

# Informacije o proizvodu (EN)

HP Mini PC Pro 260 G9 (6D2Y8EA)



Tehnoteka je online destinacija za upoređivanje cena i karakteristika bele tehnike, potrošačke elektronike i IT uređaja kod trgovinskih lanaca i internet prodavnica u Srbiji. Naša stranica vam omogućava da istražite najnovije informacije, detaljne karakteristike i konkurentne cene proizvoda.

Posetite nas i uživajte u ekskluzivnom iskustvu pametne kupovine klikom na link:

https://tehnoteka.rs/p/hp-mini-pc-pro-260-g9-6d2y8ea-akcija-cena/

Overview

### HP Pro Mini 260 G9 Desktop PC



- 1. Type-C<sup>®</sup> SuperSpeed USB 10Gbps signaling rate port (charge support up to 5V/3A)
- 2. Type-A SuperSpeed USB 5Gbps signaling rate port
- 3. Type-A Hi-Speed USB 480Mbps signaling rate port (charge support up to 5V/1.5A)
- 4. Combo Audio Jack with CTIA and OMTP headset support
- 5. Dual-state power button
- 6. Hard drive activity light

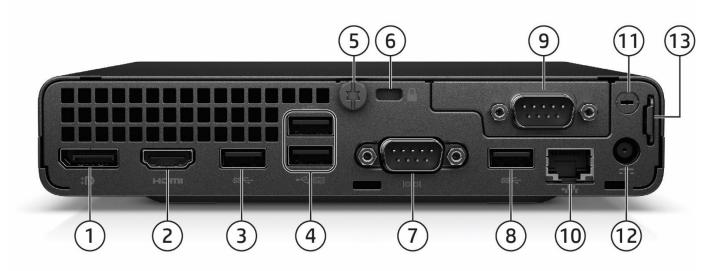
### Not shown

(2) M.2 (1 as M.2 2230 socket for WLAN/BT and 1 as M.2 2280 socket for storage)

(1) 2.5" internal storage drive bay

Overview

### HP Pro Mini 260 G9 Desktop PC



- 1. DisplayPort™ 1.4a (DP++)
- 2. HDMI 1.4b
- 3. Type-A SuperSpeed USB 5Gbps signaling rate port
- 4. Type-A Hi-Speed USB 480Mbs signaling rate port (2)
- 5. Cover release thumbscrew
- 6. Standard cable lock slot (10 mm)
- 7. Serial port

- 8. Type-A SuperSpeed USB 5Gbps signaling rate port
- 9. Flex Port 2<sup>1</sup>, choice of:
  - Serial
  - 2<sup>nd</sup> External Antenna
- 10. RJ45 Network connector
- 11. External WLAN antenna opening
- 12. Power connector
- 13. Retractable Padlock loop

### 1. Must be configured at time of purchase

### **AT A GLANCE**

- 12<sup>th</sup> and 13<sup>th</sup> Generation Intel® processors (up to Core™ i5), featuring integrated Intel® UHD Graphics
- Choice of Windows 11 Professional, Windows 11 Home, Win 11 Pro 64 Downgrade (Win 10 Pro 64) and FreeDOS Up to 64GB of DDR4 Synchronous Dynamic Random Access Memory (SDRAM)
- Optional M.2 PCIe NVMe solid state drives (SSD) enabling faster system startup and application launches
- Support for up to two monitors via one standard HDMI 1.4b and one standard Display Port 1.4a.
- Serial port support comes standard, with ability to configure one additional for a total of two, enabling support for legacy peripherals
- Integrated 10/100/1000 Ethernet Controller
- Optional Wi-Fi 6E, Wi-Fi 6 and Wi-Fi 5 (802.11ac) connectivity
- Trusted Platform Module (TPM) 2.0
- VESA mounting incorporated into chassis design
- Dust filter available
- High efficiency energy saving power supply
- PC chassis and all internal components and modules are manufactured with low halogen content
- Protected by HP Services, including limited warranties up to 1-1-1(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
- Compliance with CE (Class B) / FCC (Class B) / UL (UL60950-1 / UL62368-1) / CSA (CSA C22.2 No.60950-1-07 / CSA C22.2 No. 62368-1-14) / ICES-003 / CCC / VCCI (Class B) / KCC (Class B)

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



Standard Features and Configurable Modules

#### OPERATING SYSTEMS

Preinstalled Windows 11 Pro<sup>1</sup>

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

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

Windows 11 Home Single Language - HP recommends Windows 11 Pro for business<sup>1</sup> Windows 10 Pro (available through downgrade rights from Windows 11 Pro)<sup>1</sup>

Windows 11 Pro (Windows 11 Enterprise or Windows 10 Enterprise available with a Volume

Licensing Agreement)1,2

**FreeDOS** 

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.

2. This system is preinstalled with Windows 10 Pro software and also comes with a license for Windows 11 Pro software and provision for recovery software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.

### **PROCESSORS**

### Intel® 12<sup>th</sup> Generation Core™ Processors

Intel® Core™ i5-1235U Processor¹
15W
1.3GHz base frequency
Up to 4.4 GHz max. Turbo frequency with Intel® Turbo Boost Technology²
12MB cache, 10 cores, 12 threads
Intel® Iris® Xe Graphics³

Intel® Core™ i3-1215U Processor¹
15W
1.2GHz base frequency
Up to 4.4 GHz max. Turbo frequency with Intel® Turbo Boost Technology²
10MB cache, 6 cores, 8 threads
Intel® UHD Graphics

#### Intel® Pentium® Processors

Intel® Pentium® Gold 8505 Processor¹
15W
1.2 GHz base frequency
Up to 4.4 GHz max. Turbo frequency with Intel® Turbo Boost Technology²
8MB cache, 5 cores, 6 threads
Intel® UHD Graphics

### Intel® Celeron® Processors

Intel® Celeron® 7305 Processor¹ 15W 1.1 GHz base frequency 8MB cache, 5 cores, 6 threads Intel® UHD Graphics



Standard Features and Configurable Modules

### Intel® 13th Generation Core™ Processors

Intel® Core™ i5-1335U Processor¹
15W
1.3GHz base frequency
Up to 4.6 GHz max. Turbo frequency with Intel® Turbo Boost Technology²
12MB cache, 10 cores, 12 threads
Intel® Iris® Xe Graphics³

Intel® Core™ i3-1315U Processor¹
15W
1.2GHz base frequency
Up to 4.5 GHz max. Turbo frequency with Intel® Turbo Boost Technology²
10MB cache, 6 cores, 8 threads
Intel® UHD Graphics

- 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 http://www.intel.com/technology/turboboost for more information.
- 3. Intel® Iris® Xe Graphics capabilities require system to be configured with Intel® Core™ i5 or i7 processors and dual channel memory. Intel® Iris® Xe Graphics with Intel® Core™ i5 or 7 processors and single channel memory will only function as UHD graphics.

### **GRAPHICS**

#### Integrated

Intel® UHD Graphics. Intel® Iris® Xe Graphics1,2

**NOTE:** Intel® integrated UHD Graphics varies by processor

- 1. Intel® Iris® Xe Graphics¹ only support on Intel® Core™ i5-1245U, i5-1235U & i5-1335U.
- 2. Intel® Iris® Xe Graphics capabilities require system to be configured with Intel® Core™ i5 or i7 processors and dual channel memory. Intel® Iris® Xe Graphics with Intel® Core™ i5 or 7 processors and single channel memory will only function as UHD graphics.

### **STORAGE**

**NOTE:** Starting from November 1<sup>st</sup>, 2023, all shipments will require Windows to be installed on SSD to provide users a better experience. HDD can only be configured as additional data drives and not the boot drive.

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

500GB\* 7200RPM 2.5in SATA HDD 1TB\* 7200RPM 2.5in SATA HDD 1TB\* 5400RPM 2.5in SATA HDD 2TB\* 5400RPM 2.5in SATA HDD

#### M.2 PCIe NMVe Solid State Drives (SSD)

256GB\* M.2 2280 PCIe NVMe SSD 512GB\* M.2 2280 PCIe NVMe SSD 1TB\* M.2 2280 PCIe NVMe SSD 512GB\* M.2 2280 PCIe NVMe Three Layer Cell SSD 1TB\* M.2 2280 PCIe NVMe Three Layer Cell SSD



Standard Features and Configurable Modules

2TB\* M.2 2280 PCIe NVMe Three Layer Cell SSD

256GB\* M.2 2280 PCIe NVMe Self Encrypted OPAL2 SSD\*\*

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

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

\*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) of system disk is reserved for the system recovery software.

\*\*NOTE: Storage DriveLock does not work with Self Encrypting or Optane based storage.

### **MEMORY**

### **Type**

DDR4-3200(Transfer rates up to 3200MT/s)

#### Maximum

64GB capacity

### **Memory Configurations**

2 SODIMMs

4GB (4GB x 1)

8GB (4GB x 2)1

8GB (8GB x 1)

16GB (8GB x 2)1

16GB (16GB x 1)

32GB (16GB x 2)1

32GB (32GB x 1)

64GB (32GB x 2)

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

**NOTE:** For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available due to system resource requirements. Addressing memory above 4 GB requires a 64-bit operating system.

**NOTE:** Memory modules support data transfer rates up to 3200 MT/s; actual data rate is determined by the system's configured processor. See processor specifications for supported memory data rate.

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

### **NETWORKING/COMMUNICATIONS**

#### Networking

Intel® I219-V Gigabit Network Connection LOM (Non-vPro)

#### Wireless

Realtek RTL8821CE Wi-Fi 5<sup>1</sup> (802.11ac) 1x1 with Bluetooth® 4.2 Wireless Card Intel® Wi-Fi 6E<sup>2</sup> AX211 802.11ax 2x2³ with Bluetooth® 5.3 Wireless Card non-vPro™ Realtek RTL 8852BE Wi-Fi 6⁴ with Bluetooth 5.3 Wireless Card

- 1. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 5 (802.11 ac) is backwards compatible with prior 802.11 specs.
- 2. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.
- 3. Usage of the 6GHz band relies on Windows 11 Operating System support.
- 4. 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.



### HP Pro Mini 260 G9 Desktop PC

# QuickSpecs

Standard Features and Configurable Modules

**NOTE:** WiFi-6E might restrict by local regulation and the current eligible regions are: USA, South Korea, Costa Rica, El Salvador, Guatemala, Honduras, Peru and UAE. HP will enable countries in the future by upgrading BIOS in default.



Standard Features and Configurable Modules

### **KEYBOARDS/POINTING DEVICES**

### **Keyboard and Mouse Combo**

HP 655 Wireless Keyboard and Mouse Combo

### Keyboard

HP 125 Wired Keyboard

HP USB Business Slim Wired SmartCard CCID Keyboard

#### Mouse

HP Wired Desktop 320M Mouse HP Wired 125 Mouse HP Wired 128 Laser Mouse

**NOTE**: Availability may vary by country

### **SECURITY**

TPM 2.0<sup>1</sup> (FW: 15.23) endpoint security controller (Infineon SLB9672). Common Criteria EAL4+ Certified. FIPS 140-2 Level 2 Certified.

Intrusion Sensor (integrated in the system board, can be enabled/disabled through BIOS)

Support for chassis cable lock devices

Support for chassis padlocks devices

SATA port disablement (via BIOS)

Serial, USB enable/disable (via BIOS)

Removable media write/boot control

Power-on password (via BIOS)

Setup password (via BIOS)

1. In some scenarios, machines pre-configured with Windows OS might ship with TPM turned off

### **PORTS**

#### **Internal slots and Ports**

- (1) M.2 PCIe x1 2230 (for WLAN)
- (1) M.2 PCIe x4 2280 (for storage)
- (1) Integrated SATA storage connector

**NOTE**: For Desktop Mini with M.2 Storage config, there will be no SATA drive bracket. If you plan to use or upgrade the storage with any 2.5" SATA drive, please select a DM SATA Drive Bracket (available as both factory configured and after market option).

#### **Bays**

2.5" Internal Storage Drive

### **Standard User Accessible Ports**

Front

- (1) Type-C® SuperSpeed USB 10Gbps signaling rate port
- (1) Type-A Hi-Speed USB 480Mbps signaling rate port
- (1) Type-A SuperSpeed USB 5Gbps signaling rate port
- (1) Combo Audio Jack with CTIA and OMTP headset support



### Standard Features and Configurable Modules

**Rear** (2) Type-A SuperSpeed USB 5Gbps signaling rate port

(2) Type-A Hi-Speed USB 480Mbps signaling rate port

(1) Display Port 1.4a

(1) HDMI 1.4b

(1) RJ45

(1) Serial (RS-232)

### Configurable Non-PCIe/PCI Slot User Accessible Ports

Rear Flexible Port, choice of Serial (RS-232), 2<sup>nd</sup> External antenna

### **USB SPECIFICATION AND MARKETING NAME MAPPING TABLE**

Marketing Name	Technical Terminology
Hi-Speed USB 480Mbps signaling rate	USB 2.0
SuperSpeed USB 5Gbps signaling rate	USB 3.2 Gen 1
SuperSpeed USB 10Gbps signaling rate	USB 3.2 Gen 2
SuperSpeed USB 20Gbps signaling rate	USB 3.2 Gen 2x2

### SOFTWARE COMPONENTS AND APPLICATIONS WITH WINDOWS

#### Software

HP Desktop Support Utilities myHP HP Notifications HP Support Assistant<sup>1</sup> HP Smart Support<sup>2</sup> Microsoft 365<sup>3</sup>

### **Manageability Features**

HP Cloud Recovery4

### **Client Security Software**

McAfee LiveSafe™ (1 year subscription)<sup>5</sup>

- 1. HP Support Assistant requires Windows and Internet access.
- 2. 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..
- 3. Sold separately and requires Internet access for activation
- 4. HP Cloud Recovery is available for select HP 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.
- 5 Availability may vary by country. McAfee LiveSafe 30-day free trial offer (Internet access required. First 30 days included. Subscription required for live updates afterwards.)



Standard Features and Configurable Modules

### **UNIT ENVIRONMENT AND OPERATING CONDITIONS**

### **ENERGY STAR® certified models available**

ENERGY STAR® certified. EPEAT® registered where applicable. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit <a href="http://www.epeat.net">http://www.epeat.net</a> for more information.

Low halogen (chassis, all internal components and modules)<sup>1</sup>

TAA compliant models available

1. External power supplies, power cords, cables and peripherals are not Low Halogen. Service parts obtained after purchase may not be Low Halogen.

### **General Unit Operating Guidelines**

- Keep the computer away from excessive moisture, direct moisture and the extremes of heat and cold, to ensure that unit is operated within the specified operating range.
- Leave a 10.2 cm (4 in) clearance on all vented sides of the computer to permit the required airflow.
- Never restrict airflow into the computer by blocking any vents or air intakes.
- Do not stack computers on top of each other or place computers so near each other that they are subject to each other's recirculated or preheated air.
- Occasionally clean the air vents on the front, back, and any other vented side of the computer. Lint, dust and other foreign matter can block the vents and limit the airflow.
- If the computer is to be operated within a separate enclosure, intake and exhaust ventilation must be provided on the enclosure, and the same operating guidelines listed above will still apply.

**Temperature Range**Operating: 50° to 95° F (10° to 35° C)<sup>2</sup>

Non-operating: -22° to 140° F(-30° to 60° C)

**Relative Humidity** Operating: 10% to 90% (non-condensing at ambient)

Non-operating: 0% to 95% (non-condensing at ambient)

Maximum Altitude (unpressurized)Operating:10,000 ft (3048 m)

Non-operating: 30,000 ft (9144 m)

2. 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.



Standard Features and Configurable Modules

### **ENVIRONMENTAL & INDUSTRY**

Eco-Label Certifications & declarations	This product has received or is in be labeled with one or more of the IT ECO declaration  US ENERGY STAR®  US Federal Energy Mana EPEAT® Gold registered status in your country.  TCO Certified China Energy Conservat China State Environmen Taiwan Green Mark Korea Eco-label Japan PC Green label Commission Regulation	nese marks:  Ingement Program  In the United Stat  Ion Program (CEC  Ital Protection Ad	n (FEMP) tes. See http://wv EP) ministration (SEP	ww.epeat.net for registration
System Configuration	The configuration used for the Er Desktop model is based on a "Ty			loise Emissions data for the
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VA(	C, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	4.9000 W	5.010	00 W	4.7000 W
Normal Operation (Long idle)	1.3700 W	1.450	00 W	1.2100 W
Sleep	1.3500 W	1.430	00 W	1.1900 W
Off	0.5000 W	0.520	00 W	0.4600 W
	NOTE: Energy efficiency data listed i family. HP computers marked with the Environmental Protection Agency (E not offer ENERGY STAR® certified con PC featuring a hard disk drive, a high	he ENERGY STAR® I PA) ENERGY STAR® nfigurations, then on efficiency power s	Logo are certified w specifications for c energy efficiency da upply, and a Micros	ith the applicable U.S. omputers. If a model family does ata listed is for a typically configured oft Windows® operating system.
Heat Dissipation*	115VAC, 60Hz	230VA	, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	16.7090 BTU/hr	17.0841	BTU/hr	16.0270 BTU/hr
Normal Operation (Long idle)	4.6717 BTU/hr	4.9445		4.1261 BTU/hr
Sleep	4.6035 BTU/hr	4.8763		4.0579 BTU/hr
Off	1.7050 BTU/hr	1.7732	BTU/hr	1.5686 BTU/hr
	<b>NOTE:</b> Heat dissipation is calculated one hour.	based on the meas	sured watts, assumi	ng the service level is attained for
Declared Noise	Sound Power			Sound Pressure
Emissions	(L <sub>WAd</sub> , bels)			(L <sub>pAm</sub> , decibels)
(in accordance with ISO 7779 and ISO 9296)	(=inity = ===)			(-ріш) 2000 000,
Typically Configured – Idle	2.7			17
Fixed Disk – Random writes	2.9			17



### Standard Features and Configurable Modules

Longevity and Upgrading  Additional Information	• 2 SODIMM r • Interchange  Spare parts a production.  • This dire • This (WE • This Drin	can be upgraded, possibly extending its useful life by lor components contained in the product may includ memory slots eable M.2 PCIe NVME SSD & 2.5" SATA HDD are available throughout the warranty period and or for sproduct is in compliance with the Restrictions of Hazactive - 2011/65/EC. See HP product is designed to comply with the Waste Elective - 2002/96/EC. See product is in compliance with California Proposition alking Water and Toxic Enforcement Act of 1986). Stics parts weighing over 25 grams used in the product	for up to 5 years after the end of zardous Substances (RoHS) ectrical and Electronic Equipment 65 (State of California; Safe
	ISO <sup>2</sup> • This	ones parts weighing over 25 grains used in the product 1043. 5 product contains 0% post-consumer recycled plastic 5 product is 95.1% recycle-able when properly dispos	c (by wt.)
Packaging Materials	External:	PAPER/Corrugated	450 g
	+	PAPER/Molded Pulp	74 g
	Internal:	PLASTIC/Polyethylene low density - LDPE	5 g
		packaging material contains at least 30% recycled co	
		nted paper packaging materials contains at least 35%	
Material Usage	to the HP Ge	does not contain any of the following substances in a neral Specification for the Environment at hp.com/hpinfo/globalcitizenship/environment/pdf/g	- ,
	<ul> <li>Cert</li> <li>Cert</li> <li>Cad</li> <li>Chlo</li> <li>Forr</li> <li>Halo</li> <li>Leac</li> <li>Mer</li> <li>Nick</li> <li>han</li> </ul>	estos tain Azo Colorants tain Brominated Flame Retardants – may not be used mium orinated Hydrocarbons orinated Paraffins maldehyde ogenated Diphenyl Methanes d carbonates and sulfates d and Lead compounds curic Oxide Batteries cel – finishes must not be used on the external surfac dled or carried by the user. one Depleting Substances	



Standard Features and Configurable Modules

	Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
Packaging Usage	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.
	<ul> <li>Eliminate the use of ozone-depleting substances (ODS) in packaging materials.</li> </ul>
	Design packaging materials for ease of disassembly.
	<ul> <li>Maximize the use of post-consumer recycled content materials in packaging materials.</li> </ul>
	<ul> <li>Use readily recyclable packaging materials such as paper and corrugated materials.</li> </ul>
	<ul> <li>Reduce size and weight of packages to improve transportation fuel efficiency.</li> </ul>
	<ul> <li>Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.</li> </ul>
End-of-life Management	HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To
and Recycling	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
	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	For more information about HP's commitment to the environment:
Environmental	Global Citizenship Report
Information	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://www.hp.com/hpinfo/globalcitizenship/environment/pdf/PC_GBU_Product_Design_ISO_14K
	_Certificate.pdf and
	http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf
	http://www.np.com/npinro/globalcitizensinp/environment/par/cert.par

### SERVICE AND SUPPORT

On-site Warranty<sup>1</sup>: Three-year (3-3-3) or one-year (1-1-1) limited warranty delivers three years or one year of on-site, next business day<sup>2</sup> service for parts and labor and includes free support 24 x 7<sup>3</sup>. Three-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>4</sup>

- 1. Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.
- 2. 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.
- 3. Technical telephone support applies only to HP-configured and third-party HP qualified hardware and software. Toll-free calling and  $24 \times 7$  support may not be available in some countries.
- 4. 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. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.



Technical Specifications – Graphics

#### **GRAPHICS**

### Intel® UHD Graphics (integrated)¹

**Graphics Controller** Integrated

**HDMI** Supports HDMI 1.4b features

Supports HDCP 2.3

Supports audio over HDMI

**DisplayPort** Supports DisplayPort 1.4a

**Memory** 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.

Maximum Color Depth up to 16 bits/color

Graphics/Video API Support HEVC 10b Enc/12b Dec HW

VP9 12b Dec HW

HDR Rec. 2020 DX12

 Max. Resolution (DP)
 4096 x 2304@60Hz

 Max. Resolution (HDMI)
 4096 x 2160 @ 30Hz



Technical Specifications – Storage

### **STORAGE**

**NOTE:** Starting from November 1<sup>ST</sup>, 2023, all shipments will require Windows to be installed on SSD to provide users a better experience. HDD can only be configured as additional data drives and not the boot drive.

#### 500GB 7200RPM 2.5in SATA HDD

Capacity500GBRotational Speed7,200 rpmInterfaceSATA 6 Gb/sBuffer SizeUp to 128MBLogical Blocks976,773,168Seek Time12 ms (Average)

 Height
 0.283in/7.2mm (Max)

 Width
 2.75in/70mm (nominal)

 Operating Temperature
 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) of system disk is reserved for the system recovery software.

### 1TB 7200RPM 2.5in SATA HDD

Capacity 1TB

Rotational Speed 7,200 rpm
Interface SATA 6 Gb/s
Buffer Size Up to 128MB
Logical Blocks 1,953,525,168
Seek Time 12 ms (Average)

 Height
 0.283in/7.2 mm (Max)

 Width
 2.75in/70mm (nominal)

 Operating Temperature
 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) of system disk is reserved for the system recovery software.

### 1TB 5400RPM 2.5in SATA HDD

Capacity 1TB

Rotational Speed 5,400 rpm
Interface SATA 6 Gb/s
Buffer Size Up to 128MB
Logical Blocks 1,953,525,168
Seek Time 12ms (Average)

 Height
 0.283in/7.2mm (Max.)

 Width
 2.75in/70mm (nominal)

 Operating Temperature
 41° to 131° F (5° to 55° C)



Technical Specifications – Storage

**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) of system disk is reserved for the system recovery software.

### 2TB 5400RPM 2.5in SATA HDD

Capacity 2TB

**Rotational Speed** 5,400 rpm **Interface** SATA 6 Gb/s **Buffer Size** 128MB

 Logical Blocks
 3,907,050,336

 Seek Time
 12 ms (Average)

 Height
 0.374in/9.5mm (Max.)

 Width (nominal)
 2.75in/70mm (nominal)

 Operating Temperature
 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) of system disk is reserved for the system recovery software.

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

Capacity256GBInterfacePCIe NVMeMinimum Sequential Read3200MB/s ±10%Minimum Sequential Write2000MB/s ±10%Logical Blocks500,118,192

TRIM; L1.2

**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) of system disk is reserved for the system recovery software.

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

**Features** 

Capacity 512GB
Interface PCIe NVMe
Minimum Sequential Read 3200MB/s ±10%
Minimum Sequential Write 3200MB/s ±10%
Logical Blocks 1,000,215,216
Features TRIM; L1.2

**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) of system disk is reserved for the system recovery software.



Technical Specifications – Storage

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

Capacity 1TB

Interface PCIe NVMe

Minimum Sequential Read3200MB/s ±10%Minimum Sequential Write3200MB/s ±10%Logical Blocks2,000,409,264FeaturesTRIM; L1.2

**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) of system disk is reserved for the system recovery software.

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

Capacity 256GB
Interface PCIE Gen4x4
Minimum Sequential Read 4000MB/s ±10%
Minimum Sequential Write 2000MB/s ±10%

Minimum Sequential Write 2000MB/s ±1
Logical Blocks 500,118,192

Features TRIM; L1.2; Pyrite 2.0

**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) of system disk is reserved for the system recovery software.

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

Capacity 512GB

Features TRIM; L1.2; Pyrite 2.0

**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) of system disk is reserved for the system recovery software.

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

Capacity 1TB

InterfacePCIE Gen4x4Minimum Sequential Read6400MB/s ±10%Minimum Sequential Write5000MB/s ±10%Logical Blocks2,000,409,264FeaturesTRIM: L1.2; Pyrite 2.0

**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) of system disk is reserved for the system recovery software.



Technical Specifications – Storage

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

Capacity 2TB

 Interface
 PCIE Gen4x4

 Minimum Sequential Read
 6400MB/s ±10%

 Minimum Sequential Write
 5000MB/s ±10%

 Logical Blocks
 4,000,797,360

 Features
 TRIM; L1.2; Pyrite 2.0

**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) of system disk is reserved for the system recovery software.

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

Capacity256GBInterfacePCIE Gen4x4Minimum Sequential Read4000MB/s ±10%Minimum Sequential Write2000MB/s ±10%Logical Blocks500,118,192

Features TRIM; L1.2; TCG Opal 2.0

**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) of system disk is reserved for the system recovery software.

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

**Capacity** 512GB

InterfacePCIE Gen4x4Minimum Sequential Read $6400MB/s \pm 10\%$ Minimum Sequential Write $3500MB/s \pm 10\%$ Logical Blocks1,000,215,216

Features TRIM; L1.2; TCG Opal 2.0

**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) of system disk is reserved for the system recovery software.



Technical Specifications – Networking

### **NETWORKING AND COMMUNICATIONS**

Intel® I219v 1 Gigabit N	letwork Connection LOM (non-vPro)
Connector	RJ-45
System Interface	PCI (Intel proprietary) + SMBus
Data rates supported	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 802.3 clauses 40)
	Auto-Negotiation (Automatic Speed Selection)
	Full Duplex Operation at all Speeds, Half Duplex operation at 10, 100 & 1000 Mbit/s
IEEE Compliance	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)
	IEEE 802.3i 10BASE-T
	IEEE 802.3u 100BASE-TX
	IEEE 802.3ab 1000BAE-T
	IEEE 802.3bz 2.5GBASE-T
Performance	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
Power consumption	Cable Disconnetion: 25mW
	100Mbps Full Run: 450mW
	1000bp Full Run: 1000mW
	WoL Enable(S3/S4/S5): 50mW
	WoL Disable(S3/S4/S5): 25mW
Power	ACPI compliant – multiple power modes
Management	Situation-sensitive features reduce power consumption
	Advanced link down power saving for reducing link down power consumption
Management Interface	Auto MDI/MDIX Crossover cable detection
IT Manageability	Wake-on-LAN from 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
Security & Manageability	Intel® non vPro™ support with appropriate Intel® chipset components



Intel® AX211 Wi-Fi 6E +Blue	etooth® 5.3 Wireless Card M.2 160MHz CNVi WW WLAN¹
Wireless LAN Standards	IEEE 802.11a
	IEEE 802.11b
	IEEE 802.11g
	IEEE 802.11n
	IEEE 802.11ac
	IEEE 802.11ax
	IEEE 802.11d
	IEEE 802.11e
	IEEE 802.11h
	IEEE 802.11i
	IEEE 802.11k
	IEEE 802.11r
	IEEE 802.11v
Interoperability	Wi-Fi® certified
Frequency Band	802.11b/g/n/ax
	• 2.402 – 2.482 GHz
	802.11a/n/ac/ax
	• 4.9 – 4.95 GHz (Japan)
	• 5.15 – 5.25 GHz
	• 5.25 – 5.35 GHz
	• 5.47 – 5.725 GHz
	• 5.825 – 5.850 GHz
	• 5.955 – 6.415 GHz
	• 6.435 – 6.515 GHz
	• 6.535 – 6.875 GHz
	• 6.895 – 7.115 GHz
Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps
	• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	• 802.11n: max 300Mbps
	• 802.11ac: 1733Mbps
	• 802.11ax: max 2.4Gbps
Modulation	Direct Sequence Spread Spectrum
	OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
-	, 1024QAM
Security <sup>2</sup>	• IEEE and Wi-Fi® compliant 64 / 128 bit WEP encryption for a/b/g mode only
	AES-CCMP: 128 bit in hardware
	802.1x authentication
	WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.
	WPA2 certification
	WPA3 certification
	• IEEE 802.11i
National Aughlandson	• WAPI
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Assess Daint Daguirod)
Desmine	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power <sup>3</sup>	• 802.11b: +17dBm minimum
	• 802.11g: +16dBm minimum
	• 802.11a: +17dBm minimum
	• 802.11n HT20(2.4GHz): +14dBm minimum
	• 802.11n HT40(2.4GHz): +13dBm minimum



	• 802.11n HT20(5GHz): +14dBm minimum
	• 802.11n HT40(5GHz): +13dBm minimum
	• 802.11ac VHT80(5GHz): +10dBm minimum
	• 802.11ac VHT160(5GHz): +10dBm minimum
	• 802.11ax HE40(2.4GHz): +12dBm minimum
	• 802.11ax HE80(5GHz): +10dBm minimum
	• 802.11ax HE160(5GHz): +10dBm minimum
Power Consumption	• Transmit mode 2.0 W
	Receive mode 1.6 W
	• Idle mode (PSP) 180 mW (WLAN Associated)
	• Idle mode 50 mW (WLAN unassociated)
	Connected Standby 10mW
	Radio disabled 8 mW
Power Management	ACPI and PCI Express compliant power management
	802.11 compliant power saving mode
Receiver Sensitivity <sup>4</sup>	• 802.11b, 1Mbps: -93.5dBm maximum
	• 802.11b, 11Mbps: -84dBm maximum
	• 802.11a/g, 6Mbps: -86dBm maximum
	• 802.11a/g, 54Mbps: -72dBm maximum
	• 802.11n, MCS07: -67dBm maximum
	• 802.11n, MCS15: -64dBm maximum
	• 802.11ac, MCS0(VHT80): -84dBm maximum
	• 802.11ac, MCS9(VHT80): -59dBm maximum
	• 802.11ac, MCS9(VHT160): -58.5dBm maximum
	• 802.11ax, MCS11(HE40): -57dBm maximum
	• 802.11ax, MCS11(HE80): -54dBm maximum
	• 802.11ax, MCS11(HE160): -53.5dBm maximum
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure
	To a shall deliberate de Citata de C
	Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN
	MIMO communications and Bluetooth communications
	DOLE MANAGER I
Form Factor	PCI-Express M.2 MiniCard
Porm Factor Dimensions	1. Type 2230: 2.3 x 22.0 x 30.0 mm
Dimensions	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm
	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm 1. Type 2230: 2.8g
Dimensions Weight	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm 1. Type 2230: 2.8g 2. Type 1216: 1.3g
Dimensions Weight Operating Voltage	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm 1. Type 2230: 2.8g 2. Type 1216: 1.3g 3.3v +/- 9%
Dimensions Weight	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm 1. Type 2230: 2.8g 2. Type 1216: 1.3g 3.3v +/- 9% Operating: 14° to 158° F (–10° to 70° C)
Dimensions  Weight  Operating Voltage Temperature	1. Type 2230: 2.3 x 22.0 x 30.0 mm  2. Type 1216: 1.67 x 12.0 x 16.0 mm  1. Type 2230: 2.8g 2. Type 1216: 1.3g  3.3v +/- 9%  Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C)
Dimensions Weight Operating Voltage	1. Type 2230: 2.3 x 22.0 x 30.0 mm  2. Type 1216: 1.67 x 12.0 x 16.0 mm  1. Type 2230: 2.8g  2. Type 1216: 1.3g  3.3v +/- 9%  Operating: 14° to 158° F (-10° to 70° C)  Non-operating: -40° to 176° F (-40° to 80° C)  Operating: 10% to 90% (non-condensing)
Dimensions  Weight  Operating Voltage  Temperature  Humidity	1. Type 2230: 2.3 x 22.0 x 30.0 mm  2. Type 1216: 1.67 x 12.0 x 16.0 mm  1. Type 2230: 2.8g 2. Type 1216: 1.3g 3.3v +/- 9%  Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C)  Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing)
Dimensions  Weight  Operating Voltage  Temperature	1. Type 2230: 2.3 x 22.0 x 30.0 mm  2. Type 1216: 1.67 x 12.0 x 16.0 mm  1. Type 2230: 2.8g 2. Type 1216: 1.3g 3.3v +/- 9%  Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C)  Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing)  Operating: 0 to 10,000 ft (3,048 m)
Dimensions  Weight  Operating Voltage  Temperature  Humidity  Altitude	1. Type 2230: 2.3 x 22.0 x 30.0 mm  2. Type 1216: 1.67 x 12.0 x 16.0 mm  1. Type 2230: 2.8g  2. Type 1216: 1.3g  3.3v +/- 9%  Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C)  Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing)  Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m)
Dimensions  Weight  Operating Voltage  Temperature  Humidity	1. Type 2230: 2.3 x 22.0 x 30.0 mm  2. Type 1216: 1.67 x 12.0 x 16.0 mm  1. Type 2230: 2.8g 2. Type 1216: 1.3g 3.3v +/- 9%  Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C)  Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing)  Operating: 0 to 10,000 ft (3,048 m)
Dimensions  Weight  Operating Voltage  Temperature  Humidity  Altitude  LED Activity	1. Type 2230: 2.3 x 22.0 x 30.0 mm  2. Type 1216: 1.67 x 12.0 x 16.0 mm  1. Type 2230: 2.8g  2. Type 1216: 1.3g  3.3v +/- 9%  Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C)  Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing)  Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m)
Dimensions  Weight  Operating Voltage  Temperature  Humidity  Altitude  LED Activity  HP Integrated Module with Blue	1. Type 2230: 2.3 x 22.0 x 30.0 mm  2. Type 1216: 1.67 x 12.0 x 16.0 mm  1. Type 2230: 2.8g 2. Type 1216: 1.3g 3.3v +/- 9%  Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C)  Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing)  Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m)  LED Amber – Radio OFF; LED OFF – Radio ON
Dimensions  Weight  Operating Voltage  Temperature  Humidity  Altitude  LED Activity  HP Integrated Module with Blue  Bluetooth® Specification	1. Type 2230: 2.3 x 22.0 x 30.0 mm  2. Type 1216: 1.67 x 12.0 x 16.0 mm  1. Type 2230: 2.8g 2. Type 1216: 1.3g 3.3v +/- 9%  Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C)  Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing)  Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m)  LED Amber – Radio OFF; LED OFF – Radio ON  etooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology
Dimensions  Weight  Operating Voltage  Temperature  Humidity  Altitude  LED Activity  HP Integrated Module with Blue  Bluetooth® Specification  Frequency Band	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm 1. Type 2230: 2.8g 2. Type 1216: 1.3g 3.3v +/- 9% Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C) Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing) Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m) LED Amber – Radio OFF; LED OFF – Radio ON  etooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology  4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Compliant 2402 to 2480 MHz
Dimensions  Weight  Operating Voltage  Temperature  Humidity  Altitude  LED Activity  HP Integrated Module with Blue  Bluetooth® Specification  Frequency Band	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm  1. Type 2230: 2.8g 2. Type 1216: 1.3g 3.3v +/- 9% Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C) Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing) Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m) LED Amber – Radio OFF; LED OFF – Radio ON  etooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology  4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Compliant 2402 to 2480 MHz Legacy: 0~79 (1 MHz/CH)
Dimensions  Weight  Operating Voltage  Temperature  Humidity  Altitude  LED Activity  HP Integrated Module with Blue Bluetooth® Specification Frequency Band Number of Available Channels	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm  1. Type 2230: 2.8g 2. Type 1216: 1.3g 3.3v +/- 9% Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C) Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing) Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m) LED Amber – Radio OFF; LED OFF – Radio ON  etooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology  4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Compliant 2402 to 2480 MHz Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Dimensions  Weight  Operating Voltage  Temperature  Humidity  Altitude  LED Activity  HP Integrated Module with Blue  Bluetooth® Specification  Frequency Band  Number of Available Channels	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm 1. Type 2230: 2.8g 2. Type 1216: 1.3g 3.3v +/- 9% Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C) Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing) Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m) LED Amber – Radio OFF; LED OFF – Radio ON etooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology  4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Compliant 2402 to 2480 MHz Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH) Legacy: 3 Mbps data rate; throughput up to 2.17 Mbps
Dimensions  Weight  Operating Voltage  Temperature  Humidity  Altitude  LED Activity	1. Type 2230: 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm  1. Type 2230: 2.8g 2. Type 1216: 1.3g 3.3v +/- 9% Operating: 14° to 158° F (-10° to 70° C) Non-operating: -40° to 176° F (-40° to 80° C) Operating: 10% to 90% (non-condensing) Non-operating: 5% to 95% (non-condensing) Operating: 0 to 10,000 ft (3,048 m) Non-operating: 0 to 50,000 ft (15,240 m) LED Amber – Radio OFF; LED OFF – Radio ON  etooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology  4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Compliant 2402 to 2480 MHz Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)



	Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 9.5 dBm for BR and EDR.
Power Consumption	Peak (Tx): 330 mW
	Peak (Rx): 230 mW
	   Selective Suspend: 17 mW
Bluetooth° Software Supported Link Topology	Microsoft Windows Bluetooth Software
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management	ETS 300 328, ETS 300 826
Certifications	Low Voltage Directive IEC950
	UL, CSA, and CE Mark
Bluetooth Profiles Supported	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)
	BT5.2
	ESR9/10 Compliance
	LE Advertisement Extensions
	Channel Selection Algo
	Limited High Duty Cycle Non-Connectable Advertising
	2Mbps LE
	LE Long Range

- 1. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported. Wi-Fi 6E is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.
- 2. Check latest software/driver release for updates on supported security features.
- 3. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
- 4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
- 5. Usage of the 6GHz band relies on Windows 11 Operating System support.



Wireless LAN Standards	1x1) Wi-Fi 5 and Bluetooth® 4.2 Wireless Card¹  IEEE 802.11a
WIFELESS LAN STANDARDS	IEEE 802.11a
	IEEE 802.11g
	IEEE 802.11n
	IEEE 802.11ac
	IEEE 802.11d
	IEEE 802.11e
	IEEE 802.11h
	IEEE 802.11i
	IEEE 802.11k
	IEEE 802.11r
I	IEEE 802.11v
Interoperability	Wi-Fi® certified modules
Frequency Band	802.11b/g/n
	• 2.402 – 2.482 GHz
	802.11a/n/ac
	• 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: max 150Mbps
	• 802.11ac: max 433.3Mbps
Modulation	Direct Sequence Spread Spectrum
	PROM ORGA COM CA CAM OF CAM
	BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Security <sup>2</sup>	• IEEE and Wi-Fi® certified 64 / 128 bit WEP encryption for a/b/g mode only
•	AES-CCMP: 128 bit in hardware
	• 802.1x authentication
	• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.
	WPA2 certification
	WPA3 certification
	• IEEE 802.11i
	• WAPI
Network Architecture	Ad-hoc (Peer to Peer)
Models	
	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power <sup>3</sup>	• 802.11b: +14dBm minimum
-	• 802.11g: +12dBm minimum
	• 802.11a: +12dBm minimum
	• 802.11n HT20(2.4GHz): +12dBm minimum
	• 802.11n HT40(2.4GHz): +12dBm minimum
	• 802.11n HT20(5GHz): +10dBm minimum
	• 802.11n HT40(5GHz): +10dBm minimum
	• 802.11ac VHT80(5GHz): +10dBm minimum
Power Consumption	• Transmit mode 2.0 W
	• Receive mode 1.6 W



	Lille woods (DCD) 4.00 white (IVIII AN Associated)
	• Idle mode (PSP) 180 mW (WLAN Associated)
	Idle mode 50 mW (WLAN unassociated)     Connected Standby 10mW
	Radio disabled 8 mW
	- Radio disabled o Hiw
Power Management	ACPI and PCI Express compliant power management
	802.11 compliant power saving mode
Receiver Sensitivity <sup>4</sup>	802.11b, 1Mbps: -93.5dBm maximum
	802.11b, 11Mbps: -84dBm maximum
	802.11a/g, 6Mbps: -86dBm maximum
	802.11a/g, 54Mbps: -72dBm maximum
	802.11n, MCS07: -67dBm maximum
	802.11n, MCS15: -64dBm maximum
	802.11ac, MCS0: -84dBm maximum
	802.11ac, MCS9: -59dBm maximum
Antenna type	High efficiency antenna.
	One embedded dual band 2.4/5 GHz antenna is provided to the card to support WLAN
	communications and Bluetooth communications
Form Factor	PCI-Express M.2 MiniCard
Dimensions	Type 2230: 2.3 x 22.0 x 30.0 mm
Weight	Type 2230: 2.8g
Operating Voltage	3.3v +/- 9%
Temperature	Operating: 14° to 158° F (–10° to 70° C)
11	Non-operating: -40° to 176° F (-40° to 80° C)
Humidity	Operating: 10% to 90% (non-condensing)
AlaiaJ.	Non-operating: 5% to 95% (non-condensing)
Altitude	Operating: 0 to 10,000 ft (3,048 m)
LED A - L''	Non-operating: 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF; LED OFF – Radio ON
HP Integrated Module with Blueto	ooth® 4.0/4.1/4.2 Wireless Card Technology
Bluetooth <sup>®</sup> Specification	4.0/4.1/4.2 Wireless Card Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH)
	BLE: 0~39 (2 MHz/CH)
Data Rates and Throughput	Legacy: 3 Mbps data rate; throughput up to 2.17 Mbps
	BLE: 1 Mbps data rate; throughput up to 0.2 Mbps
	Legacy: Synchronous Connection Oriented links up to 3, 64 kbps, voice channels
	Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or
	864 kbps symmetric (3-EV5)
	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum
	transmit power of + 4 dBm for BR and EDR.
	Peak (Tx) 330 mW
	Peak (Rx) 230 mW
	Selective Suspend 17 mW
Transmit Power	USB 2.0 compliant
Power Consumption	Microsoft Windows Bluetooth Software
	Microsoft Windows ACPI, and USB Bus Support
Topology	
Power Management	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Certifications	4.0/4.1/4.2 Compliant
	no, n., ne companie



Power Management	ETS 300 328, ETS 300 826
Certifications	Low Voltage Directive IEC950
	UL, CSA, and CE Mark
Bluetooth Profiles Supported	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)

<sup>1.</sup> Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 5 (802.11 ac) is backwards compatible with prior 802.11 specs.



<sup>2.</sup> Check latest software/driver release for updates on supported security features.

<sup>3.</sup> The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.

<sup>4.</sup> Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

rate)¹	
Wireless LAN Standards	IEEE 802.11a
	IEEE 802.11b
	IEEE 802.11g
	IEEE 802.11n
	IEEE 802.11ac
	IEEE 802.11ax
	IEEE 802.11d
	IEEE 802.11e
	IEEE 802.11h
	IEEE 802.11i
	IEEE 802.11k
	IEEE 802.11r
	IEEE 802.11v
Interoperability	Wi-Fi® certified 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: max 300Mbps
	• 802.11ac: max 866.7Mbps
	• 802.11ax: max 1201Mbps
Modulation	Direct Sequence Spread Spectrum
	BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
Security <sup>2</sup>	• IEEE and Wi-Fi® certified 64 / 128 bit WEP encryption for a/b/g mode only
	AES-CCMP: 128 bit in hardware
	• 802.1x authentication
	• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.
	WPA2 certification
	WPA3 certification
	• IEEE 802.11i
National Analysis at the	• WAPI
Network Architecture Models	Ad-hoc (Peer to Peer)
moaets	Infunctional (Access Daint Dequiped)
Dooming	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power <sup>3</sup>	• 802.11b: +18.5dBm minimum
	802.11g: +17.5dBm minimum     802.11a: +18.5dBm minimum
	• 802.11n HT20(2.4GHz): +15.5dBm minimum
	• 802.11n HT40(2.4GHz): +14.5dBm minimum
	• 802.11n HT20(5GHz): +15.5dBm minimum
	• 802.11n HT40(5GHz): +14.5dBm minimum
	• 802.11ac VHT80(5GHz): +11.5dBm minimum
	• 802.11ax HE40(2.4GHz): +10dBm minimum



Power Consumption	• Transmit mode:2.5 W		
	• Receive mode:2 W		
	• Idle mode (PSP) 180 mW (WLAN Associated)		
	Idle mode:50 mW (WLAN unassociated)		
	Connected Standby/Modern Standby: 10mW		
	• Radio disabled: 8 mW		
Power Management	ACPI and PCI Express compliant power management		
D	802.11 compliant power saving mode		
Receiver Sensitivity <sup>4</sup>	802.11b, 1Mbps: -93.5dBm maximum		
	802.11b, 11Mbps: -84dBm maximum		
	802.11a/g, 6Mbps: -86dBm maximum		
	802.11a/g, 54Mbps: -72dBm maximum		
	802.11n, MCS07: -67dBm maximum		
	802.11n, MCS15: -64dBm maximum		
	802.11ac, MCS0: -84dBm maximum 802.11ac, MCS9: -59dBm maximum		
	802.11ax, MCS11(HE40): -57dBm maximum		
	802.11ax, MCS11(HE80): -54dBm maximum		
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure		
Antenna type	Thigh efficiency differing with spatial diversity, mounted in the display enclosure		
	Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN		
	MIMO communications and Bluetooth communications		
Form Factor	PCI-Express M.2 MiniCard		
Dimensions	1. Type 2230: 2.3 x 22.0 x 30.0 mm		
Difficusions	2. Type 1216: 1.67 x 12.0 x 16.0 mm		
Weight	1. Type 2230: 2.8g		
Weight	2. Type 126: 1.3g		
Operating Voltage	3.3v +/- 9%		
Temperature	Operating: 14° to 158° F (–10° to 70° C)		
Temperature	Non-operating: -40° to 176° F (-40° to 80° C)		
Humidity	Operating: 10% to 90% (non-condensing)		
	Non-operating: 5% to 95% (non-condensing)		
Altitude Operating: 0 to 10,000 ft (3,048 m)			
	Non-operating: 0 to 50,000 ft (15,240 m)		
LED Activity	LED Amber – Radio OFF;		
	LED OFF – Radio ON		
HP Integrated Module with Blu	etooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology		
Bluetooth® Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Compliant		
Frequency Band	2402 to 2480 MHz		
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)		
Data Rates and Throughput			
Data Nates and Throughput	Legacy: 3 Mbps data rate; throughput up to 2.17 Mbps		
	BLE: 1 Mbps data rate; throughput up to 0.2 Mbps		
	Legacy: Synchronous Connection Oriented links up to 3, 64 kbps, voice channels		
	Legacy: Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or		
	864 kbps symmetric (3-EV5)		
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum		
	transmit power of + 4 dBm for BR and EDR.		
Power Consumption	Peak (Tx): 330 mW		
	Peak (Rx): 230 mW		



	Selective Suspend: 17 mW		
Electrical Interface	Microsoft Windows Bluetooth Software		
Bluetooth® Software Supported Link Topology	Microsoft Windows ACPI, and USB Bus Support		
Power Management	FCC (47 CFR) Part 15C, Section 15.247 & 15.249		
Certifications	ETS 300 328, ETS 300 826		
	Low Voltage Directive IEC950		
	UL, CSA, and CE Mark Peak (Tx): 330 mW		
	Peak (Rx): 230 mW		
	Selective Suspend: 17 mW		
Power Management	Microsoft Windows Bluetooth Software		
Certifications			
Bluetooth Profiles Supported	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		

<sup>1.</sup> 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. 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.



<sup>2.</sup> Check latest software/driver release for updates on supported security features.

<sup>3.</sup> The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.

<sup>4.</sup> Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

Technical Specifications – Input/Output

## **INPUT/OUTPUT DEVICES**

HP USB 125 (Antimicrob	ial)/128 Laser Mouse (China onl	y)	
Dimensions (H x L x W)	112 x 63 x 36.2 mm (L x W x H)		
Weight	85 g		
Environmental	Operating temperature	50° to 122° F (10° to 50° C)	
	Non-operating temperature	-22° to 140° F (-30° to 60° C)	
	Operating humidity	10% to 90% (non-condensing at ambient)	
	Non-operating humidity	20% to 80% (non-condensing at ambient)	
	Operating shock	40 g, six surfaces	
	Non-operating shock	80 g, six surfaces	
	Operating vibration	2-g peak acceleration	
	Non-operating vibration	4-g peak acceleration	
Electrical	Operating voltage	5 VDC, +/-5%	
	Power consumption (typical)	100mA	
	Resolution	1,200 DPI	
	Sensor	Optical/ Laser USB mouse sensor	
	Tracking speed	30 inch/sec (max)	
	Tracking acceleration	8G(max), 1G=9.8m/s2	
Mechanical	Connector	USB	
	Cable length	6 ft (1.8 m)	
	Color	Jack Black	
Regulatory approvals	Compliant	UL, FCC, CE Mark, TUV GS, VCCI, BSMI, RCM, KCC, EAC	

HP Wired Desktop 320M Mouse				
Physical Characteristics	Keys	Left/right key		
	Dimensions(L x W x H)	4.09 x2.50 x 1.40 in (103.8x 63.4 x 35.5 mm)		
	Weight	0.16 lb(72g)		
Electrical	Operating voltage	5 VDC, +/-0.25V		
	Power consumption	100 mA Max		
	System interface	USB Port		
	ESD	Contact Discharge: 8 KV Air Discharge: 15 KV (Class B)		
	EMI - RFI	European Standard EN 55022: 2006+A1: 2007, Class B. FCC/CFR 47: Part 15 Class B		
Mechanical	Keycaps	0.3mm key travel		
	Key actuation	75±20g		
	Key life	1million cycles		
	Key structure type	Tact Switch		



Ergonomic compliance	TUVGS				
Approvals	CB, CE, FCC, cULus, ICES, EAC, NOM-NYCE SCT, RCM, VCCI, KC, BSMI				
Approvale	Drop (in box)	N/A	CI VC DCMI		
	Drop (out of box) 76cm on carpet, six-drop sequence				
	Drop (out of bow)	500 - 0.0039		0.0039	
		350-500	-6	- 0.0030	
	Tion operating vibration	137-350	0	0.008	
	Non-operating vibration	100-137	-6	-	
		5.100	0	0.015	
		Frequency (Hz)	Slope (dB/oct)	PSD (g²/Hz)	
		Total Test time: 10 minutes		5	
		500	- (~0.21G <sub>nms</sub> )	0.00005	
	Operating vibration	350-500	-6	- 0.0000	
		5-350	0	0.0001	
		Frequency (Hz)	Slope (dB/oct)	PSD (g²/Hz)	
	Non-operating shock	i. Half-Sine Shock – End-Use Handling, Non-Operational Sample size: 5pcs. Condition: Sample power off. Axis: X, Y, Z axis (all 6 faces) – sample normal mode of operation. Number of shocks: 1 shock/face. Pulse duration: < 3 ms Velocity change: 50lps (inch-per-second)- 65lps desired.  ii. Trapezoidal Shock- Transportation Environment, Non-Operational Sample size: 5pcs. Condition: Sample power off. Orientation: All six faces: Front, Rear, Left, Right, Bottom, and Top. Configuration: As intended for shipment Number of shocks: 1 shock/face. Minimum faired acceleration: 30G's. Test also at 40 and 50G's to find margin. Velocity change: 266lps (inch-per-second) for product mass (m) 20 <m<40lbs.< th=""></m<40lbs.<>			
	Operating shock	N/A			
	Non-operating humidity		10% to 90% (non-condensing at ambient)		
	Operating humidity	N/A			
	Non-operating temperature		30° C to 95° C		
Liivii Viiiii Eiitat	Operating temperature	10° to 90° C			
Environmental	Operating temperature	10° to 00° C			



HP USB Business Slim Wire	ed SmartCard CCID Keyboard			
Physical Characteristics	Keys	104, 105, 109 layout (depending upon country)		
	Dimensions (L x W x H)	17.34 x 5.68 x 0.78in (440.6 x 144.5 x 1.98 cm)		
	Weight	1.32 lb (598ց)		
Electrical	Operating voltage	5 VDC, +/-5%		
	Power consumption	100mA (All LED on)		
	System interface	USB Type A plug connector		
	ESD	Contact Discharge: 8 KV Air Discharge: 12.5 KV		
	EMI - RFI	Conforms to FCC rules for a Class B computing device		
Mechanical	Keycaps	Low-profile design		
	Switch actuation	60±10g nominal peak force with tactile feedback		
	Switch life	10 million keystrokes (Life tester)		
	Switch type	Contamination-resistant switch membrane		
	Key-leveling mechanisms	For all double-wide and greater-length keys		
	Cable length	6 ft (1.8 m)		
Environmental	Acoustics	43-dBA maximum sound pressure level		
	Operating temperature	50° to 122° F (10° to 50° C)		
	Non-operating temperature	-22° to 140° F (-30° to 60° C)		
	Operating humidity	10% to 90% (non-condensing at ambient)		
	Non-operating humidity	20% to 80% (non-condensing at ambient)		
	Operating shock	40 g, six surfaces		
	Non-operating shock	80 g, six surfaces		
	Operating vibration	2-g peak acceleration		
	Non-operating vibration	4-g peak acceleration		
	Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence		
	Drop (in box)	30 in (76.2 cm) on concrete, 16-drop sequence		
Approvals	CE Marking, TUV, EAC, FCC, cUL	CE Marking, TUV, EAC, FCC, cULus/CSAus, ICES, RCM, VCCI, KCC, BSMI		
Ergonomic compliance	ISO 9241-4, TUVGS			



HP 125 (Antimicrobial) Wi	red Keyboard (China only)			
Physical Characteristics	Keys	104/105/107/109layout (depending upon country)		
	Dimensions (L x W x H)	436 x 138 x24.7 mm		
	Weight	471g		
Electrical	Operating voltage	5V +- 5%		
	Power consumption	50mA		
	System interface	USB Type A plug connector		
	ESD	Contact Discharge: 8 KV Air Discharge: 12.5 KV		
	EMI - RFI	Conforms to FCC rules for a Class B computing device		
Mechanical	Keycaps	Low-profile design		
	Switch actuation	55±10g nominal peak force with tactile feedback		
	Switch life	10 million keystrokes (Life tester)		
	Switch type	Contamination-resistant switch membrane		
	Key-leveling mechanisms	For all double-wide and greater-length keys		
	Cable length	1.8 m		
Environmental	Acoustics	43-dBA maximum sound pressure level		
	Operating temperature	50° to 122° F (10° to 50° C)		
	Non-operating temperature	-4° to 149° F (-20° to 65° C)		
	Operating humidity	10% to 95% (non-condensing at ambient)		
	Non-operating humidity	0% to 95% (non-condensing at ambient)		
	Operating shock	40 g, six surfaces		
	Non-operating shock	80 g, six surfaces		
	Operating vibration	2-g peak acceleration		
	Non-operating vibration	4-g peak acceleration		
	Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence		
	Drop (in box)	30 in (76.2 cm) on concrete, 16-drop sequence		
Approvals	UL, cUL, FCC, CE, TUV GS, VCCI,	UL, cUL, FCC, CE, TUV GS, VCCI, BSMI, RCM, KCC, USB-IF, WHQL, EN/IEC 60601-1		
Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and	ANSI HFS 100, ISO 9241-4, and TUVGS		



HP 655 wireless Keyboard	l		
Physical Characteristics	Keys	104, 105, 107,109 layouts	
	Dimensions (L x W x H)	16.86 x 4.55 x 0.71 in (428.22 x 115.47 x 18.06 mm)	
	Weight	0.96 lb (435g)	
Electrical	Operating voltage	3 VDC, +/-5%	
	Power consumption	20 mA Max (All LED on)	
	System interface	2.4GHz Wireless	
	ESD	Contact Discharge: 8 KV Air Discharge: 15 KV	
	EMI - RFI	Conforms to FCC rules for a Class B computing device	
Mechanical	Keycaps	Plunger, 2.0 mm key travel	
	Key actuation	60±10g nominal peak force with tactile feedback	
	Key life	10 million keystrokes (Life tester)	
	Key structure type	Rubber dome & Membrane	
	Key-leveling mechanisms	For all double-wide and greater-length keys	
Environmental	Operating temperature	50° to 122° F (10° to 50° C)	
	Non-operating temperature	-22° to 140° F (-30° to 60° C)	
	Operating humidity	10% to 90% (non-condensing at ambient)	
	Non-operating humidity	20% to 80% (non-condensing at ambient)	
	Operating shock	40 g, six surfaces	
	Non-operating shock	80 g, six surfaces	
	Operating vibration	2-g peak acceleration	
	Non-operating vibration	4-g peak acceleration	
	Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence	
	Drop (in box)	30 in (76.2 cm) on concrete, 16-drop sequence	
Approvals	CB, CE, FCC, cULus, ICES, IC, I TRC, TRA, CASA, UA, EAC, CNC, ANATEL, NOM-NYCE SCT, IFETEL, MPTC, RCM, BIS, PosTel, VCCI, TELEC, KC, MCMC, IDA, BSMI, NCC, DWLF&M, TP-BY, MOC		
Ergonomic compliance	TUVGS		



Technical Specifications – Audio

### **AUDIO/MULTIMEDIA**

**Type** Integrated

**HD Stereo Codec** Realtek ALC3252

**Audio I/O Ports** Front: Headset connector supports a CTIA and OMTP style headset and is retaskable as a Line-in,

Line-out, Microphone-in or Headphone-out port

Internal Speaker Amplifier 2W class D mono amplifier for the internal speaker only. External speakers must be powered

externally

**Multi-streaming Capable** Playback multi-streaming allows independent audio

streams to be sent to/from the front jacks and integrated speaker.

Sampling 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

Wavetable Syntheses Yes - Uses OS soft wavetable

Analog Audio Yes

# of Channels on Line-Out Stereo (Left & Right channels)

Internal Speaker Yes



Technical Specifications – Power

### **POWER SUPPLY**

Operating Voltage Range90Vac~264VacRated Voltage Range100Vac~240VacRated Line Frequency50Hz~60HzOperating Line Frequency47Hz~63HzRated Input Current with65W≦ 1.6A

**Energy Efficient\* Power** Average efficiency 88% at 115V **Supply** Average efficiency 89% at 230V

DC Output +19.5V

Current Leakage (NFPA 99:

2102)

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 264 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.

Power cord length 6.0 ft. (1.83 m)

**Dimensions** 90 x 51 x 28.5mm & 102 x 55 x 30mm



Technical Specifications – Weights and Dimensions

### WEIGHT AND DIMENSIONS<sup>1</sup>

**System** 

**Dimensions** 6.97 x 6.89 x 1.35 in 177 x 175 x 34.2 mm

Weight<sup>2</sup> 2.74 lbs

1.25 kg

**Volume** 64 cu in

1.05 L

Packaging dimensions and weight

**Dimensions** 19.57 x 5.04 x 8.78 in

497 x 128 x 223 mm

MPP/EPE: 19.61 x 9.25 x 5.20 in

498 x 235 x 132 mm

**Weight** 7.36 lbs

3.34 kg

**MPP/EPE:** 6.4 lbs 2.9 kg

**Palletization and Container** 

Pallet Profile 1 unit/carton

18 cartons/layer

5~6 layers per pallet max depending on details of air freight 90~108 units per pallet depending on details of air freight

**MPP/EPE:** 1 unit/carton 10 cartons/layer

10~19 layers per pallet max depending on details of ground/sea freight 100~190 units per pallet depending on details of ground/sea freight

Pallet Size Loaded 45.354 x 39.13 x 57.80 in

1152 x 994 x 1468 mm

**MPP/EPE:** 46.26 x 39.21 x 103.74 in 1175 x 996 x 2635 mm

- 1. Packaging material used will vary by country
- 2. Configured with 1 SATA Drive



After-Market Options (availability may vary by region)

### **AFTER MARKET OPTIONS**

<u>Туре</u>	<u>Description</u>	Part Number
Graphics Solutions	HP HDMI Standard Cable Kit	T6F94AA
	HP DisplayPort™ To HDMI True 4k Adapter	2JA63AA
	HP DisplayPort™ Cable Kit	VN567AA
	HP DisplayPort™ To VGA Adapter	AS615AA
	HP DisplayPort™ To DVI-D Adapter	FH973AA
	HP USB to Serial Adapter	J7B60AA
	HP HDMI to VGA Adapter	H4F02AA
Desktop Mini Accessories	HP Desktop Mini 2.5" SATA Drive Bay kit v2	13L70AA
	HP Desktop Mini LockBox V2	3EJ57AA
	HP Desktop Mini DVD-Writer ODD Expansion Module	K9Q83AA
	HP Desktop Mini Security/Dual VESA Sleeve v3	13L67AA
	HP Desktop Mini Security/Dual VESA Sleeve v3 With Power Supply Holder	13L68AA
	HP B300 PC Mounting Bracket with Power Supply Holder	7DB37AA
	HP Desktop Mini Vertical Chassis Stand	G1K23AA
	HP Integrated Work Center Stand 5	G1V61AA
Data Storage Drives	HP PCIe NVME Gen4 TLC 512GB SSD M.2 Drive	406L8AA
	HP PCIe NVME Gen4 TLC 1TB SSD M.2 Drive	406L7AA
Input Devices	HP Wired Desktop 320K Keyboard	9SR37AA
	HP USB Business Slim SmartCard CCID Keyboard	Z9H48AA
	HP Wired Desktop 320MK Mouse and Keyboard	9SR36AA
	HP Wired Desktop 320M Mouse	9VA80AA
	HP 655 Wireless Keyboard and Mouse Combo	4R009AA
	HP 125 Wired Keyboard	266C9AA
	HP 125 Wired Mouse	265A9AA
	HP 128 Laser Wired Mouse	265D9AA
	HP 225 Wired Mouse and Keyboard Combo	286J4AA
	HP 225 Antimicrobial Wired Mouse and Keyboard Combo (China Only)	286K3AA
	HP Mouse Pad	AT485AA



After-Market Options (availability may vary by region)

Memory	HP 4GB DDR4-3200 SODIMM	13L79AA
	HP 8GB DDR4-3200 SODIMM	13L77AA
	HP 16GB DDR4-3200 SODIMM	13L75AA
	HP 32GB DDR4-3200 SODIMM	13L73AA
Multimedia Devices	HP S101 Speaker Bar	
	HP Stereo 3.5mm Headset G2	428K7AA
	HP Stereo USB Headset G2	428K6AA
Security Devices	HP Keyed Cable Lock 10mm	T1A62AA
	HP Master Keyed Cable Lock 10mm	T1A63AA
Stands and Mounting	HP B560 PC Mounting Bracket	763U8AA
Accessories	HP B200 PC Mounting Bracket	762T5AA
	HP B250 PC Mounting Bracket	8RA46AA
	HP B300 PC Mounting Bracket	2DW53AA
	HP Quick Release Bracket 2	6KD15AA



### Change Log

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Date of change:	Version History:		Description of change:
August 29, 2023	From v1 to v2	Correction	Packaging Weight corrected
October 30, 2023	From v2 to v3	Update	Security section updated
November 1, 2023	From v3 to v4	Removal	"Shipped with Windows 10" removed
May 3, 2024	From v4 to v5	Removal	HP Desktop Mini Port Cover v3 from AMO section
	From v5 to v6		
	From v6 to v7		





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