Overview

HP EliteBook 665 16 inch G11 Notebook PC

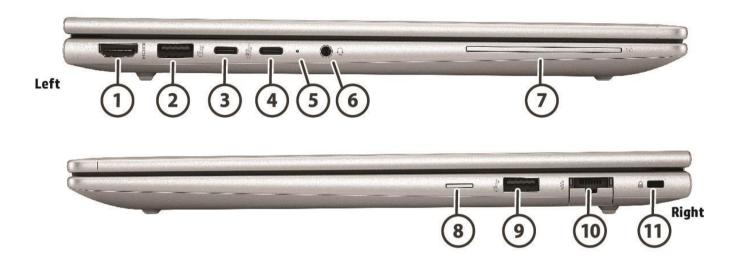


Front

- 1. Internal Microphone (2)
- 2. Webcam LED
- 3. Webcam
- * Select product only.

- 4. Camera Shutter
- 5. Touchpad
- 6. Near-field communication (NFC) *

Overview



Sides

- **1.** HDMI 2.1
- **2.** Super Speed USB Type-A 5Gbps signaling rate Power **9.** charging
- 3. USB4™ Type-C[®] 40 Gbps USB Power Delivery DisplayPort™ 1.4
- USB4[™] Type-C[®] 40 Gbps USB Power Delivery DisplayPort[™] 1.4
- 5. Power Indicator LED
- 6. Headphone/mic combo jack
- 7. Smart Card Reader (Optional)

- 8. Nano SIM card slot (Optional)
- 9. Super Speed USB Type-A 5Gbps signaling rate rate Data only
- **10.** RJ45 Ethernet port
- **11.** Security lock slot (Integrated)

Technical Specifications

PRODUCT NAME

HP EliteBook 665 16 inch G11 Notebook PC

OPERATING SYSTEMS

Preinstalled 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 1

Windows 11 Pro Education 1

Windows 11 Pro (Windows 11 Enterprise or Windows 10 Enterprise available with a Volume Licensing

Agreement)
FreeDOS

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

PROCESSORS

Processor ^{2,3,4}	Cores	Threads	L3 Cache	Max Turbo Frequency ⁵	Base Frequency	Pro
AMD Ryzen™ 7 PRO 7735U	8 cores	16	16 MB	4.75 GHz	2.70 GHz	X
AMD Ryzen™ 7 7735U	8 cores	16	16 MB	4.75 GHz	2.70 GHz	
AMD Ryzen™ 5 PRO 7535U	6 cores	12	16 MB	4.55 GHz	2.90 GHz	Х
AMD Ryzen™ 5 7535U	6 cores	12	16 MB	4.55 GHz	2.90 GHz	
AMD Ryzen™ 3 PRO 7335U	4 cores	8	8 MB	4.30 GHz	3.00 GHz	Х
AMD Ryzen™ 3 7335U	4 cores	8	8 MB	4.30 GHz	3.00 GHz	

Processor Family

AMD Ryzen™ 7 PRO processor

AMD Ryzen™ 7 processor

AMD Ryzen™ 5 PRO processor

AMD Ryzen™ 5 processor

AMD Ryzen™ 3 PRO 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. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
- 4. Features and software that require a NPU may require software purchase, subscription or enablement by a software or platform provider, and third party software may have specific configuration or compatibility requirements. Performance varies by use, configuration, and other factors.
- 5. AMD Max Boost frequency performance varies depending on hardware, software and overall system configuration.

GRAPHICS

Integrated

AMD Radeon™ Graphics

Supports

UMA: Support HDMI 2.1

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

DISPLAY

Non-Touch

40.6 cm (16") diagonal, WUXGA (1920 x 1200), Bent, LCD, UWVA, anti-glare, WLED, 300 nits, NTSC $45\%^{6,7}$ 40.6 cm (16") diagonal, WUXGA (1920 x 1200), Bent, LCD, UWVA, anti-glare, WLED + Low Blue Light, 400 nits, low power, sRGB $100\%^{6,7}$

40.6 cm (16") diagonal, WUXGA (1920 x 1200), Bent, LCD, UWVA, anti-glare, WLED + Low Blue Light, 1000 nits, sRGB 100%, HP Sure View reflect integrated privacy screen ^{6,7}

Touch

40.6 cm (16") diagonal, WUXGA (1920 x 1200), Bent, LCD, touch, UWVA, anti-glare, WLED, 300 nits, NTSC 45% ^{6,7,8,9}

Display Size (Diagonal)

40.6 cm (16.0")

Screen to Body Ratio

90.60%

Aspect Ratio

16.10

- 6. HD content required to view HD images.
- 7. Sold separately or as an optional feature.
- 8. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
- 9. Actual brightness will be lower with touchscreen or Sure View.



DOCKING (Sold Separately)

Docking station model #1 HP USB-C Dock G5

Docking station model #2HP Thunderbolt™ 120W G4 DockDocking station model #3HP USB-C G5 Essential DockDocking station model #4HP USB-C/A G2 Universal DockFor additional aftermarket options and docking specs please see page 35.

STORAGE AND DRIVES

Primary Storage

2 TB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell 10

1 TB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell 10

1 TB PCIe® Gen4x4 NVMe™ Self Encrypted OPAL2 Three Layer Cell ¹⁰

512 GB PCIe® Gen4x4 NVMe™ Self Encrypted OPAL2 SSD Three Layer Cell 10

512 GB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell 10

512 GB PCIe® Gen4x4 NVMe™ SSD Value 10

256 GB PCIe® Gen4x4 NVMe™ Self Encrypted OPAL2 SSD Value 10

256 GB PCIe® Gen4x4 NVMe™ SSD Value 10

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

MEMORY

Maximum Memory

64GB DDR5-4800 (2 x 32 GB) MT/s RAM 11

Memory

64GB DDR5-4800 (2 x 32 GB) MT/s RAM ¹¹
32GB DDR5-4800 (2 x 16 GB) MT/s RAM ¹¹
32GB DDR5-4800 (1 x 32 GB) MT/s RAM ¹¹
16GB DDR5-4800 (2 x 8 GB) MT/s RAM ¹¹
16GB DDR5-4800 (1 x 16 GB) MT/s RAM ¹¹
8GB DDR5-4800 (1 x 8 GB) MT/s RAM ¹¹

Memory Slots

2 SODIMM System runs at 4800 MT/s Supports Dual Channel Memory ¹¹

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.



Technical Specifications

NETWORKING/COMMUNICATIONS

Ethernet

Realtek RTL8111EPP 1GbE Ethernet Controller ¹²
Realtek RTL8111HSH 10/100/1000 Integrated NIC ¹²

WLAN

Realtek 8852CE Wi-Fi 6E Bluetooth® 5.3 wireless card WLAN ¹³
Mediatek RZ616 Wi-Fi 6E Bluetooth® 5.3 wireless card AIM-T WLAN ¹³

WWAN

HP 4G LTE-A Pro Cat16 WWAN eSIM 14

NFC

NFC Mirage WNC XRAV-1

Miracast

Native Miracast Support 15

- 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. Gigabit-class 4G LTE module is optional and must be configured at the factory. Module designed for up to 1 Gbps download speeds as carriers deploy 5 carrier aggregation and 100Mhz channel bandwidth, requires activation and separately purchased service contract. Backwards compatible to HSPA 3G technologies. 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.
- 15. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.



AUDIO/MULTIMEDIA

Audio

Audio by Poly Studio
2 Integrated stereo speakers
Discrete Amplifiers
2 Integrated dual array microphones

Speaker Power

2W/4ohm per speaker

Camera

5MP+Infrared camera ^{16,17} FHD camera ^{16,17}

Sensors

Ambient Light Sensor ¹⁸ Hall Effect Sensor Thermal Sensor HP Tamper Lock

- 16. HD content required to view HD images.
- 17. Sold separately or as an optional feature.
- 18. Select product only (Privacy panel SKU)

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard

HP Standard Keyboard with numeric keypad, spill-resistant, backlit, Durakey keyboard. ¹⁹ HP Standard Keyboard with numeric keypad, spill-resistant, Privacy, backlit, Durakey keyboard. ¹⁹ HP Standard Keyboard with numeric keypad, spill-resistant keyboard.

Pointing Device

Clickpad with multi-touch gesture support
Microsoft Precision Touchpad Default Gestures Support

Function Keys

ESC: System Information

F1 - Emoji

F2 - Brightness Down

F3 - Brightness Up

F4 - Backlight Keyboard

F5 - Audio Mute

F6 - Volume Down

F7 - Volume Up

F8 - Mic Mute

F9 - Play and Pause

F10 - Home

F11 - End



F12 – Programmable Key Screen Shot Power Button Delete

Microsoft Copilot 20

Hidden Function Keys

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

19. Backlit keyboard is an optional feature.

20. Requires Windows 11 and an NPU. Timing of feature delivery and availability varies by market and device. Requires Microsoft account to log in. Where Copilot in Windows is not available, the Copilot key will lead to the Bing search engine. See http://aka.ms/WindowsAIFeatures

SOFTWARE AND SECURITY

Software

Adobe Offer 21

Bing Search for IE11

Buy Microsoft Office (Sold separately)

HP Connection Optimizer

HP Easy Clean²²

HP Easy Clean Keyboard Driver

HP Hotkey Support

HP Mac Address Manager

HP Notifications

HP PC Hardware Diagnostics UEFI

HP PC Hardware Diagnostics Windows

HP Power Manager with Battery Health Manager²³

HP Privacy Settings

HP Services Scan 24

HP Smart Support 25

HP Support Assistant 26

HSA Fusion for Commercial

HSA Telemetry for Commercial

Miro Offer 27

mvHP 28

Poly Lens 29

Manageability Features

HP Client Catalog (download) 30

HP Client Management Script Library (download) 31

HP Cloud Recovery 32

HP Connect for Microsoft Endpoint Manager 33

HP Driver Packs (download) 34

HP Image Assistant (download) 35

HP Manageability Integration Kit (download) 36

HP Patch Assistant (download) 37

Security Management

Secured-Core PC Enable 38

Windows Hello Enhanced Sign-In Security (ESS)



HP Wolf Security for Business which includes:39

HP Sure Admin ⁴⁰
HP Sure Click ⁴¹
HP Sure Recover ⁴²
HP Sure Run ⁴³
HP Sure Sense
HP Sure Start ⁴⁴

Security-TPM

HP Tamper Lock

Model: Nuvoton NPCT760HABYX TCG TPM 2.0

Firmware Version: 7.2.3.1 FIPS 140-2 Compliant: Yes

Model: Infineon SLB9672VU2.0 FW15.23

TCG TPM 2.0

Firmware Version: 15.23 FIPS 140-2 Compliant: Yes

BIOS

Absolute Persistence Module ⁴⁵
BIOS Update via Network
HP BIOSphere Gen6 ⁴⁶
HP DriveLock & Automatic DriveLock
HP Fingerprint Sensor ⁴⁷
HP Secure Erase ⁴⁸
HP Wake on WLAN

Smartcard Reader

Model number: Alcor AK9563 FIPS 201 Compliant: Yes

IPv6 Support

Yes

FirstNet Certified

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

UEFI version: 2.7

Class: 3

- 21. Click on Adobe icon in the start menu to take advantage of a 30 day trial membership of select Adobe software. The software is tied to the device and is not transferrable. You may also choose to enter your payment details to auto-renew and continue to use the software beyond the 30 day trial. See Adobe for complete details.
- 22. HP Easy Clean requires Windows 10 RS3 and higher and will disable the keyboard, touchscreen, and clickpad only. Ports are not disabled. See user guide for cleaning instructions.
- 23. HP Power Manager requires Windows 10 and higher and can be downloaded from the Microsoft Store. Depending on what version of HP Battery Health Manager (BHM) is available for your device, HP BHM may look at a number of factors to determine how to adjust battery charging over time to optimize battery health. HP BHM is preset to "Let HP Manage my Battery Charging" to allow the system to balance charging between battery health and battery duration. As Let HP Manage My Battery Charging adjusts charge capacity, the amount of run-time on battery will be reduced over time. HP may utilize BIOS updates to adjust BHM settings on select systems to optimize battery health and reduce exposure to those factors that can accelerate battery



Technical Specifications

degradation. To update or change HP BHM settings and for complete details, see https://support.hp.com/us-en/document/ish 4449597-3519507-16

24. 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.

25. HP Smart Support requires the HP 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 provided thru Windows Update and will check entitlement on each hardware device to determine if an HP agent-enabled service has been purchased, and will download applicable software automatically. The HP 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 http://www.hpdaas.com/requirements.

26. HP Support Assistant is available on Windows. For more information, please visit http://www.support.hp.com/help/hp-support-assistant

- 27. HP customers qualify for a 90 day trail of Miro, this offer ends September 2025. Complete terms and conditions are provided by Miro when accepting the offer.
- 28. MyHP Requires Windows 10 or higher OS.
- 29. Poly Lens Desktop requires a Windows OS
- 30. HP Client Catalog can be downloaded from https://www.hp.com/us-en/solutions/client-management-solutions.html
- 31. HP Client Management Script Library can be downloaded from https://www.hp.com/us-en/solutions/client-management-solutions.html#tab=manageability-tools
- 32. 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://apps.microsoft.com/detail/9mtks9pr7r3n?hl=en-US&gl=US.
- 33. HP Connect for Microsoft Endpoint Manager is available from the Azure Market Place for HP Pro, Elite, Z and Point-of-Sale PCs managed with Microsoft Endpoint Manager. Subscription to Microsoft Endpoint Manager required and sold separately. Network connection required.
- 34. HP Driver Packs can be downloaded from https://www.hp.com/us-en/solutions/client-management-solutions/drivers-pack.html
- 35. HP Image Assistant can be downloaded from https://ftp.ext.hp.com/pub/caps-softpag/cmit/HPIA.html
- 36. HP Manageability Integration Kit can be downloaded from

http://www8.hp.com/us/en/ads/clientmanagement/overview.html.

- 37. HP Patch Assistant available on select HP PCs with the HP Manageability Kit that are managed through Microsoft System Center Configuration Manager. HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html.
- 38. Secured-Core PC Enable requires an Intel® vPro®, AMD Ryzen™ Pro processor or Qualcomm® processor with SD850 or higher and requires 8 GB or more system memory. Secured-core PC is enabled from the factory.
- 39. 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.
- 40. 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
- 41. HP Sure Click requires Windows 10 or 11 Pro or higher. See https://bit.ly/2PrLT6A_SureClick for complete details.
- 42. 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. Network based recovery using Wi-Fi is only available on select PCs.



- 43. HP Sure Run is available on select HP PCs and requires Windows 10 and higher.
- 44. HP Sure Start is available on select HP PCs and requires Windows 10 and higher
- 45. Absolute 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/

- 46. HP BIOSphere Gen6 features may vary depending on the platform and configuration.
- 47. HP Fingerprint Reader is an optional feature that requires Windows 10 or 11 and must be configured at purchase.
- 48. 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™.



Technical Specifications

POWER

Power Supply

HP Standard 65W USB Type-C® adapter 49
HP Standard 65W USB Type-C® Halogen Free adapter 49

Battery

HP Long Life 3 cell 56Whr Polymer ^{50,51} HP Long Life 3 cell, 48Whr Polymer ⁵²

Battery Recharge Time

Supports battery HP Fast Charge: approximately 50% in 30 minutes 53

Power Cord

3-wire plug - 1m 49

Battery Life54

Up to 13 hours 15 mins with 56Whr battery (Benchmark: MobileMark25)
Up to 12 hours with 48Whr battery (Benchmark: MobileMark25)

- 49. Availability may vary by country.
- 50. Battery is internal and not replaceable by customer. Serviceable by warranty.
- 51. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors.
- 52. Only available for selected regions and selected configurations.
- 53. 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. Upon initial startup, it is necessary to use an minimum 45 W adapter.
- 54. Mobile Mark 25 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See www.bapco.com for additional details.



Technical Specifications

WEIGHTS & DIMENSIONS

Product Weight

Starting at 1.748 kg (3.86 lb) with 56 Whr battery ⁵⁵ Weight will vary by configuration. Does not include power adapter.

Product Dimensions (W x D x H)

359.4 mm (W) x 251.0 mm (D) x 10.9mm (front)/17.0mm (rear) (14.15 in x 9.88 in x 0.43 in (Front)/ 0.67 in (rear)

Pallet Dimensions (W x D x H)

16" to 17" boxes (345mm height): 1200mm x 1000mm x 1200mm⁵⁶

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

56. 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 HDMI 2.1 57
- 1 Super Speed USB Type-A 5Gbps signaling rate rate Power charging
- 2 USB4™ Type-C® 40 Gbps rate USB Power Delivery DisplayPort™ 1.4
- 1 Headphone/mic combo jack
- 1 Smart Card Reader (Integrated)

Right side

- 1 Security lock slot (Integrated)
- 1 RJ45 Ethernet port
- 1 Super Speed USB Type-A 5Gbps signaling rate rate Data only
- 1 Nano SIM card slot (Optional)
- 57. HDMI cable sold separately.



Technical Specifications

SERVICE AND SUPPORT

1-year warranty and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty. Refer to http://www.hp.com/support/batterywarranty/ for additional battery information. On-site service and extended coverage is also available. HP Care Pack Services are optional extended service contracts that go beyond the standard limited warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: http://www.hp.com/go/cpc.58

58. 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 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 grams
Non-operating 3.500 grams

Altitude (unpressurized)

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

Planned Industry Standard

Certifications

Regulatory Model Number HSN-Q39C-6

CSA/UL 62368-1 Yes ENERGY STAR® Yes ⁵⁹

EPEAT® Gold in the United States 60

FCC/ICES/CISPR/VCCI Yes
CE MARKING Yes
GS Mark Yes

Related commodity should comply with ISO 9241 Standards.

China CCC/SRRC Yes Taiwan BSMI/NCC Yes Korea KCC/KC/KES Yes **Ukraine NSoC/TEC** Yes **EAEU Compliance** Yes Saudi Arabian Compliance Yes TC0 Yes **WW RoHS** Yes Low Blue Light Yes Yes⁶¹ MIL-STD 810H Testing

59. Configurations of the HP EliteBook 665 G11 that are ENERGY STAR® qualified are identified as HP EliteBook 665 G11 ENERGY STAR on HP websites and on http://www.energystar.gov.

60. 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.



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

DISPLAYS

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

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

16.0 in WUXGA (1920 x 1200) Anti-Glare UWVA WLED+LBL sRGB NB2Y 1000 eDP 1.3+PSR 100 PrivacyG4 Plus bent LCD Panel

 Outline Dimensions (W x H)
 349.980 x 225.420 (max)

 Active Area
 344.680 x 215.420 (typ)

Weight 310 (max)

Diagonal Size 16

Surface Treatment Anti-Glare

Touch Enabled No

Contrast Ratio 1500:1 (typ)
Refresh Rate 60 Hz

Brightness 1000 nits¹

Pixel Resolution - Format 1920 x1200 (WUXGA)

Backlight WLED **Pixel Resolution** RGB

Color Gamut Coverage SRGB 100%

Color Depth 8

Viewing Angle UWVA 85/85/85

Low Blue Light Yes

16.0 in WUXGA (1920 x 1200) Anti-Glare UWVA WLED+LBL sRGB NB2Y 400 eDP 1.4+PSR2 Low-Power 100 bent LCD Panel

 Outline Dimensions (W x H)
 350.680 x 226.470 (max)

 Active Area
 344.678 x 215.424 (typ)

Weight 330g (max)

Diagonal Size 16

Surface Treatment Anti-Glare

Touch Enabled No

Contrast Ratio1000:1(typ)Refresh Rate60 HzBrightness400 nits1

Pixel Resolution - Format 1920 x 1200 (WUXGA)

Backlight WLED
Pixel Resolution RGB

Color Gamut Coverage sRGB 100%

Color Depth 8

Viewing Angle UWVA 89/89/89

Low Blue Light Yes



Power Consumption (W, EBL@ 150nits max/ 200nits max))

1.60 (max)/ 1.95 (max)

16.0 in WUXGA (1920 x 1200) Anti-Glare UWVA LED NTSC 45 NB2X 300 eDP 1.2 w/o PSR bent LCD Panel

Outline Dimensions (W x H)

350.680 x 226.470 (max) **Active Area** 344.6784x215.424 (tvp)

Weight 390 (max)

Diagonal Size 16

Surface Treatment Anti-Glare

Touch Enabled No

Contrast Ratio 1000:1(tvp) **Refresh Rate** 60 Hz **Brightness** 300 nits1

Pixel Resolution - Format 1920 x 1200 (WUXGA)

Backlight **WLED Pixel Resolution RGB**

Color Gamut Coverage NTSC 45% Color Depth 6 bits + 2FRC

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 in WUXGA (1920 x 1200) Anti-Glare UWVA LED NTSC 45 NB2X 300 TOP eDP 1.2 w/o PSR bent LCD Panel

Outline Dimensions (W x H) 350.680 x 226.470 (max)

Active Area 344.6784x215.424 (typ)

Weight 390 (max)

Diagonal Size 16

Surface Treatment Anti-Glare

Touch Enabled Yes

Contrast Ratio 1000:1 (typ)

Refresh Rate 60 Hz **Brightness** 300 nits1

Pixel Resolution - Format 1920 x 1200 (WUXGA)

Backlight WLED **Pixel Resolution** RGB **NTSC 45% Color Gamut Coverage Color Depth** 6 bits + 2FRC

UWVA 89/89/89/89 **Viewing Angle**

Low Blue Light No



STORAGE AND DRIVES

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10 and 11) is reserved for system recovery software.

SSD 512GB 2280 PCIe-4x4 NVMe Three Layer Cell Form Factor M.2 2280
Capacity 512GB
NAND Type TLC

InterfacePCIe NVMe Gen4X4Maximum Sequential Read6400 MB/s ±20%Maximum Sequential Write3500 MB/s ±20%Logical Blocks1,000,215,215FeaturesPyrite 2.0; TRIM; L1.2

SSD 1TB 2280 PCIe-4x4 NVMe Three Layer Cell Form Factor M.2 2280
Capacity 1TB
NAND Type TLC

InterfacePCIe NVMe Gen4X4Maximum Sequential Read6400 MB/s ±20%Maximum Sequential Write5000 MB/s ±20%Logical Blocks2,000,409,264

Features Pyrite 2.0; TRIM; L1.2

SSD 2TB 2280 PCIe-4x4 NVMe Three Layer Cell Form Factor M.2 2280
Capacity 2TB
NAND Type TLC

InterfacePCIe NVMe Gen4X4Maximum Sequential Read6400 MB/s ±20%Maximum Sequential Write5000 MB/s ±20%Logical Blocks4,000,797,360

Features Pyrite 2.0; TRIM; L1.2

256GB PCIe 2280 NVMe Self Form Factor
Encrypted OPAL2 Value Capacity
Solid State Drive

Form Factor M.2 2280
Capacity 256GB
NAND Type TLC

InterfacePCIe NVMe Gen4X4Maximum Sequential Read2000 MB/s ±20%Maximum Sequential Write900 MB/s ±20%Logical Blocks500,118,192

Features TCG Opal 2.0; TRIM; L1.2

512GB PCIe-4x4 2280 NVME Form Factor
Self Encrypted OPAL2 Capacity
Three Layer Cell Solid State

Drive

Form Factor M.2 2280
Capacity 512GB
NAND Type TLC

InterfacePCIe NVMe Gen4X4Maximum Sequential Read6400 MB/s ±20%Maximum Sequential Write3500 MB/s ±20%Logical Blocks1,000,215,215

Features TCG Opal 2.0; TRIM; L1.2

SSD 256GB 2280 PCIe NVMe Value Form Factor M.2 2280
Capacity 256 GB
NAND Type TLC

InterfacePCIe NVMe Gen4X4Maximum Sequential Read2000 MB/s ±20%Maximum Sequential Write900 MB/s ±20%Logical Blocks500,118,192

Features Pyrite 2.0; TRIM; L1.2

SSD 512GB 2280 PCIe NVMe Value Form Factor M.2 2280
Capacity 512 GB
NAND Type TLC

InterfacePCIe NVMe Gen4X4Maximum Sequential Read2200 MB/s ±20%Maximum Sequential Write1000 MB/s ±20%Logical Blocks1,000,215,215

Features Pyrite 2.0; TRIM; L1.2

1TB PCIe-4x4 2280 NVME Self Encrypted OPAL2 Three Layer Cell Solid State Drive

Form Factor M.2 2280
Capacity 1 TB
NAND Type TLC

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

NETWORKING/COMMUNICATIONS



Realtek RTL8852CE 802.11ax 2x2 Wi-Fi 6E Bluetooth®5.3 wireless card (802.11ax 2x2, supporting gigabit data rate)¹ Wireless LAN Standards IEEE 802.11a

IEEE 802.11ac
IEEE 802.11ax
IEEE 802.11b
IEEE 802.11d
IEEE 802.11e
IEEE 802.11g
IEEE 802.11h
IEEE 802.11h

IEEE 802.11k IEEE 802.11n

Wi-Fi certified

Interoperability
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

Security²

• 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

chitecture Ad-hoc (Peer to Peer)

Models

Infrastructure (Access Point Required)

Roaming

IEEE 802.11 compliant roaming between access points

Output Power³

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

* 002.1 Tax 11L+0(2.+0112). * 12ubiii 11iiiiiiiiiiiiii

• 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 Sensitivity⁴

• 802.11b, 1Mbps : -93.5dBm maximum

• 802.11b, 11Mbps : -84dBm maximum

802.11a/g, 6Mbps: -86dBm maximum
802.11a/g, 54Mbps: -72dBm maximum

• 802.11n, MCS07: -67dBm maximum

• 802.11n, MCS15: -64dBm maximum

• 802.11ac, MCS0(VHT80): -84dBm maximum

• 802.11ac, MCS9(VHT80): -59dBm maximum

• 802.11ac. MCS9(VHT160): -58.5dBm maximum

• 802.11ax, MCS11(HE40): -57dBm maximum

• 802.11ax, MCS11(HE80): -54dBm maximum

•802.11ax, MCS11(HE160): -53.5dBm maximum

Antenna type High efficiency antenna with spatial diversity

Two embedded tri-band 2.4/5/6 GHz antennas are provided to the card to

support WLAN MIMO communications and Bluetooth® communications

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 1. Type 2230: 2.8 g

2. Type 1216: g

Operating Voltage 3.3 v +/- 5 %

HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology

Bluetooth® Specification 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant

Frequency Band 2402 to 2480 MHz

Number of Available Legacy : 0~79 (1 MHz/CH)
Channels BLE : 0~39 (2 MHz/CH)

Signaling Data Rate Legacy: 3 Mbps data rate; throughput up to 2.17 Mbps

BLE: 1 Mbps data rate; throughput up to 0.2 Mbps

Legacy: Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1

kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)



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

Supported Link Topology Microsoft Windows Bluetooth® Software

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 Advanced Audio Distribution Profile (A2DP)

Bluetooth® 4.1-ESR 5/6/7 Compliance

Bluetooth® 4.2 ESR08 Compliance Bluetooth® 5.2

Bluetooth® 5.3 Wireless Card Channel Selection Algo

Encryption key size control enhancements

ESR9/10 Compliance Hands Free Profile (HFP) LE Advertisement Extensions LE Data Packet Length Extension

LE Dual Mode

LE L2CAP Connection Oriented Channels

LE Link Layer LE Link Layer Ping LE Long Range

LE Low Duty Cycle Directed Advertising

LE Privacy 1.2 - Extended Scanner Filter Policies

LE Privacy 1.2 —Link Layer Privacy LE Secure Connection—Basic/Full

Limited High Duty Cycle Non-Connectable Advertising

Periodic Advertisement interval Train Nudging & Interlaced Scan Windows Bluetooth® profiles support

- 1. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported. 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, that supports 80MHz and higher channels.
- 2. Check latest software/driver release for updates on supported security features.
- 3. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
- 4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

Wireless LAN Standards IEEE 802.11a



MediaTek RZ616 Wi-Fi 6E Bluetooth® 5.3 wireless card (802.11ax 2x2, AMD AIM-T) ¹

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
Wi-Fi certified

IEEE 802.11ac

IEEE 802.11ax

Interoperability 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

Security²

• 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

• WAP

• 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 Power³ 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

• 802.11ax HE160: +11.5dBm

6GHz LPI mode (MIMO, typical):

• 802.11a: 0dBm

802.11ax HE20: +1dBm
802.11ax HE40: +4dBm
802.11ax HE80: +7dBm
802.11ax HE160: +7.5dBm

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 Sensitivity⁴

2.4GHz (SISO):

•802.11b, 11Mbps : -82dBm maximum
• 802.11g, 54Mbps : -71dBm maximum
• 802.11n, MCS7 : -64dBm maximum
• 802.11ac, MCS9 : -52dBm maximum

•802.11ax, MCS11(HT40): -49dBm maximum

5GHz (SISO):

802.11a, 54Mbps: -71dBm maximum
802.11n, MCS07: -64dBm maximum
802.11ac, MCS9: -52dBm maximum

•802.11ax, MCS11(HE80/HE160): -46dBm maximum

6GHz (SISO):

802.11a, 54Mbps: -71dBm maximum
 802.11n, MCS7: -64dBm maximum
 802.11ac, MCS9: -52dBm maximum

•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 1. Type 2230: 2.8 g

2. Type 1216: g

Operating Voltage 3.3v +/- 9%



HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology

Bluetooth® Specification 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant

Frequency Band 2402 to 2480 MHz

Number of Available Legacy : 0~79 (1 MHz/CH)
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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

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Supported Link Topology Microsoft Windows Bluetooth® Software

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

Advanced Audio Distribution Profile (A2DP)

Basic Imaging Profile (BIP)

Bluetooth® 4.1-ESR 5/6/7 Compliance Bluetooth® 4.2 ESR08 Compliance

Bluetooth® 5.2

Bluetooth® 5.3 Wireless Card Channel Selection Algo

Encryption key size control enhancements

ESR9/10 Compliance FAX Profile (FAX) Hands Free Profile (HFP) Headset Profile (HSP) LE Advertisement Extensions

LE Data Packet Length Extension

LE Dual Mode

LE L2CAP Connection Oriented Channels

LE Link Layer LE Link Layer Ping LE Long Range

LE Low Duty Cycle Directed Advertising

LE Privacy 1.2 - Extended Scanner Filter Policies

LE Privacy 1.2 –Link Layer Privacy LE Secure Connection- Basic/Full

Limited High Duty Cycle Non-Connectable Advertising

Periodic Advertisement interval Train Nudging & Interlaced Scan Windows Bluetooth® profiles support



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- 2. Check latest software/driver release for updates on supported security features.
- 3. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
- 4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

HP 4G LTE-A Pro Cat16 WWAN eSIM¹

Technology/Operating bands

WCDMA/HSPA+ operating bands:

Band 1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL) Band 2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL)

Band 4: 1710 to 1755 MHz (UL), 2110 to 2155 MHz (DL) Band 5: 824 to 849 MHz (UL), 869 to 894 MHz (DL)

Band 8: 880 to 915 MHz (UL), 925 to 960 MHz (DL)

LTE FDD/TDD operating bands:

Band 1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL) Band 12: 699 to 716 MHz (UL), 729 to 746 MHz (DL)

Band 13: 777 to 787 MHz (UL), 746 to 756 MHz (DL)

Band 14: 788 to 798 MHz (UL), 758 to 768 MHz (DL)

Band 17: 704 to 716 MHz (UL), 734 to 746 MHz (DL) Band 18: 815 to 830 MHz (UL), 860 to 875 MHz (DL)

Band 19: 830 to 845 MHz (UL), 875 to 890 MHz (DL) Band 2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL)

Band 20: 832 to 862 MHz (UL), 791 to 821 MHz (DL) Band 25: 1850 to 1915 MHz (UL), 1930 to 1995 MHz (DL)

Band 26: 814 to 849 MHz (UL), 859 to 894 MHz (DL)

Band 28: 703 to 748 MHz (UL), 758 to 803 MHz (DL)

Band 29: 717 to 728 MHz (DL)

Band 3: 1710 to 1785 MHz (UL), 1805 to 1880 MHz (DL) Band 30: 2305 to 2315 MHz (UL) 2350 to 2360 MHz (DL)

Band 32: 1452 to 1496 MHz (DL) Band 34: 2010 to 2025 MHz (UL/DL) Band 38: 2570 to 2620 MHz (UL/DL) Band 39: 1880 to 1920 MHz (UL/DL)

Band 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 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 3GPP LTE Rel15

LTE Specification, 100MHz 5 DLCA, 256 QAM, DL 1.0Gbps (CAT16)/ 40MHz

2 ULCA, 256 QAM, UL 211Mbps (CAT18)

WCDMA 3GPP Release 8 UMTS Specification, DL UMTS: 384 kbps/UL 384

kbp, DL DC-HSPA+: 42 Mbps (CAT24)/UL 11.5 Mbps (CAT7)

WCDMA R99,

3GPP Release 5, 6, 7 and 8 UMTS Specification



GPS Standalone/A-GPS (MS-A, MS-B)

GPS bandsGPS L1 (1575.42MHz), GLONASS L1 (1602MHz), Beidou B1

(1561.098MHz), Galileo E1 (1575.42MHz), QZSS (1575.42MHz)

Maximum data rates DC-HSPA+: 42.00 Mbps(Download), 11.50 Mbps(Upload)

Maximum output power HSPA+: 23.5 dBm

LTE (all bands except B41): 23.0 dBm

Maximum powerLTE: 1,300 mA (peak); 1,100 mA (average)consumptionHSPA+: 1,100 mA (peak); 800 mA (average)

 Form Factor
 M.2, 3052-S3 Key B

 Weight
 8.0 q (0.282 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 Support

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



NFC NXP NPC300 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 ISO/IEC 14443 A

Card Emulation (PICC-VICC) Mode

ISO/IEC 14443 B and B'

MIFARE FeliCa

Frequency 13.56 MHz

NFC Modes Supported Reader/Writer, Peer-to-Peer 106, 212, 424, 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

Net Module 236.8 mA

Detected Test Tag Type 2 Total 288.8 mA

Net Module 241.8 mA

Detected Test Tag Type 3 Total 287.7 mA

Net Module 240.7 mA

Detected Test Tag Type 4 Total 282.3 mA

Net Module 235.3 mA

Antenna Antenna connector, 0.5mm pitch, 7 connector FPC. Antenna matching is

external to module.



Realtek RTL8111HSH 10/100/1000 Integrated NIC Connector

RJ-45

System Interface

PCIe + SMBus

Data rates supported

10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-

14)

100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses

21-30)

1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023

clauses 40)

Auto-Negotiation (Automatic Speed Selection)

Full Duplex Operation at all Speeds, Half Duplex operation at 10 and

100 Mbit/s

IEEE Compliance IEEE 802.1p QoS (Quality of Service) Support

IEEE 802.1q VLAN support

IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)

IEEE 802.3az EEE (Energy Efficient Ethernet)

Performance TCP/IP/UDP Checksum Offload (configurable)

Protocol Offload (ARP & NS)

Large send offload and Giant send offload

Receiving Side Scaling Jumbo Frame 9K

Power consumption Cable Disconnetion: 25mW

100Mbps Full Run: 450mW 1000bp Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW

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))

Comprehensive diagnostic and configuration software suite

Virtual Cable Doctor for Ethernet cable status

Realtek RTL8111EPP 1GbE Ethernet Controller Connector RJ-45

System Interface PCI (Intel proprietary) + SMBus

Data rates supported 10 Mbit/s operation (10BASE-T; IEEE 802.3; IEEE 802.3 clauses 13-

14)

100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses

21-30)

1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 802.3

clauses 40)



IEEE Compliance IEEE 802.1p QoS (Quality of Service) Support

IEEE 802.1q VLAN support

IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)

IEEE 802.3az EEE (Energy Efficient Ethernet)

Performance IEEE 802.1p QoS (Quality of Service) Support, IEEE 802.1q VLAN

support, IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32 configurable), IEEE 802.3az EEE (Energy Efficient Ethernet)

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



POWER

1. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors

AC Adapter 65 Watt nPFC Weight Standard USB type C Straight 1.8m

240a ± 10a 100-240Vac Input

> **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

5V/15W **Output power**

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 **C6**

Environmental Design Operating

temperature

32° F to 95° F (0° to 35° C)

Non-operating (storage)

-4° F to 185° F (-20° to 85° C) temperature **Altitude** 0 to 16,400 ft (0 to 5000m)

Humidity 20% to 95% Storage Humidity 10% to 95%

EMI and Safety Certifications

Output

CE Mark - full compliance with LVD and EMC directives

Worldwide safety standards - IEC60950-1 and IEC62368-1: 2018,

EN62368-1:2014+A11, UL 62368-1

Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, CU(EAC), EAEU, KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC

HP 65W Standard USB-C Straight AC Power Adapter HF **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 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** Halogen Free

Connector C6

Environmental Design Operating

temperature

32° F to 95° F (0° to 35° C)

Non-operating (storage)

temperature -4° F to 185° F (-20° to 85° C)
Altitude 0 to 16,400 ft (0 to 5000m)

Humidity 20% to 95% Storage Humidity 10% to 95%

EMI and Safety Certifications

Output

CE Mark - full compliance with LVD and EMC directives

Worldwide safety standards - IEC60950-1 and IEC62368-1: 2018,

EN62368-1:2014+A11, UL 62368-1

Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, CU(EAC), EAEU, KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC

RX 48Whr Long Life Polymer Fast Charge 3 cell Battery **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 capacity1 48.84Wh

Temperature Operating (Charging) 32° to 113° F (0° to 45° C)

32° to 122° F (0° to 50° C)

Operating (Discharging) 14° to 140° F (10° to 60° C)

Optional Travel Battery No

Available

RX 56Whr Long Life Polymer Fast Charge 3 cell Battery 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) 32° to 113° F (0° to 45° C)

32° to 122° F (0° to 50° C)

Operating (Discharging) 14° to 140° F (-10° to 60° C)

Optional Travel Battery No

Available

AUDIO

HD Stereo Codec ALC3247

Audio I/O Ports 3.5mm Headset: CTIA only; Headphone-out

Internal Speaker Amplifier Integrate in ALC3247

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.,

Following MSFT Behavior

Sampling DAC: Supports resolutions from 16-bit to 16-bit;48.0 kHz to 48.0 kHz

ADC: Supports resolutions from 16-bit to 16-bit;48.0 kHZ to 48.0 kHz

Wavetable Syntheses Yes - Uses OS soft wavetable

Internal Speaker Yes

FINGERPRINT READER

Sensor vendorELANSensor typeCapacitiveDPI resolution508 DPIScan area80 x 80 pixels

False Rejection Rate < 3%
False Acceptance Rate < 0.001%

Mobile Voltage Operation 2.7 V ~ 3.6 V



Technical Specifications

Operating Temperature

-20°C ~ 80°C (-4°F ~ 176°F)

Current Consumption

Image

35 mA max

Low Latency Wait For

300 uA **Finger**

Capture Rate 50 frames/sec

IEC 61000-4-2 4B (+15KV) **ESD Resistance**

Detection Matrix 508 dpi / 4.0 x 4.0 mm sensor area

SYNAPTICS Sensor vendor Capacitive Sensor type **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 Current Consumption

0°C ~ 60°C (32°F ~ 140°F)

Image

100 mA max

Low Latency Wait For

260 uA **Finger**

Capture Rate 50 frames/sec

IEC 61000-4-2 4B (+15KV) **ESD Resistance**

Detection Matrix 363 dpi / 7.4 x 6.0 mm sensor area

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

DOCKING (Sold Separately)

Docking station model #1

HP USB-C Dock G5

3

Total number of supported displays

(incl. the notebook display) Max. resolutions supported

Multi-Function Mode: (2) 5k @ 30Hz and (1) 4k UHD @ 30Hz on any port

High-Resolution Mode: (2) 5k @ 60Hz on DisplayPort ports and (1) 4k UHD @

60Hz on HDMI port

Dock Connectors 1x HDMI 2.0, 2x DisplayPort 1.4

Technical limitations Maximum resolution and display support is dependent on the maximum

capability of the notebook.

Highest resolution with dual displays is two 8K@ 60Hz host in High Resolution mode.

Three maximum displays supported are two 5K@ 30 Hz on DP ports plus one 4K

UHD@ 30 Hz on HDMI in Multi-function mode.

The highest resolution for a non-Thunderbolt host in Multi-function mode is a

single 5K dual cable (using both DP ports) + (1) 4K on HDMI port.

Docking station model #2

Total number of supported displays

(incl. the notebook display)

Max. resolutions supported

Technical limitations

HP Thunderbolt™ 120W G4 Dock

4

Quad 4K @60Hz. Dual 8K single cable@30 for Thunderbolt hosts or USB-C hosts DisplayPort 1.4

with Display Stream Compression in High-Resolution Mode. **Dock Connectors**

2 x HDMI 2.0, 1 x USB-C Alt Mode, 1 x Thunderbolt 4, 2 x DisplayPort 1.4

Maximum resolution and display support is dependent on the maximum capability of the notebook.

Thunderbolt Hosts:

Maximum of (4) displays with maximum resolution of 5K@ 30Hz running

Thunderbolt host.

Maximum resolution possible is dual 8K displays @ 60Hz running Thunderbolt host or running a non-Thunderbolt host in high resolution mode @30Hz.

Non-Thunderbolt hosts:

The highest resolution for dual displays running a non-Thunderbolt host in multi-function mode is

(1) 5K dual cable (using both DP ports) +(1) 4K on USB-C DP port.

Non-Thunderbolt hosts support (3) displays with a maximum resolution of (2) 5K single cable + (1) 4K UHD @ 60 Hz in high resolution mode. In multi-function mode the maximum resolution for (3) displays is (2) 5K single cable @ 30Hz +

(1) 4K UHD @ 30Hz.

Docking station model #3

Total number of supported displays

(incl. the notebook display)

HP USB-C G5 Essential Dock

3

Multi-Function Mode: (2) 5k @ 30Hz and (1) 4k UHD @ 30Hz on any port Max. resolutions supported

High-Resolution Mode: (2) 5k @ 60Hz on DisplayPort ports and (1) 4k UHD @

60Hz on HDMI port



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

Dock Connectors 1x HDMI 2.0, 2x DisplayPort 1.4

Technical limitations Maximum resolution and display support is dependent on the maximum

capability of the notebook.

Highest resolution with dual displays is two 8K@ 60Hz host in High

Resolution mode.

Three maximum displays supported are two 5K@ 30 Hz on DP ports plus one 4K

UHD@ 30 Hz on HDMI in Multi-function mode.

The highest resolution for a non-Thunderbolt host in Multi-function mode is a

single 5K dual cable (using both DP ports) + (1) 4K on HDMI port.

Docking station model #4 HP USB-C/A Universal Dock G2

Total number of supported displays

(incl. the notebook display)
Max. resolutions supported

Multi-Function Mode: (3) 4K DCI @ 30Hz on any port

High-Resolution Mode: (3) 4K DCI @ 30Hz on any port

Dock Connectors 1x HDMI 2.0, 2x DisplayPort 1.2

Technical limitations Maximum resolution and display support is dependent on the maximum

capability of the notebook.

The best resolution for dual or triple displays is 4K UHD@ 60Hz.

For use with the USB-A adapter that comes in the box the maximum number of displays supported is (2) 4k x 60 Hz on the Type-A Gen 1 connection from the

host.

3



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

Туре	Description	Part Number
Adapter	HP HDMI to VGA Adapter	H4F02AA
	HP USB 3.0 to Gigabit RJ45 Adapter G2	4Z7Z7AA
	HP USB-C to DisplayPort Adapter	6M148AA
	HP USB-C to DisplayPort Adapter G2	8Y8Y1AA, 8Y8Y2AA
	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
Cases	HP Campus XL Marble Stone Backpack	7K0E2AA
	HP Campus XL Tie Dye Backpack	7K0E3AA
	HP Renew Business 17.3 Laptop Backpack	3E2U5AA
	HP Renew Business 17.3 Laptop Bag	3E2U6AA
	HP Renew Executive 16 Laptop Backpack	6B8Y1AA
	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™ 120W G4 Dock	4J0A2AA
_	HP USB-C™ 120W G5 Dock	5TW10AA
	HP USB-C™ G5 Essential Dock	72C71AA
	HP USB-C™/A 120W G2 Universal Dock	5TW13AA
Hub	HP 4K USB-C Multiport Hub	6G843AA
	HP Universal USB-C Hub and Laptop Charger Combo	9Н0Н9АА
	HP Universal USB-C Multiport Hub	50H55AA
	HP USB-C to USB-A Hub	Z6A00AA
	HP USB-C Travel Hub G3	86S97AA
Keyboard/Combo	HP 655 Wireless Keyboard and Mouse Combo	4R009AA
	HP 655 Wireless Keyboard and Mouse Combo (Blk Qty.10)	4R009A6
	HP 655 Wireless Keyboard and Mouse Combo White	860P8AA
	HP Wireless Rechargeable 950MK Mouse and Keyboard	3M165AA
	HP 405 Multi-Device Backlit Wired Keyboard	7N7C1AA



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

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	HP 455 Programmable Wireless Keyboard	4R177AA
	HP 455 Programmable Wireless Keyboard (Bulk Qty.12)	4R177A6
	HP 475 Dual-Mode Wireless Keyboard	7N7B9AA
	HP 965 black Ergonomic Wireless Keyboard	7E756AA
	HP 975 Dual-Mode USB+ Bluetooth® Wireless Keyboard	3Z726AA
Mouse	HP 125 Wired Mouse	265A9AA
	HP 125 Wired Mouse (Bulk Qty.120)	265A9A6
	HP 128 Laser Wired Mouse	265D9AA
	HP 128 Laser Wired Mouse (Bulk Qty.120)	265D9A6
	HP 320M Wired Mouse	9VA80AA
	HP 425 Programmable Wireless Mouse	7M1D5AA
	HP 435 Multi-Device Wireless Mouse	3B4Q5AA
	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
	HP Premium Wireless Mouse	1JR31AA
Power	HP 110W USB-C Laptop Charger	8B3Y2AA
	HP 65W GaN USB-C Laptop Charger	600Q8AA
	HP 65W USB-C Laptop Charger	671R3AA
	HP 65W USB-C LC AC Power Adapter	1P3K6AA
Video	HP USB-A 325 Webcam	53X27AA
	HP Streaming 965 Webcam	695J5AA
	HP 625 Webcam	6Y7L1AA
	HP 435 Webcam	77B10AA



Change Log

Date of change:	Version History:		Description of change:
June 10, 2024	V1 to V2	Added	System unit Section
June 11, 2024	V2 to V3	Added	Display Section
June 17, 2024	V3 to V4	Added	Graphics Section

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