



ARCHITECTURAL AND ENGINEERING SPECIFICATION

PRODUCT: MX2-24X24-HDMI20-AUDIO-R

FUNCTIONAL OVERVIEW

The MX2-24x24-HDMI20-Audio-R is a standalone HDMI 2.0 matrix switcher providing 24x24 AV routing with support for 4K UHD 60 Hz 4:4:4 class signals, HDCP 2.3 compliance, EDID emulation/management, and pixel accurate reclocking. The “-Audio” variant adds balanced analog audio embedding to, and de-embedding from, the HDMI stream. The “-R” variant provides redundant power supplies and ruggedized control/power connectors. Control and configuration are available via front panel LCD/jog dial, built-in web, Lightware Device Controller (LAN/USB), Ethernet protocols, and RS-232.

VIDEO INPUT AND OUTPUT

- Matrix size: 24 inputs x 24 outputs
- Video inputs:
 - 24x HDMI inputs (AV standard DVI 1.0, HDMI 2.0)
 - Connector: 19-pole HDMI Type A receptacle
- Video outputs:
 - 24x HDMI outputs (AV standard DVI 1.0, HDMI 2.0)
 - Connector: 19-pole HDMI Type A receptacle
- HDCP compliance: HDCP 2.3
- Color space: RGB, YCbCr
- Video delay: 0 frame
- Reclocking: Pixel Accurate Reclocking
- Supported resolutions:
 - At 12 bits/color: up to 5120x2160@30Hz (4:4:4) or 5120x2160@60Hz (4:2:0)
 - At 8 bits/color: up to 4096x2048@60Hz (4:4:4) or 3840x2160@60Hz (4:4:4) (and 4:2:0 where applicable)
- Max. HDMI cable length (premium certified cable, series guidance):
 - 40 m at 1920x1080@60Hz 4:4:4
 - 15 m at 3840x2160@30Hz 4:4:4
 - 5 m at 3840x2160@60Hz 4:4:4
- Input cable equalization: Yes, +12 dB fixed
- 3D support: Yes

AUDIO CAPABILITIES

- Analog audio I/O
 - Analog audio input ports: 8 (port numbering section lists Audio Input ports 1–8)
 - Analog audio output ports: 8 (port numbering section lists Audio Output ports 1–8)
 - Connector type: 5-pole Phoenix (balanced / unbalanced)
 - Audio format: 2-channel PCM, 48 kHz
 - Analog input level controls: Gain -12 dB to +35 dB, Balance -100 to +100 (0=center)
 - Analog output level controls: Volume -78 dB to 0 dB, Balance -100 to +100 (0=center)
- Audio embedding/de-embedding:
 - Analog audio can be embedded into the HDMI stream (per input port audio source selection)
 - Analog outputs provide de-embedded audio from the HDMI stream
 - Only stereo LPCM can be de-embedded from the HDMI signal
- HDMI embedded audio formats (series): all formats in line with HDMI 2.0 standard; Dolby Digital / Dolby Digital Plus / Dolby TrueHD / Dolby Atmos / Dolby Vision; DTS / DTS-HD Master Audio 7.1 / WMA Pro
- Audio routing behavior: there is no independent audio layer; embedded audio is switched together with video as part of the AV stream

POWERING

- Supported power source: 100–240 V AC, 50/60 Hz
- Redundant power supplies: Yes
 - Two AC inputs via Neutrik powerCON connectors
 - Redundant PSUs can be connected to two different AC power lines; either one or both PSUs can power the unit
- Power redundancy monitoring: PSU1/PSU2 status available (running / failed) in device status

CONTROL

- Front panel: color LCD with jog dial for menu navigation and setting; front panel operations supported
- Built-in web interface: browser-based control/configuration (HTTP)



- Lightware Device Controller (LDC): control via LAN or USB
- Ethernet (LAN) control:
 - LW2 protocol: TCP 10001
 - LW3 protocol: TCP 6107
 - HTTP: TCP 80
- USB: USB mini-B, USB 2.0, HID device class
- RS-232: 9-pole D-SUB serial port; factory default: enabled; 57600 baud; protocol LW3
- LAN connector: Neutrik etherCON (Ethernet/LAN)

GENERAL

- Dimensions: 440.5 (483 with rack ears) W x 177 H x 280.2 D mm; 17.3 (19 with rack ears) W x 6.9 H x 11 D in
- Rack height / enclosure: 4 RU
- Mounting options:
 - Standard rack installation (default) with supplied rack ears
 - M4x8 is the longest allowed screw for fixing the rack ears to the housing
- LVD / electrical safety compatibility: EN 62368-1:2014 Second Edition
- Warranty period: 3 years
- Cooling: cooling fans, airflow front to rear
- Supplied accessories (per Box Contents table for this model):
 - Safety and Warranty Info
 - Quick Start Guide
 - Neutrik powerCON power cable (2x)
 - Serial data cable (male-female)
 - Phoenix Combicon 5-pole connector (16 pcs)

DOCUMENT REVISION HISTORY

Document	Release Date	Changes	Checked by
v1	2026-07-29	Initial version	Tamas Forgacs