DM Lite™ HD(I)-MD Auto-Switchers and Extenders

Supplemental Guide

Crestron Electronics, Inc.

The product warranty can be found at www.crestron.com/legal/sales-terms-conditions-warranties.

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This document was written by the Technical Publications department at Crestron.

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DM Lite™ HD(I)-MD Auto-Switchers and Extenders

Introduction

Crestron® DM Lite™ HD(I)-MD auto-switchers and extenders, hereinafter referred to simply as *switchers*, are designed for basic point-to-point and small auto-switching applications. Using CAT5e or higher cable, the switchers can extend 1080p signals up to 230 feet (70 meters). Consisting of a transmitter and receiver, the switchers automatically scale input signals to match the native resolution of the display device.

The built-web interface of the switchers allows simplified configuration. Advanced functionality is enabled through integration with a Crestron control system.

This guide provides information about the following:

- Models
- Using the web interface
- Using the routing push buttons

Models

The following table provides information about the various HD(I)-MD switcher models.

HD(I)-MD Switcher Models

FEATURE	HD-MD-400-C-E	HD-MD-300-C-E-B/W-T	HDI-MD-400-C-2G-E-B/W-T	HD-MD-200-C-E	HD-MD-200-C-1G-E-B/W-T
			Transmitter and Receiver Pair		
Transmitter	HD-TX-301-C-E	HD-TX-201-C-2G-E-B/W-T	HDI-TX-301-C-2G-E-B/W-T	HD-TX-101-C-E	HD-TX-101-C-1G-E-B/W-T
Receiver	HD-RX-201-C-E	HD-RX-201-C-E	HD-RX-201-C-E	HD-RX-201-C-E	HD-RX-201-C-E
			Video		
Input Types	3 x HDMI® (DVI and Dual-Mode DisplayPort™ compatible[1]), 1 x VGA (RGB, Component[2])	2 x HDMI (DVI and Dual-Mode DisplayPort compatible[1]), 1 x VGA (RGB, Component[2])	3 x HDMI (DVI & Dual-Mode DisplayPort compatible[1]), 1 x VGA (RGB, Component[2])	2 x HDMI (DVI and Dual-Mode DisplayPort compatible[1])	2 x HDMI (DVI and Dual-Mode DisplayPort compatible[1])
Output Types	HDMI (DVI compatible[3])	HDMI (DVI compatible[3])	HDMI (DVI compatible[3])	HDMI (DVI compatible[3])	HDMI (DVI compatible[3])
Video Features	Deep Color, 3D, Auto/Manual Switching, and Priority Routing	Deep Color, 3D, Auto/Manual Switching, and Priority Routing	Deep Color, 3D, Auto/Manual Switching, and Priority Routing	Deep Color, 3D, Auto/Manual Switching, and Priority Routing	Deep Color, 3D, Auto/Manual Switching, and Priority Routing
Maximum HDMI Input/Output Resolutions	1080p 60 Hz @ 4:4:4 up to 70 m	1080p 60 Hz @ 4:4:4 up to 70 m	1080p 60 Hz @ 4:4:4 up to 70 m	1080p 60 Hz @ 4:4:4 up to 70 m	1080p 60 Hz @ 4:4:4 up to 70 m
Maximum VGA Input Resolutions	VGA/RGB: 1920 x 1200p 60 Hz Component: 1080p 60 Hz	VGA/RGB: 1920 x 1200p 60 Hz Component: 1080p 60 Hz	VGA/RGB: 1920 x 1200p 60 Hz Component: 1080p 60 Hz	N/A	N/A
Custom Resolutions	Supported at pixel clock rates up to 300 MHz for HDMI or 165 MHz for VGA	Supported at pixel clock rates up to 300 MHz for HDMI or 165 MHz for VGA	Supported at pixel clock rates up to 300 MHz for HDMI or 165 MHz for VGA	Supported at pixel clock rates up to 300 MHz	Supported at pixel clock rates up to 300 MHz
Output Scaler	Yes	Yes	Yes	Yes	Yes
Copy Protection	HDCP 1.4 (Configurable[4])	HDCP 1.4 (Configurable[4])	HDCP 1.4 (Configurable[4])	HDCP 1.4 (Configurable[4])	HDCP 1.4 (Configurable[4])

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HD(I)-MD Switcher Models *(Continued)*

FEATURE	HD-MD-400-C-E	HD-MD-300-C-E-B/W-T	HDI-MD-400-C-2G-E-B/W-T	HD-MD-200-C-E	HD-MD-200-C-1G-E-B/W-T
			Audio		
Input Types	3 x HDMI (Dual-Mode DisplayPort compatible[1]), 1 x Analog Stereo	2 x HDMI (Dual-Mode DisplayPort compatible[1]), 1 x Analog Stereo	3 x HDMI (Dual-Mode DisplayPort compatible[1]), 1 x Analog Stereo	2 x HDMI (Dual-Mode DisplayPort compatible[1])	2 x HDMI (Dual-Mode DisplayPort compatible[1])
Output Types	1 x HDMI, 1 x Analog Stereo	1 x HDMI, 1 x Analog Stereo	1 x HDMI, 1 x Analog Stereo	1 x HDMI, 1 x Analog Stereo	1 x HDMI, 1 x Analog Stereo
Digital Input/ Output Audio Formats	Dolby Digital®, Dolby Digital EX, DTS®, DTS-ES, DTS 96/24, LPCM up to 8 channels	Dolby Digital®, Dolby Digital EX, DTS®, DTS-ES, DTS 96/24, LPCM up to 8 channels	Dolby Digital®, Dolby Digital EX, DTS®, DTS-ES, DTS 96/24, LPCM up to 8 channels	Dolby Digital®, Dolby Digital EX, DTS®, DTS-ES, DTS 96/24, LPCM up to 8 channels	Dolby Digital®, Dolby Digital EX, DTS®, DTS-ES, DTS 96/24, LPCM up to 8 channels
Analog Output Audio Formats	Stereo 2-channel	Stereo 2-channel	Stereo 2-channel	Stereo 2-channel	Stereo 2-channel
Audio Features	Audio-follows-video	Audio-follows-video	Audio-follows-video	Audio-follows-video	Audio-follows-video
Analog Output Audio Compensation	-80 dB to +20 dB	-80 dB to +20 dB	-80 dB to +20 dB	-80 dB to +20 dB	-80 dB to +20 dB
Analog Output Audio Delay	0 to 150 ms	0 to 150 ms	0 to 150 ms	0 to 150 ms	0 to 150 ms
			Other		
CEC	Yes[5]	Yes[5]	Yes[5]	Yes[5]	Yes[5]
EDID	Yes[4]	Yes[4]	Yes[4]	Yes[4]	Yes[4]
Power[6]	Powered over DM Lite, Power Pack	Powered over DM Lite, Power Pack	Powered over DM Lite, Power Pack	Powered over DM Lite, Power Pack	Powered over DM Lite, Power Pack
USB Power for Active Cables or USB Powered Devices (5 V 500 mA)	No	No	No	Yes	Yes
USB HID	No	No	No	No	No

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HD(I)-MD Switcher Models *(Continued)*

FEATURE	HD-MD-400-C-E	HD-MD-300-C-E-B/W-T	HDI-MD-400-C-2G-E-B/W-T	HD-MD-200-C-E	HD-MD-200-C-1G-E-B/W-T
			Other (Cont'd)		
COM/IR Pass-Through	No	No	No	No	No
COM/IR Control	Yes[5]	Yes[5]	Yes[5]	Yes[5]	Yes[5]
TT-100 Series	Yes	No	No	No	No
Ethernet	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps
			Crestron Software Support		
Crestron XiO Cloud™ Service	No	No	No	No	No
SIMPL Windows Software[7]	Yes	Yes	Yes	Yes[8]	Yes[8]
Crestron Pyng® OS 2	No	No	No	No	No
SIMPL # Software[7]	Yes	Yes	Yes	Yes[8]	Yes[8]
.AV Framework™ Software[9]	Yes	Yes	Yes[8]	Yes[8]	Yes[8]
Crestron Studio® Software[7]	Yes	Yes	Yes[8]	Yes[8]	Yes[8]

1. DVI and Dual-Mode DislayPort are supported via an HDMI input using a suitable adapter or interface cable.
2. RGB and component video are supported via a VGA input using a suitable adapter or breakout cable.
3. DVI is supported via HDMI output using a suitable adapter or interface cable.
4. EDID and HDCP management is available either through a control system or the web interface.
5. CEC, COM, and IR are available through either a control system or the web interface.
6. The power pack may be connected to either the transmitter or receiver. Only one power pack is required. Do not connect more than one power pack simultaneously.
7. SIMPL Windows, SIMPL #, and Crestron Studio software are supported only for HD-MD-400-C-E, HD-MD-300-C-E, HDI-MD-400-C-2G-E, HD-MD-200-C-E and HD-MD-200-C-1G-E pairs.
8. At the time of publication of this document, .AV Framework, Crestron Studio, and SIMPL Windows software support is not available.
9. The .AV Framework software is configured via a supported control system such as the MPC3-201 and is supported only for HD-MD-400-C-E, HD-MD-300-C-E, HDI-MD-400-C-2G-E, HD-MD-200-C-E, and HD-MD-200-C-1G-E pairs.

Using the Web Interface

The web interface of the switchers allows configuration of routing, input, output, network, and device settings. In addition, information about the switchers and the connected display can be viewed.

NOTE: Configuration of the switchers is hosted by the receiver (HD-RX-201-C-E).

This section provides instructions to perform the following tasks:

- Access the web interface
- Navigate the web interface
- View status information
- Route an input to the HDMI output
- Configure input settings
- Configure output settings
- Configure network settings
- Configure device settings

NOTE: Unless otherwise indicated in this manual, the web pages of the switchers are the same.

Access the Web Interface

To access the web interface:

1. Find the IP address of the switcher by pressing the **SETUP** button on the receiver and noting the IP address on the connected display. The IP address is displayed for 10 seconds.

   NOTE: If the transmitter includes a **SETUP** button, pressing the button on the transmitter also displays the IP address.

2. Open a web browser.
3. Go to the IP address. The Login page opens.

Login Page

4. Enter the username and password. The default username and password are both *admin*.

NOTES:

- The username and password are case sensitive.
- For enhanced security, it is recommended that the default username and password be changed. For information about changing the username and password, refer to "Change the Username and Password" on page 26.

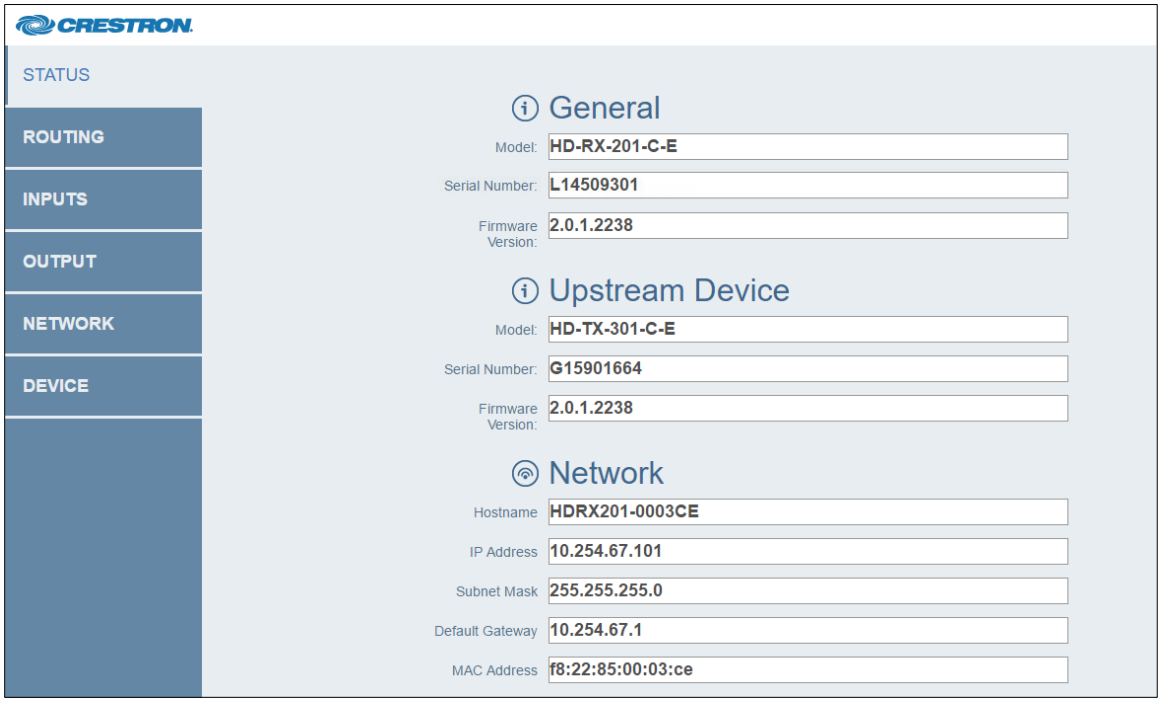
5. Click **Submit**. The Status page opens.

   For information about navigating the web interface, refer to "Navigate the Web Interface" that follows.

Navigate the Web Interface

The web interface provides a navigation bar and built-in web pages.

Web Interface (Sample HD-MD-400-C-E Status Page Shown)



The navigation bar provides access to the web pages as follows:

- Clicking **STATUS** accesses the Status page, which provides general and network-related information. For more information, refer to "View Status Information" on the following page.
- Clicking **ROUTING** accesses the Routing page, which allows an input to be selected and routed to the HDMI output on the receiver. For more information, refer to "Route an Input to the HDMI Output" on page 10.
- Clicking **INPUTS** accesses the Input page, which allows the desired EDID to be sent to the inputs. For more information, refer to "Configure Input Settings" on page 11.
- Clicking **OUTPUT** accesses the HDMI Output page, which allows the output resolution to be set. In addition, the output can be enabled or disabled. For more information, refer to "Configure Output Settings" on page 15.
- Clicking **NETWORK** accesses the Network page, which allows network settings such as hostname and DHCP (Dynamic Host Configuration Protocol) mode to be set. For more information, refer to "Configure Network Settings" on page 22.
- Clicking **DEVICE** accesses the Device page, which allows changes to username and password settings and also controls various device functions. For more information, refer to "Configure Device Settings" on page 23.

NOTE: After 10 minutes of inactivity, the web interface times out and returns to the Login page.

View Status Information

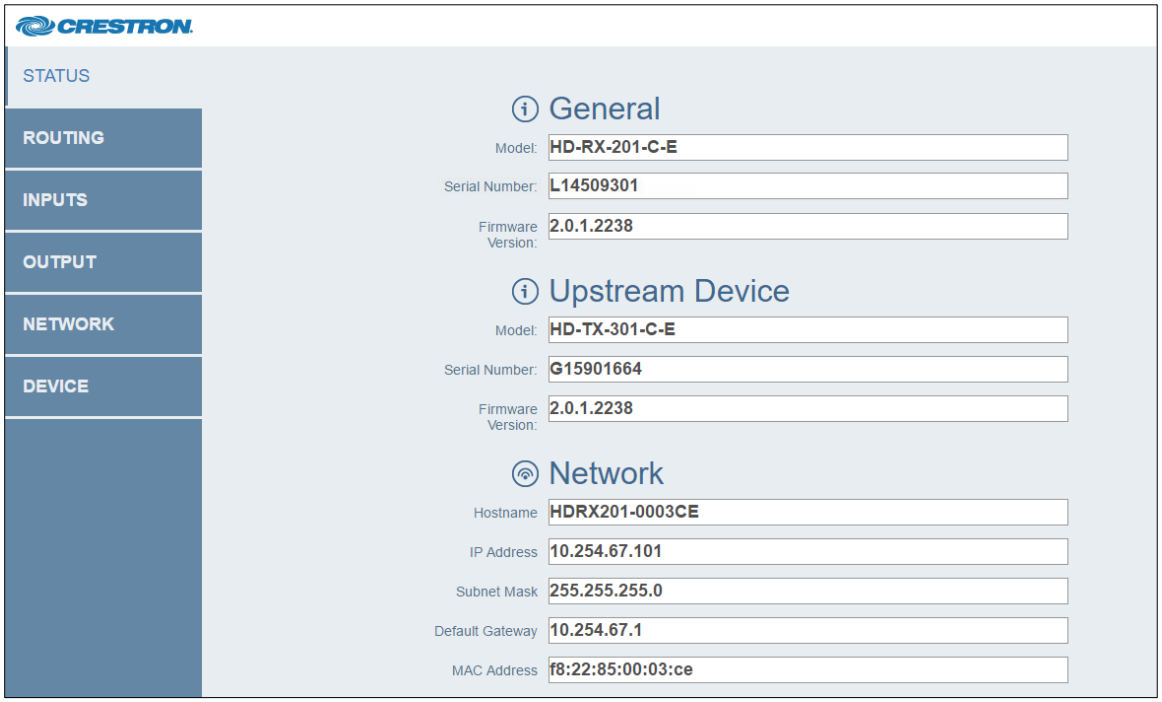
General information, such as model name, serial number, and firmware version of a switcher, can be viewed. The current network settings, such as hostname and IP address, can also be viewed.

To view status information:

In the navigation bar, click **STATUS**. The Status page opens.

NOTE: The Status page opens after logging in to the HD-RX-201-C-E.

Status Page (Sample HD-MD-400-C-E Status Page Shown)



The Status page displays the following information:

- General information related to the receiver:
  - Model, which is **HD-RX-201-C-E**
  - Serial Number
  - Firmware Version

- Upstream device information related to the transmitter:

  NOTE: The **Upstream Device** section appears on the Status page only when the TO RX port on the transmitter is connected to the FROM TX port on the HD-RX-201-C-E.

  - Model, which is one of the following:
    - **HD-TX-301-C-E** for the HD-MD-400-C-E
    - **HD-TX-201-C-2G-E** for the HD-MD-300-C-E
    - **HDI-TX-301-C-2G-E** for the HDI-MD-400-C-2G-E
    - **HD-TX-101-C-E** for the HD-MD-200-C-E
    - **HD-TX-101-C-1G-E** for the HD-MD-200-C-1G-E
  - Serial Number

    NOTE: For the HD-TX-101-C-E and HD-TX-101-C-1G-E, the serial number is displayed as **N/A**.
  - Firmware Version

    NOTE: For the HD-TX-101-C-E and HD-TX-101-C-1G-E, the firmware version is displayed as **N/A**.

- Network-related information:
  - Hostname

    NOTE: The default hostname of the HD-RX-201-C-E is **HDRX201-*xxxxxx*,** where ***xxxxxx*** represents the last six characters (excluding punctuation) of the MAC address.
  - IP Address
  - Subnet Mask
  - Default Gateway
  - MAC Address

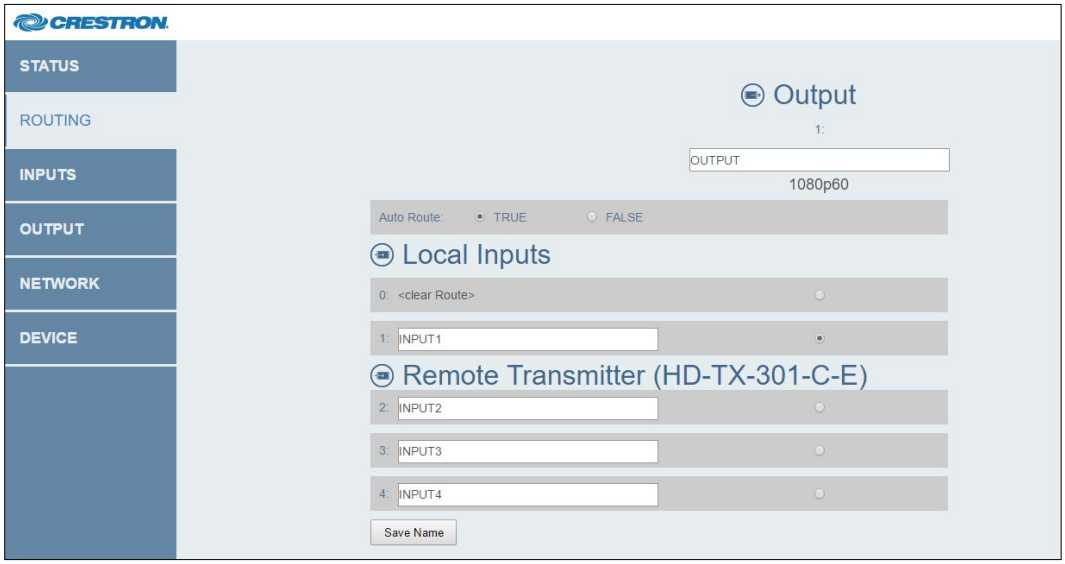
Route an Input to the HDMI Output

The HDMI input on the receiver (local input) or any input on the transmitter (remote input) can be automatically or manually routed to the HDMI output on the receiver. The default input and output names can be changed if desired.

To route the desired input to the HDMI output on the receiver:

1. In the navigation bar, click **ROUTING**. The Routing page opens.

Routing Page of HD-MD-400-C-E



The Routing page of the switchers contains an **Output** section in the upper-right corner of the page, an option to enable or disable automatic routing **(Auto Route)**, a **Local Inputs** section, and a **Remote Transmitter** section. The name of the transmitter that is displayed varies:

- For the HD-MD-400-C-E, the transmitter is the HD-TX-301-C-E.
- For the HD-MD-300-C-3, the transmitter is the HD-TX-201-C-2G-E.
- For the HDI-MD-400-C-2G-E, the transmitter is the HDI-TX-301-C-2G-E.
- For the HD-MD-200-C-E, the transmitter is the HD-TX-101-C-E.
- For the HD-MD-200-C-1G-E, the transmitter is the HD-TX-101-C-1G-E.

NOTE: The **Remote Transmitter** section appears on the Routing page only when the TO RX port on the transmitter is connected to the FROM TX port on the receiver.

The default name of the HDMI output on the receiver is **OUTPUT**. The default name of the local HDMI input on the receiver is **INPUT1**. The default names of the remote inputs on the transmitter range from **INPUT2 to INPUT4.** The number of inputs is model dependent.

2. Enable or disable automatic routing of the local and remote inputs by clicking the appropriate **Auto Route** radio button:
   - To enable automatic routing, click the **TRUE** radio button (default setting).
   - To disable automatic routing, click the **FALSE** radio button.
3. In the text entry boxes of the **Output**, **Local Inputs**, and **Remote Transmitter** sections, rename the output and inputs if desired, and then click **Save Name**.

   NOTE: The **Output** section displays the resolution and frame rate being transmitted to the output.

4. To manually route a local or remote input to the output, select the corresponding input radio button. The input is routed to the output.

To manually disconnect the route of a local or remote input, click the **<clear Route>** radio button in the **Local Inputs** section of the page.

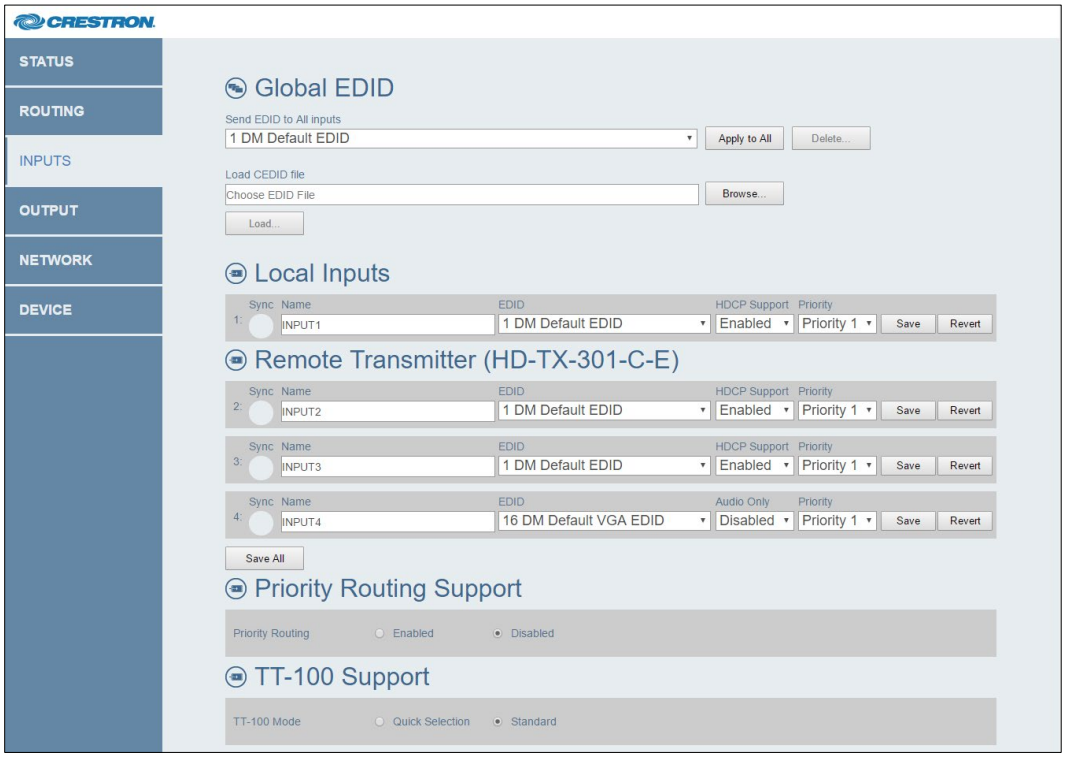
Configure Input Settings

The web interface allows the desired EDID to be selected and sent to the inputs. Three built-in EDID files are available for selection, and a custom EDID file can also be selected. The EDID can be selected on a global basis and sent to all inputs, or it can be selected on an individual basis for each input. In addition, inputs can be renamed. HDCP support can also be enabled or disabled for each input on an individual basis. The routing priority level of inputs can also be set. For the HD-MD-400-C-E only, TT-100 support can also be configured.

To configure inputs:

1. In the navigation bar, click **INPUTS**. The Inputs page opens.

Inputs Page of HD-MD-400-C-E



2. (Optional) In the **Global EDID** section of the page, load a custom EDID file by doing the following:

    a. Click **Browse** located to the right of the **Load CEDID file** field. Windows Explorer opens.

    b. Navigate to the desired EDID file (*.cedid), select the file, and then click **Open**.

    The selected EDID file appears in the **Load CEDID file** field.

    c. Click **Load**. A prompt appears asking for confirmation that the EDID file be uploaded to the input device.

    d. Click **OK**. The following occurs:

    - In the **Global EDID** section of the page, the custom EDID filename is added to the **Send EDID to All inputs** drop-down list.
    - In the **Local Inputs** and **Remote Transmitter** sections of the page, the custom EDID filename is added to the **EDID** drop-down lists.

NOTES:

- Only custom EDID files can be deleted. Built-in EDID files cannot be deleted. To delete a custom EDID file, click **Delete** in the Global EDID section of the page. The custom EDID file is deleted from the Send EDID to All inputs drop-down list and also from each individual EDID drop-down list in the Local Inputs and Remote Transmitter sections of the page.
- When a custom EDID file is deleted, the EDID reverts to the default EDID for any input that was loaded with the custom EDID. The default EDID for an HDMI input is DM Default EDID. The default EDID for the VGA input is **DM Default VGA EDID**.

3. Configure the inputs as follows:

   a. (Optional) In the **Global EDID** section of the page, globally apply the same EDID to all inputs simultaneously by doing the following:

      i. In the **Send EDID to All inputs** drop-down list, select the desired built-in EDID file or a custom EDID file. The built-in EDID files are as follows:

         1 DM Default EDID
         16 DM Default VGA EDID
         Output

         NOTE: Selecting **Output** copies the EDID from the output to all of the inputs.

      ii. Click **Apply to All**. The selected EDID is automatically sent to all inputs and appears in the **EDID** drop-down list for all inputs in the **Local Inputs** and **Remote Transmitter** sections of the page.

   b. In the **Local Inputs** and **Remote Transmitter** sections of the page, configure each input as desired:

      NOTE: For each input, the Sync icon denotes whether a source is detected at the input. If a source is detected, the icon is green. If no source is detected, the icon is gray.

      i. In the **Name** text box, rename the input if desired.

      ii. If an EDID other than the Global EDID is to be assigned, select the desired EDID in the **EDID** drop-down list.

      iii. (Applicable only to HDMI inputs) In the **HDCP Support** drop-down list, select **Enabled** or **Disabled**. The default setting is **Enabled**.

iv. (Applicable only to the VGA input of the HD-MD-300-C-E, HD-MD-400-C-E, and HD-MD-400-C-2G-E) In the **Audio Only** drop-down list, select **Enabled** or **Disabled**. If the VGA input is not connected to a VGA video source, enabling **Audio Only** allows analog audio to be transmitted from the VGA input. (Depending on the **Audio Only Mode** setting on the Device page, a black or blue frame is displayed on the output). If **Audio Only** is disabled, an active VGA video source must be connected to the VGA input. The default setting is D**isabled**.

NOTE: When **Audio Only** is enabled and when **Auto Route** is set to **TRUE** on the Routing page, automatic switching from the VGA input to another input occurs when a new source is detected at that other input. Automatic switching from the VGA input to another input will not occur if an active VGA video source is disconnected from the VGA input.

v. (Applicable only when **Auto Route** is set to **TRUE** on the Routing page) In the **Priority** drop-down list, select the priority level for routing of the input.

NOTE: In order for a priority level to be selected, the **Priority Routing** radio button in the **Priority Routing Support** section of the Inputs page must be set to **Enabled**.

Priority levels for automatic routing of an input range from **Priority 1** (highest priority) to **Priority 2** (lowest priority for the HD-MD-200-C-E and HD-MD-200-C-1G-E), **Priority 3** (lowest priority for the HD-MD-300-C-E) or **Priority 4** (lowest priority for the HD-MD-400-C-E and HDI-MD-400-C-2G-E). 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.

vi. Do one of the following:

- Click **Save** to save the **Name**, **EDID**, **HDCP Support**, **Audio Only**, and **Priority** entries for each corresponding input.
- Click **Revert** to revert to the previous settings without saving the current entries.
- Click **Save All** to save all unsaved entries.

c. (HD-MD-400-C-E only) In the **TT-100 Support** section of the page, select the TT-100 mode to determine how the HD-MD-400-C-E is to interpret button presses on the connected Crestron Connect It™ cable caddy (TT-100 Series):

- **Quick Selection:** (Default setting) The HD-MD-400-C-E switches among the active inputs each time a button on a cable caddy is pressed while the button LED is green. The selected active input is displayed on the output.

  A button LED is green when an active input is routed and is blue when no inputs are connected to the HD-MD-400-C-E.

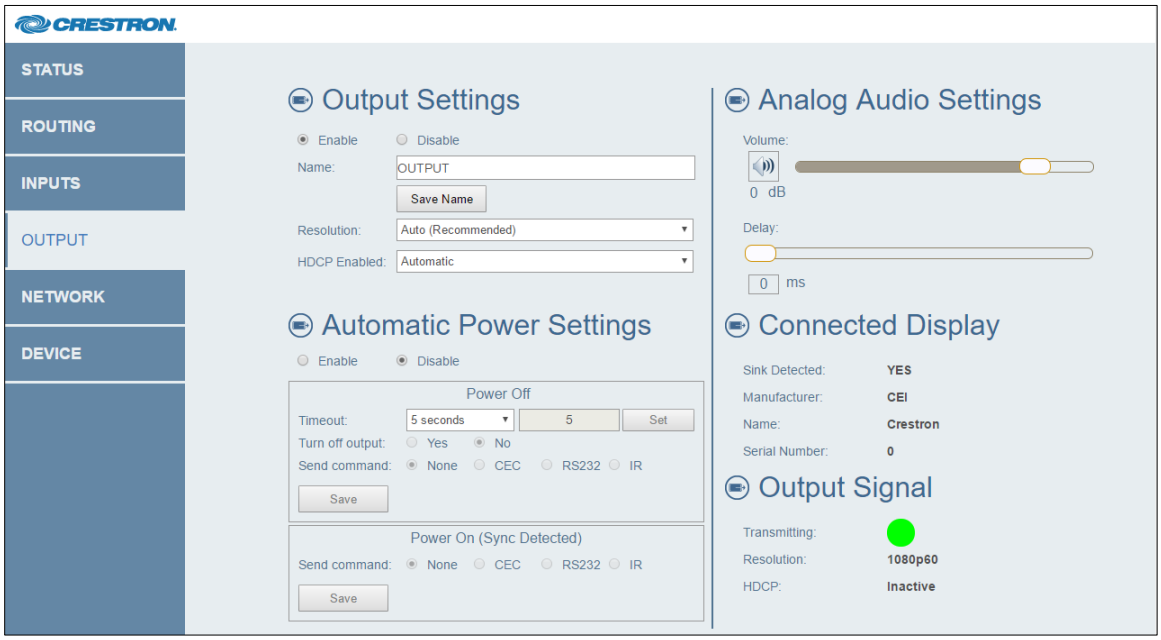
- **Standard:** Operates according to the SIMPL program (refer to the SIMPL Windows help file for information)

Configure Output Settings

Configuration of output settings includes the enabling or disabling of the HDMI output, the renaming of the output, setting the output resolution, and the enabling of 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.

Configure output settings on the Output page of the web interface. To access the Output page, click **OUTPUT** in the navigation bar.

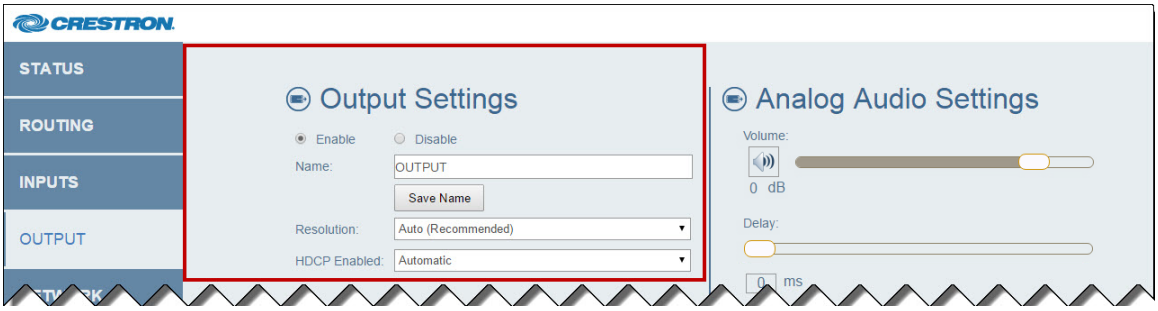
Output Page



Configure HDMI Output Settings

Configure HDMI output settings in the **Output Settings** section of the Output page.

Output Page - Output Settings



To configure HDMI output settings:

1. Enable or disable the HDMI output by clicking the **Enable** or **Disable** radio button, respectively. By default, the **Enable** radio button is selected, allowing the output display to turn on. If the **Disable** radio button is selected, the output display turns off.
2. In the **Name** text entry box, rename the output if desired. The default name is **OUTPUT**. To save the new name, click **Save Name**.
3. In the **Resolution** drop-down list, select the desired output resolution. A list of the available selections follows.

   NOTE: In the following list, *RB* denotes *Reduced Blanking*.

Auto (Recommended)	1360x768@60
640x480@60	1366x768@60
480i	1366x768@60 RB
480p	1400x1050@60
576i	1400x1050@60 RB
576p	1440x900@60
720p@50	1440x900@60 RB
720p@60	1600x900@60 RB
800x600@60	1600x1200@60
840x480@60	1680x1050@60
1024x768@60	1680x1050@60 RB
1280x768@60	1080i50
1280x768@60 RB	1080i60
1280x800@60	1080p50
1280x800@60 RB	1080p60
1280x960@60	1900x1200@60 RB
1280x1024@60	1080p30

   The default setting is **Auto (Recommended)**, which specifies the preferred resolution of the connected display.

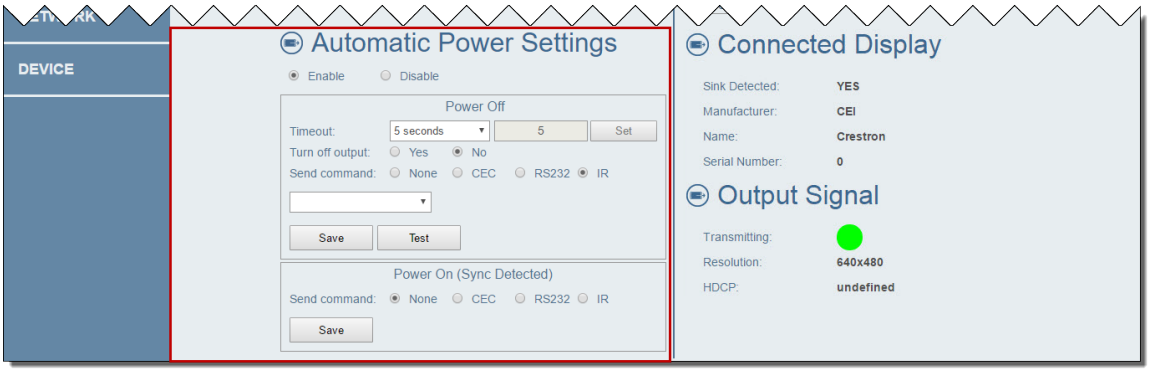
4. In the **HDCP Enabled** drop-down list, select either of the following:

   - **Automatic:** (Default setting) Specifies that the output be encrypted if the input requires HDCP protection
   - **Always Enabled:** Specifies that the output always be encrypted regardless of the input requirements

Configure Automatic Power Settings

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

Output Page - Automatic Power Settings



By default, automatic power-off and power-on settings are disabled (the **Disable** radio button is selected). To enable automatic power settings, click the **Enable** radio button. For configuration information, refer to "Configure Power-Off Settings" and "Configuring Power-On Settings" that follow.

Configure Power-Off Settings

If **Automatic Power Settings** is set to **Enable**, configure automatic power-off settings by doing the following in the **Power Off** section:

1. In the **Timeout** drop-down list, select the amount of time in seconds that no signal is active before the HDMI output automatically turns off. Available values are the following: **5 seconds**, **10 seconds**, **15 seconds**, **30 seconds**, **60 seconds**, **90 seconds**, and **Custom...(sec).** The default setting is **5 seconds**.

   If **Custom...(sec)** is selected, enter the desired number of seconds in the **Timeout** text box. Valid values range from **5** to **9999** seconds. To save the setting, click **Set**.

2. Specify whether the HDMI output is to be turned off according to the timeout value specified in step 1. Select the **Yes** radio button to turn off the output or the **No** radio button to allow the output to remain turned on.

3. Select one of the **Send command** radio buttons to choose the interface to send a power-off command: **None** (default setting), **CEC**, **RS232**, or **IR**.

   - If **None** is selected, no command is sent. Click **Save** to save the power-off setting.
   - If **CEC** (Consumer Electronics Control) is selected, continue with step 4.
   - If **RS232** is selected, skip step 4 and proceed to step 5.
   - If **IR** is selected, skip steps 4 and 5 and proceed to step 6.

4. (Applicable only when **Send command** is set to **CEC)** In the **CEC** drop-down list, select one of the following to turn off the output:

   - **Power Off: RCP** (Remote Control Passthrough) **and SS** (System Standby)
   - **Power Off: RCP Only**
   - **Power Off: SS Only**
   - **Custom**

   If **RCP and SS**, **RCP Only**, or **SS Only** is selected, skip steps 5 and 6 and proceed to step 7. If **Custom** is selected, continue with step 5.

5. (Applicable only when **Send command** is set to **CEC Custom** or to **RS232)** Do the following:

   a. Select the **Hex** or **Ascii** radio button to specify the format of the command. The default setting is **Hex.**

   b. In the **Command** text box, enter the command in hexadecimal or ASCII format.

   c. In the **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), or **CR LF** (carriage return followed by a line feed). The default setting is **CR LF**.

   d. Skip step 6 and proceed to step 7.

6. (Applicable only when **Send command** is set to **IR)** Do the following:

   NOTE: In order for IR operation to be functional, an IR file (*.ir) must be loaded to the switcher. For information about loading an IR file, refer to "Configure IR Settings" on page 27.

   a. In the IR drop-down list, select the IR signal that is to be transmitted to turn off the output.

   b. Continue with step 7.

7. (Applicable only when **Send command** is set to **CEC**, **RS232**, or **IR**) Do one of the following:

   - Click **Save** to save the power-off settings.
   - Click **Test** to test the command. If the command is successful, click **Save** to save the power-off settings.

Configure Power-On Settings

If **Automatic Power Settings** is set to **Enable**, configure power-on settings by doing the following in the **Power On (Sync Detected)** section:

1. Select one of the **Send command** radio buttons to choose the interface to send a power-on command: **None** (default setting), **CEC**, **RS232**, or **IR**.

   - If **None** is selected, no command is sent. Click **Save** to save the power-on setting.
   - If **CEC** (Consumer Electronics Control) is selected, continue with step 2.
   - If **RS232** is selected, skip step 2 and proceed to step 3.
   - If **IR** is selected, skip steps 2 and 3 and proceed to step 4.

2. (Applicable only when **Send command** is set to **CEC)** In the **CEC** drop-down list, select one of the following to turn on the output:

   - **Power On: RCP** (Remote Control Passthrough) **and IVO** (Image View On)
   - **Power On: RCP**
   - **Power On: Image View on**
   - **Custom**

   If **RCP and IVO**, **RCP**, or **Image View on** is selected, skip steps 3 and 4 and proceed to step 5. If **Custom** is selected, continue with step 3.

3. (Applicable only when **Send command** is set to **CEC Custom** or to **RS232)** Do the following:

   a. Select the **Hex** or **Ascii** radio button to specify the format of the command. The default setting is **Hex.**

   b. In the **Command** text box, enter the command in hexadecimal or ASCII format.

   c. In the **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), or **CR LF** (carriage return followed by a line feed). The default setting is **CR LF**.

   d. Skip step 4 and proceed to step 5.

4. (Applicable only when **Send command** is set to **IR**) Do the following:

   NOTE: In order for IR operation to be functional, an IR file (*.ir) must be loaded to the switcher. For information about loading an IR file, refer to "Configure IR Settings" on page 27.

   a. In the IR drop-down list, select the IR signal that is to be transmitted to turn on the output.

   b. Continue with step 5.

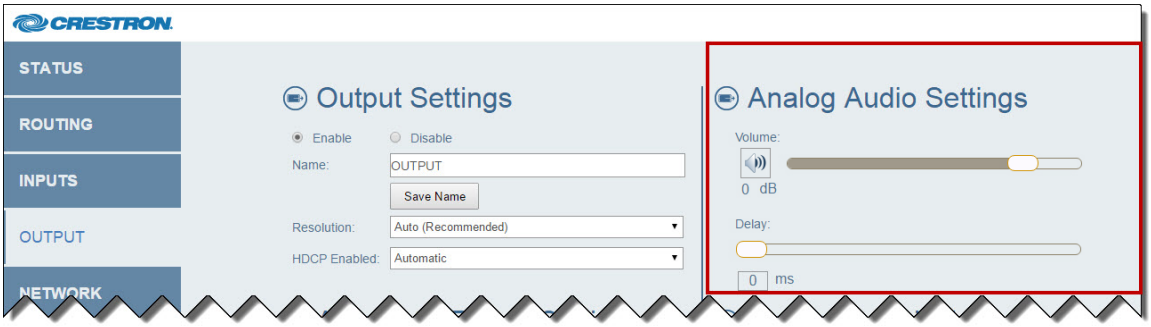
5. (Applicable only when **Send command** is set to **CEC**, **RS232**, or **IR**) Do one of the following:

   - Click **Save** to save the power-on settings.
   - Click **Test** to test the command. If the command is successful, click **Save** to save the power-on settings.

Configure Analog Audio Settings

Configure analog audio settings in the **Analog Audio Settings** section of the Output page.

Output Page - Analog Audio Settings



To configure analog audio settings:

1. Mute or unmute audio by clicking the **Volume** button, which is represented by a speaker icon. By default, audio is unmuted and is set to **0 dB.** When audio is muted, the **Volume** button displays a red circle with a slash overlapping the speaker icon ( ).

2. (Applicable only when audio is unmuted) Adjust the volume as desired by dragging the **Volume** slider to the left or to the right. The volume decreases when the slider is dragged to the left and increases when the slider is dragged to the right. Available values range from **-80 dB** to **20 dB**.

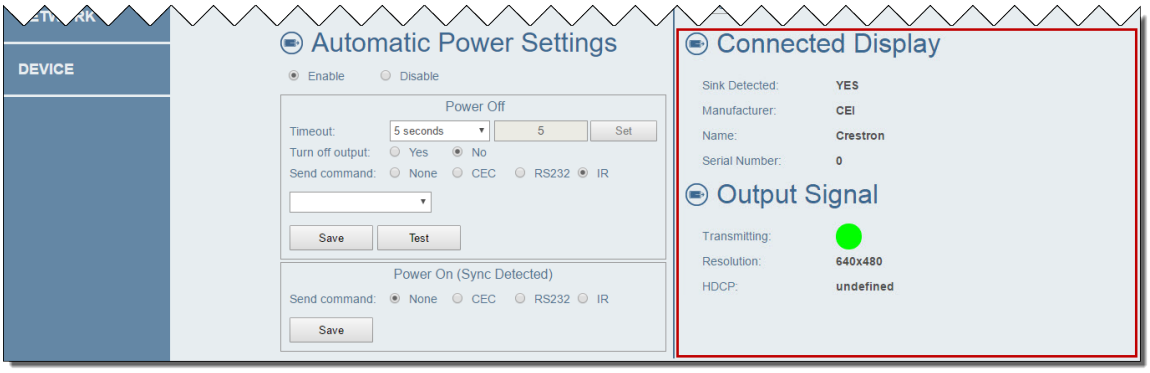
3. Set the audio delay so that the audio is in sync with the video. To do so, do either of the following:

   - Drag the **Delay** slider to the left or to the right. The **Delay** text box displays the value set by the **Delay** slider.
   - Enter the desired value in the **Delay** text box. The **Delay** slider adjusts to the value entered in the **Delay** text box.

   Valid values range from **0 ms** to **150 ms.** The default setting is **0 ms**.

The Output page also displays information about the connected display and the output signal in the **Connected Display** and **Output Signal** sections of the page, respectively.

Output Page - Connected Display and Output Signal Information



The following information is displayed in the **Connected Display** section of the page:

- **Sink Detected:** Specifies whether the HDMI signal is detected by the connected display (**Yes** or **No**)
- **Manufacturer:** Specifies the name of the manufacturer of the connected display
- **Name:** Specifies the model name of the connected display
- **Serial Number:** Specifies the serial number of the connected display

The following information is displayed in the **Output Signal** section of the page:

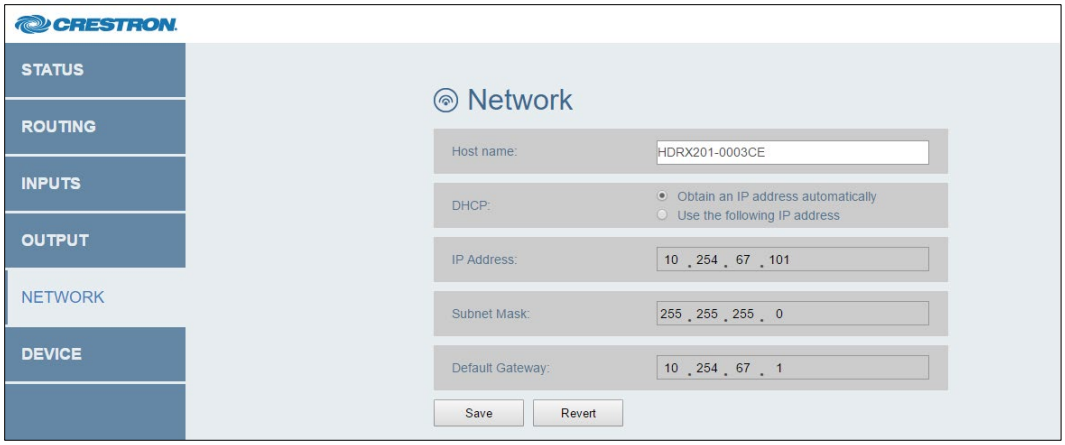
- **Transmitting:** Specifies whether the HDMI output is transmitting an HDMI signal to the connected display:
  - A green icon indicates that the HDMI output is transmitting an HDMI signal.
  - A gray icon indicates that the HDMI output is not transmitting an HDMI signal.
- **Resolution:** Specifies the current resolution of the output
- **HDCP:** Specifies whether HDCP is active, inactive, or undefined

Configure Network Settings

To configure network settings:

1. In the navigation bar, click **Network**. The Network page opens.

   Network Page

2. Configure network settings as required:

   - In the **Hostname** text box, overwrite the existing hostname with a name that identifies the switcher on the network. The hostname is restricted to the letters *a* to *z* (not case sensitive), the digits *0* to *9*, and the hyphen.

     The default hostname is **HDRX201-*xxxxxx***, where ***xxxxxx*** consists of the last six characters (excluding punctuation) of the MAC address of the switcher.

   - Specify whether the IP address of the switcher is to be assigned by a DHCP server. To set the IP address, click either of the following radio buttons:

     – **Obtain an IP address automatically:** (Default setting) Allows the IP address of the switcher to be automatically assigned by a DHCP server on the local area network (LAN) for a predetermined period of time.

     > **NOTE:** If a DHCP server does not exist on the network and 45 seconds have elapsed since the switcher was powered on, the IP address defaults to a link-local address. Refer to RFC 3927 for information about link-local addressing.

     – **Use the following IP address:** Allows a static IP address and related network settings to be assigned:

       - **IP address:** Enter a unique IP address for the switcher.
       - **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.

Do either of the following:

- To save the current entries, click **Save**. The device automatically reboots.
- To revert to the previous settings without saving the current entries, click **Revert**.

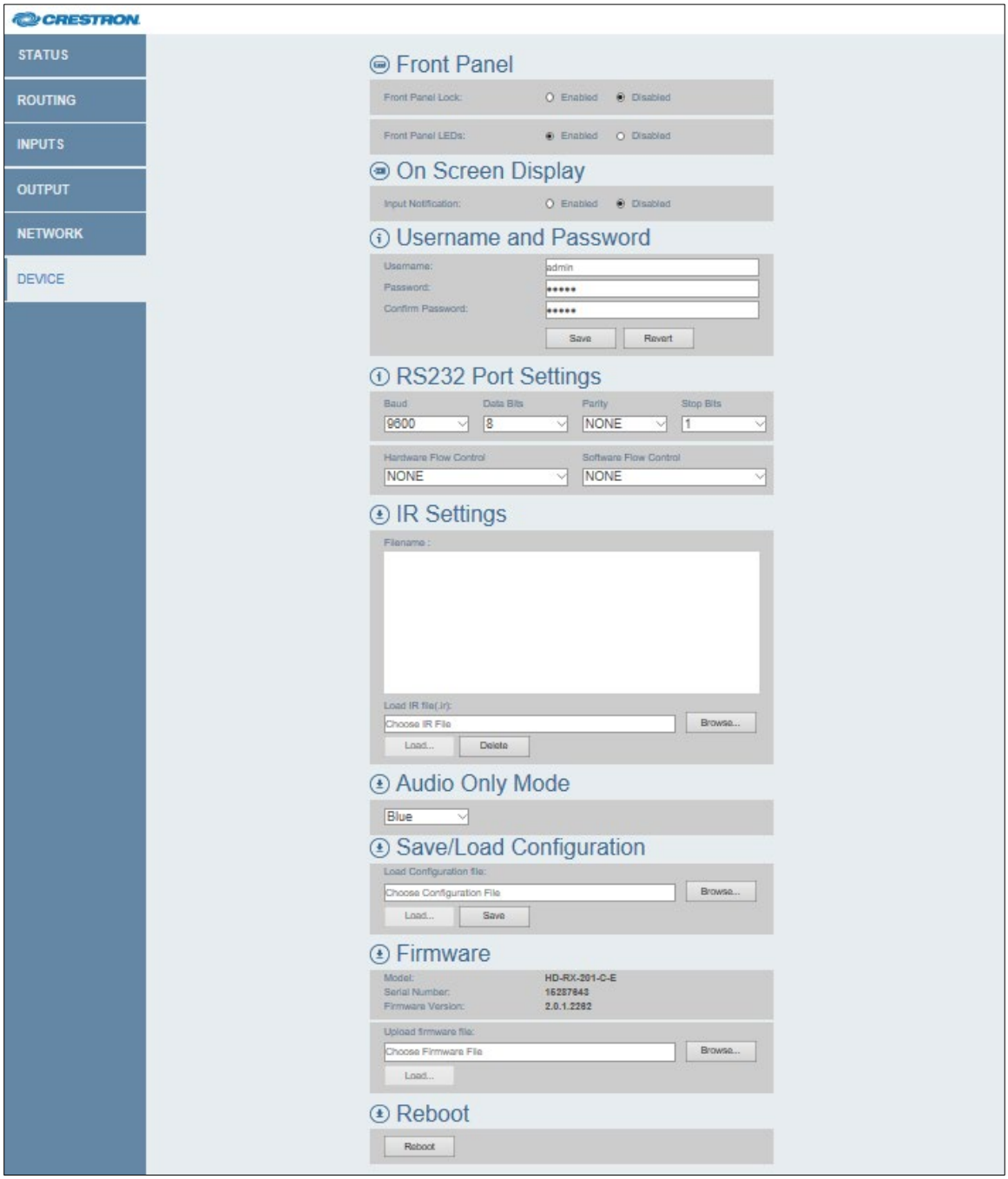
Configure Device Settings

Configuration and management of device settings consist of the following:

- Enabling or disabling the front panel
- Displaying the selected input on the HDMI output
- Changing the username and password
- Configuring RS232 port settings
- Configuring IR settings
- Configuring audio only mode (applicable only to the HD-MD-400-C-E, HD-MD-300-C-E, and HDI-MD-400-C-2G-E)
- Saving or loading a configuration file
- Upgrading firmware
- Rebooting the device

Configure device settings on the Device page of the web interface. To access the Device page, click **DEVICE** in the navigation bar.

Sample Device Page

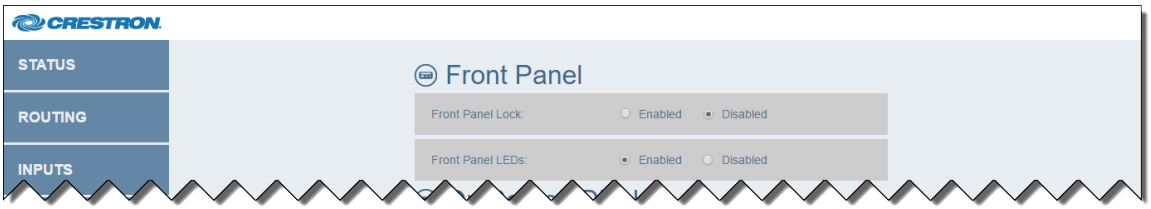


Enable or Disable the Front Panel

By default, the front panel of the transmitter and receiver is unlocked, allowing the push buttons to function. When the front panel is locked, pressing any of the push buttons—with the exception of the **SETUP** push 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—with the exception of the SETUP LED—do not light. Although front panel push buttons and LEDs may be disabled, the device continues to function.

Configure the front panel in the **Front Panel** section of the Device page.

Device Page - Front Panel



To configure the front panel, do the following as required:

- Configure **Front Panel Lock** to unlock or lock the front panel push buttons:
  - To disable locking of the push buttons and allow them to function, click the **Disabled** radio button (default setting).
  - To enable locking of the push buttons excluding the **SETUP** push button, click the **Enabled** radio button.
- Configure **Front Panel LEDs** to enable or disable the LEDs:
  - To enable the LEDs to light as appropriate, click the **Enabled** radio button (default setting).
  - To disable the LEDs excluding the SETUP LED, click the **Enabled** radio button.

Display the Selected Input on the HDMI Output

By default, the HDMI output is configured to display the name of the selected input when inputs are switched. The input name is the name assigned in the web interface or SIMPL Windows. The input name is displayed for 10 seconds in the upper-right corner of the display.

Configure input notification in the **On Screen Display** section of the Device page.

Device Page - On Screen Display

To configure input notification, do either of the following:

- To enable input notification on the HDMI output when inputs are switched, click the **Enabled** radio button (default setting).
- To disable input notification on the HDMI output when inputs are switched, click the **Disabled** radio button.

Change the Username and Password

Change the username and password in the **Username and Password** section of the Device page.

Device Page - Username and Password

To change the username and password:

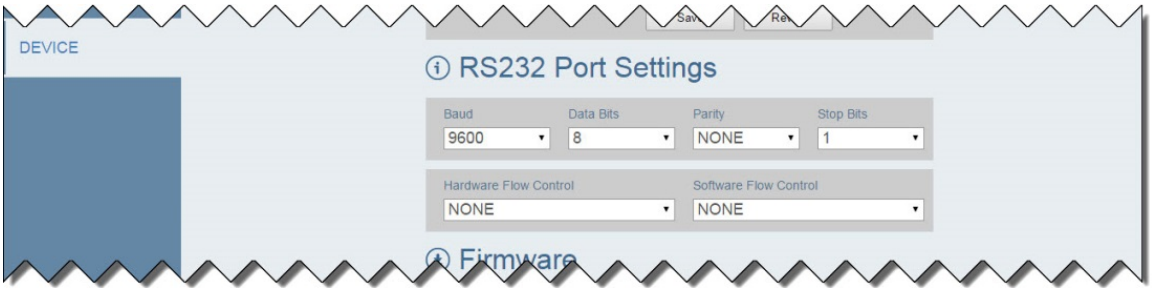
NOTE: The username and password are case sensitive.

1. In the **Username** text box, enter the desired username.
2. In the **Password** text box, enter the desired password.
3. In the **Confirm Password** text box, reenter the desired password to confirm the password.
4. Do either of the following:
   - To save the current entries, click the **Save** button.
   - To revert to the previous settings without saving the current entries, click the **Revert** button.

Configure RS232 Port Settings

Configure RS232 port settings in the **RS232 Port Settings** section of the Device page.

Device Page - RS232 Port Settings



To configure RS232 port settings:

1. In the **Baud** drop-down list, select the number of bits to be transmitted per second. Available values are as follows:

300	9600
600	14400
1200	19200
2400	28800
3600	38400
4800	57600
7200	115200

   The default setting is **9600** bits per second (bps).

2. In the **Data Bits** drop-down list, select the number of data bits that are to be transmitted as a series. Available values are **7** and **8.** The default setting is **8.**

3. In the **Parity** drop-down list, select the parity. Available values are **NONE, Odd, Even,** or **Mark.** The default setting is **NONE.**

4. In the **Stop Bits** drop-down list, select the number of stop bits. Available values are **1** and **2.** The default setting is **1.**

5. In the **Hardware Flow Control** drop-down list, select the hardware flow control. Available values are **RTS/CTS** and **NONE.** The default setting is **NONE.**

6. In the **Software Flow Control** drop-down list, select the software flow control. Available values are **NONE** and **XON/XOFF.** The default setting is **NONE.**

Configure IR Settings

An IR file (*.ir) can be loaded to a switcher. The IR file defines all IR signals available on the device.

NOTE: After the Crestron Database is installed on a PC, IR files are installed in the following location on the PC:

C:\Program Files (x86)\Crestron\Cresdb\cresirdb.zip

Before loading an IR file, extract the *.ir files from the cresirdb.zip file.

Load an IR file using the **IR Settings** section of the Device page.

Device Page - IR Settings

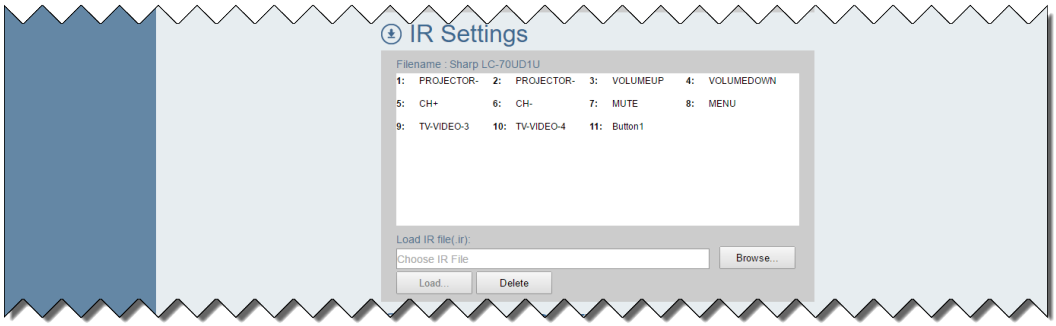
To load an IR file:

1. Click **Browse** located to the right of the **Load IR file (.ir)** field. Windows Explorer opens.
2. Locate and select the desired IR file (*.ir), and then click **Open**. The **Load IR file (.ir)** field displays the path to the selected IR file.

   NOTE: If a file other than an *.ir file is selected, a message appears indicating that the selected file is an invalid file type. Select a valid IR file.

3. Click **Load**. A prompt appears asking for confirmation that the IR file be loaded.
4. Click **OK** to load the IR file. The IR filename is displayed and the IR signals are listed below the filename as shown in the example below.

   ### Device Page - Sample IR Settings



To delete IR settings:

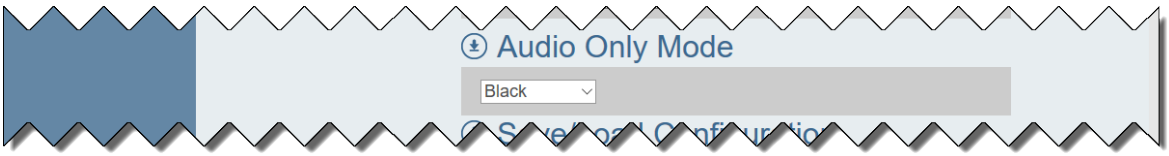
1. In the **IR Settings** section of the Device page, click **Delete**. A prompt appears asking for confirmation that the IR settings be deleted.
2. Click **OK** to delete the IR settings. The IR settings are removed from the **IR Settings** section of the page.

Configure Audio Only Mode

NOTE: Audio Only Mode is only applicable to the VGA input on the transmitter of an HD-MD-400-C-E, HD-MD-300-C-E, and HDI-MD-400-C-2G-E.

If **Audio Only** is enabled on the Inputs page for the VGA input, configure **Audio Only Mode** to display a black or blue frame on the output. The default setting is **Black.**

Device Page – Audio Only Mode

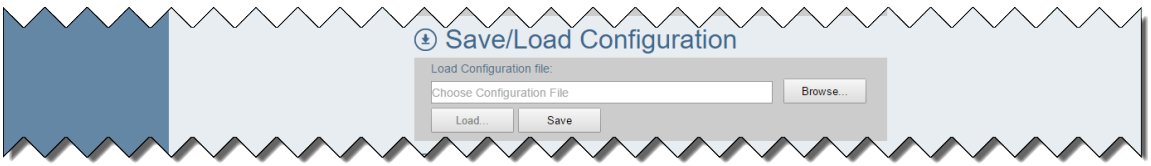


Save or Load a Configuration File

A configuration file (*.xml) can be generated using the settings currently configured on a switcher. The file can then be saved to the local hard drive of a PC. A configuration file can also be loaded to a switcher.

Save or load a configuration file in the **Save/Load Configuration** section of the Device page.

Device Page - Save/Load Configuration



To save or load a configuration file, refer to "Save a Configuration File" or "Load a Configuration File" on the following page.

Save a Configuration File

In the **Save/Load Configuration** section, do the following to save a configuration file:

1. Click **Save**.

   An HD-RX-201-C-E.xml file is generated containing the settings currently configured on the switcher. In addition, an **XML Edit** dialog box opens.

2. Click **Save** to save the HD-RX-201-C-E.xml file. The file is downloaded to the **Downloads** folder of the PC.

Load a Configuration File

In the **Save/Load Configuration** section, do the following to load a configuration file:

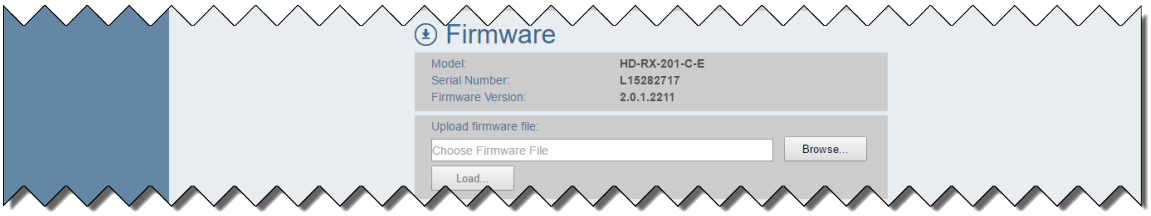
1. Click **Browse** located to the right of the **Load Configuration file** field. Windows Explorer opens.
2. Locate and select the desired configuration file (*.xml), and then click **Open**. The Load Configuration file field displays the path to the selected configuration file.
3. Click **Load** to load the configuration file. A prompt appears asking for confirmation that the selected configuration file be loaded.
4. Click **Yes**. The **Restoring** message appears.

   When the configuration file is loaded to the switcher, a message appears indicating that the XML restore process is finished. The web interface then returns to the Login page.

Upgrade Firmware

Upgrade firmware in the **Firmware** section of the Device page.

Device Page - Firmware



The **Firmware** section displays the following information about the receiver:

- Model, which is **HD-RX-201-C-E**
- Serial Number
- Firmware Version

NOTE: The firmware file is an *.bin file. Before upgrading firmware, extract the *.bin file from the *.zip file.

To upgrade firmware:

1. Click **Browse** located to the right of the Upload firmware file field. Windows Explorer opens.
2. Locate and select the desired firmware file (*.bin), and then click **Open**. The Upload firmware file field displays the path to the selected firmware file.
3. Click **Load**. A prompt appears asking for confirmation that the firmware be upgraded.

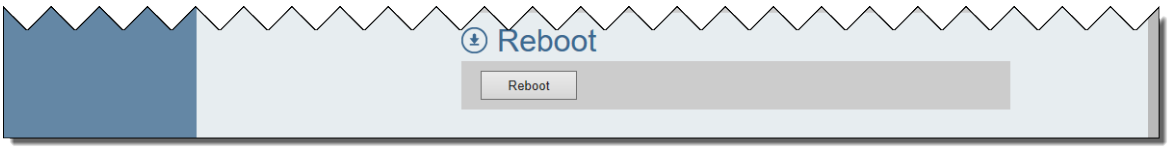
4. Click **OK** to upgrade the firmware. When the firmware upgrade process is complete, the Login page of the web interface opens.

NOTE: If the web interface is inaccessible after a firmware upgrade, refresh the web browser using **CTRL** + **F5.**

Reboot the Device

Reboot the device in the **Reboot** section of the Device page.

Device Page - Reboot



To reboot the device:

1. Click **Reboot**. A prompt appears asking for confirmation that the device be rebooted.
2. Click **OK** to reboot the device.

Using the Routing Push Buttons

This section provides information about the push buttons that can be used to route an input to the HDMI output on the receiver. Push buttons are located on the receiver and on the HD-MD-400-C-E, HD-MD-300-C-E, and HDI-MD-400-C-2G-E transmitters.

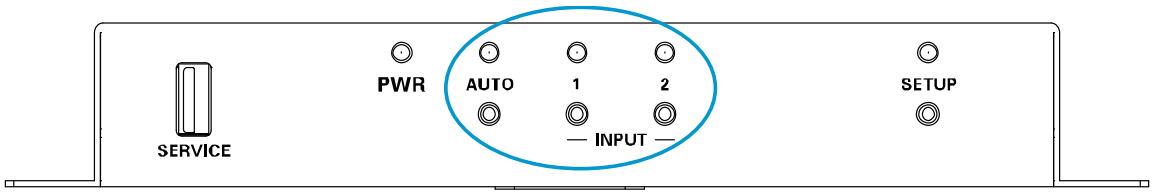
NOTES:

- If the front panel is disabled, pressing the routing push buttons has no effect and the corresponding LEDs do not light. For more information, refer to "Enable or Disable the Front Panel" on page 24.
- As discussed in the "Route an Input to the HDMI Output" section on page 10, the Routing page of the web interface can also be used to route an input to the HDMI output.

Use Routing Push Buttons on the Receiver

The receiver of the switchers provides one **AUTO** push button, two **INPUT** push buttons, and corresponding LEDs as shown in the following illustration.

Routing Push Buttons and LEDs on the Receiver



To route signals for each of the inputs on the receiver, use the routing push buttons as follows:

- To enable or disable automatic routing of the inputs, press the **AUTO** push button. Pressing the button toggles automatic routing on and off. Automatic routing is enabled by default.
- To route the HDMI signal corresponding to the HDMI input on the receiver, press the **INPUT 1** push button.
- To route the signal corresponding to the FROM TX input on the receiver, press the **INPUT 2** push button.

NOTE: The **INPUT 2** push button on the receiver must be pressed in order for any of the inputs on the transmitter to be routed to the output.

For each **INPUT** push button on the receiver, the corresponding LED functions as follows:

- **AUTO LED:** When automatic routing is enabled, the AUTO LED lights green. When automatic routing is disabled, the AUTO LED turns off.
- **INPUT LED:** For each input, the INPUT LED indicates whether the input is routed and a source is detected:
  - Green indicates that the input is routed to an output.
  - Amber indicates that a source is detected but is not routed.
  - Off indicates that no source is detected and no signal is routed.

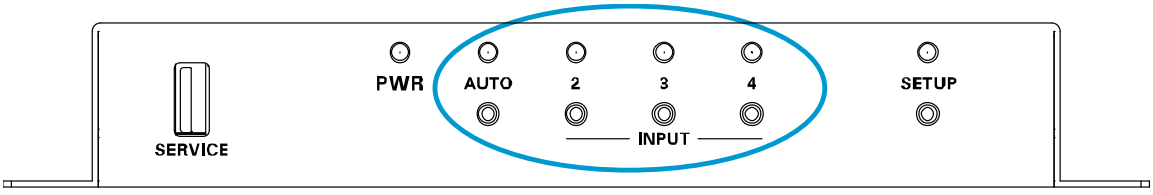
Use Routing Push Buttons on the Transmitter

The following sections provide information about the routing push buttons and LEDs on the HD-MD-400-C-E, HD-MD-300-C-E, and HDI-MD-400-C-2G-E transmitters.

Routing Push Buttons on the HD-MD-400-C-E Transmitter

The HD-MD-400-C-E transmitter (HD-TX-301-C-E) provides one **AUTO** push button, three **INPUT** push buttons, and corresponding LEDs. The routing push buttons and LEDs on the HD-MD-400-C-E transmitter are shown in the following illustration.

Routing Push Buttons and LEDs on the HD-MD-400-C-E Transmitter



To route signals for each of the inputs on the HD-MD-400-C-E transmitter, use the routing push buttons as follows:

NOTE: The **INPUT 2** push button on the receiver must be pressed in order for any of the inputs on the transmitter to be routed to the output.

- To enable or disable automatic routing of the inputs, press the **AUTO** push button. Pressing the button toggles automatic routing on and off. Automatic routing is enabled by default.
- To route the HDMI signal corresponding to the HDMI 2 input on the transmitter, press the **INPUT 2** push button.
- To route the HDMI signal corresponding to the HDMI 3 input on the transmitter, press the **INPUT 3** push button.
- To route the RGB (VGA) or component video input signal with an analog audio signal corresponding to the VGA 4 and AUDIO inputs on the transmitter, press the **INPUT 4** push button.

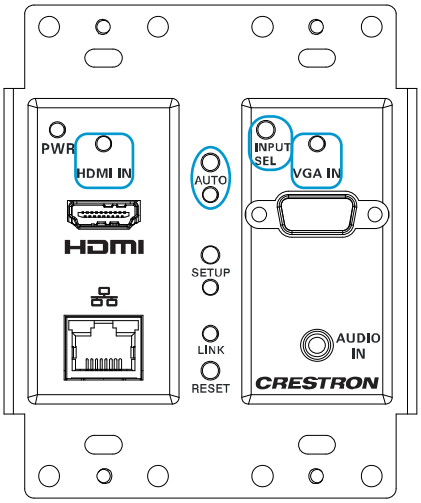
For each **INPUT** push button on the HD-MD-400-C-E transmitter, the corresponding LED functions as follows:

- **AUTO LED:** When automatic routing is enabled, the AUTO LED lights green. When automatic routing is disabled, the AUTO LED turns off.
- **INPUT LED:** For each input, the INPUT LED indicates whether the input is routed and a source is detected:
  - Green indicates that the input is routed to an output.
  - Amber indicates that a source is detected but is not routed.
  - Off indicates that no source is detected and no signal is routed.

Routing Push Buttons on the HD-MD-300-C-E Transmitter

The HD-MD-300-C-E transmitter (HD-TX-201-C-2G-E) provides one **AUTO** push button and LED, one **INPUT SEL** push button, one HDMI IN LED, and one VGA IN LED. The routing push buttons and LEDs are shown in the following illustration.

Routing Push Buttons and LEDs on the HD-MD-300-C-E Transmitter



To route signals for each of the inputs on the HD-MD-300-C-E transmitter, use the routing push buttons as follows:

NOTE: The **INPUT 2** push button on the receiver must be pressed in order for any of the inputs on the transmitter to be routed to the output.

- To enable or disable automatic routing of the inputs, press the **AUTO** push button. Pressing the button toggles automatic routing on and off. Automatic routing is enabled by default.
- To switch from the default setting of automatic routing to any of the inputs on both the transmitter and receiver, press the **INPUT SEL** push button in succession to cycle through the HDMI and VGA inputs on both the transmitter and receiver until the desired input is selected.

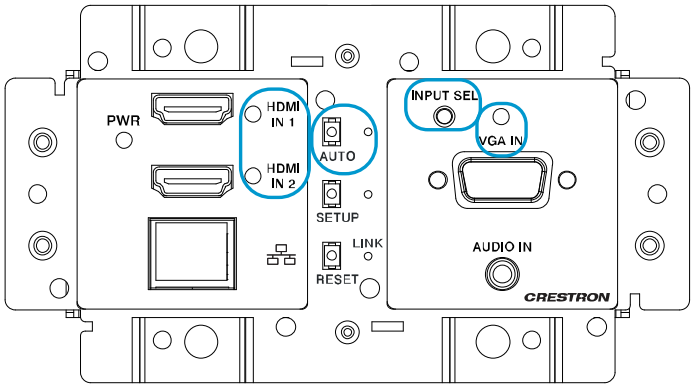
For each input on the HD-MD-300-C-E transmitter, the corresponding LED functions as follows:

- **AUTO LED:** When automatic routing is enabled, the AUTO LED lights green. When automatic routing is disabled, the AUTO LED turns off.
- **INPUT LED:** For each input, the corresponding LED indicates whether the input is routed and a source is detected:
  - Green indicates that the input is routed to an output.
  - Amber indicates that a source is detected but is not routed.
  - Off indicates that no source is detected and no signal is routed.

Routing Push Buttons on the HDI-MD-400-C-2G-E Transmitter

The HDI-MD-400-C-2G-E transmitter (HDI-TX-301-C-2G-E) provides one **AUTO** push button and LED, two HDMI IN LEDs, and one VGA IN LED. The routing push buttons and LEDs are shown in the following illustration.

Routing Push Buttons and LEDs on the HDI-MD-400-C-2G-E Transmitter



NOTE: The **INPUT 2** push button on the receiver must be pressed in order for any of the inputs on the transmitter to be routed to the output.

- To enable or disable automatic routing of the inputs, press the **AUTO** push button. Pressing the button toggles automatic routing on and off. Automatic routing is enabled by default.
- To switch from the default setting of automatic routing to any of the inputs on both the transmitter and receiver, press the **INPUT SEL** push button in succession to cycle through the HDMI and VGA inputs on both the transmitter and receiver until the desired input is selected.

For each input on the HDI-MD-400-C-2G-E transmitter, the corresponding LED functions as follows:

- **AUTO LED:** When automatic routing is enabled, the AUTO LED lights green. When automatic routing is disabled, the AUTO LED turns off.
- **INPUT LED:** For each input, the corresponding LED indicates whether the input is routed and a source is detected:
  - Green indicates that the input is routed to an output.
  - Amber indicates that a source is detected but is not routed.
  - Off indicates that no source is detected and no signal is routed.

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Supplemental Guide – DOC. 7797D
(2045740)
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