4x2 HDMI 2.0 Matrix

4KMX42-H2A



User Manual

AV Access

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Introduction

Overview

This product is a 4x2 HDMI matrix switcher with resolutions up to 4K@60Hz 4:4:4 8bit and HDCP 2.2 compatibility. It supports digital optical audio de-embedding from output 2 and analog audio de-embedding from output 1. Via DIP switch on rear panel, SPDIF Out also can output ARC audio from TV connected to HDMI Out 2. With an Audio Setting DIP switch built-in, output audio formats can be set according to the requirements.

It also supports matrix switching control through IR Remote and API commands, EDID management via RS232 interface is also provided, it also allows automatic/manual CEC control to TURN ON/OFF the connected display by input signal status detection.

Features

- Routes four HDMI sources to two 4K HDR Ultra HD displays.
- HDCP 2.2 compliant.
- Supports up to 4K Ultra HD and DCI resolutions(4096x2160@60Hz).
- Each output supports scaling from 4K to 1080P independently.
- Analog audio de-embedded from output 1.
- Digital audio de-embedded from HDMI output 2 or HDMI ARC from TV.
- Supports Audio Setting DIP switch for output audio format setting.
- Rich control options, include RS232, IR and front panel button controls.

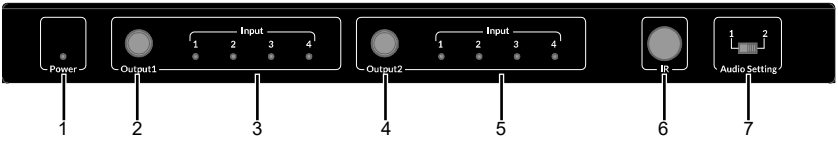
Package Contents

Before you start the installation of the product, please check the package contents:

- Matrix x 1
- Power Adapter (DC 5V 1A) x 1
- IR Remote x 1
- Phoenix Male Connectors (3.5mm, 3 Pins) x 1
- Mounting Brackets (with Screws) x 2
- User Manual x 1

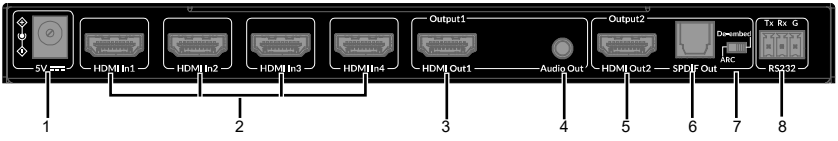
Panel

Front Panel



No.	Name	Description
1	Power LED	On: The device is powered on. Off: The device is powered off.
2	Output 1 Switch Button	Click to select input source for Output 1.
3 & 5	Input LED (1-4)	On: HDMI In (1-4) is selected. Off: HDMI In (1-4) is not selected.
4	Output 2 Switch Button	Click to select input source for Output 2.
6	IR Window	Receive IR signals.
7	Audio Setting DIP Switch	For output audio format setting. Detail information, please refer to “Audio Format Setting” section.

Rear Panel



No.	Name	Description
1	DC 5V	Connect the power supply provided.
2	HDMI In (1-4)	Connect to the HDMI sources.
3 & 5	HDMI Out 1 & 2	Connect to HDMI displays such as TV.
4	Audio Out	Connect to audio device such as Amplifier for analog de-embedded audio output from HDMI Out 1.
6	SPDIF Out	Connect to audio devices such as AV system for digital de-embedded audio output from HDMI Out 2 or ARC audio output from the TV connected to HDMI Out 2.

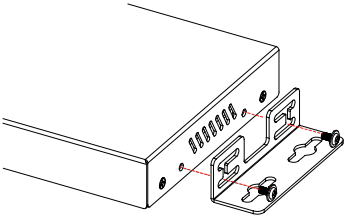
No.	Name	Description
7	DIP Switch	De-embedded: De-embedded mode. SPDIF Out outputs de-embedding audio from HDMI Out 2. ARC: ARC mode. SPDIF Out outputs ARC audio from the TV connected to HDMI Out 2.
8	RS232	Connect to a control PC or control system for RS232 serial control.

Installation and Application

Brackets Installation

Note: Before installation, please ensure the device is disconnected from the power source.

1. Attach the installation bracket to the enclosure using the screws provided in the package separately. As shown in the following figure.
2. Mount and secure the device to a surface or a suitable location with the mounting screws.



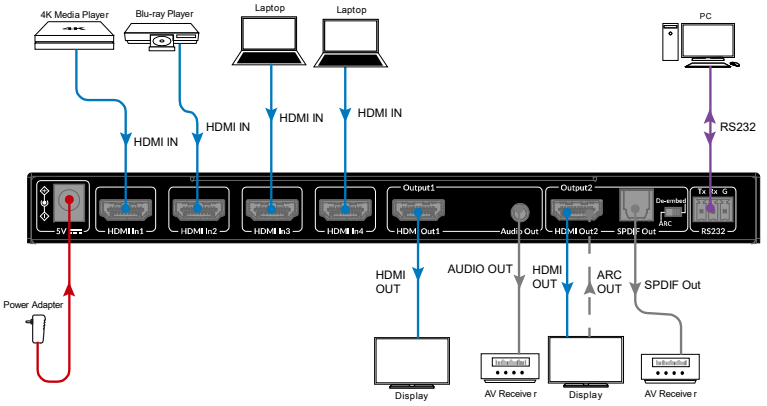
Application

Warnings:

- Before wiring, disconnect the power from all devices.
- During wiring, connect and disconnect the cables gently.

Note:

- Slide the DIP switch to De-embedded mode, the SPDIF Out of Output 2 will output the digital de-embedded audio from HDMI Out 2.
- Slide the DIP switch to ARC mode, the SPDIF Out of Output 2 will output the ARC audio from the TV connected to HDMI Out 2.



Audio Format Setting

Audio Setting DIP switch is located on front panel of the device. It is used to set output audio formats. The function of each setting is shown in the following table.

Position	Function
1 (Left)	Higher audio compatibility. In this mode, the analog audio de-embedding, digital audio de-embedding and ARC audio can work properly. **Note:** The audio information of EDID will be limited in this mode.
2 (Right)	Full copy EDID of the connected display, and no limitation of audio formats. **Note:** In this mode, the audio de-embedding may have no sound, users may need to set audio format of input source manually.

The supported audio formats in different settings are as follows:

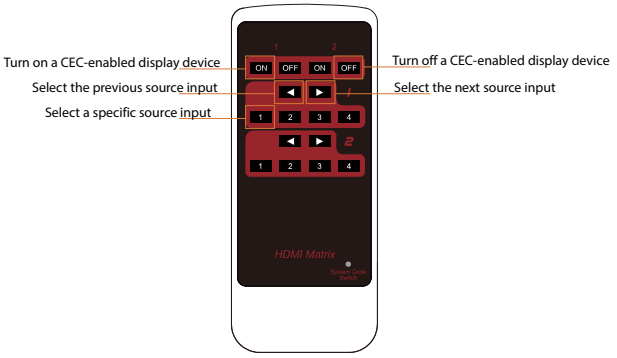
Audio Mode	Output 1		Output 2	
	HDMI Audio	Analog Audio	HDMI Audio	SPDIF Audio
1	PCM 2.0 only	PCM 2.0 only	Up to 5.1ch	Up to 5.1ch
2	All HDMI 2.0 audio formats[1]	PCM 2.0 or no audio output[2]	All HDMI 2.0 audio format	Up to 5.1ch or no audio output[3]

Note:

- 1: all HDMI 2.0 audio formats: means fully supports audio formats in HDMI 2.0 specification. E.g., PCM 2.0, LPCM 5.1/7.1, Dolby TrueHD, DTS-HD Master Audio, Dolby Atmos and DTS:X.
- 2: PCM 2.0 or no audio output: audio de-embedding will have sound only when the audio of the source is set to PCM2.0 format.
- 3: Up to 5.1ch or no audio output: audio de-embedding will have sound only when the audio of the source is set to 5.1 channels and below.

IR Remote Control

The included remote-control handset can be used to turn on and off a CEC-enabled display device and to switch the HDMI source for each display device.



Note:

- As the internal battery inside the remote control of our device is packaged by insulation slice, please remove the insulation slice before use.
- Please make sure that the remote is pointed directly at the IR receiver window.

System Code Switch

The IR Remote provided with the Matrix is shipped in “00” IR system code. In the event that Remote’s IR signal interferes with IR devices, e.g., TV, DVD player, the Remote can be switched to “4E” code by short pressing the System Code Switch on the Remote panel. At the same time, you must redefine the IR system code of the Matrix using the API command.



RS232 Control

Advanced users may need to control the matrix through RS232 serial communication. Connect a control PC or control system to the RS232 port of the switcher. Detail API Commands, please refer to a separate document "API Command Set_4KMX42-H2A". A professional RS232 serial interface software (e.g., Serial Assist) may be needed as well.

Before executing the API command through RS232 serial connection, please ensure RS232 interface of the device and the control PC are configured correctly.

Parameters	Value
Baud Rate	115200 bps
Data Bits	8 bits
Parity	None
Stop Bits	1 bit
Flow Control	None

Specification

Technical	
Input/Output Port	4 x HDMI In, 2 x HDMI Out, 1 x Audio Out (Analog), 1 x SPDIF Out (Digital), 1 x RS232 (3.5mm, 3-Pin Phoenix Connector), 1 x DC 5V In
Video Signal Type	HDMI with 4K@60 4:4:4, HDR 10 & HDR 10+, HLG & Dolby Vision, HDCP 2.2
Input/Output Resolution Supported	**VESA:** 640x480[8], 800x600[8], 1024x768[8], 1024x768[8], 1280x768[8], 1280x800[8], 1280x960[8], 1280x1024[8], 1360x768[8], 1366x768[8], 1400x1050[8], 1440x900[8], 1600x900[8], 1600x1200[8], 1680x1050[8], 1920x12008 **SMPTE:** 720x480P[8], 720x576P[8], 1280x720P[1,2,3,4,5,6,7,8], 1920x1080I[6,8], 1920x1080P[1,2,3,4,5,6,7,8], 3840x2160[2,3,5,6,8], 4096x2160[2,3,5,6,8] 1 = at 23.98 Hz, 2 = at 24 Hz, 3 = at 25 Hz, 4 = at 29.97 Hz, 5 = at 30 Hz, 6 = at 50 Hz, 7 = at 59.94 Hz, 8 = at 60 Hz
Audio Format Supported	HDMI In/Out: Fully supports audio formats in HDMI 2.0 specification, including PCM 2.0/5.1/7.1, Dolby TrueHD, Dolby Atmos, DTSHD Master Audio and DTS:X AUDIO Out: Only support PCM 2.0 SPDIF Out: Support PCM 2.0/5.1, Dolby digital and DTS up to 5.1 Channel
Maximum Data Rate	18 Gbps

Technical	
Control Method	IR, RS232, Front Panel Button

General	
Operating Temperature	0°C to 45°C (32°F to 113°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Humidity	10% to 90%, non-condensing
ESD Protection	Human-body Model: ±8kV (Air-gap discharge)/ ±4kV (Contact discharge)
Power Supply	DC 5V 1A
Power Consumption	3.3W (Max)
Device Dimension (W x H x D)	220mm x 21mm x 100.2mm/ 8.66'' x 0.83'' x 3.94''
Product Weight	0.56kg/1.23lbs

Transmission Distance

Cable Type	Range	Supported Video
HDMI	Input:15m/50ft Output: 10m/33ft	1080P@60Hz
	Input/Output: 10m/33ft	4K@30Hz 4:4:4 8bit
	Input/Output: 5m/16ft	4K@60Hz 4:4:4 8bit

Warranty

Products are backed by a limited 1-year parts and labor warranty. For the following cases AV Access Technology Limited shall charge for the service(s) claimed for the product if the product is still remediable and the warranty card becomes unenforceable or inapplicable.

1. The original serial number (specified by AV Access Technology Limited) labeled on the product has been removed, erased, replaced, defaced or is illegible.
2. The warranty has expired.
3. The defects are caused by the fact that the product is repaired, dismantled or altered by anyone that is not from an AV Access Technology Limited authorized service partner. The defects are caused by the fact that the product is used or handled improperly, roughly or not as instructed in the applicable User Guide.
4. The defects are caused by any force majeure including but not limited to accidents, fire, earthquake, lightning, tsunami and war.
5. The service, configuration and gifts promised by salesman only but not covered by normal contract.
6. AV Access Technology Limited preserves the right for interpretation of these cases above and to make changes to them at any time without notice.

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