

# **HDMI2.0 4K Ultra HD Scaler with Frame Conversion**

**User Manual**

**VER 1.0**

## Thank you for purchasing this product

For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

## Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

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## 1. Introduction

This scaler is a high performance, HDMI 2.0, HDCP2.2 compliant scaler capable upscale and downscale among Ultra HD/4K, Full HD, and HD resolutions with frame converting support. It accepts wide range of resolutions from 480i up to 4K@60Hz4:4:4 and output resolutions up to 4K@60Hz4:4:4 with digital and analog audio extraction. It provides one HDMI input and one HDMI output and the scaler automatically scale any input signal to match native resolution of the display or any connected HDMI device. Or output can be set to specific resolution. It supports data rate up to 18Gbps with 4K604:4:4 color format which is HDMI 2.0 specification. The scaler features front panel buttons or OSD(on screen display)menu, or RS-232 control for scaler configuration.

## 2. Features

- ☆ HDMI 2.0b (18Gbps), HDCP 2.2 compliant
- ☆ Up scaling video resolutions up to 4K2K@50/60Hz (YUV444) and downscaling video resolutions to 1024x768@60Hz
- ☆ Adaptive de-interlacing support
- ☆ Extracts HDMI audio to multi-channel optical (SPDIF) or L/R analog audio
- ☆ Supports Dolby True HD, Dolby Digital Plus and DTS -HD Master Audio plus LPCM (up to 192kHz)
- ☆ Supports CEC bypass
- ☆ Front panel buttons, OSD and RS-232 Control

## 3. Package Contents

- ① 1× HDMI 4K Ultra HD Scaler
- ② 1× 12V/1A Power Adapter
- ③ 1× User Manual

## 4. Specifications

Technical	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 1.4 and HDCP 2.2
Video Bandwidth	18 Gbps
Video Resolutions	Ultra HD/4K up to 4096 x 2160 @50/60Hz
Color Depth	10-bit, 12-bit
Color Space	RGB, YCbCr 4:4:4, YCbCr 4:2:2YCbCr 4:2:0
HDMI Audio Formats	LPCM 2/5.1/7.1CH, Dolby Digital, DTS 5.1, Dolby Digital+, Dolby True HD, DTS-HD Master Audio, Dolby Atmos, DTS:X
Optical AudioFormats	LPCM 2CH,LPCM 5.1,Dolby Digital 2/5.1CH, DTS2/5.1CH
L/R Audio Formats	Analog Stereo 2CH
ESD Protection	Human-body Model : $\pm 8\text{kV}$ (Air-gap discharge) , $\pm 4\text{kV}$ (Contact discharge)
Connections	
Inputs	1x HDMI Type A [19-pin female] 1 x RS232 [Phoenix connector] 1 x Firmware [Mini USB]
Outputs	1x HDMI Type A [19-pin female] 1x L/R Audio Out [3.5mm Stereo Mini-jack] 1x Optical Out [S/PDIF]
Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	115mm(W) $\times$ 100mm(D) $\times$ 25mm(H)
Weight	450g
Power Supply	Input: AC100~240V 50/60Hz Output: DC 12V/1A(US/EU standards , CE/FCC/UL certified)
Power Consumption	8W ( max )
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Relative Humidity	20~90% RH (non-condensing)

\* Supported Input Resolution List

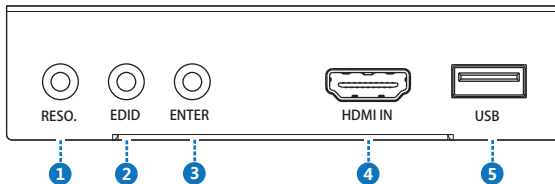
640x480@60Hz	720x480i@60Hz	720x480p@60Hz
720x576i@50Hz	720x576p@50Hz	800x600@60Hz
1024x768@60Hz	1152x864@75Hz	1024x768@75Hz
1280x768@60Hz	1280x960@60Hz	1280x1024X60Hz
1365x1024@60Hz	1600x1200@60Hz	1680x1050@60Hz
1856x1392@60Hz	1920x1080@60Hz	1920x1200@60Hz
1920x1440@60Hz	3840x2160@24Hz	3840x2160@30Hz
3840x2160@25Hz	4096x2160@24Hz	4096x2160@25Hz
4096x2160@30Hz	3840x2160@50Hz	3840x2160@60Hz
4096x2160@50Hz	4096x2160@60Hz	

\* Supported Output Resolution List

1024x768@60Hz	1280x720@50Hz	1280x720@60Hz
1280x800@60Hz	1360x768@60Hz	1400x1050@60Hz
1600x1200@60Hz	1680x1050@60Hz	1920x1200@60Hz
1920x1080@50Hz	1920x1080@60Hz	3840x2160@30Hz
3840x2160@50Hz	3840x2160@60Hz	3840x2160@25Hz

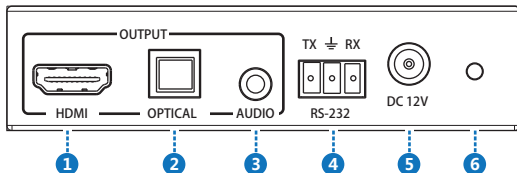
## 5. Operation Controls and Functions

### ☆ Front Panel



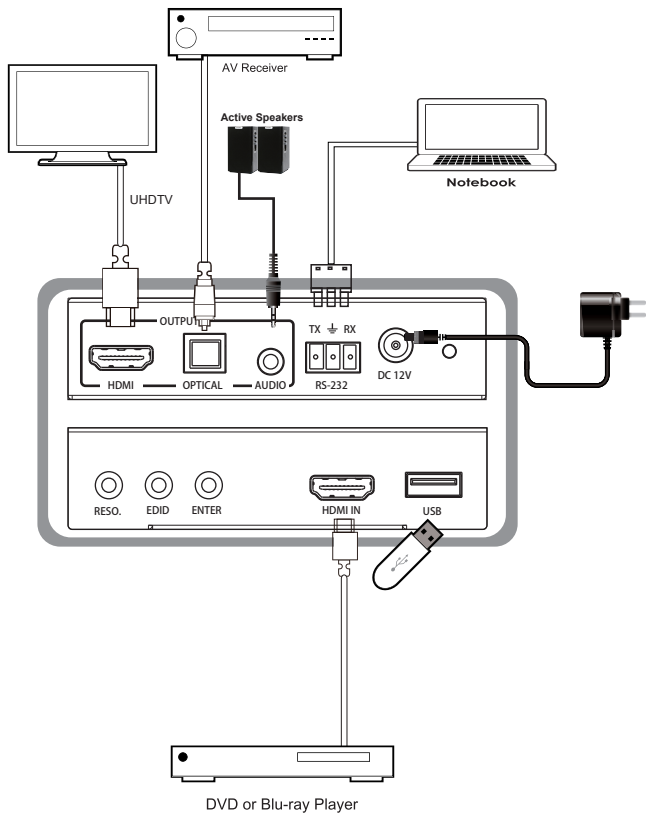
Number	Name	Function description
1	RESOLUTION	Output resolution list menu. Press the button to switch output resolution. Long press for 5 seconds output resolution will be set to 720p@60Hz.
2	EDID	Press the button to change EDID value. Long press for 5 seconds, the scaler will back to factory default setting.
3	ENTER	Press the button to save setting, long press for 5 seconds will do software update for the scaler.(The update process in last page)
4	HDMI IN	HDMI input port
5	USB	Firmware update port

## ☆ Rear Panel



Number	Name	Function description
1	HDMI OUTPUT	HDMI output port
2	OPTICAL OUTPUT	OPTICAL digital audio output port
3	AUDIO OUTPUT	3.5mm analog audio output port
4	RS-232	RS-232 control port
5	DC 12V	DV 12V power supply unit input connector
6	POWER LED	System power indicator

## 6. Connection diagram



## Software update process

The scaler supports software updates via USB flash disk. The procedure is as follows:

- 1) Copy the file "MERGE.bin" to the root directory of a USB flash disk. (Make sure the file is copied to the root directory. The "MERGE.bin" file is provided/authorized by our engineering department or from our website)
- 2) Plug the USB flash disk to the scaler USB port on its rear panel.
- 3) Press the ENTER KEY (hold the KEY about 5 seconds) to start the update .when the OSD display the update process then release the KEY. Update completed, the scaler will reboot.

