

### Overview

#### HP ProBook Fortis 14 inch G10



#### Left

- |    |                              |     |                                                                  |
|----|------------------------------|-----|------------------------------------------------------------------|
| 1. | Internal microphones (2)     | 6.  | SuperSpeed USB Type-C® 5 Gbps signaling rate port                |
| 2. | Webcam LED                   | 7.  | SuperSpeed USB Type-A 5 Gbps signaling rate port (USB 3.2 Gen 1) |
| 3. | Camera Shutter               | 8.  | HDMI port (Cable not included)                                   |
| 4. | Webcam and HP Privacy Camera | 9.  | Ethernet (RJ-45) port                                            |
| 5. | Clickpad                     | 10. | Power Connector                                                  |

### Overview



#### Right

1. Power Button Key
2. Security lock slot (nano lock sold separately)
3. SuperSpeed USB Type-A 5 Gbps signaling rate port (USB 3.2 Gen 1)
4. Audio combo jack

### Overview

#### AT A GLANCE

- Windows 11 Pro, other Windows OS, or FreeDOS preinstalled
- Weight starting at 3.73 lbs (1.69 kgs)
- Undergoes 19 MIL-STD 810H, with rugged features such as co-molded rubber trim, and spill- and pick-resistant keyboard
- Choice of 12th generation Intel® Core™ i5 and i3 processors
- Choice of 35.6 cm (14") diagonal FHD IPS micro-edge LED touch screen (1920 X 1080), or 35.6 cm (14") diagonal FHD IPS micro-edge LED screen (1920 X 1080), or 35.6 cm (14") diagonal HD SVA micro-edge LED screen (1366x768)
- Up to 256 GB PCIe® NVMe™ M.2 Solid State Drive storage options
- Up to 8 GB total system memory
- Reliable connectivity with choice of Intel® Wi-Fi 6E AX211 and Bluetooth® 5.2 Combo WLAN or Intel® 9560 802.11b/g/n/a/ac (2x2) and Bluetooth® 5 Combo WLAN for learning and collaboration beyond the classroom
- Built-in ports include: Ethernet (RJ-45), USB 3.1 Gen 1, USB Type-C®, and HDMI 1.4b port for connecting to high-resolution displays
- Enhanced security TPM 2.0 discrete chip
- Battery life up to 9 hours and 45 minutes

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

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### Technical Specifications

#### PRODUCT NAME

HP ProBook Fortis 14 inch G10

#### OPERATING SYSTEM

**Preinstalled** Windows 11 Pro <sup>1</sup>  
 Windows 11 Pro Education <sup>1</sup>  
 Windows 11 Home - HP recommends Windows 11 Pro for business <sup>1</sup>  
 Windows 11 Home Single Language - HP recommends Windows 11 Pro for business <sup>1</sup>  
 Windows 11 Pro (Windows 11 Enterprise available with a Volume Licensing Agreement) <sup>1</sup>  
 Windows 10 Pro (available through downgrade rights from Windows 11 Pro) <sup>1,2</sup>  
 FreeDOS

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>.
2. This system is preinstalled with Windows 10 Pro software and also comes with a license for Windows 11 Pro software and provision for recovery software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.

#### PROCESSORS

| Processor <sup>3,4,5,6</sup> | Cores | Number of P-cores | Number of E-cores | Threads | L3 Cache | Max Turbo Frequency |         | Base Frequency |         |
|------------------------------|-------|-------------------|-------------------|---------|----------|---------------------|---------|----------------|---------|
|                              |       |                   |                   |         |          | P-cores             | E-cores | P-cores        | E-cores |
| Intel® Core™ i5-1230U        | 10    | 2                 | 8                 | 12      | 12MB     | 4.4 GHz             | 3.3 GHz | 1.0 GHz        | 0.7 GHz |
| Intel® Core™ i3-1210U        | 6     | 2                 | 4                 | 8       | 10MB     | 4.4 GHz             | 3.3 GHz | 1.0 GHz        | 0.7 GHz |

3. Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
4. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
5. In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on <http://www.support.hp.com>.
6. 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

#### CHIPSET

Chipset is integrated with processor

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#### GRAPHICS

##### Integrated

Intel® UMA Graphics

##### Supports

Support HD decode, DX12, HDMI 1.4b. <sup>7</sup>

[7. HD content required to view HD images.](#)

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#### DISPLAY

##### Non-Touch

35.6 cm (14") diagonal, HD (1366 x 768), SVA, micro-edge, anti-glare, 250 nits, 45% NTSC<sup>7,8,9</sup>

35.6 cm (14") diagonal, FHD (1920 x 1080), IPS, micro-edge, anti-glare, 250 nits, 45% NTSC<sup>7,8,9</sup>

##### Touch

35.6 cm (14") diagonal, FHD (1920 x 1080), touch, IPS, micro-edge, anti-glare, 250 nits, 45% NTSC<sup>7,9,10</sup>

##### Display Size

14" diagonal

35.6 cm (14") diagonal

[7. HD content required to view HD images.](#)

[8. Sold separately or as an optional feature.](#)

[9. Resolutions are dependent upon monitor capability, and resolution and color depth settings.](#)

[10. Actual brightness will be lower with touchscreen or HP Sure View.](#)

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### 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 Mini Dock           |
| <b>Docking station model #3</b> | HP USB-C/A Universal Dock G2 |
| <b>Docking station model #4</b> | HP USB-C Travel Dock G2      |

For additional aftermarket options and docking specs please see page 26.

#### STORAGE AND DRIVES

##### Primary Storage

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

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

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

#### MEMORY

##### Maximum Memory

8 GB LPDDR4X-4266 MHz RAM (on-board) <sup>12,13</sup>

##### Memory

8 GB LPDDR4X-4266 MHz RAM (on-board) (2 x 4 GB) <sup>12,13</sup>

4 GB LPDDR4X-4266 MHz RAM (on-board) (1 x 4 GB) <sup>12,13</sup>

##### Memory Slots

On-board LPDDR4x ; system runs at 4266 MHz <sup>12,13</sup>

Supports Dual Channel Memory

12. All slots are non-accessible / non-upgradeable.

13. Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

### Technical Specifications

#### NETWORKING/COMMUNICATIONS

##### WLAN

Intel® Wi-Fi CERTIFIED 6E™ AX211 (2x2) and Bluetooth® 5.2 combo, non-vPro® <sup>14</sup>

Intel® Dual Band Wireless-AC 9560 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 5 combo, non-vPro® <sup>15</sup>

##### Miracast

Native Miracast Support <sup>16</sup>

##### Ethernet

Realtek RTL8111HSH-CG 10/100/1000 GbE NIC <sup>17</sup>

14. 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.

15. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 5 (802.11 ac) is backwards compatible with prior 802.11 specs.

16. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.

17. The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

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#### AUDIO/MULTIMEDIA

##### Audio

HP HD Audio

2 Integrated stereo speakers

Integrated dual array microphone

##### Speaker Power

2W/4ohm per speaker

##### Camera

720p HD camera <sup>7</sup>

7. HD content required to view HD images.

### Technical Specifications

#### KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

##### Keyboard

Full-sized keyboard, spill and pick resistant keyboard

##### Pointing Device

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

##### Function Keys

F1 - Display Switching

F2 - Brightness Down

F3 - Brightness Up

F4 - Speaker Mute

F5 - Volume Down

F6 - Volume Up

F7 - Mic Mute

F8 - Blank

F9 - Blank

F10 - Insert

F11 - Wi-Fi Toggle

F12 - HP Programmable Key

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#### SOFTWARE AND SECURITY

##### Software

HP Quick Touch

HP Quick Drop <sup>18</sup>

HP PC Hardware Diagnostics Windows

HSA Fusion for Commercial

HSA Telemetry for Commercial

Touchpoint Customizer for Commercial

myHP

HP Smart Support <sup>19</sup>

HP Connection Optimizer

HP Mac Address Manager

HP Hotkey Support

HP Support Assistant <sup>20</sup>

HP Notifications

HP Power Manager

HP Privacy Settings

Buy Microsoft Office (Sold separately)

AI Noise Reduction Gen 2

##### Manageability Features

HP Manageability Integration Kit (download) <sup>21</sup>

HP Driver Packs (download)

HP Client Catalog (download)

HP Client Management Script Library (download)

HP Image Assistant (download)

## Technical Specifications

### Security Management

HP Sure Click <sup>22</sup>  
HP Sure Sense <sup>23</sup>  
HP Sure Start Gen7 <sup>24</sup>  
HP Sure Admin <sup>25</sup>

### BIOS

HP BIOSphere Gen6 <sup>26</sup>  
HP Secure Erase <sup>27</sup>  
Absolute Persistence Module <sup>28</sup>  
HP DriveLock & Automatic DriveLock  
BIOS Update via Network  
HP Wake on WLAN  
TPM 2.0 Embedded Security Chip (Common Criteria EAL4+ Certified) (FIPS 140-2 Level 2 Certified)  
HP Fingerprint Sensor <sup>29</sup>

### IPv6 Support

No

18. HP Quick Drop requires Internet access and Windows 10 or higher PC preinstalled with HP QuickDrop app and either an Android device (phone or tablet) running Android 7 or higher with the Android HP QuickDrop app, and /or an iOS device (phone or tablet) running iOS 12 or higher with the iOS HP QuickDrop app.
19. HP Smart Support automatically collects the telemetry necessary upon initial boot of the product to deliver device-level configuration data and health insights and is available preinstalled on select products, thru HP Factory Configuration Services; or it can be downloaded. For more information about how to enable HP Smart Support or for download, please visit <http://www.hp.com/smart-support>.
20. HP Support Assistant requires Windows and Internet Access
21. HP Manageability Integration Kit can be downloaded from <http://www.hp.com/go/clientmanagement>.
22. HP Sure Click requires Windows 10 Pro or higher or Enterprise. See [https://bit.ly/2PrLT6A\\_SureClick](https://bit.ly/2PrLT6A_SureClick) for complete details.
23. HP Sure Sense is available on select HP PCs with Windows 10 Pro, Windows 10 Enterprise, Windows 11 Pro, or Windows 11 Enterprise OS.
24. HP Sure Start Gen7 is available on select HP PCs and requires Windows 10 and higher.
25. HP Sure Admin requires Windows 10 or higher, HP BIOS, HP Manageability Integration Kit from <http://www.hp.com/go/clientmanagement> and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store.
26. HP BIOSphere Gen6 features may vary depending on the platform and configuration.
27. For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.
28. Absolute firmware module is shipped turned off and can only be activated with the purchase a license subscription and full activation of the software agent. License subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. Certain conditions apply. For full details visit: <https://www.absolute.com/about/legal/agreements/absolute/>.
29. Fingerprint Reader is an optional feature that must be configured at purchase.

### Technical Specifications

#### POWER

**Power Supply**

HP Smart 45 W External AC power adapter <sup>30</sup>

HP Smart 45 W USB Type-C adapter <sup>30</sup>

**Battery**

HP Long Life 3-cell, 42 Wh Polymer<sup>31,32</sup>

Supports HP Fast Charge (90% in 90 minutes) <sup>33</sup>

**Power Cord**

3-wire plug - 1m

**Battery life**

Up to 9 hours and 45 minutes<sup>34</sup>

**Battery Weight**

HP Long Life 3-cell - 42 Wh Polymer - .49lb

HP Long Life 3-cell - 42 Wh Polymer - 225g

30. Availability may vary by country.

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

32. 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.

33. Recharges up to 90% within 90 minutes when the system is off or in standby mode when used with the power adapter provided with the notebook. After charging has reached 90% capacity, charging speed will return to normal. Charging time may vary +/-10% due to System tolerance.

34. Windows 10 MM18 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See <http://www.bapco.com> for additional details.

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#### WEIGHTS & DIMENSIONS

**Product Weight**

Starting at 3.73 lb<sup>35</sup>

Starting at 1.69 kg<sup>35</sup>

**Product Dimensions (W x D x H)**

13.23 x 9.06 x 0.87 in

33.6 x 23 x 2.19 cm

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

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### Technical Specifications

#### PORTS/SLOTS

- 2 Super Speed USB Type-A 5Gbps signaling rate (USB 3.2 Gen 1)
- 1 SuperSpeed USB Type-C® 5 Gbps signaling rate port (USB Power Delivery, Alt-mode DisplayPort™ 1.2)
- 1 HDMI 1.4b <sup>36</sup>
- 1 RJ-45
- 1 AC power
- 1 headphone/microphone combo jack

[36. HDMI cable sold separately.](#)

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### 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>37</sup>

37. 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.

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### Technical Specifications

#### SYSTEM UNIT

##### Stand-Alone Power Requirements (AC Power)

|                           |         |
|---------------------------|---------|
| Nominal Operating Voltage | 19V     |
| Average Operating Power   |         |
| Integrated graphics       | Yes     |
| Discrete Graphics         | N/A     |
| Max Operating Power       | UMA<45W |

##### Temperature

|               |                               |
|---------------|-------------------------------|
| Operating     | 32° to 95° F (0° to 35° C)    |
| Non-operating | -4° to 140° F (-20° to 60° C) |

##### Relative Humidity

|               |                                                            |
|---------------|------------------------------------------------------------|
| Operating     | 10% to 90%, non-condensing                                 |
| Non-operating | 5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature |

##### Shock

|               |                        |
|---------------|------------------------|
| Operating     | 40 G, 2 ms, half-sine  |
| Non-operating | 240 G, 2 ms, half-sine |

##### Random Vibration

|               |            |
|---------------|------------|
| Operating     | 0.75 grams |
| Non-operating | 1.50 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         | HSN-I48C                                       |
| UL                              | Yes                                            |
| CSA                             | Yes                                            |
| FCC Compliance                  | Yes                                            |
| ENERGY STAR®                    | Yes <sup>38</sup>                              |
| EPEAT®                          | Registered Gold in United States <sup>39</sup> |
| ICES                            | Yes                                            |
| Australia /                     | Yes                                            |
| NZ A-Tick Compliance            | Yes                                            |
| CCC                             | Yes                                            |
| Japan VCCI Compliance           | Yes                                            |
| KC                              | Yes                                            |
| BSMI                            | Yes                                            |
| CE Marking Compliance           | Yes                                            |
| BNCI or BELUS                   | Yes                                            |
| CIT                             | Yes                                            |
| GOST (EAC)                      | Yes                                            |
| Saudi Arabian Compliance (ICCP) | Yes                                            |
| SABS                            | Yes                                            |
| UKRSERTCOMPUTER                 | Yes                                            |

38. Configurations of the HP ProBook Fortis 14 inch G9 that are ENERGY STAR® certified are identified HP ProBook Fortis 14 inch G9 ENERGY STAR on HP websites and on <http://www.energystar.gov>.

### Technical Specifications

39. EPEAT® registered where applicable. EPEAT registration varies by country. See <http://www.epeat.net> for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at <http://www.hp.com/go/options>.

#### DISPLAYS

Note: All specifications represent the typical specifications provided by hp's component manufacturers; actual performance may vary either higher or lower.

1. Actual brightness will be lower with touchscreen or HP Sure View.

|                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Panel LCD 14 inch FHD<br/>(1920 x 1080) Anti-Glare WLED<br/>IPS45% cg 250nits eDP<br/>slim NB</b> | <b>Outline Dimensions (W x H)</b><br><b>Active Area</b><br><b>Weight</b><br><b>Diagonal Size</b><br><b>Thickness</b><br><b>Interface</b><br><b>Surface Treatment</b><br><b>Touch Enabled</b><br><b>Contrast Ratio</b><br><b>Refresh Rate</b><br><b>Brightness</b><br><b>Pixel Resolution - Format</b><br><b>Backlight</b><br><b>Pixel Resolution</b><br><b>Color Gamut Coverage</b><br><b>Color Depth</b><br><b>Viewing Angle</b><br><b>Low Blue Light</b><br><b>Power Consumption (W, EBL@<br/>150nits max/ 200nits max)</b> | 316.17 x 197.98 mm (max)<br>309.37 x 174.02 mm (typ.)<br>285 g (max)<br>14.0 inch<br>3.0 mm (max)<br>eDP 1.2 (2 lane)<br>Anti-Glare<br>No<br>600:1 (typ.)<br>60 Hz<br>250 nits<br>1920 x 1080 (FHD)<br>WLED<br>RGB Stripe<br>45%<br>6 bits<br>UWVA 85/85/85/85<br>No<br><2.28W max. @150nits |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Panel LCD 14 inch FHD<br/>(1920 x 1080) Anti-Glare WLED<br/>IPS 45% cg 250nits eDP slim<br/>Touch on Panel Narrow Bezel</b> | <b>Outline Dimensions (W x H)</b><br><b>Active Area</b><br><b>Weight</b><br><b>Diagonal Size</b><br><b>Thickness</b><br><b>Interface</b><br><b>Surface Treatment</b><br><b>Touch Enabled</b><br><b>Contrast Ratio</b><br><b>Refresh Rate</b><br><b>Brightness</b><br><b>Pixel Resolution - Format</b><br><b>Backlight</b><br><b>Pixel Resolution</b> | 316.112 x 197.98 mm (max)<br>309.37 x 174.02 mm (typ.)<br>290 g (max)<br>14.0 inch<br>3.0 mm (panel side) / 3.2 mm (PCBA Side) (max)<br>eDP 1.2<br>Anti-Glare On-cell<br>Yes <sup>1</sup><br>600:1 (typ.)<br>60 Hz<br>250 nits <sup>1</sup><br>1920 x 1080 (FHD)<br>WLED<br>RGB Stripe |
|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Technical Specifications

|                                                             |                      |
|-------------------------------------------------------------|----------------------|
| <b>Color Gamut Coverage</b>                                 | 45%                  |
| <b>Color Depth</b>                                          | 6 bits               |
| <b>Viewing Angle</b>                                        | UWVA 85/85/85/85     |
| <b>Low Blue Light</b>                                       | No                   |
| <b>Power Consumption (W, EBL@ 150nits max/ 200nits max)</b> | 2.67W max. @ 150nits |

|                                                                                                                |                                   |                           |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------|
| <b>Panel LCD 14-in HD (1366x768)</b><br><b>Anti-Glare WLED SVA 45% cg</b><br><b>250nits eDP NWBZ ultraslim</b> | <b>Outline Dimensions (W x H)</b> | 316.2x198.04 max. (w/PCB) |
|                                                                                                                | <b>Active Area</b>                | 309.4 x 173.95 mm         |
|                                                                                                                | <b>Weight</b>                     | 285g Max                  |
|                                                                                                                | <b>Diagonal Size</b>              | 14 inch                   |
|                                                                                                                | <b>Thickness</b>                  | 3.0mm max.                |
|                                                                                                                | <b>Interface</b>                  | eDP 1.2                   |
|                                                                                                                | <b>Surface Treatment</b>          | Anti-Glare                |
|                                                                                                                | <b>Touch Enabled</b>              | No                        |
|                                                                                                                | <b>Contrast Ratio</b>             | 300:1 (typ)               |
|                                                                                                                | <b>Refresh Rate</b>               | 60Hz                      |
|                                                                                                                | <b>Brightness</b>                 | 250nits                   |
|                                                                                                                | <b>Pixel Resolution - Format</b>  | RGB                       |
|                                                                                                                | <b>Backlight</b>                  | WLED                      |
|                                                                                                                | <b>Pixel Resolution</b>           | 1366 x 768 (HD)           |
|                                                                                                                | <b>Color Gamut Coverage</b>       | NTSC 45%                  |
|                                                                                                                | <b>Color Depth</b>                | 6bits                     |
|                                                                                                                | <b>Viewing Angle</b>              | 45/45/15/30               |
| <b>Low Blue Light</b>                                                                                          | No                                |                           |
| <b>Power Consumption (W, EBL@ 150nits max/ 200nits max)</b>                                                    | <2.52W max./ <2.86W max.          |                           |

### Technical Specifications

#### STORAGE AND DRIVES

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

|                                       |                                 |                                          |
|---------------------------------------|---------------------------------|------------------------------------------|
| <b>SSD 128GB 2230 PCIe NVMe Value</b> | <b>Form Factor</b>              | M.2 2230                                 |
|                                       | <b>Capacity</b>                 | 128GB                                    |
|                                       | <b>NAND Type</b>                | TLC                                      |
|                                       | <b>Height</b>                   | 0.09 in (2.3 mm)                         |
|                                       | <b>Width</b>                    | 0.87 in (22 mm)                          |
|                                       | <b>Weight</b>                   | 0.01 lb (5 g)                            |
|                                       | <b>Interface</b>                | PCIe NVMe Gen3X4 or Gen3X2               |
|                                       | <b>Maximum Sequential Read</b>  | Up To 2100 MB/s                          |
|                                       | <b>Maximum Sequential Write</b> | Up To 1200 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; TRIM; L1.2                       |

|                                       |                                 |                                          |
|---------------------------------------|---------------------------------|------------------------------------------|
| <b>SSD 256GB 2230 PCIe NVMe Value</b> | <b>Form Factor</b>              | M.2 2230                                 |
|                                       | <b>Capacity</b>                 | 256GB                                    |
|                                       | <b>NAND Type</b>                | TLC                                      |
|                                       | <b>Height</b>                   | 0.09 in (2.3 mm)                         |
|                                       | <b>Width</b>                    | 0.87 in (22 mm)                          |
|                                       | <b>Interface</b>                | PCIe NVMe Gen3X4 or Gen3X2               |
|                                       | <b>Maximum Sequential Read</b>  | Up To 2500 MB/s                          |
|                                       | <b>Maximum Sequential Write</b> | Up To 1300 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; TRIM; L1.2                       |

### Technical Specifications

#### NETWORKING

Intel® AX211 Wi-Fi 6E<sup>1</sup>  
and Bluetooth® 5.2 M.2  
160MHz CNVi WW WLAN  
non-vPro®

**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<sup>3</sup>**

- IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only
- AES-CCMP: 128 bit in hardware
- 802.1x authentication
- WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.
- WPA2 certification
- WPA3 certification
- IEEE 802.11i
- WAPI

**Network Architecture  
Models**

Ad-hoc (Peer to Peer)  
Infrastructure (Access Point Required)

**Roaming**

IEEE 802.11 compliant roaming between access points

**Output Power<sup>2</sup>**

- 802.11b : +17dBm minimum



### Technical Specifications

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                         | <ul style="list-style-type: none"> <li>• 802.11g : +16dBm minimum</li> <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 10 mW</li> <li>• Radio disabled 8 mW</li> </ul>                                                                                                                                                                                                                                                                                                                                                           |
| <b>Power Management</b>                 | ACPI and PCI Express compliant power management<br>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<br>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<br>2. Type 1216: 1.67 x 12.0 x 16.0 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Weight</b>                           | 1. Type 2230 : 2.8g<br>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)<br><b>Non-operating</b> -40° to 176° F (-40° to 80° C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Humidity</b>                         | <b>Operating</b> 10% to 90% (non-condensing)<br><b>Non-operating</b> 5% to 95% (non-condensing)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Altitude</b>                         | <b>Operating</b> 0 to 10,000 ft (3,048 m)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

### Technical Specifications

**Non-operating** 0 to 50,000 ft (15,240 m)

**LED Activity**

LED Amber – Radio OFF; LED Off – Radio ON

**HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1/5.2 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 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels. 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® 9560</b><br/> <b>802.11a/b/g/n/ac (2x2)</b><br/> <b>Wi-Fi® and Bluetooth®</b><br/> <b>5.0 Combo 1 non-vPro®</b></p> | <p><b>Wireless LAN Standards</b></p>      | <p>IEEE 802.11a<br/>         IEEE 802.11b<br/>         IEEE 802.11g<br/>         IEEE 802.11n<br/>         IEEE 802.11ac<br/>         IEEE 802.11d<br/>         IEEE 802.11e<br/>         IEEE 802.11h<br/>         IEEE 802.11i<br/>         IEEE 802.11k<br/>         IEEE 802.11r<br/>         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<br/>2.402 – 2.482 GHz</li> <li>•802.11a/n/ac<br/>4.9 – 4.95 GHz (Japan)<br/>5.15 – 5.25 GHz<br/>5.25 – 5.35 GHz<br/>5.47 – 5.725 GHz<br/>5.825 – 5.850 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: max 1733Mbps</li> </ul>                                                                                                                                      |
|                                                                                                                                  | <p><b>Modulation</b></p>                  | <p>Direct Sequence Spread Spectrum<br/>         BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM</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)<br/>         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> <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> </ul> |

### Technical Specifications

|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                  |                               |                      |                                |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------------------|----------------------|--------------------------------|
| <b>Power Consumption</b>                                                       | <ul style="list-style-type: none"> <li>• 802.11ac VHT160(5GHz): +10dBm minimum</li> <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/Modern Standby: 10mW</li> <li>• Radio disabled: 8 mW</li> </ul>                                                                                                                     |                  |                               |                      |                                |
| <b>Power Management</b>                                                        | ACPI and PCI Express compliant power management<br>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> </ul> |                  |                               |                      |                                |
| <b>Antenna type</b>                                                            | High efficiency antenna with spatial diversity, mounted in the display enclosure.<br>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 with CNVi Interface                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |                               |                      |                                |
| <b>Dimensions</b>                                                              | <ol style="list-style-type: none"> <li>1. Type 2230: 2.3 x 22.0 x 30.0 mm</li> <li>2. Type 1216: 1.67 x 12.0 x 16.0 mm</li> </ol>                                                                                                                                                                                                                                                                                                                                  |                  |                               |                      |                                |
| <b>Weight</b>                                                                  | <ol style="list-style-type: none"> <li>1. Type 2230: 2.8g</li> <li>2. Type 1216: 1.3g</li> </ol>                                                                                                                                                                                                                                                                                                                                                                   |                  |                               |                      |                                |
| <b>Operating Voltage</b>                                                       | 3.3v +/- 9%                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |                               |                      |                                |
| <b>Temperature</b>                                                             | <table border="0"> <tr> <td style="padding-right: 10px;"><b>Operating</b></td> <td>14° to 158° F (-10° to 70° C)</td> </tr> <tr> <td><b>Non-operating</b></td> <td>-40° to 176° F (-40° to 80° C)</td> </tr> </table>                                                                                                                                                                                                                                              | <b>Operating</b> | 14° to 158° F (-10° to 70° C) | <b>Non-operating</b> | -40° to 176° F (-40° to 80° C) |
| <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>                                                                | <table border="0"> <tr> <td style="padding-right: 10px;"><b>Operating</b></td> <td>10% to 90% (non-condensing)</td> </tr> <tr> <td><b>Non-operating</b></td> <td>5% to 95% (non-condensing)</td> </tr> </table>                                                                                                                                                                                                                                                    | <b>Operating</b> | 10% to 90% (non-condensing)   | <b>Non-operating</b> | 5% to 95% (non-condensing)     |
| <b>Operating</b>                                                               | 10% to 90% (non-condensing)                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |                               |                      |                                |
| <b>Non-operating</b>                                                           | 5% to 95% (non-condensing)                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  |                               |                      |                                |
| <b>Altitude</b>                                                                | <table border="0"> <tr> <td style="padding-right: 10px;"><b>Operating</b></td> <td>0 to 10,000 ft (3,048 m)</td> </tr> <tr> <td><b>Non-operating</b></td> <td>0 to 50,000 ft (15,240 m)</td> </tr> </table>                                                                                                                                                                                                                                                        | <b>Operating</b> | 0 to 10,000 ft (3,048 m)      | <b>Non-operating</b> | 0 to 50,000 ft (15,240 m)      |
| <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                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |                               |                      |                                |
| <b>HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0 Wireless Technology</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                  |                               |                      |                                |
| <b>Bluetooth Specification</b>                                                 | 4.0/4.1/4.2/5.0 Compliant                                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |                               |                      |                                |
| <b>Frequency Band</b>                                                          | 2402 to 2480 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |                               |                      |                                |
| <b>Number of Available Channels</b>                                            | Legacy: 0~79 (1 MHz/CH)<br>BLE: 0~39 (2 MHz/CH)                                                                                                                                                                                                                                                                                                                                                                                                                    |                  |                               |                      |                                |
| <b>Data Rates and Throughput</b>                                               | Legacy: 3 Mbps data rate; throughput up to 2.17 Mbps<br>BLE 1 Mbps data rate; throughput up to 0.2 Mbps<br>Legacy: Synchronous Connection Oriented links up to 3, 64 kbps, voice channels<br>Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps                                                                                                                                                                                                     |                  |                               |                      |                                |

### Technical Specifications

**Transmit Power** asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)  
 The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.

1. Wi-Fi 5 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 5 (802.11 ac) is backwards compatible with prior 802.11 specs.
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).

|                                                              |                                             |                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Realtek RTL8111HSH<br/>10/100/1000 Integrated<br/>NIC</b> | <b>Ethernet Features</b>                    | 10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14)<br>100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30)<br>1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023 clauses 40)<br>Auto-Negotiation (Automatic Speed Selection)<br>Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s |
|                                                              | <b>Power Management</b>                     | ACPI compliant – multiple power modes<br>Situation-sensitive features reduce power consumption<br>Advanced link down power saving for reducing link down power consumption                                                                                                                                                                                     |
|                                                              | <b>Performance Features</b>                 | TCP/IP/UDP Checksum Offload (configurable)<br>Protocol Offload (ARP & NS)<br>Large send offload and Giant send offload<br>Receiving Side Scaling<br>Jumbo Frame 9K                                                                                                                                                                                             |
|                                                              | <b>Manageability</b>                        | Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only)<br>PXE 2.1 Remote Boot<br>Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30))<br>Comprehensive diagnostic and configuration software suite<br>Virtual Cable Doctor for Ethernet cable status |
|                                                              | <b>Interface<br/>NIC Device Driver Name</b> | PCIe + SMBus<br>Realtek PCIe GBE Ethernet Family Controller                                                                                                                                                                                                                                                                                                    |

### Technical Specifications

#### POWER

|                                      |                                                                                                                                                                                                                                                                                                               |                                                                     |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>HP 45W Smart AC adapter</b>       | <b>Dimensions</b>                                                                                                                                                                                                                                                                                             | 3.74 x 1.57 x 1.04 in (9.5 x 4.0 x 2.65 cm)                         |
|                                      | <b>Weight</b>                                                                                                                                                                                                                                                                                                 | 0.386 lb (175g) max                                                 |
|                                      | <b>Input</b>                                                                                                                                                                                                                                                                                                  | 90 to 265 VAC                                                       |
|                                      | <b>Input Efficiency</b>                                                                                                                                                                                                                                                                                       | 87.74% at 115Vac and 88.4% at 230Vac                                |
|                                      | <b>Input frequency range</b>                                                                                                                                                                                                                                                                                  | 47 to 63 Hz                                                         |
|                                      | <b>Input AC current</b>                                                                                                                                                                                                                                                                                       | 1.4 A at 90 VAC                                                     |
|                                      | <b>Output</b>                                                                                                                                                                                                                                                                                                 |                                                                     |
|                                      | <b>Output power</b>                                                                                                                                                                                                                                                                                           | 45W                                                                 |
|                                      | <b>DC output</b>                                                                                                                                                                                                                                                                                              | 19.5V                                                               |
|                                      | <b>Hold-up time</b>                                                                                                                                                                                                                                                                                           | 5 msec at 115 VAC input                                             |
|                                      | <b>Output current limit</b>                                                                                                                                                                                                                                                                                   | <8.0A                                                               |
|                                      | <b>Connector</b>                                                                                                                                                                                                                                                                                              | 4.5mm Barrel Type, 3 pin/grounded, mates with interchangeable cords |
|                                      | <b>Environmental Design</b>                                                                                                                                                                                                                                                                                   |                                                                     |
|                                      | <b>Operating temperature</b>                                                                                                                                                                                                                                                                                  | 32° to 95° F (0° to 35° C)                                          |
|                                      | <b>Non-operating (storage) temperature</b>                                                                                                                                                                                                                                                                    | -4° 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.<br>*CE Mark - full compliance with LVD and EMC directives<br>*Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE.<br>*MTBF - over 200,000 hours at 25°C ambient condition. |                                                                     |

|                                                   |                              |                                                                                                                                          |
|---------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HP 45W USB Type-C Straight 1.8m AC Adapter</b> | <b>Dimensions</b>            | 94.0mm x 40.0mm x 26.5mm                                                                                                                 |
|                                                   | <b>Weight</b>                | 192.5g +/-10%                                                                                                                            |
|                                                   | <b>Input</b>                 |                                                                                                                                          |
|                                                   | <b>Input Efficiency</b>      | Average Efficiency of 25%, 50%, 75%, 100% load condition with 115Vac/230Vac Spec:<br>5V: 81.5%<br>9V: 86.7%<br>12V: 87.41%<br>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>          | 5V/15W<br>9V/27W<br>12V/36W<br>15V/45W                                                                                                   |

### Technical Specifications

|                                            |                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DC output</b>                           | 5V/9V/12V/15V                                                                                                                                                                                                                                                                                                   |
| <b>Hold-up time</b>                        | 5ms at 115 Vac input                                                                                                                                                                                                                                                                                            |
| <b>Output current limit</b>                | <5.0A                                                                                                                                                                                                                                                                                                           |
| <b>Connector</b>                           | USB Type-C                                                                                                                                                                                                                                                                                                      |
| <b>Environmental Design</b>                |                                                                                                                                                                                                                                                                                                                 |
| <b>Operating temperature</b>               | 32° to 95° F (0° to 35° C)                                                                                                                                                                                                                                                                                      |
| <b>Non-operating (storage) temperature</b> | -4° 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:<br>*CE Mark - full compliance with LVD and EMC directives<br>* Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE.<br>* MTBF - over 200,000 hours at 25°C ambient condition. |

|                                                              |                                          |                                          |
|--------------------------------------------------------------|------------------------------------------|------------------------------------------|
| <b>AN 42Whr Long Life Polymer Fast Charge 3 cell Battery</b> | <b>Dimensions (H x W x L)</b>            | H6.6mm Max; W67.8mm ±0.15; L249.5mm ±0.2 |
|                                                              | <b>Weight</b>                            | 225g Max                                 |
|                                                              | <b>Cells/Type</b>                        | 3 cell; Polymer                          |
|                                                              | <b>Energy</b>                            |                                          |
|                                                              | <b>Voltage</b>                           | 11.4V                                    |
|                                                              | <b>Amp-hour capacity</b>                 | 3.75Ah                                   |
|                                                              | <b>Watt-hour capacity</b>                | 42.75Wh                                  |
|                                                              | <b>Temperature</b>                       | 5° to 40° C                              |
|                                                              | <b>Operating (Charging)</b>              | 0° to 45° C                              |
|                                                              | <b>Operating (Discharging)</b>           | -10° to 60° C                            |
|                                                              | <b>Fuel Gauge LED</b>                    | NA                                       |
|                                                              | <b>Warranty</b>                          | 1000 cycles                              |
|                                                              | <b>Optional Travel Battery Available</b> | No                                       |

### Technical Specifications

#### AUDIO

|                                         |                                                                                                                                   |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>HD Stereo Codec</b>                  | Realtek ALC3247                                                                                                                   |
| <b>Audio I/O Ports</b>                  | CTIA only                                                                                                                         |
| <b>Internal Speaker Amplifier</b>       | 2W class D stereo amplifier for the internal speaker only                                                                         |
| <b>Multi-streaming Capable Sampling</b> | Yes, follow Microsoft policy<br>spk/headphone - 16/24bit, 48kHz<br>microphone - 16bit/48kHz<br>external - 16/24bit, 48kHz/44.1kHz |
| <b>Wavetable Syntheses</b>              | 2w/4ohm per speaker                                                                                                               |
| <b>Analog Audio</b>                     | CTIA only                                                                                                                         |
| <b># of Channels on Line-Out</b>        | N/A                                                                                                                               |
| <b>Internal Speaker</b>                 | YES                                                                                                                               |

#### 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 + 4K UHD (multi-function mode) 5120x2880                                                                                                                                                                                                                                                                                                          |
| <b>Dock Connectors</b>                                                 | 1xHDMI, 2xDP                                                                                                                                                                                                                                                                                                                                                    |
| <b>Technical limitations</b>                                           | Highest resolution with dual displays is two 8K@ 60Hz host in High Resolution mode.<br>Three maximum displays supported are two 5K@ 30 Hz on DP ports plus one 4K UHD@ 30 Hz on HDMI in multi-function mode.<br>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 Mini Dock                                                                                                                                                                                                                                                                                                                                              |
| <b>Total number of supported displays (incl. the notebook display)</b> | 1                                                                                                                                                                                                                                                                                                                                                               |
| <b>Max. resolutions supported</b>                                      | Single 4K@30Hz (HDMI) or 2K@60Hz (VGA)                                                                                                                                                                                                                                                                                                                          |
| <b>Dock Connectors</b>                                                 | 1xHDMI, 1xVGA                                                                                                                                                                                                                                                                                                                                                   |
| <b>Technical limitations</b>                                           | One display supported at a time                                                                                                                                                                                                                                                                                                                                 |
| <b>Docking station model #3</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 3840 x 2160                                                                                                                                                                                                                                                                                                                                 |
| <b>Dock Connectors</b>                                                 | 1xHDMI, 2xDP                                                                                                                                                                                                                                                                                                                                                    |
| <b>Technical limitations</b>                                           | The best resolution for dual or triple displays is 4K UHD@ 60Hz.<br>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.                                                                                                                               |
| <b>Docking station model #4</b>                                        | HP USB-C Travel Dock G2                                                                                                                                                                                                                                                                                                                                         |
| <b>Total number of supported displays (incl. the notebook display)</b> | 1                                                                                                                                                                                                                                                                                                                                                               |
| <b>Max. resolutions supported</b>                                      | Single 4K@ 30 Hz 4960 x 2160 (via HDMI) or 1920 x 1200@ 60Hz via VGA                                                                                                                                                                                                                                                                                            |
| <b>Dock Connectors</b>                                                 | 1xHDMI, 1xVGA                                                                                                                                                                                                                                                                                                                                                   |
| <b>Technical limitations</b>                                           | Single external display using either HDMI or VGA                                                                                                                                                                                                                                                                                                                |

### 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 Business 14.1 Sleeve                | 2UW01AA         |
|                                   | HP Business 15.6 Top Load              | 25C66AA         |
|                                   | HP Business Slim 14.1 Top Load         | 25C65AA         |
|                                   | HP Business Slim 17.3 Top Load         | 2UW02AA         |
|                                   | HP Executive 14.1 Tote                 | 6KD10AA         |
|                                   | HP Executive 15.6 Backpack             | 6KD07AA         |
|                                   | HP Executive 15.6 Top Load             | 6KD06AA         |
|                                   | HP Executive 17.3 Backpack             | 6KD05AA         |
|                                   | HP Executive 17.3 Top Load             | 6KD08AA         |
|                                   | HP Executive Leather 15.6 Top Load     | 6KD09AA         |
|                                   | 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 Renew 14 Laptop Sleeve              | 2E6U9AA,2E6V0AA |
|                                   | HP Renew Business 14.1 Laptop Bag      | 3E5F9AA         |
|                                   | HP Renew Business 14.1 Laptop Sleeve   | 3E2U7AA         |
|                                   | HP Renew Business 15.6 Laptop Bag      | 3E5F8AA         |
|                                   | HP Renew Business 17.3 Laptop Backpack | 3E2U5AA         |
| HP Renew Business 17.3 Laptop Bag | 3E2U6AA                                |                 |
| HP Mobility 14 Laptop             | 4U9G9AA                                |                 |
| <b>Docking</b>                    | HP USB-C 120W G5 Dock                  | 5TW10AA         |
|                                   | HP USB-C/A 120W G2 Universal Dock      | 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>Dongle</b>                     | HP HDMI to DVI Adapter                 | F5A28AA         |
|                                   | HP HDMI to VGA Adapter                 | H4F02AA         |
|                                   | HP USB-C to DisplayPort Adapter        | N9K78AA         |
|                                   | HP USB-C to HDMI 2.0 Adapter           | 1WC36AA         |
|                                   | HP USB-C to RJ45 Adapter               | V7W66AA         |
|                                   | HP USB-C to USB 3.0 Adapter            | N2Z63AA         |
|                                   | HP USB-C to VGA Adapter                | N9K76AA         |
|                                   | HP USB to Gigabit RJ45 Adapter         | N7P47AA         |

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

|                                                   |                                                          |             |
|---------------------------------------------------|----------------------------------------------------------|-------------|
| <b>Keyboard/Combo</b>                             | HP 975 USB+BT Dual-Mode Wireless Keyboard                | 3Z726AA     |
|                                                   | HP 455 Programmable Wireless Keyboard                    | 4R177AA     |
|                                                   | HP 125 WD USB Keyboard                                   | 266C9AA     |
|                                                   | HP 320K WD USB Keyboard                                  | 9SR37AA     |
|                                                   | HP 655 Wireless Keyboard and Mouse Combo                 | 4R009AA     |
|                                                   | HP 225 Wired Mouse and Keyboard Combo                    | 286J4AA     |
|                                                   | HP 235 Wireless Mouse and Keyboard Combo                 | 1Y4D0AA     |
|                                                   | HP Slim Wireless Keyboard and Mouse                      | T6L04AA     |
|                                                   | HP Wired Desktop 320MK Mouse and Keyboard                | 9SR36AA     |
| HP Wireless Rechargeable 950MK Mouse and Keyboard | 3M165AA                                                  |             |
| <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     |
| <b>Power</b>                                      | HP 65W USB-C Auto Chevy AC Power Adapter                 | 5TQ76AA     |
|                                                   | HP 45W 4.5 mm Smart AC Power Adapter                     | H6Y88AA     |
|                                                   | HP 45W USB-C G2 Zeus AC Power Adapter                    | 1HE07AA     |
|                                                   | HP 45W USB-C LC Dali AC Power Adapter                    | 1MZ01AA     |
|                                                   | HP 65W 4.5 mm Smart AC Power Adapter                     | H6Y89AA     |
|                                                   | HP 65W 4.5 mm wDongle 7.4 mm Slim AC Power Adapter       | H6Y82AA     |
|                                                   | HP 65W USB-C Hades AC Power Adapter                      | 1HE08AA     |
|                                                   | HP 65W USB-C LC AC Power Adapter                         | 1P3K6AA     |
|                                                   | HP 65W 4.5 mm LC Smart non-EM India Ony AC Power Adapter | 3FF84AA#ACJ |
| HP 65W Portable Laptop Charger                    | 468T1AA                                                  |             |
| <b>Commodity</b>                                  | HP USB DVD-Writer EXT ODD                                | F2B56AA     |
|                                                   | HP Nano Keyed Cable Lock                                 | 1AJ39AA     |
|                                                   | HP Nano Master Keyed Cable Lock                          | 1AJ40AA     |
|                                                   | HP SureKey Standard/Nano/Wedge Cable Lock                | 6UW42AA     |

### Summary of Changes

| Date of change:   | Version History: | Updated | Description of change:                                    |
|-------------------|------------------|---------|-----------------------------------------------------------|
| January 26, 2022  | V1 to V2         | Added   | AI Noise Reduction Gen 2 in Software and Security section |
| February 28, 2022 | V2 to V3         | Removed | HP 955 4K Webcam from Accessories section                 |
| March 4, 2022     | V3 to V4         | Added   | Fast Charge in Battery section                            |
| April 11, 2022    | V4 to V5         | Added   | Reference for USB ports                                   |
| April 21, 2022    | V5 to V6         | Added   | Battery Life and removed eMMC                             |
|                   | V6 to V7         |         |                                                           |
|                   |                  |         |                                                           |
|                   |                  |         |                                                           |
|                   |                  |         |                                                           |

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