Overview

HP Elite c640 14 inch G3 Chromebook Enterprise



Left

1. Microphones enhanced by AI Noise Reduction (2)
2. HP Privacy Camera Shutter
3. 5MP camera
4. Webcam LED
5. Glass Clickpad
6. Smart Card Reader (Smart card is not included) (Optional))
7. MicroSD memory card reader (Memory card is not included.)
8. Thunderbolt™ 4 with USB4 Type-C® 40Gbps signaling rate (USB Power Delivery)[1]
9. Super Speed USB Type-A 5Gbps signaling rate (Support charging) (USB 3.2 Gen 1)
10. HDMI port (Cable not included.)

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

Overview



Right

1. Power Button
2. Headphone/Microphone Combo Jack
3. Super Speed USB Type-A 5Gbps signaling rate (Charging) (USB 3.2 Gen 1)
4. Thunderbolt™ 4 with USB4 Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)[1]
5. Nano Lock Slot (Lock sold separately)
6. SIM card slot (WWAN sku only)
7. Fingerprint Sensor (Optional)

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

Overview

AT A GLANCE

- Bring exceptional clarity and contrast to your images, even in low light environments with the 5MP camera
- Help speed up demanding business applications with the latest Intel® processor.1,2 Coupled with up to 16GB memory and 512GB SSD storage.
- Keep up with the demands of your business with enhanced security supported total memory encryption, long battery life with optional Intel® vPro® technology.
- Seamlessly connect and charge your Chromebook and USB-C® accessories with two Thunderbolt™ USB-C® ports.
- With AI-based noise reduction3 and HP speakers, custom-tuned in collaboration with experts at B&O, get an enhanced audio and video conferencing experience.
- Attain fast and secure authentication in Chrome or virtualized computing environment with an optional smart card reader and fingerprint sensor.
- Get peace of mind with a built-in HP Privacy Camera that blocks the lens of your camera.
- Instantly block prying eyes by making your screen appear unreadable from the side with HP Sure View Reflect.
- 4G LTE delivers fast data uploads and transfers, while Wi-Fi 6E and Bluetooth® connectivity provide speed and stability on crowded networks.

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

Technical Specifications

PRODUCT NAME

HP Elite c640 14 inch G3 Chromebook Enterprise

OPERATING SYSTEM

Preinstalled Chrome OS with Chrome Enterprise Upgrade

NOTE: Single Chrome Enterprise Upgrade included. Requires one-time setup, subscription, Google Admin Console, and your organization's domain. Please see https://support.google.com/a/answer/60216

PROCESSORS

Processor [1,2,3,4]	Cores	Number of P-cores	Number of E-cores	Threads	L3 Cache	Max Turbo Frequency		Base Frequency		Intel SIPP/vPro® Enterprise
						P-cores	E-cores	P-cores	E-cores	
Intel® Core™ i7-1265U	10	2	8	12	12MB	4.8 GHz	3.6 GHz	1.8 GHz	1.3 GHz	X
Intel® Core™ i7-1255U	10	2	8	12	12MB	4.7 GHz	3.5 GHz	1.7 GHz	1.2 GHz	
Intel® Core™ i5-1245U	10	2	8	12	12MB	4.4 GHz	3.3 GHz	1.2 GHz	1.2 GHz	X
Intel® Core™ i5-1235U	10	2	8	12	12MB	4.4 GHz	3.3 GHz	1.3 GHz	0.9 GHz	
Intel® Core™ i3-1215U	6	2	4	8	10MB	4.4 GHz	3.3 GHz	1.2 GHz	0.9 GHz	
Intel® Pentium® Gold 8505	5	1	4	6	8MB	4.4 GHz	3.3 GHz	1.2 GHz	0.9 GHz	
Intel® Celeron® 7305	5	1	4	6	8MB	N/A	N/A	1.1 GHz	0.9 GHz	

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

Technical Specifications

4. Intel vPro® requires Chrome OS R99 or after, a vPro supported processor, vPro enabled wired LAN and/or WLAN card, Wi-Fi 6E and H1 Security Chip are required. Some functionality requires additional 3rd party software in order to run. Features of vPro® Essentials and Enterprise vary. See http://intel.com/vpro

CHIPSET

Chipset is integrated with processor

GRAPHICS

Integrated

Intel® Iris® Xᵉ Graphics [5,6]

Intel® UHD Graphics [5]

Supports

Support HD Decode, DX12, and HDMI 2.0

5. HD content required to view HD images.

6. 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.

DISPLAY

Non-Touch

35.6 cm (14") diagonal FHD (1920 x 1080) HP Sure View Reflect, UWVA anti-glare, micro-edge, eDP1.3+PSR, Low Blue Light, 1000 nits, 72% NTSC with HP Eye Ease [5,7,8,9,10]

35.6 cm (14") diagonal FHD IPS anti-glare micro-edge WLED-backlit, eDP1.2, narrow bezel bent, 250 nits, 45% NTSC (1920 x 1080) [5,7,8]

35.6 cm (14") diagonal FHD IPS anti-glare micro-edge WLED-backlit, Low Power, eDP1.3+PSR , narrow bezel bent, 400 nits, 72% NTSC (1920 x 1080) [5,7,8]

35.6 cm (14") diagonal HD SVA anti-glare micro-edge WLED-backlit, eDP1.2, narrow bezel bent, 250 nits, 45% NTSC (1366 x 768) [5,7,8]

Touch

35.6 cm (14") diagonal FHD (1920 x 1080), IPS, anti-glare, touch on panel micro-edge WLED-backlit touch screen, eDP1.2 w/o PSR bent, 250 nits, 45% NTSC [5,7,8,9,10]

Displays Support

Support 3 external displays up to 4K resolution.

Size (Diagonal)

14"

35.6 cm

5. HD content required to view HD images.

Technical Specifications

7. Sold separately or as an optional feature.
8. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
9. HP Sure View Reflect integrated privacy screen is an optional feature that must be configured at purchase and is designed to function in landscape orientation.
10. Actual brightness will be lower with touchscreen or HP Sure View.

DOCKING (Sold Separately)

Docking station model #1	HP USB-C Dock G5
Docking station model #2	HP USB-C/A Universal Dock G2

For additional aftermarket options and docking specs please see page 30.

STORAGE AND DRIVES

Primary Storage
64GB eMMC

Primary M.2 Storage
512 GB 2280 PCIe® NVMe™ M.2 SSD [11]
256 GB 2230 PCIe® NVMe™ M.2 SSD [11]
128 GB 2230 PCIe® NVMe™ M.2 SSD [11]

11. For storage drives, GB = 1 billion bytes. Actual formatted capacity is less. For 64GB drive, 5.76GB is not user accessible. For 128GB drive, 8.76GB is not user accessible. For 256GB drive, 17.53GB is not user accessible. For 512GB drive, 48.64GB is not user accessible.

MEMORY

Maximum Memory
16 GB DDR4-4266 SDRAM

Memory
16 GB LPDDR4X-4266 SDRAM
8 GB LPDDR4X-4266 SDRAM

Memory Slots
On-board system memory
Supports Dual Channel Memory

Technical Specifications

NETWORKING/COMMUNICATIONS

WLAN
Intel® AX211 Wi-Fi 6E Bluetooth® 5.2 WLAN [12]
Intel® AX211 Wi-Fi 6E Bluetooth® 5.2 vPro WLAN [12]
MU-MIMO supported
HP Extended Range WLAN supported

WWAN
Intel® XMM 7360 LTE-Advanced (Cat 9)[13]

Miracast
Chromecast Support [14]

12. 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.
13. 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.
14. Chromecast must be purchased separately.

AUDIO/MULTIMEDIA

Audio
Audio by Bang & Olufsen
Dual stereo speakers
Dual microphone enhanced by AI noise reduction.

Speaker Power
2Watt / 4Ohms

Camera
5 MP camera
HP Privacy Camera

Technical Specifications

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard

Full- size island-style 3 coat paint backlit keyboard
Full- size island-style 3 coat paint standard keyboard

Pointing Device

Clickpad with multi-touch gesture support

Function Keys

esc	ESC key
←	Go to the previous page
↻	Refresh your current page
⛶	Make your page take up the full screen
▭	Show all open windows
▣	Take a screenshot
☼	Decrease screen brightness
☼	Increase screen brightness
◪	[for SureView sku]: Turn on SureView
☼	[for non-SureView sku]: Keyboard backlight on/off
☼	[for SureView sku]: Keyboard backlight on/off
⏯	[for non-SureView sku]: Play/pause
🎤	Global microphone mute/unmute
🔇	Turn off the sound
🔉	Lower the volume
🔊	Raise the volume
⏻	Power button

Technical Specifications

SOFTWARE AND SECURITY

Preinstalled Software

Software

HP QuickDrop [15]

Manageability Features

Zero Touch Enrollment [16]

Chrome Enterprise Upgrade (Included)

NOTE: To enhance brightness, level go to the Intel® Graphics Command Center app, click on System and turn off the Display Power Savings function.

Security Management

Titan C security chip

Nano lock slot [17]

Fingerprint Sensor (Optional)

Smartcard Reader

Model number: Alcor AU9560

FIPS 201 Compliant: No

IPv6 Support

No

FirstNet Certified

No

Is the BIOS on this notebook ISO/IEC 19678:2015 (formerly NIST 800-147) compliant?: No

15. HP Quick Drop requires Internet access and Chrome OS device 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.
16. ZTE 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.
17. Sold separately.

Technical Specifications

POWER

Power Supply
AC Adapter 65 Watt nPFC Standard USB type C Straight [18]
AC Adapter 45 Watt nPFC Standard USB type C Straight [18]

Battery
HP Long Life 3-cell, 58 Wh Polymer [19,20]
Support HP Fast Charge (90% in 90 min) [21]

Power Cord
3-wire plug - 1m

Battery Life
Up to 10 hours 45 minutes (Intel i7-1265U/16GB/128GB SSD/FHD touch screen) [22]

Battery Weight
227.75g

18. Availability may vary by country.
19. Battery is internal and not replaceable by customer. Serviceable by warranty.
20. 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.
21. 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 will return to normal. Charging time may vary +/-10% due to System tolerance.
22. 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.

WEIGHTS & DIMENSIONS

Product Weight [23]
Starting at 3.4 lb
Starting at 1.54 kg

Product Dimensions (W x D x H)
12.71 x 8.7 x 0.77 in
32.3 x 22.1 x 1.98 cm

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

Technical Specifications

PORTS/SLOTS

2 Thunderbolt™ 4 with USB4 Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4) [24]
2 Super Speed USB Type-A 5Gbps signaling rate (Charging) (USB 3.2 Gen 1)
1 HDMI-in [25]

Expansion Slots
1 MicroSD memory card reader [26]

24. SuperSpeed USB 20Gbps is not available with Thunderbolt™ 4.
25. HDMI cable sold separately.
26. MicroSD card sold separately.

Technical Specifications

SERVICE AND SUPPORT

HP Services offers 1-year or 3-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. [27]

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

Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	USB-C 45W and 65W adapter
Nominal Operating Voltage	5V/9V/12V/15V
Average Operating Power	< 45W
Integrated graphics	Yes
Discrete Graphics	N/A
Max Operating Power	UMA < 45W
Temperature	
Operating	32° to 95° F (0° to 35° C)
Non-operating	41° to 95° F (5° to 35° 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 to 3,048 m)
Non-operating	-50 to 40,000 ft (-15 to 12,192 m)
Planned Industry Standard Certifications	
Regulatory Model Number	TPN-Q276
UL	Yes
CSA	No
FCC Compliance	Yes
ENERGY STAR®	Yes [28]
EPEAT®	Yes, EPEAT® Gold in United States [29]
TCO certified	Yes
ICES	Yes
Australia / NZ A-Tick Compliance	Yes
CCC	Yes
Japan VCCI Compliance	Yes
KC	Yes
BSMI	Yes
CE Marking Compliance	Yes
BNCI or BELUS	No
CIT	No
EAC Certificate	Yes
GOST	Yes (EAC)
Saudi Arabian Compliance (ICCP)	Yes
SABS	Yes
UKRSERTCOMPUTER	No

28. Configurations of the HP Elite c640 G3 Chromebook Enterprise that are ENERGY STAR® qualified are identified as HP Elite c640 G3 Chromebook Enterprise ENERGY STAR on HP websites and on http://www.energystar.gov.

29. 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.

Technical Specifications

DISPLAYS

NOTE: Actual brightness will be lower with touchscreen or 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	309.37 x 174.02
	Weight	<305g max.
	Diagonal Size	14"
	Thickness	3.0mm/ 5.0mm (w/PCB) max.
	Interface	eDP 1.2 (2lane)
	Surface Treatment	Anti-Glare
	Touch Enabled	Yes
	Contrast Ratio	600:1 (typ)
	Refresh Rate	60Hz
	Brightness	250 nits
	Pixel Resolution - Format	1920 x 1080 (FHD)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%
	Color Depth	6bits
	Viewing Angle	UWVA 85/85/85/85
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.7W max./3.1W 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 x D)**	316.170 x 186.400 max
	Active Area	309.37 x 174.02
	Weight	300g
	Diagonal Size	14"
	Thickness	3.0mm/ 5.0mm (w/PCB) max.
	Interface	eDP 1.2 (2lane)
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	600:1 (typ)
	Refresh Rate	60Hz
	Brightness	250nits
	Pixel Resolution - Format	1920 x 1080 (FHD)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%
	Color Depth	6bits
	Viewing Angle	UWVA 85/85/85/85
	Low Blue Light	No

Technical Specifications

	Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.205W Max/2.716W 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 x D)**	316.110x186.370mm(max)
	Active Area	309.4 x 173.95
	Weight	300g Max
	Diagonal Size	14"
	Thickness	3.0mm/ 5.0mm (w/PCB) max.
	Interface	eDP 1.2 (1 lane)
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	300:1 (typ)
	Refresh Rate	60Hz
	Brightness	250nits
	Pixel Resolution - Format	1366 x 768 (HD)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%
	Color Depth	6 bits
	Viewing Angle	SVA 45/45/15/30
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	2.52W max/2.86W max

14.0 in FHD (1920 x 1080) Anti-Glare UWVA Low Blue Light sRGB NB2Y 1000 eDP 1.3+PSR 100 PrivacyG4 Plus bent LCD Panel	**Outline Dimensions (W x H x D)**	314.612 x 184.900 (max)
	Active Area	309.312 x 173.990 (typ.)
	Weight	230 g (max)
	Diagonal Size	14 (inch)
	Thickness	2.2mm / 3.9mm (w/PCB) (max)
	Interface	eDP1.4
	Surface Treatment	Bright View
	Touch Enabled	No
	Contrast Ratio	1500:1 (typical)
	Refresh Rate	60Hz
	Brightness	1000 nits
	Pixel Resolution - Format	1920 x 1080 (FHD)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	sRGB 100%
	Color Depth	8
	Viewing Angle	UWVA 85/85/85/85
	Low Blue Light	Yes

Technical Specifications

	Power Consumption (W, EBL@ 150nits max/ 200nits max)	1.6 (max)/2.0(max)

Panel LCD 14 inch FHD (1920x1080) Anti-Glare WLED UWVA sRGB 100percent cg 400nits eDP 1.4+PSR2 bent LP NB2X	**Outline Dimensions (W x H x D)**	315.370 x 186.900 (max)
	Active Area	309.370 x 174.020 mm (typ.)
	Weight	200 g (max)
	Diagonal Size	14.0 (inch)
	Thickness	2.0 mm / 4.0 mm (w/PCB) (max)
	Interface	eDP1.4 (4 lane)
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	1200:1 (typical)
	Refresh Rate	60Hz
	Brightness	400 nits
	Pixel Resolution - Format	1920 x 1080 (FHD)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	sRGB 100% (NTSC 72%)
	Color Depth	6+2 FRC
	Viewing Angle	UWVA 85/85/85/85
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max)	1.04 (max)/ 1.25 (max)

Technical Specifications

STORAGE AND DRIVES

For storage drives, GB = 1 billion bytes. Actual formatted capacity is less. For 64GB drive, 5.76GB is not user accessible. For 128GB drive, 8.76GB is not user accessible. For 256GB drive, 17.53GB is not user accessible. For 512GB drive, 48.64GB is not user accessible.

64 GB eMMC	**Form Factor**	eMMC
	Capacity	64GB
	NAND Type	MLC/TLC
	Height	1.4mm
	Width	11.5x13mm
	Weight	0.2g
	Interface	MMC protocal
	Maximum Sequential Read	Up to 250MB/s
	Maximum Sequential Write	Up to 70MB/s
	Logical Blocks	64GB (62,537,072,640 Bytes)
	Operating Temperature	64GB (62,537,072,640 Bytes)
	Features	HS400

SSD 128GB 2230 PCIe NVMe Value (SSD 128GB 2230 PCIe NVMe Value)	**Form Factor**	M.2 2230
	Capacity	128GB
	NAND Type	Value
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Weight	0.01 lb (6 g) ~ 0.02 lb (10 g)
	Interface	NVMe
	Maximum Sequential Read	3000 Up to MB/s
	Maximum Sequential Write	1400 Up to MB/s
	Logical Blocks	250,069,680
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite

SSD 256GB 2230 PCIe NVMe Value (256GB 2230 PCIe NVMe Value 2nd Solid State Drive)	**Form Factor**	M.2 2230
	Capacity	256GB
	NAND Type	Value
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	NVMe
	Maximum Sequential Read	3000 Up to MB/s
	Maximum Sequential Write	1800 Up to MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite

Technical Specifications

SSD 512GB 2280 PCIe NVMe Value (512GB 2280 PCIe NVMe Value 2nd Solid State Drive)	**Form Factor**	M.2 2280
	Capacity	512GB
	NAND Type	Value
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	NVMe
	Maximum Sequential Read	3200 Up to MB/s
	Maximum Sequential Write	2700 Up to MB/s
	Logical Blocks	1,000,215,216
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	Pyrite

Technical Specifications

NETWORKING/COMMUNICATIONS

Intel® AX211 Wi-Fi 6E + Bluetooth® 5.2 M.2 160MHz CNVi World-wide WLAN 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[3]	• 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[2]	• 802.11b : +17dBm minimum • 802.11g : +16dBm minimum

Technical Specifications

	• 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)
LED Activity	LED Amber – Radio OFF; LED Off – Radio ON

Technical Specifications

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

Bluetooth Specification	4.0/4.1/4.2/5.0/5.1/5.2 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.
2. 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.
3. Check latest software/driver release for updates on supported security features.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

Technical Specifications

Intel® AX211 Wi-Fi 6E + Bluetooth® 5.2 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[3]	• 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[2]	• 802.11b : +17dBm minimum • 802.11g : +16dBm minimum • 802.11a : +17dBm minimum

Technical Specifications

	• 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)
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Technical Specifications

Intel® XMM™ 7360 LTE-Advanced CAT9[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), 1400 (Band 11), 700 (Band 12 lower), 700 (Band 13 upper), 700 (Band 17 lower), 850 (Band 18 lower), 850 (Band 19 upper), 800 (Band 20), 1400 (Band 21), 850 (Band 26), 700 (Band 28), 700 (Band 29 RX only), 2300 (Band 30), 1700/2100 (Band 66). TDD LTE: 2600 (Band 38), 1900 (Band 39), 2400 (Band 40), 2500 (Band 41). HSPA+: 2100 (Band 1), 1900 (Band 2), 1700/2100 (Band 4), 850 (Band 5), 900 (Band 8) MHz
	Wireless protocol standards	3GPP Release 11 LTE Specification CAT.9, DL 60MHz BW throughput up to 450Mbps; UL 20MHz throughput up to 50Mbps WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification
	Maximum data rates	LTE: 450 Mbps (Download), 50 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload)
	Maximum output power	LTE: 23 dBm 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	5.8 g
	Dimensions (Length x Width x Thickness)	42 x 30 x 2.3 mm

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

Technical Specifications

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.

45 W AC adapter	**Dimensions**	3.74 x 1.69 x 1.08in (9.5 x 4.3 x 2.75 cm)
	Weight	200g +/-10%
	Input	100 to 240 VAC
	Input Efficiency	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec: 5V : 81.5% 9V : 86.7% 12V : 87.41% 15V : 87.8%
	Input frequency range	47 ~ 63Hz
	Input AC current	Max. 1.4 A at 90 Vac
	Output	
	Output power	45W
	DC output	5V/15W 9V/27W 12V/36W 15V/45W
	Hold-up time	5ms at 115 Vac input
	Output current limit	<5.0A
	Connector	USB Type-C®
	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	Eg: * CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards -IEC60950, EN60950, UL60950, UL62368, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.

Technical Specifications

HP 65W USB TYPE-C PD adapter	**Dimensions**	3.54 x 2.0 x 1.12 in (9.0cm x 5.1cm x 2.85cm)
	Weight	0.55 lb (250 g) max (Not including power cord. Power cord varies by country)
	Input	
	Input Efficiency	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec: 5V : 81.5% 9V : 86.7% 12V : 88% 15V : 88% 20V : 89%
	Input frequency range	47 ~ 63Hz
	Input AC current	Max. 1.6 A at 90 Vac
	Output	
	Output power	5V/15W 9V/27W 12V/60W 15V/60W 20V/65W
	DC output	5V/9V/12V/15V/20V
	Hold-up time	5ms at 115 Vac input
	Output current limit	<8.0A
	Connector	USB Type-C®
	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	1 to 16,400 ft (0 to 5000m)
	Humidity	20% to 95%
	Storage Humidity	10% to 95%
	EMI and Safety Certifications	Eg: * CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards -IEC60950, EN60950, UL60950, UL62368, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE. * MTBF - over 200,000 hours at 25°C ambient condition.

Technical Specifications

HP 3 -cell Long Life Li-Ion (58Wh)[1]	**Dimensions (H x W x L)**	4.7 x 249 x 103.07 mm (0.185 x 9.8 x 4.06 inch)
	Weight	0.23 kg (0.506 lb)
	Cells/Type	3cell Lithium-Ion Polymer cell / 407792
	Energy	
	Voltage	11.55V
	Amp-hour capacity	5.095A
	Watt-hour capacity	58.84Wh
	Temperature	
	Operating (Charging)	32˚ to 113˚ F (0˚ to 45˚ C)
	Operating (Discharging)	14˚ to 122˚ F (-10˚ to 60˚ C)
	Fuel Gauge LED	NA
	Warranty	1-year
	Optional Travel Battery Available	No

Technical Specifications

AUDIO

HD Stereo Codec	Realtek ALC5682I-VS
Audio I/O Ports	Headset connector supports both CTIA and OMTP style headset
Internal Speaker Amplifier	Maxim MAX98360D x2, up to 3W class-D mono smart amplifier
Multi-streaming Capable	Follow ChromeOS behavior (NOT SUPPORT in current version)
Sampling	Follow ChromeOS behavior
Wavetable Syntheses	N/A
Analog Audio	Stereo headphone out by 3.5mm audio jack only.
# of Channels on Line-Out	Headphone L/R, No Line-Out
Internal Speaker	Yes

FINGERPRINT READER

Sensor vendor	Model: FINGERPRINTS FPC1025
Sensor type	Capacitive
DPI resolution	508 dpi
Scan area	160x160
False Rejection Rate	CLKfreq 8kHz~19kHz
False Acceptance Rate	N/A
Mobile Voltage Operation	1.62V to 1.98V (Typical 1.8V)
Operating Temperature	-40° to +85°C
Current Consumption Image	< 6 mA
Low Latency Wait For Finger	2.1 mA
ESD Resistance	+/- 30kV
Detection Matrix	160 x 160 pixels

COUNTRY OF ORIGIN

China

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

DOCKING (Sold Separately)

Docking station model #1	HP USB-C Dock G5
Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	Dual 5K@ 30Hz + (1) 4K UHD (multi-function mode)
Dock Connectors	1xHDMI, 2xDP
Technical limitations	Highest resolution with dual displays is two 8K@ 60Hz host in High Resolution mode. Three maximum displays supported are two 5K@ 30 Hz on DP ports plus one 4K UHD@ 30 Hz on HDMI in Multi-function mode The highest resolution for a non-Thunderbolt host in Multi-function mode is a single 5K dual cable (using both DP ports) + (1) 4K on HDMI port.
Docking station model #2	HP USB-C/A Universal Dock G2
Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	Triple 4K UHD@ 60Hz 3840x2160
Dock Connectors	1xHDMI, 2xDP
Technical limitations	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

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

Category	Description	Part Number
Audio/Video	HP Wired USB-A Stereo Headset	428K6AA
	HP Wired 3.5mm Stereo Headset	428K7AA
Cases	HP Executive 15.6 Backpack	6KD07AA
	HP Executive 15.6 Top Load	6KD06AA
	HP Executive Slim 14.1 Top Load	6KD04AA
	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 Mobility 14” Laptop Case	4U9G9AA
	HP Renew Business 14.1" Bag	3E5F9AA
	HP Renew Business 17.3" Backpack	3E2U5AA
	HP Renew Business 14.1" Sleeve	3E2U7AA
	HP Renew Business 15.6" Bag	3E5F8AA
	HP Renew Business 17.3" Bag	3E2U6AA
Docking	HP USB-C Dock G5	5TW10AA
	HP USB-C/A Universal Dock G2	5TW13AA
Hub	HP USB-C Mini Dock	1PM64AA
	HP Universal USB-C Multiport Hub	50H55AA
	HP USB-C Travel Dock G2	7PJ38AA
	HP USB-C to USB-A Hub	Z6A00AA
Adapter	HP HDMI to DVI Adapter	F5A28AA
	HP HDMI to VGA Adapter	H4F02AA
	HP USB to Gigabit RJ45 Adapter	N7P47AA
	HP USB-C to DisplayPort Adapter	N9K78AA
	HP USB-C to HDMI 2.0 Adapter	1WC36AA
	HP USB-C to RJ45 Adapter	V7W66AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA
	HP USB-C to VGA Adapter	N9K76AA
Keyboard/Combo	HP 325 Chrome BT Keyboard	45U14AA
Mouse	HP USB Premium Wireless Mouse	1JR31AA
	HP 435 Multi-Device Wireless Mouse	3B4Q5AA
	HP 125 USB-A Wired Mouse	265A9AA
	HP 128 USB Laser Wired Mouse	265D9AA
	HP 320M USB-A Wired Mouse	9VA80AA
	HP Creator USB-A+Bluetooth 935 Wireless Mouse Black	1D0K8AA
	HP USB-A+Bluetooth Multi-Device 635 Wireless Mouse Black	1D0K2AA
	HP USB-A+Bluetooth Travel Bluetooth Mouse	6SP30AA

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

Power	HP 45W USB-C G2 AC Power Adapter	1HE07AA
	HP 45W USB-C LC AC Power Adapter	1MZ01AA
	HP 65W USB-C AC Power Adapter	1HE08AA
	HP 65W USB-C LC AC Power Adapter	1P3K6AA
	HP 65W USB-C Travel Slim AC Power Adapter	3PN48AA
Commodity	HP Nano Keyed Cable Lock	1AJ39AA
	HP Nano Master Keyed Cable Lock	1AJ40AA
	HP SureKey Standard/Nano/Wedge Cable Lock	6UW42AA

Summary of Changes

Date of change:	Version History:	Updated	Description of change:
May 17, 2022	V1 to V2	Added	Battery life
June 15, 2022	V2 to V3	Added	Added note in Manageability Feature
September 26, 2022	V3 to V4	Removed	GPS data
	V4 toV5		

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