

# Gefen

®

## Audio / Video Scaler Pro

EXT-GSCALER-PRON

User Manual



[www.gefen.com](http://www.gefen.com)

## ASKING FOR ASSISTANCE

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# CONTENTS

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- 1 Introduction
- 2 Operation Notes
- 3 Features
- 4 Panel Layout
- 5 Connecting The A/V Scaler Pro
- 6 RMT-SR-IR Remote Description
- 7 RMT-SR-IR Remote Installation
- 8 RMT-SR-IR Remote Configuration
- 9 Operating The A/V Scaler Pro
- 15 RS-232 Serial Control Interface
- 16 RS-232 Commands
- 18 Rack Mount Installation
- 19 Specifications
- 20 Warranty

# INTRODUCTION

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Congratulations on your purchase of the A/V Scaler Pro. Your complete satisfaction is very important to us.

## **Gefen**

Gefen delivers innovative, progressive computer and electronics add-on solutions that harness integration, extension, distribution and conversion technologies. Gefen's reliable, plug-and-play products supplement cross-platform computer systems, professional audio/video environments and HDTV systems of all sizes with hard-working solutions that are easy to implement and simple to operate.

## **The Gefen A/V Scaler Pro**

This device offers a plug and play solution for upscaling and switching between multiple analog and digital audio/video formats for an engaging HDTV experience. Scale analog and digital video up to 1080p / 1920x1200, and output as digital HDMI with digital audio. Easily adjust key video aspects such as color, aspect ratio, and noise reduction with the Gefen Audio/Video Scaler Pro. Digitize and scale audio and video in different formats into outgoing HDMI together with external digital audio (S/PDIF and TOSLINK).

The A/V Scaler Pro works with all of today's audio/video sources including set-top boxes, DVD players and gaming consoles including the Xbox 360 and PS3.

It supports one component source with analog audio, one composite or s-video source with analog audio, one DVI source with analog audio and two HDMI sources with digital audio. Audio from the analog sources is digitized in HDMI format.

The DVI-I input with analog audio enables direct PC connections, supporting both VGA and DVI formats that can be used for analog or digital graphics card input. With support for analog stereo audio, the unit supports all multimedia applications. On-screen menus accessible through the IR remote allow for an easy system setup and image adjustment to accommodate different viewing modes and screen sizes. Discrete codes have been added to the IR to enable complete control over switching. An RS232 control port is also included.

The A/V Scaler Pro is rack mountable, fitting in all standard racks, making it suitable for professional installations with rack ears or as a stand-alone solution.

## **How It Works**

Connect all audio and video source devices to the A/V Scaler Pro. Connect your HDMI display to the output on the rear of the unit. Power on the unit and use the included IR remote to navigate the GUI and change settings. All scaling and analog to digital format conversions are done automatically for superior audio and video output.

## OPERATION NOTES

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### READ THESE NOTES BEFORE INSTALLING OR OPERATING THE A/V SCALER PRO

- When initially powering on HDMI sources, it is important to have the A/V Scaler Pro's input selected to that source to ensure that the EDID (display information) is relayed properly.
- Compatible with all HDMI and DVI\* displays
- Supports high bit-rate audio.
- Frame-rate conversion is possible between 24, 50 and 60 fps.
- Discrete input switching is available through the RS-232 port or by using a remote that will accept hex commands. These hex commands are available at [www.gefen.com](http://www.gefen.com)
- HDMI/HDCP compliant

*\*When used with a DVI to HDMI adapter*

# FEATURES

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## Features

- Both digital and analog inputs are format converted and pixel re-scaled through the A/V Scaler Pro. It outputs a large range of formats and resolutions that will easily match the native resolution/format of your display to ensure highest picture quality.
- DVI/HDCP/HDMI compliant input: Operates up to 165MHz (Up to UXGA @60Hz).
- Supports digital HD output up to 1080p/60Hz.
- Supports Dolby Digital™, DTS-HD-MA™ and Dolby TrueHD™
- Supports 1080p/24Hz true movie pass-thru.
- Integrated 8-bit triple-ADC/PLL.
- Integrated DVI/HDCP/HDMI compliant receiver.
- Dual high quality scaling engines.
- Dual 3-D motion video adaptive de-interlacers with smooth low angle edge.
- Automatic 3:2 pull-down & 2:2 pull-down detection and recovery.
- High performance frame rate conversion engine.
- The Proprietary Advanced Color Engine technology gives you brilliant and fresh color, intensified contrast and details, vivid skin tone, sharp edge, accurate and independent color control.
- Option to select Audio input from HDMI or Optical/SPDIF audio source.
- 3D noise reduction on analog inputs only.
- Operates through on-screen menu control, remote control, and RS-232 serial control.
- Aspect Ratio Control.
- Digital Audio Delay to match audio/video timing.
- Less than one frame delay for gaming devices.

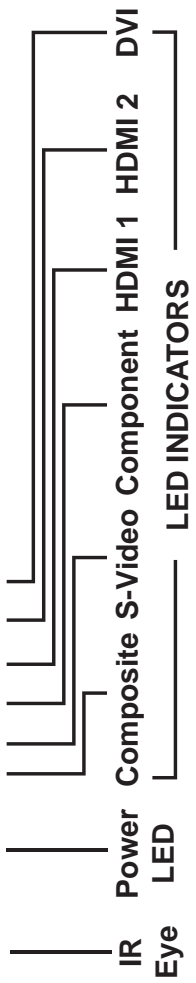
## Package Includes

- (1) Gefen A/V Scaler Pro
- (1) 6 ft. HDMI cable (M-M)
- (1) 5V DC power supply
- (1) IR Remote Control Unit
- (1) Rack Ears
- (1) User Manual

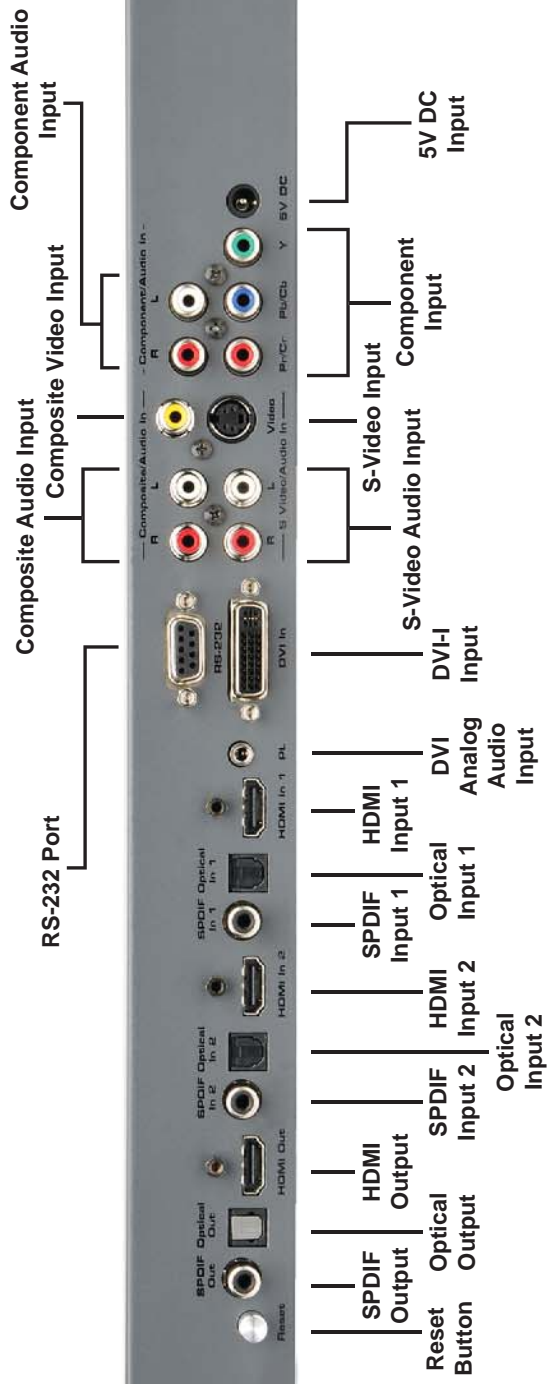
Front Panel



**Audio/Video Scaler Pro**



Back Panel

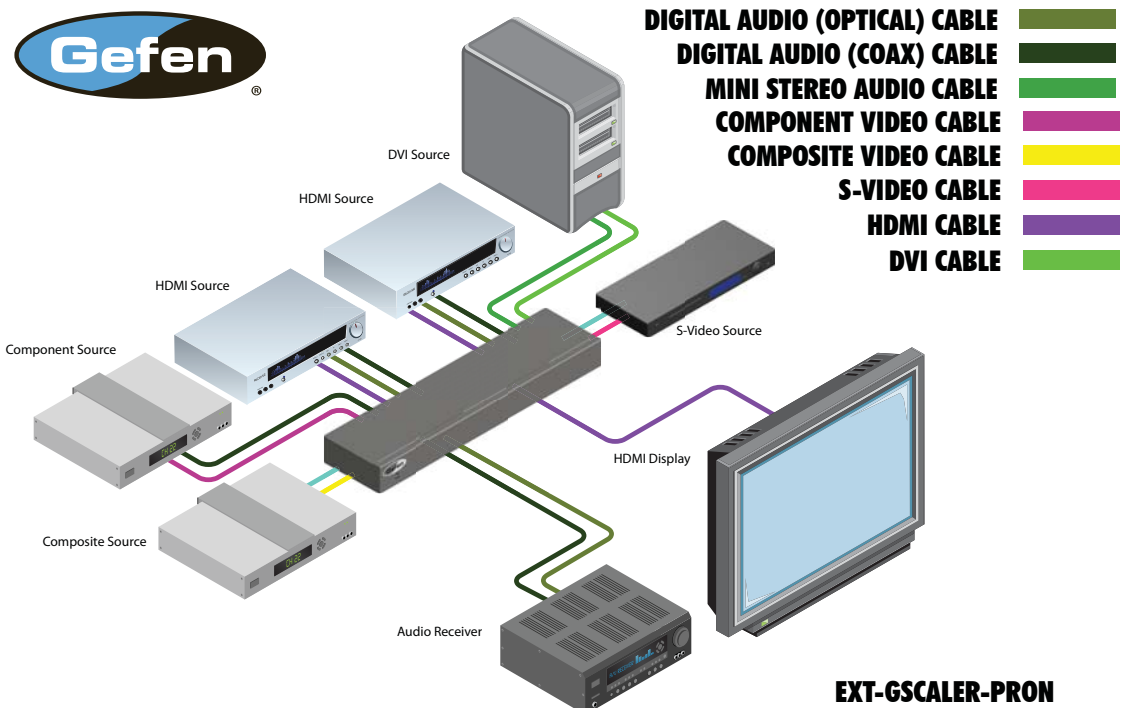


## CONNECTING THE A/V SCALER PRO

1. Connect the HDMI output on the A/V Scaler Pro to the display using the supplied HDMI cable.
2. Connect either the digital SPDIF or digital Optical audio output to the display or an external audio processor using user supplied digital audio cables.
3. Connect the sources to the A/V Scaler Pro using user supplied cables. See the wiring diagram below.
4. Plug the 5V DC power supply into the A/V Scaler Pro.
5. Press the POWER button on the RMT-SR-IR remote to begin operation of the A/V Scaler Pro.
6. Power on the display and the source(s).
7. Power on the source(s).

**NOTE:** When initially powering on HDMI or DVI sources, it is important to have the A/V Scaler Pro's input selected to that source to ensure that the EDID is relayed properly.

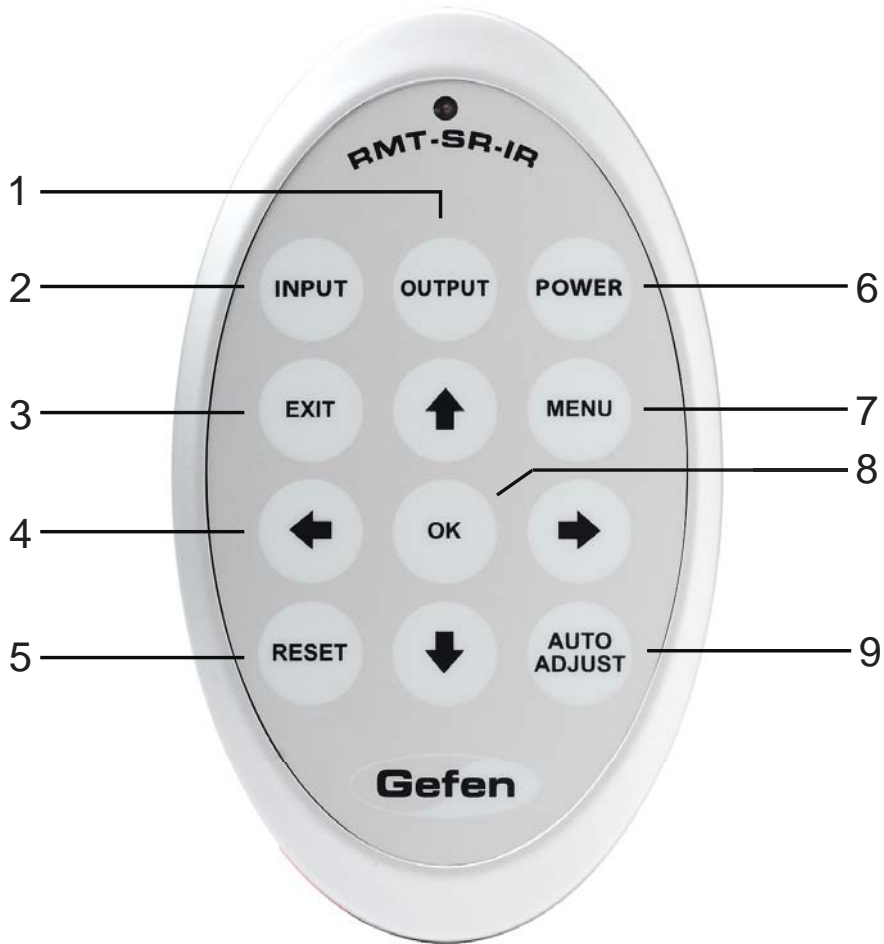
### Wiring Diagram for the A/V Scaler Pro





## RMT-SR-IR REMOTE DESCRIPTION

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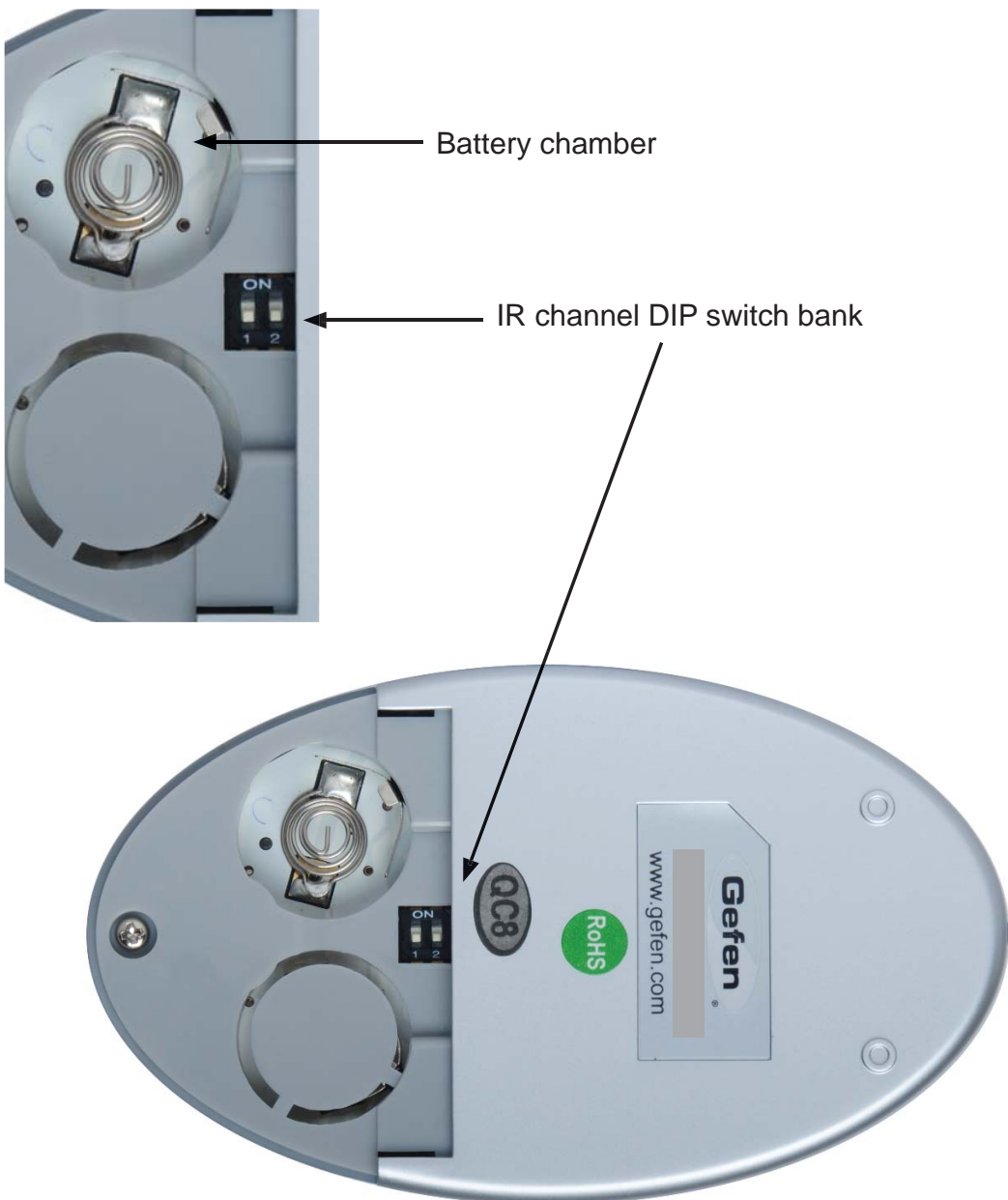
1. Output - Cycles through the available output resolutions. Please see the section A/V Scaler Pro CONFIGURATION / Output on page 9 for the output resolution table.
2. Input - Cycles through all of input sources. The selectable inputs are Composite, S-Video, Component, HDMI 1, and HDMI 2 and DVI.
3. Exit - Exits the current menu option and menu system.
4. Navigation Keys - These include up, down, left, and right buttons for navigating the menu system.
5. Reset - Resets the input and output resolutions to factory default.
6. Power - Turns the unit on and off (standby).
7. Menu - Displays the menu system for adjustment of options.
8. The OK button will select specific menu options for adjustment and will also confirm/cycle-through selections (Output/Input).
9. Auto Adjust - Sets the display for optimal resolution and aspect ratio based on the display's EDID information and the currently selected sources output resolution.

## RMT-SR-IR REMOTE INSTALLATION

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1. Remove battery cover from the back of the RMT-SR-IR remote.
2. Verify that DIP switches 1 & 2 are in the down (OFF) position. (See page 8)
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-SR-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.

NOTE: The RMT-SR-IR ships with two batteries. Only one battery is required for operation, the other battery is complimentary.



# RMT-SR-IR REMOTE CONFIGURATION

## How to Resolve IR Code Conflicts

In the event that IR commands from other remote controls conflict with the supplied RMT-SR-IR remote control, changing the remote channel will alleviate this issue. The RMT-SR-IR remote control has DIP SWITCHES for configuring the remote channel. The A/V Scaler Pro must match the remote channel set in the RMT-SR-IR remote control. Please see page 7 for instruction on how to configure the channel on the A/V Scaler Pro. By default, both the A/V Scaler Pro and the RMT-SR-IR remote control are set to Channel 1.



Remote Channel 1:  
Default



Remote Channel 2:



Remote Channel 3:



Remote Channel 4:



### DIP Switch Bank

**Left:** Picture of the opened rear battery compartment of the RMT-SR-IR remote showing the exposed DIP Switch bank between the battery chambers.

## OPERATING THE A/V SCALER PRO

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The A/V Scaler Pro has a built in GUI for navigating the various functions. The GUI is navigated by the included IR remote control. Please see the RMT-SR-IR Remote Description on page 6 for functional information. Control of certain functions are also available using the RS-232 serial communications port located on the back panel. For RS-232 serial communications control commands please see page 16.

### **Entering the Menu System**

Pressing the Menu button on the included RMT-SR-IR remote control will display the GUI (graphical user interface) for adjustment options.

The GUI is overlaid onto the outgoing video to the display. Therefore, the selected source must be outputting a compatible resolution for viewing on the display. If video is not visible on the display, the GUI will also fail to be displayed. To correct this, please follow the steps below.

1. Verify that the source is on and outputting a video signal.
2. Verify that the RMT-SR-IR remote channel is in the default position.  
(See Page 12)
3. Verify that the A/V Scaler Pro is selected to the chosen source.
4. Press the Output button on the RMT-SR-IR remote control to cycle through output resolutions until video is displayed. Please see page 12 for a listing of the available output resolutions and cycle order.

### **Navigation**

Use the directional buttons to navigate the menu system. Press the OK button to enter a sub category and also to select a menu item for adjustment. Use the Left and Right buttons to adjust the selected menu item. Press the EXIT or OK button to return to the previous menu. Use the LEFT and RIGHT buttons to adjust selected options. Pressing the EXIT button while in the main menu will exit out of the menu system.

### **IMPORTANT:**

When using the remote, do not press multiple buttons simultaneously or rapidly. These actions will cause the remote to reset and steps 1-4 (page 7) will have to be repeated.

# OPERATING THE A/V SCALER PRO

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## MAIN MENU

The following are the main menu options. Use the UP and DOWN buttons to choose your desired subcategory and press OK to enter it.

**VIDEO**  
**COLOR**  
**OUTPUT**  
**OSD**  
**AUDIO**  
**INFORMATION**

## VIDEO

### Picture Mode

Preset and user configurable settings for different viewing scenarios. Preset settings will not allow user adjustment. **Only the USER option will allow customized video settings. The USER settings are saved.**

Options:

- Standard - useful for general content
- Movie - useful for dimly lit environments
- Vivid - useful for accentuating colors for a more vibrant image
- User - user configurable settings

**NOTE:** User settings are saved. However, user settings for the digital inputs (HDMI 1 and 2) are linked and user settings for the analog inputs (Composite, S-Video, and Component) are linked. i.e. adjustments to video user settings made on HDMI 1 will be reflected in HDMI 2.

Press OK to begin adjusting settings. Use the LEFT and RIGHT buttons to change settings. Press the OK button once the desired settings are made.

### Contrast

Adjusts the contrast in increments of 1 on a scale of 1 to 100 (default 50).

### Brightness

Adjusts the brightness in increments of 1 on a scale of 1 to 100 (default 50).

### Hue

Adjusts the hue in increments of 1 on a scale of 1 to 100 (default 50).

### Saturation

Adjusts the saturation in increments of 1 on a scale of 1 to 100 (default 50).

### Sharpness

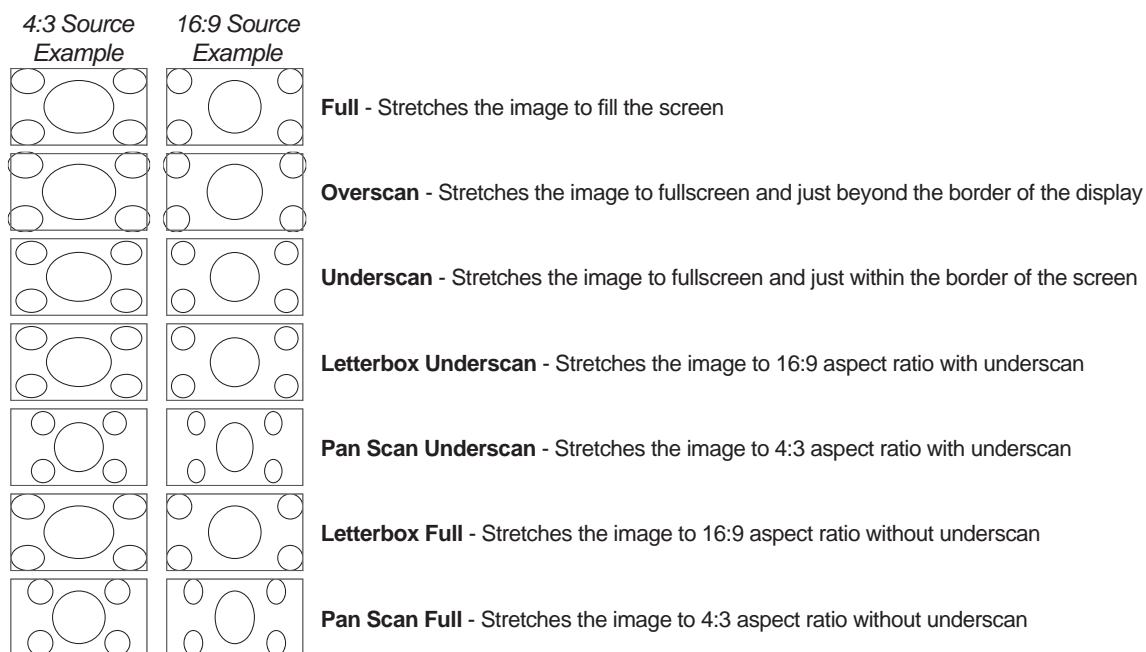
Adjusts the sharpness in increments of 1 on a scale of 1 to 100 (default 50).

### Scale

Adjusts the aspect ratio of the video.

Options: Full, Overscan, Underscan, Letterbox Underscan, Pan Scan Underscan, Letterbox Full, Pan Scan Full

# OPERATING THE AV SCALER PRO



## N.R. (Noise Reduction) - Only for Composite and S-Video Inputs

Reduces video noise inherent in analog video signals.

Options:

- Off - default
- Low
- Middle
- High

## H-Pos (Horizontal Position)

Adjusts the image's horizontal position on the screen.

- Adjusts in increments of 1 on a scale of 1 to 100 (default is 50)

## V-Pos (Vertical Position)

Adjusts the image's vertical position on the screen.

- Adjusts in increments of 1 on a scale of 1 to 100 (default is 50)

## Y/C Separation - Only for Composite Input

Selects the method in which the brightness and color are separated from the composite video signal.

Options:

- Auto - automatically selects the optimal method (default)
- 2D - Separation based on single frame analysis
- 3D - Motion adaptive color separation based on multiple frame analysis

## Coring - Only for Composite Input

Adjusts the threshold level for pixel noise evaluation. This relates to how much of the image is processed in regards to noise reduction.

- Adjusts in increments of ~6.5 on a scale of 1 to 100. (default is 20)

# OPERATING THE AV SCALER PRO

## OUTPUT

This menu sets the output resolution for all video sources. Use the directional buttons to choose your desired output resolution and press the OK button to set it. These outputs can be cycled through in the numbered order below when not in the menu system by pressing the OUTPUT button on the RMT-SR-IR remote control.

1	VGA	6	480i	11	576i	16	WXGA
2	SVGA	7	480p	12	576p	17	WSXGA
3	XGA	8	720p 60	13	720p 50	18	WUXGA
4	SXGA	9	1080i 60	14	1080i 50	19	2K
5	UXGA	10	1080p 60	15	1080p 50		Native*

\* Native option will select the native resolution of the connected display based on the EDID from the display

## PASS-THROUGH MODES AND LINE STANDARD SUPPORT

Mode:	1080p-1	1080p-2	1080p-3
Frame Rate:	24/50/60	24/60	24/50
Action:	No Frame-Rate Conversion	Converts All but Frame-Rate 24 to 60	Converts All but Frame-Rate 24 to 50

**NOTE:** If a resolution that is not supported by the display is selected, the menu GUI will not longer be visible. To correct this, press the OUTPUT button on the RMT-SR-IR remote control. and cycle through the output resolutions until a supported mode is displayed

# OPERATING THE A/V SCALER PRO

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## COLOR

Press OK to begin adjusting settings. Use the LEFT and RIGHT buttons to change settings. Press the OK button once the desired settings are made.

### Color Tone

Sets the color for the appearance of white. Only the USER option will allow customized settings. The USER settings are saved.

- Normal - Normal white color appearance (default)
- Warm - Slight red shift to white appearance
- Cool - Slight blue shift to white appearance
- User - User adjustments to Red, Green, and Blue

### Red

Adjust the red color in regards to the appearance of white for the USER setting.

- Adjustments are in increments of 1 from 1 to 100 (default is 50)

### Green

Adjusts the green color in regards to the appearance of white for the USER setting.

- Adjustments are in increments of 1 from 1 to 100 (default is 50)

### Blue

Adjusts the blue color in regards to the appearance of white for the USER setting.

- Adjustments are in increments of 1 from 1 to 100 (default is 50)

## OSD (ON SCREEN DISPLAY)

Press OK to begin adjusting settings. Use the LEFT and RIGHT buttons to change settings. Press the OK button once the desired settings are made.

### H-Pos (Horizontal Position)

Adjusts the OSD's horizontal position on the screen.

- Adjustments are in increments of 1 from 1 to 100 (default is 50)

### V-Pos (Vertical Position)

Adjusts the OSD's vertical position on the screen.

- Adjustments are in increments of 1 from 1 to 100 (default is 50)

### Time Out

Adjusts the amount of idle time, **in seconds**, before the OSD is automatically exited.

- Adjustments are in increments of 1 from 1 to 100 (default is 10)

### Background

Sets the transparency level of the OSD background.

- Adjustments are in increments of ~12.5 on a scale of 1 to 100 (default is 50)



# OPERATING THE A/V SCALER PRO

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## OSD (ON SCREEN DISPLAY) CONTINUED

### Remote Channel

Sets the remote channel for use with the RMT-SR-IR remote control. If the selected channel in this menu and does not match the channel set in the RMT-SR-IR remote, the unit will cease to respond to IR commands from the remote.

- Selectable remote channel from 1 to 4 (default is 1)

## AUDIO

Press OK to begin adjusting settings. Use the LEFT and RIGHT buttons to change settings. Press the OK button once the desired settings are made.

### Source

Sets the audio source for current input.

Options for Composite:

- L/R1 - Composite analog audio input (default)

Options for S-Video:

- L/R2 - S-Video analog audio input (default)

Options for Component:

- L/R3 - Component analog audio input (default)

Options for HDMI 1:

- HDMI1 - HDMI 1 internal audio (default)
- Optical1 - Optical input 1
- Coaxial1\* - SPDIF input 1

Options for HDMI 2:

- HDMI2 - HDMI 2 internal audio (default)
- Optical2 - Optical input 2
- Coaxial2\* - SPDIF input 2

Options for DVI:

- L/R4 - DVI analog audio input (default)

### Delay

Sets the audio delay for lip syncing correction.

- Off - No delay (default)
- 40ms - 40 millisecond audio offset
- 110ms - 110 millisecond audio offset
- 150ms - 150 millisecond audio offset

### Sound

Select general audio output function

- On - Use selected audio source (default)
- Mute - No sound output

\*Coaxial is also know as SPDIF

# RS-232 SERIAL CONTROL INTERFACE



Only Pins 2 (RX), 3 (TX), and 5 (Ground) are used on the RS-232 serial interface

## RS232 Settings

Bits per second ..... 19200

Data bits ..... 8

Parity ..... None

Stop bits ..... 1

Flow Control ..... None

## Commands

Command Code	Response	Description
S POWER 0	> POWER OFF	POWER OFF
S POWER 1	> POWER ON	POWER ON
S SOURCE 0	> SOURCE CV	CV INPUT
S SOURCE 1	> SOURCE SV	SV INPUT
S SOURCE 2	> SOURCE COMP	COMP INPUT
S SOURCE 3	> SOURCE HDMI 1	HDMI INPUT 1
S SOURCE 4	> SOURCE HDMI 2	HDMI INPUT 2
S SOURCE 5	> SOURCE DVI	DVI INPUT
S OUTPUT 0	> OUTPUT NATIVE	NATIVE RESOLUTION OUTPUT
S OUTPUT 1	> OUTPUT VGA	VGA RESOLUTION OUTPUT
S OUTPUT 2	> OUTPUT SVGA	SVGA RESOLUTION OUTPUT
S OUTPUT 3	> OUTPUT XGA	XGA RESOLUTION OUTPUT
S OUTPUT 4	> OUTPUT SXGA	SXGA RESOLUTION OUTPUT
S OUTPUT 5	> OUTPUT UXGA	UXGA RESOLUTION OUTPUT
S OUTPUT 6	> OUTPUT 480i	480i RESOLUTION OUTPUT
S OUTPUT 7	> OUTPUT 480P	480P RESOLUTION OUTPUT
S OUTPUT 8	> OUTPUT 720P	720P 60HZ RESOLUTION OUTPUT
S OUTPUT 9	> OUTPUT 1080i	1080i 60HZ RESOLUTION OUTPUT
S OUTPUT 10	> OUTPUT 1080P	1080P 60HZ RESOLUTION OUTPUT

## RS-232 COMMANDS

Command Code	Response	Description
S OUTPUT 11	> OUTPUT 576I	576I 60HZ RESOLUTION OUTPUT
S OUTPUT 12	> OUTPUT 576P	576P 60HZ RESOLUTION OUTPUT
S OUTPUT 13	> OUTPUT 720P	720P 50HZ RESOLUTION OUTPUT
S OUTPUT 14	> OUTPUT 1080I50	1080I 50HZ RESOLUTION OUTPUT
S OUTPUT 15	> OUTPUT 1080P50	1080P 50HZ RESOLUTION OUTPUT
S OUTPUT 16	> OUTPUT WXGA	WXGA RESOLUTION OUTPUT
S OUTPUT 17	> OUTPUT WSXGA	WSXGA RESOLUTION OUTPUT
S OUTPUT 18	> OUTPUT WUXGA	WUXGA RESOLUTION OUTPUT
S OUTPUT 19	> OUTPUT 2K	2048x1080P RESOLUTION OUTPUT
S SIZE 0	> SIZE FULL	SCALER FULL OUTPUT
S SIZE 1	> SIZE OVERSCAN	SCALER OVERSCAN OUTPUT
S SIZE 2	> SIZE UNDERSCAN	SCALER UNDERSCAN U.S. OUTPUT
S SIZE 3	> SIZE LETTERBOX U.S.	SCALER LETTERBOX U.S. OUTPUT
S SIZE 4	> SIZE PANSCAN U.S.	SCALER PANSCAN OUTPUT
S SIZE 5	> SIZE LETTERBOX FULL	SCALER LETTERBOX FULL OUTPUT
S SIZE 6	> SIZE PANSCAN FULL	SCALER PANSCAN FULL OUTPUT
S PICTUREMODE 0~3	> PICTUREMODE STANDARD~USER	0:STANDARD ; 1:MOVIE ; 2:VIVID ; 3:USER ,PICTURE MODE OUTPUT
S CONTRAST 0~100	> CONTRAST 0~100	CONTRAST 0~100 ADJUST
S BRIGHTNESS 0~100	> BRIGHTNESS 0~100	BRIGHTNESS 0~100 ADJUST
S HUE 0~100	> HUE 0~100	HUE 0~100 ADJUST
S SATURATION 0~100	> SATURATION 0~100	SATURATION 0~100 ADJUST
S SHARPNESS 0~100	> SHARPNESS 0~100	SHARPNESS 0~100 ADJUST
S NR 0~3	> NR OFF~HIGH	0:OFF ; 1:LOW ; 2:MIDDLE ; 3:HIGH ,NR CONTROL
S PCHPOSITION 0~100	> PCHPOSITION 0~100	H POSITION 0~100 ADJUST
S PCVPOSITION 0~100	> PCVPOSITION 0~100	V POSITION 0~100 ADJUST
S PCCLOCK 0~100	> PCCLOCK 0~100	PC MODE COLCK 0~100 ADJUST
S PCPHASE 0~63	> PCPHASE 0~63	PC MODE PHASE 0~63 ADJUST
S COLORTEMP 0~3	> COLORTEMP NORMAL~USER	0:NORMAL ; 1:WARM ; 2:COOL ; 3:USER ,COLOR TEMP SETTING
S RED 0~100	> RED 0~100	COLOR TEMP "RED" ADJUST
S GREEN 0~100	> GREEN 0~100	COLOR TEMP "GREEN" ADJUST
S BLUE 0~100	> BLUE 0~100	COLOR TEMP "BLUE" ADJUST
S OSDHPOSITION 0~100	> OSDHPOSITION 0~100	OSD H POSITION 0~100 ADJUST
S OSDVPOSITION 0~100	> OSDVPOSITION 0~100	OSD V POSITION 0~100 ADJUST
S OSDTIMEOUT 0~100	> OSDTIMEOUT 0~100	OSD TIMEOUT 0~100 SETTING
S OSDBACKGROUND 0~8	> OSDBACKGROUND 0~8	OSD OSDBACKGROUND 0~8 ADJUST
S AUDIOMUTE 0~1	> AUDIOMUTE OFF~ON	0:OFF ; 1:ON ,AUDIO MUTE CONTROL
S AUDIODELAY 0~3	> AUDIODELAY OFF~150MS	0:OFF ; 1:40MS ; 2:110MS ; 3:150MS ,AUDIO DELAY SETTING
S RESET 1	> RESET ON	RESET ACTION

# RS-232 COMMANDS

## Status Commands

Command Code	Response	Description
R POWER	> POWER ON	SHOW POWER STATUS
R SOURCE	> SOURCE CV~HDMI	SHOW SOURCE STATUS
R OUTPUT	> OUTPUT NATIVE~WUXGA	SHOW OUTPUT STATUS
R SIZE	> SIZE FULL~PANSCAN	SHOW SIZE STATUS
R PICTUREMODE	> PICTUREMODE STANDARD~USER	SHOW PICTURE MODE STATUS
R CONTRAST	> CONTRAST 0~100	SHOW CONTRAST STATUS
R BRIGHTNESS	> BRIGHTNESS 0~100	SHOW BRIGHTNESS STATUS
R HUE	> HUE 0~100	SHOW HUE STATUS
R SATURATION	> SATURATION 0~100	SHOW SATURATION STATUS
R SHARPNESS	> SHARPNESS 0~100	SHOW SHARPNESS STATUS
R NR	> NR OFF~HIGH	SHOW NR STATUS
R PCHPOSITION	> PCHPOSITION 0~100	SHOW PC H-POSITION STATUS
R PCVPOSITION	> PCVPOSITION 0~100	SHOW PC V-POSITION STATUS
R PCCLOCK	> PCCLOCK 0~100	SHOW PC COLOK STATUS
R PCPHASE	> PCPHASE 0~63	SHOW PC PHASE STATUS
R COLORTEMP	> COLORTEMP NORMAL~USER	SHOW COLOR TEMP STATUS
R RED	> RED 0~100	SHOW COLOR TEMP RED STATUS
R GREEN	> GREEN 0~100	SHOW COLOR TEMP GREEN STATUS
R BLUE	> BLUE 0~100	SHOW COLOR TEMP BLUE STATUS
R OSDHPOSITION	> OSDHPOSITION 0~100	SHOW OSD H-POSITION STATUS
R OSDVPOSITION	> OSDVPOSITION 0~100	SHOW OSD V-POSITION STATUS
R OSDTIMEOUT	> OSDTIMEOUT 0~100	SHOW OSD TIMEOUT STATUS
R OSDBACKGROUND	> OSDBACKGROUND 0~8	SHOW OSD BACKGROUND STATUS
R AUDIOMUTE	> AUDIOMUTE OFF~ON	SHOW AUDIO MUTE STATUS
R AUDIODELAY	> AUDIODELAY OFF~150MS	SHOW AUDIO DELAY STATUS

## KEY Commands

Command Code	Response	Description
K POWER	> POWER	POWER ON/OFF
K RESET	> RESET	RESET TO FACTORY VALUE
K SOURCE	> SOURCE	INPUT SOURCE SELECTION
K OUTPUT	> OUTPUT	OUTPUT MODE SELECTION
K AUTO	> AUTO	AUTO ADJUST POSITION/CLOCKPHASE

## RACK MOUNT INSTALLATION

Rack mount ears are provided for installation of this unit into a 1U rack mount space.

1. Locate the side screws on the unit.
2. Remove the front 2 screws that are located closest to the front of the unit.
3. Using the removed screws, screw the rack mounting bracket into the unit.
4. Repeat the procedure on the opposite side of the unit.



## SPECIFICATIONS

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Digital Video Amplifier Bandwidth .....	165 MHz
Component Video Bandwidth .....	350 MHz
Input DDC Signal .....	5 Volts p-p (TTL)
Input Video Signal .....	1.2 Volts p-p
Single Link Range .....	1080p/2048x1080p
Analog Video In Connector 1 .....	3 RCA Component
Analog Video In Connector 2 .....	1 RCA Composite
Analog Video In Connector 3 .....	1 S-Video
Analog Audio In Connector .....	3x2 RCA R+L
Digital Audio In Connector .....	2 Optical TOSLINK and 2 Coaxial SPDIF
Digital Audio Out Connector .....	1 Optical TOSLINK and 1 Coaxial SPDIF
HDMI Input Connector .....	2 Type A 19 pin female
HDMI Output Connector .....	1 Type A 19 pin female
DVI Input Connector .....	DVI-I 29 pin female
Power Supply.....	5VDC
Power Consumption .....	8 Watts (max)
Dimensions .....	17.1" W x 1.75" H x 6.75" D
Shipping Weight .....	5 lbs.

## WARRANTY

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Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.
2. Customers outside the US are responsible for shipping charges to and from Gefen.
3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

For the latest warranty coverage information, refer to the Warranty and Return Policy under the Support section of the Gefen Web site at [www.gefen.com](http://www.gefen.com).

## PRODUCT REGISTRATION

**Please register your product online by visiting the Register Product page under the Support section of the Gefen Web site.**



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This product uses UL listed power supplies.