

USER MANUAL



KV-M22A — Analogue 2×2 Milan Interface



**KV-M22A
FRONT**



**KV-M22A
REAR**

1) Quick Start

Connect the Milan/AVB network cable (RJ45/EtherCON) from an 802.3af PoE-capable AVB switch to the unit.

Wait for the Power/Network LED to show a healthy state (see LED section).

Connect analogue inputs (XLR-F IN 1/IN 2) and analogue outputs (XLR-M OUT 1/OUT 2).

On your AVDECC/Milan controller (e.g., Hive or compatible):

Discover the device.

Create/subscribe streams as required (route IN→network and network→OUT).

Verify signal LEDs and audio at the destination.

2) Connections & Signal Flow

Inputs: 2 × balanced line-level (XLR-F). Nominal +4 dBu; fixed gain.

Outputs: 2 × balanced line-level (XLR-M). Nominal +4 dBu; fixed gain.

Network/Power: Single Milan/AVB port provides audio transport + PoE power. No separate PSU.

Operational note: The KV-M22A performs format transport only (analogue Milan). Any EQ/mix/processing happens in your console/processor.

3) Normal Operation (Step-by-Step)

Power & link: Attach to PoE AVB switch; confirm link up.

Discover: Open AVDECC controller → device appears as a Milan endpoint.

Identify (optional): Press Identify to blink/flag the unit in software if you're unsure which box is which.

Route inputs: Advertise or map IN 1/IN 2 to a Milan transmit stream; subscribe your destination device to that stream.

Route outputs: Subscribe the KV-M22A playback stream(s) to receive from your source device; audio will appear on OUT 1/OUT 2.

Verify levels: Use input LEDs and destination meters; adjust gain at the source device or mixer (no trims on the unit).

Run check: Confirm stable Power/Network LED and expected audio at the endpoints.

4) LED Indicators (Behaviour)

Power/Network LED (front):

Green: PoE power OK; AVB time sync and stream state healthy.

Amber: Network present but attention/issue (e.g., not synced, stream error, profile mismatch).

Off: No power/link.

Input LEDs (per channel):

Green: $\leq +4$ dBu (signal present, nominal).

Amber: $+4$ to $+18$ dBu (hot).

Red: $+18$ to $+22$ dBu (near max; reduce source level to avoid clipping downstream).

Output LEDs (per channel):

Green: Signal present on output.

5) Milan/AVDECC Routing Tips

Ensure your switch is AVB/TSN-capable and that gPTP and stream reservation are enabled.

When routing, match channel counts and stream formats expected by your destination device.

If the controller offers presets, store a "Show" or "Install" scene after routing is confirmed.

6) Troubleshooting (Analogue)

No power/LED off: Check PoE budget and cabling; verify the port supplies 802.3af.

Amber network LED: Confirm AVB features on the switch; check gPTP/stream reservation; re-apply routes.

Low/distorted audio: Source may be too hot; keep peaks below the red LED region; adjust at the mixer/processor.

No audio at OUT 1/2: Confirm the KV-M22A is subscribed to the correct incoming stream; check channel mapping.

Noise/hum: Use balanced cabling; avoid ground loops; confirm proper gain staging in the external devices.

USER MANUAL



KV-M22D — AES/EBU 4×4 Milan Interface



**KV-M22D
FRONT**



**KV-M22D
REAR**

1) Quick Start

Connect the Milan/AVB network cable from a PoE AVB switch to the unit.

Wait for the Power/Network LED to indicate healthy status.

Connect AES inputs (two XLR-F pairs = 4 ch total) and AES outputs (two XLR-M pairs = 4 ch total).

In your AVDECC/Milan controller: discover, then route streams for TX (inputs to network) and RX (network to outputs).

Confirm AES channel LEDs and audio at your endpoints.

2) Connections & Signal Flow

AES Inputs: 2 × AES3 input pairs (XLR-F) → 4 channels to the network.

AES Outputs: 2 × AES3 output pairs (XLR-M) ← 4 channels from the network.

Network/Power: Single Milan/AVB port with PoE (no separate PSU).

Operational note: Each AES input pair has an independent Sample Rate Converter (SRC). Inputs can be non-synchronous to the network; audio is resampled to the Milan network rate. There is no SRC bypass; outputs always follow the network clock.

3) Normal Operation (Step-by-Step)

Power & link: Connect to PoE AVB switch; verify link and time sync.

Discover: Use AVDECC controller; the device appears as a Milan endpoint with 4-in/4-out channel resources.

Identify (optional): Press Identify to blink/flag the hardware from software.

Route inputs (TX): Advertise/map the two AES input pairs (4 ch total) to a Milan transmit stream; subscribe your destination device(s).

Route outputs (RX): Subscribe the KV-M22D to receive from your source stream(s); assigned channels appear on AES OUT pairs.

Verify lock & signal: Check AES input LEDs for valid signal; confirm meters at the far end.

Clock domain sanity: Remember the network is master; the KV-M22D re-clocks incoming AES to network rate for onward transmission and for outputs.

4) LED Indicators (Behaviour)

Power/Network LED (front):

Green: PoE OK; AVB sync and streams OK.

Amber: Network present but attention/issue (e.g., unsynced, stream error, format mismatch).

Off: No power/link.

AES Input LEDs (per channel):

Green: Valid AES signal present up to 0 dBFS.

Off: No valid signal or below detection threshold.

AES Output LEDs (per channel):

Green: Valid digital signal present on output up to 0 dBFS.

5) Milan/AVDECC Routing Tips

Use an AVB/TSN-compliant switch; enable gPTP and stream reservation.

Ensure the receiving device expects the same stream format and channel count.

If an input source changes sample rate, the SRC handles it automatically; your network remains synchronous.

6) Troubleshooting (AES/EBU)

No power/LED off: Verify PoE supply and cabling; confirm 802.3af on the port.

Amber network LED: Check AVB features (gPTP/ SRP) are active; re-establish routes; confirm Milan profiles match.

Input LED off (no signal): Verify AES source power/clock; try the other input pair; check cable and pinout.

Clicks/pops at destination: Typically a route/format mismatch; re-subscribe streams and confirm network sync is green.

Wrong channels at outputs: Check channel mapping inside your AVDECC controller; confirm the KV-M22D is subscribed to the intended stream and order.

“Bypass SRC” requirement: Not supported; design assumes network-synchronous operation.

Common Operational Notes (Both Units)

Use balanced cabling and proper gain staging in connected devices.

Save controller presets/scenes after routing so systems come up correctly after power cycles.

For large shows/installs, label endpoints and ports; the Identify button is invaluable when racks look similar.

Keep firmware (where applicable) consistent across the network for predictable operation.

