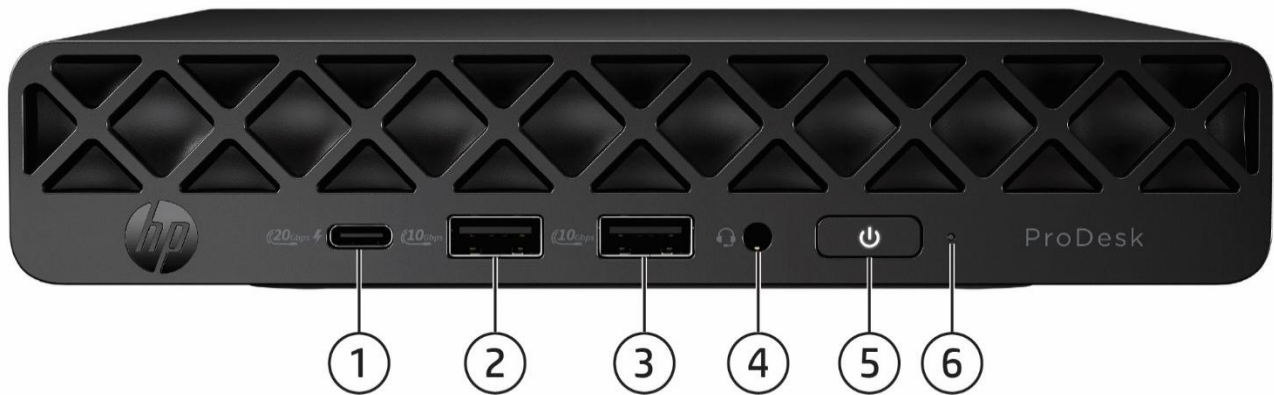


Overview

HP ProDesk 4 Mini G1i Desktop AI PC



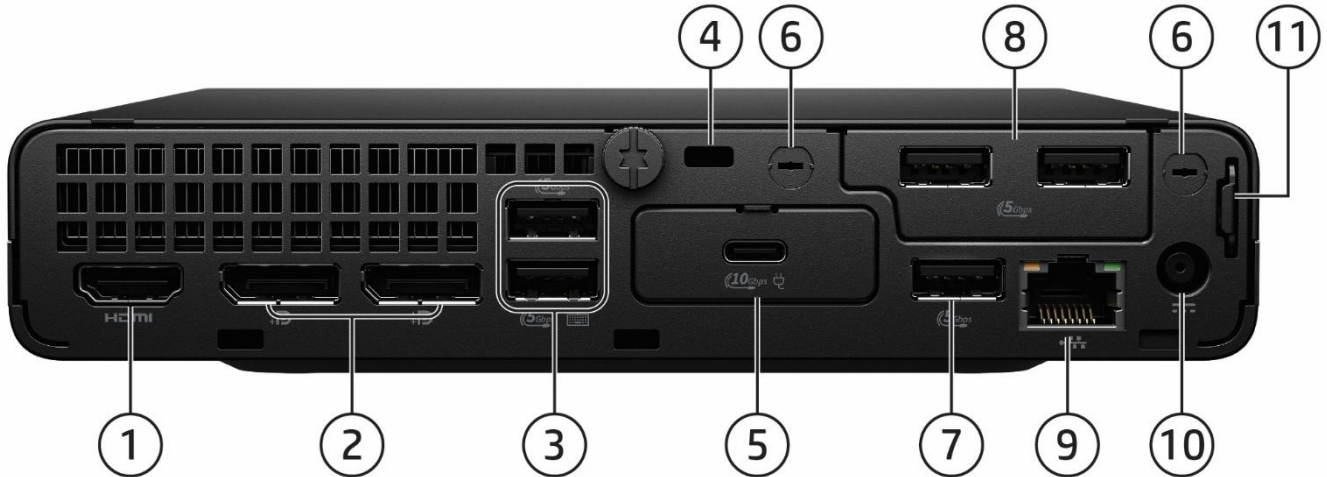
- | | |
|---|--|
| 1. Type-C® SuperSpeed USB 20Gbps signaling rate port (charge support up to 5V/3A) | 4. Combo Audio Jack with CTIA and OMTP and headset support |
| 2. Type-A SuperSpeed USB 10Gbps signaling rate port | 5. Dual-state power button |
| 3. Type-A SuperSpeed USB 10Gbps signaling rate port | 6. SSD activity light |

Not shown

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

Overview

HP ProDesk 4 Mini G1i Desktop AI PC



1. HDMI 2.1 TMDS 6Gbps
2. 2x Dual Mode DisplayPort™ 2.1 HBR3 (DP++)
3. 2x Type-A SuperSpeed USB 5Gbps signaling rate port (Supporting wake from S4/S5 with keyboard/mouse connected and enabled in BIOS)
4. Standard cable lock slot (10 mm)
5. Flex Port 1, choice of:
 - DisplayPort™ 2.1
 - HDMI 2.1
 - Type-C® SuperSpeed USB 10Gbps signaling rate port w/ DisplayPort™ Alt mode and power intake via Type-C® Power Delivery up to 100W (shown in the image)
 - Dual Type A SuperSpeed USB 5Gbps signaling rate port
 - VGA
 - Serial¹
6. External WLAN antenna opening²
7. Type-A SuperSpeed USB 5Gbps signaling rate port
8. Flex Port 2², choice of:
 - Serial
 - Dual Type-A SuperSpeed USB 5Gbps signaling rate port (shown in the image)
9. RJ-45 network connector
10. Power connector
11. Retractable Padlock loop

Not shown

Slots

- (1) Internal M.2 2230 connector for WLAN
- (2) Internal M.2 SSD storage 2280 connector

Mounting

- Support for
- Dual VESA Sleeve V4 Standalone
 - Quick Release Bracket
 - B200/B300/B500/B550/B560/B600 Mounting bracket
 - Integrated Work Center Stand
 - HP Single Monitor Arm

1. Sold separately or as an optional feature.
2. Must be configured at time of purchase.

NOTE: SPO (Single Power On) feature only available when system configured with Type-C flex module at the time of purchase.

HP ProDesk 4 SFF G1i Desktop AI PC



- | | |
|--|--|
| 1. Slim optical drive (optional) | 4. Combo Audio Jack with CTIA and OMTP and headset support |
| 2. (1) Type-C® SuperSpeed USB 10Gbps signaling rate port | 5. Dual-state power button |
| 3. (3) Type-A SuperSpeed USB 10Gbps signaling rate port | 6. Hard drive activity light |

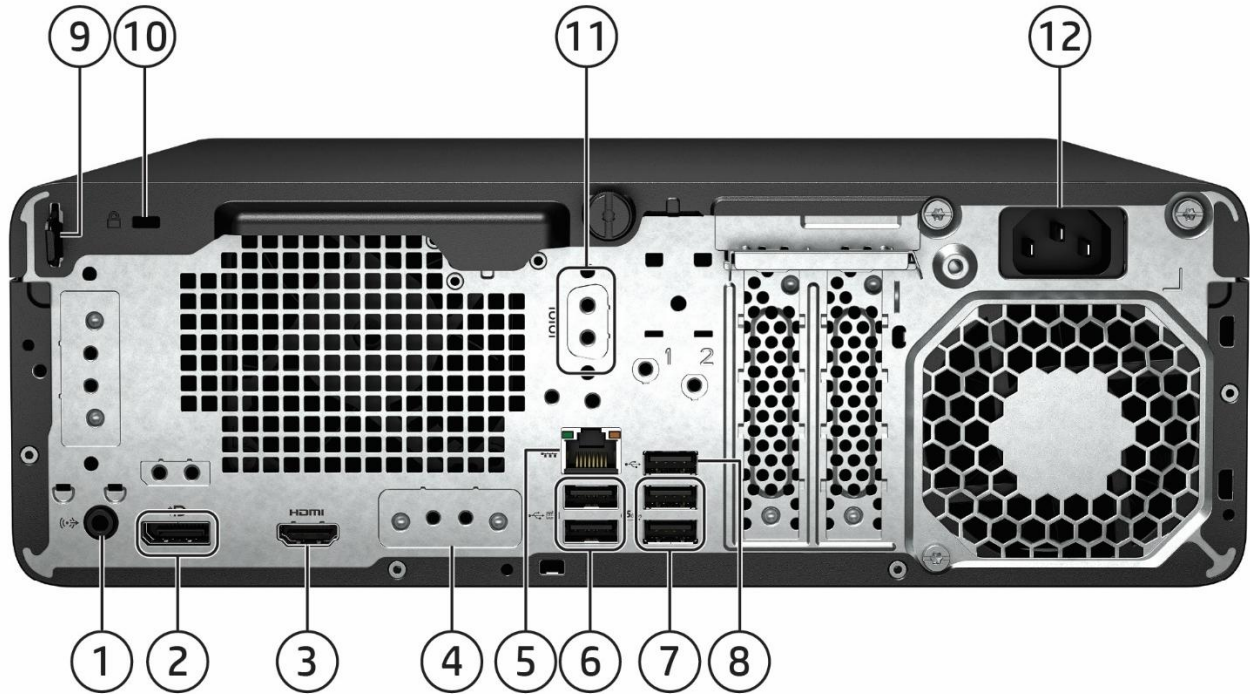
Not shown

- (1) PCI Express Gen4 x16
- (1) PCI Express Gen4 x1
- (3) M.2 (1 as M.2 2230 socket for WLAN/Bluetooth^{®1} and 2 as M.2 2280 socket for storage)

1. Must be configured at time of purchase.

Overview

HP ProDesk 4 SFF G1i Desktop AI PC



1. Audio line-in/line-out connector
2. (1) DisplayPort™ 2.1 HBR3 (DP++)
3. (1) HDMI 2.1
4. Flex Port, choice of:
 - Serial
 - VGA
 - HDMI 2.1
 - DisplayPort™ 2.1
 - Dual Type-A SuperSpeed USB 5Gbps signaling rate
 - Type-C® SuperSpeed USB 10Gbps signaling rate with DisplayPort™ Alt mode
5. RJ-45 network connector
6. (2) Type-A Hi-Speed USB 480Mbps signaling rate port (Supporting wake from S4/S5 with keyboard/mouse connected and enabled in BIOS)
7. (2) Type-A SuperSpeed USB 5Gbps signaling rate port
8. (1) Type-A Hi-Speed USB 480Mbps
9. Padlock loop
10. Standard cable lock slot
11. Serial Port (optional)
12. Power cord connector

Not shown

Ports

Optional 4 Serial Port PCIe Card¹ (1 to 4 serial port dongle)
 Optional Parallel port¹

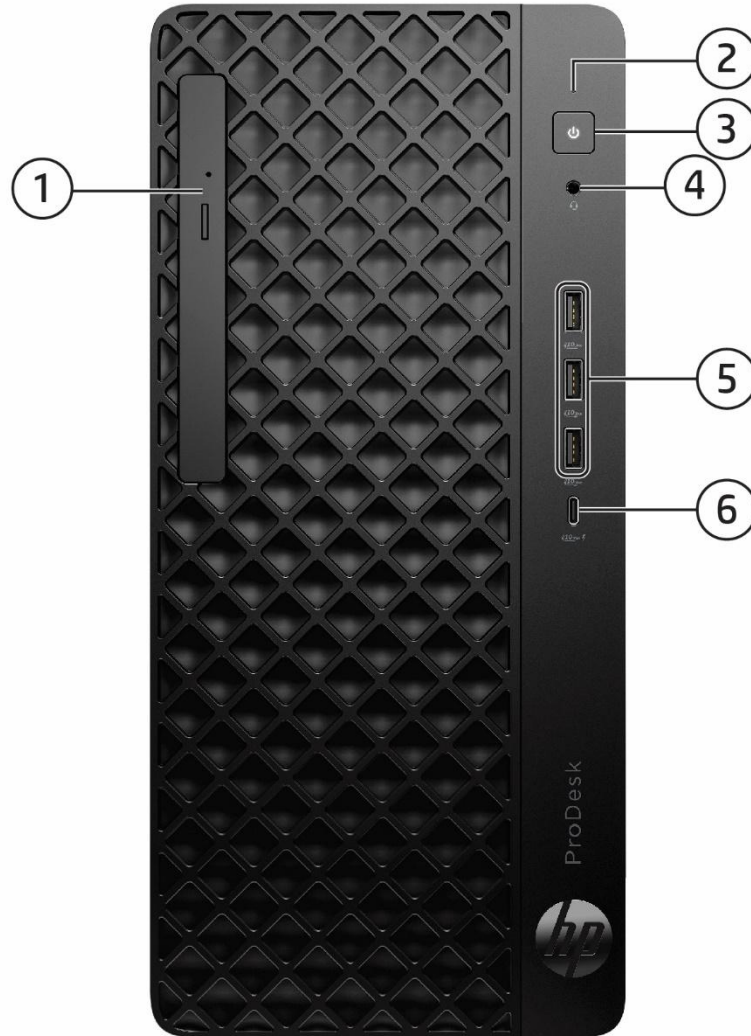
Bays

(1) 9.5mm internal optical drive bay
 (1) 3.5" internal storage drive bay

1. Each of the legacy options will occupy one rear slot.

Overview

HP ProDesk 4 Tower G1i / G1i E Desktop AI PC



1. Slim optical drive (optional)
2. Hard drive activity light
3. Dual-state power button
4. Combo Audio Jack with CTIA and OMTP headset support
5. (3) Type-A SuperSpeed USB 10Gbps signaling rate port
6. (1) Type C SuperSpeed USB 10Gbps (charge support 15W)

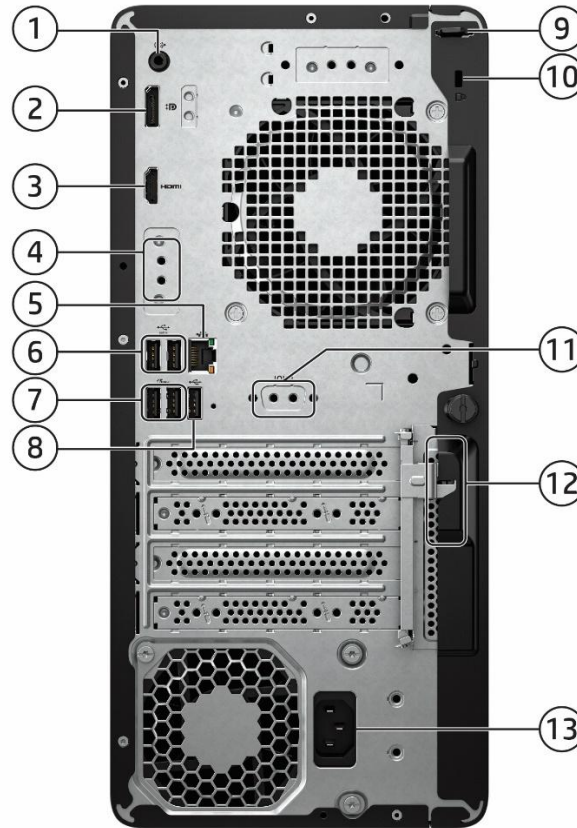
Not shown

- (1) PCI Express x16
- (2) PCI Express 3.0 x1
- (3) M.2 (1 as M.2 2230 socket for WLAN/Bluetooth®/storage¹ and 2 as M.2 2280 socket for storage)

1. Optional

Overview

HP ProDesk 4 Tower G1i / G1i E Desktop AI PC



1. Audio line-in/line-out connector
2. DisplayPort™ 2.1 HBR3
3. HDMI 2.1
4. Flex Port, choice of:
 - DisplayPort™ 2.1 • VGA
 - HDMI 2.1 • Serial
 - Dual Type-A SuperSpeed USB 5Gbps signaling rate
 - Type-C® SuperSpeed USB 10Gbps signaling rate with DisplayPort™ Alt mode)
5. RJ-45 network connector
6. (2) Type-A Hi-Speed USB 480Mbps signaling rate (Supporting wake from S4/S5 with keyboard/mouse connected and enabled in BIOS)
7. (2) Type-A SuperSpeed USB 5Gbps signaling rate port
8. (1) Type-A Hi-Speed USB 480Mbps signaling rate
9. Padlock loop
10. Standard cable lock slot
11. Optional Serial port (shown here not installed)
12. Integrated keyboard/mouse wire hoop
13. Power cord connector

Not shown

Ports

- Optional 4 Serial Port PCIe Card¹ (1 to 4 serial port dongle)
- Optional Parallel port¹

Bay

- (1) 9.5mm internal optical drive bay
- (2) 3.5" internal storage drive bay

1. Each of the legacy options will occupy one rear slot

Overview

HP ProStudio 4 All-in-One G1i 23.8 Desktop AI PC (Touch/Non-Touch)

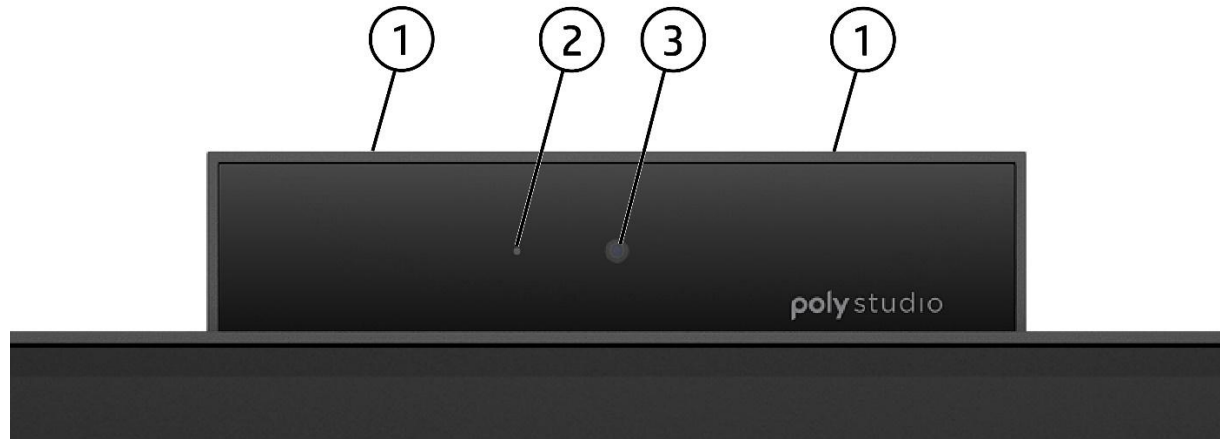


1. Pull-up webcam (optional)
2. Speakers
3. Type-C SuperSpeed USB 20 Gbps signaling rate port (charge support 15W)
4. Combo Audio Jack with CTIA and OMTP headset support
5. Type-A SuperSpeed USB 10 Gbps signaling rate port
6. Power Activity Light
7. Power Button

Overview

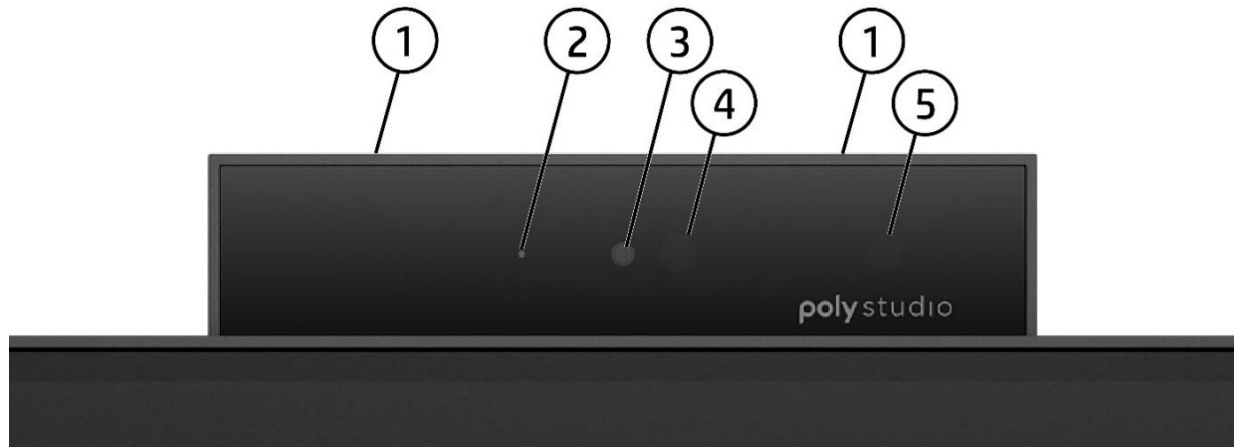
HP ProStudio 4 All-in-One G1i 23.8 Desktop AI PC (Touch/Non-Touch)

5MP webcam



- 1. Dual microphones
- 2. Webcam light
- 3. 5MP webcam

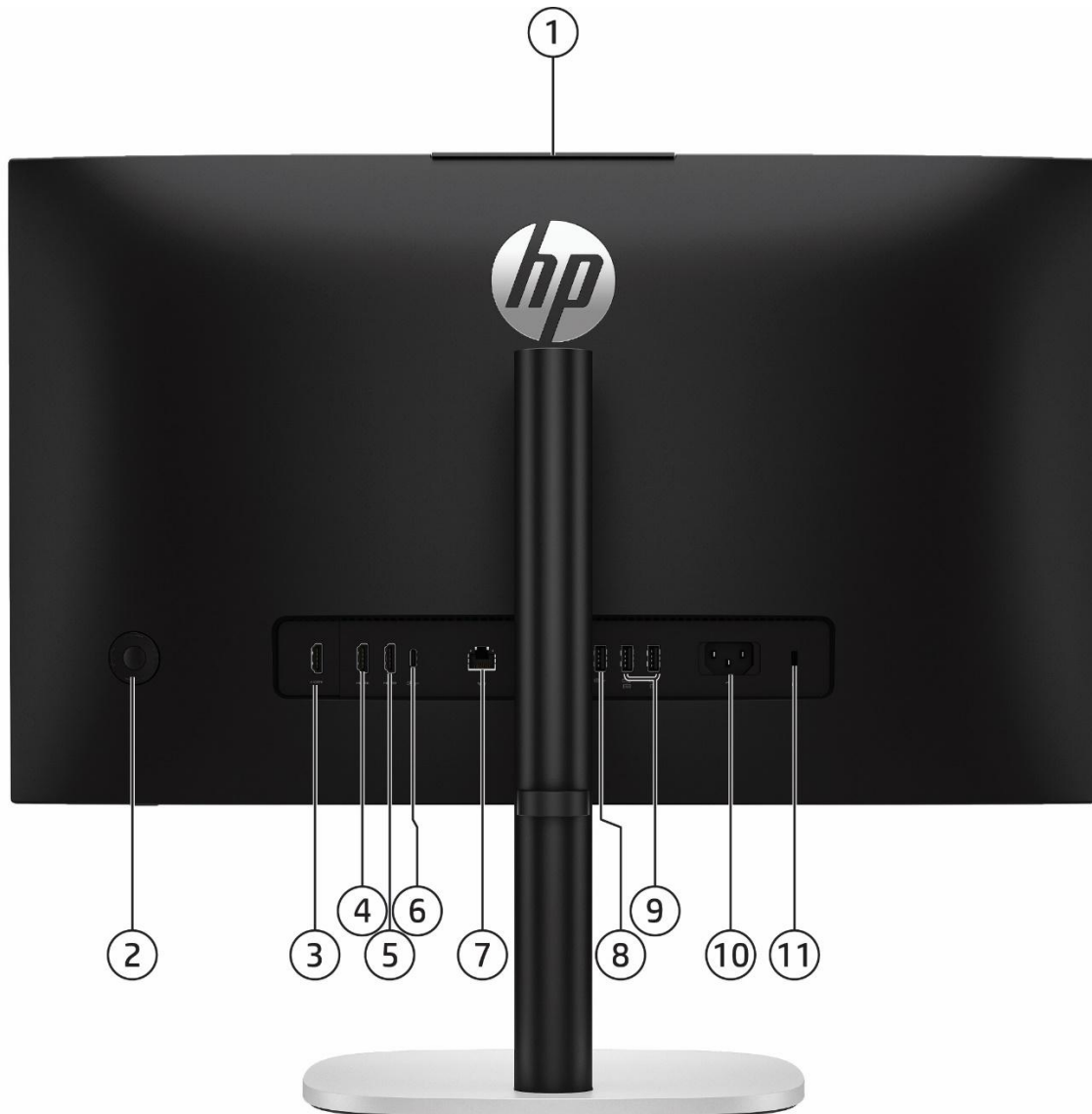
5MP HDR webcam with IR Sensor + + ISP Sensor



- 1. Dual microphones
- 2. Webcam light
- 3. 5MP/ISP webcam
- 4. IR sensor
- 5. IR light

Overview

HP ProStudio 4 All-in-One G1i 23.8 Desktop AI PC (Touch & Non-Touch)



- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Pull-up Camera (Optional) 2. OSD 3. Flex Port, choice of: <ul style="list-style-type: none"> • HDMI 2.1 • DisplayPort™ 1.4 • Dual Type-A Superspeed USB 5Gbps signaling rate port • Type-C SuperSpeed USB 10Gbps signaling rate port with DisplayPort alt mode | <ol style="list-style-type: none"> 4. HDMI-in 1.4 5. HDMI-out 2.1 6. Type-C SuperSpeed USB 10 Gbps signaling rate port 7. RJ-45 network connector 8. Type-A SuperSpeed USB 10 Gbps signaling rate port 9. (2) Type-A SuperSpeed USB 5 Gbps signaling rate port (supporting wake from S4/S5) with Keyboard/Mouse connected and enabled in BIOS 10. Power cord connector 11. Standard Cable Lock Slot |
|--|---|

1. Availability may vary by country



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

PRODUCT NAME

HP ProDesk 4 Mini G1i Desktop AI PC
HP ProDesk 4 SFF G1i Desktop AI PC
HP ProDesk 4 Tower G1i Desktop AI PC
HP ProDesk 4 Tower G1i E Desktop AI PC
HP ProStudio 4 All-in-One G1i 23.8-inch Desktop AI PC

OPERATING SYSTEM

Preinstalled

- Windows 11 Pro¹
- Windows 11 Pro Education¹
- Windows 11 Home - HP recommends Windows 11 Pro for business¹
- Windows 11 Home Single Language - HP recommends Windows 11 Pro for business¹
- 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 apply and additional requirements may apply over time for updates. See <http://www.windows.com>.

CHIPSET

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|-------------|-------------|------------|------------|------------|
| Intel® Q870 | X | X | X | X |

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

PROCESSORS

| Intel® Core Ultra Processor | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|---|-------------|------------|------------|------------|
| Intel® Core™ Ultra 7-265 Processor with Intel® UHD Graphics 4X ^e (2.4GHz, up to 5.3GHz with Intel® Turbo Boost ¹ Max Technology, 30MB L3 Cache, 20 Cores, 20 Threads) 65W, Supports Intel® vPro® Technology ² | | V | V | V |
| Intel® Core™ Ultra 7-265T Processor with Intel® UHD Graphics 4X ^e (1.5GHz, up to 5.3GHz with Intel® Turbo Boost ¹ Max Technology, 30MB L3 Cache, 20 Cores, 20 Threads) 35W, Supports Intel® vPro® Technology ² | V | | | V |
| Intel® Core™ Ultra 5-245 Processor with Intel® UHD Graphics 4X ^e (3.5GHz, up to 5.1GHz, 24MB L3 Cache, 14 Cores, 14 Threads) 65W, Supports Intel® vPro® Technology ² | | V | V | V |
| Intel® Core™ Ultra 5-245T Processor with Intel® UHD Graphics 4X ^e (2.2GHz, up to 5.1GHz, 24MB L3 Cache, 14 Cores, 14 Threads) 35W, Supports Intel® vPro® Technology ² | V | | | V |
| Intel® Core™ Ultra 5-235 Processor with Intel® UHD Graphics 3X ^e (3.4GHz, up to 5GHz, 24MB L3 Cache, 14 Cores, 14 Threads) 65W, Supports Intel® vPro® Technology ² | | V | V | V |
| Intel® Core™ Ultra 5-235T Processor with Intel® UHD Graphics 3X ^e (2.2GHz, up to 5GHz, 24MB L3 Cache, 14 Cores, 14 Threads) 35W, Supports Intel® vPro® Technology ² | V | | | V |
| Intel® Core™ Ultra 5-225 Processor with Intel® UHD Graphics 2X ^e (3.3GHz, up to 4.9GHz, 20MB L3 Cache, 10 Cores, 10 Threads) 65W, | | V | V | V |
| Intel® Core™ Ultra 5-225T Processor with Intel® UHD Graphics 2X ^e (2.5GHz, up to 4.9GHz, 20MB L3 Cache, 10 Cores, 10 Threads) 35W, | V | | | V |

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

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

NOTE: All processors are embedded with 13 TOPs NPU.

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

GRAPHICS

Integrated Graphics

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|--------------------------------------|-------------|------------|------------|------------|
| Intel® UHD Graphics 4Xe ¹ | X | X | X | X |
| Intel® UHD Graphics 3Xe ¹ | X | X | X | X |
| Intel® UHD Graphics 2Xe ¹ | X | X | X | X |

Optional Discrete Graphics Solutions

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|--|-------------|------------|------------|------------|
| NVIDIA® GeForce® RTX 3050 8GB GDDR6 Graphics Card ² | | | X | |
| NVIDIA® A400 4GB Graphics Card ³ | | X | X | |
| NVIDIA® A1000 8GB Graphics Card ³ | | X | | |
| Intel® Arc A380 6GB GDDR6 Graphics card ³ | | | X | |
| AMD Radeon™ RX 6450M with 4 GB GDDR6 Graphics | | | | X |
| AMD Radeon™ RX 6300 2GB GDDR6 Graphics card ³ | | X | X | |

- Xe is Intel LPG Graphics Architecture, one Xe-core represents 16EU.
- Only available with 400W power supply.
- Not available with 180W power supply.
- Supports up to 3 external monitors when configured with a flex video port option on AiO.
- Support up to 7 displays via native video ports, a configurable Flex IO port and a discrete graphics on TWR & SFF.
- Support up to 4 displays via native video ports and configurable Flex IO ports on Mini.

Adapters and Cables

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|--|-------------|------------|------------|------------|
| HP DisplayPort™ Cable | X | X | X | X |
| HP DisplayPort™ to DVI-D Adapter | | X | X | X |
| HP DisplayPort™ to VGA Adapter | X | X | X | X |
| 50cm USB-C Cable (100W power delivery) | X | | | |

STORAGE

NOTE: Starting from November 1st, 2023, all shipments will require Windows to be installed when selecting a SSD. HDD can only be configured as additional data drives and not as the boot drive.

3.5 inch SATA Hard Disk Drives (HDD)

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|-----------------------|-------------|------------|------------|------------|
| 1TB* 7200RPM SATA HDD | | X | X | |
| 2TB* 7200RPM SATA HDD | | X | X | |

NOTE: RAID is supported when 2 NVMe M.2 SSD are configured.

M.2 PCIe NVMe Solid State Drives (SSD)

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|---|-------------|------------|------------|------------|
| 256GB M.2 2280 PCIe NVMe SSD | X | X | X | X |
| 512GB M.2 2280 PCIe NVMe SSD | X | X | X | X |
| 1TB M.2 2280 PCIe NVMe SSD | X | X | X | X |
| 512GB M.2 2280 PCIe NVMe Three Layer Cell SSD | X | X | X | X |
| 1TB M.2 2280 PCIe NVMe Three Layer Cell SSD | X | X | X | X |

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

| | | | | |
|--|---|---|---|---|
| 2TB M.2 2280 PCIe NVMe Three Layer Cell SSD | X | X | X | X |
| 512GB M.2 2280 PCIe NVMe Self Encrypted OPAL2 Three Layer Cell SSD | X | X | X | X |
| 256GB M.2 2280 PCIe OPAL2 NVMe SSD | X | X | X | X |

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.

Optical Disc Drives

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|--|-------------|------------|------------|------------|
| HP 9.5mm Slim DVD-ROM Drive ¹ | | X | X | X |
| HP 9.5mm Slim DVD Writer Drive | | X | X | X |

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

MEMORY

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|--|-------------|------------|------------|------------|
| DDR5-5600 (Transfer rates up to 5600 MT/s), Max 64 GB, 2 U-DIMM | | X | | |
| DDR5-5600 (Transfer rates up to 5600 MT/s), Max 128 GB, 4 U-DIMM | | | X | |
| DDR5-5600 (Transfer rates up to 5600 MT/s), Max 64 GB, 2 SO-DIMM | X | | | X |

Memory Configuration

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|------------------|-------------|------------|------------|------------|
| 8GB (8GB x 1) | X | X | X | X |
| 16GB (8GB x 2) | X | X | X | X |
| 12GB (12GB x1) | X | | | X |
| 16GB (16GB x 1) | X | X | X | X |
| 32GB (16GB x 2) | X | X | X | X |
| 24GB (24GB x1) | X | | | X |
| 32GB (32GB x 1) | X | X | X | X |
| 64GB (32GB x 2) | X | X | X | X |
| 32GB (8GB x 4) | | | X | |
| 64GB (16GB x 4) | | | X | |
| 128GB (32GB x 4) | | | X | |

***NOTE**: Memory modules support data transfer rates up to 5600 MT/s; system speed should follow Intel's 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.

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

NETWORKING/COMMUNICATIONS

Ethernet (RJ-45)

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|--|-------------|------------|------------|------------|
| Intel® I219-LM Integrated Gigabit Network Connection LOM (vPro®) | X | X | X | X |
| Intel I226-T1 2.5GbE Ethernet Network Adapter | | X | X | |

Wireless

| | | | | |
|--|---|---|---|---|
| Intel® Wi-Fi 6E ¹ AX211 + Bluetooth® 5.3 wireless card (802.11AX 2x2 vPro®, supporting gigabit data rate ²) | X | X | X | X |
| Intel® Wi-Fi 6E ¹ AX211 + Bluetooth® 5.3 wireless card (802.11AX 2x2 non-vPro®, supporting gigabit data rate ²) | X | X | X | X |
| Realtek RTL8852BE-VT 802.11ax 2x2 Wi-Fi 6 + Bluetooth® 5.4 Wireless Card (802.11ax 2x2, supporting gigabit data rate) | X | X | X | X |
| Realtek RTL8852CE 802.11ax 2x2 Wi-Fi 6E + Bluetooth® 5.3 Wireless Card (802.11ax 2x2, supporting gigabit data rate) | X | X | X | |

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. 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: Usage of the 6GHz band relies on Windows 11 Operating System support.

KEYBOARDS AND POINTING DEVICES

Keyboards

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|---|-------------|------------|------------|------------|
| HP Business Slim v2 Smart Card CCID USB Keyboard | X | X | X | X |
| HP 125 v2 Antimicrobial Wired Keyboard (China Only) | X | X | X | X |
| HP Wired Desktop 320K v2 Keyboard | X | X | X | X |
| HP 725 Multi-Device Rechargeable Wireless Keyboard | X | X | X | X |
| HP 125 v2 Wired Keyboard | X | X | X | X |

Keyboard & Mouse Combo

| | | | | |
|--|---|---|---|---|
| HP 725 Multi-Device Rechargeable Wireless Keyboard and Mouse Combo | X | X | X | X |
|--|---|---|---|---|

NOTE: V2 keyboards contain copilot* shortcut key.

*Copilot in Windows requires Windows 11. Some features require an NPU. Timing of feature delivery and availability varies by market and device. Requires Microsoft account to log in. Where Microsoft in Windows is not available, the Copilot key will lead to the Bing search engine. Use of Recall requires customer authentication using Windows Hello Enhanced Sign in Security (ESS) which requires a fingerprint reader or facial recognition camera and may not be supported on all platforms. See <http://aka.ms/WindowsAIFeatures>.

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

Mouse

| | | | | |
|---|---|---|---|---|
| HP Wired Desktop 320M Mouse | X | X | X | X |
| HP 125 Wired Antimicrobial Mouse (China Only) | X | X | X | X |
| HP 128 Wired Laser Mouse | X | X | X | X |
| HP 725 Multi-Device Rechargeable Wireless Mouse | X | X | X | X |
| HP 125 Wired Mouse | X | X | X | X |

SECURITY

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|---|--------------------------------|------------|------------|------------|
| TPM 2.0 (FW: 15.21) endpoint security controller (Infineon SLB9672/Nuvoton NPCT760HABYX) Common Criteria EAL4+ Certified. FIPS 140-2 Level 2 Certified. | X | X | X | X |
| Intrusion Sensor (Optional) | | X | X | |
| Intrusion Sensor (integrated in the system board, can be enabled/disabled through BIOS) | X | | | X |
| Support for chassis cable lock devices | X (10 mm barrel or smaller) | X | X | X |
| Support for chassis padlocks devices | X | X | X | |
| Support for table lock | | | | X |
| SATA port disablement (via BIOS) | X | X | X | |
| Serial, USB enable/disable (via BIOS) | X | X | X | X |
| Intel® Identify Protection Technology (IPT) ¹ | X | X | X | X |
| Removable media write/boot control | X | X | X | X |
| Power-on password (via BIOS) | X | X | X | X |
| Setup password (via BIOS) | X | X | X | X |

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

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

PORTS

Internal Slots and Ports

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|----------------------|---|---|---|---|
| M.2 PCIe | (1) M.2 PCIe x1 2230 (for WLAN/Bluetooth) (2) M.2 PCIe x4 2280 (for storage) | (1) M.2 PCIe x1 2230 (for WLAN/Bluetooth ¹) (2) M.2 PCIe x4 2280 (for storage) | (1) M.2 PCIe x1 2230 (for WLAN/Bluetooth ¹) (2) M.2 PCIe x4 2280 (for storage) | (1) M.2 PCIe x1 2230 (for WLAN) (2) M.2 PCIe x4 2280 (for storage) |
| PCI Express v3.0 x1 | | | 2 | |
| PCI Express v4.0 x1 | | 1 | | |
| PCI Express v4.0 x16 | | 1 | 1 | |
| SATA port | | 2 | 3 | |

NOTE: PCI slots for TWR are full height and SFF are low profile.

Bays

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|--|-------------|----------------|----------------|------------|
| 9.5mm Slim Optical Disc Drive (ODD) | | 1 | 1 | |
| 3.5" Internal Storage Drive ¹ | | 1 ¹ | 2 ¹ | |

1. Must be configured at time of purchase

Standard User Accessible Ports

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|---|---|--|--|---|
| Type-A Hi-Speed USB 480Mbps signaling rate port | | 3 (rear) | 3 (rear) | |
| Type-A SuperSpeed USB 5Gbps signaling rate port | 3 (rear) | 2 (rear) | 2 (rear) | 2 (rear) |
| Type-A SuperSpeed USB 10Gbps signaling rate port | 2 (front) | 3 (front) | 3 (front) | 1 (rear) 1 (down facing) |
| Type-C [®] SuperSpeed USB 10Gbps signaling rate port | | 1 (front) | 1 (front) | 1 (rear) |
| Type-C [®] SuperSpeed USB 20Gbps signaling rate port | 1 (front) | | | 1 (down facing) |
| Video | 2 DisplayPort™ 2.1 HBR3 (rear) 1 HDMI 2.1TMDS 6Gbps (rear) | 1 DisplayPort™ 2.1 (rear) 1 HDMI 2.1 (rear) | 1 DisplayPort™ 2.1 (rear) 1 HDMI 2.1 (rear) | 1 HDMI-in (Rear) 1.4b 1 HDMI 2.1 (rear) |
| Audio | 1 Combo Audio Jack with CTIA and headset support (front) | 1 Combo Audio Jack with CTIA & OMTP and headset support (front) 1 Audio-Line-in/Line out (rear) | 1 Combo Audio Jack with CTIA & OMTP and headset support (front) 1 Audio-Line-in/Line out (rear) | 1 Combo Audio Jack with CTIA and OMTP headset support (down facing) |
| Network Interface | 1 RJ-45 (rear) | 1 RJ-45 (rear) | 1 RJ-45 (rear) | 1 RJ-45 (rear) |

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

Rear Configurable Non-PCIe/PCI Slot User Accessible Ports

Flexible Port 1, choice of one of the following:

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|-----------------|---|--|--|--|
| Type-A USB | 2 Type-A SuperSpeed USB 5Gbps signaling rate port | 2 Type-A SuperSpeed USB 5Gbps signaling rate port | 2 Type-A SuperSpeed USB 5Gbps signaling rate port (rear) | 2 Type-A SuperSpeed USB 5Gbps signaling rate port (rear) |
| Type-C® USB | 1 SuperSpeed USB 10Gbps signaling rate port w/ DisplayPort™ Alt Mode and power intake via USB Type-C® Power Delivery up to 100W | 1 SuperSpeed USB 10Gbps signaling rate port w/ DisplayPort™ Alt Mode | 1 SuperSpeed USB 10Gbps signaling rate port w/ DisplayPort™ Alt Mode | 1 SuperSpeed USB 10Gbps signaling rate port w/ DisplayPort™ Alt Mode |
| Video | 1 DisplayPort™ 2.1 <u>or</u> HDMI 2.1 <u>or</u> VGA | 1 DisplayPort™ 2.1 HBR3 <u>or</u> HDMI 2.1 <u>or</u> VGA | 1 DisplayPort™ 2.1 <u>or</u> HDMI 2.1 HBR3 <u>or</u> VGA | 1 DisplayPort™ 1.4a <u>or</u> HDMI 2.1a <u>or</u> USB-C |
| Serial (RS-232) | 1 | 1 | 1 | 1 |

(1) Flexible Port 2, choice of one of the following¹:

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|--|-------------|------------|------------|------------|
| Dual Type-A SuperSpeed USB 5Gbps signaling rate port | 1 | | | |
| Serial (RS-232) | 1 | | | |
| 2 nd External antenna | 1 | | | |

1. Must be configured at time of purchase

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

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 |

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

SOFTWARE COMPONENTS AND APPLICATIONS WITH WINDOWS

Software

- Buy Microsoft Office¹ (sold separately)
- Edge Customization
- HP AI Companion (Only on Next Gen AI PC's)
- HP Connection Optimizer
- HP Desktop Support Utilities
- HP Documentation
- HP Hot Key Support
- HP Notifications
- HP PC Hardware Diagnostics UEFI
- HP PC Hardware Diagnostics Windows
- HP Privacy Settings
- HP Services Scan²
- HP Smart Support³
- HP Setup Integrated OOBE
- HP Support Assistant⁴
- HSA Fusion for Commercial
- HSA Telemetry for Commercial
- myHP
- Poly Lens⁵
- Poly Camera Pro

Manageability Features

- HP Client Catalog (download)⁶
- HP Client Management Script Library (download)⁷
- HP Cloud Recovery⁸
- HP Connect for Microsoft Endpoint Manager⁹
- HP Driver Packs (download)¹⁰
- HP Image Assistant (download)¹¹
- HP Manageability Integration Kit (download)¹²
- HP Patch Assistant (download)¹³

Security Features

- HP Protect and Trace
- HP Endpoint Security Controller (ESC) Gen5
- HP Wolf Security for Business includes¹⁴
- HP Sure Admin¹⁵
- HP Sure Click¹⁶
- HP Sure Run¹⁷
- HP Sure Sense¹⁸
- HP Sure Recover¹⁹
- HP Sure Start²⁰
- HP Tamper Lock²¹
- Secured-Core PC Enable

BIOS

- Absolute Persistence Module²²
- HP Bios Recovery
- HP BIOS Update via Network
- HP BIOSphere²³
- HP Secure Erase²⁴
- UEFI Self Certification Level: 2.9



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

1. Microsoft 365 sold separately and requires Internet access for activation.
2. HP Services Scan is preinstalled and/or provided thru Windows Update and checks for service entitlement on each hardware device and downloads the HP Insights agent automatically. To disable this feature, please follow the instructions at <http://www.hpdaas.com/requirements>. The HP Insights agent is a telemetry and analytics platform that provides critical data around devices and applications and is not sold as a standalone service. Select HP Workforce Solutions require an HP Insights agent for Windows, Mac, & Android, available for download at <https://admin.hp.com/software>. For full system requirements and services that require the agent, please visit <https://admin.hp.com/requirements>. The agent collects telemetry and analytics around devices and applications that integrate into the Workforce Experience platform and is not sold as a standalone service. Internet access with connection to the Workforce Experience platform is required. HP follows stringent GDPR privacy regulations, and the platform is ISO27001, ISO27701, ISO27017 and SOC2 Type2 certified for Information Security. Not available in China.
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 Support Assistant is available on Windows. For more information, please visit <http://www.support.hp.com/help/hp-support-assistant>
5. Poly Lens Desktop requires a Windows OS.
6. HP Client Catalog not preinstalled, however available for download at (<https://www.hp.com/us-en/solutions/client-management-solutions.html>).
7. HP Client Management Script Library (<https://www.hp.com/us-en/solutions/client-management-solutions.html#tab=manageability-tools>).
8. 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://apps.microsoft.com/detail/9mtks9pr7r3n?hl=en-US&gl=US>.
9. 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.
10. HP Driver Packs not preinstalled, however available for download at <http://www.hp.com/go/clientmanagement>.
11. HP Image Assistant not preinstalled, however available for download at (<https://ftp.ext.hp.com/pub/caps-softpaq/cmit/HPIA.html>),
12. HP Manageability Integration Kit can be downloaded from <https://www.hp.com/us-en/solutions/client-management-solutions.html#tab=manageability-tools>.
13. 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 Client Management Solutions Overview HP® Official Site.
14. 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.
15. 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
16. HP Sure Click requires Windows 10 Pro or higher or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.
17. HP Sure Run is available on select HP PCs and requires Windows 10 and higher.
18. HP Sure Sense is available on select HP PCs with Windows 10 Pro, Windows 10 Enterprise, Windows 11 Pro, or Windows 11 Enterprise OS.
19. 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.
20. HP Sure Start is available on select HP PCs and requires Windows 10 and higher.
21. HP Tamper Lock can be Enabled/disabled by customers or IT administrator with administrator authority. 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.
22. 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/>.
23. HP BIOSphere features may vary depending on the platform and configuration.
24. HP Secure Erase implements the methods outlined in the National Institute of Standards and Technology Special Publication 800-88r "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.

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

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: 5° to 35° C ¹ Non-Operating for AiO: -20° to 60° C ¹ Non-Operating for MT/SFF/DM: -30° to 60° C ¹ |
| 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) |

1. 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 Components (availability may vary by country)

ENVIRONMENTAL & INDUSTRY

HP ProDesk 4 Mini G1i Desktop AI PC

| | | | |
|--|---|---------------------|---------------------|
| Eco-Label Certifications & declarations | <p>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:</p> <ul style="list-style-type: none"> • 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) <p>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.</p> | | |
| Sustainable Impact Specifications | <ul style="list-style-type: none"> • At least 25% ocean bound plastic-PET Bottle in the Fan and 5% ocean bound plastic-PET Bottle used in the Speaker¹ • At least 5% OP-EPS in plastic parts of Enclosure • At least 55% of post-consumer recycled plastic used in system² • 95% recycled plastic used in parts • 20% recycled metal used in parts • 100% recycled Aluminum used in thermal part • 100% Recycled Rare Earth Elements (REE) used in speaker • Outside Box and corrugated cushions are 100% sustainably sourced and recyclable³ • Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable⁴ • Bulk packaging available⁵ | | |
| System Configuration | <p>The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a Typically Configured Desktop.</p> | | |
| Energy Consumption (in accordance with US ENERGY STAR® test method) | 115VAC, 60Hz | 230VAC, 50Hz | 100VAC, 60Hz |
| Normal Operation (Short idle) | 10.73 W | 11.64 W | 10.40 W |
| Normal Operation (Long idle) | N/A | N/A | N/A |
| Sleep | 4.40 W | 4.24 W | 4.39 W |
| Off | 0.91 W | 0.89 W | 0.92 W |
| | <p>NOTE: Energy efficiency data listed is for an ENERGY STAR® certified product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are certified with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® certified 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.</p> | | |

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

| Heat Dissipation* | 115VAC, 60Hz | 230VAC, 50Hz | 100VAC, 50Hz |
|--|--|--|--------------|
| Normal Operation (Short idle) | 37 BTU/hr | 40 BTU/hr | 36 BTU/hr |
| Normal Operation (Long idle) | N/A | N/A | N/A |
| Sleep | 15 BTU/hr | 15 BTU/hr | 15 BTU/hr |
| Off | 3.1 BTU/hr | 3 BTU/hr | 3.1 BTU/hr |
| <p>NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.</p> | | | |
| Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296) | Sound Power (L _{WAd} , bels) | Sound Pressure (L _{pAm} , decibels) | |
| Typically Configured – Idle | 2.7 | 17 | |
| Fixed Disk – Random writes | 2.7 | 17 | |
| Longevity and upgrading | <p>This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:</p> <ul style="list-style-type: none"> • 2 SODIMM memory slots • Interchangeable M.2 PCIe NVME SSD & 2.5" SATA HDD <p>Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.</p> | | |
| Batteries | <p>This battery(s) in this product comply with EU Directive 2006/66/EC</p> <p>Batteries used in the product do not contain:</p> <ul style="list-style-type: none"> Mercury greater than 1ppm by weight Cadmium greater than 20ppm by weight <p>Battery size: CR2032 (coin cell) Battery type: Lithium</p> | | |
| Additional Information | <ul style="list-style-type: none"> • 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). • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product contains a minimum of 35% post-consumer recycled (PCR) plastic (by wt.); including 10% ITE-derived post-consumer recycled plastic.* • This product is 95.1% recycle-able when properly disposed of at end of life. <p>*Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.</p> | | |
| Packaging Materials -Horizontal design | External: | PAPER/Paper | 562 g |
| | Internal: | PAPER/Molded Pulp | 79 g |
| | | PLASTIC/Polyethylene low density - LDPE | 16 g |
| Packaging Materials -Vertical design | External: | PAPER/Paper | 405 g |
| | Internal: | PAPER/Molded Pulp | 74 g |
| | | PLASTIC/Polyethylene low density - LDPE | 5 g |
| Material Usage | <p>This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):</p> | | |

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

| | |
|--|---|
| | <ul style="list-style-type: none"> • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • 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) |
| <p>Packaging Usage</p> | <p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> • 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. |
| <p>End-of-life Management and Recycling</p> | <p>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.</p> <p>The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: 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.</p> <p>Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://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</p> |
| <p>Footnotes</p> | <ol style="list-style-type: none"> 1. Percentage of ocean-bound plastic & PCR 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. |

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

HP ProDesk 4 SFF G1i Desktop AI PC

| | | | |
|--|---|---------------------|---------------------|
| Eco-Label Certifications & declarations | <p>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:</p> <ul style="list-style-type: none"> • 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) <p>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.</p> | | |
| Sustainable Impact Specifications | <ul style="list-style-type: none"> • At least 25% ocean bound plastic-PET Bottle in the fan and 5% ocean bound plastic-PET used in the speaker • 95% recycled plastic used in parts • 20% recycled metal used in parts • At least 60% of the total post-consumer recycled plastic used in system • 100% Recycled Rare Earth Elements (REE) in speaker • Outside Box and corrugated cushions are 100% sustainably sourced and recyclable • Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable • Bulk packaging available | | |
| System Configuration | <p>The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a Typically Configured Desktop.</p> | | |
| Energy Consumption (in accordance with US ENERGY STAR® test method) | 115VAC, 60Hz | 230VAC, 50Hz | 100VAC, 60Hz |
| Normal Operation (Short idle) | 17.94 W | 17.63 W | 17.66 W |
| Normal Operation (Long idle) | N/A | N/A | N/A |
| Sleep | 3.41 W | 3.76 W | 3.55 W |
| Off | 0.47 W | 0.47 W | 0.47 W |
| | <p>NOTE: Energy efficiency data listed is for an ENERGY STAR® certified product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are certified with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® certified configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency , and a Microsoft Windows® operating system.</p> | | |

QuickSpecs

HP Pro Series 4 G1i Desktops AI PCs

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

| Heat Dissipation* | 115VAC, 60Hz | 230VAC, 50Hz | 100VAC, 60Hz |
|--|--|---|--|
| Normal Operation (Short idle) | 61 BTU/hr | 60 BTU/hr | 60 BTU/hr |
| Normal Operation (Long idle) | N/A | N/A | N/A |
| Sleep | 11.7 BTU/hr | 13 BTU/hr | 12.1 BTU/hr |
| Off | 1.6 BTU/hr | 2 BTU/hr | 1.6 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 | | 21 |
| | Fixed Disk – Random writes | | 23 |
| | Optical Drive sequential reads | | 22 |
| Longevity and Upgrading | <p>This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:</p> <ul style="list-style-type: none"> • 2 DIMM memory slots • Interchangeable M.2 PCIe NVME SSD & 2.5"/3.5" SATA HDD <p>Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.</p> | | |
| Batteries | <p>This battery(s) in this product comply with EU Directive 2006/66/EC</p> <p>Batteries used in the product do not contain: Mercury greater than 1ppm by weight Cadmium greater than 20ppm by weight</p> <p>Battery size: CR2032 (coin cell) Battery type: Lithium</p> | | |
| Additional Information | <ul style="list-style-type: none"> • 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). • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product contains a minimum of 35% post-consumer recycled (PCR) plastic (by wt.); including 10% ITE-derived post-consumer recycled plastic.* • This product is 93.6% recycle-able when properly disposed of at end of life. <p>*Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.</p> | | |
| Packaging Materials (vary by country) | External: | PAPER/Corrugated | 424 g |
| | | PAPER/Molded Pulp | 468 g |
| | | PLASTIC/Polyethylene low density - LDPE | 28 g |
| <p>The plastic packaging material contains at least 20-30% recycled content. The corrugated paper packaging material contains at least 35% recycled content.</p> | | | |



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

| | |
|--|--|
| Material Usage | <p>This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):</p> <ul style="list-style-type: none"> • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • 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 | <p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> • 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 | <p>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.</p> <p>The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: 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.</p> |
| HP Inc. Corporate Environmental Information | <p>For more information about HP's commitment to the environment:</p> <p>Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://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</p> |

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

| | |
|------------------|--|
| footnotes | <ul style="list-style-type: none"> • Percentage of ocean-bound plastic and PCR contained in each component varies by product • Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard. • 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers. • Fiber cushions made from 100% recycled wood fiber and organic materials. • Plastic cushions are made from >90% recycled plastic. • recycled metal is expressed as a percentage of the total weight of the metal according to ISO 14021 definitions for metal parts over 25 grams. |
|------------------|--|

HP ProDesk 4 Tower G1i / G1i E Desktop AI PC

| | | | |
|--|---|---------------------|---------------------|
| Eco-Label Certifications & declarations | <p>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:</p> <ul style="list-style-type: none"> • 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) <p>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.</p> | | |
| Sustainable Impact Specifications | <ul style="list-style-type: none"> • At least 25% ocean bound plastic-PET Bottle in the fan and 5% ocean bound plastic-PET in the speaker • 95% recycled plastic used in parts • 20% recycled metal used in parts • At least 60% of post-consumer recycled plastic used in system • 100% Recycled Rare Earth Elements (REE) used in speaker • Outside Box and corrugated cushions are 100% sustainably sourced and recyclable • Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable • Bulk packaging available | | |
| System Configuration | The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a Typically Configured Desktop. | | |
| Energy Consumption (in accordance with US ENERGY STAR® test method) | 115VAC, 60Hz | 230VAC, 50Hz | 100VAC, 60Hz |
| Normal Operation (Short idle) | 5.72 W | 5.78 W | 5.69 W |
| Normal Operation (Long idle) | 2.09 W | 2.11 W | 2.08 W |
| Sleep | 2.09 W | 2.11 W | 2.08 W |
| Off | 0.56 W | 0.59 W | 0.55 W |



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

| | | | |
|--|--|---------------------|--|
| | <p>NOTE: Energy efficiency data listed is for an ENERGY STAR® certified product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are certified with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® certified 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.</p> | | |
| Heat Dissipation* | 115VAC, 60Hz | 230VAC, 50Hz | 100VAC, 60Hz |
| Normal Operation (Short idle) | 20 BTU/hr | 20 BTU/hr | 19 BTU/hr |
| Normal Operation (Long idle) | 7 BTU/hr | 7 BTU/hr | 7 BTU/hr |
| Sleep | 7.1 BTU/hr | 7 BTU/hr | 7.1 BTU/hr |
| Off | 1.9 BTU/hr | 2 BTU/hr | 1.9 BTU/hr |
| | <p>NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.</p> | | |
| Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296) | Sound Power (L _{WA} d, bels) | | Sound Pressure (L _{pAm} , decibels) |
| Typically Configured – Idle | 3.1 | | 23 |
| Fixed Disk – Random writes | 3.2 | | 25 |
| Optical Drive - Sequential reads | 3.1 | | 23 |
| Longevity and Upgrading | <p>This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:</p> <ul style="list-style-type: none"> • 2 DIMM memory slots • Interchangeable M.2 PCIe NVME SSD & 2.5"/3.5" SATA HDD <p>Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.</p> | | |
| Batteries | <p>This battery(s) in this product complies with EU Directive 2006/66/EC</p> <p>Batteries used in the product do not contain:</p> <ul style="list-style-type: none"> Mercury greater than 1ppm by weight Cadmium greater than 20ppm by weight <p>Battery size: CR2032 (coin cell) Battery type: Lithium</p> | | |
| Additional Information | <ul style="list-style-type: none"> • This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. • This HP product is designed to complies 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 1680.1 (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 contains 44.4% post-consumer recycled plastic (by wt.) • This product is 93.6% recycle-able when properly disposed of at end of life. | | |

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

| | | | |
|---|--|-------------------|--------|
| Packaging Materials (vary by country) | External: | PAPER/Corrugated | 1106 g |
| | Internal: | PAPER/Molded Pulp | 676 g |
| | | OTHER/Other | 36 g |
| Material Usage | <p>This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):</p> <ul style="list-style-type: none"> • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • 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 | <p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> • 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 | <p>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.</p> <p>The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: 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.</p> | | |

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

| | |
|--|---|
| HP Inc. Corporate Environmental Information | <p>For more information about HP's commitment to the environment:</p> <p>Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://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</p> |
| Footnote | <ul style="list-style-type: none"> • Percentage of ocean-bound plastic and PCR contained in each component varies by product • Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard. • 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers. • Fiber cushions made from 100% recycled wood fiber and organic materials. • Plastic cushions are made from >90% recycled plastic. • recycled metal is expressed as a percentage of the total weight of the metal according to ISO 14021 definitions for metal parts over 25 grams. |

HP ProStudio 4 All-in-One G1i 23.8-inch Desktop AI PC

| | |
|--|--|
| Eco-Label Certifications & declarations | <p>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:</p> <ul style="list-style-type: none"> • 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) |
| Sustainable Impact Specifications | <ul style="list-style-type: none"> • At least 25% ocean bound plastic-PET Bottle in the Fan and 5% ocean bound plastic-PET Bottle used in the Speaker • At least 75% of post-consumer recycled plastic used in system • 95% recycled plastic used in parts • 20% recycled metal used in parts • 20% recycled glass used in display panels • 100% recycled Aluminum used in thermal part and Stand part • 100% Recycled Rear earth element (REE) used in speaker • Outside Box and corrugated cushions are 100% sustainably sourced and recyclable • Recycled Plastic cushions |
| System Configuration | <p>The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a "Typically Configured Desktop".</p> |

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

| Energy Consumption (in accordance with US ENERGY STAR® test method) | 115VAC, 60Hz | 230VAC, 50Hz | 100VAC, 60Hz |
|--|---|---------------------|---|
| Normal Operation (Short idle) | 17.30 W | 17.20 W | 17.52 W |
| Normal Operation (Long idle) | 1.89 W | 1.80 W | 1.79 W |
| Sleep | 1.89 W | 1.80 W | 1.79 W |
| Off | 0.64 W | 0.63 W | 0.61 W |
| | <p>NOTE: Energy efficiency data listed is for an ENERGY STAR® certified product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are certified with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® certified 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.</p> | | |
| Heat Dissipation* | 115VAC, 60Hz | 230VAC, 50Hz | 100VAC, 60Hz |
| Normal Operation (Short idle) | 58.99 BTU/hr | 58.65 BTU/hr | 59.74 BTU/hr |
| Normal Operation (Long idle) | 6.44 BTU/hr | 6.14 BTU/hr | 6.10 BTU/hr |
| Sleep | 6.44 BTU/hr | 6.14 BTU/hr | 6.10 BTU/hr |
| Off | 2.18 BTU/hr | 2.15 BTU/hr | 2.08 BTU/hr |
| | <p>NOTE: Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.</p> | | |
| Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296) | Sound Power (L_{WAd}, bels) | | Sound Pressure (L_{pAm}, decibels) |
| Typically Configured – Idle | 2.8 | | 14 |
| Fixed Disk – Random writes | 3.0 | | 19 |
| Longevity and Upgrading | <p>This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:</p> <ul style="list-style-type: none"> • 2 SODIMM memory slots <p>Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.</p> | | |
| Batteries | <p>This battery(s) in this product comply with EU Directive 2006/66/EC</p> <p>Batteries used in the product do not contain: Mercury greater than 1ppm by weight Cadmium greater than 20ppm by weight</p> <p>Battery size: CR2032 (coin cell) Battery type: Lithium</p> | | |

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

| | | | |
|---|--|---------------------|---------|
| Additional Information | <ul style="list-style-type: none"> • 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, see http://www.epeat.net. • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product contains a minimum of 50% post-consumer recycled (PCR) plastic (by wt.); including 10% ITE-derived post-consumer recycled plastic.* • This product is 95.9% recycle-able when properly disposed of at end of life. <p>*Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.</p> | | |
| Packaging Materials (vary by country) | External: | PAPER/Corrugated | 1102.6g |
| | | Molded Pulp Cushion | 1711.8g |
| | Internal: | Wood fiber | 0g |
| | | LDPE | 39.6g |
| | The plastic packaging material contains at least 0.0% recycled content. | | |
| | The corrugated paper packaging materials contains at least 90.0% recycled content. | | |
| Material Usage | <p>This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):</p> <ul style="list-style-type: none"> • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • 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 | <p>HP follows these guidelines to decrease the environmental impact of product packaging:</p> <ul style="list-style-type: none"> • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. | | |

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

| | |
|---|--|
| | <ul style="list-style-type: none"> • 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 | <p>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.</p> <p>The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: 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.</p> <p>Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html</p> <p>Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html</p> <p>ISO 14001 certificates: http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842 and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf</p> |
| footnotes | <ul style="list-style-type: none"> • Percentage of ocean-bound plastic & PCR contained in each component varies by product • Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard. • External power supplies, WWAN modules, power cords, cables and peripherals excluded. • 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers. • Plastic cushions are made from >90% recycled plastic. |

SERVICE AND SUPPORT

On-site Warranty¹: One-year (1-1-1) limited warranty delivers one year of on-site, next business day² 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.

PROCESSORS

Intel Core Ultra Processors 2005 series

All HP ProDesk 4 & ProStudio 4 G1i Business PC models featuring this technology include processors that are part of the Intel® Stable Image Platform Program (SIPP) designed to ensure the stability promise inherent in the value proposition of the HP ProDesk and ProStudio G1i Business PC.

Intel® Advanced Management Technology (AMT)¹ v19 – An advanced set of remote management features and functionality which provides network administrators the latest and most effective tools to remotely discover, heal, and protect networked client systems regardless of the system's health or power state. AMT 19 includes the following advanced management functions:

- Support for configuration of Intel® AMT 19.0 capabilities
- No reset after provisioning
- Support for Intel® Enterprise Digital Fence
- The Platform Discovery Utility can now discover these additional Intel® products:
 - Intel® Identity Protection Technology with One Time Password
 - Public Key Infrastructure
 - Multi Factor Authentication
- Profile Editor and Profile Editor Plugin Interface
- Required Permissions for Solutions Framework

1. Intel® Active Management Technology requires an Intel® AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications of implementation of new business processes.

Technical Specifications - Display Panel Specifications

DISPLAY PANEL SPECIFICATIONS

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

HP ProStudio 4 All-in-One G1i 23.8-inch Desktop AI PC

23.8" diagonal IPS widescreen WLED backlit anti-glare LCD (1920 x 1080) Projected Capacitive Touch supports up to 10 touch-points

Support HW low blue light feature

| | |
|---|--|
| Type | IPS WLED Backlit LCD |
| Active area (mm) | 527.04 x 296.46 |
| Native resolution (HxV) | 1920 x 1080 |
| Refresh rate | 75 Hz @ 1920 x 1080 |
| Aspect ratio | 16:9 |
| Pixel pitch (HxV)(mm) | 0.2745 x 0.2745 |
| Contrast ratio | 1000:1 |
| Brightness | 300nits* |
| Viewing angle (HxV) | 178° x 178° |
| Backlight lamp life (to half brightness) | 30,000 hours minimum |
| Color support | Up to 16.7 million colors with 8 Bit (6 Bit + FRC) |
| Color gamut | sRGB 99% |
| Anti-glare | Yes |
| Response time | 14ms |
| Default color temperature | Warm (6500K) |

NOTE*: Actual brightness will be lower with touchscreen

23.8" diagonal IPS widescreen WLED backlit anti-glare LCD (1920 x 1080) non-touch

Support HW low blue light feature

| | |
|---|--|
| Type | IPS WLED Backlit LCD |
| Active area (mm) | 527.04 x 296.46 |
| Native resolution (HxV) | 1920 x 1080 |
| Refresh rate | 75Hz @ 1920 x 1080 |
| Aspect ratio | 16:9 |
| Pixel pitch (HxV)(mm) | 0.2745 x 0.2745 |
| Contrast ratio | 1000:1 |
| Brightness | 250nits* |
| Viewing angle (HxV) | 178° x 178° |
| Backlight lamp life (to half brightness) | 30,000 hours minimum |
| Color support | Up to 16.7 million colors with 8 Bit (6 Bit + FRC) |
| Color gamut | sRGB99% |
| Anti-glare | Yes |
| Response time | 14ms |
| Default color temperature | Warm (6500K) |

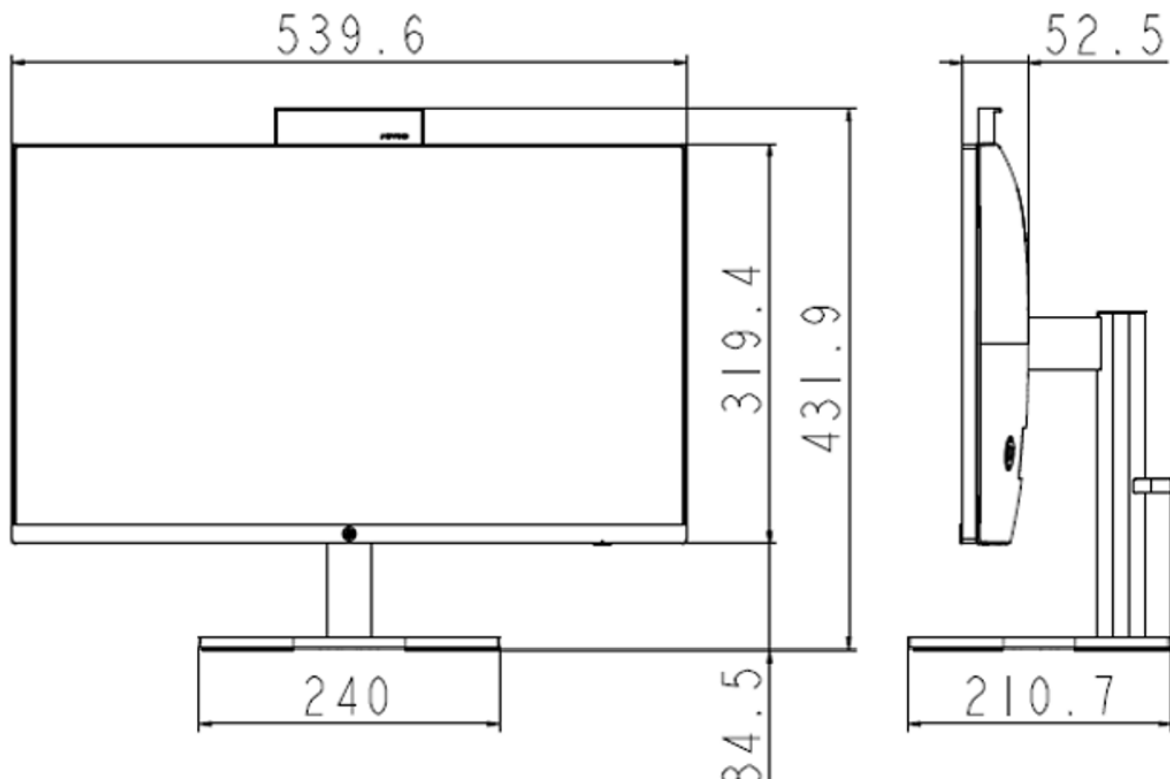
Technical Specifications - All-in-One Stand Specifications

ALL-IN-ONE STAND SPECIFICATIONS

HP ProStudio 4 All-in-One G1i 23.8-inch Desktop AI PC

HP ProStudio 4 G1i 23.8" AIO Cantilever Stand

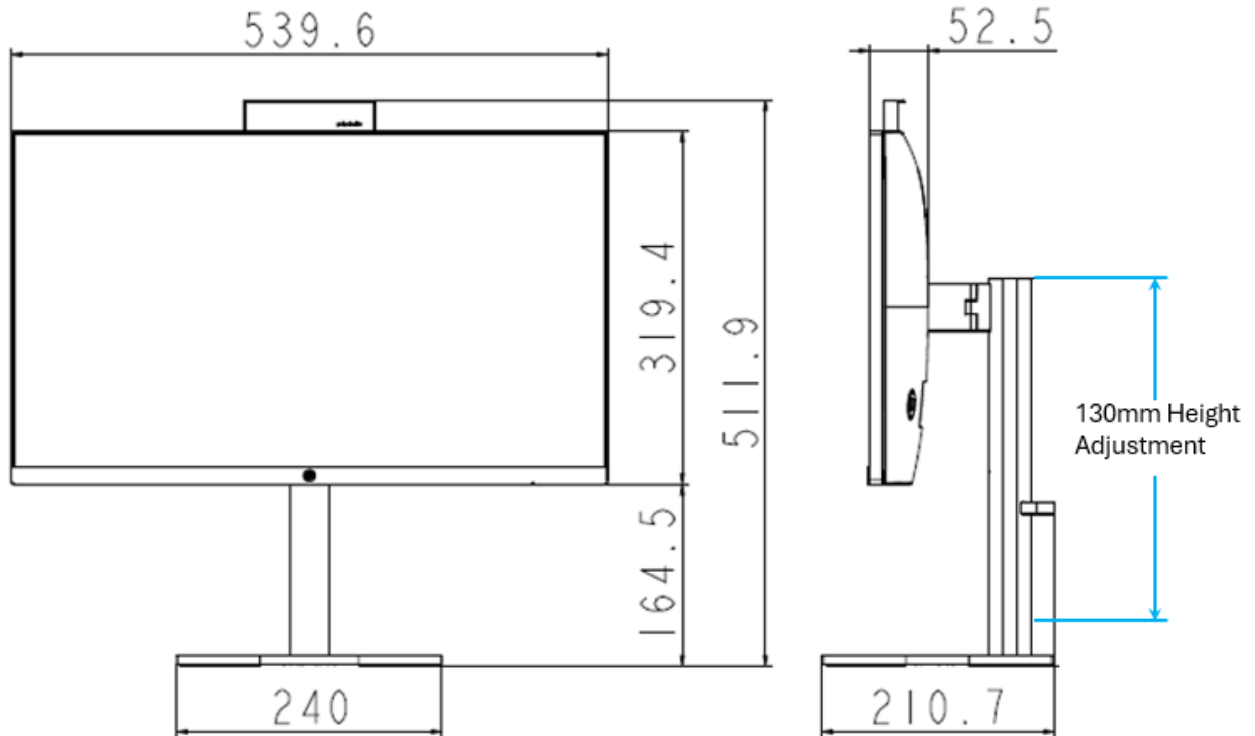
| | | |
|---|-------------------|-------------|
| Cantilever Stand (Fixed Height Tilt Stand) | Tilt Angle | -5° to +23° |
| | Rotation (Swivel) | None |
| | Pivot | None |



Technical Specifications - All-in-One Stand Specifications

HP ProStudio 4 G1i 23.8" AIO Height Adjustment

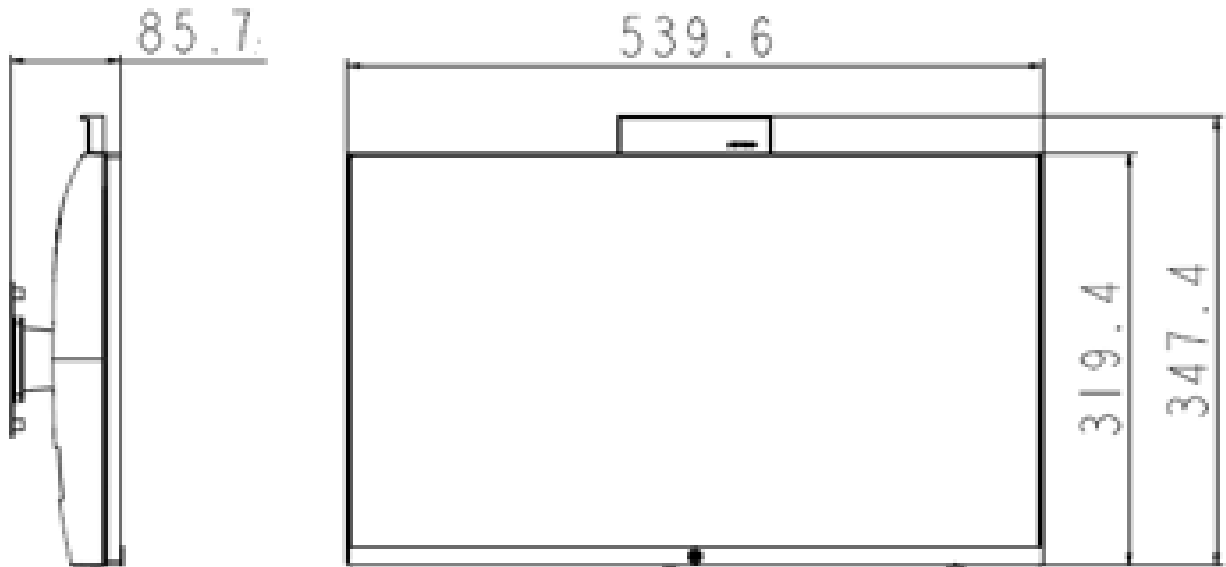
| | | |
|--------------------------------|---|-----------------|
| Adjustable Height Stand | Height Adjustment (Landscape Mode) | 5.12 in / 130mm |
| | Height Adjustment (Portrait Mode) | N/A |
| | Tilt Angle | -5° to +23° |
| | Rotation (Swivel) | ±45° |
| | Pivot | None |



Technical Specifications - All-in-One Stand Specifications

HP ProStudio 4 G1i 23.8" AIO VESA Plate

| | | |
|-------------------------------------|--------------------------|------|
| No Stand | Tilt Angle | None |
| (VESA COVER with VESA Plate) | Rotation (Swivel) | None |
| | Pivot | None |



Technical Specifications – Graphics

GRAPHICS

HP ProDesk 4 Mini G1i Desktop AI PC

Intel® UHD Graphics (integrated)

Up to four simultaneous displays, 4K60Hz display concurrent with:

- Single external display up to 8K60Hz, supported by joining two pipes over single port.
- Up to 4x4K60Hz External display (3 Native video ports + 1 Flex IO options)

| | |
|--------------------------------------|---|
| Graphics Controller | Integrated |
| DisplayPort™ | Supports up to UHBR20 Support MST (Multi-Stream Transport), Maximum of 3 displays with Daisy-Chain monitor Support VESA DSC 1.2b Support HDCP Support up to 36 BPP (Bit Pre Pixel) Supports HDMI 2.1 features Supports up to 6Gbps TMDS link rates on 3 lanes Supports up to 12Gbps FRL link rates on 4 lanes Supports HDCP 2.3 Supports audio over HDMI Support up to 36 BBP (Bit Pre Pixel) |
| VGA (optional) | VGA output |
| USB-C® DP Alt Mode (optional) | DisplayPort™ over the USB-C® module |
| 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. |
| Graphics/Video API Support | HEVC/VP9 8k@60 12-bit 420/422/444 Decode AV1 8K @60 10-bit 420 Decode AVC 4k @60 8bit 420 Decode HDR rect3D* 2015 /Direct3D 12/Direct3D 11.2/Direct/Direct3D11.1/Direct3D 10/Direct2D OpenGL* 4.5 OpenCL* 3.0 Direct X* 12 |
| Max. Resolution (Native HDMI) | HDMI 2.1 (TMDS 6Gbps) 4K @60HZ 24 bpp |
| Max. Resolution (Native DP) | DP2.1 (HBR3) 7680 x 4320 @60hz (with DSC) |
| Max Resolution (optional VGA) | 2048 x 1536 @60Hz |
| Max Resolution (optional DP) | 8K @240 Hz, 16K @60 Hz (with DSC) |

Technical Specifications – Graphics

| | |
|---------------------------------------|---|
| Max Resolution (optional HDMI) | HDMI2.1 (FRL 12G bps) 8K60Hz (Compressed, 5K120Hz compressed, 4K144Hz compressed) |
| Max Resolution (option Type C) | DP2.1 (HBR3) 7680 x 4320@60Hz (with DSC) |

HP ProDesk 4 SFF G1i Desktop AI PC

| | |
|--|--|
| Intel® HD Graphics (integrated) | |
| Up to three simultaneous displays, 4K60Hz display concurrent with: | |
| — Single external display up to 8K60Hz, supported by joining two pipes over single port. | |
| — Up to 3x4K60Hz External display. (2 Native video ports + 1 Flex IO options) | |
| VGA Controller | Integrated |
| DisplayPort™ | Multimode capable; supports HDCP, Display Port Audio, Native support HBR3 link rates/option DP support to UHBR20 and Multi-Stream Technology for a maximum of 3 displays connected to any output controlled by Intel® Graphics |
| HDMI (Native / optional) | USB-C® DP Alt Mode (optional) |
| VGA (optional) | VGA output |
| USB-C® DP Alt Mode (optional) | DisplayPort™ over the optional USB-C® module (Support DP1.4 HBR32) |
| 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 | Supports up to 36 BPP (Bit Per Pixel) |
| Graphics/Video API Support | Decode: HEVC/VP9 8K60 12-bit 420/422/444*, AV1 8K60 10-bit 420, AVC 4K60 8-bit 420 Encode: HEVC/VP9 8K30 10-bit 420/444*, AV1 8K30 10-bit 420 (FF accel), AVC 4K60 8-bit 420 HDR Dolby Vision 420/422 w/ DSC 1.2 DX12 Ultimate |
| Max. Resolution (VGA Option) | 2048 x 1536 @60Hz |
| Max. Resolution (Native HDMI) | HDMI TMDS 6G: 4096 x 2160 @60Hz |
| Max. Resolution (Option HDMI) | HDMI2.1 FRL 12G: 8K @60Hz Compressed, 5K @120Hz compressed, 4K @144Hz compressed |
| Max. Resolution (On board DP) | DP2.1 HBR3: 7680 x 4320 @60Hz (with DSC) |
| Max. Resolution (Option DP) | DP2.1 UHBR20: 8K @60Hz compressed, 5K @120Hz compressed |
| Max. Resolution (Option Type C) | DP HBR3: 7680 x 4320 @60Hz (with DSC) |

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 | 512M x32 GDDR6 ,1 pcs / 16Gbps |
| Max. Resolution (HDMI) | 7680 x 4320 @60Hz |
| Max. Resolution (DP) | 7680 x 4320 @120Hz |
| Multi Display Support | 2 displays |
| HDCP Compliance | Yes |
| Rear I/O connectors (bracket) | HDMI x1+ 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 |



Technical Specifications – Graphics

NVIDIA® RTX A1000 8GB GRAPHICS

| | |
|--------------------------------------|---|
| GPU Clocks | Base: 721 Mhz Boost: 1462 Mhz |
| Memory size / Bus Width | 8GB / 128bits |
| Graphic Memory Type / Clock | 8GB GDDR6/6001MHz |
| Max. Resolution (DP1.4a) | 7680 x 4320 x 24bpp @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® RTX A400 4GB Graphics

| | |
|--------------------------------------|---|
| 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) | 7680 x 4320 x24bpp @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 |

HP ProDesk 4 Tower G1i / G1i E Desktop AI PC

Intel® HD Graphics (integrated)

Up to three simultaneous displays, 4K60Hz display concurrent with:

— Single external display up to 8K60Hz, supported by joining two pipes over single port.

— Up to 3x4K60Hz External display. (2 Native video ports + 1 Flex IO options)

| | |
|--------------------------------------|---|
| VGA Controller | Integrated |
| DisplayPort™ | Multimode capable; supports HDCP, Display Port Audio, Native support HBR3 link rates/option DP support to UHBR20 and Multi-Stream Technology for a maximum of 3 displays connected to any output controlled by Intel® Graphics |
| HDMI (Native / optional) | USB-C® DP Alt Mode (optional) |
| VGA (optional) | VGA output |
| USB-C® DP Alt Mode (optional) | DisplayPort™ over the optional USB-C® module (Support DP1.4 HBR3 ²) |
| 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 | Supports up to 36 BPP (Bit Per Pixel) |

Technical Specifications – Graphics

| | |
|--|--|
| Graphics/Video API Support | Decode: HEVC/VP9 8K60 12-bit 420/422/444*, AV1 8K60 10-bit 420, AVC 4K60 8-bit 420 Encode: HEVC/VP9 8K30 10-bit 420/444*, AV1 8K30 10-bit 420 (FF accel), AVC 4K60 8-bit 420 HDR Dolby Vision 420/422 w/ DSC 1.2 DX12 Ultimate |
| Max. Resolution (VGA Option) | 2048 x 1536 @60Hz |
| Max. Resolution (Native HDMI) | HDMI TMDS 6G: 4096 x 2160@,60Hz |
| Max. Resolution (Option HDMI) | HDMI2.1 FRL 12G: 8K @60Hz Compressed, 5K @120Hz compressed, 4K @144Hz compressed |
| Max. Resolution (Native DP) | DP2.1 HBR3: 7680 x 4320 @60Hz (with DSC) |
| Max. Resolution (Option DP) | DP2.1 UHBR20: 8K @60Hz compressed, 5K @120Hz compressed |
| Max. Resolution (Option Type C) | DP HBR3: 7680 x 4320 @60Hz (with DSC) |

NVIDIA® GeForce® RTX 3050 8GB GDDR6 Graphics Card

| | |
|--------------------------------------|--|
| Engine Clock | Base: 1515 Mhz Boost: 1755 Mhz |
| Frame Buffer Size / Width | 8GB/128bit |
| Graphic Memory Type / Clock | 512M x32 GDDR6 @ 4 pcs/14Gbps |
| Max. Resolution (HDMI) | 7680 x 4320 @60Hz |
| Max. Resolution (DP) | 7680 x 4320 @60Hz |
| Multi Display Support | 4 displays |
| HDCP Compliance | Yes |
| Rear I/O connectors (bracket) | HDMI x1+ DPx3 |
| Cooling (active/passive) | Active fansink with 4 pin fan control |
| Total power consumption (W) | 120W |
| Form-factor | ATX (X:144.7mm/Y:111.15mm/Z: 36.70mm) PCB with ATX dual slot bracket |

NOTE: PCIe 2x4 power connector requires for RTX3050 with 400W PSU

Intel® Arc™ A380 6GB GDDR6 Graphics card⁴

| | |
|--------------------------------------|-----------------------|
| Engine Clock | 2150Mhz |
| Frame Buffer Size / Width | 6GB/96bit |
| Graphic Memory Type / Clock | GDDR6 ,3 pcs/15.5Gbps |
| Max. Resolution (HDMI) | 4096 x 2160 @60Hz |
| Max. Resolution (DP) | 7680 x 4320 @60Hz |
| Multi Display Support | 4 displays |
| HDCP Compliance | Yes |
| Rear I/O connectors (bracket) | DP x3 + HDMI x1 |
| Cooling (active/passive) | Active |
| Total power consumption (W) | 75W |

Technical Specifications – Graphics

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 | 512M x32 GDDR6,1 pcs / 16Gbps |
| Max. Resolution (HDMI) | 7680 x 4320 @60Hz |
| Max. Resolution (DP) | 7680 x 4320 @120Hz |
| Multi Display Support | 2 displays |
| HDCP Compliance | Yes |
| Rear I/O connectors (bracket) | HDMI x1+ 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 |

NVIDIA® RTX A400 4GB Graphics

| | |
|--------------------------------------|---|
| 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) | 7680 x 4320 x 24bpp @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 |

HP ProSTUDIO 4 ALL-IN-ONE G1i 23.8-INCH DESKTOP AI PC

| | |
|--------------------------------------|---|
| | Intel® UHD Graphics (integrated) |
| Graphics Controller | Integrated |
| DisplayPort™ | Multimode capable; supports HDCP, Display Port Audio , HBR2 link rates and Multi-Stream Technology for a maximum of 3 displays connected to any output controlled by Intel® Graphics |
| HDMI (Native / optional) | Supports HDMI 2.1 features Supports HDCP 2.3 Supports audio over HDMI |
| USB-C® DP Alt Mode (optional) | DisplayPort™ over the USB-C® module |
| 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 |

Technical Specifications – Graphics

| | |
|--|--|
| Graphics/Video API Support | Decode: HEVC/VP9 8K60 12-bit 420/422/444*, AV1 8K60 10-bit 420, AVC 4K60 8-bit 420 Encode: HEVC/VP9 8K30 10-bit 420/444*, AV1 8K30 10-bit 420 (FF accel), AVC 4K60 8-bit 420 HDR |
| | DX12 |
| Max. Resolution (HDMI) | 4096 x 2160 @60Hz |
| Max. Resolution (DP) | DP2.1 (HBR3) 5120 x 3200 @60hz 24 bpp |
| Max. Resolution (Optional DP) | 5120 x 2160 @60Hz |
| Max. Resolution (Optional HDMI) | 3840 x 2160 @60Hz |

AMD Radeon™ RX 6450M 2GB GDDR6 Graphics card

| | |
|------------------------------------|--------------------------------|
| Engine Clock | Base: 2000 Mhz Boost: 2460 Mhz |
| Memory Size / Width | 4GB / 32bit |
| Graphic Memory Type / Clock | 512M x32 GDDR6, 2 pcs / 16Gbps |
| HDCP Compliance | Yes |
| Total power consumption (W) | 25W |

Technical Specifications – Storage

STORAGE

NOTE: Starting from November 1st, 2023, all shipments will require Windows to be installed when selecting a 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 | 64MB |
| Logical Blocks | 1,953,525,168 |
| Seek Time | 11 ms (Average) |
| Height | 1in/2.54cm |
| 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 | 128MB |
| Logical Blocks | 3,907,050,336 |
| Seek Time | 11 ms (Average) |
| Height | 1.028in/26.11mm |
| 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.

256GB M.2 2280 PCIe NVMe SSD

| | |
|---------------------------------|----------------|
| Capacity | 256GB |
| Interface | PCIe Gen4x4 |
| Minimum Sequential Read | 3100 MB/s ±20% |
| Minimum Sequential Write | 1200 MB/s ±20% |
| 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 Gen4x4 |
| Minimum Sequential Read | 3500 MB/s \pm 20% |
| Minimum Sequential Write | 1600 MB/s \pm 20% |
| 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 Gen4x4 |
| Minimum Sequential Read | 3500 MB/s \pm 20% |
| Minimum Sequential Write | 2700 MB/s \pm 20% |
| 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 \pm 20% |
| Minimum Sequential Write | 3500 MB/s \pm 20% |
| 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 \pm 20% |
| Minimum Sequential Write | 5000 MB/s \pm 20% |
| 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.

Technical Specifications – Storage

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

| | |
|---------------------------------|------------------------|
| Capacity | 2TB |
| Interface | PCIe Gen4x4 |
| Minimum Sequential Read | 6400 MB/s ±20% |
| Minimum Sequential Write | 5000 MB/s ±20% |
| 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 | 3100 MB/s ±20% |
| Minimum Sequential Write | 1200 MB/s ±20% |
| Logical Blocks | 500,118,192 |
| Features | TCG Opal 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 ±20% |
| Minimum Sequential Write | 3500 MB/s ±20% |
| 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 |

Technical Specifications – Storage

| | |
|--|--|
| 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 |
| 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 (140 g) Without bezel |
| 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 |
| Read Speeds | DVD-RW, DVD+RW - Up to 8X DVD-R DL, DVD+R DL - Up to 8X DVD+R, DVD-R - Up to 8X DVD-ROM DL, DVD-ROM - Up to 8X CD-ROM, CD-R - Up to 24X CD-RW - Up to 24X |
| 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

| Intel® I219-LM 1 Gigabit Network Connection LOM (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 8023 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) |
| 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 1000bp 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 modern standby or sleep state (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only), <u>Microsoft Windows Fast Startup must be disabled.</u> 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® vPro® support with appropriate Intel® chipset components |

Technical Specifications – Networking

| Intel I226-T1 2.5GbE Ethernet Network Adapter | |
|--|---|
| Connector | RJ-45 |
| System Interface | PCI (Intel proprietary) + SMBus |
| Data rates supported | <ol style="list-style-type: none"> 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 1000BASE-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 1000Mbps Full Run: 1000mW 2500Mbps 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 |

Technical Specifications – Networking

Realtek RTL8852CE 802.11ax 2x2 Wi-Fi 6E + Bluetooth® 5.3 Wireless Card¹

(802.11ax 2x2, supporting gigabit data rate)

| | |
|------------------------------------|---|
| Wireless LAN Standards | <ul style="list-style-type: none"> IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k |
| Interoperability | Wi-Fi certified |
| Frequency Band | <p>802.11b/g/n/ax</p> <ul style="list-style-type: none"> • 2.402 – 2.482 GHz <p>802.11a/n/ac/ax</p> <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | <p>Direct Sequence Spread Spectrum</p> <p>OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM</p> |
| Security² | <ul style="list-style-type: none"> • 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 • EAP |
| Network Architecture Models | <p>Ad-hoc (Peer to Peer)</p> <p>Infrastructure (Access Point Required)</p> |
| Roaming | IEEE 802.11 compliant roaming between access points |
| Output Power³ | <ul style="list-style-type: none"> • 802.11b: +17dBm minimum • 802.11g: +16dBm minimum |

Technical Specifications – Networking

| | |
|--------------------------------|---|
| | <ul style="list-style-type: none"> • 802.11 a: +17dBm minimum • 802.11 n HT20(2.4GHz): +14dBm minimum • 802.11 n HT40(2.4GHz): +13dBm minimum • 802.11 n HT20(5GHz): +14dBm minimum • 802.11 n HT40(5GHz): +13dBm minimum • 802.11 ac VHT80(5GHz): +10dBm minimum • 802.11 ac VHT160(5GHz): +10dBm minimum • 802.11 ax HE40(2.4GHz): +12dBm minimum • 802.11 ax HE80(5GHz): +10dBm minimum • 802.11 ax HE160(5GHz): +10dBm minimum • 802.11 ax HE80(6GHz): +10dBm minimum • 802.11 ax HE160(6GHz): +10dBm minimum |
| Power Consumption | <ul style="list-style-type: none"> • 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] | <ul style="list-style-type: none"> 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 Two embedded tri-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% |
| 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) |
| LED Activity | N/A |

Technical Specifications – Networking

| 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 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/E, Section 15.247, 15.249, 15.407 ETSI 300 328, ETSI 301 893, ETSI 303 687 |
| Bluetooth® Profiles Supported | Bluetooth 4.1-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 Bluetooth.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) Bluetooth 5.2 ESR9/10 Compliance LE Advertisement Extensions Channel Selection Algo Limited High Duty Cycle Non-Connectable Advertising 2Mbps LE LE Long Range Windows Bluetooth profiles support Bluetooth 5.3 Periodic Advertisement interval Encryption key size control enhancements |

Technical Specifications – Networking

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).

| Intel® AX211 Wi-Fi 6E +Bluetooth® 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 |
| Security² | • 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 • WAPI |



Technical Specifications – Networking

| | |
|---|--|
| Network Architecture Models | Ad-hoc (Peer to Peer) Infrastructure (Access Point Required) |
| Roaming | IEEE 802.11 compliant roaming between access points |
| Output Power³ | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 Sensitivity⁴ | <ul style="list-style-type: none"> • 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 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 2. Type 1216: 1.67 x 12.0 x 16.0 mm |
| Weight | 1. Type 2230: 2.8g 2. Type 1216: 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 |

Technical Specifications – Networking

| 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 + 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 Certifications | ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark |
| Bluetooth® Profiles Supported | Bluetooth 4.1-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 Bluetooth 4.2 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) Bluetooth 5.2 ESR9/10 Compliance LE Advertisement Extensions Channel Selection Algo Limited High Duty Cycle Non-Connectable Advertising 2Mbps LE LE Long Range |

Technical Specifications – Networking

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.

Intel® AX211 Wi-Fi 6E + Bluetooth® 5.3 wireless card M.2 vPro® 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 |
| Security² | • 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 |



Technical Specifications – Networking

| | |
|---|--|
| | <ul style="list-style-type: none"> • 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 Power³ | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 Sensitivity⁴ | <ul style="list-style-type: none"> • 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 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 2. Type 1216: 1.67 x 12.0 x 16.0 mm |
| Weight | 1. Type 2230: 2.8g 2. Type 1216: 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 |

Technical Specifications – Networking

| 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 + 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 Certifications | ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark |
| Bluetooth® Profiles Supported | Bluetooth 4.1-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 Bluetooth 4.2 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) Bluetooth 5.2 ESR9/10 Compliance LE Advertisement Extensions Channel Selection Algo Limited High Duty Cycle Non-Connectable Advertising 2Mbps LE LE Long Range |

Technical Specifications – Networking

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.

Realtek RTL8852BE-VT 802.11ax 2x2 Wi-Fi™ + Bluetooth® 5.4 Wireless Card (802.11ax 2x2, supporting gigabit data 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, OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM |
| Security² | •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 certification •IEEE 802.11i •WAPI |

Technical Specifications – Networking

| | |
|---|---|
| Network Architecture Models | Ad-hoc (Peer to Peer) Infrastructure (Access Point Required) |
| Roaming | IEEE 802.11 compliant roaming between access points |
| Output Power³ | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 Sensitivity⁴ | 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. 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: 2.4 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) |

Technical Specifications – Networking

| | |
|---------------------|--|
| 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 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 |
| Bluetooth® Software Supported Link Topology | Microsoft Windows Bluetooth Software |
| Power Management | Microsoft Windows ACPI, and USB Bus Support |
| Certifications | FCC (47 CFR) Part 15C/E, Section 15.247, 15.249 ETSI 300 328, ETSI 301 893 |
| Bluetooth® Profiles Supported | Bluetooth 4.1-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 Bluetooth 4.2 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) Bluetooth 5.1 ESR9/10 Compliance LE Advertisement Extensions Channel Selection Algo Limited High Duty Cycle Non-Connectable Advertising 2Mbps LE LE Long Range |

Technical Specifications – Networking

1. 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.
2. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
3. 1. Check latest software/driver release for updates on supported security features.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

Technical Specifications – Input/Output Devices

I/O DEVICES

| HP Business Slim v2 Smart Card CCID USB Keyboard | | |
|---|--|--|
| Physical Characteristics | Keys | 104, 105, 107, 109 layout (depending upon country) |
| | Dimensions (LxWxH) | 17.34 x 5.68 x 0.78in (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 v2 AntiMicrobial Wired Keyboard (China only) | | |
|--|--|--|
| Physical Characteristics | Keys | 104/105/107/109layout (depending upon country) |
| | Dimensions (L x W x H) | 436 x 138 x20.7 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 Wired Desktop 320K v2 Keyboard | | | |
|--|---------------------------|---|-----------------------|
| Physical Characteristics | Keys | 104, 105, 107,109 layouts | |
| | Dimensions(L x W x H) | 18.86*4.55*0.66 in (426.2 x 110.9 x 16.7 mm) | |
| | Weight | 1.00 lb(452g) | |
| Electrical | Operating voltage | 5 VDC, +/-5% | |
| | Power consumption | 50 mA Max (All LED on) | |
| | 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 | 2.0mm +/-0.2mm at 120gf Key travel | |
| Environmental | Operating temperature | 10° C 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 | |
| | Non-operating shock | <p>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.</p> <p>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.</p> | |
| | Operating vibration | Frequency (Hz) | Slope (dB/oct) |
| 5-350 | | 0 | 0.0001 |
| 350-500 | | -6 | - |
| 500 | | - | 0.00005 |
| (~0.21G _{rms}) | | | |
| Total Test time: 10 minutes | | | |

Technical Specifications – Input/Output Devices

| | | Frequency (Hz) | Slope (dB/oct) | PSD (g ² /Hz) |
|-----------------------------|--|-----------------------------------|----------------|--------------------------|
| | Non-operating vibration | 5.100 | 0 | 0.015 |
| | | 100-137 | -6 | - |
| | | 137-350 | 0 | 0.008 |
| | | 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 725 Multi-Device Rechargeable Wireless Keyboard | | |
|---|---|---|
| Physical Characteristics | Keys | US-109 Keys POD-110 Keys JP-114 Keys LA-110 Keys |
| | Dimensions (LxWxH) | 420.47 x 120.7 x 17.66(mm); 16.56 x 4.75 x 0.7(in) |
| | Weight | 1.1lb; 499g |
| Electrical | Operating voltage | 2.5V~3.8V |
| | Power consumption | 2.4G Active=0.833mA Idle=0.065mA Sleep=0.03mA Power off=0.006mA BLE Active=0.414mA Idle=0.048 Sleep=0.03mA Power off=0.006mA |
| | System Interface | 2.4GHz Wireless +Bluetooth 5.3 |
| | ESD | 4kV, Contact Discharge 8kV, Air Discharge |
| | EMI - RFI | -3dB |
| Mechanical | Key Structure (Switch type and feeling) (Plunger,, Scissor, Mechanical) | Scissor, 2.0mm ± 0.3mm low profile key travel |
| | Key actuation | Contact Point: 1.1±0.4mm |
| | Key life | 10 million keystrokes (Life tester) |
| | Key structure type | Scissor |
| | Key-leveling mechanisms | balance bar |
| Environmental | Operating temperature | -29°C ~ 60°C |
| | Non-operating temperature | -20°C ~ 65°C |
| | Operating humidity | N/A |
| | Non-operating humidity | 0-95%RH |

Technical Specifications – Input/Output Devices

| | |
|-------------------------|--|
| Operating shock | 40G, 2ms, 1 impact on the $\pm X$, $\pm Y$, and $+ Z$ axes, with a total of 6 impacts |
| Non-operating shock | 240G, 2ms, 1 impact on the $\pm X$, $\pm Y$, and $+ Z$ axes, with a total of 6 impacts |
| Operating vibration | N/A |
| Non-operating vibration | Frequency: 5-55-5 (Hz), Amplitude: 2mm, Vibration direction: X, Y, Z, three axes in total, Cycle time: 3 minutes/CYCLE, Number of cycles: 10 times, Test time: 30 minutes/axis, total 90 minutes |
| Drop (out of box) | 6 faces & 4 corners, 76cm |
| Drop (in box) | 1 corner, 3 edge, 6 flat |
| Approvals | CB; FCC; IC; RCM; WPC; NTC; IMDA; BSMI; NCC; SRRC; SIRIM; TRA; EAC; ICASA; UKCA; KCC; TUV; RATEL; IFETEL; BIS; MOICT; iCTqatar; RoHS; Subtel; NKRZI |

| HP Wired Desktop 320M Mouse | | |
|------------------------------------|---------------------------|--|
| Physical Characteristics | Keys | Left/right key |
| | Dimensions(L x W x H) | 4.09 x 2.50 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 \pm 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 |
| | 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. |

Technical Specifications – Input/Output Devices

| | | | | |
|-----------------------------|--|--|-----------------------|-------------------------------|
| | | 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) $20 < m < 40 \text{lb}$. | | |
| | Operating vibration | Frequency (Hz) | Slope (dB/oct) | PSD (g²/Hz) |
| | | 5-350 | 0 | 0.0001 |
| | | 350-500 | -6 | - |
| | | 500 | - | 0.00005 |
| | | (~0.21G _{rms}) | | |
| | | Total Test time: 10 minutes | | |
| | Non-operating vibration | Frequency (Hz) | Slope (dB/oct) | PSD (g²/Hz) |
| | | 5.100 | 0 | 0.015 |
| | | 100-137 | -6 | - |
| | | 137-350 | 0 | 0.008 |
| 350-500 | | -6 | - | |
| | 500 | - | 0.0039 | |
| Drop (out of box) | 76cm on carpet, six-drop sequence | | | |
| Drop (in box) | N/A | | | |
| Approvals | CB, CE, FCC, cULus, ICES, EAC, NOM-NYCE SCT, RCM, VCCI, KC, BSMI | | | |
| Ergonomic compliance | TUVGS | | | |

Technical Specifications – Input/Output Devices

| HP USB 125 Antimicrobial (China only) / 128 Laser Mouse | | |
|--|--------------------------------|---|
| 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/s ² |
| 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 |

Technical Specifications – Input/Output Devices

| HP 725 Multi-Device Rechargeable Wireless Mouse | | |
|--|--|--|
| Dimensions (HxLxW) | 114.89 x 73.26 x 39.86 (mm); 4.52 x 2.88 x 1.57 (in) | |
| Weight | 90.1 (g); 0.2 (lb) | |
| Environmental | Operating temperature | -29°C ~ 60°C |
| | Non-operating temperature | -20°C ~ 65°C |
| | Operating humidity | N/A |
| | Non-operating humidity | 0-95%RH |
| | Operating shock | 40G, 2ms, 1 impact on the ± X, ± Y, and + Z axes, with a total of 6 impacts |
| | Non-operating shock | 240G, 2ms, 1 impact on the ± X, ± Y, and + Z axes, with a total of 6 impacts |
| | Operating vibration | N/A |
| | Non-operating vibration | Frequency: 5-55-5 (Hz), Amplitude: 2mm, Vibration direction: X, Y, Z, three axes in total, Cycle time: 3 minutes/CYCLE, Number of cycles: 10 times, Test time: 30 minutes/axis, total 90 minutes |
| Electrical | Operating voltage | 2.5V~3.8V |
| | Power consumption (typical) | 2.4G Active=1.126mA Idle=0.108mA Sleep=0.042mA Power off=0.007mA BLE Active=1.057mA Idle=0.102mA Sleep=0.044mA Power off=0.005mA |
| | Resolution | 1,200 DPI (Default) Range: 800->1200 (default)->1600->2400->3600->4000 DPI Adjustable by HPX (or HPAC) from 800 to 4000, every 50 dpi per step |
| | Sensor | PAW3220DB |
| | Tracking speed (Report rate) | 125Hz |
| | Tracking acceleration | 2.4GHz Wireless and Bluetooth |
| Mechanical | Color | Black |
| Regulatory approvals | Compliant | CB; FCC; IC; RCM; WPC; NTC; IMDA; BSMI; NCC; SRRC; SIRIM; TRA; EAC; ICASA; UKCA; KCC; TUV; RATEL; IFETEL; BIS; MOICT; ICTqatar; RoHS; Subtel; NKRZI |

Technical Specifications – Audio/Multimedia

AUDIO/MULTIMEDIA

HP ProDesk 4 Mini G1i Desktop AI PC

| | |
|-----------------------------------|---|
| Type | Integrated |
| HD Stereo Codec | Realtek ALC3252 |
| Audio I/O Ports | Front: Headset connector supports a CTIA and OMTP 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 |
| Multi-streaming Capable | Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the front jacks or integrated speaker. |
| Sampling | Supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and ADC |
| Wavetable Syntheses | Yes - Uses OS soft wavetable |
| Analog Audio | Yes |
| # of Channels on Line-Out | Stereo (Left & Right channels) |
| Internal Speaker | Yes |

HP ProDesk 4 SFF G1i Desktop AI PC

| | |
|-----------------------------------|--|
| Type | Integrated |
| HD Stereo Codec | Realtek ALC3252 |
| Audio I/O Ports | Front: Headset connector supports a CTIA and OMTP headset and is retaskable as a Line-in, Line-out, Microphone-in or Headphone-out port Rear: Audio line-in/line-out jack connector*, 3.5mm and support stereo output 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 | Supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and 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 – Audio/Multimedia

HP ProDesk 4 Tower G1i / G1i E Desktop AI PC

| | |
|-----------------------------------|--|
| Type | Integrated |
| HD Stereo Codec | Realtek ALC3252 |
| Audio I/O Ports | Front: Headset connector supports a CTIA and OMTP headset and is retaskable as a Line-in, Line-out, Microphone-in or Headphone-out port Rear: Audio line-in/line-out jack connector*, 3.5mm and support stereo output 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 | Supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and 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

HP ProStudio 4 All-in-One G1i 23.8-inch Desktop AI PC

| | |
|-----------------------------------|---|
| Type | Integrated |
| HD Stereo Codec | Realtek ALC3274 |
| Audio I/O Ports | Down facing 3.5mm headset connector supports an OMTP or CTIA style headset and is re-taskable as a Line-in, Line-out, Microphone-in or Headphone-out port |
| Internal Speaker Amplifier | 2W per channel class D stereo amplifier for the internal speakers only |
| Multi-streaming Capable | Playback multi-streaming allows independent audio streams to be sent to/from the side jack and integrated speakers. |
| Sampling | Supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and ADC |
| Wavetable Syntheses | Yes – Uses OS Soft Wavetable |
| Analog Audio | Yes |
| Internal Speaker | Yes - Stereo |

INTEGRATED WEBCAM AND MICROPHONE

Optional integrated 5 MP RGB webcam & microphone; maximum resolution of 2592 x 1944

Optional integrated 5 MP RGB webcam with IR sensor, ISP+, & microphone; maximum resolution of 2592 x 1944 (Supports Windows Hello and human presence detection)

Technical Specifications – Power

POWER

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> | <u>AiO</u> |
|--|--|---|--|---|
| External Power Supplies¹ | 90W EPS, active PFC, 88% average efficiency at 115V & 89% at 230Vac 100W EPS Type-C ² , active PFC, 88% average efficiency at 115V & 89% at 230Vac | N/A | N/A | N/A |
| Internal Power Supply | N/A | <p>280W active PFC Efficiency at 115Vac 80PLUS Platinum certified 90/92/89% efficient at 20/50/100% load</p> <p>Efficiency at 230Vac 91/93/90% at 20/50/100% load Which meet 80PLUS Gold</p> <p>180W active PFC Efficiency at 115Vac 80PLUS Gold certified 87/90/87% efficient at 20/50/100% load</p> <p>Efficiency at 230Vac 90/92/89% at 20/50/100% load Which meet 80PLUS Gold</p> | <p>280W/400W active PFC Efficiency at 115Vac 80PLUS Platinum certified 90/92/89% efficient at 20/50/100% load</p> <p>Efficiency at 230Vac 91/93/90% at 20/50/100% load Which meet 80PLUS Gold</p> <p>180W active PFC Efficiency at 115Vac 80PLUS Gold certified 87/90/87% efficient at 20/50/100% load</p> <p>Efficiency at 230Vac 90/92/89% at 20/50/100% load Which meet 80PLUS Gold</p> | <p>280W active PFC, Efficiency at 115Vac 80PLUS Platinum certified 90/92/89% efficient at 20/50/100% load</p> <p>Efficiency at 230Vac 90/92/89% at 20/50/100% load Which meet 80PLUS Platinum</p> |
| Operating Voltage Range | 90Vac~264Vac | 90Vac~264Vac | 90Vac~264Vac | 90Vac~264Vac |
| Rated Voltage Range | 100Vac~240Vac | 100Vac~240Vac | 100Vac~240Vac | 100Vac~240Vac |
| Rated Line Frequency | 50HZ~60HZ | 50HZ~60HZ | 50HZ~60HZ | 50HZ~60HZ |
| Operating Line Frequency | 47HZ~63HZ | 47HZ~63HZ | 47HZ~63HZ | 47HZ~63HZ |
| Rated Input Current with Energy Efficient* Power Supply | 90W ≤ 1.7A 100W ≤ 1.6A | 280W Platinum ≤ 3.3A 180W Gold ≤ 2.3A | 180W Gold ≤ 2.3A 280W Platinum ≤ 3.3A 400W Platinum ≤ 5.2A | 280W ≤ 3.2A |
| DC Output | +19.5V | +12V | +12V | +20V |
| Current Leakage (NFPA 99: 2012) | Less than 40microamps of leakage current at 250 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and | Less than 500 microamps of leakage current at 264 Vac with the ground wire disconnected, as required for Non- | Less than 500 microamps of leakage current at 264 Vac with the ground wire disconnected, as required for Non- | Less than 500 microamps of leakage current at 264 Vac with the ground wire disconnected, as required for Non- |

Technical Specifications – Power

| | | | | |
|---------------------------|---|--|--|--|
| | Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1. Less than 40 microamps of leakage current at 250 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. | 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. | 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. | 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 Supply Fan | N/A | 50mm variable speed | 70mm variable speed | N/A |
| Power cord length* | 1m, 6.0 ft. (1.83 m) | 6.0 ft. (1.83 m) | 6.0 ft. (1.83 m) | 6.0 ft. (1.83 m) ^{1,3} |
| Dimensions | 90W: 127 x 51 x 30 mm 100W: 136 x 60 x 22 mm | 165 x 95 x 73 mm | 165 x 95 x 73 mm | 90 x 130 x 26 mm |

1. Power cord length will be varied from different type of cords start from 1.8m.
2. The 100W USB Type-C power adapter is not certified for medical use. For medical environments, customers should use the conventional(barrel type) power adapter.
3. The length of India power cord is 2.0m

Technical Specifications – Power

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 | Standard Efficiency | 82/85/82% | 85/88/85% | 87/90/87% | 90/92/89% | Input Voltage |
|--------------------|---------------------|-----------|-----------|-----------|-----------|---------------|
| 10% of Rated Load | - | 75% | 81% | 84% | 86% | 115Vac/60HZ |
| 20% of Rated Load | - | 82% | 85% | 87% | 90% | 115Vac/60HZ |
| 50% of Rated Load | - | 85% | 88% | 90% | 92% | 115Vac/60HZ |
| | PF>0.9 | PF>0.9 | PF>0.9 | PF>0.9 | PF>0.95 | 115Vac/60HZ |
| 100% of Rated Load | 70% | 82% | 85% | 87% | 89% | 115Vac/60HZ |
| | PF>0.9 | PF>0.9 | PF>0.9 | PF>0.9 | PF>0.9 | 230Vac/50HZ |

Technical Specifications – Weights and Dimensions

WEIGHTS & DIMENSIONS¹

| | <u>Mini</u> | <u>SFF</u> | <u>TWR</u> |
|---|---|--|--|
| Chassis (WxDxH) | 6.97 x 7.13 x 1.35 in (177 x 181 x 34 mm) | 11.95 x 12.13 x 3.94 in (303.5 x 308 x 100 mm) | 6.1 x 12.13 x 13.27 in (155x 308 x 337 mm) |
| System Volume | 66.86 cu in (1.09 L) | 570.57 cu in (9.35 L) | 982 cu in (16.1 L) |
| Standard System Weight¹ | 2.64 lb (1.2 kg) | 10 lb (4.55 kg) | 12.3 lb (5.58 kg) |
| Heavy Configuration Weight | N/A | 10.6 lb (4.81 kg) | 15.4 lb (6.99 kg) |
| Stand Dimensions (WxDxH) | 117 x 160 x 20 mm | 151.7 x 199.8 x 38.2mm | N/A |
| Packaging Dimension (WxDxH) | Packaging 1: 18.9 x 4.1 x 9.4 in (481 x105 x 240 mm) Packaging 2 ¹ : 19.6 x 5.2 x 9.3 in (498 x x132 x 235 mm) | 7.87 x 19.65 x 15.51 in (200 x 499 x 394 mm) MPP: 7.87 x 19.65 x 15.51 in (200 x 499 x 394 mm) | 15.75 x 19.65 x 11.30 in (400 x 499 x 287 mm) MPP: 15.75 x 19.65 x 11.30 in (400 x 499 x 287 mm) |
| Shipping Weight | 6.52 lb (2.97 kg) MPP: 7.50 lb (3.40 kg) | 13.02 lb (5.91 kg) MPP: 13.72 lb (6.23 kg) | 17.82 lb (8.09 kg) MPP: 18.7 lb (8.9 kg) |
| Palletization Profile (Molded Pulp) | Palletization 1: 22-units per layer 8 layers max 176 units per pallet 46.14 x 37.87 x 81.5 in (1172 x 962 x 2070 mm) (including pallet) Palletization 2: 10-units per layer 10 to 19 layers max depending on details of freight 100 or 190 units per pallet depending on details of freight 46.26 x 39.21 x 103.74 in, (1175 x 996 x 2635 mm) (including pallet) | 6 units per layer 12 layers max 72 units per pallet (1200 x 1000 x 2494 mm) (include the pallet) | 6-units per layer 8 layers max 48 per pallet 47.24 x 39.37 x 95.12 in, (1200 x 1000 x 2416 mm) (including pallet) |

1. Only available on selected US, Brazil & Japan SKU. (HP ProDesk 4 Mini G1i Desktop AI PC)
2. Actual weight depends on configuration.
3. Packaging material used will vary by country
4. TWR/SFF standard system weight uses 1 HDD + 1 ODD + 1 DIMM configuration
5. The palletization is for single pack.
6. Palletization options depend on the factories.

Technical Specifications – Weights and Dimensions

ALL-IN-ONE DIMENSIONS¹

| | | Without Stand (VESA Cover Plate) | | Fixed Height Tilt Stand (Tilt Angle Range -5~23 degrees) | | Adjustable Height Stand (Tilt Angle Range -5~23 degrees) | |
|-----------------------------------|--|-------------------------------------|---------|---|---------|---|---------|
| | | cm/kg | inch/lb | cm/kg | inch/lb | cm/kg | inch/lb |
| Product | Width | 539.6 | 21.2 | 539.6 | 21.2 | 539.6 | 21.2 |
| | Length/Depth | 85.7 | 3.4 | 210.7 | 8.3 | 210.7 | 8.3 |
| | Height (include Webcam pop up) | 347.4 | 13.7 | 431.9 | 17.0 | 511.9 | 20.2 |
| | Weight | 6.86 | 15.1 | 7.85 | 17.3 | 8.27 | 18.2 |
| Package | Width | 198 | 7.8 | 198 | 7.8 | 198 | 7.8 |
| | Length/Depth | 750 | 29.5 | 750 | 29.5 | 750 | 29.5 |
| | Height | 480 | 18.9 | 480 | 18.9 | 480 | 18.9 |
| | Weight | 11.61 | 25.6 | 12.6 | 27.8 | 13.02 | 28.7 |
| Palletization for Sea/Rail | Width | 1000 | 39.4 | 1000 | 39.4 | 1000 | 39.4 |
| | Length/Depth | 1200 | 47.2 | 1200 | 47.2 | 1200 | 47.2 |
| | Height | 2060 | 81.1 | 2060 | 81.1 | 2060 | 81.1 |
| | Weight | 339.58 | 748.6 | 367.3 | 809.8 | 379.06 | 835.7 |
| | Qty / Layer | 7 | | 77 | | 7 | |
| | Layers | 4 | | 4 | | 4 | |
| Qty / Pallet via Sea/Rail | | 28 | | 28 | | 28 | |
| Qty / Pallet via Air | | 21 | | 21 | | 21 | |

NOTE: Packaging material used will vary by country.
 Package weight is based on EPE package.
 Actual system weight will depend on the system configuration.

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 / mainboard failure
 - 5 red + 5 white System controller rebooted the system after a health or recovery timer triggered
- HP PC Hardware Diagnostics UEFI:
 - This utility enables hardware level testing outside the operating system on many components. The diagnostics can be invoked by pressing F2 at POST, and is available as a download from HP Support
- System/Emergency ROM
- Flash ROM
- CMOS Battery Holder for easy replacement
- Flash Recovery with Video Configuration Record Software
- 1 Aux Power LED on System PCA
- Processor ILMSocket 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 bottom LED - To Indicate Normal Operations and Fault Conditions
-
- 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, memory & optical drive Removal (For MT, SFF, and DM only)
- Blue Pull Tabs, and Quick Release Latches for easy Identification

Miscellaneous Features

Additional Features

Product Orientation

Description

Microtower (MT) can be oriented in a tower (vertical) orientation.

Small Form Factor (SFF) can be oriented as either a desktop (horizontal) or a tower (vertical) with optional vertical stand.

Desktop Mini (DM) can be oriented as either a desktop (horizontal) or a tower (vertical) with optional vertical stand.

Boot Sectors Protection

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

Drive Protection System

DPS Access through F10 Setup during Boot

A diagnostic hard drive self- test. It scans critical physical components and every sector of the hard drive for physical faults and then reports any faults to the user

Running independently of the operating system, it can be accessed through a Windows-based diagnostics utility or through the computer's setup procedure. It produces an evaluation on whether the hard drive is the source of the problem and needs to be replaced

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

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

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

SMART I - Drive Failure Prediction

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

SMART II - Off-Line Data Collection

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

SMART III - Off-Line Read Scanning with Defect Reallocation

IOEDC: I/O Error Detection Circuitry

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

Detects errors in Read/Write buffers on HDD cache RAM

After Market Options

AFTER MARKET OPTIONS

| Graphics Solutions | Mini | SFF | TWR | AiO | Part Number |
|---|------|-----|-----|-----|-------------|
| NVIDIA RTX A400 4GB Graphics | | X | X | | AV8J3AA |
| AMD Radeon RX 6300 2GB GDDR6 DP+HDMI FH | | | X | | 7Y6P7AA |
| AMD Radeon RX 6300 2GB GDDR6 DP+HDMI LP | | X | | | 803S9AA |
| Intel Arc A380 6GB GDDR6 FH PCIe x16 3DP+HDMI | | | X | | 9Q6G0AA |
| HP DisplayPort™ To HDMI True 4k Adapter | X | X | X | X | 2JA63AA |
| HP HDMI Standard Cable Kit | X | X | X | X | T6F94AA |
| HP HDMI to VGA Adapter | X | X | X | X | H4F02AA |
| HP DisplayPort™ Cable Kit | X | X | X | X | VN567AA |
| HP DisplayPort™ To VGA Adapter | X | X | X | X | F7W97AA |
| HP DisplayPort™ To DVI-D Adapter | X | X | X | X | F7W96AA |
| HP USB-C to DisplayPort Adapter G2 | X | X | X | X | 8Y8Y1AA |
| HP USB-C to HDMI 2.0 Adapter | X | X | X | X | 1WC36AA |
| HP USB-C to USB 3.0 Adapter | X | X | X | X | N2Z63AA |
| HP Single Mini Display Port Adapter to Display Port Adapter | | X | X | | 2MY05AA |
| HP USB External DVDRW Drive | X | X | X | | F2B56AA |

| Desktop Mini Accessories | Mini | SFF | TWR | AiO | Part Number |
|--|------|-----|-----|-----|-------------|
| HP Desktop Mini v4+ VESA Sleeve | X | | | | 99T54AA |
| HP Desktop Mini v4+ VESA Sleeve with Power Supply Holder | X | | | | 99T55AA |
| HP B250 PC Mounting Bracket | X | | | | 8RA46AA |
| HP B200 PC Mounting Bracket | X | | | | 762T5AA |
| HP B300 PC Mounting Bracket | X | | | | 2DW53AA |
| HP B300 PC Mounting Bracket with Power Supply Holder | X | | | | 7DB37AA |
| HP Desktop Mini Vertical Chassis Stand | X | | | | G1K23AA |
| HP B550 PC Mounting Bracket | X | | | | 16U00AA |
| HP B560 PC Mounting Bracket | X | | | | 763U8AA |
| HP Quick Release Bracket 2 | X | | | | 6KD15AA |

| AIO Accessories | Mini | SFF | TWR | AiO | Part Number |
|---------------------------------------|------|-----|-----|-----|-------------|
| HP ProStudio 4 G1i DVD-Writer EXT ODD | | | | X | B6BS7AA |
| HP All-in-One G1i VESA Plate | | | | X | B6BT8AA |



After Market Options

| Data Storage Drives | Mini | SFF | TWR | AiO | Part Number |
|---|-------------|------------|------------|------------|--------------------|
| HP PCIe Gen 4 NVME TLC M.2 512GB SSD | X | X | X | X | 406L8AA |
| HP PCIe Gen 4 NVME TLC M.2 1TB SSD | X | X | X | X | 406L7AA |
| HP 1TB 7200rpm SATA 6Gb/s 3.5" Hard Drive | | X | X | | QK555AA |

| Input Devices | Mini | SFF | TWR | AiO | Part Number |
|--|-------------|------------|------------|------------|--------------------|
| HP 125 G2 Wired Keyboard | X | X | X | X | AY2Y7AA |
| HP 125 Wired Mouse | X | X | X | X | 265A9AA |
| HP 128 Laser Wired Mouse | X | X | X | X | 265D9AA |
| HP 320K G2 Wired Keyboard | X | X | X | X | 9SR37UT |
| HP Wired Desktop 320M Mouse | X | X | X | X | 9VA80AA |
| HP Wired Desktop 320MK Mouse and Keyboard G2 | X | X | X | X | 9SR36UT |
| HP Business Slim v2 Smart Card USB Keyboard | X | X | X | X | A71J9AA |
| HP 655 Wireless Keyboard and Mouse Combo G2 | X | X | X | X | 4R009UT |
| HP 455 G2 Programmable WRLS USB Keyboard | X | X | X | X | B08ZDAA |
| HP 405 Multi-Device Wired Backlit Keyboard | X | X | X | X | 7N7C1AA |
| HP 680 Comfort Dual-Mode Keyboard | X | X | X | X | 8T6L8AA |
| HP 725 Multi-Device Rechargeable Wireless Keyboard | X | X | X | X | 9T5B2AA |
| HP 725 Multi-Device Rechargeable Wireless Keyboard and Mouse Combo | X | X | X | X | 9T5B0UT |
| HP 515 Ultra-Fast Rechargeable Wireless Mouse | X | X | X | X | 9C2F7AA |

| System Memory | Mini | SFF | TWR | AiO | Part Number |
|--------------------------|-------------|------------|------------|------------|--------------------|
| HP 8GB DDR5-5600 UDIMM | | X | X | | A9TF0AA |
| HP 16GB DDR5-5600 UDIMM | | X | X | | A9TF1AA |
| HP 32GB DDR5-5600 UDIMM | | X | X | | A9TF3AA |
| HP 8GB DDR5-5600 SODIMM | X | | | X | B8CA1AA |
| HP 16GB DDR5-5600 SODIMM | X | | | X | B8CA2AA |
| HP 32GB DDR5-5600 SODIMM | X | | | X | B8CA3AA |

| Multimedia Devices | Mini | SFF | TWR | AiO | Part Number |
|---|-------------|------------|------------|------------|--------------------|
| HP S101 Speaker Bar | X | X | X | | 5UU40AA |
| HP Z G3 Conferencing Speaker Bar wStand | X | X | X | X | 647Y2AA |

| Communication Devices | Mini | SFF | TWR | AiO | Part Number |
|------------------------------------|-------------|------------|------------|------------|--------------------|
| Intel® Ethernet I226-T1 2.5GbE NIC | | X | X | | 9P1U8AA |



After Market Options

| Security Devices | Mini | SFF | TWR | AiO | Part Number |
|-------------------------------------|-------------|------------|------------|------------|--------------------|
| HP Business PC Security Lock v3 Kit | | X | X | | 3XJ17AA |
| HP Keyed Cable Lock 10mm | X | X | X | X | T1A62AA |
| HP Master Keyed Cable Lock 10mm | X | X | X | X | T1A63AA |
| HP Combination Standard Cable Lock | X | X | X | | T0Y15AA |
| HP Essential Combination Lock | X | X | X | | T0Y16AA |

| Stands and Mounting Accessories | Mini | SFF | TWR | AiO | Part Number |
|--|-------------|------------|------------|------------|--------------------|
| HP B250 PC Mounting Bracket | X | | | | 8RA46AA |
| HP B300 PC Mounting Bracket | X | | | | 2DW53AA |
| HP B550 PC Mounting Bracket | X | | | | 16U00AA |
| HP Quick Release Bracket 2 | X | | | X | 6KD15AA |
| HP All-in-One G1i VESA Plate | | | | X | B6BT8AA |
| HP ProStudio 4 G1i DVD-Writer EXT ODD | | | | X | B6BS7AA |

| I/O Devices | Mini | SFF | TWR | AiO | Part Number |
|---|-------------|------------|------------|------------|--------------------|
| HP DisplayPort 2.1 Flex IO v3 | X | X | X | | B6BS8AA |
| HP HDMI 2.1 Flex IO v3 | X | X | X | | B6BS9AA |
| HP USB-C 3.1 Gen2 15W Out Flex IO v3 | | X | X | | B6BT3AA |
| HP USB 3.2 Gen1 x2 Module FlexIO v2 | X | X | X | | 13L58AA |
| HP USB-C 3.1 Gen2 ALT 100W In Flex IO v3 | X | | | | B6BT4AA |
| HP VGA Flex IO v3 | X | X | X | | B6BT0AA |
| HP Serial Port Flex IO 2nd | X | | | | 13L57AA |
| HP PCIe x1 Parallel Port Card | | X | X | | N1M40AA |
| HP USB to Serial Port Adapter | X | X | X | X | J7B60AA |
| HP Serial Port Flex IO v3 | X | X | X | | 5B895AA |
| HP USB-C to DisplayPort Adapter G2 | X | | | X | 8Y8Y1AA |
| HP Single Mini Display Port Adapter to Display Port Adapter | | X | X | | 2MY05AA |

NOTE: For more detail on HP I/O Devices please refer to the HP FLEX IO v3 Option Cards QuickSpecs: <https://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c06712909>



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Change Log

| Date | Version History | Action | Description of Change |
|--------------------|-----------------|------------|--|
| April 29, 2025 | From v1 to v2 | Correction | Wireless, Standard User Accessible Ports and call outs sections for AiO corrected |
| May 5, 2025 | From v2 to v3 | Correction | (2) PCI Express 3.0 x2 corrected to x1 in front call out section for TWR |
| June 10, 2025 | From v3 to v4 | Update | “Win 10 only” removed from Manageability in SW section / Max resolution display supported with native port added to graphics notes for Mini / HP Business Slim v2 Smart Card CCID USB Keyboard table specs added. |
| June 19, 2025 | From v4 to v5 | Update | AiO Environmental table values updated |
| June 25, 2025 | From v5 to v6 | Correction | Post-consumer recycled plastic used in system percentage corrected for MINI-TWR’s-AiO / External power supply data corrected for MINI |
| July 24, 2025 | From v6 to v7 | Addition | HP Endpoint Security Controller (ESC) Gen5 added to Sec Features in SW section / All M.2 2280 PCIe NVMe SSD’s interface corrected to PCIe Gen4x4 |
| July 25, 2025 | From v7 to v8 | Addition | HP Protect and Trace added to Security features in SW section |
| August 5, 2025 | From v8 to v9 | Addition | Note added to 3.5 inch SATA Hard Disk Drives (HDD) in Storage section |
| August 11, 2025 | From v9 to v10 | Removal | 2MY05AA removed from AiO and Mini at AMO section |
| August 14, 2025 | From v10 to v11 | Correction | 3 SODIMM AMO skus (8/16/32GB) corrected |
| August 19, 2025 | From v11 to v12 | Update | HP Wolf Security for Business disclaimer in SW section updated |
| August 21, 2025 | From v12 to v13 | Update | 12GB (1x12GB) and 24GB (1x24GB) added in Memory conf. table |
| August 26, 2025 | From v13 to v14 | Update | 128GB (32GBx4) added in Memory conf. table |
| September 3, 2025 | From v14 to v15 | Update | AiO G1i VESA Plate SKU corrected and 13L58AA description updated in AMO section |
| September 19, 2025 | From v15 to v16 | Correction | 4 All-in-One G1i 23 front call out USB-C description corrected to 20 Gbps |
| September 22, 2025 | From v16 to v17 | Update | UEFI Self Certification ADDED / DDR5-5600 (Transfer rates up to 5600 MT/s), Max 128 GB, 4 U-DIMM for TWR updated /20% recycled glass used in display panels added to AiO environmental table Sustainable Impact Specifications row |
| September 24, 2025 | From v17 to v18 | Correction | RJ45 corrected to RJ-45 in the whole doc and “Integrated” added to Intel® I219-LM |
| | From v18 to v19 | | |
| | From v19 to v20 | | |
| | From v20 to v21 | | |
| | From v21 to v22 | | |
| | From v22 to v23 | | |