



# iMatrix

8x8 HDMI 2.0 Matrix with Audio Matrix/ Downscaling/

AOC Supported

*Datasheet Model: H88AM*



**All Rights Reserved**

Version: H88AM\_2021V1.0

[www.infobitav.com](http://www.infobitav.com) [info@infobitav.com](mailto:info@infobitav.com)

# 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

|                             |   |
|-----------------------------|---|
| <b>Video</b>                |   |
| 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. |
| <b>Digital Audio Output</b> |   |
| 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, $\pm 1$ dB  |
| Max Output Level            | $\pm 0.05$ dBFS   |
| 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   |
| <b>Analog Audio Output</b>  |   |
| 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, $\pm 1$ dB   |
| Max Output Level            | 2.0Vrms $\pm 0.5$ dB. 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°C ~ +55°C  |
| Storage Temperature   | -25°C ~ +70°C   |
| 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:

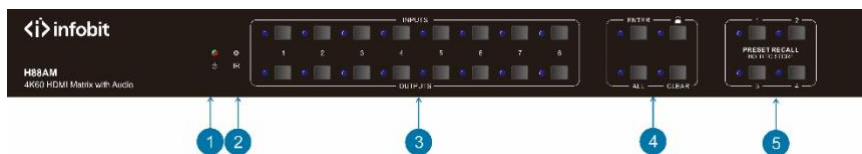
The product supports video resolution down-scaling, the 4K input can be automatically degraded to 1080p output for compatibility with 1080p display, shown in the below chart.

| # | 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   | <b>Power Indicator</b>  | <ul style="list-style-type: none"> <li>• Illuminates green when device powered on;</li> <li>• Turns red in standby mode.</li> </ul>  |
| ②   | <b>IR sensor</b>  | Built-in IR sensor, receives IR signal sent from IR remote.  |
| ③   | <b>INPUT selector button</b><br><b>OUTPUT selector button</b> | <ul style="list-style-type: none"> <li>• Total 8 input selector buttons, press one of buttons to switch input source.</li> <li>• Total 8 output selector buttons, press the buttons to select output channel.</li> </ul> |
| ④   | <b>ENTER button</b>   | Confirm operation.   |
|     | <b>LOCK button</b>  | Press this button for 3 seconds to lock/unlock all front buttons.  |
|     | <b>ALL button</b>   | Select all outputs to convert an input to all outputs:<br>→ Press INPUTS 1 + ALL + ENTER   |
|     | <b>CLEAR button</b>   | Withdraw button.   |
| ⑤   | <b>PRESET RECALL</b><br><b>HOLD TO STORE</b>                  | <ul style="list-style-type: none"> <li>• Press and hold the button 1~4 to save the current switching status to the corresponding preset 1~4.</li> <li>• Press the button 1~4 to recall the saved preset 1~4.</li> </ul>  |

## 3.2 Rear Panel



| No. | Name                        | Description  |
|-----|-----------------------------|--|
| ①   | <b>INPUTS</b>               | HDMI input ports, 8 in total, connects with HDMI sources.  |
| ②   | <b>OUTPUTS</b>              | 8 in total, connects with HDMI displays. The latter four HDMI ports have down-scaling function.  |
| ③   | <b>AUDIO MATRIX OUTPUTS</b> | <b>SPDIF:</b> Audio output ports for de-embedded HDMI audio, 8 in total.<br><b>L&amp;R (RCA):</b> Audio output ports for de-embedded HDMI audio, 8 pairs in total. |
| ④   | <b>IR EYE</b>               | Connects with external IR receiver for using the IR remote to control the Matrix Switcher.   |
| ⑤   | <b>RS232</b>                | 3-pin terminal block to connect the RS232 control device (e.g. PC) or a device to be controlled by RS232 commands.   |
| ⑥   | <b>FIREWARE</b>             | USB-A port for updating firmware.  |
| ⑦   | <b>TCP/IP</b>               | RJ45 port to connect the control device (e.g. PC) to control the matrix by GUI.  |
| ⑧   | <b>DC 24V</b>               | Connect with 24VDC 2.71A power adaptor.  |