LIGHTWARE
Gizella 51-57, Budapest H-1143, Hungary
+36 1 255 3800
sales@lightware.com

ARCHITECTURAL AND ENGINEERING SPECIFICATION
PRODUCT: MX2-48X48-DH-48DPI-A-R

FUNCTIONAL OVERVIEW

The MX2-48x48-DH-48DPi-A-R is a standalone matrix switcher providing 48x48 crosspoint routing with DisplayPort inputs and HDMI outputs, 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, and frame detector/signal analysis. DisplayPort link diagnostics (lane count, data rate) and restart link training are provided for troubleshooting without unplugging. The "-A" option enables analog audio embedding into the routed AV stream and analog audio de-embedding for external audio systems. Control is available via front panel LCD/jog dial, Ethernet, RS-232, and USB.

VIDEO INPUT AND OUTPUT

- Matrix size: 48 inputs x 48 outputs
- Video input count and types:
  - 48x DisplayPort inputs (ports 1–48)
- Video output count and types:
  - 48x HDMI outputs (ports 1–48)
- Connectors:
  - DisplayPort input: 20-pole DisplayPort receptacle
  - HDMI output: 19-pole HDMI Type A receptacle
- AV standards / behavior:
  - DisplayPort input: DP 1.2 (with 18 Gbps bandwidth limitation); device converts DisplayPort video to HDMI in all models
  - HDMI output: DVI 1.0, HDMI 2.0
- 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 (series description):
  - De-embedding note: only stereo LPCM can be de-embedded from the HDMI signal
- Port counts for this model:
  - Analog audio inputs: 1–16
  - Analog audio outputs: 1–16

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