

## Multiport HDMI and TPS Matrix Switcher



Part no: 1931 0032



### Highlight Features

- 6x2 multiport matrix switcher with HDMI and TPS ports
- 4K / UHD (30Hz RGB 4:4:4, 60Hz YCbCr 4:2:0) and 3D capabilities
- 4x HDMI 1.4 input + 2x TPS input
- 2x independent AV output
- Two ports per output: mirrored HDMI + TPS
- Up to 170m\* transmission distance over TPS
- Balanced analog audio inputs and outputs
- Event Manager

\*Depends on cable category and quality

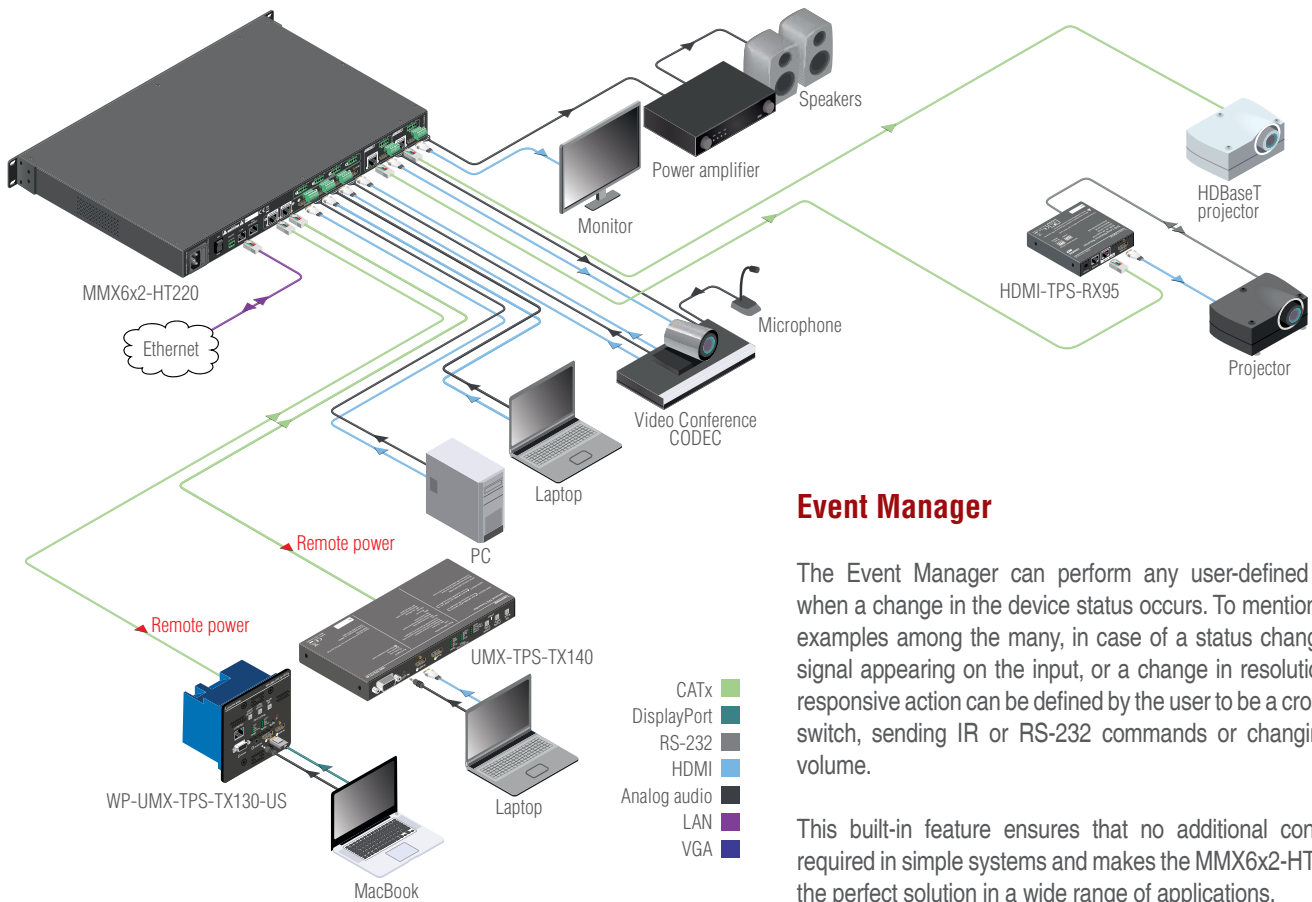
The MMX6x2-HT220 responds to a need for a practical standalone matrix switcher specifically designed for meeting room and classroom environments. The compact MMX6x2-HT220 has six video inputs (four HDMI 1.4 and two TPS) and two video outputs (two independent HDMI outputs which both have mirrored TPS outputs). 4K / UHD (30Hz RGB 4:4:4, 60Hz YCbCr 4:2:0), 3D capabilities and HDCP are fully supported. The device also has four audio connectors for audio insertion and two audio outputs for de-embedding purposes. These features make this standalone matrix unique on the market.

PoE 48V remote powering is available on every TPS ports for cost-effective installations. MMX6x2-HT220 receives and transmits digital video, audio and control to a distance of up to 170m over a single CATx cable. Using factory, custom or transparent EDID emulation the user can fix and lock EDID data on each input connector. Advanced EDID Management forces the required resolution from any video source and fixes the output format to conform to the system requirements.

The unit offers IR and RS-232 command injection capabilities allowing to send any IR or RS-232 control command directly from the LAN connection to remote end points. The MMX6x2-HT220 is also compatible with both HDBaseT™ extenders and HDBaseT™ compliant displays.

HDBaseT™ and the HDBaseT Alliance logo are trademarks of the HDBaseT Alliance

## Typical Application



## Event Manager

The Event Manager can perform any user-defined action when a change in the device status occurs. To mention a few examples among the many, in case of a status change of a signal appearing on the input, or a change in resolution, the responsive action can be defined by the user to be a crosspoint switch, sending IR or RS-232 commands or changing the volume.

This built-in feature ensures that no additional control is required in simple systems and makes the MMX6x2-HT family the perfect solution in a wide range of applications.

Condition	Action
	 Crosspoint switch
	 Projector switch on via RS232

In a meeting room application when a guest connects a laptop to the TPS wall plate, the Event Manager can detect that signal is present, and can automatically route the video to the desired display. At the same time, it also turns the display on via RS232.

Condition	Action
	 Signal switched to display
	 Audio from codec is switched to speakers, volume is set

When the video conference codec is switched on, the codec's video signal is automatically routed to the second display. The audio from the codec is switched to the speakers, while adjusting output volume as necessary.

Condition	Action
	 If no signal is detected on an output port, display is turned off via RS232

If no signal is detected on an output port, the event manager automatically turn the unused display off through RS232.

## Configuration Cloning Capability

Using the supplied Lightware Device Controller application it is possible to clone configuration settings in a few easy steps and restore them in an unlimited number of other MMX6x2-HT220 devices.

## Power Injection over TPS ports

MMX6x2-HT220 has remote powering capabilities on its TPS in- and outputs. This feature allows for remote powering the connected TPS transmitters or receivers using standard Power over Ethernet (PoE) technology by delivering 48V of DC power over CAT cables, for devices consuming less than 15W of power. Remote powering saves time and money by avoiding the need for separate installation of video and power infrastructures. Powered extenders can be freely placed without a need for AC outlets.

## Volume Control for De-embedded Audio

MMX6x2-HT220 enables de-embedding audio and setting volume level on the balanced audio out connectors. This feature makes installations simpler and cost effective as there is no need for an external device for volume and balance adjustment when using active speakers.

## Applications

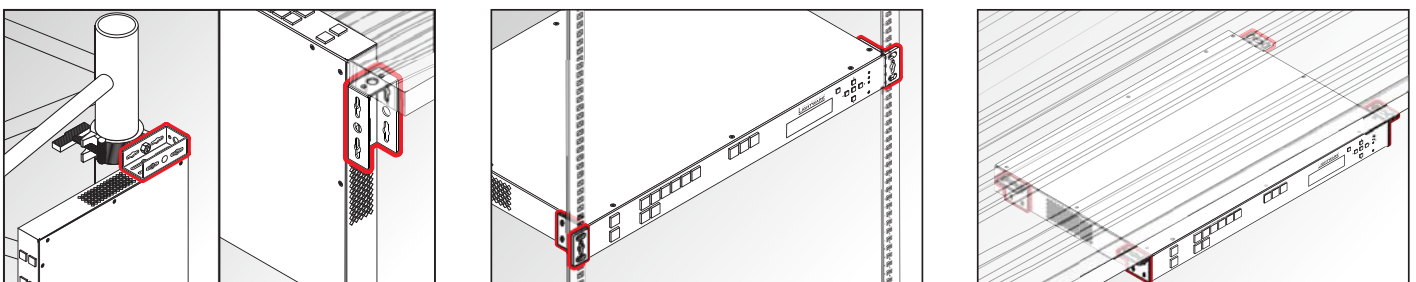
- Classrooms
- Conference/meeting/huddle rooms
- Control room
- Home cinema

## Features

- 6x2 multiport matrix with HDMI and TPS ports
- 4K / UHD (30Hz RGB 4:4:4 , 60Hz YCbCr 4:2:0) and 3D capabilities
- 4x HDMI 1.4 input
- 2x TPS input
- 2x independent AV output
- Two ports per output: mirrored HDMI + TPS
- Easy to clone device configuration settings between matrices in large installations
- Firmware upgrade capability of connected extenders through TPS link
- Up to 170m video transmission distance over TPS
- Fully HDCP compliant
- Advanced EDID Management
- Zero frame delay
- Autoselect mode
- Balanced analog audio inputs and outputs
- Audio insertion and de-embedding capabilities
- Assignable AUX audio inputs: any audio input can be combined with any video input or video output
- Analog audio inputs are converted to digital signal
- Embedded 7.1 HBR audio support
- Volume and Gain control options
- Audio de-embedding from uncompressed HDMI audio formats
- Integrated power injector on every TPS input and output port
- Bi-directional RS-232, IR, transmission over TPS
- 10/100 Ethernet extension
- RS-232, USB, and IP control options
- Insert RS-232 and IR commands from LAN
- Intuitive Control Software
- Event Manager



## Mounting Options



Devices can be mounted several ways, depending on the application. Rack ears and mounting bracket are available offering easy mounting on truss systems with standard clamps or allowing the unit to be built into furniture.

## I/O Connectors Comparison Chart

	HDMI in	TPS in	HDMI out	TPS out
MMX6x2-HT220	4	2	2	2
MMX6x2-HT210	4	2	2	1
MMX6x2-HT200	4	2	2	0

## Connectors

Digital video inputs:	4x HDMI connector
Digital video outputs:	2x HDMI connector
TPS inputs:	2x RJ45 connector
TPS outputs:	2x RJ45 connector
Analog audio inputs:	4x 5-pole PHOENIX
Analog audio outputs:	2x 5-pole PHOENIX
Control LAN:	RJ45
TPS Ethernet:	RJ45
Serial port:	3-pole PHOENIX
USB:	Mini-USB B
Power:	IEC 230V

## Supported Audio Formats

HDMI embedded audio:	Multichannel PCM (up to 8 ch., 192 kHz)
	Dolby Digital 2.1; 5.1; 7.1
	DTS 2.1; 5.1; 7.1
	Dolby TrueHD (HBR)
	DTS-HD (HBR)
DTS-HD Master Audio (HBR)	DTS-HD Master Audio (HBR)
	All other HDMI 1.4 specified audio formats
Balanced analog output:	Stereo PCM (up to 96 kHz)

## Supplied Accessory

- 2x rack ear



## Analog Audio Input

Gain (adjustable):	0..21 dB
Volume (adjustable):	-95..0 dB
Maximum differential input level:	+4 dBu @ 0 dB Gain

## Analog Audio Output

Gain (adjustable):	0..3 dB
Volume (adjustable):	-57..0 dB
Nominal differential output level:	+4 dBu @ 0 dB Gain
Maximum differential output level:	+7 dBu @ 3 dB Gain

## Specification

Crosspoint:	6x2 video - any input(s) to any output(s)
Resolution:	Up to 4K UHD 3840x2160@30Hz, 1600x1200@60Hz, FullHD 1920x1080@60Hz
Digital audio formats:	Supports up to 8 channel PCM, Dolby TrueHD and DTS-HD Master Audio 7.1 formats
Input cable equalization (HDMI):	Max. 20 m (auto EQ)
EDID emulation:	Yes, Advanced EDID Management
EDID memory:	119 factory preset, 12 user programmable
HDCP compliant:	Yes
Front panel buttons:	Yes
Front panel LCD:	Yes, 2x16 characters
RS-232 control:	Selectable (9600, 19200, 38400, 57600, 115200) Baud Rx, Tx (default: 57600)
Local power:	100 - 240 V AC
Power consumption:	30 W (typ.), 45 W (max.), 155 W (max. with PoE*)
Heat dissipation:	102 BTU/h (typ.), 187 BTU/h (max.)
Enclosure:	1 mm metal
Dimensions with rack mounting ears:	482 W x 43,9 H x 300 D mm
Dimensions without rack mounting ears:	442 W x 43,9 H x 300 D mm
Rack height:	1U
Net weights:	4,8 kg
Compliance:	CE
Temperature:	0°C to +50°C operational -40°C to +70°C storage
Humidity:	10 to 90% non-condensing
RoHS compliance:	Yes
Warranty:	3 years

\*including power consumption of remote powered TPS extenders

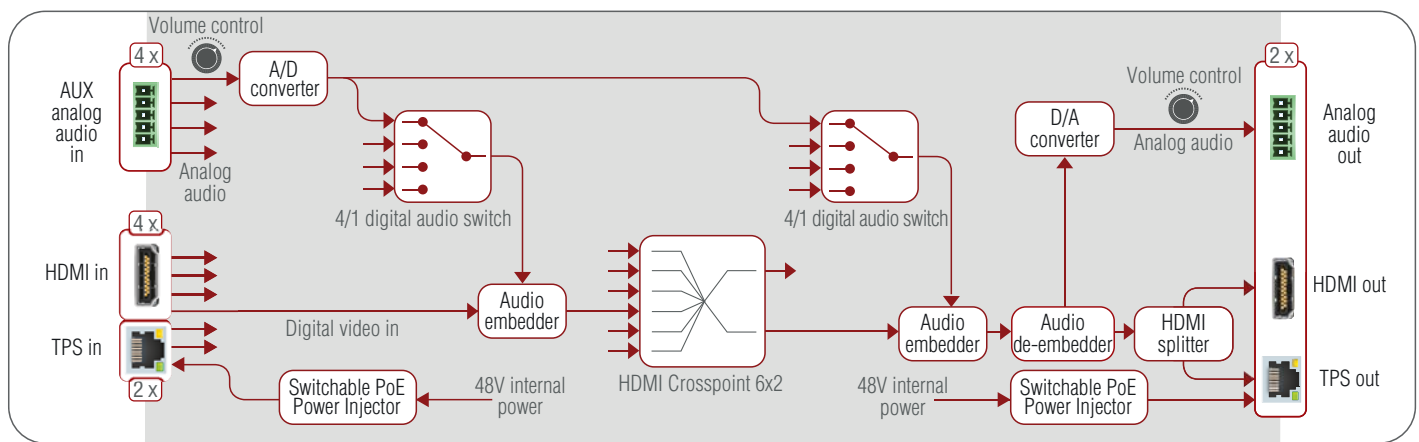
## Mounting Accessories



### Mounting bracket V2 (Part No: 5240 0273)

Our new mounting bracket makes through-furniture and under-desk mounting easy and allows truss mounting with standards clamps.

## Port Diagram



## Max Cable Lengths Supported by the Available Firmware Versions

Resolution	Pixel Clock Rate	Cable Lengths (Auto / Longreach TPS Mode)		
		CAT5e AWG24	CAT7 AWG26	CAT7 AWG23
1024x768@60Hz	65 MHz	100 m / 130 m*	90 m / 120 m*	120 m / 170 m*
1280x720p@60Hz	73.8 MHz	100 m / 130 m*	90 m / 120 m*	120 m / 170 m*
1920x1080p@60Hz / 24bpp	148.5 MHz	100 m / 130 m*	90 m / 120 m*	120 m / 170 m*
1920x1200@60Hz	152.9 MHz	100 m / NA*	90 m / NA*	120 m / NA*
1600x1200@60Hz	162 MHz	100 m / NA*	90 m / NA*	120 m / NA*
1920x1080@60Hz / 36bpp	223 MHz	70 m / NA*	70 m / NA*	100 m / NA*
3840x2160@30Hz UHD	297 MHz	70 m / NA*	70 m / NA*	100 m / NA*
4096x2160@30Hz 4K	297 MHz	70 m / NA*	70 m / NA*	100 m / NA*

\* with Long reach operation mode which supports pixel clock frequencies up to 148,5 MHz.