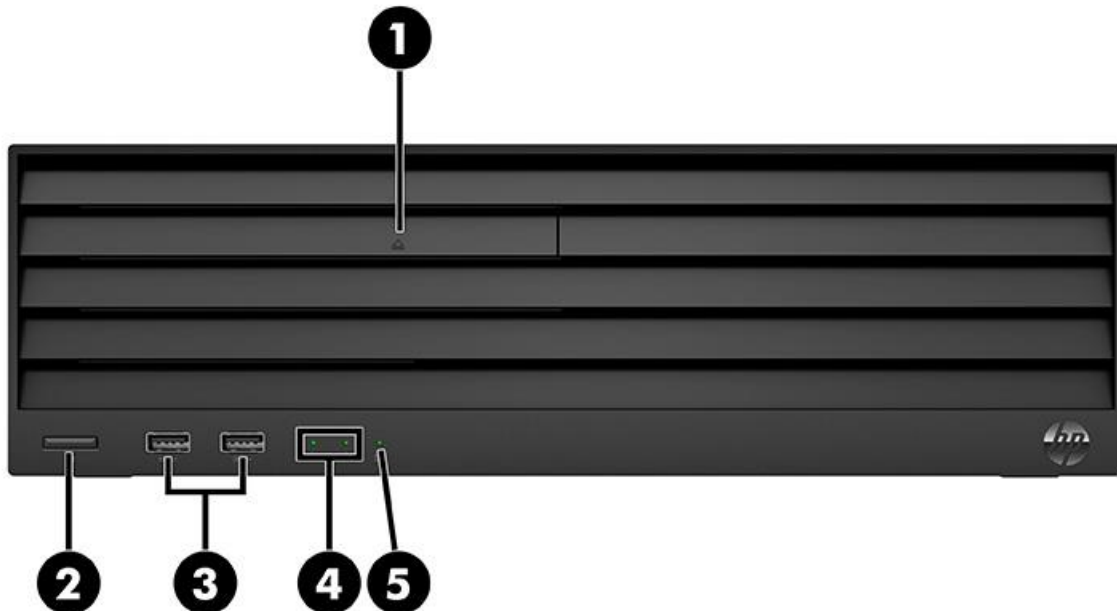


### Overview

### HP Engage Flex Pro G2 Retail System

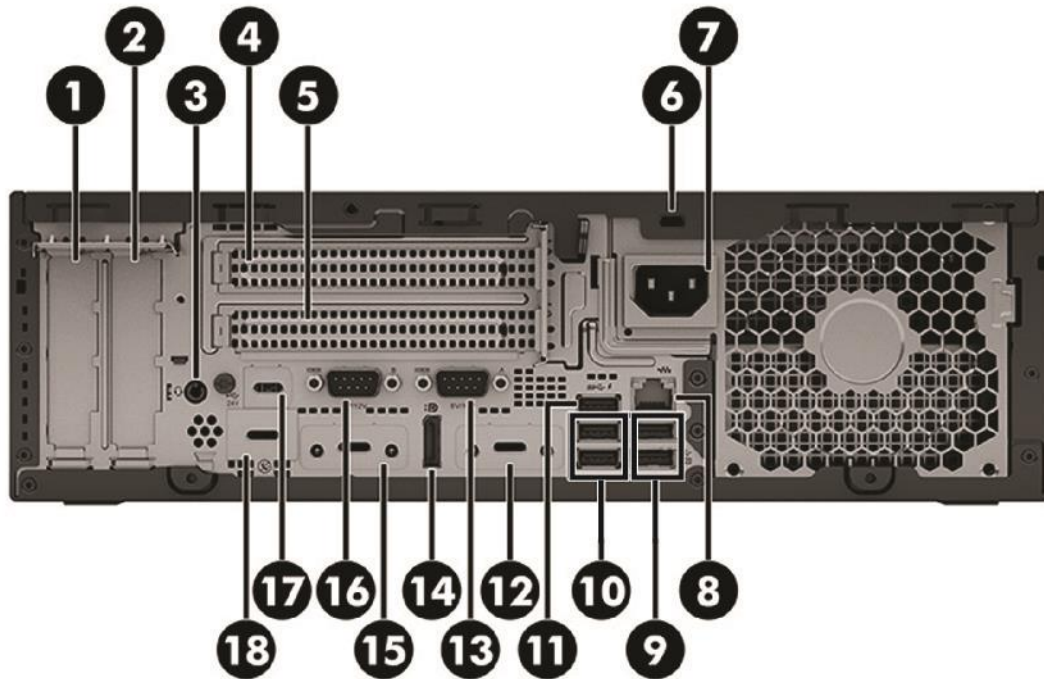


#### Front View

- |    |  |    |                        |
|----|--|----|------------------------|
| 1. | Optical drive with eject button (optional) | 4. | NIC Link indicator LED |
| 2. | Power button *                             | 5. | Hard Drive LED         |
| 3. | 2 USB 3.2 Gen 1 Type-A ports               |    |                        |

\*The light on the power button is normally white when the power is on. If the light blinks red, the computer displays a diagnostic code to indicate a problem. See the Maintenance and Service Guide to interpret the code.

### Overview



#### Rear View

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. PCIe x16 expansion slot **</li> <li>2. PCIe x4 expansion slot **</li> <li>3. Audio-out (headphone)/Audio-in (microphone) combo jack</li> <li>4. PCIe x1 expansion slots (optional)*</li> <li>5. PCIe x1 expansion slots (optional)*</li> <li>6. Security cable slot</li> <li>7. Power connector</li> <li>8. RJ-45 (network) jack</li> <li>9. USB 2.0 ports</li> <li>10. USB 3.2 Gen 1 Type-A ports</li> <li>11. USB 3.2 Gen 1 Type-A port with HP Sleep and Charge</li> <li>12. Flex Port             <ul style="list-style-type: none"> <li>• USB 3.1 Gen2 Type-C® port (15W)</li> <li>• USB Type-C® port (w 65W PD)****</li> <li>• 2X USB 3.1 Gen1 Type-A port</li> <li>• DisplayPort™ port</li> <li>• HDMI port</li> <li>• VGA port</li> <li>• Intel i225 2.5Gbps Ethernet port</li> <li>• Serial Port</li> </ul> </li> </ol> | <ol style="list-style-type: none"> <li>13. Serial port (optional)</li> <li>14. DisplayPort™ monitor Connector</li> <li>15. Flex port             <ul style="list-style-type: none"> <li>• USB 3.1 Gen2 Type-C® port (15W)</li> <li>• USB Type-C® port (w 27W PD)****</li> <li>• 2X USB 3.1 Gen1 Type-A port</li> <li>• DisplayPort™ port</li> <li>• HDMI port</li> <li>• VGA port</li> <li>• Intel i225 2.5Gbps Ethernet port</li> <li>• Serial Port</li> </ul> </li> <li>16. Serial port (optional)</li> <li>17. PUSB Port, 24V (optional)***</li> <li>18. Cash drawer port (optional)***</li> </ol> |
|--|---|

\* Can be configured either as two (2) PCI x1 or two (2) PCIe x1 Full-Height slots.

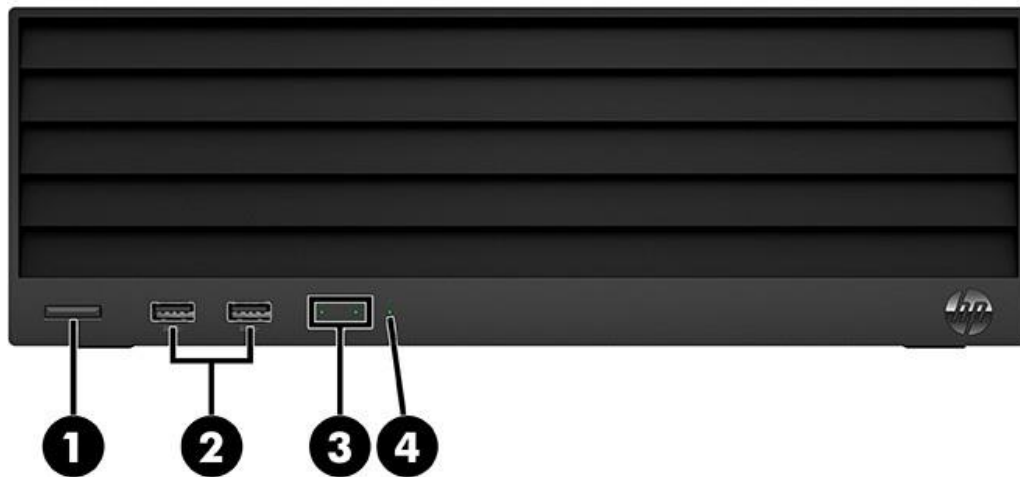
\*\*A variety of cards are available to populate slots, dependent on riser choice and connectors utilized. For full details, please contact your HP sales representative for configuration choices.

\*\*\*24V USB and Cash Drawer Ports must be sold together

\*\*\*\* Configurations including these Flex Ports may limit other options due to power concerns

### Overview

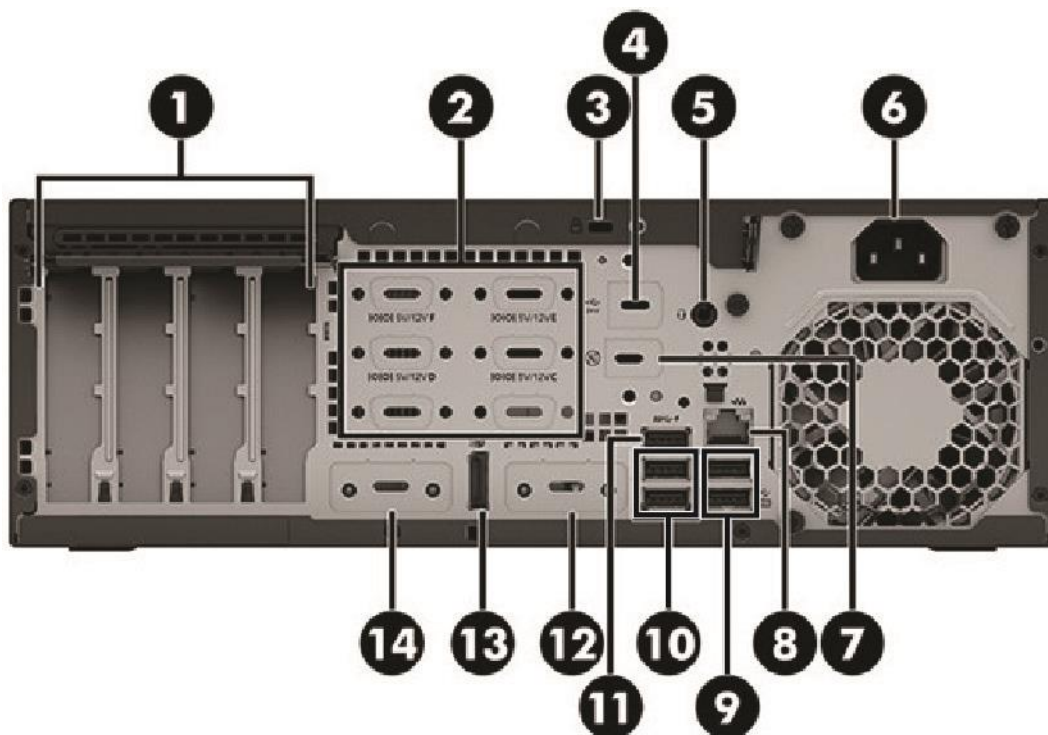
### HP Engage Flex Pro-C G2 Retail System



#### Front View

- |                                 |                           |
|---------------------------------|---------------------------|
| 1. Power button *               | 3. NIC Link indicator LED |
| 2. 2 USB 3.2 Gen 1 Type-A ports | 4. Hard Drive LED         |

\*The light on the power button is normally white when the power is on. If the light blinks red, the computer displays a diagnostic code to indicate a problem. See the Maintenance and Service Guide to interpret the code.



### Overview

1. PCIe expansion slots (4)\*\*
2. Serial port (optional)
3. Security cable slot
4. PUSB Port, 24V (optional)\*\*\*
5. Audio-out (headphone)/Audio-in (microphone) combo jack
6. Power connector
7. Cash drawer port (optional)\*\*\*
8. RJ-45 (network) jack
9. USB 2.0 ports
10. USB 3.2 Gen 1 Type-A ports
11. USB 3.2 Gen 1 Type-A port with HP Sleep and Charge

### Rear View

12. Flex port
  - USB 3.1 Gen2 Type-C® port (15W)
  - USB Type-C® port (w 65W PD)\*\*\*\*
  - 2X USB 3.1 Gen1 Type-A port
  - DisplayPort™ port
  - HDMI port
  - VGA port
  - Intel i225 2.5Gbps Ethernet port
  - Serial Port
13. DisplayPort™ monitor Connector
14. Flex port
  - USB 3.1 Gen2 Type-C® port (15W)
  - USB Type-C® port (w 27W PD)\*\*\*\*
  - 2X USB 3.1 Gen1 Type-A port
  - DisplayPort™ port
  - HDMI port
  - VGA port
  - Intel i225 2.5Gbps Ethernet port
  - Serial Port

\*\*A variety of cards are available to populate slots, dependent on riser choice and connectors utilized. For full details, please contact your HP sales representative for configuration choices.

\*\*\*24V USB and Cash Drawer Ports must be sold together

\*\*\*\* Configurations including these Flex Ports may limit other options due to power concerns

### Overview

#### Introduction

Efficiently manage your retail business from the store floor to the back office with the HP Engage Flex Pro, our stable, secure, and highest-performing retail platform that delivers maximum flexibility for a range of deployments.

#### At A Glance

- Choice of two form factors: HP Engage Flex Pro G2, or the smaller HP Engage Flex Pro-C G2
- Intel® Q670E chipset supporting Intel® 13th generation Intel® Core™ processors, featuring integrated Intel® UHD Graphics and Intel® vPro® Technology (vPro® is optional and requires factory configuration, available with Core i5, Core i7, and Core i9 processors only)<sup>4</sup>
- HP developed and engineered UEFI BIOS supporting security, manageability and software image stability
- Choice of the following pre-installed operating systems:
  - Windows 11 Pro, 64-bit<sup>1</sup>
  - Windows 10 IoT Enterprise LTSC, 64-bit<sup>1</sup>
  - FreeDOS
- Support for 35W and 65W processors
- Integrated 10/100/1000 Ethernet Controller, with optional 802.11ac Wi-Fi and/or Bluetooth® 5.0
- Up to 128GB DDR5 Synchronous Dynamic Random Access Memory (SDRAM)
- Support for up to three video outputs via 1 standard video connector and two optional video port connectors which provide the following choices: DisplayPort™ 1.4, HDMI™ 2.0, VGA, or USB Type-C® with Display Output (DisplayPort, HDMI, & USB Type C can support 4k resolution @60 Hz refresh rate)
- Discrete graphics options available
- 90% high efficiency energy saving power supply
- ENERGY STAR® certified configurations models available (dependent upon the desired configuration)
- Can be configured with multiple hard disk drives in a RAID array
- HP Client Security Manager
  - HP Sure Recover (via Network) Gen5
  - HP Sure Run Gen5
- HP Image Assistant
- HP Manageability Integration Kit
- HP Sure Admin Gen2
- HP Sure Start Gen7
- HP Sure Click
- HP Support Assistant
- ENERGY STAR® certified configurations available. EPEAT® Gold registered configurations available where applicable/supported. Registration may vary by country. See <http://www.epeat.net> for registration status by country. Search keyword generator on HP's 3rd party option store for solar generator accessories at <http://www.hp.com/go/options>
- Protected by HP Services, including limited warranties up to 3-3-3 (terms and conditions vary by country; certain restrictions and exclusions apply); Care Packs available with up to 5 years Next Business Day Onsite Hardware Support
- Tool-less serviceability features for easier upgrades and repairs
- 40°C ambient thermals standard.
- Tool-less serviceability for easy upgrades and repair
- Optional retail I/O ports including cash drawer port.
- Configurable Full-Height expansion slots; must choose either a PCI x1 Riser or PCIe x1 Riser. The choice of riser will affect which cards can be utilized.

**NOTE:** All models and features may not be available in all countries

[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 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See <http://www.windows.com>.

### Standard Features and Configurable Components (availability may vary by country)

#### Operating Systems

##### Preinstalled

Windows 11 Pro, 64-bit\*

Windows 10 IoT Enterprise 2021 LTSC, 64-bit\*

FreeDOS

##### Certified

SuSE Linux® 15 SP5\*\*

**NOTE:** In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel® 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on <http://www.support.hp.com>

\* 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> .

\*\*The following features are not supported by SUSE Linux® Enterprise Desktop:

- Power Management features
  - Multi-touch capabilities
  - Systems configured with Linux® do not qualify for ENERGY STAR®
-

Standard Features and Configurable Components (availability may vary by country)

### Retail Solutions Services and Features

Intel® Stable Image Platform Program (SIPP)

Intel® vPro® Technology\*

HP Global Series Services

Factory Express Deployment and Lifecycle Services

Intel® Standard Manageability

Trusted Platform Module (TPM) v2.0\*\*

\*Intel® vPro® Technology available on models with Intel® Core™ i7 and Intel® Core™ i5 processors.

\*\*TPM module disabled where restricted by law, i.e. Russia.

### Service and Support

On-site Warranty<sup>15</sup>: One-year (1-1-1) limited warranty delivers one year of on-site, next business day<sup>16</sup> service for parts and labor and includes free support 24 x 7<sup>17</sup>. Configurable options include extension of On Site support to 3, 4, or 5 years. Three, four, or five year onsite and labor are not available in all countries. Service offers terms up to 5 years by choosing an optional HP Care Pack. To choose the right level of service for your HP product, visit HP Care Pack Central:

<http://www.hp.com/go/cpc>.<sup>18</sup>

15. Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.

16. On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.

17. Technical telephone support applies only to HP-configured and third-party HP qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.

18. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit [www.hp.com/go/cpc](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.

### Chipset

Intel® Q670E

### Processor

#### Intel® Celeron® Processors

##### Intel® Celeron® G6900E Processor

46W

3.0 GHz base frequency

4 MB cache, 2 cores, 2 threads

Intel® UHD Graphics 710

Supports DDR5 memory up to 4800 MT/s data rate

##### Intel® Celeron® G6900TE Processor

35W

2.4 GHz base frequency

4MB cache, 2 cores, 2 threads

Intel® UHD Graphics 710

Supports DDR5 memory up to 4800 MT/s data rate

#### Intel® Pentium® Processors

##### Intel® Pentium® Gold G7400 Processor

46W

3.6 GHz base frequency

6 MB cache, 2 cores, 4 threads

Intel® UHD Graphics 710

Supports DDR5 memory up to 4800 MT/s data rate

### Standard Features and Configurable Components (availability may vary by country)

#### Intel® 13th Generation Core™ i3 Processors

##### Intel® Core™ i3 13100E Processor<sup>1</sup>

65W  
3.3 GHz base frequency  
12 MB cache, 4 cores, 8 threads  
Intel® UHD Graphics 730  
Supports DDR5 memory up to 4800 MT/s data rate

##### Intel® Core™ i3 13100TE Processor<sup>1</sup>

35W  
2.4 GHz base frequency  
12 MB cache, 4 cores, 8 threads  
Intel® UHD Graphics 730  
Supports DDR5 memory up to 4800 MT/s data rate

#### Intel® 13th Generation Core™ i5 Processors

##### Intel® Core™ i5 13500E Processor<sup>1,2,3</sup>

65W  
2.4 GHz base frequency  
Up to 4.6 GHz max. turbo frequency with Intel® Turbo Boost Technology<sup>3</sup>  
24 MB cache, 14 cores, 20 threads  
Intel® UHD Graphics 770  
Supports DDR5 memory up to 4800 MT/s data rate  
Supports Intel® vPro® Technology and Intel® Stable Image Platform Program (SIPP) 4

##### Intel® Core™ i5 13500TE Processor<sup>1,2,3</sup>

35W  
1.3GHz base frequency  
Up to 4.5 GHz max. turbo frequency with Intel® Turbo Boost Technology<sup>3</sup>  
24 MB cache, 14 cores, 20 threads  
Intel® UHD Graphics 770  
Supports DDR5 memory up to 4800 MT/s data rate  
Supports Intel® vPro® Technology and Intel® Stable Image Platform Program (SIPP) 4

#### Intel® 13th Generation Core™ i7 Processors

##### Intel® Core™ i7 13700E Processor<sup>1,2,3</sup>

65W  
1.9 GHz base frequency  
Up to 5.1 GHz max. turbo frequency with Intel® Turbo Boost Technology<sup>3</sup>  
30 MB cache, 16 cores, 24 threads  
Intel® UHD Graphics 770  
Supports DDR5 memory up to 5600 MT/s data rate  
Supports Intel® vPro® Technology and Intel® Stable Image Platform Program (SIPP)<sup>4</sup>

#### Intel® 13th Generation Core™ i9 Processors

##### Intel® Core™ i9 13900E Processor<sup>1,2,3</sup>

65W  
1.8 GHz base frequency  
Up to 5.2 GHz max. turbo frequency with Intel® Turbo Boost Technology<sup>3</sup>  
36 MB cache, 24 cores, 32 threads



### Standard Features and Configurable Components (availability may vary by country)

Intel® UHD Graphics 770

Supports DDR5 memory up to 5600 MT/s data rate

Supports Intel® vPro® Technology and Intel® Stable Image

Platform Program (SIPP)<sup>4</sup>

1. Multi-core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.

2. Intel® Turbo Boost technology requires a PC with a processor with Intel® Turbo Boost capability. Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See [www.intel.com/technology/turboboost](http://www.intel.com/technology/turboboost) for more information.

3. Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd party software in order to run. Features of vPro® Essentials and Enterprise vary. See <http://intel.com/vpro>

**NOTE:** S-Processor 6+2 DDR4 2666 MT/s 2 DPC UDIMM is supported when channel is populated with the same UDIMM part number

### Redundant Array of Independent Drives (RAID)

Flexible implementation:

- DriveLock is supported while in RAID mode. Users can manage the DriveLock password from within F10 Setup. Locked drives will be displayed as such in the RAID option ROM interface.
- Hard drive information can be viewed within F10 Setup while in RAID mode. Previously, the hard drives will not appear in Drive Configuration when switching to RAID mode.
- The RAID Setup Utility (accessed through CTRL-I) can be protected by the F10 Setup password.

**NOTE:**

RAID 1 is the only RAID configuration offered via HP factory configurations. The pre-configured systems:

- are complete RAID systems and have both drives installed.
- have the necessary Option ROM configuration.
- are pre-loaded and pre-installed with all required Intel® software.
- include a preinstalled operating system that is mirrored mode out of the box.

Please refer to the HP White Paper titled “Advanced Host Controller Interface (AHCI) and Redundant Array of Independent Disks (RAID) on HP Compaq PCs” at: <http://www.hp.com> for more information and instructions.

### Standard Features and Configurable Components (availability may vary by country)

#### Memory

**Type**

DDR5-4800 Memory DIMMs, transfer rates up to 4800 MT/s

**Maximum**

128GB

**Number of Slots**

4 UDIMM

**Memory Upgrades**

Both slots are customer upgradeable/accessible.

**Key Benefits of DDR5 Memory**

Dual channel configuration – HP Engage Flex Pro features motherboards designed with two memory channels instead of a single channel.

Reduce system latencies and significantly improve your system performance with dual channel memory configurations by utilizing the theoretical bandwidth of two memory modules instead of one.

Expect fast start-up times with reduced delays during routine operations and system maintenance functions.

Meet everyday workloads head on, and run more programs simultaneously. Easily toggle back and forth between several open applications with noticeable speed.

**CAUTION:** You must shut down the Retail System and disconnect the power cord before adding or removing memory modules. Regardless of the power-on state, voltage is always supplied to the memory modules as long as the Retail System is plugged in to an active AC outlet. Adding or removing memory modules while voltage is present may cause irreparable damage to the memory modules or system board.

#### Memory Configurations:

Supports up to 128 GB of DDR5 SDRAM using UDIMM modules.

8 GB (1 x 8 GB)
16 GB (2 x 8 GB)
16 GB (1 x 16 GB)
32 GB (4 x 8 GB)
32 GB (2 x 16 GB)
32 GB (1 x 32 GB)
64 GB (4 x 16 GB)
64 GB (2 x 32 GB)
128 GB (4 x 32 GB)

\* For 8GB configurations, there can only be one installation per channel.

**NOTE:** Memory modules support data transfer rates up to 4800 MT/s; actual data rate is determined by the system's configured processor and memory configuration. See processor specifications for supported memory data rate.

**NOTE:** All memory slots are customer accessible / upgradeable.

**NOTE:** S-Processor 6+2 DDR5 4800 MT/s 2 DPC UDIMM is supported when channel is populated with the same UDIMM part number.

#### Storage

##### 3.5 inch SATA Hard Disk Drives (HDD)

HP Engage Flex Pro G2

HP Engage Flex Pro-C G2



### Standard Features and Configurable Components (availability may vary by country)

1 TB 7200RPM 3.5in SATA HDD	X	
2 TB 7200RPM 3.5in SATA HDD	X	
4 TB 7200RPM 3.5in SATA HDD	X	

#### 2.5 inch SATA Hard Disk Drives (HDD)

	HP Engage Flex Pro G2	HP Engage Flex Pro-C G2
1 TB 7200RPM 2.5in SATA HDD	X	X

	HP Engage Flex Pro G2	HP Engage Flex Pro-C G2
256 GB M.2 2280 PCIe NVMe Value SSD	X	X
512 GB M.2 2280 PCIe NVMe Value SSD	X	X
1 TB M.2 2280 PCIe NVMe Value SSD	X	X
256 GB M.2 2280 PCIe NVMe OPAL SSD	X	X
512 GB M.2 2280 PCIe NVMe OPAL SSD	X	X
512 GB M.2 2280 PCIe NVMe Three Layer Cell SSD	X	X
1 TB M.2 2280 PCIe NVMe Three Layer Cell SSD	X	X
2 TB M.2 2280 PCIe NVMe Three Layer Cell SSD	X	X

	HP Engage Flex Pro G2	HP Engage Flex Pro-C G2
HP 9.5mm Slim DVD-ROM Drive <sup>1</sup>	X	
HP 9.5mm Slim DVD Writer Drive <sup>2</sup>	X	
HP 9.5mm SuperMulti DVDRW	X	

1. HD-DVD disks cannot be played on this drive. No support for DVD-RAM. Actual speeds may vary. Don't copy copyright-protected materials. Double Layer discs can store more data than single layer discs. Discs burned with this drive may not be compatible with many existing single-layer DVD drives and players.

2. Don't copy copyright-protected materials.

3. For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 64 GB (for Windows 11) of system disk is reserved for the system recovery software.

### Standard Features and Configurable Components (availability may vary by country)

#### Security

- Trusted Platform Module (TPM) 2.0<sup>1</sup>
- Stringent security (via BIOS)<sup>2</sup>
- SATA port disablement (via BIOS)
- Drive lock
- RAID configurations
- Serial, parallel, USB enable/disable (via BIOS)
- Optional USB Port Disable at factory (user configurable via BIOS)
- Power Configurable Serial Ports (COM 1, 2, 3 and 4 ) via the HP BIOS
- Removable media write/boot control
- Power-On password (via BIOS)
- Setup password (via BIOS)
- & Intrusion Sensor
- Intel® Identity Protection Technology (IPT)<sup>3</sup>
- Wall Mount (sold separately)
- Support for chassis cable lock devices
- Support for chassis padlock devices

<sup>1</sup> TPM module disabled where use is restricted by law; for example, Russia.

<sup>2</sup> This setting is defaulted to disable, but when enabled, the PW jumper will not clear the BIOS pre-boot authentication passwords.

**NOTE:** TPM module disabled where use is restricted by law.

<sup>3</sup> Models configured with Intel® Core™ processors have the ability to utilize advanced security protection for online transactions. IPT, used in conjunction with participating web sites, provides double identity authentication by adding a hardware component in addition to the usual user name and password. IPT is initialized through an HP Client Security module.

### Standard Features and Configurable Components (availability may vary by country)

#### I/O Ports

<b>USB</b>	USB 2.0: Rear: Two (2) USB 3.2 Gen1 Type A: Front: Two (2) Rear: Three (2, 1 charging)
<b>USB 24V</b>	One (1) 24V powered USB (optional)
<b>Serial</b>	Up to six (6) RS-232 (power configurable) optional ports
<b>Parallel</b>	One port available as an option*
<b>USB+PWR 12V</b>	Two (2) USB+PWR 12V cards optional (three (3) 12 Volt USB+ PWR per card) for a total of 6*
<b>RJ-12</b>	One (1) RJ-12 Cash Drawer port (optional)
<b>Video</b>	One (1) DisplayPort™ v1.4 and up to two additional (2) DisplayPort™ v1.4 as options Up to two (2) optional HDMI or VGA ports.
<b>DVI output</b>	Available via optional DisplayPort™ to DVI Adapter
<b>Audio</b>	Rear: Line input (supports microphone or line input) and optional line out All ports are 3.5mm in diameter
<b>NIC</b>	One (1) Industry standard RJ-45 port accesses the integrated network interface controller

\*These options occupy slot openings so less slots will be available when the options are installed

### Technical Specifications

#### Slots

	HP Engage Flex Pro G2	HP Engage Flex Pro-C G2
<b>Full-Height</b>	<p>Total of Two (2) Full-Height Slots, with a <b>Choice of either</b>:</p> <p>1.) PCI x1 - Two (2) each: 4.2" full height, 6.6" length, 25W max. power</p> <p>2.) PCIe v4.0 x1 - Two (2) each: 4.2" full height, 6.6" length, 10W max. power</p> <p>Serial PCIe x1 Full Height PCA Idle: 0.95W @3.3V Working: 1.14W@3.3V</p>	N/A
<b>Half-Height</b>	<p>Total of Two (2) Half-Height:</p> <p>PCIe v4.0 x16 (wired as x16) - One (1) each: 2.5 low profile, 6.6" length, 75W max. power</p> <p>PCIe v4.0 x16 (wired as x4) - One (1) each: 2.5" low profile, 6.6" length, 25W max. power</p> <p>Serial PCIe x1 Low profile PCA Idle: 0.95W @3.3V Working: 1.14W@3.3V</p>	<p>Total of Four (4) Half-Height:</p> <p>PCIe v4.0 x16 (wired as x16) One (1) each: 2.5 low profile, 6.6" length, 75W max. power</p> <p>PCIe v4.0 x16 (wired as x4) - One (1) each: 2.5" low profile, 6.6" length, 25W max. power</p> <p>PCIe v4.0 x4 (wired as x2) - One (1) each: 2.5" low profile, 6.6" length, 10W max. power</p> <p>PCIe v4.0 x4 (wired as x2) - One (1) each: 2.5" low profile, 6.6" length, 10W max. power</p> <p>Serial PCIe x1 Low profile PCA Idle: 0.95W @3.3V Working: 1.14W@3.3V</p>

**NOTE:** Use of full-height slots requires optional PCI or PCIe Riser Card

#### Bays

	HP Engage Flex Pro G2	HP Engage Flex Pro-C G2
<b>Internal HDD (3.5")</b>	2	N/A
<b>Internal HDD (2.5")</b>	N/A <sup>1</sup>	2
<b>External</b>	1 each 5.25"	N/A
<b>Storage M.2</b>	2	2

<sup>1</sup>2.5" drives can be supported with a caddy

#### Controllers

<b>Hard drive</b>	SATA Supports up to SATA 6.0 Gb/s
<b>SATA interfaces</b>	One (1) SATA 2.0 Two (2) SATA 3.0
<b>Host SATA</b>	Advanced Host Controller Interface (AHCI) Revision 1.2. The specification includes a description of the hardware/software interface between system software and the host controller hardware

#### Network Interface Connections

Intel® I219-LM 10/100/1000 Integrated NIC

Intel® Wi-Fi 6E- AX 211 802.11a/b/d/e/g/h/i/k/n/r/u/v/w/ac/ax (2x2) Wi-Fi and Bluetooth® 5.3 Combo wireless Card vPro®

### Technical Specifications

Intel® Wi-Fi 6E- AX 211 802.11a/b/d/e/g/h/i/k/n/r/u/v/w/ac/ax (2x2) Wi-Fi and Bluetooth® 5.3 Combo wireless Card  
Realtek® RTL8822BE 802.11a/b/g/n/ac (2x2) WiFi and Bluetooth® 4.2 Combo Card

**NOTE:** The integrated network connection is required to support Intel® vPro Technology. 802.11 requires wireless access point and internet service. Availability of public wireless access points limited. Gigabit Ethernet speeds may vary.

### Graphics

Integrated:

Intel® UHD Graphics 770

Intel® UHD Graphics 730

Intel® UHD Graphics 710

Discrete:

NVIDIA® Quadro T1000 8GB Graphics Card

NVIDIA® RTX A2000 12GB Graphics Card

HP DisplayPort™ to DVI-D Adapter

HP DisplayPort™ to VGA Adapter

HP DisplayPort™ to HDMI True 4K Adapter

HP Type-C™ to DisplayPort™ Adapter

**NOTE:** HD content required to view HD images. Integrated Intel® HD graphics uses part of the total system memory for video performance. System memory dedicated to video performance is not available for other use by other programs.

### Multimedia

High Definition Audio (integrated) with Realtek ALC3252 codec (all ports are stereo)

Line-out and Line-In rear Port (3.5mm)

Line-out rear port (optional)

Internal Speaker (standard)

### Input/Output Devices

HP 128 USB Laser Mouse (optional)

HP 320K USB Optical Mouse (optional)

HP 125 USB Mouse (optional)

HP 125 USB Keyboard (optional)

HP 320K USB Keyboard (optional)

### Miscellaneous Devices and Configurations

HP Serial Port Adapter

HP Tower Stand

HP Engage Flex Pro PCI Riser Assembly<sup>1</sup>

HP Engage Flex Pro PCIe Riser Assembly<sup>1</sup>

24 Volt Powered USB + Cash Drawer Port Module

Three (3) port 12 Volt USB + Pwr Card

Two (2) port RS232 Serial (power configurable) COM 3 & 4 port card<sup>1</sup>

<sup>1</sup>Not available on HP Engage Flex Pro-C

### Technical Specifications

#### Weights & Dimensions

(configured with 1 HDD)

	HP Engage Flex Pro G2	HP Engage Flex Pro-C G2
Chassis (H x W x D)	3.94" x 13.27" x 15.12" 100mm x 337mm x 384mm	3.94" x 11.81" x 11.89" 100mm x 300mm x 302mm
System Volume	790.5 cu in, 12940.8 cm <sup>3</sup>	553.3 cu in, 9060 cm <sup>3</sup>
Packaging (H x W x D)	L489 x D239 x H518 mm (MPP Cushion) (19.25" x 9.41" x 20.39") L499 x D229 x H528 mm (EPE Cushion) (19.65" x 9.02" x 20.79")	H 499 x W 229 x D 400 mm 19.6" x 9" x 15.75"
System Weight*	4.7 kg 10.4 lb	3.9kg 8.6 lb
Shipping Weight*	7.4 kg 16.2 lb (w/ EPE cushions) 8.2 kg 18.0 lb (w/ MPP cushions)	6.5 kg 14.4 lb (w/ EPE cushions) 6.9 kg 15.1 lb (w/ MPP cushions)
Max Supported Weight (desktop orientation)	77 lb 35 kg	77 lb 35 kg

\* Exact weight depends on configuration



### Technical Specifications

#### Unit Environment and Operating Conditions

<b>Temperature Range</b>	Operating: 50° to 104° F (10° to 40° C)* Non-operating: -22° to 149° F (-30° to 65° C)	
<b>Relative Humidity</b>	Operating: 20% to 85% (non-condensing at ambient) Non-operating: 0% to 95% (non-condensing at ambient)	
<b>Maximum Altitude</b> (unpressurized)	Operating: 10,000 ft (3048 m) Non-operating: 30,000 ft (9144 m)	
<b>Shock</b> (non repetitive)	<b>HP Engage Flex Pro G2</b> Operating: ½ Sine, 40G, 2ms Non-operating: ½ Sine, 165 cm/s, 2~3ms Non-operating square: 422 cm/s, 40G	<b>HP Engage Flex Pro-C G2</b> Operating: ½ Sine, 40G, 2ms Non-operating: ½ Sine, 165 cm/s, 2~3ms Non-operating square: 457 cm/s, 40G
<b>Vibration</b>	Operating random: 1.05g (rms), 5-300 Hz, up to 0.01g <sup>2</sup> /Hz Non-operating random: 2.09g (rms), 5-500 Hz, up to 0.015 g <sup>2</sup> /Hz	

\* Operating temperature is de-rated 1.0 deg C per 300 m (1000 ft) to 3000 m (10,000 ft) above sea level, no direct sustained sunlight. Maximum rate of change is 10 deg C/Hr. The upper limit may be limited by the type and number of options installed.

	<b>HP Engage Flex Pro G2</b>	<b>HP Engage Flex Pro-C G2</b>
<b>Power Supply</b>	250-watt – EPA92 power supply – Active PFC	
	*This power supply meets ENERGY STAR compliance in conjunction with a select range of processors and modules.	
Operating Voltage Range	90 to 264 VAC	
Rated Voltage Range	100 to 240 VAC	
Rated Line Frequency	50/60 Hz	
Operating Line Frequency Range	47 – 63 Hz	
Rated Input Current	3A	
	Efficiency 90/92/89% at 20/50/100% load	
Power Supply Fan	90 mm variable speed fan	70 mm variable speed fan
ENERGY STAR Compliant	ENERGY STAR® certified configurations available	
Power Cord Length	6.0ft (1.83m)	
Current Leakage (NFPA99:2012)	Less than 500 microamps of leakage current at 264 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1.	
	Less than 100 microamps of leakage current at 120 Vac with the ground wire intact with normal polarity, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1.	

### Technical Specifications

#### Serviceability Features

- Dual colored power LED on front of computer to indicate either normal or fault condition
- Diagnostic LED Explanation Table:
  - Power LED will blink red 2 to 5 times, then blink white 2 or more times, then repeat (with beep tones for each blink initially):
    - 2 red + 2 white User must provide file for BIOS recovery (USB storage typically)
    - 2 red + 3 white User must enter a key sequence to proceed with recovery by policy
    - 2 red + 4 white BIOS recovery is in progress
    - 3 red + 2 white Memory could not be initialized
    - 3 red + 3 white Graphics adaptor could not be found
    - 3 red + 4 white Power supply failure / not connected
    - 3 red + 5 white Processor not installed
    - 3 red + 6 white Current processor does not support an enabled feature
    - 4 red + 2 white Processor has exceeded its temperature threshold / system thermal shutdown
    - 4 red + 3 white System internal temperature has exceeded its threshold
    - 5 red + 2 white System controller firmware is not valid
    - 5 red + 3 white System controller detected BIOS is not executing
    - 5 red + 4 white BIOS could not complete initialization / PCA failure
    - 5 red + 5 white System controller rebooted the system after a health or recovery timer triggered
- HP PC Hardware Diagnostics UEFI:
  - This utility enables hardware level testing outside the operating system on many components. The diagnostics can be invoked by pressing F2 at POST, and is available as a download from HP Support
- System/Emergency ROM
- Flash ROM
- CMOS Battery Holder for easy replacement
- Flash Recovery with Video Configuration Record Software
- Aux Power LED on System PCA
- Processor ZIF Socket for easy Upgrade
- Over-Temp Warning on Screen (Requires IM Agents)
- Clear Password Jumper
- DIMM Connectors for easy Upgrade
- Clear CMOS Button
- NIC LEDs (integrated) (Green & Amber)
- Dual Color Power and HD LED - To Indicate Normal Operations and Fault Conditions
- Color coordinated cables and connectors
- Tool-less Hood Removal
- Front power switch
- System memory can be upgraded without removing the system board or any internal components
- Tool-less Hard Drive, CD Removal
- Green Pull Tabs, and Quick Release Latches for easy Identification

### Technical Specifications

## SOFTWARE COMPONENTS AND APPLICATION WITH WINDOWS

### BIOS

HP BIOSphere Gen6<sup>1</sup>  
HP Secure Erase<sup>2</sup>  
Absolute Persistence Module<sup>3</sup>  
HP Drive Lock & Automatic Drive Lock<sup>4</sup>  
BIOS Update via Network  
HP Wake on WLAN

### Software

HP Desktop Support Utilities  
HP Connection Optimizer<sup>5</sup>  
HP Easy Clean  
myHP  
HP Privacy Settings  
HP PC Hardware Diagnostics  
Touchpoint Customizer for Commercial  
HP Notifications  
HP Presence Aware<sup>7</sup>  
HP Setup Integrated OOB  
HP Support Assistant<sup>8</sup>  
HP Noise Cancellation Software  
HP QuickDrop<sup>9</sup>  
Microsoft Defender  
Buy Microsoft Office (sold separately)  
HP Smart Support<sup>10</sup>

### Manageability Features

HP Driver Packs (download)<sup>11</sup>  
HP Client Catalog (download)  
HP Image Assistant (download)  
HP Manageability Integration Kit for Microsoft System Center Configuration Management Gen4 (download)<sup>12</sup>  
Ivanti Management Suite (download)<sup>13</sup>  
HP Cloud Recovery<sup>14</sup>  
HP Client Management Script Library (download)

### Security Management

HP Pro Security Edition (optional)<sup>15</sup>  
HP Client Security Manager Gen7<sup>16</sup>  
HP Sure Sense<sup>17</sup>  
HP Sure Admin<sup>18</sup>  
HP Sure Click<sup>19</sup>  
HP Sure Start Gen6<sup>20</sup>  
HP Sure Run Gen4<sup>21</sup>  
HP Sure Recover Gen4<sup>22</sup>  
HP Tamper Lock  
TPM 2.0 Embedded Security Chip (Common Criteria EAL4+ Certified) (FIPS 140-2 Level 2 Certified)

1. HP BIOSphere Gen6 features may vary depending on the platform and configuration.

2. For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.

### Technical Specifications

3. Absolute Persistence Module: Absolute agent is shipped turned off, and will be activated when customers activate a purchased subscription. Subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. The Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit: <http://www.absolute.com/company/legal/agreements/computrace-agreement>. Data Delete is an optional service provided by Absolute Software. If utilized, the Recovery Guarantee is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either obtain a PIN or purchase one or more RSA SecurID tokens from Absolute Software.
  4. Drive Lock is not supported on NVMe drives.
  5. HP Connection Optimizer requires Windows 10.
  7. HP Presence Aware requires a proximity sensor that is available on select EliteBooks and requires Windows Hello for authentication.
  8. HP Support Assistant requires Windows and Internet access.
  9. HP Quick Drop requires Internet access and Windows 10 or higher PC preinstalled with HP QuickDrop app and either an Android device (phone or tablet) running Android 7 or higher with the Android HP QuickDrop app, and /or an iOS device (phone or tablet) running iOS 12 or higher with the iOS HP QuickDrop app.
  10. 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>.
  11. HP Driver Packs not preinstalled, however available for download at <http://www.hp.com/go/clientmanagement>.
  12. HP Manageability Integration Kit can be downloaded from <http://www.hp.com/go/clientmanagement>
  13. Ivanti Management Suite subscription required.
  14. HP Cloud Recovery is available for Z by HP, HP Elite and Pro desktops and laptops PCs with Intel® or AMD processors and requires an open, wired network connection. **NOTE:** You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Detail please refer to: <https://support.hp.com/us-en/document/c05115630>.
  15. HP Pro Security Edition is available preloaded on select HP PCs and includes HP Sure Click Pro and HP Sure Sense Pro. 3-year license required. The HP Pro Security Edition software is licensed under the license terms of the HP End User License Agreement (EULA) that can be found at: [https://h30670.www3.hp.com/ecommerce/common/disclaimer.do#EN\\_US](https://h30670.www3.hp.com/ecommerce/common/disclaimer.do#EN_US) as modified by the following: "7. Term. Unless otherwise terminated earlier pursuant to the terms contained in this EULA, the license for the HP Pro Security Edition (HP Sure Sense Pro and HP Sure Click Pro) is effective upon activation and will continue for thirty-six (36) months thereafter ("Initial Term"). At the end of the Initial Term you may either (a) purchase a renewal license for the HP Pro Security Edition from HP.com, HP Sales or an HP Channel Partner, or (b) continue using the standard versions of HP Sure Click and HP Sure Sense at no additional cost with no future software updates or HP Support." HP Pro Security Edition is optimized for the SMB environment and ships pre-configured - manageability is optional. The HP Pro Security Edition supports a limited tool set that can be used by the HP Manageability Integration Kit which can be downloaded from <http://www.hp.com/go/clientmanagement>.
  16. HP Client Security Manager Gen7 requires Windows and is available on the select HP Elite and Pro PCs.
  17. HP Sure Sense is available on select HP PCs and is not available with Windows 10 Home.
  18. HP Sure Admin requires Windows 10 or higher, HP BIOS, HP Manageability Integration Kit from <http://www.hp.com/go/clientmanagement> and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store.
  19. HP Sure Click requires Windows 10 or 11 Pro or higher. See [https://bit.ly/2PrLT6A\\_SureClick](https://bit.ly/2PrLT6A_SureClick) for complete details.
  20. HP Sure Start Gen6 is available on select HP PCs.
  21. HP Sure Run Gen4 is available on select Windows 10 or 11 Pro or higher based HP Pro, Elite and Workstation PCs with Intel® or AMD processors.
  22. HP Sure Recover Gen4 is available on select HP PCs and requires an open network connection. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data.
-

### Technical Specifications

#### Additional Features

##### Tower Orientation

##### Description

The chassis can be oriented as either a desktop or a tower.

##### Drive Lock

Implementation of the industry standard ATA Security feature set. When enabled, it prevents software access to user data on the drive until one or two user-defined passwords are provided.

##### Boot Sectors Protection

MBR and GPT sectors of the hard drive are critical to booting the operating system. By saving the MBR or GPT data (depending on the how the OS was installed), the BIOS will be able to monitor for changes and allow the user to override them with the backup copy at boot-up.

##### Drive Protection System

DPS Access through F10 Setup during Boot

A diagnostic hard drive self- test. It scans critical physical components and every sector of the hard drive for physical faults and then reports any faults to the user. Running independently of the operating system, it can be accessed through a Windows-based diagnostics utility or through the computer's setup procedure. It produces an evaluation on whether the hard drive is the source of the problem and needs to be replaced

The system expands on the Self-Monitoring, Analysis, and Reporting Technology (SMART), a continuously running systems diagnostic that alerts the user to certain types of failures

##### SMART Technology (Self-Monitoring, Analysis and Reporting Technology)

Allows hard drives to monitor their own health and to raise flags if imminent failures were predicted

##### SMART I – Drive Failure Prediction

Predicts failures before they occur. Tracks fault prediction and failure indication parameters such as re-allocated sector count, spin retry count, calibration retry count

##### SMART II – Off-Line Data Collection

By avoiding actual hard drive failures, SMART hard drives act as "insurance" against unplanned user downtime and potential data loss from hard drive failure

##### SMART III – Off-Line Read Scanning with Defect Reallocation

IOEDC: I/O Error Detection Circuitry

Detects errors in Read/Write buffers on HDD cache RAM

##### SMART IV – End-to-End CRC for hard drives

Interface in F10 setup provides confirmation of SMART IV support.

### Technical Specifications - Audio

#### High Definition Audio

<b>Type</b>	Integrated
<b>HD Stereo Codec</b>	Conexant ALC3252
<b>Audio I/O Ports</b>	Rear Line-In/Microphone input (47-K ohm Input Impedance, function is configurable by audio driver) Line-in and Line-out, both on rear. All ports are 3.5mm in diameter
<b>Internal Speaker Amplifier</b>	2W class D mono amplifier for the internal speaker only. External speakers must be powered
<b>Multi-streaming Capable</b>	Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the rear jack or integrated speaker.
<b>Sampling</b>	Independent sampling rates for DAC's and ADC's; supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and 44.1 kHz to 96 kHz for ADC
<b>Wavetable Syntheses (software)</b>	Yes – Uses OS soft wavetable
<b>Analog Audio</b>	Yes
<b># of Channels on Line-Out (mono/stereo)</b>	Stereo (Left & Right channels)
<b>Internal Speaker</b>	Yes
<b>External Speaker Jack (Line-Out)</b>	Yes

### Technical Specifications - Communications

#### Intel® I219-LM 1 Gigabit Network Connection LOM (vPro®)

<b>Connector</b>	RJ-45
<b>System Interface</b>	PCI (Intel proprietary) + SMBus
<b>Memory</b>	24 KB FIFO packet buffer memory
<b>Data rates supported</b>	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023 clauses 40) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s
<b>IEEE Compliance</b>	IEEE 802.1p QoS (Quality of Service) Support IEEE 802.1q VLAN support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) IEEE 802.3az EEE (Energy Efficient Ethernet)
<b>Performance</b>	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling Jumbo Frame 9K
<b>Power consumption</b>	Cable Disconnection: 25mW 100Mbps Full Run: 450mW 1000bp Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW
<b>Power management</b>	ACPI compliant – multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
<b>Management interface</b>	Auto MDI/MDIX Crossover cable detection
<b>IT manageability</b>	Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status
<b>Network transfer rate</b>	10BASE-T (half-duplex)            10 Mbps 10BASE-T (full-duplex)           20 Mbps 100BASE-TX (half-duplex)        100 Mbps 100BASE-TX (full-duplex)        200 Mbps 1000BASE-T (full-duplex)        2000 Mbps
<b>Security &amp; Manageability</b>	Intel® vPro® support with appropriate Intel® chipset components

#### Intel® I225-LM 2.5 Gigabit Network Connection LOM (vPro®)

<b>Connector</b>	RJ-45
<b>System Interface</b>	PCI (Intel proprietary) + SMBus
<b>Data rates supported</b>	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023 clauses 40) Auto-Negotiation (Automatic Speed Selection)

### Technical Specifications - Communications

<b>IEEE Compliance</b>	Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s IEEE 802.1p QoS (Quality of Service) Support IEEE 802.1q VLAN support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) IEEE 802.3az EEE (Energy Efficient Ethernet)
<b>Performance</b>	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling (Hash Mode Only) Jumbo Frame 9K
<b>Power consumption</b>	Cable Disconnection: 25mW 100Mbps Full Run: 450mW 1000bp Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW
<b>Power management</b>	ACPI compliant – multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
<b>Management interface</b>	Auto MDI/MDIX Crossover cable detection
<b>IT manageability</b>	Wake-on-LAN from modern standby or sleep state (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status
<b>Network transfer rate</b>	10BASE-T (half-duplex)            10 Mbps 10BASE-T (full-duplex)            20 Mbps 100BASE-TX (half-duplex)            100 Mbps 100BASE-TX (full-duplex)            200 Mbps 1000BASE-T (full-duplex)            2000 Mbps
<b>Security &amp; Manageability</b>	Intel® vPro® support with appropriate Intel® chipset components

### Intel® Wi-Fi 6E\* AX211 + Bluetooth®5.3 (802.11ax 2x2, vPro®, supporting gigabit data rate\*\*) vPro®

<b>Wireless LAN standards</b>	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™
<b>Frequency band</b>	802.11b/g/n/ax • 2.402 – 2.482 GHz 802.11a/n/ac/ax



### Technical Specifications - Communications

	<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>	<ul style="list-style-type: none"> <li>• 802.11b: 1, 2, 5.5, 11 Mbps</li> <li>• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps</li> <li>• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)</li> <li>• 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz &amp; 160MHz)</li> <li>• 802.11ax : MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, ,80MHz &amp; 160MHz)</li> </ul>
<b>Modulation</b>	<p>Direct Sequence Spread Spectrum            OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM</p>
<b>Security<sup>2</sup></b>	<ul style="list-style-type: none"> <li>• IEEE and Wi-Fi CERTIFIED™ 64/128bit WEP encryption for a/b/g mode only</li> <li>• AES-CCMP: 128 bit in hardware</li> <li>• 802.1x authentication</li> <li>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</li> <li>• WPA2 certification</li> <li>• WPA3 certification</li> <li>• IEEE 802.11i</li> <li>• WAPI</li> </ul>
<b>Network architecture models</b>	<p>Ad-hoc (Peer to Peer)            Infrastructure (Access Point Required)</p>
<b>Roaming</b>	IEEE 802.11 compliant roaming between band Access Points
<b>Output power</b>	<ul style="list-style-type: none"> <li>• 802.11b: +17dBm minimum</li> <li>• 802.11g: +16dBm minimum</li> <li>• 802.11a: +17dBm minimum</li> <li>• 802.11n HT20(2.4GHz) : +14dBm minimum</li> <li>• 802.11n HT40(2.4GHz) : +13dBm minimum</li> <li>• 802.11n HT20(5GHz) : +14dBm minimum</li> <li>• 802.11n HT40(5GHz) : +13dBm minimum</li> <li>• 802.11ac VHT80(5GHz) : +10dBm minimum</li> <li>• 802.11ac VHT160(5GHz) : +10dBm minimum</li> <li>• 802.11ax HE40(2.4GHz) : +12dBm minimum</li> <li>• 802.11ax HE80(5GHz): +10dBm minimum</li> <li>• 802.11ax HE160(5GHz): +10dBm minimum</li> </ul>
<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>• Transmit mode: 2.0 W</li> <li>• Receive mode: 1.6 W</li> <li>• Idle mode (PSP) 180 mW (WLAN Associated)</li> <li>• Idle mode: 50 mW (WLAN unassociated)</li> <li>• Connected Standby: 10mW</li> <li>• Radio disabled: 8 mW</li> </ul>
<b>Power Management</b>	<p>ACPI and PCI Express compliant power management            802.11 compliant power saving mode</p>
<b>Receiver Sensitivity</b>	<ul style="list-style-type: none"> <li>• 802.11b, 1Mbps: -93.5dBm maximum</li> <li>• 802.11b, 11Mbps: -84dBm maximum</li> <li>• 802.11a/g, 6Mbps: -86dBm maximum</li> <li>• 802.11a/g, 54Mbps: -72dBm maximum</li> <li>• 802.11n, MCS07: -67dBm maximum</li> <li>• 802.11n, MCS15: -64dBm maximum</li> <li>• 802.11ac, MCS0(VHT80): -84dBm maximum</li> <li>• 802.11ac, MCS9(VHT80): -59dBm maximum</li> <li>• 802.11ac, MCS9(VHT160): -58.5dBm maximum</li> </ul>

### Technical Specifications - Communications

	<ul style="list-style-type: none"> <li>•802.11ax, MCS11(HE40): -57dBm maximum</li> <li>•802.11ax, MCS11(HE80): -54dBm maximum</li> <li>•802.11ax, MCS11(HE160): -53.5dBm maximum</li> </ul>				
<b>Antenna Type</b>	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth® communications				
<b>Form Factor</b>	PCI-Express M.2 MiniCard with CNVi Interface				
<b>Dimensions</b>	<ol style="list-style-type: none"> <li>1. Type 2230: 2.3 x 22.0 x 30.0 mm</li> <li>2. Type 1216: 1.67 x 12.0 x 16.0 mm</li> </ol>				
<b>Weight</b>	<ol style="list-style-type: none"> <li>1. Type 2230: 2.8g</li> <li>2. Type 126: 1.3g</li> </ol>				
<b>Operating voltage</b>	3.3V +/- 9%				
<b>Temperature</b>	<table> <tr> <td>Operating</td> <td>14° to 158° F (-10° to 70° C)</td> </tr> <tr> <td>Non-operating</td> <td>-40° to 176° F (-40° to 80° C)</td> </tr> </table>	Operating	14° to 158° F (-10° to 70° C)	Non-operating	-40° to 176° F (-40° to 80° C)
Operating	14° to 158° F (-10° to 70° C)				
Non-operating	-40° to 176° F (-40° to 80° C)				
<b>Humidity</b>	<table> <tr> <td>Operating</td> <td>10% to 90% (non-condensing)</td> </tr> <tr> <td>Non-operating</td> <td>5% to 95% (non-condensing)</td> </tr> </table>	Operating	10% to 90% (non-condensing)	Non-operating	5% to 95% (non-condensing)
Operating	10% to 90% (non-condensing)				
Non-operating	5% to 95% (non-condensing)				
<b>Altitude</b>	<table> <tr> <td>Operating</td> <td>0 to 10,000 ft (3,048 m)</td> </tr> <tr> <td>Non-operating</td> <td>0 to 50,000 ft (15,240 m)</td> </tr> </table>	Operating	0 to 10,000 ft (3,048 m)	Non-operating	0 to 50,000 ft (15,240 m)
Operating	0 to 10,000 ft (3,048 m)				
Non-operating	0 to 50,000 ft (15,240 m)				
<b>LED activity</b>	LED Amber - Radio OFF; LED White - Radio ON				

### HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.1 Wireless Technology

<b>Bluetooth® Specification</b>	4.0/4.1/4.2/5.0/5.1 Compliant
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)
<b>Data Rates and Throughput</b>	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
<b>Transmit Power</b>	The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +9.5 dBm for BR and EDR.
<b>Power Consumption</b>	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
<b>Bluetooth® Software Supported Link Topology</b>	Microsoft Windows Bluetooth® Software
<b>Power Management</b>	Microsoft Windows ACPI, and USB Bus Support
<b>Certifications</b>	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
<b>Power Management Certifications</b>	ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
<b>Bluetooth® Profiles Supported</b>	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels

### Technical Specifications - Communications

Train Nudging & Interlaced Scan  
 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)  
 BT5.1  
 ESR9/10 Compliance  
 LE Advertisement Extensions Channel Selection Algo  
 Limited High Duty Cycle Non-Connectable Advertising 2Mbps LE  
 LE Long Range

#### Security & Manageability

Intel® vPro® support with appropriate Intel® chipset components

\*Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs  
 \*\*Wi-Fi 6 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.

### Intel® Wi-Fi 6E\* AX201 + Bluetooth® 5.3 (802.11ax 2x2, non-vPro®, supporting gigabit data rate\*\*) non-vPro®

#### Wireless LAN standards

IEEE 802.11a IEEE  
 802.11b IEEE  
 802.11g IEEE  
 802.11n IEEE  
 802.11ac IEEE  
 802.11ax IEEE  
 802.11d IEEE  
 802.11e IEEE  
 802.11h IEEE  
 802.11i IEEE  
 802.11k IEEE  
 802.11r  
 IEEE 802.11v

#### Interoperability

Wi-Fi CERTIFIED™

#### Frequency band

802.11b/g/n/ax  
 • 2.402 – 2.482 GHz  
 802.11a/n/ac/ax  
 • 4.9 – 4.95 GHz (Japan)  
 • 5.15 – 5.25 GHz  
 • 5.25 – 5.35 GHz  
 • 5.47 – 5.725 GHz  
 • 5.825 – 5.850 GHz

#### Data rates

• 802.11b: 1, 2, 5.5, 11 Mbps  
 • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps  
 • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps  
 • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)  
 • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz)  
 • 802.11ax : MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz)

#### Modulation

Direct Sequence Spread Spectrum

### Technical Specifications - Communications

	OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
<b>Security<sup>2</sup></b>	<ul style="list-style-type: none"> <li>• IEEE and Wi-Fi CERTIFIED™ 64/128bit WEP encryption for a/b/g mode only</li> <li>• AES-CCMP: 128 bit in hardware</li> <li>• 802.1x authentication</li> <li>• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.</li> <li>• WPA2 certification</li> <li>• WPA3 certification</li> <li>• IEEE 802.11i</li> <li>• WAPI</li> </ul>
<b>Network architecture models</b>	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
<b>Roaming</b>	IEEE 802.11 compliant roaming between band Access Points
<b>Output power</b>	<ul style="list-style-type: none"> <li>• 802.11b: +17dBm minimum</li> <li>• 802.11g: +16dBm minimum</li> <li>• 802.11a: +17dBm minimum</li> <li>• 802.11n HT20(2.4GHz): +14dBm minimum</li> <li>• 802.11n HT40(2.4GHz): +13dBm minimum</li> <li>• 802.11n HT20(5GHz): +14dBm minimum</li> <li>• 802.11n HT40(5GHz): +13dBm minimum</li> <li>• 802.11ac VHT80(5GHz): +10dBm minimum</li> <li>• 802.11ac VHT160(5GHz): +10dBm minimum</li> <li>• 802.11ax HE40(2.4GHz): +12dBm minimum</li> <li>• 802.11ax HE80(5GHz): +10dBm minimum</li> <li>• 802.11ax HE160(5GHz): +10dBm minimum</li> </ul>
<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>• Transmit mode: 2.0 W</li> <li>• Receive mode: 1.6 W</li> <li>• Idle mode (PSP) 180 mW (WLAN Associated)</li> <li>• Idle mode: 50 mW (WLAN unassociated)</li> <li>• Connected Standby: 10mW</li> <li>• Radio disabled: 8 mW</li> </ul>
<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
<b>Receiver Sensitivity</b>	<ul style="list-style-type: none"> <li>• 802.11b, 1Mbps: -93.5dBm maximum</li> <li>• 802.11b, 11Mbps: -84dBm maximum</li> <li>• 802.11a/g, 6Mbps: -86dBm maximum</li> <li>• 802.11a/g, 54Mbps: -72dBm maximum</li> <li>• 802.11n, MCS07: -67dBm maximum</li> <li>• 802.11n, MCS15: -64dBm maximum</li> <li>• 802.11ac, MCS0(VHT80): -84dBm maximum</li> <li>• 802.11ac, MCS9(VHT80): -59dBm maximum</li> <li>• 802.11ac, MCS9(VHT160): -58.5dBm maximum</li> <li>• 802.11ax, MCS11(HE40): -57dBm maximum</li> <li>• 802.11ax, MCS11(HE80): -54dBm maximum</li> <li>• 802.11ax, MCS11(HE160): -53.5dBm maximum</li> </ul>
<b>Antenna Type</b>	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth® communications
<b>Form Factor</b>	PCI-Express M.2 MiniCard with CNVi Interface
<b>Dimensions</b>	<ol style="list-style-type: none"> <li>3. Type 2230: 2.3 x 22.0 x 30.0 mm</li> <li>4. Type 1216: 1.67 x 12.0 x 16.0 mm</li> </ol>
<b>Weight</b>	<ol style="list-style-type: none"> <li>3. Type 2230: 2.8g</li> <li>4. Type 1216: 1.3g</li> </ol>

### Technical Specifications - Communications

<b>Operating voltage</b>	3.3V +/- 9%	
<b>Temperature</b>	Operating	14° to 158° F (-10° to 70° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
<b>Humidity</b>	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
<b>Altitude</b>	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
<b>LED activity</b>	LED Amber - Radio OFF; LED White - Radio ON	

### HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.1 Wireless Technology

<b>Bluetooth® Specification</b>	4.0/4.1/4.2/5.0/5.1 Compliant
<b>Frequency Band</b>	2402 to 2480 MHz
<b>Number of Available Channels</b>	Legacy : 0~79 (1 MHz/CH)
	BLE : 0~39 (2 MHz/CH)
<b>Data Rates and Throughput</b>	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps
	BLE : 1 Mbps data rate; throughput up to 0.2 Mbps
	Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels
	Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
<b>Transmit Power</b>	The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +9.5 dBm for BR and EDR.
<b>Power Consumption</b>	Peak (Tx) 330 mW
	Peak (Rx) 230 mW
	Selective Suspend 17 mW
<b>Bluetooth® Software Supported Link Topology</b>	Microsoft Windows Bluetooth® Software
<b>Power Management</b>	Microsoft Windows ACPI, and USB Bus Support
<b>Certifications</b>	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
<b>Power Management Certifications</b>	ETS 300 328, ETS 300 826
	Low Voltage Directive IEC950 UL, CSA, and CE Mark
<b>Bluetooth® Profiles Supported</b>	BT4.1-ESR 5/6/7 Compliance
	LE Link Layer Ping
	LE Dual Mode
	LE Link Layer
	LE Low Duty Cycle Directed Advertising
	LE L2CAP Connection Oriented Channels
	Train Nudging & Interlaced Scan
	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)	
BT5.1	
ESR9/10 Compliance	

### Technical Specifications - Communications

LE Advertisement Extensions Channel Selection Algo  
 Limited High Duty Cycle Non-Connectable Advertising 2Mbps LE  
 LE Long Range

#### Security & Manageability

Intel® vPro® support with appropriate Intel® chipset components

\*Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs  
 \*\*Wi-Fi 6 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.

### Realtek RTL8852AE 802.11ax 2x2 Wi-Fi\* + Bluetooth® 5.3 (802.11ax 2x2, supporting gigabit data rate\*\*)

#### Wireless LAN standards

IEEE 802.11a IEEE  
 802.11b IEEE  
 802.11g IEEE  
 802.11n IEEE  
 802.11ac IEEE  
 802.11ax IEEE  
 802.11d IEEE  
 802.11e IEEE  
 802.11h IEEE  
 802.11i IEEE  
 802.11k IEEE  
 802.11r  
 IEEE 802.11v

#### Interoperability

Wi-Fi CERTIFIED™ modules

#### Frequency band

802.11b/g/n/ax  
 • 2.402 – 2.482 GHz  
 802.11a/n/ac/ax  
 • 4.9 – 4.95 GHz (Japan)  
 • 5.15 – 5.25 GHz  
 • 5.25 – 5.35 GHz  
 • 5.47 – 5.725 GHz  
 • 5.825 – 5.850 GHz

#### Data rates

• 802.11b: 1, 2, 5.5, 11 Mbps  
 • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps  
 • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps  
 • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)  
 • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz & 80MHz)  
 • 802.11ax : MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, ,80MHz)

#### Modulation

Direct Sequence Spread Spectrum  
 OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM

#### Security<sup>2</sup>

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

#### Network architecture models

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

#### Roaming

IEEE 802.11 compliant roaming between band Access Points

### Technical Specifications - Communications

<b>Output power</b>	<ul style="list-style-type: none"> <li>• 802.11b: +18.5dBm minimum</li> <li>• 802.11g: +17.5dBm minimum</li> <li>• 802.11a: +18.5dBm minimum</li> <li>• 802.11n HT20(2.4GHz) : +15.5dBm minimum</li> <li>• 802.11n HT40(2.4GHz) : +14.5dBm minimum</li> <li>• 802.11n HT20(5GHz) : +15.5dBm minimum</li> <li>• 802.11n HT40(5GHz) : +14.5dBm minimum</li> <li>• 802.11ac VHT80(5GHz) : +11.5dBm minimum</li> <li>• 802.11ax HE40(2.4GHz) : +10dBm minimum</li> <li>• 802.11ax HE80(5GHz): +10dBm minimum</li> </ul>				
<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>• Transmit mode: 2.5 W</li> <li>• Receive mode: 2 W</li> <li>• Idle mode (PSP) 180 mW (WLAN Associated)</li> <li>• Idle mode : 50 mW (WLAN unassociated)</li> <li>• Connected Standby/Modern Standby: 10mW</li> <li>• Radio disabled: 8 mW</li> </ul>				
<b>Power Management</b>	ACPI and PCI Express compliant power management 802.11 compliant power saving mode				
<b>Receiver Sensitivity</b>	<ul style="list-style-type: none"> <li>• 802.11b, 1Mbps: -93.5dBm maximum</li> <li>• 802.11b, 11Mbps: -84dBm maximum</li> <li>• 802.11a/g, 6Mbps: -86dBm maximum</li> <li>• 802.11a/g, 54Mbps: -72dBm maximum</li> <li>• 802.11n, MCS07: -67dBm maximum</li> <li>• 802.11n, MCS15: -64dBm maximum</li> <li>• 802.11ac, MCS0: -84dBm maximum</li> <li>• 802.11ac, MCS9: -59dBm maximum</li> <li>• 802.11ax, MCS11 (HE40): -57dBm maximum</li> <li>802.11ax, MCS11 (HE80): -54dBm maximum</li> </ul>				
<b>Antenna Type</b>	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth® communications				
<b>Form Factor</b>	PCI-Express M.2 MiniCard				
<b>Dimensions</b>	<ol style="list-style-type: none"> <li>1. Type 2230: 2.3 x 22.0 x 30.0 mm</li> <li>5. Type 1216: 1.67 x 12.0 x 16.0 mm</li> </ol>				
<b>Weight</b>	<ol style="list-style-type: none"> <li>1. Type 2230: 2.8g</li> <li>5. Type 126: 1.3g</li> </ol>				
<b>Operating voltage</b>	3.3V +/- 9%				
<b>Temperature</b>	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Operating</td> <td>14° to 158° F (-10° to 70° C)</td> </tr> <tr> <td>Non-operating</td> <td>-40° to 176° F (-40° to 80° C)</td> </tr> </table>	Operating	14° to 158° F (-10° to 70° C)	Non-operating	-40° to 176° F (-40° to 80° C)
Operating	14° to 158° F (-10° to 70° C)				
Non-operating	-40° to 176° F (-40° to 80° C)				
<b>Humidity</b>	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Operating</td> <td>10% to 90% (non-condensing)</td> </tr> <tr> <td>Non-operating</td> <td>5% to 95% (non-condensing)</td> </tr> </table>	Operating	10% to 90% (non-condensing)	Non-operating	5% to 95% (non-condensing)
Operating	10% to 90% (non-condensing)				
Non-operating	5% to 95% (non-condensing)				
<b>Altitude</b>	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Operating</td> <td>0 to 10,000 ft (3,048 m)</td> </tr> <tr> <td>Non-operating</td> <td>0 to 50,000 ft (15,240 m)</td> </tr> </table>	Operating	0 to 10,000 ft (3,048 m)	Non-operating	0 to 50,000 ft (15,240 m)
Operating	0 to 10,000 ft (3,048 m)				
Non-operating	0 to 50,000 ft (15,240 m)				
<b>LED activity</b>	LED Amber - Radio OFF; LED White - Radio ON				

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

<b>Bluetooth® Specification</b>	4.0/4.1/4.2/5.0/5.1/5.2 Compliant
<b>Frequency Band</b>	2402 to 2480 MHz

### Technical Specifications - Communications

<b>Number of Available Channels</b>	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)
<b>Data Rates and Throughput</b>	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
<b>Transmit Power</b>	The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of +4 dBm for BR and EDR.
<b>Power Consumption</b>	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
<b>Bluetooth® Software Supported Link Topology</b>	Microsoft Windows Bluetooth® Software
<b>Power Management</b>	Microsoft Windows ACPI, and USB Bus Support
<b>Certifications</b>	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
<b>Power Management Certifications</b>	ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
<b>Bluetooth® Profiles Supported</b>	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan 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) BT5.1 ESR9/10 Compliance LE Advertisement Extensions Channel Selection Algo Limited High Duty Cycle Non-Connectable Advertising 2Mbps LE LE Long Range
<b>Security &amp; Manageability</b>	Intel® vPro® support with appropriate Intel® chipset components  *Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 6 (802.11ax) is backwards compatible with prior 802.11 specs **Wi-Fi 6 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.



### Technical Specifications - Graphics

#### Intel® UHD Graphics (integrated)

<b>VGA Controller</b>	Integrated
<b>DisplayPort™ 1.4</b>	Multimode capable; supports HDCP (on standard DisplayPort™ and up to 1 optional port), Display Port™ Audio (2 streams), HBR2 link rates and Multi-Stream Technology for a maximum of 3 displays connected to any output controlled by Intel® Graphics
<b>HDMI (optional)</b>	Supports HDMI 2.0a features Supports HDCP 2.2 (on up to 1 HDMI port option) Supports BT2020 and HDR playback (7th Gen processors only)
<b>VGA (optional)</b>	VGA output
<b>USB-C® DisplayPort™ Alt Mode (optional)</b>	DisplayPort™ over the optional USB-C® module
<b>Memory</b>	The actual amount of maximum graphics memory can be >4GB. System memory is allocated for graphics as needed using Intel's Dynamic Video Memory Technology (DVMT), to provide an optimal balance between graphics and system memory use.
<b>Maximum Color Depth</b>	up to 10 bits/color
<b>Graphics/Video API Support</b>	HEVC 10b Enc/Dec HW VP9 10b Dec HW HDR Rec. 2020 DX12
<b>34" UHD Supported Resolutions and Refresh Rates. Other resolutions may also work.</b>	640x480 60 Hz 640x480 67Hz 640x480 72Hz 640x480 75Hz 720x400 70Hz 800x600 60Hz 800x600 75Hz 1024x768 60Hz 1024x768 75Hz 1280x960 60Hz 1280x720 60Hz 1280x1024 60Hz 1280x1024 75Hz 1440x900 60Hz 1440x900 75Hz 1680x1050 60Hz 1920x1080 60Hz 3440x1440 60Hz (Native Resolution) 3440x1440 30Hz

#### NVIDIA® Quadro T1000 8GB Graphics Card

<b>Memory Clock</b>	2000 MHz
<b>Memory Size (width)</b>	8GB (64-bit)
<b>Memory Type</b>	256M x 32 GDDR6
<b>Max. Resolution (DisplayPort™)</b>	5120x32880@60Hz
<b>Multi Display Support</b>	4 displays
<b>HDCP Compliance</b>	Yes
<b>Rear I/O connectors (bracket)</b>	mini DisplayPort™x4
<b>Cooling (active/passive)</b>	Active fan heatsink

### Technical Specifications - Graphics

<b>Total power consumption</b>	<50W
<b>PCB form-factor with bracket</b>	LP PCB with LP bracket

---

#### **NVIDIA® RTX A2000 12GB Graphics Card**

<b>Memory Clock</b>	2000 MHz
<b>Memory Size (width)</b>	12GB (64-bit)
<b>Memory Type</b>	256M x 32 GDDR6
<b>Max. Resolution (DisplayPort™)</b>	5120x2880@60Hz
<b>Multi Display Support</b>	4 displays
<b>HDCP Compliance</b>	Yes
<b>Rear I/O connectors (bracket)</b>	mini DisplayPort™x4
<b>Cooling (active/passive)</b>	Active fan heatsink
<b>Total power consumption</b>	<70W
<b>PCB form-factor with bracket</b>	LP PCB with LP bracket (Dual Width)

---

### Technical Specifications - Data Storage Drives

#### Storage

##### 1 TB 7200RPM 3.5in SATA HDD

<b>Capacity</b>	1 TB
<b>Rotational Speed</b>	7,200 rpm
<b>Interface</b>	SATA 6.0 Gb/s
<b>Buffer Size</b>	64 MB
<b>Logical Blocks</b>	1,953,525,168
<b>Seek Time</b>	11 ms (average)
<b>Height (nominal)</b>	1 in/2.54 cm
<b>Width (nominal)</b>	Media diameter: 3.5 in/8.89 cm Physical size: 4 in/10.2 cm
<b>Operating Temperature</b>	41° to 131° F (5° to 55° C)

**NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

##### 2 TB 7200RPM 3.5in SATA HDD

<b>Capacity</b>	2 TB
<b>Rotational Speed</b>	7,200 rpm
<b>Interface</b>	SATA 6.0 Gb/s
<b>Buffer Size</b>	128 MB
<b>Logical Blocks</b>	3,907,050,336
<b>Seek Time</b>	11 ms (average)
<b>Height (nominal)</b>	1 in/2.54 cm
<b>Width (nominal)</b>	Media diameter: 3.5 in/8.89 cm Physical size: 4 in/10.2 cm
<b>Operating Temperature</b>	41° to 131° F (5° to 55° C)

**NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

##### 4 TB 7200RPM 3.5in SATA HDD (Enterprise)

<b>Capacity</b>	4 TB
<b>Rotational Speed</b>	7,200 rpm
<b>Interface</b>	SATA 6.0 Gb/s
<b>Buffer Size</b>	256 MB
<b>Logical Blocks</b>	7,814,100,672
<b>Seek Time</b>	8.5 ms (average)
<b>Height (nominal)</b>	1 in/2.54 cm
<b>Width (nominal)</b>	Media diameter: 3.5 in/8.89 cm Physical size: 4 in/10.2 cm
<b>Operating Temperature</b>	41° to 131° F (5° to 55° C)

**NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

### Technical Specifications - Data Storage Drives

#### 12TB 7200 RPM 3.5in SATA HDD (Enterprise)

<b>Capacity</b>	12 TB
<b>Rotational Speed</b>	7,200 rpm
<b>Interface</b>	SATA 6.0 Gb/s
<b>Buffer Size</b>	Up to 256 MB
<b>Logical Blocks</b>	23,437,770,752
<b>Seek Time</b>	8.5 ms (average)
<b>Height (nominal)</b>	1 in/2.54 cm
<b>Width (nominal)</b>	Media diameter: 3.5 in/8.89 cm Physical size: 4 in/10.2 cm
<b>Operating Temperature</b>	41° to 131° F (5° to 55° C)

**NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

#### 1 TB 7200RPM 2.5in SATA HDD

<b>Capacity</b>	1 TB
<b>Rotational Speed</b>	7,200 rpm
<b>Interface</b>	SATA 6.0 Gb/s
<b>Buffer Size</b>	Up to 128 MB
<b>Logical Blocks</b>	1,953,525,168
<b>Seek Time</b>	12 ms (average)
<b>Height (nominal)</b>	0.374 in/9.5 mm
<b>Width (nominal)</b>	2.75 in/70 mm
<b>Operating Temperature</b>	41° to 131° F (5° to 55° C)

**NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

#### 256GB M.2 2280 PCIe NVMe SSD

<b>Drive Weight</b>	<10g
<b>Capacity</b>	256 GB
<b>Interface</b>	PCIe Gen4x4
<b>Maximum Sequential Read</b>	Up to 2700MB/s
<b>Maximum Sequential Write</b>	Up to 1000MB/s
<b>Logical Blocks</b>	500,118,192
<b>Operating Temperature</b>	0° to 70°C (32° to 158°F) [ambient temp]
<b>Features</b>	APST; ASPM L1.2; NVMe spec 1.2

**NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

### Technical Specifications - Data Storage Drives

#### 512GB M.2 2280 PCIe NVMe SSD

<b>Drive Weight</b>	<10g
<b>Capacity</b>	512 GB
<b>Interface</b>	PCIe Gen4x4
<b>Maximum Sequential Read</b>	Up to 2900MB/s
<b>Maximum Sequential Write</b>	Up to 1100MB/s
<b>Logical Blocks</b>	1,000,215,216
<b>Operating Temperature</b>	0° to 70°C (32° to 158°F) [ambient temp]
<b>Features</b>	APST; ASPM L1.2; NVME spec 1.2

**NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

#### 1TB M.2 2280 PCIe NVMe SSD

<b>Drive Weight</b>	<10g
<b>Capacity</b>	1 TB
<b>Interface</b>	PCIe Gen4x4
<b>Maximum Sequential Read</b>	Up to 3480MB/s
<b>Maximum Sequential Write</b>	Up to 3037MB/s
<b>Logical Blocks</b>	2,000,409,264
<b>Operating Temperature</b>	0° to 70°C (32° to 158°F) [ambient temp]
<b>Features</b>	APST; ASPM L1.2; NVME spec 1.2

**NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

#### 512GB M.2 2280 PCIe NVMe Three Layer Cell SSD

<b>Drive Weight</b>	<10g
<b>Capacity</b>	512 GB
<b>Interface</b>	PCIe Gen4x4
<b>Maximum Sequential Read</b>	Up to 6600MB/s
<b>Maximum Sequential Write</b>	Up to 5100MB/s
<b>Logical Blocks</b>	1,000,215,216
<b>Operating Temperature</b>	0° to 70°C (32° to 158°F) [ambient temp]
<b>Features</b>	APST; ASPM L1.2; NVME spec 1.2

**NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

#### 1TB M.2 2280 PCIe NVMe Three Layer Cell SSD

<b>Drive Weight</b>	<10g
<b>Capacity</b>	1 TB
<b>Interface</b>	PCIe Gen4x4
<b>Maximum Sequential Read</b>	Up to 7100MB/s
<b>Maximum Sequential Write</b>	Up to 5200MB/s
<b>Logical Blocks</b>	2,000,409,264
<b>Operating Temperature</b>	0° to 70°C (32° to 158°F) [ambient temp]

### Technical Specifications - Data Storage Drives

**Features** APST; ASPM L1.2; NVME spec 1.2

**NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

#### 2TB M.2 2280 PCIe NVMe Three Layer Cell SSD

**Drive Weight** <10g  
**Capacity** 2 TB  
**Interface** PCIe Gen4x4  
**Maximum Sequential Read** Up to 7100MB/s  
**Maximum Sequential Write** Up to 5200MB/s  
**Logical Blocks** 2,000,797,360  
**Operating Temperature** 0° to 70°C (32° to 158°F) [ambient temp]

**Features** APST; ASPM L1.2; NVME spec 1.2

**NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

#### 256GB M.2 2280 PCIe NVMe Self Encrypted OPAL2 Three Layer Cell SSD

**Drive Weight** <10g  
**Capacity** 256 GB  
**Interface** PCIe Gen4  
**Maximum Sequential Read** Up to 2700MB/s  
**Maximum Sequential Write** Up to 1000MB/s  
**Logical Blocks** 500,118,192  
**Operating Temperature** 0° to 70°C (32° to 158°F) [ambient temp]

**Features** APST; ASPM L1.2; NVME spec 1.2; TCG-OPAL2 security

**NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

#### 512GB M.2 2280 PCIe NVMe Self Encrypted OPAL2 Three Layer Cell SSD

**Drive Weight** <10g  
**Capacity** 512 GB  
**Interface** PCIe Gen4  
**Maximum Sequential Read** Up to 2900MB/s  
**Maximum Sequential Write** Up to 1100MB/s  
**Logical Blocks** 1,000,215,216  
**Operating Temperature** 0° to 70°C (32° to 158°F) [ambient temp]

**Features** APST; ASPM L1.2; NVME spec 1.2; TCG-OPAL2 security

**NOTE:** For hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

#### HP 9.5mm Slim DVD Writer

**Height** 9.5 mm height  
**Orientation** Either horizontal or vertical

### Technical Specifications - Data Storage Drives

<b>Interface type</b>	SATA/ATAPI
<b>Dimensions (W x H x D)</b>	5.04 x 0.37 x 5.0 in (128 x 9.5 x 127 mm) without bezel
<b>Weight (max)</b>	Up to 0.31 lb (140g) without bezel
<b>Read Speeds</b>	DVD-R DL - Up to 6X DVD+R - Up to 8X DVD+RW - Up to 8X DVD+R DL - Up to 6X DVD-R - Up to 8X DVD-RW - Up to 6X CD-R - Up to 24X CD-RW - Up to 10X DVD-RW, DVD+RW - Up to 8X DVD-R DL, DVD+R DL - Up to 8X DVD+R, DVD-R - Up to 8X DVD-ROM DL, DVD-ROM - Up to 8X CD-ROM, CD-R - Up to 24X CD-RW - Up to 24X
<b>Access time (typical reads, including settling)</b>	Random: DVD-ROM: 170 ms (typical), CD-ROM: 170 ms (typical) Full stroke: DVD-ROM: 320 ms (typical), CD-ROM: 320 ms (typical) Stop Time 6 seconds (typical)
<b>Power</b>	Source Slimline SATA DC power receptacle DC Power Requirement 5 VDC $\pm$ 5%-100 mV ripple p-p DC Current 5 VDC (< 1000 mA typical, 1600 mA maximum)
<b>Environmental conditions (operating – non-condensing)</b>	Temperature 41° to 122° F (5° to 50° C) Relative Humidity 10% to 80% Maximum Wet Bulb Temperature 84° F (29° C)

### HP 9.5mm SuperMulti DVDRW

<b>Height</b>	9.5 mm height
<b>Orientation</b>	Either horizontal or vertical
<b>Interface type</b>	SATA/ATAPI
<b>Dimensions (W x H x D)</b>	5.04 x 0.37 x 5.0 in (128 x 9.5 x 127 mm) without bezel
<b>Weight (max)</b>	Up to 0.31 lb (140g) without bezel
<b>Read Speeds</b>	DVD-R DL - Up to 6X DVD+R - Up to 8X DVD+RW - Up to 8X DVD+R DL - Up to 6X DVD-R - Up to 8X DVD-RW - Up to 6X CD-R - Up to 24X CD-RW - Up to 10X DVD-RW, DVD+RW - Up to 8X DVD-R DL, DVD+R DL - Up to 8X DVD+R, DVD-R - Up to 8X DVD-ROM DL, DVD-ROM - Up to 8X CD-ROM, CD-R - Up to 24X CD-RW - Up to 24X
<b>Access time (typical reads, including settling)</b>	Random: DVD-ROM: 170 ms (typical), CD-ROM: 170 ms (typical) Full stroke: DVD-ROM: 320 ms (typical), CD-ROM: 320 ms (typical) Stop Time 6 seconds (typical)
<b>Power</b>	Source Slimline SATA DC power receptacle DC Power Requirement 5 VDC $\pm$ 5%-100 mV ripple p-p DC Current 5 VDC (< 1000 mA typical, 1600 mA maximum)
<b>Environmental conditions (operating – non-condensing)</b>	Temperature 41° to 122° F (5° to 50° C) Relative Humidity 10% to 80% Maximum Wet Bulb Temperature 84° F (29° C)

### HP 9.5mm Slim DVD ROM Drive

<b>Height</b>	9.5 mm height
<b>Orientation</b>	Either horizontal or vertical
<b>Interface type</b>	SATA/ATAPI
<b>Dimensions (W x H x D)</b>	5.04 x 0.37 x 5.0 in (128 x 9.5 x 127 mm) without bezel
<b>Weight (max)</b>	Up to 0.31 lb (140g) without bezel
<b>Read Speeds</b>	DVD+R/-R/+RW/ -RW/+R DL /-R DL Up to 8X DVD-ROM Up to 8X CD-ROM, CD-R Up to 24X CD-RW Up to 24X

### Technical Specifications - Data Storage Drives

<b>Access time (typical reads, including settling)</b>	Random DVD-ROM: 170 ms (typical), CD-ROM: 170 ms (typical) Full Stroke DVD-ROM: 320 ms (typical), CD-ROM: 320 ms (typical)
<b>Power</b>	Source Slimline SATA DC power receptacle DC Power Requirement 5 VDC $\pm$ 5%-100 mV ripple p-p DC Current 5 VDC (< 1000 mA typical, 1600 mA maximum)
<b>Environmental conditions (operating – non-condensing)</b>	Temperature 41° to 122° F (5° to 50° C) Relative Humidity 10% to 80% Maximum Wet Bulb Temperature 84° F (29° C)

---



### HP Anyware Integrated Remote System Controller – Technical Specifications

**System-on-Module (SoM)****CPU****GPU****Memory****Storage****Upgradeable Storage****Ethernet****mDP****USB****TPM****Power****Thermal****Operating Temperature**

NVIDIA® Jetson Nano

Quad-core ARM Cortex-A57 MPCore processor

NVIDIA® Maxwell with 128 NVIDIA® CUDA® cores

4GB 64-bit LPDDR4, 1600MHz 25.6 GB/s

16 GB eMMC 5.11

uSD Slot (SD4.0)<sup>2</sup>

10/100/1000Mbps

Input 1920x1200 60Fps

USB3.1G1 (5Gbps)

TPM2.0 SLB9672

~4W (Idle)/~17W (Max)

Active Cooling

Max ambient temperature: 55°C

<sup>1</sup>Virtual Media storage capacity is 4.7GB.<sup>2</sup>For later expandable storage.

### Technical Specifications - Input/Output Devices

#### HP 125 Wired Keyboard

<b>Dimensions (H x L x W)</b>	17.17 x 5.43 x 0.81 inch (436 x 138 x 20.3mm)
<b>Weight</b>	16.63 oz (471.5g ±30g)
<b>Cable length</b>	1800mm
<b>Keys</b>	104, 105, 107, 109 layout (depending on country)
<b>Operating voltage</b>	5V
<b>Power consumption</b>	50mA - 100mA
<b>Interface</b>	USB
<b>Switch life</b>	10M for all the keys 5M for functional hot keys
<b>Switch type</b>	Plunger with 3mm travel
<b>Operating temperature</b>	10°C to 50°C
<b>Non-operating temperature</b>	-30°C to 65°C
<b>Operating humidity</b>	10°C to 90°C
<b>Non-operating humidity</b>	0°C to 90°C
<b>Sustainability</b>	Greater than 50% post-consumer recycled plastic content and low halogen PCBA
<b>System required</b>	Windows 10 (64 and 32 bit), (UWP) RS4 and above
<b>Approvals</b>	FCC, ICES, CULus, CE, GS, EAC, Ukraine, India BIS, KCC, RCM, BSMI, VCCI
<b>Country of origin</b>	China

#### HP Wired Desktop 320K Keyboard

<b>Dimensions (H x L x W)</b>	16.77 x 4.36 x 0.65 in (426.2 x 110.9 x 16.7 mm)
<b>Weight</b>	14.57 oz (413g)
<b>Cable length</b>	1800mm
<b>Keys</b>	104, 105, 107, 109 layout (depending on country)
<b>Operating voltage</b>	5V
<b>Power consumption</b>	50mA - 100mA
<b>Interface</b>	USB
<b>Switch life</b>	10M
<b>Switch type</b>	Plunger
<b>Operating temperature</b>	10°C to 50°C
<b>Non-operating temperature</b>	30°C to 65°C
<b>Operating humidity</b>	10°C to 90°C
<b>Non-operating humidity</b>	0°C to 90°C
<b>Sustainability</b>	Greater than 50% post-consumer recycled plastic content and low halogen PCBA
<b>System required</b>	Windows 10 (64 and 32 bit), (UWP) RS4 and above
<b>Approvals</b>	FCC, ICES, CULus, CE, GS, EAC, Ukraine, India BIS, KCC, RCM, BSMI, VCCI
<b>Country of origin</b>	China

#### HP 125 Wired Mouse

<b>Dimensions (H x L x W)</b>	4.41 x 2.48 x 1.42 inch (112 x 63 x 36mm)
<b>Weight</b>	2.83 oz (80.5g ±5g)
<b>Dots per inch (DPI)</b>	1200 DPI

### Technical Specifications - Input/Output Devices

<b>Tracking type</b>	Optical Red Sensor <sup>1</sup>
<b>Connectivity</b>	USB
<b>Cable length</b>	1800mm
<b>System requirements</b>	Windows 10 (64 bit and 32 bit) (UWP) RS4 and above
<b>Approvals</b>	FCC, ICES, CULus, CE, GS, EAC, Ukraine, India BIS, KCC, RCM, BSMI, VCCI
<b>Sustainability</b>	Low halogen PCBA.
<b>Country of origin</b>	China

1. Surface Coverage recommendation for Optical Red Sensor: Difuse surface: wooden board, cloth mouse pad

### HP 128 Laser Wired Mouse

<b>Dimensions (H x L x W)</b>	4.41 x 2.48 x 1.42 inch (112 x 63 x 36mm)
<b>Weight</b>	2.88 oz (81.9g ±5g)
<b>Dots per inch (DPI)</b>	1200 DPI
<b>Tracking type</b>	Laser Sensor <sup>1</sup>
<b>Connectivity</b>	USB
<b>Cable length</b>	1800mm
<b>System requirements</b>	Windows 10 (64 bit and 32 bit) (UWP) RS4 and above
<b>Approvals</b>	FCC, ICES, CULus, CE, GS, EAC, Ukraine, India BIS, KCC, RCM, BSMI, VCCI
<b>Sustainability</b>	Low halogen PCBA.
<b>Country of origin</b>	China

1. Surface Coverage recommendation for Optical Red Sensor: Difuse surface: wooden board, cloth mouse pad

### HP Wired Desktop 320M Mouse

<b>Dimensions (H x L x W)</b>	4.08 x 2.49 x 1.39 in (103.8 x 63.4 x 35.5 mm)
<b>Weight</b>	2.67 oz (75.8 g)
<b>Dots per inch (DPI)</b>	1000
<b>Tracking type</b>	Optical Red Sensor
<b>Connectivity</b>	USB
<b>Cable length</b>	1800mm
<b>System requirements</b>	Windows 10 (64 bit and 32 bit) (UWP) RS4 and above
<b>Approvals</b>	FCC, ICES, CULus, CE, GS, EAC, Ukraine, India BIS, KCC, RCM, BSMI, VCCI
<b>Sustainability</b>	Low halogen PCBA.
<b>Country of origin</b>	China

1. Surface Coverage recommendation for Optical Red Sensor: Difuse surface: wooden board, cloth mouse pad

### Technical Specifications - Environmental Data

#### Environmental Data HP Engage Flex Pro G2 Retail System

##### Eco-Label Certifications & declarations

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- IT ECO declaration
- US ENERGY STAR®
- US Federal Energy Management Program (FEMP)
- EPEAT® Gold with Climate+ registered configurations available. See [www.epeat.net](http://www.epeat.net) for registration status and tier levels by country.\*
- TCO Certified
- China Energy Conservation Program (CECP)
- China State Environmental Protection Administration (SEPA)
- Taiwan Green Mark
- Korea Eco-label
- Japan PC Green label\*

\*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit [www.epeat.net](http://www.epeat.net) for more information

##### Sustainable Impact Specifications

- Ocean-bound plastic in CPU Fan, Speaker
- 10% recycled metal
- 55% post-consumer recycled plastic
- Low halogen
- Outside Box and corrugated cushions are 100% sustainably sourced and recyclable
- Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable
- Bulk packaging available

##### System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.

##### Energy Consumption

(in accordance with US ENERGY STAR® test method)

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	24.28 W	24.42 W	23.70 W
Normal Operation (Long idle)	18.14 W	18.31 W	17.80 W
Sleep	3.38 W	3.41 W	3.31 W
Off	2.32 W	2.35 W	2.32 W

##### NOTE:

Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

##### Heat Dissipation\*

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	83 BTU/hr	84 BTU/hr	81 BTU/hr
Normal Operation (Long idle)	62 BTU/hr	63 BTU/hr	61 BTU/hr

### Technical Specifications - Environmental Data

Sleep	12 BTU/hr	12 BTU/hr	11 BTU/hr
Off	8 BTU/hr	8 BTU/hr	8 BTU/hr

\* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

<b>Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)</b>	Sound Power ( $L_{WAd}$ , bels)	Sound Pressure ( $L_{pAm}$ , decibels)
Typically Configured – Idle	3.49	24.7
Fixed Disk – Random writes	3.84	26.1
Optical Drive – Sequential reads	3.88	27.3

**Longevity and Upgrading** This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the

Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.

#### Additional information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see [www.epeat.net](http://www.epeat.net)
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
- This product is 95.6% recycle-able when properly disposed of at end of life.

#### Packaging Materials

<b>External:</b>	PAPER/Corrugated	1136 g
	PAPER/Molded Pulp	1008 g
<b>Internal:</b>	PLASTIC/Polyethylene low density - LDPE	40 g

The plastic packaging material contains at least 0.0% recycled content.

The corrugated paper packaging materials contains at least 66.8% recycled content.

#### RoHS Compliance

HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam.

We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products.

We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the

### Technical Specifications - Environmental Data

scope of the commitment to include further restricted substances as regulations continue to evolve.

To obtain a copy of the HP RoHS Compliance Statement, see [HP RoHS position statement](#).

#### Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at [http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen\\_specifications.html](http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html)):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Bis(2-Ethylhexyl) phthalate (DEHP)
- Benzyl butyl phthalate (BBP)
- Dibutyl phthalate (DBP)
- Diisobutyl phthalate (DIBP)
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

#### Packaging

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

#### End-of-life Management and Recycling

HP offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

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

### Technical Specifications - Environmental Data

instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/recyclers>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

#### HP, Inc. Corporate Environmental Information

For more information about HP's commitment to the environment:

Global Citizenship Report

<http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>

Eco-label certifications

<http://www8.hp.com/us/en/hp-information/environment/ecolabels.html>

ISO 14001 certificates:

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842>

and

<http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf>

#### footnotes

- Percentage of ocean-bound plastic contained in each component varies by product
- Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.
- External power supplies, WWAN modules, power cords, cables and peripherals excluded.
- 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers.
- Fiber cushions made from 100% recycled wood fiber and organic materials.
- Disclaimer: 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

### Technical Specifications - Environmental Data

#### Environmental Data HP Engage Flex Pro-C G2 Retail System

##### Eco-Label Certifications & declarations

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- IT ECO declaration
- US ENERGY STAR®
- US Federal Energy Management Program (FEMP)
- EPEAT® Gold with Climate+ registered configurations available. See [www.epeat.net](http://www.epeat.net) for registration status and tier levels by country.\*
- TCO Certified
- China Energy Conservation Program (CECP)
- China State Environmental Protection Administration (SEPA)
- Taiwan Green Mark
- Korea Eco-label
- Japan PC Green label\*

\*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit [www.epeat.net](http://www.epeat.net) for more information

##### Sustainable Impact Specifications

- Ocean-bound plastic in System Fan, Speaker
- 10% recycled metal
- 55% post-consumer recycled plastic
- Low halogen
- Outside Box and corrugated cushions are 100% sustainably sourced and recyclable
- Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable
- Bulk packaging available

##### System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.

##### Energy Consumption

(in accordance with US ENERGY STAR® test method)

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	22.68 W	22.74 W	22.34 W
Normal Operation (Long idle)	15.82 W	15.58 W	15.55 W
Sleep	3.58 W	3.61 W	3.58 W
Off	2.46 W	2.42 W	2.42 W

##### NOTE:

Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

##### Heat Dissipation\*

	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	78 BTU/hr	78 BTU/hr	76 BTU/hr
Normal Operation (Long idle)	54 BTU/hr	53 BTU/hr	53 BTU/hr



### Technical Specifications - Environmental Data

Sleep	12 BTU/hr	12 BTU/hr	12 BTU/hr
Off	8 BTU/hr	8 BTU/hr	8 BTU/hr

\* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	Sound Power ( $L_{WAd}$ , bels)	Sound Pressure ( $L_{pAm}$ , decibels)
Typically Configured – Idle	3.34	22.2
Fixed Disk – Random writes	3.37	22.6
Optical Drive – Sequential reads	3.78	25.7

**Longevity and Upgrading** This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the

Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.

#### Additional information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see [www.epeat.net](http://www.epeat.net)
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
- This product is 94.5% recycle-able when properly disposed of at end of life.

#### Packaging Materials

<b>External:</b>	PAPER/Corrugated	968 g
	PAPER/Paperboard	180 g
	PAPER/Molded Pulp	470 g
<b>Internal:</b>	PLASTIC/Polyethylene low density - LDPE	30 g

The plastic packaging material contains at least 0.0% recycled content.

The corrugated paper packaging materials contains at least 53.9% recycled content.

#### RoHS Compliance

HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam.

We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products.

We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the

### Technical Specifications - Environmental Data

scope of the commitment to include further restricted substances as regulations continue to evolve.

To obtain a copy of the HP RoHS Compliance Statement, see [HP RoHS position statement](#).

#### Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at [http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen\\_specifications.html](http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html)):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Bis(2-Ethylhexyl) phthalate (DEHP)
- Benzyl butyl phthalate (BBP)
- Dibutyl phthalate (DBP)
- Diisobutyl phthalate (DIBP)
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

#### Packaging

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

#### End-of-life Management and Recycling

HP offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

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

### Technical Specifications - Environmental Data

instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/recyclers>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

#### HP, Inc. Corporate Environmental Information

For more information about HP's commitment to the environment:

Global Citizenship Report

<http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>

Eco-label certifications

<http://www8.hp.com/us/en/hp-information/environment/ecolabels.html>

ISO 14001 certificates:

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842>

and

<http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf>

#### footnotes

- Percentage of ocean-bound plastic contained in each component varies by product
- Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.
- External power supplies, WWAN modules, power cords, cables and peripherals excluded.
- 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers.
- Fiber cushions made from 100% recycled wood fiber and organic materials.
- Disclaimer: 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

After-Market Options (availability may vary by region)

### Graphics Solutions

	<b>Part #</b>
NVIDIA RTX A2000 12GB Graphics	5Z7D9AA
NVIDIA Quadro T1000 8GB Graphics	5Z7D8AA
HP DisplayPort™ Cable Kit	VN567AA
HP DisplayPort™ To DVI-D Adapter	FH973AA
HP DisplayPort™ to VGA Adapter	AS615AA
HP HDMI Standard Cable Kit	T6F94AA
HP UHD USB Graphics Adapter	N2U81AA
HP DisplayPort™ to HDMI True 4k Adapter	2JA63AA

### Hard Disk Storage Drives

	<b>Part #</b>
HP 1TB SATA (6.0Gb/s) Hard Disk Drive*	LQ037AA
HP Removable SATA Hard Drive Enclosure (frame & carrier)*	RY102AA
HP Removable SATA Hard Drive Enclosure (carrier only)*	RY103AA

\*Not compatible with Engage Flex Pro-C G2

### Input / Output Devices

	<b>Part #</b>
HP 125 Wired Keyboard	266C9AA
HP Wired Desktop 320K Keyboard	9SR37AA
HP 125 Wired Mouse	265A9AA
HP 128 Laser Wired Mouse	265D9AA
HP Wired Desktop 320M Mouse	9VA80AA

### System Memory

	<b>Part #</b>
HP 8GB DDR5-4800 MHz UDIMM	4M9X9AA
HP 16GB DDR5-4800 MHz UDIMM	4M9Y0AA
HP 32GB DDR5-4800 MHz UDIMM	4M9Y2AA

### Multimedia Devices

	<b>Part #</b>
HP 9.5mm DVD-ROM Drive*	N1M41AA
HP DVD-Writer Drive*	QS208AA

\*Not compatible with Engage Flex Pro-C G2

### Security Devices

	<b>Part #</b>
HP Business PC Security Lock	3XJ17AA



After-Market Options (availability may vary by region)

---

After-Market Options (availability may vary by region)

### Retail Solutions Specific Accessories

	<b>Part #</b>
HP L7010t – 10.1” Retail Touch Monitor	T6N30AA
HP L7014 14” Retail Non-touch Monitor	T6N31AA
HP L7014t 14” Retail Touch Monitor	T6N32AA
HP L7016t – 15.6” Retail Touch Monitor	V1X13AA
HP Engage One 10.1in Touch Display (Black / White / No Stand + VESA)	1XD81AA/3FH67AA/3 F1W9AA
HP Engage One 10.1in Non-Touch Display (Black / White / No Stand + VESA)	1XD80AA/3FH66AA/3 F1W8AA
HP Engage 14 FHD No Stand+No VESA Monitor	8X037AA
HP Engage 14t FHD No Stand+No VESA Monitor	8X078AA
HP Engage 16t FHD No Stand Monitor	8Q3N2AA
HP Engage 16t MSR FHD No Stand Monitor	8Q3W5AA
HP Engage 15t XGA No Stand Monitor	67Q84AA
HP Engage 6.6 inch Display (Black / White)	9YH48AA/156N8AA
HP Engage 6.6 inch Display with Ingenico Moby 5500M	156P0AA
HP Engage 6.6 inch Display for Ingenico Moby 5500M	10P74AA
HP Engage 6.6 inch Pole Display (Black / White)	10P79AA/156N9AA
HP Engage 2x20 Customer Facing Pole Display	6K553AA
HP Anywhere Integrated Flex Pro Remote System Controller	9B141AA
HP Z2 Mini/Z2 Tower/Z4/Z6 Depth Adjustable Fixed Rail Rack Kit	2A8Y5AA
HP Engage Imaging Barcode Scanner II	5YQ08AA
Datalogic 3450VSi Presentation Scanner	7UZ38AA
Datalogic 1500i Presentation Scanner	9BU50AA
Datalogic 4090 WRLS Charging Base	4P775AA
Datalogic 4190 WRLS Charging Base	4P776AA
Datalogic Gryphon GBT4500 2D WRLS BCS (w/o Digimarc / w Digimarc)	4P886AA/4P887AA
HP Engage One Prime Barcode Scanner (Black / White)	638L9AA/638M0AA
HP Engage 2D G2 Barcode Scanner (Black / White)	6Y2V4AA/6Y2V5AA
Epson TM-T88VI Serial Ethernet USB	2HV25AA
HP Value Thermal Receipt Printer	4AK33AA
Epson H6000V Hybrid Printer	4ZE21AA
Epson TM-T88VI PUSB Printer only	6BC94AA
Epson TM-T20IIIL Serial USB	340U3AA
HP Engage Serial Ethernet USB Thermal Printer	299U7AA
HP Engage PUSB Thermal Printer	299V7AA
Epson TM-m30II (Black / White)	340U1AA/340U2AA
HP Heavy Duty Cash Drawer	FK182AA
HP Standard Duty Cash Drawer	QT457AA
HP USB Standard Duty Cash Drawer	E8E45AA

### After-Market Options (availability may vary by region)

HP Heavy Duty Cash Drawer Random Locks	8QX99AA
HP Engage One Prime Cash Drawer (Black / White)	638M5AA/638M6AA
HP Standard Duty Till w/Lockable Lid	QT458AA
HD Cash Drawer Till 5B5C	31G54AA

\*Not compatible with Engage Flex Pro-C

\*\*Not compatible with Engage Flex Pro

\*\*\*Requires Riser card accessory for compatibility with Engage Flex Pro. Riser not required or available for Engage Flex Pro-C

	<b>Part #</b>
HP Engage Flex Pro-C 3 Pack Dust Filters**	4VW74AA
HP Engage Flex Pro 3 Pack Dust Filters*	4VW73AA
HP Engage Flex Pro Wall Mount/Security Sleeve*	4VW75AA
HP Engage Flex Pro-C Wall Mount/Security Sleeve**	4VW76AA

\*Not compatible with Engage Flex Pro-C

\*\*Not compatible with Engage Flex Pro

\*\*\*Requires Riser card accessory for compatibility with Engage Flex Pro. Riser not required or available for Engage Flex Pro-C

Date of change:	Version History:		Description of change:
July 25, 2023	From v1 to v2	Changed	Environmental Data sections, changed images from pages 2 and 4
November 21, 2023	From v2 to v3	Changed	Format
January 25, 2024	From v3 to v4	Changed	ENVIRONMENTAL DATA section

Copyright © 2024 HP Development Company, L.P.

Microsoft, Windows 10, Windows 8.1, Windows 7, and Windows POSReady 7 are registered trademarks or trademarks of Microsoft Corporation in the U.S. and/or other countries. Intel, Core, and Pentium are registered trademarks or trademarks of Intel Corporation in the U.S. and/or other countries. Bluetooth® is a registered trademark of its proprietor and used by HP Inc under license. USB Type-C® and USB-C® are trademarks of USB Implementers Forum. DisplayPort™ and the DisplayPort™ logo are trademarks owned by the Video Electronics Standards Association (VESA®) in the United States and other countries. ENERGY STAR® is a registered mark of the U.S. Environmental Protection Agency.

The information contained herein is subject to change. The only warranties for HP products are set forth in the express limited warranty statements accompanying such products. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.