TPS (HDBaseT™) Extender for DisplayPort with Local Monitor Out

⊕HDBT™

Part No: 9154 0019

PoE RECEIVER

Highlight features

- 4K/UHD (30Hz RGB 4:4:4, 60Hz YCbCr 4:2:0) and 3D capabilities
- Extends DisplayPort1.1 + Audio + Ethernet + RS-232 + IR + GPIO over a single CAT5e-CAT7e cable up to 170 m distance*
- Event Manager
- 10/100 Ethernet extension
- Bi-directional RS-232 and IR
- GPIO control port
- Embeds analog audio
   *Depends on cable category and quality

The DP-TPS-TX220 is a flagship model in the Lightware TPS (HDBaseT™ Transmitter) product family. The device can transmit universal video, audio and control up to a 170 meter distance over a single CAT cable in dynamically changing environments such as small board rooms and classrooms. The extender was designed to handle DP1.1 digital video signals and analog stereo audio from local inputs or DP Embedded Audio up to eight channel PCM or HBR audio. Analog audio is converted into digital format. The device has a local video output. The video and the Embedded Audio of the local output is the same as the one transmitted via TPS link.

The DP-TPS-TX220 handles HDCP encryption. Using the 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 conforming to the system requirements. The unit offers bi-directional and transparent IR, RS232 and Ethernet transmission. Both the RS232 and IR connection supports command injection. Remote powering is available through the single CAT 5e - CAT 7 cable, but local power supply can also be used. All devices can be mounted on a rack shelf or used standalone. DP-TPS-TX220 is compatible with both HDBaseT™ extenders and matrix switchers.
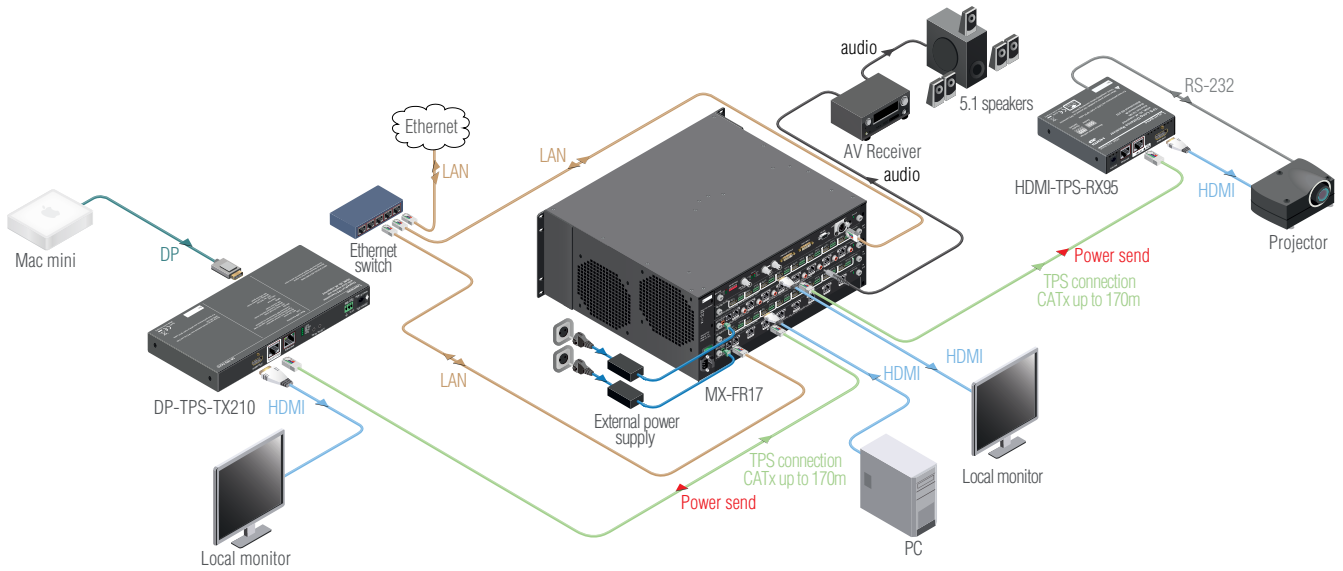
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DP-TPS-TX220

Standalone Application
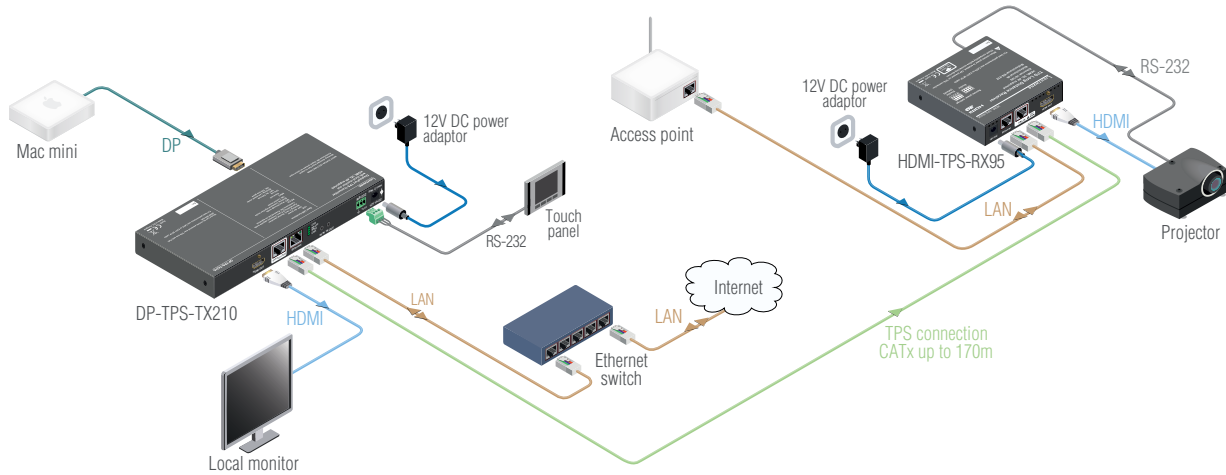
Application Diagram

## Transmitter Front and Back View

DP-TPS-TX210

DP-TPS-TX220

Event Manager

The Event Manager is a completely new feature of Lightware's UMX-TPS extender family. It's available through the Lightware Device Controller and can be configured to detect LW3 protocol CHANGE messages. The Event Manager was developed to handle tasks from the most simple; like displaying internal events on GPIO ports, and controlling the extender via GPIO inputs instead of front panel pushbuttons; 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. The Event Manager makes the UMX-TPS extender family an expert solution in a wider range of applications.
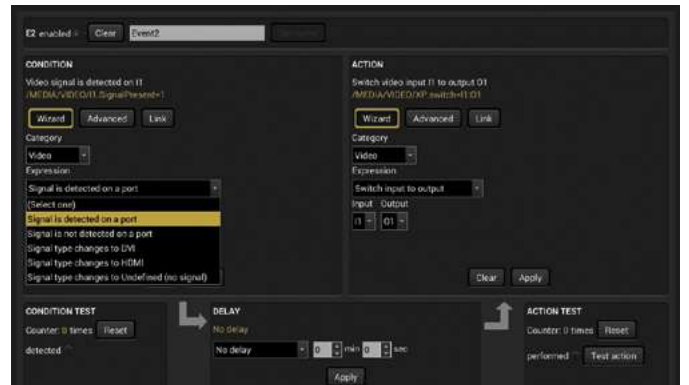
Event Manager Wizard

Assigning an action to a condition is quick and easy with the Event Manager's smart Wizard function. The user can choose from the given port options in the dropdown menu and also add expressions to it.
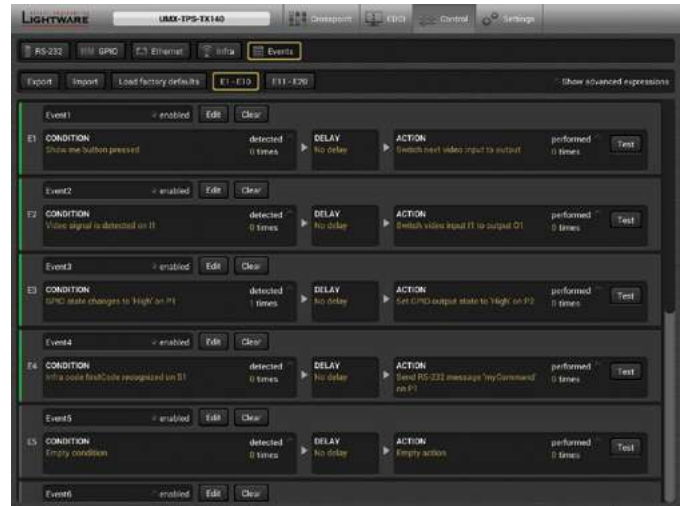
The Events menu contains 20 separately configurable Events

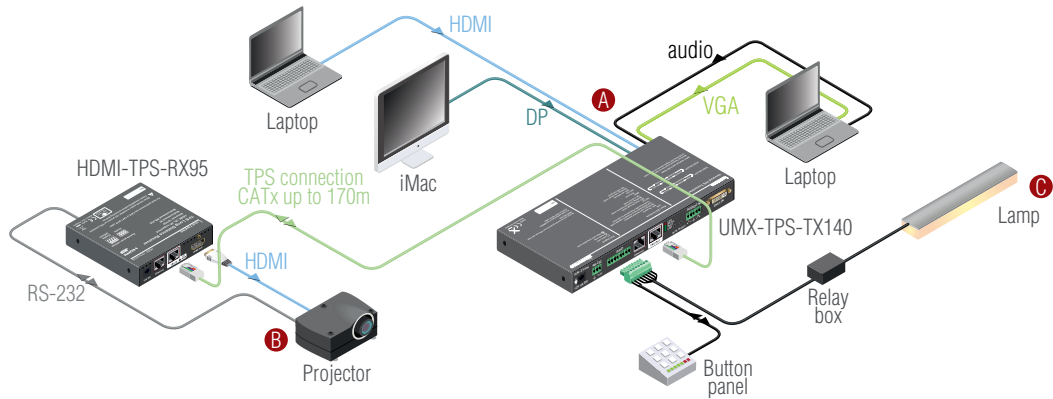The Event Wizard makes the setup easy with simple dropdown options

There are many default Expressions available to choose from

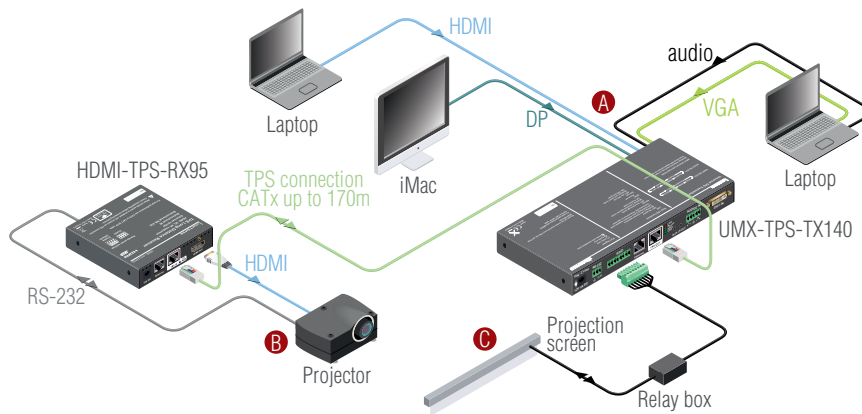Green lines show which Event is configured and active, the rest stay grey

Event Manager Example A

Condition	Action		
		Ⓐ	Input select
		Ⓑ	Projector switch on
Press button panel		Ⓒ	Lamp switch off

With a connected button panel trough the GPIO port the UMX-TPS-TX140 can be controlled from a remote location, input swithcing is available even if the transmitter mounted underdesk. In the example above there are three actions followed by a condition. When an input selector button is pressed on the remote button panel, the input port is switched to the selected one, the lamp switches off, and the projector turns on as well.
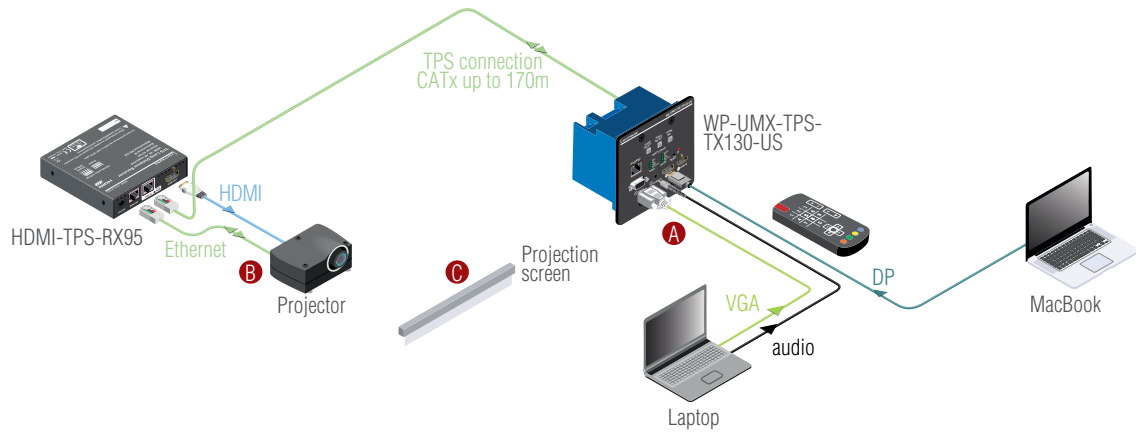
Event Manager Example B

Condition	Action		
		Ⓐ	Input select
		Ⓑ	Projector switch on
		Ⓒ	Screen down

The projector and the rolling screen (through the Relay box) are connected to the UMX-TPS-TX140. When the user connects a laptop through HDMI to the transmitter the connected input is selected automatically the screen goes down and the projector turns on to display the connected source.

Event Manager Example C

Condition	Action		
Press remote controller		**A**	Input select
		B	Projector switch on
		C	Screen down

A MacBook with DisplayPort and another laptop with VGA and analog audio are connected to the WP-UMX-TPS-TX130-US wallplate which means there are two audio signals and two video signals connected. With a remote controller via IR these inputs can be switched. For example the analog audio of the Laptop can be mixed with the DisplayPort video of the MacBook. The Event Manager helps the user to assign actions like rolling the screen down and switch the projector on when the desired input is selected.

DP-TPS-TX220

Port Diagram
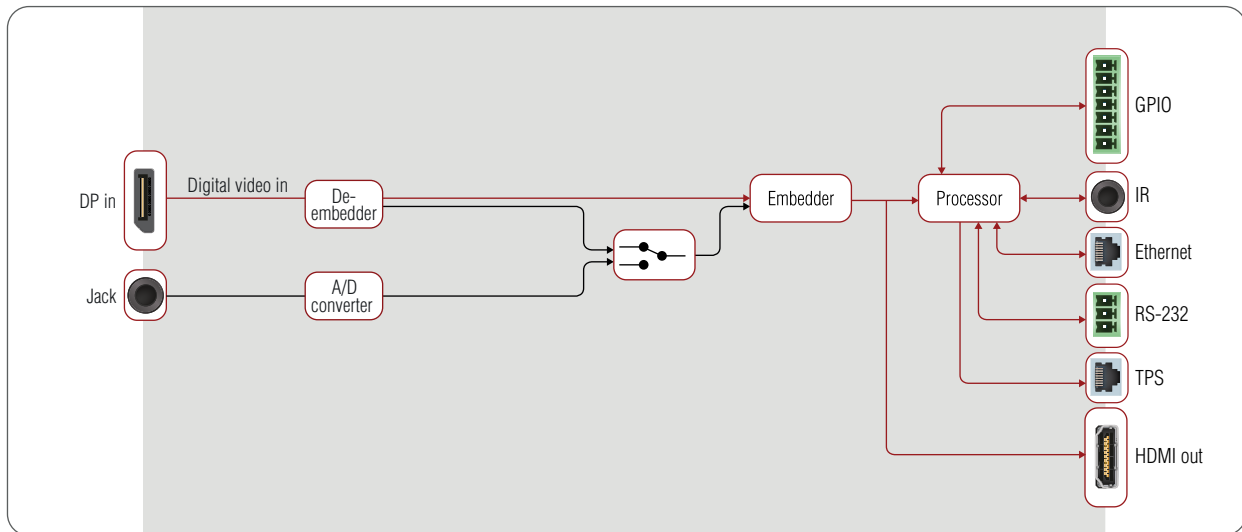
Compatibility Products

- MX Series matrix frames with MX-TPS-IB or MX-TPS2-IB
- HDMI-TPS-RX90
- DVI-HDCP-TPS-RX95
- HDMI-TPS-RX95
- TPS-PI-1P1

Applications

- Small classrooms
- Conference rooms, meeting rooms
- Control rooms
- Home cinemas

Features

- 4K/UHD (30Hz RGB 4:4:4, 60Hz YCbCr 4:2:0) and 3D capabilities
- Extends DisplayPort1.1 + Audio + Ethernet + RS-232 + IR + GPIO over a single CAT5e-CAT7e cable up to 170 m distance*
- Audio and video connectors: DisplayPort (input), HDMI (local output), Stereo jack
- Advanced EDID Manager
- Event Manager
- 10/100 Ethernet extension
- Bi-directional RS-232 and IR
- GPIO control port
- HDCP compliant, CEC
- Embeds analog audio
  *Depends on cable category and quality

Specifications

Resolution:	Up to 4K UHD 3840×2160@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:	Automatic, adaptive
EDID emulation:	Yes, Advanced EDID Management
EDID memory:	120 factory preset, 15 user programmable
HDCP pass-through:	Yes
RS-232 pass-through:	Yes, configurable
RS-232 (control option):	9600, 19200, 38400, 57600, 115200 Baud Rx,Tx (through CATx) (default: 57600)
Local power:	Universal power adaptor, DC 12V 2.5A
Power over TPS:	DC 48V 1 A
Power consumption:	8,5 W (typ)
Enclosure:	1 mm metal
Dimensions:	221 W x 100.4 D x 26 H mm
Compliance:	CE
Warranty:	3 years

Connectors

Digital video input:	DisplayPort connector
Digital video output:	HDMI connector
Audio input:	3.5 mm stereo jack
Ethernet:	1 x RJ45
GPIO:	8-pole PHOENIX
IR:	3.5 mm jack
TPS output:	1 x RJ45
Serial port:	3-pole PHOENIX
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

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).

Rack shelf (Part No: 5240 0935)
1U high rack shelf provides mounting holes for fastening four quarter-rack sized units. Pocket sized devices can also be fastened on the shelf.

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*

Above values are valid when the extender is powered by a local adaptor; distances may decrease depending on the powering mode (local or remote) and cable quality.
* with Long reach operation mode which supports pixel clock frequencies up to 148,5 MHz.