



ARCHITECTURAL AND ENGINEERING SPECIFICATION

PRODUCT: MX2-48X48-HDMI20-A-R

FUNCTIONAL OVERVIEW

The MX2-48x48-HDMI20-A-R is a standalone HDMI 2.0 matrix switcher providing 48x48 crosspoint routing with support for uncompromised 4K UHD 60 Hz 4:4:4 video switching. It supports HDCP 2.3, advanced EDID management, pixel accurate reclocking, and frame detector/signal analysis. The “-A” option enables embedding analog audio into the HDMI stream at inputs and de-embedding supported audio from HDMI at outputs for external audio systems. Local configuration is available via the front panel color LCD and jog dial, and the unit can be controlled via Ethernet, RS-232, and USB using the built-in web interface and Lightware Device Controller.

VIDEO INPUT AND OUTPUT

- Matrix size: 48 inputs x 48 outputs
- Video input type and count:
 - 48x HDMI inputs (HDMI 2.0; compatible with HDMI 1.x and DVI 1.0)
- Video output type and count:
 - 48x HDMI outputs (HDMI 2.0; compatible with HDMI 1.x and DVI 1.0)
- Connector type: 19-pole HDMI Type A receptacle (input and output)
- AV standard: DVI 1.0, HDMI 2.0
- HDCP compliance: HDCP 2.3
- Color space support: RGB, YCbCr
- Video delay: 0 frame
- Supported resolutions (HDMI input/output):
 - Up to 5120x2160@30 Hz (4:4:4) or 5120x2160@60 Hz (4:2:0) at 12 bits/color
 - Up to 4096x2048@60 Hz (4:4:4) or 4096x2048@60 Hz (4:2:0) at 8 bits/color
 - Up to 3840x2160@60 Hz (4:4:4) or 3840x2160@60 Hz (4:2:0) at 8 bits/color
 - 1920x1080@60 Hz (4:4:4) up to 12 bits/color
- HDMI cable length guidance (premium certified cable):
 - 1920x1080@60 Hz 4:4:4: 40 m
 - 3840x2160@30 Hz 4:4:4: 15 m
 - 3840x2160@60 Hz 4:4:4: 5 m
- Reclocking: Pixel Accurate Reclocking
- 3D support: Yes

- Input cable equalization: Yes, +12 dB fixed

AUDIO CAPABILITIES

- Analog audio availability: “-A” (analog audio embedding/de-embedding supported)
- Analog audio connectors: 5-pole Phoenix (balanced / unbalanced line in/out)
- Analog audio input:
 - Format: 2-channel PCM; sampling frequency 48 kHz
 - Maximum input level: +0 dBu, 0.77 Vrms, 2.19 Vpp
 - Gain: -12 dB to +35 dB
 - Balance: -100 (-95 dB) to +100 (0 dB) (0 = center)
- Analog audio output:
 - Format: 2-channel PCM; sampling frequency 48 kHz
 - Volume: -78 dB to 0 dB
 - Balance: -100 (-95 dB) to +100 (0 dB) (0 = center)
 - Nominal differential output level @ 0 dB gain: +4 dBu
 - Nominal differential output level @ 3 dB gain: +7 dBu
- HDMI embedded audio formats: 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
- De-embedding note: only stereo LPCM can be de-embedded from the HDMI signal
- Port counts for this model:
 - Analog audio inputs: 16 (HDMI)
 - Analog audio outputs: 16 (HDMI)

POWERING

- Supported power source: 100–240 V AC, 50/60 Hz
- Power supply option: built-in PSU
- Redundant power supply: provided
 - Two AC inputs via Neutrik powerCON connectors
 - Double PSU allows connection to two different AC power lines to ensure continuous power
- AC power connector: two Neutrik powerCON
- AC fuse: F 3.15 A

- Power consumption:
 - (no signal / max. signal): 108 W / 203 W

CONTROL

- Front panel control:
 - Color LCD menu + jog dial control knob
 - Front panel I/O buttons
- Ethernet/LAN control:
 - 10/100Base-T, full duplex with autodetect
 - LW2 over TCP port 10001; LW3 over TCP port 6107
 - HTTP control via built-in website (TCP port 80)
 - Secondary protocol via TCP port 23
- RS-232 control:
 - -R models: 9-pole D-SUB connector
 - Adjustable baud rate; factory default: 57600 baud, protocol LW3
- USB control:
 - USB mini-B (USB 2.0, HID) for local control (e.g., Lightware Device Controller)
- Software:
 - Lightware Device Controller (LDC)
 - Built-in web interface (browser control)

GENERAL

- Enclosure / rack:
 - Rack mountable (rack ears supplied)
 - Dimensions (8 RU models): 440.5 (483+2) W x 355 H x 280.2 D mm
- Mounting options:
 - Standard rack installation with supplied rack ears
 - Handles can be mounted (handles are supplied)
- Electrical safety / LVD-related standard:
 - EN 62368-1:2014 Second Edition
- Warranty period: 3 years
- Cooling:
 - Cooling fans; airflow from front to rear (front-to-back airflow design)



- Supplied accessories:
 - Safety and Warranty Info, Quick Start Guide
 - Neutrik powerCON power cable (2 pcs)
 - Serial data cable (male-female)
 - Phoenix Combicon 5-pole connectors (32 pcs)
 - Handle pair with 4 pcs M5 flat head screws

DOCUMENT REVISION HISTORY

Document	Release Date	Changes	Checked by
v1	2026-07-30	Initial version	Tamas Forgacs