Overview

HP ProBook 440 14 inch G10 Notebook PC

Left

1. Internal Microphones (2)
2. Webcam LED (Optional)
3. HD or 5MP IR Camera
4. Camera Shutter (Only available with webcam)
5. Clickpad
6. SuperSpeed USB Type-A 5Gbps signaling rate port (USB 3.2 Gen 1)
7. Ethernet Port (RJ-45)
8. Nano Security Lock Slot (Lock sold separately)

Overview

Right

1. Speakers
2. Power Button Key
3. Power Connector
4. SuperSpeed USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)
5. SuperSpeed USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)
6. SuperSpeed USB Type-A 5Gbps signaling rate port (USB 3.2 Gen 1)
7. HDMI 2.1 Port (Cable not included)
8. Audio Combo Jack
9. Nano SIM Slot (Select models)
10. Touch Fingerprint Sensor (Select models)

Overview

At a Glance

- Preinstalled with Windows 11 versions or FreeDOS
- Choice of 13th generation Intel® Core™ i7, i5 and i3 and U300 processors
- NVIDIA® GeForce® RTX2050 discrete graphics with 4 GB GDDR6 video memory
- Dual USB Type-C® Connectors for your daily connectivity
- Optimize your video calls with an 5MP IR camera (selected model) and Temporal Noise Reduction that adjusts to the lighting in your environment.
- Choice of 39.62 cm (14") diagonal HD, Ultra Wide Viewing Angle FHD, Touch or Non-Touch screen
- Features redesigned quiet and responsive HP Keyboard with the HP Programmable key and backlit options
- Choice of solid state drives up to 1 TB, 2nd SSD 128GB/256GB (Optional)
- Multi-layered security with HP SureStart, HP Privacy Camera, HP Sure Run, HP Sure Click, and Touch Fingerprint reader, Tamper Lock, HP Wolf Security,
- Supports wireless options for connectivity on the go including gigabit-speed up to Wi-Fi® 6E and CAT16 4G/LTE WWAN/ LPWAN
- Supports fast charging (50% in 30 minutes) with no impact on battery recharge cycles.
- Designed to support HP docking options
- Battery life up to 14 hours
- Passed MIL-STD 810H tests[1]
- Synchronized hinge allows the EliteBook to ProBook to open to 177˚ +/- 3˚ without lifting the keyboard and offers visibility from multiple angles.

1. MIL-STD 810GH 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.

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

Technical Specifications

PRODUCT NAME

HP ProBook 440 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	
						P-cores	E-cores	P-cores	E-cores
Intel® Core™ i7-1360P	12	4	8	16	18 MB	5.2 GHz	3.9 GHz	1.9 GHz	1.4 GHz
Intel® Core™ i7-1355U	10	2	8	12	12 MB	5.0 GHz	3.7 GHz	1.7 GHz	1.2 GHz
Intel® Core™ i5-1345U [8]	10	2	8	12	12 MB	4.7GHz	3.5 GHz	1.6 GHz	1.2 GHz
Intel® Core™ i5-1340P	12	4	8	16	12 MB	4.6 GHz	3.4 GHz	1.9 GHz	1.4 GHz
Intel® Core™ i5-1335U	10	2	8	12	12 MB	4.6 GHz	3.4 GHz	1.3 GHz	0.9 GHz
Intel® Core™ i5-1334U	10	2	8	12	12 MB	4.6 GHz	3.4 GHz	1.3 GHz	0.9 GHz
Intel® Core™ i3-1315U	6	2	4	8	10 MB	4.5 GHz	3.3 GHz	1.2 GHz	0.9 GHz
Intel® Processor® U300	5	1	4	6	8MB	4.4 GHz	3.3 GHz	1.2 GHz	0.9 GHz

Technical Specifications

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
8. Intel® Core™ i5-1345U available only in India.

CHIPSET

Chipset is integrated with processor

GRAPHICS

Integrated
Intel® Iris® Xᵉ Graphics (Core i5 and Core i7) [9,10]
Intel® UHD Graphics (Core i3) [10]

Discrete
NVIDIA® GeForce® RTX 2050 (4 GB GDDR6 dedicated) [11]

Supports
Support HD decode, DX12, HDMI 2.1, CUDA, Optimus/MS-Hybrid, PhysX, Dynamic Boost [9]

9. 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.
10. HD content required to view HD images.
11. Integrated graphics depends on processor. NVIDIA® Optimus™ technology requires an Intel processor, plus an NVIDIA® GeForce® discrete graphics configuration and is available on Windows 10 Pro OS. With NVIDIA® Optimus™ technology, full enablement of all discrete graphics video and display features may not be supported on all systems (e.g. OpenGL applications will run on the integrated GPU or the APU as the case may be).

Technical Specifications

DISPLAY

Non-Touch

35.6 cm (14") diagonal, FHD UWVA eDP Low Blue Lightanti-glare narrow bezel bent, 400 nits, 100% for 5MP IR + Webcam (1920 x 1080) with HP Eye Ease [10,12,13]

35.6 cm (14") diagonal, FHD UWVA eDP Low Blue Light, IPS anti-glare, narrow bezel bent, 400 nits, 100% for HD Webcam (1920 x 1080) with HP Eye Ease [10,12,13]

35.6 cm (14") diagonal, FHD UWVA eDP anti-glare, narrow bezel bent, 250 nits, 45% NTSC for 5MP IR + Webcam (1920 x 1080) [10,12,13]

35.6 cm (14") diagonal, FHD UWVA eDP, IPS anti-glare, narrow bezel bent, 250 nits, 45% NTSC for HD Webcam and WWAN (1920 x 1080) [10,12,13]

35.6 cm (14") diagonal, FHD UWVA eDP, IPS anti-glare, narrow bezel bent, 250 nits, 45% NTSC for HD Webcam (1920 x 1080) [10,12,13]

35.6 cm (14") diagonal, FHD UWVA eDP + PSR anti-glare, narrow bezel bent, 250 nits, 45% NTSC (1920 x 1080) [10,12,13]

35.56 cm (14") diagonal, HD UWVA eDP + PSR anti-glare, narrow bezel bent, 250 nits, 45% NTSC for HD Webcam (1366 x 768) [10,12,13]

35.6 cm (14") diagonal, HD UWVA eDP + PSR anti-glare, narrow bezel bent, 250 nits, 45% NTSC (1366 x 768) [10,12,13]

Touch

35.6 cm (14") diagonal FHD UWVA eDP, anti-glare, narrow bezel, touch-on-panel screen, 250 nits, 45% NTSC for HD camera (1920 x 1080) [10,12,13,14]

35.6 cm (14") diagonal FHD UWVA eDP, anti-glare, narrow bezel, touch-on-panel screen, 250 nits, 45% NTSC for HD Webcam and WWAN (1920x1080) [10,12,13, 14]

HDMI

Support resolutions up to 4K 60Hz

Display Size (Diagonal)

14"

35.6 cm (14")

10. HD content required to view HD images.
12. HDMI cable sold separately
13. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
14. Actual brightness will be lower with touchscreen or HP Sure View.

DOCKING (Sold Separately)

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

For additional aftermarket options and docking specs please see page 41.

Technical Specifications

STORAGE AND DRIVES

Primary Storage
1 TB PCIe® Gen4x4 NVMe™ M.2 SSD TLC [15,17]
512 GB PCIe® NVMe™ M.2 Value Solid State Drive [15]
256 GB PCIe® NVMe™ M.2 Value Solid State Drive [15]
128 GB PCIe® NVMe™ M.2 Value Solid State Drive [15]

Secondary M.2 Storage
256 GB PCIe® NVMe™ M.2 Value Solid State Drive [15,16]
128 GB PCIe® NVMe™ M.2 Value Solid State Drive [15,16]

15. For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software.
16. Second storage is only available with non-WWAN base unit and Primary M.2 storage.
17. Available only to HK (Hong Kong), TW(Taiwan) and CN (China).

MEMORY

Maximum Memory
32 GB DDR4-3200 MHz RAM (2 x 16 GB) [18]

Memory
32 GB DDR4-3200 MHz SDRAM (2 x 16 GB) [18]
16 GB DDR4-3200 MHz SDRAM (1 x 16 GB) [18]
16 GB DDR4-3200 MHz SDRAM (2 x 8 GB) [18]
8 GB DDR4-3200 MHz SDRAM (1 x 8 GB) [18]
8 GB DDR4-3200 MHz SDRAM (2 x 4 GB) [18]
4 GB DDR4-3200 MHz SDRAM (1 x 4 GB) [18]

Memory Slots
2 SODIMM
Both slots are accessible/upgradeable by IT or self-maintainers only.
DDR4 PC4 SODIMMS, system runs at 3200
Supports Dual Channel Memory

18. 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® Garfield Peak 2 AX211 Wi-Fi 6e + Bluetooth® 5.3 M.2 2230 160MHz CNVi WW WLAN Wireless Card[19]
Realtek 8852CE Wi-Fi 6E + BT 5.3 M.2 2230 PCI-e+ USB WW WLAN Wireless Card [19]

WWAN

Intel® XMM 7560 R+ LTE-Advanced Pro Cat 16 WWAN [20]

Miracast

Native Miracast Support [21]

Ethernet

Realtek RTL8111HSH 10/100/1000 Integrated NIC [22]
Support on S3 AC mode only

19. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 is backwards compatible with prior 802.11 specs. 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.
20. WWAN module is optional, must be configured at the factory 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.
21. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.
22. 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.

Technical Specifications

AUDIO/MULTIMEDIA

Audio
2 Integrated stereo speakers
Integrated microphone (Dual Array)

Speaker Power
2W/4ohm Per speaker

Camera
720p HD camera with Temporal Noise Reduction [10]
5MP IR Camera with Temporal Noise Reduction [10,23]
5 MP + IR camera for face authentication with Windows Hello

10. HD content required to view HD images.
23. Sold separately or as an optional feature.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
HP Premium Keyboard, full-size, spill resistant with numeric keypad and optional backlit [24]

Pointing Device
Clickpad with multi-touch gesture support

Function Keys
F1 - Display Switching
F2 - Blank or SureView On/Off
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 - Wireless
F12 - Programmable key

Hidden Function Keys
Fn+R - Break
Fn+S - Sys Rq
Fn+C - Scroll Lock

24. Backlit keyboard is an optional feature.

Technical Specifications

SOFTWARE AND SECURITY

Preinstalled Software

Software

HP Quick Drop [25]
HP PC Hardware Diagnostics Windows
myHP
HP Smart Support [26]
HP Services Scan[27]
HP Connection Optimizer
HP Hotkey Support
HP Support Assistant [28]
HP Notifications
HP Privacy Settings
HP Power Manager
Buy Microsoft Office (Sold separately and required 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 Cloud Recovery [32]
HP Client Catalog (download)

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
HP Sure Admin [39]

BIOS

HP BIOSphere Gen6 [40]
HP Secure Erase [41]
Absolute Persistence Module [42]
HP DriveLock & Automatic DriveLock
BIOS Update via Network
HP Wake on WLAN
HP Fingerprint Sensor [43]
Secured-Core PC Enable [44]
TPM 2.0 Embedded Security Chip (Common Criteria EAL4+ Certified) (FIPS 140-2 Level 2 Certified)

Technical Specifications

Security

TPM

Model: Nuvoton NPCT760HAAYX
Version: 7.2.3.0
Revision: TPM 2.0
FIPS 140-2 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: 2.7
Class: 3

25 HP Quick Drop requires Internet access and Windows 10 or higher PC preinstalled with HP QuickDrop app and either an Android device (phone or tablet) running Android 7 or higher with the Android HP QuickDrop app, and /or an iOS device (phone or tablet) running iOS 12 or higher with the iOS HP QuickDrop app.
26. 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.
27. 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.
28. HP Support Assistant requires Windows and Internet access.
29. HP Connect 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.
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.

Technical Specifications

39. 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.
40. HP BIOSphere Gen6 features may vary depending on the platform and configuration.
41. 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™.
42. 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/
43. HP Fingerprint sensor is an optional feature that must be configured at purchase.
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.

POWER

HP Smart 65 W USB Type-C® adapter [45]
HP Smart 65 W External AC power adapter [45]
HP Smart 65 W EM External AC power adapter [45]
HP Smart 45 W External AC power adapter [45]
HP Smart 45 W USB Type-C® adapter [45]

Battery
HP Long Life 3-cell, 42 Wh Polymer [46,47]
HP Long Life 3-cell, 51 Wh Polymer [46,47]

Power Cord
3-wire plug - 1
2-wire plug - 1

Battery Life
Up to 14 hours with 51whr battery (HP Long Life 3-Cell, 51 Whr Polymer, UMA graphic, Intel U15, Display set to 200 nits display, 2*4G memory, 256 GB SSD) [48]
Up to 13 hours with 51whr battery (HP Long Life 3-Cell, 51 Whr Polymer, UMA graphic, Intel P28, Display set to 200 nits display, 2*4G memory, 256 GB SSD) [48]
Up to 11 hours and 30 minutes with 42whr battery (HP Long Life 3-Cell, 42 Whr Polymer, UMA graphic, Intel U15, Display set to 200 nits display, 2*4G memory, 256 GB SSD) [48]

45. Availability may vary by country.
46. Battery is internal and not replaceable by customer. Serviceable by warranty.
47. 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.
48. 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

42.75Wh

Starting at 3.03 lb [49]

Starting at 1.38 kg [49]

51.3 Wh

Starting at 3.14 lb [49]

Starting at 1.42 kg [49]

Product Dimensions (W x D x H)

12.67 x 8.42 x 0.78 in

32.19 x 21.39 x 1.99 cm

Pallet Dimensions (W x D x H) [50]

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

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

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

PORTS/SLOTS

2 SuperSpeed USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)

2 SuperSpeed USB Type-A 5Gbps signaling rate (1 charging, 1 powered port)

1 HDMI 2.1 [51]

1 RJ-45

1 Headphone/microphone combo jack

1 AC power

1 External Nano SIM slot for WWAN (optional) [52]

51. HDMI cable sold separately.

52. SIM slot is not user accessible without WWAN configuration.

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 www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	
Nominal Operating Voltage	19V
Average Operating Power	3.81W
Integrated graphics	Yes
Discrete Graphics	Yes
Max Operating Power	Discrete < 65W UMA < 45W
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 temperature; 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-Q32C-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	Select Models
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
TCO	Yes
WW RoHS	Yes
Low Blue Light	Yes

Technical Specifications

54. Configurations of the HP ProBook 440 14 inch G10 Notebook PC that are ENERGY STAR® qualified are identified as HP ProBook 440 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.

Panel LCD 14 inch FHD (1920x1080) Anti-Glare WLED UWVA 45percent cg 250nits eDP 1.2 w/o PSR bent Touch on Panel NWBZ	**Outline Dimensions (W x H x D)**	316.170 x 186.400 (max)
	Active Area	309.370 x 174.020 mm (typ)
	Weight	305 g (max)
	Diagonal Size	14.0
	Surface Treatment	Anti-Glare On-cell
	Touch Enabled	Yes[1]
	Contrast Ratio	600:1 (typ)
	Refresh Rate	60 Hz
	Brightness	250 nits
	Pixel Resolution - Format	1920 x 1080 (FHD)
	Backlight	LED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%
	Color Depth	6 (Hi FRC w/ condition to enable)
	Viewing Angle	UWVA 85/85/85/85
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.30 (max)/ 2.80 (max)

14.0 in FHD (1920 x 1080) Anti-Glare UWVA Low Blue Light sRGB NB2X 400 eDP 1.4+PSR2 Low-Power 100 bent LCD Panel	**Outline Dimensions (W x H)**	315.100 x 184.900 (max)
	Active Area	309.370 x 174.020 mm (typ)
	Weight	230g (max)
	Diagonal Size	14.0
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	1200:1 (typ)
	Refresh Rate	60Hz
	Brightness	400 nits
	Pixel Resolution - Format	1920 x 1080 (FHD)
	Backlight	WLED
	Pixel Resolution	RGB

Technical Specifications

	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)	1.23 (max)/1.5 (max)
Panel LCD 14-in FHD (1920x1080) Anti-Glare WLED UWVA 45percent cg 250nits eDP 1.2 w/o PSR NWBZ bent	**Outline Dimensions (W x H)**	316.170 x 186.400 (max)
	Active Area	309.370 x 174.020 mm (typ)
	Weight	300 g (max)
	Diagonal Size	14.0
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	600:1 (typ)
	Refresh Rate	60Hz
	Brightness	250 nits
	Pixel Resolution - Format	1920 x 1080 (FHD)
	Backlight	LED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%
	Color Depth	6 (Hi FRC w/ condition to enable)
	Viewing Angle	UWVA 85/85/85/85
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.205 (max)/ 2.716 (max)
Panel LCD 14-in HD (1366x768) Anti-Glare WLED SVA 45percent cg 250nits eDP 1.2 w/o PSR NWBZ bent	**Outline Dimensions (W x H)**	316.110 x 186.370 (max)
	Active Area	309.400 x 173.950 mm (typ)
	Weight	300 g (max)
	Diagonal Size	14.0
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	300:1 (typ)
	Refresh Rate	60 Hz
	Brightness	250 nits
	Pixel Resolution - Format	1366 x 768 (HD)
	Backlight	LED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%

Technical Specifications

Color Depth	6
Viewing Angle	SVA 45/45/15/35
Low Blue Light	No
Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.52 (max) / 2.86 (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 128GB 2230 PCIe NVMe Value	**Form Factor**	M.2 2230
	Capacity	128GB
	NAND Type	Value
	Interface	PCIe NVMe
	Minimum Sequential Read	2000 MB/s ± 10%
	Minimum Sequential Write	600 MB/s ± 10%
	Logical Blocks	250069680
	Features	Pyrite; TRIM; L1.2
SSD 256GB 2230 PCIe NVMe Value	**Form Factor**	M.2 2230
	Capacity	256 GB
	NAND Type	Value
	Interface	PCIe NVMe
	Minimum Sequential Read	2000 MB/s ± 10%
	Minimum Sequential Write	900 MB/s ± 10%
	Logical Blocks	500118192
	Features	Pyrite; TRIM; L1.2
SSD 256GB 2280 PCIe NVMe Value	**Form Factor**	M.2 2280
	Capacity	256GB
	NAND Type	Value
	Interface	PCIe NVMe
	Minimum Sequential Read	2000 MB/s ± 10%
	Minimum Sequential Write	900 MB/s ± 10%
	Logical Blocks	500118192
	Features	ATA Security; TRIM; L1.2
SSD 512GB 2280 PCIe NVMe Value	**Form Factor**	M.2 2280
	Capacity	512GB
	NAND Type	Value
	Interface	PCIe NVMe
	Minimum Sequential Read	2200 MB/s ± 10%
	Minimum Sequential Write	1000 MB/s ± 10%
	Logical Blocks	1000215216
	Features	Pyrite 2.0, TRIM; L1.2

Technical Specifications

SSD 1 TB 2280 PCIe NVMe Value[1]	**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).

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 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	Ad-hoc (Peer to Peer)
	Models	Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[3]	• 802.11b : +17dBm minimum

Technical Specifications

	• 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 • 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 2. Type 1216: 1.67 x 12.0 x 16.0 mm
Weight	1. Type 2230 : 2.8g 2. Type 1216: 1.3g
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)

Technical Specifications

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 Technology 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)
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)
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.
Power Consumption	Peak (Tx): 330 mW Peak (Rx): 230 mW Selective Suspend: 17 mW
Bluetooth Software Supported	Microsoft Windows Bluetooth Software
Link Topology	
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management Certifications	ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP) BT5.2 ESR9/10 Compliance LE Advertisement Extensions Channel Selection Algo Limited High Duty Cycle Non-Connectable Advertising

Technical Specifications

2Mbps LE
LE Long Range
BT5.3
Host to Controller Encryption Key Control Enahancements
Compliance to the latest Errata Sectipn 12.3 of BT 5.3 specification

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

Realtek RTL8852CE 802.11ax 2x2 Wi-Fi 6E + Buetooth® 5.3 Wireless Card (802.11ax 2x2, supporting gigabit data rate)[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
	Interoperability	Wi-Fi certified
	Frequency Band	•802.11b/g/n/ax 2.402 – 2.482 GHz •802.11a/n/ac/ax 5.15 – 5.25 GHz 5.25 – 5.35 GHz 5.47 – 5.725 GHz 5.825 – 5.850 GHz 5.955 – 6.415 GHz 6.435 – 6.515 GHz 6.535 – 6.875 GHz 6.895 – 7.115 GHz
	Data Rates	• 802.11b: 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: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS9, (20MHz, 40MHz, ,80MHz & 160MHz) • 802.11ax : MCS0 ~ MCS11, (20MHz, 40MHz, ,80MHz & 160MHz)
	Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
	Security[2]	• IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • WPA3 (personal) certification • IEEE 802.11i • WAPI • EAP
	Network Architecture	Ad-hoc (Peer to Peer)
	Models	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

Technical Specifications

	• 802.11n HT20(5GHz) : +14dBm minimum • 802.11n HT40(5GHz) : +13dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum • 802.11ac VHT160(5GHz) : +10dBm minimum • 802.11ax HE40(2.4GHz) : +12dBm minimum • 802.11ax HE80(5GHz) : +10dBm minimum • 802.11ax HE160(5GHz) : +10dBm minimum • 802.11ax HE80(6GHz) : +10dBm minimum • 802.11ax HE160(6GHz) : +10dBm minimum
Power Consumption	• Transmit mode :2.5 W • Receive mode :2 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode :50 mW (WLAN unassociated) • Connected Standby/Modern 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 •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 2.4/5/6 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 2. Type 1216: 1.67 x 12.0 x 16.0 mm
Weight	1. Type 2230 : 2.8g 2. Type 126: 1.3g
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 60% (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	N/A

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

Technical Specifications

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)
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)
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, Section 15.247 & 15.407
Power Management Certifications	ETS 300 328 Low Voltage Directive CE Mark
Bluetooth Software Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 –Link Layer Privacy LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP) BT5.2 ESR9/10 Compliance LE Advertisement Extensions Channel Selection Algo Limited High Duty Cycle Non-Connectable Advertising 2Mbps LE LE Long Range Windows BT profiles support

Technical Specifications

BT5.3
Periodic Advertisement interval
Encryption key size control enhancements

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® 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

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

Technical Specifications

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 Management	ACPI compliant – multiple power modes 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

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 (9.4x4.3x2.72cm)	
	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 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 45 Watt Smart nPFC Standard Barrel 4.5mm Right Angle 1.8m	**Dimensions (H x W x D)**	3.74 x 1.772 x 1.043 in (9.5x4.5x2.65cm)	
	Weight	0.44 lb (200 g) max (Not including power cord. Power cord varies by country.)	
	Input	100~240VAC	
		Input Efficiency	87.74 % at 115 Vac and 88.4 % at 230Vac
		Input frequency range	47 ~ 63 Hz
		Input AC current	Max. 1.4 A at 90 Vac
	Output		
		Output power	45W
		DC output	19.5V
		Hold-up time	100% load 5ms at 115 Vac input/80% load 10ms at 115 Vac input
		Output current limit	<8.0A
	Connector	4.5mm Barrel Type	
	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, 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 GEMS and RCM, BIS, BSMI, UAE, UKCA DoC	

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 (9.0x5.1x2.85cm	
	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 ~ 63 Hz
		Input AC current	1.6 A at 90 VAC

Technical Specifications

	Output		
		Output power	5V/15W 9V/27W 12V/60W 15V/60W 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	

AC Adapter 65 Watt Smart nPFC EM Barrel 4.5mm	**Dimensions (H x W x D)**	4.016 x 2.165 x 1.181 in (10.2x5.5x3cm)	
	Weight	0.58 lb (265 g) max (Not including power cord. Power cord varies by country.)	
	Input	100~240VAC	
		Input Efficiency	88.0 % at 115 Vac and 89.0 % at 230Vac
		Input frequency range	47 ~ 63 Hz
		Input AC current	Max. 1.7 A at 90 Vac
	Output		
		Output power	65W
		DC output	19.5V
		Hold-up time	100% load 5ms at 115 Vac input/80% load 10ms at 115 Vac input
		Output current limit	<11.0A
	Connector	4.5mm Barrel Type	
	Environmental Design	**Operating temperature**	32°F to 95°F (0°to 35°C)

Technical Specifications

		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, UL62368-1 Agency approvals - C-UL-US, TUV/GS, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, BIS, UKCA DoC

AC Adapter 65 Watt Smart nPFC Standard Barrel 4.5mm Right Angle 1.8m	**Dimensions (H x W x D)**		3.543 x 2.008 x 1.122 in (9.0x5.1x2.85cm)
	Weight		0.55 lb (250 g) max (Not including power cord. Power cord varies by country)
	Input		100~240VAC
		Input Efficiency	88.0 % at 115 Vac and 89.0 % at 230 Vac
		Input frequency range	47 ~ 63 Hz
		Input AC current	Max. 1.7 A at 90 Vac
	Output		
		Output power	65W
		DC output	19.5V
		Hold-up time	100% load 5ms at 115 Vac input/80% load 10ms at 115 Vac input
		Output current limit	<11.0A
	Connector		4.5mm Barrel Type
	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, 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 GEMS and RCM, BIS, BSMI, UAE, UKCA DoC

Technical Specifications

RH 42Whr Long Life Polymer Fast Charge 3 cell Battery[1]	**Weight**	0.18 kg (0.397 lb)	
	Cells/Type	3cell Lithium-Ion Polymer cell / 545974	
	Energy	**Voltage**	11.4V
		Amp-hour capacity	3.752Ah
		Watt-hour capacity[1]	42.75Wh
	Temperature	**Operating (Charging)**	32˚ to 113˚ F (0˚ to 45˚ C)
		Operating (Discharging)	14˚ to 122˚ 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.

RH 51Whr Long Life Polymer Fast Charge 3 cell Battery[1]	**Weight**	0.2025 kg (0.446 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 122˚ 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.

Technical Specifications

AUDIO

HD Stereo Codec	Realtek ALC3247
Audio I/O Ports	Headset connector supports a CTIA style headset and is re-taskable as a Microphone-in or Headphone-out port
Internal Speaker Amplifier	ALC 3247 has Embedded Class-D 2W Stereo Amplifier
Multi-streaming Capable Sampling	Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the front and rear jacks or integrated speaker..
Wavetable Syntheses	Independent sampling rates for DAC's and ADC's; supports resolutions from 16 to 24-bit; 44.1 kHz: Internal SPK/Headphone/External MIC 24bit,48000Hz: Digital MIC
Analog Audio	Support 3.5mm Headset: CTIA only and Headphone-out
# of Channels on Line-Out	We do not support Line-Out
Internal Speaker	Yes

FINGERPRINT READER

Sensor vendor	ELAN 80ST
Sensor type	Capacitive
DPI resolution	508 DPI
Scan area	80x80 pixels
False Rejection Rate	<3%
False Acceptance Rate	< 0.001%
Mobile Voltage Operation	2.7~3.6V
Operating Temperature	-20°C - +80°C
Current Consumption Image	35mA peak
Low Latency Wait For Finger	900uA
Capture Rate	Capture Rate: 50 frame/sec
ESD Resistance	IEC 61000-4-2 4B (+15KV)
Detection Matrix	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[â] 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 • 10% post-consumer recycled plastic • 50% 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)	4.18 W	4.16 W	4.1 W
Normal Operation (Long idle)	0.93 W	0.96 W	0.92 W
Sleep	0.93 W	0.96 W	0.92 W
Off	0.25 W	0.29 W	0.25 W
	NOTE: Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.		
Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 50Hz**
Normal Operation (Short idle)	14.3 BTU/hr	14.2 BTU/hr	14.0 BTU/hr

Technical Specifications

Normal Operation (Long idle)	3.2 BTU/hr	3.3 BTU/hr	3.1 BTU/hr
Sleep	3.2 BTU/hr	3.3 BTU/hr	3.1 BTU/hr
Off	0.9 BTU/hr	1.0 BTU/hr	0.9 BTU/hr
	*__NOTE:__ Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.		

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power (L_{WAd}, bels)	Sound Pressure (L_{pAm}, decibels)
Typically Configured – Idle	2.6	13.7
Fixed Disk – Random writes	2.6	13.6
Optical Drive – Sequential reads	2.9	20.2

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.
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 93.0% recycle-able when properly disposed of at end of life.

Packaging Materials	**External:**	PAPER/Corrugated	230 g
		PAPER/Corrugated	51 g
		PAPER/Molded Pulp	61 g
	Internal:	PLASTIC/Polyethylene low density - LDPE	9 g
	The plastic packaging material contains at least 0.0% recycled content.		
	The corrugated paper packaging materials contains at least 57.0% 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.

Technical Specifications

	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 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)
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.

Technical Specifications

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. • 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. • Recycled metal is expressed as a percentage of the total weight of the metal according to ISO 14021 definitions for metal parts over 25 grams.

COUNTRY OF ORIGIN

China

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

DOCKING (Sold Separately)

Docking station model #1	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
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 #2	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) 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 USB-C G5 Dock

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

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 #4	HP USB-C/A Universal G2 Dock
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 #5	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 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
Docking	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
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

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

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 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
	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 AC Power Adapter	1MZ01AA
	HP 65W 4.5 mm Smart AC Power Adapter	H6Y89AA
	HP 65W GaN USB-C Laptop Charger	600Q7AA
	HP 65W USB-C Laptop Charger	671R3AA
	HP 65W USB-C LC AC Power Adapter	1P3K6AA
	HP 90W 4.5 mm Smart AC Power Adapter	H6Y90AA
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

Change Log

Date of change:	Version History:		Description of change:
March 30, 2023	V1 to V2	Updated	At a Glance section
April 27, 2023	V2 to V3	Updated	At a Glance section
May 18, 2023	V3 to V4	Updated	Storage and Drives section
June 5, 2023	V4 to V5	Updated	Storage and Drives section
August 1, 2023	V5 to V6	Updated	Environmental Data
October 3, 2023	V6 to V7	Updated	Frequency bands for Realtek 8852CE in Networking section
October 30, 2023	V7 to V8	Added	Processors
December 20, 2023	V8 to V9	Added	Footnote for Processors