## Overview

## HP ProDesk 600 G6 Desktop Mini PC



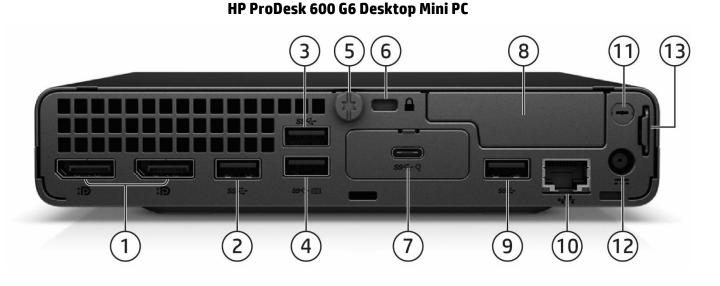
- 1. Type-C<sup>®</sup> SuperSpeed USB 10Gbps signaling rate port (charge 4. support up to 5V/3A) 5
- 2. Type-A SuperSpeed USB 10Gbps signaling rate port
- 3. Type-A SuperSpeed USB 5Gbps signaling rate port (charge support up to 5V/1.5A)
  - <u>Not Shown</u>

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

(1) 2.5" internal storage drive bay

- Combo Audio Jack with CTIA and OMTP headset support
- 5. Dual-state power button
- 6. Hard drive activity light

## Overview



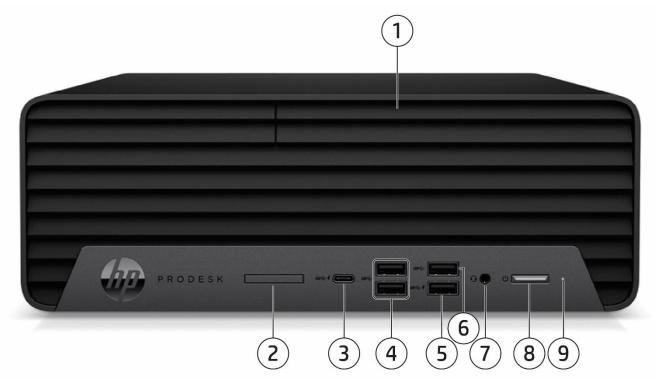
- 1. (2) Dual-Mode DisplayPort<sup>™</sup> 1.4 (DP++)
- 2. Type-A SuperSpeed USB 5Gbps signaling rate port
- Type-A SuperSpeed USB 5Gbps signaling rate port (Supporting 9. wake from S4/S5 with keyboard/mouse connected and enabled in BIOS)
- Type-A SuperSpeed USB 10Gbps signaling rate port (Supporting wake from S4/S5 with keyboard/mouse connected and enabled in BIOS)
- 5. Cover release thumbscrew
- 6. Standard cable lock slot (10 mm)
- 7. Flex Port 1, choice of:
  - Thunderbolt<sup>™</sup> 3<sup>1</sup> VGA
  - DisplayPort Serial<sup>1</sup>
  - HDMI
  - Type-C<sup>®</sup> SuperSpeed USB 10Gbps signaling rate port w/ DisplayPort<sup>™</sup> Alt Mode and power intake via USB Type-C<sup>®</sup> Power Delivery up to 100W
- 1. Sold separately or as an optional feature
- 2. Must be configured at time of purchase

- 8. Flex Port 2<sup>2</sup>, choice of:
  - 2x Type-A Hi-Speed USB 480Mbps signaling rate port
    Serial
  - Type-A SuperSpeed USB 10Gbps signaling rate port
- 10. RJ45 network connector
- 11. External WLAN antenna opening<sup>2</sup>
- 12. Power connector
- 13. Retractable Padlock loop



### Overview

## HP ProDesk 600 G6 Small Form Factor PC



- 1. Slim optical drive (optional)
- 2. SD card 4.0 reader (optional)
- 3. Type-C<sup>®</sup> SuperSpeed USB 10Gbps signaling rate port (charge support up to 5V/3A)
- 4. (2) Type-A SuperSpeed USB 10Gbps signaling rate port

#### <u>Not Shown</u>

(1) PCI Express x16

(1) PCI Express x4

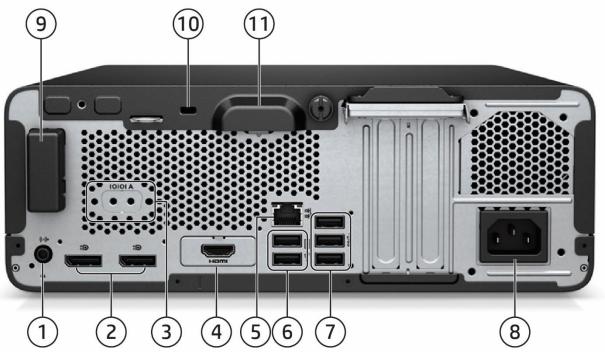
(2) M.2 (1 as M.2 2230 socket for WLAN/BT and 1 as M.2 2280 socket for storage)

- 5. Type-A SuperSpeed USB 5Gbps signaling rate port (charge support up to 5V/1.5A)
- 6. Type-A SuperSpeed USB 5Gbps signaling rate port
- 7. Combo Audio Jack with CTIA and OMTP headset support
- 8. Dual-state power button
- 9. Hard drive activity light



## Overview

HP ProDesk 600 G6 Small Form Factor PC



- 1. Audio-out connector
- 2. (2) Dual-Mode DisplayPort<sup>™</sup> 1.4 (DP++)
- 3. Serial port (optional)
- 4. Flex Port choice of:
  - DisplayPort<sup>™</sup>1.4 VGA
  - HDMI 2.0 Serial
  - Dual Type-A SuperSpeed USB 5Gbps signaling rate
  - Type-C<sup>®</sup> SuperSpeed USB 10Gbps signaling rate with DisplayPort<sup>™</sup> Alt mode

#### <u>Not Shown</u>

#### Port

Optional Thunderbolt<sup>™</sup> 3 port card

Optional PS/2 & serial port card<sup>1</sup> (connected with mainboard via flyer cable)

Optional parallel port<sup>1</sup>

Optional 4 serial port PCIe card<sup>1</sup>

5. RJ45 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. (3) Type-A SuperSpeed USB 5Gbps signaling rate port
- 8. Power cord connector
- 9. Internal WLAN antenna cover (optional)
- 10. Standard cable lock slot
- 11. Integrated accessory cable lock

#### Bay

(1) 9.5mm internal optical drive bay

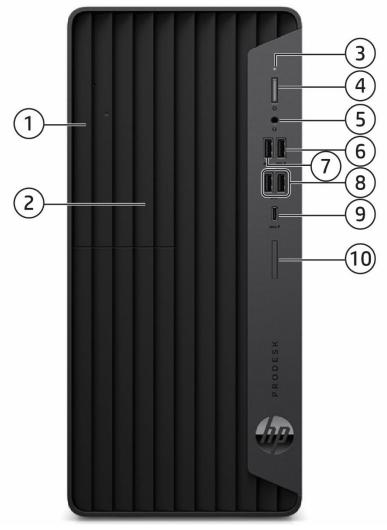
(1) 3.5" internal storage drive bay or (2) 2.5" internal storage drive bays  $^{\rm 2}$ 

1. Each of the legacy port options would occupy one rear slot

2. SFF can be configured with either (1) 3.5" or (2) 2.5" internal storage drive (2.5-inch drive needs adapter that can only be purchased when configuring the PC from factory with a 2.5" drive)



## Overview



#### HP ProDesk 600 G6 Microtower PC

- 1. Slim optical drive (optional)
- 2. 5.25-inch drive bay (optional)
- 3. Hard drive activity light
- 4. Dual-state power button
- 5. Combo Audio Jack with CTIA and OMTP headset support
- 6. Type-A SuperSpeed USB 5Gbps signaling rate port (charge support up to 5V/1.5A)

#### <u>Not Shown</u>

(2) PCI Express x16 (one wired as an x4)

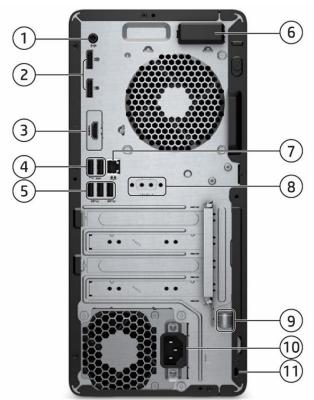
(1) PCI Express x1

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

- 7. Type-A SuperSpeed USB 5Gbps signaling rate port
- 8. (2) Type-A SuperSpeed USB 10Gbps signaling rate port
- 9. Type-C<sup>®</sup> SuperSpeed USB 10Gbps signaling rate port (charge support up to 5V/3A)
- 10. SD card 4.0 reader (optional)



## Overview



## HP ProDesk 600 G6 Microtower PC

- Audio-out connector 1.
- 2. (2) Dual-Mode DisplayPort<sup>™</sup> 1.4 (DP++)
- Flex Port, choice of: 3.
  - DisplayPort<sup>™</sup>1.4 VGA
  - HDMI 2.0 Serial
  - Dual Type-A SuperSpeed USB 5Gbps signaling rate
  - Type-C<sup>®</sup> SuperSpeed USB 10Gbps signaling rate with 11. Standard cable lock slot DisplayPort<sup>™</sup> Alt mode
- 4. (2) Type-A Hi-Speed USB 480Mbps signaling rate port (Supporting wake from S4/S5 with keyboard/mouse connected and enabled in BIOS)

#### Port

Optional Thunderbolt<sup>™</sup> 3 port card

Optional PS/2 & serial port card<sup>1</sup> (connected with mainboard via flyer cable)

Optional parallel port<sup>1</sup>

Optional 4 serial port PCIe card<sup>1</sup>

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

- (3) Type-A SuperSpeed USB 5Gbps signaling rate port 5.
- Internal WLAN antenna cover (optional) 6.
- **RJ45** network connector 7.
- Serial port (optional) 8.
- 9. Integrated accessory cable lock
- 10. Power cord connector

#### Not Shown

Bay
(1) 5.25" internal half-height drive bay or (1) 3.5" internal storage drive bay
(1) 3.5" internal storage drive bay or (1) 2.5" internal storage drive bay
(1) 2.5" internal storage drive bay
(1) 9.5mm internal optical drive bay



## HP ProDesk 600 G6 Commercial Desktops PC

# QuickSpecs

## Overview

HP ProDesk 600/680 G6 PCI Microtower PC 6 8 9

- 1. Slim optical drive (optional)
- 2. 5.25-inch drive bay (optional)
- 3. Hard drive activity light
- 4. Dual-state power button
- 5. Combo Audio Jack with CTIA and OMTP headset support

#### <u>Not Shown</u>

(2) PCI Express x16 (one wired as an x4)

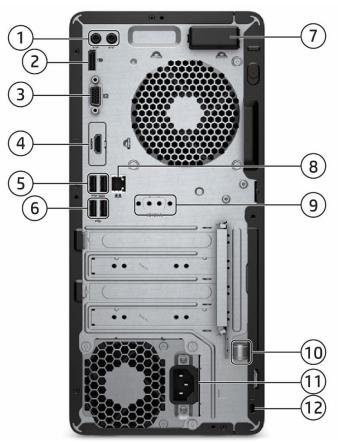
- (1) PCI Express x1
- (1) PCI x1

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

- 6. Type-A SuperSpeed USB 5Gbps signaling rate port (charge support up to 5V/1.5A)
- 7. Type-A SuperSpeed USB 5Gbps signaling rate port
- 8. (4) Type-A SuperSpeed USB 10Gbps signaling rate port
- 9. SD card 4.0 reader (optional)



## Overview



## HP ProDesk 600/680 G6 PCI Microtower PC

- 1. Audio-in/out connector
- 2. Dual-Mode DisplayPort<sup>™</sup> 1.4a (DP++)
- 3. VGA port
- 4. Flex Port, choice of:
  - DisplayPort™1.4 VGA
  - HDMI 2.0 Serial
- 5. (2) Type-A SuperSpeed USB 5Gbps signaling rate port (Supporting wake from S4/S5 with keyboard/mouse connected and enabled in BIOS)

#### <u>Not Shown</u>

#### Port

Optional PS/2 & serial port card<sup>1</sup> (connected with mainboard via flyer cable)

Optional parallel port<sup>1</sup>

Optional 4 serial port PCIe card<sup>1</sup>

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

- 6. (2) Type-A SuperSpeed USB 5Gbps signaling rate port
- 7. Internal WLAN antenna cover (optional)
- 8. RJ45 network connector
- 9. Serial port (optional)
- 10. Integrated accessory cable lock
- 11. Power cord connector
- 12. Standard cable lock slot

#### Bay

(1) 5.25" internal half-height drive bay or (1) 3.5" internal storage drive bays

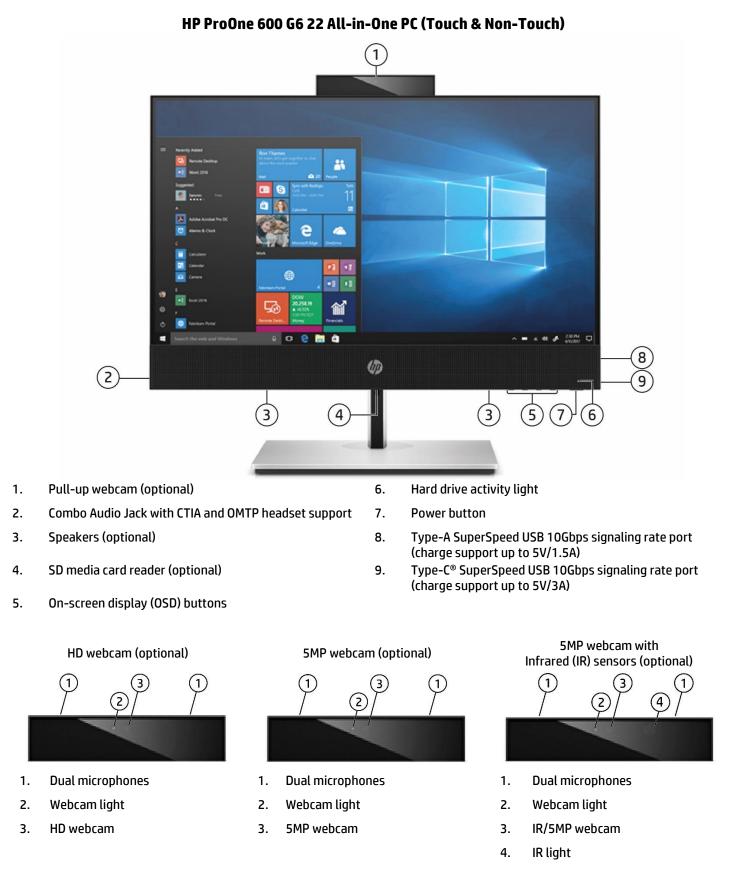
(1) 3.5" internal storage drive bay or (1) 2.5" internal storage drive bay

- (1) 2.5" internal storage drive bay
- (1) 9.5mm internal optical drive bay

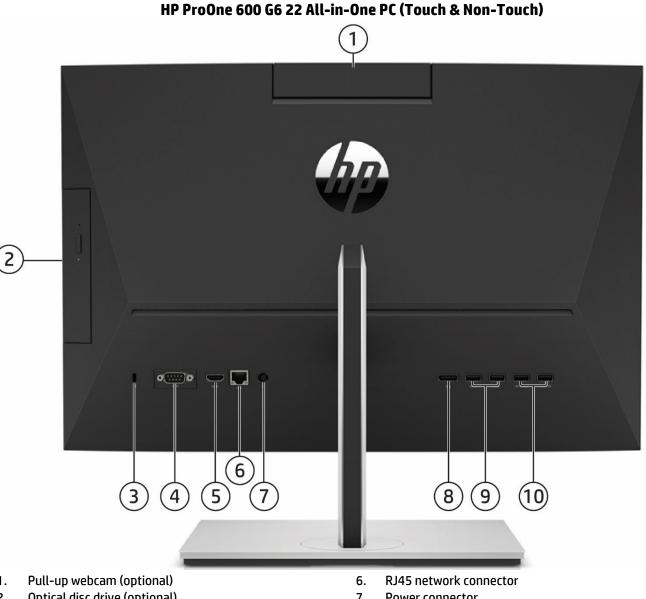


Overview

QuickSpecs



Overview



- 1.
- 2. Optical disc drive (optional)
- 3. Standard cable lock slot
- Flex Port, choice of: 4.
  - DisplayPort<sup>™</sup> Serial
  - HDMI
- 5. HDMI-in

- 7. Power connector
- Dual-Mode DisplayPort<sup>™</sup> 1.4 (DP++) 8.
- (2) Type-A SuperSpeed USB 5Gbps signaling rate port 9.
- (2) Type-A SuperSpeed USB 5Gbps signaling rate port 10. (Supporting wake from S4/S5 with keyboard/mouse connected and enabled in BIOS)



## AT A GLANCE

- Choice of four form factors: Microtower, Small Form Factor, Desktop Mini, and All-in-One
- HP developed and engineered UEFI V2.7 BIOS supporting security, manageability and software image stability
- Latest commercial class Intel® 400 Series chipsets supporting latest Intel® 10th Generation Core™ processors<sup>1</sup>, featuring integrated Intel® UHD Graphics
  - o Intel Standard Manageability (ISM) comes standard for Intel<sup>®</sup> Core™ and Pentium™ configurations
  - Optional Intel<sup>®</sup> vPro<sup>™</sup> Technology upgrade with selected Core<sup>™</sup> i5 and Core<sup>™</sup> i7 processors (vPro<sup>™</sup> is optional and requires factory configuration)<sup>5</sup>
- Support of true 65W desktop class processors on all form factors
- Intel® Optane memory and storage available as optional feature
- Choice of Windows 10 Professional, Windows 10 Home, and FreeDOS
- Integrated 10/100/1000 Ethernet Controller, with optional Wi-Fi 6 (802.11ax) and Wi-Fi 5 (802.11ac) and Bluetooth®
- Up to 128 GB of DDR4 Synchronous Dynamic Random Access Memory (SDRAM) on MT and SFF, and up to 64 GB on DM and AiO
- Support for up to three video outputs via two standard video connectors and an optional third video port connector which provides the following choices: DisplayPort<sup>™</sup>, HDMI, VGA, or USB Type-C<sup>®</sup> with DisplayPort<sup>™</sup> Output on MT/SFF/DM
- Reduce clutter on DM with single cable connection for power and video through USB Type-C<sup>®</sup> enabled displays with the optional USB Type-C<sup>®</sup> port w/ DisplayPort Alt Mode and power intake via USB Type-C<sup>®</sup> Power Delivery up to 100W; reduce desktop footprint with the DM mounted behind a USB-C<sup>™</sup> enabled display or enable a "All-in-One" experience by docking into HP Mini-in-One 24 Display
- New flexibility is delivered by the All-in-One that can be used as a full PC or as an additional display for another desktop or laptop PC via the new HDMI in functionality
- Multiple data drives setup in a RAID array
- Enable NVDIA<sup>®</sup> GeForce<sup>®</sup> VR ready<sup>2</sup> discrete graphic card and compatible with HP Reverb VR Headset<sup>7</sup> on MT with 550W PSU.
- Optional Serial port available on all form factors
- Optimized chassis design for SFF enabling dual 2.5" internal storage drives
- Integrated accessory cable lock helps secure cabled mouse and keyboard on MT/SFF
- Trusted Platform Module (TPM) 2.0<sup>3</sup>
- HP Sure Run Gen3
- HP Sure Recover Gen3
- HP SureSense
- HP SureStart Gen6
- HP BIOSphere Gen6
- HP Client Security Manager Gen6
- HP Sure Click
- HP Manageability Integration Kit Gen4
- HP Image Assistant Gen5
- HP Support Assistant
- High efficiency energy saving power supply
- ENERGY STAR<sup>®</sup> certified. EPEAT <sup>®</sup> 2019 registered where applicable. EPEAT<sup>®</sup> registration varies by country. See http://www.epeat.net for registration status by country.<sup>6</sup>
- TUV Low Blue Light certified for All-in-One. To reach maximum performance, Low Blue Light setting should be enabled in On-screen display (OSD) settings and Night light mode should be turned on in Windows<sup>®</sup>
- Optimized for Microsoft Teams for All-in-One
- Low halogen<sup>4</sup>
- All form factors undergo up to 13 MIL-STD tests<sup>8</sup>
- Dust filter available for MT/SFF/DM
- Protected by HP Services, including limited warranties up to 3-3-3 (terms and conditions vary by country; certain restrictions and exclusions apply); Care Packs available with up to 5 years Next Business Day Onsite Hardware Support
- Compliance with CE (Class B) / FCC (Class B) / UL (UL60950-1 / UL62368-1) / CSA (CSA C22.2 No.60950-1-07 / CSA C22.2 No. 62368-1-14) / ICES-003 / CCC / VCCI (Class B) / KCC (Class B)



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

2. VR-ready as optional feature, requires specific configuration for support

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

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

Some functionality of vPro technology, such as Intel Active management technology and Intel Virtualization technology, requires additional 3rd party software in order to run. Availability of future "virtual appliances" applications for Intel vPro technology is dependant on 3rd party software providers. Compatibility of this generation of Intel vPro technology-based hardware with future "virtual appliances" is yet to be determined.
 Based on US EPEAT<sup>®</sup> registration according to IEEE 1680.1-2018 EPEAT<sup>®</sup>. Status varies by country. Visit http://www.epeat.net for more

information. 7. Availability may vary by country.

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

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

#### **PRODUCT NAME**

HP ProDesk 600 G6 Desktop Mini PC HP ProDesk 600 G6 Small Form Factor PC HP ProDesk 600 G6 Microtower PC HP Prodesk 680 G6 PCI Microtower PC HP ProOne 600 G6 22 All-in-One PC

#### **OPERATING SYSTEM**

Preinstalled	Windows <sup>®</sup> 10 Pro 64 <sup>-</sup> HP recommends Windows 10 Pro <sup>1</sup> Windows <sup>®</sup> 10 Pro 64 (National Academic License) <sup>1,2</sup> Windows <sup>®</sup> 10 Home 64 <sup>1</sup> FreeDOS
Web Support	Windows <sup>®</sup> 10 Enterprise 64 (Web Support) <sup>1</sup>

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com/.

2. Some devices for academic use will automatically be updated to Windows 10 Pro Education with the Windows 10 Anniversary Update. Features vary; see https://aka.ms/ProEducation for Windows 10 Pro Education feature information.

**NOTE:** Your product does not support Windows 8 or Windows 7. In accordance with Microsoft's support policy, HP does not support the Windows<sup>®</sup> 8 or Windows 7 operating system on products configured with Intel<sup>®</sup> and AMD<sup>®</sup> 7th generation and forward processors or provide any Windows<sup>®</sup> 8 or Windows 7 drivers on http://www.support.hp.com. A full list of HP products and the Windows 10 versions tested is available on the HP support website. https://support.hp.com/us-en/document/c05195282

#### SUPPORTED VERSIONS

HP tested Windows 10, version 1809 on this platform. For testing information on newer versions of Windows 10, please see <a href="https://support.hp.com/document/c05195282">https://support.hp.com/document/c05195282</a>

#### CHIPSET



	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
Intel® Q470	Х	Х	X	X



## PROCESSORS

Intel® 10 <sup>th</sup> Generation Core™ Processors	DM	<u>SFF</u>	<u>MT</u>	AiO
Intel® Core™ i7-10700 Processor <sup>1</sup> 65W 2.9 GHz base frequency Up to 4.7 GHz max. turbo frequency with Intel® Turbo Boost Technology <sup>3</sup> 16 MB cache, 8 cores, 16 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2933 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP) <sup>4</sup>	x	x	x	x
Intel <sup>®</sup> Core <sup>™</sup> i7-10700T Processor <sup>1</sup> 35W 2.0 GHz base frequency Up to 4.4 GHz max. turbo frequency with Intel <sup>®</sup> Turbo Boost Technology <sup>3</sup> 16 MB cache, 8 cores, 16 threads Intel <sup>®</sup> UHD Graphics 630 Supports DDR4 memory up to 2933 MT/s data rate Supports Intel <sup>®</sup> vPro <sup>™</sup> Technology and Intel <sup>®</sup> Stable Image Platform Program (SIPP) <sup>4</sup>	X			X
Intel® Core™ i5-10600 Processor <sup>1</sup> 65W 3.3 GHz base frequency Up to 4.8 GHz max. turbo frequency with Intel® Turbo Boost Technology <sup>3</sup> 12 MB cache, 6 cores, 12 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP) <sup>4</sup>	x	x	x	x
Intel® Core™ i5-10600T Processor <sup>1</sup> 35W 2.4 GHz base frequency Up to 4.0 GHz max. turbo frequency with Intel® Turbo Boost Technology <sup>3</sup> 12 MB cache, 6 cores, 12 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate Supports Intel® vPro™ Technology and Intel® Stable Image Platform Program (SIPP) <sup>4</sup>	x			x

(III)

	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
Intel <sup>®</sup> Core <sup>™</sup> i5-10500 Processor <sup>1</sup> 65W 3.1 GHz base frequency Up to 4.5 GHz max. turbo frequency with Intel <sup>®</sup> Turbo Boost Technology <sup>3</sup> 12 MB cache, 6 cores, 12 threads Intel <sup>®</sup> UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate Supports Intel <sup>®</sup> vPro <sup>™</sup> Technology and Intel <sup>®</sup> Stable Image Platform Program (SIPP) <sup>4</sup>	x	x	x	x
Intel® Core <sup>™</sup> i5-10500T Processor <sup>1</sup> 35W 2.3 GHz base frequency Up to 3.8 GHz max. turbo frequency with Intel® Turbo Boost Technology <sup>3</sup> 12 MB cache, 6 cores, 12 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate Supports Intel® vPro <sup>™</sup> Technology and Intel® Stable Image Platform Program (SIPP) <sup>4</sup>	x			x
Intel® Core™ i5-10400 Processor <sup>1</sup> 65W 2.9 GHz base frequency Up to 4.3 GHz max. turbo frequency with Intel® Turbo Boost Technology <sup>3</sup> 12 MB cache, 6 cores, 12 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	x	x	x	x
Intel <sup>®</sup> Core <sup>™</sup> i5-10400T Processor <sup>1</sup> 35W 2.0 GHz base frequency Up to 3.6 GHz max. turbo frequency with Intel <sup>®</sup> Turbo Boost Technology <sup>3</sup> 12 MB cache, 6 cores, 12 threads Intel <sup>®</sup> UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	x			x

	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
Intel <sup>®</sup> Core <sup>™</sup> i3-10320 Processor <sup>1</sup> 65W 3.8 GHz base frequency Up to 4.6 GHz max. turbo frequency with Intel <sup>®</sup> Turbo Boost Technology <sup>3</sup> 8 MB cache, 4 cores, 8 threads Intel <sup>®</sup> UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	x	x	x	x

(III)

Intel <sup>®</sup> Core <sup>™</sup> i3-10300 Processor <sup>1</sup> 65W 3.7 GHz base frequency Up to 4.4 GHz max. turbo frequency with Intel <sup>®</sup> Turbo Boost Technology <sup>3</sup> 8 MB cache, 4 cores, 8 threads Intel <sup>®</sup> UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	x	x	X	x
Intel <sup>®</sup> Core <sup>™</sup> i3-10300T Processor <sup>1</sup> 35W 3.0 GHz base frequency Up to 3.9 GHz max. turbo frequency with Intel <sup>®</sup> Turbo Boost Technology <sup>3</sup> 8 MB cache, 4 cores, 8 threads Intel <sup>®</sup> UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	x			X
Intel® Core™ i3-10100 Processor <sup>1</sup> 65W 3.6 GHz base frequency Up to 4.3 GHz max. turbo frequency with Intel® Turbo Boost Technology <sup>3</sup> 6 MB cache, 4 cores, 8 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	x	X	X	x
Intel® Core™ i3-10100T Processor <sup>1</sup> 35W 3.0 GHz base frequency Up to 3.8 GHz max. turbo frequency with Intel® Turbo Boost Technology <sup>3</sup> 6 MB cache, 4 cores, 8 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	x			x

Intel® Pentium® Processors	<u>DM</u>	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
Intel® Pentium® Gold G-6600 Processor <sup>1</sup> 58W 4.2 GHz base frequency 4 MB cache, 2 cores, 4 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	x	x	x	x
Intel® Pentium® Gold G-6500 Processor <sup>1</sup> 58W 4.1 GHz base frequency 4 MB cache, 2 cores, 4 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	x	x	x	x



Intel® Pentium® Gold G-6500T Processor <sup>1</sup> 35W 3.5 GHz base frequency 4 MB cache, 2 cores, 4 threads Intel® UHD Graphics 630 Supports DDR4 memory up to 2666 MT/s data rate	x			x
Intel® Pentium® Gold G-6400 Processor <sup>1</sup> 58W 4.0 GHz base frequency 4 MB cache, 2 cores, 4 threads Intel® UHD Graphics 610 Supports DDR4 memory up to 2666 MT/s data rate	x	x	x	x
Intel® Pentium® Gold G-6400T Processor <sup>1</sup> 35W 3.4 GHz base frequency 4 MB cache, 2 cores, 4 threads Intel® UHD Graphics 610 Supports DDR4 memory up to 2666 MT/s data rate	x			x

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

2. Intel<sup>®</sup> Optane<sup>™</sup> memory system acceleration does not replace or increase the DRAM in your system.

3. 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. See www.intel.com/technology/turboboost for more information.

4. Some functionality of vPro technology, such as Intel Active management technology and Intel Virtualization technology, requires additional 3rd party software in order to run. Availability of future "virtual appliances" applications for Intel vPro technology is dependent on 3rd party software providers. Compatibility with future "virtual appliances" is yet to be determined.

NOTE: Memory speed 2666 and 2933 MT/s can be achieved via two UDIMMs per channel (2DPC) when populated with the same part number.



## GRAPHICS

<b>Integrated Graphics</b> Intel <sup>®</sup> UHD Graphics 630 (integrated on 10 <sup>th</sup> gen Core i7/i5/i3 processors and Pentium <sup>®</sup> Gold G-6600, G-6500, and G-6500T) Intel <sup>®</sup> UHD Graphics 610 (integrated on Pentium <sup>®</sup> Gold G-6400, G-6400T)	DM X X	<u>SFF</u> X X	<u>МТ</u> Х Х	<u>AiO</u> X X
Optional Discrete Graphics Solutions AMD® Radeon™ RX 550X 4GB FH DP+HDMI AMD® Radeon™ R7 430 2GB DP+VGA AMD® Radeon™ R7 430 2GB 2DP AMD® Radeon™ 520 1GB VGA+DP AMD® Radeon™ 630 with 2GB GDDR5** NVIDIA® GeForce® RTX 2060 super 8GB DP+HDMI+DVI-D *MT can support one single graphics card up to 75W or dual graphics cards up to 35W each. **AMD® Radeon™ 630 with 2GB GDDR5 must be configured at purchase	<u>DM</u>	SFF X X X	<u>МТ*</u> Х Х Х	<u>AiO</u> x
Adapters and Cables HP DisplayPort™ Cable HP DisplayPort™ to DVI-D Adapter HP DisplayPort™ to HDMI True 4K Adapter HP DisplayPort™ to VGA Adapter HP USB to Serial Port Adapter	DM X X X X X	SFF X X X X X	MT X X X X X	<u>AiO</u> X X X X X
STORAGE 3.5 inch SATA Hard Disk Drives (HDD) 500 GB 7200RPM 3.5in SATA HDD 1 TB 7200RPM 3.5in SATA HDD 2 TB 7200RPM 3.5in SATA HDD	<u>DM</u>	SFF X X X	<u>МТ</u> Х Х Х	<u>Ai0</u>
<ul> <li>2.5 inch SATA Hard Disk Drives (HDD)</li> <li>500 GB 7200RPM 2.5in SATA HDD</li> <li>1 TB 7200RPM 2.5in SATA HDD</li> <li>2 TB 5400RPM 2.5in SATA HDD</li> <li>500 GB 7200RPM 2.5in Self Encrypted OPAL2 SATA HDD*</li> <li>500 GB 7200RPM 2.5in Self Encrypted Federal Information Processing Standard SATA HDD*</li> </ul>	DM X X X X X	<u>SFF</u> X X X X X	<u>мт</u> х х х х	AiO X X X X X

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

M.2 PCIe NMVe Solid State Drives (SSD)	<u>DM</u>	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
256GB M.2 2280 PCIe NVMe SSD	X	X	Х	Х
512GB M.2 2280 PCIe NVMe SSD	X	X	Х	Х
128GB M.2 2280 PCIe NVMe Three Layer Cell SSD	X	X	Х	Х
256GB M.2 2280 PCIe NVMe Three Layer Cell SSD	X	X	Х	X
512GB M.2 2280 PCIe NVMe Three Layer Cell SSD	X	X	Х	Х
1TB M.2 2280 PCIe NVMe Three Layer Cell SSD	X	X	Х	X
2TB M.2 2280 PCIe NVMe Three Layer Cell SSD	X	X	Х	Х
256GB M.2 2280 PCIe NVMe Self Encrypted OPAL2 Three Layer Cell SSD*	X	X	Х	X
512GB M.2 2280 PCIe NVMe Self Encrypted OPAL2 Three Layer Cell SSD*	X	X	Х	Х
256GB Intel® Optane™ Memory H10 with Solid State Storage*	X	X	Х	Х
512GB Intel® Optane™ Memory H10 with Solid State Storage*	X	X	Х	Х
* Storage DriveLock does not work with Self Encrypting or Optane based storage				
Optical Disc Drives	<u>DM</u>	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
HP 9.5mm Slim DVD-ROM Drive <sup>1</sup>		X	Х	Х
HP 9.5mm Slim DVD Writer Drive <sup>2</sup>		X	Х	Х
HP 9.5mm Slim Blu-Ray Writer Drive <sup>3</sup>		X	Х	Х

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

2. Don't copy copyright-protected materials.

3. With Blu-Ray, certain disc, digital connection, compatibility and/or performance issues may arise, and do not constitute defects in the product. Flawless playback on all systems is not guaranteed. In order for some Blu-ray titles to play, they may require a DVI or HDMI digital connection and your display may require HDCP support. HD-DVD movies cannot be played on this Desktop PC.

Media Card Reader	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
SD 4.0 with 5-in-1 Interface (Supports SD, SDXC, SDHC, UHS-I, UHS-II)		X	X	
SD 3.0 with 4-in-1 Interface (Supports SD, SDXC, SDHC, UHS-I)				Х



# Standard Features and Configurable Components

## MEMORY

	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
DDR4-2666 (Transfer rates up to 2666 MT/s), 64 GB, 2 SODIMM	Х			Х
DDR4-2666 (Transfer rates up to 2666 MT/s), 128 GB, 4 DIMM		X	X	
DDR4-3200 (Transfer rates up to 3200 MT/s), 64 GB, 2 SODIMM	Х			Х
DDR4-3200 (Transfer rates up to 3200 MT/s), 128 GB, 4 DIMM		x	x	
Memory Configuration				
4 GB (4 GB x 1)	Х	X	X	Х
8 GB (4 GB x 2)	Х	X	X	Х
8 GB (8 GB x 1)	Х	X	X	Х
16 GB (8 GB x 2)	Х	X	X	Х
16 GB (16 GB x 1)	Х	X	X	Х
32 GB (32 GB x 1)	Х	X	X	Х
32 GB (16 GB x 2)	Х	X	X	Х
32 GB (8 GB x 4)		X	X	
64 GB (32 GB x 2)	Х	X	X	Х
64 GB (16 GB x 4)		X	X	
128 GB (32 GB x 4)		X	X	

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

**NOTE:** Memory modules support data transfer rates up to 2666 MT/s and 3200 MT/s respectively depending on memory module used; actual data rate is determined by the system's configured processor and memory configuration. See processor specifications for supported memory data rate. **NOTE:** All memory slots are customer accessible / upgradeable.

NOTE: Memory speed 2666 and 2933 MT/s can be achieved via two UDIMMs per channel (2DPC) when populated with the same part number.

## **NETWORKING/COMMUNICATIONS**

Ethernet (RJ-45)	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
Intel <sup>®</sup> I219-LM Gigabit Network Connection (standard)	Х	Х	Х	Х
Intel® I210-T1 PCIe x1 Gigabit Network Interface Card (optional)		Х	Х	
Wireless <sup>1</sup>				
Intel® Wi-Fi 6 AX201 802.11ax 2x2 with Bluetooth® M.2 Combo Card vPro™	Х	Х	Х	х
Intel® Wi-Fi 6 AX201 802.11ax 2x2 with Bluetooth® M.2 Combo Card non-vPro™	Х	Х	Х	х
Realtek RTL8822CE 802.11ac 2x2 with Bluetooth® M.2 Combo Card	Х	Х	Х	Х
Realtek RTL8821CE 802.11ac 1x1 with Bluetooth® M.2 Combo Card	Х	Х	Х	х

1. Wireless access point and Internet service required and not included. Availability of public wireless access points limited.

## **KEYBOARDS AND POINTING DEVICES**

Keyboards	<u>DM</u>	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
HP PS/2 Business Slim Standalone Wired Keyboard		Х	Х	
HP Wired Desktop 320K Keyboard	Х	Х	Х	Х
HP USB Business Slim Wired SmartCard CCID Keyboard	Х	Х	Х	Х
HP USB & PS/2 Washable Standalone Wired Keyboard	Х	Х	Х	Х
HP USB Wired Keyboard	Х	Х	Х	Х
HP Universal USB Wired Keyboard	X	X	X	X
Keyboard & Mouse Combo	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
HP Premium Wireless Keyboard and Mouse	Х	X	X	Х
HP Premium USB Wired Keyboard and Mouse	Х	X	X	Х
HP Business Slim Wireless Keyboard and Mouse	Х	X	X	Х
HP USB PS/2 Washable Keyboard and Mouse Wired	X	X	X	X
Mouse	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
HP PS/2 Mouse		X	X	
HP Wired Desktop 320M Mouse	Х	X	X	Х
HP USB Optical Wired Mouse	Х	Х	X	Х
HP USB Hardened Optical Wired Mouse	Х	X	Х	Х
HP USB 1000dpi Laser Mouse	Х	Х	Х	х
HP USB & PS/2 Washable Wired Mouse Standalone	Х	X	Х	Х
HP USB Premium Wired Mouse	Х	X	Х	Х
HP USB Fingerprint Mouse	Х	x	X	X

**NOTE:** Availability may vary by country



## SECURITY

	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
TPM 2.0 (FW: 7.85) endpoint security controller (Infineon SLB9670) shipped with Windows 10. Common Criteria EAL4+ Certified. FIPS 140-2 Level 2 Certified.	x	X	x	x
Solenoid Lock & Intrusion Sensor (Optional)			X	
Intrusion Sensor (Optional)		X		
Intrusion Sensor (integrated in the system board, can be enabled/disabled through BIOS)	X			X
Support for chassis cable lock devices	<b>X</b> (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	X
Serial, USB enable / disable (via BIOS)	X	X	X	X
Intel <sup>®</sup> Identify Protection Technology (IPT) <sup>1</sup>	X	X	X	X
Removable media write/boot control	X	X	X	X
Power-on password (via BIOS)	X	X	Х	X
Setup password (via BIOS)	X	X	X	X

1. Models configured with Intel<sup>®</sup> Core<sup>™</sup> 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 username and password. IPT is initialized through an HP Client Security module.

### PORTS

#### **Internal Slots and Ports**

	<u>DM</u>	<u>SFF</u>	<u>N</u>	<u>1T</u>	<u>Ai0</u>
			<u>600</u>	<u>600/680 PCI</u>	
M.2 PCIe	(1) M.2 PCIe x1 2230 (for WLAN) (2) M.2 PCIe x4 2280 (for storage)	(1) M.2 PCIe x1 2230 (for WLAN) (1) M.2 PCIe x4 2280 (for storage)	WL (2) M.2 PCle	x1 2230 (for AN) x4 2280 (for rage)	(1) M.2 PCIe x1 2230 (for WLAN) (1) M.2 PCIe x4 2280 (for storage)
PCI Express v3.0 x1			1	1	
PCI Express v3.0 x4		1			
PCI Express v3.0 x16 (wired as x4)			1	1	
PCI Express v3.0 x16		1	1	1	
PCI x1				1	
SATA port		3		4	
Integrated SATA storage connector	1				1



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

Bays	DM	<u>SFF</u>	<u>MT</u>	AiO
5.25" Half Height			1 <sup>3</sup>	
9.5mm Slim Optical Disc Drive (ODD)		1	1	11
SD Card Reader		1	1	1
2.5" Internal Storage Drive	1	2 <sup>2</sup>	1	1
3.5" Internal Storage Drive		1 <sup>2</sup>	1 <sup>4</sup>	

1. Must be configured at time of purchase

2. SFF can be configured with either (1) 3.5" or (2) 2.5" internal storage drive (2.5-inch drive needs adapter that can only be purchased when configuring the PC from factory with a 2.5" drive.)

3. MT's 5.25" legacy bay can be configured as either (1) 5.25 half-height drive bay or (1) 3.5" internal storage drive bay (3.5-inch drive needs an adapter cage that can be purchased when configuring the PC from factory with a 3.5" drive or buy the adapter cage individually as an after-market-options part).

4. MT's 3.5" bay can be configured as either (1) 3.5" internal storage drive bay or (1) 2.5" internal storage drive bay (2.5-inch drive needs an adapter that can only be purchased when configuring the PC from factory with a 2.5" drive).

#### **Standard User Accessible Ports**

	DM	<u>SFF</u>	M	<u> T</u>	<u>Ai0</u>
			<u>600</u>	<u>600/680 PCI</u>	
Type-A Hi-Speed USB 480Mbps signaling rate port		2 (rear)	2 (rear)		
Type-A SuperSpeed USB 5Gbps signaling rate port	1 (front) 2 (rear)	2 (front) 3 (rear)	2 (front) 3 (rear)	2 (front) 4 (rear)	4 (rear)
Type-A SuperSpeed USB 10Gbps signaling rate port	1 (front) 2 (rear)	2 (front)	2 (front)	4 (front)	1 (side)
Type-C <sup>®</sup> SuperSpeed USB 10Gbps signaling rate port	1 (front)	1 (front)	1 (front)		1 (side)
Video	2 DisplayPort™ 1.4 (rear)	2 DisplayPort™ 1.4 (rear)	2 DisplayPort™ 1.4 (rear)	1 DisplayPort™ 1.4 (rear) 1 VGA (rear) <sup>2</sup>	T DISplayPort <sup>111</sup> 1.4
Audio	1 Combo Audio Jack with CTIA and OMTP headset support (front)	1 Combo Audio Jack with CTIA and OMTP headset support (front)	CTIA and OM	dio Jack with 1TP headset t (front)	1 Combo Audio Jack with CTIA and OMTP headset support (side)
Network Interface	1 RJ45 (rear)	1 RJ45 (rear)	1 RJ45	i (rear)	1 RJ45 (rear)



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

Flexible Port 1, choice of <u>one</u> of the following:	DM	<u>SFF</u>	600 <u>MT</u>	600/680 PCI	<u>Ai0</u>
Type-A USB		2 Type-A SuperSpeed USB 5Gbps signaling rate port	2 Type-A SuperSpeed USB 5Gbps signaling rate port	<u>500/880 FL1</u>	
Type-C <sup>®</sup> 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		
Thunderbolt™ 3	1 <sup>1</sup>				
Video	1 DisplayPort™ 1.4 <u>or</u> HDMI 2.0 <u>or</u> VGA	1 DisplayPort™ 1.4 <u>or</u> HDMI 2.0 <u>or</u> VGA	1 DisplayPor HDMI 2.0		1 DisplayPort <sup>™</sup> 1.4 <u>or</u> HDMI 2.0
Serial (RS-232)	<b>1</b> <sup>1</sup>	1	1		1

1. Sold separately or as an optional feature

#### Flexible Port 2, choice of <u>one</u> of the following:

	DM	<u>SFF</u>	<u>M</u> 600	<u>T</u> <u>600/680 PCI</u>	<u>AiO</u>
Type-A USB	2 Hi-Speed USB 480Mbps signaling rate <sup>1</sup>				
Thunderbolt™ 3		1	1		
Serial (RS-232)	1 <sup>1</sup>	1 <sup>1</sup>	1	1	

1. Must be configured at time of purchase



## USB SPECIFICATION AND MARKETING NAME MAPPING TABLE

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



### SOFTWARE COMPONENTS AND APPLICATIONS WITH WINDOWS

#### Preinstalled Software

#### BIOS

HP BIOSphere Gen6<sup>17</sup> HP Secure Erase<sup>18</sup> HP DriveLock & Automatic DriveLock<sup>20</sup> BIOS Update via Network Absolute Persistence Module<sup>19</sup> Pre-boot Authentication

#### Software

HP Desktop Support Utility HP JumpStart HP Privacy Settings HP Setup Integrated OOBE HP Support Assistant<sup>21</sup> HP Noise Cancellation Software Buy Office (sold separately)

#### **Manageability Features**

HP Driver Packs<sup>22</sup> HP System Software Manager (SSM) (download) HP BIOS Config Utility (BCU) (download) HP Cloud Recovery<sup>38</sup> HP Client Catalog (download) HP Image Assistant Gen5 HP Manageability Integration Kit for Microsoft System Center Configuration Management Gen4<sup>23</sup> Ivanti Management Suite (download) <sup>24</sup>

#### **Client Security Software**

HP Client Security Manager Gen6<sup>25</sup> HP Power On Authentication Windows Defender<sup>27</sup>

#### **Security Management**

Trusted Platform Module TPM 2.0 Embedded Security Chip shipped with Windows 10. (Common Criteria EAL4+ Certified) Serial, USB enable/disable (via BIOS) Power-on password (via BIOS) Setup password (via BIOS) Support for chassis padlocks and cable lock devices HP Sure Sense<sup>34</sup> HP Sure Click<sup>37</sup> HP Sure Start Gen6<sup>30</sup> HP Sure Run Gen3<sup>35</sup> HP Sure Recover Gen3<sup>36</sup>

HP BIOSphere Gen6 is available on select HP Pro and Elite PCs. Features may vary depending on the platform and configurations.
 Secure Erase for the methods outlined in the National Institute of Standards and Technology Special Publication 800-88. "Clear" sanitation method. HP Secure Erase does not support platforms with Intel<sup>®</sup> Optane<sup>™</sup>.

19. Absolute agent is shipped turned off, and will be activated when customers activate a purchased subscription. Subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. The Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. For full details visit:

http://www.absolute.com/company/legal/agreements/computrace-agreement. Data Delete is an optional service provided by Absolute Software. If utilized, the Recovery Guarantee is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either obtain a PIN or purchase one or more RSA SecurID tokens from Absolute Software.



20. Storage Drivelock does not work with Self Encrypting or Optane based storage.

- 21. HP Support Assistant requires Windows and Internet access.
- 22. HP Driver Packs not preinstalled, however available for download at http://www.hp.com/go/clientmanagement.

23. HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html 24. Ivanti Management Suite subscription required.

25. HP Client Security Manager Gen6 requires Windows and is available on the select HP Elite and Pro PCs.

26. HP Sure Sense requires Windows 10.

27. Windows Defender Opt In, Windows 10, and internet connection required for updates.

30. HP Sure Start Gen6 is available on select HP PCs.

35. HP Sure Run Gen3 is available on select Windows 10 based HP Pro, Elite and Workstation PCs with select Intel® or AMD processors.

36. HP Sure Recover Gen3 requires an open network connection. You must back up important files, data, photos, videos, etc. before use to avoid loss of data.

37. HP Sure Click requires Windows 10 and supports Microsoft Internet Explorer, Google Chrome<sup>™</sup>, and Chromium<sup>™</sup>. Supported attachments include Microsoft Office (Word, Excel, PowerPoint) and PDF files in read only mode, when Microsoft Office or Adobe Acrobat are installed. 38. HP Cloud Recovery is available for HP Elite and Pro desktops and laptops PCs with Intel<sup>®</sup> or AMD processors and requires an open, wired network connection. Note: You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Detail please refer to: https://support.hp.com/us-en/document/c05115630.



## 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 <sup>1</sup> Non-Operating for AiO: -20° to 60° C <sup>1</sup> Non-Operating for MT/SFF/DM: -30° to 60° C <sup>1</sup>
Relative Humidity	Operating: 5% to 90% (non-condensing at ambient) Non-operating: 5% to 90% (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.



### **ENVIRONMENTAL & INDUSTRY**

#### HP Prodesk 600 G6 Desktop Mini PC

& declarations	labeled with one or more of these • IT ECO declaration • US ENERGY STAR® certified • EPEAT® 2019 registered where a http://www.epeat.net for registra party option store for solar genera • TCO Certified *Based on US EPEAT® registration acconduction http://www.epeat.net for more info	marks: pplicable. EPEAT® registra tion status in your country ator accessories at http://v ording to IEEE 1680.1-2018 E ormation.	*. Search keyword generator on HP's 3rd www.hp.com/go/options. PEAT®. Status varies by country. Visit
System Configuration	The configuration used for the Energy Desktop model is based on a Typic	5, ,	lared Noise Emissions data for the
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)			
Normal Operation (Long idle)			
Sleep Off			
			rs. If a model family does not offer ENERGY
	disk drive, a high efficiency power sup	ply, and a Microsoft Windows	
Heat Dissipation*			
Normal Operation (Short idle)	disk drive, a high efficiency power sup	ply, and a Microsoft Windows	® operating system.
Normal Operation (Short idle) Normal Operation (Long idle)	disk drive, a high efficiency power sup	ply, and a Microsoft Windows	® operating system.
Normal Operation (Short idle) Normal Operation (Long idle) Sleep	disk drive, a high efficiency power sup	ply, and a Microsoft Windows	® operating system.
Normal Operation (Short idle) Normal Operation (Long idle)	disk drive, a high efficiency power sup 115VAC, 60Hz	ply, and a Microsoft Windows 230VAC, 50Hz	® operating system.
Normal Operation (Short idle) Normal Operation (Long idle) Sleep Off Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	disk drive, a high efficiency power sup 115VAC, 60Hz NOTE: Heat dissipation is calculate	ply, and a Microsoft Windows 230VAC, 50Hz	© operating system.
Normal Operation (Short idle) Normal Operation (Long idle) Sleep Off Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296) Typically Configured – Idle	disk drive, a high efficiency power sup 115VAC, 60Hz NOTE: Heat dissipation is calculate attained for one hour. Sound Power	ply, and a Microsoft Windows 230VAC, 50Hz	© operating system.
Normal Operation (Short idle) Normal Operation (Long idle) Sleep Off Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296) Typically Configured –	disk drive, a high efficiency power sup 115VAC, 60Hz NOTE: Heat dissipation is calculate attained for one hour. Sound Power	ply, and a Microsoft Windows 230VAC, 50Hz	© operating system.



	Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.			
Batteries	This battery(s) in this product comply with EU Directive 2006/66/EC			
	Batteries used in the product do not contain: Mercury greater than 1ppm by weight Cadmium greater than 20ppm by weight			
	Battery size: CR2032 (coin cell)			
Additional Information	Battery type: Lithium           • 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)			
	<ul> <li>Directive – 2002/96/EC.</li> <li>This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).</li> <li>Plastics parts weighing over 25 grams used in the product are marked per IS011469 and IS01043.</li> </ul>			
	<ul> <li>This product contains a minimum of 35% post-consumer recycled (PCR) plastic (by wt.); including 10% ITE-derived post-consumer recycled plastic.*</li> <li>This product is 95.1% recycle-able when properly disposed of at end of life.</li> </ul>			
	*Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.			
Packaging Materials	External: PAPER/Corrugated			
(vary by country)				
Material Usage	External:         PARER/Corrugated           Internal:         PLASTIC/Polyethylene Expanded - EPE           PLASTIC/Polyethylene low density - LDPE           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):           • 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 Biphenyl (PBBs)           • Polybrominated Biphenyl Oxides (PBBCs)           • Polybrominated Biphenyl (PCB)           • Polychlorinated Terphenyls (PCT)           • Polychlorinated Terphenyls (PCT)           • Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.           • Radioactive Substances      <			



Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging:				
	• Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging				
	materials.				
	• Eliminate the use of ozone-depleting substances (ODS) in packaging materials.				
	<ul> <li>Design packaging materials for ease of disassembly.</li> </ul>				
	• 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	HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To				
and Recycling	recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP				
	sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.				
	The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for				
	each product type for use by treatment facilities. This information (product disassembly				
	instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These				
	instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment				
	customers who integrate and re-sell HP equipment.				
	Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html				
	Eco-label certifications				
	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				

#### HP ProDesk 600 G6 Small Form Factor PC

Eco-Label Certifications & declarations	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks: • IT ECO declaration • US ENERGY STAR® certified • EPEAT® 2019 registered where applicable. EPEAT® registration varies by country. See http://www.epeat.net for registration status in your country*. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options. • TCO Certified *Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information.				
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)					
Normal Operation (Long idle)					
Sleep Off					



	<b>NOTE:</b> 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.				
Heat Dissipation*	115	SVAC, 60Hz	230VAC	, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)					
Normal Operation (Long idle)					
Sleep Off					
	<b>NOTE:</b> Heat attained for		ated based on the me	easured watts, ass	uming the service level is
Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)		Sound Power (LwAd, bels)Sound Pressure (LpAm, decibels)			
Typically Configured – Idle					
Fixed Disk – Random writes					
Longevity and Upgrading	<ul> <li>This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:</li> <li>4 DIMM memory slots</li> <li>Interchangeable M.2 PCIe NVME SSD &amp; 2.5"/3.5" SATA HDD</li> <li>Spare parts are available throughout the warranty period and or for up to 5 years after the end of production.</li> </ul>				
Batteries	This battery(s) in this product comply with EU Directive 2006/66/EC Batteries used in the product do not contain: Mercury greater than 1ppm by weight Cadmium greater than 20ppm by weight Battery size: CR2032 (coin cell) Battery type: Lithium				
Additional Information	<ul> <li>This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.</li> <li>This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.</li> <li>This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).</li> <li>Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.</li> <li>This product contains a minimum of 35% post-consumer recycled (PCR) plastic (by wt.); including 10% ITE-derived post-consumer recycled plastic.*</li> <li>This product is 95.1% recycle-able when properly disposed of at end of life.</li> </ul> *Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.				
Packaging Materials	External: PAPER/Corrugated				
(vary by country)	Internal:         PLASTIC/Expanded Polyethylene – EPE or PAPER/molded fiber-pulp           PLASTIC/Polyethylene low density - LDPE				



	PAPER/Molded Pulp			
Material Usage	This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at			
	http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):			
	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			
	<ul> <li>Nickel – finishes must not be used on the external surface designed to be frequently handled or</li> </ul>			
	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			
Daelaaina Ueses	• Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)			
Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging:			
	• Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.			
	• Eliminate the use of ozone-depleting substances (ODS) in packaging materials.			
	• Design packaging materials for ease of disassembly.			
	• Maximize the use of post-consumer recycled content materials in packaging materials.			
	• Use readily recyclable packaging materials such as paper and corrugated materials.			
	• Reduce size and weight of packages to improve transportation fuel efficiency.			
	• Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.			
End-of-life Management	HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To			
and Recycling	recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.			
	The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for			
	each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These			
	instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM			
	customers who integrate and re-sell HP equipment.			
	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

#### HP ProDesk 600 G6 Microtower Series

Eco-Label Certifications & declarations	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks: • IT ECO declaration • US ENERGY STAR® certified • EPEAT® 2019 registered where applicable. EPEAT® registration varies by country. See http://www.epeat.net for registration status in your country*. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options. • TCO Certified *Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit http://www.epeat.net for more information.			
System Configuration	The configuration used for the End Desktop model is based on a "Typ		Noise Emissions data for the	
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz 100VAC, 50Hz		
Normal Operation (Short idle)				
Normal Operation (Long idle)				
Sleep Off				
	HP computers marked with the ENERGY STAR <sup>®</sup> Logo are certified with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR <sup>®</sup> specifications for computers. If a model family does not offer ENERGY STAR <sup>®</sup> 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 <sup>®</sup> operating system.			
Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz	
Normal Operation (Short idle)				
Normal Operation (Long idle)				
Sleep				
Off				
	<b>NOTE:</b> 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) Typically Configured –	Sound Power (L <sub>WAd</sub> , bels)		Sound Pressure (L <sub>pAm</sub> , decibels)	
Idle Fixed Disk – Random				
writes				



Longevity and Upgrading	<ul> <li>This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the product may include:</li> <li>4 DIMM memory slots</li> <li>Interchangeable M.2 PCIe NVME SSD &amp; 2.5"/3.5" SATA HDD</li> <li>Spare parts are available throughout the warranty period and or for up to "5" years after the end of</li> </ul>			
	production.		-	
Batteries	This battery(	s) in this product comply with EU Directive 2006/66/EC		
	Batteries used in the product do not contain: Mercury greater than 1ppm by weight Cadmium greater than 20ppm by weight Battery size: CR2032 (coin cell)			
Additional Information	• This produc	t is in compliance with the Restrictions of Hazardous Sub	stances (RoHS) directive -	
Additional information	2011/65/EC.	duct is designed to comply with the Waste Electrical and I		
	Directive – 20			
		t is in compliance with California Proposition 65 (State of	California; Safe Drinking Water	
		orcement Act of 1986).		
		ts weighing over 25 grams used in the product are marke		
		t contains a minimum of 35% post-consumer recycled (P	CR) plastic (by wt.); including	
		ved post-consumer recycled plastic.* t is 95.1% recycle-able when properly disposed of at end	oflife	
	• This produc	t is 95.1% recycle-able when property disposed of at end	or the.	
	*Recycled plas	tic content percentage is based on the definition set in the IEEE	1680.1-2018 standard.	
Packaging Materials	External:	PAPER/Corrugated		
(vary by country)	Internal:	PLASTIC/EPE (Expanded Polyethylene)		
		PLASTIC/Polyethylene low density PAPER/Molded Pulp		
Material Usage				



	<ul> <li>Radioactive Substances</li> <li>Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)</li> </ul>
Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging:
	<ul> <li>Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.</li> </ul>
	• Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
	• Design packaging materials for ease of disassembly.
	• Maximize the use of post-consumer recycled content materials in packaging materials.
	• Use readily recyclable packaging materials such as paper and corrugated materials.
	<ul> <li>Reduce size and weight of packages to improve transportation fuel efficiency.</li> <li>Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.</li> </ul>
End-of-life Management and Recycling	HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.
	The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment. Global Citizenship Report
	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

#### HP ProDesk 600 G6 22 All-in-One PC

Eco-Label Certifications & declarations	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:• IT ECO declaration• US ENERGY STAR® certified• EPEAT® 2019 registered where applicable. EPEAT® registration varies by country. See http://www.epeat.net for registration status in your country*. Search keyword generator on HP's 3rd party option store for solar generator accessories at http://www.hp.com/go/options.• TCO Certified*Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit 				
System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Desktop model is based on a "Typically Configured Desktop".				
Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz 230VAC, 50Hz 100VAC, 50Hz				
Normal Operation (Short idle)	17.07 W	18.19 W	16.43 W		
Normal Operation (Long idle)	5.53 W	6.28 W	4.29 W		



Sleep		0.94 W	1.01 W		0.86 W
Off		0.75 W	0.76 W		0.66 W
	HP computers Protection Ag STAR <sup>®</sup> certifie	s marked with the ENER( jency (EPA) ENERGY STAI	GY STAR® Logo are certif R® specifications for con mergy efficiency data lis	ied with the appli puters. If a mode ted is for a typica	offered within the model family. icable U.S. Environmental el family does not offer ENERGY illy configured PC featuring a hard system.
Heat Dissipation*	11	5VAC, 60Hz	230VAC, 5	DHz	100VAC, 50Hz
Normal Operation (Short idle)	58.2	2087 BTU/hr	62.0279 BT	U/hr	56.0263 BTU/hr
Normal Operation (Long idle)	18.8	3573 BTU/hr	21.4148 BT	U/hr	14.6289 BTU/hr
Sleep		054 BTU/hr	3.441 BTU		2.9326 BTU/hr
Off	2.5	575 BTU/hr	2. 5916BTl	J/hr	2.2506 BTU/hr
	<b>NOTE:</b> Heat attained for		ed based on the meas	ured watts, ass	uming the service level is
Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)			ound Pressure (L <sub>pAm</sub> , decibels)		
Typically Configured – Idle	2.8		17.2		
Fixed Disk – Random writes		3.3			20
	<ul> <li>features and/or components contained in the product may include:</li> <li>2 SODIMM memory slots</li> <li>Interchangeable M.2 PCIe NVME SSD &amp; 2.5" SATA HDD</li> <li>Spare parts are available throughout the warranty period and or for up to "5" years after the end of production.</li> </ul>				
Batteries	This battery(s) in this product comply with EU Directive 2006/66/EC Batteries used in the product do not contain: Mercury greater than 1ppm by weight Cadmium greater than 20ppm by weight Battery size: CR2032 (coin cell) Battery type: Lithium				
Additional Information	<ul> <li>This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.</li> <li>This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive - 2002/96/EC.</li> <li>This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).</li> <li>Plastics parts weighing over 25 grams used in the product are marked per IS011469 and IS01043.</li> <li>This product contains a minimum of 50% post-consumer recycled (PCR) plastic (by wt.); including 10% ITE-derived post-consumer recycled plastic.*</li> <li>This product is 95.1% recycle-able when properly disposed of at end of life.</li> </ul>				
	<ul> <li>Plastics pa</li> <li>This produ</li> <li>10% ITE-der</li> <li>This produ</li> </ul>	rts weighing over 25 g ct contains a minimun rived post-consumer r ct is 95.1% recycle-ab	grams used in the proo n of 50% post-consun ecycled plastic.* Ile when properly disp	ner recycled (PC osed of at end (	R) plastic (by wt.); including of life.
Packaging Materials	<ul> <li>Plastics pa</li> <li>This produ</li> <li>10% ITE-der</li> <li>This produ</li> </ul>	rts weighing over 25 g ct contains a minimun rived post-consumer r ct is 95.1% recycle-ab	grams used in the prog n of 50% post-consun ecycled plastic.* Ile when properly disp is based on the definitio	ner recycled (PC osed of at end (	R) plastic (by wt.); including of life.



	PLASTIC/Polyethylene low density - LDPE 36 g
Material Usage	This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at
	http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/gse.pdf):
	• Asbestos
	Certain Azo Colorants
	• Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
	• Cadmium
	Chlorinated Hydrocarbons
	Chlorinated Paraffins
	Formaldehyde     Halegenated Diphenyl Methanes
	<ul> <li>Halogenated Diphenyl Methanes</li> <li>Lead carbonates and sulfates</li> </ul>
	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     Tributul Tip (TPT) Tributul Tip Ovide (TPTO)
Packaging Usage	Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
Fackaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging:
	• Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
	• Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
	• Design packaging materials for ease of disassembly.
	• Maximize the use of post-consumer recycled content materials in packaging materials.
	• Use readily recyclable packaging materials such as paper and corrugated materials.
	• Reduce size and weight of packages to improve transportation fuel efficiency.
	• Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.
End-of-life Management and Recycling	HP Inc. offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.
	The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment. Global Citizenship Report
	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



### SERVICE AND SUPPORT

On-site Warranty<sup>1</sup>: Three-year (3-3-3) limited warranty delivers three years of on-site, next business day<sup>2</sup> service for parts and labor and includes free support 24 x 7<sup>3</sup>. Three-year onsite and labor are not available in all countries. Service offers terms up to 5 years by choosing an optional HP Care Pack. To choose the right level of service for your HP product, visit HP Care Pack Central: http://www.hp.com/go/cpc.<sup>4</sup>

Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.
 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.
 Technical telephone support applies only to HP-configured and third-party HP qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.

4. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.



Technical Specifications - Processors

### PROCESSORS

#### Intel<sup>®</sup> 10<sup>th</sup> Generation Core<sup>™</sup> Processors

All HP ProDesk & ProOne 600 G6 Business PC models featuring this technology include processors that are part of the Intel<sup>®</sup> Stable Image Platform Program (SIPP) designed to ensure the stability promise inherent in the value proposition of the HP ProDesk and ProOne 600 G6 Business PC.

Intel<sup>®</sup> Advanced Management Technology (AMT) v12<sup>1</sup> – 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 12 includes the following advanced management functions:

- Support for configuration of Intel AMT 12.0 capabilities
- No reset after provisioning
- Support for Intel Enterprise Digital Fence
- The Platform Discovery Utility can now discover these additional Intel products:
  - o 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<sup>®</sup> Active Management Technology requires an Intel<sup>®</sup> 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 – All-in-One Stand Specifications

### **DISPLAY PANEL SPECIFICATIONS<sup>1</sup>**

#### HP ProOne 600 G6 22 All-in-One PC

#### 21.5" diagonal IPS widescreen WLED backlit anti-glare LCD (1920 x 1080)

Non-touch or optional touch

Projected Capacitive Touch supports up to 10 touch-points

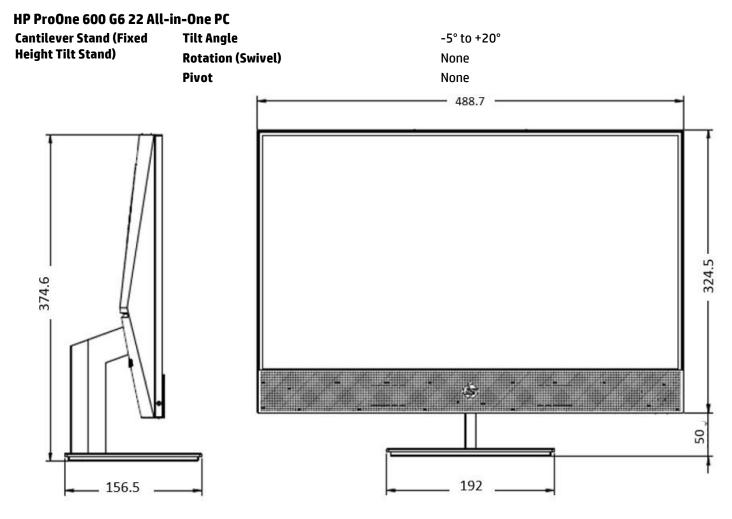
, , , , ,	•
Туре	IPS WLED Backlit LCD
Active area (mm)	476.064 x 267.786
Native Resolution (HxV)	1920 x 1080
Refresh Rate	60 Hz @ 1920 x 1080
Aspect ratio	16:9
Pixel pitch (HxV)(mm)	0.24795 x 0.24795
Contrast ratio (typical)	1000:1
Brightness (typical)	250nits
Viewing angle (typical) (HxV)	178° x 178°
Backlight lamp life (to half brightness)	30,000 hours minimum
Color support	Up to 16.7 million colors with the use of FRC technology
Color gamut (typical)	NTSC 72%
Anti-glare	Yes
Response Time	14ms (Typical)
Default color temperature	Warm (6500K)
Hardware based low blue light	Available on non-touch variant

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



## Technical Specifications – All-in-One Stand Specifications

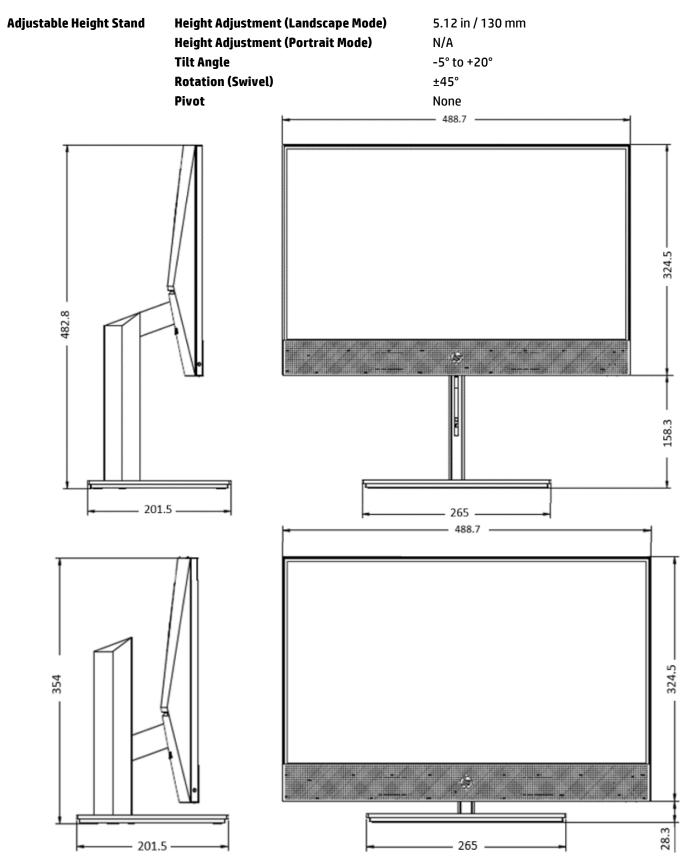
## **ALL-IN-ONE STAND SPECIFICATIONS**





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## Technical Specifications – All-in-One Stand Specifications



## Technical Specifications – Graphics

### GRAPHICS

Intel® UHD Graphics (integra	ated)
Graphics Controller	Integrated
DisplayPort™	Multimode capable; supports HDCP, Display Port Audio (2 streams), HBR2 link rates and Multi- Stream Technology for a maximum of 3 displays connected to any output controlled by Intel® Graphics
HDMI	Supports HDMI 2.0a features Supports HDCP 2.2 Supports audio over HDMI
VGA	VGA output
USB-C™ DP Alt Mode	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 10 bits/color
Graphics/Video API Support	HEVC 10b Enc/Dec HW VP9 10b Dec HW HDR Rec. 2020 DX12
Max. Resolution (VGA)	2048 x 1536@60Hz
Max. Resolution (HDMI)	4096 x 2160@60Hz
Max. Resolution (DP)	4096 x 2160@60Hz

#### AMD<sup>®</sup> Radeon<sup>™</sup> RX 550X 4 GB PCIe x16

Engine Clock	1183MHz
Memory Clock	6 Gbps
Memory Size(width)	4 GB(128-bit)
Memory Type	GDDR5
Max. Resolution(HDMI)	4096x2160 @ 60Hz
Max. Resolution(DP)	5120x2880 @ 60Hz
Multi Display Support	2 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	HDMI, DP
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<50W
PCB form-factor with bracket	LP (low profile) PCB with FH/LP bracket

#### AMD® Radeon™ RX 580 8GB GDDR5 Graphics Card

Engine Clock	1266 MHz
Memory Clock	4000 MHz
Memory Size(width)	8 GB (256-bit)
Memory Type	256M x 32 GDDR5
Max. Resolution(HDMI)	4096x2160@60Hz
Memory Size(width) Memory Type	8 GB (256-bit) 256M x 32 GDDR5



## Technical Specifications – Graphics

Max. Resolution(DP)	5120x3200@60Hz
Multi Display Support	4 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	HDMI + DPx3
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<150W
PCB form-factor with bracket	ATX (Full height) PCB with ATX dual slot bracket

#### AMD® Radeon™ R7 430 2GB VGA+DP 64bit Graphics Card

Engine Clock	780 MHz
Memory Clock	1100 MHz
Memory Size(width)	2 GB(64-bit)
Memory Type	256M x 32 GDDR5
Max. Resolution(HDMI)	2048x1536
Max. Resolution(DP)	4096x2160@60Hz
Multi Display Support	2 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	VGA+DP
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<50W
PCB form-factor with bracket	LP PCB with FH/LP bracket

#### AMD® Radeon™ R7 430 2GB GDDR5 2DP 64 bit Graphics Card

	•
Engine Clock	780 MHz
Memory Clock	1100 MHz
Memory Size(width)	2 GB(64-bit)
Memory Type	256M x 32 GDDR5
Max. Resolution(DP)	4096x2160@60Hz
Multi Display Support	2 displays
HDCP Compliance	yes
Rear I/O connectors(bracket)	DPx2
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<50W
PCB form-factor with bracket	LP PCB with FH/LP bracket

#### AMD Radeon™ 520 1GB Graphics Card

Engine Clock	780 MHz
Memory Clock	1150 MHz
Memory Size(width)	1 GB (32-bit)
Memory Type	256M x 32 GDDR5
Max. Resolution(DP)	2048x1536@60Hz
Multi Display Support	2 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	VGA+DP



## Technical Specifications – Graphics

Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<50W
PCB form-factor with bracket	PCB with FH bracket

#### AMD Radeon™ 630 with 2 GB GDDR5 Graphics Card

Memory	2 GB 64-bit wide frame buffer operating at 1125MHz.
Controller Clock Speed	AMD Radeon™ 630 GPU operating at 1024 MHz
Architecture	Hybrid Graphics AMD GPU uses Intel graphics controller for display control
Bus Connection	PCIE 3.0 x8
Graphics /API support	DIRECTX 12, Open GL 4.5, Open CL2.0, UVD, Mantle, AMD LiquidVR™
Display support	Same as for the Intel integrated graphics solution
Max. Resolution (HDMI)	4096 X 2160@60Hz
Max. Resolution (DP)	4096 X 2160@60Hz

#### NVIDIA® GeForce® RTX 2060 Super 8 GB Graphics Card

Engine Clock	1650 MHz
Memory Clock	7000 MHz
Memory Size(width)	8 GB(256-bit)
Memory Type	256M x 32 GDDR6
Max. Resolution(DVI)	2560x1600@60Hz
Max. Resolution(HDMI)	4096x2160@60Hz
Max. Resolution(DP)	7680x4320@60Hz
Multi Display Support	3 displays
HDCP Compliance	Yes
Rear I/O connectors(bracket)	DVI+HDMI+DP
Cooling(active/passive)	Active fan-sink (Active cooling with dynamic speed)
Total power consumption(W)	<175W
PCB form-factor with bracket	ATX (Full height) PCB with ATX dual slot bracket

## HARD DISK AND SOLID STATE STORAGE

#### 500 GB 7200RPM 3.5in SATA HDD

Capacity	500 GB
Rotational Speed	7,200 rpm
Interface	SATA 6.0 Gb/s
Buffer Size	32 MB
Logical Blocks	976,773,168
Seek Time	11 ms (Average)
Height	1 in/2.54 cm
Width	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 hard drives and solid state drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36 GB (for Windows 10) of system disk is reserved for the system recovery software.

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

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

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

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

Capacity	2 TB
Rotational Speed	7,200 rpm
Interface	SATA 6 Gb/s
Buffer Size	64 MB
Logical Blocks	3,907,050,336
Seek Time	11 ms (Average)
Height	1.028 in/26.11 mm
Width (nominal)	Media diameter: 3.5 in/88.9 mm Physical size: 4 in/102 mm
Operating Temperature	41° to 131° F (5° to 55° C)



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

Capacity	500 GB
Rotational Speed	7,200 rpm
Interface	SATA 6 Gb/s
Buffer Size	Up to 128 MB
Logical Blocks	976,773,168
Seek Time	12 ms (Average)
Height	0.267 in/6.8 mm (nominal)
Width (nominal)	2.75 in/70 mm (nominal)
Operating Temperature	41° to 131° F (5° to 55° C)

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

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

Capacity	1 TB
Rotational Speed	7,200 rpm
Interface	SATA 6 Gb/s
Buffer Size	Up to 128 MB
Logical Blocks	1,953,525,168
Seek Time	12 ms (Average)
Height	0.374 in/9.5 mm (Max.)
Width (nominal)	2.75 in/70 mm (nominal)
Operating Temperature	41° to 131° F (5° to 55° C)

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

#### 2 TB 5400RPM 2.5in SATA HDD

Capacity	2 TB
Rotational Speed	5,400 rpm
Interface	SATA 6 Gb/s
Buffer Size	128 MB
Logical Blocks	3,907,050,336
Seek Time	12 ms (Average)
Height	0.374 in/9.5 mm (nominal)
Width (nominal)	2.75 in/70 mm (nominal)
Operating Temperature	41° to 131° F (5° to 55° C)



#### 500 GB 7200RPM 2.5in Self Encrypted OPAL2 SATA HDD

Capacity	500 GB
Architecture	Self-Encrypting (SED) Solid State Drive with SATA interface
Interface	SATA 6 Gb/s
Buffer Size	128 MB
Logical Blocks	976,773,168
Seek Time	12 ms (Average)
Height	0.283 in/7.2 mm (Max)
Width	2.75 in/70 mm (nominal)
Operating Temperature	41° to 131° F (5° to 55° C)

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

#### 500 GB 7200RPM 2.5in Self Encrypted Federal Information Processing Standard SATA HDD

Capacity	500 GB
Architecture	Self-Encrypting (SED) Solid State Drive with SATA interface
Interface	SATA 6 Gb/s
Buffer Size	128 MB
Logical Blocks	976,773,168
Seek Time	12 ms (Average)
Height	0.283 in/7.2 mm (Max)
Width	2.75 in/70 mm (nominal)
Operating Temperature	41° to 131° F (5° to 55° C)

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

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

Drive Weight	< 10g
Capacity	256 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIE Gen3
Maximum Sequential Read	Up to 1600MB/s
Maximum Sequential Write	Up to 780MB/s
Logical Blocks	500,118,192
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2

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

Drive Weight	< 10g
Capacity	512 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIE Gen3
Maximum Sequential Read	Up to 1600MB/s
Maximum Sequential Write	Up to 860MB/s
Logical Blocks	1,000,215,216
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2

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

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

Drive Weight	< 10g
Capacity	128 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIE Gen3
Maximum Sequential Read	Up to 2800MB/s
Maximum Sequential Write	Up to 600MB/s
Logical Blocks	250,069,680
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2

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

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

Drive Weight	< 10g
Capacity	256GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIE Gen3
Maximum Sequential Read	Up to 2700MB/s
Maximum Sequential Write	Up to 1000MB/s
Logical Blocks	500,118,192
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2



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

Drive Weight	< 10g
Capacity	512 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIE Gen3
Maximum Sequential Read	Up to 2900MB/s
Maximum Sequential Write	Up to 1100MB/s
Logical Blocks	1,000,215,216
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2

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

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

Drive Weight	< 10g
Capacity	1 TB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIE Gen3
Maximum Sequential Read	Up to 3480MB/s
Maximum Sequential Write	Up to 3037MB/s
Logical Blocks	2,000,409,264
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	TRIM; ASPM L1.2

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

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

Drive Weight	< 10g
Capacity	2 TB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIE Gen3
Maximum Sequential Read	Up to 3500MB/s
Maximum Sequential Write	Up to 3000MB/s
Logical Blocks	3,907,029,168
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	TRIM; ASPM L1.2



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

Drive Weight	< 10g
Capacity	256 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIE Gen3
Maximum Sequential Read	Up to 2700MB/s
Maximum Sequential Write	Up to 1000MB/s
Logical Blocks	500,118,192
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2; TCG-OPAL2 security

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

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

Drive Weight	< 10g
Capacity	512 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIE Gen3
Maximum Sequential Read	Up to 2900MB/s
Maximum Sequential Write	Up to 1100MB/s
Logical Blocks	1,000,215,216
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	APST; ASPM L1.2; NVME spec 1.2; TCG-OPAL2 security

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

### 256 GB Intel<sup>®</sup> PCIe<sup>®</sup> NVMe<sup>™</sup> QLC + 32 GB Intel<sup>®</sup> Optane<sup>™</sup>

Drive Weight	< 10g
Capacity	256 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCle Gen3
Maximum Sequential Read	Up to 1450MB/s
Maximum Sequential Write	Up to 500MB/s
Logical Blocks	500,118,192
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	TRIM; ASPM L1.2



### 512 GB Intel® PCIe® NVMe™ QLC + 32 GB Intel® Optane™

Drive Weight	< 10g
Capacity	512 GB
Height	2.38mm
Length	80mm
Width	22mm
Interface	PCIe Gen3
Maximum Sequential Read	Up to 2400MB/s
Maximum Sequential Write	Up to 1300MB/s
Logical Blocks	1,000,215,215
Operating Temperature	0° to 70°C (32° to 158°F) [ambient temp]
Features	TRIM; ASPM L1.2

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

#### HP 9.5mm Slim DVD-ROM Drive

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

#### HP 9.5mm Slim DVD Writer Drive

Height	9.5 mm height
Orientation	Either horizontal or vertical
Interface type	SATA/ATAPI
Disc recording capacity	Up to 8.5 GB DL or 4.7 GB standard
Dimensions (W x H x D)	5.04 x 0.37 x 5.0 in (128 x 9.5 x 127 mm) without bezel
Weight (max)	0.31 lb (140 g)
Write Speeds	DVD-R DL - Up to 6X
	DVD+R - Up to 8X
	DVD+RW - Up to 8X



	DVD+R DL - Up to 6X DVD-R - Up to 8X DVD-RW - Up to 6X CD-R - Up to 24X CD-RW - Up to 10X
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)

#### HP 9.5mm Slim Blu-Ray Writer Drive

III 5.5IIIII Still Bta-hay Wi	
Height	9.5 mm height
Orientation	Either horizontal or vertical
Interface type	SATA/ATAPI
Disc recording capacity	Up to 128 GB QL, 100 GB TL, 50 GB DL or 25 GB standard SL
Dimensions (W x H x D)	5.04 x 0.37 x 5.0 in (128 x 9.5 x 127 mm) without bezel
Weight (max)	0.29 lb (132 g)
Write Speeds	BD-R SL/DL Up to 6X BD-R TL/QL Up to 4X BD-RE Up to 2X DVD-R Up to 8X DVD-R DL - Up to 6X DVD-RW Up to 6X DVD+R Up to 8X DVD+R DL - Up to 6X DVD+RW Up to 8X DVD+RW Up to 8X DVD-RAM Up to 5X CD-R Up to 24X CD-RW Up to 10X
Read Speeds	BD-ROM Up to 6X BD-R Up to 6X BD-RE SL/DL Up to 6X BD-RE TL Up to 4X DVD-ROM Up to 8X DVD-R SL/DL Up to 8X DVD-R Up to 8X DVD-RW Up to 8X DVD+R SL/DL Up to 8X DVD+R Up to 8X



	BDMV (AACS Compliant Disc) Up to 6x/2x (Read/Play) DVD-RAM Up to 5x DVD-Video (CSS Compliant Disc) Up to 8x/4x (Read/Play)
	CD-R/RW/ROM Up to 24x CD-DA (DAE) Up to 24X/10X (Read/Play)
Access time (typical reads, including settling)	Random BD-ROM: 205 ms (typical), DVD-ROM: 185 ms (typical), CD-ROM: 165 ms (typical) Full Stroke BD-ROM: 350 ms (typical), DVD-ROM: 345 ms (typical), CD-ROM: 340 ms (typical)
Power	Source Slimline SATA DC power receptacle DC Power Requirement 5 VDC ± 5%-100 mV ripple p-p DC Current 5 VDC -1200 mA typical, 2000 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 i219LM 10/100/100	0 Integrated NIC
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)
IEEE Compliance	100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30)
Performance	TCP/IP/UDP Checksum Offload (configurable)
	Protocol Offload (ARP & NS)
	Large send offload and Giant send offload
	Receiving Side Scaling
	Jumbo Frame 9K
Power consumption	Cable Disconnetion: 25mW
	100Mbps Full Run: 450mW
	1000bp Full Run: 1000mW
	WoL Enable(S3/S4/S5): 50mW
	WoL Disable(S3/S4/S5): 25mW
Power	ACPI compliant – multiple power modes
Management	Situation-sensitive features reduce power consumption
	Advanced link down power saving for reducing link down power consumption
Management Interface	Auto MDI/MDIX Crossover cable detection
IT Manageability	Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame);
	Wake-on-LAN from off (Magic Packet only)
	PXE 2.1 Remote Boot
	Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30))
	Comprehensive diagnostic and configuration software suite
	Virtual Cable Doctor for Ethernet cable status
Security & Manageability	Intel® vPro™ support with appropriate Intel® chipset components

Intel <sup>®</sup> Ethernet Contro	Intel® Ethernet Controller I210-AT Add-On Card	
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 Jumbo Frame 9K	
Power consumption	Cable Disconnetion: 25mW 100Mbps Full Run: 450mW 1000bp Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW	



Power	ACPI compliant – multiple power modes
Management	Situation-sensitive features reduce power consumption
	Advanced link down power saving for reducing link down power consumption
Management Interface	Auto MDI/MDIX Crossover cable detection
IT Manageability	Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-
	on-LAN from off (Magic Packet only)
Security & Manageability	PXE 2.1 Remote Boot

Intel Wi-Fi 6 AX201 + BT5	(802.11ax 2x2, non-vPro, supporting gigabit file transfer speeds)
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	Features Wi-Fi 6 technology
Frequency Band	802.11b/g/n/ax
	• 2.402 – 2.482 GHz
	802.11a/n/ac/ax
	• 4.9 – 4.95 GHz (Japan)
	• 5.15 – 5.25 GHz
	• 5.25 – 5.35 GHz
	• 5.47 – 5.725 GHz
	• 5.825 – 5.850 GHz
Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps
	• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)
	• 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz)
	<ul> <li>802.11ax : MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, ,80MHz &amp; 160MHz)</li> </ul>
Modulation	Direct Sequence Spread Spectrum
	OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
Security	<ul> <li>IEEE compliant 64 / 128 bit WEP encryption for a/b/g mode only</li> </ul>
	AES-CCMP: 128 bit in hardware
	802.1x authentication
	WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.
	WPA2 certification
	• IEEE 802.11i
	• WAPI
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points

Output Power	• 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
	• 802.11ac VHT160(5GHz) : +11.5dBm minimum
	• 802.11ax HT40(2.4GHz) : +10dBm minimum
	• 802.11ax VHT160(5GHz) : +10dBm minimum
Power Consumption	Transmit mode 2.0 W
	Receive mode 1.6 W
	• Idle mode (PSP) 180 mW (WLAN Associated)
	• Idle mode 50 mW (WLAN unassociated)
	• Connected Standby 10mW
	Radio disabled 8 mW
Power Management	ACPI and PCI Express compliant power management
	802.11 compliant power saving mode
Receiver Sensitivity	•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(HT40): -59dBm maximum
	•802.11ax, MCS11(VHT160): -58.5dBm maximum
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure
	Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO
	communications and Bluetooth communications
Form Factor	PCI-Express M.2 MiniCard with CNVi Interface
Dimensions	1. Type 2230 : 2.3 x 22.0 x 30.0 mm
	2. Type 1216: 1.67 x 12.0 x 16.0 mm
Weight	1. Type 2230 : 2.8g
	2. Type 126: 1.3g
Operating Voltage	3.3v +/- 9%
Temperature	Operating: 14° to 158° F (–10° to 70° C)
	Non-operating: –40° to 176° F (–40° to 80° C)
Humidity	Operating: 10% to 90% (non-condensing)
	Non-operating: 5% to 95% (non-condensing)
Altitude	Operating: 0 to 10,000 ft (3,048 m)
	Non-operating: 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF; LED Off – Radio ON
Subtitle	HP Integrated Module with Bluetooth 4.0/4.1/4.2/5.0/5.1 Wireless Technology
Bluetooth Specification	4.0/4.1/4.2/5.0/5.1 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available	Legacy : 0~79 (1 MHz/CH)
Channels	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	Microsoft Windows Bluetooth Software
Supported Link Topology	
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management	ETS 300 328, ETS 300 826
Certifications	Low Voltage Directive IEC60950-1/IEC62368-1
	UL, CSA, and CE Mark
Bluetooth Profiles	BT4.1-ESR 5/6/7 Compliance
Supported	LE Link Layer Ping
	LE Dual Mode
	LE Link Layer
	LE Low Duty Cycle Directed Advertising
	LE L2CAP Connection Oriented Channels
	Train Nudging & Interlaced Scan
	BT4.2 ESR08 Compliance
	LE Secure Connection- Basic/Full
	LE Privacy 1.2 –Link Layer Privacy
	LE Privacy 1.2 – Extended Scanner Filter Policies
	LE Data Packet Length Extension
	FAX Profile (FAX)
	Basic Imaging Profile (BIP)2
	Headset Profile (HSP)
	Hands Free Profile (HFP)
	Advanced Audio Distribution Profile (A2DP)

Intel Wi-Fi 6 AX201 + BT	5 (802.11ax 2x2, vPro, supporting gigabit file transfer speeds)
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	Features Wi-Fi 6 technology
Frequency Band	802.11b/g/n/ax
	• 2.402 – 2.482 GHz
	802.11a/n/ac/ax
	• 4.9 – 4.95 GHz (Japan)
	• 5.15 – 5.25 GHz
	• 5.25 – 5.35 GHz
	• 5.47 – 5.725 GHz
	• 5.825 – 5.850 GHz



Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps
	• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)
	• 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz)
	• 802.11ax : MCS0 ~ MCS11, (1SS and 2SS) (20MHz, 40MHz, ,80MHz & 160MHz)
Modulation	Direct Sequence Spread Spectrum
	OFDM, BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024QAM
Security	<ul> <li>IEEE compliant 64 / 128 bit WEP encryption for a/b/g mode only</li> </ul>
	AES-CCMP: 128 bit in hardware
	802.1x authentication
	WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.
	WPA2 certification
	• IEEE 802.11i
	• WAPI
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power	• 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
	• 802.11ac VHT160(5GHz) : +11.5dBm minimum
	• 802.11ax HT40(2.4GHz) : +10dBm minimum
	• 802.11ax VHT160(5GHz) : +10dBm minimum
Power Consumption	• Transmit mode :2.0 W
	• Receive mode :1.6 W
	Idle mode (PSP) 180 mW (WLAN Associated)
	• Idle mode :50 mW (WLAN unassociated)
	Connected Standby/Modern Standby: 10mW
	Radio disabled: 8 mW
Power Management	ACPI and PCI Express compliant power management
	802.11 compliant power saving mode
Receiver Sensitivity	•802.11b, 1Mbps : -93.5dBm maximum
	•802.11b, 11Mbps : -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(HT40): -59dBm maximum
	•802.11ax, MCS11(VHT160): -58.5dBm maximum
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure
	Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO
	communications and Bluetooth communications
Form Factor	PCI-Express M.2 MiniCard with CNVi Interface
Dimensions	1. Type 2230 : 2.3 x 22.0 x 30.0 mm
	2. Type 1216: 1.67 x 12.0 x 16.0 mm
Weight	1. Type 2230 : 2.8g
	2. Type 126: 1.3g



Operating Voltage	3.3v +/- 9%
Temperature	Operating: 14° to 158° F (–10° to 70° C)
•	Non-operating: –40° to 176° F (–40° to 80° C)
Humidity	Operating: 10% to 90% (non-condensing)
-	Non-operating: 5% to 95% (non-condensing)
Altitude	Operating: 0 to 10,000 ft (3,048 m)
	Non-operating: 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF; LED White – Radio ON
HP Integrated Module wit	h Bluetooth 4.0/4.1/4.2/5.0/5.1 Wireless Technology
Bluetooth Specification	4.0/4.1/4.2/5.0/5.1 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available	Legacy : 0~79 (1 MHz/CH)
Channels	BLE : 0~39 (2 MHz/CH)
Data Rates and	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps
Throughput	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	Microsoft Windows Bluetooth Software
Supported Link Topology	
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management	ETS 300 328, ETS 300 826
Certifications	Low Voltage Directive IEC60950-1/IEC62368-1
	UL, CSA, and CE Mark
Bluetooth Profiles	BT4.1-ESR 5/6/7 Compliance
Supported	LE Link Layer Ping
	LE Dual Mode
	LE Link Layer
	LE Low Duty Cycle Directed Advertising
	LE L2CAP Connection Oriented Channels
	Train Nudging & Interlaced Scan
	BT4.2 ESR08 Compliance
	LE Secure Connection- Basic/Full
	LE Privacy 1.2 –Link Layer Privacy
	LE Privacy 1.2 –Extended Scanner Filter Policies LE Data Packet Length Extension
	FAX Profile (FAX)
	Basic Imaging Profile (BIP)2
	Headset Profile (HSP)
	Hands Free Profile (HFP)
	Advanced Audio Distribution Profile (A2DP)
Security & Manageability	Intel <sup>®</sup> vPro <sup>™</sup> support with appropriate Intel <sup>®</sup> chipset components
Jecurity & manageability	וונכנ אדוס שמאשטרג אונו מאשו סאומני וונכנ כוואספו כטוואטוופוונס

(III)

	.11ac 1x1 Wi-Fi® and Bluetooth® 4.2 Combo
Wireless LAN Standards	IEEE 802.11a
	IEEE 802.11b
	IEEE 802.11g
	IEEE 802.11n
	IEEE 802.11ac
	IEEE 802.11d
	IEEE 802.11e
	IEEE 802.11h
	IEEE 802.11i
	IEEE 802.11k
	IEEE 802.11r
	IEEE 802.11v
Interoperability	Wi-Fi <sup>®</sup> certified
Frequency Band	802.11b/g/n
Frequency Banu	• 2.402 – 2.482 GHz
	802.11a/n/ac
	• 4.9 – 4.95 GHz (Japan)
	• 5.15 – 5.25 GHz
	• 5.25 – 5.35 GHz
	• 5.47 – 5.725 GHz
	• 5.825 – 5.850 GHz
Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps
	• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)
	• 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)
Modulation	Direct Sequence Spread Spectrum
	BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Security	• IEEE and WiFi <sup>®</sup> 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
	• IEEE 802.11i
	• WAPI
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power	• 802.11b : +14dBm minimum
•	• 802.11g : +12dBm minimum
	• 802.11a : +12dBm minimum
	• 802.11n HT20(2.4GHz) : +12dBm minimum
	• 802.11n HT40(2.4GHz) : +12dBm minimum
	• 802.11n HT20(5GHz) : +10dBm minimum
	• 802.11n HT40(5GHz) : +10dBm minimum
	• 802.11ac VHT80(5GHz) : +10dBm minimum
Power Consumption	• Transmit mode 2.0 W
. oner consumption	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
Dower Management	
Power Management	ACPI and PCI Express compliant power management
	802.11 compliant power saving mode



Receiver Sensitivity	802.11b, 1Mbps : -93.5dBm maximum	
	802.11b, 11Mbps : -84dBm maximum	
	802.11a/g, 6Mbps : -86dBm maximum	
	802.11a/g, 54Mbps : -72dBm maximum	
	802.11n, MCS07 : -67dBm maximum	
	802.11n, MCS15 : -64dBm maximum	
	802.11ac, MCS0 : -84dBm maximum	
	802.11ac, MCS9 : -59dBm maximum	
Antenna type	High efficiency antenna.	
	One embedded dual band 2.4/5 GHz antenna is provided to the card to support WLAN	
	communications and Bluetooth communications	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm	
Weight	Type 2230 : 2.8g	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating: 14° to 158° F (–10° to 70° C)	
-	Non-operating: –40° to 176° F (–40° to 80° C)	
Humidity	Operating: 10% to 90% (non-condensing)	
-	Non-operating: 5% to 95% (non-condensing)	
Altitude	Operating: 0 to 10,000 ft (3,048 m)	
	Non-operating: 0 to 50,000 ft (15,240 m)	
LED Activity	LED Amber – Radio OFF;	
	LED OFF – Radio ON	
HP Integrated Module with	n Bluetooth 4.0/4.1/4.2 Wireless Technology	
Bluetooth Specification	4.0/4.1/4.2 Compliant	
Frequency Band	2402 to 2480 MHz	
Number of Available	Legacy : 0~79 (1 MHz/CH)	
Channels	BLE : 0~39 (2 MHz/CH)	
Data Rates and		
vala nales allu	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps	
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	
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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)	
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Throughput Transmit Power	Legacy : 3 Mbps data rate; throughput up to 2.17 MbpsBLE : 1 Mbps data rate; throughput up to 0.2 MbpsLegacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channelsLegacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864kbps symmetric (3-EV5)The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmitpower of + 4 dBm for BR and EDR.	
Throughput Transmit Power	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps         BLE : 1 Mbps data rate; throughput up to 0.2 Mbps         Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels         Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864         kbps symmetric (3-EV5)         The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit         power of + 4 dBm for BR and EDR.         Peak (Tx) 330 mW	
Throughput Transmit Power	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps         BLE : 1 Mbps data rate; throughput up to 0.2 Mbps         Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels         Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864         kbps symmetric (3-EV5)         The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit         power of + 4 dBm for BR and EDR.         Peak (Tx) 330 mW         Peak (Rx) 230 mW	
Throughput Transmit Power Power Consumption	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps         BLE : 1 Mbps data rate; throughput up to 0.2 Mbps         Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels         Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864         kbps symmetric (3-EV5)         The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit         power of + 4 dBm for BR and EDR.         Peak (Tx) 330 mW         Peak (Rx) 230 mW         Selective Suspend 17 mW	
Throughput Transmit Power Power Consumption Electrical Interface	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps         BLE : 1 Mbps data rate; throughput up to 0.2 Mbps         Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels         Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864         kbps symmetric (3-EV5)         The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit         power of + 4 dBm for BR and EDR.         Peak (Tx) 330 mW         Peak (Rx) 230 mW         Selective Suspend 17 mW         USB 2.0 compliant	
Throughput Transmit Power Power Consumption Electrical Interface Bluetooth Software	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps         BLE : 1 Mbps data rate; throughput up to 0.2 Mbps         Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels         Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864         kbps symmetric (3-EV5)         The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit         power of + 4 dBm for BR and EDR.         Peak (Tx) 330 mW         Peak (Rx) 230 mW         Selective Suspend 17 mW         USB 2.0 compliant	
Throughput Transmit Power Power Consumption Electrical Interface Bluetooth Software Supported Link Topology	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps         BLE : 1 Mbps data rate; throughput up to 0.2 Mbps         Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels         Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864         kbps symmetric (3-EV5)         The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit         power of + 4 dBm for BR and EDR.         Peak (Tx) 330 mW         Peak (Rx) 230 mW         Selective Suspend 17 mW         USB 2.0 compliant         Microsoft Windows Bluetooth Software	
Throughput Transmit Power Power Consumption Electrical Interface Bluetooth Software Supported Link Topology Power Management Certifications	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps         BLE : 1 Mbps data rate; throughput up to 0.2 Mbps         Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels         Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864         kbps symmetric (3-EV5)         The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit         power of + 4 dBm for BR and EDR.         Peak (Tx) 330 mW         Peak (Rx) 230 mW         Selective Suspend 17 mW         USB 2.0 compliant         Microsoft Windows ACPI, and USB Bus Support	
Throughput Transmit Power Power Consumption Electrical Interface Bluetooth Software Supported Link Topology Power Management	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps         BLE : 1 Mbps data rate; throughput up to 0.2 Mbps         Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels         Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864         kbps symmetric (3-EV5)         The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit         power of + 4 dBm for BR and EDR.         Peak (Tx) 330 mW         Peak (Rx) 230 mW         Selective Suspend 17 mW         USB 2.0 compliant         Microsoft Windows ACPI, and USB Bus Support         FCC (47 CFR) Part 15C, Section 15.247 & 15.249	



Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer
	LE Low Duty Cycle Directed Advertising
	LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan
	BT4.2 ESR08 Compliance
	LE Secure Connection- Basic/Full
	LE Privacy 1.2 –Link Layer Privacy
	LE Privacy 1.2 – Extended Scanner Filter Policies
	LE Data Packet Length Extension
	FAX Profile (FAX)
	Basic Imaging Profile (BIP)2
	Headset Profile (HSP)
	Hands Free Profile (HFP)
	Advanced Audio Distribution Profile (A2DP)

Realtek RTL8822CE 802	.11ac 2x2 Wi-Fi® + BT5		
Wireless LAN Standards	IEEE 802.11a		
	IEEE 802.11b		
	IEEE 802.11g		
	IEEE 802.11n		
	IEEE 802.11ac		
	IEEE 802.11d		
	IEEE 802.11e		
	IEEE 802.11h		
	IEEE 802.11i		
	IEEE 802.11k		
	IEEE 802.11r		
	IEEE 802.11v		
Interoperability	Wi-Fi <sup>®</sup> certified		
Frequency Band	802.11b/g/n		
	• 2.402 – 2.482 GHz		
	802.11a/n/ac		
	• 4.9 – 4.95 GHz (Japan)		
	• 5.15 – 5.25 GHz		
	• 5.25 – 5.35 GHz		
	• 5.47 – 5.725 GHz		
	• 5.825 – 5.850 GHz		
Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps		
	• 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps		
	• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps		
	• 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz)		
	<ul> <li>802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz &amp; 80MHz)</li> </ul>		
Modulation	Direct Sequence Spread Spectrum		
	BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM		
Security	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only		
	AES-CCMP: 128 bit in hardware		
	802.1x authentication		
	• WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES.		
	WPA2 certification		
	• IEEE 802.11i		
	• WAPI		



Network Architecture	Ad-hoc (Peer to Peer)		
Models	Infrastructure (Access Point Required)		
Roaming	IEEE 802.11 compliant roaming between access points		
Output Power	• 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		
	• 802.11ac VHT160(5GHz) : +11.5dBm minimum		
Power Consumption	• Transmit mode :2.0 W		
	Receive mode :1.6 W		
	<ul> <li>Idle mode (PSP) 180 mW (WLAN Associated)</li> </ul>		
	• Idle mode :50 mW (WLAN unassociated)		
	Connected Standby/Modern Standby: 10mW		
	• Radio disabled: 8 mW		
Power Management	ACPI and PCI Express compliant power management		
	802.11 compliant power saving mode		
Receiver Sensitivity	802.11b, 1Mbps : -93.5dBm maximum		
	802.11b, 11Mbps : -84dBm maximum		
	802.11a/g, 6Mbps : -86dBm maximum		
	802.11a/g, 54Mbps : -72dBm maximum		
	802.11n, MCS07 : -67dBm maximum		
	802.11n, MCS15 : -64dBm maximum 802.11ac, MCS0 : -84dBm maximum		
	802.11ac, MCS9 : -59dBm maximum		
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure		
Two embedded dual band 2.4/5 GHz antennas are provided to the card to support			
	communications and Bluetooth communications		
Form Factor	PCI-Express M.2 MiniCard with CNVi Interface		
Dimensions	1. Type 2230 : 2.3 x 22.0 x 30.0 mm		
	2. Type 1216: 1.67 x 12.0 x 16.0 mm		
Weight	1. Type 2230 : 2.8g		
	2. Type 126: 1.3g		
Operating Voltage	3.3v +/- 9%		
Temperature	Operating: 14° to 158° F (–10° to 70° C)		
•	Non-operating: –40° to 176° F (–40° to 80° C)		
Humidity	Operating: 10% to 90% (non-condensing)		
-	Non-operating: 5% to 95% (non-condensing)		
Altitude	Operating: 0 to 10,000 ft (3,048 m)		
	Non-operating: 0 to 50,000 ft (15,240 m)		
LED Activity	LED Amber – Radio OFF;		
	LED OFF – Radio ON		
HP Integrated Module with	Bluetooth 4.0/4.1/4.2/5.0 Wireless Technology		
Bluetooth Specification	4.0/4.1/4.2/5.0 Compliant		
Frequency Band	2402 to 2480 MHz		
Number of Available	Legacy : 0~79 (1 MHz/CH)		
Channels	BLE : 0~39 (2 MHz/CH)		
Data Rates and	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps		
	BLE : 1 Mbps data rate; throughput up to 0.2 Mbps		
Throughput	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	Microsoft Windows Bluetooth Software		
Supported Link Topology			
Power Management	Microsoft Windows ACPI, and USB Bus Support		
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249		
Power Management	ETS 300 328, ETS 300 826		
Certifications	Low Voltage Directive IEC60950-1/IEC62368-1		
	UL, CSA, and CE Mark		
Bluetooth Profiles	BT4.1-ESR 5/6/7 Compliance		
Supported	LE Link Layer Ping		
	LE Dual Mode		
	LE Link Layer		
	LE Low Duty Cycle Directed Advertising		
	LE L2CAP Connection Oriented Channels		
	Train Nudging & Interlaced Scan		
	BT4.2 ESR08 Compliance		
	LE Secure Connection- Basic/Full		
	LE Privacy 1.2 –Link Layer Privacy		
	LE Privacy 1.2 – Extended Scanner Filter Policies		
	LE Data Packet Length Extension		
	FAX Profile (FAX)		
	Basic Imaging Profile (BIP)2		
	Headset Profile (HSP)		
	Hands Free Profile (HFP)		
	Advanced Audio Distribution Profile (A2DP)		

# Technical Specifications – Input/Output Devices

## I/O DEVICES

HP Business Slim Standal	one Wired Keyboard	
Physical Characteristics	Keys	104, 105, 106, 107, 109 layout (depending upon country)
	Dimensions (L x W x H)	171.97 x 68.35 x 8.27 in (436.8± 1.5 x 137.6± 1.0 x 21.0± 1.0 cm)
	Weight	1.32 lb (0.6± 0.08 kg)
Electrical	Operating voltage	4.4-5.25VDC
	Power consumption	50-mA maximum (with 5 VDC power supplied and three LEDs ON)
	System interface	USB or PS/2
	ESD	Contact Discharge: 2, 4,6,8KV Air Discharge: 2, 4, 8,10,12.5KV
	EMI - RFI	Conforms to FCC rules for a Class B computing device
Mechanical	Keycaps	Low-profile design
	Switch actuation	60±12.5g 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	Minus 30 degrees to 60 degrees Celsius
	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	UL, FCC, CE Mark, TUV GS, VCCI	, BSMI, RCM, KCC
Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and	1 TUVGS

HP USB Business Slim Wire	ed SmartCard CCID Keyboard	
Physical Characteristics	Keys	104, 105, 109 layout (depending upon country)
	Dimensions (L x W x H)	17.34 x 5.68 x 0.78in (440.6 x 144.5 x 1.98 cm)
	Weight	1.32 lb (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, cUL	us/CSAus, ICES, RCM, VCCI, KCC, BSMI
Ergonomic compliance	ISO 9241-4, TUVGS	

HP USB & PS/2 Washable S	standalone Wired Keyboard		
Physical Characteristics	Keys	104, 105 layout (depending upon country)	
	Dimensions (L x W x H)	17.68 x 6.68 x 1.22 in (449.18 x 169.66 x31.2 mm)	
	Weight	1.57 lb (710g)	
Electrical	Operating voltage	5V +- 5%	
	Power consumption	50mA	
	System interface	USB Type A plug connector	
	ESD	Contact Discharge: 8 KV Air Discharge: 15 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	20 million keystrokes (Life tester)	
	Switch type	Contamination-resistant switch membrane	
	Key-leveling mechanisms	For all double-wide and greater-length keys	
	Cable length	7.2 ft (2.2 m)	
Environmental	Acoustics	43-dBA maximum sound pressure level	
	Operating temperature	50° to 122° F (10° to 50° C)	
	Non-operating temperature	-4° to 149° F (-20° to 65° C)	
	Operating humidity	10% to 95% (non-condensing at ambient)	
	Non-operating humidity	0% to 95% (non-condensing at ambient)	
	Operating shock	40 g, six surfaces	
	Non-operating shock	80 g, six surfaces	
	Operating vibration	2-g peak acceleration	
	Non-operating vibration	4-g peak acceleration	
	Drop (out of box)	26 in (66 cm) on carpet, six-drop sequence	
	Drop (in box)	30 in (76.2 cm) on concrete, 16-drop sequence	
Approvals	UL, cUL, FCC, CE, TUV GS, VCCI,	UL, cUL, FCC, CE, TUV GS, VCCI, BSMI, RCM, KCC, USB-IF, WHQL, EN/IEC 60601-1, IP66/NEMA4X	
Ergonomic compliance	ANSI HFS 100, ISO 9241-4, and	ANSI HFS 100, ISO 9241-4, and TUVGS	

HP Premium Standalone V	Vireless Keyboard		
Physical Characteristics	Keys	104, 105 layout (depending upon country)	
	Dimensions (L x W x H)	17.04 x 5.55 x 0.52 in (433 x 141 x13.2 mm)	
	Weight	1.54 lb (698g)	
Electrical	Operating voltage	5 VDC, +/-5%	
	Power consumption	35mA (All LED on)	
	System interface	USB Type A plug connector	
	ESD	Contact Discharge: 8 KV Air Discharge: 15 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	UL, FCC, CE Mark, TUV GS, VCCI	, BSMI, RCM, KCC	
Ergonomic compliance	TUVGS	TUVGS	

HP USB Premium Wired Ke	yboard	
Physical Characteristics	Keys	104, 105 layout (depending upon country)
	Dimensions (L x W x H)	17.04 x 5.55 x 0.52 in (433 x 141 x13.2 mm)
	Weight	1.54 lb (698g)
Electrical	Operating voltage	5 VDC, +/-5%
	Power consumption	35mA (All LED on)
	System interface	USB Type A plug connector
	ESD	Contact Discharge: 8 KV Air Discharge: 15 KV
	EMI - RFI	Conforms to FCC rules for a Class B computing device
Mechanical	Кеусарѕ	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	UL, FCC, CE Mark, TUV GS, VCCI	, BSMI, RCM, KCC
Ergonomic compliance	TUVGS	

HP USB Wired Keyboard			
Physical Characteristics	Keys	104, 105, 106, 108, 109 layouts	
	Dimensions (L x W x H)	18.12 x 6.47 x 1.10 in (460.28 x 164.31 x 27.88 mm)	
	Weight	1.98 lb (900g) min	
Electrical	Operating voltage	5 VDC, +/-5%	
	Power consumption	50mA Max (All LED on)	
	System interface	USB Type A plug connector	
	ESD	Contact Discharge: 8 KV Air Discharge: 15 KV	
	EMI - RFI	Conforms to FCC rules for a Class B computing device	
Mechanical	Keycaps	Low-profile design	
	Switch actuation	60±14g nominal peak force with tactile feedback	
	Switch life	20 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	CUL, FCC, CE Mark, TUV GS, VCC	CUL, FCC, CE Mark, TUV GS, VCCI, BSMI, RCM, KCC, EAC	
Ergonomic compliance	TUVGS		

#### HP Universal USB Wired Keyboard

Physical Characteristics	Keys	104, 105 layout (depending upon country)
	Dimensions (L x W x H)	18.15 x 6.02 x 1.08 in (461 x 153 x 27.4 mm)
	Weight	1.32 lb (600g) min
Electrical	Operating voltage	5 VDC, +/-5%



	Power consumption	50mA Max (All LED on)	
	System interface	USB Type A plug connector	
	ESD	Contact Discharge: 8 KV Air Discharge: 15 KV	
	EMI - RFI	Conforms to FCC rules for a Class B computing device	
Mechanical	Кеусарѕ	Mid-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	UL, FCC, CE Mark, TUV GS, VCCI	UL, FCC, CE Mark, TUV GS, VCCI, BSMI, RCM, KCC, EAC	
Ergonomic compliance	TUVGS		

#### HP Universal USB Wired Mouse

4.53 x 2.50 x 1.40 in (115 x 63.46 x 35.48 mmm)	
0.18lb (80g)	
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
Operating voltage	5 VDC, +/-5%
Power consumption (typical)	50mA Max
	0.18lb (80g)Operating temperatureNon-operating temperatureOperating humidityNon-operating humidityOperating shockNon-operating shockOperating vibrationNon-operating vibrationOperating voltage



	Resolution	1,000 DPI
	Sensor	Pixart PAN3606DL
	Tracking speed	30 inch/sec (max)
	Tracking acceleration	9G(max), 1G=9.8m/s2
Mechanical	Connector	USB 2.0
	Cable length	6 ft (1.8 m)
	Color	Jack Black
Regulatory approvals	Compliant	UL, FCC, CE Mark, TUV GS, VCCI, BSMI, RCM, KCC, EAC

#### **HP Optical Mouse Dimensions** (H x L x W) 4.53 x 2.48 x1.46 in (115.2x 63 x37 mm) 0.22lb (101.6q) Weight Environmental 41° to 122° F (5° to 50° C) Operating temperature (-4° to 140° F)(-20° to 60° C) Non-operating temperature Operating humidity 10% to 85% (non-condensing at ambient) Non-operating humidity 5% 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 Electrical 30 inch/sec (max) Tracking speed 8G(max). 1G=9.8m/s2 Tracking acceleration USB or PS/2System interface Mechanical Switch actuation 60±15g nominal peak force with tactile feedback Switch life 3 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) Color Jack Black Regulatory approvals Compliant UL, FCC, CE Mark, TUV GS, VCCI, BSMI, RCM, KCC

HP USB 1000dpi Laser Mouse		
Dimensions (H x L x W)	115 * 62.9 * 37 mm (L * W * H)	
Weight	0.22lb (101.6g)	
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	1,000 DPI
	Sensor	PixArt vendor Laser USB mouse sensor
	Tracking speed	30 inch/sec (max)
	Tracking acceleration	8G(max), 1G=9.8m/s2
Mechanical	Connector	USB 2.0
	Cable length	6 ft (1.8 m)
	Color	Jack Black
Regulatory approvals	Compliant	UL, FCC, CE Mark, TUV GS, VCCI, BSMI, RCM, KCC, EAC

#### **HP USB Premium Wired Mouse**

Dimensions (H x L x W)	4.21 x 2.64 x 1.52 in (107 x 67 x 38.7 mmm)	
Weight	0.19lb (90g)	
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	50 g, 6 surfaces
	Non-operating shock	80 g, 6 surfaces
	Operating vibration	2 g peak acceleration
	Non-operating vibration	4 g peak acceleration
Electrical	Operating voltage	5 VDC, +/-5%
	Power consumption (typical)	12mA
	Resolution	800, 1200, 1600 DPI
	Sensor	Pixart PAN3606DL
	Tracking speed	30 inch/sec (max)
	Tracking acceleration	8G(max), 1G=9.8m/s2
Mechanical	Connector	USB 2.0
	Cable length	6 ft (1.8 m)
	Color	Jack Black
Regulatory approvals	Compliant	UL, FCC, CE Mark, TUV GS, VCCI, BSMI, C-Tick, KC



HP USB Fingerprint Mou	5 <b>e</b>	
<b>Dimensions</b> (H × L × W)	107 x 67 x 38.7 mm	
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)	130mA
	Resolution	1,200 DPI
	Sensor	PixArt vendor Laser USB mouse sensor
	Tracking speed	30 inch/sec (max)
	Tracking acceleration	8G(max), 1G=9.8m/s2
Mechanical	Connector	USB 2.0
	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 – Audio/Multimedia

### AUDIO/MULTIMEDIA

#### HP ProDesk 600 G6 Desktop Mini PC

Туре	Integrated
HD Stereo Codec	Realtek ALC3205
Audio I/O Ports	Front: Headset connector supports a CTIA and OMTP style headset and is re-taskable as a Line-in, Line-out, Microphone-in or Headphone-out port
Internal Speaker Amplifier	2W class D mono amplifier for the internal speaker only. External speakers must be powered
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the front and rear jacks or integrated speaker.
Sampling	Independent sampling rates for DAC's and ADC's; supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and 44.1 kHz to 96 kHz for ADC
Wavetable Syntheses	Yes - Uses OS soft wavetable
Analog Audio	Yes
# of Channels on Line-Out	Stereo (Left & Right channels)
Internal Speaker	Yes

#### HP ProDesk 600 G6 Small Form Factor PC

Туре	Integrated
HD Stereo Codec	Realtek ALC3205
Audio I/O Ports	Front: Headset connector supports a CTIA and OMTP style headset and is re-taskable as a Line-in, Line-out, Microphone-in or Headphone-out port Rear: Line-out, 3.5mm and support stereo
Internal Speaker Amplifier	2W class D mono amplifier for the internal speaker only. External speakers must be powered
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the front and rear jacks or integrated speaker
Sampling	Independent sampling rates for DAC's and ADC's; supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and 44.1 kHz to 96 kHz for ADC
Wavetable Syntheses	Yes - Uses OS soft wavetable
Analog Audio	Yes
# of Channels on Line-Out	Stereo (Left & Right channels)
Internal Speaker	Yes

#### HP ProDesk 600 G6 Microtower PC

Туре	Integrated
HD Stereo Codec	Realtek ALC3205
Audio I/O Ports	Front: Headset connector supports a CTIA and OMTP style headset and is re-taskable as a Line-in, Line-out, Microphone-in or Headphone-out port Rear: Line-Out port, 3.5mm and support stereo Line-in*, 3.5mm and support stereo
Internal Speaker Amplifier	2W class D mono amplifier for the internal speaker only. External speakers must be powered
Multi-streaming Capable	Playback multi-streaming allows independent audio streams to be sent to/from the front and rear jacks or integrated speaker.
Sampling	Independent sampling rates for DAC's and ADC's; supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and 44.1 kHz to 96 kHz for ADC
Wavetable Syntheses	Yes - Uses OS soft wavetable
Analog Audio	Yes
# of Channels on Line-Out	Stereo (Left & Right channels)



# Technical Specifications – Audio/Multimedia

**Internal Speaker** 

Yes

\*Line-in port only available on product with legacy PCI version

### HP ProOne 600 G6 All-in-One PC

Туре	Integrated
HD Stereo Codec	Realtek ALC3252
Audio I/O Ports	Side 3.5mm headset connector supports an OMTP and 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	Independent sampling rates for DAC's and ADC's; supports resolutions from 16 to 24-bit; 44.1 kHz to 192 kHz for DAC and 44.1 kHz to 96 kHz for ADC
Wavetable Syntheses	Yes - Uses OS soft wavetable
Analog Audio	Yes
# of Channels on Line-Out	Stereo (Left & Right channels)
Internal Speaker	Yes - Stereo



Technical Specifications – Integrated Webcam and Microphone

### **INTEGRATED WEBCAM AND MICROPHONE**

Optional integrated 1 MP HD RGB webcam & microphone; maximum resolution of 1280 x 720 Optional integrated 5 MP RGB webcam & microphone; maximum resolution of 2592 x 1944 Optional integrated 5 MP RGB webcam with IR sensor & microphone; maximum resolution of 2592 x 1944

# Technical Specifications – Power

#### POWER

	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
External Power Supplies	65W EPS, 88% average efficiency at 115V & 89% at 230Vac 90W EPS when using 65W CPU, 88% average efficiency at 115V & 89% at 230Vac	N/A	N/A	90W EPS, active PFC, 88% efficiency in 115Vac / 89% efficiency in 230Vac 120W EPS, active PFC, 88% efficiency in 115Vac / 89% efficiency in 230Vac 150W EPS, active PFC, 88% efficiency in 115Vac / 89% efficiency in 230Vac
80 PLUS Gold	N/A	180W active PFC / 80 PLUS Gold 87/90/87% efficient at 20/50/100% load (115V) 90/92/89% efficient at 20/50/100% load (230V)	180W active PFC / 80 PLUS Gold 87/90/87% efficient at 20/50/100% load (115V) 90/92/89% efficient at 20/50/100% load (230V)	N/A
80 PLUS Platinum	N/A	210W active PFC 90/92/89% efficient at 20/50/100% load (115V) 91/93/90% efficient at 20/50/100% load (230V)	260W active PFC / 80 PLUS Platinum 550W active PFC / 80 PLUS Platinum 90/92/89% efficient at 20/50/100% load (115V) 91/93/90% efficient at 20/50/100% load (230V)	N/A
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	65W≦1.7A 90W≦1.7A	180W Gold $\leq$ 2.3A 210W Platinum $\leq$ 2.5A	180W Gold≦2.3A 260W Platinum≦3.1A 550W Platinum≦6.6A	90W≦1.7A 120W≦2.2A 150W≦2.5A
DC Output	+19.5V	+12V	+12V	+19.5V

# Technical Specifications – Power

	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>
Current Leakage (NFPA 99: 2102)	current at 264 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1. Less than 100 microamps of leakage current at 264 Vac with the ground wire intact with normal polarity, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1.	disconnected, as required for Non- patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1. Less than 100 microamps of leakage current at 264 Vac with the ground wire intact with normal polarity, as	microamps of leakage current at 264 Vac with the ground wire disconnected, as required for Non- patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1. Less than 100 microamps of leakage current at 264 Vac with the ground wire intact	Less than 500 microamps of leakage current at 264 Vac with the ground wire disconnected, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1. Less than 100 microamps of leakage current at 264 Vac with the ground wire intact with normal polarity, as required for Non-patient Electrical Appliances and Equipment used in a patient care facility or that contact patients in normal use. Per section 10.3.5.1.
Power Supply Fan	N/A	50 mm variable speed	70 mm variable speed	N/A
Power cord length	6.0 ft. (1.83 m)	6.0 ft. (1.83 m)	6.0 ft. (1.83 m)	6.0 ft. (1.83 m)
Dimensions	65W: 102 x 55 x 30 mm 90W : 127 x 50 x 30 mm	200 x 85 x 53 mm	165 x 95 x 73 mm	90W : 127 x 50 x 30 mm 120W : 148 x 75.5 x 25.4 mm

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	
100% of Pated Load	70%	82%	85%	87%	89%	115Vac/60HZ
100% of Rated Load	PF>0.9	PF>0.9	PF>0.9	PF>0.9	PF>0.9	230Vac/50HZ



Technical Specifications – Weights and Dimensions

### WEIGHTS & DIMENSIONS<sup>1</sup>

	DM	<u>SFF</u>	<u>MT</u>
Chassis (W x D x H)	6.97 x 6.89 x 1.35 in	10.6 in x 11.9 in x 3.7 in	6.1 x 13.27 x 11.93 in
	177 x 175 x 34.2 mm	270 mm x 303 mm x 95 mm	155x 337 x 303 mm
System Volume	64 cu in	474 cu in	965 cu in
	1.05 L	7.8 L	15.83 L
System Weight <sup>2</sup>	2.74 lbs	8.6 lbs	11.01 lbs
	1.25 kg	3.9 kg	5 kg
Max Supported Weight	N/A	77 lb	77 lb
(desktop orientation)		35 kg	35 kg
Packaging Dimension	19.57 x 5.04 x 8.78 in	15.52 x 8.07 x 19.65 in	15.75 x 11.30 x 19.65 in
(W x D x H)	(497 x 128 x 223 mm)	(394 x 205 x 499 mm)	(400 x 287 x 499 mm)
	MPP: 19.61 x 9.25 x 5.20 in	MPP: 15.52 x 8.07 x 19.65 in	MPP: 15.75 x 11.30 x 19.65 in
	(498 x 235 x 132 mm)	(394 x 205 x 499 mm)	(400 x 287 x 499 mm)
Shipping Weight	6.52 lbs (2.97 kg)	15.37 lbs (6.97 kg)	16.85 lbs (7.65 kg)
	<b>MPP</b> : 7.50 lbs (3.40 kg)	<b>MPP</b> : 15.86 lbs (7.2 kg)	<b>MPP</b> : 17.55 lbs (7.97 kg)
Palletization Profile	18-units per layer 5 or 6 layers max depending on details of air freight 90 or 108 units per pallet depending on details of air freight 45.354 x 39.13 x 57.80 in, 1152 x 994 x 1468 mm (include pallet)	x 1000 x 2380 mm (including	6-units per layer 8 layer max 48 per pallet 47.24 x 39.37 x 95.12 in, 1200 x 1000 x 2416 mm (including pallet)
Palletization Profile (Molded Pulp)	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)	47.24 x 39.37 x 93.90 in, 1200	6-units per layer 8 layer max 48 per pallet 47.24 x 39.37 x 95.12 in, 1200 x 1000 x 2416 mm (including pallet)

Packaging material used will vary by country
 Configured with 1 HDD & 1 ODD; DM configured with 1 HDD only



# Technical Specifications – Weights and Dimensions

### All-in-One Dimensions<sup>1</sup>

#### HP ProOne 600 G6 22 All-in-One PC

		Withou	Without Stand Cantilever Stand (Fixed Height Tilt Stand)		Adjustable Height Stand		
		cm/kg	inch/lbs	cm/kg	inch/lbs	cm/kg	inch/lbs
	Width	48.87 cm	19.24 in	48.87 cm	19.24 in	48.87 cm	19.24 in
Product	Length/Depth	5.08 cm	2.0 in	15.65 cm	6.16 in	20.15 cm	7.93 in
FIUUULL	Height	32.45 cm	12.78 in	37.46 cm	14.75 in	35.4 ~ 48.28 cm	13.94 ~ 19.01 in
	Weight	5.178 kg	11.42 lbs	5.888 kg	12.98 lbs	6.758 kg	14.90 lbs
	Width	59.5 cm	23.43 in	59.5 cm	23.43 in	59.5 cm	23.43 in
Dealerse	Length/Depth	24.5 cm	9.65 in	24.5 cm	9.65 in	24.5 cm	9.65 in
Package	Height	41.4 cm	16.30 in	41.4 cm	16.30 in	41.4 cm	16.30 in
	Weight	8.2 kg	18.08 lbs	8.91 kg	19.64 lbs	9.78 kg	21.56 lbs
	Width	120 cm	47.24 in	120 cm	47.24 in	120 cm	47.24 in
	Length/Depth	100 cm	39.37 in	100 cm	39.37 in	100 cm	39.37 in
Palletization	Height	221 cm	87.07 in	221 cm	87.07 in	221 cm	87.07 in
for Sea/Rail	Weight	346.8 kg	764.85 lbs	375.2 kg	827.25 lbs	410 kg	904.05 lbs
	Qty / Layer	-	8	-	8	-	3
	Layers		5		8 5		5
Qty / Pallet via	n Sea/Rail	4	10	4	10	4	0
Qty / Pallet via		2	24	Ż	24	2	4

1. Packaging material used will vary by country

2. Configured with 1 HDD & 1 ODD

Technical Specifications – Miscellaneous Features

#### **MISCELLANEOUS FEATURES**

#### **Management Features**

- Advanced Configuration and Power Management Interface (ACPI). Allows the system to wake from a low power mode. Controls system power consumption, making it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system.
- Intel<sup>®</sup> Wired for Management support; industry wide initiative to make Intel<sup>®</sup> 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 Software5
- 5 Aux Power LED on System mainboard
- Processor ZIF Socket for easy Upgrade
- Over-Temp Warning on Screen (Requires IM Agents)
- DIMM Connectors for easy Upgrade
- Clear CMOS Button
- NIC LEDs (integrated) (Green & Amber)
- Dual Color Power and HD LED To Indicate Normal Operations and Fault Conditions
- Color coordinated cables and connectors
- Tool-less Hood Removal
- Front power switch
- System memory can be upgraded without removing the system board or any internal components
- Tool-less Hard Drive, memory & optical drive removal (For MT, SFF, and DM only)
- Green Pull Tabs, and Quick Release Latches for easy Identification

# Technical Specifications – Miscellaneous Features

#### **Additional Features**

Product Orientation	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.
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	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>	<u>Part Number</u>
AMD Radeon RX 550X 4GB Display Card		Х	X		<u>5LH79AA</u>
AMD Radeon R7 430 2GB 2DP Card		X	X		<u>5JW82AA</u>
AMD Radeon R7 430 2GB DP+VGA Card		X	X		<u>5JW81AA</u>
HP DisplayPort To HDMI True 4k Adapter	X	X	X	X	<u>2JA63AA</u>
HP DVI Cable Kit		X	X		<u>DC198A</u>
HP HDMI Standard Cable Kit	X	X	X	X	<u>T6F94AA</u>
HP DisplayPort Cable Kit	X	X	X	X	<u>VN567AA</u>
HP DisplayPort To VGA Adapter	X	X	X	X	<u>AS615AA</u>
HP DisplayPort To DVI-D Adapter	X	X	X	X	<u>FH973AA</u>

Desktop Mini Accessories	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>	Part Number
HP Desktop Mini Port Cover v2	X				<u>13L69AA</u>
HP Desktop Mini 2.5" SATA Drive Bay kit v2	X				<u>13L70AA</u>
HP Desktop Mini LockBox V2	X				<u>3EJ57AA</u>
HP Desktop Mini DVD-Writer ODD Expansion Module	V (Fither and)				<u>K9Q83AA</u>
HP Desktop Mini I/O Expansion Module	<b>X</b> (Either one)				<u>K9Q84AA</u>
HP Desktop Mini Security/Dual VESA Sleeve v3	X				<u>13L67AA</u>
HP Desktop Mini Security/Dual VESA Sleeve v3 with Power Supply Holder	X				<u>13L68AA</u>
HP B300 PC Mounting Bracket with Power Supply Holder	x				<u>7DB37AA</u>
HP Desktop Mini Vertical Chassis Stand	X				<u>G1K23AA</u>
HP DM Power Supply Holder Kit v2	X				<u>7DB38AA</u>

Data Storage Drives	<u>DM</u>	<u>SFF</u>	MT	<u>Ai0</u>	<u>Part Number</u>
HP PCIe NVME TLC 256GB SSD M.2 Drive	X	X	X	X	<u>1CA51AA</u>
HP PCIe NVME TLC 512GB SSD M.2 Drive	X	X	X	X	<u>X8U75AA</u>
HP 500GB 7200PRM SATA 6.0Gb/s 3.5" Hard Drive		X	X		<u>QK554AA</u>
HP 1TB 7200rpm SATA 6Gb/s 3.5" Hard Drive		X	X		<u>QK555AA</u>
HP 9.5mm G3 8/6/4 SFF G4 400 SFF/MT DVD Writer		X	X		<u>1CA53AA</u>
HP ProDesk 400/600 MT 2nd 3.5" HDD cage			X		<u>13L71AA</u>

After Market Options

Input Devices	DM	<u>SFF</u>	MT	AiO	Part Number
HP Wired Desktop 320K Keyboard	Х	X	X	Х	<u>95R37AA</u>
HP USB Antimicrobial Business Slim Keyboard and Mouse	Х	X	X	X	<u>Z9H50AA</u>
HP USB Business Slim CCID SmartCard Keyboard	X	X	X	X	<u>Z9H48AA</u>
HP USB Keyboard	Х	X	X	X	<u>QY776AA</u>
HP USB Premium Keyboard	Х	X	X	X	<u>Z9N40AA</u>
HP Wired Desktop 320MK Mouse and Keyboard	X	X	X	X	<u>95R36AA</u>
HP USB PS/2 Washable Keyboard & Mouse	X	X	X	X	BU207AA
HP Wireless Business Slim Keyboard and Mouse	Х	X	X	X	N3R88AA
HP Wireless Premium Keyboard	Х	X	X	X	<u>Z9N41AA</u>
HP PS/2 Business Slim Keyboard		X	X	1	<u>N3R86AA</u>
HP Wired Desktop 320M Mouse	Х	X	X	X	<u>9VA80AA</u>
HP Wireless Premium Mouse	Х	X	X	X	<u>1JR31AA</u>
HP USB Grey v2 Mouse	X	X	X	X	Z9H74AA
HP USB Premium Mouse	X	X	X	X	<u>1JR32AA</u>
HP PS/2 Mouse		X	X	1	<u>QY775AA</u>
HP USB 1000dpi Laser Mouse	X	X	X	X	<u>QY778AA</u>
HP USB Optical Mouse	X	X	X	X	<u></u>
HP USB Fingerprint Mouse	X	X	X	X	4TS44AA
<u> </u>		<u>,                                     </u>		1	
Communication Devices	<u>DM</u>	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>	Part Number
Intel Ethernet I210-T1 GbE NIC		X	X		<u>E0X95AA</u>
System Memory	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>	Part Number
HP 4GB DDR4-2666 UDIMM		X	X		<u>3TK85AA</u>
HP 8GB DDR4-2666 UDIMM		X	X		<u>3TK87AA</u>
HP 16GB DDR4-2666 UDIMM		X	X		<u>3TK83AA</u>
HP 32GB DDR4-2666 UDIMM		X	X		<u>1C918AA</u>
HP 4GB DDR4-2666 SODIMM	X			X	<u>3TK86AA</u>
HP 8GB DDR4-2666 SODIMM	Х			X	<u>3TK88AA</u>
HP 16GB DDR4-2666 SODIMM	Х			X	<u>3TK84AA</u>
HP 4GB DDR4-3200 UDIMM		X	X		<u>13L78AA</u>
HP 8GB DDR4-3200 UDIMM		X	X		<u>13L76AA</u>
HP 16GB DDR4-3200 UDIMM		X	X		<u>13L74AA</u>
HP 32GB DDR4-3200 UDIMM		X	X		<u>13L72AA</u>
HP 4GB DDR4-3200 SODIMM	Х			X	<u>13L79AA</u>
HP 8GB DDR4-3200 SODIMM	X			X	<u>13L77AA</u>
HP 16GB DDR4-3200 SODIMM	Х	1	1	X	<u>13L75AA</u>



After Market Options

HP 32GB DDR4-3200 SODIMM	X			X	<u>13L73AA</u>
	L	11		JI	
Multimedia Devices	DM	SFF	MT	AiO	Part Number
HP Business Headset v2	X	X	X	X	<u>T4E61AA</u>
HP S101 Speaker Bar	X	X	X		<u>5UU40AA</u>
HP UC Speaker Phone v2	X	X	X		<u>4VW02AA</u>
		1	11	1	
Security Devices	<u>DM</u>	<u>SFF</u>	<u>MT</u>	<u>AiO</u>	Part Number
HP Business PC Security Lock v3 Kit		X	X	X	<u>3XJ17AA</u>
HP Dual Head Keyed Cable Lock	X	X	X	X	<u>T1A64AA</u>
HP Keyed Cable Lock 10mm	X	X	X	X	<u>T1A62AA</u>
HP Master Keyed Cable Lock 10mm	X	X	X	X	<u>T1A63AA</u>
		655			
Stands and Mounting Accessories	<u>DM</u>	<u>SFF</u>	<u>MT</u>	<u>AiO</u>	Part Number
HP B250 PC Mounting Bracket	X	]			<u>8RA46AA</u>
HP B300 PC Mounting Bracket	X				<u>2DW53AA</u>
HP B500 PC Mounting Bracket	X				<u>2DW52AA</u>
HP Quick Release Bracket 2	X			X	<u>6KD15AA</u>
HP Single Monitor Arm				X	<u>BT861AA</u>
HP ProOne G6 VESA Plate with Power Supply Holder				X	<u>13L66AA</u>
HP ProOne G6 AiO Adjustable Height Stand				X	<u>13L65AA</u>
I/O Devices	DM	SFF	MT	AiO	Part Number
HP DisplayPort Port Flex IO v2	<u> </u>	<u> </u>	<u> </u>		13L54AA
HP HDMI Port Flex IO v2	X	X	X		<u>13L55AA</u>
HP Type-C USB 3.1 Gen2 Port Flex IO v2		X	X	]	<u>13L59AA</u>
HP Type-C USB 3.1 Gen2 Port with 100W PD Flex IO					
v2	X				<u>13L60AA</u>
HP VGA Port Flex IO v2	X	X	X		<u>13L53AA</u>
HP Serial Port Flex IO v2	X	X	X		<u>13L56AA</u>
HP Serial Port Flex IO 2nd v2	X				<u>13L57AA</u>
HP Internal Serial Port (405/600/805/800)		X	X		<u>3TK82AA</u>
HP PCIe x1 Parallel Port Card		X	X		<u>N1M40AA</u>
HP 800/600/400 G3 Serial/ PS/2 Adapter		X	X		<u>1VD82AA</u>

**NOTE:** For more detail on HP I/O Devices please refer to the HP FLEX IO Option Cards QuickSpecs. URL is: http://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c06042607

Intel® Optane™ Memory	DM	<u>SFF</u>	<u>MT</u>	<u>Ai0</u>	Part Number
Intel® Optane™ Memory 16GB (Cache)	X	X	X	X	1WV97AA
512GB Intel® Optane™ Memory H10 with SSD	X	X	X	X	6VF55AA



# Change Log

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Date	Version History	Action	Description of Change		
August 26, 2020	From v1 to v2	Addition	DVD-R DL - Up to 6X, DVD+R DL - Up to 6X, DVD-R SL/DL Up to 8X and DVD+F SL/DL Up to 8X on the read/write speed on the blue ray write drive specs or Storage section. Environmental section for AiO 22		
From From From	From v2 to v3	Update	HP ProDesk 600/680 G6 PCI Microtower PC front view, Not shown call outs corrected		
	From v3 to v4				
	From v4 to v5				
	From v5 to v6				
	From v6 to v7				
	From v7 to v8				
	From v8 to v9				
	From v9 to v10				
	From v10 to v11				
	From v11 to v12				