

### Overview

#### HP Elite c640 14 inch G3 Chromebook



#### 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, DisplayPort™ 1.4)<sup>1</sup>
  9. Super Speed USB Type-A 5Gbps signaling rate (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   | 5. Nano Lock Slot (Lock sold separately) |
| 2. Headphone/Microphone Combo Jack  | 6. SIM card slot (WWAN sku only)         |
| 3. Super Speed USB Type-A 5Gbps signaling rate (Charging) (USB 3.2 Gen1)                          | 7. Fingerprint Sensor (Optional)         |
| 4. Thunderbolt™ 4 with USB4 Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)¹ |  |

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.
- 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 reduction 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

#### OPERATING SYSTEM

Preinstalled Chrome OS

#### 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.

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>

### Technical Specifications

#### CHIPSET

Chipset is integrated with processor

---

#### GRAPHICS

##### Integrated

Intel® Iris® X<sup>e</sup> Graphics <sup>5,6</sup>

Intel® UHD Graphics <sup>5</sup>

##### Supports

Support HD Decode, DX12, and HDMI 2.0 <sup>5</sup>

5. HD content required to view HD images.

6. Intel® Iris® X<sup>e</sup> Graphics capabilities require system to be configured with Intel® Core™ i5 or i7 processors and dual channel memory. Intel® Iris® X<sup>e</sup> 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 <sup>5,7,8,9,10</sup>

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) <sup>5,7,8,9</sup>

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) <sup>5,7,8,9</sup>

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) <sup>5,7,8,9</sup>

##### 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 <sup>5,7,8,9,10</sup>

##### Displays Support

Support 3 external displays up to 4K resolution.

##### Size (Diagonal)

14"

35.6 cm

5. HD content required to view HD images.

7. Sold separately or as an optional feature.

8. Resolutions are dependent upon monitor capability, and resolution and color depth settings.

9. 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.

### Technical Specifications

---

#### DOCKING (Sold Separately)

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

[For additional aftermarket options and docking specs please see page 34.](#)

---

#### STORAGE AND DRIVES

##### Primary Storage

64GB eMMC

##### Primary M.2 Storage

512 GB 2280 PCIe® NVMe™ M.2 SSD <sup>11</sup>

256 GB 2230 PCIe® NVMe™ M.2 SSD <sup>11</sup>

128 GB 2230 PCIe® NVMe™ M.2 SSD <sup>11</sup>

<sup>11</sup>. 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 <sup>12</sup>  
Intel® AX211 Wi-Fi 6E Bluetooth® 5.2 vPro WLAN <sup>12</sup>  
MU-MIMO supported  
HP Extended Range WLAN supported

##### WWAN

Intel® XMM 7360 LTE-Advanced (Cat 9)<sup>13</sup>

##### Miracast

Chromecast Support <sup>14</sup>

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 / 40hms

##### 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 <sup>15</sup>

##### Manageability Features

Zero Touch Enrollment <sup>16</sup>

Chrome Enterprise Upgrade <sup>17</sup>

Chrome Education Upgrade <sup>18</sup>

##### Security Management

Titan C security chip

Nano lock slot <sup>19</sup>

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. Chrome Enterprise Upgrade requires one-time setup, subscription, Google Admin Console, and your organization's domain. Please see <https://support.google.com/a/topic/1409901>.

18. 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><https://support.google.com/a/answer/60216>.

19. Sold separately.

### Technical Specifications

#### POWER

##### Power Supply

AC Adapter 65 Watt nPFC Standard USB type C Straight <sup>20</sup>

AC Adapter 45 Watt nPFC Standard USB type C Straight <sup>20</sup>

##### Battery

HP Long Life 3-cell, 58 Wh Polymer <sup>21,22</sup>

Support HP Fast Charge Technology (90 mins to 90%) <sup>23</sup>

##### Power Cord

3-wire plug - 1m

##### Battery Life

Up to 10 hours 45 minutes (Intel i7-1265U/16GB/128GB SSD/FHD touch screen) <sup>24</sup>

##### Battery Weight

227.75g

20. Availability may vary by country.

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

22. 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.

23. 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.

24. 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 <sup>25</sup>

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

25. 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) <sup>26</sup>
- 2 Super Speed USB Type-A 5Gbps signaling rate (Charging) (USB 3.2 Gen1)
- 1 HDMI-in <sup>27</sup>

#### Expansion Slots

- 1 MicroSD memory card reader <sup>28</sup>

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

27. HDMI cable sold separately.

28. 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>.<sup>29</sup>

<sup>29</sup> 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

<b>Stand-Alone Power Requirements (AC Power)</b>	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
<b>Temperature</b>	
Operating	32° to 95° F (0° to 35° C)
Non-operating	41° to 95° F (5° to 35° C)
<b>Relative Humidity</b>	
Operating	10% to 90%
Non-operating	5% to 95%
<b>Shock</b>	
Operating	40 G, 2 ms, half-sine
Non-operating	240 G, 2 ms, half-sine
<b>Random Vibration</b>	
Operating	1.043 grams
Non-operating	3.5 grams
<b>Altitude (unpressurized)</b>	
Operating	-50 to 10,000 ft (-15 to 3,048 m)
Non-operating	-50 to 40,000 ft (-15 to 12,192 m)
<b>Planned Industry Standard Certifications</b>	
Regulatory Model Number	TPN-Q276
UL	Yes
CSA	No
FCC Compliance	Yes
ENERGY STAR® 8.0	Yes <sup>30</sup>
EPEAT®	Yes, EPEAT® Gold in United States <sup>31</sup>
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

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

31. 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.

<p><b>Panel LCD 14 inch FHD (1920x1080) Anti-Glare WLED UWVA 45percent cg 250nits eDP 1.2 w/o PSR bent Touch on Panel NWBZ</b></p>	<p><b>Outline Dimensions (W x H x D)</b>  <b>Active Area</b>  <b>Weight</b>  <b>Diagonal Size</b>  <b>Thickness</b>  <b>Interface</b>  <b>Surface Treatment</b>  <b>Touch Enabled</b>  <b>Contrast Ratio</b>  <b>Refresh Rate</b>  <b>Brightness</b>  <b>Pixel Resolution - Format</b>  <b>Backlight</b>  <b>Pixel Resolution</b>  <b>Color Gamut Coverage</b>  <b>Color Depth</b>  <b>Viewing Angle</b>  <b>Low Blue Light</b>  <b>Power Consumption (W, EBL@ 150nits max/ 200nits max)</b></p>	<p>316.170 x 186.400 max.            309.37 x 174.02            &lt;305g max.            14"            3.0mm/ 5.0mm (w/PCB) max.            eDP 1.2 (2lane)            Anti-Glare            Yes<sup>1</sup>            600:1 (typ)            60Hz            250 nits<sup>1</sup>            1920 x 1080 (FHD)            WLED            RGB            NTSC 45%            6bits            UWVA 85/85/85/85            No            2.7W max./3.1W max.</p>
--	--	--

<p><b>Panel LCD 14-in FHD (1920x1080) Anti-Glare WLED UWVA 45percent cg 250nits eDP 1.2 w/o PSR NWBZ bent</b></p>	<p><b>Outline Dimensions (W x H x D)</b>  <b>Active Area</b>  <b>Weight</b>  <b>Diagonal Size</b>  <b>Thickness</b>  <b>Interface</b>  <b>Surface Treatment</b>  <b>Touch Enabled</b>  <b>Contrast Ratio</b>  <b>Refresh Rate</b>  <b>Brightness</b>  <b>Pixel Resolution - Format</b>  <b>Backlight</b>  <b>Pixel Resolution</b>  <b>Color Gamut Coverage</b>  <b>Color Depth</b>  <b>Viewing Angle</b>  <b>Low Blue Light</b></p>	<p>316.170 x 186.400 max            309.37 x 174.02            300g            14"            3.0mm/ 5.0mm (w/PCB) max.            eDP 1.2 (2lane)            Anti-Glare            No            600:1 (typ)            60Hz            250nits            1920 x 1080 (FHD)            WLED            RGB            NTSC 45%            6bits            UWVA 85/85/85/85            No</p>
---	---	---

### 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

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

##### SSD 128GB 2230 PCIe NVMe Value (SSD 128GB 2230 PCIe NVMe Value)

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

##### SSD 256GB 2230 PCIe NVMe Value (256GB 2230 PCIe NVMe Value 2nd Solid State Drive)

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

### Technical Specifications

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

---

### Technical Specifications

#### NETWORKING/COMMUNICATIONS

<p><b>Intel® AX211 Wi-Fi 6E + Bluetooth® 5.2 M.2 160MHz CNVi World-wide WLAN vPro<sup>1</sup></b></p>	<p><b>Wireless LAN Standards</b></p>	<ul style="list-style-type: none"> <li>IEEE 802.11a</li> <li>IEEE 802.11b</li> <li>IEEE 802.11g</li> <li>IEEE 802.11n</li> <li>IEEE 802.11ac</li> <li>IEEE 802.11ax</li> <li>IEEE 802.11d</li> <li>IEEE 802.11e</li> <li>IEEE 802.11h</li> <li>IEEE 802.11i</li> <li>IEEE 802.11k</li> <li>IEEE 802.11r</li> <li>IEEE 802.11v</li> </ul>
	<p><b>Interoperability</b></p>	<ul style="list-style-type: none"> <li>Wi-Fi certified</li> </ul>
	<p><b>Frequency Band</b></p>	<ul style="list-style-type: none"> <li>•802.11b/g/n/ax 2.402 – 2.482 GHz</li> <li>•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</li> </ul>
	<p><b>Data Rates</b></p>	<ul style="list-style-type: none"> <li>• 802.11b: 1, 2, 5.5, 11 Mbps</li> <li>• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11n: max 300Mbps</li> <li>• 802.11ac : 1733Mbps</li> <li>• 802.11ax : max 2.4Gbps</li> </ul>
	<p><b>Modulation</b></p>	<ul style="list-style-type: none"> <li>Direct Sequence Spread Spectrum</li> <li>OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM</li> </ul>
	<p><b>Security<sup>3</sup></b></p>	<ul style="list-style-type: none"> <li>• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only</li> <li>• AES-CCMP: 128 bit in hardware</li> <li>• 802.1x authentication</li> <li>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</li> <li>• WPA2 certification</li> <li>• WPA3 certification</li> <li>• IEEE 802.11i</li> <li>• WAPI</li> </ul>
	<p><b>Network Architecture Models</b></p>	<ul style="list-style-type: none"> <li>Ad-hoc (Peer to Peer)</li> <li>Infrastructure (Access Point Required)</li> </ul>
	<p><b>Roaming</b></p>	<ul style="list-style-type: none"> <li>IEEE 802.11 compliant roaming between access points</li> </ul>
	<p><b>Output Power<sup>2</sup></b></p>	<ul style="list-style-type: none"> <li>• 802.11b : +17dBm minimum</li> <li>• 802.11g : +16dBm minimum</li> </ul>

### Technical Specifications

	<ul style="list-style-type: none"> <li>• 802.11a : +17dBm minimum</li> <li>• 802.11n HT20(2.4GHz) : +14dBm minimum</li> <li>• 802.11n HT40(2.4GHz) : +13dBm minimum</li> <li>• 802.11n HT20(5GHz) : +14dBm minimum</li> <li>• 802.11n HT40(5GHz) : +13dBm minimum</li> <li>• 802.11ac VHT80(5GHz) : +10dBm minimum</li> <li>• 802.11ac VHT160(5GHz) : +10dBm minimum</li> <li>• 802.11ax HE40(2.4GHz) : +12dBm minimum</li> <li>• 802.11ax HE80(5GHz) : +10dBm minimum</li> <li>• 802.11ax HE160(5GHz) : +10dBm minimum</li> </ul>
<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>• Transmit mode 2.0 W</li> <li>• Receive mode 1.6 W</li> <li>• Idle mode (PSP) 180 mW (WLAN Associated)</li> <li>• Idle mode 50 mW (WLAN unassociated)</li> <li>• Connected Standby 10mW</li> <li>• Radio disabled 8 mW</li> </ul>
<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
<b>Receiver Sensitivity<sup>4</sup></b>	<ul style="list-style-type: none"> <li>• 802.11b, 1Mbps : -93.5dBm maximum</li> <li>• 802.11b, 11Mbps : -84dBm maximum</li> <li>• 802.11a/g, 6Mbps : -86dBm maximum</li> <li>• 802.11a/g, 54Mbps : -72dBm maximum</li> <li>• 802.11n, MCS07 : -67dBm maximum</li> <li>• 802.11n, MCS15 : -64dBm maximum</li> <li>• 802.11ac, MCS0(VHT80) : -84dBm maximum</li> <li>• 802.11ac, MCS9(VHT80) : -59dBm maximum</li> <li>• 802.11ac, MCS9(VHT160) : -58.5dBm maximum</li> <li>• 802.11ax, MCS11(HE40): -57dBm maximum</li> <li>• 802.11ax, MCS11(HE80): -54dBm maximum</li> <li>• 802.11ax, MCS11(HE160): -53.5dBm maximum</li> </ul>
<b>Antenna type</b>	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
<b>Form Factor</b>	PCI-Express M.2 MiniCard
<b>Dimensions</b>	1. Type 2230 : 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm
<b>Weight</b>	1. Type 2230 : 2.8g 2. Type 1216: 1.3g
<b>Operating Voltage</b>	3.3v +/- 9%
<b>Temperature</b>	<b>Operating</b> 14° to 158° F (-10° to 70° C) <b>Non-operating</b> -40° to 176° F (-40° to 80° C)
<b>Humidity</b>	<b>Operating</b> 10% to 90% (non-condensing) <b>Non-operating</b> 5% to 95% (non-condensing)
<b>Altitude</b>	<b>Operating</b> 0 to 10,000 ft (3,048 m) <b>Non-operating</b> 0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	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

<b>Bluetooth Specification</b>	4.0/4.1/4.2/5.0/5.1/5.2 Compliant
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)
<b>Data Rates and Throughput</b>	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)
<b>Transmit Power</b>	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

<p><b>Intel® AX211 Wi-Fi 6E + Bluetooth® 5.2 M.2</b>  <b>160MHz CNVi World-wide WLAN non-vPro<sup>1</sup></b></p>	<p><b>Wireless LAN Standards</b></p>	<p>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</p>
	<p><b>Interoperability</b></p>	<p>Wi-Fi certified</p>
	<p><b>Frequency Band</b></p>	<ul style="list-style-type: none"> <li>•802.11b/g/n/ax 2.402 – 2.482 GHz</li> <li>•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</li> </ul>
	<p><b>Data Rates</b></p>	<ul style="list-style-type: none"> <li>• 802.11b: 1, 2, 5.5, 11 Mbps</li> <li>• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11n: max 300Mbps</li> <li>• 802.11ac : 1733Mbps</li> <li>• 802.11ax : max 2.4Gbps</li> </ul>
	<p><b>Modulation</b></p>	<p>Direct Sequence Spread Spectrum          OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM</p>
	<p><b>Security<sup>3</sup></b></p>	<ul style="list-style-type: none"> <li>• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only</li> <li>• AES-CCMP: 128 bit in hardware</li> <li>• 802.1x authentication</li> <li>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</li> <li>• WPA2 certification</li> <li>• WPA3 certification</li> <li>• IEEE 802.11i</li> <li>• WAPI</li> </ul>
	<p><b>Network Architecture Models</b></p>	<p>Ad-hoc (Peer to Peer)          Infrastructure (Access Point Required)</p>
	<p><b>Roaming</b></p>	<p>IEEE 802.11 compliant roaming between access points</p>
	<p><b>Output Power<sup>2</sup></b></p>	<ul style="list-style-type: none"> <li>• 802.11b : +17dBm minimum</li> <li>• 802.11g : +16dBm minimum</li> <li>• 802.11a : +17dBm minimum</li> </ul>

### Technical Specifications

	<ul style="list-style-type: none"> <li>• 802.11n HT20(2.4GHz) : +14dBm minimum</li> <li>• 802.11n HT40(2.4GHz) : +13dBm minimum</li> <li>• 802.11n HT20(5GHz) : +14dBm minimum</li> <li>• 802.11n HT40(5GHz) : +13dBm minimum</li> <li>• 802.11ac VHT80(5GHz) : +10dBm minimum</li> <li>• 802.11ac VHT160(5GHz) : +10dBm minimum</li> <li>• 802.11ax HE40(2.4GHz) : +12dBm minimum</li> <li>• 802.11ax HE80(5GHz) : +10dBm minimum</li> <li>• 802.11ax HE160(5GHz) : +10dBm minimum</li> </ul>
<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>• Transmit mode 2.0 W</li> <li>• Receive mode 1.6 W</li> <li>• Idle mode (PSP) 180 mW (WLAN Associated)</li> <li>• Idle mode 50 mW (WLAN unassociated)</li> <li>• Connected Standby 10mW</li> <li>• Radio disabled 8 mW</li> </ul>
<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
<b>Receiver Sensitivity<sup>4</sup></b>	<ul style="list-style-type: none"> <li>• 802.11b, 1Mbps : -93.5dBm maximum</li> <li>• 802.11b, 11Mbps : -84dBm maximum</li> <li>• 802.11a/g, 6Mbps : -86dBm maximum</li> <li>• 802.11a/g, 54Mbps : -72dBm maximum</li> <li>• 802.11n, MCS07 : -67dBm maximum</li> <li>• 802.11n, MCS15 : -64dBm maximum</li> <li>• 802.11ac, MCS0(VHT80) : -84dBm maximum</li> <li>• 802.11ac, MCS9(VHT80) : -59dBm maximum</li> <li>• 802.11ac, MCS9(VHT160) : -58.5dBm maximum</li> <li>• 802.11ax, MCS11(HE40): -57dBm maximum</li> <li>• 802.11ax, MCS11(HE80): -54dBm maximum</li> <li>• 802.11ax, MCS11(HE160): -53.5dBm maximum</li> </ul>
<b>Antenna type</b>	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
<b>Form Factor</b>	PCI-Express M.2 MiniCard
<b>Dimensions</b>	1. Type 2230 : 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm
<b>Weight</b>	1. Type 2230 : 2.8g 2. Type 1216: 1.3g
<b>Operating Voltage</b>	3.3v +/- 9%
<b>Temperature</b>	<b>Operating</b> 14° to 158° F (-10° to 70° C) <b>Non-operating</b> -40° to 176° F (-40° to 80° C)
<b>Humidity</b>	<b>Operating</b> 10% to 90% (non-condensing) <b>Non-operating</b> 5% to 95% (non-condensing)
<b>Altitude</b>	<b>Operating</b> 0 to 10,000 ft (3,048 m) <b>Non-operating</b> 0 to 50,000 ft (15,240 m)
<b>LED Activity</b>	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 Wireless Technology



### Technical Specifications

<b>Bluetooth Specification</b>	4.0/4.1/4.2/5.0/5.1/5.2 Compliant
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)
<b>Data Rates and Throughput</b>	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)
<b>Transmit Power</b>	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

<b>Intel® XMM™ 7360 LTE-Advanced CAT9<sup>1</sup></b>	<b>Technology/Operating bands</b>	<p>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).</p> <p>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</p>
	<b>Wireless protocol standards</b>	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
	<b>GPS</b>	Standalone, A-GPS (MS-A, MS-B)
	<b>GPS bands</b>	1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz, Beidou 1561.098 MHz
	<b>Maximum data rates</b>	LTE: 450 Mbps (Download), 50 Mbps (Upload) DC-HSPA+: 42 Mbps (Download), 5.76 Mbps (Upload) HSPA+: 21Mbps (Download), 5.76 Mbps (Upload)
	<b>Maximum output power</b>	LTE: 23 dBm HSPA+: 23.5 dBm
	<b>Maximum power consumption</b>	LTE: 1,200 mA (peak); 900 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average)
	<b>Form Factor</b>	M.2, 3042-S3 Key B
	<b>Weight</b>	5.8 g
	<b>Dimensions (Length x Width x Thickness)</b>	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.

<b>45 W AC adapter</b>	<b>Dimensions</b>	3.74 x 1.69 x 1.08in (9.5 x 4.3 x 2.75 cm)
	<b>Weight</b>	200g +/-10%
	<b>Input</b>	100 to 240 VAC
	<b>Input Efficiency</b>	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%
	<b>Input frequency range</b>	47 ~ 63Hz
	<b>Input AC current</b>	Max. 1.4 A at 90 Vac
	<b>Output</b>	
	<b>Output power</b>	45W
	<b>DC output</b>	5V/15W 9V/27W 12V/36W 15V/45W
	<b>Hold-up time</b>	5ms at 115 Vac input
	<b>Output current limit</b>	<5.0A
	<b>Connector</b>	USB Type-C®
	<b>Operating temperature</b>	32°F to 95°F (0°to 35°C)
	<b>Non-operating (storage) temperature</b>	-4°F to 185°F (-20° to 85°C)
	<b>Altitude</b>	0 to 16,400 ft (0 to 5000m)
	<b>Humidity</b>	20% to 95%
	<b>Storage Humidity</b>	10% to 95%
	<b>EMI and Safety Certifications</b>	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

<b>HP 65W USB TYPE-C PD adapter</b>	<b>Dimensions</b>	3.54 x 2.0 x 1.12 in (9.0cm x 5.1cm x 2.85cm)
	<b>Weight</b>	0.55 lb (250 g) max (Not including power cord. Power cord varies by country)
	<b>Input</b>	
	<b>Input Efficiency</b>	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%
	<b>Input frequency range</b>	47 ~ 63Hz
	<b>Input AC current</b>	Max. 1.6 A at 90 Vac
	<b>Output</b>	
	<b>Output power</b>	5V/15W 9V/27W 12V/60W 15V/60W 20V/65W
	<b>DC output</b>	5V/9V/12V/15V/20V
	<b>Hold-up time</b>	5ms at 115 Vac input
	<b>Output current limit</b>	<8.0A
	<b>Connector</b>	USB Type-C®
	<b>Operating temperature</b>	32°F to 95°F (0°to 35°C)
	<b>Non-operating (storage) temperature</b>	-4°F to 185°F (-20° to 85°C)
	<b>Altitude</b>	1 to 16,400 ft (0 to 5000m)
	<b>Humidity</b>	20% to 95%
	<b>Storage Humidity</b>	10% to 95%
	<b>EMI and Safety Certifications</b>	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

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

### Technical Specifications

#### AUDIO

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

#### FINGERPRINT READER

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

### Technical Specifications

#### ENVIRONMENTAL DATA

<b>Eco-Label Certifications &amp; declarations</b>	<p>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:</p> <ul style="list-style-type: none"> <li>• IT ECO declaration</li> <li>• US ENERGY STAR®</li> <li>• US Federal Energy Management Program (FEMP)</li> <li>• EPEAT<sup>□</sup> Gold registered in the United States. See <a href="http://www.epeat.net">http://www.epeat.net</a> for registration status in your country.</li> <li>• TCO Certified</li> <li>• China Energy Conservation Program (CECP)</li> <li>• China State Environmental Protection Administration (SEPA)</li> <li>• Taiwan Green Mark</li> <li>• Korea Eco-label</li> <li>• Japan PC Green label*</li> </ul>		
<b>Sustainable Impact Specifications</b>	<ul style="list-style-type: none"> <li>• Ocean-bound plastic in Speaker</li> <li>• 5% post-consumer recycled plastic</li> <li>• Low halogen</li> <li>• Outside Box and corrugated cushions are 100% sustainably sourced and recyclable</li> <li>• Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable</li> <li>• Bulk packaging available</li> </ul>		
<b>System Configuration</b>	<p>The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.</p>		
<b>Energy Consumption (in accordance with US ENERGY STAR® test method)</b>	<b>115VAC, 60Hz</b>	<b>230VAC, 50Hz</b>	<b>100VAC, 50Hz</b>
Normal Operation (Sort idle)	5.88 W	5.98 W	5.89 W
Normal Operation (Long idle)	3.32 W	3.44 W	3.26 W
Sleep	0.39 W	0.42 W	0.39 W
Off	0.2 W	0.22 W	0.2 W
	<p>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.</p>		
<b>Heat Dissipation*</b>	<b>115VAC, 60Hz</b>	<b>230VAC, 50Hz</b>	<b>100VAC, 50Hz</b>
Normal Operation (Short idle)	20.1 BTU/hr	20.5 BTU/hr	20.1 BTU/hr
Normal Operation (Long idle)	11.4 BTU/hr	11.8 BTU/hr	11.1 BTU/hr
Sleep	1.3 BTU/hr	1.4 BTU/hr	1.3 BTU/hr
Off	0.7 BTU/hr	0.8 BTU/hr	0.7 BTU/hr

### Technical Specifications

	*NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.		
<b>Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)</b>	Sound Power (L <sub>WAd</sub> , bels)	Sound Pressure (L <sub>pAm</sub> , decibels)	
Typically Configured – Idle	2.7	23.8	
Fixed Disk – Random writes	2.7	23.8	
Optical Drive – Sequential reads	-	-	
<b>Longevity and Upgrading</b>	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.		
<b>Additional Information</b>	<ul style="list-style-type: none"> <li>• This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.</li> <li>• This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.</li> <li>• This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).</li> <li>• This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see <a href="http://www.epeat.net">www.epeat.net</a></li> <li>• Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.</li> <li>• This product is 96.6% recycle-able when properly disposed of at end of life.</li> </ul>		
<b>Packaging Materials</b>	<b>External:</b>	PAPER/Corrugated	230 g
		PAPER/Paperboard	51 g
		PAPER/Molded Pulp	100 g
	<b>Internal:</b>	PLASTIC/Polyethylene low density - LDPE	9 g
		The plastic packaging material contains at least 100.0% recycled content.	
		The corrugated paper packaging materials contains at least 35.6% recycled content.	
<b>RoHS Compliance</b>	<p>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.</p> <p>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.</p> <p>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.</p> <p>To obtain a copy of the HP RoHS Compliance Statement, see <a href="#">HP RoHS position statement</a>.</p>		

### Technical Specifications

<p><b>Material Usage</b></p>	<p>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 <a href="http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html">http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html</a>):</p> <ul style="list-style-type: none"> <li>• Asbestos</li> <li>• Certain Azo Colorants</li> <li>• Certain Brominated Flame Retardants – may not be used as flame retardants in plastics</li> <li>• Cadmium</li> <li>• Chlorinated Hydrocarbons</li> <li>• Chlorinated Paraffins</li> <li>• Bis(2-Ethylhexyl) phthalate (DEHP)</li> <li>• Benzyl butyl phthalate (BBP)</li> <li>• Dibutyl phthalate (DBP)</li> <li>• Diisobutyl phthalate (DIBP)</li> <li>• Formaldehyde</li> <li>• Halogenated Diphenyl Methanes</li> <li>• Lead carbonates and sulfates</li> <li>• Lead and Lead compounds</li> <li>• Mercuric Oxide Batteries</li> <li>• Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.</li> <li>• Ozone Depleting Substances</li> <li>• Polybrominated Biphenyls (PBBs)</li> <li>• Polybrominated Biphenyl Ethers (PBBEs)</li> <li>• Polybrominated Biphenyl Oxides (PBBOs)</li> <li>• Polychlorinated Biphenyl (PCB)</li> <li>• Polychlorinated Terphenyls (PCT)</li> <li>• Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.</li> <li>• Radioactive Substances</li> <li>• Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)</li> </ul>
<p><b>Packaging Usage</b></p>	<p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> <li>• Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.</li> <li>• Eliminate the use of ozone-depleting substances (ODS) in packaging materials.</li> <li>• Design packaging materials for ease of disassembly.</li> <li>• Maximize the use of post-consumer recycled content materials in packaging materials.</li> <li>• Use readily recyclable packaging materials such as paper and corrugated materials.</li> <li>• Reduce size and weight of packages to improve transportation fuel efficiency.</li> <li>• Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.</li> </ul>
<p><b>End-of-life Management and Recycling</b></p>	<p>HP offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <a href="http://www.hp.com/go/reuse-recycle">http://www.hp.com/go/reuse-recycle</a> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.</p>



### Technical Specifications

	<p>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: <a href="http://www.hp.com/go/recyclers">http://www.hp.com/go/recyclers</a>. 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.</p>
<p><b>HP, Inc. Corporate Environmental Information</b></p>	<p>For more information about HP's commitment to the environment:</p> <p>Global Citizenship Report  <a href="http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html">http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html</a></p> <p>Eco-label certifications  <a href="http://www8.hp.com/us/en/hp-information/environment/ecolabels.html">http://www8.hp.com/us/en/hp-information/environment/ecolabels.html</a></p> <p>ISO 14001 certificates:  <a href="http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842">http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842</a>          and  <a href="http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf">http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf</a></p>
<p><b>footnotes</b></p>	<ul style="list-style-type: none"> <li>• Percentage of ocean-bound plastic contained in each component varies by product</li> <li>• Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.</li> <li>• External power supplies, WWAN modules, power cords, cables and peripherals excluded.</li> <li>• 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers.</li> <li>• Fiber cushions made from 100% recycled wood fiber and organic materials.</li> </ul>

### COUNTRY OF ORIGIN

China

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

#### DOCKING (Sold Separately)

<b>Docking station model #1</b>	HP USB-C Dock G5
<b>Total number of supported displays (incl. the notebook display)</b>	3
<b>Max. resolutions supported</b>	Dual 5K@ 30Hz + (1) 4K UHD (multi-function mode)
<b>Dock Connectors</b>	1xHDMI, 2xDP
<b>Technical limitations</b>	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.
<b>Docking station model #2</b>	HP USB-C/A Universal Dock G2
<b>Total number of supported displays (incl. the notebook display)</b>	3
<b>Max. resolutions supported</b>	Triple 4K UHD@ 60Hz 3840x2160
<b>Dock Connectors</b>	1xHDMI, 2xDP
<b>Technical limitations</b>	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
<b>Audio/Video</b>	HP Wired USB-A Stereo Headset	428K6AA
	HP Wired 3.5mm Stereo Headset	428K7AA
<b>Cases</b>	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	
<b>Docking</b>	HP USB-C Dock G5	5TW10AA
	HP USB-C/A Universal Dock G2	5TW13AA
<b>Hub</b>	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
<b>Adapter</b>	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
<b>Keyboard/Combo</b>	HP 325 Chrome BT Keyboard	45U14AA
<b>Mouse</b>	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)

<b>Power</b>	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
<b>Commodity</b>	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
May 26, 2022	V2 to V3	Added	Environmental Data
	V3 to V4		

© Copyright 2022 HP Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Intel, Celeron, Pentium and Intel vPro are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Bluetooth is a trademark owned by its proprietor and used by HP Inc. under license. USB Type-C® and USB-C® are registered trademarks of USB Implementers Forum. SDXC is a registered trademark of SD-3C in the United States, other countries or both. ENERGY STAR is a registered trademark of the U.S. Environmental Protection Agency. © 2022 Google LLC All rights reserved. Google and the Google Logo are registered trademarks of Google LLC.