18Gbps 8×8 HDMI Matrix with ARC Function

4K60 4:4:4 Matrix Switcher with Independent Audio De-embedding & ARC



Centralized 4K60 HDMI switching with integrated audio management for multi-display environments. The KanexPro MMX-8X8AUD routes up to eight 18Gbps HDMI sources to eight independent displays at resolutions up to 4K2K@60Hz 4:4:4, with Dolby Vision, HDR10+, and HLG pass-through preserved end-to-end across every output.

Each output provides independent audio de-embedding via both analog (3.5mm) and coaxial (RCA) ports, while per-output ARC support extracts return audio from connected displays. A built-in 4K→1080p downscaler operates independently on each output, enabling mixed-resolution environments from a single matrix. Control options include front panel buttons with OLED display, IR remote, RS-232, TCP/IP, and a full-featured Web GUI with scene presets. In RelayAV, KanexPro's control app, you drag a source onto a screen to route it, see at a glance which inputs have a picture, and use each source's and screen's remote from the same page.

Surge Protection Recommended — This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, or lightning strikes. Use of surge protection systems is highly recommended.

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1. Features

- ✓ Routes 8 HDMI 2.0b sources to 8 HDMI displays at full 18Gbps bandwidth — 4K2K@60Hz 4:4:4
- ✓ Dolby Vision, HDR10+, and HLG pass-through on every output
- ✓ Audio de-embedding on all 8 outputs via analog (3.5mm L/R) and coaxial (RCA) ports
- ✓ Per-output ARC extracts return audio from connected displays to coaxial output
- ✓ Controlled in RelayAV, KanexPro's control app: drag a source onto a screen to route it, see which inputs have a picture and which outputs have a screen, turn each output on or off, recall named presets, and use each source's and screen's remote over CEC; streaming boxes (Roku, Fire TV, Apple TV, Google TV) get their own remote over the network
- ✓ RelayAV runs on the matrix: Control4, Crestron and RTI connect to it with plain device commands (route, presets, power, remote keys), and every command is open over RelayAV's API, or to an AI assistant over MCP
- ✓ Independent 4K→1080p downscaler per output enables mixed-resolution deployments
- ✓ HDMI audio pass-through up to 7.1ch — LPCM, Dolby TrueHD, Dolby Atmos, DTS-HD Master, DTS:X
- ✓ Smart EDID management with 21 built-in presets, 2 user-defined, and 8 copy-from-output modes
- ✓ Full control: front panel OLED, IR remote, RS-232, TCP/IP (LAN), and Web GUI with 8 scene presets

2. Package Contents

- ✓ 1× 18Gbps 8×8 HDMI Matrix
- ✓ 1× 12V/5A Power Adapter
- ✓ 1× IR Remote
- ✓ 1× IR Receiver Cable (1.5m)
- ✓ 1× RS-232 Cable (1.5m, male to female)
- ✓ 2× Mounting Ears

3. Specifications

TECHNICAL	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2 and HDCP 1.4
Video Bandwidth	18 Gbps
Video Resolution	Up to 4K2K@50/60Hz (4:4:4)
Color Depth	8-bit, 10-bit, 12-bit
Color Space	RGB, YCbCr 4:4:4 / 4:2:2 / 4:2:0
HDR Formats	HDR10, HDR10+, Dolby Vision, HLG
HDMI Audio (Pass-through)	LPCM 2/5.1/7.1, Dolby Digital, DTS 5.1, Dolby Digital+, Dolby TrueHD, DTS-HD Master Audio, Dolby Atmos, DTS:X

continued

Coax Audio Formats	LPCM 2.0, Dolby Digital / Plus, DTS 5.1
L/R Audio Formats	PCM 2.0
ESD Protection	IEC 61000-4-2: ±8kV (air-gap) & ±4kV (contact)
CONNECTION	
Input	8× HDMI Type A [19-pin female], 1× IR EXT [3.5mm Stereo Mini-jack]
Output	8× HDMI Type A [19-pin female], 8× Coaxial Audio (RCA), 8× L/R Audio [3.5mm Stereo Mini-jack]
Control	1× TCP/IP [RJ45] • 1× RS-232 [D-Sub 9]
MECHANICAL	
Housing	Metal Enclosure, Black
Dimensions	440mm (W) × 200mm (D) × 44.5mm (H) — 1U
Weight	2.8 kg
Power Supply	AC 100–240V 50/60Hz → DC 12V/5A
Power Consumption	43W
Operating Temperature	−10–45°C / 14–113°F
Storage Temperature	−20–60°C / −4–140°F
Relative Humidity	20–90% RH (non-condensing)
CABLE LENGTH	
4K60	Up to 16 ft / 5m
4K30	Up to 32 ft / 10m
1080p60	Up to 50 ft / 15m

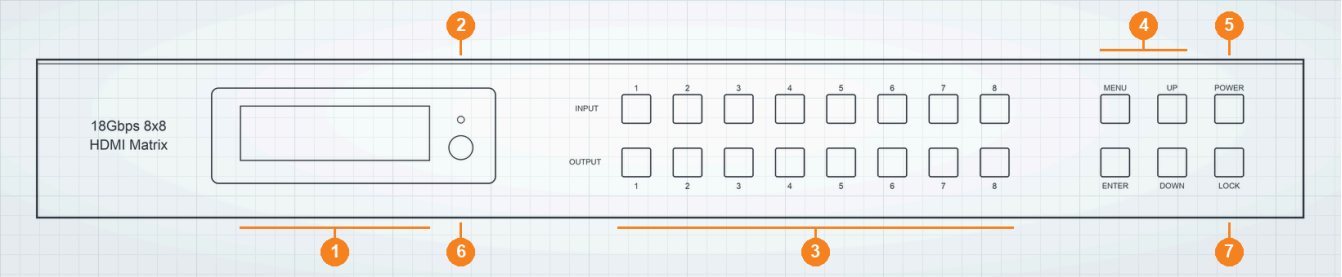
4. Introduction

The KanexPro MMX-8X8AUD is an 18Gbps 8×8 HDMI matrix switcher. It routes up to eight HDMI sources to eight displays at resolutions up to 4K2K@60Hz 4:4:4.

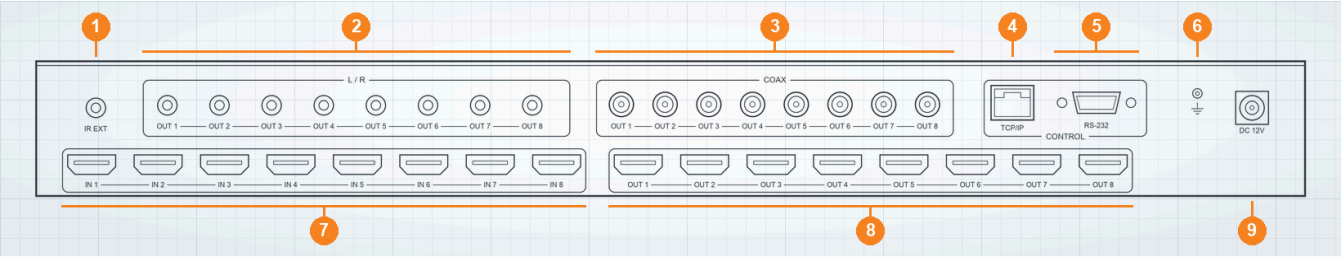
- **Audio:** Audio from all eight HDMI outputs is de-embedded to separate analog (3.5mm) and coaxial audio ports. When ARC is enabled on an output, that output takes the return audio from its connected display and sends it to its coaxial port.
- **Scaling:** Each output has its own 4K-to-1080p downscaler.
- **Control:** You can control the matrix from the front-panel OLED and buttons, the IR remote, RS-232, TCP/IP (LAN) and the Web GUI.

Surge protection recommended. This product contains sensitive electrical parts that electrical spikes, surges, electric shock or lightning strikes can damage. We strongly recommend a surge protection system.

5. Panel descriptions



Front panel



Rear panel

FRONT PANEL

No.	Name	Description
1	**OLED Screen**	Shows the matrix switching status, which inputs are routed to which outputs, the EDID mode, the baud rate and the IP address.
2	**Power LED**	Lights green when the unit is on and red when it is in standby.
3	**Input / Output Buttons (1–8)**	To route a source, press an output button (1–8) first, then press an input button (1–8).
4	**MENU / ENTER / UP / DOWN**	Use these to move through the OLED menu for EDID settings, baud rate setup and the IP address display.
5	**POWER**	Hold for 3 seconds to put the unit into standby. Press briefly to wake it.
6	**IR Window**	Receives signals from the included IR remote.
7	**LOCK**	Press briefly to lock the front-panel buttons (all except POWER). Press again to unlock them.

REAR PANEL

No.	Name	Description
1	IR EXT	3.5mm input for the IR receiver cable. Use it when the front IR window is blocked or the unit is installed in a closed space.
2	L/R OUT (1–8)	Analog audio output (3.5mm stereo mini-jack). Connect it to an amplifier or powered speakers.
3	COAX OUT (1–8)	Coaxial audio output (RCA) carrying the audio de-embedded from the matching HDMI output. When ARC is enabled, it carries the return audio from the display.
4	TCP/IP	RJ45 LAN port for the Web GUI and TCP/IP control.
5	RS-232	D-Sub 9-pin serial control port.
6	GND	Ground terminal. Connect it to earth ground to ground the housing.
7	INPUT (1–8)	HDMI input ports. Connect your source devices here.
8	OUTPUT (1–8)	HDMI output ports. Connect your displays here.
9	DC 12V	Input for the 12V/5A power adapter.

6. IR Remote

You can use the included IR remote to route inputs to outputs. Press an Output button (1–8, or All), then press an Input button (1–8) to send that source to the chosen output.

The IR window on the front panel picks up the remote from up to 23 ft (7m) away, within ±45°. If the window is blocked, plug the included IR receiver cable into the IR EXT port on the rear panel.

7. EDID Management

The matrix has 31 EDID modes in total:

- **Modes 1 to 21** are built-in presets. They cover 1080p, 1080i, 3D, 4K30 and 4K60, each with stereo 2.0, Dolby/DTS 5.1 or HD audio 7.1. Modes 19 to 21 also add HDR.
- **Modes 22 and 23** are user-defined.
- **Modes 24 to 31** copy the EDID from HDMI outputs 1 to 8.

You can set EDID from the front panel, by RS-232 command, or on the Web GUI Input page.

From the front panel:

1. Press MENU to open the EDID setting screen. 2. Use UP and DOWN to choose the EDID you want, then press ENTER. The prompt "copy to input:" appears. 3. Use UP and DOWN to choose the input port you want to apply it to, then press ENTER to confirm.

By RS-232: Send `s edid in x from z!`. Here x is the input port (0 for all inputs, or 1–8) and z is the EDID mode (1–31).

8. Default Settings

SETTING	DEFAULT VALUE
IP Address	192.168.1.100
Subnet Mask	255.255.255.0
Gateway	0.0.0.0
IP Mode	DHCP

continued

SETTING	DEFAULT VALUE
TCP/IP Port	8000
Telnet Port	23
RS-232 Baud Rate	115200
Data Bits / Stop Bits / Parity	8 / 1 / None
Power State	Power On
Panel Lock	Off
Beep	On
LCD Timeout	30 seconds
EDID (All Inputs)	1080p, Stereo Audio 2.0
Routing	Point-to-point (IN 1→OUT 1, IN 2→OUT 2, …)
Output Scaler Mode	Bypass
ARC	Off
Output Stream	Enabled
Control ID	0

9. Web GUI User Guide

1. Connect the TCP/IP port to your network. The default IP address is 192.168.1.100. To check the current address, open the OLED menu (press MENU, then UP/DOWN to the IP screen) or send the RS-232 command `r ipconfig!`. 2. Set your PC to the same network segment as the matrix. 3. Open a browser and go to the matrix's IP address. Log in as Admin or as User.

STATUS PAGE

This page shows the model name, firmware version, host name, IP address, subnet mask, gateway and MAC address.

VIDEO PAGE

Use the drop-down menus to route inputs to outputs. You can keep up to 8 presets, and you can name, save, recall and clear each one.

INPUT PAGE

- See whether each input channel is active or inactive.
- Rename channels (up to 12 characters).
- Assign an EDID to each input from the drop-down list (21 built-in, 2 user and 8 copy modes).
- Upload a custom EDID .bin file to the User 1 or User 2 slot, or download the EDID data from any input channel.

OUTPUT PAGE

- See the connection status of each output, and rename channels.
- Set the scaler mode for each output: Bypass, 4K→1080p or Auto.
- Turn ARC on or off for each output.
- Turn each output stream on or off.

CEC PAGE

- **Input control:** Control each source device over CEC: power on/off, menu navigation, play/pause/stop, rewind/fast-forward, previous/next and volume.
- **Output control:** Control each connected display over CEC: power on/off, volume up/down/mute, and active-source switching.

NETWORK PAGE

- Configure the IP settings: static or DHCP mode, IP address, subnet mask, gateway and Telnet port.
- Change the Web GUI login passwords.
- To return the network settings to KanexPro defaults, click "Set Network Defaults".

SYSTEM PAGE

- **Panel Lock:** Lock or unlock the front-panel buttons remotely.
- **Beep:** Turn the button beep on or off.
- **LCD:** Set the OLED auto-off timer to Off, Always On, 15s, 30s or 60s.
- **Serial Baud Rate:** Choose 4800, 9600, 19200, 38400, 57600 or 115200.
- **Firmware Update:** Upload a firmware .bin file.
- **Factory Reset:** Restore all settings to KanexPro defaults.
- **Reboot:** Restart the unit.

10. RS-232 Control Commands

Set the serial port to 115200 baud, 8 data bits, 1 stop bit and no parity. Every command ends with an exclamation mark (!).

In the tables below, x stands for an input number, y for an output number and z for a value. Where a range includes 0, 0 means all ports.

POWER

COMMAND	FUNCTION	DEFAULT
`s power z!`	Power on/off (z=0 off, z=1 on)	power on
`r power!`	Get current power state	
`s reboot!`	Reboot the device	

SYSTEM SETUP

COMMAND	FUNCTION	DEFAULT
`help!`	List all commands	
`r type!`	Get device model	
`r status!`	Get all device status	
`r link in x!`	Get input x connection status (x=0~8, 0=all)	
`r link out y!`	Get output y connection status (y=0~8, 0=all)	
`s reset!`	Reset to KanexPro defaults	
`s beep z!`	Enable/disable buzzer (z=0 off, z=1 on)	beep on
`r beep!`	Get buzzer state	
`r fw version!`	Get firmware version	
`s lock z!`	Lock/unlock panel (z=0 off, z=1 on)	lock off
`r lock!`	Get panel lock state	
`s lcd on time z!`	Set LCD timeout (z=0 off, 1 always, 2=15s, 3=30s, 4=60s)	30s
`r lcd mode!`	Get LCD backlight status	
`s baud rate xxx!`	Set RS-232 baud rate (4800–115200)	115200
`r baud rate!`	Get RS-232 baud rate	
`s id z!`	Set control ID (z=000~999)	0
`s logo1 ***!`	Set LCD line 1 text (max 16 characters)	
`s logo2 ***!`	Set LCD line 2 text (max 16 characters)	

PRESET

COMMAND	FUNCTION	DEFAULT
`s save preset z!`	Save current routing to preset z (z=1~8)	
`s recall preset z!`	Recall preset z (z=1~8)	
`s clear preset z!`	Clear preset z (z=1~8)	
`r preset z!`	Get preset z information (z=1~8)	

OUTPUT SETTING

COMMAND	FUNCTION	DEFAULT
`s in x av out y!`	Route input x to output y (x=1~8, y=0~8, 0=all)	PTP
`r av out y!`	Get output y routing status (y=0~8, 0=all)	
`s hdmi y stream z!`	Set output y stream (y=0~8, z=0 off, z=1 on)	enable
`r hdmi y stream!`	Get output y stream status	
`s hdmi y scaler z!`	Set output y scaler (z=1 bypass, 2=4K→1080p, 3=auto)	bypass
`r hdmi y scaler!`	Get output y scaler mode	

EDID SETTING

COMMAND	FUNCTION	DEFAULT
`s edid in x from z!`	Set input x EDID (x=0~8, z=1~31)	1080p, Stereo 2.0
`r edid in x!`	Get input x EDID status (x=0~8, 0=all)	
`r edid data hdmi y!`	Get raw EDID data of output y (y=1~8)	

AUDIO SETTING

COMMAND	FUNCTION	DEFAULT
`s hdmi y arc z!`	Set output y ARC (y=0~8, z=0 off, z=1 on)	off
`r hdmi y arc!`	Get output y ARC state (y=0~8, 0=all)	

CEC — INPUT CONTROL

COMMAND	FUNCTION
`s cec in x on!`	Power on input x (x=0~8, 0=all)
`s cec in x off!`	Power off input x
`s cec in x menu!`	Open menu on input x
`s cec in x up/down/left/right!`	Menu navigation on input x
`s cec in x enter/back!`	Menu enter/back on input x
`s cec in x play/pause/stop!`	Playback control on input x
`s cec in x rew/ff!`	Rewind/fast-forward on input x
`s cec in x previous/next!`	Previous/next on input x
`s cec in x vol+/vol-/mute!`	Volume control on input x

CEC — OUTPUT CONTROL

COMMAND	FUNCTION
`s cec hdmi out y on!`	Power on output y display (y=0~8, 0=all)
`s cec hdmi out y off!`	Power off output y display
`s cec hdmi out y vol+/vol-/mute!`	Volume control on output y display
`s cec hdmi out y active!`	Set output y as active source

NETWORK SETTING

COMMAND	FUNCTION	DEFAULT
`r ipconfig!`	Get full IP configuration	
`r mac addr!`	Get MAC address	
`s ip mode z!`	Set IP mode (z=0 static, z=1 DHCP)	DHCP
`r ip mode!`	Get IP mode	
`s ip addr x.x.x.x!`	Set IP address	192.168.1.100
`r ip addr!`	Get IP address	
`s subnet x.x.x.x!`	Set subnet mask	255.255.255.0
`r subnet!`	Get subnet mask	
`s gateway x.x.x.x!`	Set gateway	0.0.0.0
`r gateway!`	Get gateway	
`s tcp/ip port x!`	Set TCP/IP port (x=1~65535)	8000
`r tcp/ip port!`	Get TCP/IP port	
`s telnet port x!`	Set Telnet port (x=1~65535)	23
`r telnet port!`	Get Telnet port	
`s net reboot!`	Reboot network module	

11. Quick checks

There is no audio from the amplifier connected to the coaxial or L/R output.

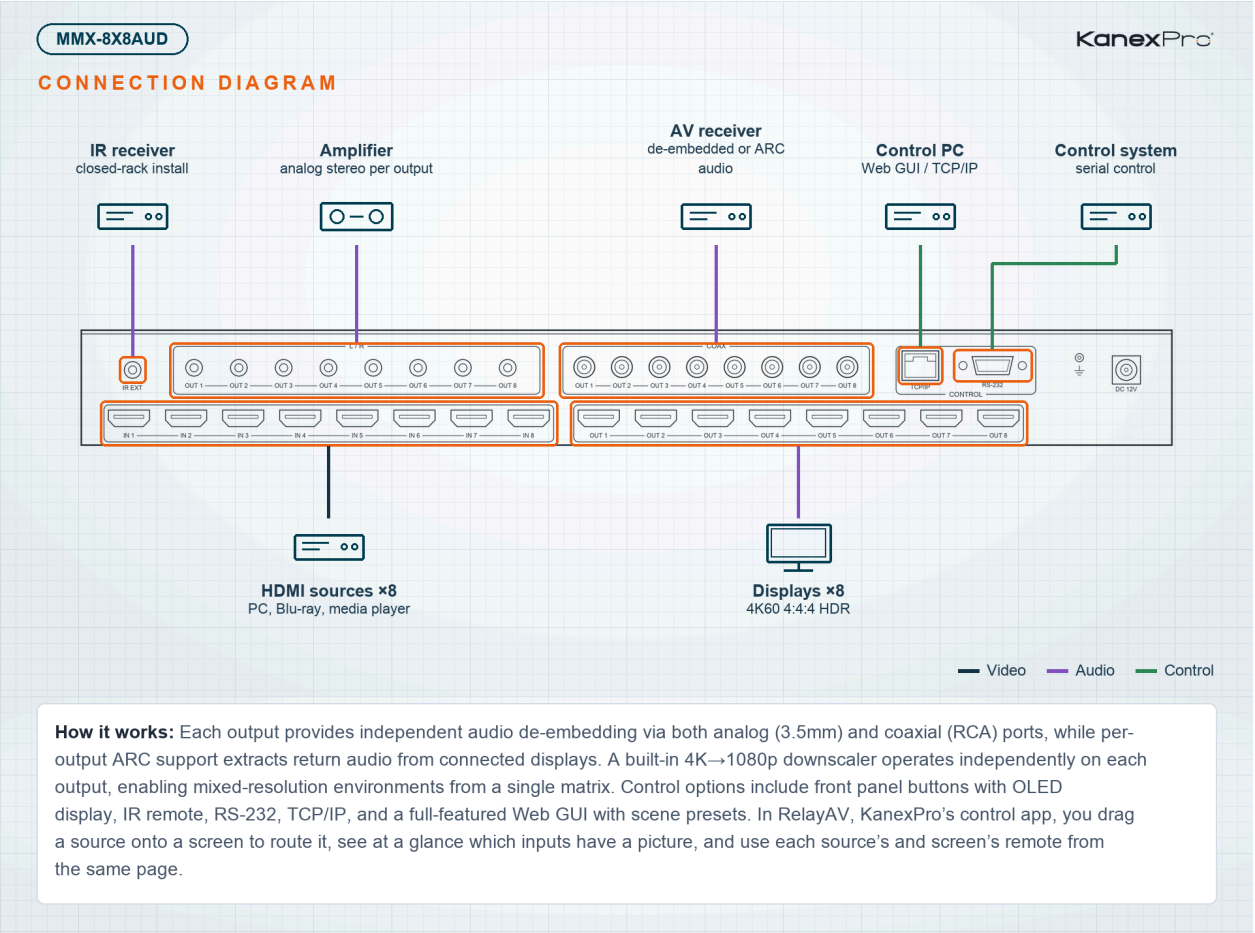
- Check that the cable is in the audio port that matches the HDMI output you are using.
- If you are using ARC, check that ARC is turned on for that output in the Web GUI or by RS-232.
- Check that ARC/CEC output is turned on in the TV's own settings.

One or more displays show no video.

- Use Premium High Speed HDMI cables. For 4K60, keep each cable to 16 ft (5m) or shorter.
- Try setting the EDID to match the display's native resolution.
- If your displays support different resolutions, turn on the 4K→1080p downscaler for the affected output.

How do I open the Web GUI? Connect the TCP/IP port to your network, open a browser and go to the default address, 192.168.1.100. Sign in as Admin.

12. Connection Diagram



How it works: Each output provides independent audio de-embedding via both analog (3.5mm) and coaxial (RCA) ports, while per-output ARC support extracts return audio from connected displays. A built-in 4K→1080p downscaler operates independently on each output, enabling mixed-resolution environments from a single matrix. Control options include front panel buttons with OLED display, IR remote, RS-232, TCP/IP, and a full-featured Web GUI with scene presets. In RelayAV, KanexPro's control app, you drag a source onto a screen to route it, see at a glance which inputs have a picture, and use each source's and screen's remote from the same page.

13. Troubleshooting

Q: The front-panel buttons do nothing when pressed. What should I check?
A: The panel is probably locked. Press LOCK briefly to unlock it, or send s lock 0!, or turn off Panel Lock on the Web GUI System page. r lock! reports the current lock state.

Q: The Power LED is red and nothing passes through. What is happening?
A: A red Power LED means the unit is in standby, which holding POWER for 3 seconds will do. Press POWER briefly to wake it, or send s power 1! over RS-232; the LED turns green when it is on.

Q: The IR remote does not change routing. What should I check?
A: Stand within 23 ft (7m) of the front IR window and within +/-45 degrees of it. Make sure nothing is blocking the window; if the unit is in a rack or cabinet, connect the IR receiver cable to the rear IR EXT port. When you route, press the Output button (1-8 or All) first, then the Input button.

Q: The matrix does not respond to RS-232 commands. What should I check?
A: Set your controller to the matrix's baud rate (115200 by default; the current rate is shown in the front-panel menu), with 8 data bits, 1 stop bit and no parity. End every command with an exclamation mark. Send help! to confirm the link is working.

Need help? — For additional support, visit kanexpro.com/support, or scan the QR code below for the product page.

14. Installation FAQ

Q: What connects to each port on the rear panel?
A: Connect sources to HDMI INPUT 1-8 and displays to HDMI OUTPUT 1-8. Each output has a matching L/R OUT (3.5mm) and COAX OUT (RCA) for an amplifier or powered speakers. The 12V/5A adapter plugs into DC 12V, and the RJ45 TCP/IP and D-Sub 9 RS-232 ports are for control.

Q: Should the matrix be grounded or surge protected?
A: Yes. Connect the rear GND terminal to earth ground to ground the housing, and use a surge protection system, because spikes, surges or lightning strikes can damage the unit's electronics.

Q: What is the range of the IR remote, and what if the front IR window will be hidden in a rack or cabinet?
A: The front IR window picks up the remote from up to 23 ft (7m) away, within +/-45 degrees. If the window is blocked or the unit is in a closed space, plug the included 1.5m IR receiver cable into the rear IR EXT port.

Q: How do I set the matrix's network address for my LAN?
A: On the Web GUI Network page, choose static or DHCP mode and set the IP address, subnet mask, gateway and Telnet port. You can also do it over RS-232 with s ip mode z! (0 static, 1 DHCP), s ip addr x.x.x.x!, s subnet x.x.x.x! and s gateway x.x.x.x!. The current address is shown on the front-panel OLED IP screen, or returned by r ipconfig!.

Q: What serial settings does the RS-232 port use?
A: The D-Sub 9 RS-232 port defaults to 115200 baud, 8 data bits, 1 stop bit and no parity, and a 1.5m male-to-female RS-232 cable is included. You can change the baud rate to 4800, 9600, 19200, 38400, 57600 or 115200 from the front-panel menu, the Web GUI System page, or with s baud rate xxx!.

15. Integration FAQ

Q: Which network ports does the matrix use for control?
A: The RJ45 LAN port serves the Web GUI and TCP/IP control. TCP/IP control uses port 8000 and Telnet uses port 23 by default, and either port can be set anywhere from 1 to 65535 (s tcp/ip port x! and s telnet port x!).

Q: How can a control system read back the matrix's current state?
A: Send r status! to get the full device status. Use r av out y! for routing, and r link in x! or r link out y! for the connection state of inputs and outputs (0 = all). Other queries include r power!, r hdmi y arc!, r edid in x! and r fw version!.

Q: Can I lock the front panel and set a device ID for a managed install?
A: Yes. s lock 1! locks every front-panel button except POWER, and s lock 0! unlocks them; the same lock is on the Web GUI System page. Use s id z! to set a control ID from 000 to 999.

Q: Can the Web GUI give end users limited access?
A: Yes. The Web GUI has two logins: Admin, with full access, and User, for day-to-day control. Change both passwords on the Network page before handing the system over.

Q: Can I put a custom label on the front-panel display?
A: Yes. s logo1 ***! and s logo2 ***! set the text on lines 1 and 2 of the front display, up to 16 characters each. On the Web GUI you can also rename input and output channels, up to 12 characters.