18Gbps 8×8 HDMI Matrix with ARC Function

The KanexPro MMX-8X8AUD is an 18Gbps 8×8 HDMI matrix switcher that routes up to eight HDMI sources to eight displays at resolutions up to 4K2K@60Hz 4:4:4. Audio is de-embedded from all eight HDMI outputs to dedicated analog (3.5mm) and coaxial audio ports. When ARC is enabled, each output can extract return audio from the connected display to its coaxial port. Each output includes an independent 4K-to-1080p downscaler. Control via front panel OLED, IR remote, RS-232, TCP/IP (LAN), and Web GUI.

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.

TABLE OF CONTENTS

FEATURES

- ✓ HDMI 2.0b, HDCP 2.2/1.4, and DVI 1.0 compliant
- ✓ Supports 18Gbps video bandwidth with resolution up to 4K2K@60Hz (YUV 4:4:4)
- ✓ HDR10, HDR10+, Dolby Vision, and HLG pass-through
- ✓ Audio pass-through up to 7.1CH HD audio (LPCM, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio, DTS:X)
- ✓ Analog (L/R 3.5mm) and coaxial audio de-embedding on all 8 outputs; coax supports LPCM 2.0, Dolby Digital/DD+, DTS 5.1
- ✓ ARC function extracts return audio from connected displays to coaxial output
- ✓ Independent 4K→1080p downscaler on each output
- ✓ Smart EDID management (21 factory, 2 user-defined, 8 copy modes) and CEC pass-through
- ✓ 1U rack-mountable with front panel OLED display
- ✓ Control via front panel buttons, IR remote, RS-232, TCP/IP (LAN), and Web GUI

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 • 1× Product Manual

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
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)

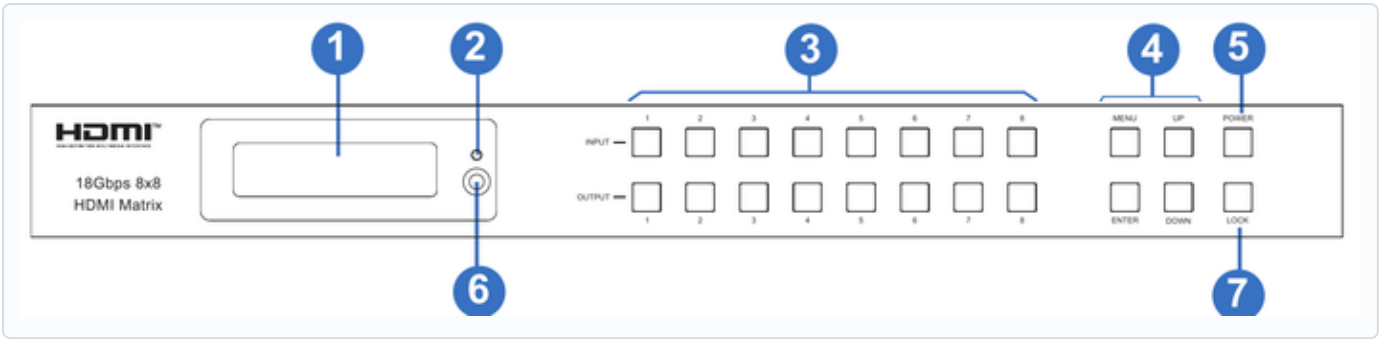
CONNECTION	
Input	8× HDMI Type A [19-pin female] 1× IR EXT [3.5mm Stereo Mini-jack]
Output	8× HDMI Type A [19-pin female] 8× Coaxial Audio (RCA) 8× L/R Audio [3.5mm Stereo Mini-jack]
Control	1× TCP/IP [RJ45] • 1× RS-232 [D-Sub 9]

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 Temp	−10–45°C / 14–113°F
Storage Temp	−20–60°C / −4–140°F
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

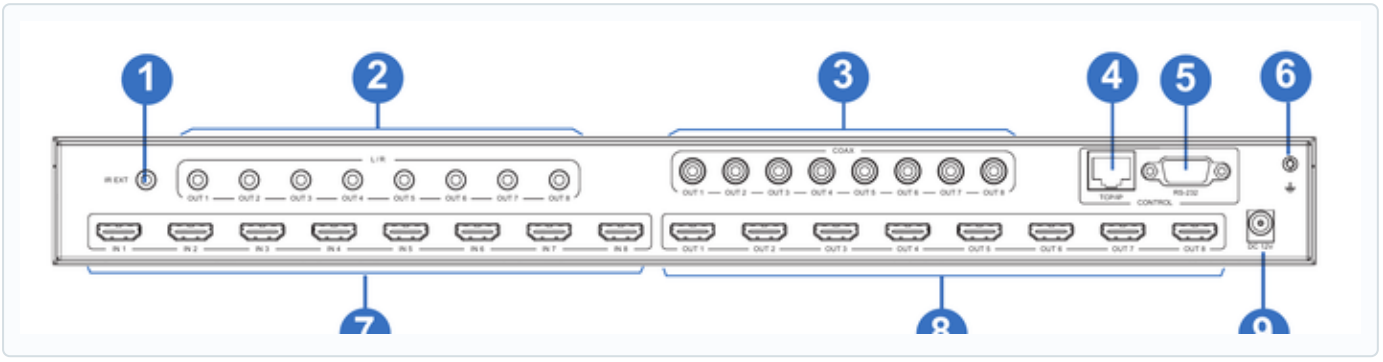
Operation Controls and Functions

FRONT PANEL



No.	Name	Function Description
1	**OLED Screen**	Displays matrix switching status, input/output port assignment, EDID mode, baud rate, and IP address.
2	**Power LED**	Green when powered on; red on standby.
3	**Input / Output Buttons (1–8)**	Press an output button (1–8) first, then press an input button (1–8) to route the selected source to that output.
4	**MENU / ENTER / UP / DOWN**	Navigate EDID settings, baud rate configuration, and IP address display via the OLED menu.
5	**POWER**	Long press for 3 seconds to enter standby; short press to wake.
6	**IR Window**	Receives IR remote signals from the included remote control.
7	**LOCK**	Short press to lock front panel buttons (except POWER); press again to unlock.

REAR PANEL



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

IR Remote & EDID Management

IR REMOTE

The included IR remote allows input-to-output routing. Press an **Output** button (1–8 or All), then press an **Input** button (1–8) to route the selected source. The front-panel IR window receives signals up to 7 meters at ±45°. If the IR window is blocked, connect the included IR receiver cable to the rear **IR EXT** port.

EDID MANAGEMENT

The matrix provides 21 factory-defined EDID settings, 2 user-defined EDID modes, and 8 copy-from-output modes (31 total). EDID can be configured via front panel buttons, RS-232 commands, or the Web GUI Input page.

Front panel: Press MENU to enter the EDID setting interface. Use UP/DOWN to select the desired EDID. Press ENTER — a prompt "copy to input:" will appear. Use UP/DOWN to select the target input port, then press ENTER to confirm.

RS-232: Send the command `s edid in x from z!` where x is the input port (0=all, 1–8) and z is the EDID mode (1–31).

EDID modes 1–21: Factory presets (1080p/1080i/3D/4K30/4K60 with Stereo 2.0, Dolby/DTS 5.1, or HD Audio 7.1; modes 19–21 add HDR). Modes 22–23: User-defined. Modes 24–31: Copy from HDMI Output 1–8.

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
TCP/IP Port	8000
Telnet Port	23
Web GUI Login (Admin)	Username: Admin / Password: admin
Web GUI Login (User)	Username: User / Password: user
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

Web GUI User Guide

Step 1: Connect the TCP/IP port to your network. The default IP is **192.168.1.100**. You can also check the current IP via the OLED menu (MENU → UP/DOWN to IP screen) or RS-232 command `r ipconfig!`.

Step 2: Set the PC to the same network segment as the matrix.

Step 3: Open a browser and navigate to the matrix IP address. Log in as **Admin** (password: **admin**) or **User** (password: **user**).

STATUS PAGE

Displays model name, firmware version, hostname, IP address, subnet mask, gateway, and MAC address.

VIDEO PAGE

Route inputs to outputs using drop-down menus. Manage up to 8 presets: name, save, recall, and clear routing configurations.

INPUT PAGE

View input channel status (active/inactive), rename channels (max 12 characters), and assign EDID to each input from the dropdown (21 factory + 2 user + 8 copy modes). Upload custom EDID bin files to User 1 or User 2 slots. Download EDID data from any input channel.

OUTPUT PAGE

View output connection status, rename channels, set scaler mode per output (Bypass / 4K→1080p / Auto), enable/disable ARC per output, and enable/disable output stream.

CEC PAGE

Input Control: Power on/off, menu navigation, play/pause/stop, rewind/fast-forward, previous/next, and volume control for each input source device via CEC.

Output Control: Power on/off, volume +/−/mute, and active source switching for each connected display via CEC.

NETWORK PAGE

Configure IP settings (Static or DHCP), IP address, subnet mask, gateway, and Telnet port. Change Web GUI login passwords. Reset network to factory defaults with “Set Network Defaults”.

SYSTEM PAGE

Panel Lock: Lock/unlock front panel buttons remotely. **Beep:** Enable/disable button beep. **LCD:** Set OLED auto-off timer (Off / Always On / 15s / 30s / 60s). **Serial Baud Rate:** Select from 4800, 9600, 19200, 38400, 57600, or 115200. **Firmware Update:** Upload firmware bin file. **Factory Reset:** Restore all settings. **Reboot:** Restart the unit.

RS-232 Control Commands

Serial port protocol — Baud rate: 115200, Data bits: 8, Stop bits: 1, Parity: None. Delimiter: !

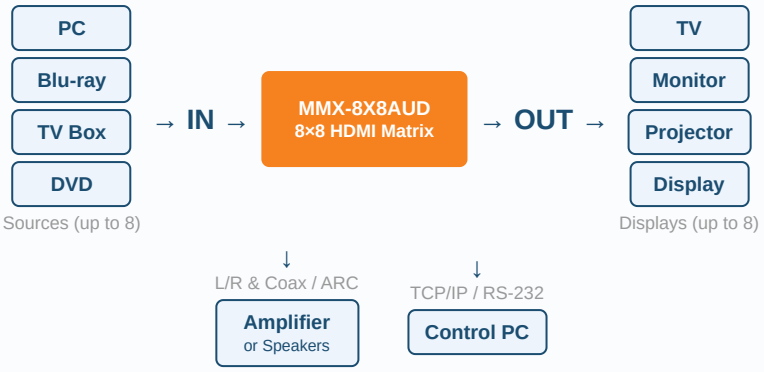
COMMAND	FUNCTION	DEFAULT
Power		
`s power z!`	Power on/off (z=0 off, z=1 on)	power on
`r power!`	Get current power state	
`s reboot!`	Reboot the device	
System Setup		
`help!`	List all commands	
`r type!`	Get device model	
`r status!`	Get all device status	
`r link in x!`	Get input x connection status (x=0~8, 0=all)	
`r link out y!`	Get output y connection status (y=0~8, 0=all)	
`s reset!`	Reset to factory 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 chars)	
`s logo2 ***!`	Set LCD line 2 text (max 16 chars)	
Preset		
`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		
`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	

RS-232 Control Commands (continued)

COMMAND	FUNCTION	DEFAULT
EDID Setting		
`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		
`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		
`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		
`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		
`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	

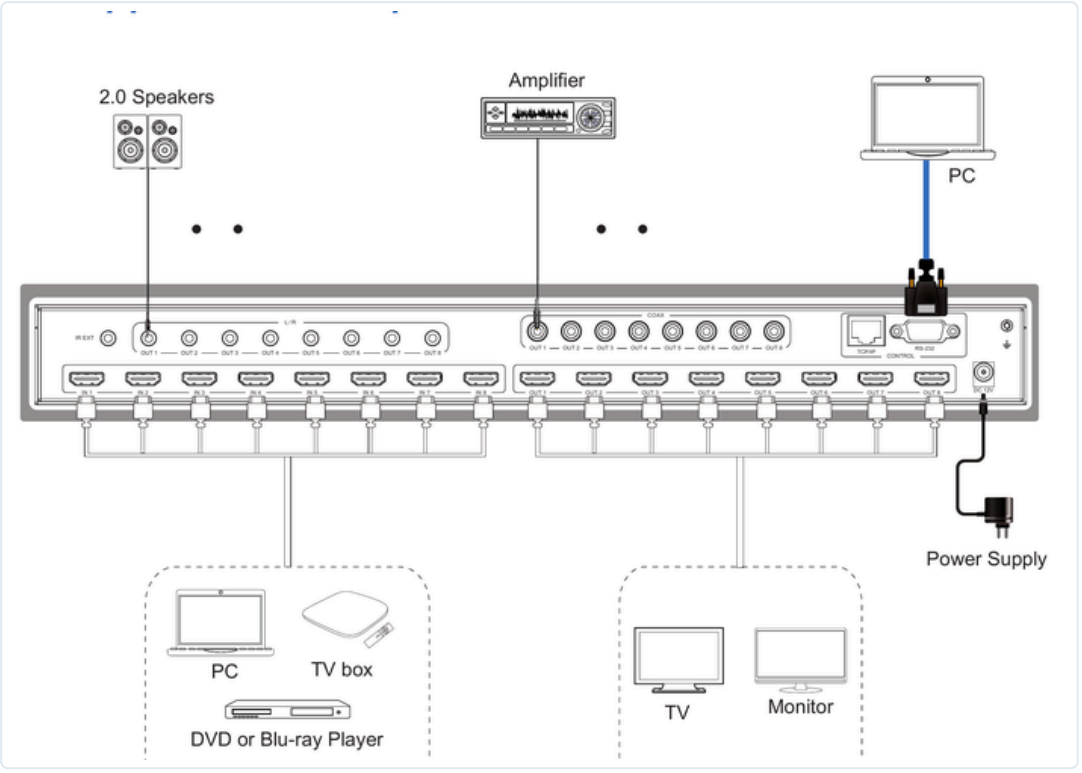
Application Example

Multi-Source / Multi-Display with Audio De-embedding & ARC



How it works: Connect up to 8 HDMI sources to inputs IN 1–8. Route any source to any display using front panel buttons, IR remote, RS-232, TCP/IP, or Web GUI. Each output passes full 4K60 4:4:4 video with HDR to the connected display, while simultaneously de-embedding audio to the corresponding analog (L/R) and coaxial (RCA) ports.
ARC: Enable ARC on any HDMI output to extract return audio from a connected TV's ARC channel to the coaxial output — ideal for routing display audio to an amplifier.
Downscaler: Each output independently downscales 4K to 1080p for mixed-resolution display environments.

DETAILED WIRING REFERENCE



TROUBLESHOOTING

Q: No audio from my amplifier connected to the coaxial or L/R output?
A: Verify the cable is connected to the audio output port corresponding to the HDMI output in use. If using ARC, ensure ARC is enabled for that output via the Web GUI or RS-232. Check that the TV's ARC/CEC output is enabled in its settings.

Q: No video on one or more displays?
A: Confirm Premium High Speed HDMI cables are used. For 4K60, cable length must not exceed 5 meters. Try setting the EDID to match the display's native resolution. If displays have mixed resolutions, enable the 4K→1080p downscaler on the affected output.

Q: How do I access the Web GUI?
A: Connect the TCP/IP port to your network. The default IP address is **192.168.1.100**. Open a browser and navigate to that address. Login as **Admin** with password **admin**.