

## Quick Start Guide

MMX2-4x1-H20  
MMX2-4x3-H20

### Front View (MMX2-4x3-H20)

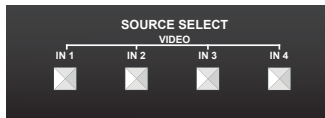


- 1 HDMI input ports** HDMI input ports for sources. The applied cable shall not be longer than 5m (22AWG) when signal resolution is 4K. Use cables certified for HDMI 2.0 (3x6Gbps) applications.
- 2 Input status LED** **on:** there is a valid signal on the port  
**blink (once):** the port is selected by a button press  
**off:** there is no valid signal on the port
- 3 Front panel buttons** For more details about the buttons, see the **Button Functionality** section. When LEDs blink green three times after pressing the button, they show that the front panel lock is enabled.
- 4 USB mini-B port** Reserved for service functions.
- 5 USB-A port** Reserved for future developments.
- 6 Configurable Ethernet port** RJ45 connector for configurable 100 Base-T Ethernet communication.

### Button Functionality

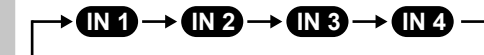
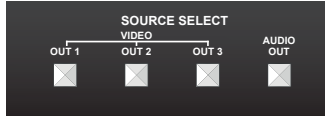
#### MMX2-4x1-H20

Use **IN1, IN2, IN3** or **IN4** button for selecting the video source to the **HDMI output**.



#### MMX2-4x3-H20

Use the **OUT1, OUT2** or **OUT3** button for selecting the video source to the specific output. Push **OUT1** to select the video input for the HDMI **OUT1** port (**OUT2** for HDMI **OUT2** and **OUT3** for HDMI **OUT3**). The sequence of each output button is the following:



Use the **AUDIO OUT** button for switching the audio source to the analog audio output. The sequence is the same as above.



#### Setting a Dynamic IP Address (DHCP)

- Keep the button on the right (**AUDIO OUT** on MMX2-4x3-H20; **IN4** on MMX2-4x1-H20 model) button pressed for **5 seconds**; all front panel LEDs start to blink.
- Release the button, then press it **3 times quickly**. DHCP is now enabled.



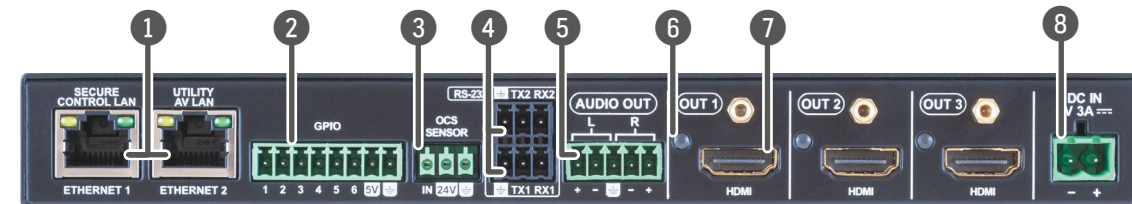
### Important Safety Instructions

Please read the supplied safety instruction document before using the product and keep it available for future reference.

### Introduction

Lightware's MMX2 switcher series enhances and extends the possibilities of a meeting room and allows meeting participants to easily use their own devices such as laptops. MMX2-H20 series models offer 4K signal switching with numerous control interfaces (secure Ethernet, OCS sensor, GPIO, Audio and RS-232 options). The device is the right choice for customers who need cost effective 4x3 and 4x1 HDMI only switchers with audio de-embedding, GPIO, Ethernet and RS-232 but without USB transmission.

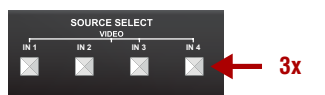
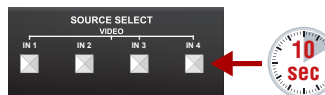
### Front View (MMX2-4x3-H20)



- 1 Ethernet ports** RJ45 connectors for 100Base-T Ethernet communication.
- 2 GPIO port** 8-pole Phoenix® connector for configurable general purpose. Max. input/output voltage is 5V, see the details on the next page
- 3 OCS sensor** 3-pole Phoenix® connector (male) for connecting an occupancy sensor. The port provides 24V output voltage (50mA).
- 4 RS-232 port** 3-pole Phoenix® connector for bi-directional RS-232 communication.
- 5 Analog audio port** Audio output port (5-pole Phoenix) for balanced analog audio output signal. The signal is de-embedded from the selected video signal.
- 6 Output status LED** **on:** video signal is present  
**off:** video signal is not present or muted
- 7 HDMI output port** HDMI output ports for connecting to the sink devices.
- 8 DC input** The device can be powered by an external 5V power supply. Connect the output to the 2-pole Phoenix® connector.

### Restore the Factory Default Settings

- Keep the **button on the right (AUDIO OUT** on MMX2-4x3-H20; **IN4** on MMX2-4x1-H20 model) pressed for **10 seconds**.
- If the LEDs blink fast, release the button, press it again for **3 times quickly**, then the device restores the factory default settings and reboots.

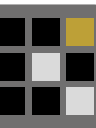


### Lock / Unlock Buttons

Press the **left** and **right** buttons together (within 100 ms) (**IN1** and **IN4** buttons in MMX2-4x1-H20 model, **OUT1** and **AUDIO OUT** on MMX2-4x3-H20 model) to disable/enable front panel buttons; front panel LEDs blink 4 times when locking/ unlocking.

### Software Control – Using Lightware Device Controller (LDC)

The device can be controlled from a computer using the Lightware Device Controller software. The application is available at [www.lightware.com](http://www.lightware.com), install it on a Windows PC or a macOS and connect to the device via LAN.

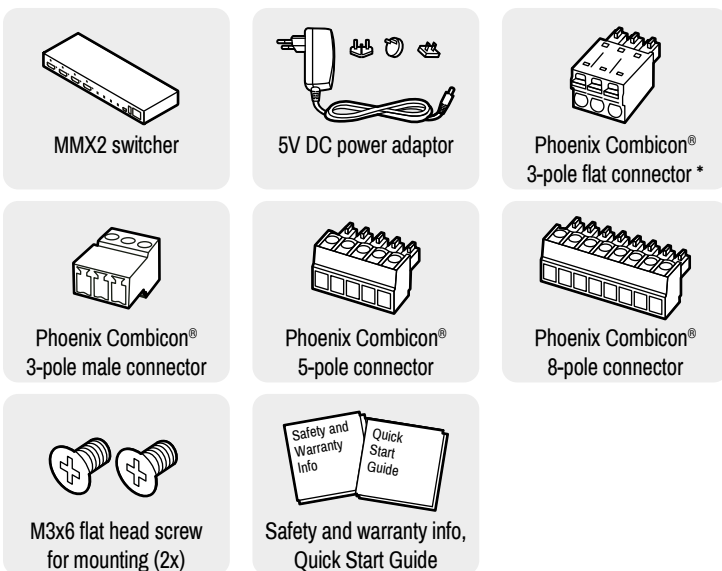


### Firmware Update

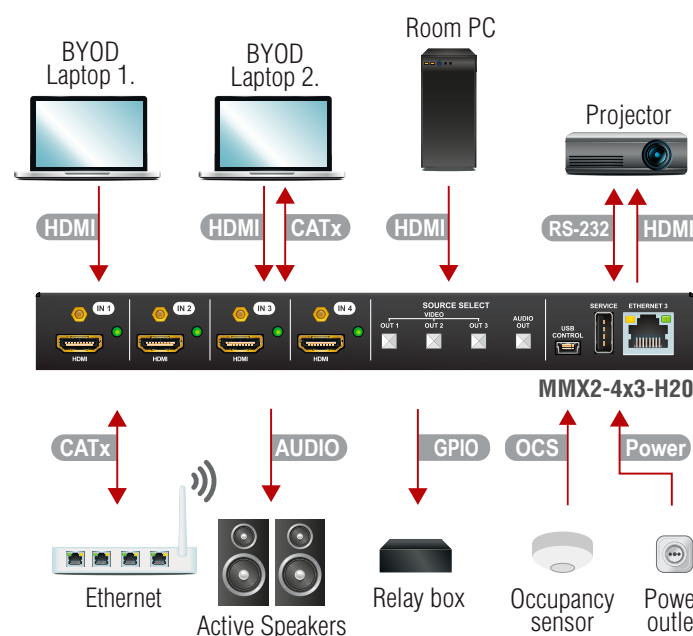
Lightware Device Updater v2 (LDU2) is an easy and comfortable way to keep your device up-to-date. Establish the connection via Ethernet. Download and install LDU2 software from [www.lightware.com](http://www.lightware.com) where you can find the latest firmware package as well.



### Box Contents



### Connecting Steps (example for MMX2-4x3-H20)



- HDMI** Connect an HDMI source (e.g. BYOD laptop or room PC) to the HDMI input port.
- CATx** Connect the Ethernet port to a Local Network Switch to provide Ethernet connection for device configuration and/or for a source device (only on MMX2-4x3-H20).
- CATx** Connect the switcher to an Ethernet Ethernet port to access the local network.
- HDMI** Connect an HDMI sink (e.g projector) to the HDMI output port.
- RS-232** Optionally connect a controller/controlled device (e.g. projector) to the RS-232 port.
- Audio** Optionally connect an audio device (e.g. active speakers) to the analog audio output port by an audio cable.
- GPIO** Optionally connect a device (e.g. Relay box ) to the GPIO port.
- OCS** Optionally connect an occupancy sensor to the OCS port.
- Power** Connect the external power supply to the AC power socket and then to the switcher unit.

**!** Powering the device is recommended as the final step.

Further information on the device is available on [www.lightware.com](http://www.lightware.com).

The User's Manual is also available via the QR code below:



### Contact Us

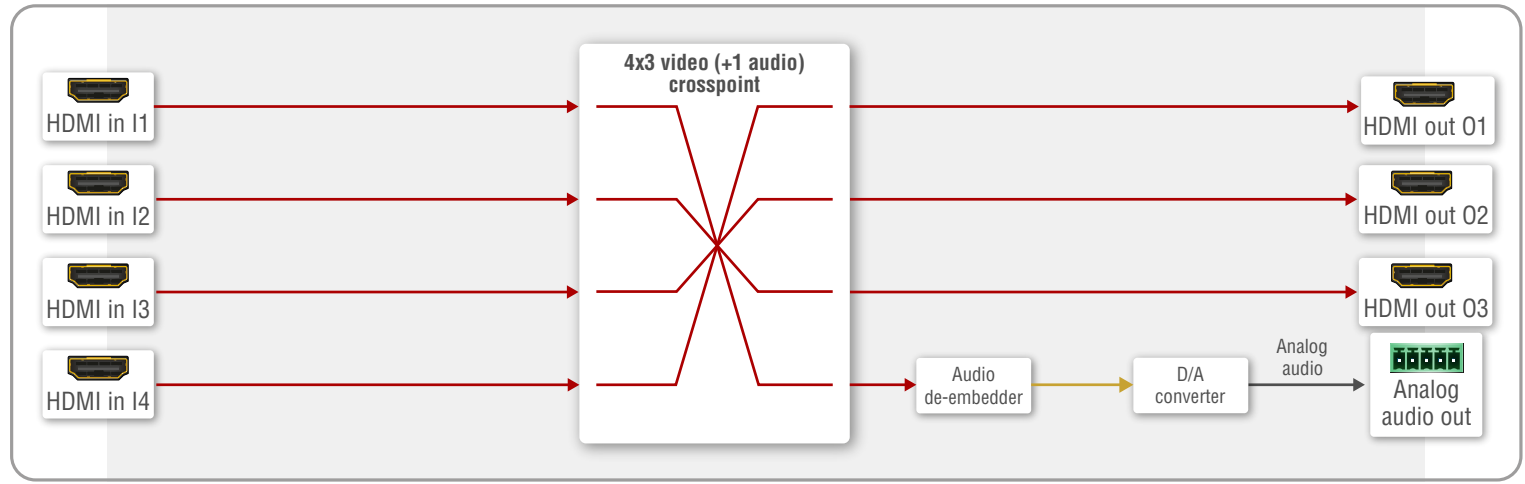
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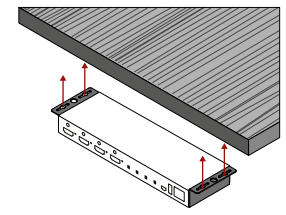
\* 2 pcs. for MMX2-4x3-H20 and 1 pc. for MMX2-4x1-H20 model (for RS-232 port)

**Port Diagram (MMX2-4x3-H20)**



**Mounting the Device (with optionally available accessory)**

The example below demonstrates the application of **UD Kit double** accessory (to order mounting accessories, please contact [sales@lightware.com](mailto:sales@lightware.com)):



- ⚠ **Using different (e.g. longer) screws may cause damage to the device.**
- 📏 **The transmitter is half-rack sized.**

**Factory Default Settings**

The settings can be restored by the front panel buttons as written on the previous page or by software tools. The factory default values are the following:

IP address	Dynamic (DHCP is enabled)
Hostname	lightware-<serialno>
Video Crosspoint (MMX2-4x3-H20)	I1@O1, I2@O2, I3@O3
Video Crosspoint (MMX2-4x1-H20)	I1@O1
HDCP mode (output)	Auto
Signal type	Auto
Emulated EDID	F47 - (Universal HDMI with PCM audio)
Analog audio output	I1 is selected
Analog audio output levels	Volume (dB): 0.00; Balance: 0 (center)
Audio Autoselect	Follow video O1
RS-232 port setting	9600 BAUD, 8, N, 1
RS-232 serial over IP	Enabled
HTTP, HTTPS	Enabled
HTTP, HTTPS authentication	Disabled

**OCS (Occupancy) Sensor**

The switcher is supplied with a 3-pole Phoenix® connector (male) for connecting an OCS sensor.

**Connector Pin Assignment**

Pin nr.	Function
1	input with logic low/high level
2	24V (max 50mA)
3	ground



**Signal Levels**

The signal levels for the Pin 1	Input voltage (V)	Max. current (mA)
Logic low level	0 - 0.8	30
Logic high level	2 - 5	18

⚠ **Occupancy sensor connector and GPIO port are not compatible with each other because of the voltage level difference, please do not connect them directly.**

**Audio Cable Wiring Guide**

The device is built with a 5-pole Phoenix output connector. See a few examples below of the most common assembling cases.

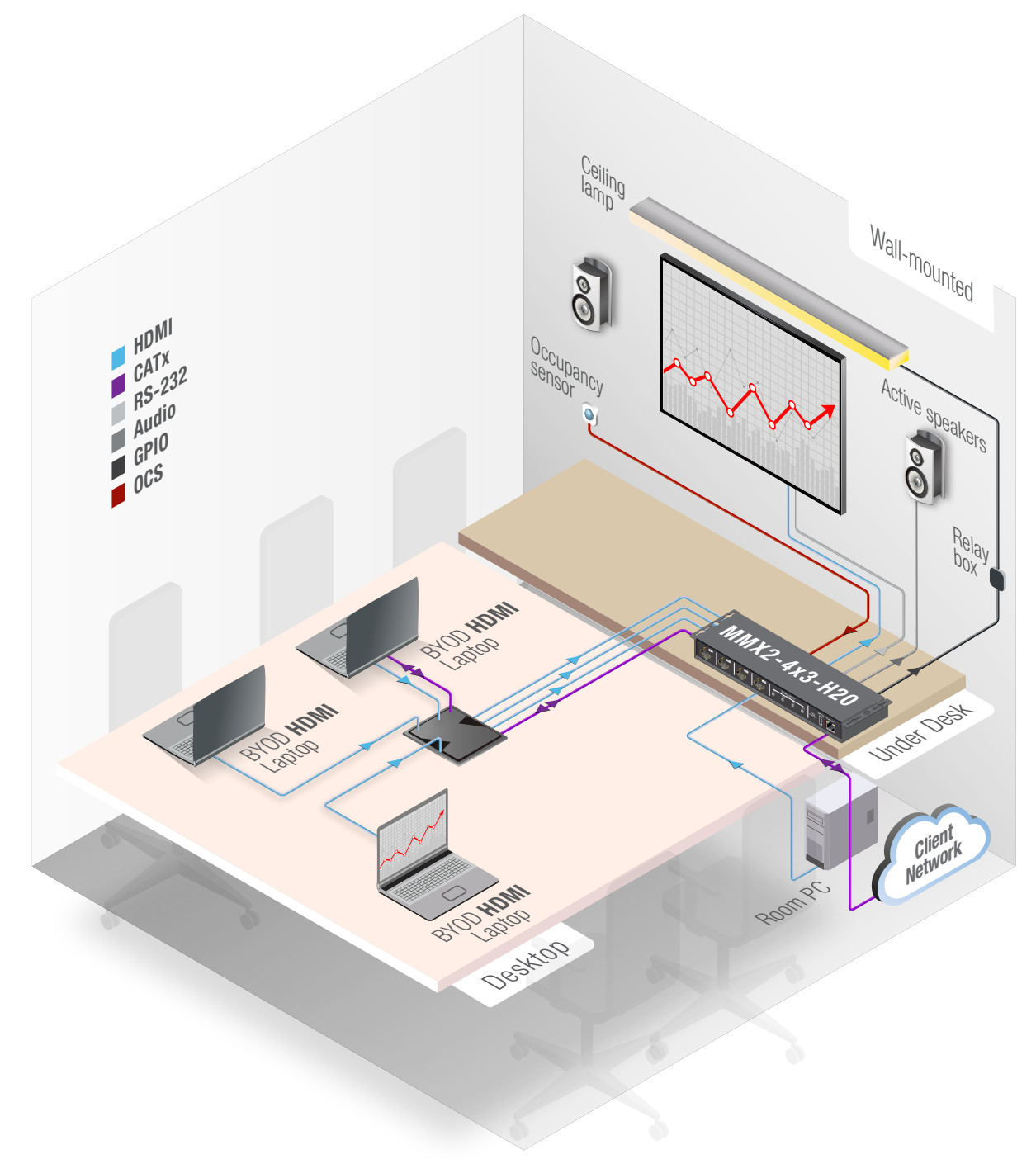
**Balanced output to balanced input**  
Phoenix - 2x6.3 (1/4") TRS

**Balanced output to balanced input**  
Phoenix cable - 2x XLR plugs

**Balanced output to unbalanced input**  
Phoenix - 2x RCA

**Balanced output to unbalanced input**  
Phoenix - 2x 6.3 (1/4") TS

**Typical Application Diagram**



**GPIO (General Purpose Input/Output Ports)**

The device has seven GPIO pins that operate at TTL digital signal levels and can be set to high or low level (Push-Pull). The direction of the pins can be input or output (adjustable).

**Connector Pin Assingment**

Pin nr.	Function
1-6	configurable
7	5V (max. 500mA)
8	ground



**Signal Levels**

	Input voltage (V)	Output voltage (V)	Max. current (mA)
Logic low level	0 - 0.8	0 - 0.5	30
Logic high level	2 - 5	4.5 - 5	18

Plug pin assignment 1-6: Configurable, 7: 5V (max. 500 mA); 8: Ground

The recommended cable for the connectors is the AWG24 (0.2 mm<sup>2</sup> diameter) or the generally used 'alarm cable' with 4x0.22 mm<sup>2</sup> wires.

📌 **The maximum total current for the six GPIO pins is 180 mA, the max. supported input/output voltage is 5V.**

**RS-232 Port**

The switcher provides a 3-pole Phoenix connector for bi-directional serial communication.

**Connector Pin Assingment**

Pin nr.	Function
1	ground
2	TX data
3	RX data



**Signal Levels**

	Output voltage (V)
Logic low level	3 - 15
Logic high level	-15 - 3