Overview

FRONT VIEW

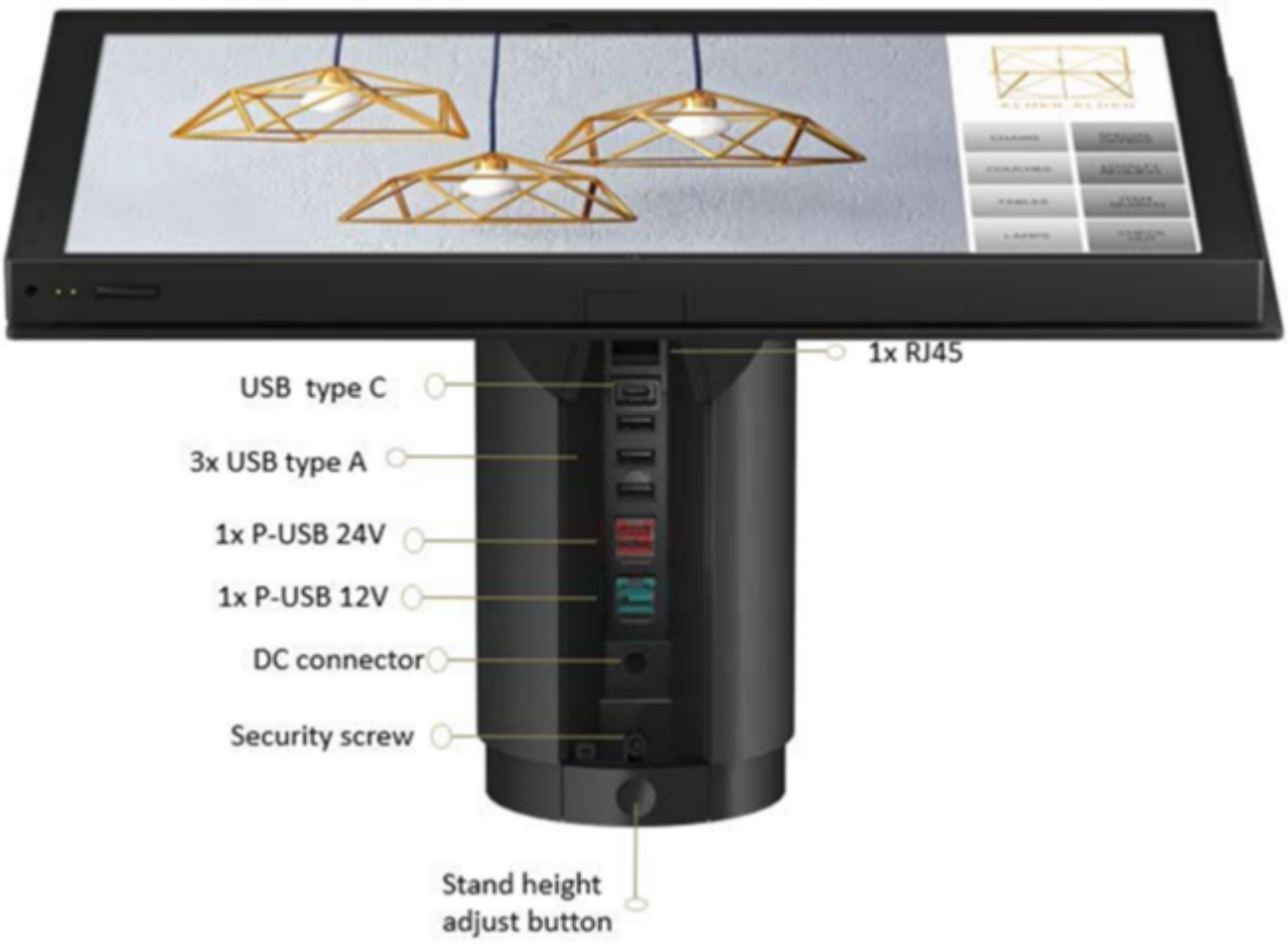
Overview

REAR VIEW

HP Engage One Pro Column hub

Overview

Overview



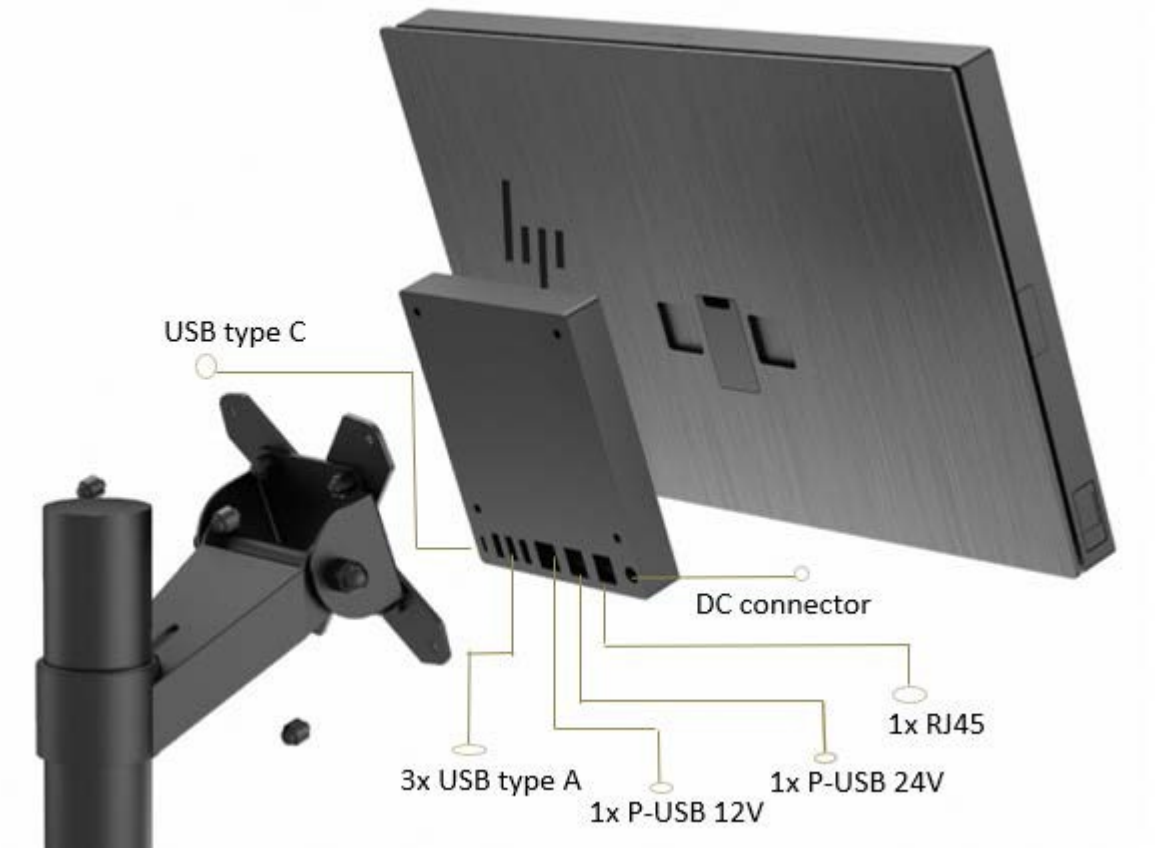
IMPORTANT: To avoid damage to the computer, DO NOT plug a telephone cable into t

Overview

HP Engage One Pro VESA hub

Overview

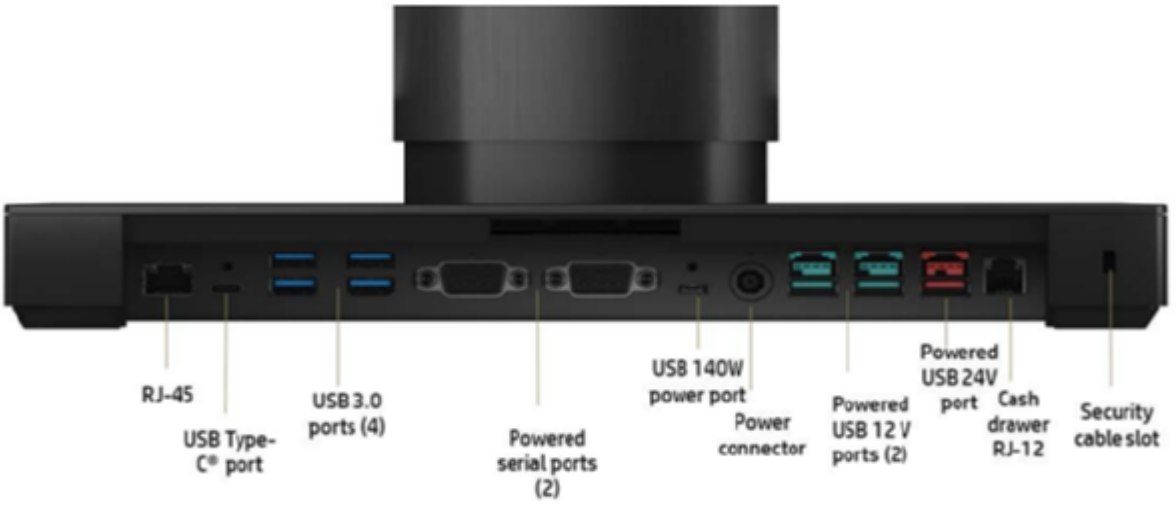
Overview



IMPORTANT: To avoid damage to the computer, DO NOT plug a telephone cable into t

Overview

HP Engage One Pro Advanced Fan-less Hub



IMPORTANT: To avoid damage to the computer, DO NOT plug a telephone cable into t

Component Breakdown

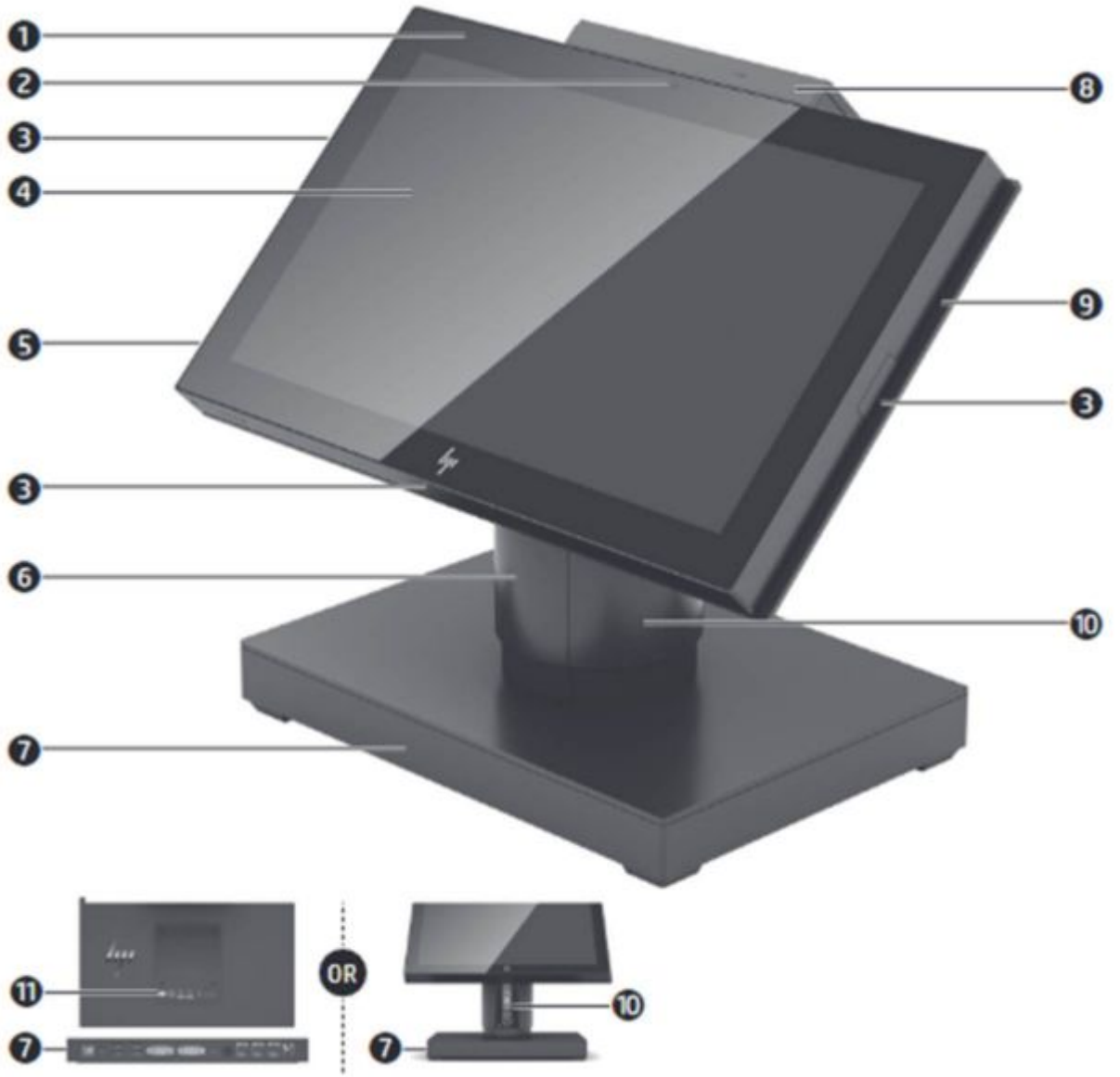
1.	Head unit: Choice of 3 screen sizes: 15.6"?, 19.5"?, 23.8"?. Landscape or portrait orientation
2.	Stand: Choice of 4: Performance stand, Pro stand, Vertical stand, Slim VESA wall mount

Not shown: Head unit connects with hub through a 140W Cable with secure screwed to connectivity base

Overview

Component Breakdown

Overview



Overview

HP Engage One Pro Stand Features

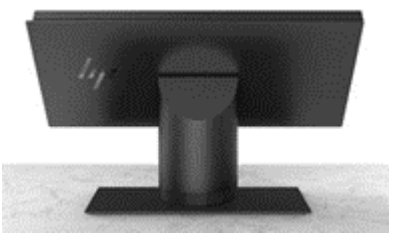
1. Performance Stand-Height adjustable 50mm, tilt 40^0 -120^0
2. Engage One Pro sta

Stand Configurations

*NOTE: HP Engage One Pro & HP Engage One Pro Vertical stand can be configured in the same way as the Performance stand shown i

HP Engage One Pro AiO Slim VESA wall mount (100x100mm)

HP Engage One Pro AiO Performance* Stand Clean Counter Mount No stability plate-include



HP Engage One Pro AiO Performance* stand with Stability Base Plate

Overview

HP Engage One Pro AiO System Performance* stand with Stability Base Plate-Hub attached

At A Glance

- Choice of 2 colors: Ebony Black & Ceramic White*
  *White only available in 15.6"?
- Choice of 2 orientations: Landscape & portrait
- Landscape Choice of with or without Camera
- Choice of 3 Long lifecycle performance All-in-One (AiO) Retail System for retail and hospitality markets ope
  - 15.6" diagonal, FHD (1920 x 1080), touch, IPS, UWVA, anti-glare, 400 nits, 45% NTSC
  - 19.5" diagonal, FHD (1920 x 1080), touch, VA, UWVA, anti-glare, 450 nits, 72% NTSC
  - 23.8" diagonal, FHD (1920 x 1080), touch, IPS, UWVA, anti-glare, 625 nits, 72% NTSC
    Note: Actual brightness will be lower with touch screen
- Choice of 3 column stand:
  - HP Engage One Pro Performance stand
  - HP Engage One Pro stand
  - HP Engage One Pro Vertical stand
- Choice of Mounting:
  - Clean counter- Place the connectivity hub under the counter
  - All together- Place the hub directly under the stand
  - Slim VESA wall mount- Place the head unit on the wall
  - Pole mount- -Place the head unit on a single or back-to-back pole
- Intel® Q470E chipset, 65W Processors
- Processor choices:
  - 10th Generation Intel® Core™ i9 processor
  - 10th Generation Intel® Core™ i7 processor
  - 10th Generation Intel® Core™ i5 processor
  - 10th Generation Intel® Core™ i3 processor
  - Intel® Pentium® processor
  - Intel® Celeron® processor
  - Integrated: Intel® UHD Graphics 610 on Celeron & Pentium; Intel® UHD Graphics 630 on i3 to i9
  - 16GB Intel® Optane™ Memory H10 with Solid State Storage
  - Intel® Ethernet Connection I219LM GbE LOM integrated network connection
  - Intel® Wi-Fi 6 AX201 (2x2) and Bluetooth® 5 combo, non-vPro® Intel® Wi-Fi 6 AX201 (2x2) and Bluetooth® 5 combo, vF
- Operating System choices:
  - Windows 10 Pro 64-bit Windows 10 IoT Enterprise 2019 LTSC 64
  - FreeDOS 2.0
  - SUSE Linux® Enterprise Desktop 12 (certification only)
  - Android 11
- Connectivity Base Choices
  - HP Engage One Column hub:
  - HP Engage One VESA hub
  - HP Engage One Advanced Fan-less hub
- Integrated peripheral options (can also be purchased and installed separately)
- HP Engage One Pro MSR
- HP Engage One Pro Bar Code Scanner (choose between 3 locations: left, right, bottom) of the head unit
- HP Engage One Pro Fingerprint Reader

Overview

- HP Engage One Pro 6x6 Customer facing display with 2x20 line display emulation **
  **The 2x20 line display emulation can be used on 6.6"? CFD and future CFDs for Engage One Pro Virtual Line Display will wor
  size line display such as 3x16 or 3x20, 5x10
- Virtual Line Display will work with any display. It defaults to 2x20,, it can also be used for any other size line display such as 3
- Industry-standard 100mm VESA mounting pattern allows for flexible use without the optional stand (Mounting hardware sold
- (2) Two DDR4 Memory Slots (32 GB Maximum)
- Realtek RTL8153 AH Ethernet Connection
- Intel & Realtek WLAN Options
- Trusted Platform Module (TPM 2.0)
- HP BIOSphere with HP Sure Start technology
- Cable Management Features
- ENERGY STAR® certified configurations available, EU Compliant, RoHS2 Compliant, EPEAT® registered configurations available
- Standard Warranty Options - 90/90/90, 1/1/1, 3/3/3; Plus Optional Care Packs
- 32 GB DDR4-2666 SDRAM Transfer rates up to 2666 MT/s.
- 2 SODIMM Memory slots
- 1 M.2 expansion slot
- 2xM.2 Storage slots
- 128 GB to up to 1 TB PCIe® NVMe™ SSD
- 128 GB to up to 1 TB PCIe® NVMe™ SSD
- 256 GB to up to 512 GB PCIe® NVMe™ SS
- Integrated HD audio with Realtek ALC3247 codec with standards internal speakers and stereo headphone j
- HP Credential Guard; HP Device Guard; HP Support Assistant; HP BIOSphere with Sure Start Generation
- HP Sure Sense; HP Sure Click (Standard); HP Sure Admin; HP MIK (SCCM Integration); HP Image Assistar
  Security Manager Gen7; HP Sure Recover Gen3; HP Sure Run Gen3
- Intel® vPro® with AMT 11.0; TPM 2.0; HP System Software Manager; HP Image Assistant; HP Client Securi
- Display head Ports and Connectors: 1 audio-out; 2 SuperSpeed USB Type-A 5Gbps signaling rate; 2 Super
  Sleep and Charge); 1 RJ-45 USB NIC; 1 140W data port Side: 1 Security lock slot
- Choice of 3 connectivity hubs:
  - **HP Engage One Pro Column hub:**
    - 3 SuperSpeed USB Type-A 5Gbps signaling rate
    - 1 RJ-45 NIC
    - 1 DC connector
    - 2 USB 2.0 Type-A
    - 1 SuperSpeed USB Type-C® 5Gbps signaling rate (27 W Power Delivery, Alt Mode DisplayPort™
    - 1x 140W data port
    - 1x P-USB 12V
    - 1x P-USB 24V
  - **HP Engage One Pro VESA hub:**
    - 3 SuperSpeed USB Type-A 5Gbps signaling rate
    - 1 RJ-45 NIC
    - 1 DC connector
    - 2 USB 2.0 Type-A
    - 1 SuperSpeed USB Type-C® 5Gbps signaling rate (27 W Power Delivery, Alt Mode DisplayPort™
    - 1 140W data port
    - 1x P-USB 12V
    - 1x P-USB 24V
  - **HP Engage One Pro Advance fan-less hub**
    - 1 cash drawer connector
    - 3 USB Type-A; 2 power serials
    - 4 SuperSpeed USB Type-A 10Gbps signaling rate, 1 RJ-45 NIC
    - 1 DC connector
    - 1 SuperSpeed USB Type-C® 5Gbps signaling rate (27 W Power Delivery, Alt Mode DisplayPort™
    - 1 x140W data port]

Overview

- 2x P-USB 12V
- 1x P-USB 24V

o **Combination of Advance hub with Column hub; Combination of Advance hub with VESA hub.**

NOTE: See important legal disclosures for all listed specs in their respectiv

SECURITY DISCLAIMERS:

HP Essential Security requires Windows 10, includes various HP Sure security features and is available on HP Elite and Workstation pr
HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html.
HP Sure Recover Gen3 is available on select HP PCs and requires an open network connection. Not available on platforms with multipl
videos, etc. before using HP Sure Recover to avoid loss of data. HP Sure Recover Gen3 requires an open network connection. You mus
loss of data.
HP Sure Start Gen6 is available on select HP PCs.
HP Sure Click is only supported on Intel Core i3, i5, i7 and i9 processors.
HP Sure Click, Sure Run, Sure Recover & Sure Sense is supported on Win 10 Pro & Win 10 IoT Enterprise 2019 LTSC; but not on Win 10
For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method
HP BIOSphere Gen6 is available on select HP Pro and Elite PCs. See product specifications for details. Features may vary depending on

Features

OPERATING SYSTEM

Preinstalled	Windows 10 Pro 64-bit [1] Windows 10 IoT Enterprise 2019 LTSC 64 FreeDOS 3.0 Android 11
Certified	SUSE Linux® Enterprise Desktop[2]

NOTE:

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. SUSE Enterprise Linux 15 SP2 YES Certification on a single platform configuration. More information about SUSE YES certification on https://http://www.suse.com/partners/ihv/yes/
   The following features are not supported by SUSE Linux Enterprise Desktop:

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

Adapters and Cables

- HP USB-C® to DisplayPort
- HP USB-C® to HDMI
- HP USB-C® to VGA
- USB to Serial Port Adapter

NETWORKING/COMMUNICATIONS

- Intel® I219-LM Gigabit Network Connection LOM (standard)
- Intel® Wi-Fi 6 AX201 + BT5 (802.11AX 2x2 vPro, supporting gigabitdata rate)*, **
- Intel® Wi-Fi 6 AX201 + BT5 (802.11AX 2x2 non-vPro, supporting gigabit data rate)*, **
- Realtek RTL8822CE 802.11ac 2x2 Wi-Fi® + BT5***

*****Wireless access point and Internet service required and not included. Availability of public wireless access points limited. The specifications for the 802.11ax WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the PC to communicate with 802.11ax WLAN devices. Wi-Fi 6 requires a wireless router, sold separately, that supports 802.11ax (Wi-Fi 6). Only available in countries where 802.11ax is supported.

** Wi-Fi 5 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.

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

Features

NEAR FIELD COMMUNICATION

WNC XRAV-1 NFC

PORTS

HP Engage One Pro Head unit I/O:

- 1x 140W data port (PDO cable to Head Unit)[1]
- 1x RJ45 vPro NIC
- 1x UAJ (Audio jack)
- 4x Integrated USB-A Gen1 Peripherals ports
- 2x USB3.2 G1 Type-A / 900mA
- 2x USB3.2 G1 Type-A / 2.2A

Internal access door for the SSD and USB-Port Type A on Motherboard

Dimensions for USB-Port Type A:

55mm L includes plug / 16mm W / 8mm

HP Engage One Pro Column hub I/O

- 3x USB3.2 G2 Type-A / 900mA
- 1x RJ45 (cable direct from Head unit)
- 1x DC connector
- 1x P-USB 12V
- 1x P-USB 24V
- 1x USB3.2 G1 Type-C® DP Alt Mode / 27W
- 1x 140W data port (PDO cable to Head Unit)[1]

HP Engage One Pro VESA hub I/O

- 3x USB3.1 G1 Type-A / 900mA
- 1x RJ45 (cable direct from Head unit)
- 1x DC connector
- 1x P-USB 12V
- 1x P-USB 24V
- 1x USB3.2 G1 Type-C® DP Alt Mode / 27W
- 1x 140W data port (PDO cable to Head Unit) [1]

HP Engage One Pro Advanced Fan-less hub I/O

- 1x RJ12 Cash Drawer
- 2x 12V P-USB
- 1x 24V P-USB
- 2x DB9 P-Serial
- 4x USB3.2 G1 Type A/900mA
- 1x RJ45 USB NIC
- 1x DC connector
- 1x USB3.1 G2 Type-C® DP Alt Mode / 27W
- 1x 140W data port (PDO cable to Head Unit) [1]

NOTE 1: HP 140W port only compatible with the 140W cable included with the product. Cable required for the HP Engage One Pro to operate

Features

USB SPECIFICATION

Speed	Terminology
Hi-Speed USB 480Mbps signaling rate	USB 2.0
SuperSpeed USB 5Gbps signaling rate	USB 3.2 Gen 1

SOFTWARE COMPONENTS AND APPLICATIONS

BIOS

- **HP BIOSphere Gen6**
  - Protect and manage the foundation of your POS System
  - Building on over a decade of BIOS security leadership, HP BIOSphere Gen6 offers an ecosystem of protections to help defend your system, including automated protections, customizable safeguards, and easy manageability
- **HP Secure Erase**[1]
- **Device Guard Enablement**

Additional features of the HP BIOS Features

- Power-On password

Software

- HP Privacy Settings
- HP Setup Integrated OOBE
- HP Easy Clean[2]
- HP Notifications
- myHP

Manageability Features

- HP Driver Packs
- HP Manageability Integration Kit[3]
- HP Image Assistant
- HP Smart Support[4]

Notes:

1. For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.
2. HP Easy Clean requires Windows and will disable the keyboard, display and touchpad only. Ports are not disabled.
3. HP Manageability Integration Kit can be downloaded from http://www.hp.com/go/clientmanagement.
4. HP Smart Support is available to commercial customers through your HP Service Representative and HP Factory Configuration Services; or it can be downloaded at: http://www.hp.com/smart-support. HP Smart Support automatically collects the telemetry necessary upon initial boot of the product to deliver device-level configuration data and health insights.

Features

Security Management

- HP BIOSphere Gen 6[1]
- HP Client Security Manager Gen7[6]
- HP Multi-Factor Authenticate -
- HP SpareKey -
- HP Sure Start[6]
- HP Sure Run[4] -
- HP Sure Recover[4]-Recover quickly and minimize downtime
  - Driven by the HP Endpoint Security Controller, HP Sure Recover enables users to reimage their systems quickly and securely using only a network connection - no IT intervention needed.

Other Security Features

- HP Engage One AiO System Biometric Fingerprint Reader (optional)
- Bolt to counter mechanism
- VESA mounting
- Keyed Cable Lock
- Trusted Platform Module TPM 2.0
- Drive lock
- USB enable/disable (via BIOS)
- Power-on password (via BIOS)
- Setup password (via BIOS)
- Tamper Resistant Screw affixed on stand of the system unit, used to secure display head to stand without Quick Released
- HP vPRO Support

Notes:

1. HP BIOSphere Gen6 features may vary depending on the platform and configuration.
2. HP Secure Erase for the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 "Clear" sanitation
3. 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 Absolut 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
4. HP Sure Click, Sure Run, Sure Recover & Sure Sense is supported on Win 10 Pro & Win 10 IoT Enterprise 2019 LTSC; but not on Win 10 IoT Enterprise 2016 LTSB.
5. HP Client Security Manager Gen7 requires Windows
6. HP Sure Start Gen6 is available on select HP PCs.

PROCESSORS

- Intel® Celeron® G5900E with Intel® UHD Graphics 610 (3.2 GHz base frequency, 2 MB L3 cache, 2 cores)
- Intel® Pentium® Gold G6400E with Intel® UHD Graphics 610 (3.8 GHz base frequency, 4 MB L3 cache, 2 cores) Intel® Core™ i3-10100E with Intel® UHD Graphics 630 (3.2 GHz base frequency, up to 3.8 GHz with Intel® Turbo Boost Technology, 6 MB L3 cache, 4 cores) [2]
- Intel® Core™ i7-10700E with Intel® UHD Graphics 630 (2.9 GHz base frequency, up to 4.5 GHz with Intel® Turbo Boost Technology, 16 MB L3 cache, 8 cores), supports Intel® vPro® Technology 3
- Intel® Core™ i9-10900E with Intel® UHD Graphics 630 (2.8 GHz base frequency, up to 4.7 GHz with Intel® Turbo Boost Technology, 20 MB L3 cache, 10 cores), supports Intel® vPro® Technology 3
- Intel® Core™ i5-10500E with Intel® UHD Graphics 630 (3.1 GHz base frequency, up to 4.2 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 6 cores), supports Intel® vPro® Technology 3

PROCESSORS FAMILY

10th Gen 65W Intel Core™ processors

NOTES:

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® 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 http://http://www.intel.com/technology/turboboost for more information.

3. For full Intel® vPro® functionality, Windows 10 Pro 64 bit, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or WLAN card and TPM 2.0 are required. Some functionality requires additional 3rd party software in order to run. See http://intel.com/vpro

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INTEL® 10th GENERATION CORE™ vPRO ® PROCESSORS

Intel® Core™ i5-10500E with Intel® UHD Graphics 630 (3.1 GHz base frequency, up to 4.2 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 6 cores), supports Intel® vPro® Technology

Intel® Core™ i7-10700E with Intel® UHD Graphics 630 (2.9 GHz base frequency, up to 4.5 GHz with Intel® Turbo Boost Technology, 16 MB L3 cache, 8 cores), supports Intel® vPro® Technology

Intel® Core™ i9-10900E with Intel® UHD Graphics 630 (2.8 GHz base frequency, up to 4.7 GHz with Intel® Turbo Boost Technology, 20 MB L3 cache, 10 cores), supports Intel® vPro® Technology 3

The HP Engage One Pro AiO System Retail System features this technology and includes processors that are part of the Intel® Stable Image. Platform Program (SIPP) designed to ensure the stability promise inherent in the value proposition of the HP Engage One Pro AiO System Retail System.

Technical Specifications

Intel® Advanced Management Technology (AMT) v11.6+

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 11.6+ includes the following advanced management function
- Power Management (on, off, reset
- Hardware Inventory (includes BIOS and firmware revisions
- Hardware Alerting
- Agent Presence
- System Defense Filters
- SOL/USBR
- Cisco NAC/SDN Support
- ME Wake-on-LAN DASH 1.1 compliance
- IPv6 Support
- Fast Call for Help - a client inside or outside the firewall may initiate a call for help via BIOS screen, periodic connections, or alert triggered connection
- Remote Scheduled Maintenance - pre-schedule when the PC connects to the IT or service provider console for maintenance. Remote PCs can get required patches, be inventoried, etc. by connecting to their IT console or Service Provider when it's convenient
- Remote Alerts - automatically alert IT or service provider if issues arise
- Access Monitor - Provides oversight into Intel® AMT actions to support security requirements
- PC Alarm Clock
- Microsoft NAP Support
- Host-based set-up and configuration
- Management Engine (ME) firmware roll back
- Wireless AMT functionality on Desktop (WoDT)
- Enhanced KVM resolution

*Some functionality of this 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.

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

OPERATOR DISPLAY*

15.6" Diagonal Wide Aspect, Projective Capacitive, Anti-glare, Anti-smudge, IPS Display

Touch Technology	Projected Capacitive Touchscreen
Resolution	1920 x 1080
Aspect Ratio	16:9
Max Color	16.2M
Brightness	Typical 400 Nits*
Contrast Ratio	Typical 800:1
Pixel Pitch	0.17925 x 0.17925mm

Technical Specifications

Viewing Angle	Horizontal 178°, Vertical 178°
Response rate	25ms (Typical On / Off)
Backlight	LED
Operating Temperature range	0 to 50°C (+ 50°C as panel surface temperature)

19.5" Diagonal Wide Aspect, Projective Capacitive, Anti-glare, Anti-smudge, UWVA, IPS Display

Touch Technology	Projected Capacitive Touchscreen
Resolution	1920 x 1080
Aspect Ratio	16:9
Max Color	16.7M
Brightness	Typical 450 Nits*
Contrast Ratio	Typical 2000:1
Pixel Pitch	0.2265 x 0.2210mm
Viewing Angle	Horizontal 170°, Vertical 170°
Response rate	25ms (Typical On / Off)
Backlight	LED
Operating Temperature range	0 to 50°C (+ 50°C as panel surface temperature)

23.8" Diagonal Wide Aspect, Projective Capacitive, Anti-glare, Anti-smudge, IPS Display

Touch Technology	Projected Capacitive Touchscreen
Resolution	1920 x 1080
Aspect Ratio	16:9
Max Color	16.7M
Brightness	Typical 625 Nits*
Contrast Ratio	1000:1
Pixel Pitch	274.5 um x 2274.5 um
Viewing Angle	Horizontal 178°, Vertical 178°
Response rate	14ms (Typical On / Off)
Backlight	LED
Operating Temperature range	0 to 50°C (+ 50°C as panel surface temperature)

*__NOTE:__ Nits is the measure of the typical brightness of the panel as specified, prior to anti-glare coating

*__NOTES:__

Portrait Display.With a Portrait Head Unit, the pre-OS environment will be displayed 90° in Landscape.
Once the Windows OS loads, then the display will show Portrait.
*All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

Intel® HD Graphics (integrated)

Integrated Graphics

Intel® UHD Graphics 630 (integrated on 10th gen Core i9/i7/i5/i3
Intel® UHD Graphics 610 (integrated on 10th gen Pentium® G6400E, Celeron® G5900E)

DisplayPort

DisplayPort over the optional 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 Graphic Memory

Windows 10 >6 GB

Maximum Color Depth

64bits/pixel
10th Generation Intel® Core™ processors:

- Next Generation Intel® Clear Video Technology HD Support is a collection of video playback and

enhancement features that improve the end user's viewing experience

- o Encode/transcode HD content
- o Playback of high-definition content including Blu-ray Disc
- o Superior image quality with sharper, more colorful images

Graphics/Video API Support

- DirectX Video Acceleration (DXVA) support for accelerating video processing o Full AVC/VC1/MPEG2/HEVC HW Decode
- Advanced Scheduler 2.0, 1.0
- Windows 10, Linux OS Support
- DirectX 12.1
- OpenGL 4.4
- Open CL 1.2 (Intel® HD Graphics 630)
- Open CL 1.2/2.0 (Intel® HD Graphics 610)

NOTE: the actual amount of maximum graphics memory can be less than the amounts listed above depending upon your computer's configuration.

Supported Display Resolutions and Refresh Rates

Note: Other resolutions may be available but are not recommended as they may not have been tested and qualified by HP

Technical Specifications-Graphics

Resolution	Refresh Rate
640x480	60Hz640x48067Hz
640x480	72Hz
640x480	75Hz
720x400	70Hz
800x600	60Hz
800x600	75Hz
1024x768	60Hz
1024x768	75Hz
1280x960	60Hz
1280x720	60Hz
1280x1024	60Hz
1280x1024	75Hz
1440x900	60Hz
1440x900	75Hz
1680x1050	60Hz
1920x1080	60Hz
3440x1440	60Hz 3440x144030Hz
2048x1536	60Hz
4096x2160	60Hz
4096x2160	60Hz

MEMORY

Type

DDR4-2666 SDRA Transfer rates up to 2666 MT/s

Maximum

32 GB

# of Slots

2 SODIMM

Memory Upgrades

- 4GB (1x4GB) DDR4 2666 SODIMM Memory
- 8GB (1x8GB) DDR4 2666 SODIMM Memory
- 16GB (2x8GB) DDR4 2666 SODIMM Memory
- 16GB (1x16GB) DDR4 2666 SODIMM Memory
- 32GB (2x16GB) DDR4 2666 SODIMM Memory

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

System Memory Support

The HP Engage One Pro AiO System Retail System supports DDR4 protocols with two independent, 64-bit wide channels eacl accessing one or two SoDIMMs.

- Two channels of non-ECC DDR4 unbuffered small outline dual in-line memory modules (SO-DIMM) with a maximum of one DIMMs per channel
- Single-channel and dual-channel memory organization modes Data burst length of eight for all memory organization modes
- Memory data transfer rates of up to 2400 MT/s; actual supported data transfer rate determined by the configured processor.
- 64-bit wide channels
- DDR4 system memory I/O voltage of 1.2V
- Theoretical maximum memory bandwidth of:
- 21.3 GB/s in dual-channel mode assuming 1333 MT/s
- 25.6 GB/s in dual-channel mode assuming 1600 MT/s
- 34.0 GB/s in dual-channel mode assuming 2133 MT/s
- 38.4 GB/s in dual-channel mode assuming 2400 MT/s

Key Benefits of DDR4 Memory:

- Dual channel configuration - HP Engage One Pro AiO System features motherboards designed with two memory channels instead of a single channel.
- Reduce system latencies and significantly improve your system performance with dual channel memory configuratior by utilizing the theoretical bandwidth of two memory modules instead of one.
- Expect fast start-up times with reduced delays during routine operations and system maintenance functions. Meet everyday workloads head on and run more programs simultaneously. Easily toggle back and forth between several open applications with noticeable speed.

Notes

For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available du to system resource requirements. Addressing memory above 4 GB requires a 64-bit operating system. Memory modules support data transfer rates up to 2400 MT/s; actual data rate is determined by the system's configured processor. See processor specifications for supported memory data rate.

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

SOLID STATE STORAGE

Drive Bays : (2) M.2 PCIe x4 2280/2230 Combo (for storage)

PCIe NMVe Solid State Drives (SSD)[1]

- 128GB 2280 PCIe-3x2 TLC Solid State Drive
- 256GB M.2 2280 PCIe NVMe SED OPAL2 TLC Solid State Drive
- 256GB M.2 2280 PCIe NVMe TLC Solid State Drive
- 256GB Intel Optane Memory H10 with Solid State Storage[2]
- 512GB M.2 2280 PCIe NVMe TLC Solid State Drive
- 512GB Intel Optane Memory H10 with Solid State Storage[2]
- 1TB 2280 PCIe-3x4 NVMe TLC Solid State Drive

Storage accelerator

- NVMe RAID 1

Notes:

1. Storage DriveLock does not work with Self-Encrypting or Optane based storage
2. Intel® Optane™ memory system acceleration does not replace or increase the DRAM in your system.

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

Unformatted Capacity	128GB
Interface	PCIe Gen 3
Form Factor	M.2
Height	2.38mm
Width	22mm
Length	80mm
Weight	<10g
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.

Technical Specifications-Storage

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

Unformatted Capacity	256GB
Interface	PCIe Gen 3
Form Factor	M.2
Height	2.38mm
Width	22mm
Length	80mm
Weight	<10g
Maximum Sequential Read	Up to 2700MB/s
Maximum Sequential Write	Up to1000MB/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

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.

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

Unformatted Capacity	512GB
Interface	PCIe Gen 3
Form Factor	M.2
Height	2.38mm
Width	22mm
Length	80mm
Weight	<10g
Maximum Sequential Read	Up to 2900MB/s
Maximum Sequential Write	Up to1100MB/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.

Technical Specifications-Storage

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

Unformatted Capacity	1TB
Interface	PCIe Gen 3
Form Factor	M.2
Height	2.38mm
Width	22mm
Length	80mm
Weight	<10g
Maximum Sequential Read	Up to 3480MB/s
Maximum Sequential Write	Up to3037MB/s
Logical Blocks	2,000,409,264
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.

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

Unformatted Capacity	1TB
Interface	PCIe Gen 3
Form Factor	M.2
Height	2.38mm
Width	22mm
Length	80mm
Weight	<10g
Maximum Sequential Read	Up to 3480MB/s
Maximum Sequential Write	Up to3037MB/s
Logical Blocks	2,000,409,264
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.

Technical Specifications-Storage

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

Unformatted Capacity	256GB
Interface	PCIe Gen 3
Form Factor	M.2
Height	2.38mm
Width	22mm
Length	80mm
Weight	<10g
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

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

256GB Intel® PCIe® NVMe™ QLC + 32GB Intel® Optane™

Unformatted Capacity	256GB
Interface	PCIe Gen 3
Form Factor	M.2
Height	2.38mm
Width	22mm
Length	80mm
Weight	<10g
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

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

Technical Specifications-Storage

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

Unformatted Capacity	512GB
Interface	PCIe Gen 3
Form Factor	M.2
Height	2.38mm
Width	22mm
Length	80mm
Weight	<10g
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.

1TB 2280 PCIe-3x4 NVMe TLC Solid State Drive

Unformatted Capacity	1TB
Interface	PCIe Gen 3
Form Factor	M.2
Height	2.38mm
Width	22mm
Length	80mm
Weight	<10g
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]

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.

Networking/Communications

Ethernet (RJ-45)

- Intel® I219-LM Gigabit Network Connection LOM (standard)

Wireless

- Intel® Wi-Fi 6 AX201 + BT5 (802.11AX 2x2 vPro, supporting gigabit data rate)*, **
- Intel® Wi-Fi 6 AX201 + BT5 (802.11AX 2x2 non-vPro, supporting gigabit data rate)*, **
- Realtek RTL8822CE 802.11ac 2x2 Wi-Fi® + BT5***

Notes:

NIC Fundamentals:

By default, the HP BIOS set the HUB WOL setting to disabled state, which will not allow wake signal from the USB bus to initiate a wake event. On Engage One Plus, the Embedded Lan Controller is enabled by default and is what HP recommend using as the primary nic for WOL capability as seen in the BIOS F10 menu If customer has a reason to use the HUB NIC and wants to wake the system from that NIC. They must enable wake events for the HUB to get the functionality.

*Wireless access point and Internet service required and not included. Availability of public wireless access points limited. The specifications for the 802.11ax WLAN are draft specifications and are not final. If the final specifications differ from the draft specifications, it may affect the ability of the PC to communicate with 802.11ax WLAN devices. Wi-Fi 6 requires a wireless router, sold separately, that supports 802.11ax (Wi-Fi 6). Only available in countries where 802.11ax is supported.

** Wi-Fi 5 is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.

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

Intel® i219LM 10/100/1000 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) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023 clauses 40) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s
IEEE Compliance	IEEE 802.1p QoS (Quality of Service) Support IEEE 802.1q VLAN support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) IEEE 802.3az EEE (Energy Efficient Ethernet)
Performance	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling(Hash Mode Only) Jumbo Frame 9K
Power consumption	Cable Disconnetion: 25mW 100Mbps Full Run: 450mW 1000bp Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW

Power Management	ACPI compliant - multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
Management Interface	Auto MDI/MDIX Crossover cable detection
IT Manageability	Wake-on-LAN from modem standby or sleep state (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status
Security & Manageability	Intel® vPro™ support with appropriate Intel® chipset components

Intel Wi-Fi 6 AX201 + BT5 (802.11ax 2x2, vPro, supporting gigabit file transfer speeds) vPro	
Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
Interoperability	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[3]	• IEEE compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware

Technical Specifications – Networking and Communications

	• 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI	
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)	
Roaming	IEEE 802.11 compliant roaming between access points	
Output Power[2]	• 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[3]	• 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 Non-operating	14° to 158° F (-10° to 70° C) -40° to 176° F (-40° to 80° C)
Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber - Radio OFF; LED White - Radio ON	

Technical Specifications – Networking and Communications

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 Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps
	BLE : 1 Mbps data rate; throughput up to 0.2 Mbps
	Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels.
	Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetoothâ component shall operate as a Class II Bluetoothâ device with a maximum transmit power of +9.5 dBm for BR and EDR.
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW
Bluetooth® Software Supported Link Topology	Microsoft Windows Bluetoothâ Software
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management Certifications	ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	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)
Security & Manageability	Intel® vPro™ support with appropriate Intel® chipset components

Intel Wi-Fi 6 AX201 + BT5 (802.11ax 2x2, non-vPro, supporting gigabit file transfer speeds) non-vPro	
Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k

	IEEE 802.11r IEEE 802.11v
Interoperability	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
Security3	• IEEE 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 Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power2	• 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

Technical Specifications – Networking and Communications

Receiver Sensitivity3	• 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 Non-operating	14° to 158° F (-10° to 70° C) -40° to 176° F (-40° to 80° C)
Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber - Radio OFF; LED Off - Radio ON	
HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0/5.1 Wireless Technology		
Bluetooth® Specification	4.0/4.1/4.2/5.0/5.1 Compliant	
Frequency Band	2402 to 2480 MHz	
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)	
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps	
	BLE : 1 Mbps data rate; throughput up to 0.2 Mbps	
	Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels. Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)	
Transmit Power	The Bluetoothâ component shall operate as a Class II Bluetoothâ device with a maximum transmit power of +9.5 dBm for BR and EDR.	
Power Consumption	Peak (Tx) 330 mW Peak (Rx) 230 mW Selective Suspend 17 mW	
Bluetooth® Software Supported Link Topology	Microsoft Windows Bluetoothâ Software	
Power Management	Microsoft Windows ACPI, and USB Bus Support	

Technical Specifications – Networking and Communications

Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249 ETS 300 328, ETS 300 826 Low Voltage Directive IEC60950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	BT4.1-ESR 5/6/7 Compliance LE Link Layer Ping LE Dual Mode LE Link Layer LE Low Duty Cycle Directed Advertising LE L2CAP Connection Oriented Channels Train Nudging & Interlaced Scan BT4.2 ESR08 Compliance LE Secure Connection- Basic/Full LE Privacy 1.2 -Link Layer Privacy LE Privacy 1.2 -Extended Scanner Filter Policies LE Data Packet Length Extension FAX Profile (FAX) Basic Imaging Profile (BIP)2 Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)

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® 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) • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz & 80MHz)
Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Security[3]	• 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

Technical Specifications – Networking and Communications

	• WAPI	
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)	
Roaming	IEEE 802.11 compliant roaming between access points	
Output Power[2]	• 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 • 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 Sensitivity3	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 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 Non-operating	14° to 158° F (-10° to 70° C) -40° to 176° F (-40° to 80° C)
Humidity	Operating Non-operating	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	Operating Non-operating	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber - Radio OFF; LED OFF - Radio ON	
HP Integrated Module with Bluetooth[å] 4.0/4.1/4.2/5.0 Wireless Technology		

Technical Specifications – Networking and Communications

Bluetooth[â] Specification	4.0/4.1/4.2/5.0 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps
	BLE : 1 Mbps data rate; throughput up to 0.2 Mbps
	Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetoothâ component shall operate as a Class II Bluetoothâ 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[â] Software Supported Link Topology	Microsoft Windows Bluetoothâ Software
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C, Section 15.247 & 15.249
Power Management Certifications	ETS 300 328, ETS 300 826
	Low Voltage Directive IEC950 UL, CSA, and CE Mark
Bluetooth Profiles Supported	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)

High-Definition Audio

Engage One System Audio (Realtek ALC3247-CG)

Type	Integrated
HD Stereo Codec	High-Definition Audio codec
Internal Speaker Amplifier	4-channel DAC, 4-channel ADC, and an integrated stereo Class-D Speaker Amplifier
Sampling	1kHz input sine wave; Sampling frequency=48kHz; 0dB=1Vrms
Analog Audio	Yes, independent analog sound inputs (multiple streaming)
# of Channels on line-out	2 watts per channel output power Stereo (Left & Right channels)
Internal speaker	Yes
Microphone	Yes, stereo digital microphone input with Realtek proprietary Acoustic Echo Cancellation (AEC), Beam Forming (BF), and Noise Suppression (NS) technology, significantly improving voice quality for PC VoIP applications
Maximum Power Output	2W per channel at 5V power supply
Headphone	yes

Technical Specifications – Integrated Camera

Optional integrated high-speed USB 2.0 compliant webcam 5MP resolution CMOS image sensor. The module integrates a USB 2.0 controller, color-processing engine and high-quality image to provide up to 30fps at 5MP size in high-speed mode.

Note: The Integrated webcam is a windows Hello Camera and IR is supported on 5MP Camera

Category	Specification
Module Key Features	1/5"?, F2.0, 5MP, webcam for OS with build-in UVC driver
	Note: The Integrated webcam is a windows Hello Camera and IR is supported on 5MP Camera
Automatic Image Control	Automatic Exposure Control Automatic White Balance Control Automatic Gain Control
Image Quality Control	Brightness, Contrast, Gamma, Hue, Saturation, Sharpness, Backlight Compensation, Anti-Flicker, White Balance, Image Flip, Night Mode, Digital Zoom, Roll and Exposure Controls.
Resolution Support	4:3 ? 5Mp (2560x1920)
	16:9 ? 5Mp (2560x1440), 1080p (1920x1080)
	720p (1280x720), 640x360
Power Saving Support	Suspend, Hibernation
On Board Component	White LED Indicator x1 IR LED x1
	Performance
Device Name	HP 5MP Camera
Brightness Control	-64~64 (0)
Contrast Control	0~64 (32)
Hue Control	-40~40 (0)
Saturation Control	0~128 (64)
Sharpness Control	0~5 (0)
Gamma Control	72~500 (100)
White Balance	2800~6500, auto (4000, auto)
Backlight	0~1 (0)
Exposure Control	-8~0, auto (-5,Auto)
Low light Compensation	Enable, Disable (Enable)
Anti-flicker (Power line)	50Hz, 60Hz (50Hz)
Format of Image Output Data	YUY2, MJPG

POWER

Power Supply	280Watt Smart PFC Standard Barrel 7.4mm Straight 1.8m C14 SR-S; 89% efficiency (advance hub) 230Watt Smart PFC Slim Barrel 7.4mm Right Angle ; 89% efficiency (Column hub & VESA hub)
Operating Voltage Range	90V~265VAC
Rated Voltage Range	100V~240AC
Rated Line Frequency	50~60HZ
Operating Line Frequency Range	47~63HZ
Rated Input Current	<2.4A RMS/280W, <3.52A/230W
Power Supply Fan	N/A
ENERGY STAR® Compliant	ENERGY STAR® certified configurations available and EPEAT® registered *
Power Cord Length	1.8m
	NOTE: Power supply meets ENERGY STAR® compliance in conjunction with a select range of processors and modules. *Energy Star in under testing & in process of certification at the time this document is written

WEIGHTS & DIMENSIONS

NOTE: Weight and dimensions below do not include MSR, Biometric Reader, Webcam, or CFD.

Head Unit-15.6"		
	Metric	US
Head Unit-15.6" Dimensions (Landscape)		
Height [mm/in]	26.4	1.0
Width [mm/in]	397.6	15.7
Depth [mm/in]	241.0	9.5
Volume (Litters/cubic inches)	2.5	154.35
Head Unit-15.6" Dimensions (Portrait)		
Height [mm/in]	26.4	1.0
Width [mm/in]	397.6	15.7
Depth [mm/in]	241.0	9.5
Volume (Litters/cubic inches)	2.5	154.35
Head Unit-15.6" Weight (Landscape)		
[kg/lb.]	3.37	7.4
Head Unit-15.6" Weight (Portrait)		
[kg/lb.]	3.35	7.4

Technical Specifications – Power

Head Unit-19.5"		
	Metric	US
Head Unit-19.5" Dimensions (Landscape)		
Height [mm/in]	29.4	1.2
Width [mm/in]	494.8	19.5
Depth [mm/in]	292.6	11.5
Volume (Litters/cubic inches)	4.3	259.75
Head Unit-19.5" Dimensions (Portrait)		
Height [mm/in]	29.4	1.2
Width [mm/in]	488.8	19.2
Depth [mm/in]	292.6	11.5
Volume (Litters/cubic inches)	4.2	256.60
Head Unit-19.5" Weight (Landscape)		
[kg/lb.]	5.70	12.6
Head Unit-19.5" Weight (Portrait)		
[kg/lb.]	5.69	12.5

Head Unit-23.8"		
	Metric	US
Head Unit-23.8" Dimensions (Landscape)		
Height [mm/in]	29.4	1.2
Width [mm/in]	576.4	22.7
Depth [mm/in]	339.9	13.4
Volume (Litters/cubic inches)	5.8	351.50
Head Unit-23.8" Dimensions (Portrait)		
Height [mm/in]	29.4	1.2
Width [mm/in]	570.4	22.5
Depth [mm/in]	339.9	13.4
Volume (Litters/cubic inches)	5.7	347.84
Head Unit-23.8" Weight (Landscape)		
[kg/lb.]	6.80	15.0
Head Unit-23.8" Weight (Portrait)		
[kg/lb.]	6.79	15.0

Technical Specifications – Power

HP Engage One Pro Advance Hub		
	Metric	US
Hub Dimensions (with U-shape)		
Height [mm/in]	36.8	1.4
Width [mm/in]	305.0	12.0
Depth [mm/in]	220.0	8.7
Hub Dimensions (without U-shape)		
Height [mm/in]	28.5	1.1
Width [mm/in]	275.0	10.8
Depth [mm/in]	100.0	3.9
Hub Weight with U-shape		
Integrated Graphics [kg/lb.]	1.00	2.2
Discrete Graphics [kg/lb.]	1.00	2.2
Hub Weight (without U-shape)		
Integrated Graphics [kg/lb.]	0.69	1.5
Discrete Graphics [kg/lb.]	0.69	1.5

HP Engage One Pro VESA hub		
	Metric	US
Dimensions		
Height [mm/in]	150.0	5.9
Width [mm/in]	125.0	4.9
Depth [mm/in]	24.4	1.0
Weight(Without Adapter)		
[kg/lb.]	547.40	1.20

Technical Specifications – Power

HP Engage One Pro Slim VESA Mount		
	Metric	US
Dimensions		
Height [mm/in]	120.0	4.7
Width [mm/in]	120.0	4.7
Depth [mm/in]	10.5	0.4
Weight		
[kg/lb.]	233.00	0.51

Engage One Pro - Performance Stand only		
	Metric	US
Weight		
[kg/lb.]	2.025	4.46

Engage One Pro - Pro Stand only		
	Metric	US
Weight		
[kg/lb.]	0.91	2

Engage One Pro - Vertical Stand only		
	Metric	US
Weight		
[kg/lb.]	1.33	2.93

System Summary Dimension Matrix

Technical Specifications – Power

Display Heads Only	Width (Horizontal)	Height (Vertical)	Thickness
15.6 Landscape	397.6	241.0	26.4
19.5 Landscape	494.8	292.6	29.4
23.8 Landscape	576.4	339.9	29.4
15.6 Portrait	241.0	391.6	26.4
19.5 Portrait	292.6	488.8	29.4
23.8 Portrait- Slim VESA only*	339.9	570.4	29.4

NOTE: *23.8"? Portrait can only be support with SLIM VESA mount, not configurable with any Column stand, not configurable with column hub

	Width	Depth	Thickness
Stability Base Only	305.0	220.0	11.7
Stability Base With Advance Hub	305.0	220.0	38.7
Delta Height with Advance hub (Note 1 - Add 27 mm to height dimension when using with the Advance Hub)	305.0	220.0	27.0

Performance Stand Low Position With Stability Base	+40 Tilt Angle From Vertical (Negative - Forward, Positive = Rear)			+120 Tilt Angle From Vertical (Negative - Forward, Positive = Rear)		
Dimensions	Height Top Edge of Screen (Note 1)	Height Bottom Edge of Screen (Note 1)	Overall Depth	Height Top Edge of Screen (Note 1)	Height Bottom edge of screen (Note 1)	Overall Depth
15.6L	313.5	112.1	220.0	289.8	146.6	220.0
19.5L	335.2	92.3	234.8	305.3	133.7	256.8
23.8L	353.3	74.2	250.0	317.1	121.8	251.6
15.6P	371.1	54.4	264.4	327.4	108.9	274.0
19.5P	410.3	17.1	297.9	354.3	84.6	437.9
23.8P VESA only	NA	NA	NA	NA	NA	NA

NOTE: *23.8"? Portrait can only be support with SLIM VESA mount, not configurable with any Column stand, not configurable with column hub
Add 27 mm to all height dimensions if unit has Advance hub attached to the Column Stand

Technical Specifications – Power

Performance Stand High Position With Stability Base	+40 Tilt Angle From Vertical Forward Travel Limit (Negative - Forward, Positive = Rear)			+120 Tilt Angle From Vertical (Negative - Forward, Positive = Rear)		
Dimensions	Height Top Edge of Screen (Note 1)	Height Bottom Edge of Screen (Note 1)	Overall Depth	Height Top Edge of Screen (Note 1)	Height Bottom edge of screen (Note 1)	Overall Depth
15.6L	363.5	162.1	220.0	339.8	196.6	220.0
19.5L	385.2	142.3	234.8	355.3	183.7	256.8
23.8L	403.3	124.2	250.0	367.1	171.8	251.6
15.6P	421.1	104.4	264.4	377.4	158.9	274.0
19.5P	460.3	67.1	297.9	404.3	134.6	437.9
23.8P VESA only	NA	NA	NA	NA	NA	NA

NOTE: *23.8"? Portrait can only be support with SLIM VESA mount, not configurable with any Column stand, not configurable with column hub
Add 27 mm to all height dimensions if unit has Advance hub attached to the Column Stand

HP Engage Pro Stand With Stability Base	+40 Tilt Angle From Vertical (Negative - Forward, Positive = Rear)			+120 Tilt Angle From Vertical (Negative - Forward, Positive = Rear)		
Dimensions	Height Top Edge of Screen (Note 1)	Height Bottom Edge of Screen (Note 1)	Overall Depth	Height Top Edge of Screen (Note 1)	Height Bottom edge of screen (Note 1)	Overall Depth
15.6L	313.4	112.0	224.0	289.6	146.4	232.9
19.5L	335.0	92.2	234.8	305.1	135.5	267.9
23.8L	380.2	101.1	240.8	317.0	121.7	308.9
15.6P	371.0	54.3	271.1	327.3	108.8	352.1
19.5P	410.2	17.0	336.6	354.2	84.5	437.9
23.8P VESA only	NA	NA	NA	NA	NA	NA

NOTE: *23.8"? Portrait can only be support with SLIM VESA mount, not configurable with any Column stand, not configurable with column hub
Add 27 mm to all height dimensions if unit has Advance hub attached to the Column Stand

HP Engage Vertical Stand With Stability Base	+15 Tilt Angle From Vertical (Negative - Forward, Positive = Rear)			+40 Tilt Angle From Vertical (Negative - Forward, Positive = Rear)		
Dimensions	Height Top Edge of Screen (Note 1)	Height Bottom Edge of Screen (Note 1)	Overall Depth	Height Top Edge of Screen (Note 1)	Height Bottom edge of screen (Note 1)	Overall Depth
15.6L	339.9	100.4	220.0	316.9	115.5	220.0
19.5L	316.9	115.5	220.0	365.7	75.5	230.2
23.8L	388.5	52.6	220.0	356.8	77.7	245.4
15.6P	412.7	27.7	221.4	374.6	57.9	259.7
19.5P	NA	NA	NA	NA	NA	NA
23.8P VESA only	NA	NA	NA	NA	NA	NA

NOTE: *23.8"? Portrait can only be support with SLIM VESA mount, not configurable with any Column stand, not configurable with column hub
Add 27 mm to all height dimensions if unit has Advance hub attached to the Column Stand

Technical Specifications – Power

MISCELLANEOUS FEATURES

Management Features

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

HP Point of Sale 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

Serviceability Features:

- System/Emergency ROM
- Flash ROM
- Flash Recovery with Video Configuration Record Software
- Over-Temp Warning on Screen (Requires IM Agents)
- Clear Password Jumper
- Clear CMOS Button
- Color coordinated cables and connectors
- Front power switch
- System memory can be upgraded without removing the system board or any internal components

Interpreting System Validation Diagnostic Front Panel LEDs and Audible Codes

During the system validation phase that occurs at system startup, the BIOS validates the functionality of the following subsystems and conditions:

- AC adapter
- System board power
- Processor failure
- BIOS corruption
- Memory failure
- Graphics failure
- System board failure
- BIOS authentication failure

If an error is detected, specific patterns of long and short blinks, accompanied by long and short beeps (where applicable) are used to identify the error. These patterns will make up a two part code:

- Major - the category of the error
- Minor - the specific error within the category

Number of long beeps/blinks	Error category
1	Not used
2	BIOS
3	Hardware
4	Thermal
5	System board

Patterns of blink/beep codes are determined by using the following parameters:

- 1 second pause occurs after the last major blink.
- 2 second pause occurs after the last minor blink.
- Beep error code sequences occur for the first 5 iterations of the pattern and then stop.
- Blink error code sequences continue until the computer is unplugged or the power button is pressed.

NOTE: Not all diagnostic lights and audible codes are available on all models.

The red LED blinks to represent the major error category (long blinks). The white LED blinks to represent the minor error category (short blinks). For example, '3.5' indicates 3 long red blinks and 5 short white blinks to communicate the processor is not detected.

Category	Major/minor code	Description
BIOS	2.2	The main area (DXE) of BIOS has become corrupted and there is no recovery binary image available.
	2.3	The embedded controller policy requires the user to enter a key sequence.
	2.4	The embedded controller is checking or recovering the boot block.
Hardware	3.2	The embedded controller has timed out waiting for BIOS to return from memory initialization.
	3.3	The embedded controller has timed out waiting for BIOS to return from graphics initialization.
	3.4	The system board displays a power failure (crowbar).*
	3.5	The processor is not detected.*
	3.6	The processor does not support an enabled feature.
Thermal	4.2	A processor over temperature condition has been detected.*
	4.3	An ambient temperature over temperature condition has been detected.
	4.4	An MXM over temperature condition has been detected.
System board	5.2	The embedded controller cannot find valid firmware.
	5.3	The embedded controller has timed out waiting for the BIOS.
	5.4	The embedded controller has timed out waiting for BIOS to return from system board initialization.
	5.5	The embedded controller rebooted the system after a possible lockup condition had been detected through the use of a System Health Timer, Automated System Recovery Timer, or other mechanism.

* Indicates hardware triggered event; all other events are controlled by the BIOS.

Technical Specifications - Miscellaneous Features

TEMPERATURE, HUMIDITY, ALTITUDE

Temperature	**Operating**	50° to 104° F (10 to 40° C)
	Non-operating	-22° to 149° F (-30°to 65° C)
Humidity	**Operating**	20%-85% relative humidity at max inlet temperature
	Non Operating	20%-85% relative humidity at max inlet temperature
Shock	**Operating**	40g, six surfaces
	Non Operating	30g, six surfaces
Vibration	**Operating**	2-g peak acceleration
	Non Operating	3-g peak acceleration
Altitude (unpressurized)	**Operating**	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 30,000 ft (9,144 m)

ENVIRONMENTAL & INDUSTRY

Environmental Data

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 configurations available
- EPEAT® Silver registered configurations available in the United States. See http://www.epeat.net for registration status in your country.

Sustainable Impact Specifications

- 54% post-consumer recycled plastic[4]
- Low halogen[1]
- Ocean-Bound Plastic in speaker enclosure[2]
- 25% ITE-derived closed loop plastic[6]

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Engage One Pro model is based on a typically configured system featuring an SSD, a high efficiency power supply, and a Microsoft Windows® operating system.

HP Engage One Pro AiO System Model 15.6"?

Energy Consumption (in accordance with US ENERGY STAR® test method)	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 60Hz**
Normal Operation (Short idle)	12.58W	13.07W	12.65 W
Normal Operation (Long idle)	10.71 W	10.96W	10.79 W
Sleep	3.28 W	3.31W	3.26 W
Off	1.15W	1.18 W	1.15 W
Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 60Hz**
Normal Operation (Short idle)	42.89 BTU/hr	44.59 BTU/hr	43.02 BTU/hr
Normal Operation (Long idle)	36.54 BTU/hr	37.39 BTU/hr	36.74 BTU/hr
Sleep	11.15 BTU/hr	11.29 BTU/hr	11.12 BTU/hr
Off	3.92 BTU/hr	3.99 BTU/hr	3.92 BTU/hr

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

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)

Typically Configured - Idle

Fixed Disk - Random writes

	Idle	Operating		Idle	Operating	
	ECMA-74 C.15.3.2 Idle mode	ECMA-74 C.9.3.2 Drive Random Seek	ECMA-74 C.15.3.3 g Active Mode	ECMA-74 C.15.3.2 Idle Mode	ECMA-74 C.9.3.2 Drive Random Seek	ECMA-74 C.15.3.3 g Active Mode
Landscape	2.7	2.8	3.6	17.8	18.8	26.5
Portrait	2.7	2.7	3.5	17.6	18.5	24.3

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

HP Engage One Pro AiO System Model 19.5"?

Technical Specifications - Environmental

Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	12.58W	13.07W	12.65 W
Normal Operation (Long idle)	10.71 W	10.96W	10.79 W
Sleep	3.28 W	3.31W	3.26W
Off	1.15W	1.18 W	1.15 W
Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 60Hz**
Normal Operation (Short idle)	42.89 BTU/hr	44.59 BTU/hr	43.02 BTU/hr
Normal Operation (Long idle)	36.54 BTU/hr	37.39 BTU/hr	36.74 BTU/hr
Sleep	11.15 BTU/hr	11.29 BTU/hr	11.12 BTU/hr
Off	3.92 BTU/hr	3.99 BTU/hr	3.92 BTU/hr

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

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)

Typically Configured - Idle

Fixed Disk - Random writes

	Idle	Operating		Idle	Operating	
	ECMA-74 C.15.3.2 Idle mode	ECMA-74 C.9.3.2 Drive Random Seek	ECMA-74 C.15.3.3 g Active Mode	ECMA-74 C.15.3.2 Idle Mode	ECMA-74 C.9.3.2 Drive Random Seek	ECMA-74 C.15.3.3 g Active Mode
Landscape	2.7	3.2	3.5	18.7	19.5	25.6
Portrait	2.9	3.3	3.6	19.1	21.1	26.1

HP Engage One Pro AiO System Model 23.8"?

Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 60Hz
Normal Operation (Short idle)	12.58W	13.07W	12.65 W
Normal Operation (Long idle)	10.71 W	10.96W	10.79 W
Sleep	3.28 W	3.31W	3.26W
Off	1.15W	1.18 W	1.15 W
Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 60Hz**
Normal Operation (Short idle)	42.89 BTU/hr	44.59 BTU/hr	43.02 BTU/hr
Normal Operation (Long idle)	36.54 BTU/hr	37.39 BTU/hr	36.74 BTU/hr
Sleep	11.15 BTU/hr	11.29 BTU/hr	11.12 BTU/hr
Off	3.92 BTU/hr	3.99 BTU/hr	3.92 BTU/hr

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

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)

Typically Configured - Idle

Fixed Disk - Random writes

	Idle	Operating		Idle	Operating	
	ECMA-74 C.15.3.2 Idle mode	ECMA-74 C.9.3.2 Drive Random Seek	ECMA-74 C.15.3.3 g Active Mode	ECMA-74 C.15.3.2 Idle Mode	ECMA-74 C.9.3.2 Drive Random Seek	ECMA-74 C.15.3.3 g Active Mode
Landscape	3.0	3.0	3.5	18.6	19.5	25.7
Portrait	3.1	3.1	3.5	19.3	21.2	27.6

Technical Specifications - Environmental

Longevity and Upgrading

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

- 2 memory slots
- M.2 2230 slot for WLAN
- (1) M.2 2280 slot for SSD

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 the1ppm by weight
Cadmium greater than 20ppm by weight
Battery size: CR2032 (coin cell)
Battery type: Lithium

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive - 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680.1 (EPEAT) standard at the <Silver> level, see www.epeat.net
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
- This product contains 45.16% post-consumer recycled plastic (by wt.)
- This product is 96% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Corrugated	TBD
Internal:	PLASTIC/Polyethylene Expanded - EPE	TBD
	PLASTIC/Polyethylene low density - LDPE	TBD

The EPE foam packaging material is made from 100% recycled content.

The corrugated paper packaging materials contains at least 35% recycled content.

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
- Nickel - finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)

- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) - except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- ~~Tributyl~~ Tin ~~(TBT), Triphenyl Tin~~ (TPT), ~~Tributyl Tin Oxide~~ (TBTO)

Notes: * EPE foam packaging material is considered "recycled"? pre-Consumer. The scrap or waste EPE material from the manufacturing process of these EPE foam pieces are re-introduced into the manufacturing process.

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 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 H 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 HP Inc. web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

HP Inc. Corporate Environmental Information

For more information about HP's commitment to the environment
Global Citizenship Report
http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html
Eco-label certifications
http://www8.hp.com/us/en/hp-information/environment/ecolabels.html
ISO 14001 certificates:
PC Product Design ISO 14001 certificate
and
HP Operations ISO 14001 certificate

Footnotes

[1]External power supplies, WWAN modules, power cords, cables and peripherals excluded.

Service parts obtained after purchase may not be Low Halogen.

[2]Percentage of ocean-bound plastic contained in each component varies by product

[4]Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.

[6]ITE Derived Closed Loop Plastic percentage is based on the definition set in the IEEE 1680.1-2018 standard.

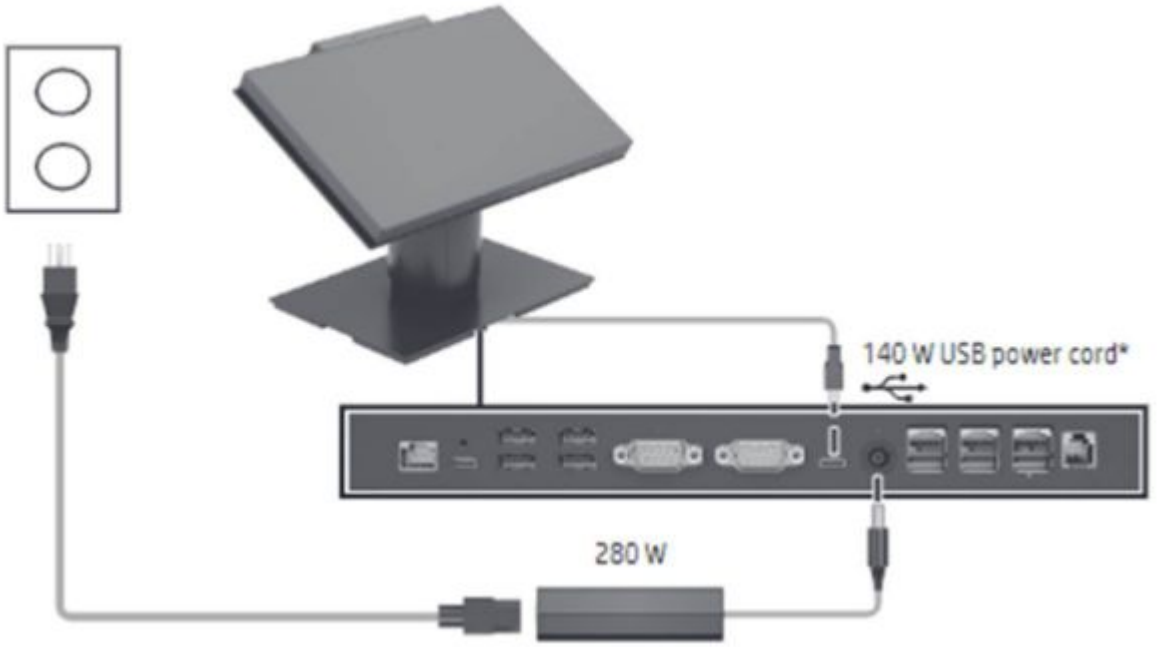
HP Engage One After Market Option Matrix

HP Engage One Pro Advance Hubs & cable AMOs

AMO Part No.	Description
9YH40AA#xxx	HP Engage One Pro Adv Fan-less Hub *
156N6AA#xxx	HP Engage One Pro Adv Fan-less Hub White *

*Included 280W PSU/1.8M cord, need one of the separate cable below

2Z8M9AA	HP Engage One Pro 2m USB-C® cable black
2Z8N0AA	HP Engage One Pro 0.5m USB-C® cable black
2Z8N2AA	HP Engage One Pro 2m USB-C® cable gray
2Z8N1AA	HP Engage One Pro 0.5m USB-C® cable gray



Additional Cable available to connect the Column hub or the VESA hub to the Advance hub below

201A2AA	HP Engage One Pro Column/VESA hub to Advance hub 2m black
201A1AA	HP Engage One Pro Column/VESA hub to Advance hub 0.5m black
316D6AA	HP Engage One Pro Column/VESA hub to Ad hub 2m gray
316D7AA	HP Engage One Pro Column/VESA hub to Ad hub 0.5m gray

HP Engage One Pro VESA Hubs & cable AMOs

HP Engage One After Market Option Matrix

	Description
9YH42AA#xxx	Engage One Pro VESA Hub**

**Included 230W PSU/1.8M cord & cable

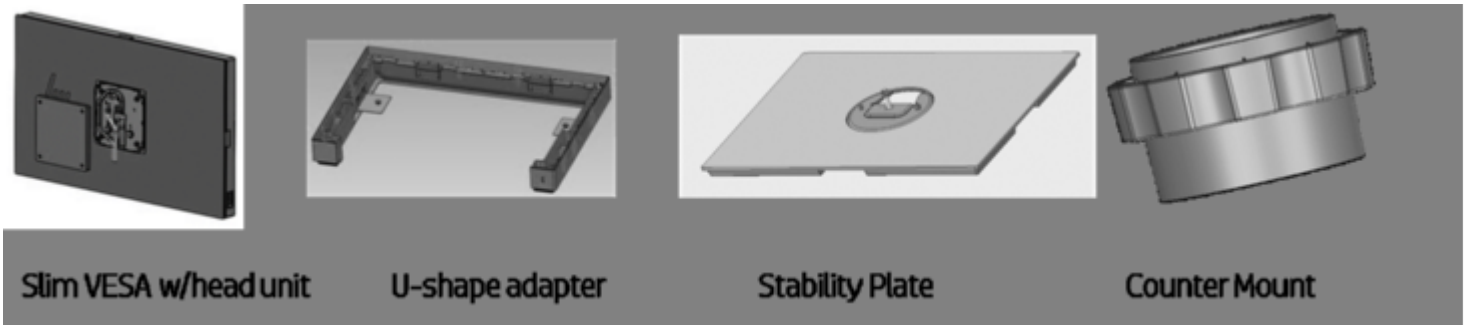
Additional Cable available to connect the Column hub or the VESA hub to the Advance hub below

201A2AA	HP Engage One Pro Column/VESA hub to Advance hub 2m black
201A1AA	HP Engage One Pro Column/VESA hub to Advance hub 0.5m black
316D6AA	HP Engage One Pro Column/VESA hub to Ad hub 2m gray
316D7AA	HP Engage One Pro Column/VESA hub to Ad hub 0.5m gray

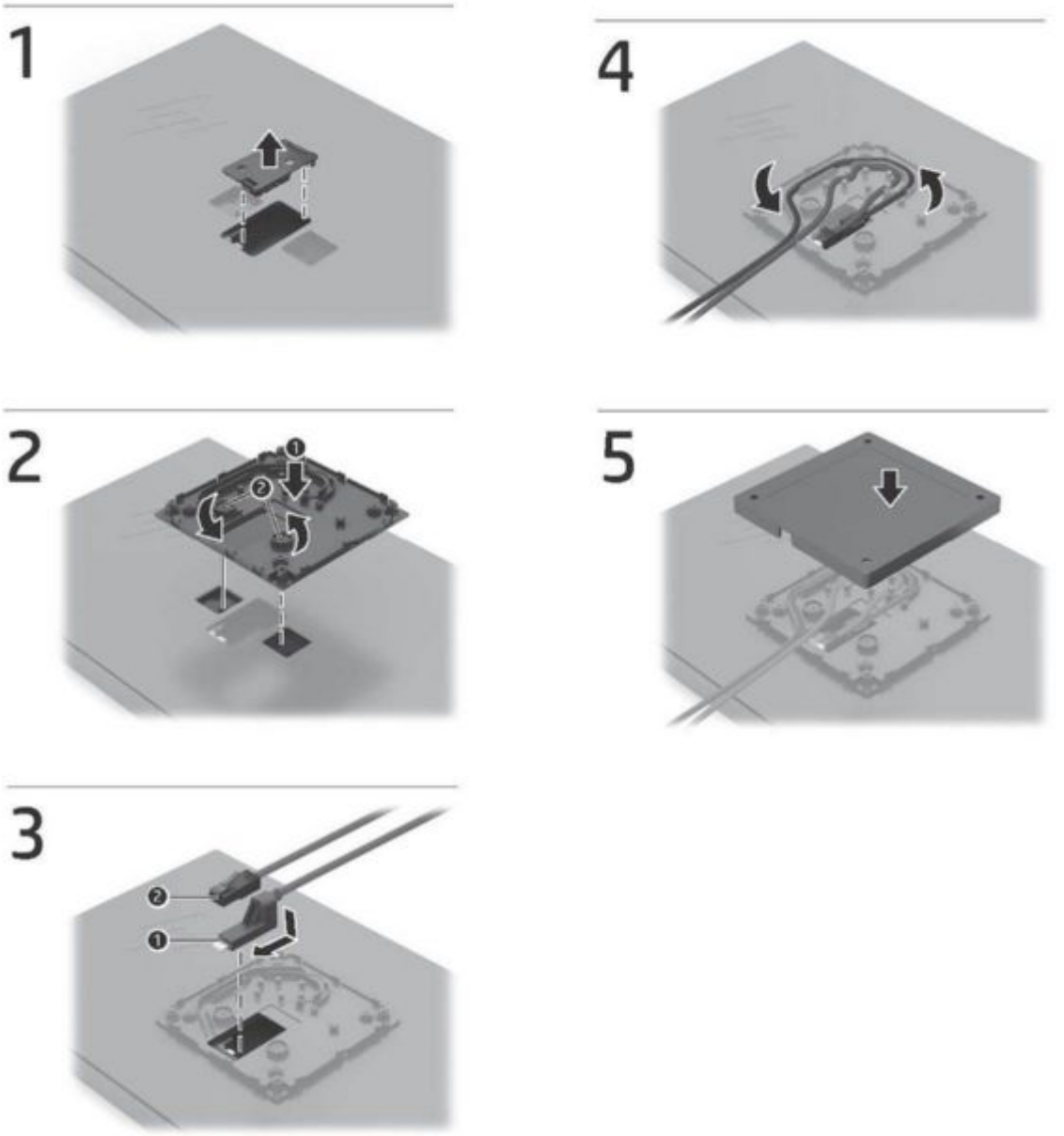
HP Engage One Pro Mounting Option AMOs

HP Engage One After Market Option Matrix

AMO Part No.	Description
1A4E7AA	Engage One Pro Slim VESA
326R7AA	Engage One Pro Slim VESA White
9YH43AA	Engage One Pro U-shaped Adapter
156N7AA	Engage One Pro U-shaped Adapter White
1A4E5AA	HP Engage One Pro AiO Stability Plate
1A4E6AA	HP Engage One Pro AiO Stability Plate White
2W7M4AA	Engage One Pro Flexible Pole Single Mount
2W7M3AA	Engage One Pro Flexible Back-to-Back Bracket
9YH51AA	Engage One Pro Undercounter Mount



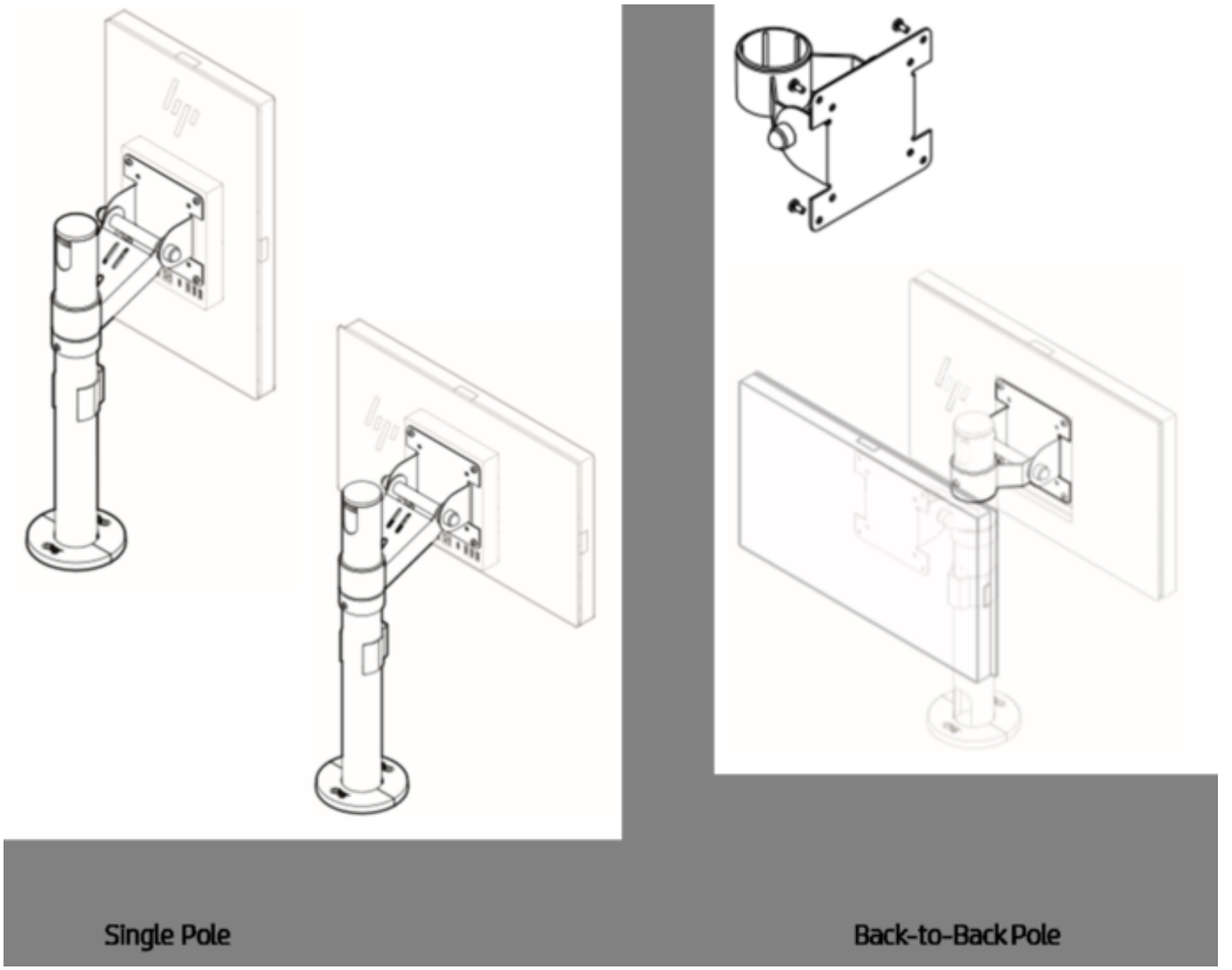
HP Engage One After Market Option Matrix



HP Engage One Pro Mounting Option AMOs

HP Engage One After Market Option Matrix

AMO Part No.	Description
2W7M4AA	Engage One Pro Flexible Pole Single Mount
2W7M3AA	Engage One Pro Flexible Back-to-Back Bracket



HP Engage One Pro Customer Facing Displays (CFDs)

HP Engage One After Market Option Matrix

AMO#	Description
9YH48AA	HP Engage One Pro 6.6 inch Customer Facing Display
156N8AA	HP Engage One Pro 6.6 inch White Customer Facing Display
10P79AA	HP Engage 6.6 inch Pole Display
156N9AA	HP Engage 6.6 inch W Pole Display
1XD80AA#ABA, #ABT, #AC3	HP Engage One 10 Display
1XD81AA#ABA, #ABT, #AC3	HP Engage One 10t Display
3FH66AA#ABA, #ABT, #AC3	HP Engage One 10w Display
3FH67AA#ABA, #ABT, #AC3	HP Engage One 10tw Display
20C49AA#AB1, #AB2, #ABT, #AC3	HP Engage One 14 FHD Monitor
20C50AA#AB1, #AB2, #ABT, #AC3	HP Engage One 14 FHD No Stand Monitor
20C51AA#AB1, #AB2, #ABT, #AC3	HP Engage One 14t FHD Monitor
20C52AA#AB1, #AB2, #ABT, #AC3	HP Engage One 14t FHD No Stand Monitor
2D9V5AA#ABT, #AC3	HP Engage One 16t FHD Monitor
2D9X0AA#ABT, #AC3	HP Engage One 16t FHD No Stand Monitor
2D9Y5AA#ABT, #AC3	HP Engage One 16ts FHD Monitor
2D9Z4AA#ABT, #AC3	HP Engage One 16ts FHD No Stand Monitor

HP Engage One Pro Customer Facing Displays (CFDs) Stands

AMO#	Description
10P60AA	HP Engage 6 Clean Mount Arm Bracket
10P61AA	HP Engage 6 Stability Mount Arm Bracket
10P77AA	HP Engage 10 Clean Mount Stand
10P78AA	HP Engage 10 Stability Mount Stand
10P58AA	HP Engage 14 Clean Mount Stand
10P62AA	HP Engage 14 Stability Mount Stand

HP Integrated Peripherals AMOs

AMO#	Description
9YH50AA	HP Engage One Pro Fingerprint Reader
2U551AA	HP Engage One Pro Magnetic Stripe Reader
2V9G4AA	HP Engage One Pro White Magnetic Stripe Reader
9YH49AA#AB4, #ABA, #ABB	HP Engage One Pro Bar Code Scanner

HP Engage 6.6 inch Customer Facing Display

Model

HP Engage 6.6 inch Customer Facing Display

HP Engage 6.6 inch Customer Facing Display White

Introduction

Give customers a clear view of their transactions and sharing engaging, colorful, dynamic content at the point of sale with LCD touch

Key Benefits

- 6.6 inch diagonal compact LCD display that integrates easily into your retail solution.
- Position as need with adjustable height and swiveling of the display head.
- Place the durable, dust resistant display in a range of high traffic areas.
- A USB connector powers the display and eliminated the need for additional cabling.
- The edge to edge, bezel free desing is easy to clean, helps protection from dust, and create a sleek, moder appearance.

Compatibility

The HP Engage 6.6 inch Customer Facing Display is compatible with HP Retail Point of Sale Systems.

Note: Not all Point of Sale system models are available in all regions.

Service and Support

Three (3) year limited warranty with advance exchange when purchased from HP.

Overview - After Market Options

General

Display Method	Backlit LED
Brightness	400 Nits
Resolution	1440 x 720
Pixel Pitch	0.105 x 0.105 mm
Active Area	75.6 (H) x 151.2 (V) mm
Contrast Ratio	1000:1 (max)
Response Rate	25 ms (rise+fall time)
Viewing Angle	Left: 85° Right: 85° Top: 85° Bottom: 85°
Color Gamut	70% (CIE 1931 Standard NTSC)

Mechanical

Display Dimensions (WxHxD)	171.4 x 76.2 x 56.35 mm
Display Weight	0.25 kg
Hinge Adjustability	Rotation Range 0°~90° (normal using) Folded to 90° for shipping
Color	HP Black / White

Connection

Interface	USB

Power

Operating Voltage	5V
Full Load Current	6.5W (DC +5V, 1300mA)
Idle Current 0.64W	TBD

Temperature Range

Operating	0°C to 35°C [32 to 95°F] at 10% to 90% humidity (non-condensing)
Non-operating	-30°C to 65°C [-22 to 149°F] at 0% to 95% humidity (38.7°C maximum wet bulb temperature)
Webcam	30fps USB 2.0 webcam, 5MP (2560x1920) resolution **Note:** The Integrated webcam is a windows Hello Camera and IR is supported on 5MP Camera

Operating System

Compatible with:	**Windows 10 Professional 64-bit)** **Windows 10 IoT Enterprise 2019 LTSC (64-bit)** **Windows Server 2019 Standard** **FreeDos 3.0** **Ubuntu Desktop 18.04 LTS CentOS 7** **Android 11**

Kit Contents

HP Engage 6.6 inch Customer Facing Display, documentation, warranty card.

Overview - After Market Options

HP Engage One Pro Bar Code Scanner*

*Integrated scanner supports OCR Passport Reading

Model

HP Engage One Pro Bar Code Scanner (Americas)	9YH
HP Engage One Pro Bar Code Scanner (Europe)	9YH
HP Engage One Pro Bar Code Scanner (Asia)	9YH

Compatibility

The HP Engage One Pro Barcode Scanner is compatible with the HP Engage One Pro All-in-One system.

Service and Support

Three (3) year limited warranty with advance exchange when purchased from HP.

General

Image Sensor	1200 x 800 CMOS
Illumination Aimer	White LED Red LED 625± 10nm
Depth of Field	**Typical Performance *** **Narrow Width** — **Depth of Field** Code 39 — 5 mils:90 to 215mm Data Matrix — 10 mils: 65 to 180mm EAN-13 — 13 mils: 70 to 190mm PDF-417 — 6.7 mils: 70 to 190mm QR Code — 15 mils: 40 to 245mm
Symbol Contrast	25% minimum reflectance
Roll (tilt)	360°
Pitch	±60°
Skew	±60°
Field of View	Horizontal 42°, Vertical 28°
1D decode symbologies	Autodiscriminates all standard 1D codes including GS1 DataBar™ linear codes.
2D decode symbologies	Aztec Code Chinese Sensible Code Code One Data Matrix GM Code MaxiCode MicroPDF417 Micro QR Code PDF417 QR Code

Overview - After Market Options

Postal decode symbologies	Australian Post KIX Post Royal Mail USPS Planet USPS Postnet
OCR symbologies	Passport OCR

Mechanical

Dimensions (W xD x H)	30.4 x 45.8 x 9.8 mm
Weight	15g
Color	Black

Interface/Connection

Interface	USB

Temperature

Operating	-20°C to 50°C (-4°F to 140°F)
Storage	-40°C to 70°F (-40°F to 158°F)
Humidity (non-condensing)	5% to 95%

Power

Operating Voltage	5VDC±5%
Current at 5VDC	Operating: 500~700mA (RMS typical), 800mA (RMS max.) Idle: <70mA Sleep: <1mA

Rated Power Consumption 3W

Drivers

Windows USB HID-KB and OPOS & JPOS (via USB-COM mode drivers)

Ambient Light 0- 100,000 lux

Water Penetration Protection IP54

Operating System

Compatible with:

Windows
Windows 10 Pro 64bit
Windows 10 IoT Enterprise 2016 LTSB 64bit (RS1)
Windows 10 IoT Enterprise 2019 LTSC 64bit (RS5)

Linux
Red Hat/CentOS 5.6.8and above (64 bit)
Suse Linux Enterprise 11/12 SP3 and above (64 bit)
Ubuntu 12.04/14.04 LTS and above (64 bit)

Android
Android 8-0 and above

Agency Certifications

FCC Part15, Class B, CE EMC Class B, IEC62471, RoHS, IEC 62368-1

Kit Contents

HP Engage One Pro Barcode Scanner, documentation, warranty card.

HP Engage One Magnetic Stripe Reader

Model

HP Engage One Pro Magnetic Stripe Reader

HP Engage One Pro White Magnetic Stripe Reader

Compatibility

The HP Engage One Pro Magnetic Stripe Reader is compatible with the HP Engage One Pro All-in-One System.

NOTE: Not all Point of Sale system models are available in all regions.

Service and Support

Three (3) year limited warranty with advance exchange when purchased from HP.

General		
	Magnetic stripe formats	ISO 7811, AAMVA
	Card Thickness	0.38 to 1.14 mm (0.015 to 0.045 in)
	Indicators	Bi-colored LED, beeper (requires system audio driver)
	Card Speed	3 to 75 ips (7.6 to 190.5 cm/s)
Mechanical		
	Weight	5.67 g
	Slot width	1.14 mm (0.045 in)
	Color	HP Black HP White
Connection		
	Interface	Eight-pin male Molex 51021-0800
	Cable Length	125 ± 6.4 mm
Power		
	Power Supply	3.0 to 3.6 VDC
	I/O Voltage Range	2.7 to 3.6 VDC
	Active Power Supply Current	5
	mA Standby Power Supply Current	0.03 mA
Temperature Range		
	Operating	0°C to 55°C
	Relative Humidity	-10% to 90% non-condensing

Overview - After Market Options

Reliability

Operating Life 1,000,000 card swipes minimum

Agency Certifications

FCC, CE, USB-IF

Operating Systems

Compatible with:
Windows 10 Professional (64-bit)
Windows 10 IoT Enterprise 2019 LTSC (64-bit)
Windows 10 IoT Enterprise 202x LTSC (64-bit)
Windows Server 2016 Standard
Windows Server 2019 Standard
FreeDos 3.0
Ubuntu Desktop 18.04 LTS
CentOS 7
Android 11

Kit Contents

HP Engage One Pro Magnetic Stripe Reader, documentation, warranty card.

HP Engage One Pro Fingerprint Reader

Model

HP Engage One Pro Fingerprint Reader

Compatibility

The HP Engage One Pro Fingerprint Reader is compatible with the HP Engage One Pro All-in-One System.

Service and Support

Three (3) year limited warranty with advance exchange when purchased from HP.

Overview - After Market Options

General

Sensor Type	Capacitive
Array Size	208 x 288 pixels
Image Resolution	508 DPI
Gray Scale	8-bit (256 levels)

Mechanical

Image Area	10.4 x 14.4 mm
Image/Coating	Steel Coat
Color	HP Black

Digital ID Reliability

NVM Storage	100 templates
Data Retention	20 years
Erase/Write	100,000 cycles

Interface/Connection

Interface	USB 2.0
Interface Connector	5 pin, 0.8mm pitch wire-type (gold-plated)

Temperature

Operating	-30° to +85°C
Storage	-40° to +85°C
Humidity (non-condensing)	5% to 85%
ESD Tolerance	IEC 61000-4-2 Level 4

Power

Consumption	Supply voltage: single supply voltage, 3.0V to 3.6V Imaging mode: 105 mA @ 3.3V Sleep mode: 1350 uA @ 3.3V
Wake-up Time	< 15 ms (Sleep to imaging)

Drivers

Windows USB HID-KB and OPOS & JPOS (via USB-COM mode drivers)

Operating Systems

Compatible with:	Windows 10 Professional (64-bit) Windows 10 IoT Enterprise 2019 LTSC (64-bit) Windows 10 IoT Enterprise 202x LTSC (64-bit) Windows Server 2016 Standard Windows Server 2019 Standard FreeDos 3.0 Ubuntu Desktop 18.04 LTS CentOS 7 Android 11

Agency Certifications

FCC (47 CFR) Part 15C, Section 15.247 & 15.249

Kit Contents

HP Engage One Pro Fingerprint Reader, documentation, warranty card.

HP Engage One Serial USB Thermal Printer

Model

HP Engage One Serial USB Thermal Printer (Black)

HP Engage One Serial USB Thermal Printer (White)

Introduction

Redefine your perception of retail printing with the HP Engage One Serial USB Thermal Printer, an eye-catching, compact, cubist print dazzle alongside your HP Engage One AiO System at the point of sale.

Key Features and Benefits

- Print quickly with 114 mm per second print speed and 8 MB of integrated memory. Add your logo, special of or coupons to receipts with 203 DPI and fonts that include Unicode, Arabic, and Asian.
- Connect to your retail system with an optional USB, PUSB or Serial cable kit (sold separately), and drive up two optional cash drawers through connections on the printer.
- Place the ultra-compact printer where you need it with the assurance that the internal steel frame can withs the everyday wear and tear of retail environments.

Compatibility

The HP Engage One Serial USB Thermal Printer is compatible with the HP Engage One AiO Systems.

NOTE: Not all Point of Sale system models are available in all regions. Not all HP Cash Drawer models are available in all regions. This printer does not comply with fiscalization requirements that may be required in certain countries.

Service and Support

Three (3) year limited warranty with advance exchange when purchased from HP.

General

Supported Character Sets Resident Code Pages:	437 (US) 720(Arabic) 737(Greek) 775(Lithuanian) 850(Multilingual) 852 (Slavic)

		857(Turkish) 858 (with Eurosymbol) 860(Portuguese) 862(Hebrew) 863(French Canadian) 864(Arabic) 865(Nordic) 866(Cyrillic) 874 (Thai) 932(Kanji) 936(Simplified Chinese) 949(Korean - Hangul) 950(Traditional Chinese) KZ_1048 (Kazakh) 1250(Latin) 1251(Cyrillic) 1252(Windows Latin I) 1254(Turkish) 1255(Hebrew) 1256(Arabic) 1257(Baltic) Katakana 28591 (ISO8859-1, Latin 1) 28592 (ISO8859-2, Latin 2) 28594 (ISO8859-4, Latin 4) 28596(ISO8859-6,Latin/Arabic) 28599 (ISO8859-5, Latin 5/Turkish) 28605 (ISO8859-15, Latin 9) Unicode UTF-8 encoding for listed code pages
	Bar Codes	**1D:** UPC-A, UPC-E, EAN8, EAN13, Code 39, Code 93, Interleaved 2 of 5 Codabar, Code 128, Code 128,EAN 128, GS1 Databar **2D:** Datamatrix, QR code, PDF 417
	Print Method	Direct Thermal
	Printing Speed	114 mm/sec (33.75 LPS)
	Printer Sensor	**Low:** No
		Out: Yes
	Resolution	203 DPI
	Flash Memory	8 MB
	RAM	8 MB
	Knife	Full and Partial cuts supported
	Receipt-Columns	44/56
	Paper Type	Direct Thermal Monochrome POS Grade(s)
	Paper Roll Size (W x D)	3.1 in. X 3.26 in. (80 mm X 83 mm)
	Paper Thickness Range	2.3 - 3.2 mil
	Cash Drawers	1 connector can drive 2 cash drawers with separately purchased splitter cable (default configuration is connection to 1 cash drawer)
Mechanical		
	Dimensions (WxDxH)	4.4 in. X 5.2 in. X 4.06 in. (111.8 mm X 131.6 mm X 103 mm)
	Weight	1.75lbs. (.793 kg) (printer only)
	Color	Ebony Black or Ceramic White

Overview - After Market Options

Interface/Connection

Interface	RS232 (9-Pin Female to 9-Pin Female NULL modem cable) or standard USB 2.0 cable. 24V Cash Drawers support with RJ 12 interface

Power

External Power Supply	48 w
Operating Voltage	24 V
Full Load Current	2 A w/active power management system
Idle Current	25mA
Idle Power	0.6 W

Temperature Range

Operating	41°F to 95°F (5°C to 35°C) at 5% to 90% humidity 95°F to 122°F (35°C to 50°C) at 5% to 40% humidity
Non-operating	Transit range: -40°F to 140°F (-40°C to 60°C) 5% to 95% humidity Storage range: 14°F to 122°F (35°C to 50°C) at 5% to 90% humidity

Drivers

Windows, OPOS, JPOS

Operating System

Compatible with:

Windows

- Windows 10 IoT Enterprise for Retail (64-bit)
- Windows 10 Pro (64-bit)

Linux

- Red Hat/CentOS 6 and 7 (32-bit and 64 bit)
- Suse Linux® Enterprise POS 11 and 12 (32-bit and 64-bit)
- Ubuntu 14.04 LTS (32-bit and 64-bit)

Android 11

Reliability

MCBF Print Mechanism: 29-million lines
MCBF Knife Cuts: 1-million
Print Head Life: 100 km

Agency Certifications

Flammability:	UL 94V-0
Safety:	UL 60950-1 2nd edition 2014-10-14; UL 62382-1 CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 EN 60950-1:2006 + A1:2010+ A2:2013 IEC/EN 62382-1 2ND Edition CB Report: IEC 60950-1:2005 + A1:2009 +A2:2013 GB4943.1-2011-China IS 13252-1 (2010)/A1:2013/A2:2015
Radiated Emissions:	FCC 47CFR, Part 15, Class B ICES-003: 2012, Issue 6, Class B EN 55032:2015 Class B CISPR22 Class B VCCI: V-3/2015.04 Class B AS/NZS 3548
Immunity:	EN55024: 2010 EN61000-4-2 Level 4 (8kV direct, 15kV air discharge) EN61000-4-3: Level 3 (10V/m) EN61000-4-6 Level 3 (10V rms) EN61000-4-4: Level 3 (2kV mains, 1kV data lines) RoHS, WEEE

Overview - After Market Options

Kit contents

HP Engage One Serial USB Thermal Printer, starter paper roll
NOTE: This printer does not comply with fiscalization requirements that may be required in certain countries.
Cable kits sold separately:
1RM02AA - HP Engage One USB + Pwr Adapter
1RM03AA - HP Engage One Serial + Pwr Adapter
BM477AA - HP PUSB Y Cable
1RM05AA - HP Engage One PUSB Pw only
3WV53AA - HP Engage One W Printer USB + Pwr Adpter
3WV54AA - HP Engage One W Printer Serial + Pwr Adptr
3WV55AA - HP Engage One W Printer PUSB Y Cable
5FW23AA - HP Engage One W Printer Serial + PUSB Pw only

NOTE: For cable routing configuration information refer to HP Engage One AiO System quick specs.

Service and Support

Ninety-day (90-90-90), one-year (1-1-1), and three-year (3-3-3) limited warranty delivers (ninety days/one year/three years) of on-s business day[2] service for parts and labor and complimentary limited technical support.[3] Three-year onsite and labor are not available countries. Service offers terms up to 5 years by choosing an optional HP Care Pack.[1] To choose the right level of service for your HP HP Care Pack Central: http://http://www.hp.com/go/cpc

NOTES:

1. Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in y
2. On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.
3. Technical support applies only to HP-configured Compaq and third-party HP-qualified hardware and software. 24 x 7 support r available in some countries.

Summary of Changes

Date of change:	Version History:		Description of change:
March 2, 2021	From v1 to v2	Changed	At A Glance and ENVIRONMENTAL & INDUSTRY sections
April 14, 2021	From v2 to v3	Changed	Environmental Data section
April 28, 2021	From v3 to v4	Changed	Networking and HP Engage One Pro Advance Hubs & cable AMOs sections
May 3, 2021	From v4 to v5	Changed	Ports section
May 28, 2021	From v5 to v6	Changed	HP Engage 6.6 inch Customer Facing Display section
May 31, 2021	From v6 to v7	Changed	HP Smart Support and footnote
June 9, 2021	From v7 to v8	Changed	WEIGHTS & DIMENSIONS section
June 23, 2021	From v8 to v9	Changed	OPERATOR DISPLAY section
June 28, 2021	From v9 to v10	Changed	HP Engage One Pro Mounting Option AMOs section
July 9, 2021	From v10 to v11	Changed	HP Engage One Pro Bar Code Scanner section
August 9, 2021	From v11 to v12	Changed	OPERATING SYSTEM section
August 11, 2021	From v12 to v13	Changed	HP Engage One Pro VESA Hubs & cable AMOs and HP Engage One Pro Mounting Option AMOs sections
August 25, 2021	From v13 to v14	Changed	Integrated Camara section

title