HD-RX-4K-x10-C-E(-SW4)

4K Multiformat AV Switch and Receiver

Web Interface Configuration Guide

Crestron Electronics, Inc.

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

Regulatory Model: M1845002

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Contents

Introduction

The HD-RX-4K-x10-C-E(-SW4) is a multiformat AV switch and receiver which provides enhanced remote HDMI video source switching and audio presentation capabilities in areas such as classrooms and conference rooms. The HD-RX-4K-x10-C-E(-SW4) has two HDMI® inputs and one scaling HDMI output.

In addition, the HD-RX-4K-410-C-E(-SW4) provides two DM Lite® inputs and the HD-RX-4K-510-C-E(-SW4) provides three DM Lite inputs for connection to DM Lite transmitters.

The HD-RX-4K-x10-C-E-SW4 models include a 4-port Gigabit Ethernet switch. Two of the ports (Ports 3 and 4) are PoE+ power sourcing equipment ports that can be connected to two PoE+ powered devices simultaneously.

Web Interface

The web interface of the HD-RX-4K-x10-C-E(-SW4) enables you to view device status information and configure routing, input, output, network, and device settings.

Access the Web Interface

The web interface is accessed from a web browser. The following table lists various operating systems and the corresponding supported web browsers.

Operating System and Supported Web Browsers

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

To access the web interface, do either of the following:

- Open the web interface directly in a web browser.
- Open a web browser from within the Crestron Toolbox™ application.

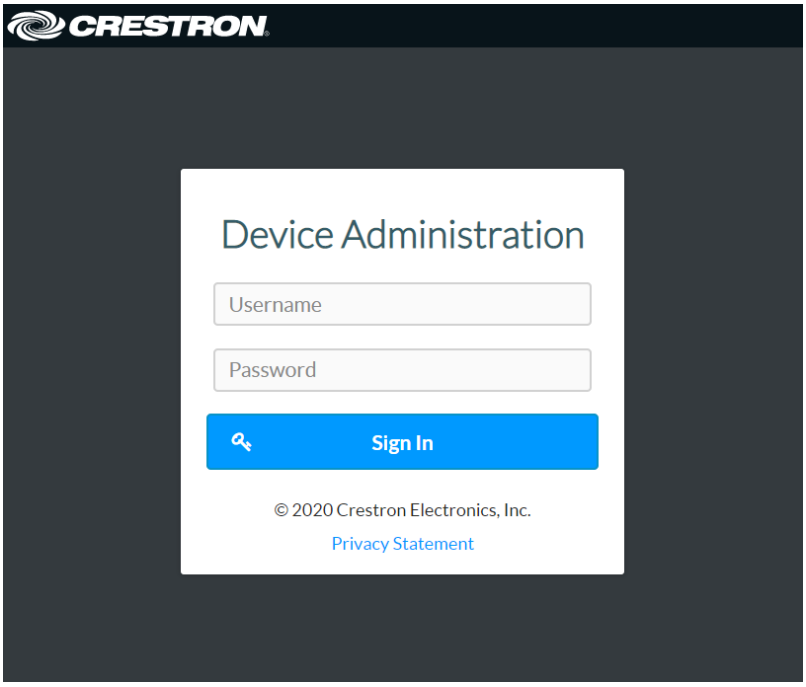
Access Web Interface with a Web Browser

1. Enter the IP address of the HD-RX-4K-x10-C-E(-SW4) into a web browser.

   NOTE: To obtain the IP address, press the **Setup** button on the HD-RX-4K-x10-C-E(-SW4) to display the IP address on the HDMI output. The IP address is displayed for 20 seconds.

2. Enter your credentials in the **Device Administration** dialog. The user name and password are case sensitive. The default user name is *admin*, and the default password is *admin*.

   NOTE: For enhanced security, it is recommended that the default password be changed.



3. Click **Sign In**.

Access Web Interface with Crestron Toolbox Application

To access the web interface by opening a web browser within the Crestron Toolbox application, do the following:

1. Open the Crestron Toolbox application.
2. From the **Tools** menu, select **Device Discovery Tool**. You can also access the Device Discovery Tool by clicking the Device Discovery Tool button in the Crestron Toolbox toolbar. The HD-RX-4K-x10-C-E(-SW4) is discovered and is listed in the device list on the left side of the screen. The associated host name, IP address, and firmware version are also 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.

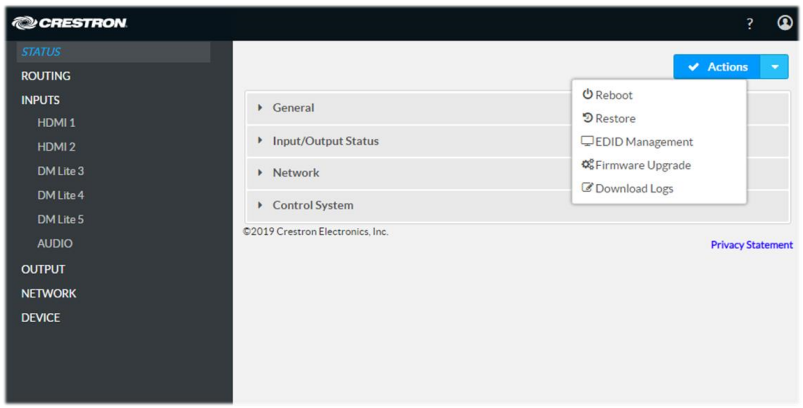
3. In the Device Discovery Tool list, double-click the HD-RX-4K-x10-C-E(-SW4) device.
4. Enter your credentials in the **Authentication** dialog that opens, and then click **Log In**.
5. Click **Web Configuration** in the Configuration page displayed on the left side of the Device Discovery Tool.

Actions Menu

The Actions drop-down menu is displayed at the top right of each page and provides quick access to common device functionality of the HD-RX-4K-x10-C-E(-SW4), such as:

- Rebooting the device
- Restoring factory default settings
- EDID management
- Performing firmware upgrades
- Downloading logs

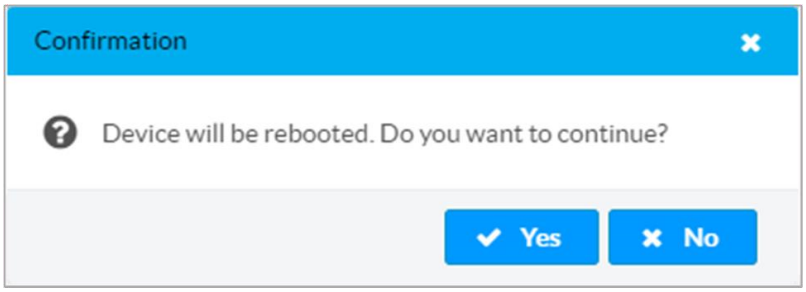
The **Actions** drop-down menu can be accessed at any time by clicking the drop-down arrow of the **Actions** drop-down menu.



Rebooting the Device

Certain changes to the settings may require that the HD-RX-4K-x10-C-E(-SW4) be rebooted to take effect. To reboot the device, do the following:

1. Click **Reboot** in the **Actions** drop-down menu. The **Confirmation** message box appears.



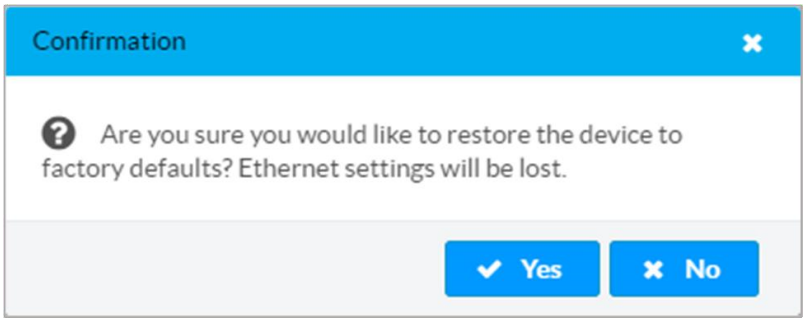
2. Click **Yes** to reboot the device. The **Reboot** message box appears.

   Wait for the device reboot to complete before attempting to reconnect to the device.

Restoring Factory Default Settings

1. Click **Restore** in the **Actions** drop-down menu to restore the settings of the HD-RX-4K-x10-C-E(-SW4) to factory defaults.

   NOTE: When settings are restored, all settings, including the network settings, will revert to the factory default. If a static IP address is set, restoring the device to factory default settings will revert the IP address to the default DHCP mode.

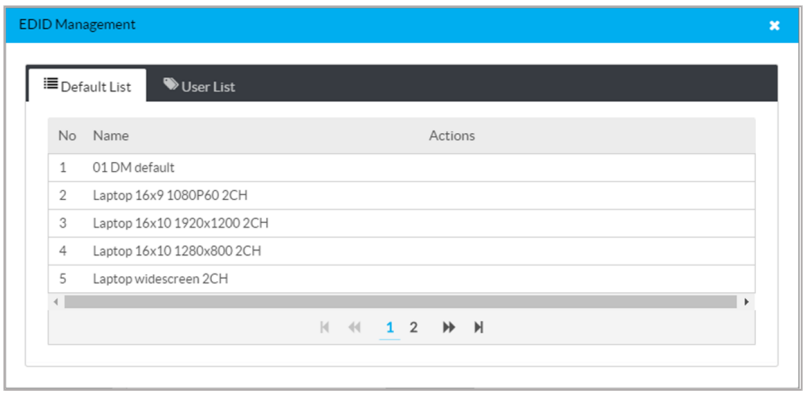


2. Click **Yes** in the **Confirmation** dialog to restore the HD-RX-4K-x10-C-E(-SW4) to factory default settings. Click **No** to cancel the restore operation.

   A dialog is displayed again, indicating that the Restore process was successful and that the device rebooted.

EDID Management

The **EDID Management** dialog displays available built-in EDID files and enables loading of a custom EDID file.



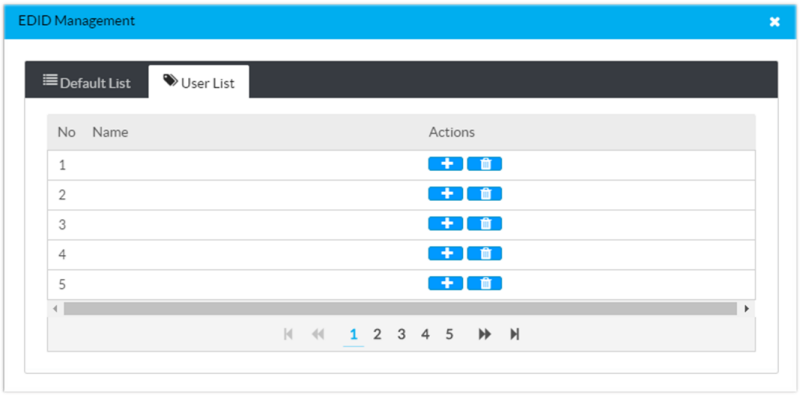
Built-in EDIDs are displayed in the **Default List** tab of the **EDID Management** dialog. The following EDIDs are available:

- 01 DM Default
- Laptop 16x9 1080P60 2CH

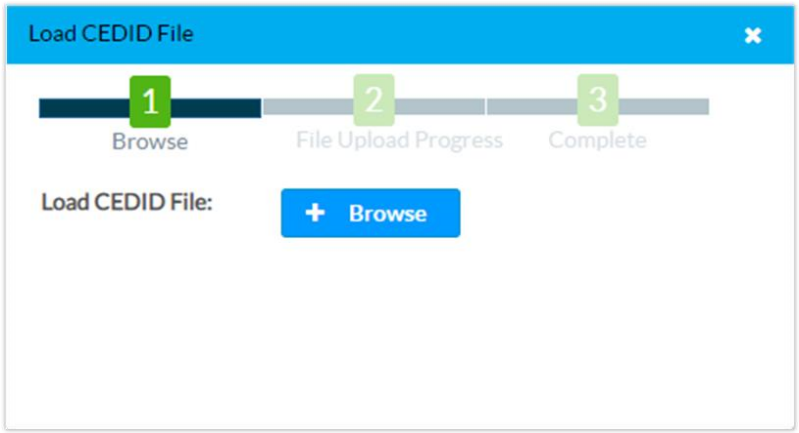
- Laptop 16x10 1920x1200 2CH
- Laptop 16x10 1280x800 2CH
- Laptop widescreen 2CH
- Laptop 16x9 1080P50 2CH
- DM default 4k 30Hz 2CH
- DM Default VGA
- DM Default 4k 60Hz 2CH

Loading a Custom EDID File

1. In the **EDID Management** dialog, click the **User List** tab and then click the + button in any available row of the table.

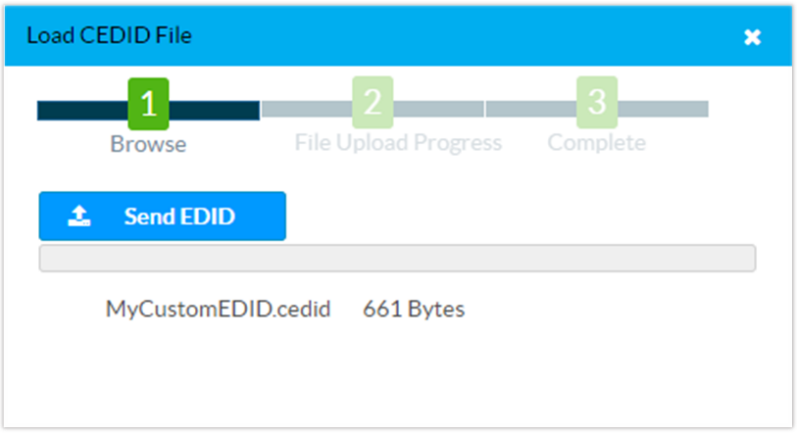


2. Click **+ Browse** in the **Load CEDID File** dialog:



3. In **Windows Explorer**, navigate to the desired custom EDID file (.cedid extension), select the file, and then click **Open**.

   The name of the selected custom EDID file is displayed below the progress bar.



4. Click **Send EDID**. A prompt appears asking for confirmation that the EDID file be uploaded to the input device.
5. Click **OK**.

After the EDID file is sent successfully, the following occurs:

- In the **Global EDID** section of the **INPUTS** page, the custom EDID file name is added to the **Send EDID to All inputs** drop-down list.
- In the **Global Inputs** section of the **INPUTS** page, the custom EDID file name is added to each individual input **EDID** drop-down list.

NOTE: Any custom EDIDs will be listed (in alphabetical order) after the last built-in EDID.

Deleting a Custom EDID File

NOTE: Only custom EDID files can be deleted. Built-in EDID files cannot be deleted.

To delete a custom EDID file:

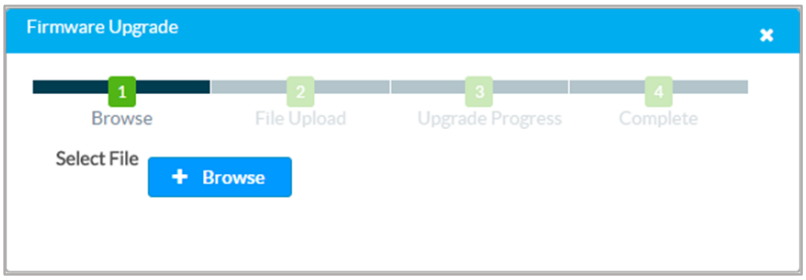
1. Click the **User List** tab and then click the trashcan button in the row of the custom EDID file that will be deleted.
2. Click **Yes** in the **Confirmation** dialog to confirm the delete operation. Click **No** to cancel the operation.

After a successful deletion, the custom EDID file is removed from the **Send EDID to All Inputs** drop-down list and also from each individual input EDID drop-down list in the **Global Inputs** sections of the **INPUTS** page.

When a custom EDID file is deleted, the EDID reverts to the default EDID. The default EDID for an HDMI input is DM Default EDID. The default EDID for the VGA input is DM Default VGA EDID.

Upgrading Firmware

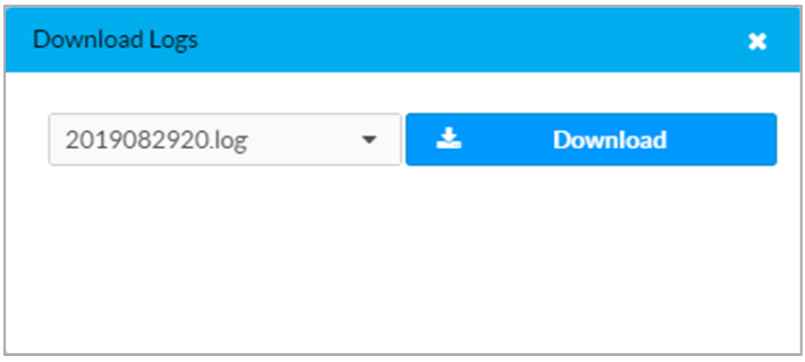
1. Click **Firmware Upgrade** in the **Actions** drop-down menu.
2. In the **Firmware Upgrade** dialog, click **+ Browse**.



3. Locate and select the desired firmware file, and then click **Open**. The selected firmware file name is displayed in the **Firmware Upgrade** dialog.
4. Click **Load** and wait for the progress bar to complete and for the **OK** button in the message to become clickable.
5. Click **OK**. The device with new firmware can now be accessed.

Downloading Device Logs

1. Click **Download Logs** in the **Actions** drop-down menu.

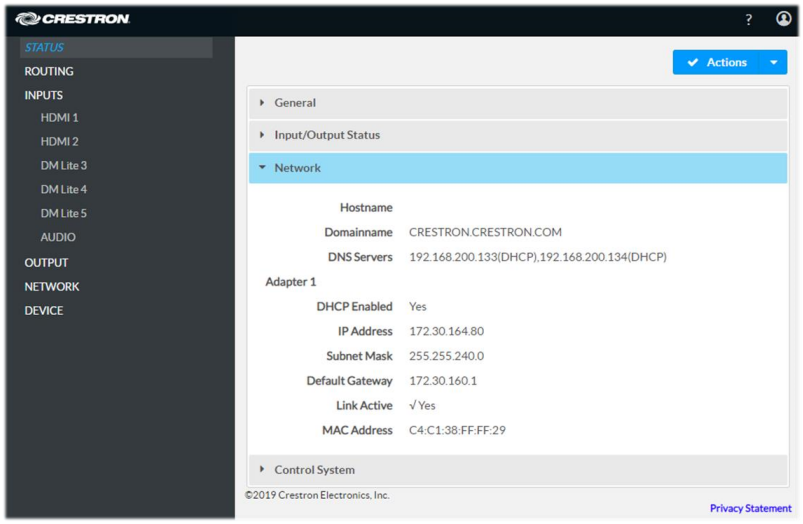


2. Select the desired log file from the combo box and click **Download**. The log file (.log) is downloaded to the **Downloads** folder of the PC or mobile device.

Status

The Status page is the first page displayed when starting the web interface of the HD-RX-4K-x10-C-E(-SW4). It displays general information about the HD-RX-4K-x10-C-E(-SW4) (such as model name, serial number, and firmware version), current network settings (such as host name and IP address, etc.), as well as information about the connection to the control system.

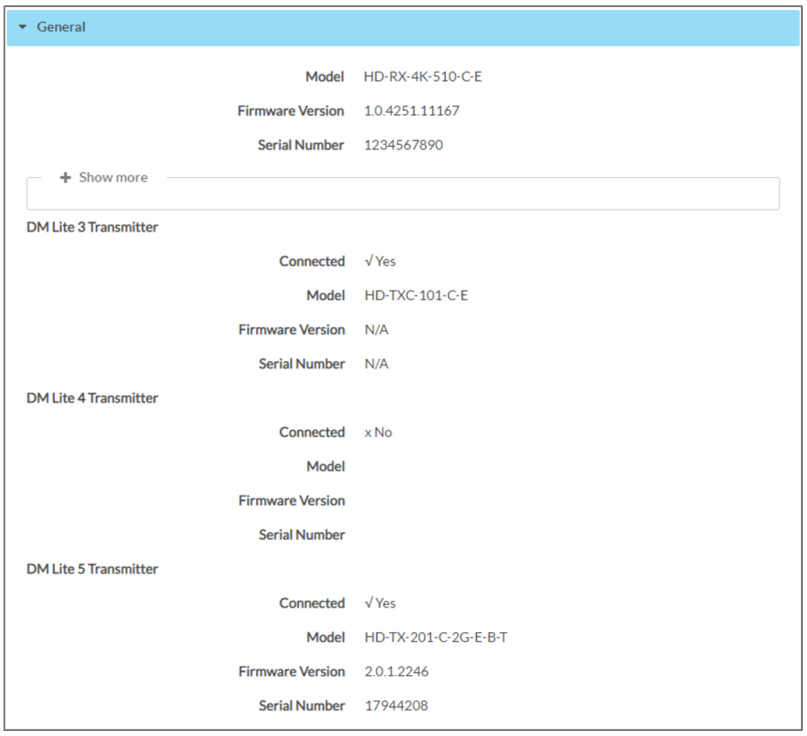
The Status page can be accessed at any time by clicking the **STATUS** tab in the navigation bar of the web interface.



Information displayed on the Status page is organized into different sections.

General

General: Displays the **Model**, **Firmware Version**, and **Serial Number** of the HD-RX-4K-x10-C-E(-SW4).



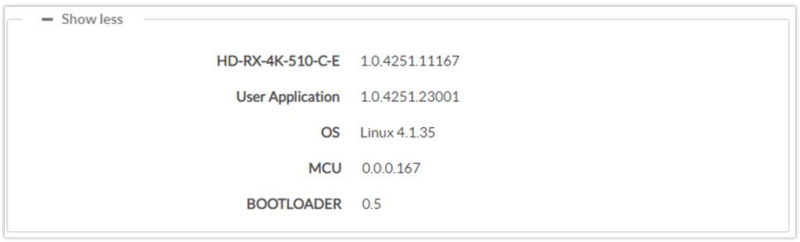
For each DM Lite® input, the following data is reported:

- **DM Lite "Input Name" Transmitter:** "Input Name" matches the input name defined on the **INPUTS** page or the corresponding DM Lite input page. For example, the default name for HD-RX-4K-x10-C-E(-SW4) Input 2 is "DM Lite 2", the name displayed is: "DM Lite 2 Transmitter".

  If the input name was changed programmatically or through the **INPUT** page or the corresponding DM Lite input page of the web interface, the name will get updated in real time. For example, if the name is changed to "DML 2" the label will read: "DML 2 Transmitter".

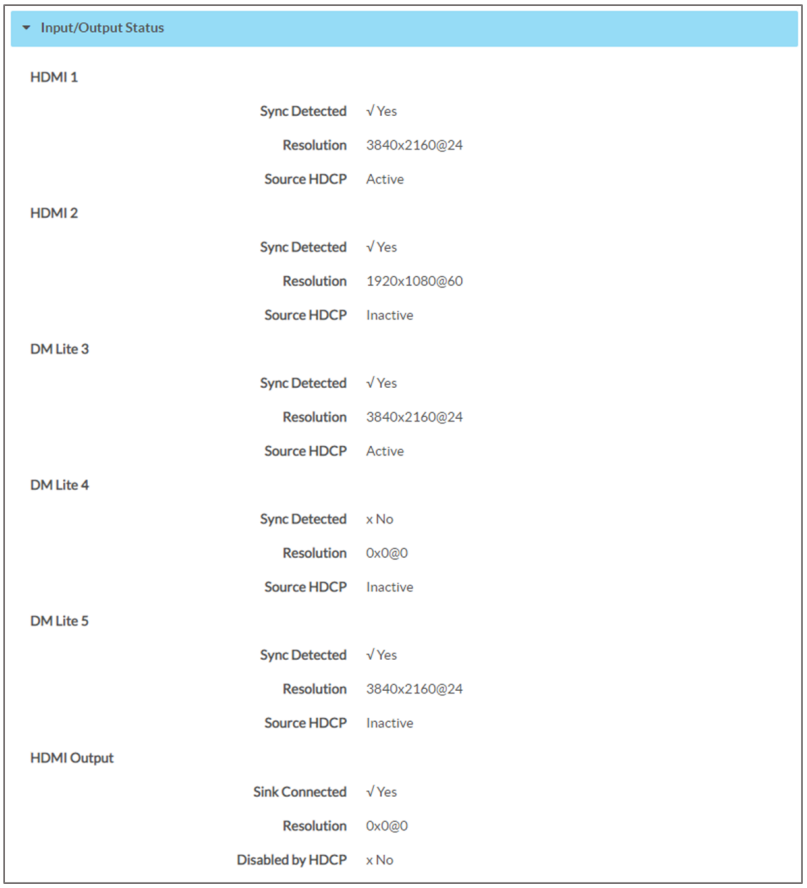
- **Connected: Yes**, if a DM Lite transmitter is connected or **No**, if DM Lite transmitter is not detected
- **Model:** Model of the connected DM Lite transmitter, for example, HD-TX-301-C-E. If a DM Lite transmitter is not detected, no information is displayed.
- **Firmware version:** Firmware version as reported from the connected DM Lite transmitter. "N/A" will be displayed in case that the transmitter's firmware version is not available (for HD-TX-101 transmitters). If a DM Lite transmitter is not detected, no information is displayed.
- **Serial number:** Serial number as reported from the connected DM Lite transmitter. "N/A" will be displayed in case that the transmitter's serial number is not available (for HD-TX-101 transmitters). If a DM Lite transmitter is not detected, no information is displayed.

Click **+ Show More** to review additional information about the HD-RX-4K-x10-C-E(-SW4):



Input/Output Status

The **Input/Output Status** section displays information about available inputs and outputs of HD-RX-4K-x10-C-E(-SW4).



Input Name

- **Sync detected: Yes**, if connection is detected or **No**, if connection is not detected.
- **Resolution:** Resolution when video with valid resolution is detected. If no video is detected, the reported resolution will be **0x0@0**.
- **Source HDCP:** Reports **Active** when HDCP source is connected. Reports **Inactive** when non-HDCP source or no source is connected.

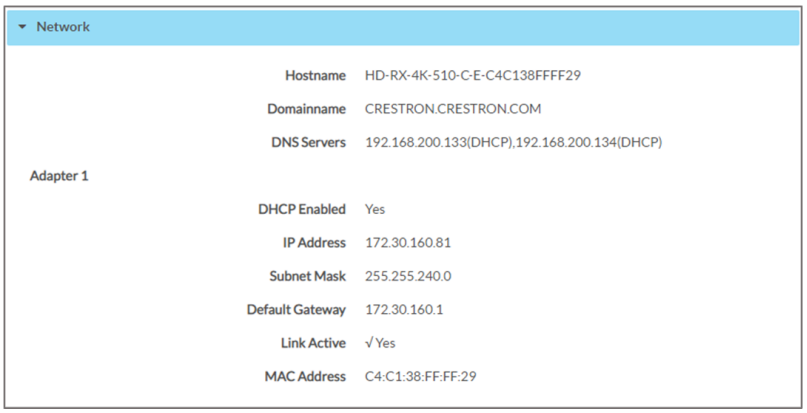
Output

- **Sink Connected: Yes**, if connection is detected or **No**, if connection is not detected.
- **Resolution:**
  - Displays **0x0@0** when the video signal is not being transmitted. For example, no HDMI cable is connected.
  - Displays detected resolution when video signal is being transmitted. In the event an HDMI cable is connected to the display/downstream device, but the device is turned off, the last detected resolution will be displayed until a new video signal is received.
- **Disabled by HDCP: Yes** or **No**.

NOTE: As the sources, transmitters and sink are connected or disconnected, information is updated in real time without requiring a page refresh.

Network

The Network section displays network-related information about the HD-RX-4K-x10-C-E(-SW4), including the **Hostname**, **Domainname**, and **DNS Servers**.



NOTE: By default the host name of HD-RX-4K-x10-C-E(-SW4) consists of the model name followed by the MAC address of the device. For example, HD-RX-4K-510-C-E-C4C138FFFF29.

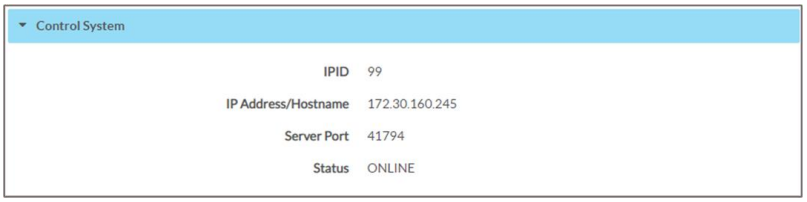
Additionally, the following IPv4 addressing information is provided:

- **DHCP Enabled**: (**Yes** or **No**)
- **IP Address**

- **Subnet Mask**
- **Default Gateway**
- **Link Active**: (**Yes** or **No**)
- **MAC Address**

Control System

The Control System section shows connection information, consisting of the following:



IP ID: Reports the currently used IP ID of the HD-RX-4K-x10-C-E(-SW4).

IP Address/Hostname: IP address of the control system.

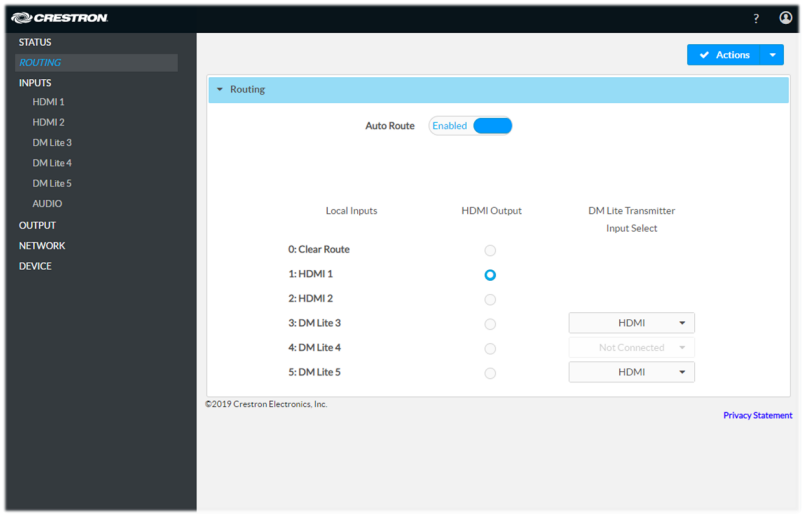
Server Port: The default port is set to **41794**.

Status: **OFFLINE** or **ONLINE**.

Routing

The **Routing** page can be used to automatically or manually route input(s) on the receiver (local inputs) or any DM Lite transmitter input (remote inputs) to the HDMI output. The default input and output names also can be changed if desired.

The **Routing** page can be accessed at any time by clicking the **ROUTING** tab in the navigation bar of the web interface.



The default name of the HDMI output of the HD-RX-4K-x10-C-E(-SW4) is **HDMI Output**. The default names of the local HDMI inputs on the receiver are **HDMI1** and **HDMI2**. The default names of the remote inputs range from **DM Lite 3** to **DM Lite 4** for the HD-RX-4K-410-C-E(-SW4) or **DM Lite 5** for the HD-RX-4K-510-C-E(-SW4).

Move the **Auto Route** slider to **Enabled** or **Disabled** to specify whether automatic input routing of inputs will be enabled or disabled. When automatic input routing is enabled and Priority Routing is disabled, the HD-RX-4K-x10-C-E(-SW4) will do the following:

- Automatically route the last connected input.
- Remember the order in which sources were connected to the inputs; the device will update its connection order status if a non-routed source is disconnected.

NOTE: Auto Route mode can be set from the front panel, SIMPL program, or the web configuration interfaces of the HD-RX-4K-x10-C-E(-SW4), as well as the transmitter.

To manually route a local input to the output, select the radio button next to the name of the corresponding input. The input is routed to the output.

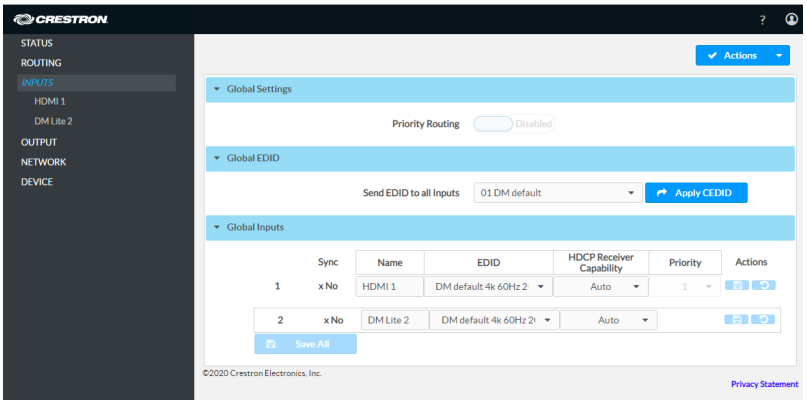
When routing DM Lite inputs, select the desired DM Lite transmitter input from the corresponding drop-down list. If the DM Lite transmitter is not connected, the drop-down selection menu is grayed out and displays **Not Connected**.

Click **Clear Route** to clear the route.

Inputs

The Inputs page can be used to configure the settings of the HD-RX-4K-x10-C-E(-SW4) HDMI inputs by renaming one or more inputs, changing and applying EDID to specific inputs or to all inputs at once (Global EDID), and enabling or disabling HDCP (High-bandwidth Digital Content Protection) on individual inputs.

The Inputs page can be accessed at any time by clicking the **INPUTS** tab in the navigation bar of the web interface.



Global EDID

Apply/Send Global EDID

In the **Send EDID to all inputs** drop-down list, select a built-in EDID file from a list of built-in predefined EDID files.

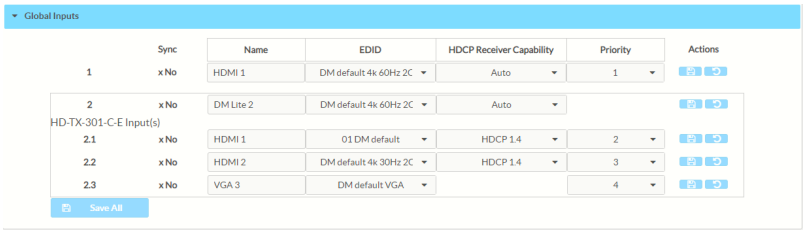
- Copy Output - will apply the EDID of the display attached to the HDMI Output to the selected input
- 01 DM Default
- Laptop 16x9 1080p60 2CH
- Laptop 16x10 1920x1200 2CH
- Laptop 16x10 1280x800 2CH
- Laptop widescreen 2CH
- Laptop 16x9 1080p50 2CH
- DM default 4k 30Hz 2CH
- DM Default VGA
- DM Default 4k 60Hz 2CH

Click **Apply CEDID**.

The selected EDID is automatically sent to all inputs and appears in the EDID drop-down list in the **Global Inputs** section of the page.

Global Inputs

The Global Inputs section displays information and enables settings to be modified for available local and transmitter inputs. DM Lite inputs are listed below the detected transmitter model name.



The following information about the HDMI inputs and DM Lite inputs can be viewed and configured in this section of the Inputs page.

- **Input Number (read-only):** Indicates the input number. Input numbers of transmitter inputs are shown in the format "X.Y", where X is the input number of the corresponding DM Lite input and Y is the transmitter input number.
- **Sync (read-only):** Indicates whether a valid video signal is detected at the corresponding input.

  Yes indicates that a source is detected.

  No indicates that a source is not detected.
- **Name:** Displays the name of the local or transmitter input. To modify the name of the input, enter the new name in this field.
- **EDID:** Displays the selected pre-defined EDID file. To modify the existing setting, select an EDID from the drop-down list.
- **HDCP Receiver Capability:** Specifies whether HDCP Support for this input will be Disabled, Auto, HDCP 1.4, or HDCP 2.2. To modify the existing setting, select the desired option from the drop-down list.

NOTE: VGA inputs and HD-TX(C)-101-C(-1G)-E transmitter HDMI inputs do not support setting HDCP receiver capability. As a result, the HDCP Receiver Capability drop-down box will not be displayed for those inputs.

- **Priority:** When Priority Routing is enabled, specifies the priority level of each input.

  Priority levels for automatic routing of an input range from Priority 1 (highest priority) to Priority 4 (lowest priority). Automatic routing of an input occurs according to the routing priority level and the detection of a source at the input. Routing of an input remains until the input is disconnected. If the input that is being routed is disconnected, automatic routing switches to another input based on the routing priority level and the detection of a source at the input. If Priority 1 is set for all inputs, the last connected input is automatically routed.

> NOTE: Priority can only be changed when Priority Routing is enabled.

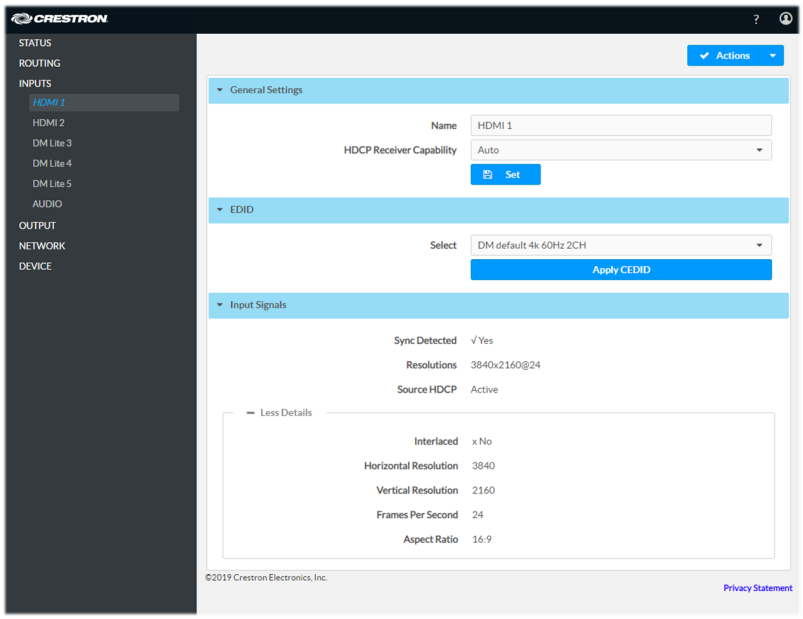
Click **Save** in the **Actions** column of a specific input to save changes made in the fields of that HDMI Input.

Click **Revert** to revert to the previous settings without saving.

Click **Save All** to save all changes.

HDMI Inputs

The **HDMI Input 1** or **HDMI Input 2** page can be accessed at any time by clicking the arrow next to the **INPUTS** tab and then clicking **HDMI INPUT 1** or **HDMI INPUT 2** in the navigation bar of the web interface.



General Settings

Modify the name of the HDMI input by editing the existing name or entering a new name in the **Name** field.

Use the **HDCP Receiver Capability** drop-down list to specify whether the HDCP Support capability for this input will be **Disabled**, **Auto**, **HDCP 1.4**, or **HDCP 2.2**.

Click the **Set** button to save any changes made in the **Name** or **HDCP Receiver Capability** fields. Changes take effect immediately and the new stream routing name is reflected on the **Inputs** page.

EDID

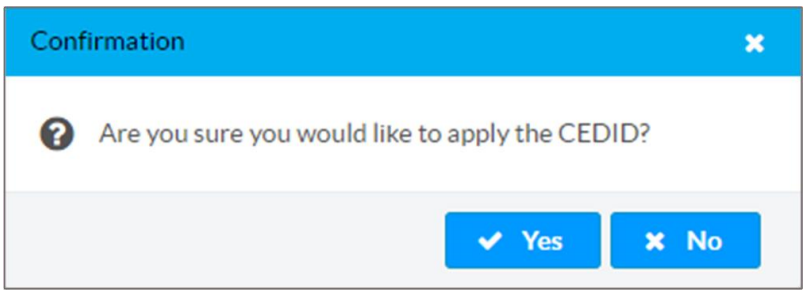
The default EDID for local HDMI and DM Lite inputs is DM Default 4k 60Hz 2CH. The default EDIDs for transmitter inputs are as follows:

- **HDMI Inputs:** 01 DM Default
- **VGA inputs:** DM Default VGA

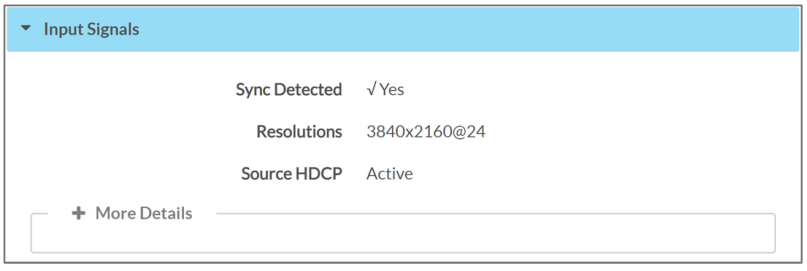
1. In the **Select** drop-down list, select an EDID file from the list of built-in predefined EDID files. An error message will be displayed if incorrect EDID is assigned to the input, for example, if attempting to assign EDID without a CEA block to an HDMI.

   Predefined EDIDs are as follows:

   - Copy Output - Will apply the EDID of the display attached to the HDMI Output to the selected input.
   - 01 DM Default
   - Laptop 16x9 1080p60 2CH
   - Laptop 16x10 1920x1200 2CH
   - Laptop 16x10 1280x800 2CH
   - Laptop widescreen 2CH
   - Laptop 16x9 1080p50 2CH
   - DM default 4k 30Hz 2CH
   - DM Default VGA
   - DM Default 4k 60Hz 2CH
2. Click **Apply CEDID** to apply the EDID to the HDMI input.
3. In the **Confirmation** dialog, click **Yes** to load the selected EDID file. Click **No** to cancel the operation.



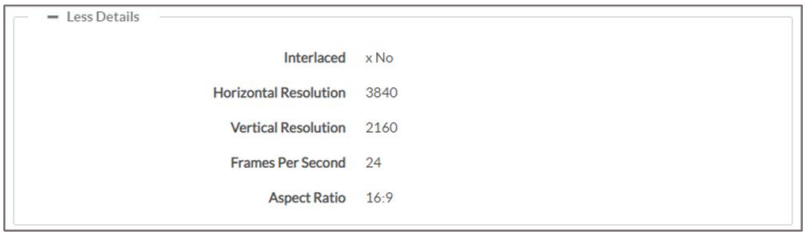
Input Signals



The **Input Signals** section displays the following information about the HDMI input signal.

- **Sync Detected:** Indicates whether video sync levels are detected at the HDMI input.
- **Resolution:** Displays the input signal resolution. **0x0@0** will be displayed if video signal is not detected.
- **Source HDCP:** Indicates the presence of HDCP (High-bandwidth Digital Content Protection), which requires compatible players and displays. Source HDCP will display **Inactive** if an input signal is not detected.

Click **+ More Details** to view additional information about the HDMI input such as the HDCP state, horizontal and vertical resolution, aspect ratio, audio format, audio channels and more.

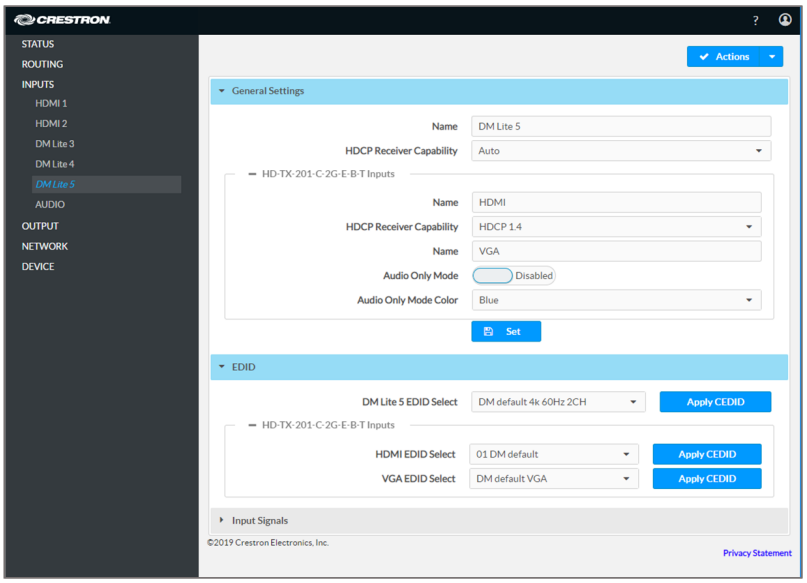


- **Interlaced:** Indicates whether the scanning method used is interlaced (**Yes**) or progressive (**No**).
- **Horizontal Resolution:** Displays the horizontal resolution of the input signal. Reported values range from 0 (source is not connected) to 4096 pixels.
- **Vertical Resolution:** Displays the vertical resolution of the input signal. Reported values range from 0 (source is not connected) to 2160 lines.
- **Frames per Second:** Displays the frame rate of the input signal. Reported values range from 0 (source is not connected) to 120.
- **Aspect Ratio:** Displays the aspect ratio of the input signal. Valid values are:
    - No Signal
    - 5:4
    - 4:3
    - 16:10
    - 16:9

Click **–Less Details** to hide this section from view.

DM Lite Inputs

The **DM Lite 3 Input**, **DM Lite 4 Input** or **DM Lite 5 Input** (HD-RX-4K-510-C-E[-SW4] only) page can be accessed at any time by expanding the **INPUTS** section and then clicking **DM Lite 3**, **DM Lite 4** or **DM Lite 5** in the navigation bar of the web interface.

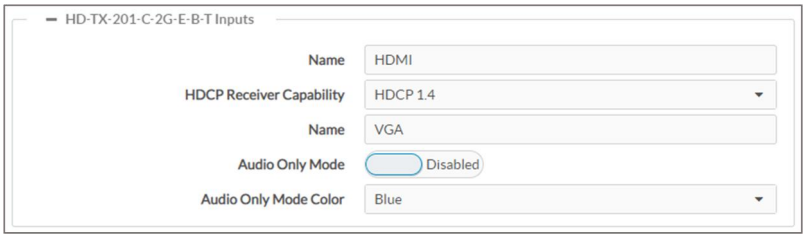


General Settings

Modify the name of this DM Lite input by editing the existing name or entering a brand new name in the **Name** field. Valid name can consist of up to 32 alphanumeric characters.

Use the **HDCP Receiver Capability** drop-down list to specify whether the HDCP Support capability for this input will be Disabled, Auto, HDCP 1.4 or HDCP 2.2.

Transmitter Inputs Settings

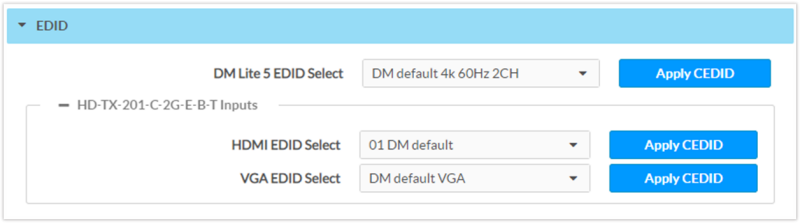


NOTE: Not all transmitters will have the same controls. Multiple Name and/or HDCP Receiver Capability fields will be displayed for transmitters with multiple inputs.

- **Name (each input):** Modify the name of one or more transmitter inputs by editing the corresponding existing name or entering a brand new name.
- **HDCP Receiver Capability:** HDMI, DP or USB-C inputs.
- **Audio Only Mode (VGA input):** Move the slider to **Enabled** to allow analog audio to pass without having the VGA video present.
- **Audio Only Mode Color (VGA input):** Select Audio Only mode color from the drop down list. By default, the selected color is Blue.

Click **Set** to save any changes made in the **Name**, **HDCP Receiver Capability** and/or any **Transmitter Inputs** fields. Any changes will take effect immediately and the new/edited name is also reflected in the **Inputs** page.

EDID

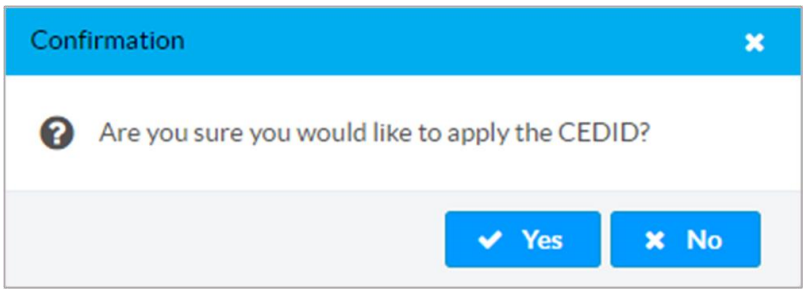


Predefined EDIDs for the DM Lite inputs are as follows:

- Copy Output – Will apply the EDID of the display attached to the HDMI Output to the selected input.
- 01 DM Default
- Laptop 16x9 1080p60 22CH
- Laptop 16x10 1920x1200 2CH
- Laptop 16x10 1280x800 2CH
- Laptop widescreen 2CH
- Laptop 16x9 1080p50 2CH
- DM default 4k 30Hz 2CH
- DM Default VGA
- DM Default 4k 60Hz 2CH (default)

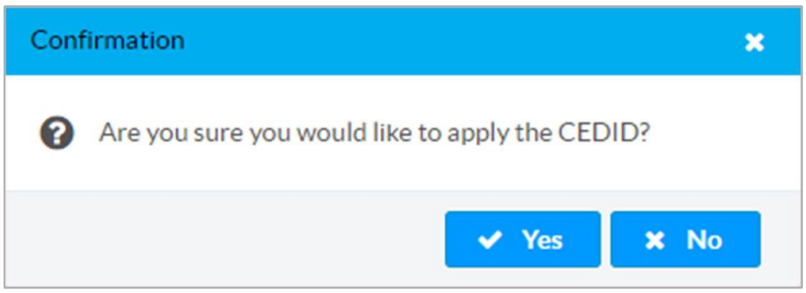
Applying EDID to the DM Lite Input

1. In the **DM Lite # EDID Select** drop down list, select an EDID file from the list of built-in predefined EDID or custom uploaded EDID files. An error message will be displayed if an incorrect EDID is assigned to the input.
2. Click **Apply CEDID** to apply the EDID to the DM Lite input.
3. In the **Confirmation** dialog click **Yes** to load the selected EDID file. Click **No** to cancel the operation:



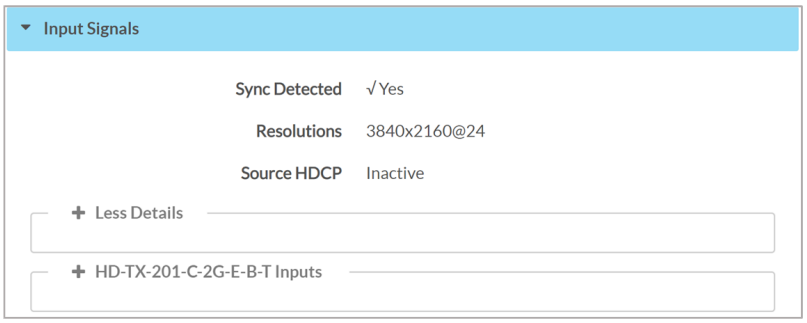
Applying EDID to a Transmitter Input

1. In the **HDMI EDID Select** or **VGA EDID Select** drop down list, select an EDID file from the list of built-in predefined EDID or custom uploaded EDID files. An error message will be displayed if an incorrect EDID is assigned to the input.
2. Click the corresponding **Apply CEDID** button to apply the selected EDID to the corresponding transmitter input.
3. In the **Confirmation** dialog click **Yes** to load the selected EDID file. Click **No** to cancel the operation.



Input Signals

The Input Signals section displays the following read-only information about the input signal on the DM Lite input:



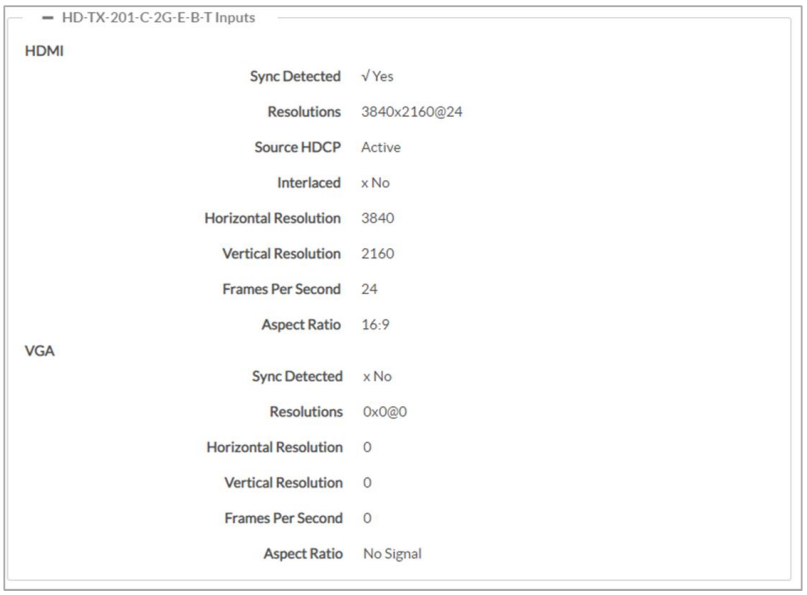
- **Sync Detected:** Indicates if video sync levels are detected at the input.
- **Resolution:** Reports the detected resolution.
- **Source HDCP:** Indicates the presence of HDCP.

Click **+ More Details** to view additional information about the DM Lite input settings. The **+ More Details** section displays additional details about the HDCP state, horizontal and vertical resolution, aspect ratio, audio format and audio channels and more:

- **Interlaced:** Indicates whether the input signal is interlaced (Yes) or progressive (No). 'No' is also displayed when a source is not connected.
- **Horizontal Resolution:** Reports the horizontal resolution of the input signal. Reported values range from 0 (source is not connected) to 4096 pixels.
- **Vertical Resolution:** Reports the vertical resolution. Reported values range from 0 (source is not connected) to 2160 lines.
- **Frames per Second:** Reports the frame per second rate of the input signal. Reported values range from 0 (source is not connected) to 120.
- **Aspect Ratio:** Reports the aspect ratio of the input signal. Valid values are:
    - No Signal
    - 5:4
    - 4:3
    - 16:10
    - 16:9

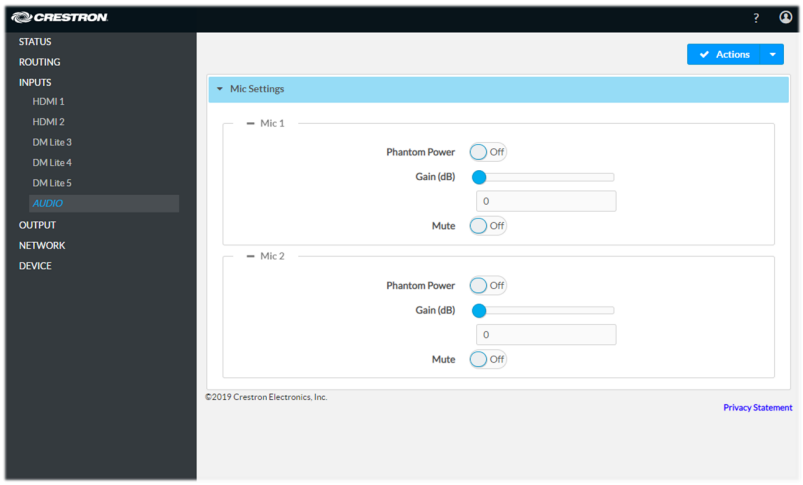
Click **–Less Details** to hide this section from view.

Information about the corresponding transmitter inputs is also shown.



Audio

The **AUDIO** page can be accessed at any time by expanding the **INPUTS** section and then clicking on **AUDIO** in the navigation bar of the web interface.



Move the **Phantom Power** slider of the desired microphone input to **On** or **Off** (default setting) to enable (**On**) or disable (**Off**) the phantom power supply.

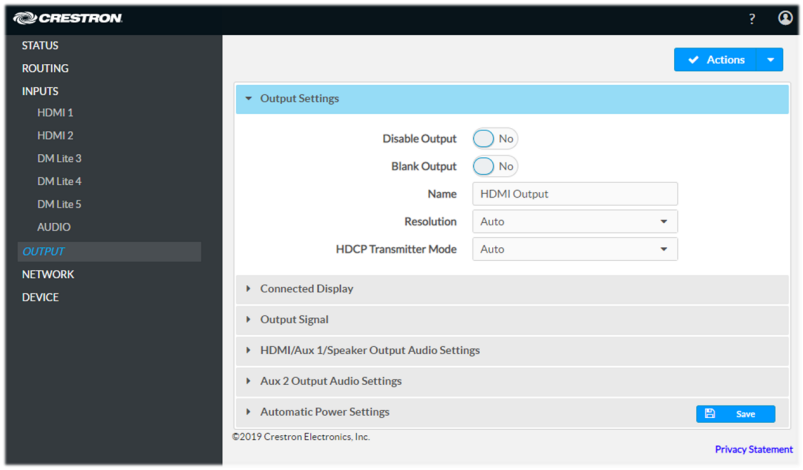
Use the **Gain** slider to adjust the gain on the desired mic input. Alternatively, enter a valid value in the range of 0 to 60 dB in the text field below the **Gain** slider. Invalid values will be ignored.

Move the **Mute** slider to **On** or **Off** (default) if the corresponding mic will be muted (**On**) or not (**Off**).

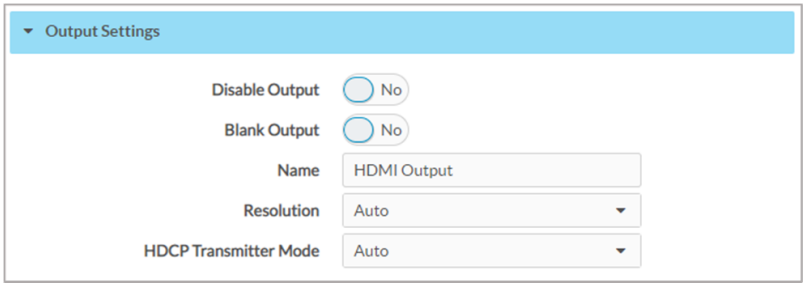
Output

Use the **Output** page to enable or disable the HDMI output, to blank the output, rename it, set the output resolution, or to enable or modify HDCP. In addition, automatic power settings and analog audio settings can be configured. Information about the connected display and the output signal can also be viewed.

The Output page can be accessed at any time by clicking the **OUTPUT** tab in the web interface.



Output Settings

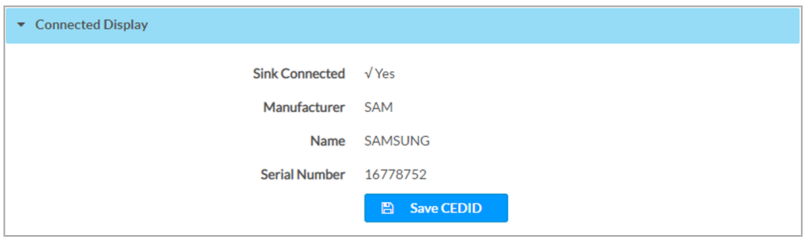


- **Disable Output:** Move the **Disable Output** slider to the desired position (**Yes** or **No**) to enable or disable the output settings. By default, **No** (enable) is selected, allowing the output display to turn on. If **Yes** is selected, the output display will turn off.
- **Blank Output:** Move the **Blank Output** slider to the desired position (**Yes** or **No**) to specify whether the output will be blanked (which creates an output of a free-run black frame).
- **Name:** Enter a name in the **Name** field to modify the name of the output. The default name is **HDMI Output**.

- **Resolution:** In the **Resolution** drop-down list, select the desired resolution of the HDMI output from the following available resolution settings. By default, the **Resolution** is set to **Auto** (Recommended).
    - Auto (Recommended)
    - 720p50
    - 720p60
    - 1080i25
    - 1080i30
    - 1080p30
    - 1080p24
    - 1080p25
    - 1080p50
    - 1080p60
    - 3840x2160@24
    - 3840x2160@25
    - 3840x2160@30
    - 4096x2160@24
    - 4096x2160@25
    - 4096x2160@30
    - 3840x2160@50
    - 3840x2160@60
    - 4096x2160@50
    - 4096x2160@60
- **HDCP Transmitter Mode:** Select the desired option from the **HDCP Transmitter Mode** drop-down list:
    - **Auto (Default):** When non-HDCP content is routed, the content will pass through and not be authenticated until HDCP content is routed. When HDCP content is routed, the scaler will latch onto the highest HDCP level supported by the downstream device. The scaler will not attempt to reauthenticate unless hot-plugged or the downstream device HDCP support level changes.
    - **Follow Input:** Authenticates each time the input sync changes it state. The output will authenticate to the level reported at the input.
    - **Always:** Authenticates to and keeps synced with the highest level HDCP supported by the downstream device.
    - **Never:** The HDMI output will blank if the input is HDCP encrypted.

Connected Display

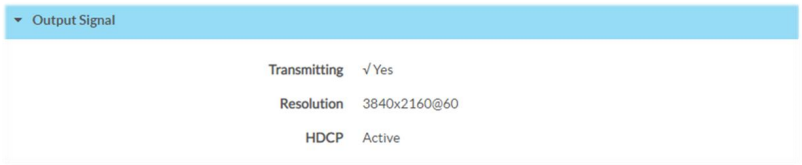
The **Connected Display** section of the Output page displays read-only information that identifies the display connected to the HDMI output.



The **Manufacturer**, **Name** and **Serial Number** fields display additional information about the connected display's manufacturer, model and serial number, respectively.

Click **Save CEDID** to save the CEDID file of the connected output. The saved CEDID file can be loaded later, if desired.

Output Signal



The Output Signal section of the Output page displays read-only information about the output resolution of the device and whether the device is transmitting or not:

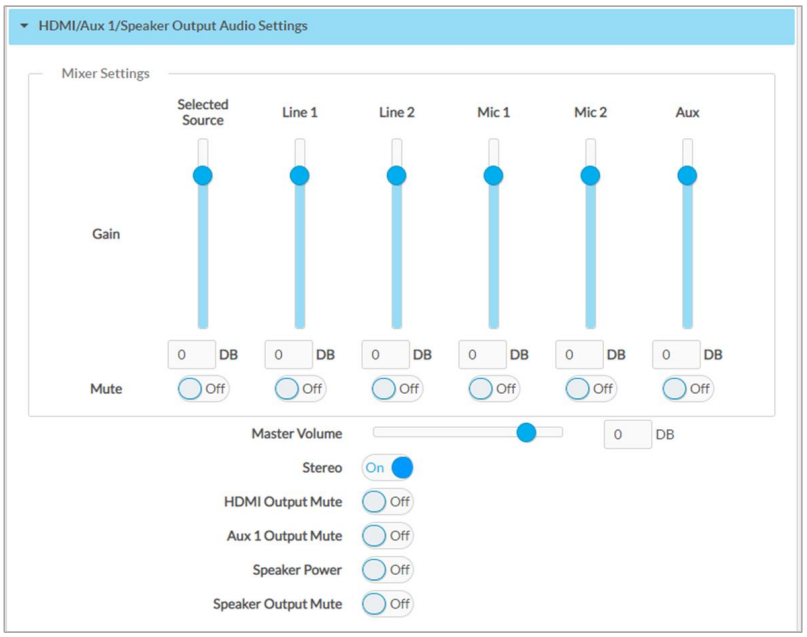
- **Transmitting:** Specifies whether the HDMI output is transmitting an HDMI signal to the connected display: Yes/No.
- **Resolution:** Displays the detected resolution when a video signal is being transmitted. In the event an HDMI cable is connected to the display/downstream device, but the device is turned off, the last detected resolution will be displayed until a new video signal is received.

  Displays **0x0@0** when the video signal is not being transmitted. For example, no HDMI cable is connected.

- **HDCP:** Reports whether HDCP is Active or Inactive.

  If no output signal is being transmitted, HDCP will display **Inactive**.

HDMI/Aux 1/Amp Output Audio Settings



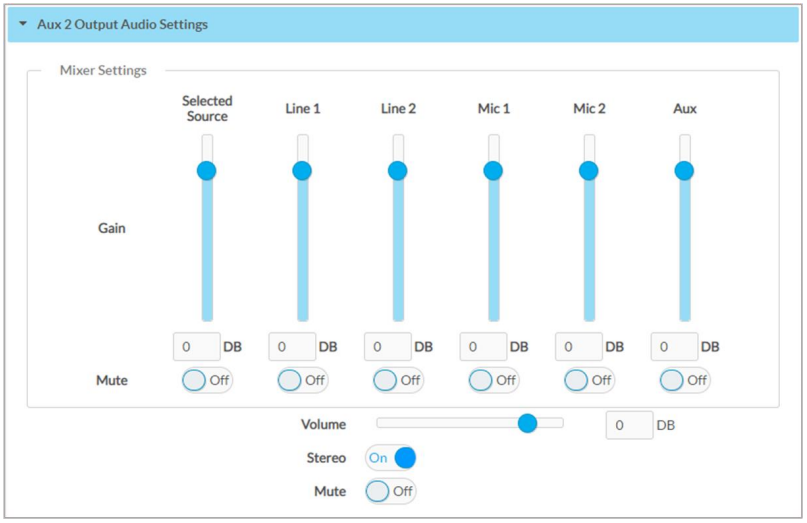
- **Mixer Settings**

  The **Mixer Settings** section provides the ability to mix source, line, mic and aux audio together.

  - Adjust the gain of the corresponding source, line, mic or aux audio by moving the desired **Gain** slider(s) up or down, or by entering a value in the corresponding text field below the slider. Valid values range from **-80 dB** to **20 dB**, adjustable in 1 dB increments.
  - Toggle the corresponding **Mute** slider to **On** or **Off** (default) to specify whether the corresponding audio will be muted or not.

- **Master Volume:** Adjust the master volume by moving the **Master Volume** slider to the left or right or by entering a value in the corresponding text field. Valid values range from **-80 dB** to **20 dB**, adjustable in 1 dB increments.
- **Stereo:** Move the **Stereo** slider to **On** or **Off** to specify Stereo (**On**) or Mono (**Off**) output.
- **Speaker Power:** Move the **Speaker Power** to **On** or **Off** to turn speaker power on or off.
- Move the **HDMI Output Mute**, **Aux1 Output Mute**, **Speaker Output Mute** slider to **On** or **Off** to specify whether the corresponding audio will be muted or not.

Aux 2 Output Audio Settings



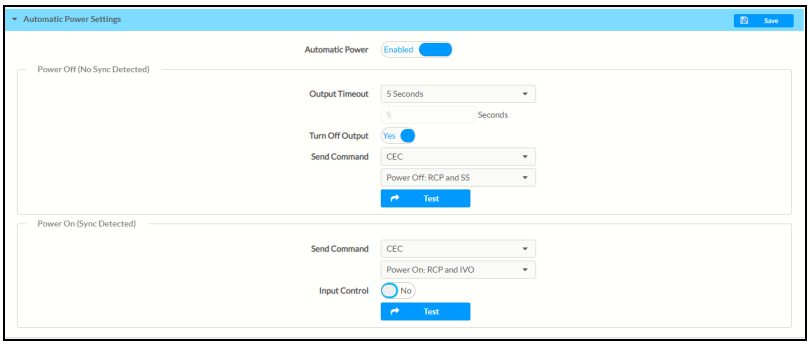
- **Mixer Settings**

  The **Mixer Settings** section provides the ability to mix source, line, mic and aux audio together.

  - Adjust the gain of the corresponding source, line, mic or aux audio by moving the desired **Gain** slider(s) up or down, or by entering a value in the corresponding text field below the slider. Valid values range from **-80 dB** to **20 dB**, adjustable in 1 dB increments.
  - Toggle the corresponding **Mute** slider to **On** or **Off** (default) to specify if the corresponding audio will be muted or not.

- **Volume:** Adjust the master volume by moving the **Volume** slider to the left or right or by entering a value in the corresponding text field. Valid values range from **-80 dB** to **20 dB**, adjustable in 1 dB increments.
- **Stereo:** Move the **Stereo** slider to **On** or **Off** to specify Stereo (**On**) or Mono (**Off**) output.
- **Mute:** Toggle the **Mute** slider to **On** or **Off** (default) to specify whether the output audio will be muted (**On**) or not (**Off**).

Automatic Power Settings



Configure automatic power-off and power-on settings in the **Automatic Power Settings** section of the **Output** page.

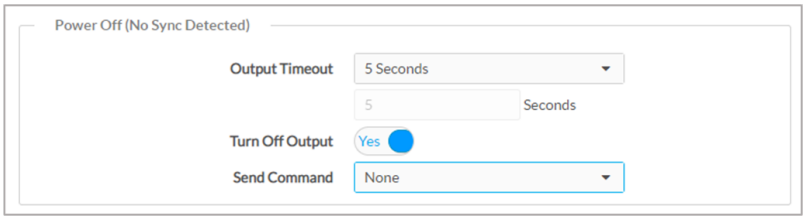
By default, automatic power-on and power-off settings are disabled. To enable automatic power settings, move the **Automatic Power** slider to **Enabled**. To disable automatic power settings again, move the **Automatic Power** slider to **Disabled**.

Configuring Power-Off Settings

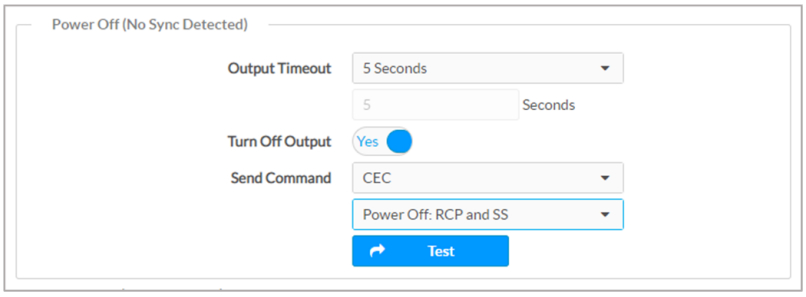
To configure the automatic power-off settings, do the following in the **Power Off** section:

1. In the **Output Timeout** drop-down list, select the amount of time of signal inactivity before the HDMI output automatically turns off. Valid values range from **5 Seconds** (default setting) to **90 Seconds**. Alternatively, select **Custom** and enter the desired number of seconds (valid values range from **1** to **500** seconds) in the corresponding text entry field.
2. Move the **Turn Off Output** slider to **Yes** to turn off the HDMI output or to **No** to enable the output to remain turned on.

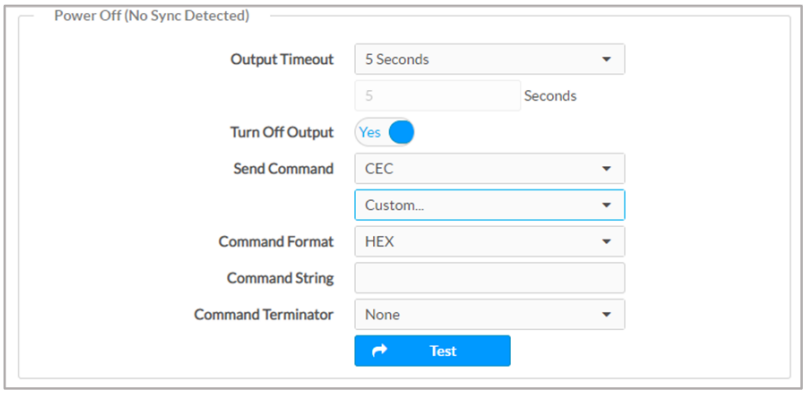
3. Choose the interface to send a power-off command by selecting one of the following from the **Send Command** drop-down list:
    - **None:** No command is sent. Continue with Step 6.



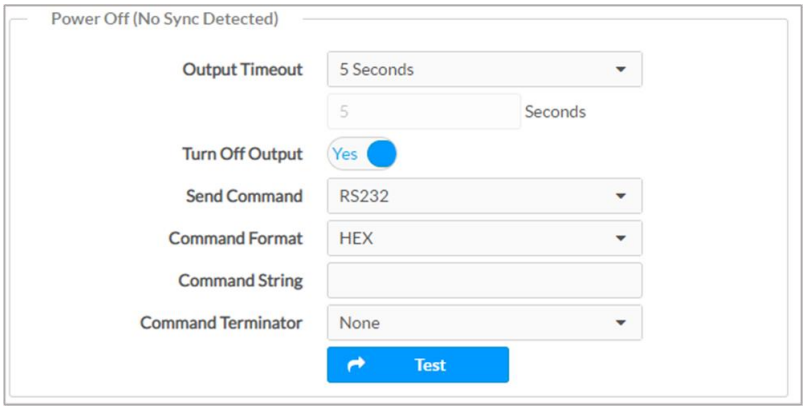
    - **CEC (Consumer Electronics Control):** When the CEC command is chosen, select one of the following options in the drop-down list displayed below the **Send Command** drop-down list.



        - **Power Off: RCP (Remote Control Passthrough) and SS (System Standby):** Continue with Step 5.
        - **Power Off: RCP Only:** Continue with Step 5.
        - **Power Off: SS Only:** Continue with Step 5.
        - **Custom:** Continue with Step 4.



- **RS232:** Continue with Step 4.



4. (Applicable only when **Send Command** is set to **CEC ->Custom** or to **RS232**) Do the following:
    a. Select the **HEX** (default value) or **ASCII** from the **Command Format** drop-down list to specify whether the format of the command will be hexadecimal (HEX) or ASCII.
    b. In the **Command String** text entry field, enter the command in hexadecimal or ASCII format.

       When the **HEX** command format is selected, the **Command String** must be entered as pairs of characters separated by a space. Valid characters are 0-9, a-f, and A-F. A command string example is shown below:

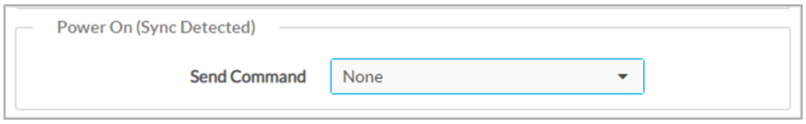
       58 00 0D 0A

    c. In the **Command Terminator** drop-down list, select one of the following terminators to append to the command:
        - **None** (specifies no terminator).
        - **CR** (carriage return).
        - **LF** (line feed).
        - **CR LF** (carriage return followed by a line feed).
5. Click Test (if displayed) to test the command.
6. Click Save to save the power-off settings.

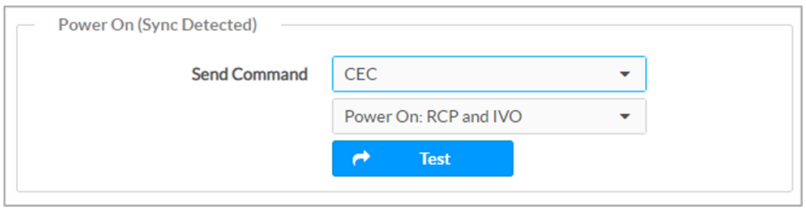
Configuring Power-On Settings

After setting the **Automatic Power** setting to **Enabled**, configure power-on settings by doing the following in the **Power On (Sync Detected)** section:

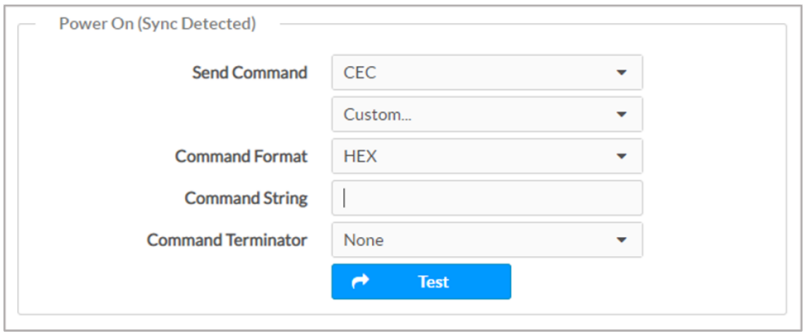
1. Choose the interface to send a power-on command by selecting one of the following from the **Send Command** drop-down list:
   - **None:** No command is sent. Continue with Step 6.



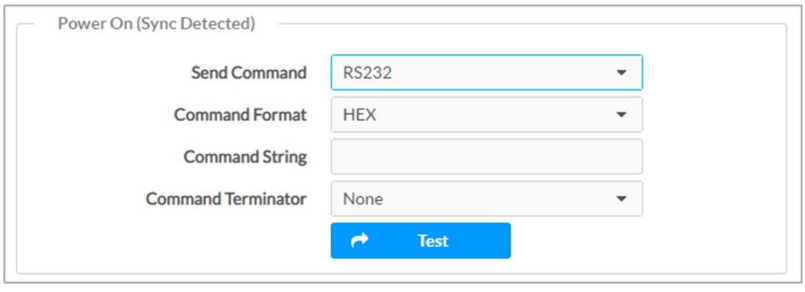
   - **CEC (Consumer Electronics Control):**When **CEC command** is chosen, select one of the following options in the drop-down list displayed below the **Send Command** drop-down list.



     - **Power On: RCP (Remote Control Passthrough) and IVO (Image View On):** Continue with Step 3.
     - **Power On: RCP Only:** Continue with Step 3.
     - **Power On: IVO Only:** Continue with Step 3.
     - **Custom:** Continue with Step 2.



   - **RS232:** Continue with Step 2.

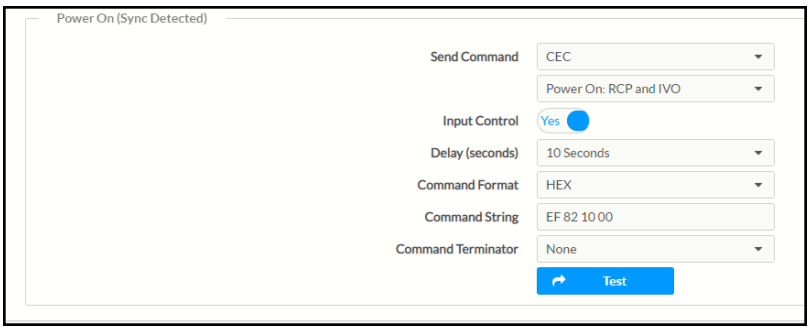


2. (Applicable only when **Send Command** is set to **CEC ->Custom** or **RS232**) Do the following:
    a. Select the **HEX** (default value) or **ASCII** from the **Command Format** drop-down list to specify whether the format of the command will be hexadecimal (HEX) or ASCII.
    b. In the **Command String** text entry field, enter the appropriate command string based on display capabilities.

       When the **HEX** command format is selected, the **Command String** must be entered as pairs of characters separated by a space. Valid characters are 0-9, a-f, and A-F. A command string example is shown below:

       58 00 0D 0A

    c. In the **Command Terminator** drop-down list, select one of the following terminators to append to the command:
        - **None** (specifies no terminator).
        - **CR** (carriage return).
        - **LF** (line feed).
        - **CR LF** (carriage return followed by a line feed).
3. If desired, enable **Input Control** by toggling the **Input Control** switch to **Yes** to control which HDMI input on the display is to be used to turn on the display. The default setting is **No**.



4. (Applicable only when **Input Control** is set to **Yes**) Do the following:
    a. Set **Delay** to the amount of time in seconds that must pass before input control commands can be sent to the display.
    b. Select the **HEX** (default value) or **ASCII** from the **Command Format** drop-down list to specify whether the format of the command will be hexadecimal (HEX) or ASCII.
    c. In the **Command String** text entry field, enter the command in hexadecimal or ASCII format.

       When the **HEX** command format is selected, the **Command String** must be entered as pairs of characters separated by a space. Valid characters are 0-9, a-f, and A-F. A command string example is shown below:

       58 00 0D 0A

d. In the **Command Terminator** drop-down list, select one of the following terminators to append to the command:
    - **None** (specifies no terminator).
    - **CR** (carriage return).
    - **LF** (line feed).
    - **CR LF** (carriage return followed by a line feed).

5. Click Test (if displayed) to test the command.
6. Click Save to save the power-on settings.

Network

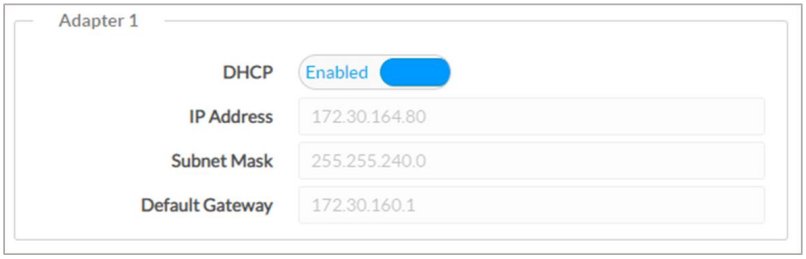
To configure the network settings of the HD-RX-4K-x10-C-E(-SW4), modify one or more of the following:

- **Host Name:** Overwrite the existing host name in the **Host Name** field with the desired new host name. The host name is restricted to the letters a to z (not case sensitive), the digits 1 to 9, and the hyphen.
- **Domain Name:** Specify a domain name.
- **Primary Static DNS:** Enter the IP address of the primary DNS server.

NOTE: The **Primary Static DNS** field may not be editable while DHCP is enabled.

- **Secondary Static DNS:** Enter the IP address of the secondary DNS server.

NOTE: The **Secondary Static DNS** field may not be editable while DHCP is enabled.



- **DHCP:** Set this slider to **Enabled** or **Disabled** to specify whether the IP address of the HD-RX-4K-x10-C-E(-SW4) is to be assigned by a DHCP (Dynamic Host Configuration Protocol) server.
    - When DHCP is **Enabled** (default setting), the IP address of the HD-RX-4K-x10-C-E(-SW4) is automatically assigned by a DHCP server on the LAN for a predetermined period of time.
    - When DHCP is **Disabled**, manually enter information in the following fields:
        - **IP Address:** Enter a unique IP address for the HD-RX-4K-x10-C-E(-SW4).
        - **Subnet Mask:** Enter the subnet mask that is set on the network.
        - **Default Gateway:** Enter the IP address that is to be used as the network's gateway.

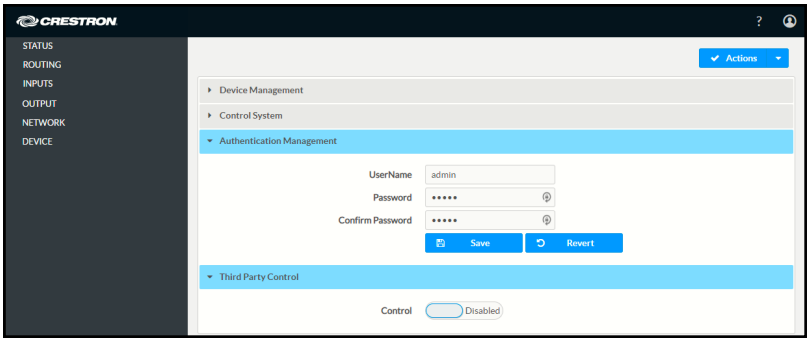
To save new network entries, click **Save**. The HD-RX-4K-x10-C-E(-SW4) automatically reboots.

Device

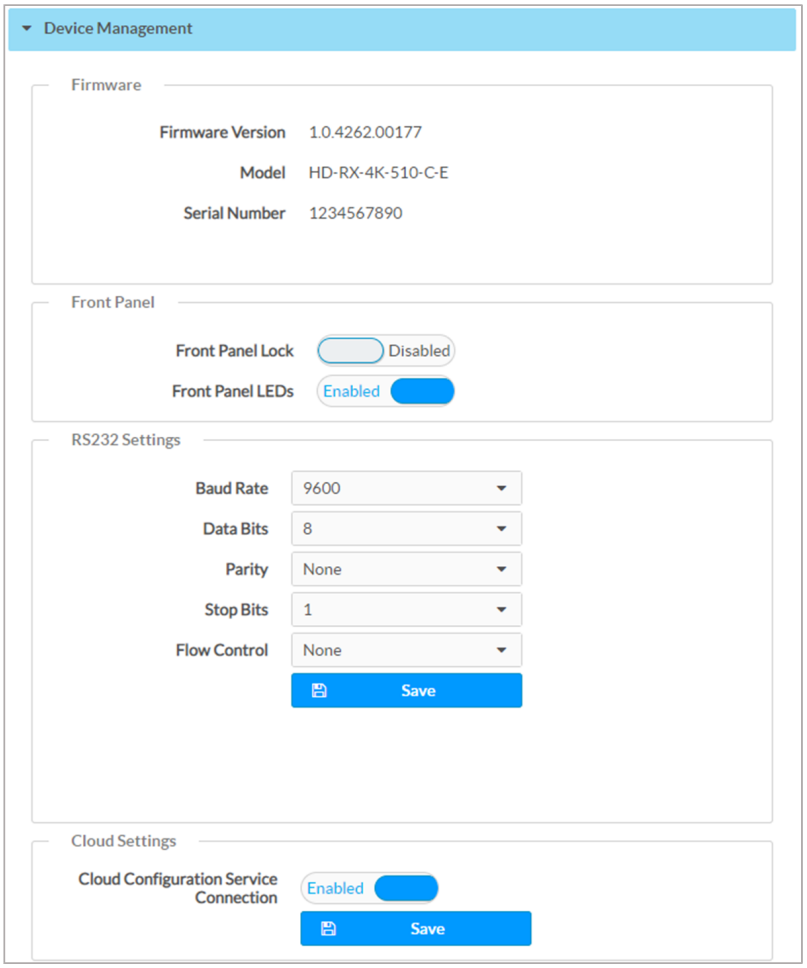
The Device page can be used to configure and manage various functions of the HD-RX-4K-x10-C-E(-SW4) such as:

- Viewing the firmware version or serial number of the device
- Enabling/disabling the front panel lock
- Enabling/disabling the front panel LEDs
- Modifying RS232 settings
- Modifying control system settings
- Setting up authentication management options
- Configuring third-party control for compatible Cisco® video conference systems

The Device page can be accessed at any time by clicking the **DEVICE** tab in the navigation bar.



Device Management



Firmware

The **Firmware** section displays the following information about the HD-RX-4K-x10-C-E(-SW4).

- **Firmware Version**
- **Model**
- **Serial Number**

Front Panel

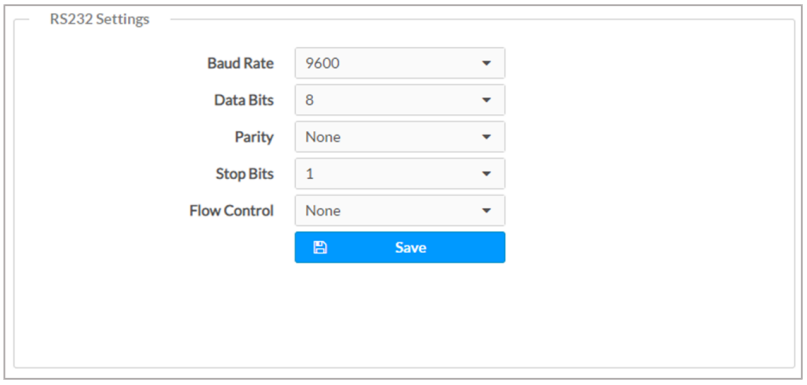
To prevent accidental changes to device settings, the **Front Panel** section of the Device page can be set to lock the front panel buttons on the HD-RX-4K-x10-C-E(-SW4). By default, the front panel is unlocked, allowing the front panel buttons to function. When the front panel is locked, pressing any of the buttons (with the exception of the SETUP button) has no effect. In addition, the LEDs on the front panel are enabled by default. When the front panel LEDs are disabled, the LEDs (except the SETUP LED) do not light.

To enable the front panel lock, move the **Front Panel Lock** slider to the **Enabled** position; to disable it again, move the slider to the **Disabled** position (default setting).

To disable the front panel LEDs, move the **Front Panel LEDs** slider to the **Disabled** position (default setting). To enable it again, move the slider to **Enabled**.

RS232 Settings

To adjust RS232 communication parameters of the HD-RX-4K-x10-C-E(-SW4), do the following under **RS232 Settings**:



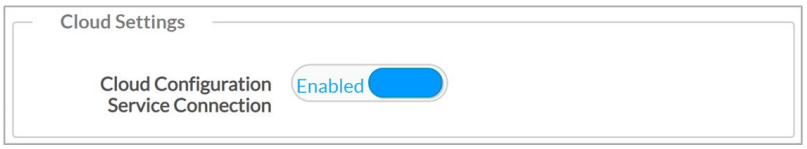
1. Select the desired speed of data transmission (baud rate) from the **Baud Rate** drop-down list. Available options are:
    - 1200
    - 1800
    - 2400
    - 3600
    - 4800
    - 7200
    - 9600 (Default value)
    - 14400
    - 19200
    - 28800
    - 38400
    - 57600
    - 115200

    NOTE: The baud rate setting of **115200** must be used for third-party control by Cisco devices, which is configured under Third-Party Control (on page 44) on the Device page.
2. Select the number of data bits (**7** or **8**) that will be used from the **Data bits** drop-down list.
3. Choose the error checking type from the **Parity** drop-down list. Available options are :
    - None (default)
    - Odd
    - Even
    - Mark
4. Select the number of stop bits (**1** or **2**) that will be used from the **Stop bits** drop-down list.
5. Choose the flow control mechanism (controls the flow of data between the devices) from the **Flow Control** drop-down list.

    Available options are:
    - None (default)
    - XON/XOFF (software handshake)
6. Click the **Save** button to save your modifications.

Cloud Settings

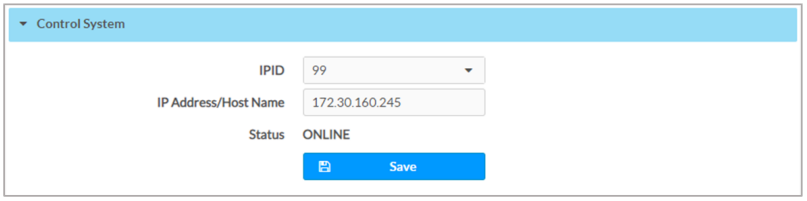
The **Cloud Settings** section of the Device page provides functionality to enable or disable the cloud configuration service connection. By default, the cloud configuration service connection is **Enabled**.



To disable the connection to the cloud server, move the **Cloud Configuration Service Connection** slider to the **Disabled** position. To enable it again, move the slider to **Enabled**.

Control System

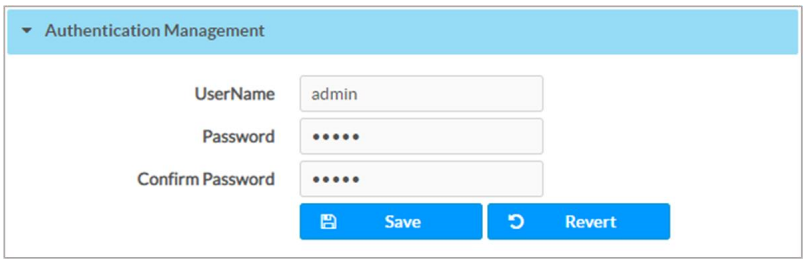
To connect the HD-RX-4K-x10-C-E(-SW4) to a control system, in the **Control System** section of the page, do the following:



1. In the **IP ID** drop-down list, select the IP ID of the HD-RX-4K-x10-C-E(-SW4). Valid values range from 03 to FE in hexadecimal notation.
2. In the **IP Address/Host Name** text field, enter the IP address or hostname of the control system.
3. The **Status** field (read only) displays the connection status of the HD-RX-4K-x10-C-E(-SW4) to the control system as **OFFLINE** or **ONLINE**.
4. To save the new entries, click **Save Changes**. The **Control System Save** message box appears, indicating that the control system settings were saved successfully.

Authentication Management

Use the **Authentication Management** section to make changes to your user name and password.



To change the username and password:

NOTE: The username and password are case sensitive.

In the **Username** text field, enter the desired username.

In the **Password** text field, enter the desired password.

In the **Confirm Password** text field, reenter the desired password

To save the updated user name and password, click **Save**.

To revert to the previous user name and password without saving the current entries, click **Revert**.

Third-Party Control

Third-party control enables source inputs from the HD-RX-4K-x10-C-E(-SW4) to be added to the inputs of compatible Cisco video conference systems that are controlled by the Cisco Touch 10 control unit.

Integration of Crestron HD-RX-4K-x10-C-E(-SW4) source inputs with Cisco devices requires that the following tasks be performed:

1. Generation of a configuration file that configures the Crestron and Cisco devices and defines the appearance of the source selection buttons on the Cisco Touch 10 screen (refer to Generating a Configuration File for information).
2. Configuration of third-party control on the Device page of the HD-RX-4K-x10-C-E(-SW4) web interface (refer to Enabling Third-Party Control for information).

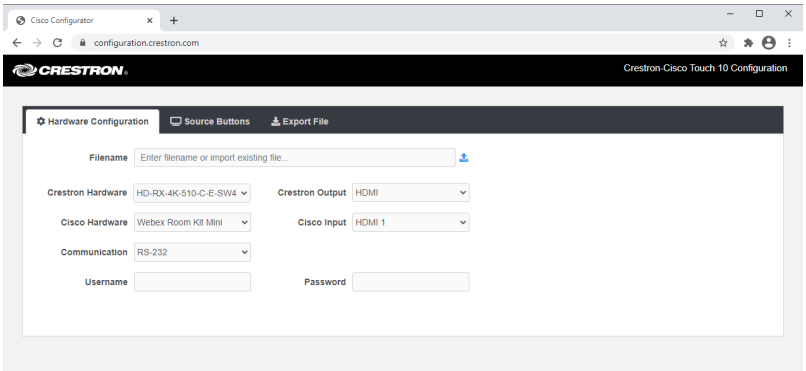
If desired, third-party control can be disabled (refer to Disabling Third-Party Control for information).

Generating a Configuration File

To generate a configuration file:

1. Go to https://configuration.crestron.com.

   The Crestron-Cisco Touch 10 Configuration page opens.



2. Under the **Hardware Configuration** tab, configure the following parameters:

   - **Filename:** Enter the desired name of the configuration file.
   - **Crestron Hardware:** Select **HD-RX-4K-410-C-E**, **HD-RX-4K-410-C-E-SW4**, **HD-RX-4K-510-C-E**, or **HD-RX-4K-510-C-E-SW4**.
   - **Cisco Hardware:** Select the desired Cisco video conference system. Available options are:

     Webex Room Kit

     Webex Room Kit Mini (default setting)

     Webex Room Kit Plus

     Webex Room Kit Pro

     Webex Codec Plus

     Webex Codec Pro

     Webex Room 55 Single

     Webex Room 55 Dual

     Webex Room 70

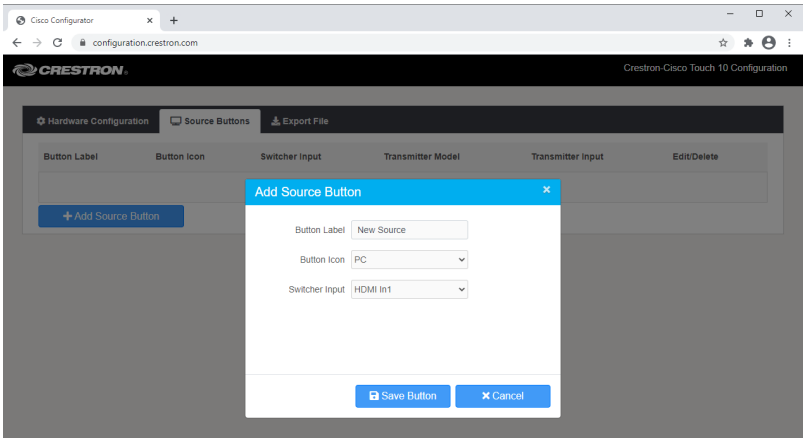
     Webex Room 70 G2

     SX80 Codec

   - **Communication: RS-232** is the only available selection.
   - **Username:** Enter the desired username to be used for authentication to connect to the Cisco video conference system.
   - **Crestron Output: HDMI** is the only available selection.

- **Cisco Input:** Select the desired input port of the selected Cisco video conference system.
- **Password:** Enter the desired password to be used for authentication to connect to the Cisco video conference system.

3. Under the **Source Buttons** tab, click **+Add Source Button**. The Add Source Button dialog box opens.



Configure the following parameters to add buttons that will be used on the Cisco Touch 10 screen for each input that is available from the HD-RX-4K-x10-C-E(-SW4):

- **Button Label:** Enter the desired name of the button.
- **Button Icon:** Select the desired icon for the button.

- **Switcher Input:** Configure the input ports on the HD-RX-4K-x10-C-E(-SW4):
  - If the input port is **HDMI In1** (default setting) or **HDMI In2**, click **Save Button**. The button is added to the Source Buttons list.
  - If the input port is **DMLite In3**, **DMLite In4**, or **DMLite In5** (HD-RX-4K-510-C-E [-SW4]) only, configure the following parameters:
    - **Transmitter Model:** Select the desired Crestron DM Lite transmitter. Available options are:

      HDI-TX-301-C-2G-E

      HD-TX-301-C-E

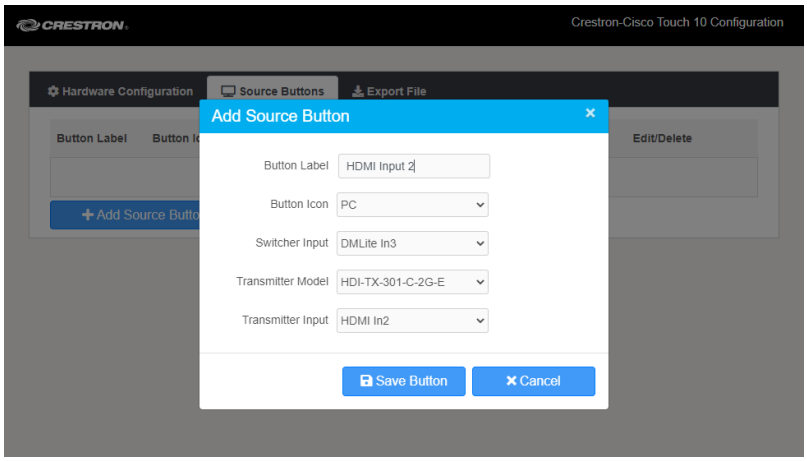
      HD-TX-201-C-2G-E

      HD-TX-101-C-E

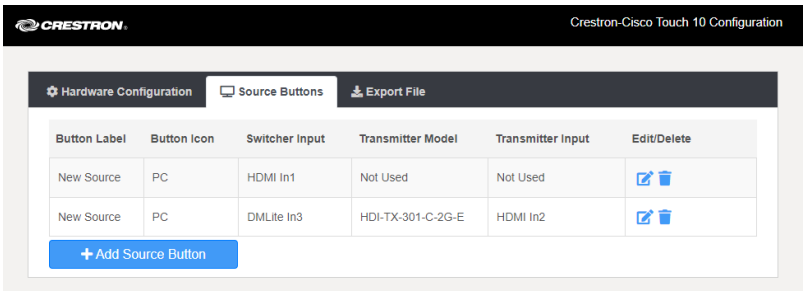
      HD-TXC-101-C-E

      HD-TX-101-C-1G-E

      HD-TXC-101-C-1G-E

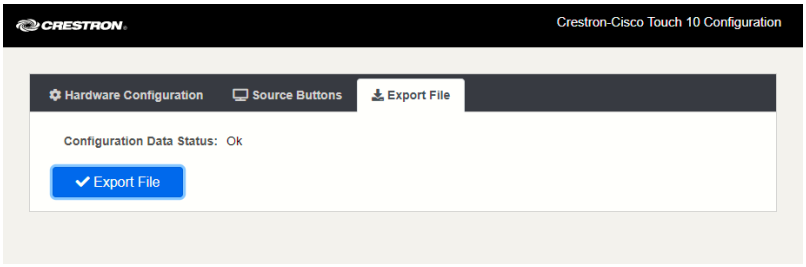


    - **Transmitter Input:** The list of transmitter inputs varies depending on the transmitter model that is selected. Select each input for which a button is to be added to the Cisco Touch 10 screen, or select **No Change** to make a route change to the DM Lite input without changing which input on the DM Lite transmitter is to be routed. For each button, click **Save Button**. Each button is added to the Source Buttons list as shown in the following example.



NOTE: In the **Edit/Delete** column of the Source Buttons list, buttons can be edited by clicking the Edit (✎) icon or deleted by clicking the Delete (🗑) icon.

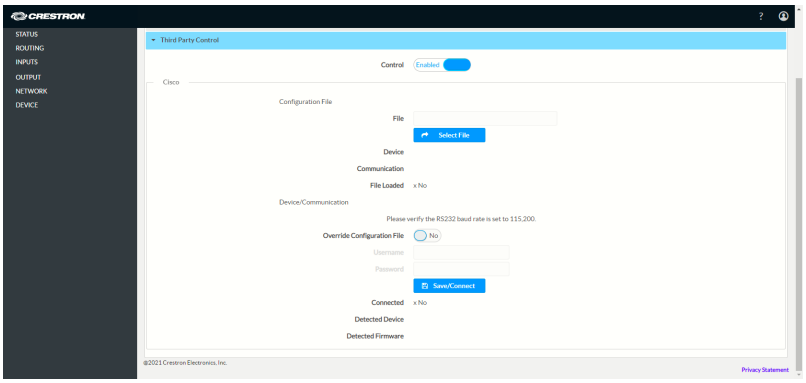
4. Under the **Export File** tab, click **Export File** to export the file to the local hard drive of your computer. The file is named *.json (* is the filename assigned to the configuration file).



Enabling Third-Party Control

On the Device page of the HD-RX-4K-x10-C-E(-SW4) web interface, enable third-party control for compatible Cisco video conference systems:

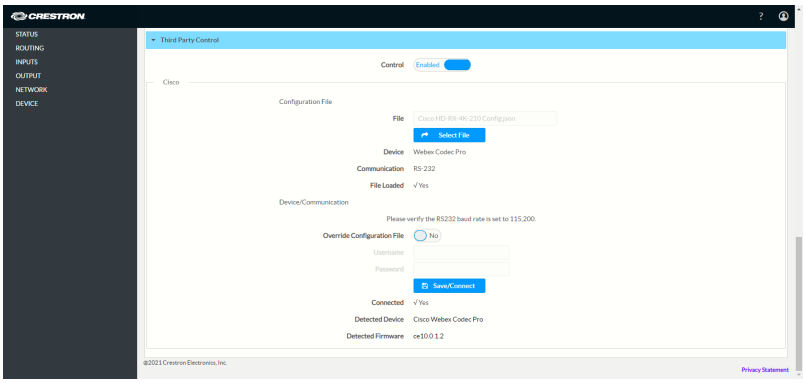
1. In the **RS232 Settings** section of the page, ensure that **Baud Rate** is set to **115200**.
2. In the **Third-Party Control** section of the page, toggle the **Control** switch to **Enabled** to allow integration with a supported Cisco device. The default setting is **Disabled**.



3. In the **Cisco** section, click the **Select File** button and then browse and select the configuration file generated in the Generating a Configuration File (on page 45) section.

   NOTE: Login credentials for the Cisco device are encrypted and embedded in the configuration file.

   The configuration file loads and the HD-RX-4K-x10-C-E(-SW4) connects to the Cisco device. When the connection is successful, the **Connected** status indicates **Yes**, and the Cisco device model and firmware version are displayed as shown in the example below.

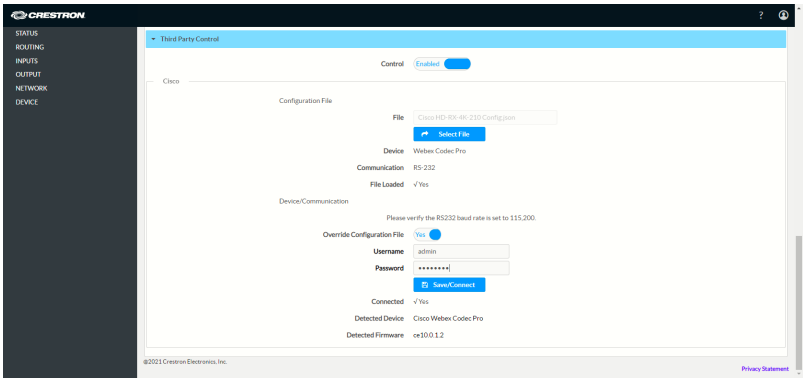


4. (Applicable only if login credentials for the Cisco device need to be updated) Do the following:

   a. Toggle the **Override Configuration File** switch to **Yes**.

   b. Enter the new credentials in the **Username** and **Password** text boxes.

   c. Press the **Save/Connect** button to reconnect to the Cisco device.



Disabling Third-Party Control

To disable third-party control for Cisco video conference systems:

1. In the **Third-Party Control** section of the Device page, toggle the **Control** switch to **Disabled**.
2. Reset the external HD-RX-4K-x10-C-E(-SW4) input buttons on the Cisco Touch10 device as follows:
    a. Log in to the web interface of the Cisco video conference system.
    b. Select **Developer API** from the left panel.
    c. Execute the following command:

        xCommand UserInterface Presentation ExternalSource RemoveAll

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Web Interface Configuration Guide — Doc. 9211A

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Specifications subject to
change without notice.