



# **HD-SCALER-HD-E/HD-SCALER-VGA-E**

## High-Definition Video Scalers

Supplemental Guide  
Crestron Electronics, Inc.

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# Contents

<b>Introduction</b>	<b>1</b>
<b>OSD Operation</b>	<b>1</b>
<b>Configuration</b>	<b>3</b>
Configuring Picture Settings .....	3
Configuring Output Settings .....	5
Configuring Audio Settings .....	7
Configuring OSD Settings .....	8
Configuring Device Settings .....	9
Restoring Factory Default Settings .....	10
Configuring EDID Mode.....	10
Configuring the Output Timeout .....	11
Configuring Input Settings (HD-SCALER-HD-E Only) .....	13
Auto Adjusting RGB Video Settings (HD-SCALER-VGA-E Only) .....	13
<b>Device Information</b>	<b>14</b>
Viewing Serial Number and Firmware Version .....	14
Viewing Input Signal Information .....	15
Viewing Output Signal Information .....	16
<b>Firmware Upgrade</b>	<b>17</b>



# HD-SCALER-HD-E/HD-SCALER-VGA-E: High-Definition Video Scalers

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## Introduction

The Crestron® HD-SCALER-HD-E and HD-SCALER-VGA-E video scalers provide streamlined, application-specific HD scaling solutions. The HD-SCALER-HD-E provides one HDMI® input and one HDMI output. The HD-SCALER-VGA-E provides one VGA input and one HDMI output. Both the HD-SCALER-HD-E and HD-SCALER-VGA-E automatically scale any input signal to match the native resolution of a display or other HDMI device.

This guide provides information about configuration of the video scalers using the OSD (on-screen display). For installation information, refer to the HD-SCALER-HD-E/HD-SCALER-VGA-E DO Guide (Doc. 7778).

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## OSD Operation

The HD-SCALER-HD-E and HD-SCALER-VGA-E provide an OSD that appears on the connected output display device. The OSD allows configuration of the video scalers and displays signal status information.

To access the OSD, press the **MENU / ENTER** button on the video scaler. The main menu of the OSD opens.

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**NOTE:** Depending on the video input, the main menu may differ slightly from the one shown below.

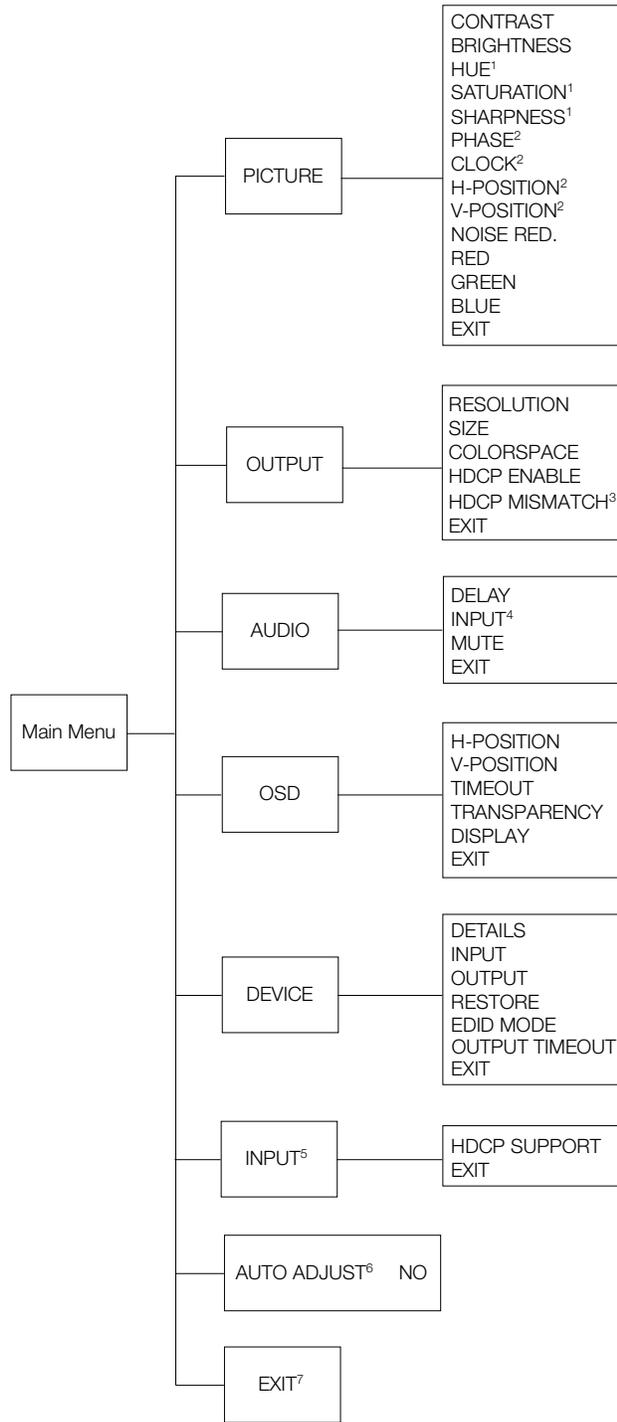
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### *OSD Main Menu*



The following illustration provides a menu tree of the OSD.

OSD Menu Tree



<sup>1</sup>Applicable only to component video of the HD-SCALER-VGA-E. Also applicable to HDMI video of the HD-SCALER-HD-E  
<sup>2</sup>Applicable only to RGB video of the HD-SCALER-VGA-E  
<sup>3</sup>Applicable only to the HDMI output of the HD-SCALER-HD-E  
<sup>4</sup>Applicable only to the audio input of the HD-SCALER-HD-E  
<sup>5</sup>Applicable only to the HDMI input of the HD-SCALER-HD-E  
<sup>6</sup>Applicable only to PHASE, CLOCK, H-POSITION, and V-POSITION settings for RGB video of the HD-SCALER-VGA-E  
<sup>7</sup>Exits the main menu

To navigate the OSD, use the **MENU / ENTER**, **UP**, and **DOWN** buttons on the video scaler as follows:

- To access the OSD, press **MENU / ENTER**.
- To move up or down in a menu, press **UP** or **DOWN**.
- To select a highlighted item (yellow text) in a menu, press **MENU / ENTER**.
- To move up or down in a list of available configuration settings (blue text enclosed by ► and ◀), press **UP** or **DOWN**.
- To select an available configuration setting (blue text enclosed by ► and ◀), press **MENU / ENTER**. Once selected, the configuration setting becomes yellow text.

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## Configuration

The OSD allows configuration of the following types of settings:

- Picture settings
- Output settings
- Audio settings
- OSD settings
- Device settings
- Input settings

In addition, the OSD of the HD-SCALER-VGA-E allows the auto adjustment of certain RGB video settings.

### Configuring Picture Settings

Picture settings can be configured to improve picture quality as desired. To configure picture settings, do the following:

1. On the main menu of the OSD, select **PICTURE**.

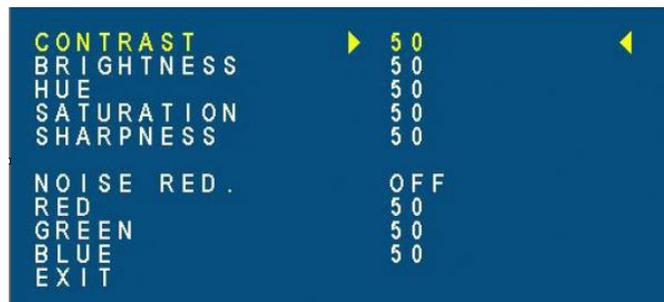
The PICTURE submenu opens.

---

**NOTE:** Depending on the video input, the PICTURE submenu may differ from the one shown below.

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#### *PICTURE Submenu*



2. Configure picture settings as desired. Refer to the following table for information about the PICTURE submenu configuration items.

*PICTURE Submenu Configuration Items*

<b>CONFIGURATION ITEMS</b>	<b>DESCRIPTION</b>
CONTRAST	Controls the difference in brightness between objects or regions within the picture by adjusting the white level in the picture. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>50</b> .
BRIGHTNESS	Controls the overall darkness or lightness of the picture by adjusting the black level in the picture. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>50</b> .
HUE	(Applicable only to component video of the HD-SCALER-VGA-E. Also applicable to HDMI video of the HD-SCALER-HD-E.) Adjusts the pure colors (for example, red, green, and yellow) in the picture without affecting parts of the picture that contain black, white, and gray. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>50</b> .
SATURATION	(Applicable only to component video of the HD-SCALER-VGA-E. Also applicable to HDMI video of the HD-SCALER-HD-E.) Adjusts the intensity of the colors in the picture. A higher saturation make the colors look more vivid. A lower saturation turns the colors toward gray. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>50</b> .
SHARPNESS	(Applicable only to component video of the HD-SCALER-VGA-E. Also applicable to HDMI video of the HD-SCALER-HD-E.) Adjusts the picture to look crisper or softer. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>50</b> .
PHASE*	(Applicable only to RGB video of the HD-SCALER-VGA-E) Minimizes video distortion or video jitter. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>0</b> .
CLOCK*	(Applicable only to RGB video of the HD-SCALER-VGA-E) Minimizes any vertical bars or stripes visible on the screen background. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>0</b> .
H-POSITION*	(Applicable only to RGB video of the HD-SCALER-VGA-E) Adjusts the horizontal position of the picture. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>0</b> .
V-POSITION*	(Applicable only to RGB video of the HD-SCALER-VGA-E) Adjusts the vertical position of the picture. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>0</b> .

*(Continued on following page)*

*PICTURE Submenu Configuration Items (Continued)*

<b>CONFIGURATION ITEMS</b>	<b>DESCRIPTION</b>
NOISE RED.	Sets the level of noise reduction. Available selections are as follows: OFF LOW MEDIUM HIGH The default setting is <b>OFF</b> .
RED	Adjusts the red color component of the picture. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>50</b> .
GREEN	Adjusts the green color component of the picture. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>50</b> .
BLUE	Adjusts the blue color component of the picture. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>50</b> .

\* It is recommended that automatic adjustment of the PHASE, CLOCK, H-POSITION, and V-POSITION settings be performed before manually adjusting the settings in the PICTURE submenu. For information about automatic adjustment of the settings, refer to “Auto Adjusting RGB Video Settings (HD-SCALER-VGA-E Only)” on page 13.

- Exit the PICTURE submenu by selecting **EXIT** at the bottom of the submenu. The OSD returns to the main menu.

## Configuring Output Settings

Output settings can be configured to select the desired video output resolution and the size of the video image on the output display device. HDCP settings can also be configured for the output. To configure output settings, do the following:

- On the main menu of the OSD, select **OUTPUT**.

The OUTPUT submenu opens.

### *OUTPUT Submenu*



- Configure output settings as desired. Refer to the following table for information about the OUTPUT submenu configuration items.

*OUTPUT Submenu Configuration Items*

<b>CONFIGURATION ITEMS</b>	<b>DESCRIPTION</b>																																		
RESOLUTION	<p>Sets the video output resolution. Available selections are as follows:</p> <table data-bbox="727 373 1133 848"> <tr><td>NATIVE</td><td>1280x768/60R*</td></tr> <tr><td>640x480/60</td><td>1280x800/60R*</td></tr> <tr><td>800x600/60</td><td>1366x768/60R*</td></tr> <tr><td>1024x768/60</td><td>1400x1050/60R*</td></tr> <tr><td>1280x1024/60</td><td>1440x900/60R*</td></tr> <tr><td>1400x1050/60</td><td>1680x1050/60R*</td></tr> <tr><td>1600x1200/60</td><td>480p60</td></tr> <tr><td>1280x800/60</td><td>720p60</td></tr> <tr><td>1440x900/60</td><td>1080i60</td></tr> <tr><td>1680x1050/60</td><td>1080p60</td></tr> <tr><td>1920x1200/60</td><td>576p50</td></tr> <tr><td>1600x900/60</td><td>720p50</td></tr> <tr><td>848x480</td><td>1080i50</td></tr> <tr><td>1280x768/60</td><td>1080p50</td></tr> <tr><td>1280x960/60</td><td>1080p24</td></tr> <tr><td>1360x768/60</td><td>1080p25</td></tr> <tr><td>1366x768/60</td><td>1080p30</td></tr> </table> <p>*The letter <i>R</i> denotes Reduced Blanking.</p> <p>The default setting is <b>NATIVE</b>, which automatically scales any input signal to match the native resolution of the output display device.</p>	NATIVE	1280x768/60R*	640x480/60	1280x800/60R*	800x600/60	1366x768/60R*	1024x768/60	1400x1050/60R*	1280x1024/60	1440x900/60R*	1400x1050/60	1680x1050/60R*	1600x1200/60	480p60	1280x800/60	720p60	1440x900/60	1080i60	1680x1050/60	1080p60	1920x1200/60	576p50	1600x900/60	720p50	848x480	1080i50	1280x768/60	1080p50	1280x960/60	1080p24	1360x768/60	1080p25	1366x768/60	1080p30
NATIVE	1280x768/60R*																																		
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1400x1050/60	1680x1050/60R*																																		
1600x1200/60	480p60																																		
1280x800/60	720p60																																		
1440x900/60	1080i60																																		
1680x1050/60	1080p60																																		
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1280x960/60	1080p24																																		
1360x768/60	1080p25																																		
1366x768/60	1080p30																																		
SIZE	<p>Controls the size of the video image on the output display device. Available selections are as follows:</p> <ul data-bbox="727 1045 1403 1688" style="list-style-type: none"> <li>• <b>ASPECT:</b> Fits the image within the display while maintaining the aspect ratio of the image. If the image is smaller than the total resolution of the display, the image is enlarged to fit the display. If the image is larger than the total resolution of the display, the image is reduced to fit the display.</li> <li>• <b>FULL:</b> Depending on the input and output resolutions, stretches the image horizontally, vertically, or both horizontally and vertically in order to fill the display. The aspect ratio of the image is not maintained.</li> <li>• <b>OVERSCAN:</b> Crops the edges of the image and scales the image to fill the display</li> <li>• <b>UNDERSCAN:</b> Reduces the size of the image on the display, resulting in a black border around the image</li> <li>• <b>LETTERBOX:</b> Reduces an image of widescreen aspect ratio on a display of standard aspect ratio until the full width of the image can be seen, resulting in black bars above and below the image</li> <li>• <b>PAN SCAN:</b> Adjusts an image of widescreen aspect ratio on a display of standard aspect ratio by cropping the left, right, or both sides of the image without resulting in black bars above and below the image</li> </ul> <p>The default setting is <b>ASPECT</b>.</p>																																		

*(Continued on following page)*

### OUTPUT Submenu Configuration Items (Continued)

CONFIGURATION ITEMS	DESCRIPTION
COLORSPACE	Sets the colorspace of the output. Available selections are as follows: <ul style="list-style-type: none"><li>• <b>AUTOMATIC:</b> Automatically selects RGB or YUV</li><li>• <b>RGB:</b> Sets the colorspace to RGB</li><li>• <b>YUV:</b> Sets the colorspace to YUV</li></ul> The default setting is <b>AUTOMATIC</b> .
HDCP ENABLE	Specifies when HDCP (High-bandwidth Digital Content Protection) is to be enabled. Available settings are as follows: <ul style="list-style-type: none"><li>• <b>AUTOMATIC:</b> Enables HDCP automatically only when HDCP content is detected at the input</li><li>• <b>ALWAYS ENABLE:</b> Enables HDCP regardless of whether HDCP content is detected at the input</li></ul> The default setting is <b>AUTOMATIC</b> .
HDCP MISMATCH	(Applicable only to HD-SCALER-HD-E) Determines the effect on the output when HDCP content is not supported by the output. Available settings are as follows: <ul style="list-style-type: none"><li>• <b>DISABLE:</b> Turns off the output when HDCP content is not supported by the output</li><li>• <b>BLANK:</b> Displays a blank window on the output if HDCP content is not supported by the output</li></ul>

3. Exit the OUTPUT submenu by selecting **EXIT** at the bottom of the submenu. The OSD returns to the main menu.

## Configuring Audio Settings

Audio settings can be configured for audio delay and audio input type as well as for turning audio on or off. To configure audio settings, do the following:

1. On the main menu of the OSD, select **AUDIO**.

The AUDIO submenu opens.

### AUDIO Submenu



2. Configure audio settings as desired. Refer to the following table for information about the AUDIO submenu configuration items.

*AUDIO Submenu Configuration Items*

<b>CONFIGURATION ITEMS</b>	<b>DESCRIPTION</b>
DELAY	<p>Sets the audio delay so that the audio is in sync with the video. Available selections are as follows:</p> <ul style="list-style-type: none"> <li>OFF</li> <li>40 mS</li> <li>110 mS</li> <li>150 mS</li> </ul> <p>The default setting is <b>OFF</b>.</p>
INPUT	<p>(Applicable only to the HD-SCALER-HD-E. For the HD-SCALER-VGA-E, the audio input is always analog.) Available selections are as follows:</p> <ul style="list-style-type: none"> <li>• <b>HDMI:</b> Sets the audio to HDMI (digital)</li> <li>• <b>ANALOG:</b> Sets the audio to analog</li> </ul> <p>The default setting is <b>HDMI</b>.</p>
MUTE	<p>Turns the audio on or off.</p> <ul style="list-style-type: none"> <li>• <b>UNMUTED:</b> Turns the audio on</li> <li>• <b>MUTED:</b> Turns the audio off</li> </ul> <p>The default setting is <b>UNMUTED</b>.</p>

- Exit the AUDIO submenu by selecting **EXIT** at the bottom of the submenu. The OSD returns to the main menu.

## Configuring OSD Settings

OSD settings can be configured to control the positioning and appearance of the OSD. To configure OSD settings, do the following:

- On the main menu of the OSD, select **OSD**.

The OSD submenu opens.

*OSD Submenu*



- Configure OSD settings as desired. Refer to the following table for information about the OSD submenu configuration items.

### OSD Submenu Configuration Items

CONFIGURATION ITEMS	DESCRIPTION
H-POSITION	Adjusts the horizontal position of the OSD. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>50</b> .
V-POSITION	Adjusts the vertical position of the OSD. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>50</b> .
TIMEOUT	Sets the time in seconds in which the OSD is visible after the last button is pressed. Available selections range from <b>5</b> to <b>100</b> seconds. The default setting is <b>10</b> seconds.
TRANSPARENCY	Adjusts the display of background information through the OSD. Available selections range from <b>0</b> to <b>100</b> . The default setting is <b>0</b> .
DISPLAY	Controls the display of input and output signal information on the display device whenever the OSD is not visible. Available selections are as follows: <ul style="list-style-type: none"><li>• <b>INFO</b>: Allows the information to be displayed for 10 seconds</li><li>• <b>ON</b>: Allows the information to be displayed for as long as the OSD is not visible</li><li>• <b>OFF</b>: Prevents the information from being displayed</li></ul> The default setting is <b>INFO</b> .

3. Exit the OSD submenu by selecting **EXIT** at the bottom of the submenu. The OSD returns to the main menu.

## Configuring Device Settings

The OSD allows configuration of the following device settings:

- Restoration of factory default settings
- EDID mode
- Output timeout

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**NOTE:** The OSD also displays device information. For additional information, refer to “Device Information” on page 14.

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## Restoring Factory Default Settings

To restore factory default settings, do the following:

1. On the main menu of the OSD, select **DEVICE**. The DEVICE submenu opens.

### *DEVICE Submenu*



2. Select **RESTORE**.

The DEVICE submenu appears as shown below.

### *DEVICE Submenu with RESTORE Selected*



3. To restore factory default settings, select **YES**.

The factory default settings are restored.

## Configuring EDID Mode

EDID mode controls whether the predefined Crestron EDID or the EDID of the output display device is sent to the input device. To configure EDID mode, do the following:

1. On the main menu of the OSD, select **DEVICE**.

The DEVICE submenu opens.

### *DEVICE Submenu*



2. Select **EDID MODE**.

The **DEVICE** submenu appears as shown below.

*DEVICE Submenu with EDID MODE Selected*



3. Set **EDID MODE** to either of the following:
  - **DEFAULT:** The video scaler sends the predefined Creston EDID to the input device.
  - **COPY:** The video scaler copies the EDID of the display device and then sends the EDID to the input device.

The default setting is **DEFAULT**.

### *Configuring the Output Timeout*

An output timeout can be set to turn off the HDMI and AUDIO outputs based on the number of minutes that no sync is detected at the inputs.

To configure the output timeout, do the following:

1. On the main menu of the OSD, select **DEVICE**. The **DEVICE** submenu opens.

*DEVICE Submenu*



2. Select **OUTPUT TIMEOUT**.

The DEVICE submenu appears as shown below.

*DEVICE Submenu with OUTPUT TIMEOUT Selected*



3. Enable or disable the output timeout. By default, the output timeout is disabled. To enable the output timeout, select the number of minutes that no sync is detected at the inputs before the HDMI and AUDIO outputs turn off. Available selections range from **1** to **120** minutes.

A sample screen showing the selection of **60** minutes is shown below.

*OUTPUT TIMEOUT Set to 60 Minutes*



4. Exit the DEVICE submenu by selecting **EXIT** at the bottom of the submenu. The OSD returns to the main menu.

## Configuring Input Settings (HD-SCALER-HD-E Only)

HDCP support can be enabled or disabled at the HDMI input. To configure HDCP support, do the following:

1. On the main menu of the OSD, select **INPUT**. The INPUT submenu opens.

### *INPUT Submenu*



2. Configure **HDCP SUPPORT** by selecting **ENABLE** or **DISABLE**. The default setting is **ENABLE**.
3. Exit the INPUT submenu by selecting **EXIT**. The OSD returns to the main menu.

## Auto Adjusting RGB Video Settings (HD-SCALER-VGA-E Only)

The PHASE, CLOCK, H-POSITION, and V-POSITION configuration items are provided on the PICTURE submenu of the HD-SCALER-VGA-E to allow manual adjustment of the settings (refer to “Configuring Picture Settings” on page 3 for information). By default, automatic adjustment of those settings is disabled. To allow the video scaler to adjust those settings automatically, do the following:

1. On the main menu of the OSD, select **AUTO ADJUST**.

### *OSD Main Menu – AUTO ADJUST*



2. Select **YES**.

The video scaler automatically adjusts the PHASE, CLOCK, H-POSITION, and V-POSITION settings.

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**NOTE:** If additional adjustment of the settings is desired, manually adjust the settings using the PICTURE submenu.

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## Device Information

The OSD allows the following types of device information to be viewed:

- Serial number and firmware version
- Input signal information
- Output signal information

### Viewing Serial Number and Firmware Version

To view serial number and firmware version, do the following:

1. On the main menu of the OSD, select **DEVICE**. The **DEVICE** submenu opens.

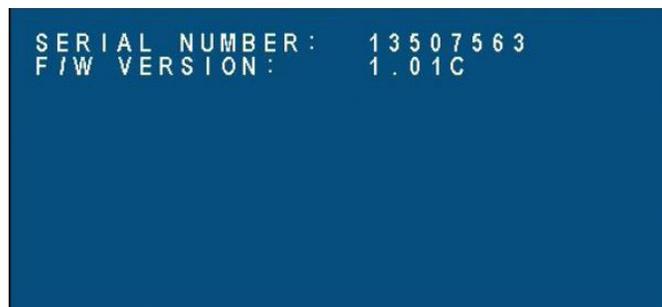
#### *DEVICE Submenu*



2. Select **DETAILS**.

The serial number and firmware version of the video scaler are displayed as shown in the example below.

#### *Sample Display of Serial Number and Firmware Version*



## Viewing Input Signal Information

To view input signal information, do the following:

1. On the main menu of the OSD, select **DEVICE**. The DEVICE submenu opens.

### *DEVICE Submenu*



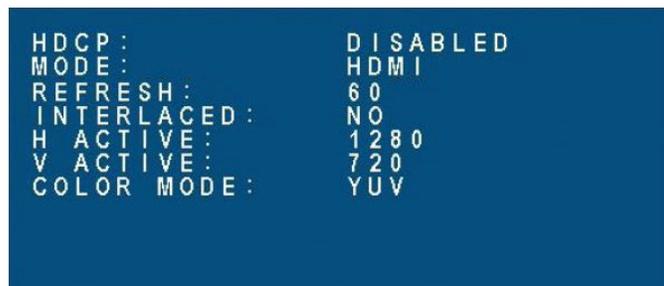
2. Select **INPUT**.

### *DEVICE Submenu with INPUT Highlighted*



Once **INPUT** is selected, status information specific to the input signal is displayed as shown in the example below.

### *Sample Input Signal Information*



## Viewing Output Signal Information

To view output signal information, do the following:

1. On the main menu of the OSD, select **DEVICE**. The DEVICE submenu opens.

### *DEVICE Submenu*



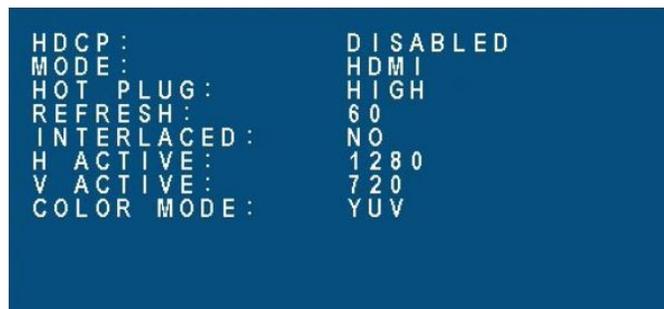
2. Select **OUTPUT**.

### *DEVICE Submenu with OUTPUT Highlighted*



Once **OUTPUT** is selected, status information specific to the output signal is displayed as shown in the example below.

### *Sample Output Signal Information*



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## Firmware Upgrade

The latest firmware file can be downloaded from the Crestron website after logging in to the website as an authorized user. The firmware file is a .BIN file, which is included in a .zip file. The .zip file also includes a .PDF file, which provides product release notes.

To upgrade firmware, do the following:

1. Extract the \*.BIN file from the \*.zip file (the \* represents the respective filename).
2. Copy the \*.BIN file to the root directory of a USB flash drive.

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**NOTE:** The USB flash drive must use FAT32.

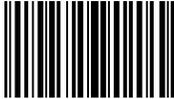
**NOTE:** Ensure that the latest firmware file (\*.BIN) is the only firmware file in the root directory.

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3. Disconnect the power pack from the video scaler.
4. Press and hold the **MENU / ENTER** button on the video scaler while doing the following:
  - a. Reconnect the power pack.
  - b. Insert the USB flash drive into the SERVICE port of the video scaler.  
The firmware update process begins. When the POWER LED starts flashing, the firmware upgrade is complete.
5. Disconnect and then reconnect the power pack again.

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**Supplemental Guide – DOC. 7828D**  
**(2045131)**  
**08.17**  
Specifications subject to  
change without notice.