

4K/60 In-line HDMI Scaler with DSP-Controlled Audio Breakout, Dolby TrueHD™ & DTS-HD™ Downmixing and eARC Output

CON-H2-DD-EARC



Quickstart Guide

! WyreStorm recommends reading through this document in its entirety to become familiar with the product's features prior to starting the installation process.



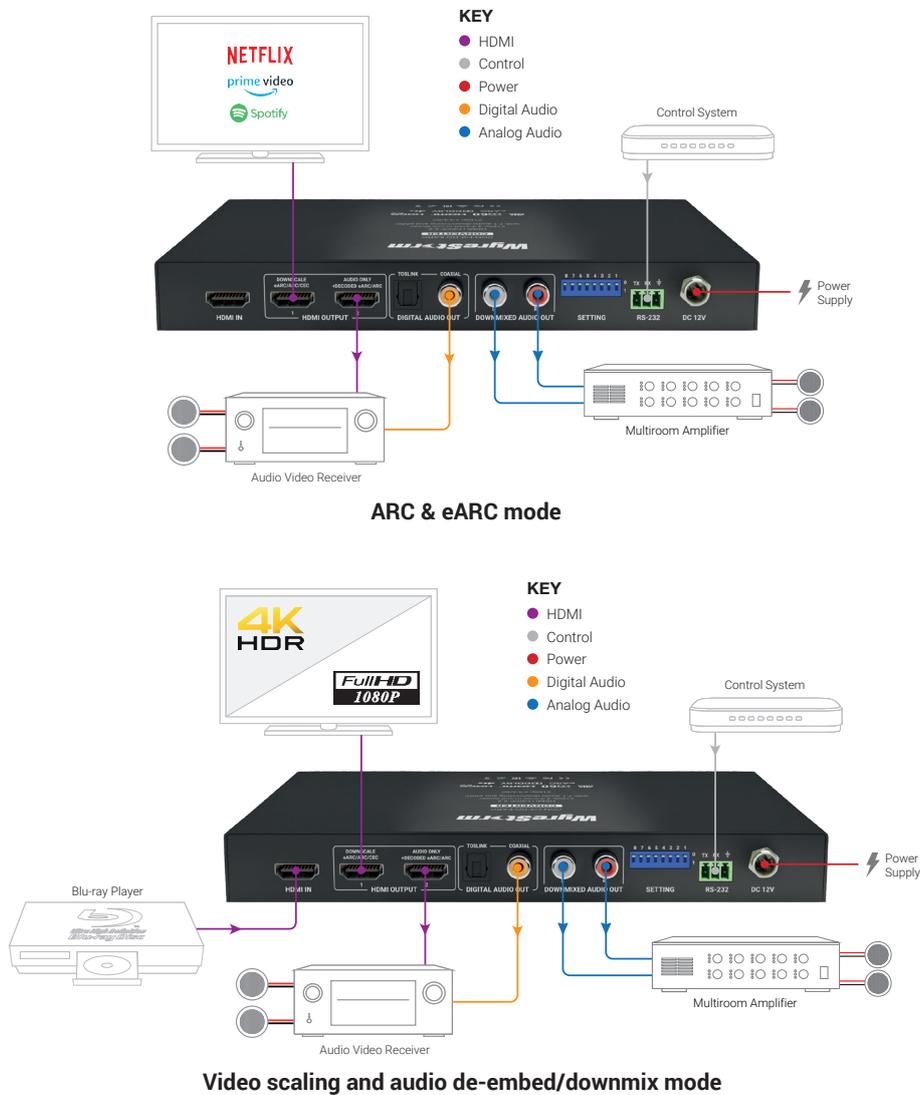
! IMPORTANT! Installation Requirements

- Visit the product page to download the latest firmware, document version, additional documentation, and configuration tools.
- Read through the [Wiring and Connections](#) section for important wiring guidelines before creating or choosing premade cables.
- While this product supports CEC for the HDMI outputs, WyreStorm cannot guarantee compatibility with all forms of CEC communication.

In the Box

- 1x CON-H2-DD-EARC Downmixer/scaler
- 1x 3-pin Phoenix connector
- 2x Rack mounting brackets (for NHD-000-RACK4)
- 1x 12V DC 1A Power Supply with wall adaptors (US/UK/EU/AU)
- 1x Quickstart guide (this document)

Basic Wiring Diagrams



Wiring and Connections

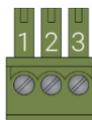
WyreStorm recommends that all wiring for the installation is run and terminated prior to making connections to the scaler. Read through this section in its entirety before running or terminating the wires to ensure proper operation and to avoid damaging equipment.

⚠ IMPORTANT! Wiring Guidelines

- The use of patch panels, wall plates, cable extenders, kinks in cables, and electrical or environmental interference will have an adverse effect on signal transmission which may limit performance. Steps should be taken to minimize or remove these factors completely during installation for best results.
- WyreStorm recommends using pre-terminated HDMI cables due to the complexity of these connector types. Using pre-terminated cables will ensure that these connections are accurate and will not interfere with the performance of the product.

RS-232 Wiring

The CON-DAC-DD-EARC uses a 3-pin RS-232 with no hardware flow control. Most control systems and computers are DTE where pin 2 is RX, this can vary from device to device. Refer to the documentation for the connected device for pin functionality to ensure that the correct connections can be made.

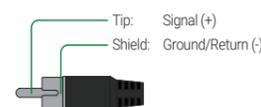


WyreStorm Connector		3rd Party Device
Pin 1	TX (Transmit)	---> To ---> RX (Receive)
Pin 2	RX (Receive)	---> To ---> TX (Transmit)
Pin 3	G (Ground)	---> To ---> G (Ground)

Audio Wiring

This scaler contains audio connections for Analog Audio as well as S/PDIF digital.

Analog Audio



S/PDIF Digital Coax Audio



Setup and Configuration

EDID and Scaling

EDIDs can be configured to request the correct content from the source device. It is recommended that you set an EDID appropriate to the maximum capability of the source device then configure the video & audio output settings to match the connected TV, projector or AVR.

- When set to Auto-scale, the scaler will scan the EDID of the device connected to HDMI OUT 1, then dynamically adjust the output to the optimum resolution.
- When EDID settings are changed, ensure the source device is connected but powered off, then power on once all DIP switches have been set.
- Ensure that a display or AVR is connected and powered on before copying EDIDs or the copy will fail.
- Power to the scaler must be cycled (Off/On) after changing dip switches in order for the setting to take effect.

EDID Switch Location



Setting EDIDs

- Ensure the CON-H2-DD-EARC and connected source devices are powered OFF
- Set the desired switch configuration according to the illustrations below or the EDID table which is printed on the base of the unit.
- Power ON the CON-H2-DD-EARC
- Power ON the source device
- Ensure the input status light is lit on the front of the CON-H2-DD-EARC

HDMI Output 1 Scaling

Force Downscale	
Auto Downscale	

HDMI Output 1 Audio

Bypass	
Downmix 2ch	

S/PDIF Audio Output

Bypass (max 5.1ch)	
Downmix 2ch	

EDID Management

1080p/60 2ch PCM (default)		2160p/60 4:2:0 HDR 7.1ch Dolby/DTS HD	
1080p/60 5.1ch Dolby/DTS		2160p/60 4:4:4 Static HDR 2ch PCM	
1080p/60 7.1ch Dolby/DTS HD		2160p/60 4:4:4 Static HDR 5.1ch Dolby/DTS	
1080i/60 2ch PCM		2160p/60 4:4:4 Static HDR 7.1ch Dolby/DTS HD	
1080i/60 5.1ch Dolby/DTS		DVI 1280x1024 60Hz No Audio	
1080i/60 7.1ch Dolby/DTS HD		Copy EDID from HDMI output 1	
2160p/60 4:2:0 HDR 2ch PCM		Copy EDID from HDMI output 2	
2160p/60 4:2:0 HDR 5.1ch Dolby/DTS		API managed EDID	

Troubleshooting

Video loss or quality issues

- Verify that power is being supplied to the scaler device.
- Verify that all HDMI connections are well seated in the HDMI ports.
- Verify that both the output resolution of the source and display are supported by this scaler.
- For 4K content, verify that high-speed HDMI cables are being used.
- Ensure that the video scaler output setting is set according to the capability of your display.
- Ensure that you are not using HDMI OUT 2 (audio only) for connection to a display.

Audio loss or quality issues

- Ensure that the audio cables are of good quality and are capable of passing the signal.
- Verify that the audio output settings are set appropriate to the connected equipment (HDMI output and S/PDIF output can be set independently).
- When using the S/PDIF output, ensure that the signal does not exceed 6ch LPCM or bitstream.
- When using ARC or eARC content, ensure the devices are connected correctly – ARC or eARC enabled TV connected to HDMI OUT 1, AVR or sound system connected to HDMI OUT 2.

- The CON-H2-DD-EARC will only downmix bitstream or LPCM audio up to a maximum of 8ch (7.1 Dolby TrueHD™ or DTS-HD™) from a connected source or eARC enabled TV.
- If no audio is present from the outputs when ARC or eARC is required, ensure the input selector button on the front has been pressed and that the "ARC/eARC" indicator light is lit.
- Additional ARC/eARC troubleshooting may involve checking audio settings & configuration within the TV. Refer to TV manufacturers instruction manual for further guidance.

No or Intermittent 3rd party Device Control

- Verify that the RS-232 cables are properly terminated following the [Wiring and Connections](#) section.

🔍 Troubleshooting Tips:

- WyreStorm recommends using a cable tester or connecting the cable to other devices to verify functionality.

Warranty Information

WyreStorm Technologies LLC warrants that its products to be free from defects in material and workmanship under normal use for a period of five (5) years from the date of purchase. Refer to the Product Warranty page on wyrestorm.com for more details on our limited product warranty.



Specifications

Video		
HDMI	v2.0b TMDS	
Inputs	1x HDMI In: 19-pin type A	
Output 1	1x HDMI Out: 19-pin type A Scaling output 3840x2160p > 1920x1080p only	
Output 2 (Audio Only)	1x HDMI Out: 19-pin type A	
Maximum Transmission Bit Rate	17.8Gbps	
Maximum Pixel Clock	HDMI: 600MHz	
Video Resolutions (Max)	Resolution	HDMI
	1920x1080p @60Hz	15m/49ft
	3840x2160p @60Hz 8bit 4:4:4	3m/10ft
	3840x2160p @60Hz 10bit 4:2:0 HDR	3m/10ft
3840x2160p @60Hz 12bit 4:2:2 HDR	3m/10ft	
Supported Standards	DCI RGB HDR HDR10 Dolby Vision up to 60Hz HLG BT.2020 BT.2100	
Audio		
Outputs	1x HDMI Out (1): Pass-through or 2ch re-embed 1x HDMI Out (2): Audio Only eARC to AVR or audio system 1x Audio Out: RCA Stereo DSP controlled Volume & EQ adjustment 2x Audio Out: Mirrored S/PDIF (Coaxial & Toslink) 5.1 bitstream or 2ch downmix	
Audio Formats (Passthrough)	HDMI: 8ch LPCM Multichannel bitstream up to Dolby Atmos and DTS-X	
Audio Formats (Downmix)	8ch LPCM Dolby TrueHD™ DTS Master HD	
Maximum Sampling Rate	192KHz	
Maximum Audio Channels	Inputs HDMI 1: 7.1Ch PCM Dolby True HD DTS-HD eARC: 7.1Ch PCM Dolby True HD DTS-HD	Outputs HDMI 2 eARC: 7.1Ch PCM Dolby True HD DTS-HD Stereo RCA: 2ch analog Digital S/PDIF: 5.1ch PCM Dolby Digital DTS
Enhanced Audio Return Channel (eARC)	Supported From Output 1 only To Output 2 HDMI, S/PDIF out (maximum 5.1) or stereo RCA downmixed	
Communication and Control		
RS-232	1x RS-232: 3-pin Phoenix API control	
HDCP	Pass-through, 2.2 Supported	
EDID	Managed	
Consumer Electronics Control (CEC)	ARC/eARC Trigger Only	
Auto Low Latency Mode (ALLM)	Not Supported	
Variable Refresh Rate (VRR)	Not Supported	
Power		
Power Supply	12V DC 1A supplied	
Max Power Consumption	8W	
Environmental		
Operating Temperature	32°F ~ 110°F (0°C ~ 40°C) 10% ~ 90%, non-condensing	
Storage Temperature	-4°F to ~ 140°F (-20°C ~ +60°C) 10% ~ 90%, non-condensing	
Maximum BTU	27.2 BTU/hr	
Dimensions and Weight		
Installation	<1U Wall mounted Free standing	
Height	25mm/0.98in	
Width	215mm/8.46in	
Depth	118mm/4.64in	
Weight	0.42kg/0.92lbs	
Regulatory		
Safety and Emission	CE FCC RoHS RCM EAC	

Note: WyreStorm reserves the right to change product specification, appearance or dimensions of this product at any time without prior notice.