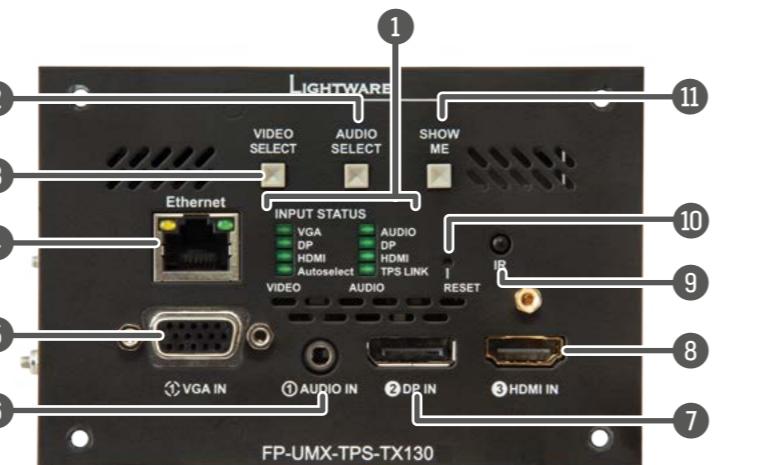




## Quick Start Guide

FP-UMX-TPS-TX120-GES4, -GES9, -MKM, -MKS  
FP-UMX-TPS-TX130-GES4, -GES9, -MKM, -MKS

### Front View



The product is compatible with any HDBaseT™ third party devices.



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### Front View Legend

- |           |                          |   |
|-----------|--------------------------|---|
| <b>1</b>  | <b>Status LEDs</b>       | The LEDs give feedback about the state of the unit, the video and audio signals. See the attached list for details.         |
| <b>2</b>  | <b>Audio Select</b>      | Manual switching between the audio inputs.  |
| <b>3</b>  | <b>Video Select</b>      | Manual switching between the video inputs.  |
| <b>4</b>  | <b>Ethernet</b>          | Locking RJ45 connector for Ethernet communication.  |
| <b>5</b>  | <b>VGA Input</b>         | Input for an analog video source. Using a VGA cable where all the pins are wired (DDC channel) is highly recommended.       |
| <b>6</b>  | <b>Audio Input</b>       | 3.5 mm Jack connector for unbalanced analog audio signal.   |
| <b>7</b>  | <b>DisplayPort Input</b> | Input for digital video source (only on TX130 models). Applied cable shall not be more, than 30 m (at 2.7 Gbps data speed). |
| <b>8</b>  | <b>HDMI Input</b>        | Input for a digital video source. Applied cable shall not be more than 30 m (at 1080p) and 15 m (at 4K).                    |
| <b>9</b>  | <b>IR Detector</b>       | IR Detector can sense IR light, which can be forwarded to the receiver side or can be used for controlling functions.       |
| <b>10</b> | <b>Reset Button</b>      | The same as disconnecting the device from the power source and reconnecting it again.                                       |
| <b>11</b> | <b>Show Me Button</b>    | Special functions are available with this button (e.g. enable DHCP (dynamic IP) or restore factory default settings).       |

### Front Panel LEDs

#### Video sources

- OFF: video source is not selected.
- BLINKING: video source is selected but not active.
- ON: video source is selected and active.



#### Audio sources

- OFF: audio source is not selected.
- BLINKING: audio source is selected but not active.
- ON (with short pause): audio source is selected and the port is active but not embedded to the output video stream.
- ON: audio source is selected, the port is active and the audio is embedded in the video.

① When Autoselect is enabled and video signal is not present at all, video LEDs blink.



#### Autoselect LED

- OFF: autoselect is disabled.
- BLINKING: autoselect is enabled; searching for signal (video LEDs also blink).
- ON: autoselect is enabled; active video signal is found.

② A port is active if there is a valid signal on it.

#### TPS LINK

- OFF: no TPS link between transmitter and receiver.
- BLINKING (slow): low power mode is active.
- BLINKING (fast): Ethernet fallback mode is active.
- ON: TPS link is established, HDBaseT or Long Reach mode is active.



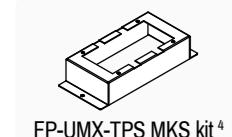
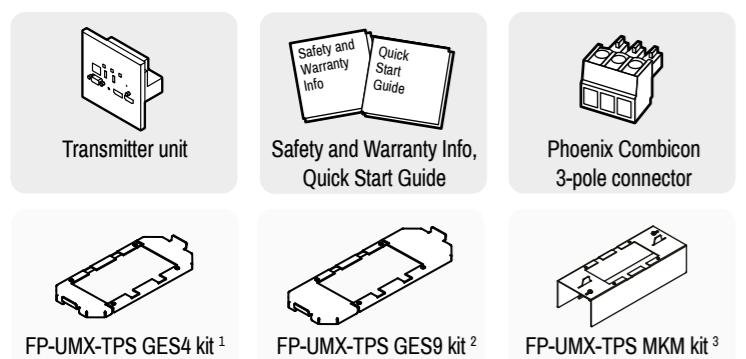
### Important Safety Instructions

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

### Introduction

Lightware's FP-UMX-TPS extenders transmit universal video at a resolution up to 4K, audio and control up to 170 m distance over a single CATx cable. The products have HDBaseT™ integration with additional Lightware developments. This transmitter was designed for digital and analog video and audio signals e.g. DVI, VGA, HDMI1.4 and DP 1.1 with analog stereo audio from local inputs or embedded 7.1 HBR audio and to handle HDCP encryption.

### Box Contents



<sup>1</sup> Only for the FP-UMX-TPS-TX120-GES4 and FP-UMX-TPS-TX130-GES4 models.

<sup>2</sup> Only for the FP-UMX-TPS-TX120-GES9 and FP-UMX-TPS-TX130-GES9 models.

<sup>3</sup> Only for the FP-UMX-TPS-TX120-MKM and FP-UMX-TPS-TX130-MKM models.

<sup>4</sup> Only for the FP-UMX-TPS-TX120-MKS and FP-UMX-TPS-TX130-MKS models.

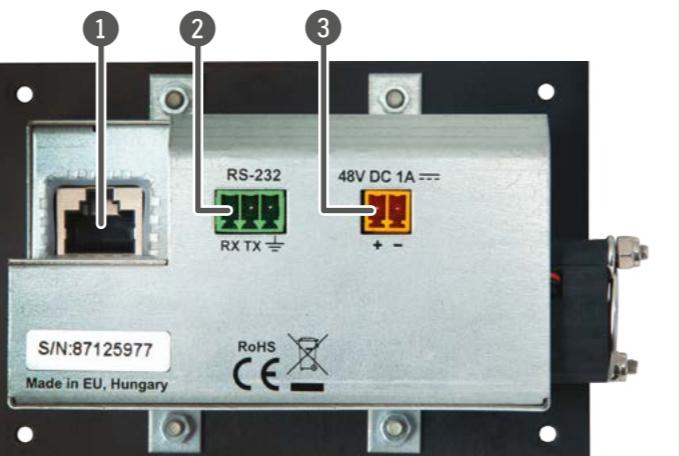
### Optional Accessories

The following accessories can be purchased separately, for the details please contact [sales@lightware.com](mailto:sales@lightware.com)



48V DC power adaptor with interchangeable plugs

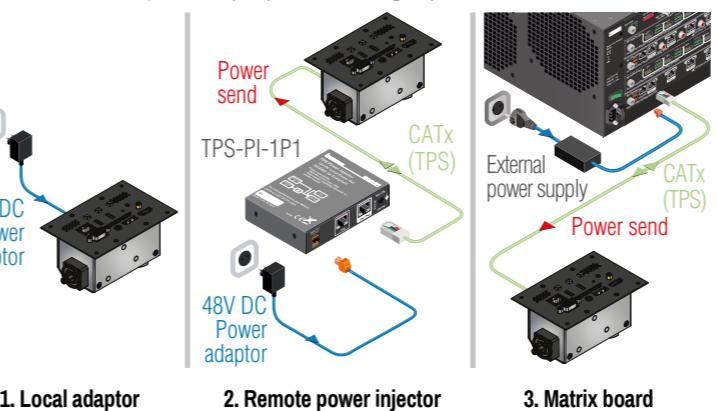
### Rear View



- |          |                        |   |
|----------|------------------------|---|
| <b>1</b> | <b>TPS Output Port</b> | Locking RJ45 connector for CATx cables to a TPS receiver unit. Remote powering also happens through this connector. |
| <b>2</b> | <b>RS-232 Port</b>     | 3-pole Phoenix connector for RS-232 serial port.  |
| <b>3</b> | <b>DC Input</b>        | 48V DC input connector for local powering.  |

### Power Supply Options

The transmitter can be powered by any of the following ways:



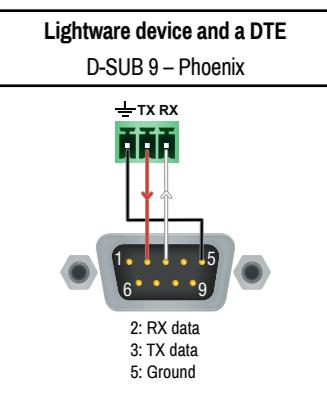
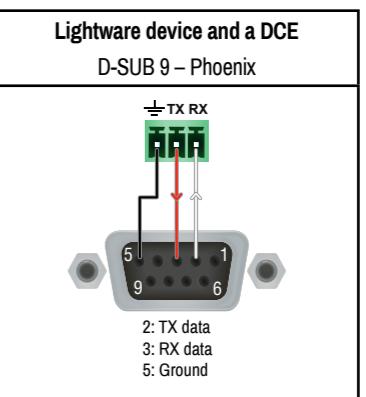
#### ⚠ Warranty void if damage occurs due to the usage of a different power source.

① Please note that the 48V power adaptor is an optional accessory that can be purchased separately.

② TPS-TX/RX90 and TPS-TX/RX95 are not PoE-compatible, thus not able to remote power the FP-UMX-TPS-TX100 series and vice versa. FP-UMX-TPS-TX100 series contains PoE-compatible remote power function, RX95 and TX95 extenders can be remote powered only by each other.

### Wiring Guide for RS-232 Data Transmission

The transmitters are built with a 3-pole Phoenix connector. See the examples below of connecting to a DCE (Data Circuit-terminating Equipment) or a DTE (Data Terminal Equipment) type device:



For more information about the cable wiring, see the user's manual of the device or the [Cable Wiring Guide](#) on our website [www.lightware.com/support/guides-and-white-papers](http://www.lightware.com/support/guides-and-white-papers).

Further information on this 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

[sales@lightware.com](mailto:sales@lightware.com)

+36 1 255 3800

[support@lightware.com](mailto:support@lightware.com)

+36 1 255 3810

Lightware Visual Engineering PLC.

Budapest, Hungary

Doc. ver.: 1.2

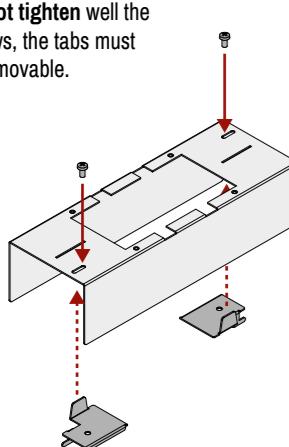
19210064

The transmitters are compatible with all Lightware TPS receivers, matrix boards and third-party devices based on HDBaseT™ technology.

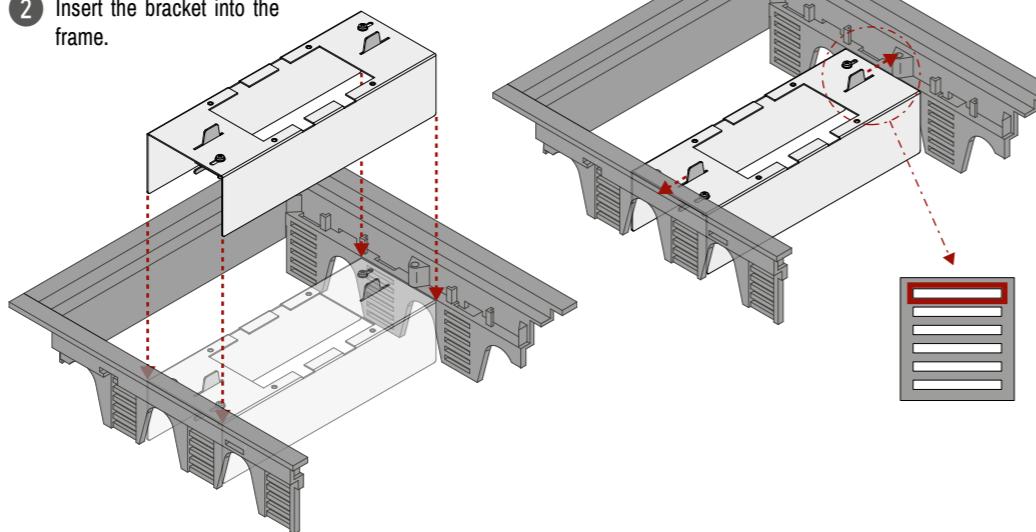
## Mounting Steps - FP-UMX-TPS-TX100-MKM series

The bracket is compatible with the CRMB265 floorbox type (MK Cablelink Plus Modular series).

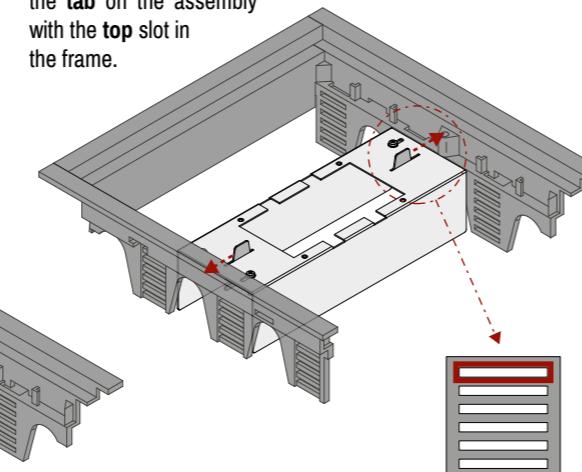
- 1 Assembling of the bracket: insert both handle tab parts to the bracket and fix them with the two supplied M3x6 PH fixing screws.



- 2 Insert the bracket into the frame.

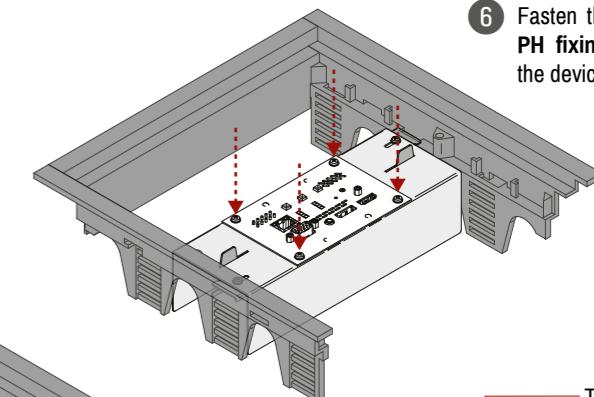
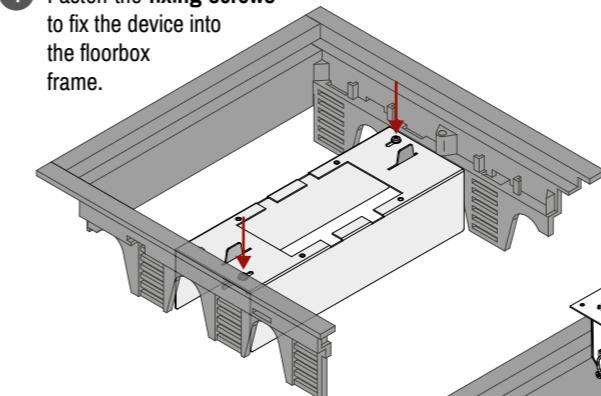


- 3 Move the handles towards the frame. Align the tab on the assembly with the top slot in the frame.

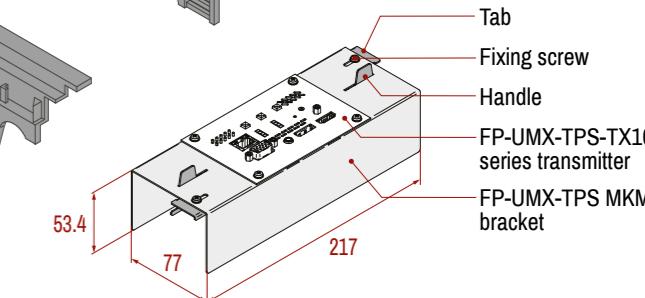


**Do not tighten** well the screws, the tabs must stay movable.

- 4 Fasten the fixing screws to fix the device into the floorbox frame.



- 6 Fasten the all four M3x6 PH fixing screws to fix the device to the bracket.



## Front Panel Button Functions

### Video Input Selection



The desired video input can be selected by pressing the **Video select** button on the front panel. The input selection order depends on the model as follows:

- TX120 models: VGA → HDMI → Autoselect
- TX130 models: VGA → DP → HDMI → Autoselect

### Audio Input Selection



The desired audio input can be selected by pressing the **Audio select** button on the front panel. The input selection order depends on the model.

**! If 4K video is selected to the output, analog audio cannot be embedded to the video stream due to the limitations of the video IC, thus the original audio stream will be transmitted.**

**Cross Audio-embedding:** The video and audio inputs can be combined with limitations. The table below contains the allowed connections:

Video source	Audio source		
	HDMI	DP	Audio
HDMI	✓	-	✓
DP	-	✓	✓
VGA	-	-	✓

**! The video and audio inputs can be also selected by using LDC (Lightware Device Controller), sending a protocol command, or using Autoselect.**

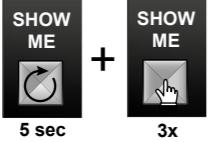
### Lock / Unlock Buttons

Press the **Audio select** and the **Show me** buttons together.



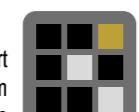
### Set a Dynamic IP Address

- Keep the **Show me** 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.



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

The device can be controlled from a computer through the Ethernet port using Lightware Device Controller. Please download the application from [www.lightware.com](http://www.lightware.com), install on a Windows PC or a macOS, and connect to the device via the Ethernet port. The LDC software contains many useful built-in tools that can be used for signal analysis, like the Frame detector, Cable diagnostics, and the No sync screen (Test pattern).



## Maximum Extension Distances

The values below are valid when the transmitter is powered by a local adaptor; distances may decrease depending on the powering mode (local or remote) and cable quality.

Resolution	Pixel clock rate	Cable lengths (Auto / Long reach 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)	222.75 MHz	70 m / NA	70 m / NA	120 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

\* Long reach TPS mode supports pixel clock frequencies up to 148.5 MHz.

\*\* If 4K video is selected to the output, analog audio cannot be embedded to the video stream due to the capabilities of the video IC, thus the original audio stream is transmitted.

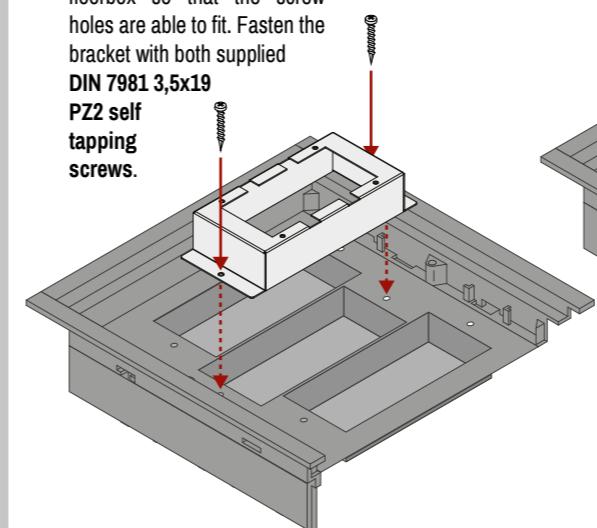
To specify the accurate extension distances, please also check the documentation of the connected HDBaseT-compatible device.

**! CAT7 SFTP AWG23 cable is always recommended.**

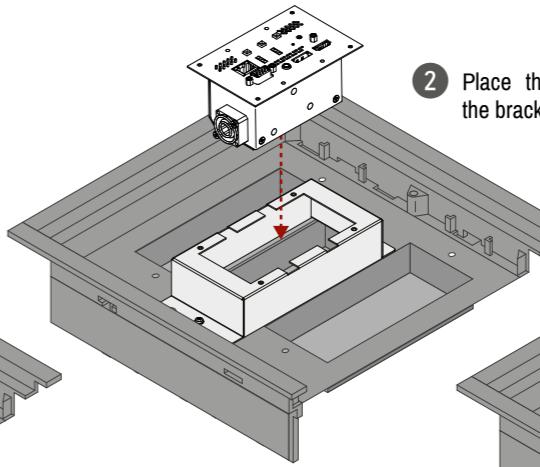
## Mounting Steps - FP-UMX-TPS-TX100-MKS series

The bracket is compatible with the MK Cablelink Screed series floorbox types.

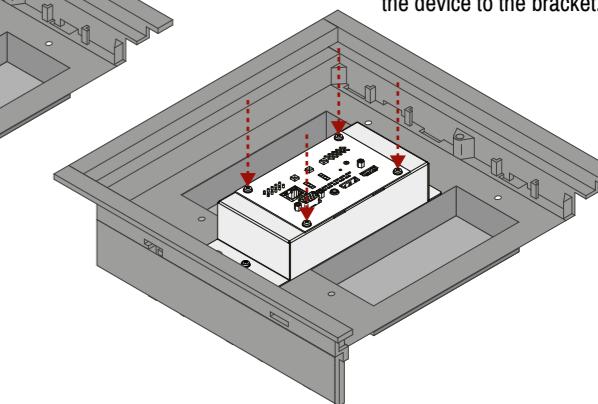
- 1 Place the MKS bracket to the floorbox so that the screw holes are able to fit. Fasten the bracket with both supplied DIN 7981 3,5x19 PZ2 self tapping screws.



- 2 Place the transmitter to the bracket.



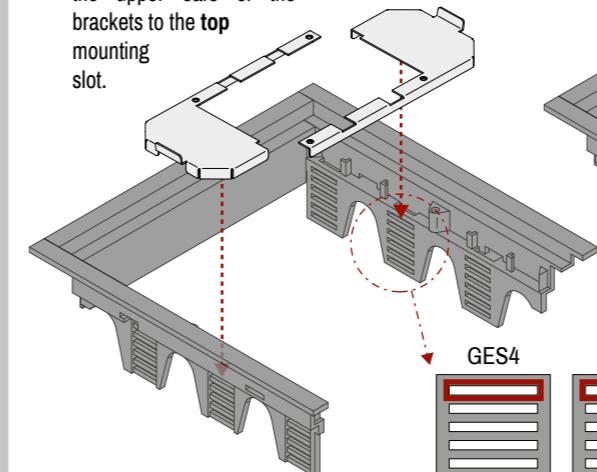
- 3 Fasten the all four M3x6 PH fixing screws to fix the device to the bracket.



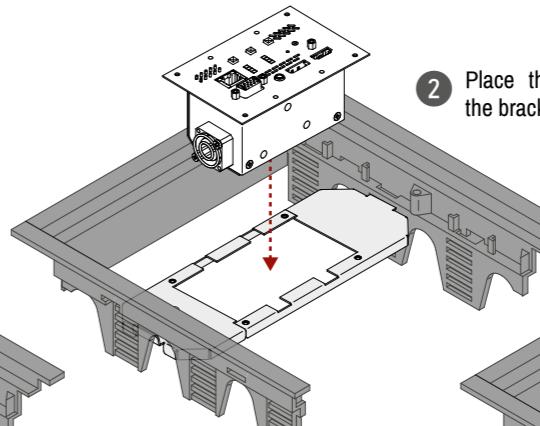
## Mounting Steps - FP-UMX-TPS-TX100-GES4 and -GES9 series

The brackets are compatible with the OBO Bettermann GES and UDHOME series floorbox types.

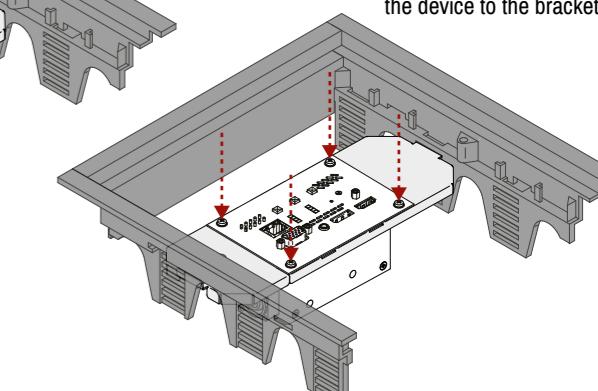
- 1 Place the two half of the brackets of GES-4 / GES-9 to the floorbox. Hook up the upper ears of the brackets to the top mounting slot.



- 2 Place the transmitter to the brackets.



- 3 Fasten the all four M3x6 PH fixing screws to fix the device to the brackets.



## Mounting Steps - FP-UMX-TPS-TX100-GES4 and -GES9 series

The device can be controlled from a computer through the Ethernet port using Lightware Device Controller. Please download the application from [www.lightware.com](http://www.lightware.com), install on a Windows PC or a macOS, and connect to the device via the Ethernet port. The LDC software contains many useful built-in tools that can be used for signal analysis, like the Frame detector, Cable diagnostics, and the No sync screen (Test pattern).

