

# User Manual

**HDMI®**

## Digital to Digital Video Scaler

Audio  Authority®

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**HDMI to HDMI Scaler**

**Model 1388**

**HDMI®**

**FC CE**

**Model 1388**

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## **WARNINGS**

- Read these instructions before installing or using this product.
- To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.
- This product must be installed by qualified personnel.
- Do not open the cover—there are no user-serviceable parts inside.
- Do not expose this unit to excessive heat.
- Install only in dry, indoor locations.
- Clean the unit only with a dry or slightly dampened soft cloth.

## **LIABILITY STATEMENT**

Every effort has been made to ensure that this product is free of defects. Audio Authority® cannot be held liable for the use of this product or any direct or indirect consequential damages arising from its use. It is the responsibility of the user of the product to check that it is suitable for his/her requirements and that it is installed correctly. All rights are reserved. No parts of this manual may be reproduced or transmitted by any form or means electronic or mechanical, including photocopying, recording or by any information storage or retrieval system without the written consent of the publisher.

Audio Authority reserves the right to revise any of its hardware and software following its policy to modify and/or improve its products where necessary or desirable.

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# User Manual

## Model 1388 Digital Video Scaler

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## 1.0 INTRODUCTION

Thank you for purchasing this HDMI® Video Scaler from Audio Authority®. The 1388 converts video resolutions to and from a variety of PC and HD formats, and provides both an HDMI input and output. It accepts audio embedded in the HDMI signal or external analog and digital sources of audio. The 1388 embeds audio from external sources and outputs it in the original formats, and converts digital 2-channel pcm to analog audio output. Variable audio delay provides correction for lip sync errors.

Audio Authority audio/video switchers, converters, and distribution amps can be purchased at [www.audioauthority.com](http://www.audioauthority.com) or through authorized dealers.

## 1.1 SYSTEM FEATURES

- Maximum I/O resolutions WUXGA and 1080p
- Default resolution is 1080p@60Hz
- Automatically detects the resolution of the connected display (Native mode)
- Accepts 1080p, 1080i, 720p, 480i or 576i input
- 50/60Hz frame rate conversion
- 3-D Motion Adaptive, 3-D de-interlacing and 3:2 / 2:2 pull-down
- OSD (On Screen Display)
- Adjustment of contrast, brightness, hue, saturation, sharpness & RGB levels
- Supports digital and analog audio input and output
- Variable audio delay (up to 150ms)
- HDMI 1.2 and HDCP 1.1 compliant

## 1.2 CHECKING PACKAGE CONTENTS

Before connecting the system, please make certain the following items are in the shipping carton.

- 1388 video scaler
- 3.5mm to stereo RCA cable
- 5V DC power adapter
- User manual

Note: Please retain the original packing material and invoice in case you need to return the unit. If you find any items are missing, contact Audio Authority immediately. Have the model number and invoice available for reference when you call.

## 2.0 GETTING STARTED

The 1388 automatically detects the resolution of the HDMI source. If the display device or distribution system accepts 1080p signals (1388 default output), no other adjustment may be necessary. The 1388 also has the ability to determine the native resolution of the HDMI display device when in “NATIVE” resolution mode. Although you can manually select an output resolution setting via the OSD (On Screen Display) menu, it is not necessary to set an output resolution. See 4.0 to make adjustments.

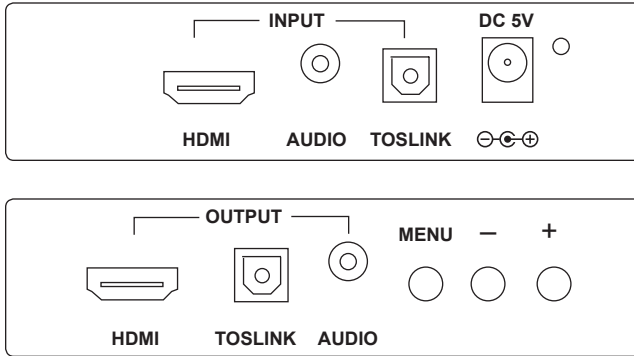
## 2.2 SUPPORTED RESOLUTIONS

INPUT HDMI (PC)	VGA@(60/72/75/85Hz) SVGA@(56/60/72/75/85Hz) XGA@60/70/75/85Hz SXGA@(60/75/85Hz) UXGA@60Hz WXGA@60Hz WSXGA@60Hz WUXGA@60Hz
INPUT HDMI (HDTV)	480p 576p 720p@50/60Hz 1080i@25/30Hz 1080p@50/60Hz
HDMI (SDTV)	480i, 576i
OUTPUT HDMI (PC)	VGA@(60/72/75/85Hz) SVGA@(56/60/72/75/85Hz) XGA@(60/70/75/85Hz) SXGA@(60/75/85Hz) SXGA+@60Hz UXGA@60Hz WXGA@60Hz WXGA+@60Hz SXGA@60Hz WUXGA@60Hz
OUTPUT HDMI (HDTV)	480p 576p 720p@50/60Hz 1080i@25/30Hz <b>1080p@50/60Hz (Default)</b>

Resolution Key		
480p	640	480
576p	704	576
720p	1280	720
1080i	1920	1080
1080p	1920	1080
576i	640	480
480i	625	576
VGA	640	480
SVGA	800	600
XGA	1024	768
XGA+	1152	864
WXGA	1280	768
WXGA	1280	800
SXGA	1280	960
SXGA	1280	1024
HD	1366	768
WSXGA	1440	900
HD+	1600	900
UXGA	1600	1200
WSXGA+	1680	1050
HD-1080	1920	1080
WUXGA	1920	1200

### 3.0 CONNECTING THE HARDWARE

Please study the panel drawings below and become familiar with the signal inputs, outputs, operational controls and the location of the power connector. Turn off the HDMI source and the HDMI display and connect the appropriate HDMI and audio cables, first between the source and the 1388 and then between the 1388 and the display (or signal distribution system). Plug in the provided AC adapter, first to the 1388 and then to an active AC power source. Turn on the HDMI source and display device. (The 1388 has no power switch and will begin to function as soon as it has the AC adapter connected to it.)



### 4.0 OPERATING THE UNIT

Default output is 1080p to the display. The 1388 allows adjustment of video parameters, selection of output resolutions, type of audio output and amount of audio delay, etc. Adjustments are made via an On Screen Display (OSD) menu. Much of the operation of the scaler is done automatically; however, in some circumstances an adjustment is needed, usually when the input signals are not presented at standard levels.

Note: The OSD does not appear when input signal is not present, or when the TV cannot accept the input signal resolution.

The menu structure is shown on the opposite page. When you press the Menu button for the first time, you see the menu tier 1 selections. Use the + and – buttons to move up and down the tier 1 selections and press MENU button to either choose a parameter, or enter the adjustment feature of that parameter.

**Reset Function:** To reset the 1388 output resolution to match the source’s native settings, press and hold the MENU button while connecting the DC power supply to the 1388.

If there is only one adjustment in tier 2 associated with the parameter, use the + and – buttons to make adjustments. If there is more than one item associated with the parameter, use the + and – buttons to navigate, and press the MENU button to select a parameter.

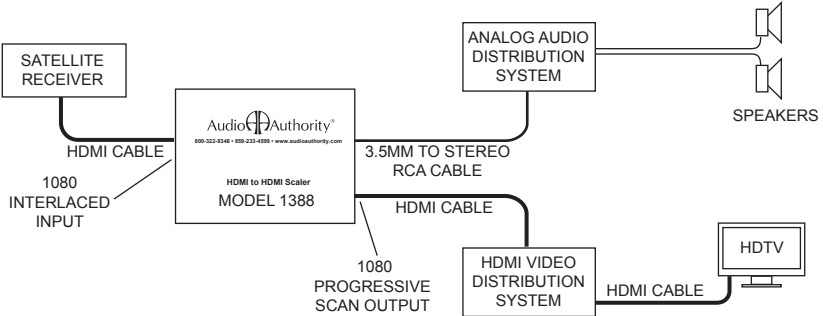
Use the MENU button and + and – buttons to navigate to the menu EXIT.

Menu Tier 1	Menu Tier 2	Adjustment
<b>CONTRAST</b>	-	0 ~ 100 of Contrast Level
<b>BRIGHTNESS</b>	-	0 ~ 100 of Brightness Level
<b>FINETUNE</b>	- HUE	0 ~ 100 of Hue Level
	- SATURATION	0 ~ 100 of Saturation Level
	- SHARPNESS	0 ~ 100 of Sharpness Level
	- EXIT	Back to Tier 1
<b>COLOR</b>	- RED	0 ~ 100 of Red Color Level
	- GREEN	0 ~ 100 of Green Color Level
	- BLUE	0 ~ 100 of Blue Color Level
	- EXIT	Back to Tier 1
<b>SIZE</b>	-	FULL / OVERSCAN / UNDERSCAN
<b>OUTPUT</b>	-	NATIVE / VGA / SVGA / XGA / SXGA / SXGA+ WXGA+ / WSXGA / UXGA / WUXGA 480i / 480p / 720p@60Hz / 1080i@60Hz / <b>1080p@60Hz</b> / 576i / 576p / 720p@50Hz / 1080i@50Hz / 1080p@50Hz
<b>AUDIO</b>	- SOURCE	HDMI / EAR PHONE / OPTICAL
	- DELAY	OFF/40ms/110ms/150ms
<b>OSD</b>	- HPOSITION	0 ~ 100 of OSD Horizontal Position
	- VPOSITION	0 ~ 100 of OSD Vertical Position
	- TIMER	0 ~ 100 of OSD Existing Time (sec.)
	- TRANSP	0 ~ 100 of OSD Transparent Level
	- EXIT	Back to Tier 1
<b>INFORMATION</b>	-	SOURCE (Input Interface) INPUT (Input Resolution) OUTPUT (Output Resolution) VERSION (Firmware Version)
<b>EXIT</b>	-	Close OSD Menu

*Note: some of the tier 1 parameters have only one associated adjustment -- e.g. BRIGHTNESS -- whereas others have several: e.g. FINETUNE.*

## 5.0 EXAMPLE APPLICATION

An audio and video application for the 1388 is a signal distribution system that requires progressive scan HDMI video format when the source outputs only interlaced video signals. The 1388 can also be used to provide an analog audio output for use with an audio distribution system. Set up the source to output 2-channel PCM via HDMI, and then connect the 1388 analog output to the distribution system. The HDMI output preserves the 2-channel signal for TV sound.



## 6.0 TROUBLESHOOTING

- **No picture:** perform the verifications below.
  - Make certain the 1388 is connected to a live AC outlet and check the POWER indicator light to verify the unit is powered on.
  - Check the HDMI cables at input and output connections to see if any of the connectors have become loose. Use good strain relief methods.
  - Test using known good HDMI cables, or try shorter cables.
  - Verify that the 1388 is set to a resolution supported by the display (1080p).
  - The resolution from the source must be an acceptable 1388 input resolution.
- **Poor image quality:** Some sources, such as cable and satellite receivers, compress output resulting in poor image quality. Connect the source directly to a display via a short HDMI® cable to compare.
- **Intermittent signal dropout:** Cable is longer than rated distance for the bandwidth of the source signal. Reduce bandwidth or cable length.
- **No surround sound (multi-channel audio):** adjust the source to output the desired digital audio format, and make certain the destination device is capable of receiving it. (Note: if analog stereo audio output is required, the digital audio input must be set to 2-channel PCM.)
- **No audio, or no dialogue:** If you are using the 1388 analog audio output (3.5mm jack) the source must be set to output 2-channel PCM, not surround sound.

Contact Audio Authority Technical Service with questions: 800-322-8346 or support@audioauthority.com.



## 7.0 SPECIFICATIONS

HDMI	1x via HDMI connector
Resolutions Supported	See page 8
Video Adjustments	Contrast, brightness, hue, sharpness, saturation, R-G-B levels
De-Interlace	3D motion adaptive
Pull-Down	3:2 + 2:2 recovery
HDMI Compliance	v1.2
HDCP Compliance	v1.1
DVI Compliance	v1.0
Image Component Processing	Full time/full range
Frame Rate Conversion	50/60Hz
Scan Conversion	Converts all standard scan formats
Analog Stereo	1x via 3.5mm stereo connector
Digital	1x SPDIF via Toslink connector
Variable Audio Output Delay	Off/40ms/110ms/150ms
Analog Stereo Input Level	2Vrms
Analog Stereo Output Level	1Vrms
Toslink Input/Output Level	Sampling rate 48KHz 2CH LPCM
Analog Stereo Bandwidth	20Hz to 20KHz
Size (H-W-D)	25x102x145mm (1x4x5.7 inches)
Weight (Net)	324g (11.4oz)
Limited Warranty	1 year parts and labor
Operating Temperature	0° to +50°C (+32° to +122°F)
Operating Humidity	10% to 90%, non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, non-condensing
External Power Supply	5VDC@2A – center positive, US, UK or Euro
Regulatory Approvals (Scaler)	FCC, CE, RoHS
Regulatory Approvals (Power Supply)	UL, CUL, CE, PSE, GS, RoHS
Accessories Included	AC power adapter, 3.5mm to 2-channel RCA cable, user manual

## **8.0 LIMITED WARRANTY**

If any consumer product from Audio Authority® fails due to defects in materials or workmanship within one year from the date of the original sale to the end-user, Audio Authority guarantees that we will replace the defective product at no cost. Freight charges for the replacement unit will be paid by Audio Authority (ground service only). A copy of the invoice showing the item number and date of purchase (proof-of-purchase) must be submitted with the defective unit to constitute a valid in-warranty claim.

Units that fail after the warranty period has expired may be returned to the factory for repair at a nominal charge, if not damaged beyond the point of repair. All freight charges for out-of-warranty returns for repair are the responsibility of the customer. Units returned for repair must have a Return Authorization Number assigned by the factory.

This is a limited warranty and is not applicable for products which, in our opinion, have been damaged, altered, abused, misused, or improperly installed. Audio Authority makes no other warranties either expressed or implied, including limitation warranties as to merchantability or fitness for a particular purpose. Additionally, there are no allowances or credits available for service work or installation performed in the field by the end user.

## **8.1 WARRANTY SERVICE PROCEDURES**

If you suspect a product defect, contact Audio Authority's Technical Service Department at 800-322-8346 or 859-233-4599 for assistance in verifying the problem. If a defect or potential defect is suspected, a replacement unit will be shipped immediately on a defect-exchange basis and a Return Authorization Number will be issued for the return of the defective product. Replacement units are sent out at the Manufacturer's Suggested Retail Price which is debited to the Customer's Credit Card at the time of shipment. Once we receive the defective unit back at the factory, it will be evaluated under the conditions of this warranty and if found to be in-warranty, a full credit will be issued to the Customer's Credit Card. Return freight charges for the defective unit are the customer's responsibility. Please contact our Technical Service Department for complete details concerning all in and out of warranty service matters.

We appreciate your confidence in our products and services and will always strive to meet or exceed your needs.

## **9.0 REGULATORY COMPLIANCE**

The 1388 complies with HDMI® and HDCP rules and regulations. The power supply included has been tested for compliance with UL, CUL, CE, PSE, and GS rules and guidelines. This product and its power supply are RoHS compliant.

## **10.0 CONTACT INFORMATION**

If you have questions or require assistance with this product in areas not covered by this manual, please contact Audio Authority using the information below.

Audio Authority Technical Service  
800-322-8346 M-F 8:30 AM to 5:00 PM, EST  
International: 859-233-4599 Fax: 859-233-4510  
Send email to: [support@audioauthority.com](mailto:support@audioauthority.com)

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