4x2 HDMI Matrix Switcher with Breakaway Analog Audio

Part No: 9131 0034

Highlight Features

- 4x2 HDMI matrix switcher with audio embedding and de-embedding
- 4K/UHD (30Hz RGB 4:4:4, 60Hz YCbCr 4:2:0) and 3D capabilities
- Fully HDCP compliant
- Balanced analog audio input and output ports for audio embedding and de-embedding
- Audio volume control on analog input and output
- Advanced EDID management
- Event Manager
- RS-232, Ethernet, USB control options
- Compact size

MMX4x2-HDMI is a uniquely mini size matrix switcher. It has four HDMI inputs and two independent HDMI outputs. Audio can be de-embedded from the HDMI signal to a balanced 5-pole Phoenix (Euroblock) port and external audio signal can be embedded into the HDMI stream from another 5-pole Phoenix input port. The volume and gain properties of the audio signal can be modified at both input and output. The unit is fully 4K/UHD/3D capable and HDCP compliant. The device has a built-in Event Manager configurable via the Lightware Device Controller software. Further control options are served by the USB, RS-232, IR (in and out) and Ethernet ports.
MMX4x2-HDMI

Standalone Application Diagram

Port Diagram
Event Manager

The Event Manager is a smart, built-in feature in the Lightware HDBaseT compatible TPS extender family, the MODEX line and in some select matrix switches like the MMX4x2 series units. The feature is available through the freely downloadable Lightware Device Controller software.

The Event Manager was developed to handle tasks from the most simple to expert ones, like controlling the rolling shutter, the air conditioning system or the lights based on any condition changes on the media ports, such as a new source being connected or removed.

Event Manager application is continuously updated with additional features via firmware upgrades: a delay can be added between the condition and the action and more actions can be triggered by a single condition change. With the help of the ‘condition count’ and ‘action test’ features, the predefined settings can be tested before going live. The system can recognize infrared commands which can also be set as conditions, and commands can also be sent via Ethernet.

Event Manager Wizard

Assigning an action to a condition is quick and easy with the Wizard function of Event Manager. The most typical examples of the currently selectable conditions and actions within the Event Manager Wizard are the following:

**Conditions**
- Video: Signal is detected on a port
- Video: Signal is not detected on a port
- Audio: Signal is detected on a port
- Audio: Signal is not detected on a port
- Audio: Signal type changes to 2 CH PCM
- Audio: Signal type changes to Multichannel PCM or Compressed
- Audio: Signal type changes to Undefined (no signal)
- IR: Infra code recognized

**Actions**
- Ethernet: Send TCP command
- Ethernet: Send UDP command
- R232: Send RS232 message
- EDID: Switch EDID
- Audio: Set audio volume
- Audio: Mute output
- Audio: Unmute output
- Audio: Increase/decrease volume
- Video: Switch input to output
- Video: Enable autoselect on output
- Video: Disable autoselect on output
- Video: Load crosspoint preset
- Audio: Source select
Event Example A

Laptop is connected to the matrix (signal turns up on MMX4x2-HDMI’s HDMI input port)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laptop connected to the matrix</td>
<td>A Switches the lights off over RS232</td>
</tr>
<tr>
<td></td>
<td>B Switches the projector on over TCP/IP</td>
</tr>
<tr>
<td></td>
<td>C Switches HDMI input 1 to HDMI OUT 2 (projector)</td>
</tr>
<tr>
<td></td>
<td>D Unmutes analog audio out and adjusts volume</td>
</tr>
</tbody>
</table>

Event Example B

Laptop is disconnected from the matrix (signal disappears on MMX4x2-HDMI’s HDMI input port)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laptop disconnected from the matrix</td>
<td>A Switches the lights on over RS232</td>
</tr>
<tr>
<td></td>
<td>B Switches the projector off over TCP/IP</td>
</tr>
<tr>
<td></td>
<td>C Switches HDMI input 2 (PC) to HDMI OUT 2 (projector)</td>
</tr>
<tr>
<td></td>
<td>D Mutes analog audio out</td>
</tr>
</tbody>
</table>
MMX4x2-HDMI

Applications
- Classrooms
- Meeting and conference rooms
- Control room
- Home cinema

Features
- 4x2 Matrix Switcher with HDMI 1.4 ports
- 4K/UHD (30Hz RGB 4:4:4, 60Hz YCbCr 4:2:0) and 3D capabilities
- Audio: 1x 5-pole Phoenix connector for balanced analog audio embedding, 1x 5-pole Phoenix connector for balanced analog audio de-embedding
- Analog audio volume control
- Embedded 7.1 HBR audio support
- Event Manager
- Intuitive Control Software
- Command injection on IR and RS-232 connections
- Fully HDCP compliant
- Advanced EDID Management
- Zero frame delay
- Frame detector
- Compact size

Specifications

**Analog Audio Input**
- Volume: -96 dB to 0 dB
- Balance: -100 dB to 0 dB to 100 dB
- Mute function: Yes

**Analog Audio Output**
- Volume: -57 dB to +3 dB
- Balance: -100 dB to 0 dB to 100 dB
- Mute function: Yes

**Resolution**
- Up to 4K UHD 3840x2160@30Hz, 1080x1200@60Hz, FullHD 1920x1080@60Hz

**Digital audio formats**
- Supports up to 8 channel PCM, Dolby TrueHD and DTS-HD Master Audio 7.1 formats

**EDID emulation**
- Yes, Advanced EDID Management

**EDID memory**
- 120 factory preset, 12 user programmable

**HDCP compatibility**
- Yes

**RS-232 pass-through**
- Yes, configurable

**RS-232 (control option)**
- 9600, 19200, 38400, 57600, 115200 Baud
- Rx, Tx (default: 57600)

**Local power**
- DC Power supply 12V, 2A

**Power consumption**
- 7W (max)

**Enclosure**
- 1 mm metal

**Dimensions**
- 221 W x 100.4 D x 26 H mm

**Compliance**
- CE

**Warranty**
- 3 years

*Depends on cable category and quality

Connectors

**Digital video inputs**
- 4x HDMI connector

**Digital video outputs**
- 2x HDMI connector

**Balanced audio input**
- 5-pole Phoenix (Euroblock) connector

**Balanced audio output**
- 5-pole Phoenix (Euroblock) connector

**Ethernet**
- 1 x RJ45

**USB**
- mini-USB-B connector

**IR in and out**
- 3.5 mm jack

**Serial port**
- 3-pole Phoenix (Euroblock)

**Power**
- Locking DC connector (2.1 / 5.5 mm)
Supplied Accessories

PSU-12VU Universal DC adaptor (Part No: 1180 0098)
Wall power adaptor with interchangeable plug for international use. Universal input: 100-240 V AC, 50-60 Hz, output: 12 V DC, 2.5 A

IR emitter and IR eye (Part No: 1374 0003 TX, 1374 0002 RX)
IR emitter is supplied with TPS-TX, IR eye is supplied with TPS-RX units. Needed for IR extension.

Optional Accessories

Rack shelf (Part No: 5240 0269)
The 1U high rack shelf provides mounting holes for fastening two half- rack or four quarter-rack sized units.

Under desk mounting kit double (Part No: 5240 0276)
The UD-kit double makes it easy to mount multiple devices on any flat surface (e.g. furniture).