

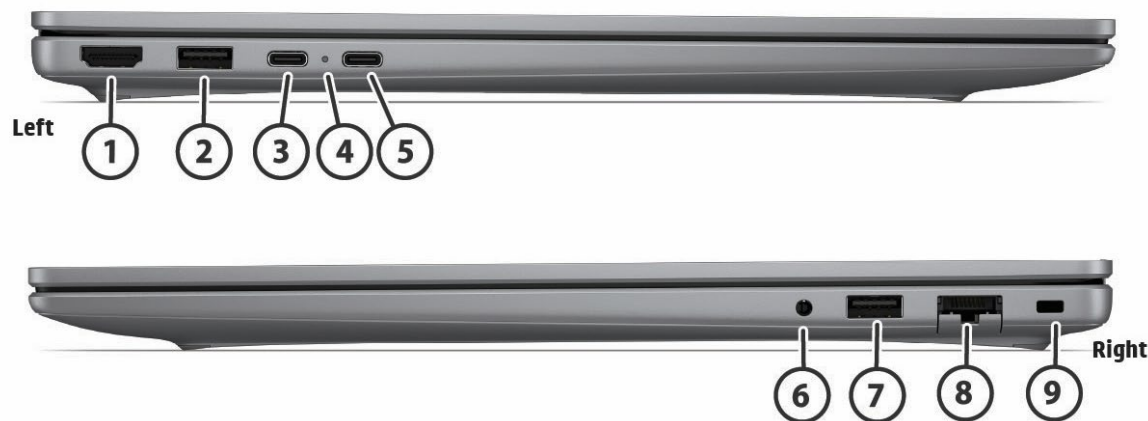
HP 200 G2a 16 inch Notebook PC



Front

- |   |                         |   |            |
|---|-------------------------|---|------------|
| 1 | Internal Microphone (2) | 4 | Webcam LED |
| 2 | Webcam                  | 5 | Touchpad   |
| 3 | Camera Shutter          |   |            |





| Sides |                                                                          |
|-------|--------------------------------------------------------------------------|
| 1     | HDMI 2.1                                                                 |
| 2     | USB Type-A 5Gbps signaling rate (Powered)                                |
| 3     | USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4) |
| 4     | Power Indicator LED                                                      |
| 5     | USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4) |
| 6     | Headphone/mic combo jack                                                 |
| 7     | USB Type-A 5Gbps signaling rate (Powered)                                |
| 8     | RJ45 Ethernet port                                                       |
| 9     | Nano Security Slot                                                       |

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### PRODUCT NAME

HP 200 G2a 16 inch Notebook PC

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### OPERATING SYSTEM

#### Preinstalled

FreeDOS

Windows 11 Home - HP recommends Windows 11 Pro for business <sup>1</sup>

Windows 11 Home Education <sup>1</sup>

Windows 11 Home Single Language - HP recommends Windows 11 Pro for business <sup>1</sup>

Windows 11 Pro <sup>1</sup>

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>

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PROCESSORS

| Processor <sup>2,3,4,5</sup>    | Cores   | Threads | L3 Cache | Max Boost Frequency | Base Frequency | Integrated Graphics | NPU     |
|---------------------------------|---------|---------|----------|---------------------|----------------|---------------------|---------|
| AMD Ryzen™ 7 H processor 255    | 8 cores | 16      | 16 MB    | 4.90 GHz            | 3.80 GHz       | AMD Radeon™ 780M    | N/A     |
| AMD Ryzen™ 7 processor 250      | 8 cores | 16      | 16 MB    | 5.10 GHz            | 3.30 GHz       | AMD Radeon™ 780M    | 16 TOPS |
| AMD Ryzen™ 5 processor 220      | 6 cores | 12      | 16 MB    | 4.90 GHz            | 3.20 GHz       | AMD Radeon™ 740M    | N/A     |
| AMD Ryzen™ 3 processor 210      | 4 cores | 8       | 8 MB     | 4.70 GHz            | 3.00 GHz       | AMD Radeon™ 740M    | N/A     |
| AMD Ryzen™ 5 processor 40       | 4 cores | 8       | 4 MB     | 4.30 GHz            | 2.80 GHz       | AMD Radeon™ 740M    | N/A     |
| AMD Ryzen™ 3 processor 30       | 4 cores | 8       | 4 MB     | 4.10 GHz            | 2.40 GHz       | AMD Radeon™ 610M    | N/A     |
| AMD Athlon™ Gold processor 20   | 2 cores | 4       | 4 MB     | 3.70 GHz            | 2.40 GHz       | AMD Radeon™ 610M    | N/A     |
| AMD Athlon™ Silver processor 10 | 2 cores | 2       | 2 MB     | 3.50 GHz            | 2.40 GHz       | AMD Radeon™ 610M    | N/A     |

Processor Family

- AMD Ryzen™ 7 H processor
- AMD Ryzen™ 7- processor
- AMD Ryzen™ 5- processor
- AMD Ryzen™ 3- processor
- AMD Athlon™ Gold processor
- AMD Athlon™ Silver processor

2. 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. AMD’s numbering is not a measurement of clock speed.

3. AMD Max Boost frequency performance varies depending on hardware, software and overall system configuration.

4. 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>.

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5. Features and software that require a NPU may require software purchase, subscription or enablement by a software or platform provider, and third party software may have specific configuration or compatibility requirements. Potential NPU inferencing performance varies by use, configuration, and other factors.

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### GRAPHICS

#### Integrated

AMD Radeon™ Graphics

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DISPLAY

Availability may vary by country.  
Actual brightness will be lower with touchscreen or HP Sure View.

- 40.6 cm (16") diagonal, 2.5K (2560 x 1600), LCD, UWVA, Anti-Glare, Low Blue Light, 500 nits, sRGB 100%
- 40.6 cm (16") diagonal, WUXGA (1920 x 1200), LCD, UWVA, , Anti-Glare, WLED, 300 nits, sRGB 62.5%
- 40.6 cm (16") diagonal, WUXGA (1920 x 1200), OLED, UWVA, BrightView, OLED+ Low Blue Light, 300nit, DCI-P3 95%

Display Size (Diagonal)

40.6 cm (16.0")

Aspect Ratio

16:10

Screen to Body Ratio

Up to 88%

Max Hinge Open Angle

135°



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### STORAGE AND DRIVES

#### Storage

1 TB PCIe® NVMe™ SSD Value <sup>6</sup>

512 GB PCIe® NVMe™ SSD Value <sup>6</sup>

256 GB PCIe® NVMe™ SSD Value <sup>6</sup>

6. For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 32 GB is reserved for system recovery software.

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MEMORY

Only one memory type option can be selected in a single unit.

HP branded SODIMM memory is recommended to ensure compatibility. If two SODIMM memory modules with different speeds are installed, the system will perform at the lower memory speed.

| Option                          | Option 1                                                                                                                                                                                              | Option 2                                                                                          |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Memory slots                    | Two SODIMM slot                                                                                                                                                                                       | Onboard memory, no memory slots                                                                   |
| Memory type                     | DDR5                                                                                                                                                                                                  | LPDDR5x                                                                                           |
| Maximum supported memory        | 32GB DDR5-5600 MT/s                                                                                                                                                                                   | 32GB LPDDR5x-7500 MT/s                                                                            |
| Available memory configurations | 8GB (1 x 8GB) DDR5-5600 MT/s<br>12GB (1 x 12GB) DDR5-5600 MT/s<br>16GB (1 x 16GB) DDR5-5600 MT/s<br>16GB (2 x 8GB) DDR5-5600 MT/s<br>24GB (1 x 24GB) DDR5-5600 MT/s<br>32GB (1 x 32GB) DDR5-5600 MT/s | 8GB LPDDR5-5500 MT/s<br>8GB LPDDR5x-6400 MT/s<br>16GB LPDDR5x-7500 MT/s<br>32GB LPDDR5x-7500 MT/s |
| Notes                           | System runs at 5600 MT/s.<br>Memory is non-accessible / non-upgradeable.<br>Supports Dual Channel Memory.                                                                                             | System runs at 5500 MT/s<br>Memory is non-accessible / non-upgradeable.                           |

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### NETWORKING /COMMUNICATIONS

Items below may be optional.

#### Ethernet

RTK GBE Ethernet Controller <sup>7</sup>

#### WLAN

Mediatek MT7920 Wi-Fi 6 Bluetooth® 5.4 WW WLAN <sup>9,10</sup>

Realtek 8922AE-VS Wi-Fi 7 Bluetooth® 6.0 WW WLAN <sup>8,9</sup>

#### Miracast <sup>11</sup>

Compatible with Miracast-certified devices (For Win11)

7. 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

8. Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires compatible Windows OS, select processor, and a Wi-Fi 7 router, sold separately. Wi-Fi 7 is backwards compatible with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported. The specification for 802.11BE is a draft specification and is not final. If the final specification differs from the draft specification, it may affect the ability of the device to communicate with other 802.11BE devices.

9. 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. Available in countries where Wi-Fi 6E is supported.

10. 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).

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



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### AUDIO/MULTIMEDIA

Privacy panel is only available on select models.

#### Audio

Audio by Poly Studio

2 Integrated stereo speakers

2 Integrated dual array microphone

AI noise reduction

#### Speaker Power

2W / 4 ohm per speaker

#### Camera

FHD HDR camera

FHD HDR camera, IR camera

#### Sensors

Fingerprint Sensor

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

#### Keyboard

HP Standard Notebook Keyboard with numeric keypad, spill-resistant, backlit keyboard.

HP Standard Notebook Keyboard with numeric keypad, spill-resistant keyboard.

#### Pointing Device

Clickpad

#### Function Keys

F1 - Display Switching

F2 - Screenshot

F3 - Brightness Down

F4 - Brightness Up

F5 - Play and Pause

F6 - Audio Mute

F7 - Volume Down

F8 - Volume Up

F9 - Mic Mute

F10 - Blank or Backlit Toggle

F11 - Programmable Key

F12 - Settings

#### Hidden Function Keys

Fn+R - Break

Fn+S - Sys Rq

Fn+C - Scroll Lock



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### SOFTWARE AND SECURITY

#### Application Software

MS Office WW Common

MS Office - Lang Packs

WPS Office CMIT

Dropbox Promotion

Dropbox URL

E-QR Code - UWP

sMedio True DVD for HP

Adobe offer

Doubao

HP Documentation

Retail Demo -Video Attract Loop

HP app<sup>12</sup>

HP Privacy Settings

Windows Push Button Reset Recovery - CPS

Windows 10 HP Driver Reinstallation Support - CPS

HP SSRM

HP Support Assistant<sup>13</sup>

HP Connection Optimizer

ENERGY STAR UWP

HP PC Hardware Diagnostics Windows

Touchpoint Customizer for Consumer

HP PC Hardware Diagnostics UEFI

HP Setup Integrated OOBE (GDPR)

Bing Search for IE11

WW-BTB Host and ISP Stub

Audio Brand Logo Rules Configuration

Booking URL

Booking Edge Fav

Agoda URL

Agoda Edge Fav

HP Smart Support<sup>14</sup>



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HP System Event Utility - UWP  
HSA Telemetry for Consumer  
HSA fusion  
TCO E-Logo

### Manageability Features

Windows Cloud Bare Metal Recovery - CPS  
HP BIOS Recovery

### Security Features

McAfee - MLS  
McAfee Checkbox  
McAfee LiveSafe Install Rules Configuration  
McAfee URL

### Security- TPM

### Model

Model: Nuvoton NPCT760HACYX

### Firmware Version

Firmware Version: 7.2.4.0

### FIPS 140-2 Compliant

No. It is FIPS 140-3 Level 1 Compliant.

### BIOS

Absolute Persistence Module<sup>15</sup>  
HP Secure Erase<sup>16</sup>  
HP Fingerprint Sensor

### Does the BIOS implement the ISO/IEC 19678:2015 (formerly NIST 800-147) guidelines?

Yes



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**UEFI version**

2.8B

**Class**

3

12. HP app requires Windows 10 or higher OS. Multicamera support for Mini Desktop PC only available on 13th processor and beyond.

13. HP Support Assistant is available on Windows. For more information, please visit <http://www.support.hp.com/help/hp-support-assistant>

14. 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>.

15. Absolute Persistence 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/>.

16. HP Secure Erase implements the methods outlined in the National Institute of Standards and Technology Special.

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### POWER

Power supply availability may vary by country.

Battery is internal and replaceable by customer.

Higher wattage adapter is recommended for best performance and fastest charging.

Using lower-capacity third-party USB Type-C® power cables may reduce power delivery.

#### Power Supply

HP 100W Wall Mount USB Type-C® Gallium Nitride AC power adapter

HP 65W Wall Mount USB Type-C® Gallium Nitride AC power adapter

HP 65W Standard USB Type-C® Gallium Nitride AC power adapter

HP 45W Standard USB Type-C® Gallium Nitride AC power adapter

#### Battery

HP Long Life 4 cell, 68Wh Polymer<sup>17</sup>

HP Long Life 3 cell, 41Wh Polymer<sup>17</sup>

#### Battery Recharge Time

Supports battery HP Fast Charge: approximately 50% in 45 minutes

#### Power Cord

3-wired plug- 1.0m

USB Type-C® Power Cable- 2.0m for wall mount adapter

#### Battery life

Up to 9.20 hours with 41whr battery (HP Long Life 3-Cell, 41 Whr Polymer, UMA graphic, AMD HPT 15W, Display set to 300 nits display, 256GB SSD) Up to 16.81 hours with 68whr battery (HP Long Life 4-Cell, 68 Whr Polymer, UMA graphic, AMD HPT 15W, Display set to 300 nits display, 256GB SSD)

17. MobileMark 25 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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### WEIGHT & DIMENSIONS

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

Front height measurement is near the front edge where the mechanical chassis taper begins. Back height measurement is near the rear edge where the mechanical chassis taper ends.

#### Product Weight

Starting at 1.7 kg (3.75 lb)

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

#### Product Dimensions (w x d x h)<sup>18</sup>

358.6 mm (W) x 251.8 mm (D) x 11.2 mm (H front) / 15.35 mm (H rear)

(14.11 in (W) x 9.91 in (D) x 0.44 in (H front)/ 0.6 in (H rear))

Maximum height 18.90 mm (0.74 in)

#### Pallet Dimensions (w x d x h)

Product packaging size varies based on options chosen. Please contact your HP representative for your packaging size details. For detailed packaging information, access the [HP Commercial Notebooks Packaging Guide](#).

18. Typical dimension. Actual dimension may vary +/- 0.5mm. Height may vary based on configuration. Maximum Height does not include Rubber feet.

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### PORTS/SLOTS

#### Left side

- 2 x USB Type-C® 10Gbps signaling rate (USB Power Delivery, DisplayPort™ 1.4)
- 1 x USB Type-A 5Gbps signaling rate (Powered)
- 1 x HDMI 2.1

#### Right side

- 1 x USB Type-A 5Gbps signaling rate (Powered)
  - 1 x headphone/mic combo jack
  - 1 x Nano Security Slot
  - 1 x RJ45 Ethernet port
- 



ENVIRONMENTAL DATA

|                    |                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              |              |
|--------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|
| Environmental Data | Eco-Label Certifications & Declarations                             | This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks: <ul style="list-style-type: none"><li>IT ECO declaration</li><li>US ENERGY STAR®</li><li>US Federal Energy Management Program (FEMP)</li><li>EPEAT® Gold registered in the United States. See <a href="http://www.epeat.net">http://www.epeat.net</a> for registration status in your country.</li><li>TCO</li><li>China Energy Conservation Program (CECP)</li><li>China State Environmental Protection Administration (SEPA)</li><li>Taiwan Green Mark</li><li>Korea Eco-label</li><li>Japan PC Green label*</li></ul>              |              |              |
|                    | Sustainable Impact Specifications                                   | <ul style="list-style-type: none"><li><a href="#">Product Carbon Footprint</a></li><li>At least 5% ocean bound plastic in the Speaker Parts<sup>1</sup></li><li>At least 20% post-consumer recycled plastic<sup>2</sup></li><li>At least 80% recycled metal<sup>3</sup></li><li>External Power Supply 90% Efficiency</li><li>Low Halogen<sup>4</sup></li><li>100% of HP paper-based packaging is from recycled or certified sustainable sources<sup>5</sup></li><li>Bulk packaging available</li><li>Outside Box and corrugated cushions are 100% sustainably sourced and recyclable</li><li>Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable</li></ul> |              |              |
|                    | System Configuration                                                | The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a "Typically Configured Notebook".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |              |
|                    | Energy Consumption (in accordance with US ENERGY STAR® test method) | 115VAC, 60Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 230VAC, 50Hz | 100VAC, 50Hz |
|                    | Normal Operation (Sort idle)                                        | 5.988 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6.084 W      | 6.012 W      |
|                    | Normal Operation (Long idle)                                        | 0.708 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.816 W      | 0.732 W      |



|  |                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                 |              |
|--|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|--------------|
|  | Sleep                                                                     | 0.708 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.816 W                                         | 0.732 W      |
|  | Off                                                                       | 0.348 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.384 W                                         | 0.348 W      |
|  |                                                                           | Note:<br>Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system. |                                                 |              |
|  | Heat Dissipation*                                                         | 115VAC, 60Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 230VAC, 50Hz                                    | 100VAC, 50Hz |
|  | Normal Operation (Short idle)                                             | 20 BTU/hr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 21 BTU/hr                                       | 21 BTU/hr    |
|  | Normal Operation (Long idle)                                              | 2 BTU/hr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3 BTU/hr                                        | 3 BTU/hr     |
|  | Sleep                                                                     | 2 BTU/hr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3 BTU/hr                                        | 3 BTU/hr     |
|  | Off                                                                       | 1 BTU/hr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1 BTU/hr                                        | 1 BTU/hr     |
|  |                                                                           | *NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                 |              |
|  | Declared Noise Emissions<br>(in accordance with<br>ISO 7779 and ISO 9296) | Sound Power<br>(L <sub>WAd</sub> , bels)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Sound Pressure<br>(L <sub>pAm</sub> , decibels) |              |
|  | Typically Configured - Idle                                               | 2.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 25                                              |              |
|  | Fixed Disk - Random writes                                                | 4.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 45                                              |              |
|  | Optical Drive - Sequential reads                                          | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | N/A                                             |              |
|  | Longevity and Upgrading                                                   | This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the<br><br>Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.                                                                                                                                                                                                                                                                             |                                                 |              |



|  |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                  |       |
|--|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------|
|  | Additional Information | <ul style="list-style-type: none"><li>This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.</li><li>This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive - 2002/96/EC.</li><li>This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).</li><li>This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see <a href="http://www.epeat.net">www.epeat.net</a></li><li>Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.</li><li>This product is 94.6% recycle-able when properly disposed of at end of life.</li></ul>                                                                                                                                                                                                                                                                                                                          |                                  |       |
|  | Packaging Materials    | External:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | PAPER/Corrugated                 | 280 g |
|  |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | PAPER/Molded Pulp                | 196 g |
|  |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | PAPER/Paper                      | 11 g  |
|  |                        | Internal:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | PLASTIC/Polyethylene low density | 10 g  |
|  |                        | The plastic packaging material contains at least 100% recycled content.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                  |       |
|  |                        | The corrugated paper packaging materials contains at least 35% recycled content.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                  |       |
|  | RoHS Compliance        | <p>HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam.</p> <p>We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products.</p> <p>We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve.</p> <p>To obtain a copy of the HP RoHS Compliance Statement, see <a href="#">HP RoHS position statement</a>.</p> |                                  |       |



|  |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Material Usage</b> | <p>This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at <a href="https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c05998906">https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c05998906</a>):</p> <ul style="list-style-type: none"><li>• Asbestos</li><li>• Certain Azo Colorants</li><li>• Certain Brominated Flame Retardants - may not be used as flame retardants in plastics</li><li>• Cadmium</li><li>• Chlorinated Hydrocarbons</li><li>• Chlorinated Paraffins</li><li>• Bis(2-Ethylhexyl) phthalate (DEHP)</li><li>• Benzyl butyl phthalate (BBP)</li><li>• Dibutyl phthalate (DBP)</li><li>• Diisobutyl phthalate (DIBP)</li><li>• Formaldehyde</li><li>• Halogenated Diphenyl Methanes</li><li>• Lead carbonates and sulfates</li><li>• Lead and Lead compounds</li><li>• Mercuric Oxide Batteries</li><li>• Nickel - finishes must not be used on the external surface designed to be frequently handled or carried by the user.</li><li>• Ozone Depleting Substances</li><li>• Polybrominated Biphenyls (PBBs)</li><li>• Polybrominated Biphenyl Ethers (PBBEs)</li><li>• Polybrominated Biphenyl Oxides (PBBOs)</li><li>• Polychlorinated Biphenyl (PCB)</li><li>• Polychlorinated Terphenyls (PCT)</li><li>• Polyvinyl Chloride (PVC) - except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.</li><li>• Radioactive Substances</li><li>• Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)</li></ul> |
|--|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



|  |                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Packaging Usage</b>                      | <p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> <li>• Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.</li> <li>• Eliminate the use of ozone-depleting substances (ODS) in packaging materials.</li> <li>• Design packaging materials for ease of disassembly.</li> <li>• Maximize the use of post-consumer recycled content materials in packaging materials.</li> <li>• Use readily recyclable packaging materials such as paper and corrugated materials.</li> <li>• Reduce size and weight of packages to improve transportation fuel efficiency.</li> <li>• Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.</li> </ul>                                                                                                |
|  | <b>End-of-life Management and Recycling</b> | <p>HP offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <a href="https://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c05403198">https://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c05403198</a> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.</p> <p>The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <a href="#">HP Product Disassembly Instruction Website</a>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.</p> |

|  |                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>HP, Inc. Corporate Environmental Information</b> | <p>For more information about HP's commitment to the environment:</p> <ul style="list-style-type: none"> <li>• Sustainable Impact Report <ul style="list-style-type: none"> <li>◦ <a href="https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c06040843">https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c06040843</a></li> </ul> </li> <li>• Eco-label certifications <ul style="list-style-type: none"> <li>◦ <a href="https://www.hp.com/us-en/sustainable-impact/document-reports.html#filters_documents_reports=document_type-type_energy_star,type_epeat,type_tcoISO">https://www.hp.com/us-en/sustainable-impact/document-reports.html#filters_documents_reports=document_type-type_energy_star,type_epeat,type_tcoISO</a></li> </ul> </li> <li>• ISO 14001 certificates <ul style="list-style-type: none"> <li>◦ <a href="https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c04777932">https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c04777932</a></li> </ul> </li> </ul>                                                                                                                                                                                                                                                                         |
|  | <b>Footnotes</b>                                    | <ol style="list-style-type: none"> <li>1. Percentage of ocean-bound plastic contained in each component varies by product. Ocean Bound plastic is expressed as a percentage of the total weight plastic. Ocean Bound plastic is based on the definition set by the UL2809 standard.</li> <li>2. Recycled plastic is expressed as a percentage of the total weight plastic. Post-consumer recycled is based on the definition set in the EPEAT standard for computers, IEEE 1680.1-2018 standard.</li> <li>3. Recycled metal is expressed as a percentage of the total weight of the metal according to ISO 14021 definitions for metal parts over 25 grams.</li> <li>4. External power supplies, WWAN modules, power cords, cables and peripherals excluded. Service parts obtained after purchase may not be Low Halogen.</li> <li>5. HP paper and fiber-based packaging for PCs, displays, home and office print, and supplies is reported by suppliers as recycled or certified, with a minimum of 97% by volume verified by HP. Packaging is the box that comes with the product and all paper-based materials inside the box. Packaging for personal systems accessories and spare parts is not included. Plastic cushions are made from &gt;90% recycled plastic.</li> </ol> |



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### SERVICE AND SUPPORT

#### Warranty

1-year warranty and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty. 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>19</sup>

19. 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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### SYSTEM UNIT

#### Stand - Alone Power Requirements

##### (AC Power)

|                           |                                                 |
|---------------------------|-------------------------------------------------|
| Nominal Operating Voltage | 15V/20V                                         |
| Max Operating Power       | UMA < 45W for 15W TDP<br>UMA < 100W for 45W TDP |

##### Temperature

|                 |                                                                                                  |
|-----------------|--------------------------------------------------------------------------------------------------|
| Operating       | 32° to 95° F (0° to 35° C) (not writing optical)<br>41° to 95° F (5° to 35° C) (writing optical) |
| 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       | 1.043 grms |
| Non - operating | 3.5 grms   |

##### Altitude(unpressurized)

|                 |                                       |
|-----------------|---------------------------------------|
| Operating       | -50 to 10,000 ft (-15.24 to 3,048 m)  |
| Non - operating | -50 to 40,000 ft (-15.24 to 12,192 m) |

#### Industry Standard Certifications

|                         |                            |
|-------------------------|----------------------------|
| Regulatory Model Number | TPN-Q312                   |
| CSA/UL 62368-1          | Yes                        |
| ENERGY STAR®            | Yes <sup>1</sup>           |
| FCC/ICES/CISPR/VCCI     | Yes, EMI                   |
| CE MARKING              | Yes                        |
| GS Mark                 | No                         |
| China CCC/SRRC/CEL      | Yes                        |
| Taiwan BSMI/NCC         | Yes, BSMI                  |
| Korea KCC/KC/KES        | Yes, EMI(KCC), Safety (KC) |
| Ukraine NSoC/TEC        | Yes                        |



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|                                                   |                               |
|---------------------------------------------------|-------------------------------|
| EAEU Compliance                                   | Yes                           |
| Saudi Arabian Compliance                          | No                            |
| TCO                                               | Yes (TCO 10)                  |
| EPEAT Gold                                        | Yes (EPEAT 2 Gold)            |
| Low Blue Light                                    | Yes                           |
| WW RoHS                                           | Yes (UAE RoHS, Ukraine RoHS)  |
| CECP                                              | No                            |
| Medical EMC: IEC 60601-1-2:2014 EN60601-1-2: 2015 | No                            |
| SEPA                                              | No                            |
| MIL - STD Testing                                 | Yes, entry level <sup>2</sup> |

1. Configurations that are ENERGY STAR® qualified are identified as ENERGY STAR on HP websites and on <http://www.energystar.gov>

2. MIL STD testing is not intended to demonstrate fitness for U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Accidental damage requires an optional HP Accidental Damage Protection Care Pack.

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### DISPLAYS

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

Availability may vary by country

|                                                                                                                                                                   |                                  |                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------|
| <b>16.0" WUXGA (1920 X 1200)</b><br><b>OLED BrightView bent UWVA,</b><br><b>eDP, Narrow Bezel, 60Hz,</b><br><b>Low Blue Light (300nits, 95%</b><br><b>DCI-P3)</b> | <b>Active Area</b>               | 344.448 (H) x 215.28 (V) mm                 |
|                                                                                                                                                                   | <b>Dimensions (W x H)</b>        | 348.15 (W) x 224.76 (H) x 3.005 (D) mm      |
|                                                                                                                                                                   | <b>Weight</b>                    | 216 g                                       |
|                                                                                                                                                                   | <b>Diagonal Size</b>             | 16.0 inch                                   |
|                                                                                                                                                                   | <b>Surface Treatment</b>         | Glare (BV)                                  |
|                                                                                                                                                                   | <b>Touch Enabled</b>             | Not specified                               |
|                                                                                                                                                                   | <b>Contrast Ratio</b>            | 1,000,000:1                                 |
|                                                                                                                                                                   | <b>Refresh Rate</b>              | 60 Hz                                       |
|                                                                                                                                                                   | <b>Brightness</b>                | 300nits                                     |
|                                                                                                                                                                   | <b>Pixel Resolution - Format</b> | RGB Stripe Type                             |
|                                                                                                                                                                   | <b>Aspect Ratio</b>              | 16:10                                       |
|                                                                                                                                                                   | <b>Backlight</b>                 | OLED (self-emissive, no separate backlight) |
|                                                                                                                                                                   | <b>Color Gamut Coverage</b>      | DCI-P3: 95% (typ), 90% (min)                |
|                                                                                                                                                                   | <b>Color Depth</b>               | 1.074 billion colors (RGB 8bit + 2FRC)      |
|                                                                                                                                                                   | <b>Viewing Angle</b>             | 89/89/89/89                                 |
| <b>16.0" WUXGA (1920X1200)</b><br><b>WLED AntiGlare flat UWVA,</b><br><b>eDP, Narrow Bezel (300nits,</b><br><b>62.5% sRGB)</b>                                    | <b>Low Blue Light</b>            | Support                                     |
|                                                                                                                                                                   | <b>Power Consumption</b>         | 8.0W (BL + Logic @ Mosaic)                  |
|                                                                                                                                                                   | <b>Active Area</b>               | 344.6784 x 215.424 mm                       |
|                                                                                                                                                                   | <b>Dimensions (W x H)</b>        | 350.68 x 233.77 mm                          |
|                                                                                                                                                                   | <b>Weight</b>                    | 380g                                        |
|                                                                                                                                                                   | <b>Diagonal Size</b>             | 16 inch                                     |
|                                                                                                                                                                   | <b>Surface Treatment</b>         | AG                                          |
|                                                                                                                                                                   | <b>Touch Enabled</b>             | NA                                          |
|                                                                                                                                                                   | <b>Contrast Ratio</b>            | 1200:1                                      |
|                                                                                                                                                                   | <b>Refresh Rate</b>              | 60Hz                                        |
|                                                                                                                                                                   | <b>Brightness</b>                | 300nits                                     |
|                                                                                                                                                                   | <b>Pixel Resolution - Format</b> | 1920 x 1200                                 |
|                                                                                                                                                                   | <b>Aspect Ratio</b>              | 16:10                                       |
|                                                                                                                                                                   | <b>Backlight</b>                 | WLED                                        |
|                                                                                                                                                                   |                                  |                                             |



|                             |                            |
|-----------------------------|----------------------------|
| <b>Color Gamut Coverage</b> | sRGB62.5%                  |
| <b>Color Depth</b>          | 8bits                      |
| <b>Viewing Angle</b>        | 89/89/89/89                |
| <b>Low Blue Light</b>       | NA                         |
| <b>Power Consumption</b>    | 4.1W (BL + Logic @ Mosaic) |

**16.0" WQXGA (2560X1600)  
WLED AntiGlare flat UWVA,  
eDP, Narrow Bezel (500nits,  
100% sRGB)**

|                                  |                                  |
|----------------------------------|----------------------------------|
| <b>Active Area</b>               | 344.68 x 215.42                  |
| <b>Dimensions (W x H)</b>        | 349.978(W) x 233.924 (H)(w/PCBA) |
| <b>Weight</b>                    | 330g                             |
| <b>Diagonal Size</b>             | 16 inch                          |
| <b>Surface Treatment</b>         | AG                               |
| <b>Touch Enabled</b>             | NA                               |
| <b>Contrast Ratio</b>            | 1200:1                           |
| <b>Refresh Rate</b>              | 240Hz                            |
| <b>Brightness</b>                | 500nits                          |
| <b>Pixel Resolution - Format</b> | 2560x1600                        |
| <b>Aspect Ratio</b>              | 16:10                            |
| <b>Backlight</b>                 | WLED                             |
| <b>Color Gamut Coverage</b>      | sRGB 100%                        |
| <b>Color Depth</b>               | 8bits                            |
| <b>Viewing Angle</b>             | 89/89/89/89                      |
| <b>Low Blue Light</b>            | Support                          |
| <b>Power Consumption</b>         | 5.3W EBL@250nits                 |



### STORAGE

|                                   |                         |                          |
|-----------------------------------|-------------------------|--------------------------|
| <b>1 TB PCIe® NVMe™ M.2 SSD</b>   | <b>Form Factor</b>      | M.2 2280                 |
|                                   | <b>Capacity</b>         | 1TB                      |
|                                   | <b>NAND Type</b>        | TLC/QLC                  |
|                                   | <b>Weight</b>           | 0 ~ 15.0 g (0 ~ 0.03 lb) |
|                                   | <b>Interface</b>        | PCIe NVMe                |
|                                   | <b>Sequential Read</b>  | Up to 3500 MB/s          |
|                                   | <b>Sequential Write</b> | Up to 2700 MB/s          |
|                                   | <b>Logical Blocks</b>   | 2000409264               |
|                                   | <b>Features</b>         | Pyrite 2.0; TRIM; L1.2   |
| <b>512 GB PCIe® NVMe™ M.2 SSD</b> | <b>Form Factor</b>      | M.2 2280                 |
|                                   | <b>Capacity</b>         | 512GB                    |
|                                   | <b>NAND Type</b>        | TLC/QLC                  |
|                                   | <b>Weight</b>           | 0 ~ 15.0 g (0 ~ 0.03 lb) |
|                                   | <b>Interface</b>        | PCIe NVMe                |
|                                   | <b>Sequential Read</b>  | Up to 3500 MB/s          |
|                                   | <b>Sequential Write</b> | Up to 1600 MB/s          |
|                                   | <b>Logical Blocks</b>   | 1000215216               |
|                                   | <b>Features</b>         | Pyrite 2.0; TRIM; L1.2   |
| <b>256 GB PCIe® NVMe™ M.2 SSD</b> | <b>Form Factor</b>      | M.2 2280                 |
|                                   | <b>Capacity</b>         | 256GB                    |
|                                   | <b>NAND Type</b>        | TLC                      |
|                                   | <b>Weight</b>           | 0 ~ 15.0 g (0 ~ 0.03 lb) |
|                                   | <b>Interface</b>        | PCIe NVMe                |
|                                   | <b>Sequential Read</b>  | Up to 3100 MB/s          |
|                                   | <b>Sequential Write</b> | Up to 1200 MB/s          |
|                                   | <b>Logical Blocks</b>   | 500118192                |
|                                   | <b>Features</b>         | Pyrite 2.0; TRIM; L1.2   |



NETWORKING / COMMUNICATION

|                                                    |                        |                                                                                                                                                                                                        |
|----------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mediatek MT7920 Wi-Fi® 6<br>Bluetooth® 5.4 WW WLAN | Wireless LAN Standards | IEEE 802.11a                                                                                                                                                                                           |
|                                                    |                        | IEEE 802.11b                                                                                                                                                                                           |
|                                                    |                        | IEEE 802.11g                                                                                                                                                                                           |
|                                                    |                        | IEEE 802.11n                                                                                                                                                                                           |
|                                                    |                        | IEEE 802.11ac                                                                                                                                                                                          |
|                                                    |                        | IEEE 802.11ax                                                                                                                                                                                          |
|                                                    |                        | IEEE 802.11d                                                                                                                                                                                           |
|                                                    |                        | IEEE 802.11e                                                                                                                                                                                           |
|                                                    |                        | IEEE 802.11h                                                                                                                                                                                           |
|                                                    |                        | IEEE 802.11i                                                                                                                                                                                           |
|                                                    |                        | IEEE 802.11k                                                                                                                                                                                           |
|                                                    | Interoperability       | Wi-Fi certified modules                                                                                                                                                                                |
|                                                    | Frequency Band         | 802.11b/g/n/ax<br>▪ 2.402 - 2.482 GHz<br>802.11a/n/ac/ax<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                            |
|                                                    | Data Rates             | 802.11b: 1, 2, 5.5, 11 Mbps<br>802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>802.11n: max 300Mbps<br>802.11ac : max 866.7Mbps<br>802.11ax : max 1201Mbps |
|                                                    | Modulation             | Direct Sequence Spread Spectrum<br>BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM                                                                                                                   |

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Security</b>                    | <p>IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only</p> <p>AES-CCMP: 128 bit in hardware</p> <p>802.1x authentication</p> <p>WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</p> <p>WPA2 certification</p> <p>WPA3 certification</p> <p>IEEE 802.11i</p> <p>WAPI</p> <p>EAP</p>                                                                                                            |
| <b>Network Architecture Models</b> | <p>Ad-hoc (Peer to Peer)</p> <p>Infrastructure (Access Point Required)</p>                                                                                                                                                                                                                                                                                                                                             |
| <b>Roaming</b>                     | IEEE 802.11 compliant roaming between access points                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Output Power</b>                | <p>802.11b : +17dBm minimum</p> <p>802.11g : +16dBm minimum</p> <p>802.11a : +17dBm minimum</p> <p>802.11n HT20(2.4GHz) : +14dBm minimum</p> <p>802.11n HT40(2.4GHz) : +13dBm minimum</p> <p>802.11n HT20(5GHz) : +14dBm minimum</p> <p>802.11n HT40(5GHz) : +13dBm minimum</p> <p>802.11ac VHT80(5GHz) : +10dBm minimum</p> <p>802.11ax HE40(2.4GHz) : +12dBm minimum</p> <p>802.11ax HE80(5GHz) : +10dBm minimum</p> |
| <b>Power Consumption</b>           | <p>Transmit mode:2.5 W</p> <p>Receive mode:2 W</p> <p>Idle mode (PSP)180 mW(WLAN Associated)</p> <p>Idle mode:50 mW(WLAN unassociated)</p> <p>Connected Standby/Modern Standby: 10mW</p> <p>Radio disabled: 8 mW</p>                                                                                                                                                                                                   |



|                                 |                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Power Management</b>         | ACPI and PCI Express compliant power management<br>802.11 compliant power saving mode                                                                                                                                                                                                                                                                                          |
| <b>Receiver Sensitivity</b>     | 802.11b, 1Mbps : -93.5dBm maximum<br>802.11b, 11Mbps : -84dBm maximum<br>802.11a/g, 6Mbps : -86dBm maximum<br>802.11a/g, 54Mbps : -72dBm maximum<br>802.11n, MCS07 : -67dBm maximum<br>802.11n, MCS15 : -64dBm maximum<br>802.11ac, MCS0 : -84dBm maximum<br>802.11ac, MCS9 : -59dBm maximum<br>802.11ax, MCS11(HE40): -57dBm maximum<br>802.11ax, MCS11(HE80): -54dBm maximum |
| <b>Antenna Type</b>             | High efficiency antenna.<br>One embedded dual band 2.4/5 GHz antenna is provided to the card to support WLAN MIMO communications and Bluetooth communications                                                                                                                                                                                                                  |
| <b>Form Factor</b>              | PCI-Express M.2 MiniCard                                                                                                                                                                                                                                                                                                                                                       |
| <b>Dimensions</b>               | Type 2230 : 2.3 x 22.0 x 30.0 mm                                                                                                                                                                                                                                                                                                                                               |
| <b>Weight</b>                   | Type 2230 : 2.8g                                                                                                                                                                                                                                                                                                                                                               |
| <b>Operating Voltage</b>        | 3.3v +/- 9%                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Bluetooth® Specification</b> | <b>Integrated Bluetooth® specifications</b><br>4.0/4.1/4.2/5.0/5.1 Compliant/5.2 Compliant/5.3 Compliant /5.4 Compliant                                                                                                                                                                                                                                                        |
| <b>Frequency Band</b>           | 2402 to 2480 MHz                                                                                                                                                                                                                                                                                                                                                               |



|                                                    |                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Number of Available Channels</b>                | <p>Legacy : 0~79 (1 MHz/CH)</p> <p>BLE : 0~39 (2 MHz/CH)</p>                                                                                                                                                                                                                                                                            |
| <b>Data Rates and Throughput</b>                   | <p>Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps</p> <p>BLE : 1 Mbps data rate; throughput up to 0.2 Mbps</p> <p>Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels</p> <p>Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)</p> |
| <b>Transmit Power</b>                              | <p>The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.</p>                                                                                                                                                                                                    |
| <b>Power Consumption</b>                           | <p>Peak (Tx): 330 mW</p> <p>Peak (Rx): 230 mW</p> <p>Selective Suspend: 17 mW</p>                                                                                                                                                                                                                                                       |
| <b>Bluetooth® Software Supported Link Topology</b> | <p>Microsoft Windows Bluetooth Software</p>                                                                                                                                                                                                                                                                                             |
| <b>Power Management</b>                            | <p>Microsoft Windows ACPI, and USB Bus Support</p>                                                                                                                                                                                                                                                                                      |
| <b>Certifications</b>                              | <p>FCC (47 CFR) Part 15C/E, Section 15.247, 15.249</p> <p>ETSI 300 328, ETSI 301 893</p>                                                                                                                                                                                                                                                |
| <b>Bluetooth® Profiles Supported</b>               | <p>BT4.1-ESR 5/6/7 Compliance</p> <p>LE Link Layer Ping</p> <p>LE Dual Mode</p> <p>LE Link Layer</p> <p>LE Low Duty Cycle Directed Advertising</p> <p>LE L2CAP Connection Oriented Channels</p> <p>Train Nudging &amp; Interlaced Scan</p>                                                                                              |



Realtek 8852BE-VT Wi-Fi® 6  
Bluetooth® 5.4 WW WLAN

Wireless LAN Standards

- BT4.2 ESR08 Compliance
- LE Secure Connection- Basic/Full
- LE Privacy 1.2 -Link Layer Privacy
- LE Privacy 1.2 -Extended Scanner Filter Policies
- LE Data Packet Length Extension
- FAX Profile (FAX)
- Basic Imaging Profile (BIP)2
- Headset Profile (HSP)
- Hands Free Profile (HFP)
- Advanced Audio Distribution Profile (A2DP)
- BT5.2
- ESR9/10 Compliance
- LE Advertisement Extensions
- Channel Selection Algo
- Limited High Duty Cycle Non-Connectable Advertising
- 2Mbps LE
- LE Long Range
- Windows BT profiles support
- BT5.3
- Encryption key size control enhancements
- 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



|                             |                                                                                                                                                                                                                                                                                                              |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Interoperability</b>     | Wi-Fi certified modules                                                                                                                                                                                                                                                                                      |
| <b>Frequency Band</b>       | <p>802.11b/g/n/ax</p> <ul style="list-style-type: none"> <li>▪ 2.402 - 2.482 GHz</li> </ul> <p>802.11a/n/ac/ax</p> <ul style="list-style-type: none"> <li>▪ 4.9 - 4.95 GHz (Japan)</li> <li>▪ 5.15 - 5.25 GHz</li> <li>▪ 5.25 - 5.35 GHz</li> <li>▪ 5.47 - 5.725 GHz</li> <li>▪ 5.825 - 5.850 GHz</li> </ul> |
| <b>Data Rates</b>           | <p>802.11b: 1, 2, 5.5, 11 Mbps</p> <p>802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</p> <p>802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</p> <p>802.11n: max 300Mbps</p> <p>802.11ac : max 866.7Mbps</p> <p>802.11ax : max 1201Mbps</p>                                                                            |
| <b>Modulation</b>           | <p>Direct Sequence Spread Spectrum, OFDM,</p> <p>BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM</p>                                                                                                                                                                                                       |
| <b>Security</b>             | <p>IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only</p> <p>AES-CCMP: 128 bit in hardware</p> <p>802.1x authentication</p> <p>WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</p> <p>WPA2 certification</p> <p>WPA3 certification</p> <p>IEEE 802.11i</p> <p>WAPI</p>             |
| <b>Network Architecture</b> | Ad-hoc (Peer to Peer)                                                                                                                                                                                                                                                                                        |
| <b>Models</b>               | Infrastructure (Access Point Required)                                                                                                                                                                                                                                                                       |



|                             |                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Roaming</b>              | IEEE 802.11 compliant roaming between access points                                                                                                                                                                                                                                                                                                                               |
| <b>Output Power</b>         | 802.11b: +18.5dBm minimum<br>802.11g: +17.5dBm minimum<br>802.11a: +18.5dBm minimum<br>802.11n HT20(2.4GHz): +15.5dBm minimum<br>802.11n HT40(2.4GHz): +14.5dBm minimum<br>802.11n HT20(5GHz): +15.5dBm minimum<br>802.11n HT40(5GHz): +14.5dBm minimum<br>802.11ac VHT80(5GHz): +11.5dBm minimum<br>802.11ax HE40(2.4GHz): +10dBm minimum<br>802.11ax HE80(5GHz): +10dBm minimum |
| <b>Power Consumption</b>    | Transmit mode: 2.5 W<br>Receive mode: 2 W<br>Idle mode (PSP): 180 mW (WLAN Associated)<br>Idle mode: 50 mW (WLAN unassociated)<br>Connected Standby/Modern Standby: 10mW<br>Radio disabled: 8 mW                                                                                                                                                                                  |
| <b>Power Management</b>     | ACPI and PCI Express compliant power management<br>802.11 compliant power saving mode                                                                                                                                                                                                                                                                                             |
| <b>Receiver Sensitivity</b> | 802.11b, 1Mbps: -93.5dBm maximum<br>802.11b, 11Mbps: -84dBm maximum<br>802.11a/g, 6Mbps: -86dBm maximum<br>802.11a/g, 54Mbps: -72dBm maximum<br>802.11n, MCS07: -67dBm maximum<br>802.11n, MCS15: -64dBm maximum<br>802.11ac, MCS0: -84dBm maximum<br>802.11ac, MCS9: -59dBm maximum<br>802.11ax, MCS11(HE40): -57dBm maximum<br>802.11ax, MCS11(HE80): -54dBm maximum            |



|                                     |                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Antenna Type</b>                 | High efficiency antenna with spatial diversity.<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>                   | Type 2230 : 2.4 x 22.0 x 30.0 mm                                                                                                                                                                                                                                                                                     |
| <b>Weight</b>                       | Type 2230 : 2.8g                                                                                                                                                                                                                                                                                                     |
| <b>Operating Voltage</b>            | 3.3v +/- 9%                                                                                                                                                                                                                                                                                                          |
| <b>Bluetooth® Specification</b>     | <b>Integrated Bluetooth® specifications</b><br>4.0/4.1/4.2/5.0/5.1/5.2/5.3/5.4 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 asymmetric (3-DH5) or 864 kbps symmetric (3-EV5) |
| <b>Transmit Power</b>               | The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.                                                                                                                                                                                        |



|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Consumption                              | Peak (Tx): 330 mW<br>Peak (Rx): 230 mW<br>Selective Suspend: 17 mW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Bluetooth® Software<br>Supported Link Topology | Microsoft Windows Bluetooth Software                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Power Management                               | Microsoft Windows ACPI, and USB Bus Support                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Certifications                                 | FCC (47 CFR) Part 15C/E, Section 15.247, 15.249<br>ETSI 300 328, ETSI 301 893                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Bluetooth® Profiles<br>Supported               | BT4.1-ESR 5/6/7 Compliance<br>LE Link Layer Ping<br>LE Dual Mode<br>LE Link Layer<br>LE Low Duty Cycle Directed Advertising<br>LE L2CAP Connection Oriented Channels<br>Train Nudging & Interlaced Scan<br>BT4.2 ESR08 Compliance<br>LE Secure Connection- Basic/Full<br>LE Privacy 1.2 –Link Layer Privacy<br>LE Privacy 1.2 –Extended Scanner Filter Policies<br>LE Data Packet Length Extension<br>FAX Profile (FAX)<br>Basic Imaging Profile (BIP)2<br>Headset Profile (HSP)<br>Hands Free Profile (HFP)<br>Advanced Audio Distribution Profile (A2DP)<br>BT5.1<br>ESR9/10 Compliance<br>LE Advertisement Extensions<br>Channel Selection Algo<br>Limited High Duty Cycle Non-Connectable Advertising |



|                           |                        |                          |
|---------------------------|------------------------|--------------------------|
|                           |                        | 2Mbps LE                 |
|                           |                        | LE Long Range            |
| Realtek 8922AE-VS Wi-Fi 7 | Wireless LAN Standards | IEEE 802.11a             |
| Bluetooth® 6.0 WW WLAN    |                        | IEEE 802.11b             |
|                           |                        | IEEE 802.11g             |
|                           |                        | IEEE 802.11n             |
|                           |                        | IEEE 802.11ac            |
|                           |                        | IEEE 802.11ax            |
|                           |                        | IEEE 802.11be            |
|                           |                        | IEEE 802.11d             |
|                           |                        | IEEE 802.11e             |
|                           |                        | IEEE 802.11h             |
|                           |                        | IEEE 802.11i             |
|                           |                        | IEEE 802.11j             |
|                           |                        | IEEE 802.11k             |
|                           |                        | IEEE 802.11mc            |
|                           |                        | IEEE 802.11r             |
|                           |                        | IEEE 802.11v             |
|                           |                        | IEEE 802.11w             |
|                           | Interoperability       | Wi-Fi certified modules  |
|                           | Frequency Band         | 802.11b/g/n/ax           |
|                           |                        | ▪ 2.402 - 2.482 GHz      |
|                           |                        | 802.11a/n/ac/ax          |
|                           |                        | ▪ 4.9 - 4.95 GHz (Japan) |
|                           |                        | ▪ 5.15 - 5.25 GHz        |
|                           |                        | ▪ 5.25 - 5.35 GHz        |
|                           |                        | ▪ 5.47 - 5.725 GHz       |
|                           |                        | ▪ 5.825 - 5.850 GHz      |
|                           |                        | 5.955-6.415GHz           |
|                           |                        | 6.435-6.515GHz           |
|                           |                        | 6.535-6.875GHz           |



|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                    | 6.895-7.115GHz<br>5.925-7.125GHz                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Data Rates</b>                  | <p>802.11b: 1, 2, 5.5, 11 Mbps</p> <p>802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</p> <p>802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</p> <ul style="list-style-type: none"> <li>▪ 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)</li> <li>▪ 802.11ac: MCS0 ~ MCS9, (20MHz, 40MHz, ,80MHz &amp; 160MHz)</li> <li>▪ 802.11ax: MCS0 ~ MCS11, (20MHz, 40MHz, ,80MHz &amp; 160MHz)</li> <li>▪ 802.11be: MCS0 ~ MCS11, (20MHz, 40MHz, ,80MHz &amp; 160MHz)</li> </ul> |
| <b>Modulation</b>                  | Direct Sequence Spread Spectrum, OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Security</b>                    | <p>IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only</p> <p>AES-CCMP: 128 bit in hardware</p> <p>802.1x authentication</p> <p>WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</p> <p>WPA2 certification</p> <p>WPA3 certification</p> <p>IEEE 802.11i</p> <p>WAPI</p> <p>EAP</p>                                                                                                                                                |
| <b>Network Architecture Models</b> | Infrastructure (Access Point Required)                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Roaming</b>                     | IEEE 802.11 compliant roaming between access points                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Output Power</b>                | <p>802.11b: +20dBm</p> <p>802.11g: +20dBm</p>                                                                                                                                                                                                                                                                                                                                                                                                              |



- 802.11a: +18dBm
- 802.11n HT20(2.4GHz): +20dBm
- 802.11n HT40(2.4GHz): +20dBm
- 802.11n HT20(5GHz): +18dBm
- 802.11n HT40(5GHz): +17dBm
- 802.11ac VHT80(5GHz): +16dBm
- 802.11ac VHT160(5GHz): +15dBm
- 802.11ax HE40(2.4GHz): +17dBm
- 802.11ax HE80(5GHz): +14dBm
- 802.11ax HE160(5GHz): +13dBm
- 802.11ax HE80(6GHz): +13dBm
- 802.11ax HE160(6GHz): +12dBm

Power Consumption

- Transmit mode:3.1 W
- Receive mode:1.8 W
- Idle mode (PSP)180 mW(WLAN Associated)
- Idle mode:50 mW(WLAN unassociated)
- Connected Standby/Modern Standby: 10mW
- Radio disabled: 8 mW

Power Management

- ACPI and PCI Express compliant power management
- 802.11 compliant power saving mode

Receiver Sensitivity

- 802.11b, 1Mbps : -93.5dBm maximum
- 802.11b, 11Mbps : -85dBm maximum
- 802.11a/g, 6Mbps : -90.5dBm maximum
- 802.11a/g, 54Mbps : -72.5dBm maximum
- 802.11n, MCS0(HT20) : -90dBm maximum
- 802.11n, MCS7(HT20) : -71.5dBm maximum
- 802.11n, MCS0(HT40) : -88.5dBm maximum
- 802.11n, MCS7(HT40) : -68.5dBm maximum
- 802.11ac, MCS9(VHT20) : -88.5dBm maximum
- 802.11ac, MCS9(VHT40) : -65.5dBm maximum
- 802.11ac, MCS9(VHT80) : -60.5dBm maximum



- 802.11ac, MCS9(VHT160) : -58.5dBm maximum
- 802.11ax, MCS11(HE20)(6GHz) : -59.5dBm maximum
- 802.11ax, MCS11(HE40)(6GHz) : -56.5dBm maximum
- 802.11ax, MCS11(HE80)(6GHz) : -53.5dBm maximum
- 802.11ax, MCS11(HE160)(6GHz) : -51.5dBm maximum

|                              |                                                                                                                                                                                                                                                                                                                  |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Antenna Type                 | 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                                                                                          |
| Form Factor                  | PCI-Express M.2 MiniCard                                                                                                                                                                                                                                                                                         |
| Dimensions                   | Type 2230 : 2.3 x 22.0 x 30.0 mm                                                                                                                                                                                                                                                                                 |
| Weight                       | Type 2230 : 2.8g                                                                                                                                                                                                                                                                                                 |
| Operating Voltage            | 3.15 ~3.6V                                                                                                                                                                                                                                                                                                       |
| Bluetooth® Specification     | <b>Integrated Bluetooth® specifications</b><br>4.0/4.1/4.2/5.0/5.1/5.2/5.3/5.4/6.0 Compliant                                                                                                                                                                                                                     |
| Frequency Band               | 2402 to 2480 MHz                                                                                                                                                                                                                                                                                                 |
| Number of Available Channels | Legacy : 0~79 (1 MHz/CH)<br>BLE : 0~39 (2 MHz/CH)                                                                                                                                                                                                                                                                |
| Data Rates and Throughput    | 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 asymmetric (3-DH5) or 864 kbps symmetric (3- |



EV5)

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Transmit Power                              | The Bluetooth component shall operate as a Class I Bluetooth device with a maximum transmit power of +15.5 dBm for BR and +13dBm for EDR.                                                                                                                                                                                                                                                                                                                                        |
| Power Consumption                           | Peak (Tx): 330 mW<br>Peak (Rx): 230 mW<br>Selective Suspend: 17 mW                                                                                                                                                                                                                                                                                                                                                                                                               |
| Bluetooth® Software Supported Link Topology | Microsoft Windows Bluetooth Software                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Power Management                            | Microsoft Windows ACPI, and USB Bus Support compliant power management 802.11 compliant power saving mode                                                                                                                                                                                                                                                                                                                                                                        |
| Certifications                              | FCC (47 CFR) Part 15C/E, Section 15.247, 15.249, 15.407<br>ETSI 300 328, ETSI 301 893, ETSI 303 687                                                                                                                                                                                                                                                                                                                                                                              |
| Bluetooth® Profiles Supported               | BT4.1-ESR 5/6/7 Compliance<br>LE Link Layer Ping<br>LE Dual Mode<br>LE Link Layer<br>LE Low Duty Cycle Directed Advertising<br>LE L2CAP Connection Oriented Channels<br>Train Nudging & Interlaced Scan<br>BT4.2 ESR08 Compliance<br>LE Secure Connection- Basic/Full<br>LE Privacy 1.2 -Link Layer Privacy<br>LE Privacy 1.2 -Extended Scanner Filter Policies<br>LE Data Packet Length Extension<br>FAX Profile (FAX)<br>Basic Imaging Profile (BIP)2<br>Headset Profile (HSP) |



|                             |                      |                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             |                      | Hands Free Profile (HFP)                                                                                                                                                                                                                                                                                                                                        |
|                             |                      | Advanced Audio Distribution Profile (A2DP)                                                                                                                                                                                                                                                                                                                      |
|                             |                      | BT5.2                                                                                                                                                                                                                                                                                                                                                           |
|                             |                      | ESR9/10 Compliance                                                                                                                                                                                                                                                                                                                                              |
|                             |                      | LE Advertisement Extensions                                                                                                                                                                                                                                                                                                                                     |
|                             |                      | Channel Selection Algo                                                                                                                                                                                                                                                                                                                                          |
|                             |                      | Limited High Duty Cycle Non-Connectable Advertising                                                                                                                                                                                                                                                                                                             |
|                             |                      | 2Mbps LE                                                                                                                                                                                                                                                                                                                                                        |
|                             |                      | LE Long Range                                                                                                                                                                                                                                                                                                                                                   |
|                             |                      | Windows BT profiles support                                                                                                                                                                                                                                                                                                                                     |
|                             |                      | BT5.3                                                                                                                                                                                                                                                                                                                                                           |
|                             |                      | Compliance to the latest errata spetipn 12.3 of bluetooth 5.3 specification                                                                                                                                                                                                                                                                                     |
|                             |                      | ESR 9/10 compliance                                                                                                                                                                                                                                                                                                                                             |
|                             |                      | Host to controller Encryption key control enhancements                                                                                                                                                                                                                                                                                                          |
| RTK GBE Ethernet Controller | Connector            | RJ-45                                                                                                                                                                                                                                                                                                                                                           |
|                             | System Interface     | PCIe + SMBus                                                                                                                                                                                                                                                                                                                                                    |
|                             | Data Rates Supported | 10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14)<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 802.3 clauses 40)<br>Auto-Negotiation (Automatic Speed Selection)<br>Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s |
|                             | IEEE Compliance      | IEEE 802.1p QoS (Quality of Service) Support<br>IEEE 802.1q VLAN support<br>IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)                                                                                                                                                                                                                   |

|                      |                                                                                                                                                                                                                                                                                                                                                                |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Performance          | IEEE 802.3az EEE (Energy Efficient Ethernet)<br>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                                                                                                                                             |
| Power Consumption    | Cable Disconnection: 25mW<br>100Mbps Full Run: 450mW<br>1000bp Full Run: 1000mW<br>WoL Enable(S3/S4/S5): 50mW<br>WoL Disable(S3/S4/S5): 25mW                                                                                                                                                                                                                   |
| Power Management     | ACPI compliant - multiple power modes<br>Situation-sensitive features reduce power consumption<br>Advanced link down power saving for reducing link down power consumption                                                                                                                                                                                     |
| Management Interface | Auto MDI/MDIX Crossover cable detection                                                                                                                                                                                                                                                                                                                        |
| IT Manageability     | Wake-on-LAN from 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 |



POWER

Power supply availability may vary by country.

Battery is internal and replaceable by customer.

Higher wattage adapter is recommended for best performance and fastest charging.

Using lower-capacity third-party USB Type-C® power cables may reduce power delivery.

|             |                                      |                                                                       |
|-------------|--------------------------------------|-----------------------------------------------------------------------|
| HP CALI 45W | Weight (DC Cable Included)           | 185g(+/-5g) (Not including power cord. Power cord varies by country.) |
|             | Input                                | 100-240Vac                                                            |
|             | Input Efficiency                     | 81.76% min at 115 Vac/ 230 Vac @5.00V                                 |
|             |                                      | 87.3% min at 115 Vac/ 230 Vac @9.00V                                  |
|             |                                      | 88.85% min at 115 Vac/ 230 Vac @15.00V                                |
|             |                                      | 88.85% min at 115 Vac/ 230 Vac @20.00V                                |
|             | Input frequency range                | 47-63Hz                                                               |
|             | Input AC current                     | Max. 1.4 A at 90 Vac                                                  |
|             | Output                               |                                                                       |
|             | Output power                         | 5V/15W                                                                |
|             |                                      | 9V/27W                                                                |
|             |                                      | 15V/45W                                                               |
|             |                                      | 20V/2.25A                                                             |
|             | DC output                            | 5V/9V/15V/20V                                                         |
|             | Hold - up time                       | 100% load 5ms at 115 Vac input                                        |
|             | Output Over Current                  | < 5.0A                                                                |
|             | Protection                           |                                                                       |
|             | AC Inlet Type                        | C6                                                                    |
|             | DC Cable Connector                   | USB type C                                                            |
|             | DC Cable Material                    | PVC                                                                   |
|             | Connector                            |                                                                       |
|             | Connector                            | C6                                                                    |
|             | Environmental Design                 |                                                                       |
|             | Operating temperature                | 32°F to 95°F (0°to 35°C)                                              |
|             | Non - operating(storage) temperature | -4°F to 185°F (-20°to 85°C)                                           |
|             | Altitude                             | 0 to 16,400 ft (0 to 5000m)                                           |

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Humidity                      | 20% to 95%                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Storage Humidity              | 10% to 95%                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| EMI and Safety Certifications | CE Mark - full compliance with LVD and EMC directives<br>Worldwide safety standards - IEC60950-1 and IEC62368-1 :<br>2018, EN62368-1:2014+A11, UL62368-1<br>Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class<br>B, FCC Class B, CISPR32 Class B, CCC and CECP, CU(EAC),<br>EAEU, KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE,<br>NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM,<br>BIS, BSMI, UAE, UKCA DoC, USB-IF,<br>Ukraine(CoC+DoC+RoHS+ECO) |

### HP Luna 65W

|                            |                                                                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight (DC Cable Included) | 220g(+/-10g) (Not including power cord. Power cord varies by country.)                                                                                            |
| Input                      | 100-240Vac                                                                                                                                                        |
| Input Efficiency           | 81.84% min at 115 Vac/ 230 Vac @5.00V<br>87.3% min at 115 Vac/ 230 Vac @9.00V<br>88.85% min at 115 Vac/ 230 Vac @15.00V<br>89.00% min at 115 Vac/ 230 Vac @20.00V |
| Input frequency range      | 47-63Hz                                                                                                                                                           |
| Input AC current           | Max. 1.6 A at 90 Vac                                                                                                                                              |
| <b>Output</b>              |                                                                                                                                                                   |
| Output power               | 5V/15W<br>9V/27W<br>12V/60W<br>15V/65W<br>20V/65W                                                                                                                 |
| DC output                  | 5V/9V/15V/20V                                                                                                                                                     |
| Hold - up time             | 100% load 5ms at 115 Vac input                                                                                                                                    |
| Output Over Current        | < 8.0A                                                                                                                                                            |
| Protection                 |                                                                                                                                                                   |
| AC Inlet Type              | C6                                                                                                                                                                |
| DC Cable Connector         | USB type C                                                                                                                                                        |
| DC Cable Material          | PVC                                                                                                                                                               |



### Connector

Connector C6

### Environmental Design

Operating temperature 32°F to 95°F (0°to 35°C)  
 Non - operating(storage) temperature -4°F to 185°F (-20°to 85°C)  
 Altitude 0 to 16,400 ft (0 to 5000m)  
 Humidity 20% to 95%  
 Storage Humidity 10% to 95%  
 EMI and Safety Certifications CE Mark - full compliance with LVD and EMC directives  
 Worldwide safety standards - IEC60950-1 and IEC62368-1 :  
 2018, EN62368-1:2014+A11, UL 62368-1  
 Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, CU(EAC), EAEU, KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC

### HP Kinopio 65W

Weight (DC Cable Included) 180g(+/-10g) (Not including Duck Head. Duck Head varies by country.)  
 Input 100-240Vac  
 Input Efficiency 81.84% min at 115 Vac/ 230 Vac @5.00V  
 87.3% min at 115 Vac/ 230 Vac @9.00V  
 88.85% min at 115 Vac/ 230 Vac @15.00V  
 89.00% min at 115 Vac/ 230 Vac @20.00V  
 Input frequency range 47-63Hz  
 Input AC current Max. 1.6 A at 90 Vac  
**Output**  
 Output power 5V/15W  
 9V/27W  
 15V/65W  
 20V/65W  
 DC output 5V/9V/15V/20V



|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hold - up time                       | 100% load 5ms at 115 Vac input                                                                                                                                                                                                                                                                                                                                                                                               |
| Output Over Current                  | 115%-135%                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Protection                           |                                                                                                                                                                                                                                                                                                                                                                                                                              |
| AC Inlet Type                        | Foldable or Fixed type                                                                                                                                                                                                                                                                                                                                                                                                       |
| DC Cable Connector                   | USB type C                                                                                                                                                                                                                                                                                                                                                                                                                   |
| DC Cable Material                    | Halogen Free (2.0 Meters)                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Environmental Design</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Operating temperature                | 32°F to 95°F (0°to 35°C)                                                                                                                                                                                                                                                                                                                                                                                                     |
| Non - operating(storage) temperature | -4°F to 185°F (-20°to 85°C)                                                                                                                                                                                                                                                                                                                                                                                                  |
| Altitude                             | 0 to 16,400 ft (0 to 5000m)                                                                                                                                                                                                                                                                                                                                                                                                  |
| Humidity                             | 20% to 95%                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Storage Humidity                     | 10% to 95%                                                                                                                                                                                                                                                                                                                                                                                                                   |
| EMI and Safety Certifications        | CE Mark - full compliance with LVD and EMC directives<br>Worldwide safety standards - IEC60950-1 and IEC62368-1 :<br>2018, EN62368-1:2014+A11, UL 62368-1<br>Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CEC, CU(EAC), EAEU, KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC |

### HP Koopa 100W

|                            |                                                                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight (DC Cable Included) | 255g(+/-5g) (Not including power cord. Power cord varies by country.)                                                                                             |
| Input                      | 100-240Vac                                                                                                                                                        |
| Input Efficiency           | 81.76% min at 115 Vac/ 230 Vac @5.00V<br>87.3% min at 115 Vac/ 230 Vac @9.00V<br>89.00% min at 115 Vac/ 230 Vac @15.00V<br>89.00% min at 115 Vac/ 230 Vac @20.00V |
| Input frequency range      | 47-63Hz                                                                                                                                                           |
| Input AC current           | Max. 1.6 A at 90 Vac                                                                                                                                              |
| <b>Output</b>              |                                                                                                                                                                   |
| Output power               | 5V/15W<br>9V/27W                                                                                                                                                  |



|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      | 15V/75W                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                      | 20V/100W                                                                                                                                                                                                                                                                                                                                                                                                                              |
| DC output                            | 5V/9V/15V/20V                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Hold - up time                       | 100% load 5ms at 115 Vac input/80% load 10ms at 115 Vac input                                                                                                                                                                                                                                                                                                                                                                         |
| Output Over Current Protection       | 5V/9V : 125%~135% ; 15V/20V: 5.4A                                                                                                                                                                                                                                                                                                                                                                                                     |
| AC Inlet Type                        | Foldable or Fixed type                                                                                                                                                                                                                                                                                                                                                                                                                |
| DC Cable Connector                   | USB type C                                                                                                                                                                                                                                                                                                                                                                                                                            |
| DC Cable Material                    | Halogen Free (2M)                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Environmental Design</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Operating temperature                | 32°F to 95°F (0°to 35°C)                                                                                                                                                                                                                                                                                                                                                                                                              |
| Non - operating(storage) temperature | -4°F to 185°F (-20°to 85°C)                                                                                                                                                                                                                                                                                                                                                                                                           |
| Altitude                             | 0 to 16,400 ft (0 to 5000m)                                                                                                                                                                                                                                                                                                                                                                                                           |
| Humidity                             | 20% to 95%                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Storage Humidity                     | 10% to 95%                                                                                                                                                                                                                                                                                                                                                                                                                            |
| EMI and Safety Certifications        | CE Mark - full compliance with LVD and EMC directives<br>Worldwide safety standards - IEC60950-1, IEC 62368-1:2014 and IEC62368-1 : 2018, EN62368-1:2020+A11, UL 62368-1<br>Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, CU(EAC), KCC(Safety+EMC), NOM-001 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC, Ukraine(CoC+DoC+RoHS+ECO) |



### Battery

#### HP 3-cell Long Life Li-Ion (41 WHr)

|                         |                                         |
|-------------------------|-----------------------------------------|
| Weight                  | 0.175 kg (0.377 lb)                     |
| Cells / Type            | 3cell Lithium-Ion Polymer cell / 515974 |
| <b>Energy</b>           |                                         |
| Voltage                 | 11.25V                                  |
| Amp - hour capacity     | 3.648Ah                                 |
| Watt - hour capacity    | 41WH                                    |
| <b>Temperature</b>      |                                         |
| Operating (Charging)    | 32° to 113° F (0° to 45° C)             |
| Operating (Discharging) | 14° to 122° F (-10° to 60° C)           |
| Optional Travel Battery | No                                      |
| Available               |                                         |

#### HP 4-cell Long Life Li-Ion (68 WHr)

|                         |                                         |
|-------------------------|-----------------------------------------|
| Weight                  | 0.255 kg / (0.55 lb)                    |
| Cells / Type            | 4cell Lithium-Ion Polymer cell / 506473 |
| <b>Energy</b>           |                                         |
| Voltage                 | 7.72V                                   |
| Amp - hour capacity     | 8.81Ah                                  |
| Watt - hour capacity    | 68Wh                                    |
| <b>Temperature</b>      |                                         |
| Operating (Charging)    | 32° to 113° F (0° to 45° C)             |
| Operating (Discharging) | 14° to 122° F (-10° to 60° C)           |
| Optional Travel Battery | No                                      |
| Available               |                                         |



## AUDIO

Privacy panel is only available on select models.

|                         |                                                                                                                                                                                                   |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Codec                   | Realtek ALC3247                                                                                                                                                                                   |
| Audio I/O Ports         | 3.5mm Headset: CTIA only; Headphone-out                                                                                                                                                           |
| Multi-streaming Capable | Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the front jacks or integrated speaker.,<br>Following Microsoft behavior. |
| Sampling                | DAC: Supports resolutions from 16-bit to 24-bit;48.0 kHz to 48.0 kHz<br>ADC: Supports resolutions from 16-bit to 24-bit;44.1 kHz to 48.0 kHz                                                      |
| Internal Speaker        | Yes                                                                                                                                                                                               |



### FINGERPRINT READER

|                                    |                                    |
|------------------------------------|------------------------------------|
| <b>Sensor vendor</b>               | ELAN                               |
| <b>Sensor type</b>                 | Capacitive                         |
| <b>DPI resolution</b>              | 508 DPI                            |
| <b>Scan area</b>                   | 80 x 80 pixels                     |
| <b>False Rejection Rate</b>        | < 3%                               |
| <b>False Acceptance Rate</b>       | < 0.001%                           |
| <b>Mobile Voltage Operation</b>    | 3 V ~ 3.6 V                        |
| <b>Operating Temperature</b>       | -20°C ~ 80°C (-4°F ~ 176°F)        |
| <b>Current Consumption Image</b>   | 120mA max                          |
| <b>Low Latency Wait For Finger</b> | 300 uA                             |
| <b>Capture Rate</b>                | 50 frames/sec                      |
| <b>ESD Resistance</b>              | IEC 61000-4-2 4B (+15KV)           |
| <b>Detection Matrix</b>            | 508 dpi / 4.0 x 4.0 mm sensor area |

|                                    |                                    |
|------------------------------------|------------------------------------|
| <b>Sensor vendor</b>               | SYNAPTICS                          |
| <b>Sensor type</b>                 | Capacitive                         |
| <b>DPI resolution</b>              | 363 DPI                            |
| <b>Scan area</b>                   | 104 x 86 pixels                    |
| <b>False Rejection Rate</b>        | < 3%                               |
| <b>False Acceptance Rate</b>       | < 0.001%                           |
| <b>Mobile Voltage Operation</b>    | 2.7 V ~ 3.6 V                      |
| <b>Operating Temperature</b>       | 0°C ~ 60°C (32°F ~ 140°F)          |
| <b>Current Consumption Image</b>   | 100 mA max                         |
| <b>Low Latency Wait For Finger</b> | 60 uA                              |
| <b>Capture Rate</b>                | 17ms/times (~58 frame/sec)         |
| <b>ESD Resistance</b>              | IEC 61000-4-2 4B (+15KV)           |
| <b>Detection Matrix</b>            | 363 dpi / 7.4 x 6.0 mm sensor area |



CHANGELOG

| Date of change    | Version History |                  | Description of change                        |
|-------------------|-----------------|------------------|----------------------------------------------|
| February 9, 2026  | V1 to V2        | Updated          | Battery Life                                 |
| February 12, 2026 | V2 to V3        | Updated          | Software and Security Section                |
| February 25, 2026 | V3 to V4        | Added<br>Updated | Environmental Data Section<br>Memory Section |
| March 24, 2026    | V4 to V5        | Updated          | Software and Security Section                |
| April 14, 2026    | V5 to V6        | Updated          | Ports / Slots                                |
| May 14, 2026      | V6 to V7        | Updated          | Processor Section                            |
| June 5, 2026      | V7 to V8        | Updated          | Memory Section                               |
| June 26, 2026     | V8 to V9        | Updated          | Power Section                                |

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