



**ADDENDUM #2**  
**DISPATCH CONSOLES AND FURNITURE-FEDERALLY FUNDED**  
**RFP #20/21-010**  
**PROPOSALS DUE NO LATER THAN: 4:00 PM ON MARCH 3, 2021**

This addendum is to notify all potential proposers of clarifications made to the RFP documents as stated below.

**COVID-19 Precautions** – Due to the City’s response to the COVID-19 virus and associated reduction in staff, in-person staff availability is limited. Proposers wishing to physically deliver their proposals on the deadline date shall note that the Purchasing Office will receive proposals in the lobby of City Hall beginning at 3:15PM on March 3rd. Proposals are due no later than 4:00PM. Proposals may also be delivered to the Purchasing Department physical dropbox/mailbox, also located in the lobby of City Hall.

1. RFI question responses:
  - a. Does the team prefer dual or single surface consoles?
    - i. Single work surface consoles are what is wanted. The monitors need to be on an independent lifting mechanism.
  - b. What are the specific sizes of the (4) computers/PCs? Brand and model #s would also work.
    - i. Below is a list of all the equipment on the console and attached is the spec sheets of the equipment:
      1. HP Z12 G4 Workstation (CPU) (1 Each + Potential Future CPU)
      2. Harris R9063 Symphony Dispatch Console (Radio CPU)
      3. Intrado (West Corporation) Model 911810-1 CPU (only diagram spec)
      4. 21.5” HP ProDisplay P221 LCD Monitor Full HD (6 Each)
      5. 27” HP EliteDisplay E271i (1 Each)
      6. Harris DDC-100 Digital Desktop Controller
      7. Plantronics CA12CD-S PTT Adapter
      8. HP M608 Printer (6 each)
  - c. What is the anticipated installation date?
    - i. Anticipated installation is to start around the beginning to mid-July. The dispatch remodel project is scheduled to be completed around the first of July.
  - d. Do you want any plexi or glass on top of the partition system for additional COVID safety measures?
    - i. Yes, low partitions around 30 inches with clear plexi or glass on top would be preferred for the following reasons: to maintain visual throughout the center; COVID separation concerns, and sound dampening between stations.

- e. Pg. 32, #9: Are dispatchers swapping out monitor cables? Why do the dispatchers need to access monitor cables?
  - i. The ports are for ease of adding ancillary equipment on the surface of the console.
  
- f. On your supplied floorplan, is the hatching the actual raised floor tiles grid?
  - i. The hatch boundary is the allowable space for you to layout your proposed console configuration.
  
- g. Will Sparks supply duplex or quad boxes either under the floor or on a whip to run up into the computer cabinets?
  - i. The PD Dispatch Remodel Project (separate project) will provide whips into each computer console cabinet from the circuits located in the UPS and normal power electrical panels to accommodate the power requirement needs in the proposed console workstation.

Dan Marran, C.P.M., CPPO  
Contracts and Risk Manager

February 25, 2021



Laptops & 2-in-1s

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HP Z2 Small Form Factor G4 Workstation Specifications

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# HP Z2 Small Form Factor G4 Workstation Specifications

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## Product image





## Operating system

Feature	Description
Preinstalled	<p>Windows 10 Pro for Workstations 64 (recommended by HP)</p> <p>Windows 10 Pro 64</p> <p>Windows 10 Pro 64 (National Academic License)</p> <p>Windows 10 Home 64</p> <p><b>NOTE:</b> Not all features are available in all editions or versions of Windows. Systems might require upgraded and/or separately purchased hardware, drivers, software, or BIOS update to take full advantage of Windows functionality. Windows 10 automatic updates are always enabled. ISP fees might apply and additional requirements might apply over time for updates.</p> <p>HP Linux Ready</p>
Supported	<p>Red Hat Enterprise Linux (RHEL) Workstation (12-month paper license available, not preinstalled)</p> <p><b>NOTE:</b> HP Workstations can be ordered with a variety of localization options that might vary by platform. Refer to the <a href="#">Linux Hardware Matrix</a> for additional Linux OS information.</p>

**NOTE:** In accordance with Microsoft support policy, this product does not support Windows 8 or Windows 7. HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation or later processors, or provide any Windows 8 or Windows 7 drivers.

## Processors

Specification	Description
Intel Xeon E-2286G processor	<p>Up to 4.9 GHz with Intel Turbo Boost Technology (4.0 GHz base frequency)</p> <p>12 MB cache and 6 cores</p> <p>Intel UHD Graphics P630</p> <p>DDR4 memory up to 2666 MT/s data rate</p> <p>80 W TDP</p> <p>Intel vPro Technology</p>

Specification	Description
Intel Xeon E-2278G processor	Up to 5.0 GHz with Intel Turbo Boost Technology (3.4 GHz base frequency) 16 MB cache and 8 cores Intel UHD Graphics P630 DDR4 memory up to 2666 MT/s data rate 80 W TDP Intel vPro Technology
Intel Xeon E-2276G processor	Up to 4.9 GHz with Intel Turbo Boost Technology (3.8 GHz base frequency) 12 MB cache and 6 cores Intel UHD Graphics P630 DDR4 memory up to 2666 MT/s data rate 80 W TDP Intel vPro Technology
Intel Xeon E-2274G processor	Up to 4.9 GHz with Intel Turbo Boost Technology (4.0 GHz base frequency) 8 MB cache and 4 cores Intel UHD Graphics P630 DDR4 memory up to 2666 MT/s data rate 80 W TDP Intel vPro Technology
Intel Xeon E-2244G processor	Up to 4.8 GHz with Intel Turbo Boost Technology (3.8 GHz base frequency) 8 MB cache and 4 cores Intel UHD Graphics P630 DDR4 memory up to 2666 MT/s data rate 80 W TDP Intel vPro Technology
Intel Xeon E-2236 processor	Up to 4.8 GHz with Intel Turbo Boost Technology (3.4 GHz base frequency) 12 MB cache and 6 cores DDR4 memory up to 2666 MT/s data rate 80 W TDP Intel vPro Technology
Intel Xeon E-2226G processor	Up to 4.7 GHz with Intel Turbo Boost Technology (3.4 GHz base frequency) 12 MB cache and 6 cores Intel UHD Graphics P630 DDR4 memory up to 2666 MT/s data rate 80 W TDP Intel vPro Technology
Intel Xeon E-2224G processor	Up to 4.6 GHz with Intel Turbo Boost Technology (3.4 GHz base frequency) 8 MB cache and 4 cores Intel UHD Graphics P630 DDR4 memory up to 2666 MT/s data rate 80 W TDP Intel vPro Technology



Specification	Description
Intel Xeon E-2176G processor	Up to 4.7 GHz with Intel Turbo Boost Technology (3.7 GHz base frequency) 12 MB cache and 6 cores Intel UHD Graphics P630 DDR4 memory up to 2666 MT/s data rate 80 W TDP Intel vPro Technology
Intel Xeon E-2174G processor	Up to 4.7 GHz with Intel Turbo Boost Technology (3.8 GHz base frequency) 8 MB cache and 4 cores Intel UHD Graphics P630 DDR4 memory up to 2666 MT/s data rate 71 W TDP Intel vPro Technology
Intel Xeon E-2144G processor	Up to 4.5 GHz with Intel Turbo Boost Technology (3.6 GHz base frequency) 8 MB cache and 4 cores Intel UHD Graphics P630 DDR4 memory up to 2666 MT/s data rate 71 W TDP Intel vPro Technology
Intel Xeon E-2136 processor	Up to 4.5 GHz with Intel Turbo Boost Technology (3.3 GHz base frequency) 12 MB cache and 6 cores DDR4 memory up to 2666 MT/s data rate 80 W TDP Intel vPro Technology
Intel Xeon E-2126G processor	Up to 4.5 GHz with Intel Turbo Boost Technology (3.3 GHz base frequency) 12 MB cache and 6 cores Intel UHD Graphics P630 DDR4 memory up to 2666 MT/s data rate 80 W TDP Intel vPro Technology
Intel Xeon E-2124G processor	Up to 4.3 GHz with Intel Turbo Boost Technology (3.4 GHz base frequency) 8 MB cache and 4 cores Intel UHD Graphics P630 DDR4 memory up to 2666 MT/s data rate 71 W TDP Intel vPro Technology
Intel Xeon E-2104G processor	3.2 GHz Base frequency 8 MB cache and 4 cores Intel UHD Graphics P630 DDR4 memory up to 2666 MT/s data rate 65 W TDP Intel vPro Technology



Specification	Description
Intel Core i9-9900K processor	Up to 5.0 GHz with Intel Turbo Boost Technology (3.6 GHz base frequency) 16 MB cache and 8 cores Intel UHD Graphics 630 DDR4 memory up to 2666 MT/s data rate 95 W TDP Intel vPro Technology
Intel Core i9-9900 processor	Up to 5.0 GHz with Intel Turbo Boost Technology (3.1 GHz base frequency) 16 MB cache and 8 cores Intel UHD Graphics 630 DDR4 memory up to 2666 MT/s data rate 95 W TDP Intel vPro Technology
Intel Core i7-9700K processor	Up to 4.9 GHz with Intel Turbo Boost Technology (3.6 GHz base frequency) 12 MB cache and 8 cores Intel UHD Graphics 630 DDR4 memory up to 2666 MT/s data rate 95 W TDP Intel vPro Technology
Intel Core i7-9700 processor	Up to 4.7 GHz with Intel Turbo Boost Technology (3.0 GHz base frequency) 12 MB cache and 8 cores Intel UHD Graphics 630 DDR4 memory up to 2666 MT/s data rate 95 W TDP Intel vPro Technology
Intel Core i5-9600 processor	Up to 4.6 GHz with Intel Turbo Boost Technology (3.1 GHz base frequency) 9 MB cache and 6 cores Intel UHD Graphics 630 DDR4 memory up to 2666 MT/s data rate 95 W TDP Intel vPro Technology
Intel Core i5-9500 processor	Up to 4.4 GHz with Intel Turbo Boost Technology (3.0 GHz base frequency) 9 MB cache and 6 cores Intel UHD Graphics 630 DDR4 memory up to 2666 MT/s data rate 95 W TDP Intel vPro Technology
Intel Core i3-9100 processor	Up to 4.2 GHz with Intel Turbo Boost Technology (3.6 GHz base frequency) 8 MB cache and 4 cores Intel UHD Graphics 630 DDR4 memory up to 2666 MT/s data rate 95 W TDP Intel vPro Technology



Need help?

Specification	Description
Intel Core i7-8700 processor	Up to 4.6 GHz with Intel Turbo Boost Technology (3.2 GHz base frequency) 12 MB cache and 6 cores Intel UHD Graphics 630 DDR4 memory up to 2666 MT/s data rate 65 W TDP Intel vPro Technology
Intel Core i7-8700K processor	Up to 4.7 GHz with Intel Turbo Boost Technology (3.7 GHz base frequency) 12 MB cache and 6 cores Intel UHD Graphics 630 DDR4 memory up to 2666 MT/s data rate 95 W TDP Intel vPro Technology
Intel Core i5-8600 processor	Up to 4.2 GHz with Intel Turbo Boost Technology (3.1 GHz base frequency) 9 MB cache and 6 cores Intel UHD Graphics 630 DDR4 memory up to 2666 MT/s data rate 65 W TDP Intel vPro Technology
Intel Core i5-8500 processor	Up to 4.0 GHz with Intel Turbo Boost Technology (3.0 GHz base frequency) 9 MB cache and 6 cores Intel UHD Graphics 630 DDR4 memory up to 2666 MT/s data rate 65 W TDP Intel vPro Technology
Intel Core i3-8100 processor	3.6 GHz Base frequency 6 MB cache and 4 cores Intel UHD Graphics 630 DDR4 memory up to 2400 MT/s data rate 65 W TDP
Intel Pentium Gold G5400 processor	3.7 GHz base frequency 4 MB cache and 2 cores Intel UHD Graphics 610 DDR4 memory up to 2400 MT/s data rate 54 W
Intel Core i5/i7/i9 and Xeon with vPro technology capable	Intel Virtualization Technology (Intel VT) Intel Active Management Technology (iAMT) <b>NOTE:</b> For Windows operating system only. Future virtual appliances applications dependent on third-party software and compatibility to be determined.
Chipset	Intel PCH C246

**NOTE:** Multicore is designed to improve performance of certain software products. Not all customers or software applications necessarily benefit from use of this technology. Performance and clock frequency vary depending on application workload and hardware and software configurations. Intel numbering is not a measurement of higher performance. Intel Turbo Boost is based on maximum GHz for a single core.

## Graphics

Feature	Description
Integrated	Intel UHD Graphics P630 Intel UHD Graphics 630 Intel UHD Graphics 610  <b>NOTE:</b> Single graphic card supported.
Entry 3D	NVIDIA Quadro P400 2 GB Graphics NVIDIA Quadro P620 2 GB Graphics  <b>NOTE:</b> Two graphic cards supported.  Radeon Pro WX3100 4 GB Graphics (single graphic card supported)
Mid-range 3D	Radeon Pro WX4100 4 GB 1st GFX Graphics NVIDIA Quadro P1000 4 GB Graphics  <b>NOTE:</b> Single graphic card supported.
Graphics cable adapters	HP DisplayPort to DVI-D Adapter HP DisplayPort to DVI-D Adapter (2-Pack) HP DisplayPort to HDMI Adapter (4-Pack) HP DisplayPort to Dual Link DVI Adapter HP DisplayPort to VGA Adapter HP DisplayPort to HDMI Adapter HP mini-DisplayPort to DP Adapter HP USB-C to VGA Adapter HP USB-C to HDMI Adapter HP USB-C to DP Adapter

**NOTE:** Intermixing integrated Intel UHD graphics and discrete graphics cards to drive more than three displays can be enabled using the Computer (F10) Setup Utility. However, HP recommends using only discrete graphics when four or fewer displays are required to be supported.

## Memory

Specification	Description
Standard	(4) SODIMM slots supporting dual-channel memory 4 GB, 8 GB, and 16 GB SODIMMs



Specification	Description
Supported configurations	<p>8 GB (1 x 8 GB) DDR4-2666 ECC SODIMM            16 GB (2 x 8 GB) DDR4-2666 ECC SODIMM            32 GB (4 x 8 GB) DDR4-2666 ECC SODIMM            32 GB (2 x 16 GB) DDR4-2666 ECC SODIMM            64 GB (4 x 16 GB) DDR4-2666 ECC SODIMM</p> <p><b>NOTE:</b> Intel Core i5/i7/i9 processors only support non-ECC memory.</p> <p>4 GB (1 x 4 GB) DDR4-2666 non-ECC SODIMM            8 GB (2 x 4 GB) DDR4-2666 non-ECC SODIMM            8 GB (1 x 8 GB) DDR4-2666 non-ECC SODIMM            16 GB (2 x 8 GB) DDR4-2666 non-ECC SODIMM            32 GB (4 x 8 GB) DDR4-2666 non-ECC SODIMM            32 GB (2 x 16 GB) DDR4-2666 non-ECC SODIMM            64 GB (4 x 16 GB) DDR4-2666 non-ECC SODIMM</p> <p><b>NOTE:</b> ECC and non-ECC memory DIMMs cannot be mixed on the same system.</p>
Maximum	Up to 128 GB

**NOTE:** Maximum memory capacities assume Windows 64-bit operating systems or Linux. With Windows 32-bit operating systems, memory above 3 GB might not all be available due to system resource requirements. Two channels of DDR4 memory are supported. To realize full performance at least one DIMM must be inserted into each channel.

## Monitors/displays

Feature	Description
Supported	<p>HP Z Display Z27n G2 27-inch IPS LED Backlit Monitor            HP Z Display Z24n G2 24-inch IPS LED Backlit Monitor            HP Z Display Z24nf G2 23.8-inch IPS Backlit Monitor            HP Z Display Z23n G2 23-inch IPS LED Backlit Monitor            HP Z Display Z22n G2 21.5-inch IPS LED Backlit Monitor</p>

**NOTE:** Resolutions are dependent upon monitor capability and resolution and color depth settings.

## Storage and drives

Feature	Description
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Feature	Description
SATA 8.89 cm (3.5 in) Hard Drives	500 GB SATA 6 Gb/s 7200 rpm HDD 1 TB SATA 6 Gb/s 7200 rpm HDD 2 TB SATA 6 Gb/s 7200 rpm HDD 4 TB SATA 7200 rpm HDD 6 TB Enterprise SATA 7200 HDD 500 GB SATA 7200 rpm SED SFF HDD 1 TB SATA 7200 rpm HDD (Enterprise Class)
SATA SSD	HP 256 GB SATA Solid State Drive HP 512 GB SATA Solid State Drive HP 1 TB Solid State Drive HP 2 TB SATA Solid State Drive HP 256 GB SATA SED Opal 2 Solid State Drive HP 512 GB SATA SED Opal 2 Solid State Drive
PCIe Solid State Drives	HP Z Turbo Drive G2 256 GB TLC SSD HP Z Turbo Drive G2 512 GB TLC SSD <b>NOTE:</b> Installed in native M.2 storage slot.
Removable storage	HP 9.5 mm Slim SuperMulti DVD Writer HP 9.5 mm Slim DVD-ROM Optical Drive HP 9.5 mm Slim BDXL Blu-Ray Writer Drive
HDD Frame/carriers	HP DP25 Removable 2.5 in HDD Frame Carrier HP DP25 Removable 2.5 in HDD Spare Carrier
Media card reader	SD Media Card Reader (optional)

**NOTE:** For solid state drives or hard drives, GB = 1 billion bytes and TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB is reserved for system recovery software.

## Ports/slots

Specifications	Description
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Specifications	Description
Ports	<p><b>Front side</b></p> <ul style="list-style-type: none"> <li>(1) Power button</li> <li>(1) Headphone/microphone combo jack</li> <li>(1) USB 3.0 Type-A charging data port</li> <li>(1) USB 3.0 Type-A data port</li> <li>(1) USB 3.1 Gen 2 Type-C charging data port (optional)</li> <li>(1) SD Card Reader (optional)</li> <li>(1) External/internal shared 8.89 cm (3.5 in) bay</li> <li>(1) Slim ODD bay</li> </ul> <p><b>Back I/O ports</b></p> <ul style="list-style-type: none"> <li>(1) WLAN/BT antenna (optional)</li> <li>(1) Audio Line-In</li> <li>(1) Audio Line-Out</li> <li>(2) DisplayPort (DP) 1.2 outputs (from Intel UHD graphics; select models)</li> <li>(1) Flexible module port output (optional flexible module required)</li> <li>(2) USB 2.0 ports</li> <li>(4) USB 3.0 ports</li> <li>(1) Serial port (optional)</li> <li>(1) RJ-45 to integrated GBE</li> <li>PS/2 ports (optional)</li> <li>(1) DC Input</li> </ul> <p><b>Internal I/O ports</b></p> <ul style="list-style-type: none"> <li>(1) USB 3.0 port</li> <li>(2) USB 2.0 ports</li> </ul> <p><b>NOTE:</b> Available as 2 separate 2 x6 (3.0 x1, 2.0 x1) and 1 x6 (2.0 x1) header: supports one USB 3.0 Media Card Reader.</p>
Controller card	<p>HP Thunderbolt 3 PCIe 3-port I/O Card</p> <p><b>NOTE:</b> Utilizes Flex IO port internal connection for video output.</p>
Rear module options	<ul style="list-style-type: none"> <li>HP Flex IO module (VGA)</li> <li>HP Flex IO module (HDMI)</li> <li>HP Flex IO module (DP)</li> <li>HP Flex IO module (USB-C)</li> <li>HP Flex IO module (1 GbE LAN)</li> </ul>
Expansion slots	<ul style="list-style-type: none"> <li>(1) PCI Express Gen 3 x16 slot mechanical/ x16 electrical</li> <li>(1) PCI Express Gen 3 x4 slot mechanical/ x1 electrical</li> <li>(1) PCI Express Gen 3 x4 slot mechanical/ x1 electrical</li> <li>(1) PCI Express Gen 3 x16 slot mechanical/ x4 electrical</li> <li>(2) M.2 storage (PCIe Gen 3 x4)</li> <li>(1) M.2 WLAN (PCIe Gen 3 x1 and Intel CNVi)</li> </ul> <p><b>NOTE:</b> All slots are Low Profile. M.2 storage supports compatible devices at 80 mm. The PCIe Gen 3 x16 slot is meant for HP qualified cards, configured or after market. HP does not provide warranty support for third-party cards.</p>
Bays	<ul style="list-style-type: none"> <li>(1) External/internal shared 8.89 cm (3.5 in) bay</li> </ul>



## Audio/multimedia

Feature	Description
Integrated audio	Conexant CX20632 5.1 HD Audio

## Keyboard/mouse/other devices

Feature	Description
Keyboard	<ul style="list-style-type: none"> <li>HP USB Business Slim CCID SmartCard Keyboard</li> <li>HP USB Business Slim Keyboard</li> <li>HP PS/2 Business Slim Keyboard</li> <li>HP Wireless Business Slim Keyboard &amp; Mouse</li> </ul>
Mouse	<ul style="list-style-type: none"> <li>HP USB Optical Mouse</li> <li>HP PS/2 Mouse</li> <li>HP USB Hardened Mouse</li> <li>SpaceMouse Pro USB 3D Input Device</li> <li>3Dconnexion CAD Mouse</li> </ul>
Other devices	<ul style="list-style-type: none"> <li>HP Power Cord Kit</li> <li>HP Workstation Mouse Pad (Japan only)</li> <li>HP Serial Port Adapter</li> <li>HP Serial and PS/2 Adapter</li> <li>HP PCIe x1 Parallel Port Card</li> <li>HP (SFF) Tower Stand</li> <li>HP Z2 SFF G4 Bezel with Dust Filter option</li> <li>HP Z2 SFF G4 Dust filter only</li> </ul>

## Networking/communication

Feature	Description
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Feature	Description
Integrated	<p>Intel I219LM PCIe GbE Controller (Intel vPro with Intel AMT 12.0)            Intel X710-DA2 2-Port 10GbE SFP+ NIC            HP 10GbE SFP+ SR Transceiver            Intel X550-T2 2-Port 10GbE NIC            Intel 9560 802.11a/b/g/n/ac with Bluetooth 5 M.2</p> <p><b>NOTE:</b> If AMT is provisioned, then network teaming with the integrated LAN port is not possible.</p> <p>Intel I350-T2 2-Port 1GbE NIC            Intel I350-T2 4-Port 1GbE NIC</p> <p><b>NOTE:</b> "Gigabit" Ethernet indicates compliance with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/sec. For high speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.</p>

## Software/security

Specification	Description
BIOS	<p>HP BIOSphere Gen4 (features vary)            HP DriveLock/HP Automatic DriveLock            BIOS Update via Network            Master Boot Record Security            Power On Authentication            Secure Erase (methods outlined in the National Institute of Standards and Technology Special Publication 800-88)            Absolute Persistence Module<sup>1</sup>            Pre-boot Authentication</p>
Communication/connectivity	HP Wireless Wakeup
HP Value Add software	<p>HP Performance Advisor (preinstalled with Windows 10 only)            HP Remote Graphics Software (RGS)            HP PC Hardware Diagnostics UEFI (Windows OS only)            HP Hotkey Support - CMIT            HP Sure Click            HP Sure Start Gen4            HP Sure Run (requires Intel 8th generation processors)            HP Sure Recover (requires Intel 8th generation processors and wired network connection)</p>
Manageability	<p>HP System Software Manager (SSM)            HP Client Catalog            HP BIOS Configuration Utility (BCU)            HP Driver Packs (available for download)            HP Manageability Integration Kit Gen2 (available for download)</p>



Specification	Description
Client Security software	Microsoft Defender HP Client Security Manager Gen4 (requires Windows and Intel 8th generation processors) HP Security Manager (including Credential Manager, HP Password Manager, HP Spare Key) HP Device Access Manager HP Power On Authentication
Security	For Windows 10, Trusted Platform Module (TPM) 2.0 (Convertible to FIPS 140-2 Certified mode through firmware v7.80) Common Criteria EAL4+ Certified RAID configurations (optional and requires a second hard drive) Power-on password (via BIOS) Setup password (via BIOS) SATA port disablement (via BIOS) Serial, USB enable/disable (via BIOS) Integrated hood sensor

**NOTE:** <sup>1</sup>Absolute agent is activated when customers activate a purchased subscription. Subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. The Absolute Recovery Guarantee is a limited warranty. Certain conditions apply. Data Delete is an optional service provided by Absolute Software. If utilized, the Recovery Guarantee is null and void. In order to use the Data Delete service, customers must first sign a Pre-Authorization Agreement and either obtain a PIN or purchase one or more RSA SecurID tokens from Absolute Software. HP Cloud Recovery download tool (Cloud Recovery Client) is available under Software and Drivers section on the support page.

## Power

Specifications	Description
Power supply	400 W Internal power adapter Up to 90% efficiency Active PFC <b>310 W Power supply</b> 90% efficiency Wide-ranging Active PFC <b>250 W Power supply</b> 85% efficiency Wide-ranging Active PFC
Rated input current	4 A at 100 to 240 V
Operating voltage range	90 to 264 VAC
Operating line frequency range	47 to 63 Hz

## Physical specifications

Specifications	Description
Dimensions (H x W x D)	<p><b>Desktop orientation</b> 100.3 x 337.8 x 381.0 mm (3.95 x 13.3 x 15.0 in)</p> <p><b>SFF Tower orientation (excluding stand)</b> 337.8 x 100.3 x 381.0 mm (13.3 x 3.95 x 15.0 in)</p> <p><b>Packaging</b> 499.11 x 229.11 x 517.91 mm (19.65 x 9.02 x 20.39 in)</p>
Weight	<p><b>Typical weight</b> 6.3 kg (13.89 lb)</p> <p><b>NOTE:</b> Configured with one 8.89 cm (3.5 in) hard drive, one optical drive, two DIMMs, and one NVIDIA Quadro P620 graphics card.</p> <p><b>Shipping weight</b> 9.35 kg (20.61 lb)</p>

## Environmental certifications

Feature	Description
Certifications	<p>US ENERGY STAR (energy-saving features available on selected configurations – Windows only)</p> <p>EPEAT 2019 Gold registered in the United States</p> <p>IT ECO declaration</p> <p>US Federal Energy Management Program (FEMP)</p>

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## SYMPHONY™

### DISPATCH SOLUTION

The Symphony Dispatch Console combines the Symphony Dispatch Platform with advanced application software to support 24-hour mission-critical operations. A unique hardware design supports the reliability needed for emergency responses. Advanced digital audio technology delivers high capacity and secure end-to-end communications.

Symphony simplifies complex dispatch center operations through a logical user interface. Dispatchers arrange their most utilized functions in a customized interface to maximize productivity.

Multiple screen configurations can be created for specific scenarios ranging from crisis situations to shift changes.

Patented Baton™ technology allows agencies to integrate their CAD

application to display 95% of Symphony's functionality using only 10% of their screen. An embedded web browser for VIDA® apps enables dispatchers to access servers to disable lost or stolen radios or view real-time radio traffic across the system.

Symphony's innovative hardware design allows a simple, flexible mechanical configuration for mounting in a rack, under a desk, as a desktop unit or for mobile installations.



### A CLEAR VIEW OF THE FULL OPERATIONAL PICTURE

#### KEY BENEFITS

- > Capable of combining over 1,000 communication modules at a single dispatch solution
- > Industry-leading capacity for active call, patch and simselect calls and integrated telephony support
- > Integrated Instant Recall Recorder for up to 24 hours of call history
- > Supports trunked and conventional operations

## GENERAL SPECIFICATIONS\*

**Processor Type:**  
Intel® Dual Core™ i7 Ivy Bridge processor

**Operating System:**  
Microsoft® Windows® 10 Enterprise 64-bit

**Typical Dimensions (H x W x D):**  
**Computer:**  
1.75 x 16.75 x 10.5 in  
(4.5 x 42.5 x 26.6 cm)

**Display:**  
Touchscreen capable from 19 to 48 inches

**Input Voltage:**  
110-240 VAC, 50-60Hz, nominal

**Operating Temperature:**  
+32 to 104°F (0 to +40°C)

**Storage Temperature:**  
-22 to +185°F (-30 to +85°C)

**MTBF:**  
10 years

**RoHS Compliant**

**UL Certified**

\*Requires System Release SR10A or newer

## SYMPHONY DISPATCH PLATFORM (ENCLOSURE)

19-inch rack mount compatible metal housing

1RU (1.75 in) height

Front panel display, access, connections and controls for:

Power	USB Accessories
DisplayPort™ (Video)	Solid-state Drive (SSD)
Auxiliary Audio Input	Backup Radio Switch
Auxiliary Audio Output	

## EXTERNAL INTERFACES

Two 10/100/1000-Gigabit Ethernet ports with RJ45

7 USB 2.0 ports (excluding Audio Subsystem)

7 USB 1.1 ports for audio accessories

6 local Digital Inputs

5 local Solid-state Relay Outputs

## AUDIO SUBSYSTEM

One 10/100 DSP-driven Ethernet Extender Interface with RF45 connector

Operator and Supervisor Headsets interfaced via DB-9F connectors on rear panel

Desk Microphone interface via DB-9F connector on rear panel

8 Speaker interface with ¼-inch TRS jacks on rear panel for audio connections

Analog Call Director interface via RJ45 connector on rear panel

Analog Backup Radio interface via DB-9 Male connector on rear panel and mode selection switch mounted on front panel

Analog Building Intercom interface via RJ45 connector on rear panel

Two Auxiliary Audio Inputs via 3.5-mm TRS jack on rear panel

Two Auxiliary Ethernet DSP Extender ports on rear panel

## VIDEO

Two DisplayPort Video Connections (can drive up to 4 monitors)

## STORAGE

Externally accessible and removable solid-state drive

Product performance note: The performance of any L3Harris console (Symphony Dispatch Console) with any third-party hardware (including computers) other than L3Harris recommended or approved hardware is not guaranteed by L3Harris Technologies nor will L3Harris Technologies offer any software or other corrections to improve the performance of the L3Harris console with such third-party hardware.

Technical specifications are subject to change without notice.  
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### Symphony™ Dispatch Solution

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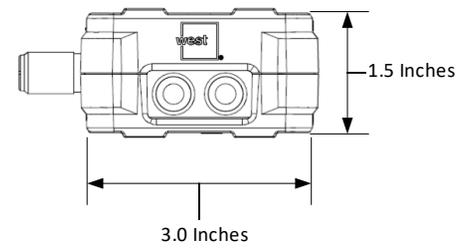
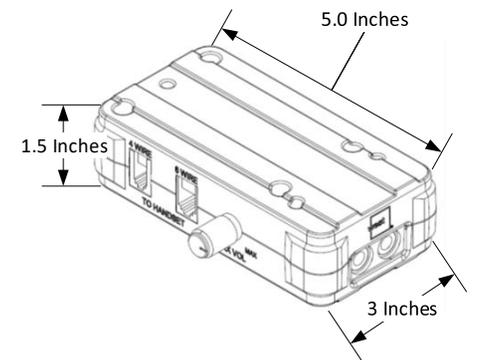
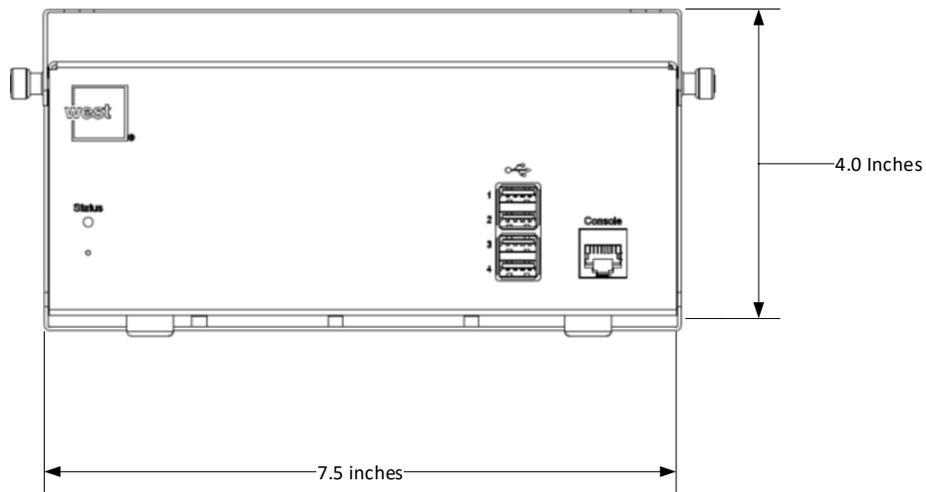
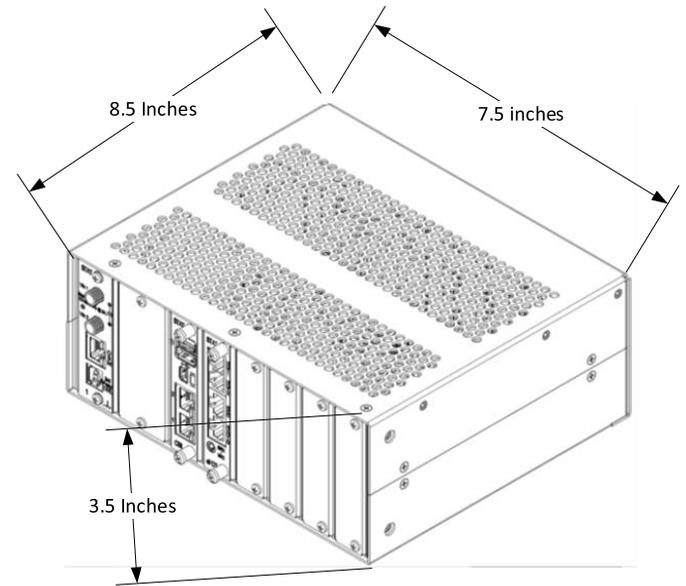
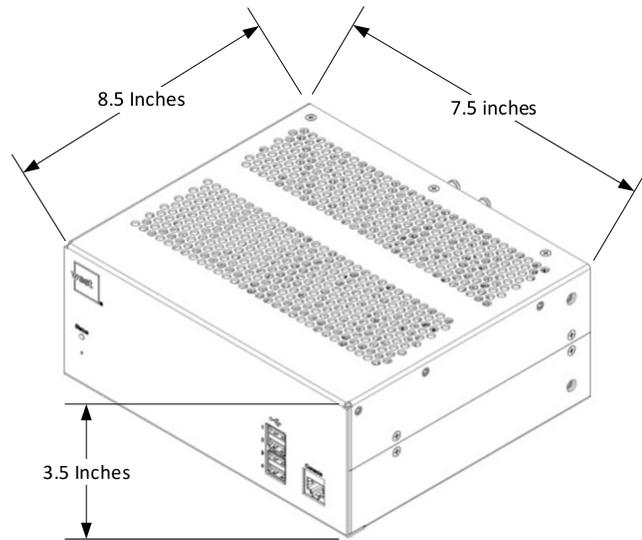
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## 21.5" HP ProDisplay P221 LCD Monitor Full HD



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HP ProDisplay P221 21.5-inch LED Backlit Monitor has diagonal viewable area display with 1920 x 1080 resolution.

### Specifications

Dimensions (WxDxH)	20.4 in x 6.3 in x 14.9 in - with stand
Display Type	LED-backlit LCD monitor / TFT active matrix
Aspect Ratio	16:9
Native Resolution	Full HD (1080p) 1920 x 1080 at 60 Hz
Contrast Ratio	1000:1 / 3000000:1 (dynamic)
Color Support	16.7 million colors
Controls & Adjustments	Brightness, contrast, color temperature, phase, clock
Dimensions (WxDxH)	20.4 in x 6.3 in x 14.9 in - with stand
Horizontal Viewing Angle	170
OSD Languages	Chinese (traditional), Chinese (simplified), English, German, French, Italian, Portuguese, Spanish, Dutch, Japanese
Vertical Viewing Angle	160
Color Temperature	9300K, 6500K
Viewable Size	21.5"
Pixel Pitch	0.248 mm
Panel Type	TN
Brightness	250 cd/m <sup>2</sup>
Screen Coating	Anti-glare
Horizontal Refresh Rate	24 - 94 kHz
Backlight Technology	WLED
Video Bandwidth	170 MHz
Vertical Refresh Rate	50 - 76 Hz
Manufacturer	HP

equipment/category/27-video-recorders-and-players)

Interfaces	DVI VGA
Nominal Voltage	AC 120/230 V
Frequency Required	50/60 Hz
Power Consumption	22 Watt
Operational	
Power Consumption	0.5 Watt
Stand by	
Image Brightness	250
Image Aspect Ratio	16:9
Image Contrast Ratio	1000:1
Video Bandwidth	170 MHz
Video Format	1080p (Full HD)
Type	LED-backlit LCD monitor
Voltage Required	AC 120/230 V (50/60 Hz)
ENERGY STAR Certified	Yes
Min Operating Temperature	41 °F
Max Operating Temperature	95 °F
Humidity Range Operating	20 - 80% (non-condensing)
Brand URL	: <a href="http://www8.hp.com">http://www8.hp.com</a> ( <a href="http://www8.hp.com">http://www8.hp.com</a> ).

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### 27" HP EliteDisplay E271i - Specifications

Width	Height	Depth	Weight	Power consumption
Specifications	Display	Response time	Write a review	

**Display:** 27 in, AH-IPS, W-LED, 1920 x 1080 pixels  
**Viewing angles (H/V):** 178 ° / 178 °  
**Brightness:** 250 cd/m<sup>2</sup>  
**Static contrast:** 1000 : 1, **Dynamic contrast:** 5000000 : 1  
**Refresh rate:** 50 Hz - 76 Hz  
**sRGB:** 90 %, **Adobe RGB:** 65 %  
**Dimensions:** 642 x 387.3 x 52.2 mm  
**Weight:** 4.9 kg

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#### Brand, series, model

Information about the brand, series, model and model aliases.

Brand Name of the company-manufacturer.	HP
Model	EliteDisplay E271i
Model aliases of the model.	D7Z72A8

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## Display

Information about the main characteristics of the display - panel, backlight, resolution, refresh rate, etc.

<b>Size class</b> Size class of the display as declared by the manufacturer. Often this is the rounded value of the actual size of the diagonal in inches.	27 in (inches)
<b>Diagonal</b> Approximate diagonal size of the display. If the manufacturer does not provide such information, the diagonal is calculated from the width and height of the screen.	685.8 mm (millimeters) 68.58 cm (centimeters) 27 in (inches) 2.25 ft (feet)
<b>Width</b> Approximate width of the display. If the manufacturer does not provide such information, the width is calculated from the diagonal and the aspect ratio.	597.36 mm (millimeters) 59.736 cm (centimeters) 23.5181 in (inches) 1.9598 ft (feet)
<b>Height</b> Approximate height of the display. If the manufacturer does not provide such information, the height is calculated from the diagonal and the aspect ratio.	336.31 mm (millimeters) 33.631 cm (centimeters) 13.2406 in (inches) 1.1034 ft (feet)
<b>Panel manufacturer</b> Name of the manufacturer of the display panel.	LG Display
<b>Panel model</b> Information about the model of the panel used.	LM270WF5-SAA1
<b>Panel type</b> There are various panel technologies. Each has its own specific features - viewing angles, color reproduction, response time, brightness/contrast, production cost, etc. The image quality depends directly on the type of the display panel used.	AH-IPS
<b>Panel bit depth</b> The most widely used panels are those with 6, 8, and 10 bits for each of the RGB components of the pixel. They provide 18-, 24-, and 30-bit color, respectively.	8 bits (6 bits + FRC)
<b>FRC</b> Frame Rate Control (FRC) is a method, which allows the pixels to show more color tones. With quick cyclic switching between different color tones, an illusion for a new intermediate color tone is created. For example, by using FRC, a 6-bit display panel is able to show 16.7 million colors, which are typical for 8-bit display panels, and not the standard 262200 colors, instead. There are different FRC algorithms.	Yes
<b>Colors</b> The maximum number of colors, which the display is able to reproduce, depends on the type of the panel in use and color enhancing technologies like FRC.	16777216 colors 24 bits
<b>Aspect ratio</b> The ratio between the horizontal and the vertical side of the display. Some of the standard and widely used aspect ratios are 4:3, 5:4, 16:9 and 16:10.	1.778:1 16:9
<b>Resolution</b> Information about the number of pixels on the horizontal and vertical side of the screen. A higher resolution allows the display of a more detailed and of higher quality image.	1920 x 1080 pixels Full HD / 1080p
<b>Pixel pitch</b> The pixel pitch shows the distance from the centers of two neighboring pixels. In displays, which have a native resolution (the TFT ones, for example), the pixel pitch depends on the resolution and the size of the screen.	0.311 mm (millimeters) 0.0311 cm (centimeters) 0.0122 in (inches) 0.001 ft (feet)
<b>Number of pixels in a unit of length</b> The number of pixels in a unit of length, which depends on the display size and the increase of pixel density increases.	81 ppi (pixels per inch) 32 ppcm (pixels per centimeter)

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<b>Display area</b> The percentage of the approximate area, taken by the active part of the screen, to the total front area.	80.8 % (percent)
<b>Backlight</b> The backlight is the source of light of the LCD display panels. The type of backlight determines the image quality and the color space of the display. There are various backlights such as CCFL, LED, WLED, RGB-LED, and etc.	W-LED
<b>sRGB</b> sRGB is a color space, developed jointly by Hewlett-Packard and Microsoft in 1996. It is used in different devices such as printers, displays, TV sets, cameras, etc. The sRGB color space covers about 72% of the NTSC color space.	90 % (percent)
<b>Adobe RGB (1998)</b> Adobe RGB (1998) is a color space, developed by Adobe Systems in 1998. It has a wider gamut than the sRGB (mainly in the cyan-green range of colors) and is widely used in professional printing.	65 % (percent)
<b>Brightness</b> Information about the brightness of the screen. It is measured in candela per square metre (cd/m <sup>2</sup> ).	250 cd/m <sup>2</sup> (candela per square meter)
<b>Static contrast</b> The static contrast shows the ratio between the brightest and the darkest color, which the display can reproduce simultaneously, for example, within one and the same frame/scene.	1000 : 1
<b>Dynamic contrast</b> The dynamic contrast shows the ratio between the brightest and the darkest color, which the display can reproduce over time, for example, in the course of playing a video.	5000000 : 1
<b>Horizontal viewing angle</b> Information about the maximum horizontal viewing angle, within which the image on the screen is of acceptable quality.	178 ° (degrees)
<b>Vertical viewing angle</b> Information about the maximum vertical viewing angle, within which the image on the screen is of acceptable quality.	178 ° (degrees)
<b>Minimum response time</b> Information about the minimum amount of time, in which the pixels change from one color to another. Very often the manufacturer provides the response time for transition from grey-to-grey (G2G).	7 ms (milliseconds) 0.0070 s (seconds)
<b>Maximum response time</b> Information about the maximum amount of time, in which the pixels change from one color to another.	20 ms (milliseconds) 0.0200 s (seconds)
<b>Input lag</b> Desktop monitors and smart TVs experience a latency/lag in visualizing the information. The time in milliseconds that the display needs to visualize the signal input.	20 ms (milliseconds) 0.0200 s (seconds)
<b>Coating</b> Information about the type of coating of the display. There are different types of matte and glossy coatings, each of which has its own advantages and drawbacks.	Anti-glare/Matte

### 3D

3D displays use various technologies to achieve a 3D effect. Each of these technologies has its own advantages and drawbacks.

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Whether 3D is supported or not.

No

## Frequencies

Information about the horizontal and vertical refresh rates/frequencies.

<b>Horizontal frequency (digital)</b> The horizontal scan rate/frequency shows the number of horizontal lines, displayed by the monitor per second, when it is plugged to a digital source.	24 kHz - 94 kHz (kilohertz)
<b>Vertical frequency (digital)</b> The vertical frequency/refresh rate shows how many times in a second the image on the screen is refreshed.	50 Hz - 76 Hz (hertz)

## Power supply and consumption

Information about the power supply and consumption, energy efficiency class, etc.

<b>110V</b> Permissible voltage tolerance in a 110-volt electric system.	100 V - 120 V (volts)
<b>220V</b> Permissible voltage tolerance in a 220-volt electric system.	220 V - 240 V (volts)
<b>Alternating current frequency</b> Requirement regarding the alternating current frequency in the electric system.	50 Hz - 60 Hz (hertz)
<b>Power consumption (off)</b> Power consumption in off-mode.	0.5 W (watts)
<b>Power consumption (sleep)</b> Power consumption in sleep/stand by/suspend mode.	0.5 W (watts)
<b>Power consumption (average)</b> Average power consumption in standard work mode.	35 W (watts)
<b>Power consumption (maximum)</b> The maximum possible power consumption.	40 W (watts)

## Dimensions, weight and color

Information about the dimensions and the weight of the specific model with and without stand as well as the colors, in which it is offered to the market.

<b>Width</b> Width without stand in different measurement units.	642 mm (millimeters) 64.2 cm (centimeters) 25.2756 in (inches) 2.1063 ft (feet)
<b>Height</b> Height without stand in different measurement units.	387.3 mm (millimeters) 38.73 cm (centimeters) 15.248 in (inches) 1.2707 ft (feet)
<b>Depth</b> Depth without stand in different measurement units.	52.2 mm (millimeters) 5.22 cm (centimeters) 2.0551 in (inches) 0.1713 ft (feet)
<b>Weight</b> Weight without stand in different measurement units.	4.9 kg (kilograms) 10.8 lbs (pounds)
<b>Width with stand</b> Width with stand in different measurement units.	642 mm (millimeters) 64.2 cm (centimeters) 25.2756 in (inches) 2.1063 ft (feet)
<b>Height with stand</b> Height with stand in different measurement units.	532.1 mm (millimeters) 53.21 cm (centimeters)

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Height with stand in different measurement units.	20.9488 in (inches) 1.7457 ft (feet)
Depth with stand Depth with stand in different measurement units.	278.5 mm (millimeters) 27.85 cm (centimeters) 10.9646 in (inches) 0.9137 ft (feet)
Weight with stand Weight with stand in different measurement units.	7.7 kg (kilograms) 16.98 lbs (pounds)
Colors Information about the colors, in which the specific model is offered to the market.	Black

### Ergonomics

Information about the ergonomic functions - height adjustment, swivel angles, tilt angles, etc.

VESA mount Information about whether there is a possibility for wall mounting according to the VESA Mounting Interface Standard (MIS).	Yes
VESA interface There are many various interfaces under the VESA standard, which differ in the size of the brackets, the distances between the screw holes and their number.	100 x 100 mm
Removable stand Information about whether the stand can be dismounted. Usually, this is required for wall mounting.	Yes
Height adjustment Information about whether the stand allows height adjustment.	Yes
Height adjustment range Information about the extent to which the stand allows the height to be adjusted.	130 mm (millimeters) 13 cm (centimeters) 5.1181 in (inches) 0.4265 ft (feet)
Landscape/portrait pivot Some displays have the ability to operate in landscape and portrait mode alike.	Yes
Left pivot Degree of pivoting the display counterclockwise.	0 ° (degrees)
Right pivot Degree of pivoting the display clockwise.	90 ° (degrees)
Left/right swivel Information whether the display can be swiveled around the stand axis.	Yes
Left swivel Maximum swivel degree of the display to the left of the stand axis.	180 ° (degrees)
Right swivel Maximum swivel degree of the display to the right of the stand axis.	180 ° (degrees)
Forward/backward tilt Most displays have the ability to be tilted forward and backward as to provide a more comfortable viewing position for the user.	Yes
Forward tilt forward tilting of the display.	5 ° (degrees)
Backward tilt backward tilting of the display.	30 ° (degrees)

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## Camera

Many contemporary desktop monitors and smart TV sets have built-in cameras.

### Camera

Information whether the current model has a built-in camera or not.

No

## Connectivity

Available connectivity ports, slots and interfaces.

### Connectivity

Information about the available connectivity ports, slots and interfaces such as USB, infrared port, SD card slot, audio/video and network interfaces, etc.

2 x USB 2.0 (downstream)  
1 x USB 2.0 (upstream)  
1 x DisplayPort 1.2  
1 x DVI-D Dual Link  
1 x D-sub

High-bandwidth Digital Content Protection (HDCP)

## Features

Some additional functional features of the model.

### Features

Information about additional software features, technologies, functions and services of the model.

DDC/CI

## Certificates, standards and licenses

Licenses from regulatory agencies, standards, certificates.

### Certificates, standards and licenses

List of the standards, certificates and licenses supported/received by the current model.

BSMI  
C-Tick  
CB  
CCC  
CE  
CECP  
CEL Grade 1  
EAC  
ENERGY STAR  
EPA  
Epeat Gold  
FCC Class B  
ICE  
ISC  
KC  
KCC  
NOM  
PSB  
SEPA  
TCO EDGE  
TÜV/S  
VCCI-B  
WHQL (Windows 8; Windows 7)

## Operating and storage conditions

There are certain requirements for the environmental conditions, in which the display should be used and stored in order to function properly.

### Operating temperature

The operating temperature shows the safe temperature range (from minimum to maximum), within which the display will operate flawlessly. Outside this range it might not operate or fail entirely.

5 °C - 35 °C (degrees Celsius)  
41 °F - 95 °F (degrees Fahrenheit)

20 % - 80 % (percent)

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The operating humidity shows the acceptable level of humidity, in which the display will function flawlessly. It sets a lower and an upper humidity level for safe operation and is measured in percentage.

#### Operating altitude

The operating altitude shows the maximum admissible altitude, at which the display will function flawlessly. Above this level it might not operate properly and/or might seize to function.

5000 m (meters)  
16404.2 ft (feet)

#### Storage temperature

The storage temperature shows the range from a minimum to a maximum temperature, within which storing of the display is considered to be safe.

-20 °C - 60 °C (degrees Celsius)  
-4 °F - 140 °F (degrees Fahrenheit)

#### Storage humidity

The storage humidity shows the lower and upper humidity limit, which ensures safe storage of the display. Storing it outside these limits might damage the display.

5 % - 95 % (percent)

#### Storage altitude

The storage altitude shows the maximum possible altitude for secure storing of the display. Storing it above this limit may result in damaging the display.

12192 m (meters)  
40000 ft (feet)

### Accessories

Often the packaging of desktop monitors and smart TV sets includes accessories for them.

#### Accessories

Information about some of the main accessories included in the standard packaging of the current model.

D-sub cable  
DisplayPort cable  
USB 2.0 upstream cable

### Additional features

Information about other features.

#### Additional features

Information about other features of the current model, which are important and have to be specified.

Security lock slot



## Clear Table & Desk Partitions

Protect table & desk areas with plexiglass barrier shields & dividers.

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by the website visitors, that include HP EliteDisplay E271i.

View

View

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HP 27er 27-Inch Full HD 1080p IPS LED Monitor with Frameless Bezel

\$228.98 ~~\$240.00~~  
(2706)



HP Newest 27" Widescreen IPS LED Full HD (1920x1080) Monitor, 5ms

\$207.96 ~~\$242.00~~  
(83)



New HP 27f Display 27" Full HD IPS Ultra-Slim Backlit LED Micro-Edge

\$199.00 ~~\$200.00~~  
(233)



HP Pavilion 27xw 27-inch Full HD 1080p IPS LED Monitor with VGA

\$183.45  
(762)



HP P Series P274 27" Full HD 1920 x 1080 LED LCD Anti-glare Monitor

\$197.21  
(43)



HP 27-inch FHD IPS Monitor with Tilt Adjustment and Anti-glare Panel

\$199.99  
(176)



HP EliteDisplay E273 27-Inch Screen LED-Lit Monitor Black/Silver

\$238.00 ~~\$260.00~~  
(39)



2020 HP 27" IPS LED FHD Antiglare Monitor, FreeSync Technology

\$219.00  
(1)

Ads by Amazon

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### Last viewed models

A list of the last viewed desktop monitors and TVs.

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27" HP EliteDisplay E271i

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The Digital Desktop Controller (DDC-100)

- Allows multiple dispatch operators to work in remote areas of a building not reached by radio signals
- Supports specialized applications with custom programming software, movable keycaps, and optional accessories
- Provides easy and inexpensive installation with standard in-building wiring



The DDC-100 is designed for users who need to remotely control an Orion<sup>™</sup>\*, Jaguar<sup>™</sup> 725M\*, or M7100<sup>IP</sup> Desktop Station and access more of its features than is possible with standard Tone or DC remotes. The unit can operate on ProVoice<sup>™</sup>, Enhanced Digital Access Communications System (EDACS<sup>®</sup>), P25<sup>IP</sup>, and conventional systems. The Light-emitting Diode (LED) equipped keypad and Liquid Crystal Display (LCD) of the DDC-100 allow access to most of the features of the desktop station.

Up to 25 remotes may be located up to 2,000 feet away from the radio. Flexible network topologies (ring, star, or "T" configuration) and use of in-building 3-twisted-pair wiring makes installation easy and inexpensive. The small footprint, internally mounted termination panel, and telephone-like ergonomics of the DDC-100 make it ideal for office environments.

### Features Users Desire

Essential features typically required in desktop radio controllers are included at no additional cost with

the DDC-100. A controller can be configured as a Supervisory unit with special control over the other controllers on the network. A Supervisory unit may enter Take-over Mode, allowing the unit to preempt other desktop controllers on the network.

Privacy Mode allows a particular desktop remote to mute all other remotes on the network (except the Supervisory unit) to allow the operator to converse over the radio without the others listening.

The Intercom feature allows a dispatch operator to converse with other operators on the network without using the radio.

Parallel Status updates on the LCD duplicate the Control Unit display; show the current mode of operation for the radio; present which System, GID, or LID has been selected; and indicate when the radio is in use by another operator.

### Clear Communication

Superior audio features make the DDC-100 easy for operators to use. Automatic Gain Control (AGC) circuitry compensates for the

distance between desktop controllers and the radio so that the volume levels remain at their optimum settings throughout the network.

The Voice-Operated Switch (VOX) prevents any annoying line hum present from being heard by the operator. The integrated speaker, microphone, and handset are included as standard equipment with every desktop controller so that each operator may choose between "speakerphone" operation and private conversation.

### Options and Accessories

Transparent keycaps with movable labels, when used with PC programming software, allow full customization of the keypad for special applications. Options such as the Push-to-Talk (PTT) foot-switch, headset, and desktop microphone support dispatch operators in a wide variety of environments.

\*Note that the Orion and Jaguar 725M are not compatible with P25<sup>IP</sup> systems.

## General Specifications

### DDC-100 System:

#### Radio Type:

Harris Orion, Jaguar 725M,  
or M7100<sup>IP</sup> Mobiles with  
Desktop Station

#### Maximum Number of Desktop

#### Controllers:

25

#### Line Lengths:

2000 ft from radio interface  
to desktop controllers

#### Connection:

#### Configuration:

T, Star, Multi-drop

#### Wire Type:

Twisted pairs down to 24  
gauge

#### Number of Conductors:

6 (3 twisted pairs)

#### Setup:

No adjustments required

### Desktop Controller:

#### Power:

12 VDC @ 300 mA, or  
optional 120 VAC or 230  
VAC wall transformers

#### Temperature:

32 to 140°F (0 to 60°C)

#### Controls:

System and Group Up and  
Down, Scan, Scan  
Add/Delete, Volume, 16-key  
keypad, Intercom, Privacy,  
Mute, TX

#### Indicators:

LCD for radio status and  
prompts. LEDs for Intercom,  
Privacy, Mute, TX, Busy, In  
Use, Scan, 16-key keypad

#### Status Tones:

Passes all progress tones  
from the radio

#### Audio Interface:

Internal microphone for use  
with intercom and front panel  
transmit. Handset for added  
privacy. Connections for  
external interface  
(microphone, speaker and  
PTT). Handset may be  
replaced by a headset.

#### Connections:

6-conductor modular cable-  
to-radio interface.

### Radio Interface:

#### Power:

12 VDC @ 300 mA

#### Temperature:

32 to 140°F (0 to 60°C)

#### Indicators:

LEDs indicating TX and RX  
activity on radio and desktop  
controller lines and power LED

#### Connections:

DB37 cable to radio, 6-  
conductor modular cable to  
desktop controllers

#### Programming Kit:

Reconfigures desktop  
controller keypads and sets the  
following system parameters:  
enables clock, Privacy Mode,  
and Intercom; and sets the  
timer for TX timeout. Includes  
12-foot cable, RS232 adapter,  
and 3-1/2-inch disk

### Certifications:

The system is designed for FCC  
Part 15 certification

# CA12CD-S PTT ADAPTER

## Meets the Needs of Mission Critical Applications



The CA12CD-S is a cordless PTT (push-to-talk) headset adapter designed to provide wireless communications and PTT functionality for applications such as Public Safety Dispatch and Air Traffic Control. The CA12CD-S is supplied with the analog Console Interface Cable (PJ-7) as shown. For digital applications, Model SSP 2468-01 (sold separately) can be installed. This USB-PTT Adapter Cable replaces the Console Interface Cable and provides a complete digital solution. The CA12CD-S uses digital processing (DECT™ 6.0), and operates in the UPCS band (1.92 – 1.93 GHz ) in North America. European versions are also available that operate within the DECT frequency range (1.88 – 1.90 GHz). Various connector options available upon request.

### APPLICATIONS:

- Public Safety
- Air Traffic Control
- Radio Dispatch Facilities
- Training/Simulation

Cordless Push-to-Talk

### CA12CD-S KEY COMPONENTS

#### BASE UNIT:

- Two charging wells (unit supplied with an extra battery)
- Sending and receiving sensitivity controls
- Status LEDs for Power, Battery Charging and PTT
- Coil cord (10 ft. extended) with PJ-7 connector
- Battery recharge time: 1 hour ( 90%); 3 hours (100%)
- Operating temp. range: +4°C (40°F ) to +49°C (110°F )

#### REMOTE UNIT:

- PTT button with momentary/locking selector
- On-Off button with LED
- Robust metal belt clip
- Receiving volume control
- 12 inch cable with Quick Disconnect
- Accepts all Plantronics "H" and "HW" Tops

#### GLOBAL SERVICE AND SUPPORT

Backed by Plantronics industry leading global service and support.

+1-800-544-4660 (US and Canada)

+1-831-458-7700 (outside US)



### FEATURES

PTT Switch, momentary and locking options

Spare Battery Pack

Lithium-ion Batteries

Selectable output ranges for transmit and receive

DECT 6.0 with 64-bit encryption

### BENEFITS

Field-proven reliability; user selectable

Two battery packs and two recharging wells: One for the remote unit and one for the spare battery — allow for 24/7 operation

Extended talk time for all day/shift use

Universal compatibility for carbon, electret, and dynamic microphone inputs

Secure and private communications, HIPAA compliant



# HP LaserJet Enterprise M608 series

This HP LaserJet with JetIntelligence combines performance, energy efficiency, and security.<sup>1</sup>

This HP LaserJet Printer with JetIntelligence combines exceptional performance and energy efficiency with professional-quality documents right when you need them—all while protecting your network from attacks with the industry's deepest security.<sup>1</sup>



HP LaserJet Enterprise M608n



HP LaserJet Enterprise M608dn



HP LaserJet Enterprise M608x

## The world's most secure printing<sup>1</sup>

- With HP Sure Start, each printer regularly checks its operating code and repairs itself from attempted hacks.
- Help prevent potential attacks and take immediate action with instant notification of security issues.
- Centralize control of your printing environment with HP Web Jetadmin—and help build business efficiency.<sup>2</sup>
- Give workgroups what they need to succeed. Easily choose and deploy over 180 HP and third-party solutions.

## High-speed performance meets energy efficiency

- Speed through tasks and save paper. Print two-sided documents nearly as fast as single-sided.
- This printer wakes up fast and prints your first page faster—in as quickly as 7.8 seconds.<sup>4</sup>
- This printer uses exceptionally low amounts of energy thanks to its innovative design and toner technology.<sup>5</sup>
- Paper handling options include a wheeled stand and 550-sheet input feeder for paper sizes A6 to legal.

## More. Pages, Performance, and Protection.<sup>6</sup>

- Produce sharp text, bold blacks, and crisp graphics with precision black toner.
- Original HP Toner cartridges with JetIntelligence deliver more pages per cartridge than predecessors.<sup>6</sup>
- Help retain the Original HP quality you paid for with anti-fraud and cartridge authentication technology.
- Spend less time replacing toner, and more on business. Choose high-yield toner cartridges.<sup>7</sup>

<sup>1</sup> Based on HP review of 2016 published security features of competitive in-class printers. Only HP offers a combination of security features that can monitor to detect and automatically stop an attack then self-validate software integrity in a reboot. For a list of printers, visit <http://www.hp.com/go/PrintersThatProtect>. For more information: <http://www.hp.com/go/printersecurityclaims>

<sup>2</sup> HP Web Jetadmin is available for download at no additional charge at <http://www.hp.com/go/webjetadmin>

<sup>3</sup> Measured using ISO/IEC 24734, excludes first set of test documents. For more information, see <http://www.hp.com/go/printerclaims>. Exact speed varies depending on the system configuration, software application, driver, and document complexity.

<sup>4</sup> Measured after 15 min in sleep. Exact speed varies depending on the system configuration, software application, driver, document complexity and time in sleep.

<sup>5</sup> Based on HP testing using the ENERGY STAR® program's Typical Electricity Consumption (TEC) method or as reported in [energystar.gov](http://energystar.gov) versus the top three leading competitors as of 8/2015. Actual results may vary. For details see <http://www.hp.com/go/Ljclaims>

<sup>6</sup> More pages versus predecessor cartridges claim based on page-yield comparison of HP 37X High Yield Black Original LaserJet Toner Cartridges with HP 87X High Yield Black Original LaserJet Toner Cartridges. For more information, see <http://www.hp.com/go/learnaboutsupplies>

<sup>7</sup> HP 37X High Yield Black Original LaserJet Toner Cartridges not included; please purchase separately.

<sup>8</sup> An FCC Class A emissions compliant device meets the less stringent (higher) levels of emissions allowed by the FCC for a product operation in a commercial environment. An FCC class A device cannot be marketed for use in a residential environment and an FCC class A device should not be purchased for use in a residential environment due to the increased risk of interference to radio communications.

## Product walkaround

1. Hardware Integration Pocket<sup>3</sup>
2. 4.3-inch (10.9 cm) color touchscreen control panel
3. Easy-access USB port<sup>1</sup>
4. 100-sheet multipurpose tray 1
5. Front door access to toner cartridges
6. 550-sheet input tray 2
7. 550-sheet input tray 3
8. 500-sheet output bin
9. Automatic two-sided printing
10. Wi-Fi Direct<sup>5</sup>/Bluetooth Low Energy<sup>8</sup>
11. Host USB port
12. Gigabit Ethernet network port
13. Hi-Speed USB 2.0 printing port
14. Slot for cable-type security lock



## Series at a glance



Model	HP LaserJet Enterprise M608n	HP LaserJet Enterprise M608dn	HP LaserJet Enterprise M608x
Part number	KOQ17A	KOQ18A	KOQ19A
Print speeds (letter/A4) <sup>2</sup>	Up to 65/61 ppm		
Control panel	2.7-inch (6.9 cm) LCD with keypad		4.3-inch (10.9 cm) touchscreen
Automatic two-sided printing	Not available	√	√
Hardware Integration Pocket <sup>3</sup>	Not available	√	√
100-sheet tray 1, 550-sheet tray 2	√		
550-sheet paper feeder <sup>4</sup>	Optional (up to four)		√ (plus up to three optional)
2,100-sheet paper feeder <sup>4</sup>	Optional		
Envelope feeder	Optional (up to two)		
Printer stand	Optional		
5-bin stapler/stacker/mailbox with job offset	Optional		
Direct mobile printing	Optional wireless direct <sup>5</sup> /NFC <sup>6</sup>		Embedded Wi-Fi Direct <sup>5</sup> /Bluetooth Low Energy <sup>8</sup>
Wireless networking	Optional <sup>7</sup>		
HP High-Performance Secure Hard Disk	Optional		

<sup>1</sup>An administrator must enable the easy-access USB port before use. <sup>2</sup>Measured using ISO/IEC 24734; excludes first set of test documents. For more information, see [hp.com/go/printerclaims](http://hp.com/go/printerclaims). Exact speed varies depending on the system configuration, software application, driver, and document complexity. <sup>3</sup>Solutions deployed through the Hardware Integration Pocket (HIP) may require additional purchase. HIP not available on the HP LaserJet Enterprise M607n and M608n. <sup>4</sup>All models come standard with the 100-sheet multipurpose tray and 550-sheet tray 2. The HP LaserJet Enterprise M608x and M609x models come with one additional 550-sheet paper feeder standard, and can add up to three additional optional 550-sheet paper feeders and the optional 2,100-sheet paper feeder. The M607n, M607dn, M608n, M608dn, and M609dn models can add up to four additional 550-sheet paper feeders and the optional 2,100-sheet paper feeder. <sup>5</sup>Wi-Fi Direct printing is embedded in the HP LaserJet Enterprise M608x and M609x models. All other models can add wireless direct with the purchase of the optional HP Jetdirect 3000w NFC/Wireless Direct Accessory. Mobile device needs to be connected directly to the signal of a Wi-Fi Direct<sup>®</sup> supported MFP or printer prior to printing. Depending on mobile device, an app or driver may also be required. For details, see [hp.com/go/mobileprinting](http://hp.com/go/mobileprinting). Wi-Fi Direct is a registered trademark of Wi-Fi Alliance<sup>®</sup>. <sup>6</sup>Touch-to-print capability is optional for all models (except M608x and M609x) with purchase of the optional HP Jetdirect 3000w NFC/Wireless Direct Accessory. Mobile device must support Near Field Communication (NFC)-enabled printing. For more information, see [hp.com/go/businessmobileprinting](http://hp.com/go/businessmobileprinting). <sup>7</sup>All models can add wireless networking with the purchase of the optional HP Jetdirect 2900w Print Server. Wireless performance is dependent on physical environment and distance from access point, and may be limited during active VPN connections. <sup>8</sup>Bluetooth Low Energy is standard only on the HP LaserJet Enterprise M608x and M609x models, and it cannot be added to other models. Bluetooth is a trademark owned by its proprietor and used by HP Inc. under license.

## HP Services

Downtime can have serious consequences, so HP provides support beyond the standard warranty. You benefit from reduced risk, maximized uptime, predictable service delivery and no unbudgeted repair costs. HP Care Pack Services provide a comprehensive suite of protection services designed to keep HP hardware and software up and running so employees can stay productive.

For carepack availability visit: [hp.com/go/cpc](http://hp.com/go/cpc):



## Top features

Only HP Enterprise printers repair themselves from attacks in real time while offering outstanding manageability. Automatically monitor threats, detect intrusions, and validate operating software while centrally managing your fleet with ease.<sup>1</sup>

With speeds up to 65 pages per minute,<sup>3</sup> fast first page out, and a variety of paper-handling options, you get confidence that your employees can speed through their tasks without interruption.

Get more pages and help protect your printer using Original HP Toner cartridges with JetIntelligence.<sup>6</sup>

### Accessories

- 2MU47A** HP Accessibility Assistant
- 2NR03A** HP 1 GB 90-pin DDR3 DIMM
- 2NR12A** HP Removable Hard Drive Enclosure
- 3JN69A** HP Jetdirect 3100w BLE/NFC/Wireless Accessory
- 5EL03A** HP TAA Version Secure Hard Disk Drive
- B5L28A** HP Internal USB Ports
- B5L29A** HP High-Performance Secure Hard Disk
- CC543B** HP SmartCard NIPRNet Solution for US Government
- F5S62A** HP Trusted Platform Module Accessory
- G6W84A** HP 1 GB 90-pin DDR3 DIMM
- HG271TT** HP Barcode Printing Solution - USB
- HG277TT** HP MICR Printing Solution - USB
- HG281TS** HP Barcodes and More Printing Solution for USB version 2 slot based LaserJet
- HG282TT** HP Scalable Barcodes Printing Solution for USB version 2 slot based LaserJet
- J8030A** HP Jetdirect 3000w NFC/Wireless Accessory
- J8031A** HP Jetdirect 2900nw Print Server
- J8J96A** HP Staple Cartridge Refill
- L0H17A** HP LaserJet 550-sheet Paper Tray
- L0H18A** HP LaserJet 2100 Sheet Paper Tray
- L0H19A** HP LaserJet Printer Stand
- L0H20A** HP LaserJet Stapler/Stacker/Mailbox
- L0H21A** HP LaserJet Envelope Feeder
- L0H22A** HP LaserJet Extension Tray Cover

### Supplies

- HP 37A Black Original LaserJet Toner Cartridge (11,000 yield) **CF237A**
- HP 37X High Yield Black Original LaserJet Toner Cartridge (25,000 yield) **CF237X**
- HP 37Y Extra High Yield Black Original LaserJet Toner Cartridge (41,000 yield) **CF237Y**

### Services

- U9NE2E** - HP 5 year Next Business Day HW Support w/Defective Media Retention
- U9NE5E** - HP 5 year 4 hour 9x5 HW Support w/Defective Media Retention
- U9NE8E** - HP 5 year 4 hour 13x5 HW Support w/Defective Media Retention
- U9NF1E** - HP 5 year Next Business Day Call To Repair HW Support w/DMR
- U9NF4E** - HP 5 year Next Business Day Exchange Service
- U9NG5PE** - HP 2 year Post Warranty Next Business Day Hardware Support w/DMR
- U9NG7PE** - HP 2 year Post Warranty 4 hour 9x5 Hardware Support w/DMR
- U9NG8PE** - HP 1 year Post Warranty 4 hour 13x5 Hardware Support w/DMR
- U9NH0PE** - HP 2 yr Post Warranty Next Business Day Call To Repair HW Support w/DMR
- U9NH1PE** - HP 1 year Post Warranty Next Business Day Exchange Service

<sup>1</sup> Based on HP review of 2016 published security features of competitive in-class printers. Only HP offers a combination of security features that can monitor to detect and automatically stop an attack then self-validate software integrity in a reboot. For a list of printers, visit <http://www.hp.com/go/PrintersThatProtect>. For more information: <http://www.hp.com/go/printersecurityclaims>

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