: 375.00 Kbps(Download), 1119.00 Kbps(Upload) GPRS: 107.00 Kbps(Download), 85.60 Kbps(Upload) EGPRS: 296.00 Kbps(Download), 236.80 Kbps(Upload)</p>



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<b>Maximum output power</b>	LTE (all bands except B41): 21.5 dBm GSM: 34.0 dBm
<b>Maximum power consumption</b>	LTE: 151 mA(peak), 16 mA(average)
<b>Form Factor</b>	M.2
<b>Weight</b>	4.0 g (0.141 oz)
<b>Dimensions (Length x Width x Thickness)</b>	22.00 x 42.00 x 2.30 mm (0.87 x 1.65 x 0.09 inch)
<b>embedded eSIM</b>	Support

1. LPWAN (also called Mobile Narrowband) support HP Protect & Trace with Wolf Connect service through the subscription term, but do not support mobile broadband use.



### POWER

Power supply availability may vary by country.

<b>HP 100W Slim USB Type-C® AC power adapter</b>	Weight (DC Cable Included)	340g ± 10g (Not including power cord. Power cord varies by country.)
	Input	100 ~ 240 Vac
	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
	<b>Output</b>	
	Output power	5V/15W 9V/27W 12V/60W 15V/75W 20V/100W
	DC output	5V/9V/12V/15V/20V
	Hold-up time	100% load 5ms at 115 Vac input / 80% load 10ms at 115 Vac input
	Output Over Current Protection	5V/9V/12V/15V<125% max current, 20V<135% max current
	AC Inlet Type	C6
	DC Cable Connector	USB type C
	DC Cable Material	PVC
	<b>Connector</b>	
	Connector	C6
	<b>Environmental Design</b>	
	Operating temperature	0° to 35° C (32° to 95° F)
	Non-operating (storage) temperature	-20° to 85° C (-4° to 185° F)
	Altitude	0 to 5,000 m (0 to 16,400 ft)
	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, IEC 62368-1:2014 and IEC62368-1 : 2018, EN62368-1:2020+A11, UL 62368-1 Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, CU(EAC), KCC(Safety+EMC), NOM-001 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC, Ukraine(CoC+DoC+RoHS+ECO)



<b>HP 65W Standard USB Type-C® AC power adapter</b>	Weight (DC Cable Included)	220g ± 10g (Not including power cord. Power cord varies by country.)
	Input	100 ~ 240 Vac
	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
	<b>Output</b>	
	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 Over Current Protection	< 8.0A
	AC Inlet Type	C6
	DC Cable Connector	USB type C
	DC Cable Material	PVC
<b>Connector</b>		
Connector	C6	
<b>Environmental Design</b>		
Operating temperature	0° to 35° C (32° to 95° F)	
Non-operating (storage) temperature	-20° to 85° C (-4° to 185° F)	
Altitude	0 to 5,000 m (0 to 16,400 ft)	
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	



<b>HP 65W USB Type-C® Gallium Nitride AC power adapter</b>	Weight (DC Cable Included)	105g ± 10g (Not including power cord. Power cord varies by country.)
	Input	100 ~ 240 Vac
	Input Efficiency	81.50% min at 115 Vac / 230 Vac @5.00V
		86.70% min at 115 Vac / 230 Vac @9.00V
		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
	<b>Output</b>	
	Output power	5V/15W
		9V/27W
		15V/65W
		20V/65W
	DC output	5V/9V/15V/20V
	Hold-up time	100% load 5ms at 115 Vac input
	Output Over Current Protection	115% ~ 125%
	AC Inlet Type	C6
	DC Cable Connector	USB type C
	DC Cable Material	PVC
	<b>Connector</b>	
Connector	C6	
<b>Environmental Design</b>		
Operating temperature	0° to 35° C (32° to 95° F)	
Non-operating (storage) temperature	-20° to 85° C (-4° to 185° F)	
Altitude	0 to 5,000 m (0 to 16,400 ft)	
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	
<b>HP 65W Slim USB Type-C® AC power adapter</b>	Weight (DC Cable Included)	200g ± 10g (Not including power cord. Power cord varies by country.)
	Input	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
<b>Output</b>		
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 Over Current Protection		< 8.0A
AC Inlet Type		C6
DC Cable Connector		USB type C
DC Cable Material		PVC
<b>Connector</b>		
Connector		C6
<b>Environmental Design</b>		
Operating temperature		0° to 35° C (32° to 95° F)
Non-operating (storage) temperature		-20° to 85° C (-4° to 185° F)
Altitude		0 to 5,000 m (0 to 16,400 ft)
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
<b>HP 65W Standard USB Type-C® Halogen Free AC power adapter</b>	Weight (DC Cable Included)	220g ± 10g (Not including power cord. Power cord varies by country.)
	Input	100 ~ 240 Vac
	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
<b>Output</b>	
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 Over Current Protection	< 8.0A
AC Inlet Type	C6
DC Cable Connector	USB type C
DC Cable Material	Halogen Free
<b>Connector</b>	
Connector	C6
<b>Environmental Design</b>	
Operating temperature	0° to 35° C (32° to 95° F)
Non-operating (storage) temperature	-20° to 85° C (-4° to 185° F)
Altitude	0 to 5,000 m (0 to 16,400 ft)
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



### Battery

Battery is internal. Serviceable by warranty.

#### HP Long Life 3 cell, 62Whr

##### Polymer

Weight	Max 236.0 g (0.52 lb)
Cells/Type	3 cell Lithium-Ion Polymer cell
<b>Energy</b>	
Voltage	11.58 V
Amp-hour capacity	5355 mAh / 5086 mAh
Watt-hour capacity	62 Whr
<b>Temperature</b>	
Operating (Charging)	0° C ~ 40° C (32° to 104° F)
Operating (Discharging)	-10° C ~ 40° C (14° to 104° F)
Optional Travel Battery Available	No

#### HP Long Life 8 cell, 77Whr

##### Polymer

Weight	Max 300 g (0.66 lb)
Cells/Type	8cell Lithium-Ion Polymer cell
<b>Energy</b>	
Voltage	15.44 V
Amp-hour capacity	4988 mAh / 4738 mAh
Watt-hour capacity	77 Whr
<b>Temperature</b>	
Operating (Charging)	0° C ~ 40° C (32° to 104° F)
Operating (Discharging)	-10° C ~ 40° C (14° to 104° F)
Optional Travel Battery Available	No



### AUDIO

<b>Codec</b>	Realtek ALC3315
<b>Audio I/O Ports</b>	3.5mm Headset: CTIA only; Headphone-out
<b>Internal Speaker Amplifier</b>	Cirrus Logic High-Efficiency Boosted Class D Amplifier
<b>Multi-streaming Capable</b>	Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the front jacks or integrated speaker., Following MSFT Behavior
<b>Sampling</b>	DAC: Supports resolutions from 16-bit to 24-bit;48.0 kHz to 48.0 kHz ADC: Supports resolutions from 16-bit to 24-bit;44.1 kHz to 48.0 kHz
<b>Internal Speaker</b>	Yes

### FINGERPRINT READER

<b>Sensor vendor</b>	SYNAPTICS
<b>Sensor type</b>	Capacitive
<b>DPI resolution</b>	363 DPI
<b>Scan area</b>	104 x 86 pixels
<b>False Rejection Rate</b>	< 3%
<b>False Acceptance Rate</b>	< 0.001%
<b>Mobile Voltage Operation</b>	2.7 V ~ 3.6 V
<b>Operating Temperature</b>	5°C ~ 60°C (41°F ~ 140°F)
<b>Current Consumption Image</b>	100 mA max
<b>Low Latency Wait For Finger</b>	260 uA
<b>Capture Rate</b>	50 frames/sec
<b>ESD Resistance</b>	IEC 61000-4-2 4B (+15KV)
<b>Detection Matrix</b>	363 dpi / 7.4 x 6.0 mm sensor area

<b>Sensor vendor</b>	ELAN
<b>Sensor type</b>	Capacitive
<b>DPI resolution</b>	363 DPI
<b>Scan area</b>	56 x 56 pixels
<b>False Rejection Rate</b>	< 3%
<b>False Acceptance Rate</b>	< 0.001%
<b>Mobile Voltage Operation</b>	2.8 V ~ 3.6 V
<b>Operating Temperature</b>	-20°C ~ 80°C (-4°F ~ 176°F)
<b>Current Consumption Image</b>	100 mA max
<b>Low Latency Wait For Finger</b>	300 uA
<b>Capture Rate</b>	50 frames/sec
<b>ESD Resistance</b>	IEC 61000-4-2 4B (+15KV)
<b>Detection Matrix</b>	363 dpi / 4.0 x 4.0 mm sensor area



### OPTIONS

Category	Description	Part Number
Adapters	HP HDMI to VGA Adapter	H4F02AA
	HP USB 3.0 to Gigabit RJ45 Adapter G2	4Z7Z7AA
	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 USB 3.0 Adapter	N2Z63AA
Audio - Earbuds	HP USB-C to VGA Adapter	N9K76AA
	Poly Voyager Free 60 UC Carbon Black Earbuds +BT700 USB-C Adapter +Basic Charge Case	7Y8H4AA
	Poly Voyager Free 60 UC M Carbon Black Earbuds +BT700 USB-C Adapter +Basic Charge Case	7Y8L8AA
	Poly Voyager Free 60+ UC Carbon Black Earbuds +BT700 USB-C Adapter +Touchscreen Charge Case	7Y8G4AA,7Y8H2AA
	Poly Voyager Free 60+ UC M Carbon Black Earbuds +BT700 USB-C Adapter +Touchscreen Charge Case	7Y8H0AA
Audio - Headset	Poly Blackwire 3210 Monaural USB-C Headset +USB-C/A Adapter	8X214AA
	Poly Blackwire 3215 Monaural USB-C Headset +3.5mm Plug +USB-C/A Adapter	8X227AA
	Poly Blackwire 3220 Stereo USB-C Headset +USB-C/A Adapter	93S87AA,8X228AA
	Poly Blackwire 3310 Monaural Microsoft Teams Certified USB-C Headset +USB-C/A Adapter	8X216AA
	Poly Blackwire 3310 Monaural USB-C Headset +USB-C/A Adapter	8X215AA
	Poly Blackwire 3315 Monaural Microsoft Teams Certified USB-C Headset +3.5mm Plug +USB-C/A Adapter	8X218AA
	Poly Blackwire 3315 Monaural USB-C Headset +3.5mm Plug +USB-C/A Adapter	8X217AA
	Poly Blackwire 3320 Stereo Microsoft Teams Certified USB-C Headset +USB-C/A Adapter	8X220AA
	Poly Blackwire 3320 Stereo USB-C Headset +USB-C/A Adapter	8X219AA
	Poly Blackwire 3325 Stereo Microsoft Teams Certified USB-C Headset +3.5mm Plug +USB-C/A Adapter	8X222AA
	Poly Blackwire 3325 Stereo USB-C Headset +3.5mm Plug +USB-C/A Adapter	8X221AA
	Poly Blackwire 5210 Monaural USB-C Headset +3.5mm Plug +USB-C/A Adapter	8X230AA
	Poly Blackwire 5220 Stereo USB-C Headset +3.5mm Plug +USB-C/A Adapter	8X231AA,93S88AA
	Poly Blackwire 8225 Stereo Microsoft Teams Certified USB-C Headset +USB-C/A Adapter	8X225AA
	Poly Blackwire 8225 Stereo USB-C Headset +USB-C/A Adapter	8X223AA
Poly EncorePro 310 Monaural USB-A Headset	767G1AA	
Poly EncorePro 310 Monaural with Quick Disconnect Headset	77T43AA	



Poly EncorePro 310 USB-C Monoaural Headset	760Q8AA
Poly EncorePro 320 Stereo USB-A Headset	767G0AA
Poly EncorePro 320 Stereo USB-C Headset	767F9AA
Poly EncorePro 320 with Quick Disconnect Binaural Headset	77T26AA
Poly EncorePro 510 Monoaural Headset +Quick Disconnect	783Q2AA
Poly EncorePro 515 Microsoft Teams Certified Monoaural with USB-A Headset	783R1AA
Poly EncorePro 515 Monoaural with USB-A Headset	783R0AA
Poly EncorePro 520 Binaural Headset +Quick Disconnect	783P7AA
Poly EncorePro 525 Microsoft Teams Certified Stereo with USB-A Headset	783R2AA
Poly EncorePro 525 USB-A Stereo Headset	783R3AA
Poly EncorePro 530 Headset +Quick Disconnect	783P3AA
Poly EncorePro 540 Convertible Headset +Quick Disconnect	783P1AA
Poly EncorePro 715 USB-A Monoaural Headset	783N5AA
Poly EncorePro 720 Binaural Headset +Quick Disconnect	8R707AA
Poly EncorePro 725 USB-A Stereo Headset	783M6AA
Poly EncorePro HW710 Single Ear Headset +Carry Case +Quick Disconnect	8R708AA
Poly Savi 7310 Office DECT 1880-1900 MHz Single Ear Headset (EMEA + APJ)	8D3G3AA
Poly Savi 7310 Office Monoaural DECT 1920-1930 MHz Headset (NA)	7S430AA
Poly Savi 7310 UC Monoaural DECT 1880-1900 MHz Headset (EMEA + APJ)	8L561AA
Poly Savi 7310 UC Monoaural DECT 1920-1930 MHz Headset (NA)	8L570AA
Poly Savi 7310 UC Monoaural Microsoft Teams Certified DECT 1880-1900 MHz Headset (EMEA + APJ)	8L575AA
Poly Savi 7310 UC Monoaural Microsoft Teams Certified DECT 1920-1930 MHz Headset (NA)	8L585AA
Poly Savi 7310-M Office DECT 1880-1900 MHz Single Ear Headset (EMEA + APJ)	8D3K7AA
Poly Savi 7310-M Office DECT 1920-1930 MHz Single Ear Headset (NA)	7S439AA
Poly Savi 7320 Office Stereo DECT 1880-1900 MHz Headset (EMEA + APJ)	8D3F7AA
Poly Savi 7320 Office Stereo DECT 1893-1906 MHz Headset (Japan)	8D3F8AA
Poly Savi 7320 Office Stereo DECT 1910-1920 MHz Headset (NA)	8D3G0AA
Poly Savi 7320 Office Stereo DECT 1920-1930 MHz Headset (NA)	7S429AA
Poly Savi 7320 UC Stereo DECT 1880-1900 MHz Headset (EMEA + APJ)	8L545AA
Poly Savi 7320 UC Stereo DECT 1893-1906 MHz Headset (Japan)	8L546AA
Poly Savi 7320 UC Stereo DECT 1920-1930 MHz Headset (NA)	8L549AA
Poly Savi 7320 UC Stereo Microsoft Teams Certified DECT 1880-1900 MHz Headset (EMEA + APJ)	8L553AA



Poly Savi 7320 UC Stereo Microsoft Teams Certified DECT 1893-1906 MHz Headset (Japan)	8L555AA
Poly Savi 7320 UC Stereo Microsoft Teams Certified DECT 1920-1930 MHz Headset (NA)	8L559AA
Poly Savi 7320-M Office Stereo DECT 1880-1900 MHz Headset (EMEA + APJ)	8D3J6AA
Poly Savi 7320-M Office Stereo DECT 1893-1906 MHz Headset (Japan)	8D3K2AA
Poly Savi 7320-M Office Stereo DECT 1910-1920 MHz Headset (NA)	8D3K0AA
Poly Savi 7320-M Office Stereo DECT 1920-1930 MHz Headset (NA)	7S435AA
Poly Savi 7410 Office Monaural DECT 1880-1900 MHz Headset (EMEA + APJ)	8L589AA
Poly Savi 7410 Office Monaural DECT 1893-1906 MHz Headset (Japan)	8L591AA
Poly Savi 7410 Office Monaural DECT 1920-1930 MHz Headset (NA)	8L7D5AA
Poly Savi 7410 Office Monaural Microsoft Teams Certified DECT 1880-1900 MHz Headset (EMEA + APJ)	8L593AA
Poly Savi 7410 Office Monaural Microsoft Teams Certified DECT 1893-1906 MHz Headset (Japan)	8L594AA
Poly Savi 7410 Office Monaural Microsoft Teams Certified DECT 1910-1920 MHz Headset (NA)	8L597AA
Poly Savi 7410 Office Monaural Microsoft Teams Certified DECT 1920-1930 MHz Headset (NA)	8L7D7AA
Poly Savi 7420 Office Stereo DECT 1880-1900 MHz Headset (EMEA + APJ)	8L560AA
Poly Savi 7420 Office Stereo DECT 1893-1906 MHz Headset (Japan)	8L563AA
Poly Savi 7420 Office Stereo DECT 1910-1920 MHz Headset (NA)	8L564AA
Poly Savi 7420 Office Stereo DECT 1920-1930 MHz Headset (NA)	8L567AA
Poly Savi 7420 Office Stereo Microsoft Teams Certified DECT 1880-1900 MHz Headset (EMEA + APJ)	8L574AA
Poly Savi 7420 Office Stereo Microsoft Teams Certified DECT 1893-1906 MHz Headset (Japan)	8L576AA
Poly Savi 7420 Office Stereo Microsoft Teams Certified DECT 1910-1920 MHz Headset (NA)	8L579AA
Poly Savi 7420 Office Stereo Microsoft Teams Certified DECT 1920-1930 MHz Headset (NA)	8L583AA
Poly Savi 8210 Office DECT 1880-1900 MHz Single Ear Headset (EMEA + APJ)	8D3K5AA
Poly Savi 8210 Office DECT 1910-1920 MHz Single Ear Headset (NA)	8D3K6AA
Poly Savi 8210 Office DECT 1920-1930 MHz Single Ear Headset (NA)	7S445AA
Poly Savi 8210 UC DECT 1880-1900 MHz USB-A Headset (EMEA + APJ)	8D3E9AA



Poly Savi 8210 UC DECT 1920-1930 MHz USB-A Headset (NA)	77T29AA
Poly Savi 8210 UC Microsoft Teams Certified DECT 1880-1900 MHz USB-A Headset (EMEA + APJ)	8D3F1AA
Poly Savi 8210 UC Microsoft Teams Certified DECT 1920-1930 MHz USB-A Headset (NA)	77T31AA
Poly Savi 8210-M Office DECT 1880-1900 MHz Single Ear Headset (EMEA + APJ)	8D3J8AA
Poly Savi 8210-M Office DECT 1910-1920 MHz Single Ear Headset (NA)	8D3K1AA
Poly Savi 8210-M Office DECT 1920-1930 MHz Single Ear Headset (NA)	7S447AA
Poly Savi 8220 Office Stereo DECT 1880-1890 MHz Headset (EMEA + APJ)	8D3J1AA
Poly Savi 8220 Office Stereo DECT 1880-1900 MHz Headset (EMEA + APJ)	8D3J2AA
Poly Savi 8220 Office Stereo DECT 1910-1920 MHz Headset (NA)	8D3J4AA
Poly Savi 8220 Office Stereo DECT 1920-1930 MHz Headset (NA)	7S4B5AA
Poly Savi 8220 Stereo DECT 1880-1900 MHz Top +Charging Cradle (EMEA + APJ)	8Y9C4AA
Poly Savi 8220 UC DECT 1880-1900 MHz USB-A Headset (EMEA + APJ)	8D3F2AA
Poly Savi 8220 UC DECT 1920-1930 MHz USB-A Headset (NA)	77T33AA
Poly Savi 8220 UC Microsoft Teams Certified DECT 1880-1900 MHz USB-A Headset (EMEA + APJ)	8D3F5AA
Poly Savi 8220 UC Microsoft Teams Certified DECT 1920-1930 MHz USB-A Headset (NA)	77Y82AA
Poly Savi 8220-M Office Stereo DECT 1880-1900 MHz Headset (EMEA + APJ)	8D3H8AA
Poly Savi 8220-M Office Stereo DECT 1910-1920 MHz Headset (NA)	8D3J0AA
Poly Savi 8220-M Office Stereo DECT 1920-1930 MHz Headset (NA)	7S4B6AA
Poly Savi 8245 DECT 1880-1900 MHz Headset +USB-A to USB-C Cable +D400 ( APJ)	8D3H2AA
Poly Savi 8245 Office DECT 1880-1900 MHz USB-A Headset ( APJ)	8D3H1AA
Poly Savi 8245 Office DECT 1920-1930 MHz USB-A Headset (NA)	7W6D1AA
Poly Savi 8245-M Microsoft Teams Certified DECT 1880-1900 MHz USB-A Headset +D200 ( APJ)	8D3F4AA
Poly Savi 8245-M Office Microsoft Teams Certified DECT 1880-1900 MHz USB-A Headset ( APJ)	8D3H7AA
Poly Savi 8245-M Office Microsoft Teams Certified DECT 1920-1930 MHz USB-A Headset (NA)	7W069AA
Poly Savi 8410 Office Monaural DECT 1880-1900 MHz Headset (EMEA + APJ)	8L5A7AA
Poly Savi 8410 Office Monaural DECT 1920-1930 MHz Headset (NA)	8L7E6AA
Poly Savi 8410 Office Monaural Microsoft Teams Certified DECT	8L5A9AA



1880-1900 MHz Headset (EMEA + APJ)	
Poly Savi 8410 Office Monaural Microsoft Teams Certified DECT	8L7E9AA
1920-1930 MHz Headset (NA)	
Poly Savi 8420 Office Stereo DECT 1880-1900 MHz Headset (EMEA + APJ)	8L5B2AA
Poly Savi 8420 Office Stereo DECT 1920-1930 MHz Headset (NA)	8L7F2AA
Poly Savi 8420 Office Stereo Microsoft Teams Certified DECT 1880-1900 MHz Headset (EMEA + APJ)	8L5B3AA
Poly Savi 8420 Office Stereo Microsoft Teams Certified DECT 1920-1930 MHz Headset (NA)	8L7F5AA
Poly Savi 8445 Office DECT 1880-1900 MHz Convertible Headset (APJ)	8L5B4AA
Poly Savi 8445 Office DECT 1920-1930 MHz Convertible Headset (NA)	8L7F8AA
Poly Savi 8445 Office Microsoft Teams Certified DECT 1880-1900 MHz Convertible Headset ( APJ)	8L5B6AA
Poly Savi 8445 Office Microsoft Teams Certified DECT 1920-1930 MHz Convertible Headset (NA)	8L7F1AA
Poly Voyager 4310 Microsoft Teams Certified Headset +BT700 dongle +Charging Stand	77Y93AA
Poly Voyager 4310 Microsoft Teams Certified USB-A Headset +BT700 dongle	77Y91AA
Poly Voyager 4310 Microsoft Teams Certified USB-C Headset +BT700 dongle	77Y95AA
Poly Voyager 4310 UC Monaural Headset +BT700 USB-A Adapter +Charging Stand	77Y92AA
Poly Voyager 4310 USB-A Headset +BT700 dongle	76U48AA
Poly Voyager 4310 USB-C Headset +BT700 dongle +Charging Stand	77Y96AA
Poly Voyager 4310 USB-C Headset +BT700 dongle	77Y94AA
Poly Voyager 4310-M Microsoft Teams Certified USB-C Headset +BT700 dongle +Charging Stand	77Y97AA
Poly Voyager 4310-M UC Headset +USB-A to USB-C Cable +BT700 dongle	7Y210AA
Poly Voyager 4320 Microsoft Teams Certified Headset +BT700 dongle +Charging Stand	77Z00AA
Poly Voyager 4320 Microsoft Teams Certified USB-A Headset +BT700 dongle	77Y98AA
Poly Voyager 4320 Microsoft Teams Certified USB-C Headset +BT700 dongle	77Z30AA
Poly Voyager 4320 UC Stereo USB-A Headset +BT700 USB-A Adapter +Charging Stand	77Y99AA
Poly Voyager 4320 USB-A Headset +BT700 dongle	76U49AA
Poly Voyager 4320 USB-C Headset +BT700 dongle +Charging Stand	77Z31AA
Poly Voyager 4320 USB-C Headset +BT700 dongle	76U50AA

	Poly Voyager 4320-M +USB-A to USB-C Cable +BT700 dongle	7Y211AA
	Poly Voyager 4320-M Microsoft Teams Certified Headset +BT700 dongle +Charging Stand	77Z32AA
	Poly Voyager Focus 2 Microsoft Teams Certified USB-C-C Headset +USB-C/A Adapter +Charging Stand	9T9J6AA
	Poly Voyager Focus 2 USB-C-C Headset +USB-C/A Adapter	9T9J3AA
	Poly Voyager Focus 2 USB-C-C Headset +USB-C/A Adapter +Charging Stand	9T9J5AA
	Poly Voyager Surround 80 UC Microsoft Teams Certified USB-C Black Headset +USB-C/A Adapter	9D452AA
	Poly Voyager Surround 80 UC Microsoft Teams Certified USB-C Headset +USB-C/A Adapter	8H2G3AA,8G7U0AA
	Poly Voyager Surround 80 UC Microsoft Teams Certified USB-C Headset +USB-C/A Adapter Demo	9C6W5AA
	Poly Voyager Surround 80 UC USB-C Headset +USB-C/A Adapter	8G7T9AA
	Poly Voyager Surround 85 UC Microsoft Teams Certified USB-C Headset +USB-C/A Adapter +Charging Stand	8G7T8AA
	Poly Voyager Surround 85 UC USB-C Headset +USB-C/A Adapter +Charging Stand	8G7T7AA
Audio - Speaker phone	Poly Sync 10 Microsoft Teams Certified Speakerphone	77P34AA
	Poly Sync 10 Speakerphone +USB-A to USB-C Cable	7S4M6AA
	Poly Sync 10 USB-A USB-C Speakerphone	772C3AA
	Poly Sync 20 Microsoft Teams Certified USB-A Speakerphone	772C8AA
	Poly Sync 20 USB-A Speakerphone	772D2AA
	Poly Sync 20 USB-C Speakerphone	7F0J7AA
	Poly Sync 20+ Microsoft Teams Certified USB-A Speakerphone	772C9AA
	Poly Sync 20+ Microsoft Teams Certified USB-C Speakerphone	772D1AA
	Poly Sync 20+ USB-A Speakerphone	772C6AA
	Poly Sync 20+ USB-C Speakerphone	772D0AA
	Poly Sync 20+M Speakerphone +USB-A to USB-C Cable +BT700 dongle +Pouch	7Y215AA
	Poly Sync 20-M Microsoft Teams Certified USB-C Speakerphone	7F0J8AA
	Poly Sync 20-M Speakerphone +USB-A to USB-C Cable	7S4M1AA
	Poly Sync 40 Microsoft Teams Certified Speakerphone	77P35AA
	Poly Sync 40 USB-A USB-C Speakerphone	772C4AA
	Poly Sync 40+ Microsoft Teams Certified USB-A USB-C Speakerphone +BT700 USB-A Adapter	77P36AA
	Poly Sync 40+ USB-A USB-C Speakerphone +BT700 USB-A Adapter	772C5AA
	Poly Sync 60 Microsoft Teams Certified Speakerphone	77P41AA
	Poly Sync 60 Speakerphone	772C2AA
Camera	HP 625 Webcam	6Y7L1AA
	HP USB-A 325 Webcam	53X27AA,53X27UT
Cases	HP Campus XL Marble Stone Backpack	7K0E2AA
	HP Campus XL Tie Dye Backpack	7K0E3AA



Commodity	HP Convertible Laptop Stand	9C2H2AA
	HP Renew Business 17.3 Laptop Backpack	3E2U5UT
	HP Renew Business 17.3 Laptop Bag	3E2U6AA
	HP Renew Executive 16 Laptop Backpack	6B8Y1AA,6B8Y1UT
	HP Renew Executive 16 Laptop Bag	6B8Y2AA
	HP USB DVD-Writer External ODD	F2B56AA
	HP Combination Nano Cable Lock	63B28AA
	HP Essential Combination Nano Cable Lock	63B31AA
	HP Nano Keyed Cable Lock	1AJ39AA
Docking	HP Nano Master Keyed Cable Lock	1AJ40AA
	HP SureKey Standard/Nano/Wedge Cable Lock	6UW42AA
	HP Thunderbolt 4 100W G6 Dock	9X472UT
	HP Thunderbolt 4 Ultra 180W G6 Dock	9X481UT
	HP Thunderbolt 4 Ultra 280W G6 Dock	AW5M5UT
	HP Thunderbolt™ 120W G4 Dock	4J0A2AA
	HP Thunderbolt 280W G4 Dock w/Combo Cable	4J0G4AA
	HP USB-C™ 120W G5 Dock	5TW10AA
	HP USB-C™/A 120W G2 Universal Dock	5TW13AA
Hub	HP 4K USB-C Multiport Hub	6G843AA,6G843UT
	HP Portable USB-C Hub	B8SU8UT
	HP Universal USB-C Hub and Laptop Charger Combo	9H0H9AA
	HP Universal USB-C Multiport Hub	50H55UT
	HP USB-C to USB-A Hub	Z6A00AA
	HP USB-C Travel Hub G3	86S97AA,86S97UT
Keyboard	HP 125 G2 Wired USB Keyboard	AY2Y7AA
	HP 320K G2 Wired USB Keyboard	9SR37UT
	HP 405 Multi-Device Backlit Wired Keyboard	7N7C1AA,7N7C1UT
	HP 435 Programmable Wireless Keypad	7N7C3AA
	HP 455 Programmable Wireless Keyboard	4R177AA
	HP 475 Dual-Mode Wireless Keyboard	7N7B9AA,7N7B9UT
	HP 485 Comfort Wired Keyboard	8T6M2AA
	HP 685 Comfort Dual-Mode Keyboard	8T6L9AA,8T6L9UT
	HP 725 Multi-Device Rechargeable Wireless Keyboard	9T5B2AA
	HP 965 black Ergonomic Wireless Keyboard	7E756AA
Keyboard & Mouse Combo	HP 975 Dual-Mode USB+Bluetooth Wireless Keyboard	3Z726AA
	HP 225 Wired Mouse and Keyboard Combo G2	AX2Y7AA
	HP 225 Wired Mouse and Keyboard Combo G2 White	AW5S6AA
	HP 655 Wireless Keyboard and Mouse Combo	4R009AA
	HP 655 Wireless Keyboard and Mouse Combo White	860P8AA
	HP 685 Comfort Dual-Mode Keyboard and Mouse Combo	8T6L7UT
	HP 725 Multi-Device Rechargeable Wireless Keyboard and Mouse Combo	9T5B0UT
	HP Wired Desktop 320MK Mouse and Keyboard	9SR36UT
Mouse	HP 105 Mouse Pad	8X595AA



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	HP 205 Desk Mat	8X597AA
	HP 685 Comfort Dual-Mode Mouse	8T6M0UT
	HP 695 Qi-Charging Wireless Mouse	8F1Y4AA
	HP 715 Rechargeable Multi-Device Bluetooth Mouse	6E6F0AA
	HP 925 Ergonomic Vertical Wireless Mouse	6H1A5AA
	HP Creator Black 935 Wireless Mouse	1D0K8AA
	HP Multi-Device Black 635 Wireless Mouse	1D0K2AA
Power	HP 110W USB-C Laptop Charger	8B3Y2AA,8B3Y2UT
	HP 65W LC USB-C AC power adapter	1P3K6AA
	HP 65W GaN USB-C Laptop Charger	600Q8UT
	HP 65W USB-C Laptop Charger	671R3AA,671R3UT
Networking /Communications	HP 4G LTE-Advanced Pro Cat19 WWAN	B8BD3AA
	HP 5G Sub-6 WWAN	B8BD4AA



### CHANGELOG

Date of change	Version History		Description of change
May 14, 2025	V1 to V2	Updated	Battery Life
May 22, 2025	V2 to V3	Updated	Docking Section Camera Section
May 26, 2025	V3 to V4	Updated	Ports Section
June 11, 2025	V4 to V5	Updated	Weight & Dimensions
June 17, 2025	V5 to V6	Updated	Audio/Multimedia
July 21, 2025	V6 to V7	Updated	Power Section
August 19, 2025	V7 to V8	Updated	Software and Security Section
September 1, 2025	V8 to V9	Updated	Networking /Communications Section Options Section
September 5, 2025	V9 to V10	Updated	Networking /Communications Section
September 15, 2025	V10 to V11	Updated	Software and Security Section

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