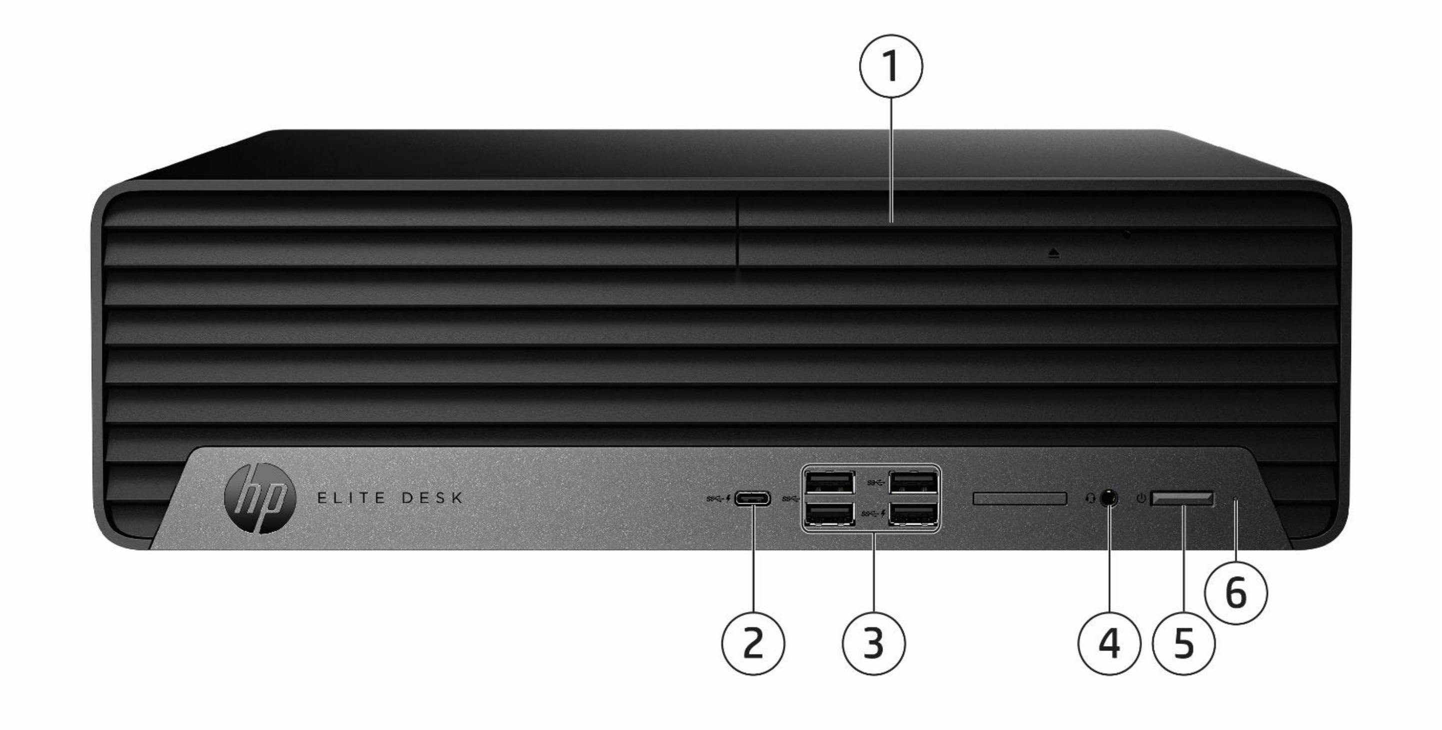
Overview

HP Elite SFF 805 G9 Desktop PC



1. Slim optical drive (optional)
2. Type-C® SuperSpeed USB 10Gbps signaling rate port (charge support up to 5V/3A)
3. (4) Type A SuperSpeed USB 10Gbps signaling rate port (1 with 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

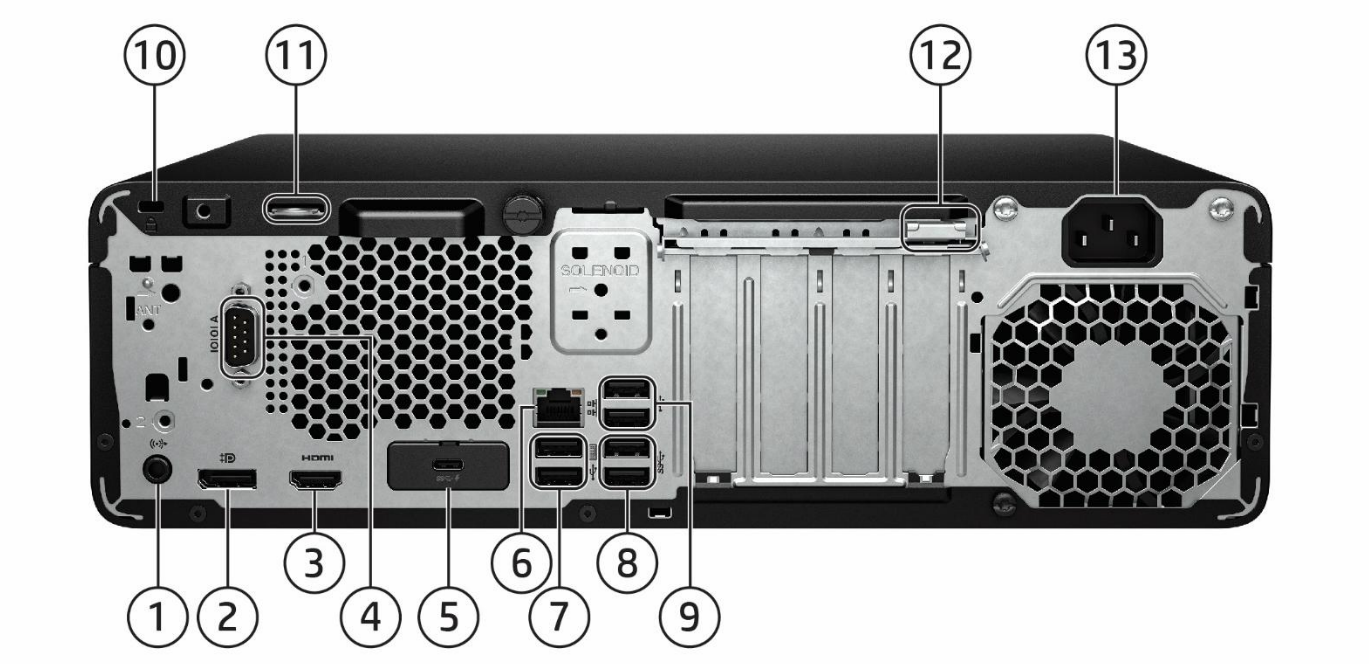
(1) PCI Express Gen4 x16[1]

(1) PCI Express x1

(3) M.2 (1 as M.2 2230 socket for WLAN/Bluetooth® and 2 as M.2 2280 socket for storage)

1. Only discrete graphics cards can be inserted.

HP Elite SFF 805 G9 Desktop PC



1. Audio line-out jack (supports line-in re-tasking)
2. Dual-Mode DisplayPort™ 1.4a (DP++)
3. HDMI port 2.1
4. Optional Serial port (shown here installed)
5. Optional port, choice of (shown here USB-C® installed):
    - DisplayPort™ 1.4a
    - HDMI 2.1
    - VGA
    - Serial
    - Dual Type-A SuperSpeed USB 5Gbps signaling rate port
    - USB-C® SuperSpeed 10Gbps signaling rate port (Alt Mode DP 1.4 with 15W output)
6. RJ45 network connector
7. (2) Type A Hi-Speed USB 480 Mbps signaling rate port with wake from S4/S5
8. (2) Type A SuperSpeed USB 5Gbps signaling rate port t
9. (2) Type A Hi-Speed USB 480 Mbps signaling rate port
10. Standard cable lock slot
11. Padlock loop
12. Integrated keyboard/mouse wire hoop
13. Power cord connector

Not shown

Optional Ports

PS/2 & serial port card (connected to the mainboard via a flyer cable)[1]
Parallel port[1]
External Antenna slot[2]
Optional 4 Serial Port PCIe Card (1 to 4 serial port dongle)[3]

Bays

(1) 3.5” internal storage drive bay

(1) Slim optical drive bay (ODD)

1. Each of the legacy port options would occupy one rear slot.
2. Occupy one rear expansion slot.
3. Available for selected countries only.

PRODUCT NAME

HP Elite SFF 805 G9 Desktop PC

OPERATING SYSTEM

Preinstalled	Windows 11 Pro[1] Windows 11 Pro Education[1] Windows 11 Home - HP recommends Windows 11 Pro for business[1] Windows 11 Home Single Language - HP recommends Windows 11 Pro for business[1] Windows 11 Pro (Windows 11 Enterprise or Windows 10 Enterprise available with a Volume Licensing Agreement)[1] 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.

CHIPSET

AMD PRO 665

PROCESSORS[1,2]

AMD Ryzen 8000 Series Desktop Processors with Pro Technology and RDNA 3 integrated Graphics
AMD Ryzen 7 PRO 8700G 8 Core, 16 Threads, 24MB Cache, 5.1GHz Boost/4.2GHz Base Frequency (16 TOPs NPU available)
AMD Ryzen 5 PRO 8600G 6 Core, 12 Threads, 22MB Cache, 5.0GHz Boost/4.3GHz Base Frequency (16 TOPs NPU available)
AMD Ryzen 5 PRO 8500G 6 Core, 12 Threads, 22MB Cache, 5.0GHz Boost/3.5GHz Base Frequency
AMD Ryzen 3 PRO 8300G 4 Core, 8 Threads, 12MB Cache, 4.9GHz Boost/3.4GHz Base Frequency

AMD Ryzen 8000 Series Desktop Processors with RDNA 3 integrated Graphics
AMD Ryzen 7 8700G 8 Core, 16 Threads, 24MB Cache, 5.1GHz Boost/4.2GHz Base Frequency (16 TOPs NPU available)
AMD Ryzen 5 8600G 6 Core, 12 Threads, 22MB Cache, 5.0GHz Boost/4.3GHz Base Frequency (16 TOPs NPU available)
AMD Ryzen 5 8500G 6 Core, 12 Threads, 22MB Cache, 5.0GHz Boost/3.5GHz Base Frequency
AMD Ryzen 3 8300G 4 Core, 8 Threads, 12MB Cache, 4.9GHz Boost/3.4GHz Base Frequency

1. Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. AMD ’s numbering is not a measurement of clock speed.
2.NPU available on select AMD Ryzen™ 8000 series processors. Must be configured at time of purchase. Features and software that require a NPU may require software purchase, subscription or enablement by a software or platform provider, and third-party software may have specific configuration or compatibility requirements. Performance varies by use, configuration, and other factors.

GRAPHICS

Integrated Radeon Graphics

AMD Radeon™ 780M (Integrated in R7/R7Pro - 8700G)
AMD Radeon™ 760M ((Integrated in R5/R5Pro - 8600G)
AMD Radeon™ 740M (Integrated in R5/R5Pro - 8500G & R3/R3Pro - 8300G)

Optional Discrete Graphics Solutions

NVIDIA® A400 4GB GDDR6 Graphics card
NVIDIA® T400 4GB GDDR6 Graphics card
AMD Radeon™ RX 6300 2GB GDDR6 Graphics card

Adapters and Cables

HP DisplayPort™ Cable
HP DisplayPort™ to VGA Adapter
HP USB to Serial Port Adapter
HP HDMI Standard Cable Kit (HDMI)

Features

STORAGE

NOTE: Starting November 1, 2023, HP PCs with Windows require Windows to be installed on SSD.
HDD can only be configured as additional data drives and not as the boot drive.
NOTE: SATA RAID and NVME RAID can be supported simultaneously when customers configure on their own.

3.5 inch SATA Hard Disk Drives (HDD)

1TB* 7200RPM SATA HDD
2TB* 7200RPM SATA HDD

M.2 PCIe NVMe Solid State Drives (SSD)[1]

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
2TB M.2 2280 PCIe NVMe Three Layer Cell SSD
512GB M.2 2280 PCIe NVMe Self Encrypted OPAL2 Three Layer Cell SSD[2]
256GB M.2 2280 PCIe OPAL2 NVMe SSD

1. 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.
2. Storage DriveLock does not work with Self Encrypting or Optane based storage.

Optical Disc Drives

HP 9.5mm Slim DVD-ROM Drive[1]
HP 9.5mm Slim DVD Writer Drive[1]

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.

MEMORY

Memory Type

DDR5-5600 (Transfer rates up to 5200 MT/s), Max 128GB, 4 UDIMM

***NOTE:** Memory modules support data transfer rates up to 5600 MT/s; system speed up to 5200 MT/s, following AMDs design guideline. Actual data rate is determined by the system configuration.
***NOTE:** System architecture design is 2 DIMMS per channel and the population starts from the furthest memory slot from the processor.
***NOTE:** Symmetric configurations are required for the 2 DIMMs within the same memory channel.
***NOTE:** To achieve optimal memory speed, HP strongly recommends using identical memory modules (e.g., same capacity, same part number and from the same supplier) within the same memory channel
***NOTE:** All memory slots are customer accessible / upgradeable.

Memory Configuration

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

NETWORKING/COMMUNICATIONS

Ethernet (RJ-45)

Ethernet RTK RTL8111EPP 1GbE
Intel® I226-T1 2.5GbE Ethernet Network Adapter

Wireless

Mediatek MT7925 Wi-Fi 7 +Bluetooth® 5.4 wireless card AIM-T WW WLAN External Antenna[1]
Mediatek RZ616 Wi-Fi 6E +Bluetooth® 5.3 wireless card AIM-T WW WLAN External Antenna[2]
Realtek RTL8852BE 802.11ax 2x2 Wi-Fi 6 + Bluetooth® 5.3 Wireless Card[3]

1. Wi-Fi 7: Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires compatible Windows 11 OS, compatible processor, and separately purchased Wi-Fi 7 router to support backwards compatibility with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported. The specification for 802.11BE is a draft specification and is not final. If the final specification differs from the draft specification, it may affect the ability of the device to communicate with other 802.11BE devices.
2. The products are compatible with 6GHz and other routers, sold separately, which have capability to operate in 2.4GHz and 5GHz, in compliance with Wi-Fi 6 and prior 802.11 specs. The actual throughput depends network condition and router configuration. Internet service required and public wireless access points are limited.
3. 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.

NOTE: WiFi-6E might be restricted by local regulation and only available in countries where Wi-Fi 6E is supported. HP will enable countries in the future by upgrading BIOS in default as the technology becomes available in more regions.

KEYBOARDS AND POINTING DEVICES

Keyboards

HP Wired Desktop 320K Keyboard
HP USB Business Slim Wired SmartCard CCID Keyboard
HP 125 Wired Keyboard
HP 125 AntiMicrobial Wired Keyboard (China Only)

Keyboard and Mouse Combo

HP 655 Wireless Keyboard and Mouse Combo

Mouse

HP Wired 320M Mouse
HP Wired 125 Mouse
HP Wired 128 Laser Mouse
HP Wired 125 Antimicrobial Mouse (China only)

SECURITY

TPM 2.0 endpoint security controller (Infineon SLB9672/Nuvoton NPCT760HABYX). Common Criteria EAL4+ Certified. FIPS 140-2 Level 2 Certified.
Support for chassis cable lock devices
Support for chassis padlocks devices
SATA port disablement (via BIOS)
Serial, USB enable / disable (via BIOS)
Serial, parallel, USB enable / disable (via BIOS)
Optional USB Port Disable at factory (user configurable via BIOS)
Removable media write/boot control
Power-on password (via BIOS)
Setup password (via BIOS)
Intrusion Sensor (optional)

PORTS

I/O Ports – Internal Ports

PCI Express 4.0 x16	1
PCI Express 3.0 x16 (wired as x4)	0
PCI Express 3.0 x1	1
SATA 3.0 (6Gbps signaling rate) port.	2
M.2 PCIe	(1) M.2 PCIe 3 x1 2230 (for WLAN) (2) M.2 PCIe 4 x4 2280 (for storage)

NOTE: PCI slots for SFF are low profile.

Standard User Accessible Ports

Type-A Hi-Speed USB 480Mbps signaling rate port	4 (rear)
Type-A SuperSpeed USB 5 Gbps signaling rate port	2 (rear)
Type-A SuperSpeed USB 10 Gbps signaling rate port	4 (front)
Type-C® SuperSpeed USB 10Gbps signaling rate port (USB-C® option has alt mode DisplayPort™ 1.4 and 15W output)	
Type-C® SuperSpeed USB 10Gbps signaling rate port	1 (front)
Video[1]	1 DisplayPort™ 1.4a 1 HDMI 2.1
Audio	1 Universal Audio Jack with CTIA and OMPT headset support (front); 1 Audio-Line-in/Line out (rear)

1. For actual resolution supported, refer to the Graphics section of this document.

(1) Flexible Port 1, choice of one of the following:

Dual Type-A SuperSpeed USB 5 Gbps signaling rate port	1
Type-C® SuperSpeed USB 10Gbps signaling rate port	1
Video	1 DisplayPort™ 1.4a or HDMI 2.1 or VGA
Serial	1

Bays

Slim Optical Disc Drive (ODD or removable storage, optional)	1
3.5" Internal Storage Drive	1

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 Easy Clean[1]
HP PC Hardware Diagnostics UEFI
HP Desktop Support Utilities
HP Privacy Settings
HP Setup Integrated OOBE
HP Support Assistant[2]
myHP
HP Notifications
HP Connection Optimizer
HP Smart Support[3]
HP Services Scan[4]
Buy Microsoft Office[5]
Miro[6]

Manageability Features
HP Connect[7] HP Image Assistant (download)
HP Manageability Integration Kit (download)[8]
HP Client Management Script Library (download)
HP Patch Assistant (download)[9]
HP Driver Packs (download)
HP Cloud Recovery[10]
HP Client Catalog (download)

Security Features
HP Wolf Security for Business[11] includes:
HP Sure Click[12]
HP Sure Sense[13]
HP Sure Run[14]
HP Sure Recover[15]
HP Sure Start[16]
HP Sure Admin[17]
HP Tamper lock[18]

BIOS
HP BIOSphere[19]
HP Secure Erase[20]
HP DriveLock & Automatic DriveLock
BIOS Update via Network
Absolute Persistence Module[21]
Power-On Authentication[22]
Microsoft 3rd Party UEFI CA Enable
UEFI Self Certification Level: 2.9

1. HP Easy Clean requires Windows 10 RS3 and will disable the keyboard, touchscreen, and clickpad only. Ports are not disabled. See user guide for cleaning instructions.
2. HP Support Assistant is available on Windows. For more information, please visit http://www.support.hp.com/help/hp-support-assistant.
3. 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.
4. HP Services Scan 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.
5. Microsoft 365 sold separately and requires Internet access for activation.
6. HP customers qualify for a 90 day trail of Miro, this offer ends September 2025. Complete terms and conditions are provided by Miro when accepting the offer.
7. HP Connect for Microsoft Endpoint Manager is available from the Azure Market Place for HP Pro, Elite, Z and Point-of-Sale PCs managed with Microsoft Endpoint Manager. Subscription to Microsoft Endpoint Manager required and sold separately. Network connection required.
8. HP Manageability Integration Kit can be downloaded from http://www.hp.com/go/clientmanagement.
9. HP Patch Assistant available on select HP PCs with the HP Manageability Kit that are managed through Microsoft System Center Configuration Manager. HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html.
10. 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.
11. HP Wolf Security for Business requires Windows 10 or 11 or higher, includes various HP security features and is available on HP Pro, Elite, RPOS and Workstation products. See product details for included security features.
12. HP Sure Click requires Windows 10 Pro or higher or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.
13. HP Sure Sense is available on select HP PCs with Windows 10 Pro, Windows 10 Enterprise, Windows 11 Pro, or Windows 11 Enterprise OS.
14. HP Sure Run is available on select HP PCs and requires Windows 10 and higher.
15. HP Sure Recover is available on select HP PCs and requires Windows 10 or 11 and an open network connection. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data. HP Sure Recover Gen6 with Embedded Reimaging is an optional feature on select HP PCs which requires Windows 10 or 11 must be configured at purchase. You must back up important files, data, photos, videos, etc. before use to avoid loss of data.
16. HP Sure Start is available on select HP PCs and requires Windows 10 and higher
17. HP Sure Admin requires HP G8 or newer platforms, Windows 10 or higher, HP BIOS, HP Manageability Kit or KMS Service from http://www.hp.com/go/clientmanagement and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store
18. HP Tamper Lock can be Enabled/disabled by customers or IT administrator with administrator authority.
19. HP BIOSphere features may vary depending on the platform and configuration.
20. HP Secure Erase 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™.
21. Absolute firmware module is shipped turned off and can only be activated with the purchase a license subscription and full activation of the software agent. License subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. Certain conditions apply. For full details visit: https://www.absolute.com/about/legal/agreements/absolute
22. Ensures that only authorized users can start up the PC or access the BIOS by requiring user authentication using a password prior to system start-up.

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 http://www.epeat.net for more information.
Low halogen (chassis, all internal components and modules)[1]
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.

UNIT ENVIRONMENT AND OPERATING CONDITIONS

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 re-circulated 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)[2] Non-operating: -22° to 149° F (-30° to 65° C)
Relative Humidity	Operating: 10% to 90% (non-condensing at ambient) Non-operating: 5% to 95% (non-condensing at ambient)
Maximum Altitude (unpressurized)	Operating: 5000m Non-operating: 50000ft (15240 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.

ENVIRONMENTAL & INDUSTRY

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® Climate+ registered in the United States. See http://www.epeat.net for registration status in your country*. • TCO Certified • China Energy Conservation Program (CECP) • China State Environmental Protection Administration (SEPA) • Taiwan Green Mark • Korea Eco-label • Japan PC Green label • Commission Regulation (EC) No 617/2013 (ErP Lot 3) **NOTE***: Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit http://www.epeat.net for more information.		
Sustainable Impact Specifications	• Product Carbon Footprint • Ocean-bound plastic in CPU Fan, Speaker[1] • 58.6% post-consumer recycled plastic[2] • 9.9% recycled metal • Low halogen • Outside Box and corrugated cushions are 100% sustainably sourced and recyclable[3] • Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable[4] • Bulk packaging available[5]		
System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a “Typically Configured Desktop.		
Energy Consumption (in accordance with US ENERGY STAR® test method)	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 50Hz**
Normal Operation (Short idle)	8.39 W	8.44 W	8.38 W
Normal Operation (Long idle)	7.01 W	7.01 W	7.00 W
Sleep	1.60 W	1.60 W	1.60 W
Off	0.69 W	0.69 W	0.69 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)	28.60 BTU/hr	28.78 BTU/hr	28.59 BTU/hr
Normal Operation (Long idle)	23.89 BTU/hr	23.90 BTU/hr	23.89 BTU/hr
Sleep	5.47 BTU/hr	5.47 BTU/hr	5.47 BTU/hr
Off	2.34 BTU/hr	2.34 BTU/hr	2.34 BTU/hr

	NOTE: 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	3.0	21.2
Fixed Disk–Random writes	3.4	22.8
Optical Drive – Sequential reads	3.2	23.4

Longevity and Upgrading	This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include: 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 Climate+ level, see http://www.epeat.net • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product is 92.9% recycle-able when properly disposed of at end of life.

Packaging Materials	**External:**	PAPER/Corrugated	1158 g
		PAPER/Molded Pulp	390 g
	Internal:	PLASTIC/Polyethylene low density - LDPE	26 g
	The plastic packaging material contains at least 0.0% recycled content.		
	The corrugated paper packaging materials contains at least 35.0% 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 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): • Asbestos

Features

	• 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 Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • 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 Inc. 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 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. Global Citizenship Report https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c06040843 Eco-label certifications HP Sustainable Impact & Documents & Reports | HP® Official Site ISO 14001 certificates: https://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c04777932

Features

footnotes	1. Percentage of ocean-bound plastic contained in each component varies by product. 2. Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard. 3. 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers. 4. Fiber cushions made from 100% recycled wood fiber and organic materials. 5. Plastic cushions are made from >90% recycled plastic.

SERVICE AND SUPPORT

On-site Warranty[1]: One-year (1-1-1) limited warranty delivers one year of on-site, next business day[2] service for parts and labor support. 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.[3]

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. 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.

CERTIFICATION AND COMPLIANCE

Energy Efficiency Compliance

ENERGY STAR® certified. EPEAT® registered where applicable. EPEAT ® registration varies by country. See http://www.epeat.net for registration status by country. According to IEEE 1680.1-2018.

PROCESSORS

AMD® Ryzen™ 8000 Series Processors
Architecture: “Zen 4”
Process Node: 4nm
AMD® Integrated Manageability Technology (AIM-T) – Dependent on WLAN vendor
KVM Support
Memory Access Protection
AMD® Memory Guard – PRO SKU only.

Technical Specifications – Graphics

GRAPHICS

AMD® HD Graphics (integrated)

DisplayPort™	Multimode capable; supports HDCP, Display Port Audio), Onboard support HBR2 link rates/option DP support to HBR2 and Multi-Stream Technology for a maximum of 3-displays connected to any output controlled by AMD® Graphics
HDMI (onboard / optional)	Supports HDMI 2.1 features (onboard HDMI support HDMI 2.1 FRL8; Option HDMI support HDMI 2.1 TMDS) Supports HDCP 2.3 (Support HDCP 1.4/2.3) Supports audio over HDMI
VGA (optional)	VGA output
USB-C® DP Alt Mode (optional)	DisplayPort™ over the optional USB-C® module (Support DP1.4 HBR3)
Memory	
Maximum Color Depth	
Graphics/Video API Support	VP9 H.264 H.265 decode with 8bit and 10bit depth and up to 4K@24, 30 and 60 FPS video at Vmin. 32b HDR Format (999e5). DX12.
Max. Resolution (VGA Option)	2048 x 1536@60Hz
Max. Resolution (Onboard HDMI)	FRL8: 7680 x4320@59Hz
Max. Resolution (Option HDMI)	TMDS: 4096 x2160 @60Hz
Max. Resolution (On board DP)	HBR2: 3840 x2160 @60Hz 24bpp
Max. Resolution (Option DP)	HBR3: 5120 x2880 @60Hz 24bpp
Max. Resolution (Option Type C)	DP HBR3: 5120 x2880 @60Hz 24bpp

NVIDIA® A400 4GB GDDR6 Graphics card

GPU Clocks	Base: 1417 Mhz Boost: 1762 Mhz
Memory size / Bus Width	4GB / 64 bits
Graphic Memory Type / Clock	4GB GDDR6/6001MHz
Max. Resolution (DP1.4a)	7680x4320 x24 bpp @120Hz/60Hz
Multi Display Support	4 displays
HDCP Compliance	Yes
Rear I/O connectors (bracket)	mDPx4
Cooling (active/passive)	Active
Total power consumption (W)	50W
Form Factor	H: 2.7"(68.58mm) x L: 6.4"(162.56mm), single slot

NVIDIA® T400 4GB Graphics Card

Engine Clock	2100 MHz
Memory Clock	5001 MHz
Memory Size (width)	4GB (64-bit)
Memory Type	512M x 16 GDDR6
Max. Resolution (DP)	7680x4320@120Hz
Multi Display Support	4 displays
HDCP Compliance	Yes
Rear I/O connectors (bracket)	mDPx3
Cooling (active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption (W)	30W
PCB form-factor with bracket	LP PCB with LP bracket

AMD Radeon™ RX 6300 2GB GDDR6 Graphics card

Engine Clock	Base: 1512 Mhz Boost: 2040 Mhz
Memory Size / Width	2GB / 32bit
Graphic Memory Type / Clock	512Mx32 GDDR6 ,1 pcs / 16Gbps
Max. Resolution (HDMI)	7680x4320@60Hz
Max. Resolution (DP)	7680x4320@120Hz
Multi Display Support	2 displays
HDCP Compliance	Yes
Rear I/O connectors (bracket)	HDMIx1+ DPx1 (LP)
Cooling (active/passive)	Active
Total power consumption (W)	57W
Form-factor	X:160.2mm/Y:68.9mm/Z: 22.6mm PCB with single slot

STORAGE

NOTE: Starting November 1, 2023, HP PCs with Windows require Windows to be installed on SSD.
HDD can only be configured as additional data drives and not as the boot drive.

1TB 7200RPM 3.5in SATA HDD

Capacity	1TB
Rotational Speed	7,200 rpm
Interface	SATA 6 Gb/s
Buffer Size	64 MB
Logical Blocks	1,953,525,168
Seek Time	11 ms (Average)
Height	1 in/2.54 cm
Width (nominal)	Media diameter: 3.5 in/8.89 cm Physical size: 4 in/10.2 cm
Operating Temperature	41° to 131° F (5° to 55° C)

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB (for Windows) is reserved for system recovery software.

2TB 7200RPM 3.5in SATA HDD

Capacity	2TB
Rotational Speed	7,200 rpm
Interface	SATA 6 Gb/s
Buffer Size	128 MB
Logical Blocks	3,907,050,336
Seek Time	11 ms (Average)
Height	1.028 in/26.11 mm
Width (nominal)	Media diameter: 3.5 in/88.9 mm Physical size: 4 in/102 mm
Operating Temperature	41° to 131° F (5° to 55° C)

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB (for Windows) is reserved for system recovery software.

256GB M.2 2280 PCIe NVMe SSD

Capacity	256GB
Interface	PCIe NVMe
Minimum Sequential Read	2000 MB/s ±10%
Minimum Sequential Write	900 MB/s ±10%
Logical Blocks	500,118,192
Features	TRIM; L1.2

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB (for Windows) is reserved for system recovery software.

Technical Specifications – Storage

512GB M.2 2280 PCIe NVMe SSD

Capacity	512GB
Interface	PCIe NVMe
Minimum Sequential Read	2200 MB/s ±10%
Minimum Sequential Write	1000 MB/s ±10%
Logical Blocks	1,000,215,216
Features	TRIM; L1.2

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB (for Windows) is reserved for system recovery software.

1TB M.2 2280 PCIe NVMe SSD

Capacity	1TB
Interface	PCIe NVMe
Minimum Sequential Read	2200 MB/s ±10%
Minimum Sequential Write	1600 MB/s ±10%
Logical Blocks	2,000,409,264
Features	TRIM; L1.2

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB (for Windows) is reserved for system recovery software.

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

Capacity	512GB
Interface	PCIE Gen4x4
Minimum Sequential Read	6400 MB/s ±10%
Minimum Sequential Write	3500 MB/s ±10%
Logical Blocks	1,000,215,216
Features	TRIM; L1.2; Pyrite 2.0

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB (for Windows) is reserved for system recovery software.

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

Capacity	1TB
Interface	PCIE Gen4x4
Minimum Sequential Read	6400 MB/s ±10%
Minimum Sequential Write	5000 MB/s ±10%
Logical Blocks	2,000,409,264
Features	TRIM; L1.2; Pyrite 2.0

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB (for Windows) is reserved for system recovery software.

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

Capacity	2TB
Interface	PCIE Gen4x4
Minimum Sequential Read	6400 MB/s ±10%
Minimum Sequential Write	5000 MB/s ±10%
Logical Blocks	4,000,797,360
Features	TRIM; L1.2; Pyrite 2.0

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB (for Windows) is reserved for system recovery software.

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

Capacity	256GB
Interface	PCIE NVMe
Minimum Sequential Read	2000 MB/s ±10%
Minimum Sequential Write	900 MB/s ±10%
Logical Blocks	500,118,192
Features	Pyrite 2.0; TRIM; L1.2

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB (for Windows) is reserved for system recovery software.

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

Capacity	512GB
Interface	PCIE Gen4x4
Minimum Sequential Read	6400 MB/s ±10%
Minimum Sequential Write	3500 MB/s ±10%
Logical Blocks	1,000,215,216
Features	TRIM; L1.2; TCG Opal 2.0

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB (for Windows) is reserved for system recovery software.

OPTICAL DISC DRIVES

HP 9.5mm Slim DVD-ROM Drive

Height	9.5 mm height
Orientation	Either horizontal or vertical
Interface type	SATA/ATAPI
Dimensions (W x H x D)	5.04 x 0.37 x 5.0 in (128 x 9.5 x 127 mm) without bezel
Weight (max)	Up to 0.31 lb (140g) without bezel
Read Speeds	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
Access time (typical reads, including settling)	Random: DVD-ROM: 170 ms (typical), CD-ROM: 170 ms (typical) Full stroke: DVD-ROM: 320 ms (typical), CD-ROM: 320 ms (typical)
Power	Source Slimline SATA DC power receptacle DC Power Requirement 5 VDC ± 5%-100 mV ripple p-p DC Current 5 VDC (< 1000 mA typical, 1600 mA maximum)
Environmental conditions (operating - non-condensing)	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 Writer Drive

Height	9.5 mm height
Orientation	Either horizontal or vertical
Interface type	SATA/ATAPI
Disc recording capacity	Up to 8.5 GB DL or 4.7 GB standard
Dimensions (W x H x D)	5.04 x 0.37 x 5.0 in (128 x 9.5 x 127 mm) without bezel
Weight (max)	0.31 lb (140 g)
Write Speeds	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
Read Speeds	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
Access time (typical reads, including settling)	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)
Power	Source Slimline SATA DC power receptacle DC Power Requirement 5 VDC ± 5%-100 mV ripple p-p DC Current 5 VDC (< 1000 mA typical, 1600 mA maximum)
Environmental conditions (operating - non-condensing)	Temperature 41° to 122° F (5° to 50° C) Relative Humidity 10% to 80% Maximum Wet Bulb Temperature 84° F (29° C)

NETWORKING AND COMMUNICATIONS

Realtek RTK8111EPP 10/100/1000 Integrated NIC	
Connector	RJ-45
System Interface	PCIe + SMBus + USB2
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 and 100 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) IEEE802.3 compatible Media Access Controller (MAC)
Performance	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload v1&v2 and Giant send offload Receiving Side Scaling Jumbo Frame 9K
Power consumption	Cable Disconnetion: 25mW 100Mbps Full Run: 450mW 1000Mbps Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW
Power Management	ACPI compliant – multiple power modes 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 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))
Security & Manageability	Support DASH 1.1 compliant/Software KVM ASF 2.0

Technical Specifications – Networking

Intel I226-T1 2.5GbE Ethernet Network Adapter	
Connector	RJ-45
System Interface	PCI (Intel proprietary) + SMBus
Data rates supported	1. 10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 2. 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 3. 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 802.3 clauses 40) 4. 2.5 Gbit/s operation(2.5GBASE-T; IEEE 802.3bz Clause 126) 5. Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 & 100 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 Disconnection: 25mW 100Mbps Full Run: 450mW 1000Mbp Full Run: 1000mW 2500Mbp Full Run: 4500mW 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

MediaTek MT7925 Wi-Fi7 + Bluetooth® 5.4 wireless card (802.11be 2x2)[1]	
Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11be IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n/ax/be • 2.402 – 2.482 GHz 802.11a/n/ac/ax/be • 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 • 802.11be: max 2.8Gbps (160MHz)
Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM, 4096QAM
Security	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • WPA3 certification • IEEE 802.11i • WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)

Technical Specifications – Networking

Roaming	IEEE 802.11 compliant roaming between access points
Output Power	• 802.11b, 1Mbps: +17dBm minimum • 802.11g, 6Mpbs: +16dBm minimum • 802.11a, 6Mbps: +17dBm minimum • 802.11n, MCS7(HT20): +14dBm minimum • 802.11n, MCS7(HT40): +13.5dBm minimum • 802.11ac MCS9(VHT20): 13.5dBm minimum • 802.11ac MCS9(VHT40): +13.5dBm minimum • 802.11ac MCS9(VHT80): +12.5dBm minimum • 802.11ac MCS9(VHT160): +10.5dBm minimum • 802.11ax MCS11(HE20) (6GHz): +11.5dBm minimum • 802.11ax MCS11(HE40) (6GHz): +7.5dBm minimum • 802.11ax MCS11(HE80) (6GHz): +7.5dBm minimum • 802.11ax MCS11(HE160) (6GHz): +7.5dBm minimum • 802.11be MCS13(EHT20) (6GHz): +11.5dBm • 802.11be MCS13(EHT40) (6GHz): +7.5dBm • 802.11be MCS13(EHT80) (6GHz): +7.5dBm • 802.11be MCS13(EHT160) (6GHz): +6.5dBm
Power Consumption	• Transmit mode 2.7 W • Receive mode 1.8 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	•802.11b, 1Mbps: -93.5dBm maximum •802.11b, 11Mbps: -85dBm maximum • 802.11a/g, 6Mbps: -90.5dBm maximum • 802.11a/g, 54Mbps: -72.5dBm maximum • 802.11n, MCS0(HT20): -90dBm maximum • 802.11n, MCS7(HT20): -71.5dBm maximum • 802.11n, MCS0(HT40): -88.5dBm maximum • 802.11n, MCS7(HT40): -68.5dBm maximum • 802.11ac, MCS9(VHT20): -88.5dBm maximum • 802.11ac, MCS9(VHT40): -65.5dBm maximum • 802.11ac, MCS9(VHT80): -60.5dBm maximum • 802.11ac, MCS9(VHT160): -58.5dBm maximum • 802.11ax, MCS11(HE20) (6GHz): -59.5dBm maximum • 802.11ax, MCS11(HE40) (6GHz): -56.5dBm maximum • 802.11ax, MCS11(HE80) (6GHz): -53.5dBm maximum • 802.11ax, MCS11(HE160) (6GHz): -51.5dBm maximum • 802.11be, MCS13(EHT20) (6GHz): -55.5dBm maximum • 802.11be, MCS13(EHT40) (6GHz): -53.5dBm maximum • 802.11be, MCS13(EHT80) (6GHz): -51.5dBm maximum • 802.11be, MCS13(EHT160) (6GHz): -48.5dBm maximum
Antenna type	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
Form Factor	PCI-Express M.2 MiniCard

Technical Specifications – Networking

Dimensions	1. Type 2230: 2.3 x 22.0 x 30.0 mm
Weight	1. Type 2230: 2.8g
Operating Voltage	3.3v +/- 9%
Temperature	Operating: 14° to 158° F (–10° to 70° C) 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 Bluetooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3/5.4 Wireless Card Technology	
Bluetooth Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3/5.4 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)
Transmit Power	The Bluetooth component shall operate as a Class I Bluetooth device with a maximum transmit power of +15.5 dBm for BR and +13dBm for EDR.
Power Consumption	Peak (Tx): 330 mW Peak (Rx): 230 mW Selective Suspend: 17 mW
Bluetooth Software Supported	1. Microsoft Windows Bluetooth Software
Link Topology	2. Linux/Chrome OS Bluetooth Software.
Power Management	ACPI and PCI Express compliant power management 802.11 compliant power saving mode
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

Technical Specifications – Networking

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 BT5.3 Host to Controller Encryption Key Control Enahancements Compliance to the latest Errata Sectipn 12.3 of BT 5.3 specification

1. Wi-Fi 7: Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires compatible Windows 11 OS, compatible processor, and separately purchased Wi-Fi 7 router to support backwards compatibility with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported. The specification for 802.11BE is a draft specification and is not final. If the final specification differs from the draft specification, it may affect the ability of the device to communicate with other 802.11BE devices.

Technical Specifications – Networking

MediaTek RZ616 Wi-Fi 6E + Bluetooth® 5.3 wireless card (802.11ax 2x2, AMD AIM-T)[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 802.11j IEEE 802.11k IEEE 802.11mc IEEE 802.11r IEEE 802.11v IEEE 802.11w
Interoperability	Wi-Fi certified
Frequency Band	802.11b/g/n/ax • 2.402 – 2.482 GHz 802.11a/n/ac/ax • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz • 5.925 – 7.125 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, (20MHz, 40MHz, ,80MHz & 160MHz) • 802.11ax: MCS0 ~ MCS11, (20MHz, 40MHz, ,80MHz & 160MHz)
Modulation	Direct Sequence Spread Spectrum OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
Security	• IEEE and WiFi 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 (personal) certification • IEEE 802.11i • WAPI
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points

	2.4GHz (MIMO, typical): • 802.11b: +18dBm • 802.11g: +16.5dBm • 802.11n/ac/ax (HT20/VHT20/HE20): +16dBm • 802.11n/ac/ax (HT40/VHT40/HE40): +12.5dBm 5GHz (MIMO, typical): • 802.11a: +13dBm • 802.11n/ac/ax (HT20/VHT20/HE20): +13.5dBm • 802.11n/ac/ax (HT40/VHT40/HE40): +12.5dBm • 802.11ac/ax (VHT80/HE80): +11.5dBm • 802.11ax HE160: +11.5dBm
Output Power	6GHz LPI mode (MIMO, typical):: • 802.11a: 0dBm • 802.11ax HE20: +1dBm • 802.11ax HE40: +4dBm • 802.11ax HE80: +7dBm • 802.11ax HE160: +7.5dBm
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 802.11 compliant power saving mode
Receiver Sensitivity	2.4GHz (SISO): •802.11b, 11Mbps: -82dBm maximum • 802.11g, 54Mbps: -71dBm maximum • 802.11n, MCS7: -64dBm maximum • 802.11ac, MCS9: -52dBm maximum •802.11ax, MCS11(HT40): -49dBm maximum 5GHz (SISO): • 802.11a, 54Mbps: -71dBm maximum • 802.11n, MCS07: -64dBm maximum • 802.11ac, MCS9: -52dBm maximum •802.11ax, MCS11(HE80/HE160): -46dBm maximum 6GHz (SISO): • 802.11a, 54Mbps: -71dBm maximum • 802.11n, MCS7: -64dBm maximum • 802.11ac, MCS9: -52dBm maximum •802.11ax, MCS11(HE160): -46dBm maximum
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5/6 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
Weight	1. Type 2230: 2.8g
Operating Voltage	3.3v +/- 9%

Technical Specifications – Networking

Temperature	Operating: 14° to 158° F (–10° to 70° C) Non-operating: –40° to 176° F (–40° to 80° C)
Humidity	Operating: 10% to 60% (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)
HP Integrated Module with Bluetooth® 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	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 1.5 Bluetooth device with a maximum transmit power of + 14 dBm and 10 dBm for BR and EDR, respectively.
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 & 15.407 ETS 300 328 Low Voltage Directive CE Mark

Technical Specifications – Networking

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 Windows BT profiles support BT5.3 Periodic Advertisement interval Encryption key size control enhancements

Technical Specifications – Networking and Communications

Realtek RTL8852BE 802.11ax 2x2 Wi-Fi® + Bluetooth® 5.3 Wireless Card (802.11ax 2x2, supporting gigabit data rate)[1,2]	
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[2]	• 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 Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power[3]	• 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 • 802.11ax HE80(5GHz): +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 802.11 compliant power saving mode
Receiver Sensitivity[4]	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 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 2. Type 1216: 1.67 x 12.0 x 16.0 mm
Weight	1. Type 2230: 2.8g 2. Type 126: 1.3g
Operating Voltage	3.3v +/- 9%
Temperature	Operating: 14° to 158° F (–10° to 70° C) 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 Bluetooth® 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	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

Technical Specifications – Networking and Communications

	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 Certifications	Microsoft Windows Bluetooth Software
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 Limited High Duty Cycle Non-Connectable Advertising 2Mbps LE LE Long Range

1. 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.
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).

I/O DEVICES

HP USB Business Slim Wired SmartCard CCID Keyboard		
Physical Characteristics	Keys	104, 105, 107, 109 layout (depending upon country)
	Dimensions (LxWxH)	17.34 x 5.68 x 0.78 in (440.6 x 144.5 x 1.98 cm)
	Weight	1.32 lb (598g)
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, cULus/CSAus, ICES, RCM, VCCI, KCC, BSMI	
Ergonomic compliance	ISO 9241-4, TUVGS	

Technical Specifications – Input/Output Devices

HP 125 AntiMicrobial Wired Keyboard (China only)		
Physical Characteristics	Keys	104/105/107/109 layout (depending upon country)
	Dimensions (LxWxH)	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, BSMI, RCM, KCC, USB-IF, WHQL, EN/IEC 60601-1	
Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and TUVGS	

Technical Specifications – Input/Output Devices

HP 655 wireless Keyboard		
Physical Characteristics	Keys	104, 105, 107,109 layouts
	Dimensions (LxWxH)	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	

<table>
<tr><th colspan="5">HP Wired Desktop 320K Keyboard</th></tr>
<tr><td rowspan="3">**Physical Characteristics**</td><td>Keys</td><td colspan="3">104, 105, 107,109 layouts</td></tr>
<tr><td>Dimensions(LxWxH)</td><td colspan="3">18.86*4.55*0.66 in (426.2 x 110.9 x 16.7 mm)</td></tr>
<tr><td>Weight</td><td colspan="3">1.00 lb(452g)</td></tr>
<tr><td rowspan="6">**Electrical**</td><td>Operating voltage</td><td colspan="3">5 VDC, +/-5%</td></tr>
<tr><td>Power consumption</td><td colspan="3">50 mA Max (All LED on)</td></tr>
<tr><td>System Interface</td><td colspan="3">USB Port</td></tr>
<tr><td>ESD</td><td colspan="3">Contact Discharge: 8 KV Air Discharge: 15 KV (Class B)</td></tr>
<tr><td>EMI - RFI</td><td colspan="3">European Standard EN 55022: 2006+A1: 2007, Class B.
FCC/CFR 47: Part 15 Class B</td></tr>
<tr><td>**Mechanical**</td><td>Keycaps</td><td colspan="3">2.0mm +/-0.2mm at 120gf Key travel</td></tr>
<tr><td rowspan="16">**Environmental**</td><td>Operating temperature</td><td colspan="3">10° C to 90° C</td></tr>
<tr><td>Non-operating temperature</td><td colspan="3">-30° C to 95° C</td></tr>
<tr><td>Operating humidity</td><td colspan="3">N/A</td></tr>
<tr><td>Non-operating humidity</td><td colspan="3">10% to 90% (non-condensing at ambient)</td></tr>
<tr><td>Operating shock</td><td colspan="3">N/A</td></tr>
<tr><td>Non-operating shock</td><td colspan="3">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<40lb</td></tr>
<tr><td rowspan="6">Operating vibration</td><th>Frequency (Hz)</th><th>Slope (dB/oct)</th><th>PSD (g^2/Hz)</th></tr>
<tr><td>5-350</td><td>0</td><td>0.0001</td></tr>
<tr><td>350-500</td><td>-6</td><td>-</td></tr>
<tr><td>500</td><td>-</td><td>0.00005</td></tr>
<tr><td colspan="3">(~0.21G_{nms})</td></tr>
<tr><td colspan="3">Total Test time: 10 minutes</td></tr>
<tr><td rowspan="4">Non-operating vibration</td><th>Frequency (Hz)</th><th>Slope (dB/oct)</th><th>PSD (g^2/Hz)</th></tr>
<tr><td>5.100</td><td>0</td><td>0.015</td></tr>
<tr><td>100-137</td><td>-6</td><td>-</td></tr>
<tr><td>137-350</td><td>0</td><td>0.008</td></tr>
</table>

		350-500	-6	-
		500	-	0.0039
	Drop (out of box)	76cm on carpet, six-drop sequence		
	Drop (in box)	10 times drop including 6 faces, one corner and 3 edges on rigid surface. Drop Height: 91cm		
Approvals	CB, CE, FCC, ICES, EAC, NOM-NYCE SCT, RCM, BIS, VCCI, KC, BSMI			
Ergonomic compliance	TUVGS			

HP Wired Desktop 320M Mouse		
Physical Characteristics	Keys	Left/right key
	Dimensions(LxWxH)	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
	Key-leveling mechanisms	N/A
Environmental	Operating temperature	10° to 90° C
	Non-operating temperature	-30° C to 95° C
	Operating humidity	N/A
	Non-operating humidity	10% to 90% (non-condensing at ambient)
	Operating shock	N/A

<table>
<tr><td rowspan="15"></td><td>Non-operating shock</td><td colspan="3">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: 50Ips (inch-per-second)- 65Ips 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: 266Ips (inch-per-second) for product mass (m) 20<m<40lb</td></tr>
<tr><td rowspan="6">Operating vibration</td><td>Frequency (Hz)</td><td>Slope (dB/oct)</td><td>PSD (g^2/Hz)</td></tr>
<tr><td>5-350</td><td>0</td><td>0.0001</td></tr>
<tr><td>350-500</td><td>-6</td><td>-</td></tr>
<tr><td>500</td><td>-</td><td>0.00005</td></tr>
<tr><td colspan="3">(~0.21G_{nms})</td></tr>
<tr><td colspan="3">Total Test time: 10 minutes</td></tr>
<tr><td rowspan="6">Non-operating vibration</td><td>Frequency (Hz)</td><td>Slope (dB/oct)</td><td>PSD (g^2/Hz)</td></tr>
<tr><td>5.100</td><td>0</td><td>0.015</td></tr>
<tr><td>100-137</td><td>-6</td><td>-</td></tr>
<tr><td>137-350</td><td>0</td><td>0.008</td></tr>
<tr><td>350-500</td><td>-6</td><td>-</td></tr>
<tr><td>500</td><td>-</td><td>0.0039</td></tr>
<tr><td>Drop (out of box)</td><td colspan="3">76cm on carpet, six-drop sequence</td></tr>
<tr><td>Drop (in box)</td><td colspan="3">N/A</td></tr>
<tr><td>Approvals</td><td colspan="4">CB, CE, FCC, cULus, ICES, EAC, NOM-NYCE SCT, RCM, VCCI, KC, BSMI</td></tr>
<tr><td>Ergonomic compliance</td><td colspan="4">TUVGS</td></tr>
</table>

HP 655 wireless Mouse		
Dimensions (HxLxW)	4.74 x 2.75 x 1.63 in (120.29 x 69.97 x41.39 mm)	
Weight	0.194lb (88g)	
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

Technical Specifications – Input/Output Devices

	Non-operating vibration	4-g peak acceleration
Electrical	Operating voltage	3 VDC, +/-5%
	Power consumption (typical)	10 mA Max
	Resolution	1,200 DPI (Default)
	Sensor	Pixart PAW3222DB-TJDS
	Tracking speed	10G(max), 1G=9.8m/s2
	Tracking acceleration	2.4GHz Wireless
Mechanical	Color	Jack Black
Regulatory approvals	Compliant	CB, CE, FCC, cULus, ICES, IC, TRC, TRA, ICASA, UA, EAC, CNC, ANATEL, NOM-NYCE SCT, IFETEL, MPTC, RCM, PosTel, VCCI, TELEC, KC, MCMC, IDA, BSMI, NCC, DWLF&M, TP-BY, MOC
Ergonomic compliance	Compliant	TUVGS

HP USB 125 (Antimicrobial)/128 Laser Mouse (China only)		
Dimensions (HxLxW)	112 x 63 x 36.2 mm (LxWxH)	
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

AUDIO/MULTIMEDIA

Type	Integrated
HD Stereo Codec	Realtek ALC 3252
Audio I/O Ports	Front: Headset connector supports a CTIA and OMTP style headset and is re-taskable as a Line-in, Line-out, Microphone-in or Headphone-out port Rear: Line-out, Line-in*, 3.5mm and support stereo and retasking
Internal Speaker Amplifier	2W class D mono amplifier for the internal speaker only. External speakers must be powered
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the front and rear jacks or 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

***NOTE:** System default is line-out. Line-in / Line-out can be adjusted through the audio setting

Technical Specifications – Power

POWER

Unit Environment and Operating Conditions

Temperature Range	Operating: 5°C ~ 50°C Non-Operating: -40°C ~66°C
Relative Humidity	Operating 5% to 90% relative humidity at max inlet temperature Non-Operating 5% to 95% relative humidity at max inlet temperature
Maximum Altitude (unpressurized)	Operating: 5000m Non-operating: 50,000 ft. (15240 m)

External Power Supplies[1]	N/A
80 PLUS Platinum	180W active PFC / 80 PLUS Gold 260W active PFC / 80 PLUS Platinum Platinum 90/92/89% efficient at 20/50/100% load (115V) 91/93/90% efficient at 20/50/100% load (230V
Operating Voltage Range	90Vac~264Vac
Rated Voltage Range	100Vac~240Vac
Rated Line Frequency	50HZ~60HZ
Operating Line Frequency	47HZ~63HZ
Rated Input Current with Energy Efficient* Power Supply	180W Gold ≦2.3A 260W Platinum ≦3.1A
DC Output	+12V

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

Current Leakage (NFPA 99: 2012)	Less 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 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.
Power Supply Fan	70 mm variable speed
Power cord length	6.0 ft. (1.83 m)[2]
External Power Adapter	Internal power
Dimensions	165 x 95 x 73 mm
Total Cord Length	6.0 ft. (1.83 m)

1. Power cord length will be varied from different type of cords start from 1.8m.
2. The length of India power cord is 2.0m

Technical Specifications – Power

AC Adaptor		**Eris+ 200W**
Dimensions		6.5 x 3.11 x 1.0 in (16.5 x 7.9 x 2.54 cm)
Weight		530 g (+/- 10 g)
Input	**Input Efficiency**	Average Efficiency of 25%, 50%, 75%, 100% load condition with 115 Vac / 230 Vac Spec: 88% at 115 Vac and 89 % at 230 Vac
	Input Frequency Range	47-63 Hz
	Input AC current	Max. 3.0 A at 90 Vac
Output	**Output Power**	200W
	DC Output	19.5V
	Hold-up Time	5 ms at 115 Vac input
	Output Over Current Protection	< 21.0A
Leakage Current		Shall not exceed 50uA when tested at 250 Vac/50 Hz in a normal operating condition
AC connector (Ac inlet)		C14
DC Plug		7.4 mm Barrel Type
Environmental Design	**Operating Temperature**	32°F to 95°F (0° to 35°C)
	Non-operating (storage) Temperature	-4°F to 185°F (-20° to 85°C)
	Altitude	0 to 16,400 ft (0 to 5000 m)
	Humidity	20% to 95%
	Storage Humidity	10% to 95%
EMI and Safety Certifications		*CE Mark - full compliance with LVD and EMC directives * Worldwide safety standards - IEC60950-1 and/or IEC62368-1 2&3 ed, EN60950-1 and/or EN62368-1, UL62368-1 , Class I, SELV; Agency approvals - cULus, CCC, BIS, PSE(J62368), EN55032 Class B, FCC Class B, CISPR32 Class B, CCC, NOM-001 NYCE, EAEU, Australia MTBF - over 100,000 hours at 35°C ambient condition

The power supply shall comply with harmonic input current requirements as detailed in EN61000-3-2 and JEIDA MITI standards.
The harmonic input current requirements must be met under the following operating conditions:
Load Requirements: 50% and 100%
Input Voltage: 230Vac/50Hz.
For active power factor correction the power factor at 50% &100% loads shall be greater than 0.9 over the entire nominal input voltage range (100-127VAC and 200-240VAC).

Condition	90/92/89%	Input Voltage
10% of Rated Load	86%	115Vac/60HZ
20% of Rated Load	90%	115Vac/60HZ
50% of Rated Load	92%	115Vac/60HZ
	PF>0.95	
100% of Rated Load	89%	115Vac/60HZ
	PF>0.9	230Vac/50HZ

Technical Specifications – Miscellaneous Features

WEIGHTS & DIMENSIONS

Chassis (WxDxH)	13.3 x 12.12 x 3.94 in 338x 308 x 100 mm
System Volume	635.11 cu in 10.4 L
System Weight	10.95 lb 4.97 kg
Max Supported Weight (desktop orientation)	12.01 lb 5.45 kg
Stand Dimensions	151.8 x 200 x 37.2mm
Packaging (WxDxH)	15.71 x 19.65 x 9.06 in 399 x 499 x 230 mm **MPP:** 15.71 x 19.65 x 9.06 in (399 x 499 x 230 mm)
Shipping Weight	17.0 lb (7.72 kg) **MPP:** 17.44 lb (7.92 kg)
Multipack Packaging (10 units)	8 units per pack 32 units per pallet 1200 x 1000 x 1317 mm (include the pallet)
Palletization Profile	6 units per layer 10 layers max 60 units per pallet 1200 x 1000 x 2438 mm (include the pallet)

Technical Specifications – Miscellaneous Features

MISCELLANEOUS FEATURES

Management Features

- Advanced Configuration and Power Management interface (ACPI). Allows the system to wake from a low power mode. Controls system power consumption, making it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system.
- Intel® Wired for Management support; industry wide initiative to make Intel® architecture based PCs, servers and mobile computers more inherently manageable out-of-the-box and over the network
- Dual State Power Button; acts as both an on/off button and a suspend-to-sleep button

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
- 1 Aux Power LED on System PCA
- Processor ZIF Socket for easy Upgrade
- Over-Temp Warning on Screen (Requires IM Agents)
- 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 & Diskette Removal
- Green Pull Tabs, and Quick Release Latches for easy identification

Technical Specifications – Miscellaneous Features

Additional Features	**Description**
Tower Orientation	Product can be oriented as either a desktop (horizontal) or a tower (vertical) and requires optional stand.
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 (for SATA hard drive only)
	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
SMART IV – End-to-End CRC for hard drives	Detects errors in Read/Write buffers on HDD cache RAM

AFTER MARKET OPTIONS

Graphics Solutions	**Part Number**
NVIDIA T400 4GB GDDR6 3mDP	5Z7E0AA
AMD Radeon RX 6300 2GB GDDR6 DP+HDMI LP	803S9AA
HP DisplayPort to HDMI True 4k Adapter	2JA63AA
HP DVI Cable Kit	DC198A
HP HDMI Standard Cable Kit	T6F94AA
HP DisplayPort to VGA Adapter	AS615AA
HP DisplayPort to DVI-D Adapter	FH973AA
HP USB-C To DisplayPort Adapter	N9K78AA

Data Storage Drives	**Part Number**
HP PCIe Gen 4 NVME TLC M.2 512GB SSD	406L8AA
HP PCIe Gen 4 NVME TLC M.2 1TB SSD	406L7AA
HP 1TB 7200rpm SATA 3.5” Hard Drive	QK555AA

Input Devices	**Part Number**
HP 125 Wired Keyboard	266C9AA
HP 225 Wired Mouse and Keyboard Combo	286J4AA
HP 125 Wired Mouse	265A9UT
HP 128 Laser Wired Mouse	265D9AA
HP Wired Desktop 320K Keyboard	9SR37AA
HP Wired Desktop 320M Mouse	9VA80AA
HP Wired Desktop 320MK Mouse and Keyboard	9SR36AA
HP USB Business Slim CCID SmartCard Keyboard	Z9H48AA
HP 655 Wireless Keyboard and Mouse Combo	4R009AA
HP 455 Programmable Wireless Keyboard	4R177AA

System Memory	**Part Number**
HP 8GB DDR5-4800 UDIMM	4M9X9AA
HP 16GB DDR5-4800 UDIMM	4M9Y0AA
HP 32GB DDR5-4800 UDIMM	4M9Y2AA

Multimedia Devices	**Part Number**
HP S101 Speaker Bar	5UU40AA
HP Stereo 3.5mm Headset G2	428K7AA
HP Z G3 Conferencing Speaker Bar	32C42AA
HP Z G3 Conferencing Speaker Bar with Stand	647Y2AA
HP Stereo USB Headset G2	428K6AA

Security Devices	**Part Number**
HP Business PC Security Lock v3 Kit	3XJ17AA
HP Keyed Cable Lock 10mm	T1A62AA

I/O Devices	**Part Number**
HP DisplayPort Port FlexIO v2	13L54AA
800 G9 SATA Power Cable Non RF	8H5A4AA
HP Type-C® USB 3.1 Gen2 Port FlexIO v2	13L59AA
HP USB 3.2 Gen1 x2 Module FlexIO v2	13L58AA
HP VGA Port FlexIO v2	13L53AA
HP Internal Serial Port (in rear wall)	3TK82AA
HP PCIe x1 Parallel Port Card	N1M40AA
HP Serial/PS/2 Adapter Kit (in PCIe slot)	1VD82AA
HP USB to Serial Port Adapter	J7B60AA
HP Serial Port v3 FlexIO	5B895AA
HP HDMI Port FlexIO v2	13L55AA
HP Single Mini Display Port Adapter	2MY05AA

NOTE: For more detail on HPI/O Devices please refer to the HP FLEXIO Option Cards QuickSpecs:
https://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c06042607

Change Log

Date	**Version History**	**Action**	**Description of Change**
July 5, 2024	From v1 to v2	Update	Environmental table updated
August 8, 2024	From v2 to v3	Addition	Intrusion Sensor to Security section / HP Tamper lock to Software section
September 3, 2024	From v3 to v4	Addition	Optional port in rear call outs image page, at Overview section
September 13, 2024	From v4 to v5	Addition	“16 TOPs NPU available” added to on 8600G & 8700G PRO & Non-PRO processors
November 6, 2024	From v5 to v6	Addition	2MY05AA HP Single Mini Display Port Adapter to I/O Devices in AMO section
December 4, 2024	From v6 to v7	Update	Type-C® SuperSpeed USB updated to 10Gbps and Pad lock to Padlock loop
December 26, 2024	From v7 to v8	Update	Graphics cards calling updated
December 19, 2025	From v8 to v9	Update	Base Frequency for 8600G/8500G/8300G
December 21, 2025	From v9 to v10	Update	Base Frequency for 8600G/8500G/8300G
February 5, 2025	From v10 to v11	Addition	NVIDIA® A400 4GB GDDR6 card added to Graphics
April 9, 2025	From v11 to v12	Correction	Chassis dimensions corrected
April 21, 2025	From v12 to v13	Addition	Intel I226-T1 2.5GbE Ethernet Network Adapter
August 14, 2025	From v13 to v14	Correction	SATA 3.0 (6Gbps signaling rate) port, System Weight and Max Supported Weight corrected
August 20, 2025	From v14 to v15	Update	HP Wolf Security for Business disclaimer in SW section updated
September 3, 2025	From v15 to v16	Addition	13L58AA added to AMO section
November 20, 2025	From v16 to v17	Update	Input devices table in AMO section updated / UEFI Self Certification Level: 2.9 added to BIOS in SW section
	From v17 to v18		
	From v18 to v19		
	From v19 to v20		
	From v20 to v21		
	From v21 to v22		
	From v22 to v23		
	From v23 to v24		
	From v24 to v25		
	From v25 to v26		
	From v26 to v27		
	From v27 to v28		