Overview

HP EliteBook 840 14 inch G10 Notebook PC



Left

1. Internal Microphones (2)
2. Ambient Light Sensor (Optional)
3. Webcam
4. Camera Shutter
5. IR Camera (Optional)
8. Glass Clickpad
9. Smartcard Reader (Optional)
10. LED Indicator
11. Thunderbolt™ 4 with USB4 Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)[1]
12. Thunderbolt™ 4 with USB4 Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)[1]

Overview

6. IR Camera LEDs (Optional)
7. NFC Sensor
13. SuperSpeed USB Type-A 5Gbps signaling rate (USB 3.2 Gen 1)
14. HDMI 2.1 Port (Cable not included)

1. SuperSpeed USB 20Gbps is not available with Thunderbolt™ 4.

Overview



Right

1. Power Button Key
2. Audio Combo Jack
3. SuperSpeed USB Type-A 5Gbps signaling rate (Charging) (USB 3.2 Gen 1)
4. Nano Security Lock Slot (Lock sold separately)
5. SIM Card Slot (Optional)
6. Touch Fingerprint Sensor (Select models)

Overview

At a Glance

- Preinstalled with Windows 11 versions or FreeDOS
- Premium ultraslim design with precision-crafted all-metal chassis for a premium look and feel
- 13th Generation Intel® Core™ i5, i7 U series and i5, i7 P series Processors up to fourteen-core
- Up to DDR5-5200 memory with 64GB capacity
- 5MP camera with 88° field of view allows you to move around more freely in front on the camera or accommodate a group
- Optional ultrabright displays with HP Eye Ease, ambient light and ambient color sensors
- Choice of displays:
  35.6 cm (14") diagonal WUXGA IPS Anti-Glare LED-backlit, 250 nits, 45% NTSC
  35.6cm (14"") diagonal WUXGA IPS Anti-Glare On-Cell LED-backlit touch, 250 nits, 45% NTSC
  35.6 cm (14") diagonal WUXGA IPS Anti-Glare LED-backlit non-touch 400 nits, 100% sRGB with HP Eye Ease
  35.6cm (14") diagonal WUXGA IPS Anti-Glare LED-backlit non-touch, 1000 nits, 100% sRGB with HP Sure View Reflect
  with HP Eye Ease
- New enhanced HP Auto Frame provides improved face tracking and more natural framing movement
- New "Be Right Back" functionality allows you to set an image and notify meeting participants you'll "BRB" when you need to leave for a few minutes
- Choose from 38Whr or 51Whr battery options
- HP Wolf Security for Business creates a hardware-enforced, always-on, resilient defense
- Connectivity with optional Intel® 5000 5G/WWAN, and Thunderbolt™ Docking (Dock sold separately)
- Undergoes MIL-STD 810H tests[1]
- Supports fast charging (50% in 30 minutes) with no impact on battery recharge cycles
- Designed to support all HP docking options including the HP Universal Dock G5
- Can be wiped up to 10,000 times with germicidal cleaning wipes[2]

1. MIL-STD 810H is not intended to demonstrate fitness of 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.
2. Approved germicidal wipes for use on Select HP Platforms
https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=4AA7-9819ENW

NOTE: See important legal disclosures for all listed specs in their respective features sections.

Technical Specifications

PRODUCT NAME

HP EliteBook 840 14 inch G10 Notebook PC

OPERATING SYSTEMS

Preinstalled

Windows 11 Pro [1]
Windows 11 Pro Education [1]
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 or Windows 10 Enterprise available with a Volume Licensing Agreement) [1]
Windows 11 Pro (preinstalled with Windows 10 Pro Downgrade) [1,2]
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.
2. This system is preinstalled with Windows 10 Pro software and also comes with a license for Windows 11 Pro software and provision for recovery software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.

PROCESSORS

Processor 3,4,5,6,7	Cores	Number of P-cores	Number of E-cores	Threads	L3 Cache	Max Turbo Frequency		Base Frequency		Intel SIPP/vPro® Enterprise	Intel vPro® Essentials
						P-cores	E-cores	P-cores	E-cores		
Intel® Core™ i7-1370P	14	6	8	20	24 MB	5.2 GHz	3.9 GHz	1.9 GHz	1.4 GHz	X	

Technical Specifications

Intel® Core™ i7-1360P	12	4	8	16	18 MB	5.0 GHz	3.7 GHz	1.9 GHz	1.4 GHz		X
Intel® Core™ i5-1350P	12	4	8	16	12 MB	4.7 GHz	3.5 GHz	1.9 GHz	1.4 GHz	X	
Intel® Core™ i7-1365U	10	2	8	12	12 MB	5.2 GHz	3.9 GHz	1.8 GHz	1.3 GHz	X	
Intel® Core™ i7-1355U	10	2	8	12	12 MB	5.0 GHz	3.7 GHz	1.7 GHz	1.2 GHz		X
Intel® Core™ i5-1345U	10	2	8	12	12 MB	4.7 GHz	3.5 GHz	1.6 GHz	1.2 GHz	X	
Intel® Core™ i5-1340P	12	4	8	16	12 MB	4.6 GHz	3.4 GHz	1.9 GHz	1.4 GHz		X
Intel® Core™ i5-1335U	10	2	8	12	12 MB	4.6 GHz	3.4 GHz	1.3 GHz	0.9 GHz		X

3. 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. Intel's numbering, branding and/or naming is not a measurement of higher performance.

4. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.

5. Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See www.intel.com/technology/turboboost for more information.

6. 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

7. Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd party software in order to run. Features of vPro® Essentials and Enterprise vary. See http://intel.com/vpro

CHIPSET

Chipset is integrated with processor

GRAPHICS

Technical Specifications

Integrated

Intel® Iris® Xᵉ Graphics (2x DIMM) [8]

Intel® UHD Premium Graphics (1x DIMM)

Supports

Support HD decode, DX12, HDMI 2.1, HDCP 2.3 [9]

8. Intel® Iris® Xᵉ Graphics capabilities require system to be configured with Intel® Core™ i5 or i7 processors and dual channel memory. Intel® Iris® Xᵉ Graphics with Intel® Core™ i5 or 7 processors and single channel memory will only function as UHD graphics.

9. HDMI cable sold separately

Technical Specifications

DISPLAY

Non-Touch

35.6 cm (14") diagonal, WQXGA (2560 x 1600), 120 Hz IPS anti-glare, micro-edge, 500 nits, 100% eDP 1.4+PSR for 5MP Webcam + IR [10,11]

35.56 cm (14") diagonal WQXGA Bent, Low Blue Light, anti-glare UWVA eDP1.4+PSR, 500 nits, 100% sRGB, 5MP+IR camera for WWAN (2560 x 1600) with HP Eye Ease [10,11]

35.56 cm (14") diagonal WUXGA Bent, anti-glare UWVA, 250 nits, 45% NTSC, Narrow Bezel (1920 x 1200) [10,11]

35.56 cm (14") diagonal WUXGA Bent, anti-glare UWVA eDP1.2, micro-edge, 250 nits, 45% NTSC, Narrow Bezel (1920 x 1200)[10,11]

35.56 cm (14") diagonal WUXGA Bent, Low Blue Light, anti-glare UWVA eDP+PSR, 400 nits, 100% sRGB, Low Power, Ambient Light Sensor+Ambient Color Sensor for 5MP Camera (1920 x 1200) with HP Eye Ease [10,11]

35.56 cm (14") diagonal WUXGA Bent, anti-glare UWVA, 250 nits, 45% NTSC for 5MP camera for WWAN (1920 x 1200) [10,11]

35.56 cm (14") diagonal WUXGA Bent, anti-glare UWVA, 250 nits, 45% NTSC for 5MP+IR camera for WWAN (1920 x 1200) [10,11]

35.56 cm (14") diagonal WUXGA Bent, anti-glare UWVA, 250 nits, 45% NTSC for 5MP+IR camera (1920 x 1200) [10,11]

35.56 cm (14") diagonal WUXGA Bent, anti-glare UWVA, 250 nits, 45% NTSC for 5MP camera (1920 x 1200) [10,11]

35.56 cm (14") diagonal WUXGA Bent, anti-glare UWVA, 250 nits, 45% NTSC for WWAN (1920 x 1200) [10,11]

35.56 cm (14") diagonal WUXGA Bent, anti-glare UWVA, 250 nits, no-Mic, 45% NTSC for WWAN (1920 x 1200)[10,11]

35.56 cm (14") diagonal WUXGA Bent, Low Blue Light, anti-glare UWVA eDP+PSR, 400 nits, 100% sRGB, Low Power, Ambient Light Sensor+Ambient Color Sensor for 5MP+IR Camera (1920 x 1200) with HP Eye Ease [10,11]

35.56 cm (14") diagonal WUXGA Bent, Low Blue Light, anti-glare UWVA eDP+PSR, 400 nits, 100% sRGB, Low Power, Ambient Light Sensor+Ambient Color Sensor for 5MP+IR Camera for WWAN (1920 x 1200) with HP Eye Ease [10,11]

35.56 cm (14") diagonal WUXGA Bent, Low Blue Light, anti-glare UWVA eDP1.3+PSR, 1000 nits, 100% sRGB with HP Sure View Reflect integrated privacy screen, Ambient Light Sensor+Ambient Color Sensor for 5MP camera (1920 x 1200) with HP Eye Ease [10,11,12,13]

35.56 cm (14") diagonal WUXGA Bent, Low Blue Light, anti-glare UWVA eDP1.3+PSR, 1000 nits, 100% sRGB with HP Sure View Reflect integrated privacy screen, Ambient Light Sensor+Ambient Color Sensor for 5MP+IR camera (1920 x 1200) with HP Eye Ease [10,11,12,13]

35.56 cm (14") diagonal WUXGA Bent, Low Blue Light, anti-glare UWVA eDP1.3+PSR, 1000 nits, 100% sRGB with HP Sure View Reflect integrated privacy screen, Ambient Light Sensor+Ambient Color Sensor for 5MP camera (1920 x 1200) for WWAN with HP Eye Ease [10,11,12,13]

Touch

35.56 cm (14") diagonal WUXGA Bent, anti-glare UWVA, 250 nits, 45% NTSC for 5MP+IR camera Touch on Panel (1920 x 1200)[10,11,13]

Technical Specifications

35.56 cm (14") diagonal WUXGA Bent, anti-glare UWVA, 250 nits, 45% NTSC for 5MP+IR camera for WWAN Touch on Panel (1920 x 1200)[10,11,13]

DisplayPort™ 1.4

HDMI 2.1 Support resolution up to 4K @60 Hz [9]

Displays support

Supports dual display through the dock

Display Size (Diagonal)

14" diagonal

35.56 cm (14") diagonal

9. HDMI cable sold separately
10. HD content required to view HD images.
11. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
12. HP Sure View Reflect integrated privacy screen is an optional feature that must be configured at purchase and is designed to function in landscape orientation.
13. Actual brightness will be lower with touchscreen or Sure View.

DOCKING (Sold Separately)

Docking station model #1	HP Thunderbolt 4 100W G6 Dock
Docking station model #2	HP Thunderbolt 120W G4 Dock
Docking station model #3	HP Thunderbolt 280W G4 Dock
Docking station model #4	HP USB-C Dock G5
Docking station model #5	HP USB-C/A Universal Dock G2
Docking station model #6	HP USB-C G5 Essential Dock

For additional aftermarket options and docking specs please see page 43.

STORAGE AND DRIVES

Primary Storage

2 TB PCIe® Gen4x4 NVMe™ M.2 SSD TLC [14]

1 TB PCIe® Gen4x4 NVMe™ M.2 SSD TLC [14,15]

1 TB GB PCIe® Gen4x4 NVMe™ SED TLC OPAL2 [14]

Technical Specifications

512 GB PCIe® Gen4x4 NVMe™ M.2 SSD TLC [14]
512 GB PCIe® Gen4x4 NVMe™ SED TLC OPAL2 [14]
512 GB PCIe® NVMe™ Value M.2 SSD[14]
256 GB PCIe® Gen4x4 NVMe™ Value SED TLC OPAL2 [14]
256 GB PCIe® NVMe™ Value M.2 SSD [14]

14. 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.
15. Available only to HK (Hong Kong), TW(Taiwan) and CN (China).

MEMORY

Maximum Memory
64 GB DDR5-5200 MT/s (2 x 32 GB)[16]

Memory
64 GB DDR5-4800 MT/s (2 x 32 GB) [16]
32 GB DDR5-5200 MT/s (2 x 16 GB) [16]
32 GB DDR5-5200 MT/s (1 x 32 GB) [16]
32 GB DDR5-4800 MT/s (2 x 16 GB) [16]
32 GB DDR5-4800 MT/s (1 x 32 GB) [16]
16 GB DDR5-5200 MT/s (2 x 8 GB) [16]
16 GB DDR5-5200 MT/s (1 x 16 GB) [16]
16 GB DDR5-4800 MT/s (2 x 8 GB) [16]
16 GB DDR5-4800 MT/s (1 x 16 GB) [16]
8 GB DDR5-5200 MT/s (1 x 8 GB) [16]
8 GB DDR5-4800 MT/s (1 x 8 GB) [16]

Memory Slots
2 SODIMM
DDR5 SODIMMS, system runs at 4800 MT/s RAM
DDR5 SODIMMS, system runs at 5200 MT/s RAM
Supports Dual Channel Memory (Optional)

16. 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

WLAN

Intel® AX211 Wi-Fi6E+ Bluetooth® 5.3 M.2 160MHz CNVi World-Wide WLAN vPro Wireless Card [17]

Intel® AX211 Wi-Fi6E+ Bluetooth® 5.3 M.2 160MHz CNVi World-Wide WLAN non-vPro Wireless Card [17]

WWAN

Intel® 5000 5G Solution WWAN [18,19]

Intel® XMM 7560 R+ LTE-Advanced Pro WWAN (Cat 16)[18]

NFC

Near Field Communication (NFC) module [20]

HP Module with NXP NFC Controller NPC300 I2C NCI

Miracast

Native Miracast Support [21]

17. 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.
18. WWAN module is an optional feature, requires factory configuration and requires separately purchased service contract. Check with service provider for coverage and availability in your area. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products, in all regions.
19. Intel 5G module is optional and must be configured at the factory. Module designed for 5G NR NSA (non-standalone) networks as carriers deploy Evolved-Universal Terrestrial Radio Access New Radio Dual Connectivity (ENDC) with both 100Mhz
of 5G NR and LTE channel bandwidth, using 256QAM 4x4 as defined by 3GPP. Module requires activation and separately purchased service contract. Check with service provider for coverage and availability in your area. Data connection, upload and
download speeds will vary due to network, location, environment, network conditions, and other factors. Backwards compatible to 4G LTE and 3G HSPA technologies. 5G module planned to be available in select platforms and select countries,
where carrier supported.
20. Sold separately or as an optional feature.
21. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.

Technical Specifications

AUDIO/MULTIMEDIA

Audio

Audio by Bang & Olufsen

2 Integrated stereo speakers

Discrete Amplifiers

Integrated dual array microphone

Speaker Power

1W/8ohm Per speaker

Camera

5 MP camera [20]

5 MP+IR camera [20]

5 MP + IR camera for face authentication with Windows Hello

Sensors

ALS (ambient light sensor)

Adaptive Color Sensor

Hall effect Sensor

Motion AI LSM6DSL

Thermal Sensor

HP Tamper Lock [22]

20. Sold separately or as an optional feature.

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

Technical Specifications

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard

HP Premium Keyboard, spill resistant, Backlit keyboard and DuraKeys [23]

HP Premium Keyboard, spill resistant, Non-Backlit keyboard and DuraKeys

HP Premium Keyboard, spill resistant, Backlit keyboard and DuraKeys Privacy

Pointing Device

Clickpad with multi-touch gesture support, taps enabled as default

Microsoft Precision Touchpad Default Gestures Support

Function Keys

ESC: system information

F1 - Display Switching

F2 - Blank or Privacy

F3 - Brightness Down

F4 - Brightness Up

F5 - Audio Mute

F6 - Volume Down

F7 - Volume Up

F8 - Mic Mute

F9 - Blank or Backlit Toggle

F10 - Insert

F11 - Airplane Mode

F12 - HP Command Center

home

end

Power Button (with LED)

Delete

Hidden Function Keys

Fn+R - Break

Fn+S - Sys Rq

Fn+C - Scroll Lock

23. Backlit keyboard is an optional feature.

Technical Specifications

SOFTWARE AND SECURITY

Preinstalled Software

Software

HP Easy Clean [24]

HP PC Hardware Diagnostics Windows

myHP

HP Smart Support [25]

HP Services Scan [26]

HP Connection Optimizer

HP Hotkey Support

HP Support Assistant [27]

HP Notifications

HP Privacy Settings

HP Power Manager [28]

Microsoft Office sold separately and requires Internet access for activation

Manageability Features

HP Connect [29]

HP Image Assistant Gen5 (download)

HP Manageability Integration Kit (download) [30]

HP Client Management Script Library (download)

HP Patch Assistant (download) [31]

HP Driver Packs (download)

HP Client Catalog (download)

HP Cloud Recovery [32]

Security Management

HP Wolf Security for Business [33] includes:

HP Sure Click [34]

HP Sure Sense [35]

HP Sure Run [36]

HP Sure Recover [37]

HP Sure Start [38]

HP Tamper Lock [39]

HP Sure Admin [40]

Technical Specifications

BIOS

HP BIOSphere Gen6 [41]

HP Secure Erase [42]

Absolute Persistence Module [43]

BIOS Update via Network

HP Wake on WLAN

Secured-Core PC Enable [44]

TPM 2.0 Embedded Security Chip (Common Criteria EAL4+ Certified) (FIPS 140-2 Level 2 Certified)

HP Fingerprint Sensor [45]

Security

TPM

Model: Nuvoton NPCT760HABYX

Version: 7.2.3.1

Revision: TPM 2.0

FIPS 140-2 Compliant: Yes

Model: Infinion SLB9672VU2.0

Version: 15.23

Revision TPM2.0

FIPS 140-2 Compliant: Yes

Smartcard Reader

Model number: Alcor AU9560

FIPS 201 Compliant: Yes

IPv6 Support

Yes

FirstNet Certified

Yes

The BIOS on this notebook implements ISO/IEC 19678:2015 guidelines (formerly NIST 800-147).

UEFI version: 2.11

Class: 3

Technical Specifications

24. 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.
25. HP Smart Support requires HP TechPulse to be installed. For more information about how to enable or to download HP Smart Support, please visit http://www.hp.com/smart-support .
26.HP Services Scan is provided with Windows Update on select products and will check entitlement on each hardware device to determine if an HP TechPulse-enabled service has been purchased, and will download applicable software automatically. HP TechPulse is a telemetry and analytics platform that provides critical data around devices and applications and is not sold as a standalone service. HP TechPulse follows stringent GDPR privacy regulations and is ISO27001, ISO27701, ISO27017 and SOC2 Type2 certified for Information Security. Internet access with connection to TechPulse portal is required. For full system requirements or to disable this feature, please visit http://www.hpdaas.com/requirements. Not applicable in China.
27. HP Support Assistance requires Windows and Internet Access
28. HP Power Manager requires Windows 10 and higher and can be downloaded from the Microsoft Store.
29. 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.
30. HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html.
31. 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.
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, wired network connection. **NOTE:** You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Details please refer to: https://support.hp.com/us-en/document/c05115630.
33. HP Wolf Security for Business requires Windows 10 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 and OS requirement.
34. HP Sure Click requires Windows 10 Pro or higher or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.
35. HP Sure Sense is available on select HP PCs with Windows 10 Pro, Windows 10 Enterprise, Windows 11 Pro, or Windows 11 Enterprise OS
36. HP Sure Run Gen5 is available on select HP PCs and requires Windows 10 and higher.
37. HP Sure Recover Gen5 with Embedded Reimaging is an optional feature which requires Windows 10 and higher must be configured at purchase. You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Network based recovery using Wi-Fi is only available on PCs with Intel Wi-Fi Module
38. HP Sure Start Gen7 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.

Technical Specifications

40. HP Sure Admin requires Windows 10 or higher, HP BIOS, HP Manageability Integration Kit from http://www.hp.com/go/clientmanagement and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store
41. HP BIOSphere Gen6 features may vary depending on the platform and configuration.
42. HP Secure Erase for the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.
43. 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/
44. 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.
45. HP Fingerprint sensor is an optional feature that must be configured at purchase.

Technical Specifications

POWER

Power Supply

HP Smart 65 W USB Type-C® adapter [46]

HP Smart 45 W USB Type-C® adapter [46]

Battery

HP Long Life 3-cell, 38 Wh Polymer [47,48]

HP Long Life 3-cell, 38 Wh Polymer SET [47,48]

HP Long Life 3-cell, 51 Wh Polymer[47,48]

Compliant with UL 1642 Standard

Power Cord

3-wire plug - 1m [46]

2-wire plug - 1m [46]

Battery Life

Up to 14 hours (U15, HP Long Life 3-cell, 51 Wh Li-ion Polymer, UMA graphic, display set to 200nits, 2*8GB DDR5 memory, 512GB NVMe SSD)[49]

46. Availability may vary by country.

47. Battery is internal and not replaceable by customer. Serviceable by warranty.

48. 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.

49. MM18 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 - 38 Whr [50]

Starting at 3.01 lb

Starting at 1.36 kg

Product Weight- 51 Whr [50]

Starting at 3.1 lb

Starting at 1.40 kg

Product Dimensions (W x D x H)

12.42 x 8.82 x 0.76 in

31.56 x 22.40 x 1.92 cm

Packaging Dimensions (W x D x H) [51]

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

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

51. Product packaging size varies based on options chosen. Please contact your HP representative for your packaging size details.

PORTS/SLOTS

2 Thunderbolt™ 4 with USB4 Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4) [52]

2 Super Speed USB Type-A 5Gbps signaling rate (1 charging)

1 HDMI 2.1 [9]

1 Headphone/microphone combo jack

1 Nano Security Lock Slot (Lock sold separately)

1 Smartcard reader (Optional)

1 nano SIM card slot

52. SuperSpeed USB 20Gbps is not available with Thunderbolt™ 4.

9. 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 except for HP Long Life batteries which will follow the one or three year warranty of the platform. 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. [53]

53. HP Care Packs are sold separately. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit http://www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	Type-C® Adapter
Nominal Operating Voltage	AC 20V
Average Operating Power	
Integrated graphics	Yes
Discrete Graphics	N/A
Max Operating Power	65W
Temperature	
Operating	32° to 95° F (0° to 35° C) (No sustained direct exposure to sunlight) (System performance may be reduced above 32°C (89.6°F))
Non-operating	-4° to 140° F (-20° to 60° C)
Relative Humidity	
Operating	10% to 90% (non-condensing)
Non-operating	5% to 95% (38.7° C (101.6° F) maximum wet bulb tempera-ture; non-condensing)
Shock	
Operating	40 G, 2 ms, half-sine
Non-operating	240 G, 2 ms, half-sine
Random Vibration	
Operating	1.043 grams
Non-operating	3.5 grams
Altitude (unpressurized)	
Operating	10,000 ft (3,048 m)
Non-operating	40,000 ft (12,192 m)
Planned Industry Standard Certifications	
Regulatory Model Number	HSN-I45C-4
CSA/UL 62368-1	Yes
ENERGY STAR®	Yes [54]
EPEAT®	EPEAT® Gold in the United States [55]
FCC/ICES/CISPR/VCCI	Yes
CE MARKING	Yes
GS Mark	Yes Related commodity should comply with ISO 9241 Standards.
China CCC/SRRC	Yes

Technical Specifications

Taiwan BSMI/NCC	Yes
Korea KCC/KC/KES	Yes
Ukraine NSoC/TEC	Yes
EAEU Compliance	Yes
Saudi Arabian Compliance	Yes
TCO	Yes
Low Blue Light	Yes
WW RoHS	Yes

54. Configurations of the HP EliteBook 840 14 inch G10 Notebook PC that are ENERGY STAR® qualified are identified as HP HP EliteBook 840 14 inch G10 Notebook PC ENERGY STAR on HP websites and on http://www.energystar.gov.

55. 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.

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.

14.0 in WUXGA (1920 x 1200) Anti-Glare UWVA LED NTSC NB2X 250 eDP 1.2 w/o PSR 45 bent LCD Panel	**Outline Dimensions (W x H x D)**	307.590 x 199.550 (max)
	Active Area	301.590 x 188.500 (typ)
	Weight	300 (max)
	Diagonal Size	14
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	1000:1(typ)
	Refresh Rate	60 Hz
	Brightness	250 nits [1]
	Pixel Resolution - Format	1920 x 1200 (WUXGA)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%
	Color Depth	6+2
	Viewing Angle	UWVA 89/89/89/89
	Low Blue Light	No

Technical Specifications

	Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.20 (max) / 2.70 (max)

14.0 in WUXGA (1920 x 1200) Anti-Glare UWVA LED NTSC NB2X 250 TOP eDP 1.2 w/o PSR 45 bent LCD Panel	**Outline Dimensions (W x H x D)**	307.590 x 199.550 (max)
	Active Area	301.590 x 188.500 (typ)
	Weight	300 (max)
	Diagonal Size	14
	Surface Treatment	Anti-Glare
	Touch Enabled	Yes[1]
	Contrast Ratio	1000:1(typ)
	Refresh Rate	60 Hz
	Brightness	250 nits [1]
	Pixel Resolution - Format	1920 x 1200 (WUXGA)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%
	Color Depth	6+2
	Viewing Angle	UWVA 89/89/89/89
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.10 (max) / 2.60 (max)

14.0 in WUXGA (1920 x 1200) Anti-Glare UWVA WLED+LBL sRGB NB2X 400 eDP 1.4+PSR2 Low-Power 100 bent LCD Panel	**Outline Dimensions (W x H x D)**	307.590 x 199.550 (max)
	Active Area	301.590 x 188.500 (typ)
	Weight	210 (max)
	Diagonal Size	14
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	1000:1(typ)
	Refresh Rate	60 Hz

Technical Specifications

	Brightness	400 nits
	Pixel Resolution - Format	1920 x 1200 (WUXGA)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	sRGB 100%
	Color Depth	8
	Viewing Angle	UWVA 89/89/89/89
	Low Blue Light	Yes
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	1.29 (max) / 1.66 (max)

14.0 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 x D)**	307.600 x 199.550 (max)
	Active Area	301.680 x 188.500 (typ)
	Weight	238 (max)
	Diagonal Size	14
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	1500:1 (typ)
	Refresh Rate	60 Hz
	Brightness	1000 nits[1]
	Pixel Resolution - Format	1920 x1200 (WUXGA)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	sRGB 100%
	Color Depth	8
	Viewing Angle	UWVA 85/85/85/85
	Low Blue Light	Yes
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	N/A

Technical Specifications

14.0 in WQXGA DRM (2560 x 1600) Anti-Glare UWVA LED DCI-P3 NB2X 500 eDP 1.4+PSR2 100 120Hz bent LCD Panel	**Outline Dimensions (W x H x D)**	307.594 x 199.546 (max)
	Active Area	301.594 x 188.496 (typ)
	Weight	230 (max)
	Diagonal Size	14
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	1200:1(typ)
	Refresh Rate	120 Hz
	Brightness	500 nits[1]
	Pixel Resolution - Format	2560 x1600 (WQXGA)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	DCI-P3 100%
	Color Depth	8
	Viewing Angle	UWVA 89/89/89/89
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.88 (max) / 3.44 (max)

Technical Specifications

STORAGE AND DRIVES

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

SSD 512GB 2280 PCIe-4x4 NVMe Three Layer Cell	**Form Factor**	M.2 2280
	Capacity	512GB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	6400 MB/s ± 10%
	Minimum Sequential Write	3500 MB/s ± 10%
	Logical Blocks	1,000,215,215
	Features	Pyrite 2.0; TRIM; L1.2

SSD 1TB 2280 PCIe-4x4 NVMe Three Layer Cell	**Form Factor**	M.2 2280
	Capacity	1TB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	3200 MB/s ± 10%
	Minimum Sequential Write	2700 MB/s ± 10%
	Logical Blocks	2,000,409,264
	Features	Pyrite 2.0; TRIM; L1.2

1. Available only to HK (Hong Kong), TW (Taiwan) and CN (China).

SSD 2TB 2280 PCIe-4x4 NVMe Three Layer Cell	**Capacity**	2TB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	6400 MB/s ± 10%
	Minimum Sequential Write	5000 MB/s ± 10%
	Logical Blocks	4,000,797,360
	Features	Pyrite 2.0; TRIM; L1.2

Technical Specifications

256GB PCIe 2280 NVMe Self Encrypted OPAL2 Value Solid State Drive	Capacity	256GB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	2000 MB/s ± 10%
	Minimum Sequential Write	900 MB/s ± 10%
	Logical Blocks	500,118,192
	Features	TCG Opal 2.0; TRIM; L1.2

Technical Specifications

512GB PCIe-4x4 2280 NVME Self Encrypted OPAL2 Three Layer Cell Solid State Drive	**NAND Type**	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	6400 MB/s ± 10%
	Minimum Sequential Write	3500 MB/s ± 10%
	Logical Blocks	1,000,215,215
	Features	TCG Opal 2.0; TRIM; L1.2

1TB PCIe-4x4 2280 NVME Self Encrypted OPAL2 Three Layer Cell Solid State Drive	**NAND Type**	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	6400 MB/s ± 10%
	Minimum Sequential Write	5000 MB/s ± 10%
	Logical Blocks	2,000,409,264
	Features	TCG Opal 2.0; TRIM; L1.2

SSD 256GB 2280 PCIe NVMe Value	**NAND Type**	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	2000 MB/s ± 10%
	Minimum Sequential Write	900 MB/s ± 10%
	Logical Blocks	500,118,192
	Features	Pyrite 2.0; TRIM; L1.2

SSD 512GB 2280 PCIe NVMe Value	**NAND Type**	TLC
	Interface	PCIe NVMe Gen4X4
	Minimum Sequential Read	2200 MB/s ± 10%
	Minimum Sequential Write	1000 MB/s ± 10%
	Logical Blocks	1,000,215,215
	Features	Pyrite 2.0; TRIM; L1.2

Technical Specifications

NETWORKING/COMMUNICATIONS

Intel® AX211 Wi-Fi 6E + Bluetooth® 5.3 M.2 160MHz CNVi World-Wide WLAN non-vPro Wireless Card[1]	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k 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	▪ 802.11b: 1, 2, 5.5, 11 Mbps ▪ 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps ▪ 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps ▪ 802.11n: max 300Mbps ▪ 802.11ac : 1733Mbps ▪ 802.11ax : max 2.4Gbps
	Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
	Security [2]	▪ IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode

Technical Specifications

	only ▪ AES-CCMP: 128 bit in hardware ▪ 802.1x authentication ▪ WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. ▪ WPA2 certification ▪ WPA3 certification ▪ IEEE 802.11i ▪ WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power [3]	▪ 802.11b : +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
Power Consumption	▪ Transmit mode 2.0 W ▪ Receive mode 1.6 W ▪ Idle mode (PSP) 180 mW (WLAN Associated) ▪ Idle mode 50 mW (WLAN unassociated) ▪ Connected Standby 10mW ▪ Radio disabled 8 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity [4]	▪ 802.11b, 1Mbps : -93.5dBm maximum ▪ 802.11b, 11Mbps : -84dBm maximum ▪ 802.11a/g, 6Mbps : -86dBm maximum ▪ 802.11a/g, 54Mbps : -72dBm maximum

Technical Specifications

	▪ 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, mounted in the display enclosure 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	1. Type 2230: 2.3 x 22.0 x 30.0 mm
Weight	1. Type 2230: 2.8g
Operating Voltage	3.3v +/- 9%
Temperature	**Operating** 14° to 158° F (-10° to 70° C) **Non-operating** -40° to 176° F (-40° to 80° C)
Humidity	**Operating** 10% to 90% (non-condensing) **Non-operating** 5% to 95% (non-condensing)
Altitude	**Operating** 0 to 10,000 ft (3,048 m) **Non-operating** 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber - Radio OFF; LED OFF - Radio ON

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

Bluetooth Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps

Technical Specifications

	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 + 9.5 dBm for BR and EDR.

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).

Technical Specifications

Intel® AX211 Wi-Fi 6E +Bluetooth® 5.3 M.2 160MHz CNVi World-Wide WLAN vPro Wireless Card[1]	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k 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	▪ 802.11b: 1, 2, 5.5, 11 Mbps ▪ 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps ▪ 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps ▪ 802.11n: max 300Mbps ▪ 802.11ac : 1733Mbps ▪ 802.11ax : max 2.4Gbps
	Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
	Security[2]	▪ IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only ▪ AES-CCMP: 128 bit in hardware

Technical Specifications

	▪ 802.1x authentication ▪ WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. ▪ WPA2 certification ▪ WPA3 certification ▪ IEEE 802.11i ▪ WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power[3]	▪ 802.11b : +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
Power Consumption	▪ Transmit mode 2.0 W ▪ Receive mode 1.6 W ▪ Idle mode (PSP) 180 mW (WLAN Associated) ▪ Idle mode 50 mW (WLAN unassociated) ▪ Connected Standby 10mW ▪ Radio disabled 8 mW
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
Receiver Sensitivity[4]	▪ 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

Technical Specifications

		▪ 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, mounted in the display enclosure 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	1. Type 2230: 2.3 x 22.0 x 30.0 mm
	Weight	1. Type 2230: 2.8g
	Operating Voltage	3.3v +/- 9%
	Temperature	**Operating** 14° to 158° F (-10° to 70° C) **Non-operating** -40° to 176° F (-40° to 80° C)
	Humidity	**Operating** 10% to 90% (non-condensing) **Non-operating** 5% to 95% (non-condensing)
	Altitude	**Operating** 0 to 10,000 ft (3,048 m) **Non-operating** 0 to 50,000 ft (15,240 m)
	LED Activity	LED Amber - Radio OFF; LED OFF - Radio ON
HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card		
	Bluetooth Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant
	Frequency Band	2402 to 2480 MHz
	Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
	Data Rates and Throughput	Legacy: 3 Mbps data rate; throughput up to 2.17 Mbps BLE: 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)

Technical Specifications

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).

Technical Specifications

Intel® 5G Solution 5000 [1]	**Technology/Operating bands**	WCDMA/HSPA+ operating bands: Band 1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL) Band 2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL) Band 4: 1710 to 1755 MHz (UL), 2110 to 2155 MHz (DL) Band 5: 824 to 849 MHz (UL), 869 to 894 MHz (DL) Band 8: 880 to 915 MHz (UL), 925 to 960 MHz (DL) LTE FDD/TDD operating bands: Band 1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL) Band 2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL) Band 3: 1710 to 1785 MHz (UL), 1805 to 1880 MHz (DL) Band 4: 1710 to 1755 MHz (UL), 2110 to 2155 MHz (DL) Band 5: 824 to 849 MHz (UL), 869 to 894 MHz (DL) Band 7: 2500 to 2570 MHz (UL), 2620 to 2690 MHz (DL) Band 8: 880 to 915 MHz (UL), 925 to 960 MHz (DL) Band 12: 699 to 716 MHz (UL), 729 to 746 MHz (DL) Band 13: 777 to 787 MHz (UL), 746 to 756 MHz (DL) Band 14: 788 to 798 MHz (UL), 758 to 768 MHz (DL) Band 17: 704 to 716 MHz (UL), 734 to 746 MHz (DL) Band 18: 815 to 830 MHz (UL), 860 to 875 MHz (DL) Band 19: 830 to 845 MHz (UL), 875 to 890 MHz (DL) Band 20: 832 to 862 MHz (UL), 791 to 821 MHz (DL) Band 25: 1850 to 1915 MHz (UL), 1930 to 1995 MHz (DL) Band 26: 814 to 849 MHz (UL), 859 to 894 MHz (DL) Band 28: 703 to 748 MHz (UL), 758 to 803 MHz (DL) Band 29: 717 to 728 MHz (DL) Band 30: 2305 to 2315 MHz (UL) 2350 to 2360 MHz (DL) Band 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 40: 2300 to 2400 MHz (UL/DL) Band 41: 2496 to 2690 MHz (UL/DL) Band 42: 3400 to 3600 MHZ (UL/DL) Band 43: 3400 to 3800 MHZ (UL/DL) Band 46: 5150 to 5925 MHZ (DL) Band 48: 3550 to 3700 MHZ (UL/DL) Band 66: 1710 to 1800 MHz (UL), 2110 to 2200 MHz (DL) Band 71: 663 to 698 MHz (UL), 617 to 652 MHz (DL)

Technical Specifications

	5GNR Sub 6GHZ n1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL) n2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL) n3: 1710 to 1785 MHz (UL), 1805 to 1880 MHz (DL) n5: 824 to 849 MHz (UL), 869 to 894 MHz (DL) n7: 2500 to 2570 MHz (UL), 2620 to 2690 MHz (DL) n8: 880 to 915 MHz (UL), 925 to 960 MHz (DL) n20: 832 to 862 MHz (UL), 791 to 821 MHz (DL) n25: 1850 to 1915 MHz (UL), 1930 to 1995 MHz (DL) n28: 703 to 748 MHz (UL), 758 to 803 MHz (DL) n38: 2570 to 2620 MHz (UL/DL) n40: 2300 to 2400 MHz (UL/DL) n41: 2496 to 2690 MHz (UL/DL) n48: 3550 to 3700 MHZ (UL/DL) n66: 1710 to 1800 MHz (UL), 2110 to 2200 MHz (DL) n71: 663 to 698 MHz (UL), 617 to 652 MHz (DL) n77: 3300 to 4200 MHz (UL/DL) n78: 3300 to 3800 MHz (UL/DL) n79: 4400 to 5000 MHz (UL/DL)
Wireless protocol standards	5GNR Air Interface 3GPP Rel15 5G NR sub-6 LTE Rel14 20 layers and 2 Gbps downlink (DL) throughput – 4 × 4 MIMO across 5x CA 200 Mbps/uplink (UL) throughput – 40 MHz ULCA and 256 QAM WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification
GPS	Standalone, A-GPS (MS-A, MS-B)
GPS bands	GPS: L1 (1575.42MHz) GLONASS: L1 (1602MHz) BeidouB1(1561.098MHz) Galileo E1 (1575.42) QZSS(1575.42 MHz)
Maximum data rates	SA 5G/NR sub-6 Peak: DL4.67Gbps/ UL 1.25Gbps 5G NSA sub 6G : DL: 3.8 Gbps/UL 700Mbps LTE: ue-CategoryDL 19, (DL : 1.6 Gbps) ue-CategoryUL 18 , (UL: 211Mbps) DC-HSPA+: 42 Mbps (Download), 11.5 Mbps (Upload)

Technical Specifications

Maximum output power	LTE: 23 dBm in all band except B41 LTE B41 HPUE = 26dBm NR: 23 dBm in all band except n41, n77, n78 and n79 LTE n41, n77, n78 and n79 HPUE = 26dBm HSPA+: 23.5 dBm
Maximum power consumption	5G Sub 6 : 2500 mA LTE: 1,300 mA (peak); 1100 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average)
Form Factor	M.2, 3052-S3 Key B
Weight	8 g
Dimensions (Length x Width x Thickness)	52 mm × 30 mm × 2.3 mm
embedded eSIM Support	embedded eSIM Support

1. Intel® 5G module is optional and must be configured at the factory. Module designed for 5G SA (standalone), and 5G NR NSA (non-standalone) networks as carriers deploy Evolved-Universal Terrestrial Radio Access New Radio Dual Connectivity (ENDC) with both 100Mhz of 5G NR and LTE channel bandwidth, using 256QAM 4x4 as defined by 3GPP. Module requires activation and separately purchased service contract. Check with service provider for coverage and availability in your area. Data connection, upload and download speeds will vary due to network, location, environment, network conditions, and other factors. Backwards compatible to 4G LTE and 3G HSPA technologies. 5G module planned to be available in select platforms and select countries, where carrier supported.

Technical Specifications

Intel® XMM™ 7560 R+ LTE-Advanced Pro [1]	**Technology/Operating bands**	FDD LTE: 2100 (Band 1), 1900 (Band 2), 1800 (Band 3), 1700/2100 (Band 4), 850 (Band 5), 2600 (Band 7), 900 (Band 8), 700 (Band 12 lower), 700 (Band 13 upper), 700 (Band 14 upper), 700 (Band 17 lower), 850 (Band 18 lower), 850 (Band 19 upper), 800 (Band 20), 1900 (Band 25), 850 (Band 26), 700 (Band 28), 700 (Band 29 RX only), 2300 (Band 30), 1700/2100 (Band 66), 600 (band 71). TDD LTE: 2100 (Band 34), 2600 (Band 38), 1900 (Band 39), 2400 (Band 40), 2500 (Band 41), 3500 (Band 42), 3700 (Band 43), 3700 (band 48), 5200 (Band 46 RX only) MHz; HSPA+: 2100 (Band 1), 1900 (Band 2), 1700/2100 (Band 4), 850 (Band 5), 900 (Band 8) MHz
	Wireless protocol standards	3GPP Release 12 LTE Specification DL-CAT.16, DL 100MHz BW throughput up to 978Mbps; UL-CAT.13 40MHz throughput up to 150Mbps WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification
	GPS	Standalone GPS/Beidou/Glonass, A-GPS (MS-A, MS-B)
	GPS bands	1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz, Beidou 1561.098 MHz
	Maximum data rates	LTE: 978 Mbps (Download), 150 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload)
	Maximum output power	LTE: 23 dBm in all band except B41 LTE B41 HPUE = 26dBm HSPA+: 23.5 dBm
	Maximum power consumption	LTE: 1,200 mA (peak); 900 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average)
	Form Factor	M.2, 3042-S3 Key B
	Weight	6 g
	Dimensions (Length x Width x Thickness)	42 x 30 x 2.3 mm
	embedded eSIM Support	embedded eSIM Support

Technical Specifications

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.

Technical Specifications

NFC NXP NPC300	**Dimensions (L x W x H)**	17x10x2.0 mm
	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	Tag Type 1, Type 2, Type3 and Type 4, NFCIP-1 and 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 cards
	Card Emulation (PICC-VICC) Mode	ISO/IEC 14443 A 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, 212, 424, 848 kbps
	Operating temperature	0°C to 70°C
	Storage temperature	-20°C to 125°C
	Humidity	10-90% operating 5-95% non-operating
	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)	

Technical Specifications

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.

Technical Specifications

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 45 Watt nPFC Standard USB Type C® Straight 1.8m	**Dimensions (H x W x D)**	3.701 x 1.693 x 1.071 in (9.4 x 4.3 x 2.72 cm)	
	Weight	0.44 lb (200 g) max (Not including power cord. Power cord varies by country.)	
	Input	100~240VAC	
		Input Efficiency	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec: 5V: 81.5% 9V: 86.7% 12V: 87.4% 15V: 87.8%
		Input frequency range	47 ~ 63Hz
		Input AC current	Max. 1.4 A at 90 Vac
	Output	**Output power**	5V/15W 9V/27W 12V/36W 15V/45W
		DC output	5V/9V/12V/15V
		Hold-up time	100% load 5ms at 115 Vac input
		Output current limit	<5.0A
	Connector	USB Type-C®	
	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	CE Mark - full compliance with LVD and EMC directives	

Technical Specifications

	Worldwide safety standards - IEC60950-1 and IEC62368-1 : 2018, EN62368-1:2014+A11, UL62368-1 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, USB-IF, Ukraine (CoC+DoC+RoHS+ECO)

Technical Specifications

AC Adapter 65 Watt nPFC Standard USB Type C® Straight 1.8m	**Dimensions (H x W x D)**	3.543 x 2.008 x 1.122 in (9.0 x 5.1 x 2.85 cm)	
	Weight	0.53 lb (240 g) max (Not including power cord. Power cord varies by country.)	
	Input	100-240Vac	
		Input Efficiency	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec: 5V : 81.5% 9V : 86.7% 12V : 88.0% 15V : 89.0% 20V : 89.0%
		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
	Connector	USB Type-C®	
	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	CE Mark - full compliance with LVD and EMC directives Worldwide safety standards - IEC60950-1 and IEC62368-1 : 2018, EN62368-1:2014+A11, UL 62368-1 Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, CU(EAC), EAEU,	

KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC

Technical Specifications

HP 65W Slim USB-C® Straight AC Power Adapter	**Dimensions (H x W x D)**	3.819 x 2.106 x 0.827 in (9.7x5.35x2.1cm)	
	Weight	0.49 lb (220 g) max (Not including power cord. Power cord varies by country.)	
	Input	100-240Vac	
		Input Efficiency	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec: 5V : 81.5% 9V : 86.7% 12V : 88.0% 15V : 89.0% 20V : 89.0%
		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
	Connector	USB TYPE C®	
	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	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	

Technical Specifications

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

Technical Specifications

HP 3-cell Long Life Li-Ion (WP 38Wh)[1]	**Weight**	0.184kg +/- 10g (0.406lb)	
	Cells/Type	3cell Lithium-Ion Polymer cell / 564975	
	Energy	**Voltage**	11.58V
		Amp-hour capacity	3.283Ah
		Watt-hour capacity[1]	38Wh
	Temperature	**Operating (Charging)**	32˚ to 113˚ F (0˚ to 45˚ C)
		Operating (Discharging)	14˚ to 140˚ F (-10˚ to 60˚ C)
		Optional Travel Battery Available	No

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

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HP 3-cell Long Life Li-Ion (WQ 38Wh)[1]	**Weight**	0.178kg +/- 10g(0.392lb)	
	Cells/Type	3cell Lithium-Ion Polymer cell / 604975	
	Energy	**Voltage**	11.55V
		Amp-hour capacity	3.291Ah
		Watt-hour capacity[1]	38Wh
	Temperature	**Operating (Charging)**	32˚ to 113˚ F (0˚ to 45˚ C)
		Operating (Discharging)	14˚ to 140˚ F (-10˚ to 60˚ C)
		Optional Travel Battery Available	No

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

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Technical Specifications

HP 3-cell Long Life Li-Ion (51 Wh)[1]	**Weight**	0.229kg +/- 10g (0.505 lb)	
	Cells/Type	3cell Lithium-Ion Polymer cell / 566075	
	Energy	**Voltage**	11.58V
		Amp-hour capacity	4.431Ah
		Watt-hour capacity[1]	51.3Wh
	Temperature	**Operating (Charging)**	32˚ to 113˚ F (0˚ to 45˚ C)
		Operating (Discharging)	14˚ to 140˚ F (-10˚ to 60˚ C)
		Optional Travel Battery Available	No

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

AUDIO

HD Stereo Codec	Realtek ALC3315
Audio I/O Ports	Headset: CTIA only and Headphone-out
Internal Speaker Amplifier	Cirrus Logic High-Efficiency Boosted Class D Amplifier
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio. Following MSFT Behavior
Sampling	DAC:48kHz ADC:48kHz
Wavetable Syntheses	N/A
Analog Audio	Support 3.5mm Headset: CTIA only and Headphone-out
# of Channels on Line-Out	N/A
Internal Speaker	Yes

FINGERPRINT READER

Sensor vendor	Main source: Synaptics FS7605 2nd source: ELAN 80SW
Sensor type	Capacitive

Technical Specifications

DPI resolution	Main source: 363 DPI
	2nd source: 508 DPI
Scan area	Main source: 104 x 86 pixels
	2nd source: 80x80 pixels
False Rejection Rate	FRR=≤ 3%
False Acceptance Rate	Main source: FAR 1/100K
	2nd source: < 0.001%
Mobile Voltage	Main source: 3.0V to 3.6V
Operation	2nd source: 2.7V~3.6V
Operating Temperature	Main source: 0°C~60°C
	2nd source: -20°C - +80°C
Current Consumption	Main source: 100mA max
Image	2nd source: 35mA peak
Low Latency Wait For	Main source: 260uA
Finger	2nd source: 300uA
Capture Rate	Main source: Image transmitter output frequency 9.6MHz
	2nd source: 50 frame/sec
ESD Resistance	IEC 61000-4-2 4B (+15KV)
Detection Matrix	Main source: 363 dpi / 7.4x6mm sensor area
	2nd source : 508 dpi / 4x4mm sensor area

Technical Specifications

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: • IT ECO declaration • US ENERGY STAR® • US Federal Energy Management Program (FEMP) • EPEAT® Gold registered in the United States. See http://www.epeat.net for registration status in your country. • TCO Certified • China Energy Conservation Program (CECP) • China State Environmental Protection Administration (SEPA) • Taiwan Green Mark • Korea Eco-label • Japan PC Green label*		
Sustainable Impact Specifications	▪ Product Carbon Footprint (hp.com) ▪ Ocean-bound plastic in Speaker ▪ 60.5% post-consumer recycled plastic ▪ 67.7% recycled metal ▪ Low halogen ▪ Outside Box and corrugated cushions are 100% sustainably sourced and recyclable ▪ Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable ▪ Bulk packaging available		
System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a "Typically Configured Notebook".		
Energy Consumption (in accordance with US ENERGY STAR® test method)	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 50Hz**
Normal Operation (Sort idle)	5.88 W	6.17 W	5.92 W
Normal Operation (Long idle)	1.66 W	1.85 W	1.76 W
Sleep	1.66 W	1.85 W	1.76 W
Off	0.46 W	0.48 W	0.41 W
	NOTE:		

Technical Specifications

	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)	20.1 BTU/hr	21.1 BTU/hr	20.2 BTU/hr
Normal Operation (Long idle)	5.7 BTU/hr	6.3 BTU/hr	6.0 BTU/hr
Sleep	5.7 BTU/hr	6.3 BTU/hr	6.0 BTU/hr
Off	1.6 BTU/hr	1.6 BTU/hr	1.4 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	3.1	20.6	
Fixed Disk – Random writes	3.3	22.8	
Optical Drive – Sequential reads	4.0	31.5	
Longevity and Upgrading	This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the		
	Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.		

Technical Specifications

Additional Information	• This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. • This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. • This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). • This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product is 93.4% recycle-able when properly disposed of at end of life.		
Packaging Materials	**External:**	PAPER/Corrugated	220 g
		PAPER/Corrugated	49 g
		PAPER/Molded Pulp	52 g
		PAPER/Molded Pulp	56 g
		PAPER/Paper	3 g
	Internal:	PLASTIC/Polyethylene low density - LDPE	13 g
	The plastic packaging material contains at least 0.0% recycled content.		
	The corrugated paper packaging materials contains at least 59.1% 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. 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. 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. 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		

Technical Specifications

	http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html): • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Bis(2-Ethylhexyl) phthalate (DEHP) • Benzyl butyl phthalate (BBP) • Dibutyl phthalate (DBP) • Diisobutyl phthalate (DIBP) • Formaldehyde • Halogenated Diphenyl Methanes • Lead carbonates and sulfates • Lead and Lead compounds • Mercuric Oxide Batteries • Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user. • Ozone Depleting Substances • Polybrominated Biphenyls (PBBs) • Polybrominated Biphenyl Ethers (PBBEs) • Polybrominated Biphenyl Oxides (PBBOs) • Polychlorinated Biphenyl (PCB) • Polychlorinated Terphenyls (PCT) • Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications. • Radioactive Substances • Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

Technical Specifications

Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • 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: http://www.hp.com/go/reuse-recycle 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: http://www.hp.com/go/recyclers. 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: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842 and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf
footnotes	• Percentage of ocean-bound plastic contained in each component varies by product • Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.

Technical Specifications

	• External power supplies, WWAN modules, power cords, cables and peripherals excluded. • 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers. • Fiber cushions made from 100% recycled wood fiber and organic materials. • Plastic cushions are made from >90% recycled plastic.

COUNTRY OF ORIGIN

China

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

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* (2) 4K @ 120Hz* (3) QHD @ 120Hz* (1) QHD @ 360Hz*
Dock Connectors	1x HDMI 2.1, 2x DisplayPort 1.4, 1x Thunderbolt 4
HP Quick Connect Support	No
Technical limitations	HP Quick Connect not supported on this platform. *Requires DisplayPort 1.4 support with Display Stream Compression (DSC). Bluetooth required for HP Quick Connect. HP Quick Connect available on select HP notebooks. Maximum resolution and display support is dependent on the maximum capability of the notebook. 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 #2	HP Thunderbolt 120W G4 Dock
Total number of supported displays (incl. the notebook display)	4
Max. resolutions supported	Quad 4K @60Hz Dual 8K single cable@30 for TB hosts or USB-C hosts DP 1.4 with DSC in high res mode
Dock Connectors	2xDP, 1xHDMI, 1xTB, 1xUSB-C Alt Mode

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

Technical limitations	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	HP Thunderbolt 280W G4 Dock
Total number of supported displays (incl. the notebook display)	4
Max. resolutions supported	Quad 4K @60Hz Dual 8K single cable@30 for TB hosts or USB-C hosts DP 1.4 with DSC in high res mode
Dock Connectors	2xDP, 1xHDMI, 1xTB, 1xUSB-C Alt Mode
Technical limitations	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)

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

	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 #4	HP USB-C Dock G5
Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	Dual 5K@ 30Hz + (1) 4K UHD (multi-function mode)
Dock Connectors	1xHDMI, 2xDP
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 #5	HP USB-C/A Universal Dock G2
Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	Dual 4K @ 60Hz Single 5K @ 60Hz
Dock Connectors	1xHDMI, 2xDP
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.
Docking station model #6	HP USB-C G5 Essential Dock
Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	For hosts that support DisplayPort 1.4 with Display Stream Compression: 3x FHD @ 60 Hz

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

	3x QHD @ 60 Hz 3x 4K @ 60 Hz For hosts that support DisplayPort 1.3/1.4: 3x FHD @ 60 Hz 3x QHD @ 60 Hz 2x 4K @ 60 Hz
Dock Connectors	1 x HDMI, 2 x DP
Technical limitations	Video resolution depends on the capability of the host machine. This dock provides up to 65W of power delivery to the host machine.

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

Type	Description	Part Number
Audio	HP Wired USB-A Stereo Headset	428K6AA
	HP Wired 3.5mm Stereo Headset	428K7AA
	HP 365 BT Speaker	567D3AA#ACJ
Video	HP 325 FHD USB-A Webcam	53X27AA
	HP 965 4K USB-A STR Webcam	695J5AA
Cases	HP Prelude G2 15.6 Backpack	1E7D6AA
	HP Prelude G2 15.6 Top Load	1E7D7AA
	HP Prelude Pro Recycled 15.6 Backpack	1X644AA
	HP Prelude Pro Recycled 15.6 Top Load	1X645AA
	HP Renew 14 Laptop Sleeve	2E6U9AA
	HP Renew Business 14.1 Laptop Bag	3E5F9AA
	HP Renew Business 14.1 Laptop Sleeve	3E2U7AA
	HP Renew Business 15.6 Laptop Bag	3E5F8AA
	HP Renew Business 17.3 Laptop Backpack	3E2U5AA
	HP Renew Business 17.3 Laptop Bag	3E2U6AA
	HP Renew Executive 14.1 Laptop Sleeve	6B8Y3AA
	HP Renew Executive 16 Laptop Backpack	6B8Y1AA
	HP Renew Executive 16 Laptop Bag	6B8Y2AA
	HP Travel 18L 15.6 Iron Gray Laptop Backpack	6H2D9AA
	HP Travel 25L 15.6 Iron Gray Laptop Backpack	6H2D8AA
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
	HP USB-C/A 120W G2 Universal Dock	5TW13AA
	HP Thunderbolt 120W G4 Dock	4J0A2AA
	HP Thunderbolt 280W G4 Dock	4J0G4AA

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

Hub	HP 4K USB-C Multiport Hub	6G842AA
	HP Universal USB-C Multiport Hub	50H55AA
	HP USB-C Travel Dock G2	7PJ38AA
	HP USB-C to USB-A Hub	Z6A00AA
Adapter	HP USB-C to RJ45 Adapter G2	4Z527AA
	HP USB 3.0 to Gigabit RJ45 Adapter G2	4Z7Z7AA
	HP HDMI to VGA Adapter	H4F02AA
	HP USB-C to DisplayPort Adapter	N9K78AA
	HP USB-C to HDMI 2.0 Adapter	1WC36AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA
	HP USB-C to VGA Adapter	N9K76AA
Keyboard/Combo	HP 125 WD USB Keyboard	266C9AA
	HP 320K WD USB Keyboard	9SR37AA
	HP 355 Compact Multi-Device BT Keyboard	692S9AA
	HP 455 Programmable Wireless Keyboard	4R177AA
	HP 975 USB+BT Dual-Mode Wireless Keyboard	3Z726AA
	HP 155 Wired Mouse and Keyboard Combo	5B8C0AA#ACJ
	HP 225 Antimicrobial Wired Mouse and Keyboard Combo	286K3AA#AB2
	HP 225 Wired Mouse and Keyboard Combo	286J4AA
	HP 235 Wireless Mouse and Keyboard Combo	1Y4D0AA
	HP 655 Wireless Keyboard and Mouse Combo	4R009AA
	HP Wired Desktop 320MK Mouse and Keyboard	9SR36AA
	HP Wireless Rechargeable 950MK Mouse and Keyboard	3M165AA
Mouse	HP 125 USB-A Wired Mouse	265A9AA
	HP 128 USB Laser Wired Mouse	265D9AA
	HP 155 USB-A Wired Mouse	5B8B7AA#ACJ
	HP 235 Wireless 2.4GHz Slim Wireless Mouse	4E407AA
	HP 320M USB-A Wired Mouse	9VA80AA
	HP 435 Bluetooth 5.0 + Wireless 2.4GHz Multi-Device Wireless Mouse	3B4Q5AA

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

	HP 715 Rechargeable Multi-Device Bluetooth 5.0 + Wireless 2.4GHz Bluetooth Mouse	6E6F0AA
	HP 925 Ergonomic Vertical Bluetooth 5.0 + Wireless 2.4GHz Wireless Mouse	6H1A5AA
	HP Creator USB-A+Bluetooth 935 Wireless Mouse Black	1D0K8AA
	HP USB Premium Wireless Mouse	1JR31AA
	HP USB-A+Bluetooth Multi-Device 635 Wireless Mouse Black	1D0K2AA
	HP USB-A+Bluetooth Travel Bluetooth Mouse	6SP30AA
Power	HP 45W USB-C LC Dali AC Power Adapter	1MZ01AA
	HP 65W GaN USB-C Laptop Charger	600Q7AA
	HP 65W USB-C Laptop Charger	671R3AA
	HP 65W USB-C LC AC Power Adapter	1P3K6AA
Commodity	HP USB DVD-Writer EXT ODD	F2B56AA
	HP Nano Keyed Cable Lock	1AJ39AA
	HP Nano Master Keyed Cable Lock	1AJ40AA
	HP SureKey Standard/Nano/Wedge Cable Lock	6UW42AA
	HP Combination Nano Cable Lock	63B28AA
	HP Essential Combination Nano Cable Lock	63B31AA
	8GB DDR5 (1x8GB) 5600 SODIMM Memory	83P90AA
	16GB DDR5 (1x16GB) 5600 SODIMM Memory	83P91AA
	32GB DDR5 (1x32GB) 5600 SODIMM Memory	83P92AA
	HP 512GB PCIe4x4 NVMe M.2 SSD	8C4X6AA
	HP 1TB PCIe4x4 NVMe M.2 SSD	8C4X7AA

Change Log

Date of change:	Version History:		Description of change:
March 30, 2023	V1 to V2	Added	Environmental Data and Battery life
April 6, 2023	V2 to V3	Updated	DisplayPort ™ in Display section
April 11, 2023	V3 to V4	Updated	Integrated Graphics
April 27, 2023	V4 to V5	Updated	Battery life
May 9, 2023	V5 to V6	Updated	Product weight in Weight and Dimensions section
May 18, 2023	V6 to V7	Updated	Storage and Drives section
June 5, 2023	V7 to V8	Updated	Storage and Drives section
June 30, 2023	V8 to V9	Updated	Environmental Data
August 1, 2023	V9 to V10	Updated	Environmental Data
August 14, 2023	V10 to V11	Updated	Processors section
August 18, 2023	V11 to V12	Updated	Memory section
September 5, 2023	V12 to V13	Added	Display in Display section
October 11, 2023	V13 to V14	Updated	Panel Color Depth in Displays section
November 2, 2023	V14 to V15	Updated	Storage and Drivez section
December 13, 2023	V15 to V16	Added	eSIM support for Intel XMM 7560 R+ LTE WWAN module
February 19, 2024	V16 to V17	Added	Power Section
February 27, 2024	V17 to V18	Updated	TPM Section
April 26, 2024	V18 to V19	Correction	MT/s units to memory speeds
May 15, 2024	V19 to V20	Added	Commodity Section
May 23, 2025	V20 to V21	Updated	Docking Section
November 13, 2026	V21 to V22	Updated	Software and Security Section

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