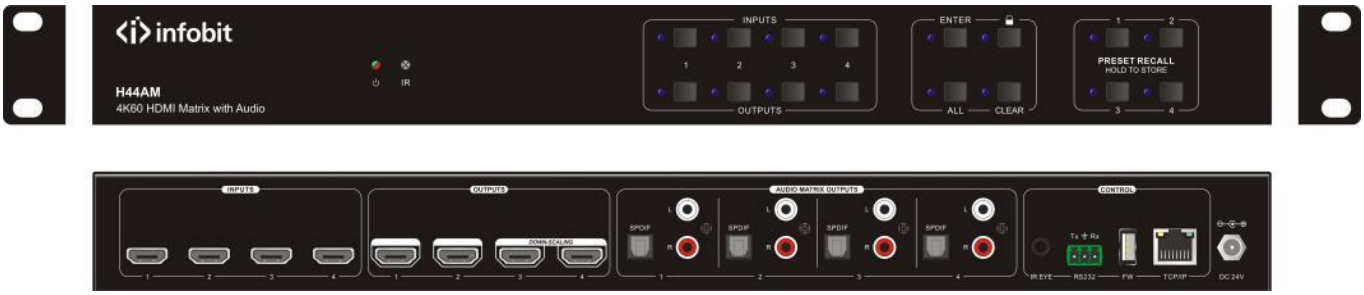
iMatrix

4x4 HDMI 2.0 Matrix with Audio Matrix/ Downscaling/ AOC Supported

Datasheet Model: iMatrix H44AM



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1. Product Introduction

The H44AM is a professional 4x4 HDMI 2.0 Matrix Switcher with Audio Matrix. It includes 4 HDMI inputs, 4 HDMI outputs and the last two outputs with down-scaling function, which is designed for switching two HDMI2.0 and HDCP2.3 compliant signals. It also features 4 SPDIF and 4 analog audio outputs for audio matrix.

The matrix switcher features comprehensive EDID management and advanced HDCP handing to ensure maximum functionality with a wide range of video sources.

The matrix switcher not only supports bi-directional IR, RS232 extension but also has IR, RS232, and TCP/IP control options.

1.1 Features

- 4x4 HDMI 2.0 Matrix Switcher.
- Supports 4K/60 4:4:4, HDR, HDCP2.3 compliant.
- Audio Matrix, audio out can de-embedded from arbitrary input or output.
- Individual volume adjustment on each L+R output.
- Supports 4K to 1080p down-scaling up to 2 outputs.
- HDMI out provides 2.5W to power Active Optical Cable (AoC).
- HDMI Output support up to 5V500mA for AoC cable
- Controllable by front panel, IR, RS232 and TCP/IP.

1.2 Package List

- 1 x H44AM
- 2 x Mounting Ears with 6 Screws
- 4 x Plastic Cushions
- 1 x IR Remote
- 1 x IR Receiver
- 1 x RS232 Cable (3-pin to DB9)
- 1 x Power Adaptor (24V DC 1.25A)
- 1 x User Manual

Note: *Please contact your distributor immediately if any damage or defect in the components is found.*

2. Specification

Video	
Video Input	(4) HDMI
Video Input Connector	(4) Type-A female HDMI
Video input Video Resolution	Up to 4K@60Hz 4:4:4
Video Output	(4) HDMI
Video Output Connector	(4) Type-A female HDMI,
Video output Video Resolution	Up to 4K@60Hz 4:4:4
HDMI Output	Supports up to 5V500mA for AoC cable
HDMI Version	Up to 2.0
HDCP Version	Up to 2.3

HDMI Audio Signal	LPCM 7.1 audio, Dolby Atmos®, Dolby® TrueHD, Dolby Digital® Plus, DTS:X™, and DTS-HD® Master Audio™ pass-through.
Digital Audio Output	
Output	(4) Digital SPDIF audio
Output Connector	(4) Toslink connector
Digital SPDIF Audio Format	Supports PCM, Dolby Digital, DTS, DTS-HD
Frequency Response	20 Hz to 20 kHz, ±1dB
Max Output level	±0.05dBFS
THD+N	< 0.05%, 20 Hz – 20 kHz bandwidth, 1 kHz sine at 0dBFS level (or max level)
SNR	> 90dB, 20Hz-20 kHz bandwidth
Crosstalk Isolation	< -70 dB, 10 kHz sine at 0dBFS level (or max level before clipping)
Noise	-90dB
Analog Audio Output	
Output	(4) Analog L/R Audio
Output Connector	(4) L&R (RCA)
Digital SPDIF Audio Format	PCM 2CH
Frequency Response	20 Hz to 20 kHz, ±1dB
Max output level	2.0Vrms ± 0.5dB. 2V = 16dB headroom above -10dBV (316 mV) nominal consumer line level signal
THD+N	< 0.05%, 20 Hz – 20 kHz bandwidth, 1 kHz sine at 0dBFS level (or max level)
SNR	> 80dB, 20Hz-20 kHz bandwidth
Crosstalk Isolation	< -80 dB, 10 kHz sine at 0dBFS level (or max level before clipping)
L-R Level deviation	< 0.05 dB, 1 kHz sine at 0dBFS level (or max level before clipping)
Frequency Response Deviation	< ± 0.5dB 20Hz - 20KHz
Output Load Capability	1k ohm and higher (supports 10x paralleled 10k ohm loads)
Noise	-80dB
Control	
Control Port	(1) IR EYE, (1) RS232, (1) FIRMWARE, (1) TCP/IP
Control Connector	(1) 3.5mm jack, (1) 3-pin terminal block, (1) USB-A, (1) RJ45,
General	
Transmission Distance	4K/60Hz/444 5m,4K/60Hz/420 10m,1080P 15m
Bandwidth	18Gbps
Operation Temperature	-5~ +55℃
Storage Temperature	-25 ~ +70℃
Relative Humility	10%-90%
External Power Supply	Input: AC 100~240V, 50/60Hz; Output: 24V DC 1.25A
Maximum Power Consumption	18.3W
Dimension (W*H*D)	436.4mm*44mm*236mm
Net Weight	2.6kg

Video Resolution Down-scaling

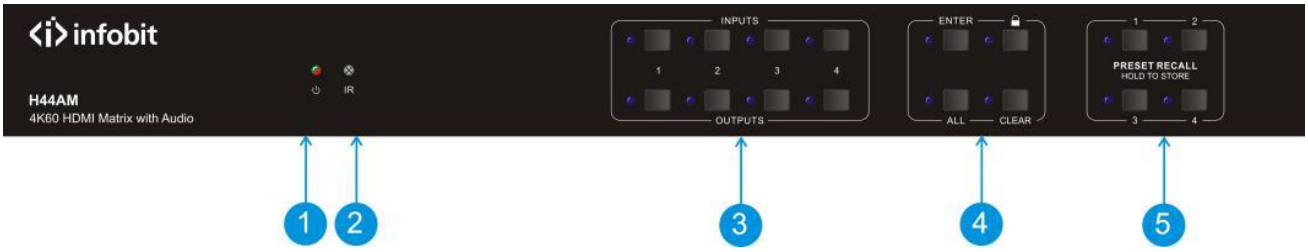
The product supports video resolution down-scaling, the 4K input can be automatically degraded to 1080p output for compatibility with 1080p display, shown in the below chart.

	Input			Output	
#	**Resolution**	**Refresh**	**Color Space**	**Downscale**	**1080p Specs**
1	3840x2160	60	4:4:4	Support	1080p@60Hz 4:4:4
2	3840x2160	30	4:4:4	Support	1080p@30Hz 4:4:4
3	3840x2160	24	4:4:4	Support	1080p@24Hz 4:4:4
4	3840x2160	60	4:2:0	Support	1080p@60Hz 4:4:4
5	3840x2160	30	4:2:0	Support	1080p@30Hz 4:4:4
6	3840x2160	24	4:2:0	Support	1080p@24Hz 4:4:4
7	3840x2160	60	4:2:2	Not Support	N/A
8	3840x2160	30	4:2:2	Not Support	N/A
9	3840x2160	24	4:2:2	Not Support	N/A

Note: *Only last two outputs (output 3 and output 4) have down-scaling function.*

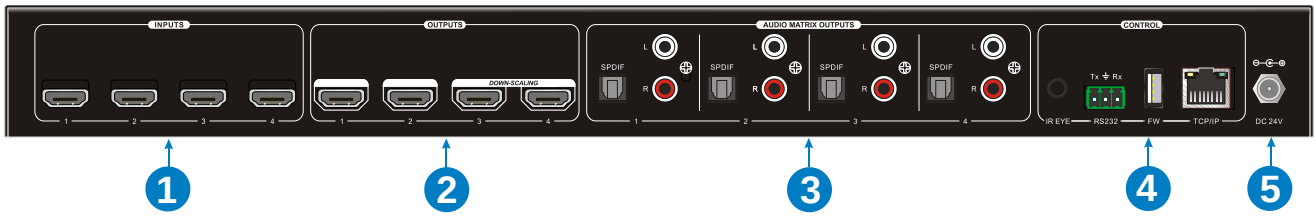
3. Panel Description

3.1 Front Panel



No.	Name	Description
①	**Power Indicator**	• Illuminates green when device powered on; • Turns red in standby mode.
②	**IR sensor**	Built-in IR sensor, receives IR signal sent from IR remote.
③	**INPUT selector button** **OUTPUT selector button**	• Total 4 input selector buttons, press one of buttons to switch input source. • Total 4 output selector buttons, press the buttons to select output channel.
④	**ENTER button**	Confirm operation.
	LOCK button	Press this button for 3 seconds to lock/unlock all front buttons.
	ALL button	Select all outputs to convert an input to all outputs: → Press INPUTS 1 + ALL + ENTER
	CLEAR button	Withdraw button.
⑤	**PRESET RECALL** **HOLD TO STORE**	• Press and hold the button 1~4 to save the current switching status to the corresponding preset 1~4. • Press the button 1~4 to recall the saved preset 1~4.

3.2 Rear Panel



No.	Name	Description
①	**INPUTS**	HDMI input ports, 4 in total, connects with HDMI sources.
②	**OUTPUTS**	4 in total, connects with HDMI displays. The latter four HDMI ports have down-scaling function.
③	**AUDIO MATRIX OUTPUTS**	**SPDIF:** audio output ports for de-embedded HDMI audio, 4 in total. **L&R (RCA):** audio output ports for de-embedded HDMI audio, 4 pairs in total.
④	**IR EYE**	Connects with external IR receiver for using the IR remote to control the Matrix Switcher.
	RS232	3-pin terminal block to connect the RS232 control device (e.g. PC) or a device to be controlled by RS232 commands.
	FIREWARE	USB-A port for updating firmware.
	TCP/IP	RJ45 port to connect the control device (e.g. PC) to control the matrix by GUI.
⑤	**DC 24V**	Connect with 24VDC 1.25A power adaptor.