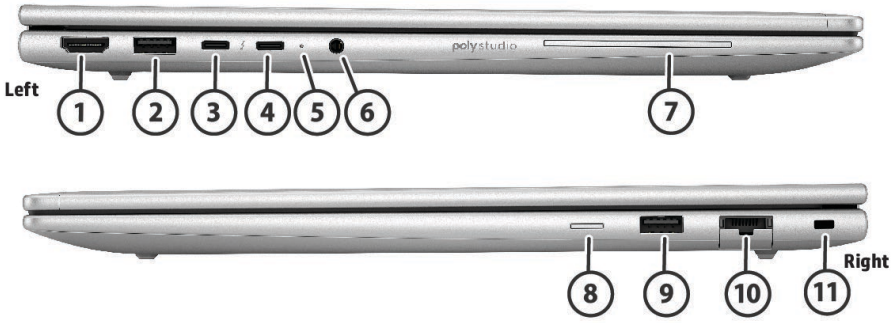
# HP EliteBook 6 G1a 16 inch Notebook AI PC


## Front

| | | | |
|---|---|---|---|
| 1 | Internal Microphone (2) | 4 | Camera Shutter |
| 2 | Webcam LED | 5 | Touchpad |
| 3 | Webcam | 6 | Near-filed communication (NFC) |




## Sides

| | | | |
|---|---|---|---|
| 1 | HDMI 2.1 | 8 | Nano SIM card slot (Optional) |
| 2 | USB Type-A 5Gbps signaling rate (Powered) [1] | 9 | USB Type-A 5Gbps signaling rate (Powered) [1] |
| 3 | Thunderbolt™ 4 with USB Type-C® 40Gbps signaling rate (USB Power Delivery 3.0, DisplayPort™ 2.1) [1] | 10 | RJ45 Ethernet port |
| 4 | Thunderbolt™ 4 with USB Type-C® 40Gbps signaling rate (USB Power Delivery 3.0, DisplayPort™ 2.1) [1] | 11 | Nano Security Slot (Integrated) |
| 5 | Power Indicator LED | | |
| 6 | Headphone/mic combo jack | | |
| 7 | Smart Card Reader (Optional) | | |

1. Actual throughput may vary.

## PRODUCT NAME

HP EliteBook 6 G1a 16 inch Notebook AI PC

## OPERATING SYSTEM

FreeDOS

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

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

Windows 11 Pro (Windows 11 Enterprise available with a Volume Licensing Agreement) [1]

Windows 11 Pro [1]

Windows 11 Pro Education [1]

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.

## PROCESSORS

| Processor [2,3,4,5] | Cores | Threads | L3 Cache | Max Boost Frequency | Base Frequency | Pro | Integrated Graphics | NPU |
|---|---|---|---|---|---|---|---|---|
| AMD Ryzen™ 7 - 255H* | 8 cores | 16 | 16 MB | 4.9 GHz | 3.80 GHz | | AMD Radeon™ 780M | N/A |
| AMD Ryzen™ 7 PRO - 250 | 8 cores | 16 | 16 MB | 5.10 GHz | 3.30 GHz | X | AMD Radeon™ 780M | 16 TOPS |
| AMD Ryzen™ 7 - 250 | 8 cores | 16 | 16 MB | 5.10 GHz | 3.30 GHz | | AMD Radeon™ 780M | 16 TOPS |
| AMD Ryzen™ 5 PRO - 230 | 6 cores | 12 | 16 MB | 4.90 GHz | 3.50 GHz | X | AMD Radeon™ 760M | 16 TOPS |
| AMD Ryzen™ 5 – 230 | 6 cores | 12 | 16 MB | 4.90 GHz | 3.50 GHz | | AMD Radeon™ 760M | 16 TOPS |
| AMD Ryzen™ 5 PRO - 215 | 6 cores | 12 | 16 MB | 4.70 GHz | 3.20 GHz | X | AMD Radeon™ 740M | N/A |
| AMD Ryzen™ 5 - 220 | 6 cores | 12 | 16 MB | 4.90 GHz | 3.20 GHz | | AMD Radeon™ 740M | N/A |
| AMD Ryzen™ 3 - 210 | 4 cores | 8 | 8 MB | 4.70 GHz | 3.00 GHz | | AMD Radeon™ 740M | N/A |

### Processor Family

AMD Ryzen™ 7 PRO - processor

AMD Ryzen™ 7 - processor

AMD Ryzen™ 5 PRO - processor

AMD Ryzen™ 5 - processor

AMD Ryzen™ 3 - 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. In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on http://www.support.hp.com.
5. Features and software that require a NPU may require software purchase, subscription or enablement by a software or platform provider, and third party software may have specific configuration or compatibility requirements. Potential NPU inferencing performance varies by use, configuration, and other factors.
*. Availability may vary by country

## GRAPHICS

**Integrated**

AMD Radeon™ Graphics

**Supported Protocols**

HDMI 2.1

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

Up to 4

Hardware acceleration for CODEC H.265/HEVC (High Efficiency Video Coding) is disabled on this platform.

## 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 [6]
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

90.6% [7]

### Aspect Ratio

16:10 [8]

### Max Hinge Open Angle

177°±3°

6. HP Sure View integrated privacy screen is an optional feature that must be configured at purchase and is designed to function in landscape orientation.
7. Percent of active plus nonactive viewing area to active viewing area plus border. Measure with lid vertical to the desk.
8. All performance specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

## DOCKING (SOLD SEPARATELY)

| | |
|---|---|
| **Docking station model #1** | HP Thunderbolt 4 100W G6 Dock |
| **Total number of supported displays (incl. the notebook display)** | 4 |
| **Max. resolutions supported** | (4) 4K @60Hz*<br>(2) 4K @ 120Hz*<br>(3) QHD @ 120Hz*<br>(1) QHD @ 360Hz* |
| **Dock Connectors** | 1x HDMI 2.1, 2x DisplayPort 1.4, 1x Thunderbolt 4 |
| **HP Quick Connect Support** | Yes |
| **Technical limitations** | HP Quick Connect is supported on this platform.<br>*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.<br><br>Maximum of (4) displays with maximum resolution of 5K@ 30Hz running<br><br>Thunderbolt Hosts:<br>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:<br>The highest resolution for dual displays running a non-Thunderbolt host in multi-function mode is<br>(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. |
| **Docking station model #2** | HP USB-C™ Dock G5 |
| **Total number of supported displays (incl. the notebook)<br>display)** | 3 |
| **Max. resolutions supported** | Multi-Function Mode: (2) 5k @ 30Hz and (1) 4k UHD @ 30Hz on any port |

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

## STORAGE AND DRIVES

All Gen5 SSDs on this system run at Gen4 speed.

For Gen5 SSD, read and write speeds are an average of the maximum values measured under full load conditions. Actual performance may vary +/- 10%.

For Gen4 SSD, read and write speeds are an average of the maximum values measured under full load conditions. Actual performance may vary +/- 20%

### Storage

2TB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell [9]

1 TB PCIe® Gen5 NVMe™ SSD Value [9]

1 TB PCIe® Gen5x4 NVMe™ Self Encrypted OPAL2 SSD [9]

1TB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell [9]

1TB PCIe® Gen4x4 NVMe™ Self Encrypted OPAL2 SSD Three Layer Cell [9]

512 GB PCIe® Gen5 NVMe™ Self Encrypted OPAL2 SSD Value [9]

512 GB PCIe® Gen5 NVMe™ SSD Value [9]

512GB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell [9]

512GB PCIe® Gen4x4 NVMe™ Self Encrypted OPAL2 SSD Three Layer Cell [9]

512GB PCIe® NVMe™ SSD Value [9]

256GB PCIe® NVMe™ Self Encrypted OPAL2 SSD Value [9]

256GB PCIe® NVMe™ SSD Value [9]

### Secondary storage connector supported (selected models)[10]

9. 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.

10. Secondary storage is optional and only available in selected markets and with selected processors. Configuration with secondary storage connectors must be selected at purchase to add a secondary storage at a later date.

## MEMORY

**Maximum Memory**

64GB DDR5-5600 MT/s (2 x 32 GB)

**Memory**

64GB DDR5-5600 MT/s (2 x 32 GB)
32GB DDR5-5600 MT/s (1 x 32 GB)
32GB DDR5-5600 MT/s (2 x 16 GB)
24GB DDR5-5600 MT/s (2 x 12 GB)
24GB DDR5-5600 MT/s (1 x 24GB)
16GB DDR5-5600 MT/s (1 x 16 GB)
16GB DDR5-5600 MT/s (2 x 8 GB)
12GB DDR5-5600 MT/s (1 x 12GB)
8GB DDR5-5600 MT/s (1 x 8 GB)

**Memory Slots**

2 SODIMM [11]
System runs at 5600 MT/s
Supports Dual Channel Memory
The memory is accessible/upgradeable by IT or self-maintainers only

11. 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

RTK GBE Ethernet Controller [12]

Realtek RTL8111EPP 1GbE Ethernet Controller [13]

### WLAN

Mediatek MT7925 Wi-Fi 7 Bluetooth® 5.4 AIM-T WW WLAN [15]

Mediatek RZ616 Wi-Fi 6E Bluetooth® 5.3 AIM-T WLAN [13,14]

Realtek 8852CE Wi-Fi 6E Bluetooth® 5.3 WLAN [13,14]

### WWAN

HP 4G CAT16 [16]

### LPWAN

Qualcomm 9205 LTE-M (CAT-M1 fSVC) [17]

### NFC

NFC Mirage WNC XRAV-1

### Miracast

Native Miracast Support [18]

12. The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

13. 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.

14. 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.

15. 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.

16. 4G LTE module is optional. WWAN-ready configuration must be selected at purchase to add WWAN at a later date. Module requires activation and separately purchased service contract. Check with service provider for coverage and availability in your area. Connection, upload and download speeds will vary due to network, location, environment, network conditions, and other factors. 4G LTE not available on all products, in all regions.

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

18. 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

2 Integrated dual array microphone

### Speaker Power

2W / 4 ohm per speaker

### Camera

5MP+Infrared camera

FHD camera

### Sensors

Ambient Light Sensor

Fingerprint Sensor (optional)

Hall Effect Sensor

HP Sure Platform

HP Tamper Lock [19]

Thermal Sensor

19. HP Tamper Lock must be enabled by the customer or your administrator.

## KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

### Keyboard

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

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

HP Standard Keyboard with numeric keypad, spill-resistant keyboard.

### Pointing Device

Clickpad

Microsoft Precision Touchpad Default Gestures Support

Multi-touch gesture support

Taps enabled as default with image sensor and glass surface

### Function Keys

ESC - system information

F1 - Display Switching

F2 - Blank or SureView On/Off

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

Microsoft Copilot [20]

**Hidden Function Keys**

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

20. Copilot+ in Windows requires Windows 11. Some features require an NPU. Timing of feature delivery and availability varies by market and device. Requires Microsoft account to log in. Where Microsoft in Windows is not available, the Copilot key will lead to the Bing search engine. Use of Recall requires customer authentication using Windows Hello Enhanced Sign in Security (ESS) which requires a fingerprint reader or facial recognition camera and may not be supported on all platforms. See http://aka.ms/WindowsAIFeatures

## SOFTWARE AND SECURITY

### Application Software

Buy Microsoft Office (Sold Separately)

Edge Customization

HP Connection Optimizer

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 [21]

HP Smart Support [22]

HP Support Assistant [23]

HSA Fusion for Commercial

HSA Telemetry for Commercial

myHP

Poly Camera Pro

Poly Lens [24]

### Manageability Features

HP Client Catalog (download) [25]

HP Client Management Script Library (download) [26]

HP Cloud Recovery [27]

HP Connect for Microsoft Endpoint Manager

HP Driver Packs (download) [28]

HP Image Assistant (download) [29]

HP Manageability Integration Kit (download) [30]

HP Power Manager with Battery Health Manager (download) [31]

**Security Features**

Secured-Core PC Enable

Windows Hello Enhanced Sign-In Security (ESS)

HP Wolf Security for Business which includes: [32]

HP Sure Admin [33]

HP Sure Click [34]

HP Sure Recover [35]

HP Sure Run [36]

HP Sure Sense [37]

HP Sure Start [38]

HP Tamper Lock [39]

**Security- TPM**

Security- TPM

Model: Nuvoton NPCT760HACYX

Firmware Version: 7.2.4.1

TCG TPM 2.0

FIPS 140-3 Compliant: Yes

Model: ST Micro ST33KTPM2X32CKE2

Firmware Version: 9.256

TCG TPM 2.0

FIPS 140-2 Compliant: Yes

**BIOS**

Absolute Persistence Module [40]

Audio Permanent Disable

BIOS Update via Network

HP BIOS Recovery

HP BIOSphere Gen6 [41]

HP DriveLock & Automatic DriveLock

HP Fingerprint Sensor [42]

HP Secure Erase [43]

HP Wake on WLAN

**Smartcard Reader**

Model number: Alcorlink AK9563

FIPS 201 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

21. 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.
22. 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.
23. HP Support Assistant is available on Windows. For more information, please visit http://www.support.hp.com/help/hp-support-assistant.
24. Poly Lens Desktop requires a Windows OS.
25. HP Client Catalog not preinstalled, however available for download at (https://www.hp.com/us-en/solutions/client-management-

solutions.html).

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

27. 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.

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

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

30. 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.

31. 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.

32. 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.

32. 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.

34. HP Sure Click requires Windows 10 and higher. See https://bit.ly/2PrLT6A_SureClick for complete details.

35. 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.

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

37. 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.

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

39. HP Tamper Lock must be enabled by the customer or your administrator.

40. 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/.

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

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

43. 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 and not replaceable by customer. Serviceable by warranty.

### Power Supply

HP 65W Standard 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, 56Whr Polymer

HP Long Life 3 cell, 48Whr Polymer

Compliant with UL 1642/2054 Standard

### Battery Recharge Time

Supports battery HP Fast Charge: approximately 50% in 30 minutes [44]

### Battery life

Up to 14 hours 15 minutes with 56Whr battery (AMD R7, UMA graphic, brightness set to 250nits on a 16-inch WUXGA 400nits LP LCD display, 2x8GB DDR5 memory, 256GB SSD) Up to 12 hours with 48Whr battery (AMD R7, UMA graphic, brightness set to 250nits on a 16-inch WUXGA 400nits LP LCD display, 2x8GB DDR5 memory, 256GB SSD) [45]

44. 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.
45. MobileMark 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 1.75kg (3.86 lb) with 56Whr battery

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

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

359.40 mm (W) x 251.00 mm (D) x 10.90 mm (front)/ 17.00 mm (rear) (14.15 in (W) x 9.88 in (D) x 0.43 in (front)/ 0.67 in (rear))

Maximum height 19.9mm (Plastic); 20.9mm (Metal)

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**

1 x USB Type-A 5Gbps signaling rate (Powered)

2 x Thunderbolt™ 4 with USB Type-C® 40Gbps signaling rate (USB Power Delivery 3.0, DisplayPort™ 2.1) [46]

1 x HDMI 2.1

1 x headphone/mic combo jack

1 x Smart Card Reader (Optional)

**Right side**

1 x USB Type-A 5Gbps signaling rate (Powered)

1 x RJ45 Ethernet port

1 x Nano SIM card slot (Optional)

1 x Nano Security Slot (Integrated)

46. USB 40Gbps signaling rate is not available with Thunderbolt™ 4. Actual throughput may vary.

## ENVIRONMENTAL DATA

| | |
|---|---|
| **Eco-Label Certifications & declarations** | This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:<br>• IT ECO declaration<br>• US ENERGY STAR®<br>• US Federal Energy Management Program (FEMP)<br>• EPEAT® Gold registered in the United States. See http://www.epeat.net for registration status in your country.<br>• TCO Certified<br>• China Energy Conservation Program (CECP)<br>• China State Environmental Protection Administration (SEPA)<br>• Taiwan Green Mark<br>• Korea Eco-label<br>• Japan PC Green label* |
| **Sustainable Impact Specifications** | • Product Carbon Footprint<br>• At least 50% ocean bound plastic in the system fan and 30% in Speakers[1]<br>• At least 25% post-consumer recycled plastic[2]<br>• At least 50% recycled metal[3]<br>• Low Halogen[4]<br>• 100% of HP paper-based packaging is from recycled or certified sustainable sources[5]<br>• Bulk packaging available |
| **System Configuration**<br><br>**Energy Consumption (in accordance with US ENERGY STAR® test method)** | The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a "Typically Configured Notebook". |

| | 115VAC, 60Hz | 230VAC, 50Hz | 100VAC, 50Hz |
|---|---|---|---|
| Normal Operation (Sort idle) | 5.29 W | 5.53 W | 5.26 W |
| Normal Operation (Long idle) | N/A | N/A | N/A |
| Sleep | 1.45 W | 1.51 W | 1.50 W |
| Off | 0.38 W | 0.42 W | 0.39 W |

**NOTE:** Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for

| | | | |
|---|---|---|---|
| | computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system. | | |
| **Heat Dissipation*** | **115VAC, 60Hz** | **230VAC, 50Hz** | **100VAC, 50Hz** |
| Normal Operation (Short idle) | 18 BTU/hr | 19 BTU/hr | 18 BTU/hr |
| Normal Operation (Long idle) | N/A | N/A | N/A |
| Sleep | 5 BTU/hr | 5 BTU/hr | 5.1 BTU/hr |
| Off | 1.3 BTU/hr | 1 BTU/hr | 1.3 BTU/hr |
| | *NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour. | | |
| **Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)** | **Sound Power ($L_{WAd}$, bels)** | **Sound Pressure ($L_{pAm}$, decibels)** | |
| Typically Configured – Idle | 2.6 | 14.8 | |
| Fixed Disk – Random writes | 2.7 | 17.6 | |
| Optical Drive – Sequential reads | 3.6 | 30.0 | |
| **Longevity and Upgrading** | This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the<br><br>Spare parts are available throughout the warranty period and or for up to "5" years after the end of production. | | |
| **Additional Information** | • This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.<br>• This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.<br>• This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).<br>• This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net<br>• Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.<br>• This product is 94.7% recycle-able when properly disposed of at end of life. | | |
| **Packaging Materials** | **External:** | PAPER/Corrugated | 417 g |

| | | | |
|---|---|---|---|
| | | PAPER/paper | 15 g |
| | | WOOD/wood | 23 g |
| | | PAPER/Molded Pulp | 125 g |
| | The plastic packaging material contains at least 0.0% recycled content. | | |
| | The corrugated paper packaging materials contains at least 46.7% recycled content. | | |
| **RoHS Compliance** | HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam.<br><br>We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products.<br><br>We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve.<br><br>To obtain a copy of the HP RoHS Compliance Statement, see HP RoHS position statement. | | |
| **Material Usage** | This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c05998906):<br><br>• Asbestos<br>• Certain Azo Colorants<br>• Certain Brominated Flame Retardants - may not be used as flame retardants in plastics<br>• Cadmium<br>• Chlorinated Hydrocarbons<br>• Chlorinated Paraffins<br>• Bis(2-Ethylhexyl) phthalate (DEHP)<br>• Benzyl butyl phthalate (BBP)<br>• Dibutyl phthalate (DBP)<br>• Diisobutyl phthalate (DIBP)<br>• Formaldehyde | | |

| | |
|---|---|
| | • Halogenated Diphenyl Methanes<br>• Lead carbonates and sulfates<br>• Lead and Lead compounds<br>• Mercuric Oxide Batteries<br>• Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.<br>• Ozone Depleting Substances<br>• Polybrominated Biphenyls (PBBs)<br>• Polybrominated Biphenyl Ethers (PBBEs)<br>• Polybrominated Biphenyl Oxides (PBBOs)<br>• Polychlorinated Biphenyl (PCB)<br>• Polychlorinated Terphenyls (PCT)<br>• Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.<br>• Radioactive Substances<br>• Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO) |
| **Packaging Usage** | HP follows these guidelines to decrease the environmental impact of product packaging:<br>• Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.<br>• Eliminate the use of ozone-depleting substances (ODS) in packaging materials.<br>• Design packaging materials for ease of disassembly.<br>• Maximize the use of post-consumer recycled content materials in packaging materials.<br>• Use readily recyclable packaging materials such as paper and corrugated materials.<br>• Reduce size and weight of packages to improve transportation fuel efficiency.<br>• Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards. |
| **End-of-life Management and Recycling** | HP offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: https://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c05403198 or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. |

| | |
|---|---|
| | The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: HP Product Disassembly Instruction Website. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment. |
| **HP, Inc. Corporate Environmental Information** | For more information about HP's commitment to the environment:<br>• Sustainable Impact Report<br>  ○ https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c06040843<br>• Eco-label certifications<br>  ○ https://www.hp.com/us-en/sustainable-impact/document-reports.html#filters_documents_reports-=document_type-type_energy_star,type_epeat,type_tcoISO<br>• ISO 14001 certificates<br>  ○ https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c04777932 |
| **footnotes** | 1. Percentage of ocean-bound plastic contained in each component varies by product. Ocean Bound plastic is expressed as a percentage of the total weight plastic. Ocean Bound plastic is based on the definition set by the UL2809 standard.<br>2. Recycled plastic is expressed as a percentage of the total weight plastic. Post-consumer recycled is based on the definition set in the EPEAT standard for computers, IEEE 1680.1-2018 standard.<br>3. Recycled metal is expressed as a percentage of the total weight of the metal according to ISO 14021 definitions for metal parts over 25 grams.<br>4. External power supplies, WWAN modules, power cords, cables and peripherals excluded. Service parts obtained after purchase may not be Low Halogen.<br>5. HP paper and fiber-based packaging for PCs, displays, home and office print, and supplies is reported by suppliers as recycled or certified, with a minimum of 97% by volume verified by HP. Packaging is the box that comes with the product and all paper-based materials inside the box. Packaging for personal systems accessories and spare parts is not included. Plastic cushions are made from >90% recycled plastic. |

## 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. [46]

46. 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 65W |
| **Temperature** | |
| Operating | 0° to 35°C (32° to 95°F) No sustained direct exposure to sunlight, System performance may be reduced above 32°C (89.6°F) |
| Non-operating | -20° to 60°C (-4° to 140° F) No sustained direct exposure to sunlight, 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-Q39C-6 |
| CSA/UL 62368-1 | Yes |
| UL 62368-1 | Yes |
| ENERGY STAR® | Yes [48] |
| FCC/ICES/CISPR/VCCI | Yes |
| CE MARKING | Yes |
| GS Mark | Yes<br>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 [49] |
| Low Blue Light | Yes |
| WW RoHS | Yes |
| CECP | Yes [50] |
| Medical EMC: IEC 60601-1-2:2014 EN60601-1-2: 2015 | Yes |
| SEPA | Yes [50] |
| MIL-STD Testing | MIL-STD 810H [51] |

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

49. 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.

50. By request.

51. 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 inch diagonal, WUXGA (1920 x 1200), LCD, UWVA, Anti-Glare, Low Blue Light, 800 nits, sRGB 100%, HP Sure View 5** [1] | **Active Area** | 344.680 x215.420 (typ) |
| | **Dimensions (W x H)** | 349.980 x224.82 (max) |
| | **Weight** | 310 (max) |
| | **Diagonal Size** | 16 |
| | **Surface Treatment** | Anti-Glare |
| | **Touch Enabled** | No |
| | **Contrast Ratio** | 1500 : 1 (typ) |
| | **Refresh Rate** | 60 (typ) |
| | **Brightness** | 800 (typ) |
| | **Pixel Resolution** | RGB |
| | **Pixel Resolution - Format** | 1920 x 1200 (WUXGA) |
| | **Aspect Ratio** | 16:10 |
| | **Backlight** | WLED |
| | **Color Gamut Coverage** | sRGB 100% |
| | **Color Depth** | 8 |
| | **Viewing Angle** | UWVA 89/89/89/89 |
| | **Low Blue Light** | Yes |
| | **Power Consumption (W, EBL@ 150nits max/ 200nits max))** | 1.93(max)/2.38(max) |
| **16.0 inch diagonal, 2.5K (2560 x 1600), LCD, 120Hz (VRR), UWVA, Anti-Glare, WLED+Low Blue Light, 400 nits, Adobe 100% + DCI-P3 100%** | **Active Area** | 344.6784x215.424 (typ) |
| | **Dimensions (W x H)** | 349.98 x 224.82 (max) |
| | **Weight** | 280 (max) |
| | **Diagonal Size** | 16 |
| | **Surface Treatment** | Anti-Glare |
| | **Touch Enabled** | No |
| | **Contrast Ratio** | 2000:1 (typ) |
| | **Refresh Rate** | 120 (typ) |
| | **Brightness** | 400 (typ) |

| | | |
|---|---|---|
| | Pixel Resolution | RGB |
| | Pixel Resolution - Format | 2560 x 1600 (2.5K) |
| | Aspect Ratio | 16:10 |
| | Backlight | WLED |
| | Color Gamut Coverage | Adobe RGB 100% + DCI-P3 100% |
| | Color Depth | 8 |
| | Viewing Angle | UWVA 89/89/89/89 |
| | Low Blue Light | Yes |
| | Power Consumption (W, EBL@150nits max/ 200nits max)) | 2.5 (max)/ 3.0 (max) |
| 16.0 inch diagonal, WUXGA (1920 x 1200), LCD, UWVA, Anti-Glare, WLED+Low Blue Light, 400 nits, Low Power, sRGB 100% | Active Area | 344.678 x 215.424 (typ) |
| | Dimensions (W x H) | 350.680 x 226.470 (max) |
| | Weight | 330 (max) |
| | Diagonal Size | 16 |
| | Surface Treatment | Anti-Glare |
| | Touch Enabled | No |
| | Contrast Ratio | 1000:1 (typ) |
| | Refresh Rate | 60 (typ) |
| | Brightness | 400 (typ) |
| | Pixel Resolution | RGB |
| | Pixel Resolution - Format | 1920 x 1200 (WUXGA) |
| | Aspect Ratio | 16:10 |
| | Backlight | WLED |
| | Color Gamut Coverage | sRGB 100% |
| | Color Depth | 8 |
| | Viewing Angle | UWVA 89/89/89/89 |
| | Low Blue Light | Yes |
| | Power Consumption (W, EBL@150nits max/ 200nits max)) | 1.60 (max)/ 1.95 (max) |

| | | |
|---|---|---|
| 16.0 inch diagonal, WUXGA (1920 x 1200), LCD, 60Hz, UWVA, Anti-Glare, WLED, 300 nits, sRGB 62.5% | Active Area | 344.6784 x 215.424 (typ) |
| | Dimensions (W x H) | 350.680 x 226.070 (max) |
| | Weight | 390 (max) |
| | Diagonal Size | 16 |
| | Surface Treatment | Anti-Glare |
| | Touch Enabled | No |
| | Contrast Ratio | 1000:1(typ) |
| | Refresh Rate | 60 (typ) |
| | Brightness | 300 (typ) |
| | Pixel Resolution | RGB |
| | Pixel Resolution - Format | 1920 x 1200 (WUXGA) |
| | Aspect Ratio | 16:10 |
| | Backlight | WLED |
| | Color Gamut Coverage | sRGB 62.5% |
| | Color Depth | 8 |
| | Viewing Angle | UWVA 89/89/89/89 |
| | Low Blue Light | No |
| | Power Consumption (W, EBL@150nits max/ 200nits max)) | 2.7 (max) / 3.4 (max) |
| 16.0 inch diagonal, WUXGA (1920 x 1200), LCD, Touch, 60Hz, UWVA, Anti-Glare, WLED, 300 nits, sRGB 62.5% | Active Area | 344.680 x 215.420 (typ) |
| | Dimensions (W x H) | 350.680 x 226.070 (max) |
| | Weight | 400 (max) |
| | Diagonal Size | 16 |
| | Surface Treatment | Anti-Glare |
| | Touch Enabled | Yes |
| | Contrast Ratio | 1000 : 1(typ.) |
| | Refresh Rate | 60 (typ) |
| | Brightness | 300 (typ) |
| | Pixel Resolution | RGB |
| | Pixel Resolution - Format | 1920 x 1200 (WUXGA) |
| | Aspect Ratio | 16:10 |

| | |
|---|---|
| **Backlight** | WLED |
| **Color Gamut Coverage** | sRGB 62.5% |
| **Color Depth** | 8 |
| **Viewing Angle** | UWVA 89/89/89/89 |
| **Low Blue Light** | Yes |
| **Power Consumption (W, EBL@ 150nits max/ 200nits max))** | 2.43 (max) / 3.03 (max) |

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

## STORAGE

All Gen5 SSDs on this system run at Gen4 speed.

For Gen5 SSD, read and write speeds are an average of the maximum values measured under full load conditions. Actual performance may vary +/- 10%.

For Gen4 SSD, read and write speeds are an average of the maximum values measured under full load conditions. Actual performance may vary +/- 20%.

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.

| | | |
|---|---|---|
| **2TB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell [1]** | **Form Factor** | M.2 2280 |
| | **Capacity** | 2TB |
| | **NAND Type** | TLC |
| | **Weight** | 10g(0.02lb) |
| | **Interface** | PCIe NVMe Gen4X4 |
| | **Maximum Sequential Read** | 6400 MB/s ±20% |
| | **Maximum Sequential Write** | 5000 MB/s ±20% |
| | **Logical Blocks** | 4,000,797,360 |
| | **Features** | Pyrite 2.0; TRIM; L1.2<br>Not all features are available in all versions. |
| **1 TB PCIe® Gen5 NVMe™ SSD Value [1]** | **Form Factor** | M.2 2280 |
| | **Capacity** | 1 TB |
| | **NAND Type** | Value |
| | **Weight** | 10g (0.02 lb) |
| | **Interface** | PCIe Gen5 NVMe |
| | **Maximum Sequential Read** | 7000 MB/s ±10% (in PCIe Gen4x4 slot) |
| | **Maximum Sequential Write** | 6600 MB/s ±10% (in PCIe Gen4x4 slot) |
| | **Logical Blocks** | 2,00,04,09,264 |
| | **Features** | Pyrite 2.0; TRIM; L1.2 |
| **1 TB PCIe® Gen5x4 NVMe™ Self Encrypted OPAL2 SSD [1]** | **Form Factor** | M.2 2280 |
| | **Capacity** | 1 TB |
| | **NAND Type** | Performance |

| | | |
|---|---|---|
| | **Weight** | 10g (0.02 lb) |
| | **Interface** | 10g (0.02 lb) |
| | **Maximum Sequential Read** | PCIe Gen5X4 NVMe |
| | **Maximum Sequential Write** | 7000 MB/s ±10% (in PCIe Gen4x4 slot) |
| | **Logical Blocks** | 7000 MB/s ±10% (in PCIe Gen4x4 slot) |
| | **Features** | 2,00,04,09,264 |
| **1TB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell [1]** | **Form Factor** | M.2 2280 |
| | **Capacity** | 1TB |
| | **NAND Type** | TLC |
| | **Weight** | 10g(0.02lb) |
| | **Interface** | PCIe NVMe Gen4X4 |
| | **Maximum Sequential Read** | 6400 MB/s ±20% |
| | **Maximum Sequential Write** | 5000 MB/s ±20% |
| | **Logical Blocks** | 2,000,409,264 |
| | **Features** | Pyrite 2.0; TRIM; L1.2<br>Not all features are available in all versions. |
| **1TB PCIe® Gen4x4 NVMe™ Self Encrypted OPAL2 SSD Three Layer Cell [1]** | **Form Factor** | M.2 2280 |
| | **Capacity** | 1TB |
| | **NAND Type** | TLC |
| | **Weight** | 10g(0.02lb) |
| | **Interface** | PCIe NVMe Gen4X4 |
| | **Maximum Sequential Read** | 6400 MB/s ±20% |
| | **Maximum Sequential Write** | 5000 MB/s ±20% |
| | **Logical Blocks** | 2,000,409,264 |
| | **Features** | TCG Opal 2.0; TRIM; L1.2<br>Not all features are available in all versions. |
| **512 GB PCIe® Gen5 NVMe™ Self Encrypted OPAL2 SSD Value [1]** | **Form Factor** | M.2 2280 |
| | **Capacity** | 512 GB |
| | **NAND Type** | Value |
| | **Weight** | 10g (0.02 lb) |

| | | |
|---|---|---|
| | **Interface** | PCIe Gen5 NVMe |
| | **Maximum Sequential Read** | 7000 MB/s ±10% (in PCIe Gen4x4 slot) |
| | **Maximum Sequential Write** | 6000 MB/s ±10% (in PCIe Gen4x4 slot) |
| | **Logical Blocks** | 1,00,02,15,216 |
| | **Features** | TCG OPAL 2.0; TRIM; L1.2 |
| **512 GB PCIe® Gen5 NVMe™ SSD Value [1]** | **Form Factor** | M.2 2280 |
| | **Capacity** | 512 GB |
| | **NAND Type** | Value |
| | **Weight** | 10g (0.02 lb) |
| | **Interface** | PCIe Gen5 NVMe |
| | **Maximum Sequential Read** | 7000 MB/s ±10% (in PCIe Gen4x4 slot) |
| | **Maximum Sequential Write** | 6000 MB/s ±10% (in PCIe Gen4x4 slot) |
| | **Logical Blocks** | 1,00,02,15,216 |
| | **Features** | Pyrite 2.0; TRIM; L1.2 |
| **512GB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell [1]** | **Form Factor** | M.2 2280 |
| | **Capacity** | 512GB |
| | **NAND Type** | TLC |
| | **Weight** | 10g(0.02lb) |
| | **Interface** | PCIe NVMe Gen4X4 |
| | **Maximum Sequential Read** | 6400 MB/s ±20% |
| | **Maximum Sequential Write** | 3500 MB/s ±20% |
| | **Logical Blocks** | 1,000,215,215 |
| | **Features** | Pyrite 2.0; TRIM; L1.2<br>Not all features are available in all versions. |
| **512GB PCIe® Gen4x4 NVMe™ Self Encrypted OPAL2 SSD Three Layer Cell [1]** | **Form Factor** | M.2 2280 |
| | **Capacity** | 512GB |
| | **NAND Type** | TLC |
| | **Weight** | 10g(0.02lb) |
| | **Interface** | PCIe NVMe Gen4X4 |
| | **Maximum Sequential Read** | 6400 MB/s ±20% |

| | | |
|---|---|---|
| | **Maximum Sequential Write** | 3500 MB/s ±20% |
| | **Logical Blocks** | 1,000,215,215 |
| | **Features** | TCG Opal 2.0; TRIM; L1.2<br>Not all features are available in all versions. |
| **512GB PCIe® NVMe™ SSD Value** [1] | **Form Factor** | M.2 2280 |
| | **Capacity** | 512 GB |
| | **NAND Type** | Value |
| | **Weight** | 10g(0.02lb) |
| | **Interface** | PCIe NVMe Gen4X4 |
| | **Maximum Sequential Read** | 3500 MB/s ±20% |
| | **Maximum Sequential Write** | 1600 MB/s ±20% |
| | **Logical Blocks** | 1,000,215,215 |
| | **Features** | Pyrite 2.0; TRIM; L1.2<br>Not all features are available in all versions. |
| **256GB PCIe® NVMe™ Self Encrypted OPAL2 SSD Value** [1] | **Form Factor** | M.2 2280 |
| | **Capacity** | 256GB |
| | **NAND Type** | Value |
| | **Weight** | 10g(0.02lb) |
| | **Interface** | PCIe NVMe Gen4X4 |
| | **Maximum Sequential Read** | 3100 MB/s ±20% |
| | **Maximum Sequential Write** | 1200 MB/s ±20% |
| | **Logical Blocks** | 500,118,192 |
| | **Features** | TCG Opal 2.0; TRIM; L1.2<br>Not all features are available in all versions. |
| **256GB PCIe® NVMe™ SSD Value** [1] | **Form Factor** | M.2 2280 |
| | **Capacity** | 256 GB |
| | **NAND Type** | Value |
| | **Weight** | 10g(0.02lb) |
| | **Interface** | PCIe NVMe Gen4X4 |
| | **Maximum Sequential Read** | 3100 MB/s ±20% |

| | |
|---|---|
| **Maximum Sequential Write** | 1200 MB/s ±20% |
| **Logical Blocks** | 500,118,192 |
| **Features** | Pyrite 2.0; TRIM; L1.2 |
| | Not all features are available in all versions. |

## NETWORKING / COMMUNICATION

Items below may be optional.

| | | |
|---|---|---|
| **Realtek 8852CE Wi-Fi 6E** | **Wireless LAN Standards** | IEEE 802.11a |
| **Bluetooth® 5.3 WLAN [1,2]** | | IEEE 802.11ac |
| | | IEEE 802.11ax |
| | | IEEE 802.11b |
| | | IEEE 802.11d |
| | | IEEE 802.11e |
| | | IEEE 802.11g |
| | | IEEE 802.11h |
| | | IEEE 802.11i |
| | | IEEE 802.11k |
| | | IEEE 802.11n |
| | **Interoperability** | Wi-Fi certified |
| | **Frequency Band** | 802.11b/g/n/ax |
| | | 2.402 - 2.482 GHz |
| | | 802.11a/n/ac/ax |
| | | 5.15 - 5.25 GHz |
| | | 5.25 - 5.35 GHz |
| | | 5.47 - 5.725 GHz |
| | | 5.825 - 5.850 GHz |
| | | 5.955 - 6.415 GHz |
| | | 6.435 - 6.515 GHz |
| | | 6.535 - 6.875 GHz |
| | | 6.895 - 7.115 GHz |
| | **Data Rates** | 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps |
| | | 802.11ac : MCS0 ~ MCS9, (20MHz, 40MHz, 80MHz, 160MHz) |
| | | 802.11ax : MCS0 ~ 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: MCS 0 ~ MCS 15, (20MHz, 40MHz) |
| | **Modulation** | Direct Sequence Spread Spectrum |
| | | 1024QAM, 16-QAM, 256-QAM, 64-QAM, BPSK, CCK, Direct |

| | |
|---|---|
| | Sequence Spread Spectrum, OFDM, QPSK |
| **Security** | 802.1x authentication |
| | AES-CCMP: 128 bit in hardware |
| | IEEE 802.11i |
| | IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only |
| | WAPI |
| | WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. |
| | WPA2 certification |
| | WPA3 (personal) certification |
| **Network Architecture** | Ad-hoc (Peer to Peer) |
| **Models** | Infrastructure (Access Point Required) |
| **Roaming** | IEEE 802.11 compliant roaming between access points |
| **Output Power** | ▪ 802.11b : +17dBm minimum |
| | ▪ 802.11g : +16dBm minimum |
| | ▪ 802.11a : +17dBm minimum |
| | ▪ 802.11n HT20(2.4GHz) : +14dBm minimum |
| | ▪ 802.11n HT40(2.4GHz) : +13dBm minimum |
| | ▪ 802.11n HT20(5GHz) : +14dBm minimum |
| | ▪ 802.11n HT40(5GHz) : +13dBm minimum |
| | ▪ 802.11ac VHT80(5GHz) : +10dBm minimum |
| | ▪ 802.11ac VHT160(5GHz) : +10dBm minimum |
| | ▪ 802.11ax HE40(2.4GHz) : +12dBm minimum |
| | ▪ 802.11ax HE80(5GHz) : +10dBm minimum |
| | ▪ 802.11ax HE160(5GHz) : +10dBm minimum |
| | ▪ 802.11ax HE80(6GHz) : +10dBm minimum |
| | ▪ 802.11ax HE160(6GHz) : +10dBm minimum |
| **Power Consumption** | 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 |

| | |
|---|---|
| **Power Management** | ACPI and PCI Express compliant power management |
| **Receiver Sensitivity** [3] | 802.11b, 1Mbps : -93.5dBm maximum<br>802.11b, 11Mbps : -84dBm maximum<br>802.11a/g, 6Mbps : -86dBm maximum<br>802.11a/g, 54Mbps : -72dBm maximum<br>802.11n, MCS07 : -67dBm maximum<br>802.11n, MCS15 : -64dBm maximum<br>802.11ac, MCS0(VHT80) : -84dBm maximum<br>802.11ac, MCS9(VHT80) : -59dBm maximum<br>802.11ac, MCS9(VHT160) : -58.5dBm maximum<br>▪802.11ax, MCS11(HE40): -57dBm maximum<br>▪802.11ax, MCS11(HE80): -54dBm maximum<br>▪802.11ax, MCS11(HE160): -53.5dBm maximum |
| **Antenna type** | High efficiency antenna with spatial diversity<br>Two embedded tri-band 2.4/5/6 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications |
| **Form Factor** | PCI-Express M.2 MiniCard |
| **Dimensions** | 30.00 x 22.00 x 2.30 mm (1.18 x 0.87 x 0.09 inch) |
| **Weight** | Type 2230: 2.8 g |
| **Operating Voltage** | 3.3 v +/- 5 % |

**Integrated Bluetooth® specifications**

| | |
|---|---|
| **Bluetooth® Specification** | 4.0<br>4.1<br>4.2<br>5.0<br>5.1<br>5.2<br>5.3 |
| **Frequency Band** | 2402 to 2480 MHz |
| **Number of Available Channels** | Legacy : 0~79 (1 MHz/CH)<br>BLE : 0~39 (2 MHz/CH) |

| | |
|---|---|
| **Data Rates and Throughput** | Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5) |
| **Transmit Power** | The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR. |
| **Power Consumption** | Peak (Tx): 330 mW<br>Peak (Rx): 230 mW<br>Selective Suspend: 17 mW |
| **Bluetooth® Software** | Microsoft Windows Bluetooth Software |
| **Supported Link Topology** | |
| **Power Management** | Microsoft Windows ACPI, and USB Bus Support |
| **Certifications** | FCC (47 CFR) Part 15C/E, Section 15.247, 15.249, 15.407; ETSI 300 328, ETSI 301 893, ETSI 303 687 |
| **Bluetooth® Profiles Supported** | 2Mbps LE<br>Advanced Audio Distribution Profile (A2DP)<br>BT4.1-ESR 5/6/7 Compliance<br>BT4.2 ESR08 Compliance<br>BT5.2<br>BT5.3<br>Channel Selection Algo<br>Encryption key size control enhancements<br>ESR9/10 Compliance<br>Hands Free Profile (HFP)<br>LE Advertisement Extensions<br>LE Data Packet Length Extension<br>LE Dual Mode<br>LE L2CAP Connection Oriented Channels<br>LE Link Layer<br>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 BT profiles support |
| **Mediatek RZ616 Wi-Fi 6E Bluetooth® 5.3 AIM-T WLAN** [1,2] | **Wireless LAN Standards** | IEEE 802.11a |
| | | IEEE 802.11ac |
| | | IEEE 802.11ax |
| | | IEEE 802.11b |
| | | IEEE 802.11d |
| | | IEEE 802.11e |
| | | IEEE 802.11g |
| | | IEEE 802.11h |
| | | IEEE 802.11i |
| | | IEEE 802.11j |
| | | IEEE 802.11k |
| | | IEEE 802.11mc |
| | | IEEE 802.11n |
| | | IEEE 802.11r |
| | | IEEE 802.11v |
| | | IEEE 802.11w |
| | **Interoperability** | Wi-Fi certified |
| | **Frequency Band** | 802.11b/g/n/ax |
| | | 2.402 - 2.482 GHz |
| | | 802.11a/n/ac/ax |
| | | 5.15 - 5.25 GHz |
| | | 5.25 - 5.35 GHz |
| | | 5.47 - 5.725 GHz |

| | |
|---|---|
| | 5.825 - 5.850 GHz |
| | 5.925 - 7.125 GHz |
| **Data Rates** | 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps |
| | 802.11ac : MCS0 ~ MCS9, (20MHz, 40MHz, 80MHz, 160MHz) |
| | 802.11ax : MCS0 ~ 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: MCS 0 ~ MCS 15, (20MHz, 40MHz) |
| **Modulation** | Direct Sequence Spread Spectrum |
| | 1024QAM, 16-QAM, 256-QAM, 64-QAM, BPSK, CCK, Direct Sequence Spread Spectrum, OFDM, QPSK |
| **Security** | 802.1x authentication |
| | AES-CCMP: 128 bit in hardware |
| | IEEE 802.11i |
| | IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only |
| | WAPI |
| | WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. |
| | WPA2 certification |
| | WPA3 (personal) certification |
| **Network Architecture** | Ad-hoc (Peer to Peer) |
| **Models** | Infrastructure (Access Point Required) |
| **Roaming** | IEEE 802.11 compliant roaming between access points |
| **Output Power** | 2.4GHz (MIMO, typical): |
| | ▪ 802.11b : +18dBm |
| | ▪ 802.11g : +16.5dBm |
| | ▪ 802.11n/ac/ax (HT20/VHT20/HE20) : +16dBm |
| | ▪ 802.11n/ac/ax (HT40/VHT40/HE40) : +12.5dBm |
| | 5GHz (MIMO, typical): |
| | ▪ 802.11a : +13dBm |
| | ▪ 802.11n/ac/ax (HT20/VHT20/HE20) : +13.5dBm |
| | ▪ 802.11n/ac/ax (HT40/VHT40/HE40) : +12.5dBm |

| | |
|---|---|
| | ▪ 802.11ac/ax (VHT80/HE80) : +11.5dBm<br>▪ 802.11ax HE160 : +11.5dBm<br>6GHz LPI mode (MIMO, typical)::<br>▪ 802.11a : 0dBm<br>▪ 802.11ax HE20 : +1dBm<br>▪ 802.11ax HE40 : +4dBm<br>▪ 802.11ax HE80 : +7dBm<br>▪ 802.11ax HE160 : +7.5dBm |
| **Power Consumption** | Transmit mode : 2.5 W<br>Receive mode : 2.0 W<br>Idle mode (PSP) : 180 mW (WLAN Associated)<br>Idle mode: 50 mW (WLAN unassociated)<br>Connected Standby/Modern Standby : 10 mW<br>Radio disabled : 8 mW |
| **Power Management** | ACPI and PCI Express compliant power management |
| **Receiver Sensitivity** [3] | 2.4GHz (SISO):<br>▪802.11b, 11Mbps : -82dBm maximum<br>▪ 802.11g, 54Mbps : -71dBm maximum<br>▪ 802.11n, MCS7 : -64dBm maximum<br>▪ 802.11ac, MCS9 : -52dBm maximum<br>▪802.11ax, MCS11(HT40): -49dBm maximum<br>5GHz (SISO):<br>▪ 802.11a, 54Mbps : -71dBm maximum<br>▪ 802.11n, MCS07 : -64dBm maximum<br>▪ 802.11ac, MCS9 : -52dBm maximum<br>▪802.11ax, MCS11(HE80/HE160): -46dBm maximum<br>6GHz (SISO):<br>▪ 802.11a, 54Mbps : -71dBm maximum<br>▪ 802.11n, MCS7 : -64dBm maximum<br>▪ 802.11ac, MCS9 : -52dBm maximum<br>▪802.11ax, MCS11(HE160): -46dBm maximum |
| **Antenna type** | High efficiency antenna with spatial diversity, mounted in the display enclosure |

| | |
|---|---|
| | Two embedded dual band 2.4/5/6 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications |
| **Form Factor** | PCI-Express M.2 MiniCard |
| **Dimensions** | 30.00 x 22.00 x 2.30 mm (1.18 x 0.87 x 0.09 inch) |
| **Weight** | Type 2230: 2.8 g |
| **Operating Voltage** | 3.3 v +/- 9 % |
| **Integrated Bluetooth® specifications** | |
| **Bluetooth® Specification** | 4.0 |
| | 4.1 |
| | 4.2 |
| | 5.0 |
| | 5.1 |
| | 5.2 |
| | 5.3 |
| **Frequency Band** | 2402 to 2480 MHz |
| **Number of Available** | Legacy : 0~79 (1 MHz/CH) |
| **Channels** | BLE : 0~39 (2 MHz/CH) |
| **Data Rates and Throughput** | Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5) |
| **Transmit Power** | The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR. |
| **Power Consumption** | Peak (Tx): 330 mW |
| | Peak (Rx): 230 mW |
| | Selective Suspend: 17 mW |
| **Bluetooth® Software** | Microsoft Windows Bluetooth Software |
| **Supported Link Topology** | |
| **Power Management** | Microsoft Windows ACPI, and USB Bus Support |

| | | |
|---|---|---|
| | **Certifications** | FCC (47 CFR) Part 15C/E, Section 15.247, 15.249, 15.407; ETSI 300 328, ETSI 301 893, ETSI 303 687 |
| | **Bluetooth® Profiles Supported** | 2Mbps LE<br>Advanced Audio Distribution Profile (A2DP)<br>Basic Imaging Profile (BIP)<br>Bluetooth 4.1 -ESR 5/6/7 Compliance<br>Bluetooth 4.2 ESR08 Compliance<br>Bluetooth 5.2<br>Bluetooth 5.3 wireless card<br>Channel Selection Algo<br>Encryption key size control enhancements<br>ESR9/10 Compliance<br>FAX Profile (FAX)<br>Hands Free Profile (HFP)<br>Headset Profile (HSP)<br>LE Advertisement Extensions<br>LE Data Packet Length Extension<br>LE Dual Mode<br>LE L2CAP Connection Oriented Channels<br>LE Link Layer<br>LE Link Layer Ping<br>LE Long Range<br>LE Low Duty Cycle Directed Advertising<br>LE Privacy 1.2 –Extended Scanner Filter Policies<br>LE Privacy 1.2 –Link Layer Privacy<br>LE Secure Connection- Basic/Full<br>Limited High Duty Cycle Non-Connectable Advertising<br>Periodic Advertisement interval<br>Train Nudging & Interlaced Scan<br>Windows Bluetooth profiles support |
| **Mediatek MT7925 Wi-Fi 7 Bluetooth® 5.4 AIM-T WW** | **Wireless LAN Standards** | IEEE 802.11a<br>IEEE 802.11ac |

| | | |
|---|---|---|
| **WLAN** [4] | | 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** | Wi-Fi certified |
| | **Frequency Band** | 802.11b/g/n/ax |
| | | 2.402 - 2.482 GHz |
| | | 802.11a/n/ac/ax |
| | | 4.9 - 4.95 GHz (Japan) |
| | | 5.15 - 5.25 GHz |
| | | 5.25 - 5.35 GHz |
| | | 5.47 - 5.725 GHz |
| | | 5.825 - 5.850 GHz |
| | | 5.955 - 6.415 GHz |
| | | 6.435 - 6.515 GHz |
| | | 6.535 - 6.875 GHz |
| | | 6.895 - 7.115 GHz |
| | **Data Rates** | 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps |
| | | 802.11ac : MCS0 ~ MCS9, (20MHz, 40MHz, 80MHz, 160MHz) |
| | | 802.11ax : MCS0 ~ MCS11, (20MHz, 40MHz, 80MHz, 160MHz) |
| | | 802.11b: 1, 2, 5.5, 11 Mbps |
| | | 802.11be : MCS0~13, (20MHz, 40MHz, ,80MHz, 160MHz, 320MHz) |
| | | 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps |
| | | 802.11n: MCS 0 ~ MCS 15, (20MHz, 40MHz) |

| | |
|---|---|
| **Modulation** | Direct Sequence Spread Spectrum<br>1024QAM, 16-QAM, 256-QAM, 4096QAM, 64-QAM, BPSK, CCK, Direct Sequence Spread Spectrum, OFDM, QPSK |
| **Security** | 802.1x authentication<br>AES-CCMP: 128 bit in hardware<br>IEEE 802.11i<br>IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only<br>WAPI<br>WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.<br>WPA2 certification<br>WPA3 (personal) certification |
| **Network Architecture** | Ad-hoc (Peer to Peer) |
| **Models** | Infrastructure (Access Point Required) |
| **Roaming** | IEEE 802.11 compliant roaming between access points |
| **Output Power** | ▪ 802.11b, 1Mbps : +17dBm minimum<br>▪ 802.11g, 6Mpbs : +16dBm minimum<br>▪ 802.11a, 6Mbps : +17dBm minimum<br>▪ 802.11n, MCS7(HT20) : +14dBm minimum<br>▪ 802.11n, MCS7(HT40) : +13.5dBm minimum<br>▪ 802.11ac MCS9(VHT20) : 13.5dBm minimum<br>▪ 802.11ac MCS9(VHT40) : +13.5dBm minimum<br>▪ 802.11ac MCS9(VHT80) : +12.5dBm minimum<br>▪ 802.11ac MCS9(VHT160) : +10.5dBm minimum<br>▪ 802.11ax MCS11(HE20)(6GHz) : +11.5dBm minimum<br>▪ 802.11ax MCS11(HE40)(6GHz) : +7.5dBm minimum<br>▪ 802.11ax MCS11(HE80)(6GHz) : +7.5dBm minimum<br>▪ 802.11ax MCS11(HE160)(6GHz) : +7.5dBm minimum<br>▪ 802.11be MCS13(EHT20)(6GHz) : +11.5dBm<br>▪ 802.11be MCS13(EHT40)(6GHz) : +7.5dBm<br>▪ 802.11be MCS13(EHT80)(6GHz) : +7.5dBm<br>▪ 802.11be MCS13(EHT160)(6GHz) : +6.5dBm |
| **Power Consumption** | Transmit mode : 2.7 W |

| | |
|---|---|
| | Receive mode : 1.8 W<br>Idle mode (PSP) : 180 mW (WLAN Associated)<br>Idle mode: 50 mW (WLAN unassociated)<br>Connected Standby/Modern Standby : 10 mW<br>Radio disabled : 8 mW |
| **Power Management** | ACPI and PCI Express compliant power management<br>802.11 compliant power saving mode |
| **Receiver Sensitivity**[3] | ▪802.11b, 1Mbps : -93.5dBm maximum<br>▪802.11b, 11Mbps : -85dBm maximum<br>▪ 802.11a/g, 6Mbps : -90.5dBm maximum<br>▪ 802.11a/g, 54Mbps : -72.5dBm maximum<br>▪ 802.11n, MCS0(HT20) : -90dBm maximum<br>▪ 802.11n, MCS7(HT20) : -71.5dBm maximum<br>▪ 802.11n, MCS0(HT40) : -88.5dBm maximum<br>▪ 802.11n, MCS7(HT40) : -68.5dBm maximum<br>▪ 802.11ac, MCS9(VHT20) : -88.5dBm maximum<br>▪ 802.11ac, MCS9(VHT40) : -65.5dBm maximum<br>▪ 802.11ac, MCS9(VHT80) : -60.5dBm maximum<br>▪ 802.11ac, MCS9(VHT160) : -58.5dBm maximum<br>▪ 802.11ax, MCS11(HE20)(6GHz) : -59.5dBm maximum<br>▪ 802.11ax, MCS11(HE40)(6GHz) : -56.5dBm maximum<br>▪ 802.11ax, MCS11(HE80)(6GHz) : -53.5dBm maximum<br>▪ 802.11ax, MCS11(HE160)(6GHz) : -51.5dBm maximum<br>▪ 802.11be, MCS13(EHT20)(6GHz) : -55.5dBm maximum<br>▪ 802.11be, MCS13(EHT40)(6GHz) : -53.5dBm maximum<br>▪ 802.11be, MCS13(EHT80)(6GHz) : -51.5dBm maximum<br>▪ 802.11be, MCS13(EHT160)(6GHz) : -48.5dBm maximum |
| **Antenna type** | High efficiency antenna with spatial diversity, mounted in the display enclosure<br><br>Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications |

| | |
|---|---|
| **Form Factor** | PCI-Express M.2 MiniCard |
| **Dimensions** | 30.00 x 22.00 x 2.30 mm (1.18 x 0.87 x 0.09 inch) |
| **Weight** | Type 2230: 2.8 g |
| **Operating Voltage** | 3.3v +/- 9% |

**Integrated Bluetooth® specifications**

| | |
|---|---|
| **Bluetooth® Specification** | 4.0<br>4.1<br>4.2<br>5.0<br>5.1<br>5.2<br>5.3<br>5.4 |
| **Frequency Band** | 2402 to 2480 MHz |
| **Number of Available Channels** | Legacy : 0~79 (1 MHz/CH)<br>BLE : 0~39 (2 MHz/CH) |
| **Data Rates and Throughput** | Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5) |
| **Transmit Power** | The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR. |
| **Power Consumption** | Peak (Tx): 330 mW<br>Peak (Rx): 230 mW<br>Selective Suspend: 17 mW |
| **Bluetooth® Software** | Microsoft Windows Bluetooth Software |
| **Supported Link Topology** | |
| **Power Management** | Microsoft Windows ACPI, and USB Bus Support |
| **Certifications** | FCC (47 CFR) Part 15C/E, Section 15.247, 15.249, 15.407; ETSI |

| | |
|---|---|
| | 300 328, ETSI 301 893, ETSI 303 687 |
| **Bluetooth® Profiles** | 2Mbps LE |
| **Supported** | Advanced Audio Distribution Profile (A2DP) |
| | Basic Imaging Profile (BIP) |
| | BT4.1-ESR 5/6/7 Compliance |
| | BT4.2 ESR08 Compliance |
| | BT5.2 |
| | BT5.3 |
| | 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 |
| | Windows BT 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).

4. 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.

| | | |
|---|---|---|
| **HP 4G CAT16** [1] | **Technology/Operating bands** | WCDMA/HSPA+ operating bands:<br>Band 1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL)<br>Band 2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL)<br>Band 4: 1710 to 1755 MHz (UL), 2110 to 2155 MHz (DL)<br>Band 5: 824 to 849 MHz (UL), 869 to 894 MHz (DL)<br>Band 8: 880 to 915 MHz (UL), 925 to 960 MHz (DL)<br>LTE FDD/TDD operating bands:<br>Band 1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL)<br>Band 12: 699 to 716 MHz (UL), 729 to 746 MHz (DL)<br>Band 13: 777 to 787 MHz (UL), 746 to 756 MHz (DL)<br>Band 14: 788 to 798 MHz (UL), 758 to 768 MHz (DL)<br>Band 17: 704 to 716 MHz (UL), 734 to 746 MHz (DL)<br>Band 18: 815 to 830 MHz (UL), 860 to 875 MHz (DL)<br>Band 19: 830 to 845 MHz (UL), 875 to 890 MHz (DL)<br>Band 2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL)<br>Band 20: 832 to 862 MHz (UL), 791 to 821 MHz (DL)<br>Band 25: 1850 to 1915 MHz (UL), 1930 to 1995 MHz (DL)<br>Band 26: 814 to 849 MHz (UL), 859 to 894 MHz (DL)<br>Band 28: 703 to 748 MHz (UL), 758 to 803 MHz (DL)<br>Band 29: 717 to 728 MHz (DL)<br>Band 3: 1710 to 1785 MHz (UL), 1805 to 1880 MHz (DL)<br>Band 30: 2305 to 2315 MHz (UL) 2350 to 2360 MHz (DL)<br>Band 32: 1452 to 1496 MHz (DL)<br>Band 34: 2010 to 2025 MHz (UL/DL)<br>Band 38: 2570 to 2620 MHz (UL/DL)<br>Band 39: 1880 to 1920 MHz (UL/DL) |

| | |
|---|---|
| | Band 4: 1710 to 1755 MHz (UL), 2110 to 2155 MHz (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 5: 824 to 849 MHz (UL), 869 to 894 MHz (DL) |
| | Band 66: 1710 to 1800 MHz (UL), 2110 to 2200 MHz (DL) |
| | Band 7: 2500 to 2570 MHz (UL), 2620 to 2690 MHz (DL) |
| | Band 71: 663 to 698 MHz (UL), 617 to 652 MHz (DL) |
| | Band 8: 880 to 915 MHz (UL), 925 to 960 MHz (DL) |
| **Wireless protocol standards** | LTE Rel15 |
| **GPS** | Standalone/A-GPS (MS-A, MS-B) |
| **GPS bands** | GPS L1 (1575.42MHz), GLONASS L1 (1602MHz), Beidou B1 (1561.098MHz), Galileo E1 (1575.42MHz), QZSS (1575.42MHz) |
| **Maximum data rates - LTE** | UE Category DL 16 (1 Gbps Download). UE Category UL 18 (211 Mbps Upload) |
| **Maximum output power** | HSPA+: 23.5 dBm |
| | LTE (all bands except B41): 23.0 dBm (Not support HPUE) |
| **Maximum power** | LTE: 1,300 mA (peak); 1,100 mA (average) |
| **consumption** | HSPA+: 1,100 mA (peak); 800 mA (average) |
| **Form Factor** | M.2; 3052-S3 Key B |
| **Weight** | 8.7 g (0.307 oz) |
| **Dimensions** | 52.00 x 30.00 x 2.30 mm (2.05 x 1.18 x 0.09 inch) |
| **(Length x Width x Thickness)** | |
| **embedded eSIM** | Yes |

1. 4G LTE module is optional, must be configured at the factory, requires activation and separately purchased service contract. Check with service provider for coverage and availability in your area. Connection, upload and download speeds will vary due to network, location, environment, network conditions, and other factors. 4G LTE not available on all products, in all regions.

| | | |
|---|---|---|
| NFC Mirage WNC XRAV-1 | Dimensions (L x W x H) | 17.00 x 10.00 x 2.00 mm (0.67 x 0.39 x 0.08 inch) |
| | Chipset | NPC300 |
| | System interface | I2C |
| | NFC RF standards | 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 |
| | NFC Forum Support | Type 1, Type 2, Type 3 / Type 4, NFCIP-1 / NFCIP-2 |
| | Reader (PCD-VCD) Mode | ISO/IEC 14443 A |
| | | ISO/IEC 14443 B |
| | | ISO/IEC 15693 |
| | | MIFARE 1K |
| | | MIFARE 4K |
| | | MIFARE DESFire |
| | | FeliCa |
| | | Jewel and Topaz |
| | Card Emulation (PICC-VICC) | ISO/IEC 14443 A |
| | Mode | ISO/IEC 14443 B and B' |
| | | MIFARE |
| | | FeliCa |
| | Frequency | 13.56 MHz |
| | NFC Modes Supported | Reader/Writer, Peer-to-Peer |
| | Raw RF Data Rates | 106 kbps, 212 kbps, 424 kbps, 848 kbps |
| | Operating temperature | Operating: 0 °C to 70 °C (32 °F to 158 °F) |
| | | Storage: -20 °C to 125 °C (-4 °F to 257 °F) |
| | Humidity | Operating: 10% - 90% (non-condensing) |
| | | Non-Operating: 5% - 95% (non-condensing) |
| | Supply Operating voltage | 4.35 to 5.25 Volts |
| | I/O Voltage | 1.8V or 3.3V |
| | Power Consumption | Booster enable, VBAT= 3.3V, VCC_BOOST = 5V |
| | Mode | Power Consumption, Typical |

| | | |
|---|---|---|
| | **Polling** | 7.3 mA |
| | **Detected Test Tag Type 1** | Total 283.8 mA<br>Net Module 236.8 mA |
| | **Detected Test Tag Type 2** | Total 288.8 mA<br>Net Module 241.8 mA |
| | **Detected Test Tag Type 3** | Total 287.7 mA<br>Net Module 240.7 mA |
| | **Detected Test Tag Type 4** | Total 282.3 mA<br>Net Module 235.3 mA |
| | **Antenna** | Antenna connector, 0.5mm pitch, 7 connector FPC. Antenna matching is external to module. |
| **RTK GBE Ethernet Controller 1** | **Connector** | RJ-45 |
| | **System Interface** | PCI (Intel proprietary) + SMBus |
| | **Data rates supported** | 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 802.3 clauses 40)<br>100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30)<br>10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) |
| | **IEEE Compliance** | IEEE 802.1p QoS (Quality of Service) Support<br>IEEE 802.1q VLAN support<br>IEEE 802.3az EEE (Energy Efficient Ethernet)<br>IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) |
| | **Performance** | TCP/IP/UDP Checksum Offload (configurable)<br>Protocol Offload (ARP & NS)<br>Large send offload and Giant send offload<br>Receiving Side Scaling<br>Jumbo Frame 9K |
| | **Power consumption** | Cable Disconnection: 25 mW<br>100Mbps Full Run: 450 mW |

| | | |
|---|---|---|
| | | 1000Mbps Full Run: 1000 mW<br>WoL Enable(S3/S4/S5): 50 mW<br>WoL Disable(S3/S4/S5): 25 mW |
| | **Power Management** | ACPI compliant – multiple power modes<br>Situation-sensitive features reduce power consumption<br>Advanced link down power saving for reducing link down power consumption |
| | **Management Interface** | Auto MDI/MDIX Crossover cable detection |
| | **IT Manageability** | Wake-on-LAN from modern standby or sleep state (Magic Packet and Microsoft Wake-Up Frame)<br>Wake-on-LAN from off (Magic Packet only)<br>PXE 2.1 Remote Boot<br>Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30))<br>Comprehensive diagnostic and configuration software suite<br>Virtual Cable Doctor for Ethernet cable status |
| **Realtek RTL8111EPP 1GbE Ethernet Controller [1]** | **Connector** | RJ-45 |
| | **System Interface** | PCI (Intel proprietary) + SMBus; USB |
| | **Data rates supported** | 10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14)<br>100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30)<br>1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 802.3 clauses 40) |
| | **IEEE Compliance** | IEEE 802.1p QoS (Quality of Service) Support<br>IEEE 802.1q VLAN support<br>IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)<br>IEEE 802.3az EEE (Energy Efficient Ethernet) |
| | **Performance** | TCP/IP/UDP Checksum Offload (configurable)<br>Protocol Offload (ARP & NS)<br>Large send offload and Giant send offload |

| | | |
|---|---|---|
| | | Receiving Side Scaling |
| | | Jumbo Frame 9K |
| | **Power consumption** | Cable Disconnection: 25 mW |
| | | 100Mbps Full Run: 450 mW |
| | | 1000Mbps Full Run: 1000 mW |
| | | WoL Enable(S3/S4/S5): 50 mW |
| | | WoL Disable(S3/S4/S5): 25 mW |
| | **Power** | ACPI compliant – multiple power modes |
| | **Management** | Situation-sensitive features reduce power consumption |
| | | Advanced link down power saving for reducing link down power consumption |
| | **Management Interface** | Auto MDI/MDIX Crossover cable detection |
| | **IT Manageability** | 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)) |
| | **Security & Manageability** | Support DASH 1.1 compliant/Software KVM ASF 2.0 |

1. The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

| | | |
|---|---|---|
| **Qualcomm 9205 LTE-M (CAT-M1 fSVC)** [1] | **Technology/Operating bands** | 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 |
| | | GSM/GPRS/EGPRS: 1800, 1900, 850, 900 MHz |
| | **Wireless protocol standards** | 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)<br>3GPP TS 27.007 V10.0.8: AT command set for User Equipment (UE)<br>3GPP TS 31.102 V10.11.0: Characteristics of the Universal Subscriber Identity Module (USIM) application<br>3GPP TS 31.11 V10.16.0: Universal Subscriber Identity Module (USIM) Application Toolkit (USAT)<br>3GPP TS 36.124 V10.3.0: Electro Magnetic Compatibility (EMC) requirements for mobile terminals and ancillary equipment<br>3GPP TS 36.521-1 V14.3.0: User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Conformance testing<br>3GPP TS 51.010-1 V10.5.0: Mobile Station (MS) conformance specification; Part 1: Conformance specification<br>3GPP TS 51.011 V4.15.0: Specification of the Subscriber Identity Module -Mobile Equipment (SIM-ME) interface |
| **GPS** | Standalone GPS/Beidou/GLONASS/A-GPS (XTRA) |
| **GPS bands** | 1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz, Beidou 1561.098 MHz |
| **Maximum data rates** | LTE FDD: 375.00 Kbps(Download), 1119.00 Kbps(Upload)<br>GPRS: 107.00 Kbps(Download), 85.60 Kbps(Upload)<br>EGPRS: 296.00 Kbps(Download), 236.80 Kbps(Upload) |
| **Maximum output power** | LTE (all bands except B41): 21.5 dBm<br>GSM: 34.0 dBm |
| **Maximum power consumption** | LTE: 151 mA(peak), 16 mA(average) |
| **Form Factor** | M.2 |
| **Weight** | 4.0 g (0.141 oz) |
| **Dimensions (Length x Width x Thickness)** | 22.00 x 42.00 x 2.30 mm (0.87 x 1.65 x 0.09 inch) |
| **embedded eSIM** | Support |

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

## POWER

Power supply availability may vary by country.

| | | |
|---|---|---|
| **HP 65W Standard USB Type-C® AC power adapter** | Weight | 240g ± 10g |
| | 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 |
| | **Output** | |
| | Output power | 5V/15W |
| | | 9V/27W |
| | | 12V/60W |
| | | 15V/65W |
| | | 20V/65W |
| | DC output | 5V/9V/12V/15V/20V |
| | Hold-up time | 100% load 5ms at 115 Vac input |
| | Output current limit | < 8.0A |
| | AC Inlet Type | C6 |
| | DC Cable Connector | USB type C |
| | DC Cable Material | PVC |
| | **Connector** | |
| | Connector | C6 |
| | **Environmental Design** | |
| | 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 5,000m (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<br>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 |
| **HP 65W Standard USB Type-C® Halogen Free AC power adapter** | Weight | 240g ± 10g |
| | Input | 100-240Vac |
| | Input Efficiency | 81.50% min at 115 Vac/ 230 Vac @5.00V<br>86.70% min at 115 Vac/ 230 Vac @9.00V<br>88.00% min at 115 Vac/ 230 Vac @12.00V<br>89.00% min at 115 Vac/ 230 Vac @15.00V<br>89.00% min at 115 Vac/ 230 Vac @20.00V |
| | Input frequency range | 47-63Hz |
| | Input AC current | Max. 1.6 A at 90 Vac |
| | **Output** | |
| | Output power | 5V/15W<br>9V/27W<br>12V/60W<br>15V/65W<br>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 |

| | |
|---|---|
| **Connector** | |
| Connector | C6 |
| **Environmental Design** | |
| 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<br>Worldwide safety standards - IEC60950-1 and IEC62368-1 : 2018, EN62368-1:2014+A11, UL 62368-1<br>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 and not replaceable by customer. Serviceable by warranty.

| | | |
|---|---|---|
| **HP Long Life 3 cell, 56Whr Polymer** | Weight | 0.208kg +/- 10g (0.459 lb) |
| | Cells/Type | 3cell Lithium-Ion Polymer cell / 586075 |
| | **Energy** | |
| | Voltage | 11.58V |
| | Amp-hour capacity | 4.840Ah |
| | Watt-hour capacity | 56.04Wh |
| | **Temperature** | |
| | Operating (Charging) | 0˚ to 45˚C (32˚ to 113˚F) (Charge Initial Temperature) |
| | | 0˚ to 50˚C (32˚ to 122˚F) (Continuous Charging) |
| | Operating (Discharging) | -10˚ to 60˚C (14˚ to 140˚F) |
| | Optional Travel Battery Available | No |
| **HP Long Life 3 cell, 48Whr Polymer** | Weight | 0.192kg +/- 10g (0.423 lb) |
| | Cells/Type | 3cell Lithium-Ion Polymer cell / NCM 565875 |
| | **Energy** | |
| | Voltage | 11.4V |
| | Amp-hour capacity | 4.285Ah |
| | Watt-hour capacity | 48.84Wh |
| | **Temperature** | |
| | Operating (Charging) | 0˚ to 45˚C (32˚ to 113˚ F) (Charge Initial Temperature) |
| | | 0˚ to 50˚C (32˚ to 122˚ F) (Continuous Charging) |
| | Operating (Discharging) | -10˚ to 60˚C (14˚ to 140˚F) |
| | Optional Travel Battery Available | No |

## AUDIO

| | |
|---|---|
| **Codec** | Realtek ALC3247 |
| **Audio I/O Ports** | 3.5mm Headset: CTIA only; Headphone-out |
| **Multi-streaming Capable** | 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.,<br>Following MSFT Behavior |
| **Sampling** | DAC: Supports resolutions from 16-bit to 24-bit;48.0 kHZ to 48.0 kHz<br>ADC: Supports resolutions from 16-bit to 24-bit;44.1 kHZ to 48.0 kHz |
| **Internal Speaker** | Yes |

## FINGERPRINT READER

| | |
|---|---|
| **Sensor vendor** | ELAN |
| **Sensor type** | Capacitive |
| **DPI resolution** | 508 DPI |
| **Scan area** | 80 x 80 pixels |
| **False Rejection Rate** | < 3% |
| **False Acceptance Rate** | < 0.001% |
| **Mobile Voltage Operation** | 2.7 V ~ 3.6 V |
| **Operating Temperature** | -20°C ~ 80°C (-4°F ~ 176°F) |
| **Current Consumption Image** | 35 mA max |
| **Low Latency Wait For Finger** | 300 uA |
| **Capture Rate** | 50 frames/sec |
| **ESD Resistance** | IEC 61000-4-2 4B (+15KV) |
| **Detection Matrix** | 508 dpi / 4.0 x 4.0 mm sensor area |

| | |
|---|---|
| **Sensor vendor** | SYNAPTICS |
| **Sensor type** | Capacitive |
| **DPI resolution** | 363 DPI |
| **Scan area** | 104 x 86 pixels |
| **False Rejection Rate** | < 3% |
| **False Acceptance Rate** | < 0.001% |
| **Mobile Voltage Operation** | 2.7 V ~ 3.6 V |
| **Operating Temperature** | 0°C ~ 60°C (32°F ~ 140°F) |
| **Current Consumption Image** | 100 mA max |
| **Low Latency Wait For Finger** | 260 uA |
| **Capture Rate** | 50 frames/sec |
| **ESD Resistance** | IEC 61000-4-2 4B (+15KV) |
| **Detection Matrix** | 363 dpi / 7.4 x 6.0 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 |
| | HP USB-C to VGA Adapter | N9K76AA |
| Audio - Earbuds | 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-A Adapter +Basic Charge Case | 7Y8L7AA |
| | 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 | HP USB G2 Stereo Headset | 428K6AA |
| | 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 Monoaural 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 Monaural 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 Monaural DECT 1920-1930 MHz Headset (NA) | 7S430AA |
| Poly Savi 7310 UC Monaural DECT 1880-1900 MHz Headset (EMEA + APJ) | 8L561AA |
| Poly Savi 7310 UC Monaural DECT 1920-1930 MHz Headset (NA) | 8L570AA |
| Poly Savi 7310 UC Monaural Microsoft Teams Certified DECT 1880-1900 MHz Headset (EMEA + APJ) | 8L575AA |
| Poly Savi 7310 UC Monaural 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 | 8L567AA |

| | |
|---|---|
| (NA) | |
| 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 | 8D3J4AA |

| | |
|---|---|
| (NA) | |
| 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 | 8L7E6AA |

| | |
|---|---|
| (NA) | |
| Poly Savi 8410 Office Monaural Microsoft Teams Certified DECT 1880-1900 MHz Headset (EMEA + APJ) | 8L5A9AA |
| Poly Savi 8410 Office Monaural Microsoft Teams Certified DECT 1920-1930 MHz Headset (NA) | 8L7E9AA |
| 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 | 8G7T8AA |

| | | |
|---|---|---|
| | Headset +USB-C/A Adapter +Charging Stand | |
| | 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 435 Webcam | 77B10AA |
| | 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 |
| | HP Convertible Laptop Stand | 9C2H2AA |
| | HP Everyday 16 odyssey gray Laptop Backpack | A08KLUT |
| | HP Everyday 16 odyssey gray Laptop Bag | A08KKAA |

| | | |
|---|---|---|
| | HP Everyday 16 odyssey gray Laptop Briefcase | A08KHUT |
| | 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 |
| Commodity | 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 |
| | HP Nano Master Keyed Cable Lock | 1AJ40AA |
| | HP SureKey Standard/Nano/Wedge Cable Lock | 6UW42AA |
| Docking | HP Thunderbolt 4 100W G6 Dock | 9X472UT |
| | HP Thunderbolt 4 Ultra 180W G6 Dock | 9X481UT |
| | HP Thunderbolt 4 Ultra 280W G6 Dock | AW5M5UT |
| | HP USB-C™ 120W G5 Dock | 5TW10AA,5TW10UT |
| | HP Thunderbolt™ 120W G4 Dock | 4J0A2AA,4J0A2UT |
| | HP USB-C™ 120W G5 Dock | 5TW10AA,5TW10UT |
| | HP USB-C™ G5 Essential Dock | 72C71AA |
| | HP USB-C™/A 120W G2 Universal Dock | 5TW13AA,5TW13UT |
| | HP Thunderbolt™ 280W G4 Dock w/Combo Cable | 4J0G4AA,4J0G4UT |
| Hub | HP 4K USB-C Multiport Hub | 6G843AA,6G843UT |
| | 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 225 Wireless Keyboard | 805T1AA,805T1UT |
| | 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 |
| | HP 975 Dual-Mode USB+Bluetooth Wireless Keyboard | 3Z726AA |
| Keyboard & Mouse Combo | 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 |
| Mouse | HP 105 Mouse Pad | 8X595AA |
| | HP 125 Wired Mouse | 265A9UT |
| | HP 128 Laser Wired Mouse | 265D9AA |
| | HP 205 Desk Mat | 8X597AA |
| | HP 235 Slim Wireless Mouse | 4E407UT |
| | HP 320M Wired Mouse | 9VA80AA |
| | HP 425 Programmable Wireless Mouse | 7M1D5AA |
| | HP 435 Multi-Device Wireless Mouse | 3B4Q5UT |
| | HP 515 Ultra-Fast Rechargeable Wireless Mouse | 9C2F7AA |
| | HP 685 Comfort Dual-Mode Mouse | 8T6M0UT |
| | 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 65W GaN USB-C LC Laptop Charger | 9Y3X5AA,9Y3X5UT |
| | 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 Cat16 WWAN | B8BD2AA |

## CHANGELOG

| Date of change | Version History | | Description of change |
|---|---|---|---|
| May 20, 2025 | V1 to V2 | Updated | Docking Section |
| June 19, 2025 | V2 to V3 | Correction | Processors section |
| July 17, 2025 | V3 to V4 | Updated | Power Section |
| August 6, 2025 | V4 to V5 | Updated | Software and Security Section |
| September 15, 2025 | V5 to V6 | Updated | Software and Security Section |
| October 3, 2025 | V6 to V7 | Updated | Processors Section<br>NET/COMM Section<br>AMO Section<br>Storage Section |
| October 16, 2025 | V7 to V8 | Updated | Processor Section |
| December 2, 2025 | V8 to V9 | Updated | Ports/Slots Section |
| January 23, 2026 | V9 to V10 | Updated | Callouts Section<br>Ports Section |
| March 20, 2026 | V10 to V11 | Updated | Software and Security Section |
| March 30, 2026 | V11 to V12 | Updated | Memory Section |
| April 28, 2026 | V12 to V13 | Updated | Memory Section |
| May 25, 2026 | V13 to V14 | Updated | Storage and Drives Section |