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HDMI MATRIX

8x8 18Gbps HDBaseT (150M) Matrix AHDMX-V2088CHDB

PRODUCT DESCRIPTION

The 18Gbps 8x8 HDBaseT(150M) Matrix can connect 8 HDMI sources to 16 displays.
It features 8 HDMI outputs and each HDMI output is mirrored to provide a CAT-Cable output which runs simultaneously. HDBaseT output can extend video transmission distance up to 492ft / 150m via a single Cat 5e/6/7 cable and the resolution is up to 4K2K@60Hz 4:4:4.
Audio de-embedded to analog and coaxial audio is supported.
Each HDMI output supports 4K2K to 1080P downscaler independently.

PRODUCT KEY FEATURES

→HDMI 2.0b and HDCP 2.2/1.x compliant
→Video resolution up to 4K2K@60Hz (YUV 4:4:4) on all HDMI & HDBaseT ports
→8 HDMI inputs, 8 HDMI & HDBaseT mirrored outputs
→HDMI ports transmit 18Gbps lossless uncompressed video bandwidth
→Support 18Gbps lossless compressed HDBaseT signal transmission
→Support 4K->1080P Down Scaler for each output port
→HDR, HDR10, HDR10+, Dolby Vision, HLG are supported
→HDBaseT output can extend video transmission distance up to 492ft / 150m for 1080P or 394ft / 120m for 4K2K via a single Cat 5e/6/7 cable
→HDMI audio pass-through up to 7.1CH HD audio (LPCM, Dolby TrueHD and DTS-HD Master Audio)
→Support IR matrix
→Audio de-embedded is supported via analog and coax ports
→Advanced EDID management and CEC control are supported
→24V POC on all HDBaseT ports

SPECIFICATIONS

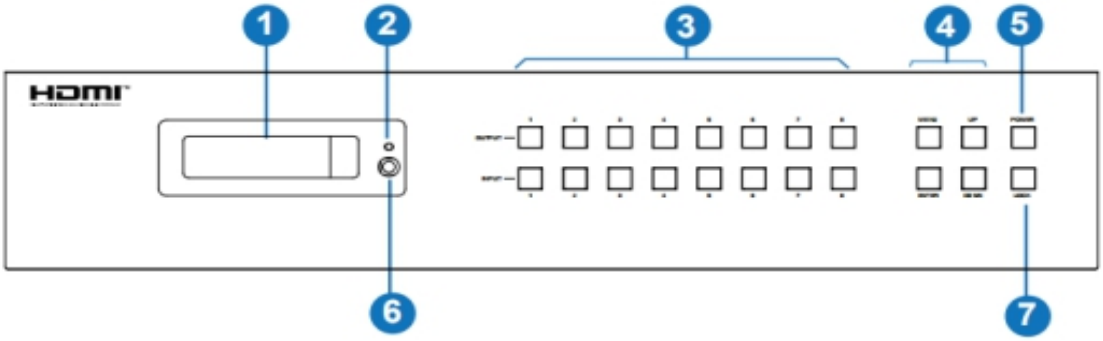
Technical	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2 and HDCP 1.x
Video Bandwidth	18Gbps
Video Resolution	Up to 4K2K@50/60Hz (4:4:4)
Color Space	RGB 4:4:4, YCbCr 4:4:4/4:2:2/4:2:0
Color Depth	8-bit, 10-bit, 12-bit (1080p@60Hz) 8-bit (4K2K@60Hz YUV4:4:4) 8-bit，10-bit,12-bit (4K2K@60Hz YCbCr 4:2:2/4:2:0)
HDR	HDR10, HDR10+, Dolby Vision, HLG
HDMI Audio Formats	LPCM 2.0/2.1/5.1/6.1/7.1, Dolby Digital, Dolby TrueHD, Dolby Digital Plus(DD+), DTS-ES, DTS HD Master, DTS HD-HRA, DTS-X
Coax Audio Formats	PCM 2.0, Dolby Digital / Plus, DTS 2.0/5.1
Analog Balanced Audio Formats	PCM2.0CH
Vmax	2Vrms
SNR	＞90dB
THD+N Ratio	＜0.1%（V_max） 0.001%~0.01%（V_best）
Crosstalk	＞80dB
Frequency Response	20Hz~20kHz ±0.5dB
ESD Protection	Human-body Model: ±8kV (Air-gap discharge) , ±4kV (Contact discharge)

Connection	
Matrix	Inputs: 8 x HDMI Type A [19-pin female] Outputs: 8 x HDMI Type A [19-pin female] 8 × HDBaseT port [RJ45] 8 × Coaxial audio [3.5mm Stereo Mini-jack] 8 × balanced analog audio [5-pin Phoenix connector] Controls: 9 x IR IN [3.5mm Stereo Mini-jack] 9 x IR OUT [3.5mm Stereo Mini-jack] 1 × TCP/IP [RJ45] 1 × RS-232 [D-Sub 9]
HDBaseT Receiver	Input: 1 x HDBT IN [RJ45, 8-pin female] Outputs: 1 x HDMI Type A [19-pin female] 1 x AUDIO OUT [3.5mm Stereo Mini-jack] Controls: 1 x IR IN [3.5mm Stereo Mini-jack] 1 x IR OUT [3.5mm Stereo Mini-jack] 1 x RS-232 [3-pin Phoenix connector] 1 x SERVICE [Mini-USB, Update port]

Mechanical			
Housing	Metal Enclosure		
Color	Black		
Dimensions	Matrix: 440mm (W) × 374mm (D) × 88.6mm (H) Receiver: 140mm (W) x 65mm (W) x 18mm (W)		
Weight	Matrix: 6.54Kg, Receiver: 155g		
Power Supply	AC 100 - 240V 50/60Hz		
Power Consumption	125W (Max)		
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F		
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F		
Relative Humidity	20~90% RH (non-condensing)		
Resolution / Distance	**4K60 - Feet / Meters**		
CAT5e/6/7	492ft / 150M		
Resolution / Cable length	**4K60 - Feet / Meters**	**4K30 - Feet / Meters**	**1080P60 - Feet / Meters**
HDMI IN / OUT	16ft / 5M	32ft / 10M	50ft / 15M
The use of "Premium High Speed HDMI" cable is highly recommended.			

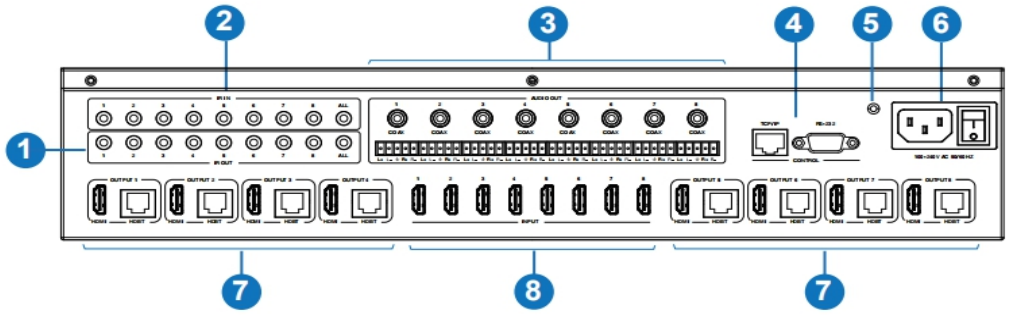
Operation Controls and Functions

Front Panel



NO.	Name	Function Description
1	OLED screen	Display matrix switching status, input / output port, EDID, Baud rate, IP Address.
2	Power LED	The LED will illuminate in green when the product is working normally, and red when the product is on standby.
3	OUTPUT / INPUT buttons	You need to press an output button (1~8) firstly and then press an input button (1~8) to select the corresponding input source for the output port.
4	MENU / ENTER / UP /DOWN	①**EDID setting:** On the initial OLED display screen, press "MENU" button to enter "Select EDID" interface, press "UP/DOWN" button to select the required EDID, and press the "ENTER" button to enter "Copy to Input:" interface. Then press "UP/DOWN" button to select the input port you need to set, and press "ENTER" button again to confirm. ②**Baud rate setting:** On the initial OLED display screen, press "MENU" button twice to enter "SELECT BAUD" interface, and press "UP/DOWN" button to select the required Baud rate, finally press the "ENTER" button to confirm the setting. ③**IP Address Check:** On the initial OLED display screen, press "MENU" button three times to enter the IP interface and check the current IP address, then press "UP/DOWN" button to switch DHCP ON/OFF, finally press the "ENTER" button to confirm the setting. Pressing the "MENU" button again will return to the initial OLED display status.
5	POWER button	Press and hold the POWER button for 3 seconds to enter the standby mode, then press the button again to wake up the device.
6	IR Window	IR receiver window, it only receives the IR remote signal from this product.
7	LOCK button	Press the LOCK button to lock front panel buttons (Except the power button); Press the button again to unlock.

Rear Panel



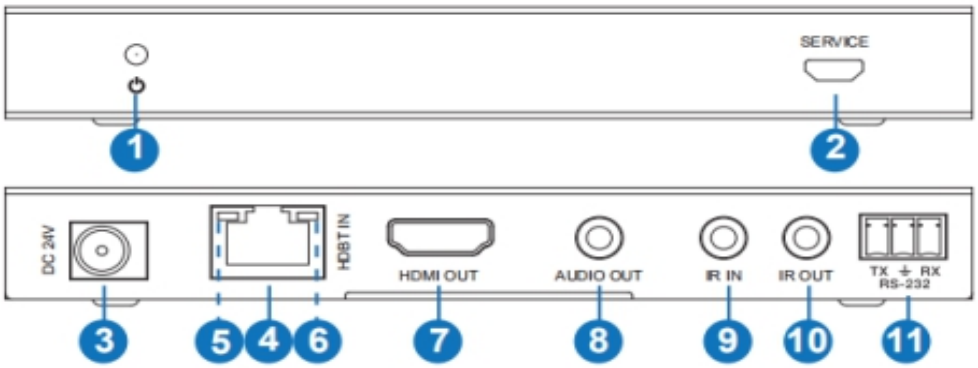
No.	Name	Function Description
1	IR OUT (1-8/ ALL) ports	Connect to IR blaster cable, the IR emit signal is from the "IR IN" port of the HDBaseT Receiver.
2	IR IN (1-8/ALL) ports	Connect to IR receiver cable, the IR receive signal will emit to the "IR OUT" port of the HDBaseT Receiver.
3	AUDIO OUT (1-8) ports	8 groups of coaxial and balanced analog audio mirrored output ports. AUDIO OUT (1-8) follows the video output of OUTPUT (1-8) ports.
4	CONTROL ports	TCP/IP: The link port for TCP/IP control. Connect to an active Ethernet link with an RJ45 cable.
		RS-232: Command control port. Connect to a PC or control system with a D-Sub 9-pin cable to control the Matrix.
5	GND	Connect the housing to the ground.
6	POWER input	Power port: Connect to 100~240V AC 50/60Hz power cable. Power switch: Press the switch to turn on/off the power.
7	OUTPUT (1-8) ports	HDMI output ports, connect to HDMI display device such as TV or monitor with an HDMI cable.
		HDBT mirrored output ports, connect to HDBaseT Receiver via CAT cable.
8	INPUT (1-8) ports	HDMI input ports , connect to HDMI source device such as DVD or PS4 with an HDMI cable.

Data Signal Indicator Lamp
- Illuminating: HDMI signal with HDCP. - Flashing: HDMI signal without HDCP. - Dark: No HDMI signal.

Video (OUT)

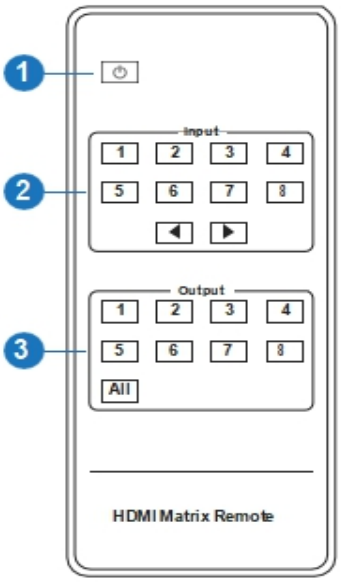
Connection Signal Indicator Lamp
- Illuminating: Matrix and HDBaseT Receiver are in good connection status. - Flashing: Matrix and HDBaseT Receiver are in poor connection status. - Dark: Matrix and HDBaseT Receiver are not connected.

HDBaseT Receiver Panel



No.	Name	Function Description
1	Power LED	Red LED will be on when the receiver is powered on.
2	SERVICE port	Firmware update port.
3	DC 24V	DC 24V/1A power supply input port. **Note:** The Matrix supports POC function, it means that either transmitter or receiver is powered on by 24V/1A power adapter, the other one doesn't need power supply.
4	HDBT IN	RJ45 connector for connecting the HDBT OUTPUT port of Matrix with a CAT cable.
5	Connection Signal Indicator lamp	▪ Illuminating: Matrix and Receiver are in goodconnection status. ▪ Flashing: Matrix and Receiver are in poor connection status. ▪ Dark: Matrix and Receiver are not connected.
6	Data Signal Indicator	▪ Illuminating: HDMI signal with HDCP. ▪ Flashing: HDMI signal without HDCP. ▪ Dark: No HDMI signal.
7	HDMI OUT	HDMI output port, connect to HDMI display device such as TV or monitor with HDMI cable.
8	AUDIO OUT	Analog audio output port. The audio is extracted from HDMI signal.
9	IR IN	Connect to IR receiver cable, the IR receive signal will emit to the "IR OUT" port of the Matrix.
10	IR OUT	Connect to IR blaster cable, the IR emit signal is from the "IR IN" port of the Matrix.
11	RS-232	Connect to a PC or control system with a 3-pin phoenix connector cable to transmit command between the Matrix and HDBaseT Receiver.

IR Remote



① **Power on or Standby:** Power on the Matrix or set it to standby mode.

②**Input 1/2/3/4/5/6/7/8:** Select input source button.
◀ ▶ : Select the last or next input source button.

③ **Output 1/2/3/4/5/6/7/8 button:** Select output source button.

All: Select all output source simultaneously. For example, when you press the "All" button and then press input "1" button, at this time the input "1" source will output to all display devices.

Operation instruction: You need to press the output button firstly and then press input button to select the corresponding input source. For example,
Press Output-X
(X means output button from 1 to 8 , including "All" button)
Then press Input-Y
(Y means input button from 1 to 8)

IR Control System

The product is not only a matrix switch but also an extender. It supports bi-directional IR control. When Matrix is connected to HDBaseT Receiver through Cat 5e/6/7 cable, you can control remote display device (HDBaseT) or input source device (Matrix) through IR signal transmission. But you must note that the IR signal transmission method is different from the method from Matrix (local) to HDBaseT Receiver (remote) and from HDBaseT Receiver (remote) to Matrix (local).

At the Matrix end (Local end): the IR signal is one-to-one transmission. For example, the IR IN 1 port signal of the Matrix will emit to IR OUT port of the HDBaseT Receiver 1, and the IR IN 3 port signal of the Matrix will emit to IR OUT port of the HDBaseT Receiver 3. It doesn't follow the video switch to change. IR IN ALL port signal of the Matrix will emit to all IR OUT ports of HDBaseT receivers simultaneously. Please see the following connection diagram.

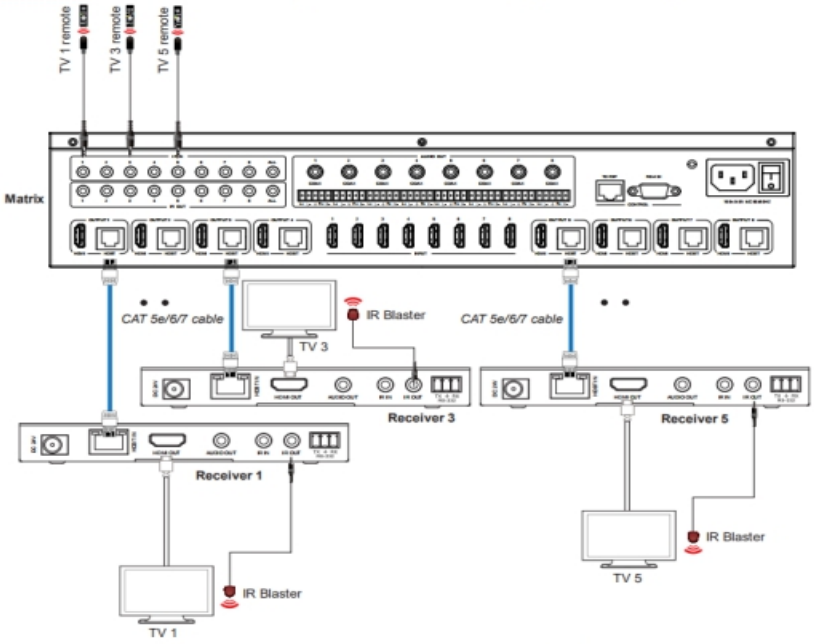


Figure 1: IR connection diagram (Matrix end)

At HDBaseT receiver (Remote end): IR signal follows video switch to change. For example, the HDMI output signal on the HDBaseT Receiver 1 is from the HDMI INPUT 2 port, so IR input signal of the HDBaseT Receiver 1 will emit to IR OUT 2 port of the Matrix. The HDMI output signal on the HDBaseT Receiver 5 is from the HDMI INPUT 4 port. Then, IR input signal of the HDBaseT Receiver 5 will emit to IR OUT 4 port of the Matrix etc. Any of HDBaseT Receiver's IR IN signal can output from IR OUT ALL port of the Matrix and the IR OUT ALL signal of the Matrix depends on your IR remote of source device. Please see the following connection diagram.

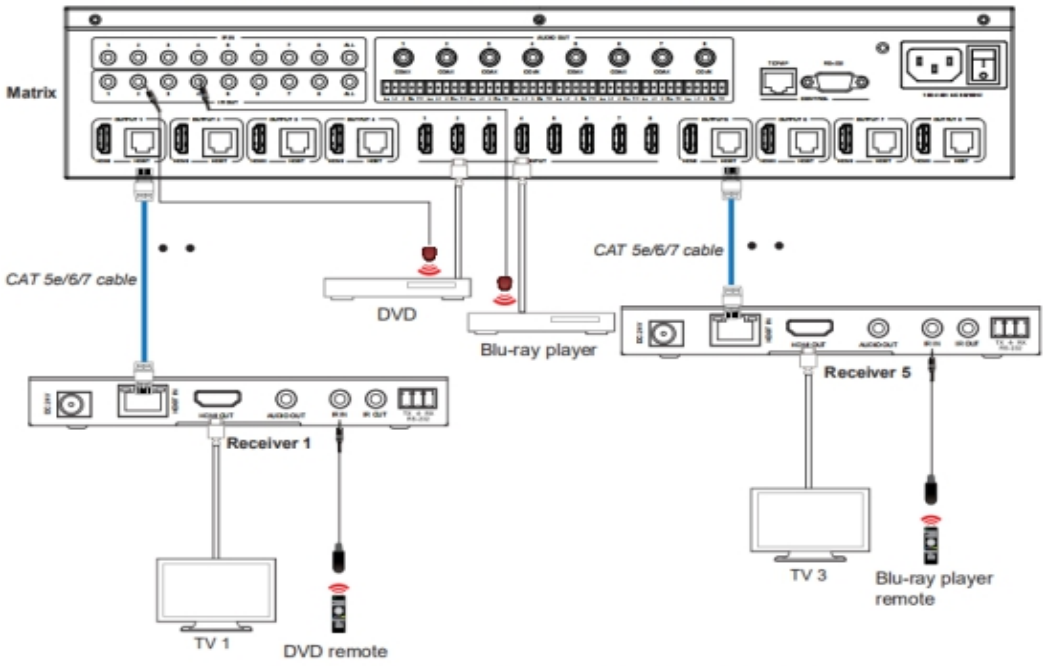


Figure 2: IR connection diagram (HDBaseT Receiver end)

IR Cable Pin Assignment