View this document in HTML
crestron.com/docs/9587

Product Manual

HD-PS

4K60 4:4:4 HDR Presentation Systems

Crestron Electronics, Inc.

Have feedback on this document? Contact docfeedback@crestron.com.

The original language version of this document is U.S. English.
All other languages are a translation of the original document.

Regulatory Model: M202004002

Crestron product development software is licensed to Crestron dealers and Crestron Service Providers (CSPs) under a limited nonexclusive, nontransferable Software Development Tools License Agreement. Crestron product operating system software is licensed to Crestron dealers, CSPs, and end-users under a separate End-User License Agreement. Both of these Agreements can be found on the Crestron website at www.crestron.com/legal/software_license_agreement.

The product warranty can be found at www.crestron.com/warranty.

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

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

Contents

Getting Started

Welcome to the HD-PS 4K60 4:4:4 HDR Presentation System Product Manual. This one-stop-shop manual replaces documents for each HD-PS Presentation System. If this is your first time setting up an HD-PS Presentation System, or you are looking for content from these replaced documents, please refer to the headings below to get your system up and running smoothly.

Installation Content (Quick Start Guides)

Installation and connection instructions previously covered in individual Quick Start guides are now contained in a dedicated section for each model. Refer to Installation on page 43 for a full list of the installation instructions covered in this manual, then select the desired model from the list.

Specifications

The specifications for each HD-PS Presentation System are available on their respective product pages on the Crestron website, as are downloadable PDF files. For convenient reference, the specifications for all models covered in this manual are also available under Specifications on page 15.

Web Interface Configuration

All information regarding each Presentation System's web interface is contained in a dedicated configuration section. Refer to Configuration on page 64 for a full list of the configuration topics covered in this manual, then select the desired model from the list.

Features

This section provides the following information:

HD-PS401 Features

The HD-PS401 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-PS401 includes four HDMI® inputs and one mirrored HDMI and DM® Essentials output.

Key features include:

- 4K60 4:4:4 digital AV presentation system
- HDR10, HDR10+, and Dolby Vision® video formats
- Four HDMI® inputs with automatic switching
- One mirrored HDMI and HDBaseT® certified DM® Essentials output
- 4K60 4:4:4 video scaler
- Enterprise-grade security
- EDID management
- HDCP 2.3 compliance
- Audio mixing with audio embedding and de-embedding
- Device control via CEC, IR, or RS-232 when paired with a compatible DM Essentials receiver
- Built-in web interface
- Compatibility with Crestron® 3-Series® or later control systems
- .AV Framework™ technology and XiO Cloud® service support

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 port supports 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 input switching, automatic display control, and direct integration with occupancy sensors enable simple setup for many applications without the need for custom control system programming.

Enterprise-Grade Security

The HD-PS401 includes advanced security features and protocols. Using 802.1X authentication, Active Directory® credential management, PKI authentication, TLS, SSH, and HTTPS, the HD-PS401 provides a true enterprise-grade AV switcher.

Automatic Input Switching

Automatic switching between the HDMI inputs occurs based on the last connected input or on an assigned routing priority. Switching behavior is configurable using the web interface or programmable using a Crestron control system. Inputs can also be routed manually using the push buttons on the front panel of the HD-PS401.

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 or a DM Essentials receiver.

4K60 4:4:4 Video Scaler

The mirrored HDMI and DM Essentials outputs share 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 Images

Text overlay, image overlay, and a background image can be displayed on-screen when the output scaler is enabled. The text overlay feature displays dynamic or fixed text for purposes such as labeling the video source or displaying special announcements or other messaging. Upload a logo or photo to use for image overlay on top of active video content or as a background whenever active video content is not being displayed.

EDID Management

The presentation system 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 presentation system assesses the format and resolution capabilities of the connected HDMI display.

Audio Mixing with Audio Embedding and De-embedding

The HD-PS401 provides three independent audio mixers for four outputs:

- One five-channel audio mixer controls the audio mix for both connectors of the mirrored HDMI and DM Essentials output.
- A five-channel audio mix is provided for each of the two analog audio **AUX** outputs.

In each mixer, embedded HDMI LPCM stereo audio can be extracted from the selected HDMI input and combined with the four mono analog audio inputs (**MIC/LINE CH1-CH2** and **LINE INPUT CH3-CH4**). Gain and mute sound adjustments can be made to each of the five inputs being mixed.

Volume and mute controls are configurable for each output independently.

USB Power Port

A USB power port is included on the HD-PS401 to power USB powered devices (5V 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

The HDMI output supports CEC (Consumer Electronics Control) to power a connected display on or off without the use of a control system. Using custom control system programming, CEC commands sent over the HDMI input connections can also control source devices.

When connected to an HD-RX-4KZ-101 or HD-RXC-4KZ-101 receiver, the DM Essentials output port can output CEC, IR, or RS-232 display control without the use of a control system. Using custom control system programming, the DM Essentials output port can output CEC and RS-232 control to an HDBaseT device.

The HD-PS401 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.

> **NOTE:** The HD-PS401 can be paired with a DM Essentials receiver with USB capabilities (RXU endpoints), but will only pass audio and video content. USB data is not passed by the HD-PS401.

Built-In Web Interface

Setup of the HD-PS401 is accomplished by using a web browser. One device configuration file can be downloaded to a computer or mobile device and uploaded to multiple HD-PS401 units to simplify system installation.

Flexible Installation Options

The HD-PS401 can be surface mounted using the included hardware. The bottom surface of the presentation system features four inlays for attaching the included joining plates to secure the presentation system to a surface. These joining plates can also be used to gang the HD-PS401 together with other compatible half- or quarter-rack width units such as the AMP-X300 or another HD-PS401. Ganged devices can be mounted in a rack using the RMK-AMP-X mounting kit (sold separately).

Notes:

1. 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, so performance may be reduced when inserting multiple cables and couplers inline.
2. 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.

HD-PS402 Features

The HD-PS402 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-PS402 includes four HDMI® inputs and two HDMI outputs with mirrored DM® Essentials outputs.

Key features include:

- 4K60 4:4:4 digital AV presentation system
- HDR10, HDR10+, and Dolby Vision® video formats
- Four HDMI® inputs with automatic switching
- Two HDMI outputs mirrored with HDBaseT® certified DM® Essentials outputs
- 4K60 4:4:4 video scaler for each mirrored output
- Enterprise-grade security
- EDID management
- HDCP 2.3 compliance
- Audio mixing with audio embedding and de-embedding
- Device control via CEC, IR, or RS-232 when used with compatible DM Essentials receivers
- Built-in web interface
- Compatibility with Crestron® 3-Series® or later control systems
- .AV Framework™ technology and XiO Cloud® service support

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 input switching, automatic display control, and direct integration with occupancy sensors enable simple setup for many applications without the need for custom control system programming.

Enterprise-Grade Security

The HD-PS402 includes advanced security features and protocols. Using 802.1X authentication, Active Directory® credential management, PKI authentication, TLS, SSH, and HTTPS, the HD-PS402 provides a true enterprise-grade AV switcher.

Automatic Input Switching

Automatic switching between the HDMI inputs occurs based on the last connected input or on an assigned routing priority. Switching behavior is configurable using the web interface or programmable using a Crestron control system. Inputs can also be routed manually using the push buttons on the front panel of the HD-PS402.

HDBaseT® Certification of DM Essentials Outputs

The DM Essentials outputs are designed using HDBaseT Alliance specifications, ensuring interoperability with other HDBaseT certified devices. The DM Essentials outputs can be connected directly to HDBaseT devices or DM Essentials receivers.

4K60 4:4:4 Video Scaler

Each pair of mirrored HDMI and DM Essentials outputs share 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 Images

Text overlay, image overlay, and a background image can be displayed on-screen when the output scaler is enabled. The text overlay feature displays dynamic or fixed text for purposes such as labeling the video source or displaying special announcements or other messaging. Upload a logo or photo to use for image overlay on top of active video content or as a background whenever active video content is not being displayed.

EDID Management

The presentation system 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 presentation system assesses the format and resolution capabilities of the connected HDMI display.

Audio Mixing with Audio Embedding and De-embedding

The HD-PS402 provides four independent audio mixers for four outputs:

- A five-channel audio mixer is provided for each pair of mirrored HDMI and DM Essentials outputs (**HDMI OUTPUT 1** and **DM OUTPUT 1** share a mixer, as do **HDMI OUTPUT 2** and **DM OUTPUT 2**).
- A five-channel audio mix is provided for each of the two analog audio **AUX** outputs.

In each mixer, embedded HDMI LPCM stereo audio can be extracted from the selected HDMI input and combined with the four mono analog audio inputs (**MIC/LINE CH1-CH2** and **LINE INPUT CH3-CH4**). Gain and mute sound adjustments can be made to each of the five inputs being mixed.

Volume and mute controls are configurable for each output independently.

USB Power Port

A USB power port is included on the HD-PS402 to power USB powered devices (5V 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

The HDMI outputs support CEC (Consumer Electronics Control) to power a connected display on or off without the use of a control system. Using custom control system programming, CEC commands sent over the HDMI input connections can also control source devices.

When connected to HD-RX-4KZ-101 or HD-RXC-4KZ-101 receivers, the DM Essentials output ports can output CEC, IR, or RS-232 display control without the use of a control system. Using custom control system programming, the DM Essentials output ports can output CEC and RS-232 control to HDBaseT devices.

The HD-PS402 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.

NOTE: The HD-PS402 can be paired with DM Essentials receivers with USB capabilities (RXU endpoints), but will only pass audio and video content. USB data is not passed by the HD-PS402.

Built-In Web Interface

Setup of the HD-PS402 is accomplished by using a web browser. One device configuration file can be downloaded to a computer or mobile device and uploaded to multiple HD-PS402 units to simplify system installation.

1 RU Rack-Mountable Design

The HD-PS402 can be mounted into a 19-inch EIA equipment rack using the included rack mount brackets. The device occupies 1 RU of rack space.

Notes:

1. 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, so performance may be reduced when inserting multiple cables and couplers inline.
2. 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.

HD-PS621 Features

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.

Key features include:

- 4K60 4:4:4 digital AV presentation system
- HDR10, HDR10+, and Dolby Vision® video formats
- Six HDMI® inputs and two DM Essentials inputs with automatic switching
- One HDMI output mirrored with an HDBaseT® certified DM® Essentials output
- 4K60 4:4:4 video scaler
- Enterprise-grade security
- EDID management
- HDCP 2.3 compliance
- Audio mixing with audio embedding and de-embedding
- 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 and XiO Cloud® service support

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 input switching, automatic display control, and direct integration with occupancy sensors enable simple setup for many applications without the need for custom 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 Input Switching

Automatic switching between the DM Essentials and HDMI inputs occurs based on the last connected input or on an assigned routing priority. Switching behavior is configurable using the web interface or programmable using a Crestron control system. Inputs can also be routed manually using the push buttons on the front panel of the HD-PS621.

HDBaseT® Certification of DM Essentials Outputs

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

4K60 4:4:4 Video Scaler

The mirrored HDMI and DM Essentials outputs share 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 Images

Text overlay, image overlay, and a background image can be displayed on-screen when the output scaler is enabled. The text overlay feature displays dynamic or fixed text for purposes such as labeling the video source or displaying special announcements or other messaging. Upload a logo or photo to use for image overlay on top of active video content or as a background whenever active video content is not being displayed.

EDID Management

The presentation system 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 presentation system assesses the format and resolution capabilities of the connected HDMI display.

Audio Mixing with Audio Embedding and De-embedding

The HD-PS621 provides three independent audio mixers for four outputs:

- One five-channel audio mixer controls the audio mix for both connectors of the mirrored HDMI and DM Essentials output.
- A five-channel audio mix is provided for each of the two analog audio **AUX** outputs.

In each mixer, embedded HDMI LPCM stereo audio can be extracted from the selected HDMI 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 five inputs being mixed.

Volume and mute controls are configurable for each output independently.

USB Power Port

A USB power port is included on the HD-PS621 to power USB powered devices (5V 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

The HDMI output supports CEC (Consumer Electronics Control) to power a connected display on or off without the use of a control system. Using custom control system programming, CEC commands sent over the HDMI input connections can also control source devices.

When connected to an HD-RX-4KZ-101 or HD-RXC-4KZ-101 receiver, the DM Essentials output port can output CEC, IR, or RS-232 display control without the use of a control system. Using custom control system programming, 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.

NOTE: The HD-PS621 can be paired with DM Essentials endpoints with USB capabilities (TXU or RXU endpoints), but will only pass audio and video content. USB data is not passed by the HD-PS621.

Built-In Web Interface

Setup of the HD-PS621 is accomplished by using a web browser. One device configuration file can be downloaded to a computer or mobile device and 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.

Notes:

1. 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, so performance may be reduced when inserting multiple cables and couplers inline.
2. 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.

HD-PS622 Features

The HD-PS622 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-PS622 includes six HDMI® inputs, two DM® Essentials inputs, and two HDMI outputs with mirrored DM Essentials outputs.

Key features include:

- 4K60 4:4:4 digital AV presentation system
- HDR10, HDR10+, and Dolby Vision® video formats
- Six HDMI® inputs and two DM Essentials inputs with automatic switching
- Two HDMI outputs mirrored with HDBaseT® certified DM® Essentials outputs
- 4K60 4:4:4 video scaler
- Enterprise-grade security
- EDID management
- HDCP 2.3 compliance
- Audio mixing with audio embedding and de-embedding
- 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 and XiO Cloud® service support

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 input switching, automatic display control, and direct integration with occupancy sensors enable simple setup for many applications without the need for custom control system programming.

Enterprise-Grade Security

The HD-PS622 includes advanced security features and protocols. Using 802.1X authentication, Active Directory® credential management, PKI authentication, TLS, SSH, and HTTPS, the HD-PS622 provides a true enterprise-grade AV switcher.

Automatic Input Switching

Automatic switching between the DM Essentials and HDMI inputs occurs based on the last connected input or on an assigned routing priority. Switching behavior is configurable using the web interface or programmable using a Crestron control system. Inputs can also be routed manually using the push buttons on the front panel of the HD-PS622.

HDBaseT® Certification of DM Essentials Outputs

The DM Essentials outputs are designed using HDBaseT Alliance specifications, ensuring interoperability with other HDBaseT certified devices. The DM Essentials outputs can be connected directly to HDBaseT devices or DM Essentials receivers.

4K60 4:4:4 Video Scaler

Each pair of mirrored HDMI and DM Essentials outputs share 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 Images

Text overlay, image overlay, and a background image can be displayed on-screen when the output scaler is enabled. The text overlay feature displays dynamic or fixed text for purposes such as labeling the video source or displaying special announcements or other messaging. Upload a logo or photo to use for image overlay on top of active video content or as a background whenever active video content is not being displayed.

EDID Management

The presentation system 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 presentation system assesses the format and resolution capabilities of the connected HDMI display.

Audio Mixing with Audio Embedding and De-embedding

The HD-PS622 provides four independent audio mixers for four outputs:

- A five-channel audio mixer is provided for each pair of mirrored HDMI and DM Essentials outputs (**HDMI OUTPUT 1** and **DM OUTPUT 1** share a mixer, as do **HDMI OUTPUT 2** and **DM OUTPUT 2**).
- A five-channel audio mix is provided for each of the two analog audio **AUX** outputs.

In each mixer, embedded HDMI LPCM stereo audio can be extracted from the selected HDMI 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 five inputs being mixed.

Volume and mute controls are configurable for each output independently.

USB Power Port

A USB power port is included on the HD-PS622 to power USB powered devices (5V 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

The HDMI output supports CEC (Consumer Electronics Control) to power a connected display on or off without the use of a control system. Using custom control system programming, CEC commands sent over the HDMI input connections can also control source devices.

When connected to HD-RX-4KZ-101 or HD-RXC-4KZ-101 receivers, the DM Essentials output ports can output CEC, IR, or RS-232 display control without the use of a control system. Using custom control system programming, the DM Essentials output ports can output CEC and RS-232 control to HDBaseT devices.

The HD-PS622 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.

NOTE: The HD-PS622 can be paired with DM Essentials endpoints with USB capabilities (TXU or RXU endpoints), but will only pass audio and video content. USB data is not passed by the HD-PS622.

Built-In Web Interface

Setup of the HD-PS622 is accomplished by using a web browser. One device configuration file can be downloaded to a computer or mobile device and uploaded to multiple HD-PS622 units to simplify system installation.

1 RU Rack-Mountable Design

The HD-PS622 can be mounted into a 19-inch EIA equipment rack using the included rack mount brackets. The device occupies 1 RU of rack space.

Notes:

1. 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, so performance may be reduced when inserting multiple cables and couplers inline.
2. 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.

Specifications

This section provides the following information:

HD-PS401 Specifications

Product specifications for the HD-PS401 are provided below.

Product Specifications

Video

Switcher	4x1 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[1])
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[2])
Copy Protection	HDCP 2.3
Maximum Resolutions	Common resolutions are listed in the table below

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	(2) mono, balanced analog **MIC/LINE** inputs; (2) mono, balanced analog **LINE** inputs; (1) stereo, digital LPCM audio input extracted from the selected HDMI input source
Audio Outputs	(1) mirrored HDMI and DM Essentials audio output; (2) stereo, balanced analog line-level **AUX** outputs
Analog-to-Digital Conversion	24-bit, 48 kHz
Digital-to-Analog Conversion	24-bit, 48 kHz

Audio, Digital Inputs (HDMI 1-4)

Input Signal Type	HDMI (Dual-Mode DisplayPort interface compatible[1])
Supported 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

Audio, Microphone/Line Inputs (CH 1-2)

Input Signal Type	Mono analog microphone-level or balanced line-level audio
Gain Range	-10 dB to +10 dB in 1 dB increments
Phantom Power	+48VDC, 12mA, enabled or disabled per channel
Mute	Enabled or disabled per channel

Audio, Line Inputs (CH 3-4)

Input Signal Type	Mono analog balanced or unbalanced line-level audio
Gain Range	-10 dB to +10 dB in 1 dB increments
Balanced Line Input Level	4Vrms
Unbalanced Line Input Level	2Vrms
Line Input Impedance	>10 kΩ
Mute	Enabled or disabled per channel

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, DTSHD 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 Outputs (AUX 1-2)

Output Signal Type	Stereo analog balanced or unbalanced line-level audio
Frequency Response	20 Hz to 20 kHz ±0.5 dB
THD+N	<0.005%, 1 kHz, 4Vrms
S/N Ratio	>95 dB, 4Vrms, 20 Hz to 20 kHz, A-weighted
Crosstalk	>90 dB, 1 kHz
Stereo Separation	>80 dB, 20 Hz to 20 kHz
Volume Control	-80 dB to +20 dB adjustment range, plus mute, mono sum, or stereo output

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
HDBaseT	HDCP 2.3

Connectors

MIC/LINE CH 1-2	(2) 3-pin 3.5 mm detachable terminal blocks; Balanced mono microphone-level or line-level analog audio inputs

LINE INPUT CH 3-4	(2) 3-pin 3.5 mm detachable terminal blocks; Balanced mono line-level analog audio inputs
AUX OUT 1-2	(2) 5-pin 3.5 mm detachable terminal blocks; Balanced stereo line-level analog audio outputs; Output Impedance: <200 Ω; Maximum Output Level: 4Vrms balanced
HDMI INPUTS 1-4	(4) HDMI Type A connectors, female; HDMI digital audio/video input (DVI and Dual-Mode DisplayPort interface compatible[1])
DM OUTPUT	(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; Mirrored with **HDMI OUTPUT**
HDMI OUTPUT	(1) HDMI Type A connector, female; HDMI digital audio/video output (DVI compatible[2]); Mirrored with **DM OUTPUT**
LAN	(1) 8-pin RJ-45 connector, female; 100BASE-TX/1000BASE-T Ethernet port
100-240VAC 0.7-0.25A 50/60 Hz	(1) IEC 60320 C14 mains power inlet; Removable power cord included

> **CAUTION:** The AC mains power connection powers the HD-PS401 and a connected DM Essentials receiver. When connected to the HD-PS401, the DM Essentials receiver must not be connected to a local power supply.[3]

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

Controls and Indicators

PWR	(1) Bicolor green/amber LED; Indicates operating power is being supplied; 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 outputs
INPUT 1-4	(4) Push buttons for manual input selection and (4) bicolor green/amber 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 connector; Green indicates that a DM Essentials link is established; Flashing amber indicates non-HDCP video; Solid amber indicates HDCP vide

Power

Main Power	100-240VAC, 0.7-0.25A 50/60 Hz

> **CAUTION:** The AC mains power connection powers the HD-PS401 and a connected DM Essentials receiver. When connected to the HD-PS401, the DM Essentials receiver must not be connected to a local power supply.[3]

Power Consumption	29.2 W typical

Environmental

Temperature	32° to 104°F (0° to 40°C)
Humidity	10% to 90% RH (noncondensing)
Heat Dissipation	99.6 BTU/hr typical
Acoustic Noise	30 dBA typical

Construction

Chassis	Metal, black finish, vented sides
Mounting	Surface-mountable via included hardware; Rack-mountable via the optional RMK-AMP-X mounting kit (sold separately)

Dimensions

Height	1.72 in. (44 mm)
Width	8.66 in. (361 mm)
Depth	10.82 in. (275 mm)

Weight

4.72 lb (2.14 kg)

Compliance

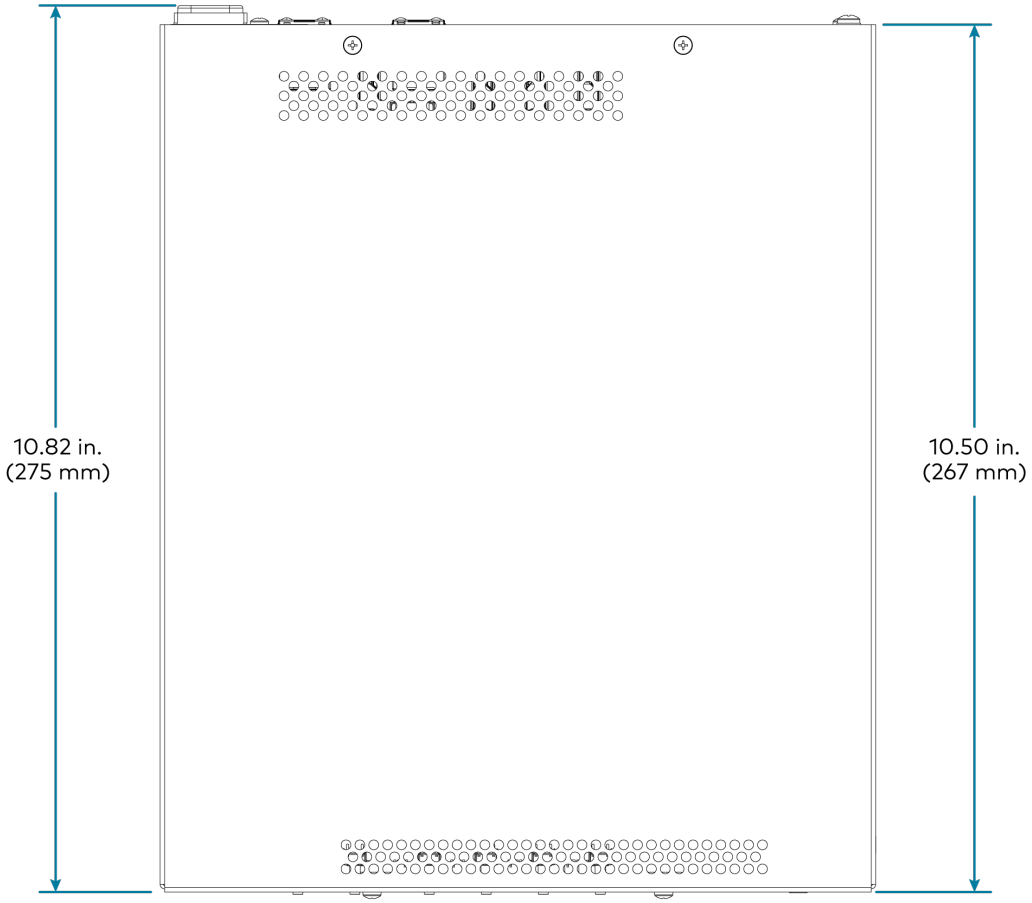
Regulatory Model: M202004002

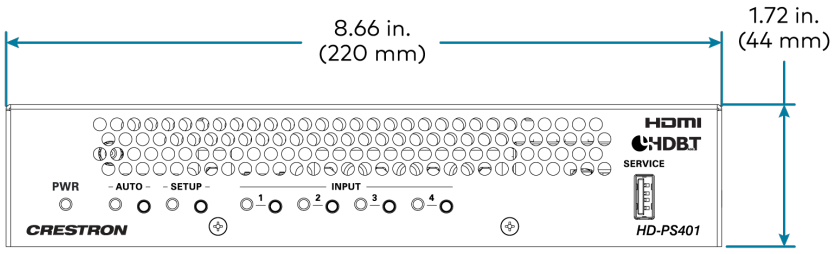
Bureau Veritas Listed for US & Canada, IC, CE, FCC Part 15 Class B digital device

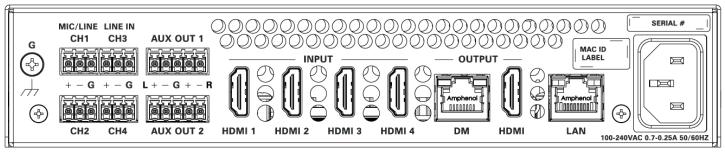
Notes:

1. An HDMI input requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal (not included).
2. An HDMI output requires an appropriate adapter or interface cable to accommodate a DVI signal (not included).
3. The HD-PS401 does not provide power to DMPS Essentials switchers or HDBaseT devices.

Dimension Drawings







HD-PS402 Specifications

Product specifications for the HD-PS402 are provided below.

Product Specifications

Video

Switcher	4x2 auto-switching or manual, audio-follows-video, Crestron Auto-Locking® and QuickSwitch HD™ technologies
Scaler (mirrored HDMI and DM Essentials outputs)	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[1])
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[2])
Copy Protection	HDCP 2.3
Maximum Resolutions	Common resolutions are listed in the table below

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	(2) mono, balanced analog **MIC/LINE** inputs; (2) mono, balanced analog **LINE** inputs; (1) stereo, digital LPCM audio input extracted from the selected HDMI input source
Audio Outputs	(1) mirrored **HDMI 1** and **DM 1** audio output; (1) mirrored **HDMI 2** and **DM 2** audio output; (2) stereo, balanced analog line-level **AUX** outputs
Analog-to-Digital Conversion	24-bit, 48 kHz
Digital-to-Analog Conversion	24-bit, 48 kHz

Audio, Digital Inputs (HDMI 1-4)

Input Signal Type	HDMI (Dual-Mode DisplayPort interface compatible[1])
Supported 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

Audio, Microphone/Line Inputs (CH 1-2)

Input Signal Type	Mono analog microphone-level or balanced line-level audio
Gain Range	-10 dB to +10 dB in 1 dB increments
Phantom Power	+48VDC, 12mA, enabled or disabled per channel

Mute	Enabled or disabled per channel

Audio, Line Inputs (CH 3-4)

Input Signal Type	Mono analog balanced or unbalanced line-level audio
Gain Range	-10 dB to +10 dB in 1 dB increments
Balanced Line Input Level	4Vrms
Unbalanced Line Input Level	2Vrms
Line Input Impedance	>10 kΩ
Mute	Enabled or disabled per channel

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, DTSHD 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 Outputs (AUX 1-2)

Output Signal Type	Stereo analog balanced or unbalanced line-level audio
Frequency Response	20 Hz to 20 kHz ±0.5 dB
THD+N	<0.005%, 1 kHz, 4Vrms
S/N Ratio	>95 dB, 4Vrms, 20 Hz to 20 kHz, A-weighted
Crosstalk	>90 dB, 1 kHz
Stereo Separation	>80 dB, 20 Hz to 20 kHz
Volume Control	-80 dB to +20 dB adjustment range, plus mute, mono sum, or stereo output

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
HDBaseT	HDCP 2.3

Connectors

MIC/LINE CH 1-2	(2) 3-pin 3.5 mm detachable terminal blocks; Balanced mono microphone-level or line-level analog audio inputs
LINE INPUT CH 3-4	(2) 3-pin 3.5 mm detachable terminal blocks; Balanced mono line-level analog audio inputs
AUX OUT 1-2	(2) 5-pin 3.5 mm detachable terminal blocks; Balanced stereo line-level analog audio outputs; Output Impedance: <200 Ω; Maximum Output Level: 4Vrms balanced
HDMI INPUTS 1-4	(4) HDMI Type A connectors, female; HDMI digital audio/video input (DVI and Dual-Mode DisplayPort interface compatible[1])
DM 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; Mirrored with **HDMI OUTPUT 1**
HDMI OUTPUT 1	(1) HDMI Type A connector, female; HDMI digital audio/video output (DVI compatible[2]); Mirrored with **DM 1**
DM 2	(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; Mirrored with **HDMI OUTPUT 2**
HDMI OUTPUT 2	(1) HDMI Type A connector, female; HDMI digital audio/video output (DVI compatible[2]); Mirrored with **DM 2**
LAN	(1) 8-pin RJ-45 connector, female; 100BASE-TX/1000BASE-T Ethernet port
100-240VAC 1.1-0.4A 50/60 Hz	(1) IEC 60320 C14 mains power inlet; Removable power cord included
	CAUTION: The AC mains power connection powers the HD-PS402 and connected DM Essentials receivers. When connected to the HD-PS402, DM Essentials receivers must not be connected to a local power supply.[3]
G	(1) 6-32 screw, chassis ground lug
SERVICE	(1) USB 2.0 Type A connector, female; For firmware loading and configuration management; Provides up to 5V, 500mA power to a USB-powered device

Controls and Indicators

PWR	(1) Bicolor green/amber LED; Indicates operating power is being supplied; 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 outputs
INPUT 1-4	(4) Push buttons for manual input selection and (4) bicolor green/amber 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
OUTPUT 1-2	(2) Push buttons for manual output selection and (2) bicolor amber/green LEDs; Amber indicates that a display or other destrination device is detected but no video source is routed to the output; Green indicates that the corresponding output is transmitting video to a detected display or other destination device
FOLLOW	(1) Push button to enable or disable Follow Output mode and (1) green LED; LED indicates that Follow Output mode is enabled, which causes a selected HDMI input to be routed to HDMI and DM Essentials outputs 1 and 2 simultaneously
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 each RJ-45 DM Essentials connector; Green indicates that a DM Essentials link is established; Flashing amber indicates non-HDCP video; Solid amber indicates HDCP vide

Power

Main Power	100-240VAC, 1.1-0.4A, 50/60 Hz
	CAUTION: The AC mains power connection powers the HD-PS402 and connected DM Essentials receivers. When connected to the HD-PS402, DM Essentials receivers must not be connected to a local power supply.[3]
Power Consumption	52 W typical

Environmental

Temperature	32° to 104°F (0° to 40°C)
Humidity	10% to 95% RH (noncondensing)
Heat Dissipation	123 BTU/hr typical
Acoustic Noise	32 dBA typical

Construction

Chassis	Metal, black finish, vented sides
Mounting	1 RU 19 in. 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

8.2 lb (3.71 kg)

Compliance

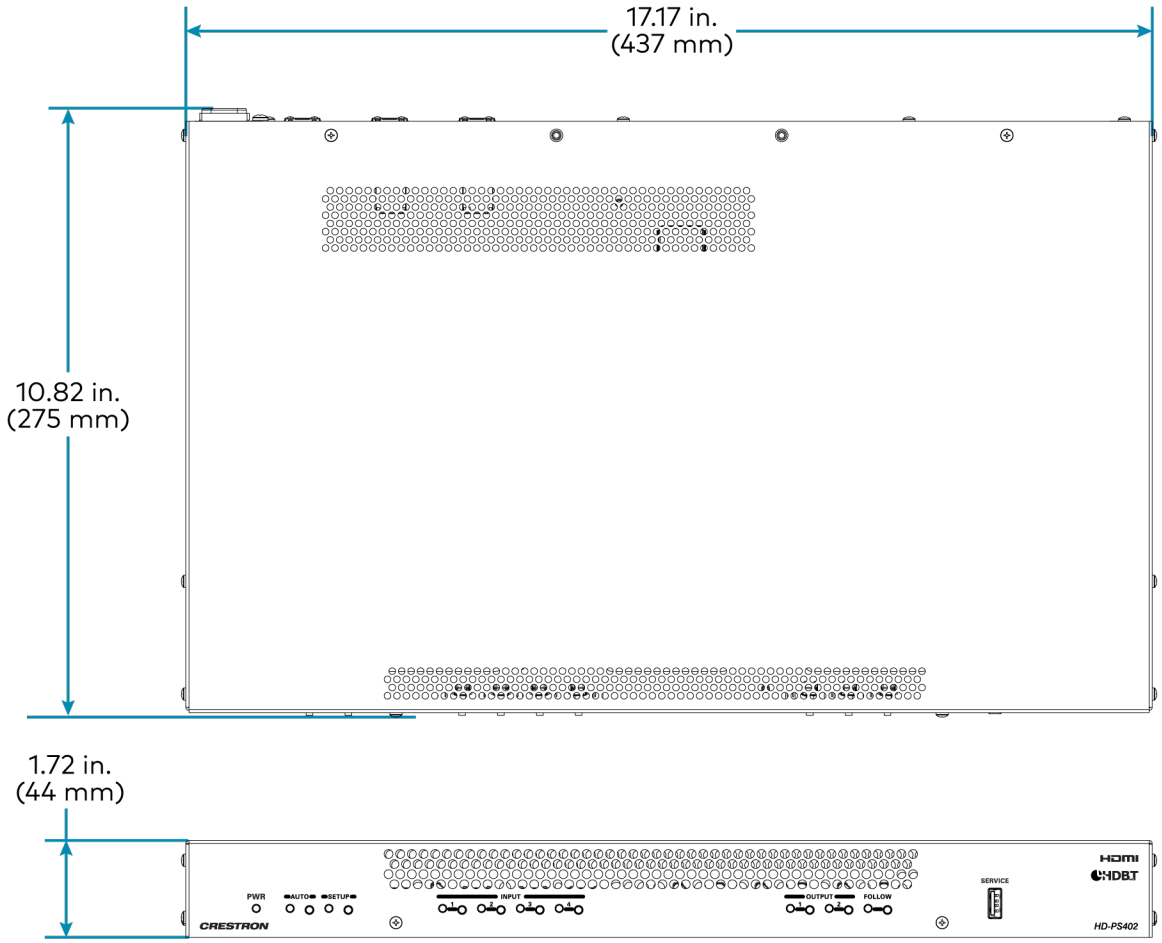
Regulatory Model: M202004002

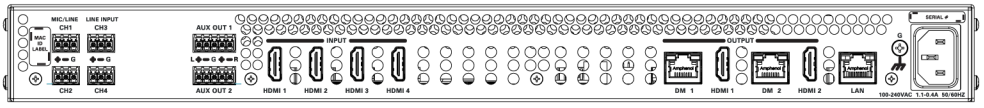
Bureau Veritas Listed for US & Canada, IC, CE, FCC Part 15 Class B digital device

Notes:

1. An HDMI input requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal (not included).
2. An HDMI output requires an appropriate adapter or interface cable to accommodate a DVI signal (not included).
3. The HD-PS402 does not provide power to DMPS Essentials switchers or HDBaseT devices.

Dimension Drawings





HD-PS621 Specifications

Product specifications for the HD-PS621 are provided below.

Product 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[1]) on **INPUTS 1-6**, DM Essentials 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[2])
Copy Protection	HDCP 2.3
Maximum Resolutions	Common resolutions are listed in the table below

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	(2) mono, balanced analog **MIC/LINE** inputs; (6) mono, balanced analog **LINE** inputs; (1) stereo, digital LPCM audio input extracted from the selected HDMI or DM Essentials input source
Audio Outputs	(1) mirrored **HDMI 1** and **DM 1** audio output; (2) stereo, balanced analog line-level **AUX** outputs
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 Type	HDMI (Dual-Mode DisplayPort interface compatible[1]), DM Essentials
Supported 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

Audio, Microphone/Line Inputs (CH 1-2)

Input Signal Type	Mono analog microphone-level or balanced line-level audio
Gain Range	Mic: 0 to +60 dB in 1 dB increments; Line:-10 dB to +10 dB in 1 dB increments
Phantom Power	+48VDC, 12mA, enabled or disabled per channel

Mute	Enabled or disabled per channel

Audio, Line Inputs (CH 3-8)

Input Signal Type	Mono analog balanced or unbalanced line-level audio
Gain Range	-10 dB to +10 dB in 1 dB increments
Balanced Line Input Level	4Vrms
Unbalanced Line Input Level	2Vrms
Line Input Impedance	>10 kΩ
Mute	Enabled or disabled per channel

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, DTSHD 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 Outputs (AUX 1-2)

Output Signal Type	Stereo analog balanced or unbalanced line-level audio
Frequency Response	20 Hz to 20 kHz ±0.5 dB
THD+N	<0.005%, 1 kHz, 4Vrms
S/N Ratio	>95 dB, 4Vrms, 20 Hz to 20 kHz, A-weighted
Crosstalk	>90 dB, 1 kHz
Stereo Separation	>80 dB, 20 Hz to 20 kHz
Volume Control	-80 dB to +20 dB adjustment range, plus mute, mono sum, or stereo output

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 CH 1-2	(2) 3-pin 3.5 mm detachable terminal blocks; Balanced mono microphone-level or line-level analog audio inputs
LINE INPUT CH 3-8	(6) 3-pin 3.5 mm detachable terminal blocks; Balanced mono line-level analog audio inputs
AUX OUT 1-2	(2) 5-pin 3.5 mm detachable terminal blocks; Balanced stereo line-level analog audio outputs; Output Impedance: <200 Ω; Maximum Output Level: 4Vrms balanced
HDMI INPUTS 1-6	(6) HDMI Type A connectors, female; HDMI digital audio/video input (DVI and Dual-Mode DisplayPort interface compatible[1])
DM INPUTS 7-8	(2) 8-pin RJ-45 yellow connectors, female, shielded; DM Essentials input ports for connection to DM Essentials transmitters[3]
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; Mirrored with **HDMI OUTPUT 1**
HDMI OUTPUT 1	(1) HDMI Type A connector, female; HDMI digital audio/video output (DVI compatible[2]); 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; Removable power cord included
	CAUTION: The AC mains power connection powers the HD-PS621 and connected DM Essentials receivers. When connected to the HD-PS621, DM Essentials receivers must not be connected to a local power supply.[3]
G	(1) 6-32 screw, chassis ground lug
SERVICE	(1) USB 2.0 Type A connector, female; For firmware loading and configuration management; Provides up to 5V, 500mA power to a USB-powered device

Controls and Indicators

PWR	(1) Bicolor green/amber LED; Indicates operating power is being supplied; 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 outputs
INPUT 1-8	(8) Push buttons for manual input selection and (8) bicolor green/amber 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 each RJ-45 DM Essentials connector; Green indicates that a DM Essentials link is established; Flashing amber indicates non-HDCP video; Solid amber indicates HDCP vide

Power

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

> **CAUTION:** The AC mains power connection powers the HD-PS621 and connected DM Essentials receivers. When connected to the HD-PS621, DM Essentials receivers must not be connected to a local power supply.[3]

Power Consumption	51 W typical

Environmental

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

Construction

Chassis	Metal, black finish, vented sides
Mounting	1 RU 19 in. 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

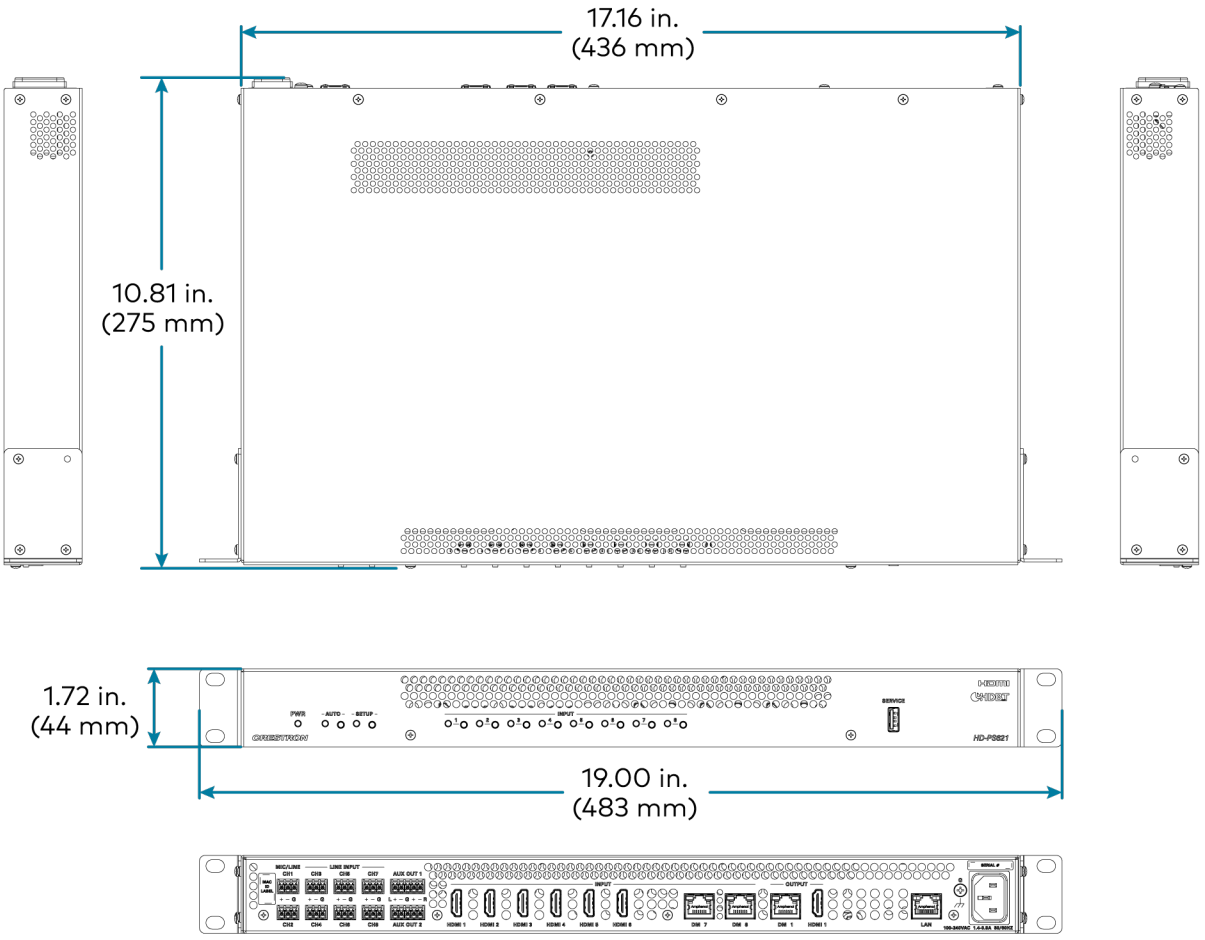
Regulatory Model: M202004002

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

Notes:

1. An HDMI input requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal (not included).
2. An HDMI output requires an appropriate adapter or interface cable to accommodate a DVI signal (not included).
3. The HD-PS621 does not provide power to DMPS Essentials switchers or HDBaseT devices.

Dimension Drawings



HD-PS622 Specifications

Product specifications for the HD-PS622 are provided below.

Product Specifications

Video

Switcher	8x2 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[1]) on **INPUTS 1-6**, DM Essentials 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[2])
Copy Protection	HDCP 2.3
Maximum Resolutions	Common resolutions are listed in the table below

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	(2) mono, balanced analog **MIC/LINE** inputs; (6) mono, balanced analog **LINE** inputs; (1) stereo, digital LPCM audio input extracted from the selected HDMI or DM Essentials input source
Audio Outputs	(1) mirrored **HDMI 1** and **DM 1** audio output; (1) mirrored **HDMI 2** an **DM 2** audio output; (2) stereo, balanced analog line-level **AUX** outputs
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 Type	HDMI (Dual-Mode DisplayPort interface compatible[1]), DM Essentials
Supported 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

Audio, Microphone/Line Inputs (CH 1-2)

Input Signal Type	Mono analog microphone-level or balanced line-level audio
Gain Range	Mic: 0 to +60 dB in 1 dB increments; Line:-10 dB to +10 dB in 1 dB increments

Phantom Power	+48VDC, 12mA, enabled or disabled per channel
Mute	Enabled or disabled per channel

Audio, Line Inputs (CH 3-8)

Input Signal Type	Mono analog balanced or unbalanced line-level audio
Gain Range	-10 dB to +10 dB in 1 dB increments
Balanced Line Input Level	4Vrms
Unbalanced Line Input Level	2Vrms
Line Input Impedance	>10 kΩ
Mute	Enabled or disabled per channel

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, DTSHD 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 Outputs (AUX 1-2)

Output Signal Type	Stereo analog balanced or unbalanced line-level audio
Frequency Response	20 Hz to 20 kHz ±0.5 dB
THD+N	<0.005%, 1 kHz, 4Vrms
S/N Ratio	>95 dB, 4Vrms, 20 Hz to 20 kHz, A-weighted
Crosstalk	>90 dB, 1 kHz
Stereo Separation	>80 dB, 20 Hz to 20 kHz
Volume Control	-80 dB to +20 dB adjustment range, plus mute, mono sum, or stereo output

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 CH 1-2	(2) 3-pin 3.5 mm detachable terminal blocks; Balanced mono microphone-level or line-level analog audio inputs
LINE INPUT CH 3-8	(6) 3-pin 3.5 mm detachable terminal blocks; Balanced mono line-level analog audio inputs
AUX OUT 1-2	(2) 5-pin 3.5 mm detachable terminal blocks; Balanced stereo line-level analog audio outputs; Output Impedance: <200 Ω; Maximum Output Level: 4Vrms balanced
HDMI INPUTS 1-6	(6) HDMI Type A connectors, female; HDMI digital audio/video input (DVI and Dual-Mode DisplayPort interface compatible[1])
DM INPUTS 7-8	(2) 8-pin RJ-45 yellow connectors, female, shielded; DM Essentials input ports for connection to DM Essentials transmitters[3]
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; Mirrored with **HDMI OUTPUT 1**
HDMI OUTPUT 1	(1) HDMI Type A connector, female; HDMI digital audio/video output (DVI compatible[2]); Mirrored with **DM 1**
DM OUTPUT 2	(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; Mirrored with **HDMI OUTPUT 2**
HDMI OUTPUT 2	(1) HDMI Type A connector, female; HDMI digital audio/video output (DVI compatible[2]); Mirrored with **DM 2**
LAN	(1) 8-pin RJ-45 connector, female; 100BASE-TX/1000BASE-T Ethernet port
100-240VAC 1.8-0.7A 50/60 Hz	(1) IEC 60320 C14 mains power inlet; Removable power cord included
	CAUTION: The AC mains power connection powers the HD-PS622 and connected DM Essentials endpoints. When connected to the HD-PS622, DM Essentials endpoints must not be connected to a local power supply.[3]
G	(1) 6-32 screw, chassis ground lug
SERVICE	(1) USB 2.0 Type A connector, female; For firmware loading and configuration management; Provides up to 5V, 500mA power to a USB-powered device

Controls and Indicators

PWR	(1) Bicolor green/amber LED; Indicates operating power is being supplied; 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 outputs
INPUT 1-8	(8) Push buttons for manual input selection and (8) bicolor green/amber 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 each RJ-45 DM Essentials connector; Green indicates that a DM Essentials link is established; Flashing amber indicates non-HDCP video; Solid amber indicates HDCP vide

Power

Main Power	100-240VAC 1.8-0.7A 50/60 Hz
	CAUTION: The AC mains power connection powers the HD-PS622 and connected DM Essentials endpoints. When connected to the HD-PS622, DM Essentials endpoints must not be connected to a local power supply.[3]
Power Consumption	72 W typical

Environmental

Temperature	32° to 104°F (0° to 40°C)
Humidity	10% to 90% RH (noncondensing)
Heat Dissipation	164 BTU/hr typical
Acoustic Noise	32 dBA typical

Construction

Chassis	Metal, black finish, vented sides
Mounting	1 RU 19 in. 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

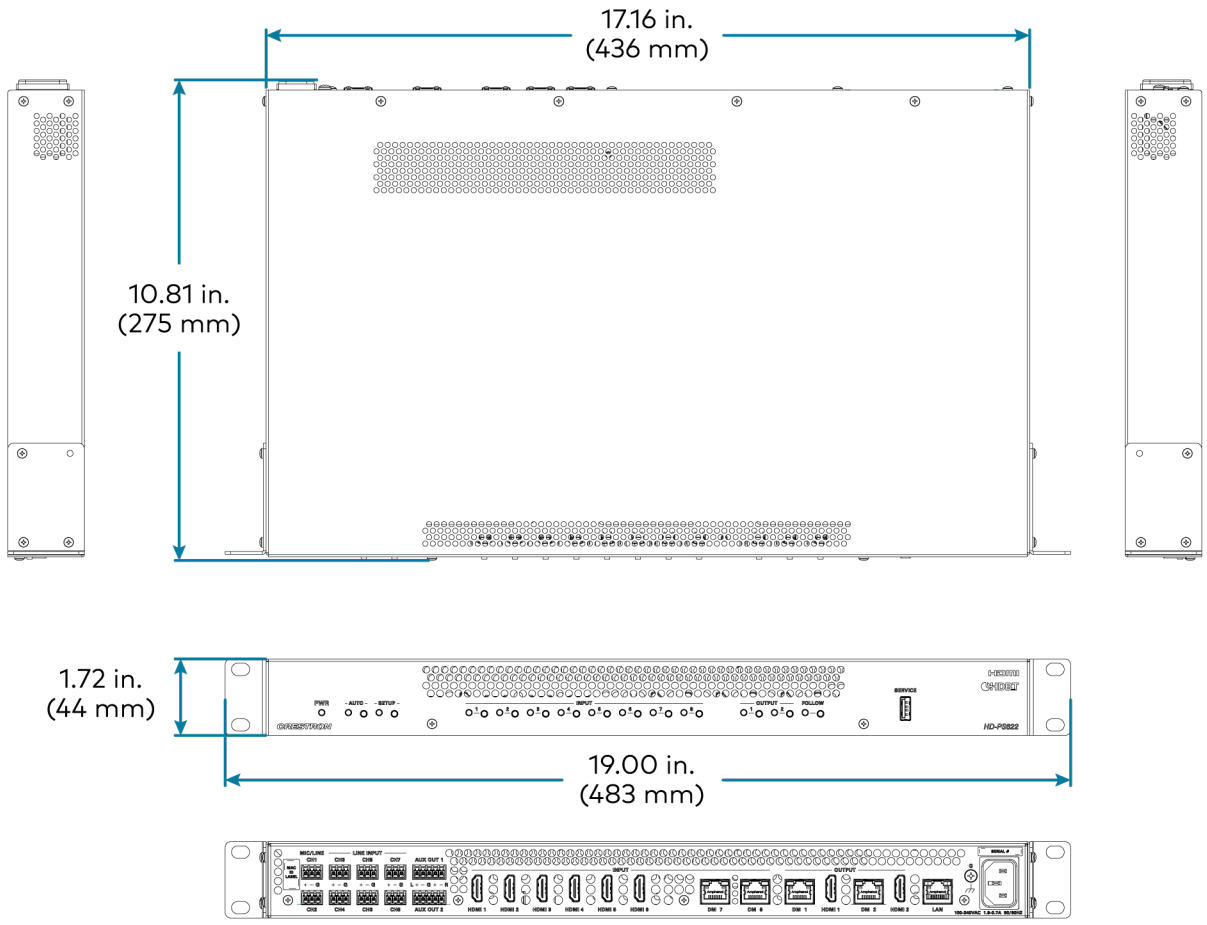
Regulatory Model: M202004002

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

Notes:

1. An HDMI input requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal (not included).
2. An HDMI output requires an appropriate adapter or interface cable to accommodate a DVI signal (not included).
3. The HD-PS622 does not provide power to DMPS Essentials switchers or HDBaseT devices.

Dimension Drawings



Installation

This section provides the following information:

HD-PS401 Installation

Use the following procedures to install the HD-PS401.

In the Box

Qty.	Description
1	HD-PS401, AV Presentation System
	Additional Items
1	Power Cord, 6 ft 7 in. (2 m) (2001134)
4	Joining Plate (2056313)
4	Connector, 3-Pin (2003575)
2	Connector, 5-Pin (2003577)
8	Joining Plate Screw, 8-32 x 5/16 in., Undercut Flat Head, Phillips, Black (2056985)
4	Anchor, Wall, Plastic, Self Drill, 8 x 1-5/8 in., Off-White (2057959)
4	Screw, 8-15 x 3/4 in., Type A, Flat Head, Phillips, Black (2057968)

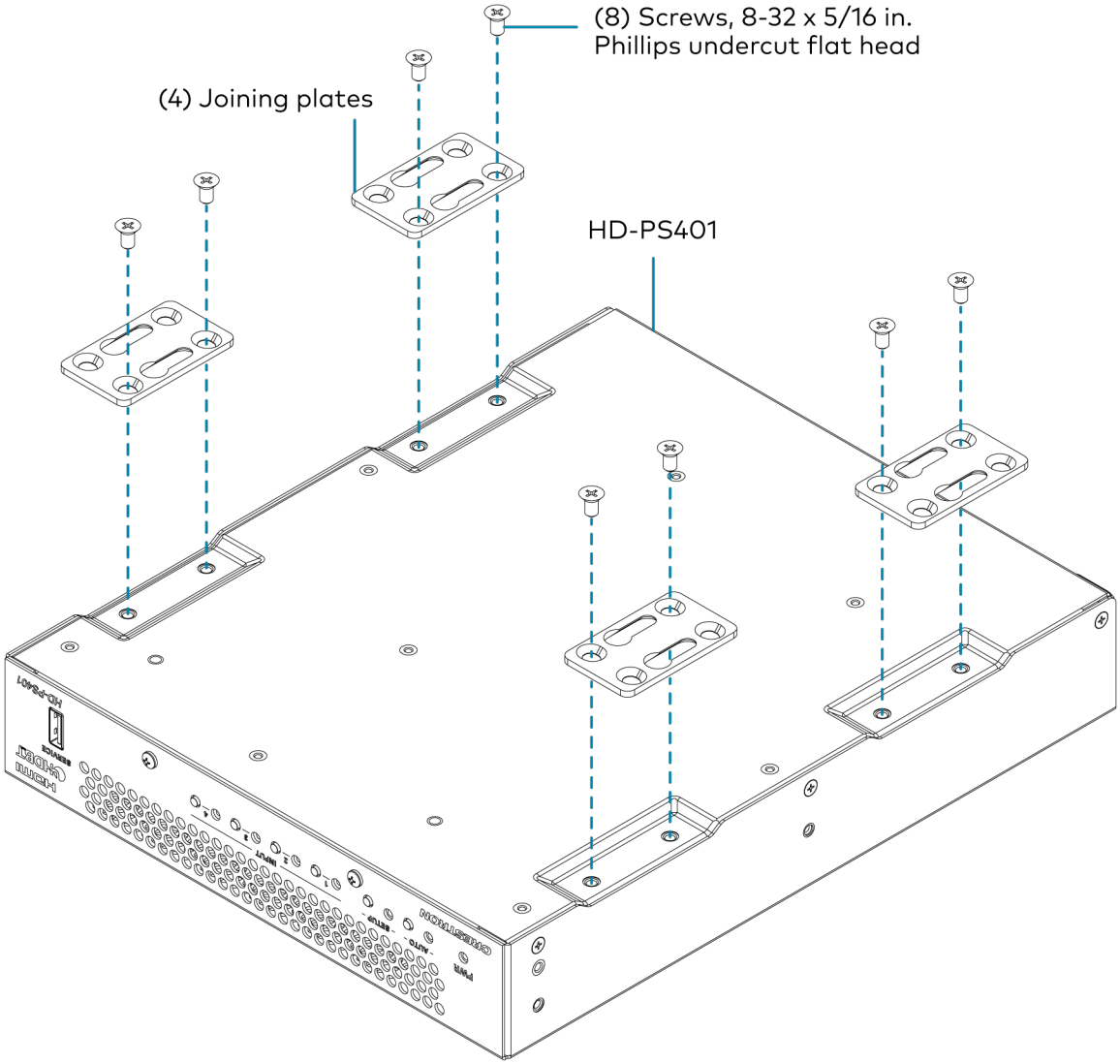
Mount the HD-PS401

The HD-PS401 can be mounted to a surface (using included hardware) or mounted in a rack (using the optional RMK-AMP-X mounting kit, sold separately).

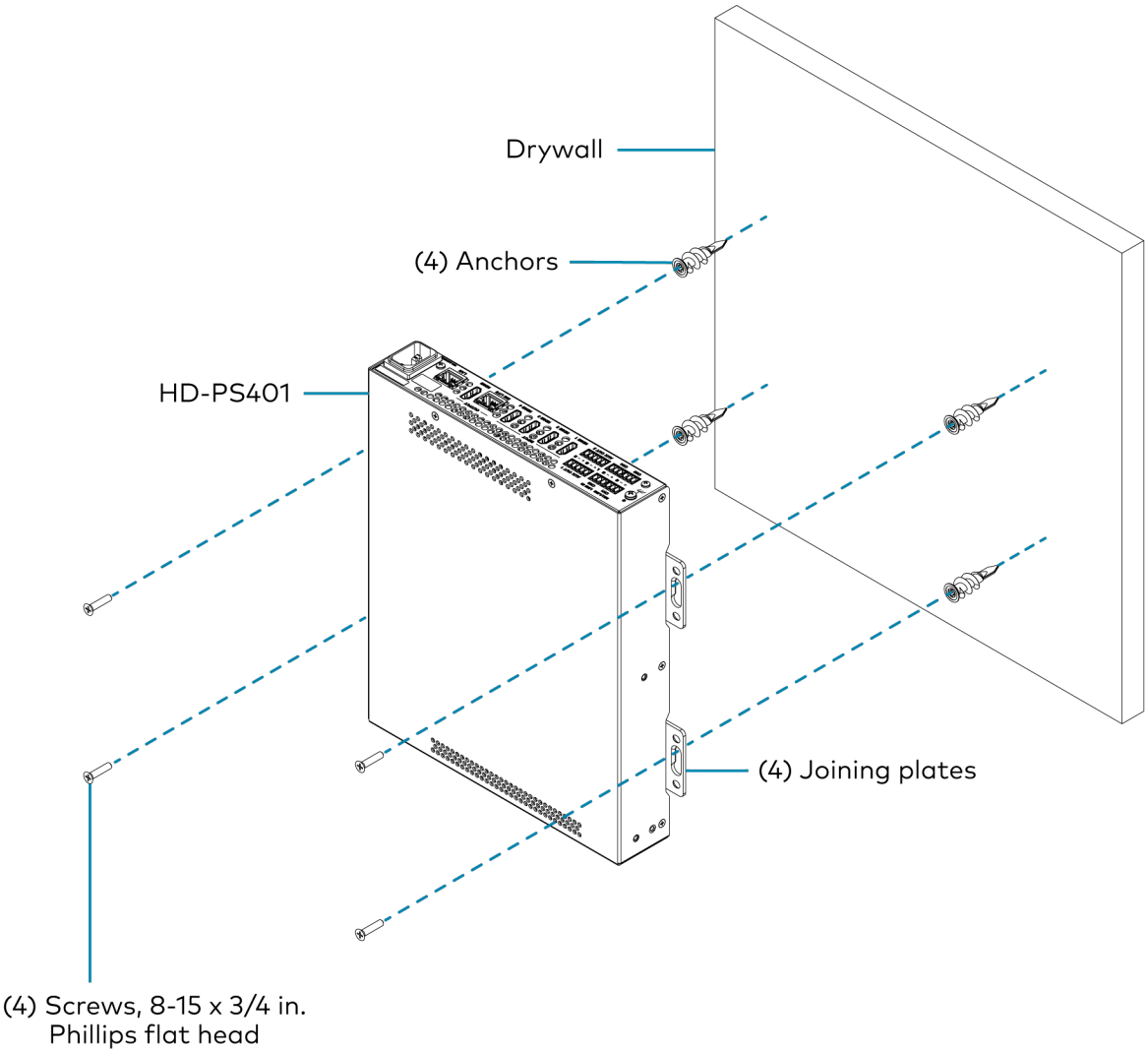
Mount to a Surface

To mount the HD-PS401 to a surface:

1. Place the HD-PS401 upside down on a flat surface.
2. Attach the four included joining plates to the presentation system using the eight included 8-32 x 5/16 in. Phillips undercut flat head screws (two screws for each joining plate).



3. Using the four included anchors and four included 8-15 x 3/4 in. Phillips flat head mounting screws, mount the presentation system onto a flat surface such as a wall.



Rack Installation

> **NOTES:**
>
> - All instructions in this section assume that an RMK-AMP-X mounting kit (sold separately) has been obtained.
> - The diagrams below depict the AMP-X300. The procedures are the same for the HD-PS401.

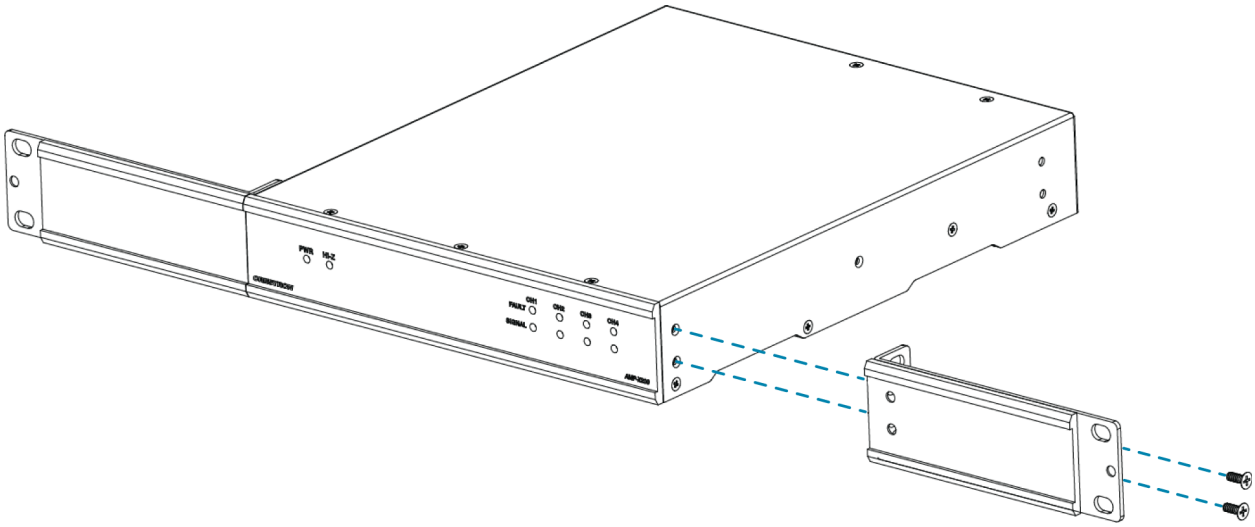
To install the presentation system in a rack, refer to the sections below:

- Single Device on page 47
- Ganged Devices on page 47

Single Device

To mount the device:

1. Attach the rack ears to the presentation system with four 6-32 x 3/8 in. screws.



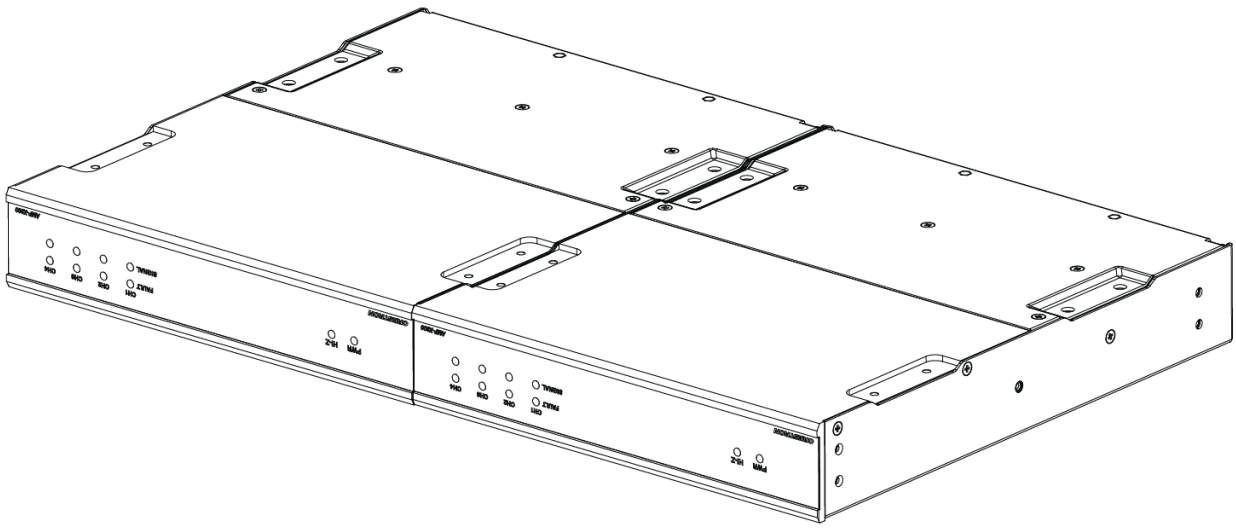
2. Mount the presentation system into the rack using four mounting screws (not included).

Ganged Devices

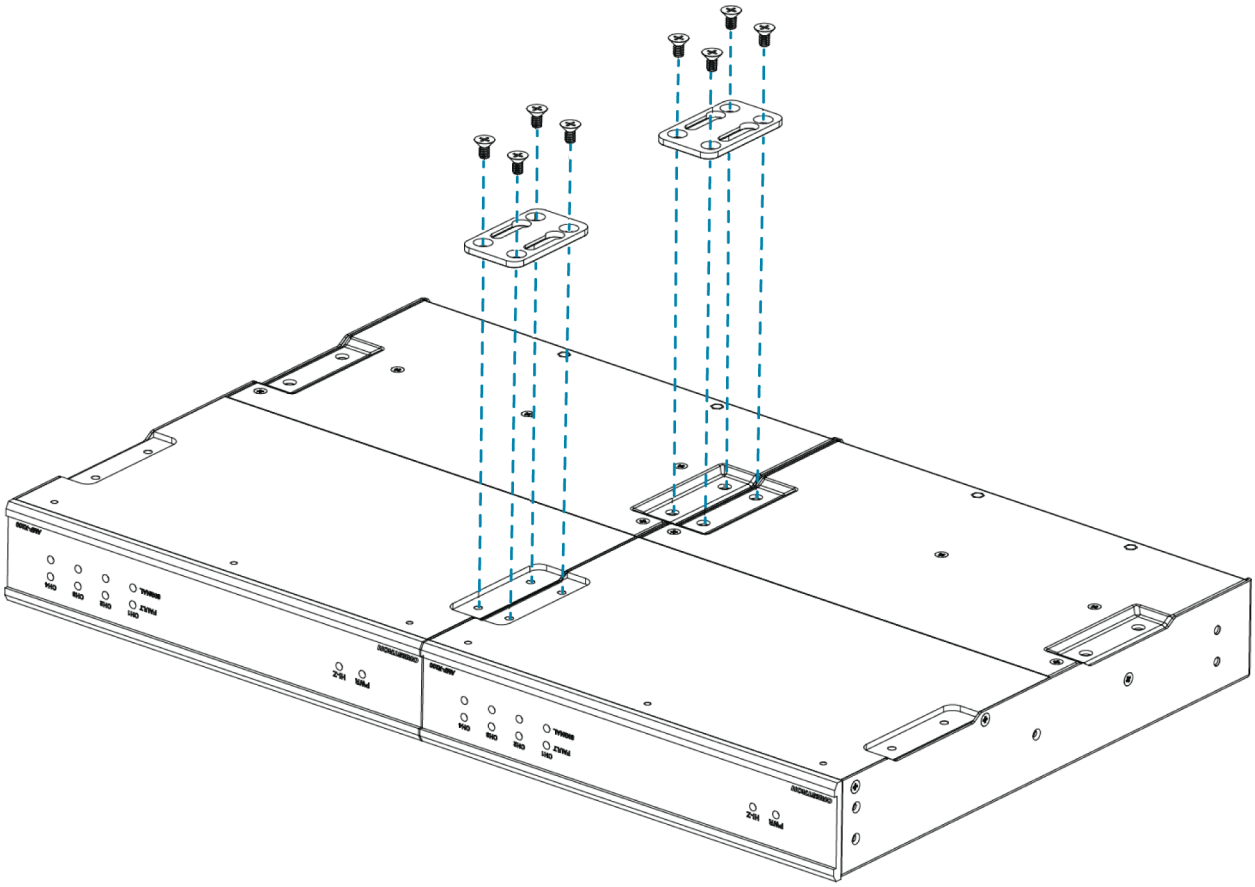
The HD-PS401 can be ganged together with an additional HD-PS401 or another device that supports the joining plate hardware (such as the AMP-X75, AMP-X300, or DM-NAX-AMP-X300, all sold separately).

To gang and mount devices:

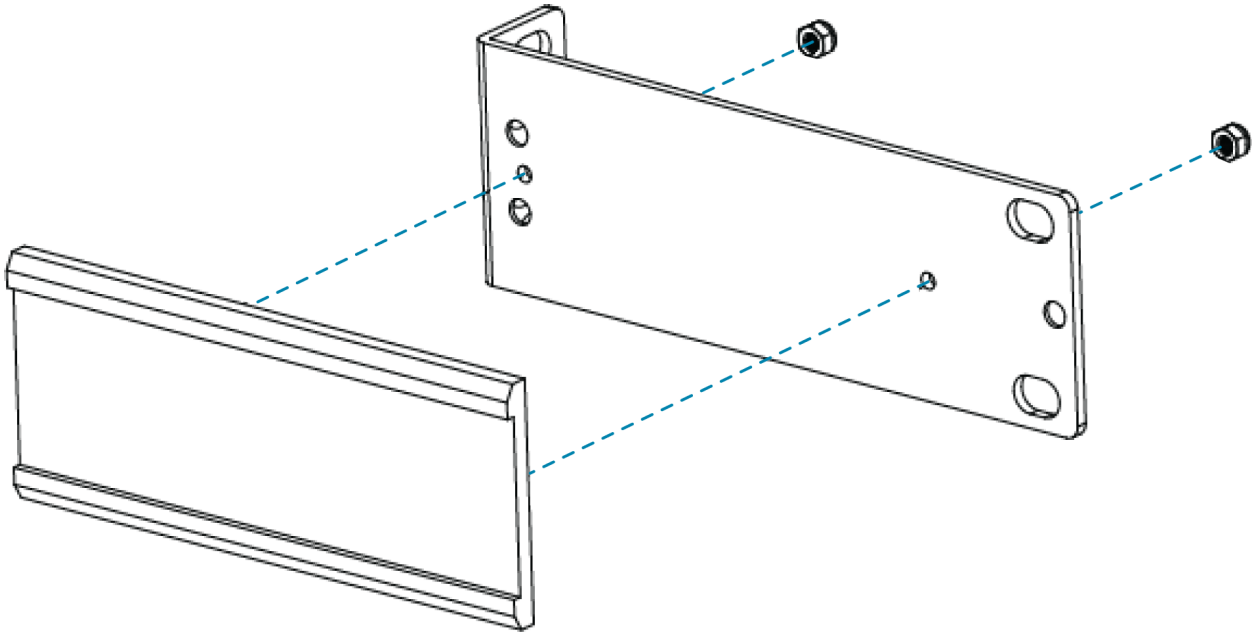
1. Place the devices upside-down and adjacent to each other on a flat surface.



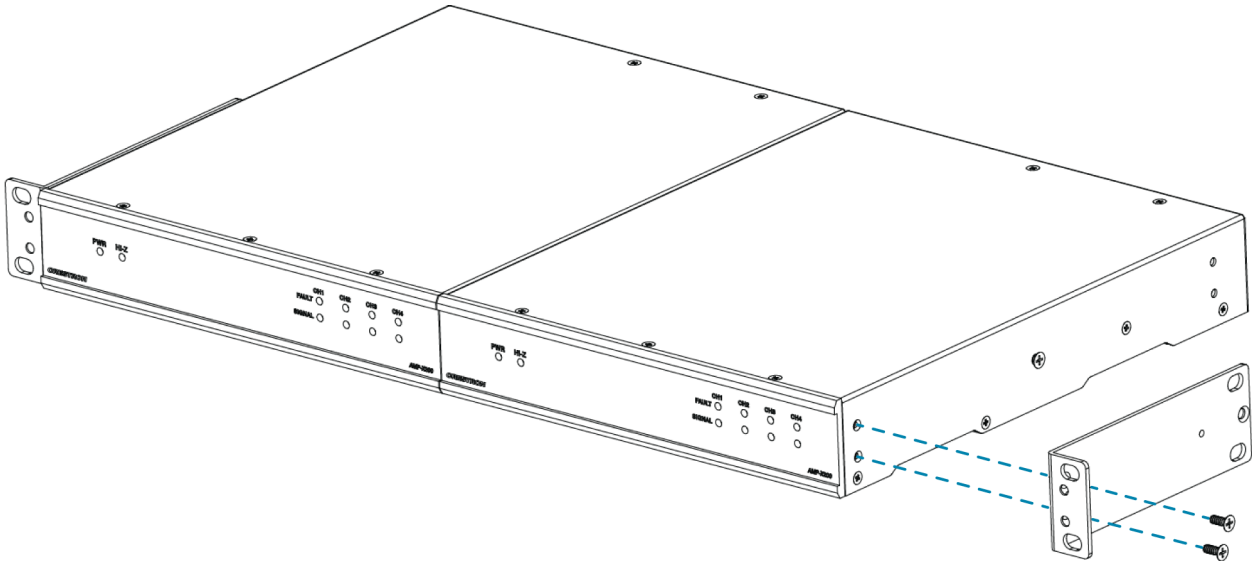
2. Use a Phillips screwdriver to gang the devices together with two of the joining plates and the eight 8-32 x 5/16 in. screws.



3. Use a wrench or M5.5 socket to remove the nuts from each faceplate, then separate the faceplate from its rack ear.



4. Turn over the device assembly and attach the rack ears to each side of the ganged devices with six 6-32 x 3/8 in. screws.



5. Mount the device into the rack using four mounting screws (not included).

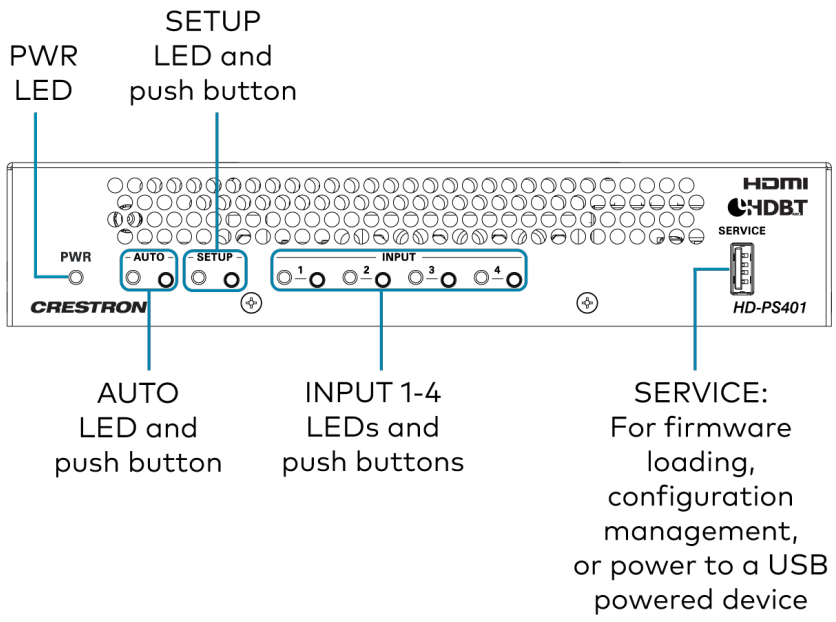
Connect the HD-PS401

Make the necessary connections as called out in the following illustration. Connect power last.

NOTES:

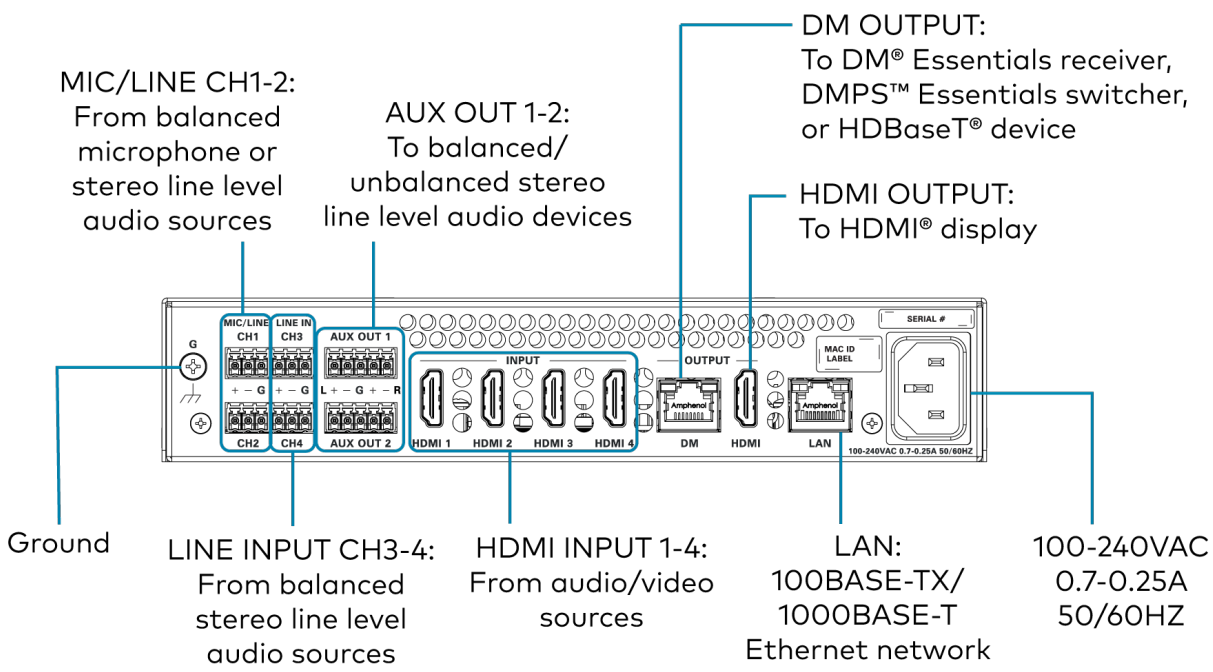
- Ensure that the device is properly grounded by connecting the chassis ground lug **G** to an earth ground (building steel).
- To prevent overheating, do not operate this product in an area that exceeds the environmental temperature range listed in the product specifications.
- Do not bundle power cords together with audio connection cables. Doing so can result in noise.

Front Panel Controls, Indicators, and Connections



NOTE: The **SERVICE** port can provide up to 5V 500mA power to a USB-powered device. The USB functionality of the **SERVICE** port is disabled by default. The **SERVICE** port USB functionality must be enabled via the web interface for any features beyond providing USB power.

Rear Panel Connections



CAUTION: Do not connect a local power supply to connected DM Essentials endpoints. The main power connection powers the presentation system as well as any connected DM Essentials transmitters and receivers.

NOTES:

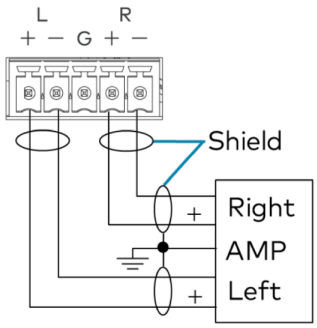
- The pair of mirrored DM Essentials and HDMI outputs transmits the same video content on both connectors.
- The HD-PS401 web interface does not support configuration of a connected DMPS Essentials switcher or HD-RX-201-C-E receiver. These devices require a separate LAN connection and must be configured using their local web interface.

Balanced/Unbalanced Audio Output

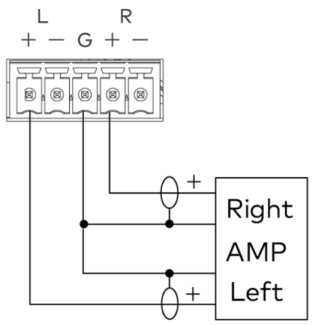
Refer to the following table and illustration for the AUX analog audio output pin assignments and connection information.

Signal Name	Balanced Audio Output	Unbalanced Audio Output
+	L+	L+ Out
-	L-	Open
G	Shield/ground	Common ground
+	R+	R+ Out
-	R-	Open

Balanced Output



Unbalanced Output



Observe the LED Indicators

Refer to the following table for information about the LED indicators on the device.

LED Indicator	Color	Meaning
PWR	Amber	Power is applied to the device and the device is booting up.
	Green	Power is applied to the device and the device is fully operational.
AUTO	Green	Automatic switching is enabled.
SETUP	Red (solid)	The **SETUP** button is pressed.
	Red (flashing)	A factory restore procedure has been initiated.
INPUT 1-4	Green	The corresponding input is routed to an output.
	Amber	A source is detected at the corresponding input but is not routed to an output.
LAN	Green	A 100BASE-TX link is established
	Amber (solid)	A 1000BASE-TX link is established
	Amber (flashing)	Data activity is occurring on the Ethernet link.

LED Indicator	Color	Meaning
DM OUTPUT	Green	A DM Essentials link is established.
	Amber (solid)	HDCP video is detected.
	Amber (flashing)	Non-HDCP video is detected.

Reset the HD-PS401

A factory restore may be performed when troubleshooting the presentation system.

CAUTION: This procedure should only be performed to recover an unresponsive device. The factory restore procedure will clear all custom device settings, which cannot be recovered once the procedure is complete. Before performing this procedure, please contact Crestron True Blue Support via phone, email or chat as described at www.crestron.com/support.

To perform a factory restore:

1. Disconnect the power cable from the presentation system.
2. Press and hold the **SETUP** button, then reconnect the power cable while still holding the **SETUP** button. Continue holding the **SETUP** button until the **SETUP** LED flashes.
3. Release the **SETUP** button once the **SETUP** LED begins to flash.

Wait for the factory restore procedure to complete before attempting to access the web interface.

HD-PS402 Installation

Use the following procedures to install the HD-PS402.

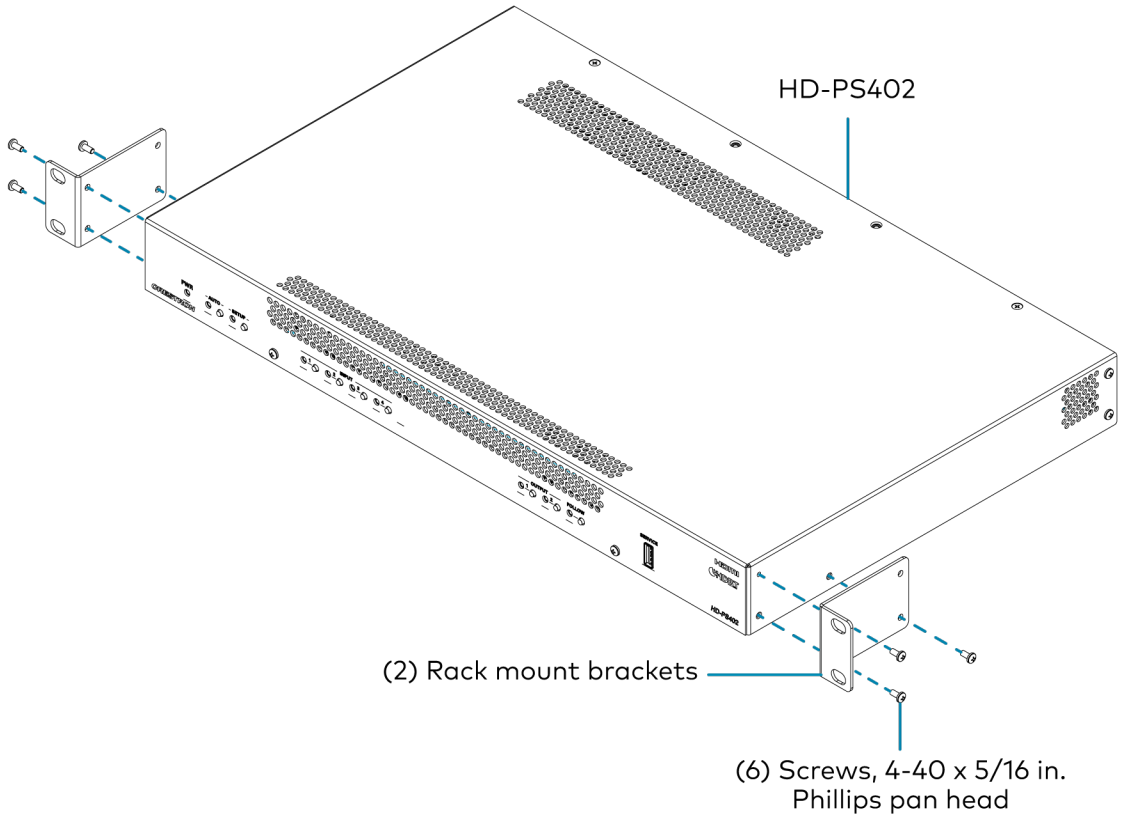
In the Box

Qty.	Description
1	HD-PS402, AV Presentation System
	Additional Items
1	Power Cord, 6 ft 7 in. (2 m) (2001134)
2	Bracket, Rack Mount, 1RU (2032122)
4	Connector, 3-Pin (2003575)
2	Connector, 5-Pin (2003577)
6	Screw, 4-40 x 5/16 in., Pan Head, Phillips, Black (2007164)

Mount the HD-PS402

To mount the HD-PS402 into a rack:

1. Attach the two included rack mount brackets to the presentation system using the six included 4-40 x 5/16 in. Phillips pan head screws (using three screws per bracket).



2. Secure the rack mount brackets to the rack rails using four rack mount screws (two screws per bracket, not included).

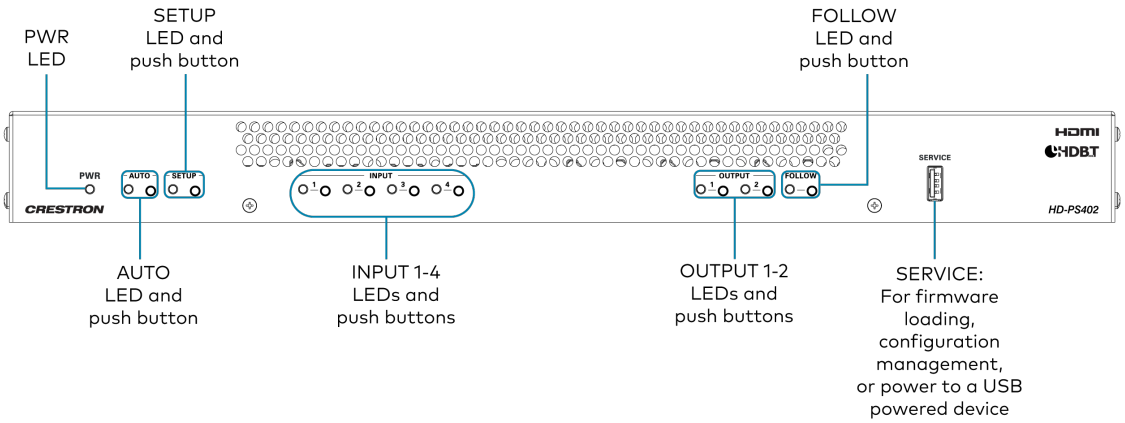
Connect the HD-PS402

Make the necessary connections as called out in the following illustration. Connect power last.

NOTES:

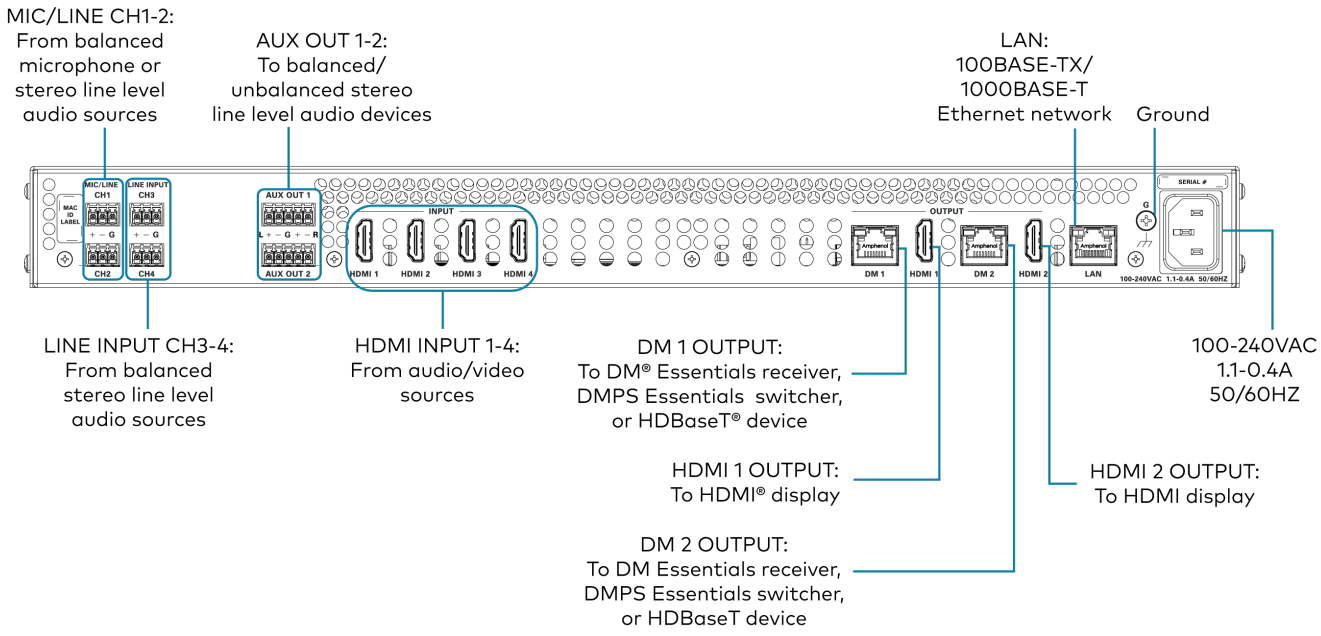
- Ensure that the device is properly grounded by connecting the chassis ground lug **G** to an earth ground (building steel).
- To prevent overheating, do not operate this product in an area that exceeds the environmental temperature range listed in the product specifications.
- Do not bundle power cords together with audio connection cables. Doing so can result in noise.

Front Panel Controls, Indicators, and Connections



NOTE: The **SERVICE** port can provide up to 5V 500mA power to a USB-powered device. The USB functionality of the **SERVICE** port is disabled by default. The **SERVICE** port USB functionality must be enabled via the web interface for any features beyond providing USB power.

Rear Panel Connections



CAUTION: Do not connect a local power supply to connected DM Essentials endpoints. The main power connection powers the presentation system as well as any connected DM Essentials transmitters and receivers.

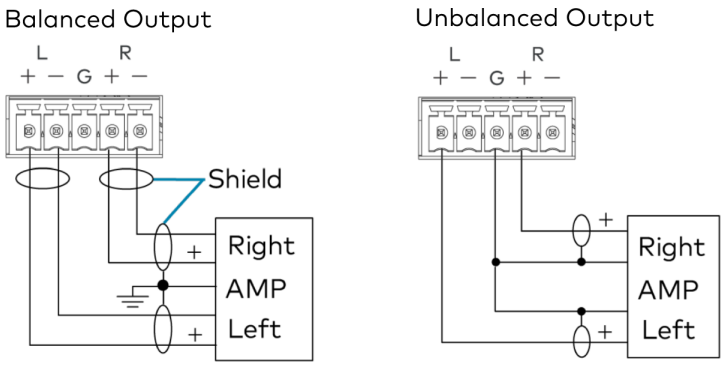
NOTES:

- Each pair of mirrored DM Essentials and HDMI outputs transmits the same video content on both connectors.
- The HD-PS402 web interface does not support configuration of connected DMPS Essentials switchers or HD-RX-201-C-E receivers. These devices require a separate LAN connection and must be configured using their local web interface.

Balanced/Unbalanced Audio Output

Refer to the following table and illustration for the AUX analog audio output pin assignments and connection information.

Signal Name	Balanced Audio Output	Unbalanced Audio Output
+	L+	L+ Out
-	L-	Open
G	Shield/ground	Common ground
+	R+	R+ Out
-	R-	Open



Observe the LED Indicators

Refer to the following table for information about the LED indicators on the device.

LED Indicator	Color	Meaning
PWR	Amber	Power is applied to the device and the device is booting up.
	Green	Power is applied to the device and the device is fully operational.
AUTO	Green	Automatic switching is enabled.
SETUP	Red (solid)	The **SETUP** button is pressed.
	Red (flashing)	A factory restore procedure has been initiated.

LED Indicator	Color	Meaning
INPUT 1-4	Green	The corresponding input is routed to an output.
	Amber	A source is detected at the corresponding input but is not routed to an output.
OUTPUT 1-2	Green	The corresponding output is transmitting video.
	Amber	The corresponding output is connected to a display or projector, but no video is routed.
FOLLOW	Green	
LAN	Green	A 100BASE-TX link is established
	Amber (solid)	A 1000BASE-TX link is established
	Amber (flashing)	Data activity is occurring on the Ethernet link.
DM 1-2 OUTPUT	Green	A DM Essentials link is established.
	Amber (solid)	HDCP video is detected.
	Amber (flashing)	Non-HDCP video is detected.

Reset the HD-PS402

A factory restore may be performed when troubleshooting the presentation system.

CAUTION: This procedure should only be performed to recover an unresponsive device. The factory restore procedure will clear all custom device settings, which cannot be recovered once the procedure is complete. Before performing this procedure, please contact Crestron True Blue Support via phone, email or chat as described at www.crestron.com/support.

To perform a factory restore:

1. Disconnect the power cable from the presentation system.
2. Press and hold the **SETUP** button, then reconnect the power cable while still holding the **SETUP** button. Continue holding the **SETUP** button until the **SETUP** LED flashes.
3. Release the **SETUP** button once the **SETUP** LED begins to flash.

Wait for the factory restore procedure to complete before attempting to access the web interface.

HD-PS621 and HD-PS622 Installation

Use the following procedures to install the HD-PS621 or HD-PS622.

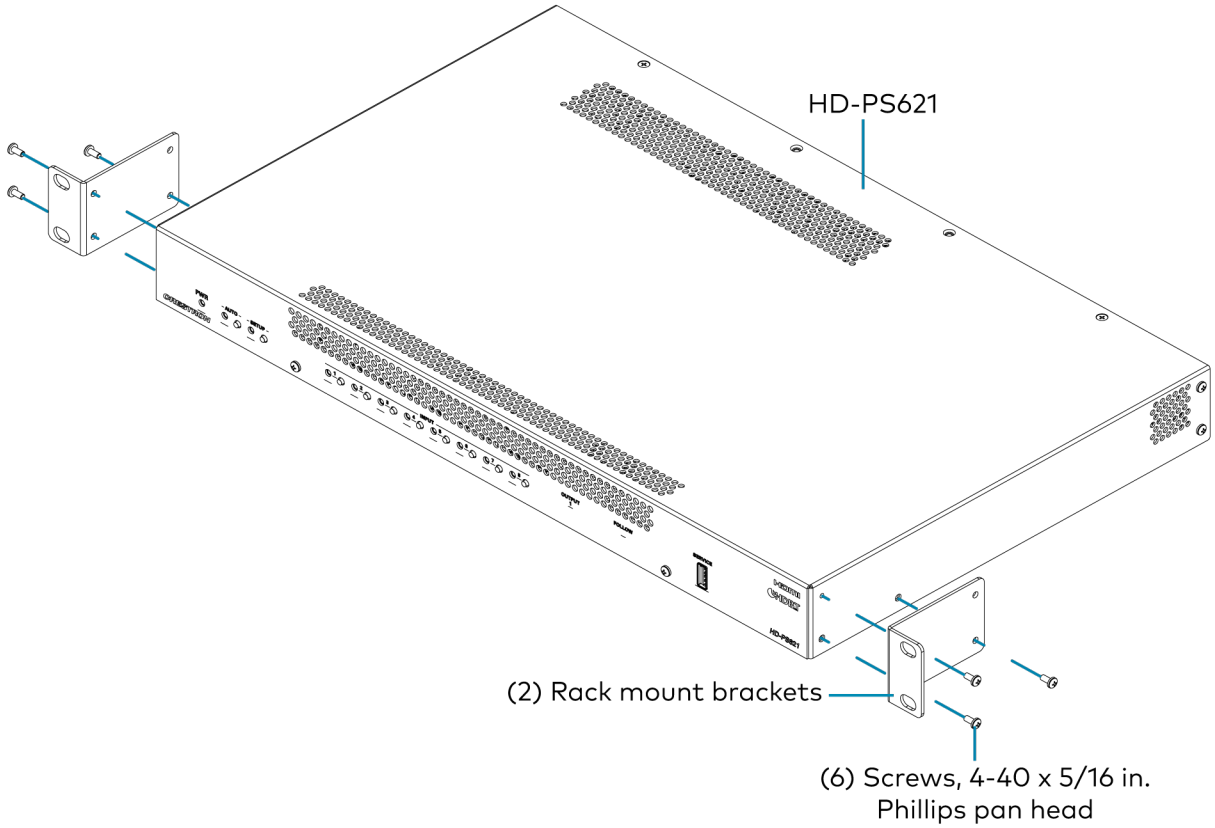
In the Box

Qty.	Description
1	HD-PS621 or HD-PS622 4K60 4:4:4 HDR Presentation System
	Additional Items
1	Power Cord, 6 ft 7 in. (2 m) (2001134)
2	Bracket, Rack Mount, 1 RU (2032122)
8	Connector, 3-Pin (2003575)
2	Connector, 5-Pin (2003577)
6	Screw, 4-40 x 5/16 in., Pan Head, Phillips, Black (2007164)

Mount the Presentation System

To mount the presentation system into a rack:

1. Attach the two included rack mount brackets to the presentation system using the six included 4-40 x 5/16 in. Phillips pan head screws (using three screws per bracket).



2. Secure the rack mount brackets to the rack rails using four rack mount screws (two screws per bracket, not included).

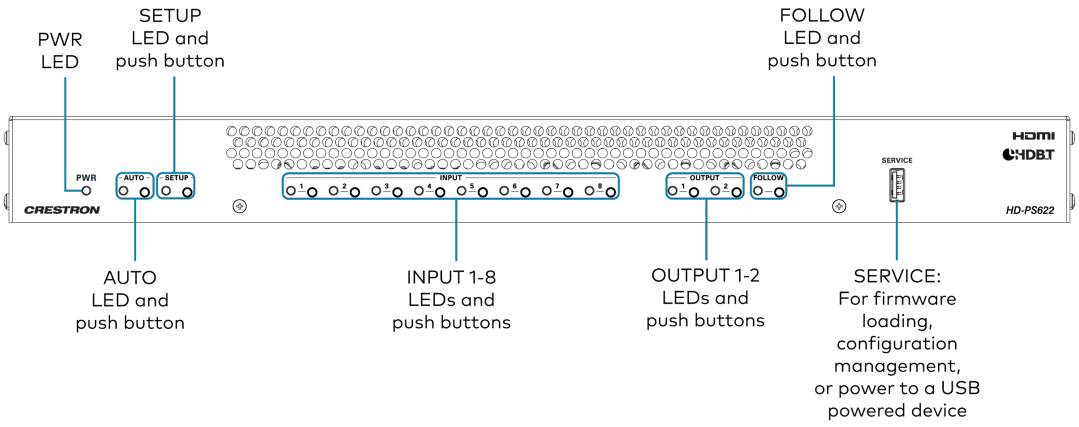
Connect the Presentation System

Make the necessary connections as called out in the following illustration. Connect power last.

NOTES:

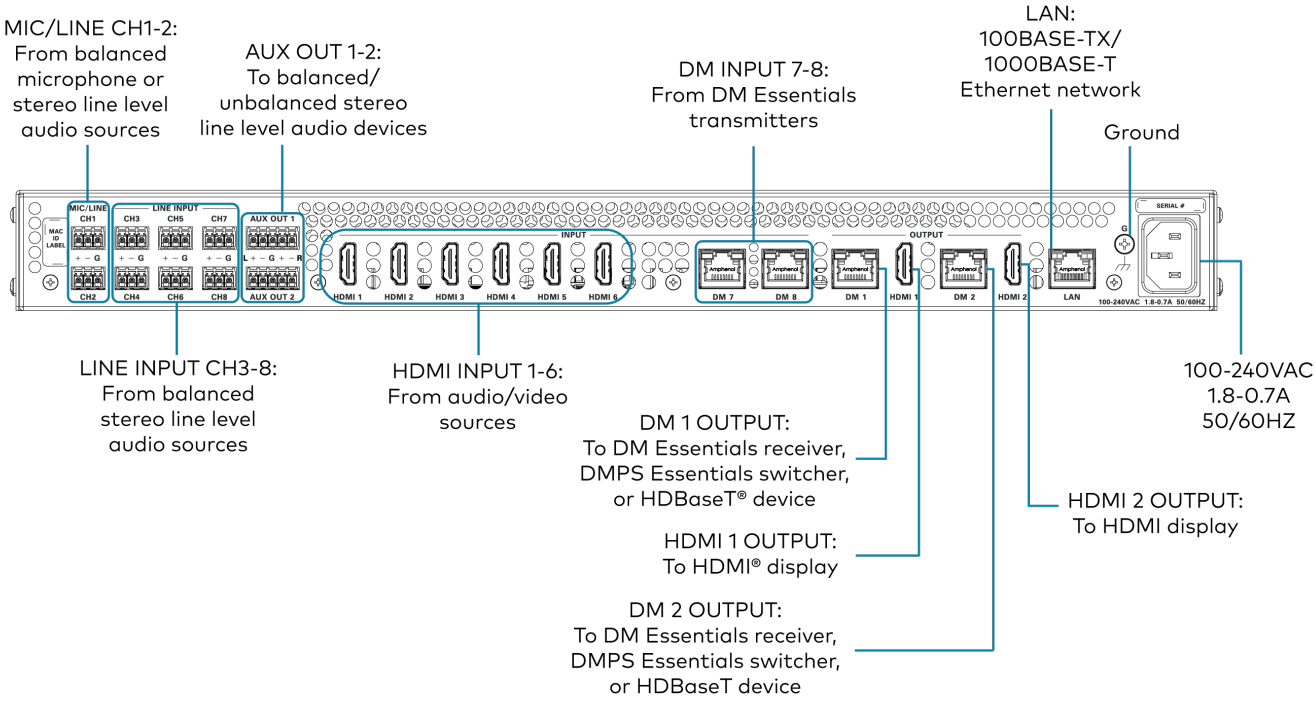
- Ensure that the device is properly grounded by connecting the chassis ground lug **G** to an earth ground (building steel).
- To prevent overheating, do not operate this product in an area that exceeds the environmental temperature range listed in the product specifications.
- Do not bundle power cords together with audio connection cables. Doing so can result in noise.

Front Panel Controls, Indicators, and Connections (HD-PS622 Shown)



NOTE: The **SERVICE** port can provide up to 5V 500mA power to a USB-powered device. The USB functionality of the **SERVICE** port is disabled by default. The **SERVICE** port USB functionality must be enabled via the web interface for any features beyond providing USB power.

Rear Panel Connections (HD-PS622 Shown)



CAUTION: Do not connect a local power supply to connected DM Essentials endpoints. The main power connection powers the presentation system as well as any connected DM Essentials transmitters and receivers.

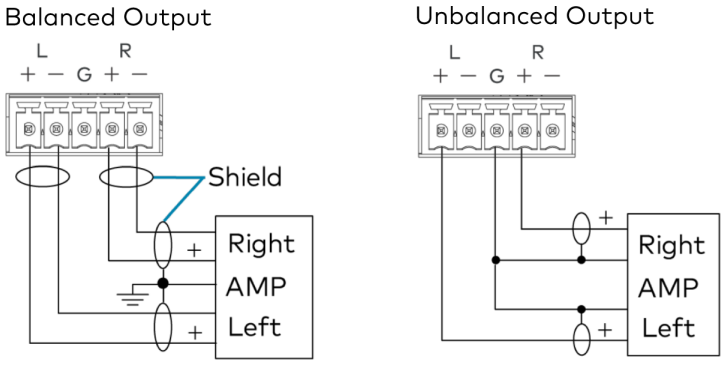
NOTES:

- Each pair of mirrored DM Essentials and HDMI outputs transmits the same video content on both connectors.
- The HD-PS web interface does not support configuration of connected DMPS Essentials switchers or HD-RX-201-C-E receivers. These devices require a separate LAN connection and must be configured using their local web interface.

Balanced/Unbalanced Audio Output

Refer to the following table and illustration for the AUX analog audio output pin assignments and connection information.

Signal Name	Balanced Audio Output	Unbalanced Audio Output
+	L+	L+ Out
-	L-	Open
G	Shield/ground	Common ground
+	R+	R+ Out
-	R-	Open



Observe the LED Indicators

Refer to the following table for information about the LED indicators on the device.

LED Indicator	Color	Meaning
PWR	Amber	Power is applied to the device and the device is booting up.
	Green	Power is applied to the device and the device is fully operational.

LED Indicator	Color	Meaning
AUTO	Green	Automatic switching is enabled.
SETUP	Red (solid)	The **SETUP** button is pressed.
	Red (flashing)	A factory restore procedure has been initiated.
INPUT 1-8	Green	The corresponding input is routed to an output.
	Amber	A source is detected at the corresponding input but is not routed to an output.
OUTPUT 1-2 (HD-PS622 only)	Green	The corresponding output is transmitting video.
	Amber	The corresponding output is connected to a display or projector, but no video is routed.
FOLLOW (HD-PS622 only)	Green	
LAN	Green	A 100BASE-TX link is established
	Amber (solid)	A 1000BASE-TX link is established
	Amber (flashing)	Data activity is occurring on the Ethernet link.
DM 1 OUTPUT or **DM 1-2 OUTPUT**	Green	A DM Essentials link is established.
	Amber (solid)	HDCP video is detected.
	Amber (flashing)	Non-HDCP video is detected.

Reset the Presentation System

A factory restore may be performed when troubleshooting the presentation system.

CAUTION: This procedure should only be performed to recover an unresponsive device. The factory restore procedure will clear all custom device settings, which cannot be recovered once the procedure is complete. Before performing this procedure, please contact Crestron True Blue Support via phone, email or chat as described at www.crestron.com/support.

To perform a factory restore:

1. Disconnect the power cable from the presentation system.
2. Press and hold the **SETUP** button, then reconnect the power cable while still holding the **SETUP** button. Continue holding the **SETUP** button until the **SETUP** LED flashes.
3. Release the **SETUP** button once the **SETUP** LED begins to flash.

Wait for the factory restore procedure to complete before attempting to access the web interface.

Configuration

Prior to configuration, ensure the device is running the latest firmware. Refer to Update Firmware on page 67.

This section provides the following information:

Initial Setup

Use the following procedures to set up the presentation system prior to regular operation:

Access the Configuration Interface

To access the web interface, refer to either of the following:

The web interface runs in a web browser. The following web browser versions are supported:

Operating System	Supported Web Browsers
Windows® operating system	Chrome™ web browser, version 31 and later Firefox® web browser, version 31 and later Internet Explorer web browser, version 11 and later Microsoft Edge web browser
macOS® operating system	Safari® web browser, version 6 and later Chrome web browser, version 31 and later Firefox web browser, version 31 and later

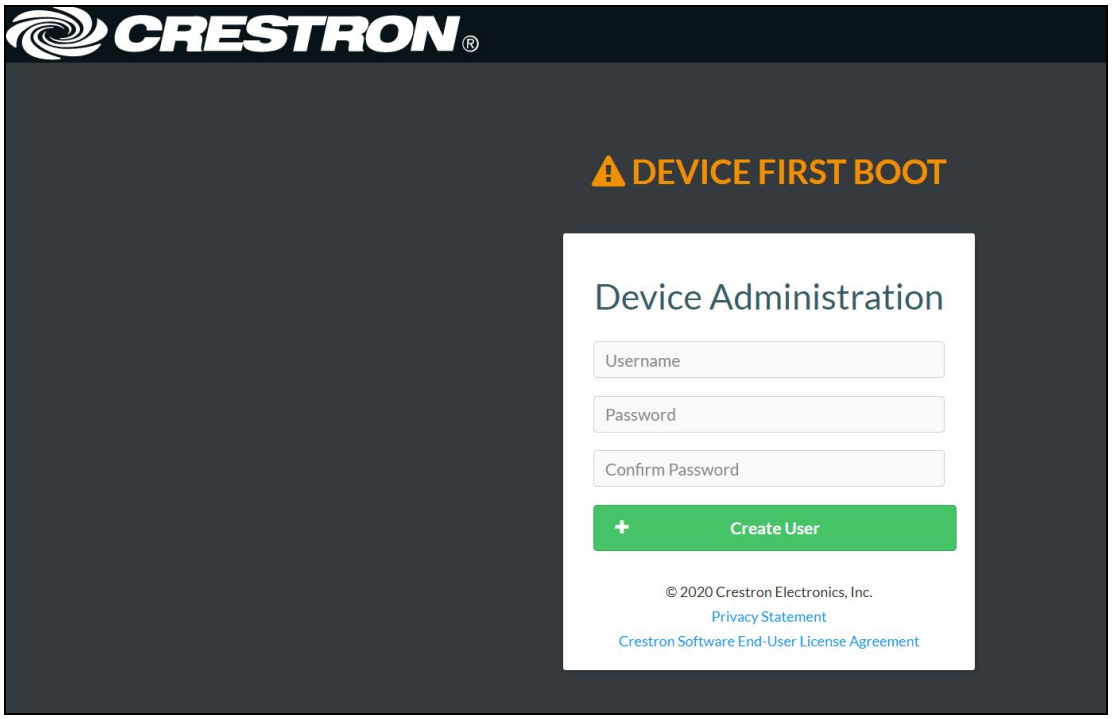
Access the Web Interface with a Web Browser

To access the web interface:

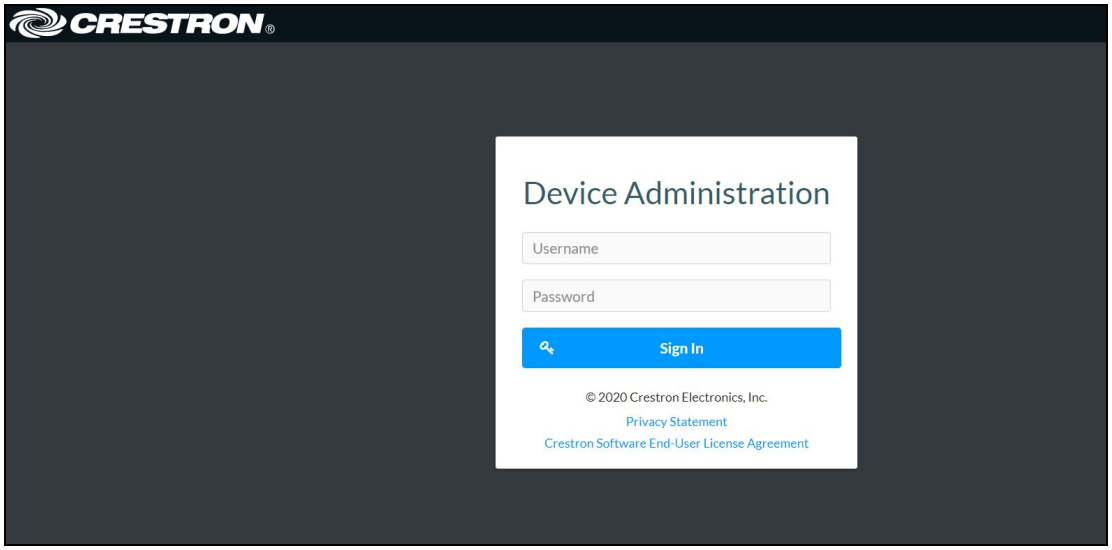
1. Enter the IP address of the presentation system into a web browser.

   > **NOTE:** Press the **SETUP** button to display the device IP address on a connected display. If no display is connected, use the Device Discovery Tool in Crestron Toolbox™ software or an IP scanner application.

2. If accessing the device for the first time, a prompt to create an administrator account will be displayed along with a **DEVICE FIRST BOOT** message. To create the first admin account:
    a. Enter a username in the **Username** field.
    b. Enter a password in the **Password** field.
    c. Re-enter the same password in the **Confirm Password** field.



    d. Select **Create User**. A new **Device Administration** page appears with an option to **Sign In** instead of **Create User**.



3. Enter the username in the **Username** field.
4. Enter the password in the **Password** field.
5. Select **Sign In**.

Access the Web Interface with the Crestron Toolbox Application

To access the web interface by opening a web browser from the Crestron Toolbox application:

1. Open the Crestron Toolbox application.
2. Select **Device Discovery Tool** from the **Tools** menu or select the Device Discovery Tool icon in the toolbar. Once the utility loads, the presentation system will be discovered on the network and listed in the device list on the left side of the screen. The device's host name, IP address, and firmware version are displayed.

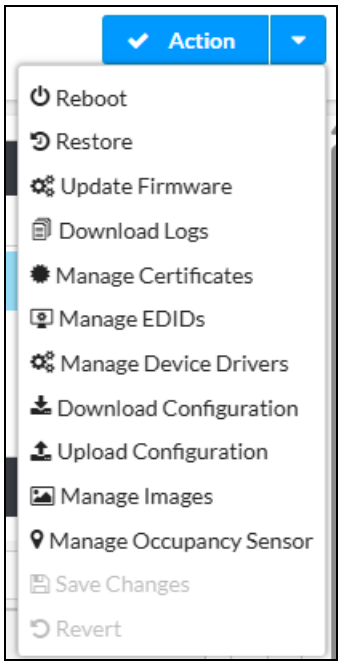
   > **NOTE:** If there is security software running on the computer, a security alert might be displayed when the Crestron Toolbox application attempts to connect to the network. Make sure to allow the connection, so that the Device Discovery Tool can be used.

3. Select the device from the discovered devices list.
4. Enter the device credentials in the **Authentication Required** dialog that opens, then select **Log In**.
5. Select **Web Configuration**.

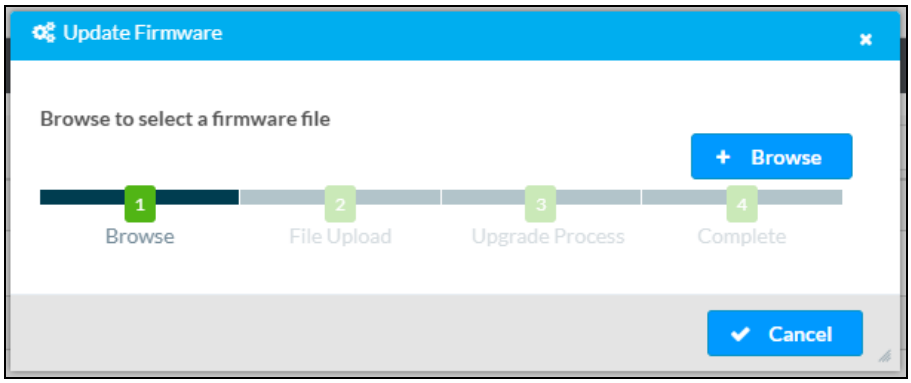
Update Firmware

To update firmware on the presentation system:

1. Sign into the device web UI.
2. Select the **Action** drop-down menu at the top right corner of the UI.



3. Select **Update Firmware**. The **Update Firmware** message box appears.

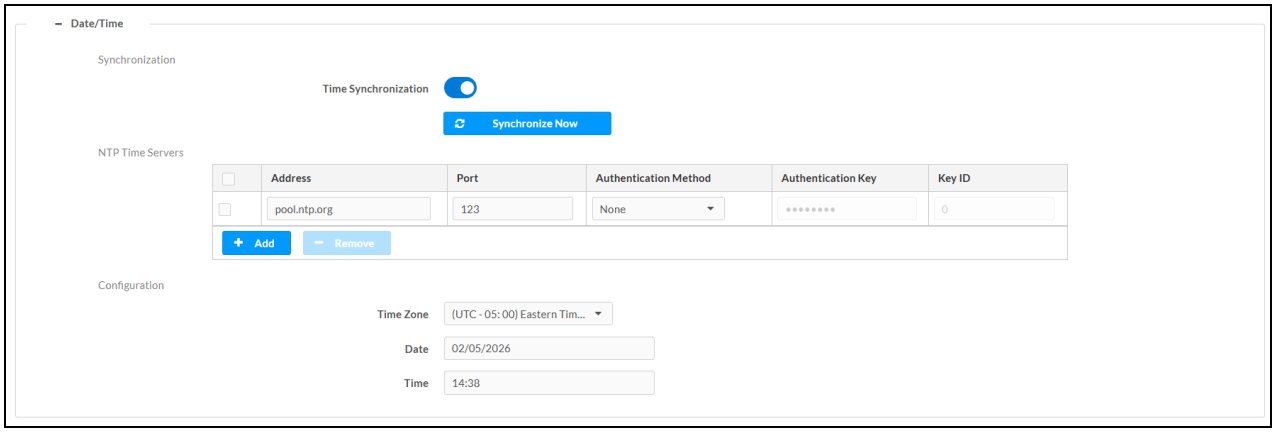


4. Select **Browse**. A file explorer window appears.
5. Locate and select the firmware file, then select **Open**. The selected firmware file name is displayed in the **Update Firmware** window.
6. Select **Load** and wait for the progress bar to complete and for **OK** to become selectable.
7. Select **OK**. The firmware update is complete and the web UI can be accessed as normal.

Set the Time Zone

To set the time zone of the presentation system:

1. Sign into the device web UI.
2. Select the **Settings** tab.
3. Expand the **System Setup** accordion.
4. Expand the **Date/Time** section.



5. To use a time server to synchronize the device time zone automatically (enabled by default):
    a. Set the **Time Synchronization** toggle to the right position to enable or left position to disable time synchronization. By default, time synchronization is enabled.
    b. In the **NTP Time Servers** table, enter the URL of a NTP (Network Time Protocol) or SNTP (Simple Network Time Protocol) server. Up to three time servers can be added on a device.
    c. Select **Synchronize Now** to perform time synchronization between the device's internal clock and the time server.
6. To set the time zone manually:
    a. Open the **Time Zone** drop-down list to select the applicable time zone.
    b. In the **Date** field, enter the current date.
    c. In the **Time** field, enter the current time in 24-hour format.

Select **Save Changes** to save the settings.

Select **Revert** from the **Action** menu to revert to the previous settings without saving.

Connect to the XiO Cloud Service

The XiO Cloud® service allows supported devices across an enterprise to be managed and configured from one central, secure location in the cloud. The device is configured to connect to the service by default.

> **NOTE:** An XiO Cloud account is required to use the service. To register for an XiO Cloud account, refer to www.crestron.com/Support/Tools/Licensing-Registration/XiO-Account-Registration.

To connect the device to the XiO Cloud service:

1. Record the MAC address and serial number that are labeled on the shipping box or the device. The MAC address and serial number are required to add the device to the XiO Cloud service.

   > **NOTE:** If the device has multiple MAC addresses, use the MAC address that is providing the primary connection back to the network. For most devices, the Ethernet MAC address should be used. However, if your device is connecting to the network over a different protocol (such as Wi-Fi® communications), use the MAC address for that protocol instead.

2. Log in to your XiO Cloud account at portal.crestron.io.
3. Claim the device to the XiO Cloud service as described in the XiO Cloud User Guide.

Once the device is claimed, associate it with a room to view its status and settings. For more information, refer to the XiO Cloud User Guide.

Web Configuration (40X Models)

The presentation system may be monitored and configured using its web configuration interface. The interface can be accessed via the device IP address as described in Access the Configuration Interface on page 65.

> **NOTE:** A similar version of the web configuration interface is provided within the XiO Cloud service. Navigate to the room associated with the device in the XiO Cloud environment tree to view the device status and settings. Additionally, certain settings can be configured for multiple devices at once at the group level. For more information, refer to the XiO Cloud User Guide.

The **Status** tab is open by default.

The web configuration interface provides the following tabs for navigating the interface:

- **Status:** Used to monitor device status. Refer to Status on page 81.
- **Settings:** Used to configure device settings. Refer to Settings on page 86.
- **Security:** Used to manage user and group access. Refer to Security on page 114.
- **802.1X Configuration:** Used to manage 802.1X PNAC settings. Refer to 802.1X Configuration on page 119.

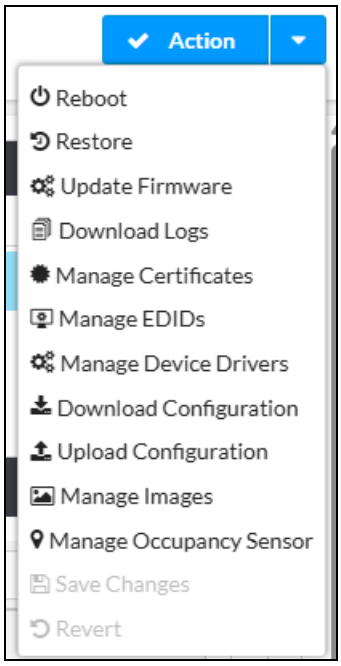
The following controls are also provided on the top right of the web configuration interface:

- Use the **Action** drop-down menu to perform various configuration actions. For more information, refer to Action Menu on page 71.
- Select the profile button to view the active device user and to sign out of the web configuration utility.

Each section of the web configuration interface is described in the sections that follow.

Action Menu

The **Action** drop-down menu is displayed at the top right side of the web interface and provides quick access to these common device functions:



Save Changes

Select **Save Changes** to save any changes made to the configuration settings.

> **NOTE: Save Changes** can only be selected if a change has been made to the configuration settings. The **Save Changes** function will also replace the **Action** button at the top right of the web UI when a settings change is detected.

Revert

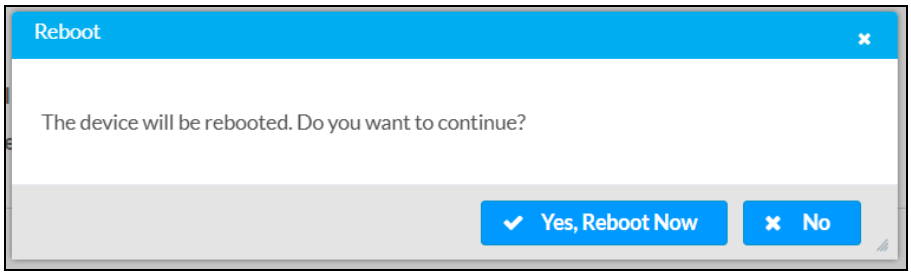
Select **Revert** to revert the device back to the last saved configuration.

NOTE: Revert can only be selected if a change has been made to the configuration settings.

Reboot

Certain changes to the settings may require a reboot to take effect. To reboot the presentation system:

1. Select **Reboot** in the **Action** menu. The Reboot confirmation message box appears.



2. Select **Yes, Reboot Now** to reboot the device. The **Reboot** status message box appears. Wait for the device reboot to complete before attempting to reconnect to the web interface. Alternatively, select **No** to cancel the reboot operation.

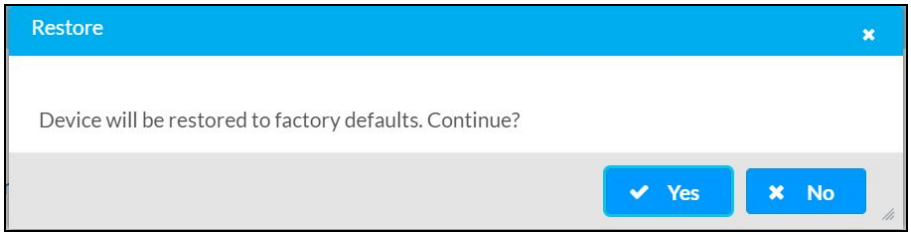
Restore

The presentation system can be restored to factory default settings from the **Action** menu.

CAUTION: The **Restore** procedure will wipe all settings from the presentation system, including network settings. If a static IP address is set, restoring the device to factory default settings will clear this address and DHCP will be enabled instead.

To restore the presentation system to factory defaults:

1. Select **Restore** in the **Action** menu. The **Restore** confirmation message box appears.



2. Select **Yes** to restore the device to factory default settings. Select **No** to cancel the restore operation. When **Yes** is selected, the **Restore** status message box appears. Wait for the device restore to complete before attempting to reconnect to the web interface.

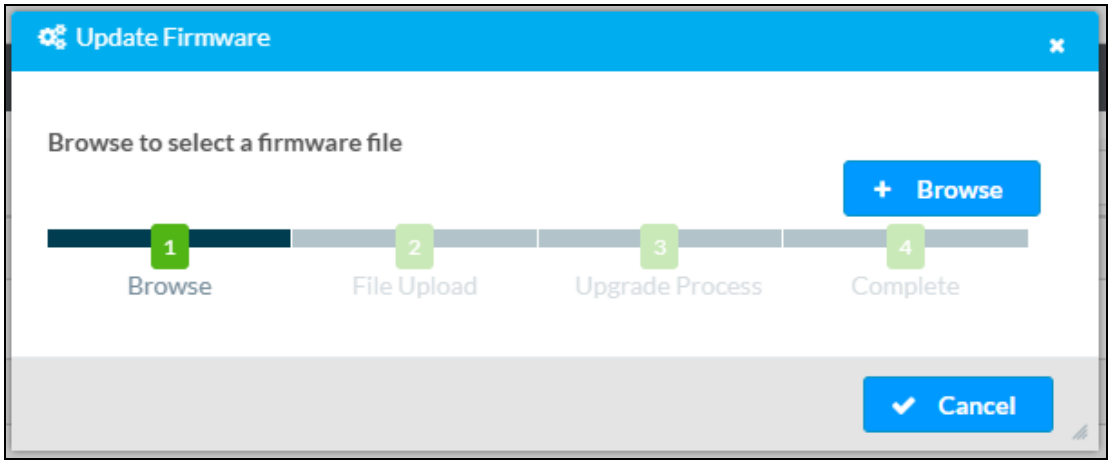
NOTE: Once the presentation system is restored, it may have a new IP address. If reconnecting to the original address does not work, use the Device Discovery Tool in Crestron Toolbox software or an IP scanner application to find the device's new IP address.

If the web interface is not accessible, the device can also be restored to factory default settings via a hardware-based procedure (refer to HD-PS401 Installation on page 44 or HD-PS402 Installation on page 54).

Update Firmware

To update the firmware of the device:

1. Select **Update Firmware** in the **Action** menu.
2. In the **Update Firmware** window that appears, select **+ Browse**.



3. Locate and select the desired firmware file, then select **Open**. The selected firmware file name is displayed in the **Update Firmware** window.
4. Select **Load**, then wait for the progress bar to complete and for **OK** to become selectable.
5. Select **OK**. The firmware update is now complete, and the web interface will return to the main log-in page.

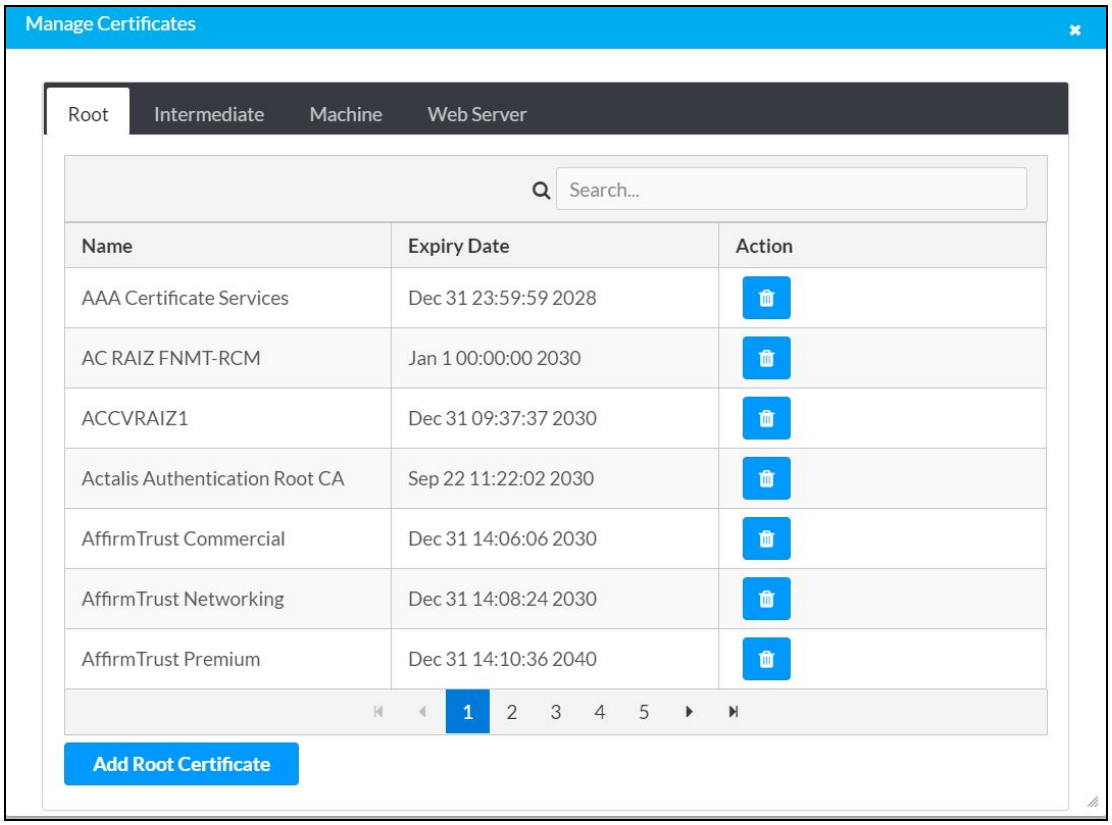
Download Logs

Select **Download Logs** in the **Action** menu to download the device message logs for diagnostic purposes.

The log file is downloaded to the **Downloads** folder of the connected computer.

Manage Certificates

Select **Manage Certificates** in the **Action** menu to open the **Manage Certificates** window. Use this window to add or remove certificates used in 802.1x authentication and other protected network functions.



The following certificate tabs are available in the **Manage Certificates** window:

- **Root:** The Root certificate is used by the presentation system to validate the network's authentication server. The device has a variety of Root certificates, self-signed by trusted CAs (Certificate Authorities) preloaded into the device. Root certificates must be self-signed.
- **Intermediate:** The Intermediate store holds non self-signed certificates that are used to validate the authentication server. These certificates will be provided by the network administrator if the network does not use self-signed Root certificates.
- **Machine:** The Machine certificate is an encrypted PFX file that is used by the authentication server to validate the identity of the presentation system. The machine certificate will be provided by the network administrator, along with the certificate password. For 802.1x, only one machine certificate can reside on the device.
- **Web Server:** The Web Server certificate is a digital file that contains information about the identity of the web server.

Add Certificates

To add a certificate:

1. Select the corresponding certificate tab.
2. Select **Add [Type] Certificate**.
3. Select **+ Browse**.

4. Locate and select the file, then select **Open**.

> **NOTE:** If the selected certificate is a machine certificate, enter the password provided by the network administrator.

5. Select **OK**. This will add the certificate to the list in the **Manage Certificates** window, displaying the file name and expiration date. The certificate is now available for selection and can be loaded to the device.

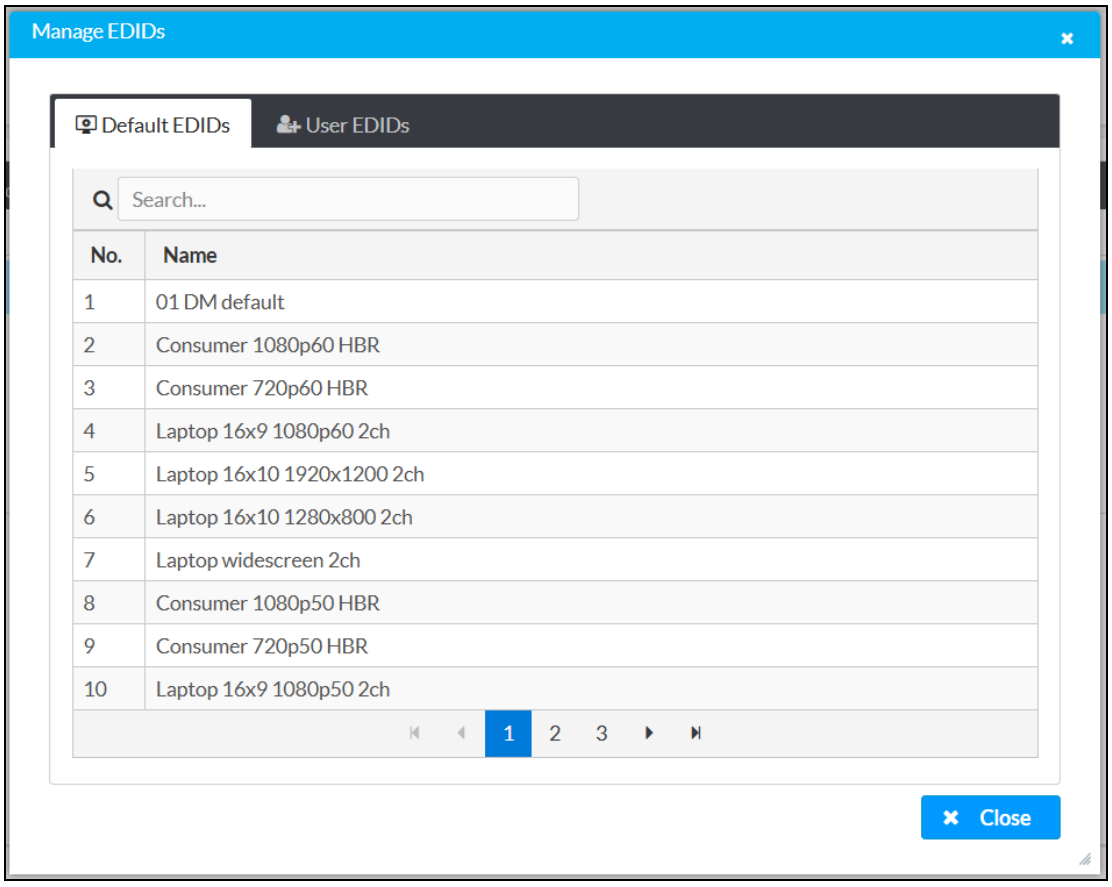
Delete Certificates

To delete a certificate:

1. Select the corresponding certificate tab.
2. Select the delete icon in the **Actions** column and the row of the certificate to be deleted.
3. Select **Yes** when prompted to delete the certificate or **No** to cancel the deletion.

Manage EDIDs

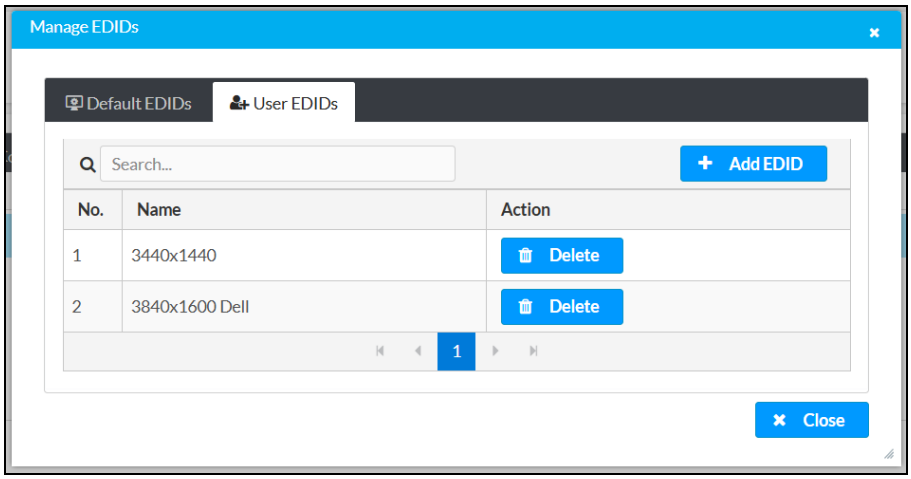
Select **Manage EDIDs** in the **Action** menu to open the **Manage EDIDs** window. Use this window to add, remove, or browse which EDIDs (Extended Display Identification Data) are available for the AV inputs and outputs of the presentation system.



The default tab that will open in this window is the **Default EDIDs** tab. This tab is read only, and provides a list of all default EDIDs available on the presentation system as part of the firmware. Use the

Search... text entry field to filter the list of EDIDs by name. Default EDIDs cannot be removed from the device.

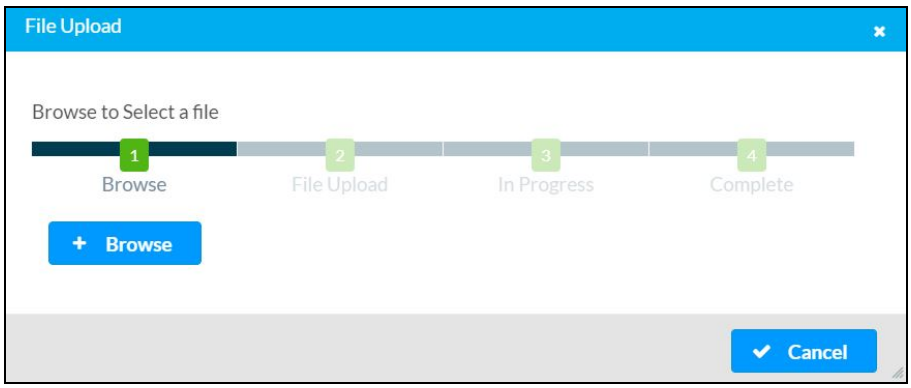
The second tab available in this window is the **User EDIDs** tab.



> **NOTE:** By default, the **User EDIDs** table will populate with **No records found**.

To add a user EDID file:

1. Select **+ Add EDID** at the top right of the table.
2. In the **File Upload** window that appears, select **+ Browse**.

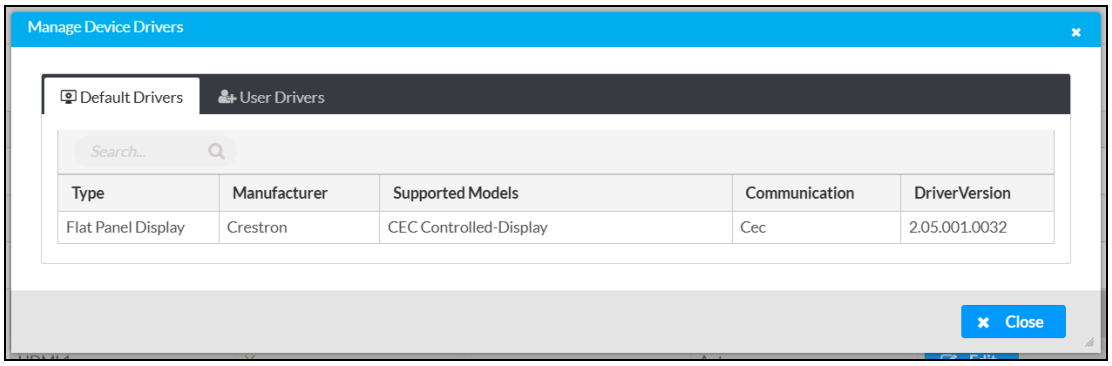


3. Select **Upload** to transfer the selected file
4. Wait for the upload to complete, then select **OK** to return to the **Manage EDIDs** window. The uploaded EDID is now displayed in the table.

To remove a user EDID file, select **Delete** in its table row.

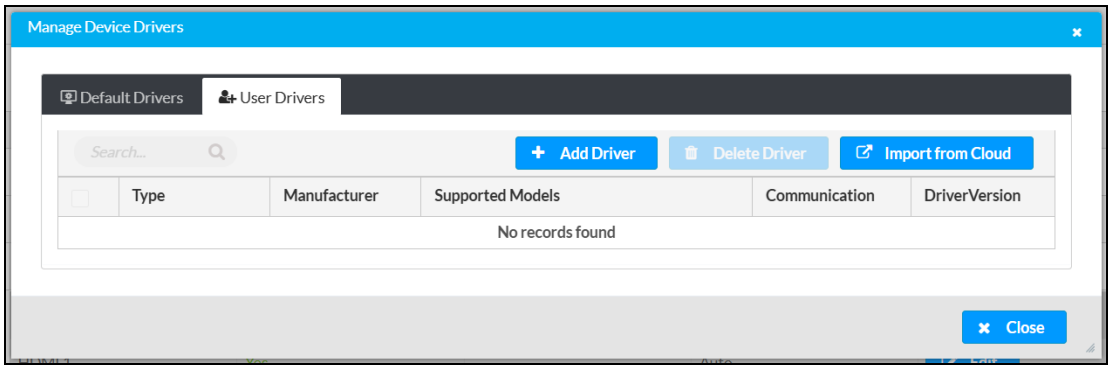
Manage Device Drivers

Select **Manage Device Drivers** in the **Action** menu to open the **Manage Device Drivers** window. Use this window to add, remove, or browse device drivers on the presentation system. These drivers can be used to issue commanders to connected displays or source devices.



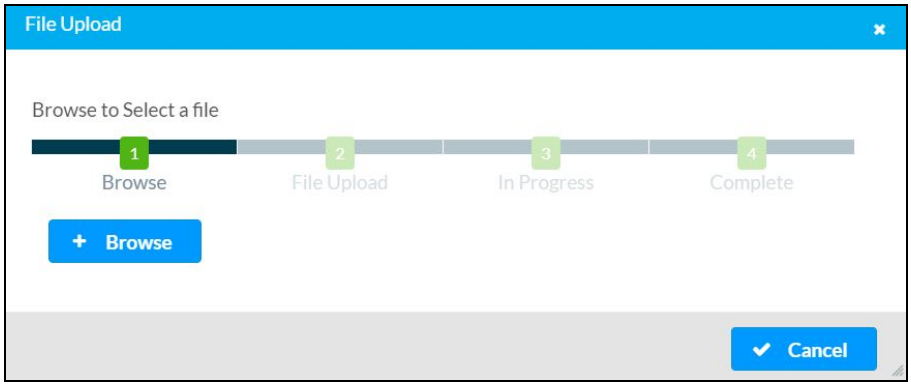
The default tab that will open in this window is the **Default Drivers** tab. This tab is read only, and provides a list of all default drivers available on the presentation system as part of the firmware. Use the **Search...** text entry field to filter the list of drivers by name (currently only the generic Flat Panel Display CEC driver is available by default). Default drivers cannot be removed from the device.

The second tab available in this window is the **User Drivers** tab. By default, the **User Drivers** table will populate with **No records found**.



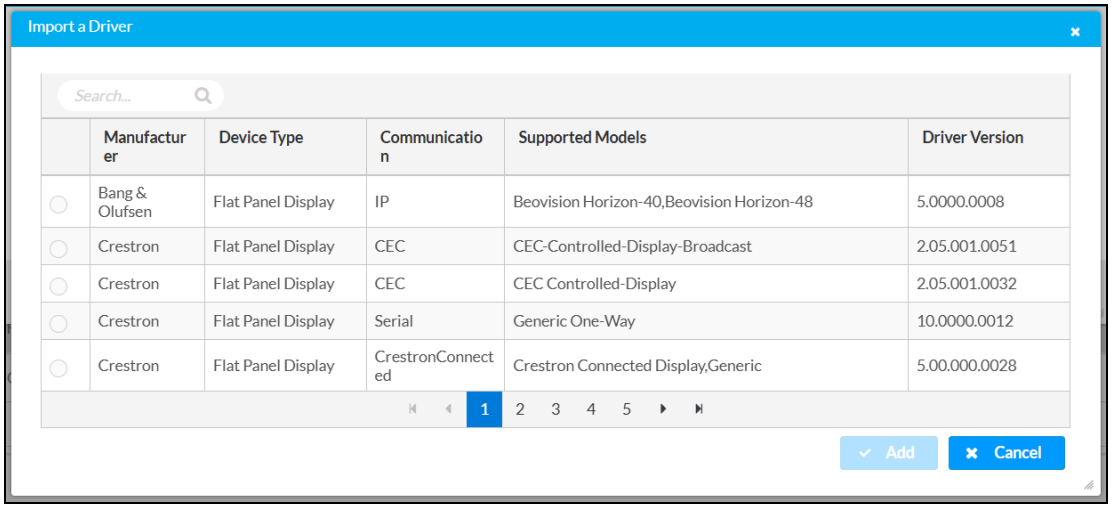
To add a driver, do one of the following:

- Select **+ Add Driver**.
    1. In the **File Upload** window that appears, select **+ Browse**.



    2. Select **Upload** to transfer the selected file
    3. Wait for the upload to complete, then select **OK** to return to the **Manage Device Drivers** window. The uploaded driver is now displayed in the table.

- Select **Import from Cloud**.
  1. In the **Import a Driver** window that appears, browse for the desired driver.



  2. Select the radio button of the desired driver in the left column, then select **Add**. The driver is downloaded from the cloud-based driver repository and added to the presentation system.

     Once the download completes, the **Import a Driver** window will close and the new driver is displayed in the table.

To delete a driver, select its entry in the table then select **Delete Driver**.

Download Configuration

A configuration file (in a *.tgz format) can be downloaded to a computer for use as a backup configuration file or for uploading to another presentation system.

Select **Download Configuration** in the **Action** menu to download the configuration file to the connected PC. The file is downloaded to the Downloads folder of the connected computer using the following naming convention:

[model]_config_**[yyyy-mm-dd]**_**[hh-mm-ss]**.tgz

- **[model]** is the model name of the presentation system.
- **[yyyy-mm-dd]** is the 4-digit year, 2-digit month, and 2-digit day at time of download, separated by hyphens.
- **[hh-mm-ss]** is the 2-digit hour, 2-digit minutes, and 2-digit seconds at time of download, separated by hyphens in a 24-hour format.

For example, hd-ps402_config_2026-01-12_14-53-49.tgz

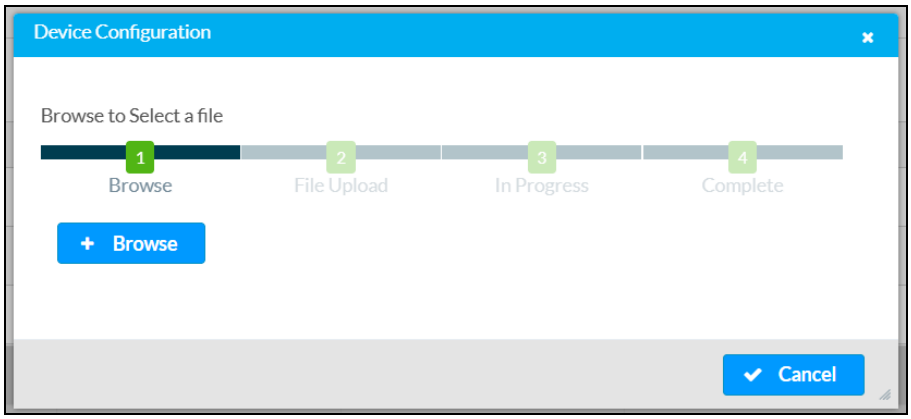
To upload the configuration file to another presentation system, refer to Upload Configuration on page 79.

Upload Configuration

A configuration file (in a *.tgz format) consisting of device and domain configurations can be uploaded to the presentation system from the **Action** menu.

To upload a configuration file:

1. Select **Upload Configuration** from the **Action** menu.
2. In the **Device Configuration** window that appears, select **+ Browse**.



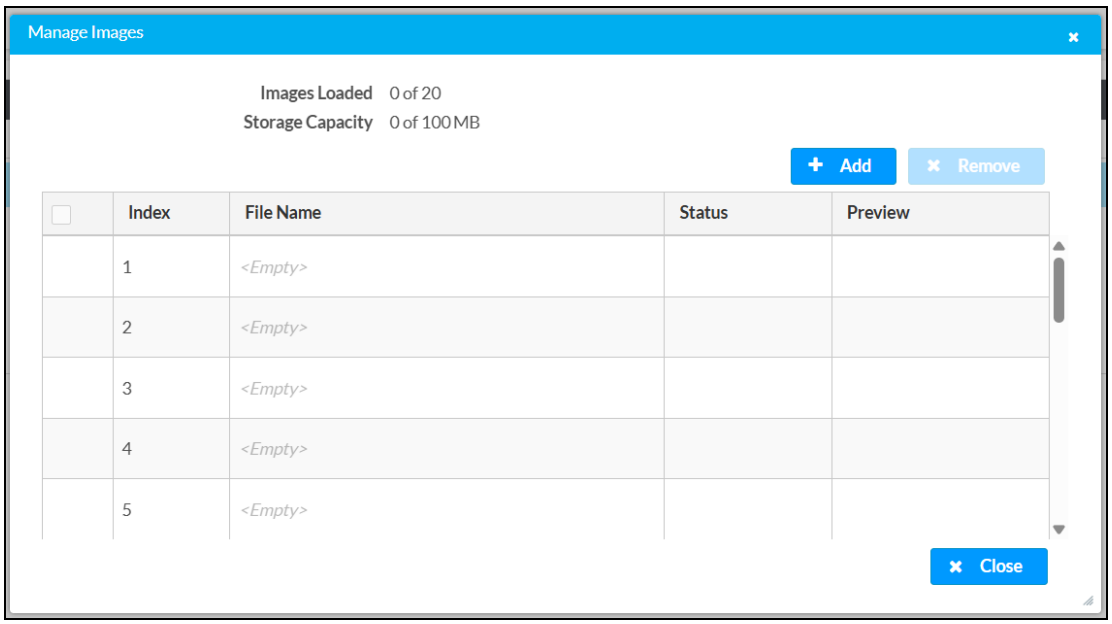
3. Navigate to the desired .tgz file and select **Open**.

> **NOTE:** The configuration file can only be uploaded to the same model of presentation system from which it was originally downloaded.

4. Select **Load** to upload the configuration file to the presentation system or select **Cancel** to cancel the operation. When **Load** is selected, the **In Progress** status bar appears.
5. When the upload is complete, select **OK**. The configuration file has been successfully uploaded to the device.

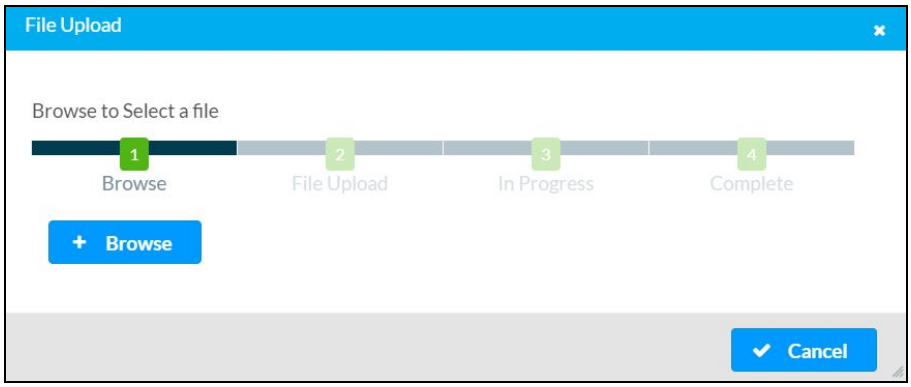
Manage Images

Select **Manage Images** in the **Action** menu to open the **Manage Images** window. Use this window to add or remove images that can be displayed as backgrounds for the on-screen display feature of the presentation system.



To add an image:

1. Select **+ Add**.
2. In the **File Upload** window that appears, select **+ Browse**.

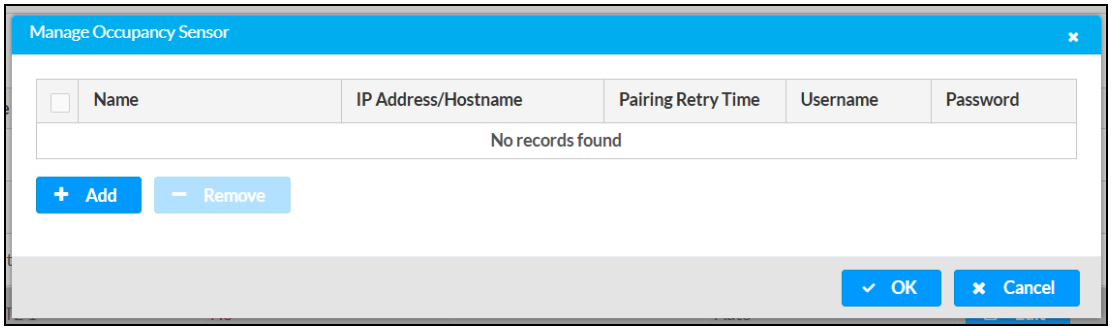


3. Locate the desired .jpeg, .jpg, or .png image file, then select **Upload** to upload it to the presentation system. The uploaded image will now appear in the **Manage Images** table with a preview and a **Ready** status message. Refer to Image Display on page 102 for information on setting a background image.

To delete an image, select its entry in the table then select **X Remove**.

Manage Occupancy Sensor

Select **Manage Occupancy Sensor** in the **Action** menu to open the **Manage Occupancy Sensor** window. Use this window to add or remove an network-based occupancy sensor that can control room functions such as the display power state.



To add an occupancy sensor:

1. Select **+ Add**.
2. In the fields that become available, enter an **IP Address/Hostname**, **Pairing Retry Time**, **Username**, and **Password**. These settings must be configured on the occupancy sensor before pairing with the presentation system.

To remove the occupancy sensor, select its entry in the table then select **- Remove**.

Status

The **Status** page is the first page displayed when opening the interface of the presentation system. It displays general information about the device (such as **Model Name**, **Firmware Version**, and **Serial**

Number), current network settings (such as **Host Name** and **IP Address**), and the current status of the connectors on the device.

The **Status** page can be accessed at any time by selecting the **Status** tab of the interface.

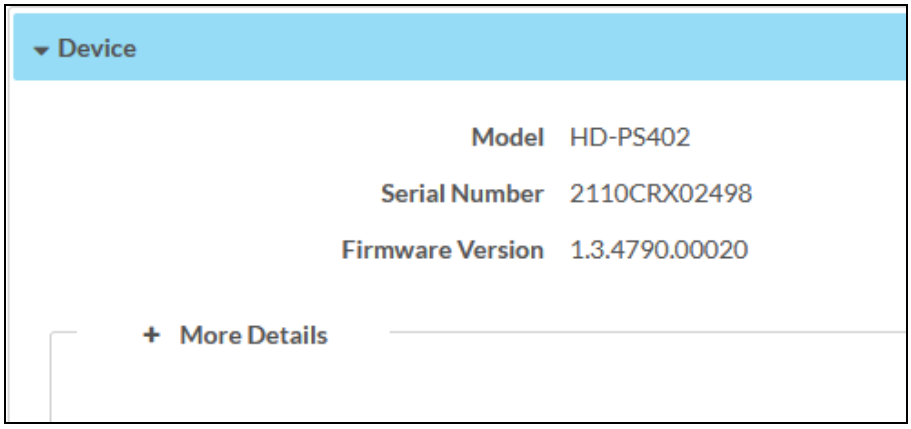
Information displayed on the **Status** page is organized into collapsible accordions:

- Device on page 82
- Occupancy Sensor on page 83
- Input/Output on page 84
- Network on page 84
- Control System on page 85

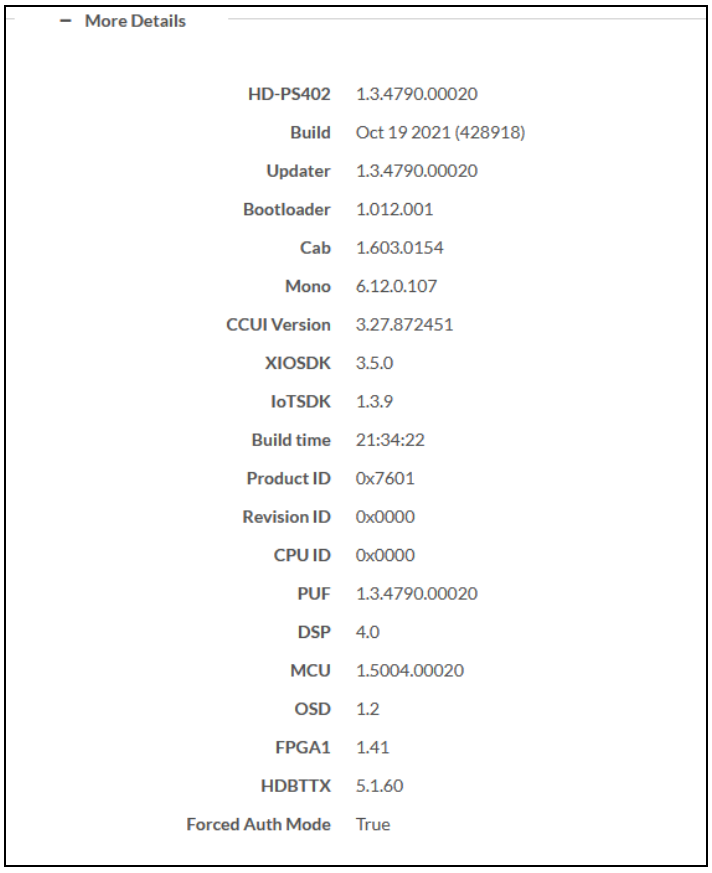
Device

The Device accordion displays the **Model**, **Firmware Version**, and **Serial Number** of the presentation system.

HD-PS Status Page - Device Accordion (HD-PS402 Shown)

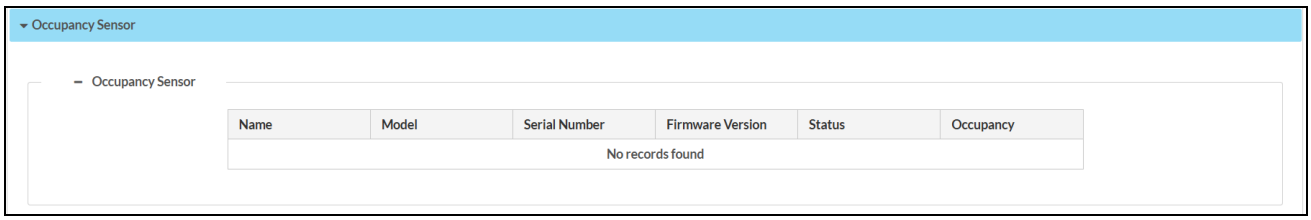


Select **+ More Details** to review additional information about the device.



Occupancy Sensor

The **Occupancy Sensor** accordion displays status information regarding the paired occupancy sensor.



> **NOTE:** If no occupancy sensor has been paired, the table will display **No records found**. To pair an occupancy sensor, refer to Manage Occupancy Sensor on page 81.

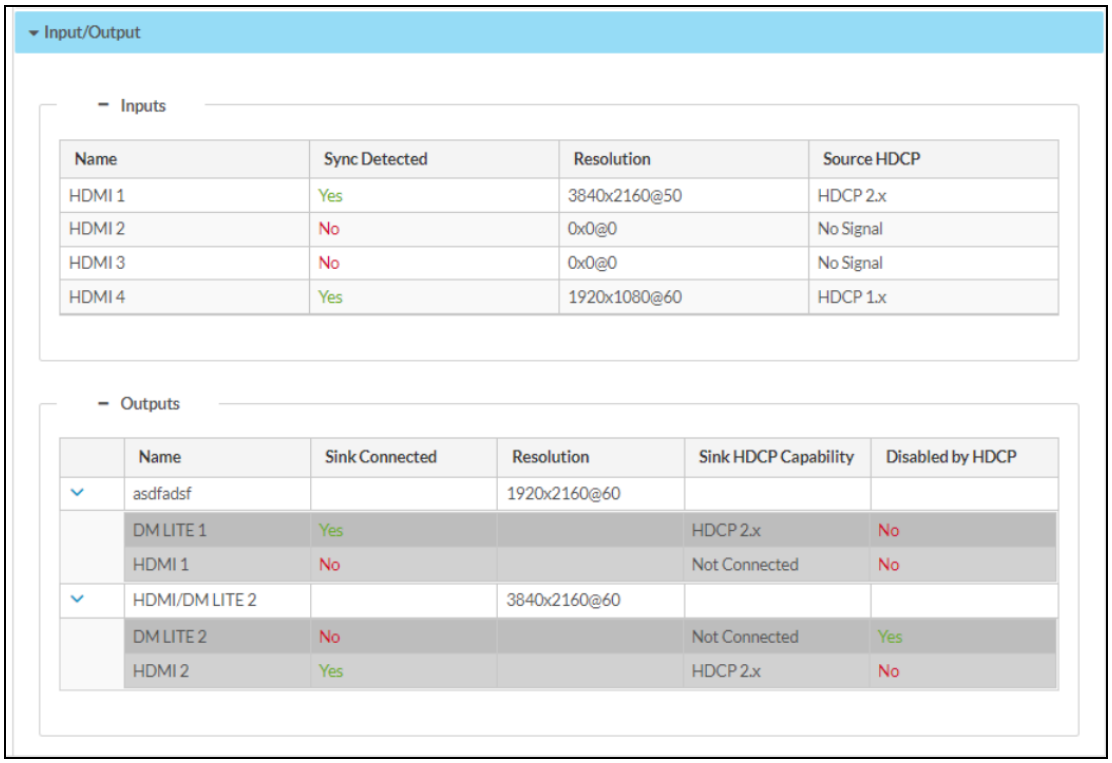
The displayed fields in the table are:

- **Name:** Displays the name of the occupancy sensor.
- **Model:** Displays the model of the occupancy sensor.
- **Serial Number:** Displays the serial number of the occupancy sensor.
- **Firmware Version:** Displays the current firmware version of the occupancy sensor.
- **Status:** Displays whether the occupancy sensor is **ONLINE** or **OFFLINE**.
- **Occupancy:** Displays whether the sensor is detecting occupancy (**OCC**) or not (**VAC**).

Input/Output

The **Input/Output** accordion displays status information regarding the AV input and output connectors.

HD-PS Status Page - Input/Output Accordion (HD-PS402 Shown)



The displayed fields for **Inputs** are:

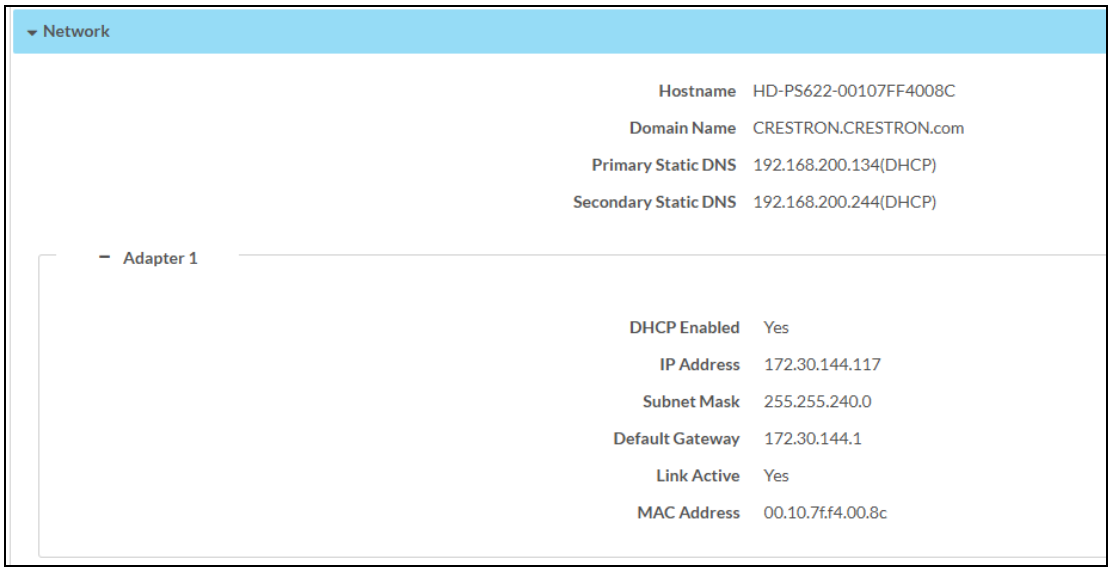
- **Name:** Displays the name of the input.
- **Sync Detected:** Displays whether sync is detected at the input (**Yes**) or not (**No**).
- **Resolution:** Displays the resolution of the incoming video signal.
- **Source HDCP:** Displays the HDCP level of the incoming video signal.

The displayed fields for **Outputs** are:

- **Name:** Displays the name of the output.
- **Sink Connected:** Displays whether a sink (such as a display or projector) is connected to the output (**Yes**) or not (**No**).
- **Resolution:** Displays the current resolution of the video output signal.
- **Sink HDCP Capability:** Displays the HDCP level supported by the connected display or projector.
- **Disabled by HDCP:** Displays whether the output is disabled by HDCP (**Yes**) or not (**No**).

Network

The Network accordion displays network-related information about the device, including the **Hostname**, **Domain Name**, and **DNS Servers**.

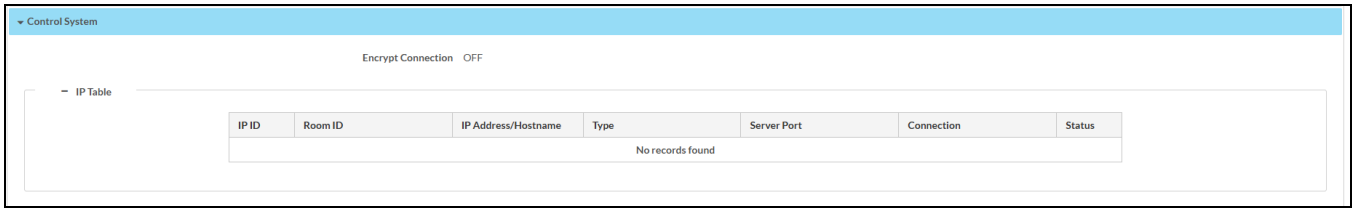


By default, the host name of the device consists of the model name followed by the MAC address of the device. For example, HD-PS622-00107FF4008C.

Select **+ Adapter 1** to display additional information regarding the presentation system's Ethernet port. If **+ Adapter 1** is selected, select **- Adapter 1** to collapse the section.

Control System

The **Control System** accordion displays information regarding the connection between the presentation system and a control system.



The displayed fields are:

- **Encrypt Connection:** Displays **ON** if the connection is encrypted or **OFF** if it is not.
- **IP ID:** Displays the IP ID of the presentation system in its IP table entry of the control system's IP table.
- **Room ID:** Displays the room ID of the presentation system in its IP table entry of the control system's IP table.
- **IP Address/Hostname:** Displays the IP address and host name of the control system.
- **Type:** Always displays **Peer** (this is the only relationship the presentation system can have to a control system).
- **Server Port:** Displays the port for the connection between the presentation system and the control system.
- **Connection:** Always displays **Gway** (this is the only connection type supported between a presentation system and a control system).

- **Status:** Displays either **ONLINE** or **OFFLINE** depending on if the presentation system is able to communicate with the control system.

Settings

The **Settings** page enables configuration of the presentation system's settings. The **Settings** page can be accessed at any time by selecting the **Settings** tab of the interface.

Settings available on the **Settings** page are organized into collapsible accordions:

- System Setup on page 86
- Inputs on page 92
- Outputs on page 96
- Routing on page 113

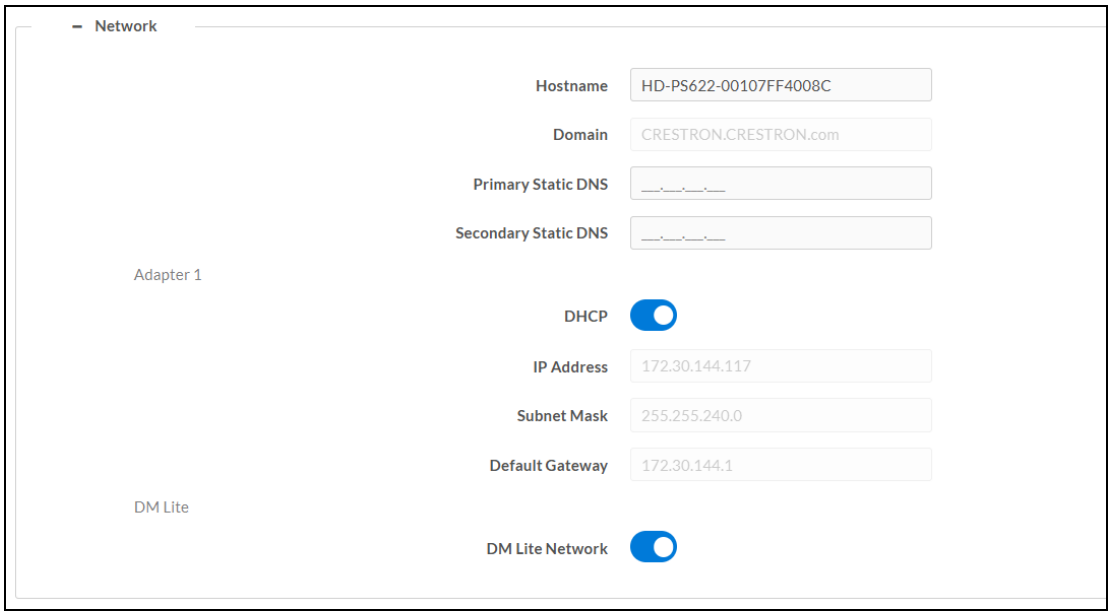
System Setup

The **System Setup** accordion contains settings for configuration of the following system functions:

- Network on page 86
- Front Panel on page 87
- Cloud Settings on page 88
- Auto Update on page 88
- Date/Time on page 89
- Control System on page 89
- Service Ports on page 90

Network

Use the **Network** section to configure the network settings of the LAN port of the presentation system.



Set the **DHCP** toggle to the right to enable DHCP or left to disable DHCP. This determines whether the IP address of the LAN port is to be assigned by a DHCP (Dynamic Host Configuration Protocol) server.

- **Enabled:** When DHCP is enabled (default setting), the IP address of the LAN port is automatically assigned by a DHCP server on the local area network (LAN).
- **Disabled:** When DHCP is disabled, manually enter information in the following fields:
  - **Primary Static DNS:** Enter a primary DNS IP address.
  - **Secondary Static DNS:** Enter a secondary DNS IP address.
  - **IP Address:** Enter a unique IP address for the LAN port.
  - **Subnet Mask:** Enter the subnet mask that is set on the network connected to the LAN port.
  - **Default Gateway:** Enter the IP address that is to be used as the LAN network's gateway.

Set the **DM Lite Network** toggle to the right to extend the LAN to connected DM Essentials (formerly DM Lite) endpoints. Set the toggle to the left position to disable this LAN extension.

To save any new network entries, select **Save Changes**.

Front Panel

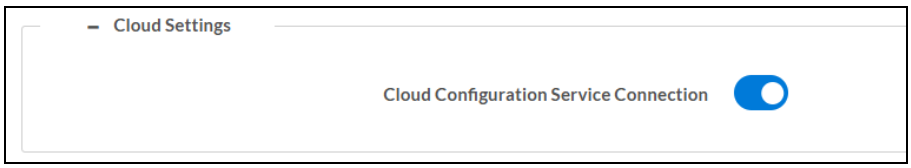
Use the Front Panel section to enable or disable the front panel controls and indicators of the presentation system.

Configure the front panel as desired:

- Set the **Front Panel Lock** toggle to the right to lock the physical controls on the front panel of the device. While this lock is enabled, device settings can only be configured via the UI or programming. Set the toggle to the left to unlock the front panel controls.
- Set the **Front Panel LEDs** toggle to the right to enable the LED indicators on the front panel of the device. Set the toggle to the left to disable the indicators.

Cloud Settings

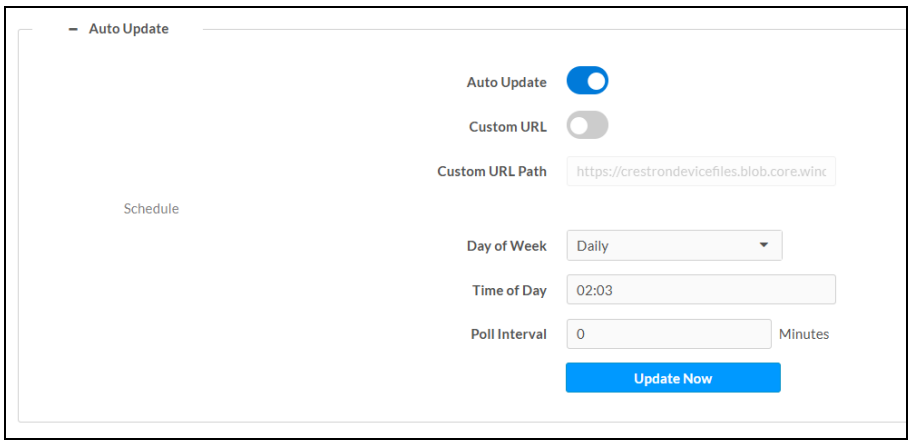
The **Cloud Settings** section provides a toggle to enable or disable communication with the Crestron XiO Cloud platform.



Set the **Cloud Configuration Service Connection** toggle to the right to allow the presentation system to communicate with the XiO Cloud platform. Set the toggle to the left to prevent the device from communicating with the XiO Cloud platform.

Auto Update

The presentation system can automatically check for and install firmware updates at scheduled intervals via the **Auto Update** feature.



To configure the **Auto Update** feature settings:

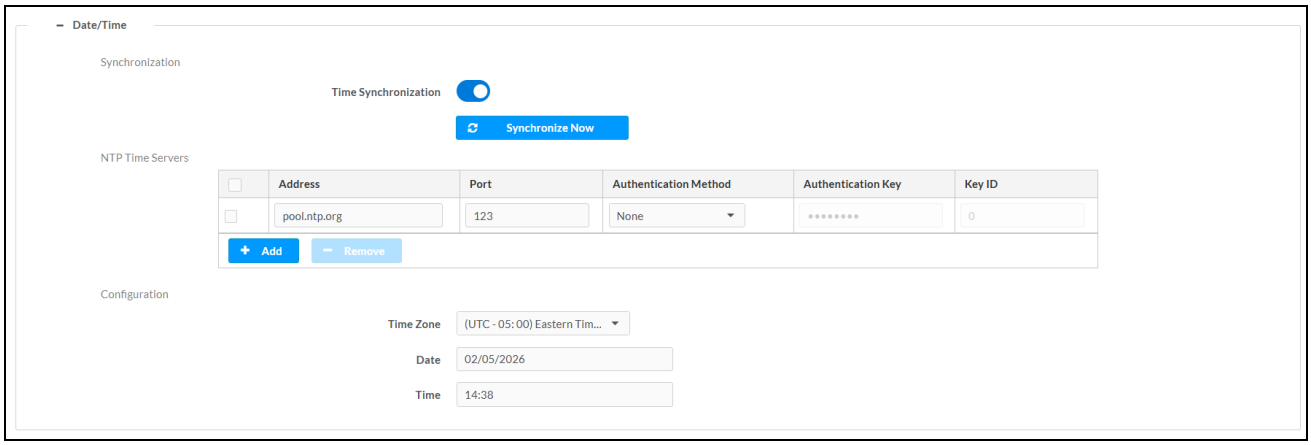
1. Set the **Auto Update** toggle to the right to enable automatic updates.
2. Define the URL to download the updates by doing either of the following:
   - Use the default URL to download the updates from the Crestron server.
   - Use a custom URL. Set the **Custom URL** toggle to the right to enable a custom URL. In the **Custom URL Path** text box, enter the path to a custom manifest file in the FTP or SFTP URL format. Use the Crestron Auto Update Tool to generate a custom manifest file, then store the file on an FTP (File Transfer Protocol) or SFTP (Secure File Transfer Protocol) server.

3. Set a schedule for the automatic firmware update by doing either of the following:
    - Select the desired **Day of Week** and **Time of Day** (24-hour format) values.
    - Set the **Poll Interval** by entering a value from 60 to 65535 minutes. A value of 0 disables the **Poll Interval**.
4. Select **Save Changes**.

Selecting **Update Now** causes the device to check for a firmware update immediately. If a schedule was set in step 3 above, that schedule still remains in effect.

Date/Time

Use the **Date/Time** section to configure the date and time settings of the presentation system.



Synchronization

1. Set the **Time Synchronization** toggle to the right to enable or left to disable time synchronization. By default, time synchronization is enabled.
2. In the **NTP Time Servers** table, enter the URL of a NTP (Network Time Protocol) or SNTP (Simple Network Time Protocol) server. Up to three time servers can be added on a device.
3. Select **Synchronize Now** to perform time synchronization between the device's internal clock and the time server.

Configuration

1. Open the **Time Zone** drop-down menu to select the applicable time zone.
2. In the **Date** field, enter the current date.
3. In the **Time** field, enter the current time in 24-hour format.

Select **Save Changes** to save the settings.

Select **Revert** from the **Action** drop-down menu to revert to the previous settings without saving.

Control System

Use the **Control System** section to configure a connection to a Crestron control system.

To configure the control system connection:

1. Set the **Encrypt Connection** toggle to the right to enable an encrypted connection to the control system.
    a. Enter a username in the **Control System Username** field.
    a. Enter a password in the **Control System Password** field.
2. Select **+ Add** to add an IP table entry to the **IP Table**.
    a. Enter the Room ID in the **Room ID** field.
    a. Enter the IP ID of the presentation system in the **IP ID** field.
    a. Enter the IP address or hostname of the control system in the **IP Address/Hostname** field.
3. Select **Save Changes** to save the new entries. The **Control System Save** message box appears, indicating that the control system settings were saved successfully. Select **Revert** to revert to the previous settings without saving.

Service Ports

Use the **Service Ports** section to enable or disable the USB service port on the front panel of the presentation system.

Set the USB Service Port toggle to the right to enable the port. Set the toggle to the left to disable the port.

The presentation system executes simple commands included in a commands.txt file loaded to the root directory of a connected USB storage device.

To configure this file:

1. Create a text file with the name **commands.txt**.
2. Enter one of the following commands:
    - `Save`
        - Saves the current device configuration file to the root directory of the USB storage device.
    - `Load <firmware or device configuration filename>`
        - Loads the indicated firmware or device configuration file to the presentation system.

        > **NOTE:** The file must also be present in the root directory of the USB storage device.

    - `Restore`
        - Restores the device to factory default settings.

        > **CAUTION:** The factory restore procedure will wipe all settings from the presentation system, including network settings. If a static IP address is set, restoring the device to factory default settings will clear this address and DHCP will be enabled instead.

    > **NOTES:**
    > - The device executes only the first line of the commands.txt file.
    > - Commands are not case-sensitive.

3. Save the file to the root directory of a USB storage device.

To execute the command in the **commands.txt** file:

1. Enable the **USB Service Port** setting by setting the toggle to the right position.
2. Connect the USB storage device to the USB service port of the presentation system.
3. Press and hold the **SETUP** button on the presentation system for 10 seconds.
    - If saving or uploading a configuration file, proceed to step 4.
    - If issuing a firmware upgrade or factory restore, wait for the device to reboot.
4. Press the **SETUP** button 10 times, waiting between one and five seconds in between presses. The **SETUP** LED will blink to indicate that log files are being loaded to the USB storage device.

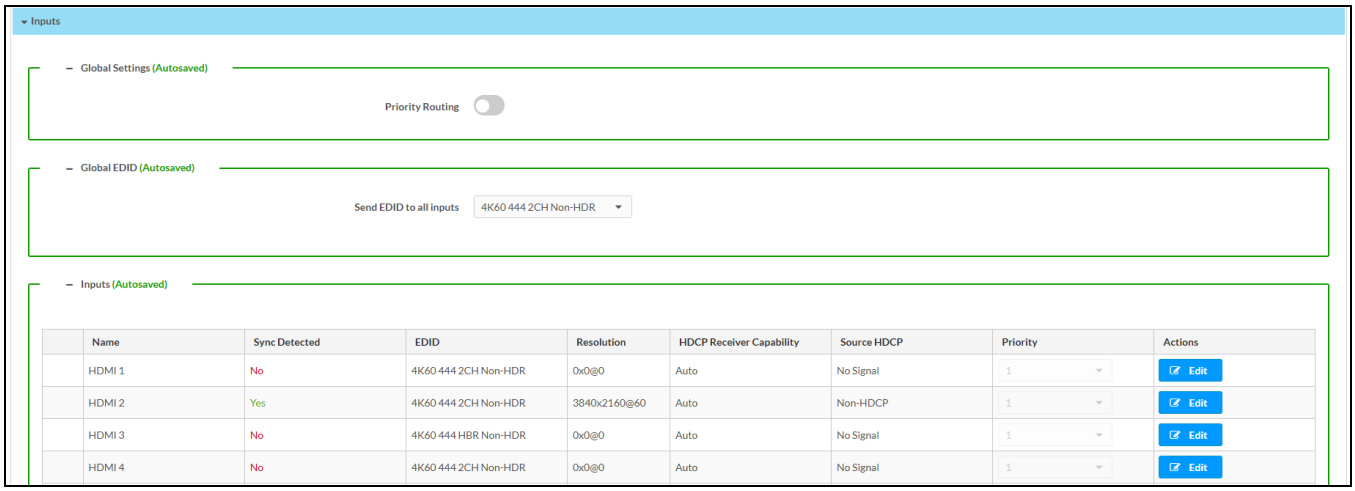
> **NOTE:** The presentation system will create a **results.txt** file in the root directory of the USB storage device. If a firmware upgrade was issued, it will create a **version.txt** file as well.

The USB service port also provides up to 5V 500mA of power to a connected USB device.

> **NOTE:** The USB service port provides this power regardless of whether the **USB Service Port** setting is enabled or disabled.

Inputs

The **Inputs** accordion configures the HDMI and DM Essentials input settings of the presentation system.

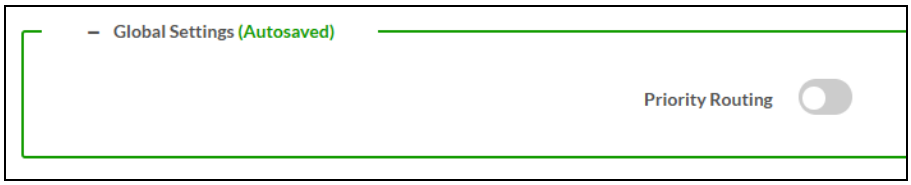


The **Inputs** accordion is broken down into several sections:

- Global Settings on page 92
- Global EDID on page 93
- Inputs on page 93
- Analog Inputs on page 95

Global Settings

The **Global Settings** section contains the option to enable or disable the **Priority Routing** feature.



Priority Routing adjusts the way the **Auto Route** feature (refer to Routing on page 113) works by allowing priority values to be assigned to each input. With **Priority Routing** enabled, the presentation system will check for video signal on higher-priority inputs before routing lower-priority inputs (a lower **Priority** number in the **Inputs** table indicates a higher priority).

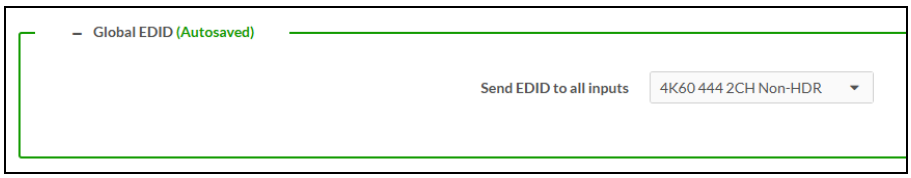
Set the **Priority Routing** toggle to the right to enable this feature. Set the toggle to the left to disable it.

NOTES:

- The drop-down selections under the **Priority** column of the **Inputs** table below only become selectable once **Priority Routing** is enabled.
- **Priority Routing** is only in effect if the **Auto Route** feature is also enabled. Refer to Routing on page 113.

Global EDID

The **Global EDID** section pushes a specified EDID to all inputs on the presentation system at once.

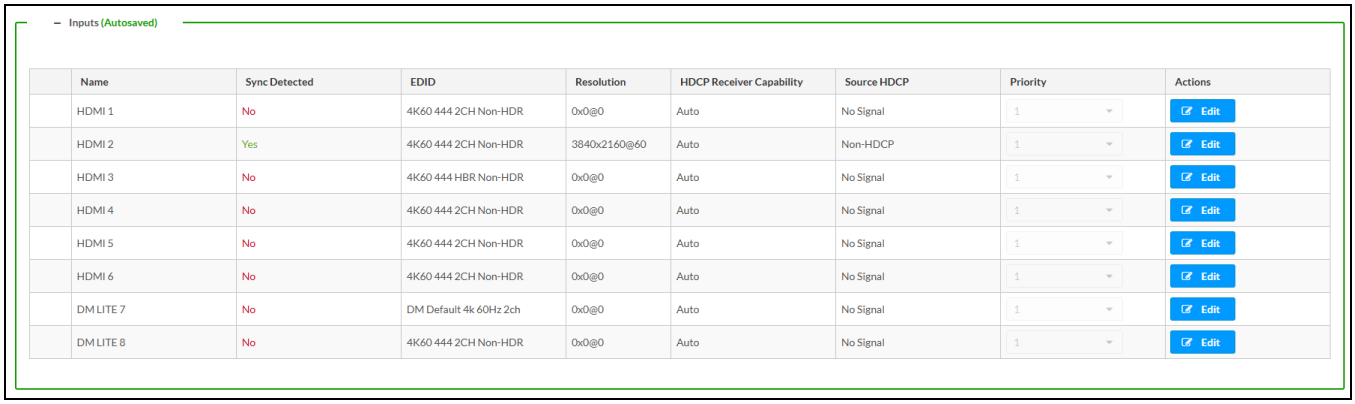


To push a global EDID, select an EDID from the **Send EDID to all inputs** drop-down list. The **Inputs** table below will update the **EDID** column for each input one at a time until all inputs have received the specified EDID.

To add EDIDs to the **Send EDID to all inputs** drop-down list, refer to Manage EDIDs on page 76.

Inputs

The **Inputs** table displays information and provides additional actions for the HDMI and DM Essentials inputs.



Each input row contains information in the following read-only columns:

- **Name:** Displays the name of the input. To change the name, refer to Edit an Input on page 94.
- **Sync Detected:** Indicates whether a video signal is detected at the input.
- **EDID:** Displays the currently applied EDID file. To modify the EDID, refer to Global EDID on page 93 or Edit an Input on page 94.
- **Resolution:** Displays the detected resolution of the incoming video signal. If no video is detected, **0x0@0** is displayed.
- **HDCP Receiver Capability:** Displays the HDCP support level of the input. To modify the HDCP support level, refer to Edit an Input on page 94.
- **Source HDCP:** Displays the HDCP level of the incoming video signal (**Non-HDCP**, **HDCP 1.x**, or **HDCP 2.x**). If no video is detected, **No Signal** is displayed.

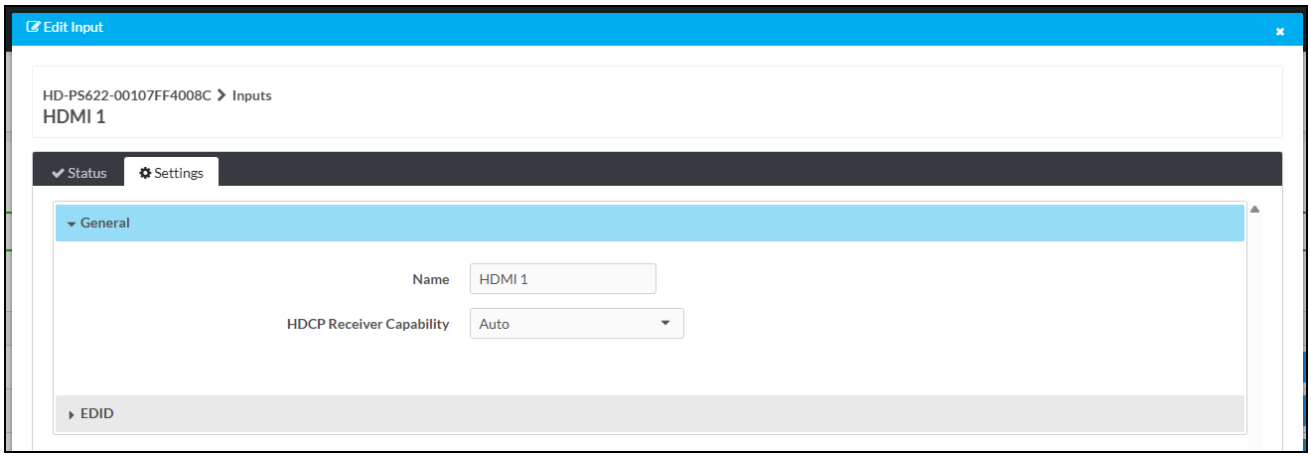
The **Priority** column contains a drop-down list in each input row. Use the **Priority** drop-down list for each input to select the priority level of that input; the lower the number, the higher the priority.

NOTES:

- **Priority** levels can only be adjusted while the **Priority Routing** setting is enabled (refer to Global Settings on page 92).
- Priority-based routing only occurs when **Auto Route** is enabled (refer to Routing on page 113).

Edit an Input

Select **Edit** in the **Actions** column to edit a given input. The **Edit Input** window appears.

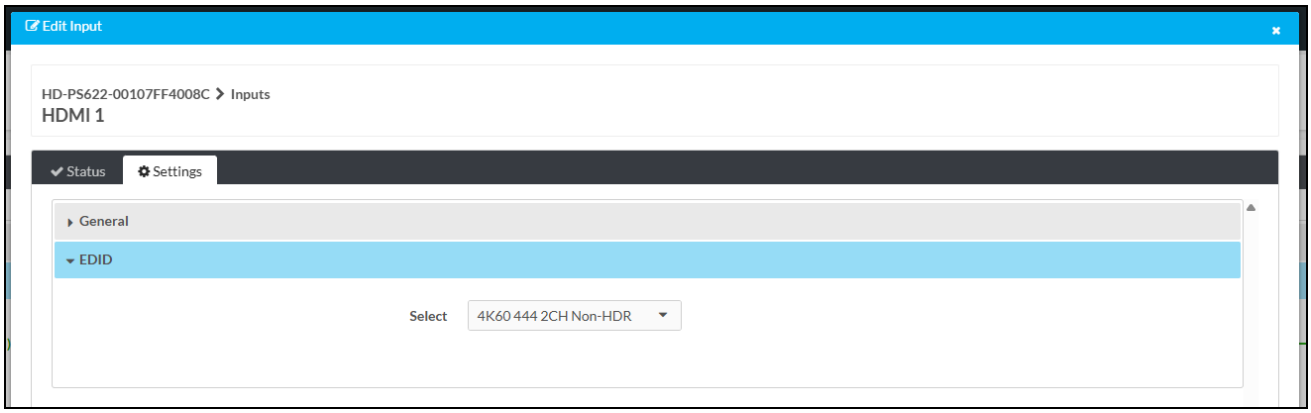


There are two tabs within the **Edit Input** window. The **Settings** tab is open by default with the **General** accordion expanded.

Within the **General** accordion, configure the following:

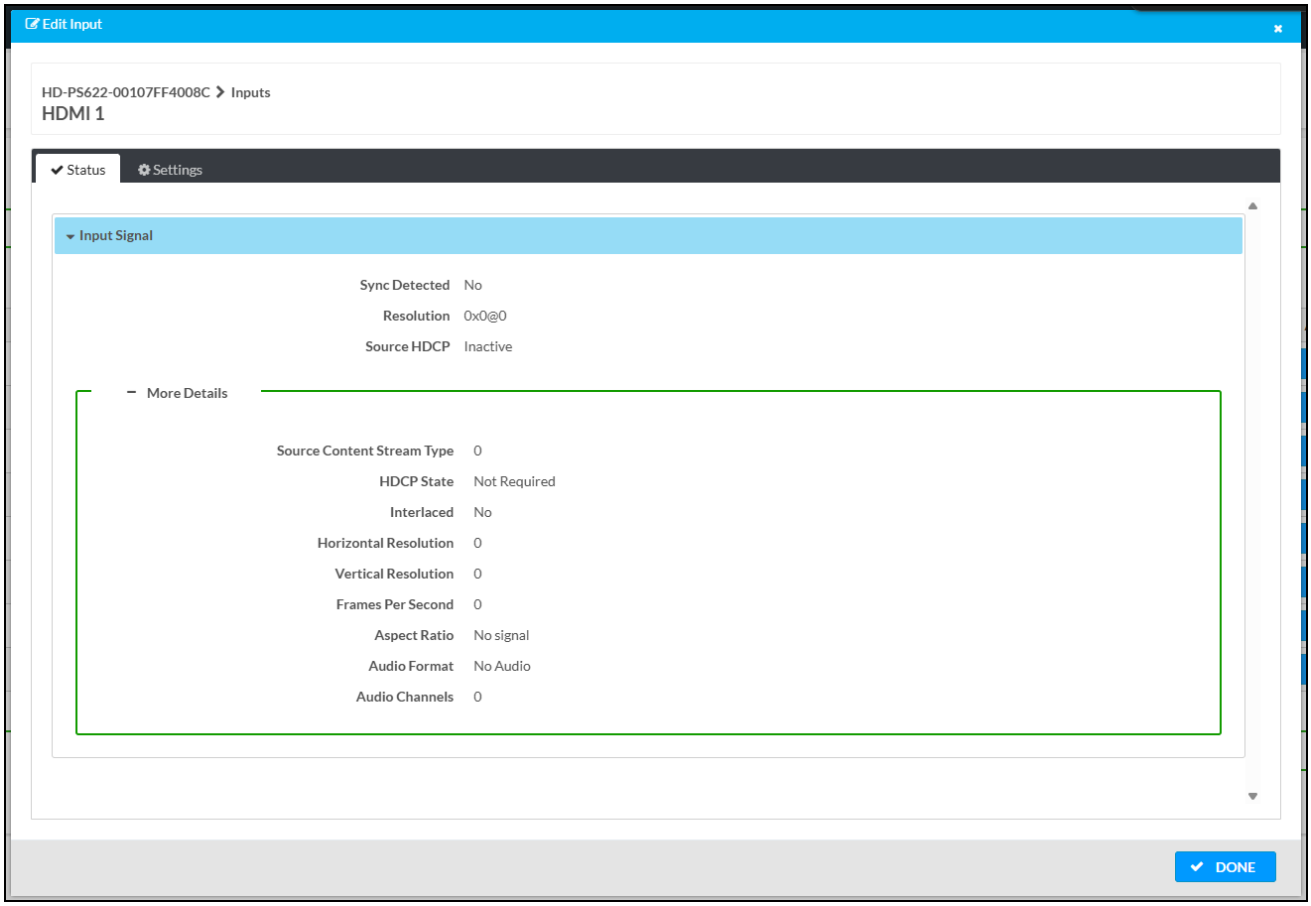
- **Name:** Enter a custom name for the input.
- **HDCP Receiver Capability:** Select an HDCP level from the drop-down list.
  - **Auto:** The HDCP level of the input will match the detected HDCP level of the incoming video signal. **Auto** is selected by default.
  - **Disable:** Disables HDCP at the input. Only non-HDCP content will be accepted by the input; any HDCP content will be blanked.
  - **HDCP 1.4:** Allows 1.4 and non-HDCP content.
  - **HDCP 2.x:** Allows 1.4, 2.x, and non-HDCP content.

Select the **EDID** accordion to expand it and access the EDID selection setting.



Select an EDID from the **Select** drop-down list to apply that EDID file to the input. To add EDIDs to the **Select** drop-down list, refer to Manage EDIDs on page 76.

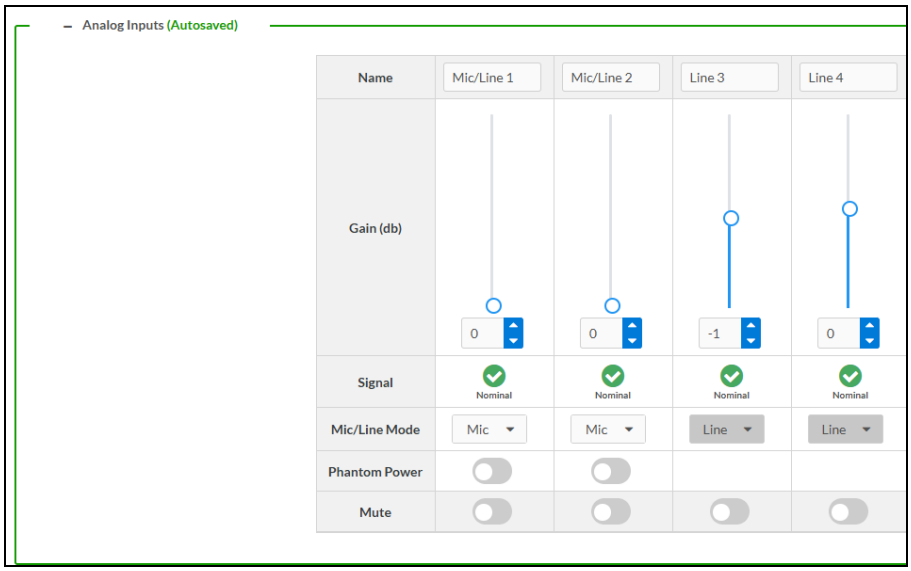
Select the **Status** tab to view the **Status** page of the **Edit Input** window, which contains read-only information regarding the input.



Select **✓ DONE** or **X** to dismiss the **Edit Input** window.

Analog Inputs

The **Analog Inputs** table provides controls for the analog audio inputs of the presentation system.



The following information and controls are available for each audio input:

- **Name:** Displays the current name of the input. Enter a new name in the text field for a given input to update its name.
- **Gain (db):** Controls the amount of gain applied to the input. To adjust the gain for a given input, do one of the following:
  - Slide the **Gain (db)** slider up to increase or down to decrease the gain.
  - Manually enter a value in the text field.
  - Use the up and down arrows to increase or decrease the gain. Values range from 0 dB to 60 dB for microphone level inputs or -10 dB to +10 dB for line level inputs, adjustable in increments of 1 dB.
- **Signal:** Indicates whether the incoming audio signal is **Nominal** or **Clipping**.
- **Mic/Line Mode:** Select whether the incoming audio signal should be treated as a microphone-level (-40dBV or less) or line-level signal (-10dBV for unbalanced, +4dBu for balanced).

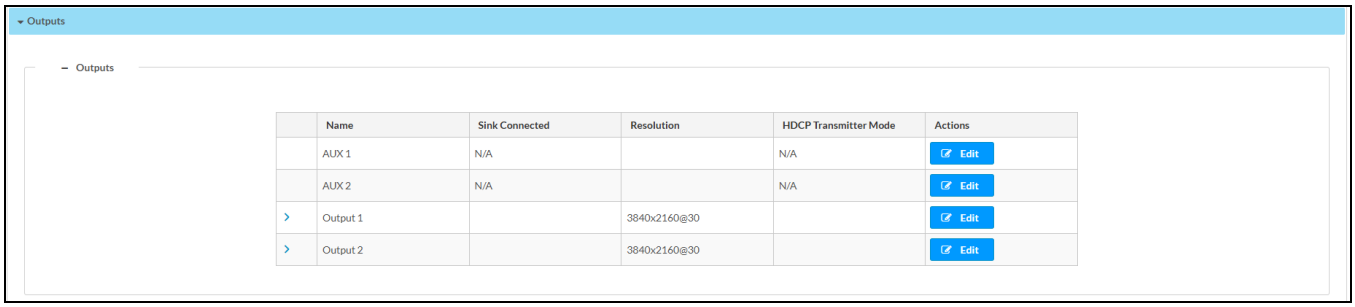
  > **NOTE:** This setting is only available on input connectors **CH1** and **CH2**. All other analog audio inputs are line-level only.

- **Phantom Power:** If **Mic** is selected for **Mic/Line Mode**, enable +48V 12mA phantom power by setting the **Phantom Power** toggle to the right. Set the toggle to the left to disable phantom power.
- **Mute:** Set the **Mute** toggle to the right to mute the input. Set the toggle to the left to unmute the input.

Outputs

The **Outputs** accordion configures the analog audio and digital A/V output settings of the presentation system.

HD-PS Settings Page - Outputs Accordion (HD-PS402 Shown)



The **Outputs** table displays information and provides additional actions for the audio, HDMI, and DM Essentials outputs.

Each output row contains information in the following read-only columns:

- **Name:** Displays the name of the input. To change the name, refer to Edit an Output on page 97.
- **Sink Connected:** Indicates whether a valid video sink device (such as a display or projector) is detected at the output. The presentation system cannot detect devices connected to the analog audio outputs, so this column always displays **N/A** for **AUX 1** and **AUX 2**.
- **Resolution:** Displays the current resolution of the outgoing video signal. This column is blank for **AUX 1** and **AUX 2**.
- **HDCP Transmitter Mode:** Displays the current HDCP level of the output. To modify the HDCP level, refer to Edit an Output on page 97.

Edit an Output

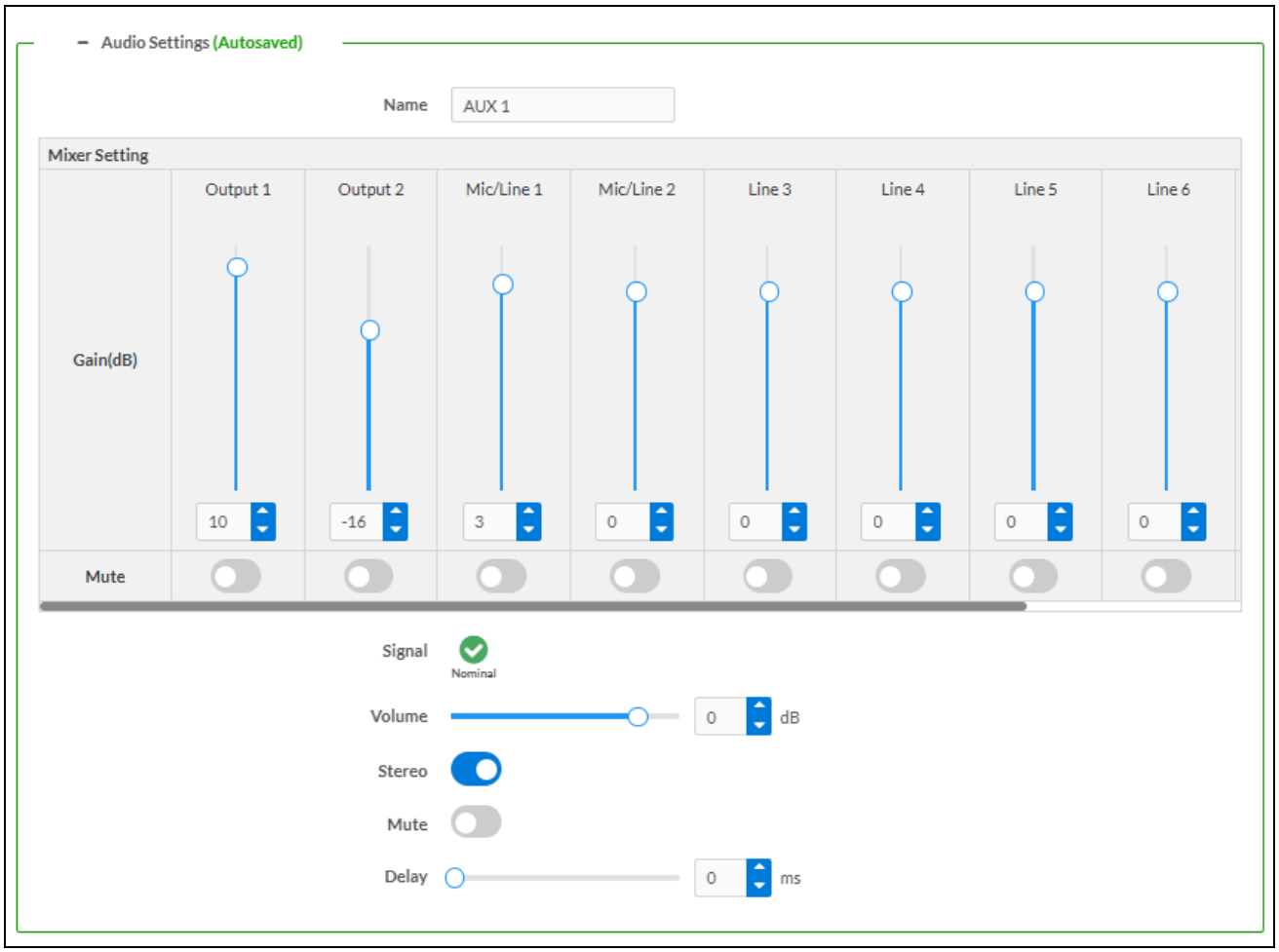
Select **Edit** in the **Actions** column to edit a given output. The **Edit Output** window appears.

There is an **Edit** button for each pair of mirrored outputs as well as for the individual connectors that comprise it. Select the arrow to the left of a mirrored output to expand the rows for the individual DM Essentials and HDMI connectors. The settings available within the **Edit Output** window are different for each of the following output types:

- Analog Audio (AUX 1 and AUX 2) on page 97
- Mirrored HDMI and DM Essentials Output on page 99
- DM Essentials Output Only on page 105
- HDMI Output Only on page 109

Analog Audio (AUX 1 and AUX 2)

The **Edit Output** window for the analog audio output connectors contains an **Audio Settings** mixer.



Use the controls to create a discrete audio mix at the corresponding **AUX** output connector:

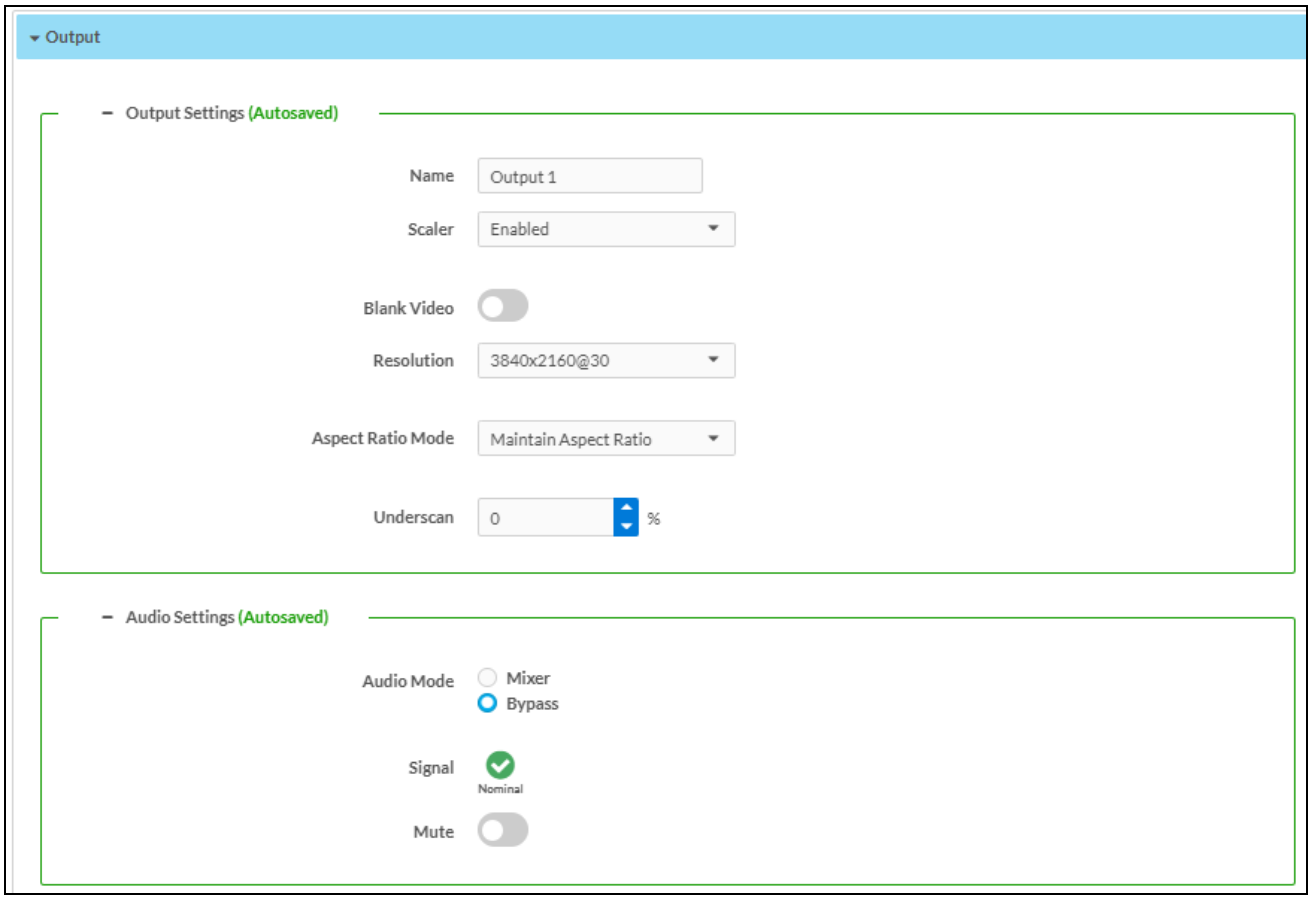
- **Gain (db):** Set a gain level for each available audio signal to mix it into the outgoing AUX audio output. Do one of the following:
  - Slide the **Gain (db)** slider up to increase or down to decrease the gain.
  - Manually enter a value in the text field.
  - Use the up and down arrows to increase or decrease the gain. Values range from -80 dB to +20 dB, adjustable in increments of 1 dB.
- **Mute:** Set each toggle to the right to mute the audio signal for that column. Set each toggle to the left to unmute that audio signal.
- **Signal:** Displays whether the level of the outgoing audio mix is **Nominal** or **Clipping**.
- **Volume:** Set an overall level for the outgoing audio mix. This level control comes after the mix levels set by the **Gain (db)** sliders above. Do one of the following:
  - Slide the **Volume** slider to the right to increase or to the left to decrease the volume.
  - Manually enter a value in the text field.
  - Use the up and down arrows to increase or decrease the volume. Values range from -80 dB to +20 dB, adjustable in increments of 1 dB.

- **Stereo:** Set the toggle to the right to allow discrete audio to pass on the left and right channels of the audio connector. Set the toggle to the left to sum the left and right audio signals to a mono mix that passes on both output channels.
- **Mute:** Set the toggle to the right to mute the audio output signal. Set the toggle to the left to unmute the audio.
- **Delay:** Set a delay time to synchronize the audio signal with a corresponding video signal. Do one of the following:
    - Slide the **Delay** slider to the right to increase or to the left to decrease the delay time.
    - Manually enter a value in the text field.
    - Use the up and down arrows to increase or decrease the delay time. Values range from 0 ms to 150 ms, adjustable in increments of 1 ms.

Enter a custom name in the **Name** field.

Mirrored HDMI and DM Essentials Output

The **Edit Output** window for a mirrored HDMI and DM Essentials output features two collapsible accordions for **Output** and On Screen Display settings. The **Output** accordion is expanded by default.



Output Settings

Configure the available settings under the **Output Settings** subsection:

- **Name:** Enter a custom name for the output pair.
- **Scaler:** Select a setting from the drop-down list:
  - **Enabled:** Bypasses the scaler to pass the input video signal unmodified to the output.
  - **Disabled:** Enables the scaler to match the output video signal resolution to a selected value from the **Resolution** drop-down list.
  - **Match Content:** Enables the scaler to match the output video signal resolution to the resolution of the input signal.

  > **NOTES:**
  > - **Scaler** must be set either to **Enable** or **Match Content** for an audio signal from this output to pass to an **AUX** audio output.
  > - The resolutions available in **Match Content** mode are limited to the supported resolutions of the internal scaler.

- **Blank Video:** Set the toggle to the right to blank the HDMI output video signal. Set the toggle to the left to pass the video signal of a routed input source.

  > **NOTE:** Audio from this output will still pass to any applicable audio mixes while **Blank Video** is enabled.

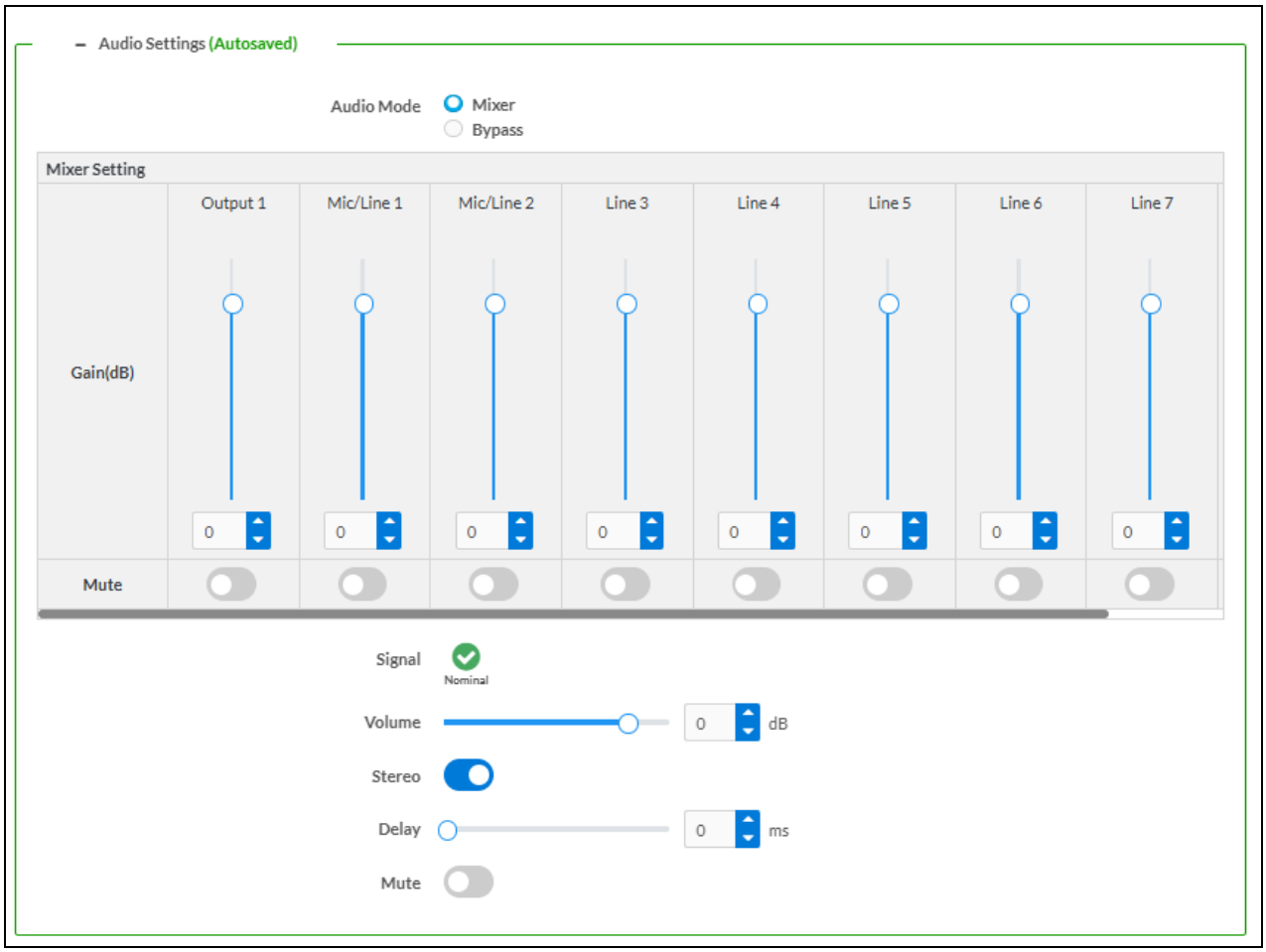
- **Resolution:** Make a selection from the drop-down list to force the video signal to that resolution. Only available when **Scaler** is disabled.
- **Aspect Ratio Mode:** Select a setting from the drop-down list. Only available when **Scaler** is disabled:
  - **Maintain Aspect Ratio:** The aspect ratio of the source signal is preserved at the output. This may result in letter-boxing or pillar-boxing black bars at the edges of the display area.
  - **Stretch To Fit:** The aspect ratio of the source signal is stretched to fit the aspect ratio of the display. This may distort the image of the incoming video signal.
  - **1:1 Pixel Mapping:** The source signal is mapped 1:1 at the display without any aspect ratio scaling. This will preserve the aspect ratio of the source signal, but may not fill the entire display area, resulting in black borders around the image.
  - **Zoom:** The aspect ratio of the source signal is zoomed in to meet the full height or width capabilities of the display, whichever is greater than the incoming signal. This may crop out parts of the incoming video signal.
- **Underscan:** Use the text field or up and down arrows to set an underscan percentage from 0% to 10% in increments of 0.1%. Setting **0%** will maintain the size of the source image area relative to the full video resolution and will preserve the image aspect ratio. Selecting higher values will shrink the size of the source image within its resolution while still preserving its aspect ratio. Any pixels outside of the image area in the full resolution will be filled by a black border. Only available when **Scaler** is disabled.

All settings in the **Edit Output** window are saved automatically. Select **✓ Done** or **X** to dismiss the window.

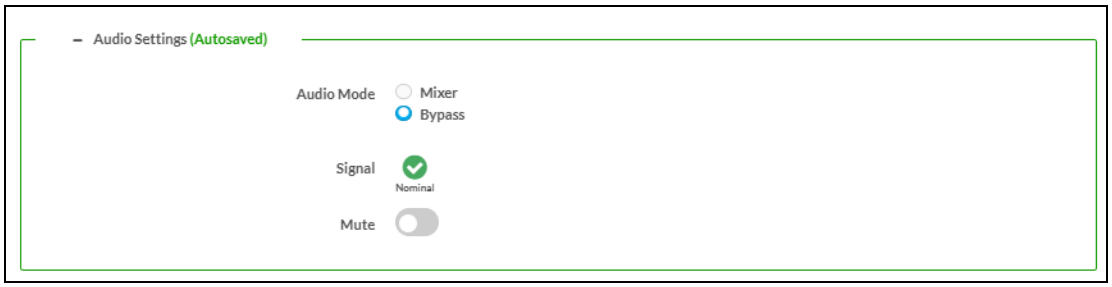
Audio Settings

Configure the available settings under the **Audio Settings** subsection:

- **Audio Mode:** Select the **Mixer** radio button to show the full audio mixer and create a custom audio mix for the A/V output.



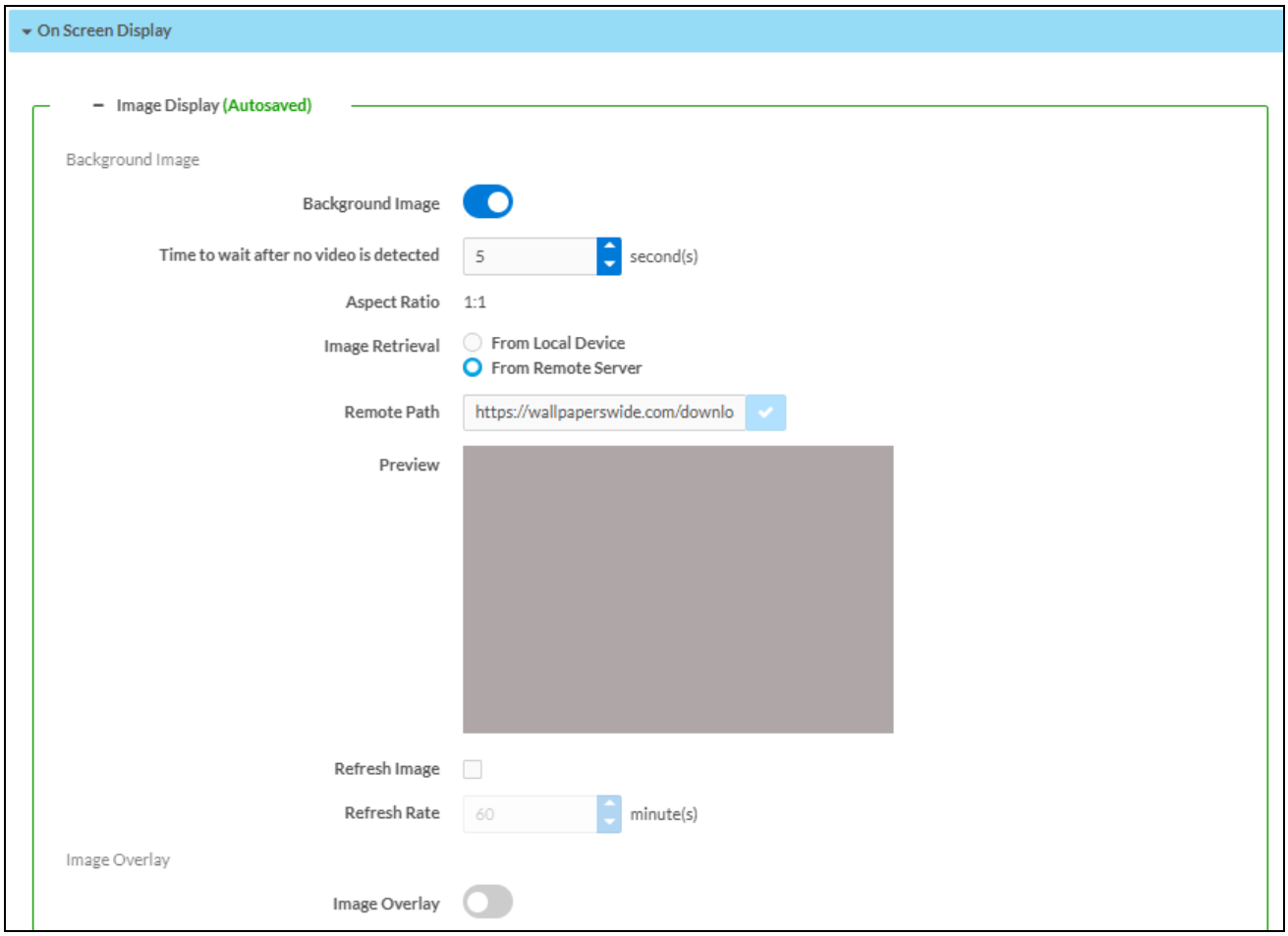
Select the **Bypass** radio button to bypass and hide the audio mixer.



- **Gain (db):** Set a gain level for each available audio signal to mix it into the outgoing AUX audio output. Do one of the following:
    - Slide the **Gain (db)** slider up to increase or down to decrease the gain.
    - Manually enter a value in the text field.
    - Use the up and down arrows to increase or decrease the gain. Values range from -80 dB to +20 dB, adjustable in increments of 1 dB.
- **Mute:** Set each toggle to the right to mute the audio signal for that column. Set each toggle to the left to unmute that audio signal.
- **Volume:** Set an overall level for the outgoing audio mix. This level control comes after the mix levels set by the **Gain (db)** sliders above. Do one of the following:
    - Slide the **Volume** slider to the right to increase or to the left to decrease the volume.
    - Manually enter a value in the text field.
    - Use the up and down arrows to increase or decrease the volume. Values range from -80 dB to +20 dB, adjustable in increments of 1 dB.
- **Stereo:** Set the toggle to the right to allow discrete audio to pass on the left and right channels of the audio connector. Set the toggle to the left to sum the left and right audio signals to a mono mix that passes on both output channels.
- **Delay:** Set a delay time to synchronize the audio signal with a corresponding video signal. Do one of the following:
    - Slide the **Delay** slider to the right to increase or to the left to decrease the delay time.
    - Manually enter a value in the text field.
    - Use the up and down arrows to increase or decrease the delay time. Values range from 0 ms to 150 ms, adjustable in increments of 1 ms.
- **Signal:** Displays whether the level of the outgoing audio mix is **Nominal** or **Clipping**.
- **Mute:** Set the toggle to the right to mute the audio output signal. Set the toggle to the left to unmute the audio.

Image Display

Select the **On Screen Display** accordion to expand it and access the **Image Display** subsection.



Configure the available settings for the **Background Image** feature:

- **Background Image:** Set the toggle to the right to enable the background image feature. A specified static image will be displayed at the output when no video signal is present.
- **Time to wait after no video is detected:** Determines how long the presentation system will wait after video signal is not detected until the background image will be displayed at the output. Enter text in the field or use the up and down arrows to set a time in seconds from 5 seconds to 65,535 seconds in intervals of 1 second.
- **Aspect Ratio:** Displays the aspect ratio of the specified image. This field is read-only.
- **Image Retrieval:** Select one of the radio buttons:
  - **From Local Device:** Use the **Image File** drop-down list to select an image file hosted locally on the presentation system. Select **Manage Images** to add or remove images from the list. Refer to Manage Images on page 80.
  - **From Remote Server:** Use the **Remote Path** text field to enter the URL of a web-based image file.
- **Preview:** Displays a preview of the specified image file.
- **Refresh Image:** If **From Remote Server** is selected for **Image Retrieval**, the presentation system can routinely poll the **Remote Path** URL for new images. Select the check-box to enable this refresh feature.

- **Refresh Rate:** Enter text in the field or use the up and down arrows to set a refresh rate in minutes from 1 minute to 65,535 minute in intervals of 1 minute. This determines how long the presentation system waits before polling the **Remote Path** URL for a new image file.

> **TIP:** The **Automatic Display Power** feature may cause the connected display to turn off before the background image appears. To ensure the background image will be displayed, either disable **Automatic Display Power** or set the **Output Timeout** interval higher than the **Time to wait after no video is detected** interval.

Configure the available settings for the **Image Overlay** feature:

- **Image Overlay:** Set the toggle to the right to enable the image overlay feature. A specified image is displayed over the top of the video output signal. Set the toggle to the left to disable the feature and all other settings within this section.
- **Image Location:** Select one of the nine preset locations for the image overlay from the three-by-three grid.
- **Custom:** Select the check-box to enable custom coordinate-based placement (disables the **Image Location** grid):
  - **X Coordinate:** Determines the left-hand starting point of the image. Enter an integer between 1 and the width resolution value. For example, the maximum value for a 3840x2160 resolution signal would be 3840.
  - **Y Coordinate:** Determines the top starting point of the image. Enter an integer between 1 and the height resolution value. For example, the maximum value for a 3840x2160 resolution signal would be 2160.
- **Transparency:** Set a transparency percentage for the image. Do one of the following:
  - Slide the **Transparency** slider up to increase or down to decrease the transparency.
  - Manually enter a value in the text field.
  - Use the up and down arrows to increase or decrease the transparency. Values range from 0% to 100%, adjustable in increments of 1%.
- **Image Retrieval:** Select one of the radio buttons:
  - **From Local Device:** Use the **Image File** drop-down list to select an image file hosted locally on the presentation system. Select **Manage Images** to add or remove images from the list. Refer to Manage Images on page 80.
  - **From Remote Server:** Use the **Remote Path** text field to enter the URL of a web-based image file.
- **Preview:** Displays a preview of the specified image file.

Text Overlay

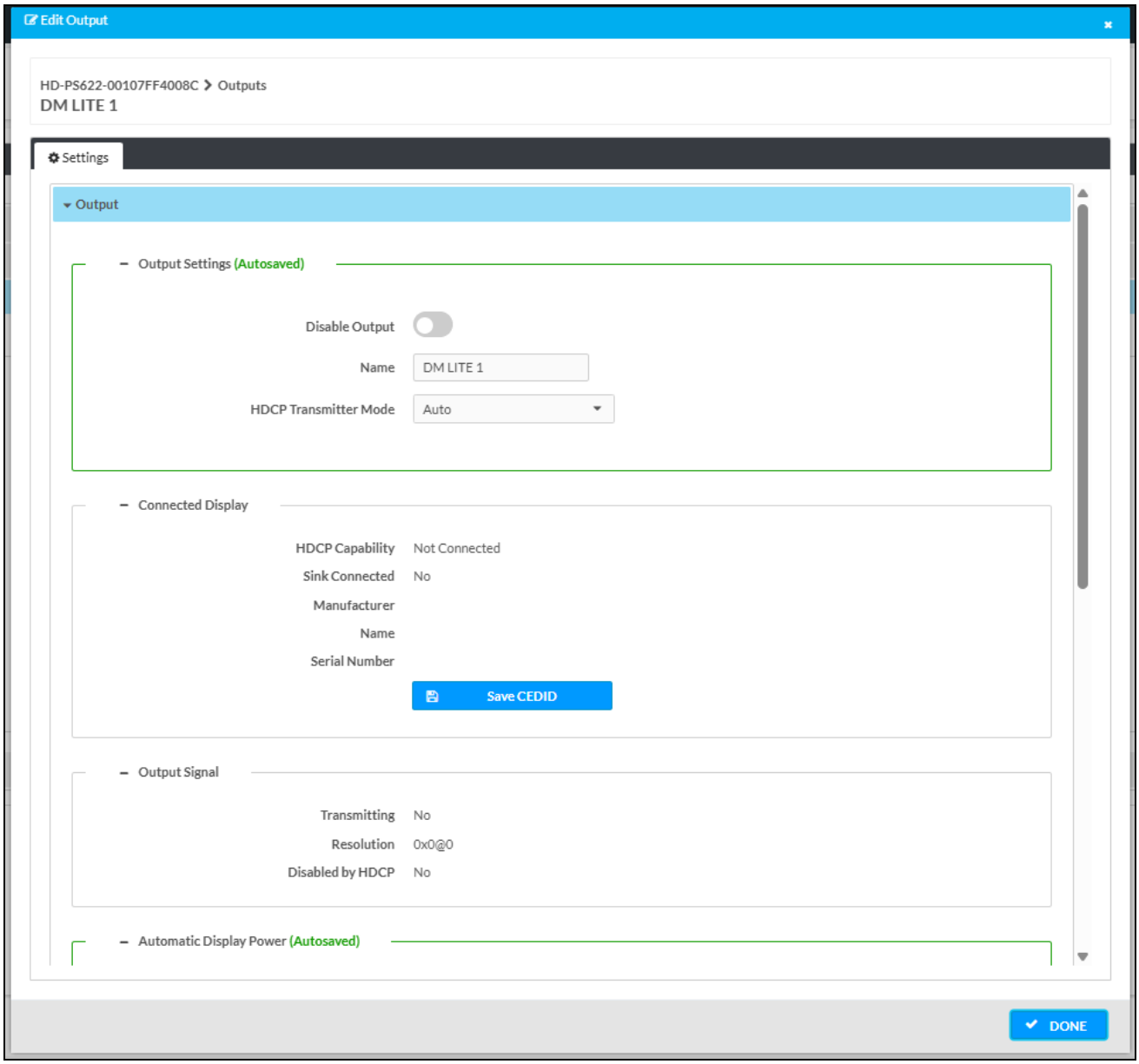
Configure the available settings for the **Text Overlay** feature:

- **Text Overlay:** Set the toggle to the right to enable the image overlay feature. A specified text string is displayed over the top of the video output signal. Set the toggle to the left to disable the feature and all other settings within this section.
- **Text to Display:** Enter the desired text string in this field. The string can be up to 59 characters in length.

- **Background Transparency:** Set a transparency percentage for the background of the text. Do one of the following:
    - Slide the **Transparency** slider up to increase or down to decrease the transparency.
    - Manually enter a value in the text field.
    - Use the up and down arrows to increase or decrease the transparency. Values range from 0% to 100%, adjustable in increments of 1%.
- **Text Location:** Select one of the nine preset locations for the text overlay from the three-by-three grid.
- **Custom:** Select the check-box to enable custom coordinate-based placement (disables the **Image Location** grid):
    - **X Coordinate:** Determines the left-hand starting point of the text. Enter an integer between 1 and the width resolution value. For example, the maximum value for a 3840x2160 resolution signal would be 3840.
    - **Y Coordinate:** Determines the top starting point of the text. Enter an integer between 1 and the height resolution value. For example, the maximum value for a 3840x2160 resolution signal would be 2160.

DM Essentials Output Only

The **Edit Output** window for a DM Essentials output features a collapsible accordion for **Output** settings. The accordion is expanded by default.



Output Settings

Configure the available settings under the **Output Settings** subsection:

- **Disable Output:** Set the toggle to the right to disable the DM Essentials output. The associated HDMI output remains active. Set the toggle to the left to enable the DM Essentials output.
- **Name:** Enter a custom name for the output.

- **HDCP Transmitter Mode:** Make a selection from the drop-down list:
  - **Auto:** The HDCP level of the output will automatically match the HDCP level of the video signal.
  - **Follow Input:** The HDCP level of the output will be forced to the supported HDCP level of the local input.
  - **Force Highest:** The HDCP level of the output will force compatibility with the highest HDCP level supported by the entire signal chain.
  - **Never Authenticate:** The output will never authenticate at any HDCP level. This will blank video when any content-protected video signal is routed to the output.

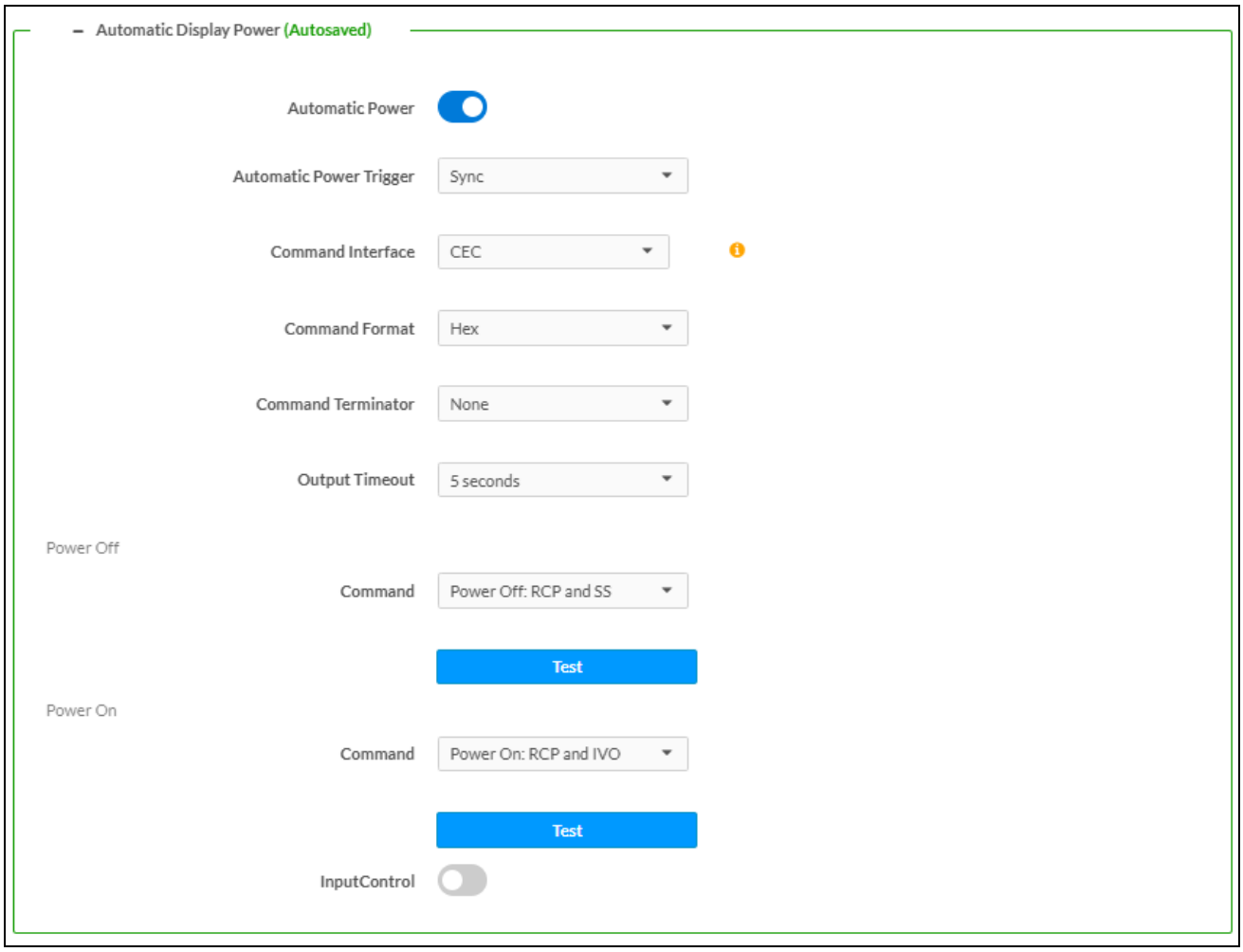
The **Connected Display** subsection contains read-only information and an option to save the CEDID of the connected display:

- **HDCP Compatibility:** Displays the supported HDCP level of the connected display. Displays **Not connected** if no display is detected.
- **Sink Connected:** Indicates whether a connected display is detected (**Yes**) or not (**No**).
- **Manufacturer:** Displays the manufacturer of the connected display.
- **Name:** Displays the name of the connected display.
- **Save CEDID:** Select to save a .cedid file to the Downloads folder of the connected computer. This can be uploaded to one or more presentation systems or other video endpoints. Refer to Manage EDIDs on page 76.

The **Output Signal** subsection contains read-only information:

- **Transmitting:** Displays **Yes** if a video signal is passing on the DM Essentials output connector. Displays **No** if video is not passing.
- **Resolution:** Displays the resolution of the output video signal. Displays **0x0@0** if no video is passing.
- **Disabled by HDCP:** Displays **Yes** if the output video signal is being blanked due to lack of HDCP support somewhere in the signal chain. Displays **No** if video is passing without being blanked by HDCP.

Configure the settings available in the **Automatic Display Power** subsection to allow the DM Essentials output to issue power controls to a connected display.



The following controls are available:

- **Automatic Power:** Set the toggle to the right to enable the feature and the rest of the settings in the subsection. Set the toggle to the left to disable the feature.
- **Automatic Power Trigger:** Select an option from the drop-down list:
    - **Sync:** Video sync from the routed input will issue the power commands. When input video sync is detected, the power on command is issued. When input video sync stops being detected, the power off command is issued.
    - **Occupancy:** Occupancy data from a paired occupancy sensor will issue the power commands. Occupancy detection issues the power on command and vacancy detection issues the power off command.
    - **Sync or Occupancy:** Either video sync detection or occupancy data will issue the power commands.
- **Command Interface:** Select an option from the drop-down list to determine whether commands will be sent via **CEC**, **RS-232**, **IR**, or **Drivers**.

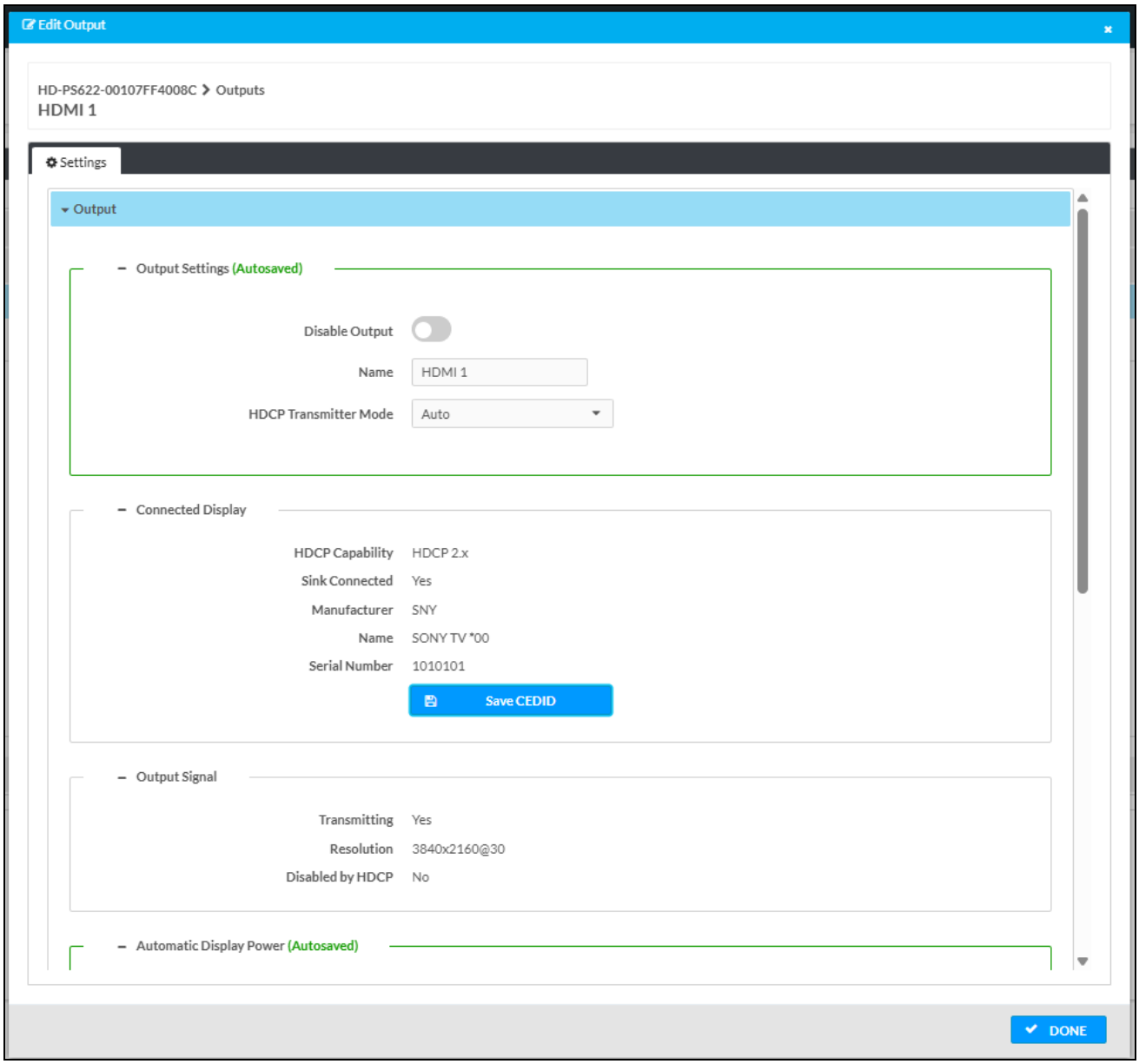
  Once the **Command Interface** is selected, set the appropriate **Power On** and **Power Off** commands under their respective subheadings. RS-232 command strings may be available from the display manufacturer's documentation.

- **Output Timeout:** Select a value from the drop-down list to determine how long (in seconds) the presentation system will wait to send the power off command. This is a timer that starts once video sync is lost or vacancy is detected (depending on the **Automatic Power Trigger** setting). The timer will reset if video sync or occupancy are detected before time runs out.
- **InputControl:** Set the toggle to the right to enable an additional command that will set the display to a specific input. Set the toggle to the left to disable this command.
    - With **InputControl** enabled, select a **Delay** from the drop-down list to determine how long the presentation system will wait after issuing the power on command before issuing the input command. Enter the command in the **Command String** text field (consult the display manufacturer's documentation for the command).

All settings in the **Edit Output** window are saved automatically. Select **✓ Done** or **X** to dismiss the window.

HDMI Output Only

The **Edit Output** window for a HDMI output features a collapsible accordions for **Output** settings. The accordion is expanded by default.



Output Settings

Configure the available settings under the **Output Settings** subsection:

- **Disable Output:** Set the toggle to the right to disable the HDMI output. The associated DM Essentials output remains active. Set the toggle to the left to enable the HDMI output.
- **Name:** Enter a custom name for the output.

- **HDCP Transmitter Mode:** Make a selection from the drop-down list:
  - **Auto:** The HDCP level of the output will automatically match the HDCP level of the video signal.
  - **Follow Input:** The HDCP level of the output will be forced to the supported HDCP level of the local input.
  - **Force Highest:** The HDCP level of the output will force compatibility with the highest HDCP level supported by the entire signal chain.
  - **Never Authenticate:** The output will never authenticate at any HDCP level. This will blank video when any content-protected video signal is routed to the output.

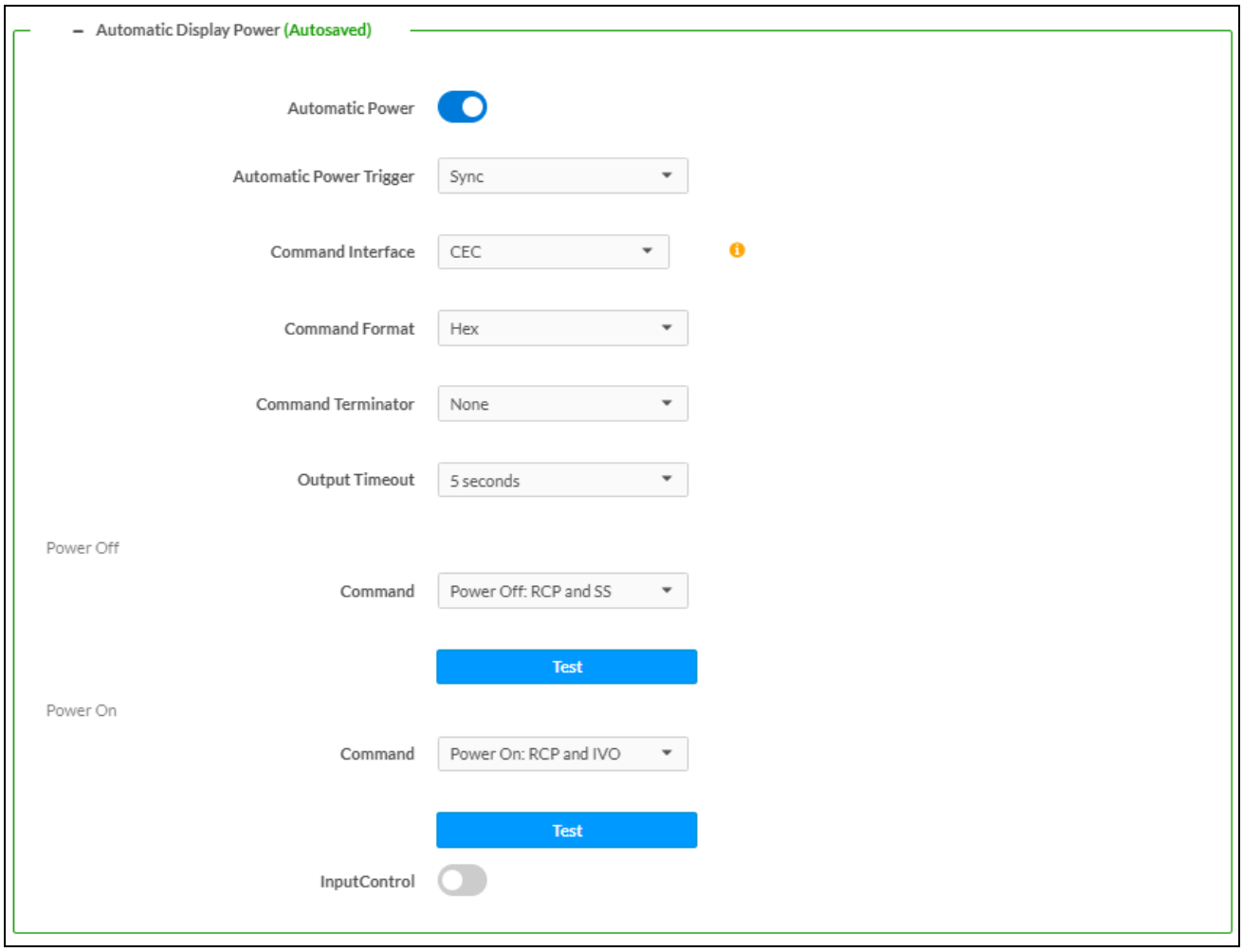
The **Connected Display** subsection contains read-only information and an option to save the CEDID of the connected display:

- **HDCP Compatibility:** Displays the supported HDCP level of the connected display. Displays **Not connected** if no display is detected.
- **Sink Connected:** Indicates whether a connected display is detected (**Yes**) or not (**No**).
- **Manufacturer:** Displays the manufacturer of the connected display.
- **Name:** Displays the name of the connected display.
- **Save CEDID:** Select to save a .cedid file to the Downloads folder of the connected computer. This can be uploaded to one or more presentation systems or other video endpoints. Refer to Manage EDIDs on page 76.

The **Output Signal** subsection contains read-only information:

- **Transmitting:** Displays **Yes** if a video signal is passing on the DM Essentials output connector. Displays **No** if video is not passing.
- **Resolution:** Displays the resolution of the output video signal. Displays **0x0@0** if no video is passing.
- **Disabled by HDCP:** Displays **Yes** if the output video signal is being blanked due to lack of HDCP support somewhere in the signal chain. Displays **No** if video is passing without being blanked by HDCP.

Configure the settings available in the **Automatic Display Power** subsection to allow the HDMI output to issue power controls to a connected display.



The following controls are available:

- **Automatic Power:** Set the toggle to the right to enable the feature and the rest of the settings in the subsection. Set the toggle to the left to disable the feature.
- **Automatic Power Trigger:** Select an option from the drop-down list:
    - **Sync:** Video sync from the routed input will issue the power commands. When input video sync is detected, the power on command is issued. When input video sync stops being detected, the power off command is issued.
    - **Occupancy:** Occupancy data from a paired occupancy sensor will issue the power commands. Occupancy detection issues the power on command and vacancy detection issues the power off command.
    - **Sync or Occupancy:** Either video sync detection or occupancy data will issue the power commands.
- **Command Interface:** Select an option from the drop-down list to determine whether commands will be sent via **CEC** or **Drivers**.

  Once the **Command Interface** is selected, set the appropriate **Power On** and **Power Off** commands under their respective subheadings.

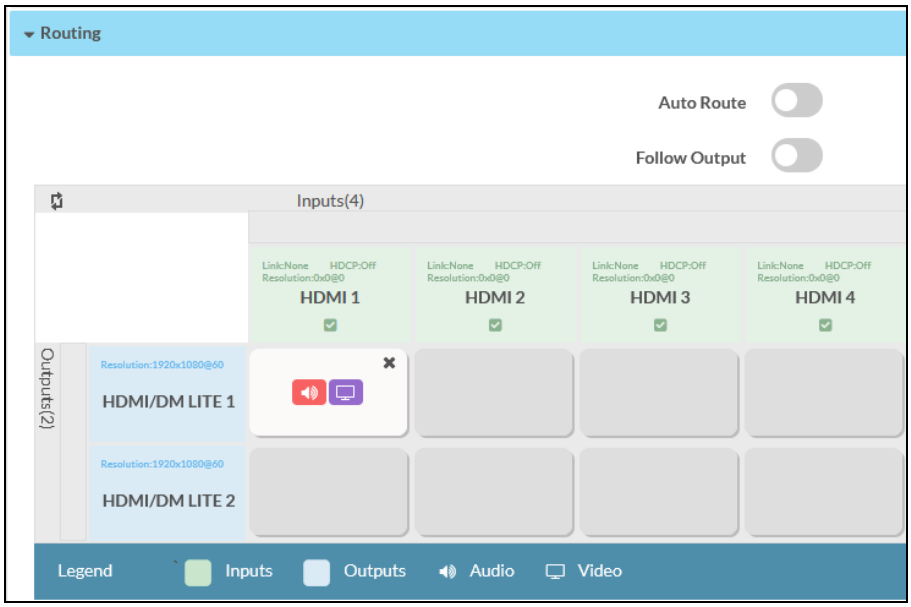
- **Output Timeout:** Select a value from the drop-down list to determine how long (in seconds) the presentation system will wait to send the power off command. This is a timer that starts once video sync is lost or vacancy is detected (depending on the **Automatic Power Trigger** setting). The timer will reset if video sync or occupancy are detected before time runs out.
- **InputControl:** Set the toggle to the right to enable an additional command that will set the display to a specific input. Set the toggle to the left to disable this command.
    - With **InputControl** enabled, select a **Delay** from the drop-down list to determine how long the presentation system will wait after issuing the power on command before issuing the input command. Enter the command in the **Command String** text field (consult the display manufacturer's documentation for the command).

All settings in the **Edit Output** window are saved automatically. Select **✓ Done** or **X** to dismiss the window.

Routing

Use the **Routing** accordion to make or break input to output routes and control the **Auto Route** feature.

HD-PS Settings - Routing Accordion (HD-PS402 Shown)



Configure the toggles to determine general routing behavior:

- Set the **Auto Route** toggle to the right to have input sources automatically route to outputs whenever video sync is detected. Set the toggle to the left to control all routes manually.
- Set the **Follow Output** toggle to the right to have **Output 2** follow all routing done for **Output 1**.

> **NOTE: Follow Output** is only applicable to the HD-PS402.

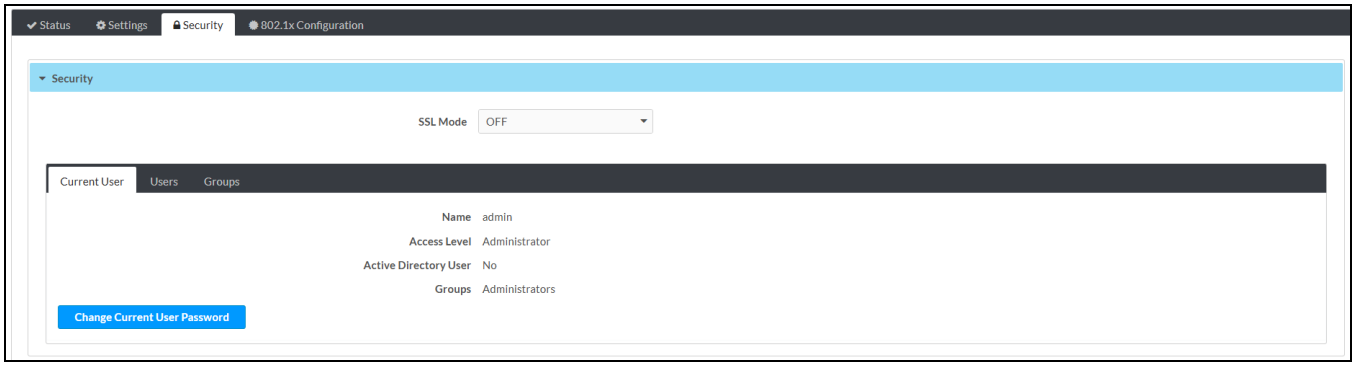
Use the routing matrix to establish or clear signal routes:

- To establish a route, select the box where the input column and output row intersect. A red audio icon and a purple video icon will appear to indicate that the route is established.

- To clear a route, select either of the icons or the **X** at the top-right of the box.
- To route an input to all available outputs, select the green check-box below the input name.

Security

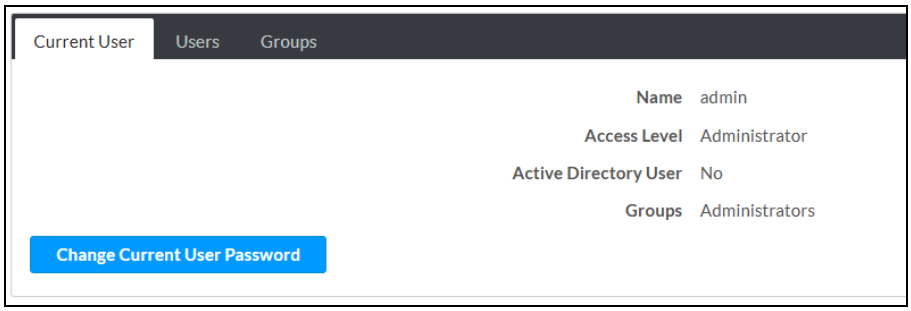
Select the **Security** tab to configure security for users and groups and to allow different levels of access to the presentation system's functions.



Select **Encrypt and Validate**, **Encrypt**, or **OFF** from the **SSL Mode** drop-down list to specify whether to use encryption. By default, **SSL Mode** is set to **OFF**.

Current User

Select the **Current User** tab to view read-only information or to change the password for the current user.

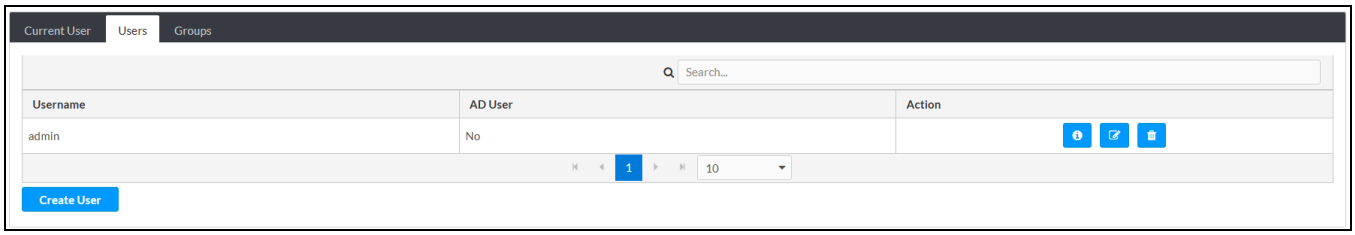


To change the password for the current user account:

1. Select **Change Current User Password**.
2. In the **Change Password** dialog, enter the current password in the **Current Password** field, a new password in the **Password** field, and the same new password in the **Confirm Password** field.
3. Select **OK** to save or select **Cancel** to cancel the changes.

Users

Select the **Users** tab to view and edit user settings. The **Users** tab can be used to add or remove local and Active Directory users and preview information about them.



Use the **Search...** field to enter search term(s) and display users that match the search criteria.

If users listed in the **Users** table span across multiple pages, navigate through the list by selecting a page number or by using the left or right arrows at the bottom of the **Users** pane to move forward or backward through the pages.

Each page can be set to display **5**, **10**, or **20** users by using the drop-down list to the right of the navigation arrows.

Information about existing users is displayed in table format and the following details are provided for each user:

- **Username:** Displays the name of the user.
- **AD User:** Displays whether the user requires authentication using Active Directory.

Select the information icon in the **Actions** column to view detailed user information, or select the delete icon to delete a user.

To create a new user, select **Create User**.

Create a New Local User

To create a new local user:

1. Select **Create User** in the **Users** tab.
2. In the **Create User** dialog, enter the following:
    a. Enter a user name in the **Name** field. A valid user name can consist of alphanumeric characters (letters a-z, A-Z, numbers 0-9) and the underscore "_" character.
    b. Enter a password in the **Password** field; re-enter the same password in the **Confirm Password** field.
    c. Assign the access level by selecting one or more groups from the **Groups** drop-down list.

    > **NOTE:** Make sure that the **Active Directory User** toggle is set to the left (disabled).

3. Select **OK** to save or select **Cancel** to cancel the changes.

Grant Access to an Active Directory User

Users cannot be created or removed from the Active Directory server, but access can be granted to an existing user in the Active Directory server.

To grant access to an Active Directory user, you can either add the user to a local group on the presentation system, or add the Active Directory group(s) that they are a member of to the presentation system. Refer to Grant Access to an Active Directory Group on page 118 for steps on granting access to a group.

To grant access to an Active Directory user directly:

1. Select **Create User**.
2. In the **Create User** dialog, enter the following:
   a. Enter a user name in the **Name** field in the format "Domain\UserName", for example "crestronlabs.com\JohnSmith". Valid user names can contain alphanumeric characters (letters a-z, A-Z, numbers 0-9) and the underscore "_" character.
   b. Select one or more groups from the **Groups** drop-down list.

   > **NOTE:** Make sure that the **Active Directory User** toggle is set to the right (enabled).

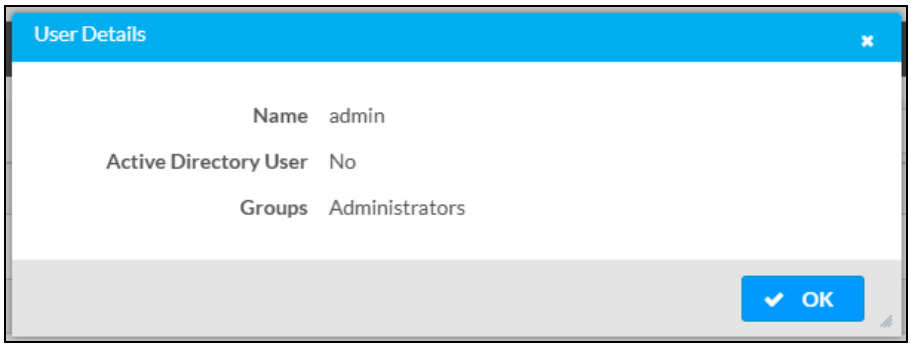
3. Select **OK** to save or select **Cancel** to cancel the changes.

Delete a User

To delete a user, select the delete icon in the **Actions** column. Select **Yes** when prompted to delete the user or **No** to cancel the deletion.

View User Details

Select the information icon in the **Actions** column to view information for the selected user. The **User Details** dialog displays the following information for the selected user.



The fields displayed in the **User Details** window are:

- **Name:** Displays the name of the selected user.
- **Active Directory User:** Displays whether the user is an Active Directory user.
- **Group:** Displays group(s) the selected user is part of.

Select **OK** to close the **User Details** window and return to the **Users** tab.

Update User Details

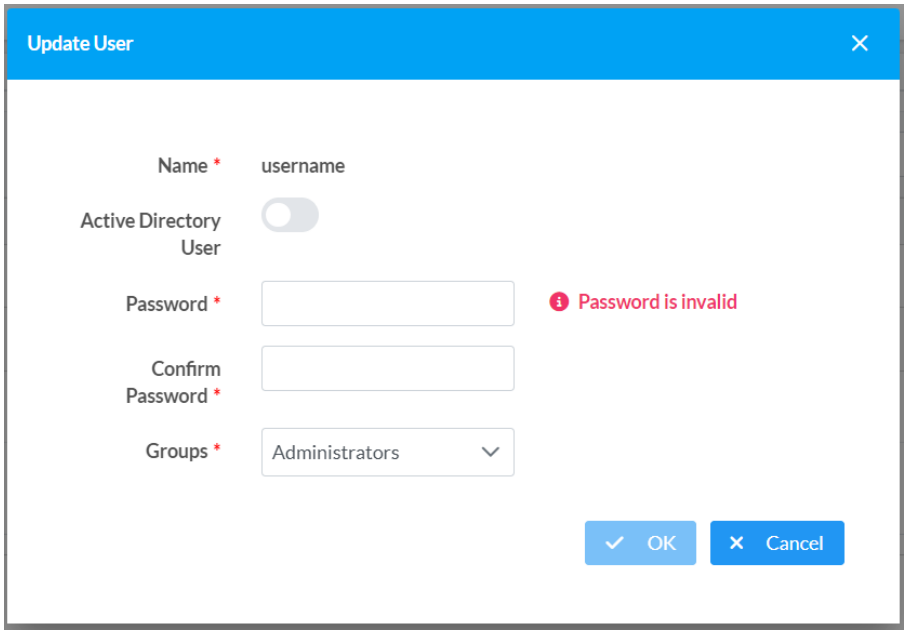
To update the details for an existing user:

1. Select the edit icon in the **Actions** column to update information for the selected user.
2. Set the **Active Directory User** toggle to the right if the user is an Active Directory user, or to the left if the user is not.
3. Enter a password in the **Password** field; re-enter the same password in the **Confirm Password** field.

4. Select one or more groups to assign the user to from the **Groups** drop-down list. Deselect any groups to remove the user from those groups.

   > **NOTE:** After a user is removed from a group, they lose any access rights associated with that group.

5. Select **OK** to save or select **Cancel** to cancel the changes.



> **NOTE:** The **Name** field is a read-only field that displays the username for the selected user. To change a username, the user must be deleted and a new user must be added.

Groups

Select the **Groups** tab to view and edit group settings. The **Groups** tab can be used to add local and Active Directory groups, remove local and Active Directory groups, and preview information about a group.

Use the **Search...** field to enter search term(s) and display groups that match the search criteria.

If groups listed in the **Groups** table span across multiple pages, navigate through the groups by selecting a page number or by using the left or right arrows at the bottom of the **Groups** pane to move forward or backward through the pages.

Each page can be set to display **5**, **10**, or **20** groups by using the drop-down list to the right of the navigation arrows.

Existing groups are displayed in a table and the following information is provided for each group:

- **Group Name:** Displays the name of the group.
- **AD Group:** Displays whether the group requires authentication using Active Directory.

- **Access Level:** Displays the predefined access level assigned to the group (**Administrator**, **Programmer**, **Operator**, **User**, or **Connect**).

Select the information icon in the **Actions** column to view detailed group information, or select the delete icon to delete a group.

Select **Create Group** in the **Groups** tab to create new group.

Create a Local Group

To create a local group:

1. Select **Create Group**.
2. In the **Create Group** dialog, enter the following:
    a. Enter the group name in the Name field.
    b. Assign the group access level by selecting a predefined access level (**Administrator**, **Connect**, **Operator**, **Programmer**, **User**) from the **Access Level** drop-down list.

    > **NOTE:** Make sure that the **Active Directory Group** toggle is set to the left (disabled).

3. Select **OK** to save. Select **Cancel** to cancel the changes.

Grant Access to an Active Directory Group

A group cannot be created or removed from the Active Directory server, but access can be granted to an existing Active Directory group.

Once the group is added, all members of that group will have access to the presentation system.

To grant access to an Active Directory group:

1. Select **Create Group**.
2. In the **Create Group** dialog enter the following:
    a. Enter the group name in the **Name** field (for example, "Engineering Group").

    > **NOTE:** Group names are case sensitive, and a space is a valid character that can be used in group names.

    b. Assign the group access level by selecting a predefined access level (**Administrator**, **Connect**, **Operator**, **Programmer**, **User**) from the **Access Level** drop-down list.

    > **NOTE:** Make sure that the Active Directory Group toggle is set to the right (enabled).

3. Select **OK** to save. Select **Cancel** to cancel the changes.

Delete a Group

Select the delete icon in the **Actions** column to delete a group. Select **Yes** when prompted to delete the group or **No** to cancel the deletion.

When a group is deleted, users in the group are not removed from the device or Active Directory server. However, because a user's access level is inherited from a group(s), users within the deleted group will lose access rights associated with the group.

View Group Details

Select the information icon in the **Actions** column to view information for the selected group. The **Group Details** dialog lists the following information for the selected group:

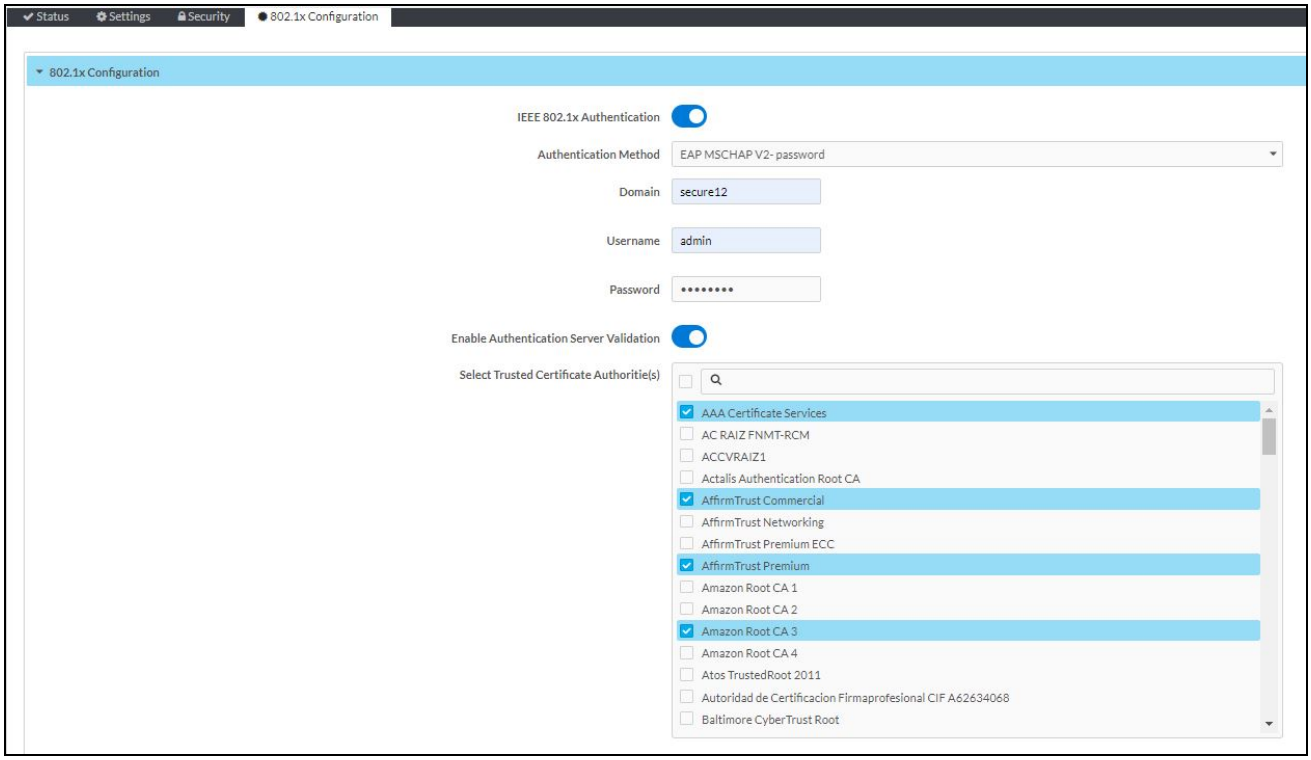
- **Name:** Displays the name of the group.
- **Access Level:** Displays the access level of the group and its users.
- **Active Directory Group:** Displays whether the group is an Active Directory group.

Select **OK** to close the **Group Details** dialog and return to the **Groups** tab.

802.1X Configuration

HD-PS presentation systems have built-in support for the 802.1X standard (an IEEE network standard designed to enhance the security of wireless and Ethernet LANs, relying on the exchange of messages between the device and the network's host, or authentication server), allowing communication with the authentication server and access to protected corporate networks.

The **802.1X Configuration** page can be accessed at any time by selecting the **802.1X Configuration** tab of the interface.



Configure the Device for 802.1X Authentication

To configure the presentation system for 802.1X authentication:

1. Set the **IEEE 802.1X Authentication** toggle to the right. This will enable all options on the 802.1X subsection.
2. Select an **Authentication Method**: Choose between **EAP-TLS Certificate** or **EAP-MSCHAP V2 Password**.
3. Do one of the following:
   - If **EAP-TLS Certificate** was selected: Select **Action/Manage Certificates** to upload the required machine certificate. The machine certificate is an encrypted file that will be supplied by the network administrator, along with the certificate password.
   - If **EAP-MSCHAP V2 Password** was selected: Enter the username and password supplied by the network administrator into the **Username** and **Password** fields, respectively. This method does not require the use of a machine certificate, only the user name and password credentials.
4. If you enabled the **Enable Authentication Server Validation** option, this will enable the **Select Trusted Certificate Authoritie(s)** list box which contains signed Trusted Certificate Authorities (CAs) preloaded onto the presentation system.

   Select the check box next to each CA whose certificate can be used for server validation, as specified by the network administrator.

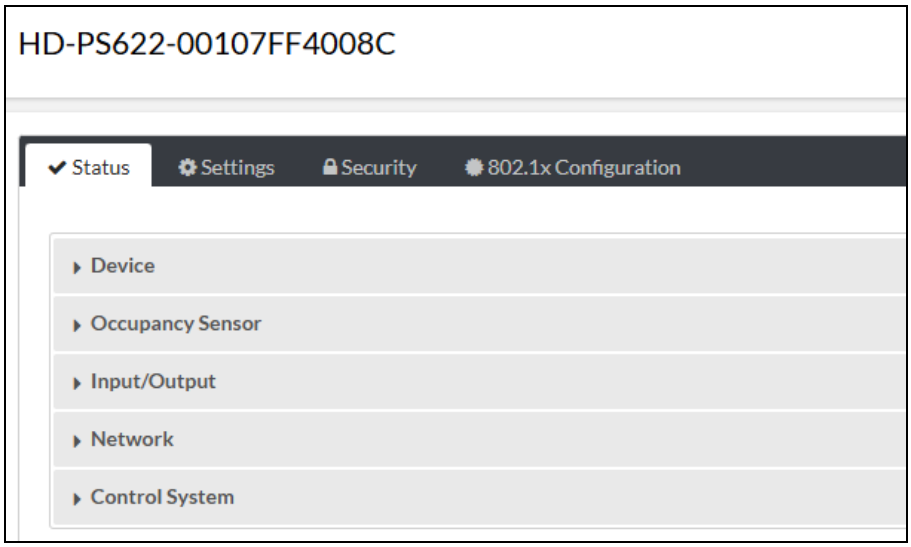
   If the network does not use any of the listed certificates, the network administrator must provide a certificate, which must be uploaded manually via the **Manage Certificates** function in the **Action** menu. Refer to Manage Certificates on page 74.
5. If required, type the domain name of the network in the **Domain** field.
6. When the 802.1X settings are configured as desired, select **Save Changes** to save the changes to the device and reboot it. Select **Revert** to cancel any changes.

Web Configuration (62X Models)

The HD-PS may be monitored and configured using its web configuration interface. The interface can be accessed via the device IP address as described in Access the Configuration Interface on page 65.

> **NOTE:** A similar version of the web configuration interface is provided within the XiO Cloud service. Navigate to the room associated with the device in the XiO Cloud environment tree to view the device status and settings. Additionally, certain settings can be configured for multiple devices at once at the group level. For more information, refer to the XiO Cloud User Guide.

The **Status** tab is open by default.



The web configuration interface provides the following tabs for navigating the interface:

- **Status:** Used to monitor device status. Refer to Status on page 131.
- **Settings:** Used to configure device settings. Refer to Settings on page 136.
- **Security:** Used to manage user and group access. Refer to Security on page 165.
- **802.1X Configuration:** Used to manage 802.1X PNAC settings. Refer to 802.1X Configuration on page 170.

The following controls are also provided on the top right of the web configuration interface:

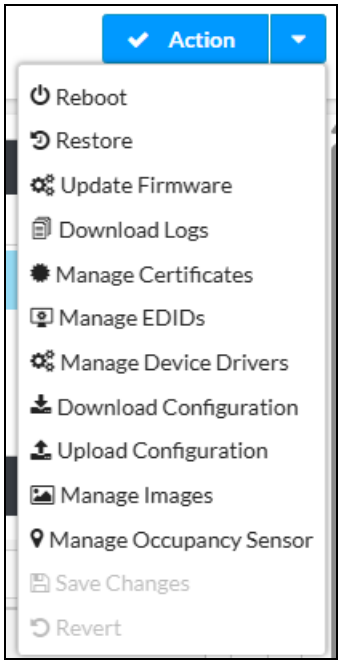
- Use the **Action** drop-down menu to perform various configuration actions. For more information, refer to Action Menu on page 122.
- Select the profile button to view the active device user and to sign out of the web configuration utility.

Each section of the web configuration interface is described in the sections that follow.

Action Menu

The **Action** drop-down menu is displayed at the top right side of the web interface and provides quick access to these common device functions:

- Save Changes on page 122
- Revert on page 123
- Reboot on page 123
- Restore on page 123
- Update Firmware on page 124
- Download Logs on page 124
- Manage Certificates on page 124
- Manage EDIDs on page 126
- Manage Device Drivers on page 127
- Download Configuration on page 129
- Upload Configuration on page 129
- Manage Images on page 130
- Manage Occupancy Sensor on page 131



Save Changes

Select **Save Changes** to save any changes made to the configuration settings.

> **NOTE: Save Changes** can only be selected if a change has been made to the configuration settings. The **Save Changes** function will also replace the **Action** button at the top right of the web UI when a

settings change is detected.

Revert

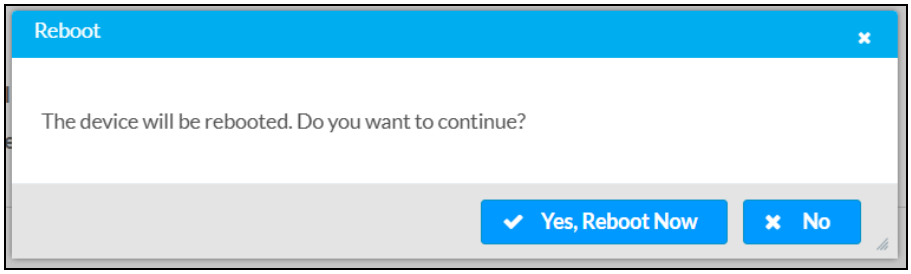
Select **Revert** to revert the device back to the last saved configuration.

NOTE: Revert can only be selected if a change has been made to the configuration settings.

Reboot

Certain changes to the settings may require a reboot to take effect. To reboot the presentation system:

1. Select **Reboot** in the **Action** menu. The Reboot confirmation message box appears.



2. Select **Yes, Reboot Now** to reboot the device. The **Reboot** status message box appears. Wait for the device reboot to complete before attempting to reconnect to the web interface. Alternatively, select **No** to cancel the reboot operation.

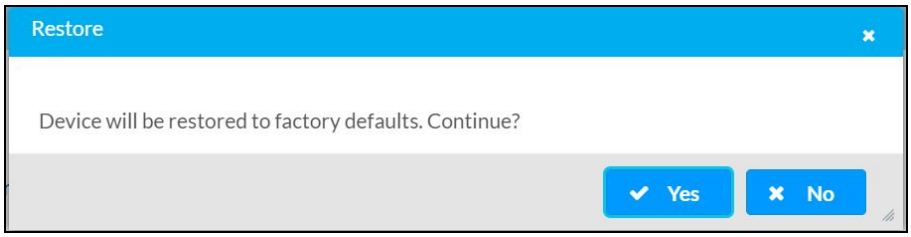
Restore

The presentation system can be restored to factory default settings from the **Action** menu.

CAUTION: The **Restore** procedure will wipe all settings from the presentation system, including network settings. If a static IP address is set, restoring the device to factory default settings will clear this address and DHCP will be enabled instead.

To restore the presentation system to factory defaults:

1. Select **Restore** in the **Action** menu. The **Restore** confirmation message box appears.



2. Select **Yes** to restore the device to factory default settings. Select **No** to cancel the restore operation. When **Yes** is selected, the **Restore** status message box appears. Wait for the device restore to complete before attempting to reconnect to the web interface.

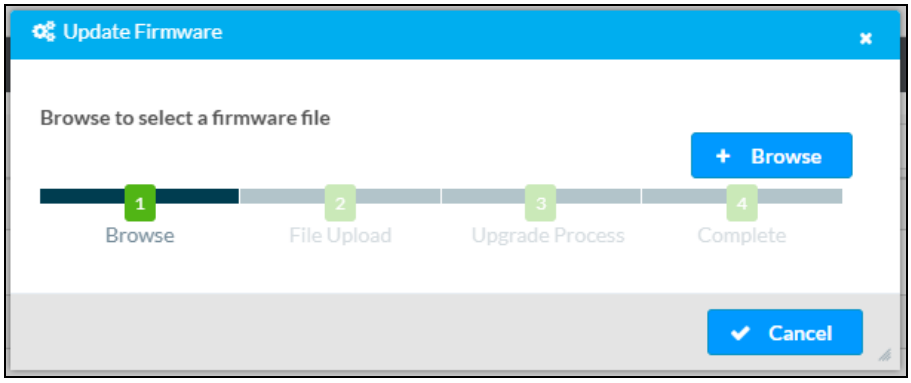
NOTE: Once the presentation system is restored, it may have a new IP address. If reconnecting to the original address does not work, use the Device Discovery Tool in Crestron Toolbox software or an IP scanner application to find the device's new IP address.

If the web interface is not accessible, the device can also be restored to factory default settings via a hardware-based procedure (refer to HD-PS621 and HD-PS622 Installation on page 59).

Update Firmware

To update the firmware of the device:

1. Select **Update Firmware** in the **Action** menu.
2. In the **Update Firmware** window that appears, select **+ Browse**.



3. Locate and select the desired firmware file, then select **Open**. The selected firmware file name is displayed in the **Update Firmware** window.
4. Select **Load**, then wait for the progress bar to complete and for **OK** to become selectable.
5. Select **OK**. The firmware update is now complete, and the web interface will return to the main log-in page.

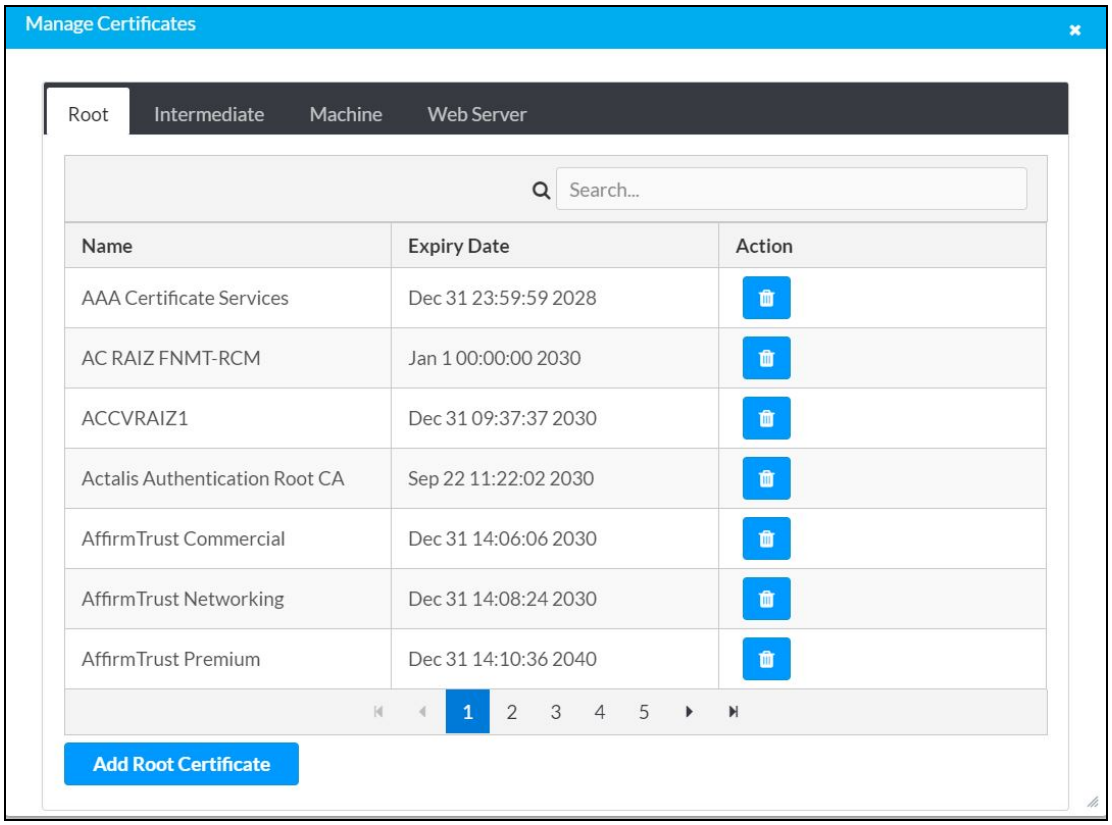
Download Logs

Select **Download Logs** in the **Action** menu to download the device message logs for diagnostic purposes.

The log file is downloaded to the **Downloads** folder of the connected computer.

Manage Certificates

Select **Manage Certificates** in the **Action** menu to open the **Manage Certificates** window. Use this window to add or remove certificates used in 802.1x authentication and other protected network functions.



The following certificate tabs are available in the **Manage Certificates** window:

- **Root:** The Root certificate is used by the presentation system to validate the network's authentication server. The device has a variety of Root certificates, self-signed by trusted CAs (Certificate Authorities) preloaded into the device. Root certificates must be self-signed.
- **Intermediate:** The Intermediate store holds non self-signed certificates that are used to validate the authentication server. These certificates will be provided by the network administrator if the network does not use self-signed Root certificates.
- **Machine:** The Machine certificate is an encrypted PFX file that is used by the authentication server to validate the identity of the presentation system. The machine certificate will be provided by the network administrator, along with the certificate password. For 802.1x, only one machine certificate can reside on the device.
- **Web Server:** The Web Server certificate is a digital file that contains information about the identity of the web server.

Add Certificates

To add a certificate:

1. Select the corresponding certificate tab.
2. Select **Add [Type] Certificate**.
3. Select **+ Browse**.

4. Locate and select the file, then select **Open**.

> **NOTE:** If the selected certificate is a machine certificate, enter the password provided by the network administrator.

5. Select **OK**. This will add the certificate to the list in the **Manage Certificates** window, displaying the file name and expiration date. The certificate is now available for selection and can be loaded to the device.

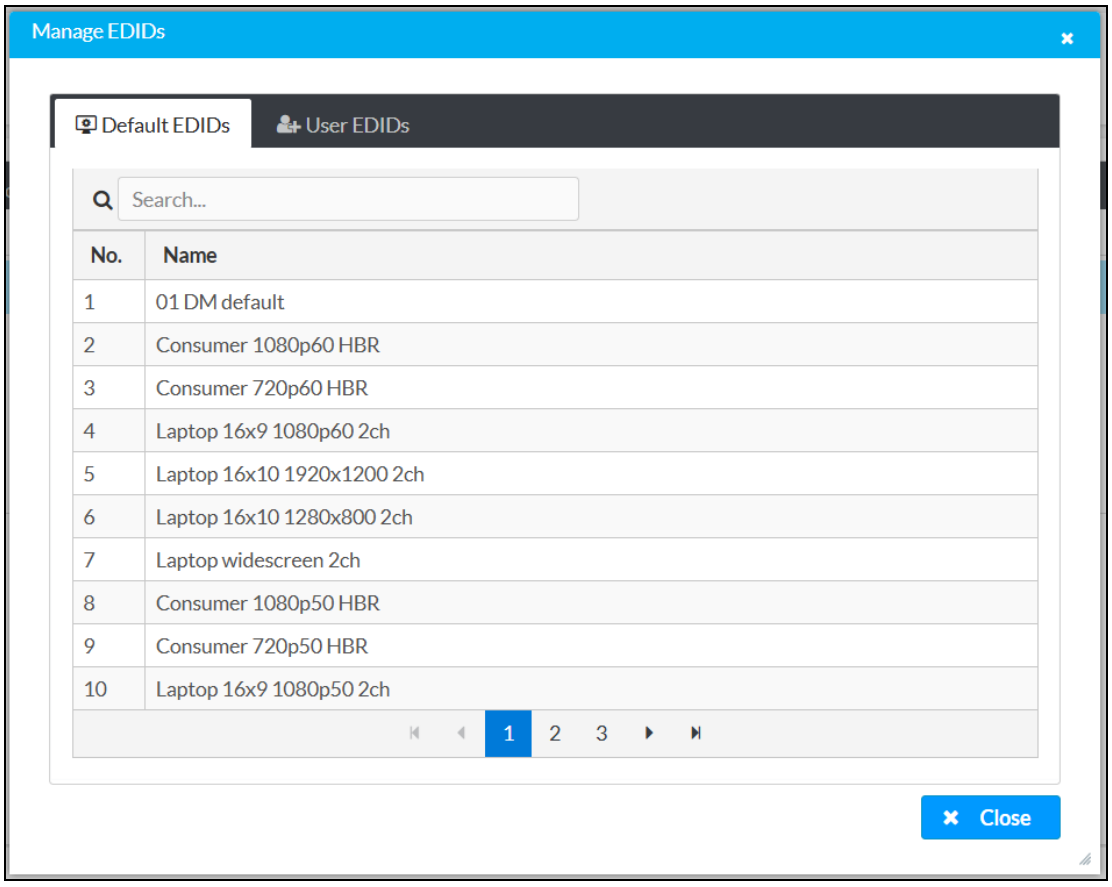
Delete Certificates

To delete a certificate:

1. Select the corresponding certificate tab.
2. Select the delete icon in the **Actions** column and the row of the certificate to be deleted.
3. Select **Yes** when prompted to delete the certificate or **No** to cancel the deletion.

Manage EDIDs

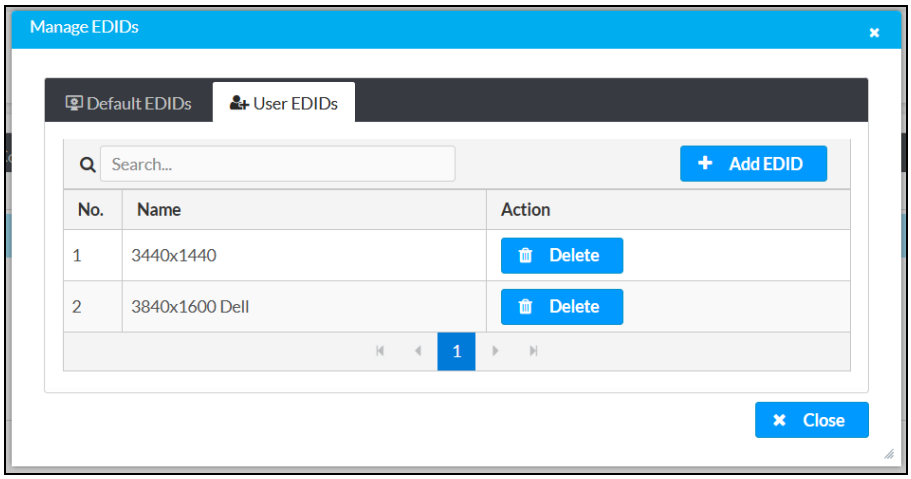
Select **Manage EDIDs** in the **Action** menu to open the **Manage EDIDs** window. Use this window to add, remove, or browse which EDIDs (Extended Display Identification Data) are available for the AV inputs and outputs of the presentation system.



The default tab that will open in this window is the **Default EDIDs** tab. This tab is read only, and provides a list of all default EDIDs available on the presentation system as part of the firmware. Use the

Search... text entry field to filter the list of EDIDs by name. Default EDIDs cannot be removed from the device.

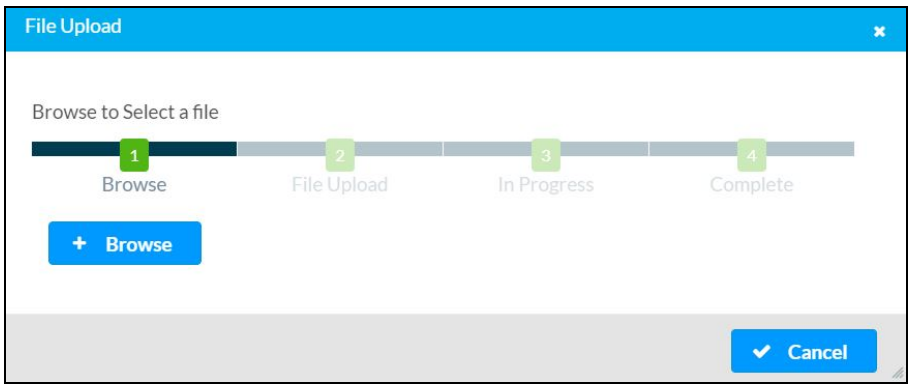
The second tab available in this window is the **User EDIDs** tab.



> **NOTE:** By default, the **User EDIDs** table will populate with **No records found**.

To add a user EDID file:

1. Select **+ Add EDID** at the top right of the table.
2. In the **File Upload** window that appears, select **+ Browse**.

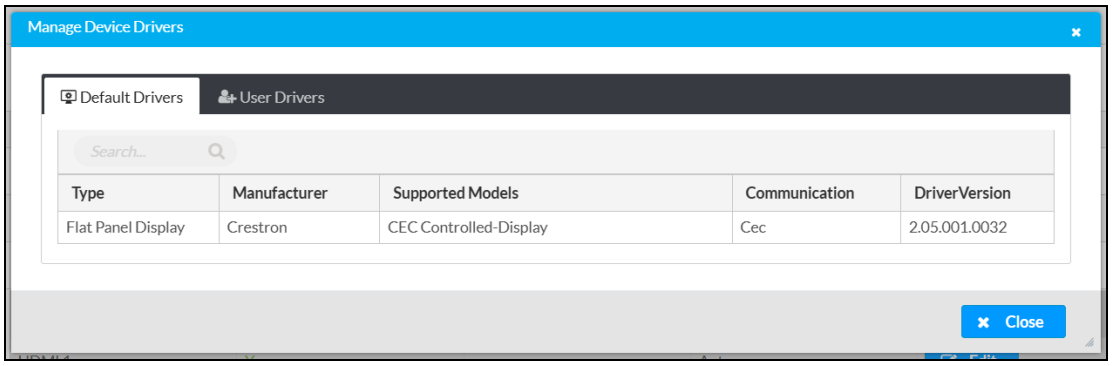


3. Select **Upload** to transfer the selected file
4. Wait for the upload to complete, then select **OK** to return to the **Manage EDIDs** window. The uploaded EDID is now displayed in the table.

To remove a user EDID file, select **Delete** in its table row.

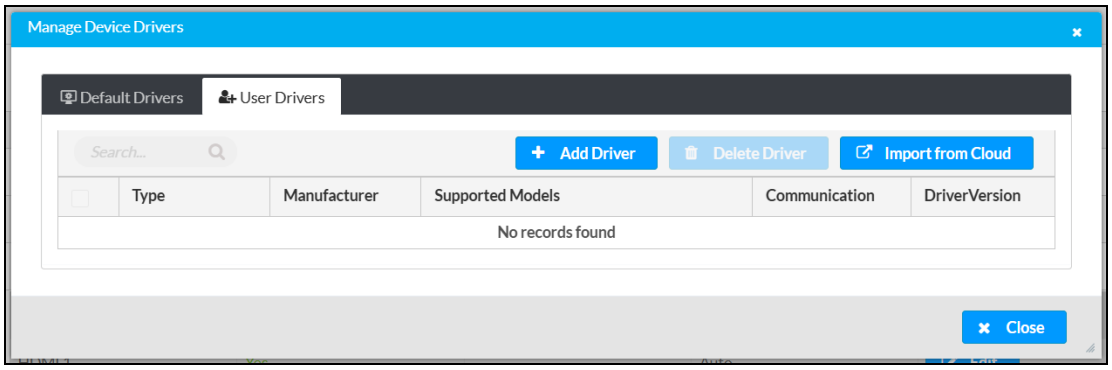
Manage Device Drivers

Select **Manage Device Drivers** in the **Action** menu to open the **Manage Device Drivers** window. Use this window to add, remove, or browse device drivers on the presentation system. These drivers can be used to issue commanders to connected displays or source devices.



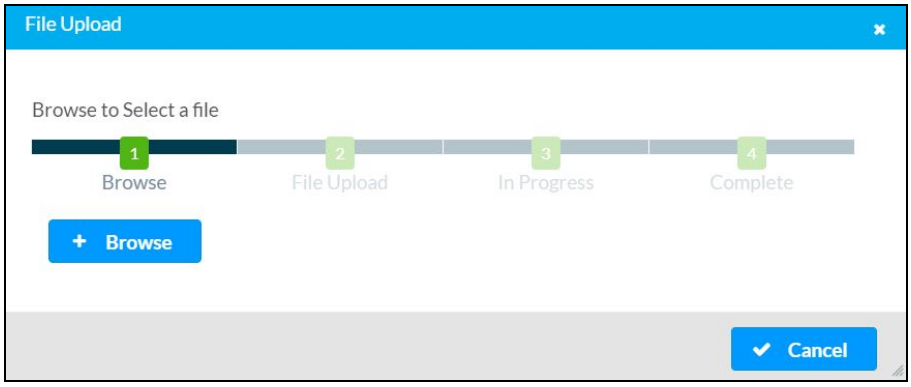
The default tab that will open in this window is the **Default Drivers** tab. This tab is read only, and provides a list of all default drivers available on the presentation system as part of the firmware. Use the **Search...** text entry field to filter the list of drivers by name (currently only the generic Flat Panel Display CEC driver is available by default). Default drivers cannot be removed from the device.

The second tab available in this window is the **User Drivers** tab. By default, the **User Drivers** table will populate with **No records found**.



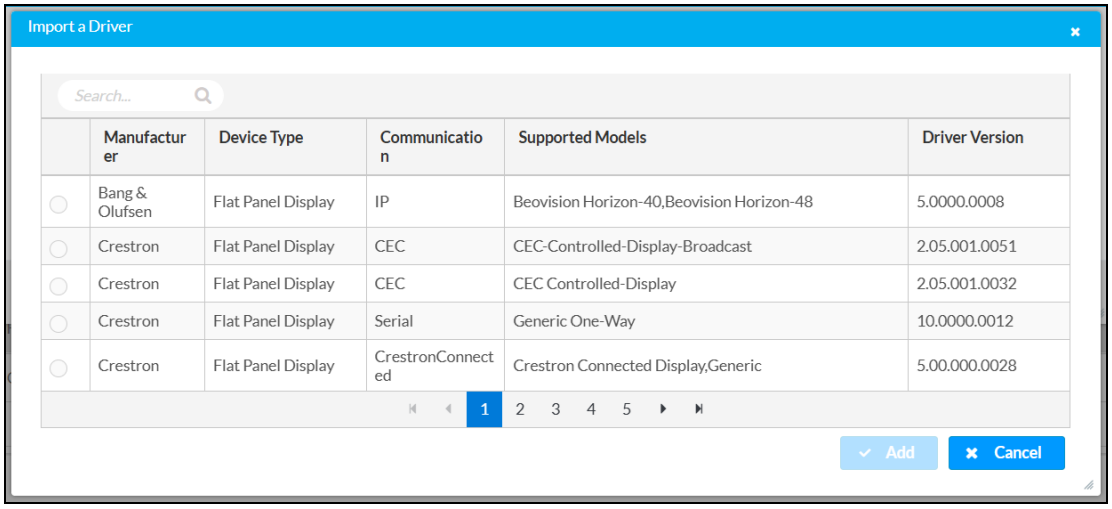
To add a driver, do one of the following:

- Select **+ Add Driver**.
    1. In the **File Upload** window that appears, select **+ Browse**.



    2. Select **Upload** to transfer the selected file
    3. Wait for the upload to complete, then select **OK** to return to the **Manage Device Drivers** window. The uploaded driver is now displayed in the table.

- Select **Import from Cloud**.
  1. In the **Import a Driver** window that appears, browse for the desired driver.



  2. Select the radio button of the desired driver in the left column, then select **Add**. The driver is downloaded from the cloud-based driver repository and added to the presentation system.

     Once the download completes, the **Import a Driver** window will close and the new driver is displayed in the table.

To delete a driver, select its entry in the table then select **Delete Driver**.

Download Configuration

A configuration file (in a *.tgz format) can be downloaded to a computer for use as a backup configuration file or for uploading to another presentation system.

Select **Download Configuration** in the **Action** menu to download the configuration file to the connected PC. The file is downloaded to the Downloads folder of the connected computer using the following naming convention:

[model]_config_**[yyyy-mm-dd]**_**[hh-mm-ss]**.tgz

- **[model]** is the model name of the presentation system.
- **[yyyy-mm-dd]** is the 4-digit year, 2-digit month, and 2-digit day at time of download, separated by hyphens.
- **[hh-mm-ss]** is the 2-digit hour, 2-digit minutes, and 2-digit seconds at time of download, separated by hyphens in a 24-hour format.

For example, hd-ps402_config_2026-01-12_14-53-49.tgz

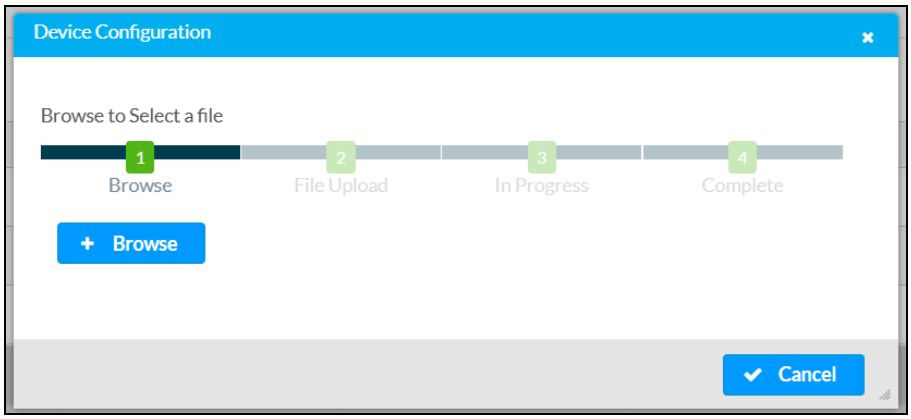
To upload the configuration file to another presentation system, refer to Upload Configuration on page 129.

Upload Configuration

A configuration file (in a *.tgz format) consisting of device and domain configurations can be uploaded to the presentation system from the **Action** menu.

To upload a configuration file:

1. Select **Upload Configuration** from the **Action** menu.
2. In the **Device Configuration** window that appears, select **+ Browse**.



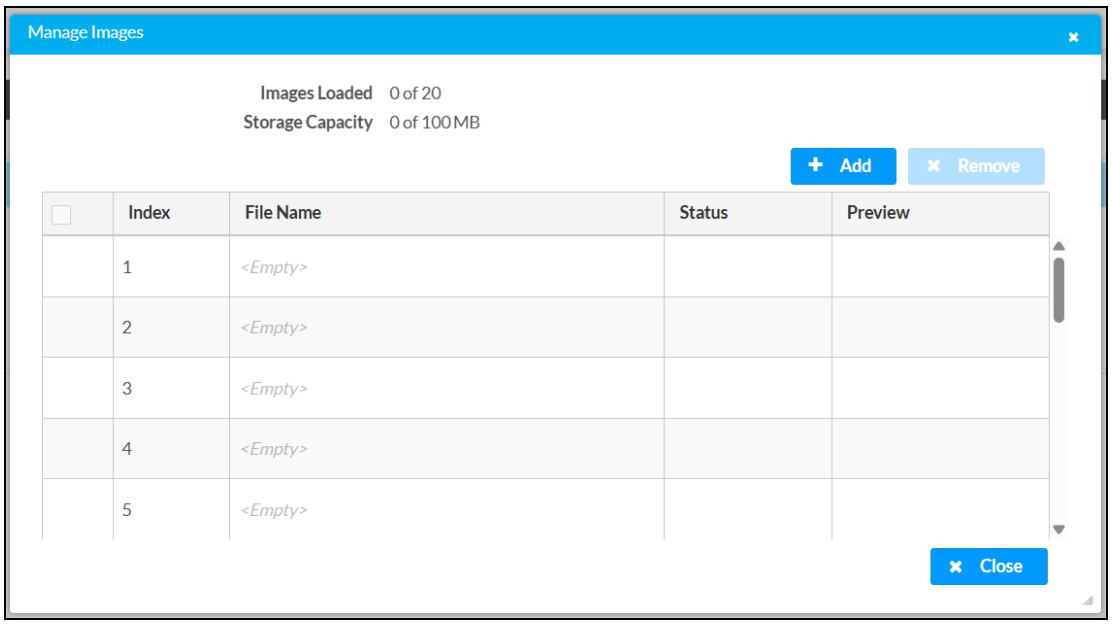
3. Navigate to the desired .tgz file and select **Open**.

> **NOTE:** The configuration file can only be uploaded to the same model of presentation system from which it was originally downloaded.

4. Select **Load** to upload the configuration file to the presentation system or select **Cancel** to cancel the operation. When **Load** is selected, the **In Progress** status bar appears.
5. When the upload is complete, select **OK**. The configuration file has been successfully uploaded to the device.

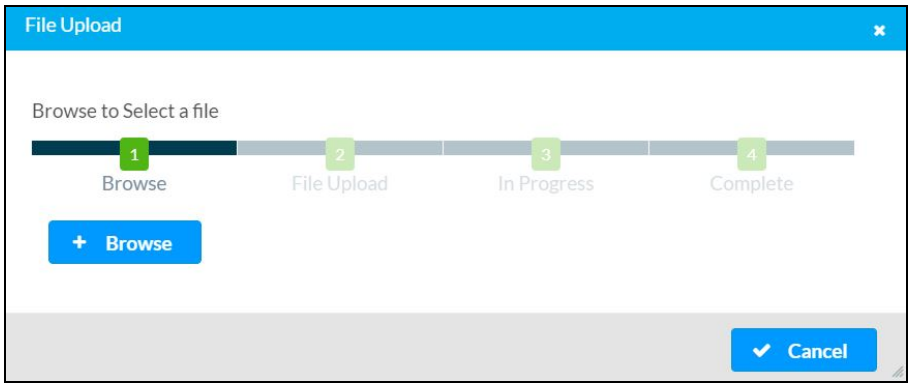
Manage Images

Select **Manage Images** in the **Action** menu to open the **Manage Images** window. Use this window to add or remove images that can be displayed as backgrounds for the on-screen display feature of the presentation system.



To add an image:

1. Select **+ Add**.
2. In the **File Upload** window that appears, select **+ Browse**.

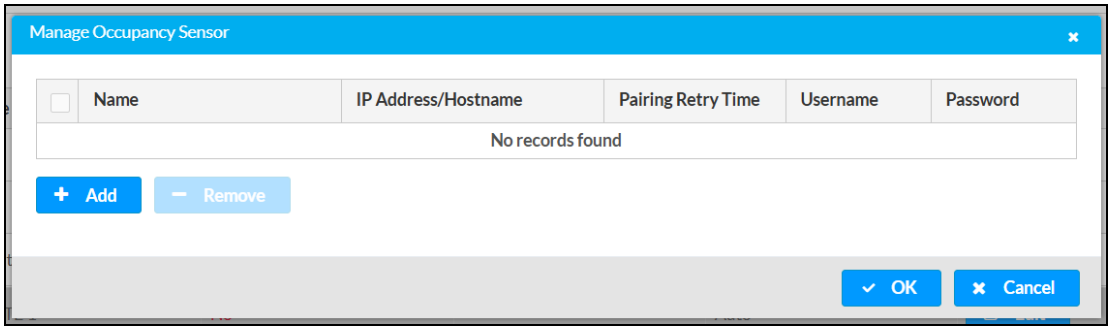


3. Locate the desired .jpeg, .jpg, or .png image file, then select **Upload** to upload it to the presentation system. The uploaded image will now appear in the **Manage Images** table with a preview and a **Ready** status message. Refer to Image Display on page 153 for information on setting a background image or image overlay.

To delete an image, select its entry in the table then select **X Remove**.

Manage Occupancy Sensor

Select **Manage Occupancy Sensor** in the **Action** menu to open the **Manage Occupancy Sensor** window. Use this window to add or remove an network-based occupancy sensor that can control room functions such as the display power state.



To add an occupancy sensor:

1. Select **+ Add**.
2. In the fields that become available, enter an **IP Address/Hostname**, **Pairing Retry Time**, **Username**, and **Password**. These settings must be configured on the occupancy sensor before pairing with the presentation system.

To remove the occupancy sensor, select its entry in the table then select **- Remove**.

Status

The **Status** page is the first page displayed when opening the interface of the presentation system. It displays general information about the device (such as **Model Name**, **Firmware Version**, and **Serial**

Number), current network settings (such as **Host Name** and **IP Address**), and the current status of the connectors on the device.

The **Status** page can be accessed at any time by selecting the **Status** tab of the interface.

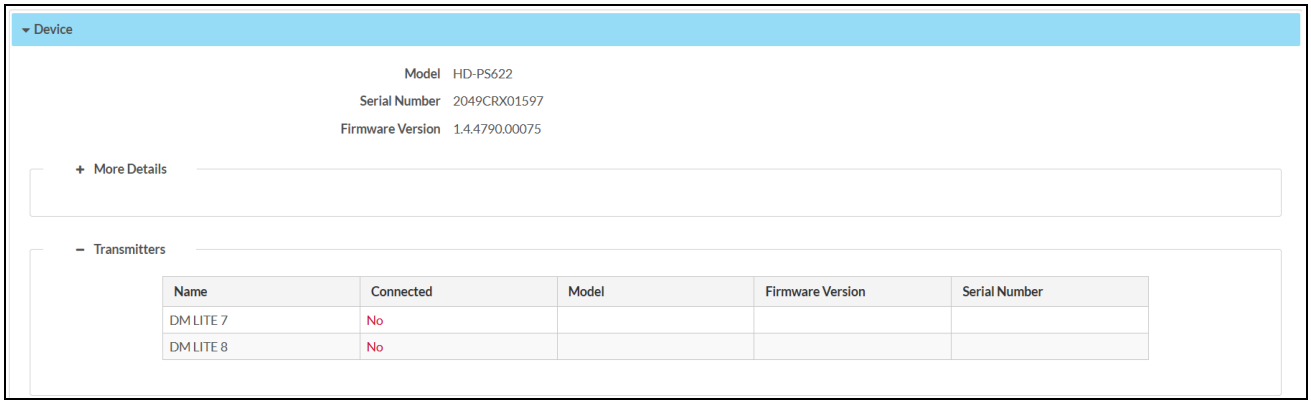
Information displayed on the **Status** page is organized into collapsible accordions:

- Device on page 132
- Occupancy Sensor on page 133
- Input/Output on page 134
- Network on page 134
- Control System on page 135

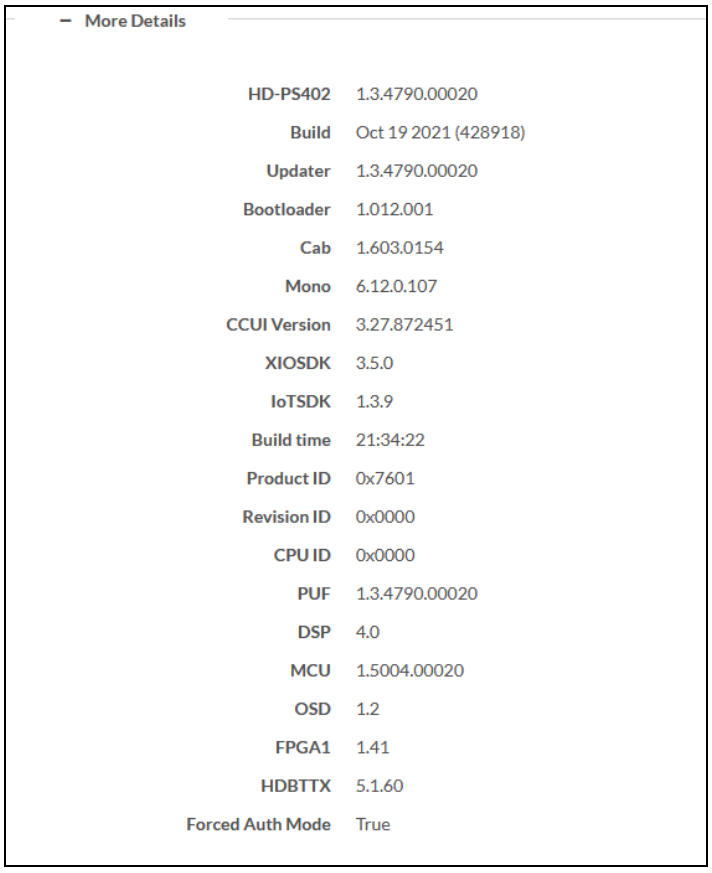
Device

The Device accordion displays the **Model**, **Firmware Version**, and **Serial Number** of the presentation system.

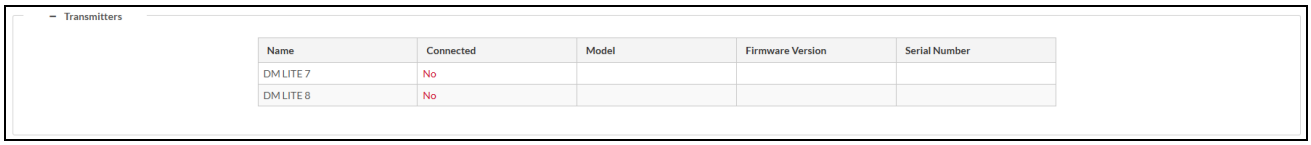
HD-PS Status Page - Device Accordion (HD-PS622 Shown)



Select **+ More Details** to review additional information about the device.

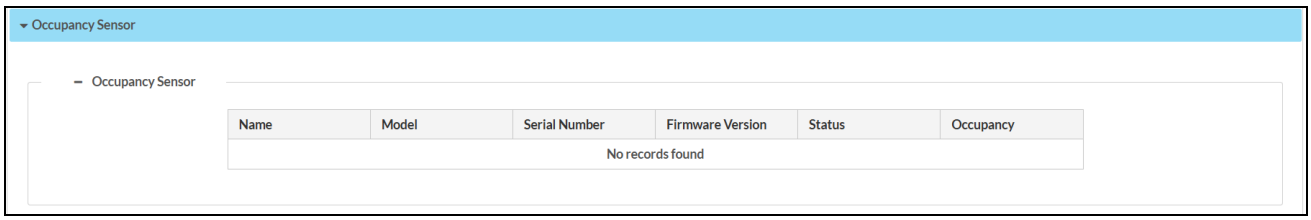


Select **+ Transmitters** to review additional information about connected DM Essentials transmitters.



Occupancy Sensor

The **Occupancy Sensor** accordion displays status information regarding the paired occupancy sensor.



NOTE: If no occupancy sensor has been paired, the table will display **No records found**. To pair an occupancy sensor, refer to Manage Occupancy Sensor on page 131.

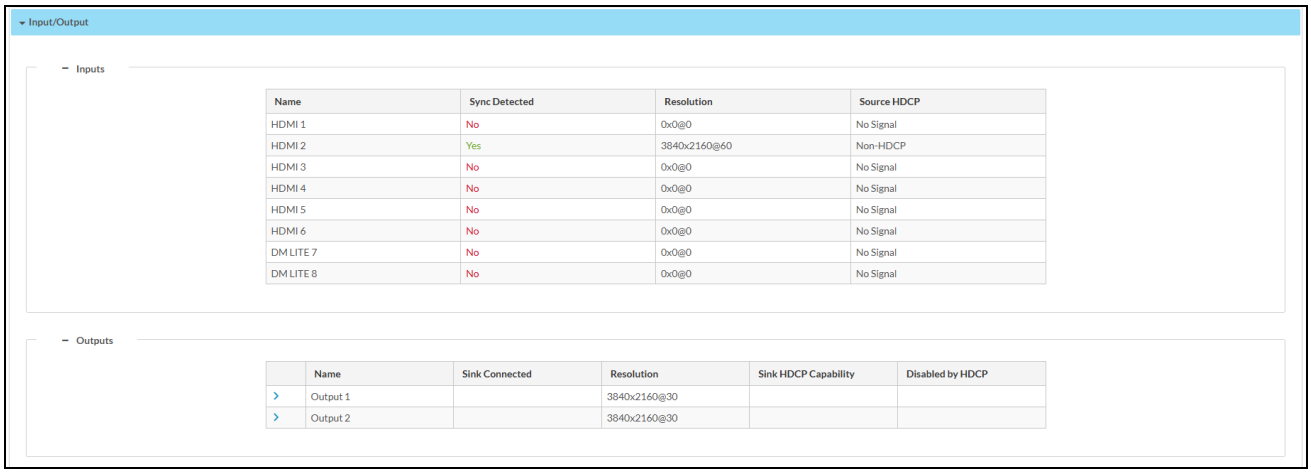
The displayed fields in the table are:

- **Name:** Displays the name of the occupancy sensor.
- **Model:** Displays the model of the occupancy sensor.
- **Serial Number:** Displays the serial number of the occupancy sensor.
- **Firmware Version:** Displays the current firmware version of the occupancy sensor.
- **Status:** Displays whether the occupancy sensor is **ONLINE** or **OFFLINE**.
- **Occupancy:** Displays whether the sensor is detecting occupancy (**OCC**) or not (**VAC**).

Input/Output

The **Input/Output** accordion displays status information regarding the AV input and output connectors.

HD-PS Status Page - Input/Output Accordion (HD-PS622 Shown)



The displayed fields for **Inputs** are:

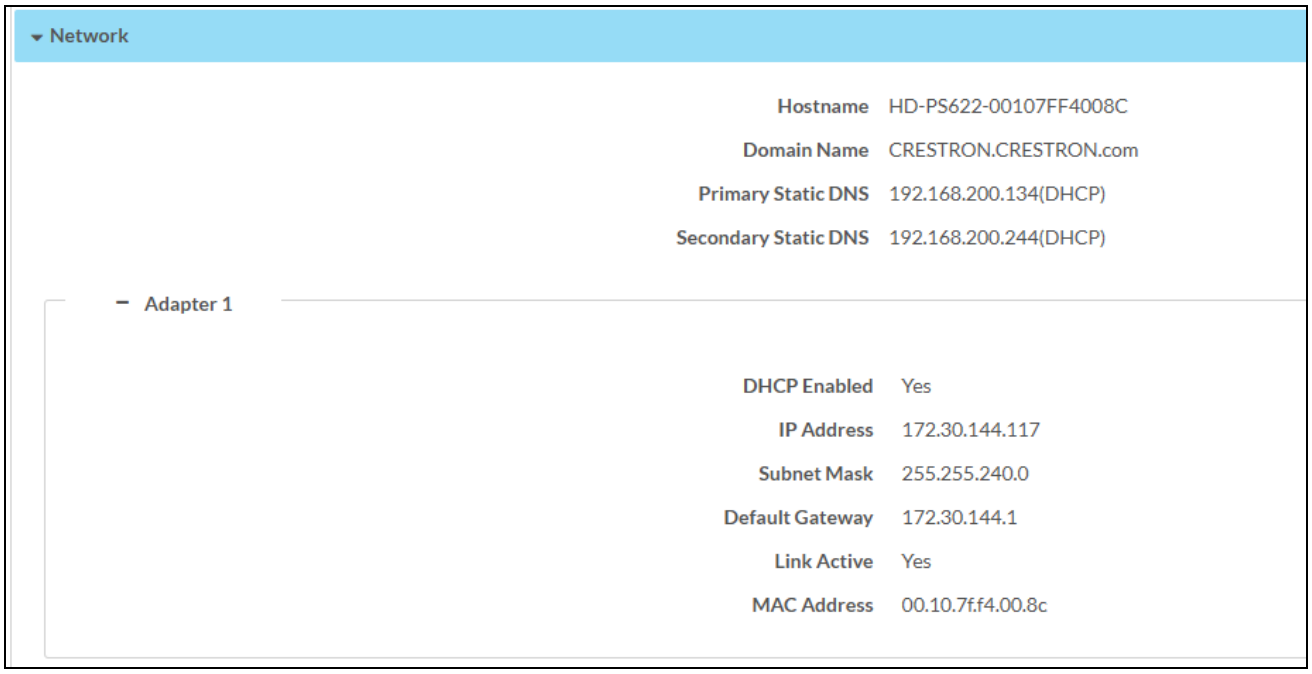
- **Name:** Displays the name of the input.
- **Sync Detected:** Displays whether sync is detected at the input (**Yes**) or not (**No**).
- **Resolution:** Displays the resolution of the incoming video signal.
- **Source HDCP:** Displays the HDCP level of the incoming video signal.

The displayed fields for **Outputs** are:

- **Name:** Displays the name of the output.
- **Sink Connected:** Displays whether a sink (such as a display or projector) is connected to the output (**Yes**) or not (**No**).
- **Resolution:** Displays the current resolution of the video output signal.
- **Sink HDCP Capability:** Displays the HDCP level supported by the connected display or projector.
- **Disabled by HDCP:** Displays whether the output is disabled by HDCP (**Yes**) or not (**No**).

Network

The Network accordion displays network-related information about the device, including the **Hostname**, **Domain Name**, and **DNS Servers**.

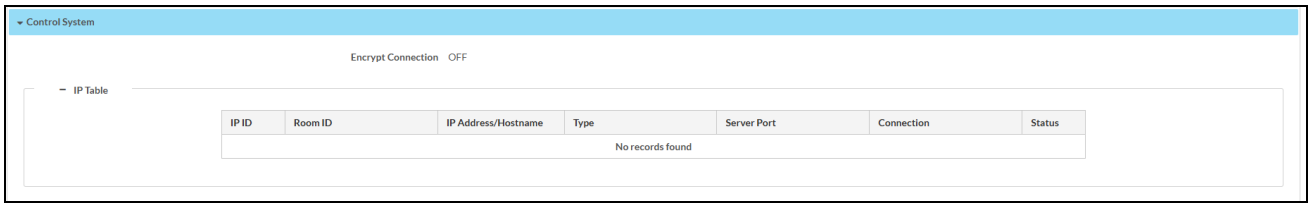


By default, the host name of the device consists of the model name followed by the MAC address of the device. For example, HD-PS622-00107FF4008C.

Select **+ Adapter 1** to display additional information regarding the presentation system's Ethernet port. If **+ Adapter 1** is selected, select **- Adapter 1** to collapse the section.

Control System

The **Control System** accordion displays information regarding the connection between the presentation system and a control system.



The displayed fields are:

- **Encrypt Connection:** Displays **ON** if the connection is encrypted or **OFF** if it is not.
- **IP ID:** Displays the IP ID of the presentation system in its IP table entry of the control system's IP table.
- **Room ID:** Displays the room ID of the presentation system in its IP table entry of the control system's IP table.
- **IP Address/Hostname:** Displays the IP address and host name of the control system.
- **Type:** Always displays **Peer** (this is the only relationship the presentation system can have to a control system).
- **Server Port:** Displays the port for the connection between the presentation system and the control system.

- **Connection:** Always displays **Gway** (this is the only connection type supported between a presentation system and a control system).
- **Status:** Displays either **ONLINE** or **OFFLINE** depending on if the presentation system is able to communicate with the control system.

Settings

The **Settings** page enables configuration of the presentation system's settings. The **Settings** page can be accessed at any time by selecting the **Settings** tab of the interface.

Settings available on the **Settings** page are organized into collapsible accordions:

- System Setup on page 136
- Inputs on page 142
- Outputs on page 146
- Routing on page 164

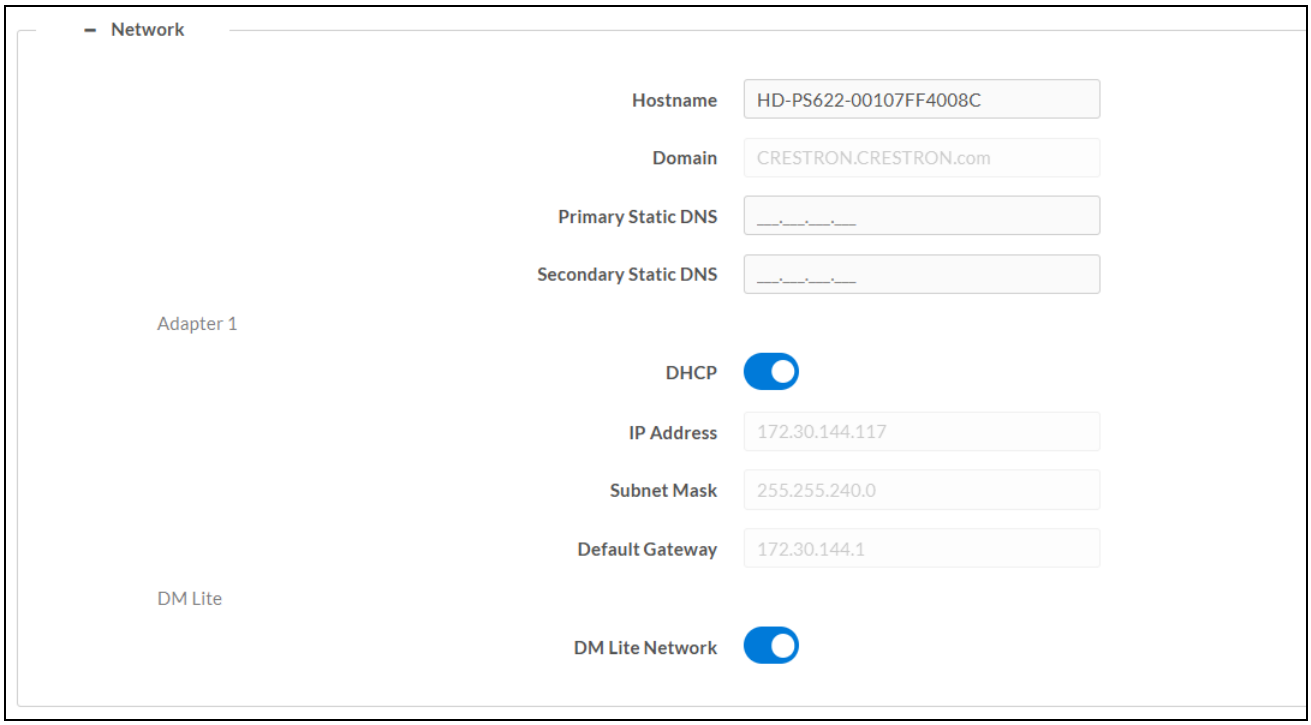
System Setup

The **System Setup** accordion contains settings for configuration of the following system functions:

- Network on page 136
- Front Panel on page 137
- Cloud Settings on page 138
- Auto Update on page 138
- Date/Time on page 139
- Control System on page 139
- Service Ports on page 140

Network

Use the **Network** section to configure the network settings of the LAN port of the presentation system.



Set the **DHCP** toggle to the right to enable DHCP or left to disable DHCP. This determines whether the IP address of the LAN port is to be assigned by a DHCP (Dynamic Host Configuration Protocol) server.

- **Enabled:** When DHCP is enabled (default setting), the IP address of the LAN port is automatically assigned by a DHCP server on the local area network (LAN).
- **Disabled:** When DHCP is disabled, manually enter information in the following fields:
  - **Primary Static DNS:** Enter a primary DNS IP address.
  - **Secondary Static DNS:** Enter a secondary DNS IP address.
  - **IP Address:** Enter a unique IP address for the LAN port.
  - **Subnet Mask:** Enter the subnet mask that is set on the network connected to the LAN port.
  - **Default Gateway:** Enter the IP address that is to be used as the LAN network's gateway.

Set the **DM Lite Network** toggle to the right to extend the LAN to connected DM Essentials (formerly DM Lite) endpoints. Set the toggle to the left position to disable this LAN extension.

To save any new network entries, select **Save Changes**.

Front Panel

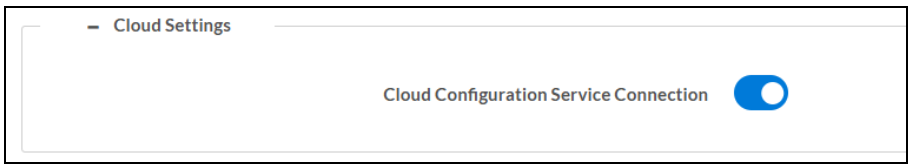
Use the Front Panel section to enable or disable the front panel controls and indicators of the presentation system.

Configure the front panel as desired:

- Set the **Front Panel Lock** toggle to the right to lock the physical controls on the front panel of the device. While this lock is enabled, device settings can only be configured via the UI or programming. Set the toggle to the left to unlock the front panel controls.
- Set the **Front Panel LEDs** toggle to the right to enable the LED indicators on the front panel of the device. Set the toggle to the left to disable the indicators.

Cloud Settings

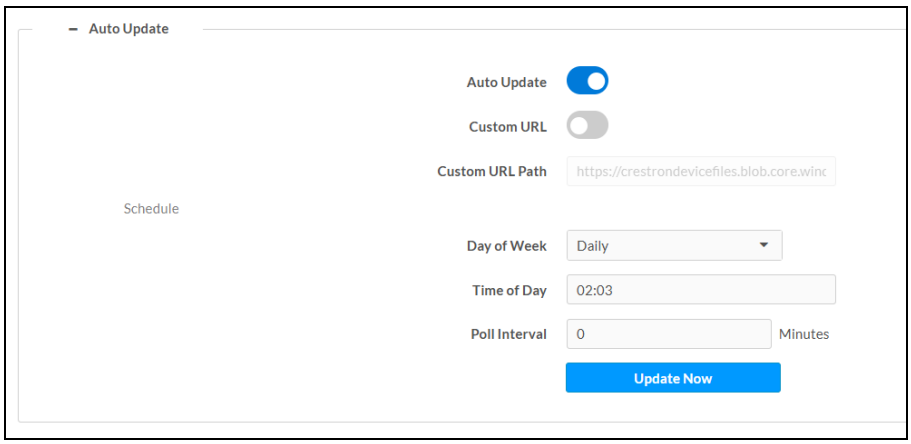
The **Cloud Settings** section provides a toggle to enable or disable communication with the Crestron XiO Cloud platform.



Set the **Cloud Configuration Service Connection** toggle to the right to allow the presentation system to communicate with the XiO Cloud platform. Set the toggle to the left to prevent the device from communicating with the XiO Cloud platform.

Auto Update

The presentation system can automatically check for and install firmware updates at scheduled intervals via the **Auto Update** feature.



To configure the **Auto Update** feature settings:

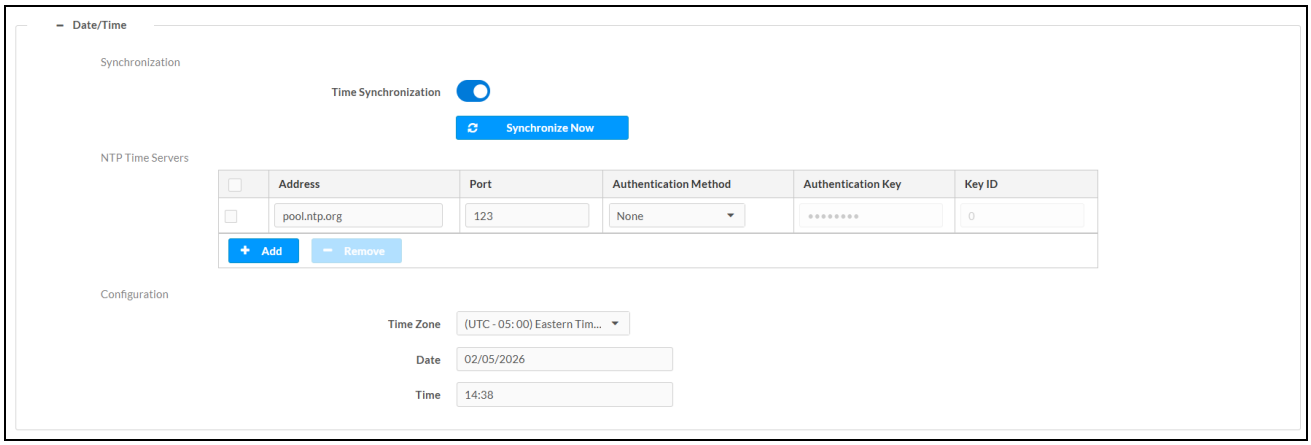
1. Set the **Auto Update** toggle to the right to enable automatic updates.
2. Define the URL to download the updates by doing either of the following:
   - Use the default URL to download the updates from the Crestron server.
   - Use a custom URL. Set the **Custom URL** toggle to the right to enable a custom URL. In the **Custom URL Path** text box, enter the path to a custom manifest file in the FTP or SFTP URL format. Use the Crestron Auto Update Tool to generate a custom manifest file, then store the file on an FTP (File Transfer Protocol) or SFTP (Secure File Transfer Protocol) server.

3. Set a schedule for the automatic firmware update by doing either of the following:
    - Select the desired **Day of Week** and **Time of Day** (24-hour format) values.
    - Set the **Poll Interval** by entering a value from 60 to 65535 minutes. A value of 0 disables the **Poll Interval**.
4. Select **Save Changes**.

Selecting **Update Now** causes the device to check for a firmware update immediately. If a schedule was set in step 3 above, that schedule still remains in effect.

Date/Time

Use the **Date/Time** section to configure the date and time settings of the presentation system.



Synchronization

1. Set the **Time Synchronization** toggle to the right to enable or left to disable time synchronization. By default, time synchronization is enabled.
2. In the **NTP Time Servers** table, enter the URL of a NTP (Network Time Protocol) or SNTP (Simple Network Time Protocol) server. Up to three time servers can be added on a device.
3. Select **Synchronize Now** to perform time synchronization between the device's internal clock and the time server.

Configuration

1. Open the **Time Zone** drop-down list to select the applicable time zone.
2. In the **Date** field, enter the current date.
3. In the **Time** field, enter the current time in 24-hour format.

Select **Save Changes** to save the settings.

Select **Revert** from the **Action** drop-down menu to revert to the previous settings without saving.

Control System

Use the **Control System** section to configure a connection to a Crestron control system.

To configure the control system connection:

1. Set the **Encrypt Connection** toggle to the right to enable an encrypted connection to the control system.
    a. Enter a username in the **Control System Username** field.
    a. Enter a password in the **Control System Password** field.
2. Select **+ Add** to add an IP table entry to the **IP Table**.
    a. Enter the Room ID in the **Room ID** field.
    a. Enter the IP ID of the presentation system in the **IP ID** field.
    a. Enter the IP address or hostname of the control system in the **IP Address/Hostname** field.
3. Select **Save Changes** to save the new entries. The **Control System Save** message box appears, indicating that the control system settings were saved successfully. Select **Revert** to revert to the previous settings without saving.

Service Ports

Use the **Service Ports** section to enable or disable the USB service port on the front panel of the presentation system.

Set the USB Service Port toggle to the right to enable the port. Set the toggle to the left to disable the port.

The presentation system executes simple commands included in a commands.txt file loaded to the root directory of a connected USB storage device.

To configure this file:

1. Create a text file with the name **commands.txt**.
2. Enter one of the following commands:
    - `Save`
        - Saves the current device configuration file to the root directory of the USB storage device.
    - `Load <firmware or device configuration filename>`
        - Loads the indicated firmware or device configuration file to the presentation system.

        > **NOTE:** The file must also be present in the root directory of the USB storage device.

    - `Restore`
        - Restores the device to factory default settings.

        > **CAUTION:** The factory restore procedure will wipe all settings from the presentation system, including network settings. If a static IP address is set, restoring the device to factory default settings will clear this address and DHCP will be enabled instead.

    > **NOTES:**
    > - The device executes only the first line of the commands.txt file.
    > - Commands are not case-sensitive.

3. Save the file to the root directory of a USB storage device.

To execute the command in the **commands.txt** file:

1. Enable the **USB Service Port** setting by setting the toggle to the right position.
2. Connect the USB storage device to the USB service port of the presentation system.
3. Press and hold the **SETUP** button on the presentation system for 10 seconds.
    - If saving or uploading a configuration file, proceed to step 4.
    - If issuing a firmware upgrade or factory restore, wait for the device to reboot.
4. Press the **SETUP** button 10 times, waiting between one and five seconds in between presses. The **SETUP** LED will blink to indicate that log files are being loaded to the USB storage device.

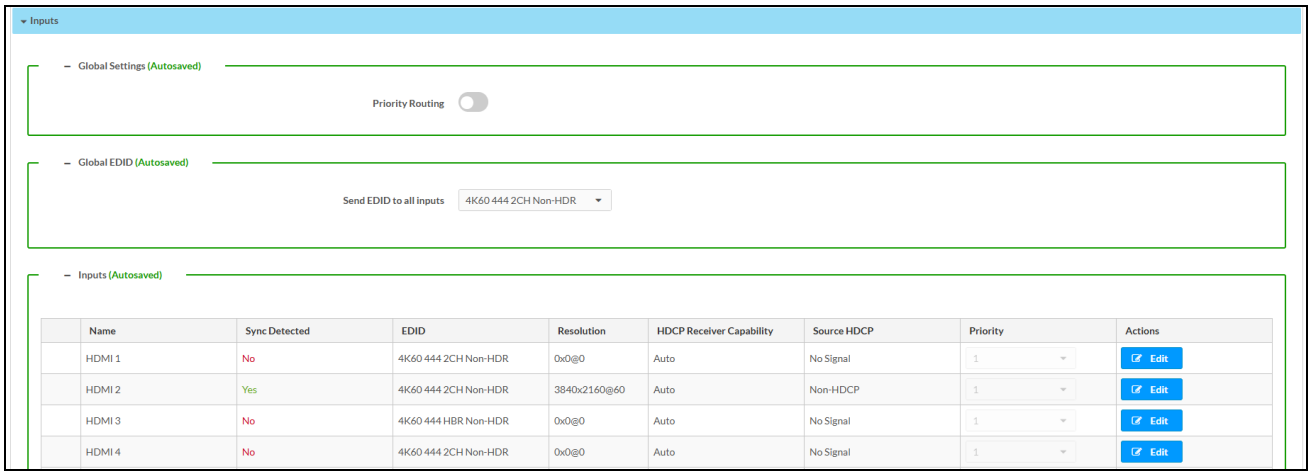
> **NOTE:** The presentation system will create a **results.txt** file in the root directory of the USB storage device. If a firmware upgrade was issued, it will create a **version.txt** file as well.

The USB service port also provides up to 5V 500mA of power to a connected USB device.

> **NOTE:** The USB service port provides this power regardless of whether the **USB Service Port** setting is enabled or disabled.

Inputs

The **Inputs** accordion configures the HDMI and DM Essentials input settings of the presentation system.

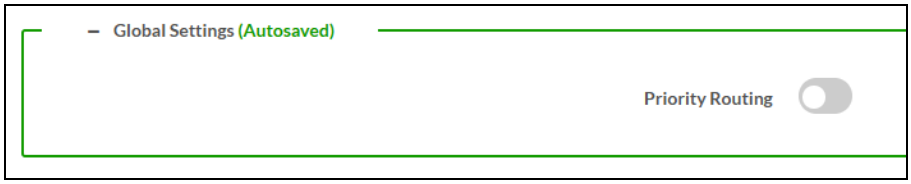


The **Inputs** accordion is broken down into several sections:

- Global Settings on page 142
- Global EDID on page 142
- Inputs on page 143
- Analog Inputs on page 145

Global Settings

The **Global Settings** section contains the option to enable or disable the **Priority Routing** feature.



Priority Routing adjusts the way the **Auto Route** feature (refer to Routing on page 164) works by allowing priority values to be assigned to each input. With **Priority Routing** enabled, the presentation system will check for video signal on higher-priority inputs before routing lower-priority inputs (a lower **Priority** number in the **Inputs** table indicates a higher priority).

Set the **Priority Routing** toggle to the right to enable this feature. Set the toggle to the left to disable it.

NOTES:

- The drop-down selections under the **Priority** column of the **Inputs** table below only become selectable once **Priority Routing** is enabled.
- **Priority Routing** is only in effect if the **Auto Route** feature is also enabled. Refer to Routing on page 164.

Global EDID

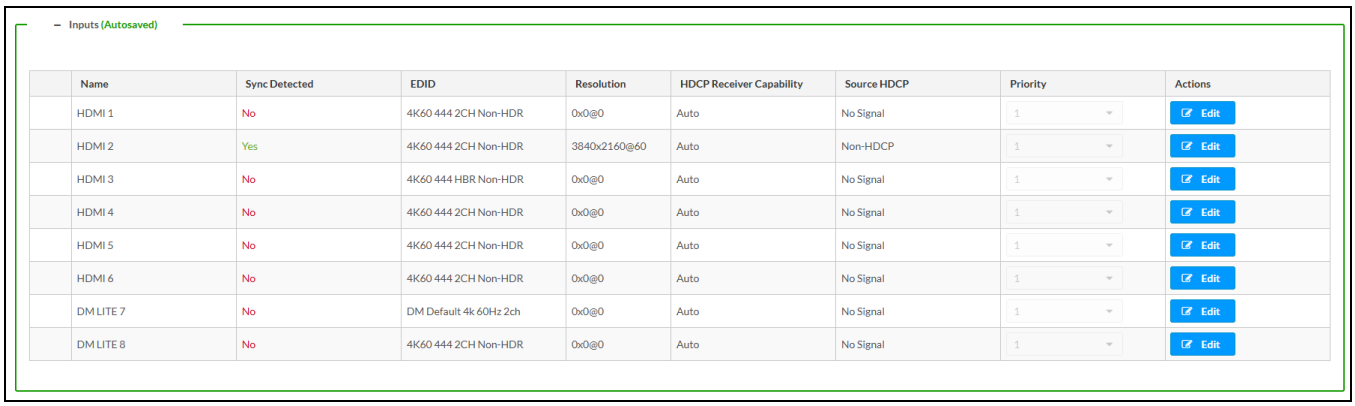
The **Global EDID** section pushes a specified EDID to all inputs on the presentation system at once.

To push a global EDID, select an EDID from the **Send EDID to all inputs** drop-down list. The **Inputs** table below will update the **EDID** column for each input one at a time until all inputs have received the specified EDID.

To add EDIDs to the **Send EDID to all inputs** drop-down list, refer to Manage EDIDs on page 126.

Inputs

The **Inputs** table displays information and provides additional actions for the HDMI and DM Essentials inputs.



Each input row contains information in the following read-only columns:

- **Name:** Displays the name of the input. To change the name, refer to Edit an Input on page 144.
- **Sync Detected:** Indicates whether a video signal is detected at the input.
- **EDID:** Displays the currently applied EDID file. To modify the EDID, refer to Global EDID on page 142 or Edit an Input on page 144.
- **Resolution:** Displays the detected resolution of the incoming video signal. If no video is detected, **0x0@0** is displayed.
- **HDCP Receiver Capability:** Displays the HDCP support level of the input. To modify the HDCP support level, refer to Edit an Input on page 144.
- **Source HDCP:** Displays the HDCP level of the incoming video signal (**Non-HDCP**, **HDCP 1.x**, or **HDCP 2.x**). If no video is detected, **No Signal** is displayed.

The **Priority** column contains a drop-down list in each input row. Use the **Priority** drop-down list for each input to select the priority level of that input; the lower the number, the higher the priority.

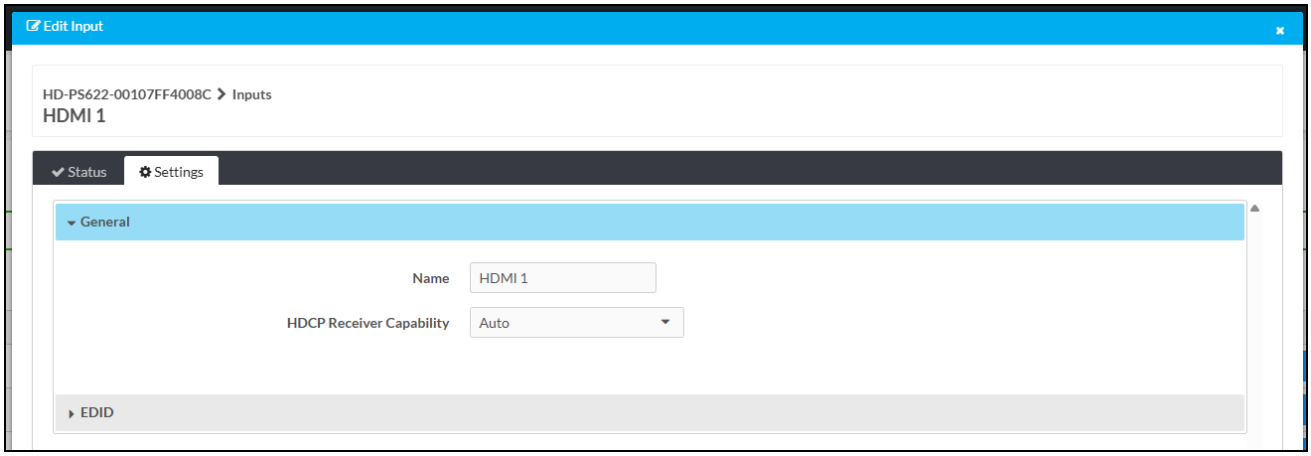
NOTES:

- **Priority** levels can only be adjusted while the **Priority Routing** setting is enabled (refer to Global Settings on page 142).
- Priority-based routing only occurs when **Auto Route** is enabled (refer to Routing on page 164).

Edit an Input

Select **Edit** in the **Actions** column to edit a given input. The **Edit Input** window appears.

Edit Input Window (HD-PS622 HDMI Input Shown)



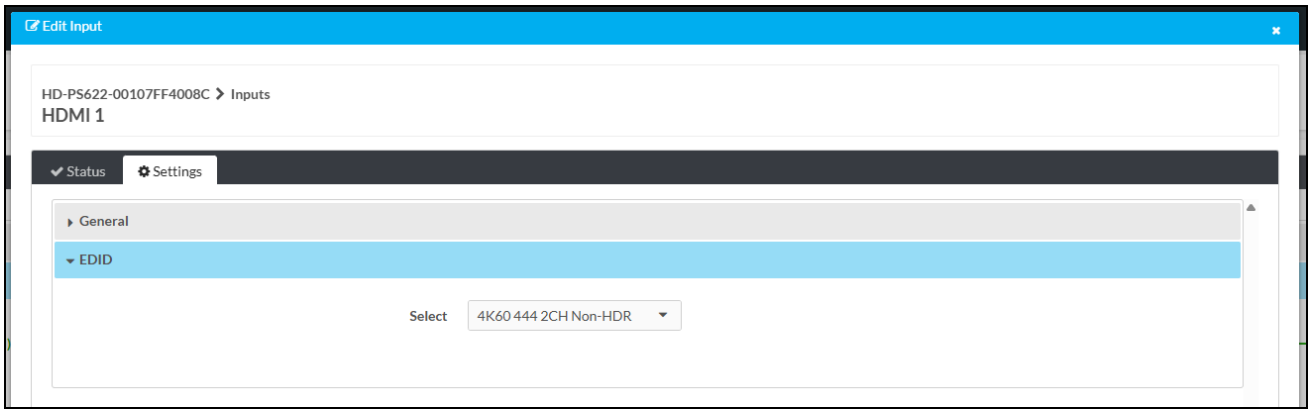
There are two tabs within the **Edit Input** window. The **Settings** tab is open by default with the **General** accordion expanded.

> **NOTE:** The settings available within the **Settings** tab are the same for the HDMI and DM Essentials inputs.

Within the **General** accordion, configure the following:

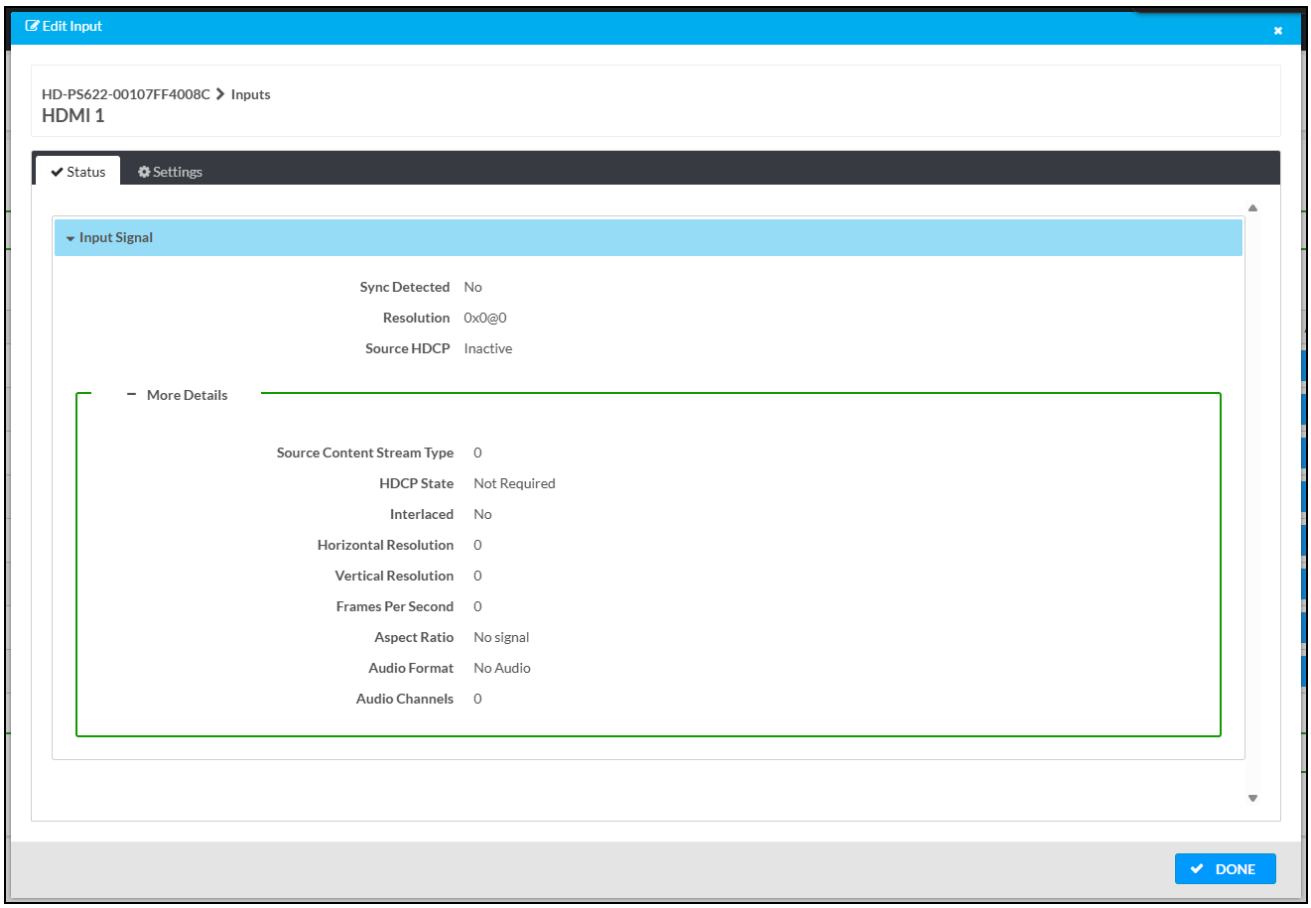
- **Name:** Enter a custom name for the input.
- **HDCP Receiver Capability:** Select an HDCP level from the drop-down list.
  - **Auto:** The HDCP level of the input will match the detected HDCP level of the incoming video signal. **Auto** is selected by default.
  - **Disable:** Disables HDCP at the input. Only non-HDCP content will be accepted by the input; any HDCP content will be blanked.
  - **HDCP 1.4:** Allows 1.4 and non-HDCP content.
  - **HDCP 2.x:** Allows 1.4, 2.x, and non-HDCP content.

Select the **EDID** accordion to expand it and access the EDID selection setting.

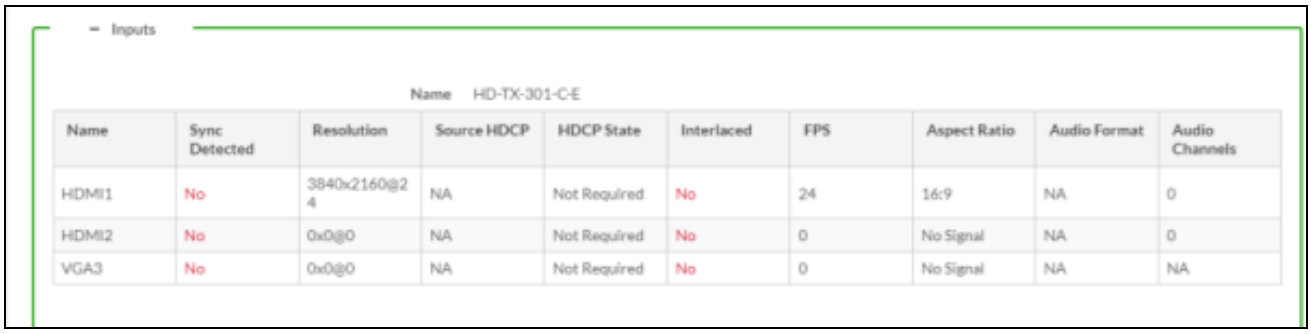


Select an EDID from the **Select** drop-down list to apply that EDID file to the input. To add EDIDs to the **Select** drop-down list, refer to Manage EDIDs on page 126.

Select the **Status** tab to view the **Status** page of the **Edit Input** window, which contains read-only information regarding the input.



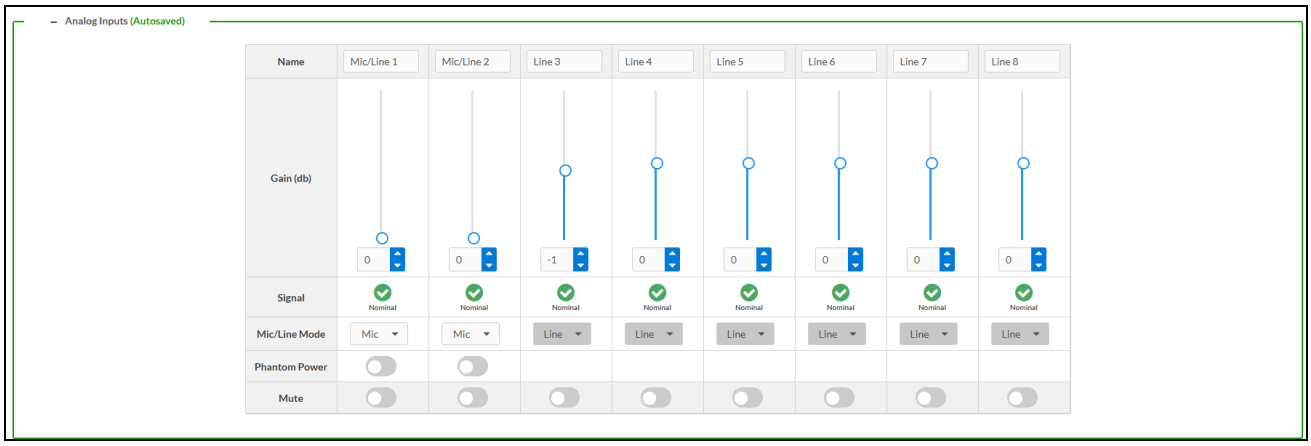
DM Essentials inputs with a connected DM Essentials transmitter may have additional information. Multi-input transmitters will display an additional **Inputs** table at the bottom of the **Status** page.



Select **√ DONE** or **X** to dismiss the **Edit Input** window.

Analog Inputs

The **Analog Inputs** table provides controls for the analog audio inputs of the presentation system.



The following information and controls are available for each audio input:

- **Name:** Displays the current name of the input. Enter a new name in the text field for a given input to update its name.
- **Gain (db):** Controls the amount of gain applied to the input. To adjust the gain for a given input, do one of the following:
    - Slide the **Gain (db)** slider up to increase or down to decrease the gain.
    - Manually enter a value in the text field.
    - Use the up and down arrows to increase or decrease the gain. Values range from 0 dB to 60 dB for microphone level inputs or -10 dB to +10 dB for line level inputs, adjustable in increments of 1 dB.
- **Signal:** Indicates whether the incoming audio signal is **Nominal** or **Clipping**.
- **Mic/Line Mode:** Select whether the incoming audio signal should be treated as a microphone-level (-40dBV or less) or line-level signal (-10dBV for unbalanced, +4dBu for balanced).

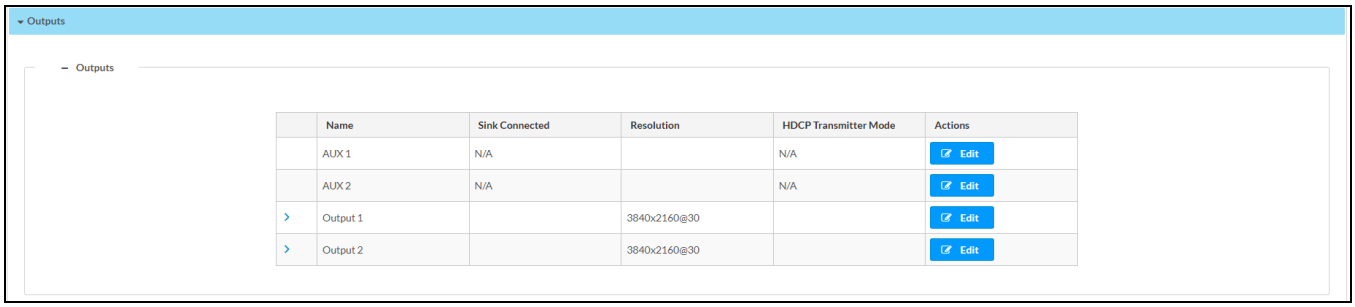
    > **NOTE:** This setting is only available on input connectors **CH1** and **CH2**. All other analog audio inputs are line-level only.

- **Phantom Power:** If **Mic** is selected for **Mic/Line Mode**, enable +48V 12mA phantom power by setting the **Phantom Power** toggle to the right. Set the toggle to the left to disable phantom power.
- **Mute:** Set the **Mute** toggle to the right to mute the input. Set the toggle to the left to unmute the input.

Outputs

The **Outputs** accordion configures the analog audio and digital A/V output settings of the presentation system.

HD-PS Settings Page - Outputs Accordion (HD-PS622 Shown)



The **Outputs** table displays information and provides additional actions for the audio, HDMI, and DM Essentials outputs.

Each output row contains information in the following read-only columns:

- **Name:** Displays the name of the input. To change the name, refer to Edit an Output on page 147.
- **Sink Connected:** Indicates whether a valid video sink device (such as a display or projector) is detected at the output. The presentation system cannot detect devices connected to the analog audio outputs, so this column always displays **N/A** for **AUX 1** and **AUX 2**.
- **Resolution:** Displays the current resolution of the outgoing video signal. This column is blank for **AUX 1** and **AUX 2**.
- **HDCP Transmitter Mode:** Displays the current HDCP level of the output. To modify the HDCP level, refer to Edit an Output on page 147.

Edit an Output

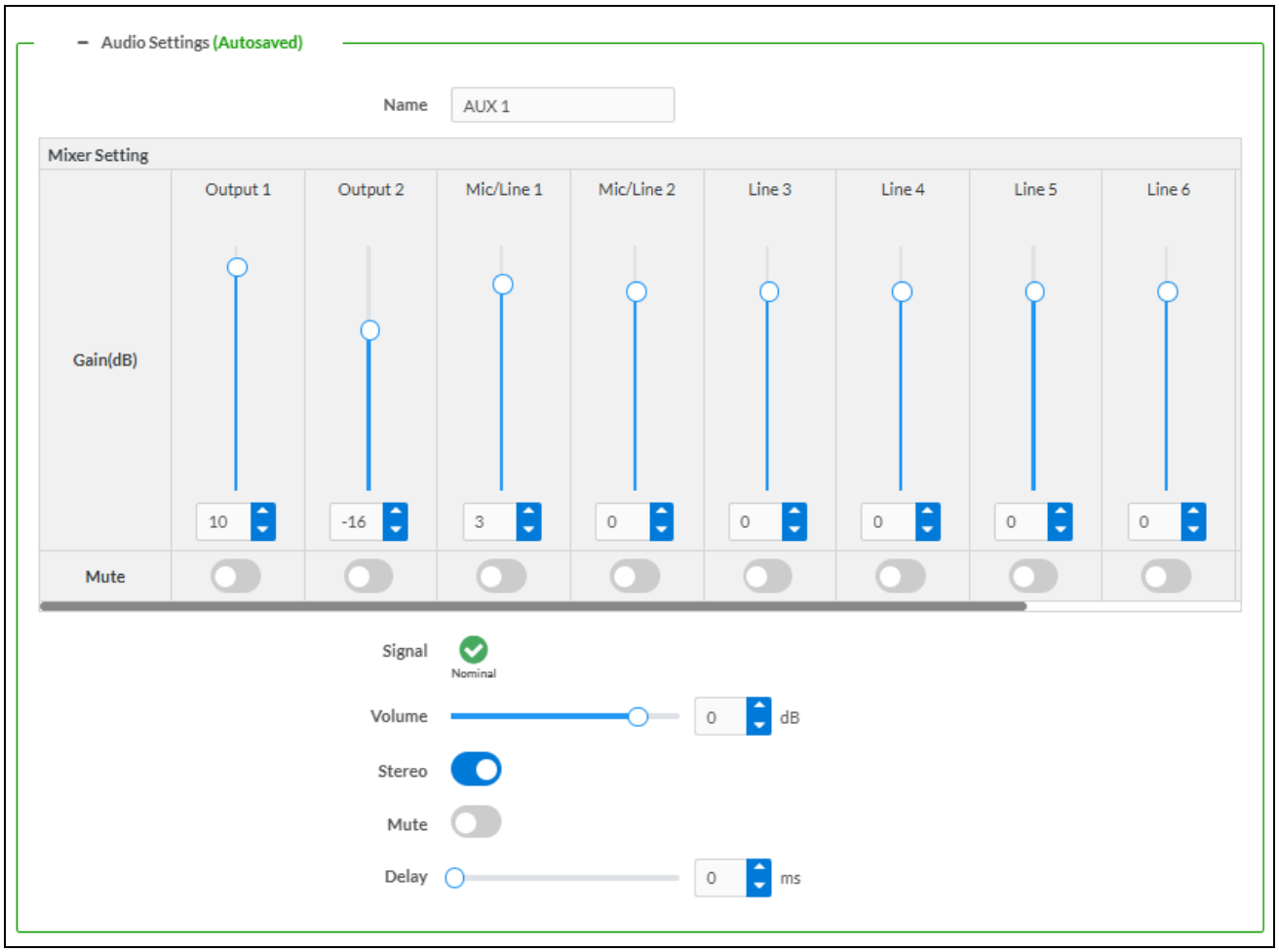
Select **Edit** in the **Actions** column to edit a given output. The **Edit Output** window appears.

There is an **Edit** button for each pair of mirrored outputs as well as for the individual connectors that comprise it. Select the arrow to the left of a mirrored output to expand the rows for the individual DM Essentials and HDMI connectors. The settings available within the **Edit Output** window are different for each of the following output types:

- Analog Audio (AUX 1 and AUX 2) on page 147
- Mirrored HDMI and DM Essentials Output on page 149
- DM Essentials Output Only on page 156
- HDMI Output Only on page 160

Analog Audio (AUX 1 and AUX 2)

The **Edit Output** window for the analog audio output connectors contains an **Audio Settings** mixer.



Enter a custom name for the output connector in the **Name** field.

Use the controls to create a discrete audio mix at the corresponding **AUX** output connector:

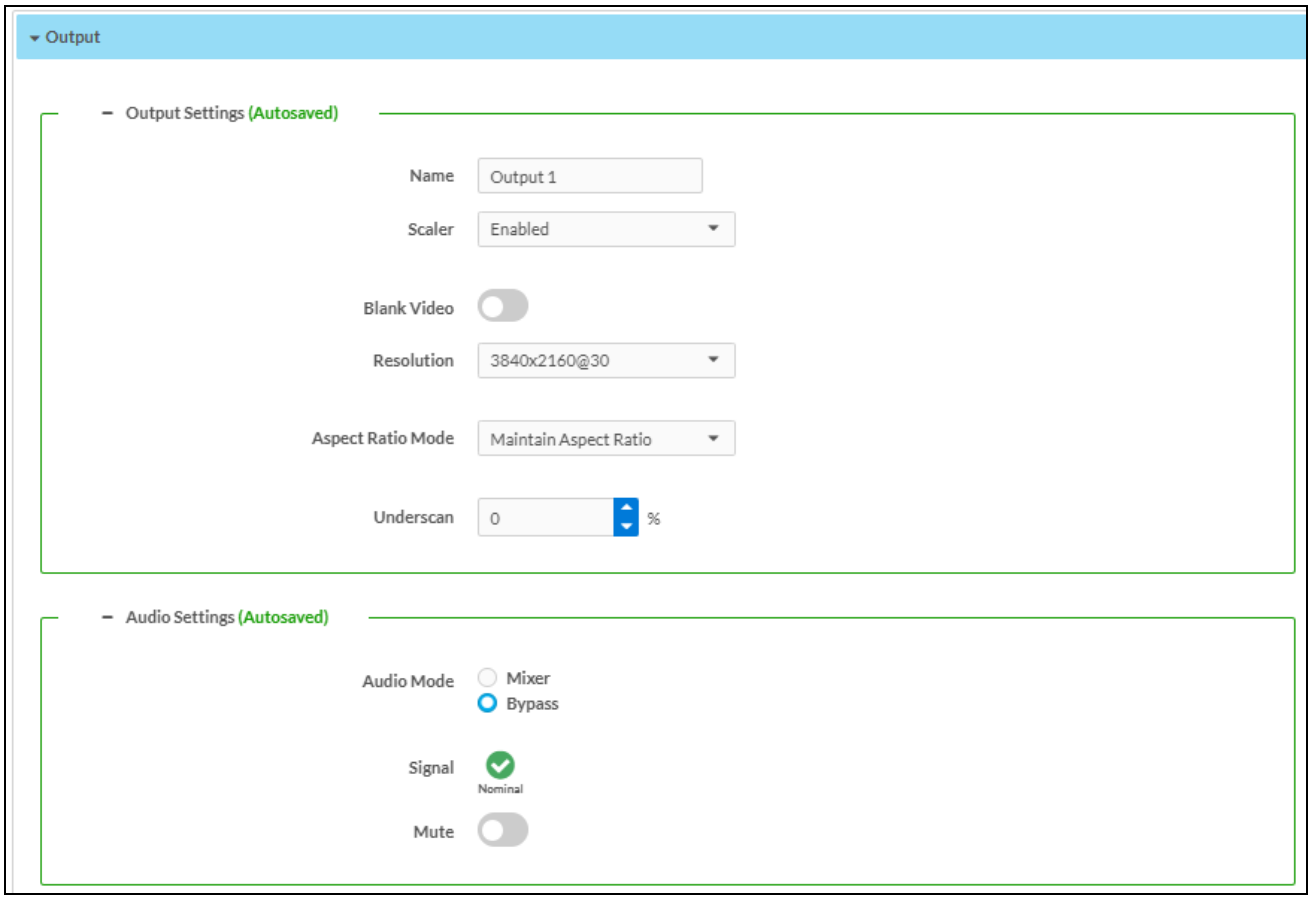
- **Gain (db):** Set a gain level for each available audio signal to mix it into the outgoing AUX audio output. Do one of the following:
  - Slide the **Gain (db)** slider up to increase or down to decrease the gain.
  - Manually enter a value in the text field.
  - Use the up and down arrows to increase or decrease the gain. Values range from -80 dB to +20 dB, adjustable in increments of 1 dB.
- **Mute:** Set each toggle to the right to mute the audio signal for that column. Set each toggle to the left to unmute that audio signal.
- **Signal:** Displays whether the level of the outgoing audio mix is **Nominal** or **Clipping**.

- **Volume:** Set an overall level for the outgoing audio mix. This level control comes after the mix levels set by the **Gain (db)** sliders above. Do one of the following:
    - Slide the **Volume** slider to the right to increase or to the left to decrease the volume.
    - Manually enter a value in the text field.
    - Use the up and down arrows to increase or decrease the volume. Values range from -80 dB to +20 dB, adjustable in increments of 1 dB.
- **Stereo:** Set the toggle to the right to allow discrete audio to pass on the left and right channels of the audio connector. Set the toggle to the left to sum the left and right audio signals to a mono mix that passes on both output channels.
- **Mute:** Set the toggle to the right to mute the audio output signal. Set the toggle to the left to unmute the audio.
- **Delay:** Set a delay time to synchronize the audio signal with a corresponding video signal. Do one of the following:
    - Slide the **Delay** slider to the right to increase or to the left to decrease the delay time.
    - Manually enter a value in the text field.
    - Use the up and down arrows to increase or decrease the delay time. Values range from 0 ms to 150 ms, adjustable in increments of 1 ms.

All settings in the **Edit Output** window are saved automatically. Select **✓ Done** or **X** to dismiss the window.

Mirrored HDMI and DM Essentials Output

The **Edit Output** window for a mirrored HDMI and DM Essentials output features two collapsible accordions for **Output** and **On Screen Display** settings. The **Output** accordion is expanded by default.



Output Settings

Configure the available settings under the **Output Settings** subsection:

- **Name:** Enter a custom name for the output pair.
- **Scaler:** Select a setting from the drop-down list:
  - **Enabled:** Bypasses the scaler to pass the input video signal unmodified to the output.
  - **Disabled:** Enables the scaler to match the output video signal resolution to a selected value from the **Resolution** drop-down list.
  - **Match Content:** Enables the scaler to match the output video signal resolution to the resolution of the input signal.

> **NOTES:**
>
> - **Scaler** must be set either to **Enable** or **Match Content** for an audio signal from this output to pass to an **AUX** audio output.
> - The resolutions available in **Match Content** mode are limited to the supported resolutions of the internal scaler.

- **Blank Video:** Set the toggle to the right to blank the HDMI output video signal. Set the toggle to the left to pass the video signal of a routed input source.

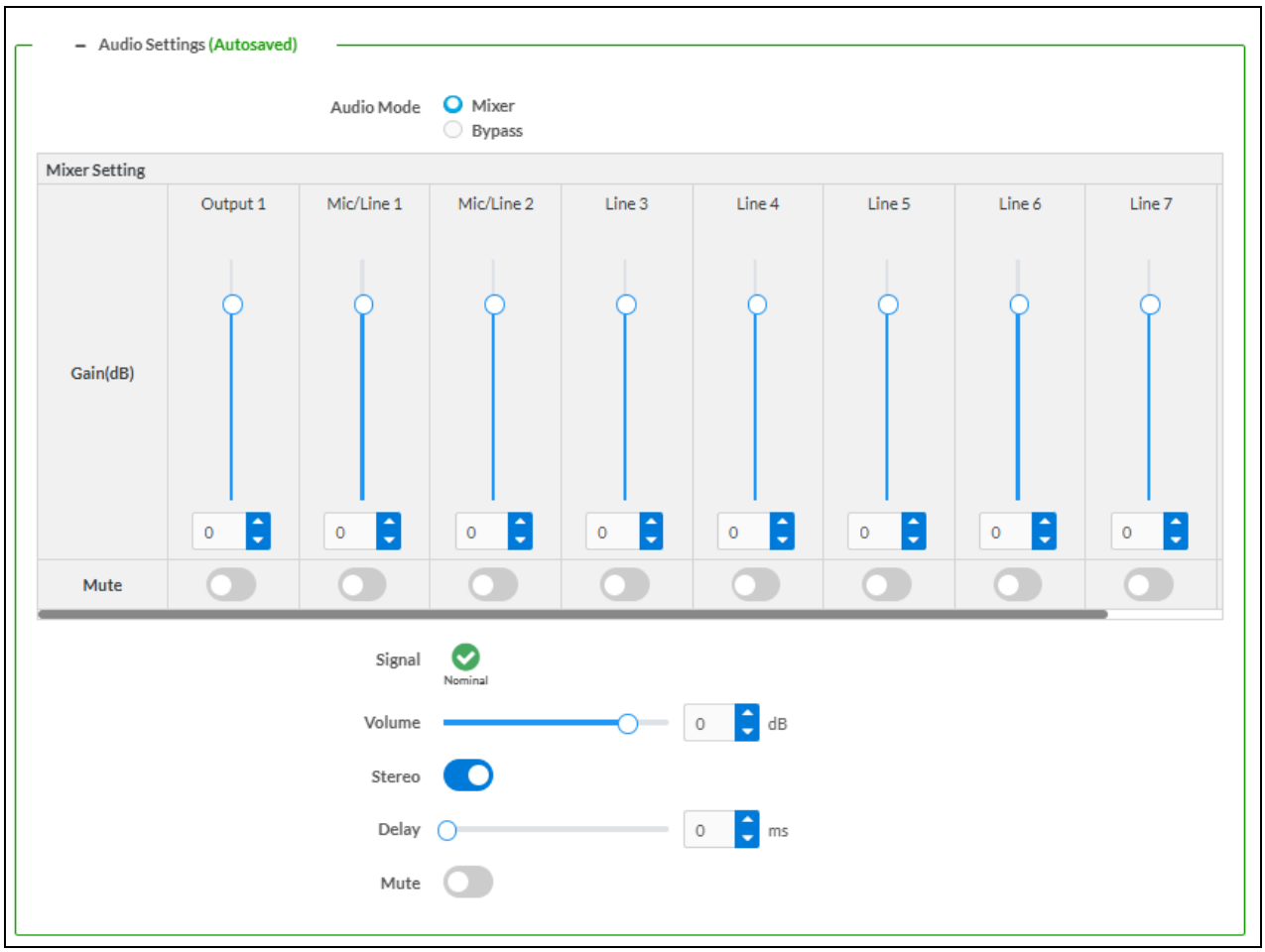
  > **NOTE:** Audio from this output will still pass to any applicable audio mixes while **Blank Video** is enabled.

- **Resolution:** Make a selection from the drop-down list to force the video signal to that resolution. Only available when **Scaler** is disabled.
- **Aspect Ratio Mode:** Select a setting from the drop-down list. Only available when **Scaler** is disabled:
  - **Maintain Aspect Ratio:** The aspect ratio of the source signal is preserved at the output. This may result in letter-boxing or pillar-boxing black bars at the edges of the display area.
  - **Stretch To Fit:** The aspect ratio of the source signal is stretched to fit the aspect ratio of the display. This may distort the image of the incoming video signal.
  - **1:1 Pixel Mapping:** The source signal is mapped 1:1 at the display without any aspect ratio scaling. This will preserve the aspect ratio of the source signal, but may not fill the entire display area, resulting in black borders around the image.
  - **Zoom:** The aspect ratio of the source signal is zoomed in to meet the full height or width capabilities of the display, whichever is greater than the incoming signal. This may crop out parts of the incoming video signal.
- **Underscan:** Use the text field or up and down arrows to set an underscan percentage from 0% to 10% in increments of 0.1%. Setting **0%** will maintain the size of the source image area relative to the full video resolution and will preserve the image aspect ratio. Selecting higher values will shrink the size of the source image within its resolution while still preserving its aspect ratio. Any pixels outside of the image area in the full resolution will be filled by a black border. Only available when **Scaler** is disabled.

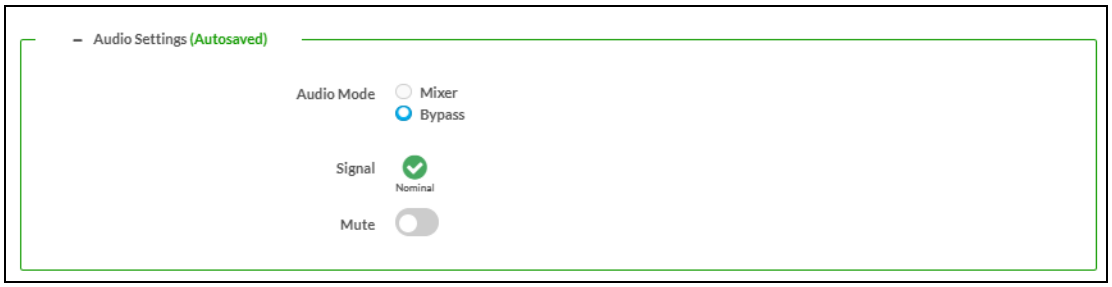
Audio Settings

Configure the available settings under the **Audio Settings** subsection:

- **Audio Mode:** Select the **Mixer** radio button to show the full audio mixer and create a custom audio mix for the A/V output.



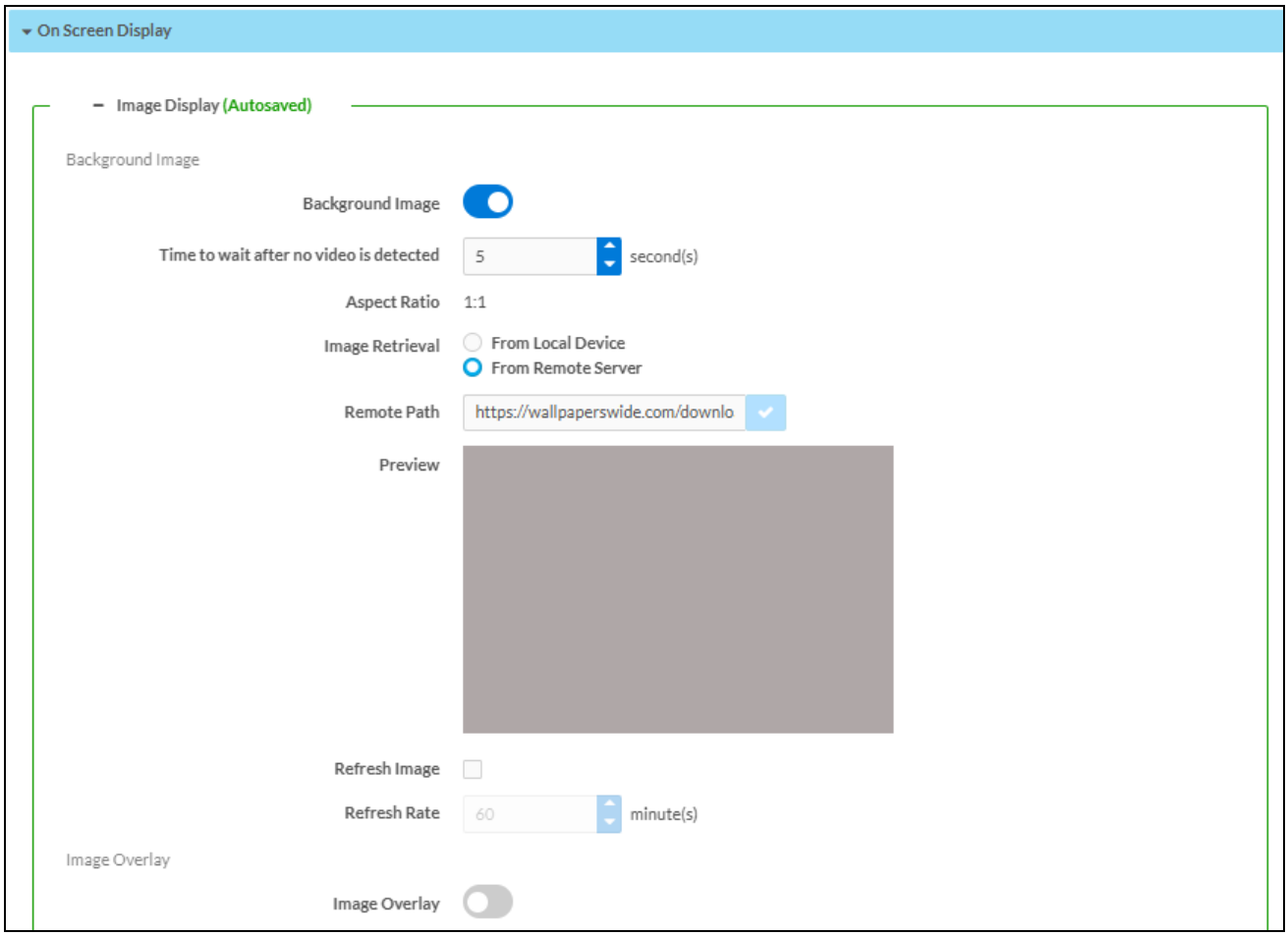
Select the **Bypass** radio button to bypass and hide the audio mixer.



- **Gain (db):** Set a gain level for each available audio signal to mix it into the outgoing AUX audio output. Do one of the following:
    - Slide the **Gain (db)** slider up to increase or down to decrease the gain.
    - Manually enter a value in the text field.
    - Use the up and down arrows to increase or decrease the gain. Values range from -80 dB to +20 dB, adjustable in increments of 1 dB.
- **Mute:** Set each toggle to the right to mute the audio signal for that column. Set each toggle to the left to unmute that audio signal.
- **Volume:** Set an overall level for the outgoing audio mix. This level control comes after the mix levels set by the **Gain (db)** sliders above. Do one of the following:
    - Slide the **Volume** slider to the right to increase or to the left to decrease the volume.
    - Manually enter a value in the text field.
    - Use the up and down arrows to increase or decrease the volume. Values range from -80 dB to +20 dB, adjustable in increments of 1 dB.
- **Stereo:** Set the toggle to the right to allow discrete audio to pass on the left and right channels of the audio connector. Set the toggle to the left to sum the left and right audio signals to a mono mix that passes on both output channels.
- **Delay:** Set a delay time to synchronize the audio signal with a corresponding video signal. Do one of the following:
    - Slide the **Delay** slider to the right to increase or to the left to decrease the delay time.
    - Manually enter a value in the text field.
    - Use the up and down arrows to increase or decrease the delay time. Values range from 0 ms to 150 ms, adjustable in increments of 1 ms.
- **Signal:** Displays whether the level of the outgoing audio mix is **Nominal** or **Clipping**.
- **Mute:** Set the toggle to the right to mute the audio output signal. Set the toggle to the left to unmute the audio.

Image Display

Select the **On Screen Display** accordion to expand it and access the **Image Display** subsection.



Configure the available settings for the **Background Image** feature:

- **Background Image:** Set the toggle to the right to enable the background image feature. A specified static image will be displayed at the output when no video signal is present.
- **Time to wait after no video is detected:** Determines how long the presentation system will wait after video signal is not detected until the background image will be displayed at the output. Enter text in the field or use the up and down arrows to set a time in seconds from 5 seconds to 65,535 seconds in intervals of 1 second.
- **Aspect Ratio:** Displays the aspect ratio of the specified image. This field is read-only.
- **Image Retrieval:** Select one of the radio buttons:
  - **From Local Device:** Use the **Image File** drop-down list to select an image file hosted locally on the presentation system. Select **Manage Images** to add or remove images from the list. Refer to Manage Images on page 130.
  - **From Remote Server:** Use the **Remote Path** text field to enter the URL of a web-based image file.
- **Preview:** Displays a preview of the specified image file.
- **Refresh Image:** If **From Remote Server** is selected for **Image Retrieval**, the presentation system can routinely poll the **Remote Path** URL for new images. Select the check-box to enable this refresh feature.

- **Refresh Rate:** Enter text in the field or use the up and down arrows to set a refresh rate in minutes from 1 minute to 65,535 minute in intervals of 1 minute. This determines how long the presentation system waits before polling the **Remote Path** URL for a new image file.

> **TIP:** The **Automatic Display Power** feature may cause the connected display to turn off before the background image appears. To ensure the background image will be displayed, either disable **Automatic Display Power** or set the **Output Timeout** interval higher than the **Time to wait after no video is detected** interval.

Configure the available settings for the **Image Overlay** feature:

- **Image Overlay:** Set the toggle to the right to enable the image overlay feature. A specified image is displayed over the top of the video output signal. Set the toggle to the left to disable the feature and all other settings within this section.
- **Image Location:** Select one of the nine preset locations for the image overlay from the three-by-three grid.
- **Custom:** Select the check-box to enable custom coordinate-based placement (disables the **Image Location** grid):
  - **X Coordinate:** Determines the left-hand starting point of the image. Enter an integer between 1 and the width resolution value. For example, the maximum value for a 3840x2160 resolution signal would be 3840.
  - **Y Coordinate:** Determines the top starting point of the image. Enter an integer between 1 and the height resolution value. For example, the maximum value for a 3840x2160 resolution signal would be 2160.
- **Transparency:** Set a transparency percentage for the image. Do one of the following:
  - Slide the **Transparency** slider up to increase or down to decrease the transparency.
  - Manually enter a value in the text field.
  - Use the up and down arrows to increase or decrease the transparency. Values range from 0% to 100%, adjustable in increments of 1%.
- **Image Retrieval:** Select one of the radio buttons:
  - **From Local Device:** Use the **Image File** drop-down list to select an image file hosted locally on the presentation system. Select **Manage Images** to add or remove images from the list. Refer to Manage Images on page 130.
  - **From Remote Server:** Use the **Remote Path** text field to enter the URL of a web-based image file.
- **Preview:** Displays a preview of the specified image file.

Text Overlay

Configure the available settings for the **Text Overlay** feature:

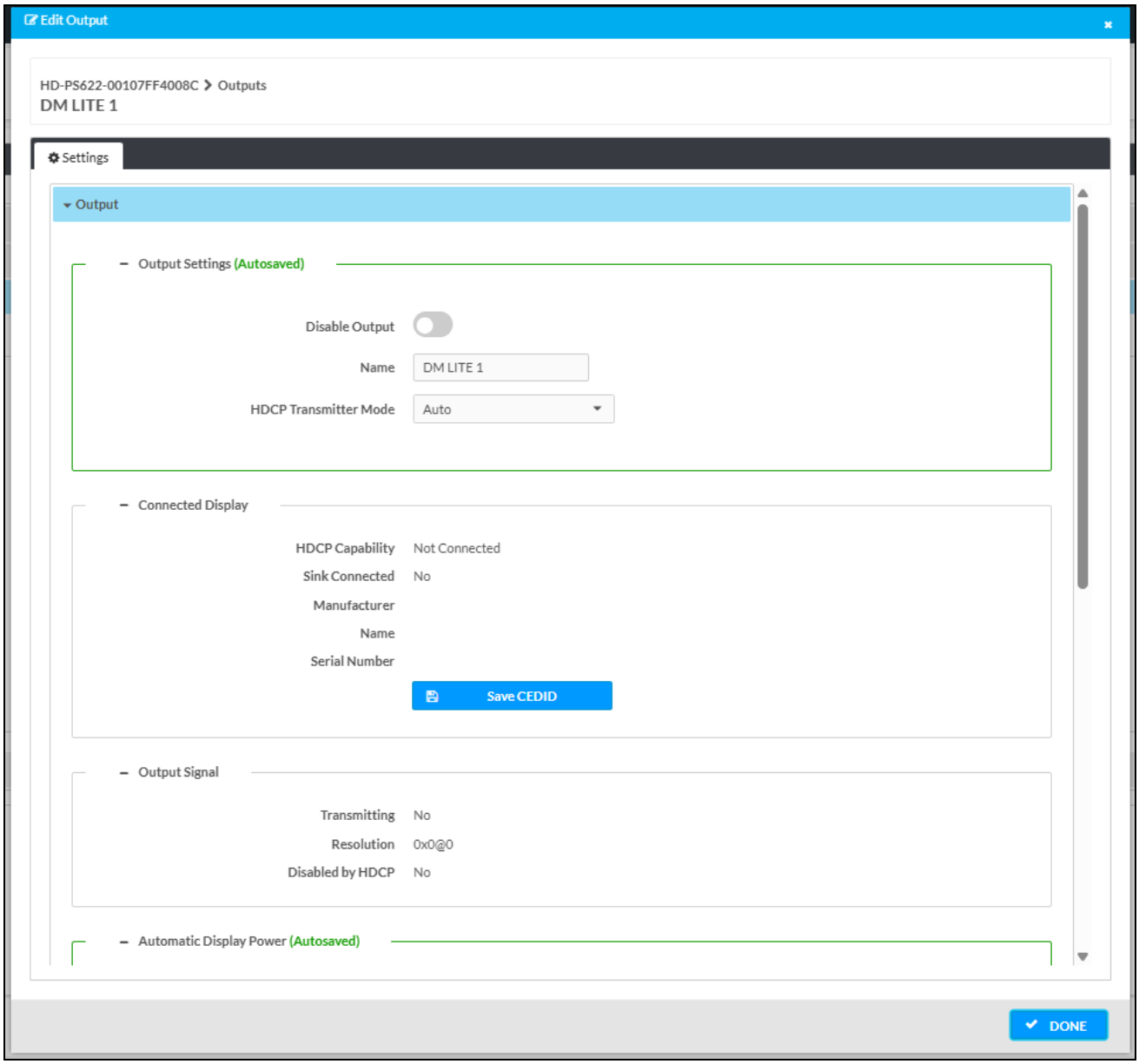
- **Text Overlay:** Set the toggle to the right to enable the image overlay feature. A specified text string is displayed over the top of the video output signal. Set the toggle to the left to disable the feature and all other settings within this section.
- **Text to Display:** Enter the desired text string in this field. The string can be up to 59 characters in length.

- **Background Transparency:** Set a transparency percentage for the background of the text. Do one of the following:
    - Slide the **Transparency** slider up to increase or down to decrease the transparency.
    - Manually enter a value in the text field.
    - Use the up and down arrows to increase or decrease the transparency. Values range from 0% to 100%, adjustable in increments of 1%.
- **Text Location:** Select one of the nine preset locations for the text overlay from the three-by-three grid.
- **Custom:** Select the check-box to enable custom coordinate-based placement (disables the **Image Location** grid):
    - **X Coordinate:** Determines the left-hand starting point of the text. Enter an integer between 1 and the width resolution value. For example, the maximum value for a 3840x2160 resolution signal would be 3840.
    - **Y Coordinate:** Determines the top starting point of the text. Enter an integer between 1 and the height resolution value. For example, the maximum value for a 3840x2160 resolution signal would be 2160.

All settings in the **Edit Output** window are saved automatically. Select **✓ Done** or **X** to dismiss the window.

DM Essentials Output Only

The **Edit Output** window for a DM Essentials output features a collapsible accordion for **Output** settings. The accordion is expanded by default.



Output Settings

Configure the available settings under the **Output Settings** subsection:

- **Disable Output:** Set the toggle to the right to disable the DM Essentials output. The associated HDMI output remains active. Set the toggle to the left to enable the DM Essentials output.
- **Name:** Enter a custom name for the output.

- **HDCP Transmitter Mode:** Make a selection from the drop-down list:
  - **Auto:** The HDCP level of the output will automatically match the HDCP level of the video signal.
  - **Follow Input:** The HDCP level of the output will be forced to the supported HDCP level of the local input.
  - **Force Highest:** The HDCP level of the output will force compatibility with the highest HDCP level supported by the entire signal chain.
  - **Never Authenticate:** The output will never authenticate at any HDCP level. This will blank video when any content-protected video signal is routed to the output.

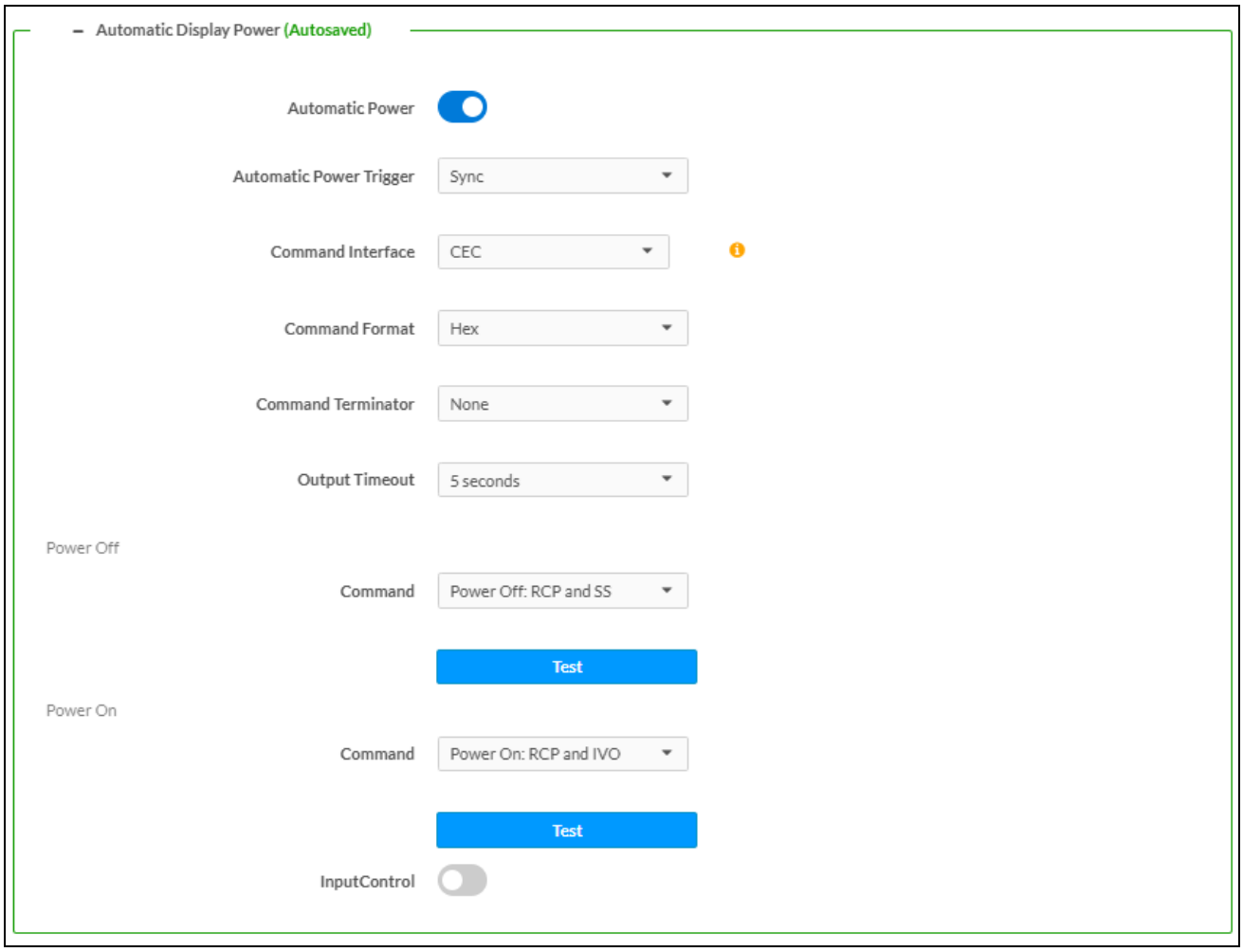
The **Connected Display** subsection contains read-only information and an option to save the CEDID of the connected display:

- **HDCP Compatibility:** Displays the supported HDCP level of the connected display. Displays **Not connected** if no display is detected.
- **Sink Connected:** Indicates whether a connected display is detected (**Yes**) or not (**No**).
- **Manufacturer:** Displays the manufacturer of the connected display.
- **Name:** Displays the name of the connected display.
- **Save CEDID:** Select to save a .cedid file to the Downloads folder of the connected computer. This can be uploaded to one or more presentation systems or other video endpoints. Refer to Manage EDIDs on page 126.

The **Output Signal** subsection contains read-only information:

- **Transmitting:** Displays **Yes** if a video signal is passing on the DM Essentials output connector. Displays **No** if video is not passing.
- **Resolution:** Displays the resolution of the output video signal. Displays **0x0@0** if no video is passing.
- **Disabled by HDCP:** Displays **Yes** if the output video signal is being blanked due to lack of HDCP support somewhere in the signal chain. Displays **No** if video is passing without being blanked by HDCP.

Configure the settings available in the **Automatic Display Power** subsection to allow the DM Essentials output to issue power controls to a connected display.



The following controls are available:

- **Automatic Power:** Set the toggle to the right to enable the feature and the rest of the settings in the subsection. Set the toggle to the left to disable the feature.
- **Automatic Power Trigger:** Select an option from the drop-down list:
    - **Sync:** Video sync from the routed input will issue the power commands. When input video sync is detected, the power on command is issued. When input video sync stops being detected, the power off command is issued.
    - **Occupancy:** Occupancy data from a paired occupancy sensor will issue the power commands. Occupancy detection issues the power on command and vacancy detection issues the power off command.
    - **Sync or Occupancy:** Either video sync detection or occupancy data will issue the power commands.
- **Command Interface:** Select an option from the drop-down list to determine whether commands will be sent via **CEC**, **RS-232**, **IR**, or **Drivers**.

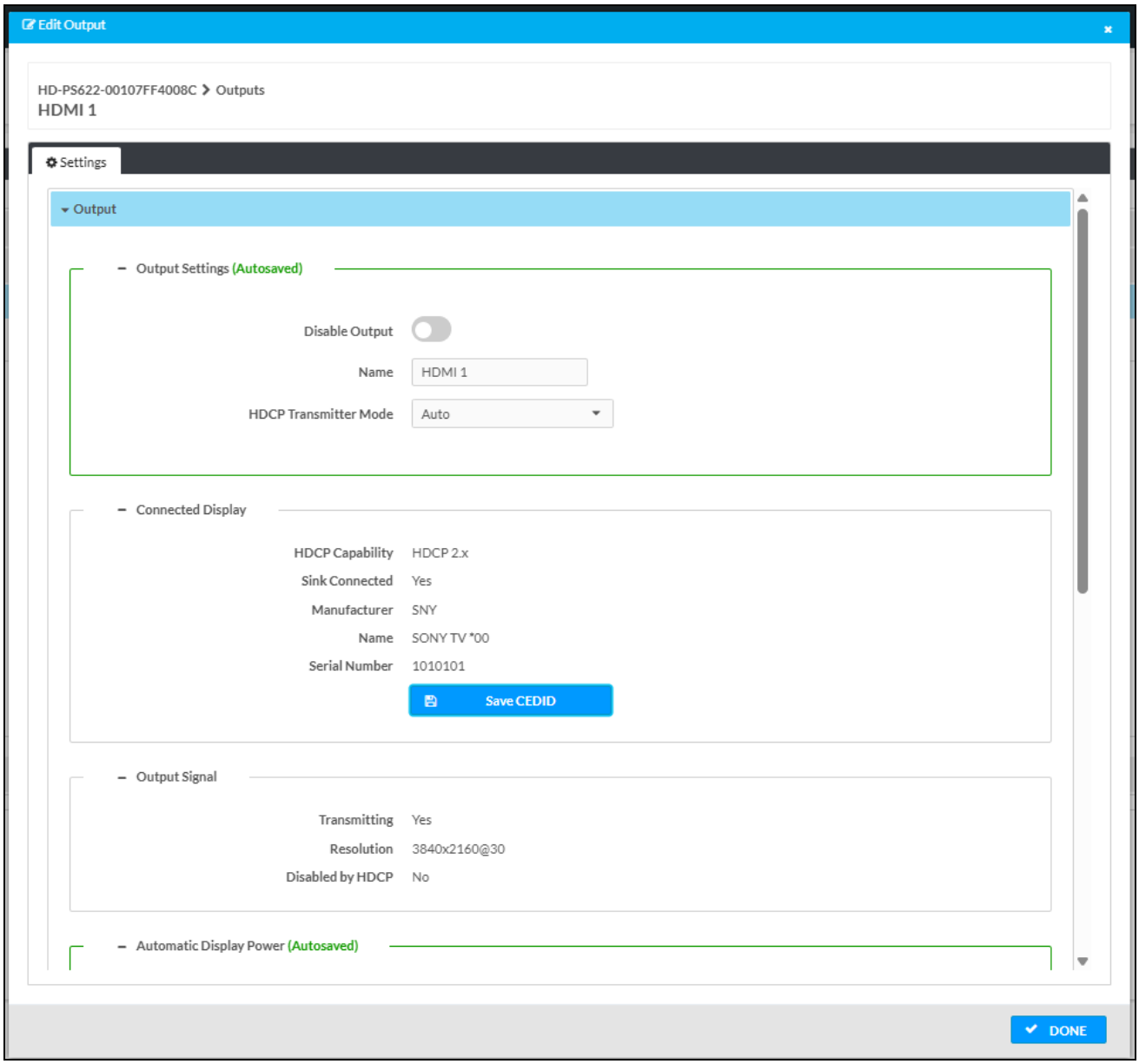
  Once the **Command Interface** is selected, set the appropriate **Power On** and **Power Off** commands under their respective subheadings. RS-232 command strings may be available from the display manufacturer's documentation.

- **Output Timeout:** Select a value from the drop-down list to determine how long (in seconds) the presentation system will wait to send the power off command. This is a timer that starts once video sync is lost or vacancy is detected (depending on the **Automatic Power Trigger** setting). The timer will reset if video sync or occupancy are detected before time runs out.
- **InputControl:** Set the toggle to the right to enable an additional command that will set the display to a specific input. Set the toggle to the left to disable this command.
    - With **InputControl** enabled, select a **Delay** from the drop-down list to determine how long the presentation system will wait after issuing the power on command before issuing the input command. Enter the command in the **Command String** text field (consult the display manufacturer's documentation for the command).

All settings in the **Edit Output** window are saved automatically. Select **✓ Done** or **X** to dismiss the window.

HDMI Output Only

The **Edit Output** window for a HDMI output features a collapsible accordions for **Output** settings. The accordion is expanded by default.



Output Settings

Configure the available settings under the **Output Settings** subsection:

- **Disable Output:** Set the toggle to the right to disable the HDMI output. The associated DM Essentials output remains active. Set the toggle to the left to enable the HDMI output.
- **Name:** Enter a custom name for the output.

- **HDCP Transmitter Mode:** Make a selection from the drop-down list:
  - **Auto:** The HDCP level of the output will automatically match the HDCP level of the video signal.
  - **Follow Input:** The HDCP level of the output will be forced to the supported HDCP level of the local input.
  - **Force Highest:** The HDCP level of the output will force compatibility with the highest HDCP level supported by the entire signal chain.
  - **Never Authenticate:** The output will never authenticate at any HDCP level. This will blank video when any content-protected video signal is routed to the output.

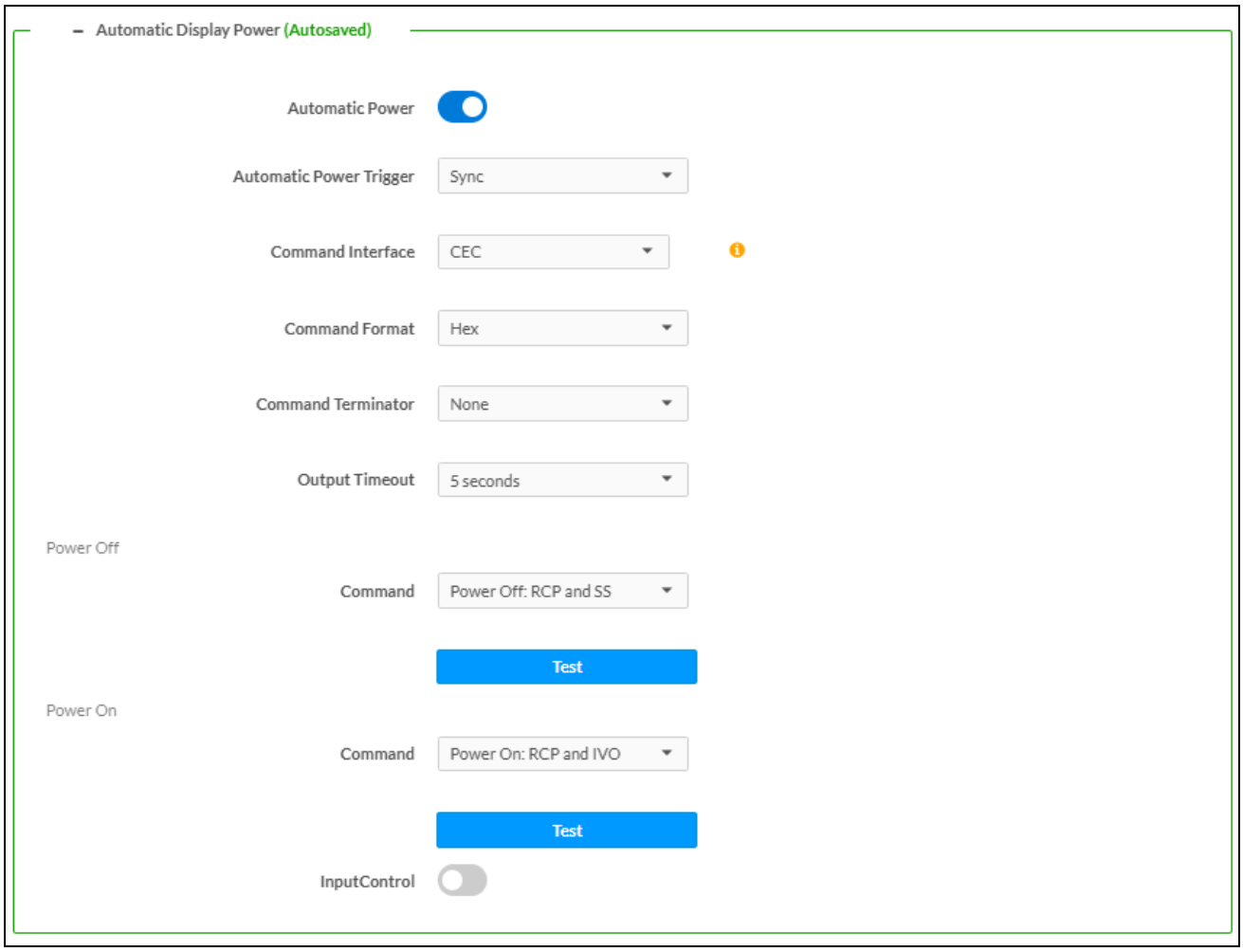
The **Connected Display** subsection contains read-only information and an option to save the CEDID of the connected display:

- **HDCP Compatibility:** Displays the supported HDCP level of the connected display. Displays **Not connected** if no display is detected.
- **Sink Connected:** Indicates whether a connected display is detected (**Yes**) or not (**No**).
- **Manufacturer:** Displays the manufacturer of the connected display.
- **Name:** Displays the name of the connected display.
- **Save CEDID:** Select to save a .cedid file to the Downloads folder of the connected computer. This can be uploaded to one or more presentation systems or other video endpoints. Refer to Manage EDIDs on page 126.

The **Output Signal** subsection contains read-only information:

- **Transmitting:** Displays **Yes** if a video signal is passing on the DM Essentials output connector. Displays **No** if video is not passing.
- **Resolution:** Displays the resolution of the output video signal. Displays **0x0@0** if no video is passing.
- **Disabled by HDCP:** Displays **Yes** if the output video signal is being blanked due to lack of HDCP support somewhere in the signal chain. Displays **No** if video is passing without being blanked by HDCP.

Configure the settings available in the **Automatic Display Power** subsection to allow the HDMI output to issue power controls to a connected display.



The following controls are available:

- **Automatic Power:** Set the toggle to the right to enable the feature and the rest of the settings in the subsection. Set the toggle to the left to disable the feature.
- **Automatic Power Trigger:** Select an option from the drop-down list:
    - **Sync:** Video sync from the routed input will issue the power commands. When input video sync is detected, the power on command is issued. When input video sync stops being detected, the power off command is issued.
    - **Occupancy:** Occupancy data from a paired occupancy sensor will issue the power commands. Occupancy detection issues the power on command and vacancy detection issues the power off command.
    - **Sync or Occupancy:** Either video sync detection or occupancy data will issue the power commands.
- **Command Interface:** Select an option from the drop-down list to determine whether commands will be sent via **CEC** or **Drivers**.

  Once the **Command Interface** is selected, set the appropriate **Power On** and **Power Off** commands under their respective subheadings.

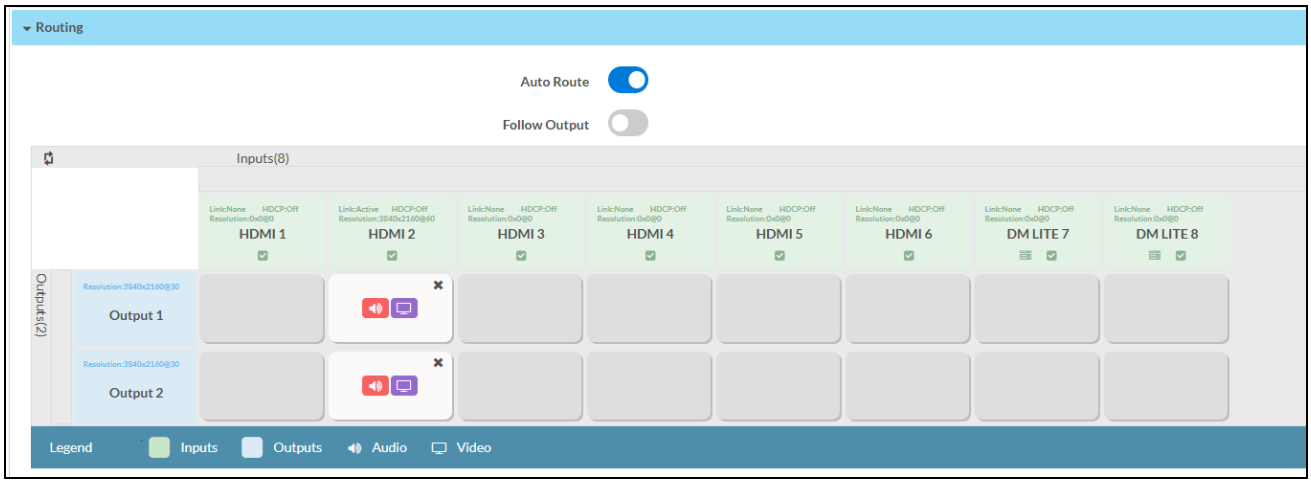
- **Output Timeout:** Select a value from the drop-down list to determine how long (in seconds) the presentation system will wait to send the power off command. This is a timer that starts once video sync is lost or vacancy is detected (depending on the **Automatic Power Trigger** setting). The timer will reset if video sync or occupancy are detected before time runs out.
- **InputControl:** Set the toggle to the right to enable an additional command that will set the display to a specific input. Set the toggle to the left to disable this command.
    - With **InputControl** enabled, select a **Delay** from the drop-down list to determine how long the presentation system will wait after issuing the power on command before issuing the input command. Enter the command in the **Command String** text field (consult the display manufacturer's documentation for the command).

All settings in the **Edit Output** window are saved automatically. Select **✓ Done** or **X** to dismiss the window.

Routing

Use the **Routing** accordion to make or break input to output routes and control the **Auto Route** feature.

HD-PS Settings - Routing Accordion (HD-PS622 Shown)



Configure the toggles to determine general routing behavior:

- Set the **Auto Route** toggle to the right to have input sources automatically route to outputs whenever video sync is detected. Set the toggle to the left to control all routes manually.
- Set the **Follow Output** toggle to the right to have **Output 2** follow all routing done for **Output 1**.

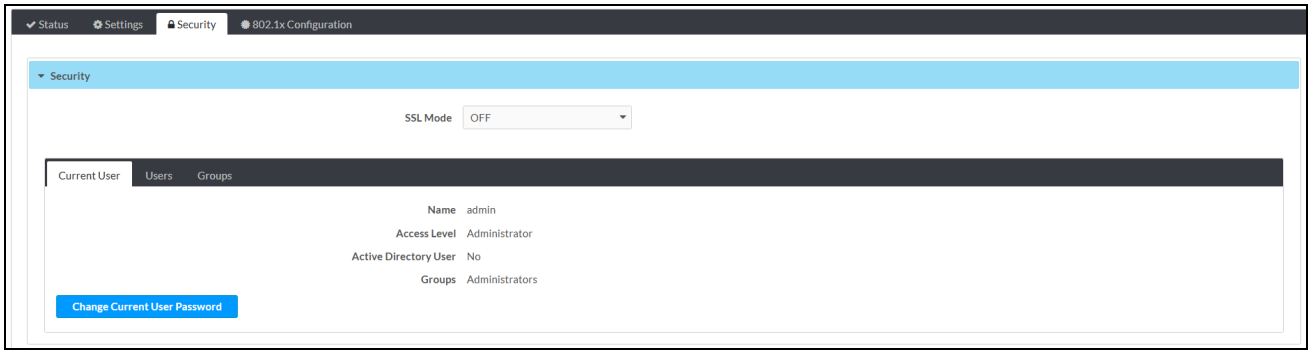
> **NOTE: Follow Output** is only applicable to the HD-PS622.

Use the routing matrix to establish or clear signal routes:

- To establish a route, select the box where the input column and output row intersect. A red audio icon and a purple video icon will appear to indicate that the route is established.
- To clear a route, select either of the icons or the **X** at the top-right of the box.
- To route an input to all available outputs, select the green check-box below the input name.

Security

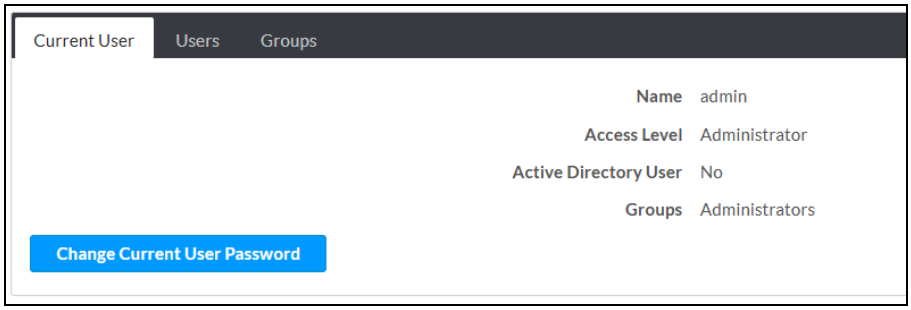
Select the **Security** tab to configure security for users and groups and to allow different levels of access to the presentation system's functions.



Select **Encrypt and Validate**, **Encrypt**, or **OFF** from the **SSL Mode** drop-down list to specify whether to use encryption. By default, **SSL Mode** is set to **OFF**.

Current User

Select the **Current User** tab to view read-only information or to change the password for the current user.

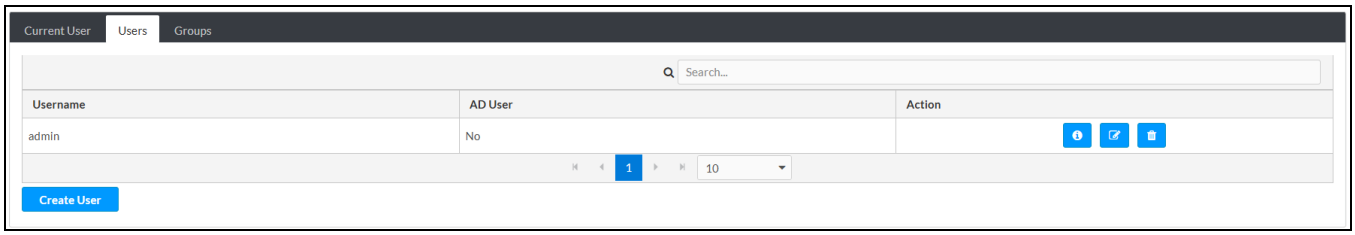


To change the password for the current user account:

1. Select **Change Current User Password**.
2. In the **Change Password** dialog, enter the current password in the **Current Password** field, a new password in the **Password** field, and the same new password in the **Confirm Password** field.
3. Select **OK** to save or select **Cancel** to cancel the changes.

Users

Select the **Users** tab to view and edit user settings. The **Users** tab can be used to add or remove local and Active Directory users and preview information about them.



Use the **Search...** field to enter search term(s) and display users that match the search criteria.

If users listed in the **Users** table span across multiple pages, navigate through the list by selecting a page number or by using the left or right arrows at the bottom of the **Users** pane to move forward or backward through the pages.

Each page can be set to display **5**, **10**, or **20** users by using the drop-down list to the right of the navigation arrows.

Information about existing users is displayed in table format and the following details are provided for each user.

- **Username:** Displays the name of the user.
- **AD User:** Displays whether the user requires authentication using Active Directory.

Select the information icon in the **Actions** column to view detailed user information, or select the delete icon to delete a user.

To create a new user, select **Create User**.

Create a New Local User

To create a new local user:

1. Select **Create User** in the **Users** tab.
2. In the **Create User** dialog, enter the following:
    a. Enter a user name in the **Name** field. A valid user name can consist of alphanumeric characters (letters a-z, A-Z, numbers 0-9) and the underscore "_" character.
    b. Enter a password in the **Password** field; re-enter the same password in the **Confirm Password** field.
    c. Assign the access level by selecting one or more groups from the **Groups** drop-down list.

    > **NOTE:** Make sure that the **Active Directory User** toggle is set to the left (disabled).

3. Select **OK** to save or select **Cancel** to cancel the changes.

Grant Access to an Active Directory User

Users cannot be created or removed from the Active Directory server, but access can be granted to an existing user in the Active Directory server.

To grant access to an Active Directory user, you can either add the user to a local group on the presentation system, or add the Active Directory group(s) that they are a member of to the presentation system. Refer to Grant Access to an Active Directory Group on page 169 for steps on granting access to a group.

To grant access to an Active Directory user directly:

1. Select **Create User**.
2. In the **Create User** dialog, enter the following:
   a. Enter a user name in the **Name** field in the format "Domain\UserName", for example "crestronlabs.com\JohnSmith". Valid user names can contain alphanumeric characters (letters a-z, A-Z, numbers 0-9) and the underscore "_" character.
   b. Select one or more groups from the **Groups** drop-down list.

   > **NOTE:** Make sure that the **Active Directory User** toggle is set to the right (enabled).

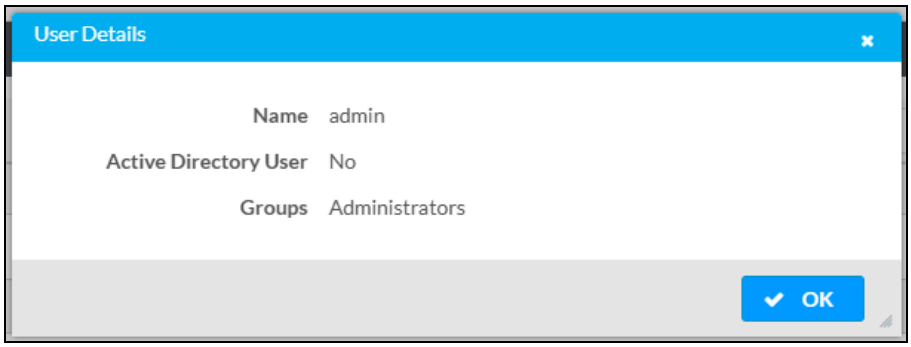
3. Select **OK** to save or select **Cancel** to cancel the changes.

Delete a User

To delete a user, select the delete icon in the **Actions** column. Select **Yes** when prompted to delete the user or **No** to cancel the deletion.

View User Details

Select the information icon in the **Actions** column to view information for the selected user. The **User Details** dialog displays the following information for the selected user.



The fields displayed in the **User Details** window are:

- **Name:** Displays the name of the selected user.
- **Active Directory User:** Displays whether the user is an Active Directory user.
- **Group:** Displays group(s) the selected user is part of.

Select **OK** to close the **User Details** window and return to the **Users** tab.

Update User Details

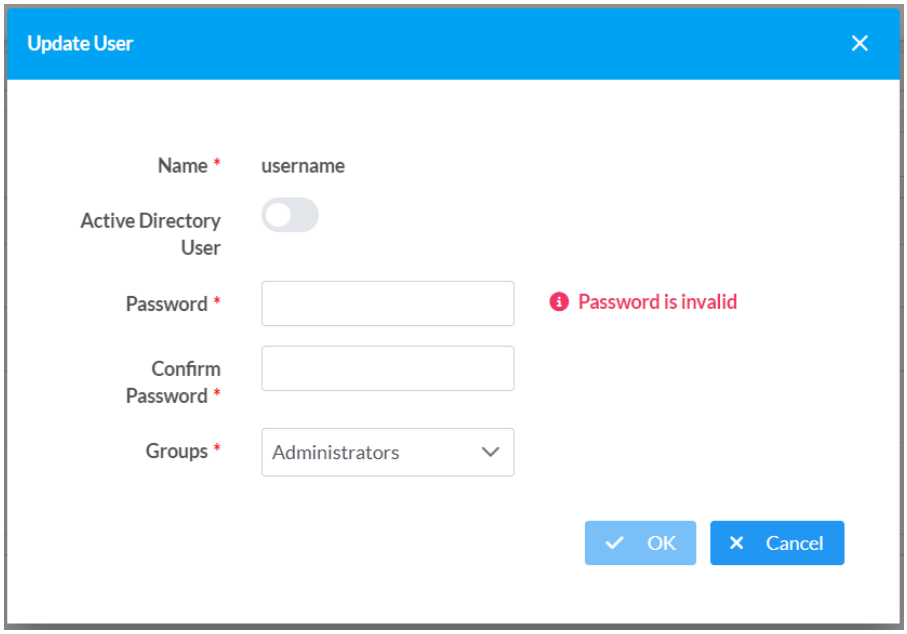
To update the details for an existing user:

1. Select the edit icon in the **Actions** column to update information for the selected user.
2. Set the **Active Directory User** toggle to the right if the user is an Active Directory user, or to the left if the user is not.
3. Enter a password in the **Password** field; re-enter the same password in the **Confirm Password** field.

4. Select one or more groups to assign the user to from the **Groups** drop-down list. Deselect any groups to remove the user from those groups.

   > **NOTE:** After a user is removed from a group, they lose any access rights associated with that group.

5. Select **OK** to save or select **Cancel** to cancel the changes.



> **NOTE:** The **Name** field is a read-only field that displays the username for the selected user. To change a username, the user must be deleted and a new user must be added.

Groups

Select the **Groups** tab to view and edit group settings. The **Groups** tab can be used to add local and Active Directory groups, remove local and Active Directory groups, and preview information about a group.

Use the **Search...** field to enter search term(s) and display groups that match the search criteria.

If groups listed in the **Groups** table span across multiple pages, navigate through the groups by selecting a page number or by using the left or right arrows at the bottom of the **Groups** pane to move forward or backward through the pages.

Each page can be set to display **5**, **10**, or **20** groups by using the drop-down list to the right of the navigation arrows.

Existing groups are displayed in a table and the following information is provided for each group:

- **Group Name:** Displays the name of the group.
- **AD Group:** Displays whether the group requires authentication using Active Directory.

- **Access Level:** Displays the predefined access level assigned to the group (**Administrator**, **Programmer**, **Operator**, **User**, or **Connect**).

Select the information icon in the **Actions** column to view detailed group information, or select the delete icon to delete a group.

Select **Create Group** in the **Groups** tab to create new group.

Create a Local Group

To create a local group:

1. Select **Create Group**.
2. In the **Create Group** dialog, enter the following:
    a. Enter the group name in the Name field.
    b. Assign the group access level by selecting a predefined access level (**Administrator**, **Connect**, **Operator**, **Programmer**, **User**) from the **Access Level** drop-down list.

    > **NOTE:** Make sure that the **Active Directory Group** toggle is set to the left (disabled).

3. Select **OK** to save. Select **Cancel** to cancel the changes.

Grant Access to an Active Directory Group

A group cannot be created or removed from the Active Directory server, but access can be granted to an existing Active Directory group.

Once the group is added, all members of that group will have access to the presentation system.

To grant access to an Active Directory group:

1. Select **Create Group**.
2. In the **Create Group** dialog enter the following:
    a. Enter the group name in the **Name** field (for example, "Engineering Group").

    > **NOTE:** Group names are case sensitive, and a space is a valid character that can be used in group names.

    b. Assign the group access level by selecting a predefined access level (**Administrator**, **Connect**, **Operator**, **Programmer**, **User**) from the **Access Level** drop-down list.

    > **NOTE:** Make sure that the Active Directory Group toggle is set to the right (enabled).

3. Select **OK** to save. Select **Cancel** to cancel the changes.

Delete a Group

Select the delete icon in the **Actions** column to delete a group. Select **Yes** when prompted to delete the group or **No** to cancel the deletion.

When a group is deleted, users in the group are not removed from the device or Active Directory server. However, because a user's access level is inherited from a group(s), users within the deleted group will lose access rights associated with the group.

View Group Details

Select the information icon in the **Actions** column to view information for the selected group. The **Group Details** dialog lists the following information for the selected group:

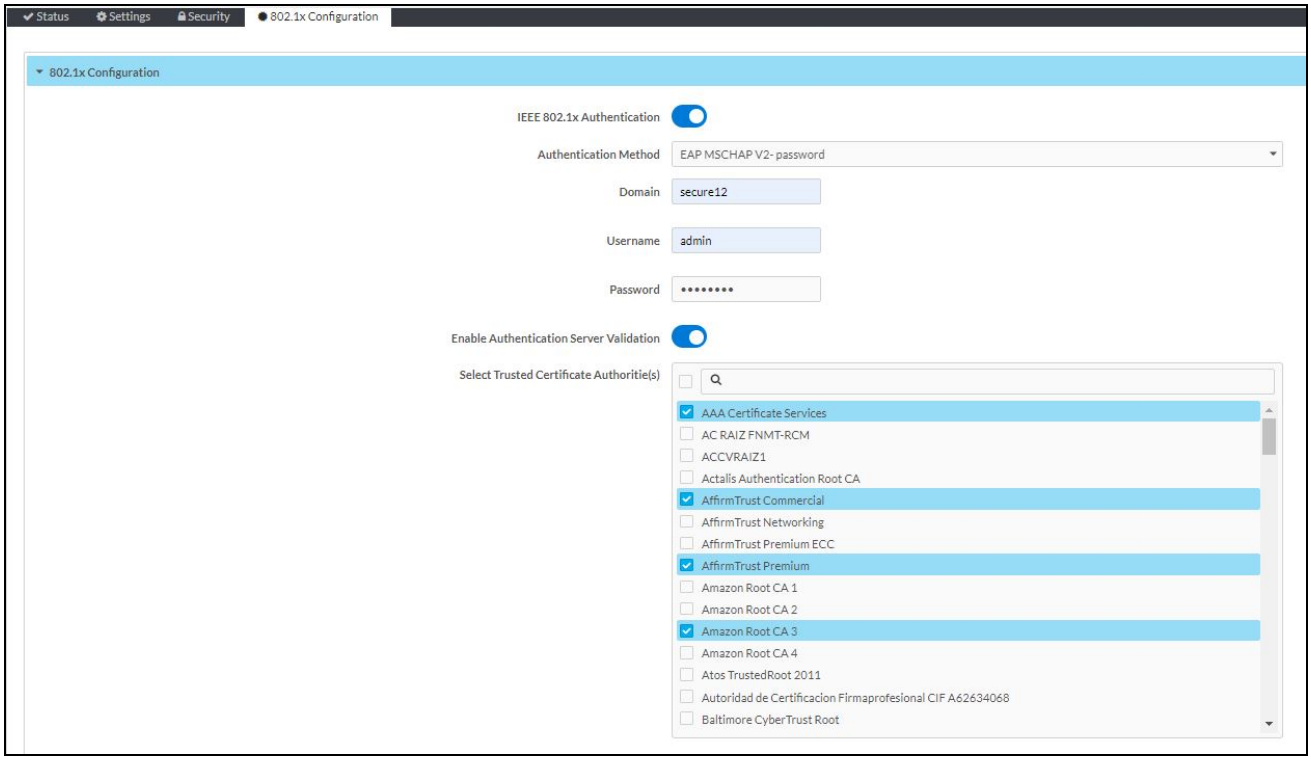
- **Name:** Displays the name of the group.
- **Access Level:** Displays the access level of the group and its users.
- **Active Directory Group:** Displays whether the group is an Active Directory group.

Select **OK** to close the **Group Details** dialog and return to the **Groups** tab.

802.1X Configuration

HD-PS presentation systems have built-in support for the 802.1X standard (an IEEE network standard designed to enhance the security of wireless and Ethernet LANs, relying on the exchange of messages between the device and the network's host, or authentication server), allowing communication with the authentication server and access to protected corporate networks.

The **802.1X Configuration** page can be accessed at any time by selecting the **802.1X Configuration** tab of the interface.



Configure the Device for 802.1X Authentication

To configure the presentation system for 802.1X authentication:

1. Set the **IEEE 802.1X Authentication** toggle to the right. This will enable all options on the 802.1X subsection.
2. Select an **Authentication Method**: Choose between **EAP-TLS Certificate** or **EAP-MSCHAP V2 Password**.
3. Do one of the following:
   - If **EAP-TLS Certificate** was selected: Select **Action/Manage Certificates** to upload the required machine certificate. The machine certificate is an encrypted file that will be supplied by the network administrator, along with the certificate password.
   - If **EAP-MSCHAP V2 Password** was selected: Enter the username and password supplied by the network administrator into the **Username** and **Password** fields, respectively. This method does not require the use of a machine certificate, only the user name and password credentials.
4. If you enabled the **Enable Authentication Server Validation** option, this will enable the **Select Trusted Certificate Authoritie(s)** list box which contains signed Trusted Certificate Authorities (CAs) preloaded onto the presentation system.

   Select the check box next to each CA whose certificate can be used for server validation, as specified by the network administrator.

   If the network does not use any of the listed certificates, the network administrator must provide a certificate, which must be uploaded manually via the **Manage Certificates** function in the **Action** menu. Refer to Manage Certificates on page 124.
5. If required, type the domain name of the network in the **Domain** field.
6. When the 802.1X settings are configured as desired, select **Save Changes** to save the changes to the device and reboot it. Select **Revert** to cancel any changes.

Resources

The following resources are provided for HD-PS presentation systems.

> **NOTE:** You may need to provide your Crestron.com web account credentials when prompted to access some of the following resources.

Crestron Support and Training

- Crestron True Blue Support
- Crestron Resource Library
- Crestron Online Help (OLH)
- Crestron Technical Institute (CTI) Portal

Programmer and Developer Resources

- help.crestron.com: Provides help files for Crestron programming tools such as SIMPL, SIMPL#, and Crestron Toolbox™ software
- developer.crestron.com: Provides developer documentation for Crestron APIs, SDKs, and other development tools

Product Certificates

To search for product certificates, refer to the Product Certificates section of the Crestron Resource Library.

Related Documentation

- Crestron Technical Documentation

Crestron Electronics, Inc.
15 Volvo Drive, Rockleigh, NJ 07647
Tel: 888.CRESTRON
Fax: 201.767.7656
www.crestron.com

Product Manual — Doc. 9587A
04/06/26
Specifications subject to
change without notice.