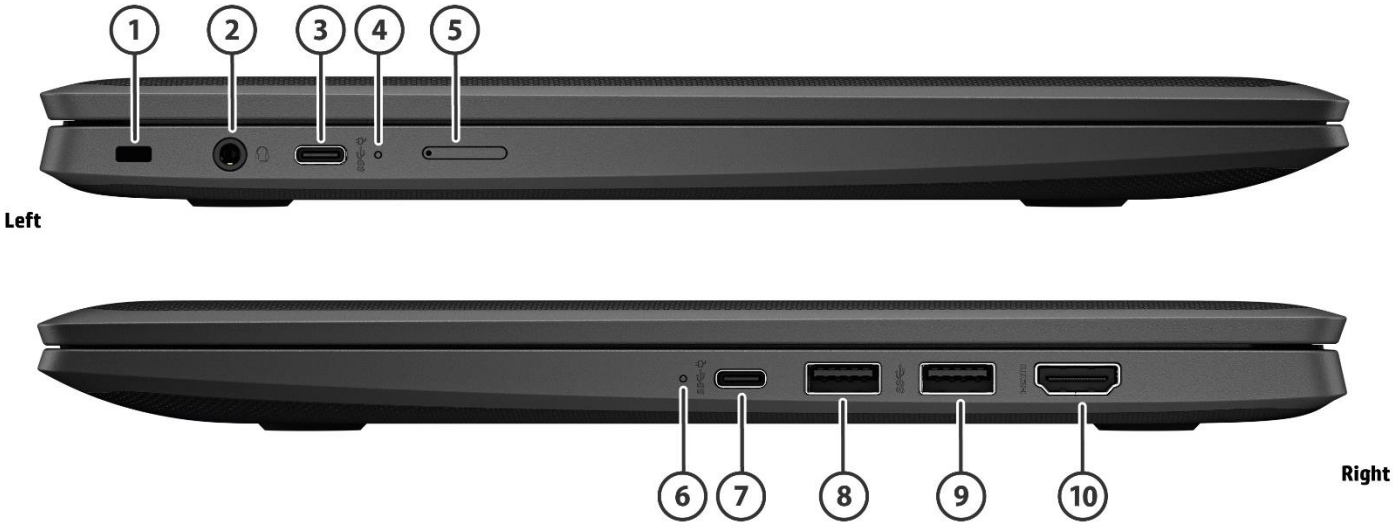
Overview

HP Fortis 14 inch G11 Chromebook

Front

1. Internal Microphone (2)
2. Webcam
3. Camera Shutter
4. Webcam LED
5. Power Button
6. Touchpad

Overview



Sides

1. Nano Lock slot (Lock sold separately)
2. Stereo Headphone/Microphone Combo Jack
3. SuperSpeed USB Type-C® 5Gbps signaling rate (Power Delivery, video, data)
4. Power Light
5. SIM Card Tray
6. Power Light
7. SuperSpeed USB Type-C® 5Gbps signaling rate (Power Delivery, video, data)
8. SuperSpeed USB Type-A 5Gbps signaling rate (USB 3.2 Gen 1)
9. SuperSpeed USB Type-A 5Gbps signaling rate (USB 3.2 Gen 1)
10. HDMI v1.4

Overview

At a Glance

- Enjoy affordable, convenient mobile productivity with Intel® N100 and N200 processors
- Optional WWAN 4G LTE (Cat 6) with embedded eSIM
- Undergoes MIL-STD 810H tests[1]
- 2 SuperSpeed USB Type-C® 5Gbps signaling rate (Power Delivery, video, data)
- 1 HDMI port to connect to displays and projectors without dongle
- Choice of up to 16GB LPDDR5 memory and 128GB UFS storage
- Spill and pick resistant keyboard with Full Skirted anchored key
- 180-degree hinge and optional IPS anti-glare touchscreen for collaboration
- Your Chromebook boots up within 10 seconds and you can be browsing online and working in Google Apps just moments later
- Intel® Wi-Fi 6E AX 2x2 WLAN with MU-MIMO and HP Extended Range Wireless LAN for stable connection in dense environment
- Keyboard that can be repeatedly wiped down with common household cleaning wipes[2]
- Spend less time charging with HP Fast Charge technology
- HP Privacy Camera

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. The chassis, ports, keyboards and displays the HP Chromebook x360 11 G4 EE, HP Chromebook x360 11MK G3 EE, HP Chromebook 11 G9 EE, HP Chromebook 11MK G9 EE, HP Chromebook 14 G7, HP ProBook x360 11 G7 EE, HP Fortis 11” G9 Chromebook and HP x360 Fortis 11” G4 Chromebook have been tested to 1,000 wipes with Windex® Original Glass & Surface Wipes and Clorox® Disinfecting Wipes with EPA Registration Number 5813-79. See user guide for cleaning instructions.

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

Technical Specifications

PRODUCT NAME

HP Fortis 14 inch G11 Chromebook

OPERATING SYSTEMS

Preinstalled Chrome OS

PROCESSORS

Processor [1,2]	Cores	Number of E-cores	Threads	L3 Cache	Max Turbo Frequency	Base Frequency
					E-cores	E-cores
Intel® N200	4	4	4	6 MB	3.7 GHz	1.0 GHz
Intel® N100	4	4	4	6 MB	3.4 GHz	0.8 GHz

Processor Family
Intel® Processor N-series

1. 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.
2. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.

CHIPSET

Chipset is integrated with processor

GRAPHICS

Integrated
Intel® UHD Graphics[3]

Supports
Support HD decode, DX12, HDMI

3. HD content required to view HD images.

Technical Specifications

DISPLAY

Non-Touch

35.6 cm (14") diagonal, FHD (1920 x 1080), anti-glare, LED UWVA, 300 nits, 45% NTSC, eDP 1.2 Low-Power, Bent type panel [3,4,5]

35.6 cm (14") diagonal, HD (1366x768), anti-glare, LED SVA, 250 nits, 45% NTSC, eDP, Bent type panel [3,4,5]

Touch

35.6 cm (14") diagonal, FHD (1920 x 1080), anti-glare, WLED UWVA, 250 nits, 45% NTSC, eDP 1.2, Bent type panel, Touchscreen [3,4,5,6]

35.6 cm (14") diagonal, HD (1366x768), anti-glare, LED SVA, 250 nits, 45% NTSC, eDP, Bent type panel, Touchscreen [3,4,5,6]

Displays support

Support extended displays through HP docks

Display Size (Diagonal)

14"

35.56 cm

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

DOCKING (Sold Separately)

Docking station model #1 HP USB-C G5 Dock

For additional aftermarket options and docking specs please see page 25.

STORAGE AND DRIVES

Primary Storage

64GB eMMC 5.0 [7]

32GB eMMC 5.0 [7]

128GB UFS [7]

7. For storage drives, GB = 1 billion bytes. Actual formatted capacity is less. Up to 18.0GB is not user accessible

Technical Specifications

MEMORY

Maximum Memory
16 GB LPDDR5X -7500 SDRAM

Memory
16 GB LPDDR5X -7500 SDRAM
8 GB LPDDR5X -7500 SDRAM
4 GB LPDDR5 -6400 SDRAM

Memory Slots
Memory soldered on board

NETWORKING/COMMUNICATIONS

WLAN
Intel® Wi-Fi 6E AX211 (2x2) and Bluetooth® 5.3 wireless card, non-Vpro® [8]
MediaTek Wi-Fi 6 MT7921 (2x2) and Bluetooth® 5.3 wireless card, non-vPro® [9]
MU-MIMO supported
HP Extended Range WLAN supported

WWAN
Qualcomm® Snapdragon™ X12 LTE-Advanced CAT 6[10]

Chromecast
Chromecast Support [11]

8. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.
9. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs.
10. 4G LTE module is optional, must be configured at the factory, requires activation and separately purchased service contract. Check with service provider for coverage and availability in your area. Connection, upload and download speeds will vary due to network, location, environment, network conditions, and other factors. 4G LTE not available on all products, in all regions.
11. Chromecast must be purchased separately.

Technical Specifications

AUDIO/MULTIMEDIA

Audio
Waves MaxxAudio®
Dual speakers
Dual array microphones

Speaker Power
2W/4ohm Per speaker

Camera
720p HD camera [3]
HP Privacy Camera

3. HD content required to view HD images.

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
Full-size island-style Chrome keyboard, spill resistant with HP Full-Skirted Anchored Key

Pointing Device
Clickpad with multi-touch gesture support
Taps enabled as default

Function Keys

- Back
- Forward
- Reload
- Full Screen
- Display Apps
- Brightness Down
- Brightness Up
- Mute
- Volume Down
- Volume Up

Technical Specifications

SOFTWARE AND SECURITY

Software
HP Classroom Manager (Sold Separately) [12]
HP Support Assistant

Manageability Features
Chrome Education Upgrade [13,14]

Security Management
Titan C security chip
Nano lock slot (Lock sold separately) [13]
Zero-touch enrollment [15]

IPv6 Support
Yes

Does the BIOS on this Chromebook follow ISO/IEC 19678:2015 guidelines (formerly NIST 800-147)?: Yes

12. HP Classroom Manager is sold separately. Control and device locking from the teacher's desktop requires purchase of HP Classroom Manager for Teachers.
13. Sold separately
14. Chrome Education Upgrade requires one-time setup, subscription, Google Admin Console, and your organization's domain. Please see https://support.google.com/a/answer/60216.
15. Zero-touch enrollment is sold separately and requires separately purchased HP Get More Service. 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

POWER

Power Supply
HP Smart 45 W USB Type-C® adapter [16]

Battery
HP Long Life 2-cell, 47 Wh Li-ion polymer [17,18]
HP Fast Charge Technology (90% in 90 minutes) [19]

Power Cord
3-wire plug - 1m [16]

Battery Life
Up to 10 hours 7 minutes with 47 Wh battery (HP Long Life 2-Cell, 47 Whr Polymer, UMA graphic, Intel N100, display set to 80 nits, 16G memory, 128 GB UFS)[20]

Battery Weight
0.48 lb
220 g

16. Availability may vary by country.
17. Battery is internal and not replaceable by customer. Serviceable by warranty.
18. 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.
19. Recharges up to 90% within 90 minutes when the system is off or in standby mode when used with the power adapter provided with the notebook. After charging has reached 90% capacity, charging speed will return to normal. Charging time may vary +/-10% due to System tolerance.
20. Testing conducted by HP using Google Chrome OS power_LoadTest. Battery life will vary and the maximum capacity of the battery will naturally decrease with time and usage and battery optimization activation. See http://www.chromium.org/chromium-os/testing/power-testing for test details. Battery configuration and charge capacity is optimized to improve battery health over time based upon charging patterns and temperature.

Technical Specifications

WEIGHTS & DIMENSIONS

Product Weight
Starting at 3.63 lb [21]
Starting at 1.63 kg [21]

Product Dimensions (W x D x H)
12.9 x 9.0 x 0.86 in
33.0 x 23.0 x 2.2 cm

Packaging Dimensions (W x D x H) [22]
12”-15” boxes (305 mm height): 1200 mm x 1000 mm x 1080 mm

21. Weight will vary by configuration. Does not include power adapter.
22. 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® 5Gbps signaling rate (Power Delivery, video, data)
2 SuperSpeed USB Type-A 5Gbps signaling rate (USB 3.2 Gen 1)
1 Headphone/microphone combo jack
1 HDMI v1.4 [23]

23. HDMI cable sold separately.

SERVICE AND SUPPORT

HP Services offers 1-year limited warranties and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty except for Long Life batteries which will have same 1-year or 3-year limited warranty as 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. [24]

24. 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)	USB-C 45W adapter
Nominal Operating Voltage	15V
Average Operating Power	<4.3w with PLT test
Integrated graphics	Intel® UHD Graphics
Discrete Graphics	N/A
Max Operating Power	< 45W
Temperature	
Operating	41° to 95° F (5° to 35° C)
Non-operating	-4° to 140° F (-20° to 60° C)
Relative Humidity	
Operating	10% to 90%
Non-operating	5% to 95%
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	-50 to 10,000 ft (-15.24 to 3,048 m)
Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)
Planned Industry Standard Certifications	
Regulatory Model Number	TPN-Q294
CSA/UL 62368-1	Yes
ENERGY STAR®	Yes [25]
EPEAT®	EPEAT® Gold in the United States [26]
FCC/ICES/CISPR/VCCI	Yes
CE MARKING	Yes
GS Mark	No
	Related commodity should comply with ISO 9241 Standards.
China CCC/SRRC	No
Taiwan BSMI/NCC	Yes
Korea KCC/KC/KES	Yes
Ukraine NSoC/TEC	No
EAEU Compliance	Yes
Saudi Arabian Compliance	No
TCO	Yes
WW RoHS	Yes
Low Blue Light	No

Technical Specifications

25. Configurations of the HP Fortis 14 G11 Chromebook that are ENERGY STAR® qualified are identified as HP Fortis 14 G11 Chromebook ENERGY STAR on HP websites and on http://www.energystar.gov.
26. 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 FHD (1920 x 1080) Anti-Glare UWVA LED NTSC 45 NB2X 300 eDP 1.2 w/o PSR Low-Power bent LCD Panel	**Outline Dimensions (W x H)**	315.370 x 185.170 (max)
	Active Area	309.37 x 174.02 (typ.)
	Weight	290 g (max)
	Diagonal Size	14.0 (inch)
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	1000:1 (typical)
	Refresh Rate	60Hz
	Brightness	300 nits (typ.)
	Pixel Resolution - Format	1920 x 1080 (FHD)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%
	Color Depth	8
	Viewing Angle	UWVA 89/89/89/89
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	1.5 (max)/ 1.87 (max)

14.0 in HD (1366x768) Anti-Glare SVA LED NTSC 45 NWBZ 250 TOP eDP 1.2 w/o PSR bent LCD Panel	**Outline Dimensions (W x H)**	316.200x186.330(max)
	Active Area	309.400 x 173.950 mm typ.
	Weight	300g (max)
	Diagonal Size	14.0 (inch)
	Surface Treatment	Anti-Glare
	Touch Enabled	Yes[1]
	Contrast Ratio	400:1 (Typ)
	Refresh Rate	60Hz
	Brightness	250 nits[1]
	Pixel Resolution - Format	1366 x 768 (HD)
	Backlight	WLED
	Pixel Resolution	RGB

Technical Specifications

	Color Gamut Coverage	NTSC 45%
	Color Depth	6
	Viewing Angle	SVA 45/45/15/30
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.44(max)/3.02(max)

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)**	316.110 x 186.370 max.
	Active Area	309.310 x 173.990 mm (typ.)
	Weight	305 g (max)
	Diagonal Size	14.0 (inch)
	Surface Treatment	Anti-Glare
	Touch Enabled	Yes[1]
	Contrast Ratio	600:1 (typ)
	Refresh Rate	60Hz
	Brightness	250 nits[1]
	Pixel Resolution - Format	1920 x 1080 (FHD)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%
	Color Depth	6
	Viewing Angle	UWVA 85/85/85/85
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.7 (max)/3.1(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	309.399 x 173.952 mm (typ.)
	Weight	300 g (max)
	Diagonal Size	14.0 (inch)
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	300:1 (typical)
	Refresh Rate	60Hz
	Brightness	250 nits (typ.)
	Pixel Resolution - Format	1366 x 768 (HD)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%

Technical Specifications

Color Depth	6
Viewing Angle	SVA 45/45/15/30
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. Actual formatted capacity is less. Up to 18.0GB is not user accessible.

eMMC 5.0	**Form Factor**	eMMC 5.0
	Capacity	32GB/64GB
	NAND Type	MLC/TLC
	Interface	MMC
	Maximum Sequential Read	up to 250MB/s
	Maximum Sequential Write	up to 70 MB/s
	Logical Blocks	32GB (31,268,536,320 Bytes)/64GB (62,537,072,640 Bytes)
	Features	HS400

128GB UFS	**Form Factor**	UFS 3.1
	Capacity	128GB
	NAND Type	TLC
	Interface	SCSI
	Maximum Sequential Read	1000MB/s (ADL-N support UFS 2.1 only)
	Maximum Sequential Write	200MB/s
	Logical Blocks	128GB (127,984,992,256 Bytes)
	Features	HS400

Technical Specifications

NETWORKING/COMMUNICATIONS

Intel® AX211 Wi-Fi 6E and Bluetooth® 5.3 wireless card M.2 160MHz CNVi World-wide WLAN non-vPro® [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 Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)

Technical Specifications

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 • 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)

Technical Specifications

	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 Technology		
	Bluetooth Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant
	Frequency Band	2402 to 2480 MHz
	Number of Available 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)
	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

Mediatek MT7921 Wi-Fi 6 + Bluetooth® 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 IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi certified modules
	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
	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 : max 866.7Mbps • 802.11ax : max 1201Mbps
	Modulation	DSSS, OFDM, DBPSK, DQPSK, CCK, 16 QAM, 64 QAM, 256 QAM , 1024 QAM
	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 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 : +18.5dBm minimum • 802.11g : +17.5dBm minimum • 802.11a : +18.5dBm minimum • 802.11n HT20(2.4GHz) : +15.5dBm minimum • 802.11n HT40(2.4GHz) : +14.5dBm minimum • 802.11n HT20(5GHz) : +15.5dBm minimum • 802.11n HT40(5GHz) : +14.5dBm minimum

Technical Specifications

	• 802.11ac VHT80(5GHz) : +11.5dBm minimum • 802.11ax HE40(2.4GHz) : +10dBm minimum • 802.11ax HE80(5GHz) : +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 : -84dBm maximum • 802.11ac, MCS9 : -59dBm maximum • 802.11ax, MCS11(HE40): -57dBm maximum • 802.11ax, MCS11(HE80): -54dBm 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 Technology

Bluetooth Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available 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 + 4 dBm for BR and EDR.

1. Wi-Fi 6 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. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs.
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

Qualcomm® Snapdragon™ X12 LTE-Advanced (CAT 6) Chrome[1]	**Technology/Operating bands**	FDD-LTE: 1,2,3,4,5,7,8,12,13,14,17,18,19,20,25,26,28,29,30,66 TDD-LTE: 38,39,40(1),41,42(1),43(1),48(2)UMTS/HSPA+: 1,2,4,5,6,8,19 (1)Not support B40/42/43 in FCC/IC (2)Not support B48 in IC (3)Not support HPUE in Japan
	Wireless protocol standards	LTE Modulation 3GPP Release 12 LTE Specification DL-CAT.6, DL 64QAM BW throughput up to 300Mbps; UL-CAT.4 16QAM throughput up to 50Mbps UMTS Modulation 3GPP Release 9
	GPS	Not support
	Maximum data rates	LTE: 300 Mbps (Download), 50 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) UMTS: 384Kbps (Download), 384Kbps (Upload)
	Maximum output power	LTE: 23/24dBm WCDMA: 23.5dBm
	Maximum power consumption	2.5A maximum
	Form Factor	M.2, 3042-S3 Key B
	Weight	5.8 g
	Dimensions (Length x Width x Thickness)	42 x 30 x 2.3 mm
	embedded eSIM	Support

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

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.

45W USB Type C® Adapter	**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

HP 2-cell Long Life Li-Ion (47 Wh)[1]	**Weight**	0.22 kg (0.48 lb)	
	Cells/Type	2cell Lithium-Ion Polymer cell / 4473A9	
	Energy	**Voltage**	8.8V
		Amp-hour capacity	6.15Ah
		Watt-hour capacity[1]	47.3 Wh
	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

AUDIO

HD Stereo Codec	Realtek ALC5682I-VS
Audio I/O Ports	Headset connector supports both CTIA and OMTP style headset
Internal Speaker Amplifier	Maxim MAX98360A x 2, up to 3W class-D mono amplifier
Multi-streaming Capable	Follow ChromeOS behavior and definition
Sampling	Follow ChromeOS behavior and definition
Wavetable Syntheses	N/A
Analog Audio	Stereo headphone out by 3.5mm audio jack only.
# of Channels on Line-Out	Line-out is not supported.
Internal Speaker	Yes

COUNTRY OF ORIGIN

China

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 • 2% post-consumer recycled plastic • 1% 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)	3.816 W	4.08 W	3.732 W
Normal Operation (Long idle)	1.428 W	1.596 W	1.452 W
Sleep	0.372 W	0.408 W	0.384 W
Off	0.24 W	0.264 W	0.24 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)	13.1 BTU/hr	14.0 BTU/hr	12.8 BTU/hr
Normal Operation (Long idle)	4.9 BTU/hr	5.5 BTU/hr	5.0 BTU/hr
Sleep	1.3 BTU/hr	1.4 BTU/hr	1.3 BTU/hr
Off	0.8 BTU/hr	0.9 BTU/hr	0.8 BTU/hr

Technical Specifications

	*__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	2.4	24.1	
Operation	2.4	24.1	
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 96.4% recycle-able when properly disposed of at end of life.		
Packaging Materials	**External:**	PAPER/Corrugated	230 g
		PAPER/Paperboard	51 g
		PAPER/Molded Pulp	100 g
		Other/Other	16 g
	The plastic packaging material contains at least 100% recycled content.		
	The corrugated paper packaging materials contains at least 35.6% 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.		

Technical Specifications

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.
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.

Technical Specifications

	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.

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

DOCKING (Sold Separately)

Docking station model #1	HP USB-C G5 Dock
Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	Multi-Function Mode: (2) 5k @ 30Hz and (1) 4k UHD @ 30Hz on any port High-Resolution Mode: (2) 5k @ 60Hz on DisplayPort ports and (1) 4k UHD @ 60Hz on HDMI port
Dock Connectors	1x HDMI 2.0, 2x DisplayPort 1.4
Technical limitations	Maximum resolution and display support is dependent on the maximum capability of the notebook. 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.

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

Type	Description	Part Number
Cases	HP 115 15.6 Laptop Backpack	8DV45AA#ACJ
	HP 215 15.6 Laptop Backpack	35L98AA#ACJ
	HP 225 15.6 Laptop Backpack	2P7U6AA#ACJ
	HP 235 15.6 Laptop Backpack	35M00AA#ACJ
	HP 315 15.6 Laptop Backpack	35L97AA#ACJ
	HP Campus Blue Backpack	7J596AA
	HP Campus Green Backpack	7J595AA
	HP Campus XL Marble Stone Backpack	7J592AA
	HP Campus XL Tie Dye Backpack	7J593AA
	HP Mobility 14 Laptop Case	4U9G9A6
	HP Mobility 14 Laptop Case	4U9G9AA
	HP Prelude 15.6 Backpack	1E7D6A6
	HP Prelude G2 15.6 Backpack	2Z8P3AA
	HP Prelude G2 15.6 Top Load	2Z8P4AA
	HP Prelude Pro Recycled 15.6 Backpack	1X644A6
	HP Prelude Pro Recycled 15.6 Top Load	1X645A6
	HP Prelude Pro Recycled 15.6 Top Load	1X645AA
	HP Prelude Pro Recycled 15.6 Backpack	1X644AA
	HP Renew Business 14.1 Laptop Bag	3E5F9AA
	HP Renew Business 14.1 Sleeve	3E2U7A6
	HP Renew Business 14.1 Laptop Bag	3E5F9A6
	HP Renew Business 14.1 Laptop Sleeve	3E2U7AA
	HP Renew Business 15.6 Laptop Bag	3E5F8A6
	HP Renew Business 15.6 Laptop Bag	3E5F8AA
	HP Renew Business 17.3 Laptop Backpack	3E2U5A6
	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	6B8U6AA
	HP Travel 25L 15.6 Iron Gray Laptop Backpack	6B8U4AA
Docking	HP USB-C G5 Dock	5TW10AA
Keyboard/Combo	HP 325 Chrome BT Keyboard	45U14AA#ABA
Power	HP 45W USB-C LC Dali AC Power Adapter	1MZ01AA
	HP 65W GaN USB-C Laptop Charger	600Q7AA

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

	HP 65W USB-C Laptop Charger	671R2AA
Audio	HP 3.5mm G2 Stereo Headset	428H6AA
	HP USB G2 Stereo Headset	428H5AA
Hub	HP 4K USB-C Multiport Hub	6G842AA
	HP Universal USB-C Multiport Hub	50H98AA
	HP USB-C to USB-A Hub Jake	Z8W90AA
	HP USB-C Travel Hub G3	86T46AA
	HP HDMI to VGA Adapter Wall-e	H4F02AA
	HP USB 3.0 to Gigabit RJ45 Adapter G2	4Z7Z7AA
	HP USB-C to DisplayPort Adapter G2 Luna2	8Y8Y1AA
	HP USB-C to DisplayPort Adapter Luna	N9K78AA
	HP USB-C to HDMI 2.0 Adapter GABBA	2PC54AA
	HP USB-C to RJ45 Adapter G2	4Z534AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA
	HP USB-C to VGA Adapter Scrappy	P7Z54AA
Adapter	HP HDMI to VGA Adapter Wall-e	H4F02AA
	HP USB 3.0 to Gigabit RJ45 Adapter G2	4Z7Z7AA
	HP USB-C to DisplayPort Adapter G2 Luna2	8Y8Y1AA
	HP USB-C to DisplayPort Adapter Luna	N9K78AA
	HP USB-C to HDMI 2.0 Adapter GABBA	2PC54AA
	HP USB-C to RJ45 Adapter G2	4Z534AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA
	HP USB-C to VGA Adapter Scrappy	P7Z54AA
Security	HP Combination Nano Cable Lock	63B28AA
	HP Essential Combination Nano Cable Lock	63B31AA
	HP Nano Keyed Cable Lock	1AJ39AA
	HP Nano Master Keyed Cable Lock	1AJ40AA
	HP SureKey Standard/Nano/Wedge Cable Lock	6UW42AA

Change Log

Date of change:	Version History:		Description of change:
18th January 2024	V1 to V2		Environmental Data