



## ARCHITECTURAL AND ENGINEERING SPECIFICATION

### PRODUCT: MMX4X2-HDMI-USB20-L

#### FUNCTIONAL OVERVIEW

MMX4x2-HDMI-USB20-L is a compact 4x2 HDMI matrix switcher with two independent HDMI outputs and an integrated USB 2.0 layer. It switches four HDMI sources to two HDMI displays and provides a 4x1 USB 2.0 switch that connects four USB peripherals to one of four host computers. The unit supports 4K/UHD/3D video and HDCP compliance, includes analog audio embedding and de-embedding, and offers automation via the built-in Event Manager configurable in Lightware Device Controller.

#### VIDEO INPUT AND OUTPUT

- Video inputs: 4x HDMI input ports
- Video outputs: 2x HDMI output ports (independent)
- Connector type (HDMI I/O): 19-pole HDMI Type A receptacle
- AV standard: DVI 1.0, HDMI 1.4
- HDCP compliance: HDCP 1.4
- Color space: RGB, YCbCr
- Video delay: 0 frame
- Supported resolutions at 8 bits/color: up to 4096x2048@30Hz (4:4:4) or 4096x2048@60Hz (4:2:0); up to 3840x2160@30Hz (4:4:4) or 3840x2160@60Hz (4:2:0); up to 1920x1080@60Hz (4:4:4)
- Deep color: up to 12 bits/color
- Reclocking: Pixel Accurate Reclocking
- 3D support: yes

#### AUDIO CAPABILITIES

- HDMI embedded audio support: 8 channel PCM; Dolby TrueHD, DTS-HD Master Audio 7.1
- Analog audio input: balanced / unbalanced stereo via 5-pole Phoenix connector; 2-ch PCM; 48 kHz sampling frequency; gain -12 dB to +6 dB
- Analog audio output: balanced / unbalanced stereo via 5-pole Phoenix connector; 2-ch PCM; 48 kHz sampling frequency; volume -57 dB to 0 dB; balance 0–100 (50 = center)
- Audio embedding: analog audio input can be embedded into HDMI outputs

- Audio de-embedding: HDMI audio can be de-embedded to analog audio output (supports 2 channel PCM audio signals only)

## POWERING

- External power adaptor (supplied)
- Supported power source (adaptor input): 100–240 V AC; 50/60 Hz
- Supplied power (adaptor output): 12 V 2 A DC
- DC power plug: locking DC connector (2.1/5.5 mm pin)
- Power consumption (min/max): 2 W / 16.8 W

## CONTROL

- Ethernet control: supports LW2 and LW3 protocols
- USB control interface (front panel mini-B): supports LW3 protocol; connection to Lightware Device Controller (LDC)
- RS-232 control: 3-pole Phoenix connectors (two local RS-232 ports)
- Infrared control: IR IN and IR OUT via 3.5 mm TRS connector; pronto HEX support
- GPIO control: 8-pole Phoenix connector with six GPIO pins operating at TTL digital signal levels
- Front panel control: OUT 1 / OUT 2 video select buttons; reset; Set Audio Config button; control lock
- Lightware Device Controller (LDC): crosspoint control, EDID management, diagnostics, Event Manager, settings/backup/restore
- Built-in Miniweb: embedded web page for source selection and Event action trigger buttons
- Advanced Control Pack (from FW package v1.3.1 / v1.6.0b19 as applicable):
  - Consumer Electronics Control (CEC) interface and command sending
  - RS-232 Recognizer
  - TCP Recognizer
  - Basic IT security features including cleartext login, TCP/IP port blocking, MAC address filtering
  - Batch commands (command salvo) and macro capability
  - Dark Mode
  - Event Manager+ functions (AND operator for conditions, variables, condition triggering)

## GENERAL

- Compliance: CE, UKCA
- Safety (LVD compatibility): EN 62368-1:2020
- EMC compliance (emission): EN 55032:2015+A1:2020
- EMC compliance (immunity): EN 55035:2017+A11:2020
- RoHS compliance: EN 63000:2018
- Warranty: 3 years
- Cooling: passive
- Enclosure material: 1 mm steel
- Dimensions: 221 W x 100.4 D x 42.5 H mm (8.7 W x 3.95 D x 1.68 H inch)
- Weight: 703 g
- Mounting options: 1U high rack shelf; rack ear-mounting (device can be mounted by the supplied rack ears)
- Supplied accessories:
  - 12V DC adaptor with interchangeable plugs
  - UTP patch cable (3 m)
  - Phoenix® Combicon 3-pole connector
  - Phoenix® Combicon 5-pole connector (2x)
  - Phoenix® Combicon 8-pole connector
  - Rack ears (2x) with M4x8 screws (4x)
  - Safety & warranty info; Quick Start Guide
- Packaging: product has a full paper / green packaging

## DOCUMENT REVISION HISTORY

| Document | Release Date | Changes         | Checked by    |
|----------|--------------|-----------------|---------------|
| v1       | 2026-08-19   | Initial version | Tamas Forgacs |