

8x1 4K60 4:4:4 HDR Presentation System



- 4K60 4:4:4 digital AV presentation system
- HDR10, HDR10+, and Dolby Vision® video formats
- Six HDMI® and two DM® Essentials inputs with automatic switching
- One mirrored HDMI and DM Essentials output
- HDBaseT® certification of DM Essentials output
- 4K60 4:4:4 video scaler for mirrored output
- Out-of-the-box functionality
- Enterprise-grade security
- Text overlay, image overlay, and background image for on-screen display
- EDID management
- HDCP 2.3 compliance
- Audio mixing with audio embedding and de-embedding
- 100BASE-TX/1000BASE-T Ethernet connectivity
- USB power port
- Device control via CEC, IR, or RS-232 when used with compatible DM Essentials receiver
- Built-in web interface
- Compatibility with Crestron® 3-Series® or later control systems
- [.AV Framework™ technology support](#)
- [XiO Cloud® service support](#)
- [API \(application programming interface\)](#)
- 1 RU rack-mountable design

The HD-PS621 provides a 4K60 4:4:4 AV presentation system with enhanced HDMI® video switching and audio presentation capabilities for areas such as conference rooms and classrooms. The HD-PS621 includes six HDMI® inputs, two DM® Essentials inputs, and one HDMI output with mirrored DM Essentials output.

4K60 4:4:4 and HDR Support

The HDMI ports support video resolutions up to 4K60 with 4:4:4 color sampling. HDR10, HDR10+, and Dolby Vision® video formats are also supported.¹

The DM Essentials ports support a maximum resolution of 4K60 4:4:4 up to 130 ft (40 m) and 1080p60 4:4:4 up to 230 ft (70 m).²

Out-of-the-Box Functionality

Features such as automatic switching of inputs, automatic display control, and direct integration with occupancy sensors enable simple setup for many applications without the need for control system programming.

Enterprise-Grade Security

The HD-PS621 includes advanced security features and protocols. Using 802.1X authentication, Active Directory® credential management, PKI authentication, TLS, SSH, and HTTPS, the HD-PS621 provides a true enterprise-grade AV switcher.

Automatic Switching of Inputs

Automatic switching among the DM Essentials and HDMI inputs can occur based on the last connected input or on the routing priority assigned to each input. Switching behavior is configurable using the web interface and is also programmable using a Crestron control system. In addition, input selection push buttons on the front panel of the HD-PS621 enable the desired inputs to be selected manually.

HDBaseT® Certification of DM Essentials Output

The DM Essentials output is designed using HDBaseT Alliance specifications, ensuring interoperability with other HDBaseT certified devices. The DM Essentials output can be connected directly to an HDBaseT device.

4K60 4:4:4 Video Scaler

The mirrored HDMI and DM Essentials output shares a single 4K60 4:4:4 video scaler. By default, input resolutions are automatically scaled to match the native resolution of the display device, resulting in optimal image quality. The video scaler can be enabled or disabled using the web interface or a control system.

Text Overlay, Image Overlay, and Background Image

When the video scaler is enabled, text overlay, image overlay, and a background image can be displayed on-screen if desired. Text overlay can be used to display dynamic or fixed text for purposes such as labeling the video source or displaying special instructions, schedules, announcements, alerts, or other messaging. An image such as a logo or photo can be uploaded and then used for image overlay on top of active video content. An image can also be uploaded and then used as a background image whenever active video content is not being displayed.

EDID Management

The HD-PS621 provides comprehensive management of EDID (Extended Display Identification Data) to ensure that every source is displayed at the optimal resolution and format. For applications requiring a custom configuration, the HD-PS621 enables assessment of the format and resolution capabilities of any device that is connected to the HDMI output of the HD-PS621. The HD-PS621 provides the ability to configure signals appropriately for the most desirable and predictable behavior.

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Audio Mixing with Audio Embedding and De-embedding

The HD-PS621 provides three independent audio mixers for three outputs. For the mirrored HDMI and DM Essentials output, the HD-PS621 provides a 9-channel audio mixer. Embedded HDMI LPCM stereo audio can be extracted from the selected HDMI or DM Essentials input and combined with the eight mono analog audio inputs (MIC/LINE CH1-CH2 and LINE INPUT CH3-CH8). Gain and mute sound adjustments can be made to each of the nine inputs being mixed.

For each of the two AUX outputs, the HD-PS621 provides a 9-channel audio mixer. Embedded HDMI LPCM stereo audio can be extracted from the selected HDMI or DM Essentials input for the mirrored HDMI and DM Essentials output and combined with the eight mono analog audio inputs (MIC/LINE CH1-CH2 and LINE INPUT CH3-CH8). Gain and mute sound adjustments can be made to each of the nine inputs being mixed.

Volume and mute control are configurable for each mirrored HDMI and DM Essentials output and AUX audio output independently.

USB Power Port

A USB power port is included on the HD-PS621 to power USB powered devices (500mA maximum).

NOTE: No USB data is passed through the USB power port. The port cannot be used to extend USB data, video, or audio signals.

Device Control via CEC, IR, or RS-232

CEC (Consumer Electronics Control) over the HDMI output can enable a display device to be turned on or off automatically without the use of a control system. Under the management of a control system, CEC over the HDMI inputs can control source devices.

When connected to a compatible DM Essentials receiver (HD-RX-101-C-E, HD-RX-101-C-1G-E, HD-RXC-101-C-E, or HD-RXC-101-C-1G-E), the DM Essentials output port can control a display device without the use of a control system. The DM Essentials output port can output CEC display control when connected to an HD-RX-101-C-E or HD-RX-101-C-1G-E receiver. When connected to an HD-RXC-101-C-E or HD-RXC-101-C-1G-E receiver, the DM Essentials output port can output CEC, IR, or RS-232 display control. Under the management of a control system, the DM Essentials output port can output CEC and RS-232 control to an HDBaseT device.

The HD-PS621 also includes support for Crestron Certified Drivers. CEC and IP drivers can be used for the HDMI and DM Essentials output ports to provide automatic display control without the use of a control system.

Built-In Web Interface

Configuration of the HD-PS621 can be accomplished by using the built-in web interface. The configuration of a single device can be downloaded to a computer or mobile device and then uploaded to multiple HD-PS621 units to simplify system installation.

1 RU Rack-Mountable Design

The HD-PS621 can be mounted into a 19-inch EIA equipment rack using the included rack mount brackets. The device occupies 1 RU of rack space.

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Specifications

Video

| | |
|--|---|
| Switcher | 8x1 auto-switching or manual, audio-follows-video, Crestron Auto-Locking® and QuickSwitch HD™ technologies |
| Scaler (mirrored HDMI and DM Essentials output) | 4K60 4:4:4 video scaler with motion-adaptive deinterlacing, intelligent frame rate conversion; Deep Color support; HDR10, HDR10+, and Dolby Vision support; content-adaptive noise reduction; and 3:2/2:2 pull-down detection and recovery |
| Input Signal Types | HDMI with HDR10, HDR10+, and Dolby Vision support, Deep Color support, and 4K60 4:4:4 support (DVI and Dual-Mode DisplayPort™ interface compatible ³) on Inputs 1-6, DM Essentials and HDBaseT with Deep Color and 4K on Inputs 7-8 |
| Output Signal Types | HDMI, DM Essentials, and HDBaseT with HDR10, HDR10+, and Dolby Vision pass-through support, Deep Color support, and 4K60 4:4:4 support (DVI compatible ⁴) |
| Copy Protection | HDCP 2.3 |
| Maximum Resolutions | Common resolutions for the HDMI and DM Essentials inputs are listed in the following table. |

| Scan Type | Resolution | Frame Rate | Color Sampling | Color Depth |
|-------------------------|---------------------------------------|------------|----------------|-------------|
| Progressive | 4096x2160 DCI 4K and 3840x2160 4K UHD | 24 Hz | 4:4:4 | 36 bit |
| | | 30 Hz | 4:4:4 | 36 bit |
| | | 60 Hz | 4:2:2 | 36 bit |
| | | 60 Hz | 4:4:4 | 24 bit |
| | 2560x1600 WQXGA | 60 Hz | 4:4:4 | 36 bit |
| | 1920x1080 HD 1080p | 60 Hz | 4:4:4 | 36 bit |
| Interlaced (Input Only) | 1920x1080 HD 1080i | 30 Hz | 4:4:4 | 36 bit |

Scaler Output Resolutions, HDMI and DM Essentials

| |
|---------------------------|
| Auto-HDMI |
| Auto-DM Lite |
| 1280x720p@50Hz (720p50) |
| 1280x720p@60Hz (720p60) |
| 1920x1080p@24Hz (1080p24) |
| 1920x1080p@25Hz (1080p25) |
| 1920x1080p@30Hz (1080p30) |
| 1920x1080p@50Hz (1080p50) |
| 1920x1080p@60Hz (1080p60) |
| 3840x2160p@24Hz |
| 3840x2160p@25Hz |
| 3840x2160p@30Hz |
| 3840x2160p@50Hz |
| 3840x2160p@60Hz |
| 4096x2160p@24Hz |
| 4096x2160p@25Hz |
| 4096x2160p@30Hz |
| 4096x2160p@50Hz |
| 4096x2160p@60Hz |

Audio, General

| | |
|-------------------------------------|--|
| Audio Inputs | Two mono 1-channel MIC/LINE inputs Six mono 1-channel LINE inputs One stereo 2-channel LPCM audio extracted from the selected HDMI or DM Essentials input source |
| Audio Outputs | One mirrored HDMI 1 and DM Essentials 1 audio output One AUX 1 output, stereo 2-channel One AUX 2 output, stereo 2-channel |
| Analog-to-Digital Conversion | 24-bit 48 kHz |
| Digital-to-Analog Conversion | 24-bit 48 kHz |

Audio, Digital Inputs (HDMI 1-6 and DM 7-8)

| | |
|---------------------------|--|
| Input Signal Types | HDMI (Dual-Mode DisplayPort interface compatible ³), DM Essentials |
| Formats | Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, Dolby Atmos®, DTS®, DTS-ES, DTS 96/24, DTS HD® High Res, DTS-HD Master Audio, DTS:X®, LPCM up to 8 channels |

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Audio, Microphone/Line Inputs (CH1-CH2)

| | |
|--------------------------|---|
| Input Signal Type | Mono analog |
| Gain Range | -10 dB to +10 dB in 1 dB increments |
| Phantom Power | +48 VDC, 12 mA, enable or disable per channel |
| Mute | Enable or disable per channel |

Audio, Line Inputs (CH3-CH8)

| | |
|------------------------------------|-------------------------------------|
| Input Signal Type | Mono analog |
| Gain Range | -10 dB to +10 dB in 1 dB increments |
| Balanced Line Input Level | 4 Vrms |
| Unbalanced Line Input Level | 2 Vrms |
| Line Input Impedance | >10k ohms |

Audio, Digital Output

| | |
|---------------------------|--|
| Output Signal Type | HDMI |
| Formats | Dolby Digital, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS, DTS-ES, DTS 96/24, DTS HD High Res, DTS-HD Master Audio, DTS:X, LPCM up to 8 channels |
| Source Gain | -80 dB to +20 dB adjustment range, plus Mute |
| Volume Control | -80 dB to +20 dB adjustment range, plus Mute |
| Delay | 0 to 150 ms adjustment range |

Audio, Analog Line Output

| | |
|----------------------------------|--|
| Output Signal Type/Format | Stereo 2-channel |
| Frequency Response | ±0.5 dB, 20 Hz to 20 kHz |
| THD+N | <0.005%, 1 kHz, 4 Vrms |
| S/N Ratio | >95 dB, 4 Vrms, 20 Hz to 20 KHz, A-weighted |
| Crosstalk | >90 dB, 1 KHz, for multiple inputs only |
| Stereo Separation | >80 dB, 20 Hz to 20 kHz |
| Volume Control | -80 dB to +20 dB adjustment range, plus Mute, Mono, and Stereo |

Communications

| | |
|----------------------|--|
| Ethernet | 100/1000 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP, Web browser setup and control, Crestron control system integration, IEEE 802.1X, Secure CIP, Authentication, SSH/SSL, TLS |
| USB | For firmware loading and configuration management and to power a USB powered device |
| HDMI | HDCP 2.3, EDID, CEC |
| DM Essentials | HDCP 2.3 and EDID |
| HDBaseT | HDCP 2.3 |

Connectors

| | |
|-------------------------------------|---|
| MIC/LINE CH1-CH2 | (2) 3-pin 3.5 mm detachable terminal blocks; Balanced mono microphone/line audio inputs |
| LINE INPUT CH3-CH8 | (6) 3-pin 3.5 mm detachable terminal blocks; Balanced mono line-level audio inputs |
| AUX OUT 1-2 | (2) 5-pin 3.5 mm detachable terminal blocks; Balanced stereo line-level audio outputs; Output Impedance: <200 Ohms; Maximum Output Level: 4 Vrms balanced |
| HDMI INPUTS 1-6 | (6) 19-pin Type A connector, female; HDMI digital video/audio input (DVI and Dual-Mode DisplayPort interface compatible ³) |
| DM INPUTS 7-8 | (2) 8-pin RJ-45 yellow connectors, female, shielded; DM Essentials input ports for connection to DM Essentials transmitters ⁵ |
| DM OUTPUT 1 | (1) 8-pin RJ-45 blue connector, female, shielded; DM Essentials output port (HDBaseT standard compliant) for connection to a DM Essentials receiver, DMPS Essentials switcher, or HDBaseT device ⁶ ; Mirrored with HDMI OUTPUT 1 |
| HDMI OUTPUT 1 | (1) 19-pin Type A connector, female; HDMI digital video/audio output (DVI compatible ⁴); Mirrored with DM OUTPUT 1 |
| LAN | (1) 8-pin RJ-45 connector, female; 100BASE-TX/1000BASE-T Ethernet port |
| 100-240VAC 1.4-0.5A 50/60 Hz | (1) IEC 60320 C14 mains power inlet; Mates with removable power cord, included |

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NOTE: This power connection powers both the HD-PS621 and the connected DM Essentials transmitters and receiver. When connected to the HD-PS621, the DM Essentials transmitters and receiver must not be connected to power.⁷

| | |
|----------------|--|
| G | (1) 6-32 screw, chassis ground lug |
| SERVICE | (1) USB 2.0 Type A connector, female; For firmware loading and configuration management; Can also provide up to 5 V 500 mA power to a USB powered device |

Controls and Indicators

| | |
|----------------------|---|
| PWR | (1) LED. Amber indicates that the device is booting. Green indicates that the device is operational. |
| AUTO | (1) Push button to enable or disable automatic switching and (1) green LED to indicate that automatic switching is enabled. |
| SETUP | (1) Red LED and (1) push button for display of IP address on connected HDMI and DM Essentials output |
| INPUT 1-8 | (8) Push buttons for manual input selection and (8) LEDs. Green indicates that the corresponding input is routed to an output. Amber indicates that a source is detected at the corresponding input but is not routed to an output. |
| Ethernet | (2) LEDs on RJ-45 LAN connector. Link status LED: Green indicates that a 100BASE-TX link is established. Amber indicates that a 1000BASE-T link is established. Ethernet activity LED: Flashing amber indicates Ethernet activity. |
| DM Essentials | (2) LEDs on RJ-45 DM Essentials connectors. Green indicates that a DM Essentials link is established. Flashing amber indicates non-HDCP video and solid amber indicates HDCP video. |

Power

Mains Power 100-240VAC 1.4-0.5A 50/60 Hz

NOTE: The AC mains power connection powers both the HD-PS621 and connected DM Essentials transmitters and receiver. When connected to the HD-PS621, the DM Essentials transmitters and receiver must not be connected to power.⁷

Power Consumption 51 W typical

Environmental

Temperature 32° to 104° F (0° to 40° C)
Humidity 10% to 90% RH (non-condensing)
Heat Dissipation 119 BTU/hr typical
Acoustic Noise 32 dBA typical

Construction

Chassis Metal, black finish, vented sides
Mounting 1 RU 19-inch rack-mountable (rack ears included)

Dimensions

Height 1.72 in. (44 mm)
Width 17.33 in. (441 mm) without rack ears
 19.00 in. (483 mm) with rack ears (included)
Depth 10.82 in. (275 mm)

Weight

8.0 lb (3.63 kg)

Compliance

Regulatory Model M202004002
 Bureau Veritas Listed for US & Canada, IC, CE, FCC Part 15 Class B digital device

Model

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Accessories

For a list of accessories, visit the [HD-PS621](#) product page.

Notes:

- 4K60 4:4:4 performance and HDR support require the use of HDMI cables and couplers with a minimum TMDS bandwidth of 18 Gbps. If 4K60 4:2:0 or 4K30 4:4:4 performance is acceptable, cables and couplers with a minimum bandwidth of 10.2 Gbps may be used. Bandwidth loss is cumulative; therefore, performance may be reduced when inserting multiple cables and couplers inline.

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- For DM Essentials connections, use Crestron DM-CBL-8G, Crestron DM-CBL-ULTRA, or third-party CAT5e or higher cable. To safeguard against unpredictable environmental electrical noise that may impact performance at resolutions above 1080p, shielded cable and connectors are recommended for all applications and are required when bundling multiple cables in a wire run. Wire and cables are sold separately.
- An HDMI input requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. CBL-HDI-DVI interface cables are sold separately.
- An HDMI output requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HDI-DVI interface cables are available separately.
- Supported DM Essentials transmitters are the HD-TX-101-C-E, HD-TXC-101-C-E, HD-TX-101-C-1G-E, HD-TXC-101-C-1G-E, HD-TX-201-C-2G-E, HD-TX-301-C-E, and HDI-TX-301-C-2G-E.
- Supported DM Essentials receivers are the HD-RX-101-C-E, HD-RXC-101-C-E, HD-RX-101-C-1G-E, and HD-RXC-101-C-1G-E. Support of the HD-RX-201-C-E DM Essentials receiver and the DMPS Essentials switchers (HD-RX-4K-210-C-E, HD-RX-4K-210-C-E-POE, HD-RX-4K-410-C-E, HD-RX-4K-410-C-E-SW4, HD-RX-4K-510-C-E, and HD-RX-4K-510-C-E-SW4) is provided for the extension of audio and video signals only. The HD-PS621 web interface does not support configuration of connected HD-RX-201-C-E receivers or DMPS Essentials switchers. Those devices require a separate LAN connection and must be configured using the web interface of each device.
- The HD-PS621 does not provide power to DMPS Essentials switchers or HDBaseT devices.

This product is covered under the Crestron standard limited warranty. Refer to www.crestron.com/warranty for full details.

The specific patents that cover Crestron products are listed online at patents.crestron.com.

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

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HDMI

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Rev 12/16/24

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