



**HD-SDI to HDMI  
Scaler  
USER MANUAL**

## ASKING FOR ASSISTANCE

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## INTRODUCTION

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The HDSDI to HDMI Scaler is the newest revision of our HDSDI conversion line incorporating SD/HDSDI Single or Dual link mode conversion scaled to HDMI. Resolutions of up to 1080p are supported over the DVI link for those that want true "High Definition". Supports HDSDI with embedded audio and outputs a full HDMI video and audio signal. Performance has been greatly enhanced due to Gennum's VXP Scaler onboard; allowing for new features such as: Genlock, Color & Gamma Correction, Noise Reduction, Detail Enhancement, Aspect Ratio Selection, Pattern Generator Mode, & Multiple Language Menu Support. Bottom Line? -- More performance, less cost.

### **SDI**

SDI (serial digital interface), used primarily in broadcasting, converts and transmits digital video through SDI connectors. It enables video sources to process high definition, high quality video.

### **How it works**

HD-SDI devices are connected to the HD-SDI input and HDMI devices are connected to the HDMI output. When the source, display and the Scaler are powered and connected, video signals are converted to the proper format.

### **FEATURES**

- 10-bit resolution for greater precision and dynamic range
- Proprietary 10-bit motion adaptive video de-interlacing with edge interpolation for HD / SD formats.
- Advanced noise reduction and detail enhancement
- Max. active image size of 2048 samples x 2048 lines PBP processing for various combinations of video and graphics with alpha blending
- Fully integrated sprite based multi-plane OSD controller.
- Frame rate conversion to / from any refresh rate
- Pattern mode w/ color bars & cross hatch patterns
- Color correction
- Noise Reduction
- Detail Enhancement
- Brightness Adjustment
- Gamma Selection
- Aspect Ratio Select
- Custom Timing output mode
- French/English Menu Set
- RS-232 upgradeable firmware
- RS-232 and/or IR Control
- Supports black burst type of Genlock

### **CONTENTS**

The HD-SDI to HDMI Scaler consists of:

- (1) HD-SDI to HDMI Scaler
- (1) RMT-8HDS-IR Remote Control
- (1) 5V DC Power Supply
- (1) User's Manual

## OPERATION NOTES

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On power up, the HD-SDI to HDMI Scaler will automatically detect the input format of the input. The unit is controlled using the included 8 button remote.

Pressing the OUTPUT button cycles the HD-SDI to HDMI Scaler through the following output modes: 640x480 - 800x600 - 720p - 1080i

Other functions and output modes can be accessed through the onscreen menu.  
(To Restore I/O settings, simply recycle power on the Scaler)

To bring up the onscreen menu, press the MENU button. Navigation is done using the UP, DOWN, LEFT, RIGHT and ENTER buttons.

The SOURCE button selects the input source (Input 1 or Input 2)

\*Note: Both dip switches under the remote battery cover must initially be in the OFF position to communicate with the Scaler. For more information, please see page 7 for RMT-8HDS-IR Installation instructions.



# PANEL DESCRIPTIONS



Infrared Eye

Power Indicator  
Light



RS-232  
Uplink Port

5V Power  
Connector

Genlock  
Input

SPDIF  
Output

HD-SDI Input /  
Loop Out

HDMI Output

# MENU FUNCTIONS

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## Aspect:

- Full Screen: Stretches input to fill the Monitor.
- Letter / Pillar Box: Sets the aspect ratio to fit a letter or pillar box format.
- Panoramic: Panoramic Zoom feature
- Extract: Feature to magnify the signal.
  - Extract Size
  - Horizontal / Vertical Position
- Through: 1:1 Mapping
  - Horizontal / Vertical Size: Horizontally and vertically contracts or expands the cropping viewport.
  - Horizontal / Vertical Position: Move the signal horizontally or vertically inside the cropping viewport.

## Layout:

- Size and Position:
  - Horizontal / Vertical Size: Adjust horizontal or vertical resolution.
  - Horizontal / Vertical Position: Move image horizontally or vertically.

## Picture:

- Image Color:
  - Contrast: Individually adjust the contrast for red, green and blue
  - Brightness: Individually adjust the brightness for red, green and blue
  - Black level: Adjust black levels between 0 (default) and 100
- Gamma Correction:
  - Default: Set for default gamma settings.
  - sRGB
  - User Table
  - Custom: Enables Gamma Coefficient menu item as the current gamma coefficient.
  - Gamma Coefficient: (0.3 - 3.0); Default set at 1.0.
- Detail Enhancement:
  - Detail Enhancement: Digitally enhance signal.
  - Noise Threshold: Adjusts noise allowed in detail enhancement.
- Noise Reduction:
  - Noise reduction: Digitally reduce signal noise
- Motion Threshold
  - Motion Threshold:

## Input:

- Input Video Format: Auto Detect by default. Signal can be forced to a specific High-definition resolution. Please see Supported Input/Output Resolutions on page 6 for more information.
- Link Configuration: When using dual link SDI/HDSDI input, allows you to select either YCbCr or RGB color spaces.
- Clean Aperture:
  - Horizontal / Vertical Size: Stretch image horizontally or vertically.
  - Horizontal / Vertical Position: Move image in view port horizontally or vertically.

# MENU FUNCTIONS

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## Input Menu Continued...

- Audio: Selects which audio pair to use for audio output (1 - 8); Default is Channel 1.
- Remote Channel: Changes the IR code of the HD-SDI to HDMI Scaler to one of 4 different settings between 0 and 3. When the remote channel is changed, dip switches in the 16 button remote must be changed to the corresponding code in order to continue operating the HD-SDI to HDMI Scaler. Please see RMT-8HDS-IR Installation page on page 7 for more information.

## Output:

- Available Formats:
  - All: All output resolutions are selectable.
  - Monitor Supported: Only resolutions supported by the attached monitors are selectable.
- Video Output Format: Select the desired HD output resolution. Please see Supported Input/Output Resolutions on page 6 for more information.
- Graphic Output Format: Select the desired computer output resolution. Please see Supported Input/Output Resolutions on page 6 for more information.
- Custom Output Format:
  - Horizontal / Vertical Total: Total horizontal and vertical pixels for the HDMI monitor.
  - Horizontal / Vertical Active: Total horizontal and vertical pixels actually used to display the picture.
  - HSync / VSync Backporch
  - HSync / VSync Width
  - Refresh Rate: Change custom refresh rate between:  
(48, 50, 59.94, 60, 75, 85Hz)
- Link Configuration: Switch between RGB 4:4:4, YCbCr 4:4:4, and YCbCr 4:2:2
- Frame Rate: Change custom frame rate between:  
(48, 50, 59.94, 60, 75, 85Hz)
- Sync Adjust:
  - Horizontal / Vertical Sync Adjust: (0-3 with Default: 0)
  - Restore Default
- Genlock Reference:
  - Off
  - Video Input: Locks input to output clock using the incoming SDI / HD-SDI signal (input clock signal must match or be a multiple of the output clock.)
  - Reference Input: Locks output clock to reference clock signal. (reference signal must match or be a multiple of the output clock.)

## Patterns:

- Color Bars: Display color bar video pattern.
- Cross Hatch: Display cross hatch video pattern.

## General:

- Language: Set menu to display English or French text.
- Save Configuration: Saves current configuration.
- Restore Defaults: Resets the box to factory settings.

## SUPPORTED INPUT/OUTPUT RESOLUTIONS

### Input Video Formats Supported:

480i	720p/50	1080p/23.98	1080sf/23.98
480p	720p/59.94	1080p/24	1080sf/24
576i	720p/60	1080p/25	1080sf/25
576p	1035i/59.94	1080p/29.97	1080sf/29.97
720p/23.98	1035i/60	1080p/30	1080sf/30
720p/24	1080i/50	1080p/50	2K-p/23.98
720p/25	1080i/50M	1080p/50M	2K-p/24
720p/29.97	1080i/59.94	1080p/59.94	2K-sf/23.98
720p/30	1080i/60	1080p/60	2K-sf/24

### Output Video Formats Supported:

480i	720p/50	1080p/23.98	2K-p/23.98
480p	720p/59.94	1080p/24	2K-p/24
576i	720p/60	1080p/25	
576p	1035i/59.94	1080p/29.97	
720p/23.98	1035i/60	1080p/30	
720p/24	1080i/50	1080p/50	
720p/25	1080i/50M	1080p/50M	
720p/29.97	1080i/59.94	1080p/59.94	
720p/30	1080i/60	1080p/60	

### Output Graphic Formats Supported:

640x350/85	1024x768/75	1280x1024/85	1920x1200/60
640x400/85	1024x768/85	1360x768/60	2048x1080
640x480/60	1280x854	1366x768/60	
640x480/75	1152x864/75	1366x923/50	
640x480/85	1280x768/60	1440x900/60	
800x600/60	1280x960/60	1440x1080/60	
800x600/75	1280x960/85	1600x1024	
800x600/85	1280x1024/60	1600x1200/60	
1024x768/60	1280x1024/75	1680x1050/60	

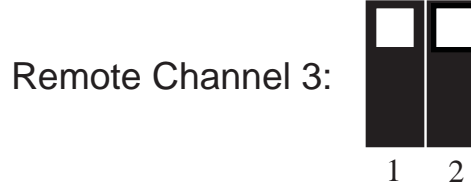
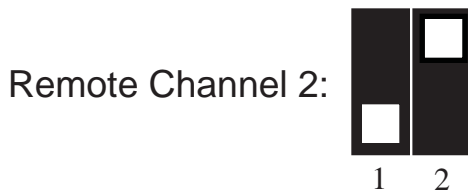
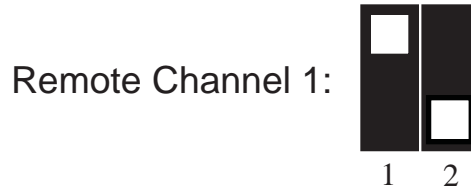
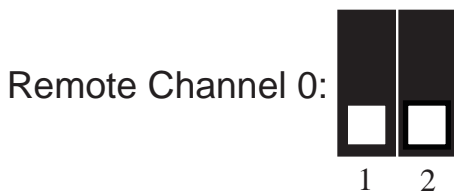
## RMT-8HDS-IR INSTALLATION

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1. Remove battery cover from the back of the RMT-8HDS-IR remote.
2. Verify that dip switches 1 & 2 are in the down (OFF) position.
3. Insert the battery, hold the battery so that you can see the positive side facing up. The side that is not marked must be facing down.
4. Test the RMT-8HDS-IR remote by pressing ONLY one button at a time. The indicator light on the remote will flash once each time you press a button. **WARNING:** Do not press multiple buttons simultaneously and do NOT press buttons rapidly. These actions will cause the remote to reset and steps 1-4 will have to be repeated.

Note: The RMT-8HDS-IR ships with two batteries. One battery is required for operation, the second battery is complimentary.

The following are the dip switch combinations that correspond to the Remote Code menu option on the HD-SDI to HDMI Scaler (Please see Menu Functions section for more information):



## FIRMWARE UPDATE PROCEDURE

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Please check <http://www.gefen.com/kvm/support/download.jsp> for firmware updates and procedures.

# SPECIFICATIONS

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Input Video Bandwidth.....	2x 1.485 Gbps (Dual Link HD-SDI)
Output Video Bandwidth.....	6.6 Gbps
Maximum Output Resolution.....	1920x1200@60Hz
HDMI Connector.....	type A 19 pin female
Audio Output.....	HDMI embedded audio & S/PDIF out
Power Supply.....	5V DC
Shipping Weight.....	5 lbs.
Dimensions.....	8.25"W x 1.75"H x 7.5"H