



ARCHITECTURAL AND ENGINEERING SPECIFICATION

PRODUCT: MX2-48X48-DH-24DPiO-A-R

FUNCTIONAL OVERVIEW

The MX2-48x48-DH-24DPiO-A-R is a standalone matrix switcher providing 48x48 crosspoint routing with combined DisplayPort and HDMI connectivity, supporting HDMI 2.0 switching up to 4K UHD 60 Hz 4:4:4. It supports HDCP 2.3, advanced EDID management, pixel accurate reclocking, frame detector/signal analysis, and DisplayPort link diagnostics with restart link training. The “-A” option enables analog audio embedding into the routed AV stream and analog audio de-embedding from outputs for external audio systems. Control is available via front panel LCD/jog dial, Ethernet, RS-232, and USB using Lightware Device Controller and the built-in web interface.

VIDEO INPUT AND OUTPUT

- Matrix size: 48 inputs x 48 outputs
- Video input count and types:
 - 24x DisplayPort inputs (ports 1–24)
 - 24x HDMI inputs (ports 25–48)
- Video output count and types:
 - 24x DisplayPort outputs (ports 1–24)
 - 24x HDMI outputs (ports 25–48)
- Connectors:
 - HDMI: 19-pole HDMI Type A receptacle (I/O)
 - DisplayPort: 20-pole DisplayPort receptacle (I/O)
- AV standards:
 - HDMI ports: DVI 1.0, HDMI 2.0
 - DisplayPort ports: DVI 1.0, HDMI 2.0, DP 1.2 (with 18 Gbps bandwidth limitation)
- HDCP compliance: HDCP 2.3
- Color space support: RGB, YCbCr
- Video delay: 0 frame

- Supported resolutions:
 - 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

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 (specification table):
 - 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 (specification table):
 - 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 audio / de-embedding note: only stereo LPCM can be de-embedded from the HDMI signal
- Port counts for this model:
 - Analog audio inputs: 1–8 and 25–32
 - Analog audio outputs: 1–32

POWERING

- Supported power source: 100–240 V AC, 50/60 Hz
- Power supply option: built-in PSU
- Redundant power supply: provided (model suffix “-R”)
 - Two AC inputs via Neutrik powerCON connectors
 - Double PSU allows connection to two different AC power lines to ensure continuous power
- AC power connector (for -R models): 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