

4K60 4:4:4 4x4 HDMI Matrix with Independent Per-Output Scaling

Route One Rack to 4K and Legacy 1080p Screens at Once — Dual Audio De-embedding, ARC & 18Gbps HDR

MPN: MMX-4X4AUD



Routes any of four HDMI 2.0 sources to four displays and scales each output independently, so a 4K60 main and a legacy 1080p overflow screen both run clean from the same box. The matrix ships in a compact metal enclosure — 8.66" wide and 1.73" high, with mounting ears supplied — and draws 10W from a locking 12V/2.5A supply, putting a full 4x4 18Gbps routing and scaling engine on a single shelf. It is the right choice for conference rooms, houses of worship, sports bars and media rooms where mixed-resolution displays and a separate audio zone matter more than paying pro-tier matrix prices.

Every output de-embeds audio to both a 3.5mm analog L/R jack and an RCA coaxial port, and ARC returns a display's audio to the coaxial output — feeding a zone amp, soundbar or DSP without an AVR upgrade. It passes 4K60 4:4:4 at the full 18Gbps with HDR10, HDR10+, Dolby Vision and HLG, carries advanced EDID management, and is controllable over RS-232 or TCP/IP with a built-in Web GUI, IR remote and front panel. Its differentiator is coverage: dual analog-and-coax de-embed with ARC return and independent 4K→1080p scaling on all four outputs, a feature set otherwise found only on matrices costing several times more.

1 PRODUCT OVERVIEW

DESIGNED FOR

Built for fixed-install spaces where four sources have to reach four displays in any combination and the room mixes a 4K main with legacy 1080p confidence or overflow screens: conference and boardrooms, houses of worship, sports bars and QSR venues, education AV, monitoring and operations walls, and high-end media and great rooms. It suits any of these where a separate audio system — a zone amp, soundbar or DSP — has to be fed alongside the video, and where the matrix must sit on a rack shelf or under a credenza and answer to a control system.

THE CHALLENGE

A plain 18Gbps matrix pushes 4K60 4:4:4 to every output, so the moment a 1080p confidence or overflow display shares the routing it blanks or forces a fallback EDID that starves the 4K main — and the audio a room actually needs stays trapped in the HDMI stream, reachable on one or two outputs at best. The usual fix is a return-path AVR and a truck-roll back when a smart TV or a mismatched display refuses to hand off cleanly, which turns a commodity switch into a recurring service call and an extra box in every rack.

THE KANEXPRO ADVANTAGE

- Scales each of the four outputs independently, so a 4K60 source feeds the 4K display at full resolution while a legacy 1080p screen on another output takes a clean 4K→1080p downscale at the same time.
- De-embeds audio to both a 3.5mm analog L/R jack and an RCA coaxial port on every output — not one or two — feeding a zone amp and a DSP or soundbar together.
- Returns display audio to the coaxial output over ARC, letting a smart TV's built-in apps drive the house audio system without an eARC AVR in the rack.
- Stabilizes mixed-display handshakes with advanced EDID management and is controllable over RS-232 or TCP/IP, with a built-in Web GUI, IR remote and front panel.
- Carries the pro-tier feature set — 18Gbps 4K60 4:4:4, per-output scaling, dual de-embed on all outputs, ARC — without the pro-tier price of matrices like AVPro Edge or Key Digital.

2 PRODUCT POSITIONING

The MMX-4X4AUD is the 4x4 18Gbps HDMI matrix for AV integrators who need per-output 4K→1080p scaling and audio de-embedded to both analog and coax on every output, with ARC return, without paying pro-tier matrix prices.

3 APPLICATIONS



Corporate boardroom, 4K main + 1080p overflow

Four sources (room PC, laptop HDMI, video-bar output, cable box) route to a 4K front display and two 1080p side/confidence monitors. The per-output scaler feeds the 1080p screens a clean downscaled signal while the main stays 4K60 4:4:4, and L/R breaks out to the room's ceiling-speaker amp — no AVR in the rack.



House of worship with recording feed

Camera, presentation PC, and playback route to a main IMAG display and lobby screens. Coax de-embed sends a DD/DTS-capable bitstream to the sanctuary DSP while analog L/R feeds the stream/record encoder, all switched from the Web GUI at the tech booth.



Sports bar / QSR multi-display zone

Multiple set-top and streaming sources fan out to four screens; the coax and L/R outputs on every display let staff route game audio to a chosen house zone independently of what is on screen, driven by the front panel or IR remote behind the bar.



Residential great room with legacy zone amp

A 4K media player and game console feed the main 4K TV while an older 1080p kitchen TV gets the downscaled output; ARC on the coax path returns the smart-TV app audio to the existing whole-house amplifier without replacing it with an eARC AVR.



Control/monitoring wall in an ops center

Four feeds route to four operator displays with independent scaling so mismatched monitors all show a correct picture; RS-232 and TCP/IP put routing under the facility's control system, and the compact half-rack chassis fits the shallow console.



Higher-ed active-learning classroom

Instructor PC, document camera, and two BYOD inputs route to a projector plus three group monitors; the scaler protects the projector's native rate while group screens take 1080p, and analog L/R feeds the room's program-audio amplifier for reinforcement.

4 WHO THIS IS FOR

Corporate conference/boardroom

Houses of worship

Sports bar/QSR

Education

Mid-tier residential

Monitoring/ops walls

Ideal User

commercial AV integrator / installing technician spec'ing a fixed 4-source, 4-display room with a separate audio zone. Cares about EDID behaviour, mixed-res endpoints, and clean audio breakout.

Project Types

corporate conference/boardroom, houses of worship, sports bar/QSR, education, mid-tier residential, monitoring/ops walls.

Typical Buyer

integrator principal or lead engineer signs the BOM; the tech on site validates it works with the room's displays and control system. Price sensitivity is real but secondary to "does it handle my 1080p overflow screen and feed my zone amp without a truck-roll back."

5 KANEXPRO PRODUCT COMPARISON

MODEL	BEST FOR	KEY CAPABILITY	HOW IT DIFFERS
HDMX44A-18G	— 4×4 HDMI 2.0 with independent analog audio outputs	4×4 HDMI 2.0 Matrix Switcher with Independent Analog Audio Outputs	MMX-4X4AUD adds coaxial de-embed, ARC return, and per-output scaling , and should sit well below it on price. HDMX44A-18G reads as the legacy premium 4×4.
MMX-8X8AUD	And	18Gbps 8×8 HDMI Matrix with ARC Function	MMX-4X4AUD is the 4×4 entry of that same ARC family , and should price naturally below the 8×8. This is its cleanest internal anchor. Positioning rule respected: only the live-catalogue siblings above are used; no disabled/discontinued SKU is used as a foil.
MMX-16X16AUD	— the "MMX...AUD ARC" family	18Gbps 16×16 HDMI Matrix with ARC Function	MMX-4X4AUD is the 4×4 entry of that same ARC family , and should price naturally below the 8×8. This is its cleanest internal anchor. Positioning rule respected: only the live-catalogue siblings above are used; no disabled/discontinued SKU is used as a foil.

6 FREQUENTLY ASKED QUESTIONS

Q: How is this different from a budget 4×4 matrix like OREI or J-Tech?

Those hit the video specs but typically de-embed audio on only one or two outputs and offer limited control. This unit de-embeds to both analog L/R and coax on all four outputs, adds ARC return on coax, and gives you four control paths — front panel, Web GUI over TCP/IP, RS-232, and IR — so it fits a controlled rack, not just a shelf.

Q: Will my 1080p display still work if the source is 4K?

Yes. Each of the four outputs scales independently, so a 4K60 source can feed a 4K display at full resolution while a legacy 1080p display on another output receives a clean 4K→1080p downscaled feed at the same time.

Q: Can I send audio to a separate sound system without upgrading to an AVR?

Yes. Every output breaks audio out to both a 3.5mm analog L/R jack and an RCA coaxial port. The coax carries PCM 2.0, Dolby Digital/Plus, and DTS 2.0/5.1; the analog output carries PCM 2.0 stereo. That feeds a zone amp, soundbar, or DSP directly.

Q: Does it support ARC from a smart TV?

Yes, ARC return is supported on the coaxial output, so a display's built-in apps can send audio back to your external audio system over the coax path.

Q: What resolutions and HDR formats does it pass?

Up to 4K60 4:4:4 at full 18Gbps bandwidth, HDCP 2.2 and 1.4, with HDR10, HDR10+, Dolby Vision, and HLG. It also passes 3D and standard PC resolutions including 1920×1200.

Q: How does it integrate with a control system?

Over RS-232 or TCP/IP, with a built-in Web GUI for setup and standalone control. It also carries advanced EDID management to stabilize handshakes across mixed displays.

Q: What's in the box?

The matrix, a locking 12V/2.5A power adapter, an IR remote, a 38kHz IR receiver cable, two mounting ears, a 3-pin phoenix connector, and mounting screws. Documentation is digital — scan the QR code on the box; no printed manual ships.