# MMX2

## MMX2-4x3-H20

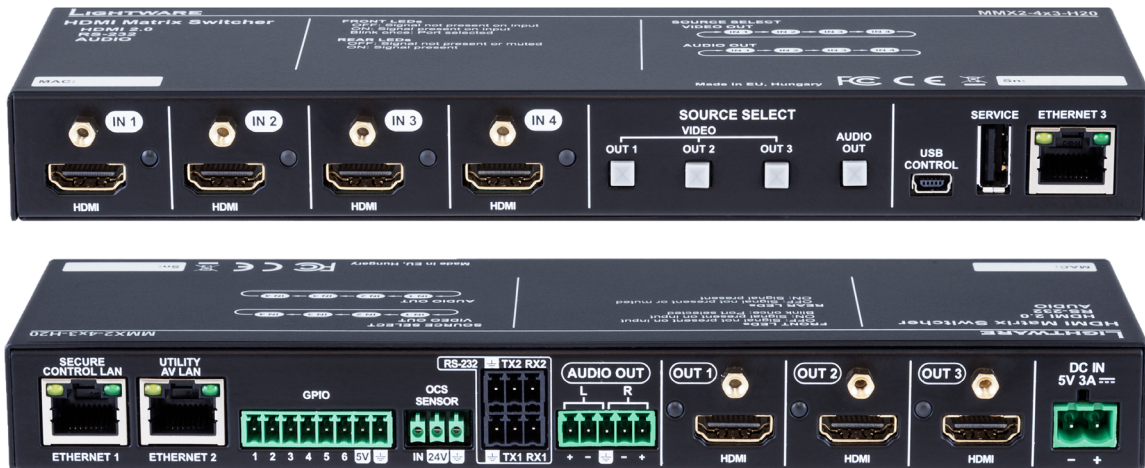visual engineering
**L**IGHTWARE

## HDMI 2.0 Switcher with breakout Audio, Occupancy Sensor input and various control features

Lightware's HDMI2.0 switcher allows users to switch between in-room computers and BYOD devices with video and audio signals up to 4k@60Hz 4:4:4.



## Bring Collaboration Spaces to the Next Level

**MMX2-4x1-H20** and **MMX-4x3-H20** are unique, compact size matrix switchers. They have **four HDMI inputs** and either one or three independent HDMI outputs. **Audio can be de-embedded** from the HDMI signal to a balanced **5-pole Phoenix (Euroblock) port**. The volume of the audio signal can be modified at the output. The devices are capable to transfer video **signal with resolutions up to 4K60** and are HDCP2.2 compliant.

Occupancy sensor input, **GPIO** and **RS-232** ports can be used to integrate other devices into the system. The device is configurable via the Lightware Device Controller software.

**Automated room control features** are also included through GPIO ports, besides of RS-232 and occupancy sensor connectivity. The switcher also thrives when it comes to audio capabilities, offering analog audio de-embedding feature.

## Additional Features and Capabilities

Security is always a key concern in the corporate world, therefore our engineers ensured that the MMX2-4x1-H20 & MMX-4x3-H20 adheres to the strictest security standards. A secure corporate Ethernet interface ensures secure device control and configuration **under the SSH, SSL and HTTPS standards**.

## Features

- Dedicated secure corporate and room utility Ethernet connectivity
- Occupancy sensor connection (with 24V power supply)
- Configurable Autoselect on video inputs
- RS-232 ports for device control
- Passive, noiseless cooling
- Supports HDMI 4K signal formats (4K UHD @60Hz RGB 4:4:4, up to 18 Gbps)
- SSH, SSL, HTTPS for IT security
- Audio de-embedding
- Multiple Ethernet network configurations fitting various corporate network topologies and IT security standards (e.g. 802.1x compliance)
- GPIO control ports
- Device control via Ethernet (TCP/IP)
- Uncompressed video up to 18 Gbps datarate (600 MHz pixel clock)

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## Specifications

| | | | |
|---|---|---|---|
| **Video** | Resolution | | Up to UHD/4k@60Hz 4:4:4 |
| | Signal Type | | HDMI 2.0, HDMI 1.x, DVI |
| | Maximum data rate | | 18 Gbps |
| | Maximum pixel clock | | 600 MHz |
| | Content protections | | HDCP 1.x, HDCP 2.2 |
| | Connector type (IN) | | 4x HDMI receptacle type A with screw locking option |
| | Connector type (OUT) | | 3x HDMI receptacle type A with screw locking option |
| | Video processing | | Signal parameter measurement |
| **Audio** | Audio mode | | Simultaneous pass-through and de-embedding to the Audio layer |
| | Supported audio formats for pass-through | | All HDMI 2.0 audio formats |
| | Supported audio formats for de-embedding | Uncompressed | LPCM (up to 8 channels, 192 kHz, 24 bits per sample) |
| | | Compressed | Dolby Digtal, DTS |
| | | Compressed HBR | Dolby TrueHD, DTS-HD |
| **Control** | Ethernet | Control | 1x 100Base-T via RJ-45 for Secure Control |
| | | User Data | 1x 100Base-T via RJ-45 for Utility AV |
| | | | 1x 100Base-T via RJ-45 for Configurable Ethernet |
| | | Audio | 1x 100Base-T via RJ-45 for Dante audio (output) |
| | RS232 | Connector | 2x 3Pol Phoenix |
| | | Symbol rate | between 9600 and 115200 baud |
| | | Configuration | Parity: none, odd or ever<br>Stopbits: 1 or 2 |
| | USB | Connectors | 1x mini USB Type B (reserved for service) |
| | | | 1x USB Type A (reserved for furure developments) |
| | Room Occupancy Sensor | Connector | 3Pol Phoenix |
| | GPIO | Connector | 8Pol Phoenix |
| **General** | Powering | | External 5V/3A wall adaptor |
| | Dimensions | Width | 221 mm |
| | | Height | 26 mm |
| | | Depth | 68 mm |
| | Operating conditions | Ambient temperature | 0-50°C |
| | | Relative humidity | 0-90% (non-condensing) |
| | Transportation conditions | Ambient temperature | -20-70°C |
| | | Relative humidity | 0-95% (non-condensing) |
| | Complience | | EN 55032:2015<br>IEC 61000-3-3:2013+AMD1:2017<br>FCC CFR Title 47, Part 15, Subpart B |
| | Warranty | | 3 years |