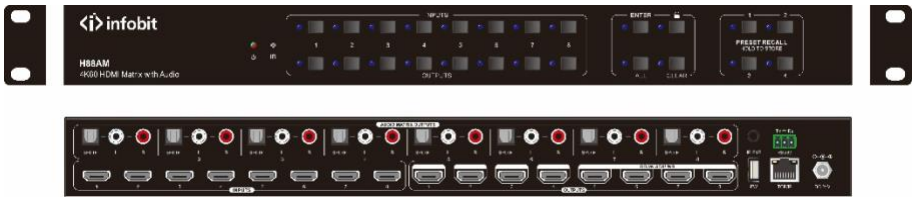
iMatrix

8x8 HDMI 2.0 Matrix with Audio Matrix/ Downscaling/

AOC Supported

Datasheet *Model: H88AM*



Version: H88AM_2021V1.0

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1. Introduction

The H88AM is a professional 8x8 HDMI 2.0 Matrix Switcher with Audio Matrix. It includes 8 HDMI inputs, 8 HDMI outputs and the last four outputs with down-scaling function, which is designed for switching four HDMI2.0 and HDCP2.3 compliant signals. It also features 8 SPDIF and 8 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

- 8x8 HDMI 2.0 Matrix Switcher.
- Supports 4K/60 4:4:4, HDR, HDCP2.3 compliant.
- Audio Matrix, audio out can be de-embedded from arbitrary input or output.
- Individual volume adjustment on each L+R output.
- Supports 4K to 1080p down-scaling up to 4 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

- 1x H88AM
- 6x Screws
- 1x RS232 cable (3-pin to DB9)
- 1x IR remote
- 1x User manual
- 2x Mounting ears
- 4x Plastic cushions
- 1x IR receiver
- 1x Power adaptor (DC 24V 2.71A)

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

2. Specification

Video	
Video Input	(8) HDMI
Input Connector	(8) Type-A female HDMI
HDMI Input Resolution	Up to 4K@60Hz 4:4:4, HDR
Video Output	(8) HDMI
Output Connector	(8) Type-A female HDMI
HDMI Output Resolution	Up to 4K@60Hz 4:4:4, HDR10 and Dolby Vision
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	(8) Digital SPDIF audio
Output Connector	(8) Toslink connector
Digital SPDIF Audio Format	Supports PCM, Dolby Digital, DTS, DTS-HD
Frequency Response	20Hz – 20KHz,±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-20KHz bandwidth
Crosstalk Isolation	< -70 dB, 10 kHz sine at 0 dBFS level (or max level before clipping)
Noise	-90dB
Analog Audio Output	
Output	(8) Analog L/R Audio
Output Connector	(8) L&R (RCA)
Digital SPDIF Audio Format	PCM 2CH
Frequency Response	20 Hz to 20 kHz, ±1dB
Max Output Level	2.0Vrms ± 0.5dB. 2 V = 16 dB 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)
Output load capability	1k ohm and higher (supports 10x paralleled 10k ohm loads)
Noise	-80dB

Control	
Control port	(1) FIRWARE, (1) IR EYE, (1) RS232, (1) TCP/IP,
Control Connector	(1) USB-A, (1) 3.5mm jack, (1) 3-pin terminal block, (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 Humidity	10% ~ 90%
External Power Supply	Input: AC 100V~240V, 50/60Hz; Output : 24V DC 2.71A
Power Consumption	24W
Dimension (W*H*D)	436.4mm*44mm*236mm
Net Weight	3kg

Video Resolution Down-scaling:

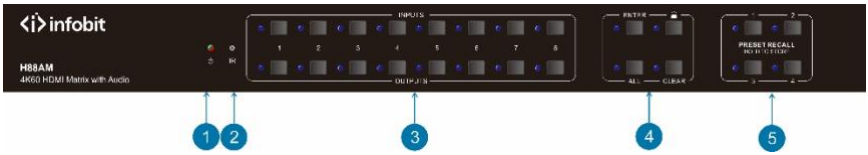
The product supports video resolution down-scaling, the 4K input can be automatically degraded to 1080p output for compatibility with 1080p display, shown in the below chart.

	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 four outputs (output 5, output 6, output 7 and output 8) 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 8 input selector buttons, press one of buttons to switch input source. • Total 8 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, 8 in total, connects with HDMI sources.
②	**OUTPUTS**	8 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, 8 in total. **L&R (RCA):** Audio output ports for de-embedded HDMI audio, 8 pairs in total.
④	**IR EYE**	Connects with external IR receiver for using the IR remote to control the Matrix Switcher.
⑤	**RS232**	3-pin terminal block to connect the RS232 control device (e.g. PC) or a device to be controlled by RS232 commands.
⑥	**FIREWARE**	USB-A port for updating firmware.
⑦	**TCP/IP**	RJ45 port to connect the control device (e.g. PC) to control the matrix by GUI.
⑧	**DC 24V**	Connect with 24VDC 2.71A power adaptor.