



ARCHITECTURAL AND ENGINEERING SPECIFICATION

PRODUCT: MMX8X8-HDMI-4K-A-USB20

FUNCTIONAL OVERVIEW

The MMX8x8-HDMI-4K-A-USB20 is an integrator-friendly 8x8 matrix switcher for HDMI video and USB 2.0 peripherals. It provides eight HDMI inputs and eight independent HDMI outputs, plus a USB 2.0 switching layer that routes four external USB peripherals to four independent host computers/laptops. 4K/UHD (30 Hz RGB 4:4:4, 60 Hz YCbCr 4:2:0), 3D, and HDCP are supported. The unit also includes analog audio I/O for embedding/de-embedding and supports control via RS-232, Ethernet, USB, and front panel operation.

VIDEO INPUT AND OUTPUT

- Matrix size: 8x HDMI inputs, 8x HDMI outputs
- Connector type: 19-pole HDMI Type A receptacle (inputs and outputs)
- A/V standard: DVI 1.0, HDMI 1.4
- HDCP compliance: HDCP 1.4
- Color space support: RGB, YCbCr
- Supported resolutions at 8 bits/color:
 - 3840x2160 @ 30 Hz (RGB 4:4:4)
 - 3840x2160 @ 60 Hz (YCbCr 4:2:0)
 - 1920x1080 @ 120 Hz (24-bit RGB 4:4:4)
 - All standard VESA/CEA and custom resolutions up to 300 MHz (HDMI 1.4)
- Video delay: 0 frame
- Reclocking: Pixel Accurate Reclocking
- 3D support: yes
- Input cable equalization: Yes, +12 dB fixed
- EDID management: EDID emulation (advanced EDID management), EDID v1.3 supported

AUDIO CAPABILITIES

- Embedded HDMI audio formats: 2-channel PCM Stereo, 8-channel PCM
- Analog audio I/O: 6x balanced, 5-pole Phoenix connectors (configured as inputs or outputs; sum of analog inputs and outputs is six)

- Audio embed/de-embed functionality:
 - Analog audio can be embedded into HDMI outputs
 - Embedded HDMI audio can be routed to analog audio outputs (de-embedded)
- Analog audio sampling frequency: 48 kHz
- Analog audio input maximum level: +0 dBu, 0.77 Vrms, 2.19 Vpp
- Analog audio transmission: balanced / unbalanced signal

POWERING

- Power supply: built-in PSU
- Supported power source: 100–240 V AC; 50/60 Hz
- AC connector: standard IEC connector
- Power-on behavior: powered on immediately after connecting the power cord; after self-test (about 30 seconds) the last configuration is loaded automatically
- Power consumption (min/max): 15.5 W / 45.3 W
- USB power note: GPIO and USB 5V can be max. 2A altogether

CONTROL

- Front panel control: color LCD display and rotary jog dial control knob; source/destination buttons; Take / Autotake modes; presets; output lock; control lock
- Ethernet control: Control Ethernet port (RJ45) to control the matrix via LAN; two additional RJ45 Ethernet ports for Ethernet (to control the unit or to passthrough), in the same local network
- RS-232 control: 2x RS-232 (3-pole Phoenix connectors) for bi-directional RS-232 communication
- USB control: front panel USB (mini B-type connector) for local control functions (e.g., Lightware Device Controller software); supports LW3 protocol
- Control software: Lightware Device Controller (Windows and macOS)
- Protocol support: LW2 and LW3
- Command injection capabilities: RS-232, Serial and IR command injection capabilities allowing to send any control command directly to end points
- GPIO control port: 6 GPIO pins via 8-pole Phoenix connector; configurable input/output; controllable with LW2 and LW3 commands
- USB 2.0 switching control: USB Host Select (PC1/PC2/PC3/PC4); Power Switch Delay; Host 5V sense feedback; Device 5V enable

- Advanced Control Pack v3 features (from firmware pack v1.3.0):
 - Basic IT security improvements: cleartext login, TCP port blocking, MAC address filtering
 - Batch commands (salvo): batch of LW3 commands can be run by stored macro or by sending a file to the device (HTTP post to <IP_address>/protocol.lw3)
 - Event Manager +: AND operator for conditions, condition triggering, variables
 - TCP Recognizer: incoming TCP messages can be processed and used as conditions/actions
 - Macros: command sequences stored in device (up to 50 macros can be saved in an MMX8x8 device)

GENERAL

- Dimensions: 442 W x 87.8 H x 300 D mm; 482 mm width with rack-mounting ears
- Enclosure material: 1 mm steel
- Rack mountable: yes
- Mounting height: 2U
- Mounting option: standard rack installation using the supplied two rack ears
- Cooling: by cooling fans; air flows from front to rear
- Compliance: CE, UKCA, UL
- Electrical safety: EN 62368-1:2020
- RoHS: EN 63000:2018
- Supplied accessories:
 - Matrix switcher
 - Safety and Warranty Info
 - Quick Start Guide
 - IEC power cable
 - 2x Infrared emitter unit Phoenix® Combicon 2-pole connector
 - 2x Phoenix® Combicon 3-pole connector
 - 6x Phoenix® Combicon 5-pole connector
 - 1x Phoenix® Combicon 8-pole connector
- Warranty period: 3 years



DOCUMENT REVISION HISTORY

Document	Release Date	Changes	Checked by
v1	2026-08-18	Initial version	Tamas Forgacs