Connect the TPS output port of the TX to the TPS port of the power injector by connecting a sink device to the HDMI (DVI-D) output port of the receiver. Connect a source to the HDMI (DVI-D) input port of the transmitter.

The product is compatible with any HDBaseT™ third party devices. HDBaseT™ and the HDBaseT Alliance logo are trademarks of the HDBaseT Alliance.

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

### Introduction
TPS-TX97 and RX97 twisted pair HDBaseT™ extenders provide extension of uncompressed 4K/UHD video with embedded audio for long distances over a single CATx cable. The extender offers uni-directional RS-232, IR, and Ethernet pass-through on the same CATx cable that carries the video signal. The TPS extenders support full HDCP and EDID compliance and offers uni-directional RS-232, IR, and Ethernet pass-through on the same CATx cable that can receive power over the TPS line.

### Power Supply Options
TPS-TX97 extenders are compatible with IEEE 802.3af standard - Power over Ethernet (PoE) - and can receive power over the TPS line. The extender offers uni-directional RS-232, IR, and Ethernet pass-through on the same CATx cable that carries the video signal. The TPS extenders support full HDCP and EDID compliance and offers uni-directional RS-232, IR, and Ethernet pass-through on the same CATx cable that can receive power over the TPS line.

### Connecting Steps
Below layout means the transmitter is powered locally by the power injector and they are placed close to each other. The receiver is powered remotely via the TPS cable (PoE).

1. Power off all devices (installing with powered devices may harm them).
2. Check the RS-232 switch(es) on the extender(s); they must be in Normal position for correct operation.
3. Connect the video source(s), sink(s) and the desired accessory device(s) to the matrix board(s).
4. Fasten the device on the shelf with the provided screws.
5. Pair the extender(s) and the matrix board(s) with CATx cable(s). The transmitters’ TPS port and the receivers’ TPS port have exactly the same capabilities and features, the only difference is the video port connector.
6. Connect the video source(s), sink(s) and the desired accessory device(s) to the TPS port of the other compatible device (extender / matrix / board).
7. Connect the video source(s), sink(s) and the desired accessory device(s) to the TPS port of the other compatible device (extender / matrix / board).
8. Connect the video source(s), sink(s) and the desired accessory device(s) to the TPS port of the other compatible device (extender / matrix / board).
9. Connect the power cord of the matrix into the outlet and switch on the matrix.
10. Connect the power cord of the matrix into the outlet and switch on the matrix.

### Status LEDs
- **HDCP**: OFF: video output signal is not encrypted with HDCP; ON: video output signal is encrypted with HDCP.
- **RS-232**: OFF: no video signal transmission; ON: video signal transmission.
- **LINK**: OFF: TPS connection failed between the devices; BLINKING: TPS connection is detected and LLP/LL link mode is active; ON: TPS connection is detected and HD/83 or LL link mode is active.

### Mounting Options
Lightware offers three types of mounting accessory to fix the extenders:

#### Rack Shell
1U high rack shell provides mounting holes for fastening up to four extenders.

### Under Desk Mounting Kit (UD-kit)
The UD-kit makes easy to mount one extender under any flat surface (e.g. furniture).

### UD Mounting Kit Double (UD-kit double)
The UD-kit makes easy to mount two extenders under any flat surface (e.g. furniture).

### Installation of the Extender With a Matrix
1. Power off all devices (installing with powered devices may harm them).
2. Check the RS-232 switch(es) on the extender(s); they must be in Normal position for correct operation.
3. The state of the TPS link mode switch makes no difference on the extender because the connected board forces the extender to use the settings of the matrix.
4. Check the PoE settings of the matrix board (with the LDC software), each port can be set for remote powering separately.
5. Pair the extender(s) and the matrix board(s) with CATx cables. The transmitters’ TPS OUT with the input boards’ TPS IN and the receivers’ TPS IN with the output boards’ TPS OUT.
6. Connect the video source(s), sinks, and the desired accessory device(s) to the matrix.
7. To supply the extender(s) with remote power supply connect the necessary power adapter to the given matrix board.
8. To supply the extender(s) with remote power supply connect the necessary power adapter to the given matrix board.
9. To supply the extender(s) with remote power supply connect the necessary power adapter to the given matrix board.
10. Connect the power cord of the matrix into the outlet and switch on the matrix.
11. Supply the other connected units.

### Further Information
The product brief and further information of this appliance is available at www.lightware.com. See the Downloads section on the website of the product.

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The direction of the video extension is fixed from TX towards RX but the pass-through data lines are bi-directional. It means the RS-232, Ethernet source and sink devices can be connected either to the TX or to the RX and the signal is transmitted to the other Extender.

In fact IR transmission is unidirectional but both parties influence the setting which determines the final TPS mode.

TPS-97 extenders are built with 3-pole Phoenix connector. See the below examples where the pin assignment is different.

**IR cable**
- 0.7 mm² or 1.5 mm² max.
- Max: 1.5A

**HDMI-TPS-TX97**
- Made in EU, RoHS
- 12V 1A
- 2mm² T6 or CA

**HDMI-TPS-RX97**
- DC 12V
- T6 or CA

**TTPPSS Long Distance Receiver**
- 12V power supply (in case of external power)
- 100-240VAC & 50-60Hz

**Framing guideline**
- 3840x2160@30Hz (IEEE 802.3af)
- Device can be remote powered over TPS link with PoE
- Pass-through data rate and the parity bits are set on the third party devices and it can be anything.

**Supported resolutions at 8 bits/clock**
- up to 1080p/24/60Hz (4:4:4) or 1080p/24/60Hz (4:2:0)
- up to 3840x2160/24/60Hz (4:4:4) or 3840x2160/24/60Hz (4:2:0)

**Output TPS port**
- 100BaseT

**Serial port**
- 3-pole Phoenix connector, pass-through mode

**Toggling Between TPS Link Modes**
The toggle switch on the transmitter can be used to toggle between the RX and Auto TPS modes. If both units have Auto mode and there is valid video signal on the transmitter the common mode will be HDMI. If the video signal disappears devices go into LPPF mode.

**Wiring Guide for RS-232 Data Transmission**
TPS-97 extenders are built with 3-pole Phoenix connector. See the below examples of connecting to a DCE (Data Circuit-Terminating Equipment) or a DTE (Data Terminal Equipment) type device:

**Lightware device and a DCE**
- D-Sub 9-pin Phoenix
- Xbox
- Coolstream
- Blu-Ray or Dvd Player

**Lightware device and a DTE**
- D-Sub 9-pin Phoenix

For more information about the cable wiring see the Cable Wiring Guide on our website www.lightware.com/support/guides-and-white-papers.