



# User Manual

## TL-SMP-HDV

### Collaboration Hub



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**Version: TL-SMP-HDV\_180723**

## Preface

Read this user manual carefully before using this product. Pictures shown in this manual is for reference only, different model and specifications are subject to real product.

This manual is only for operation instruction only, not for any maintenance usage.

## Trademarks

Product model and logo are trademarks. Any other trademarks mentioned in this manual are acknowledged as the properties of the trademark owner. No part of this publication may be copied or reproduced without the prior written consent.

## FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference.

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.



## SAFETY PRECAUTIONS

To insure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

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## Contents

1. Introduction .....	1
1.1 Introduction to TL-SMP-HDV .....	1
1.2 Features .....	1
1.3 Package List .....	2
2. Panel Description .....	3
2.1 Transmitter .....	3
2.2 Receiver .....	5
3. System Connection .....	6
3.1 Usage Precautions .....	6
3.2 System Diagram .....	6
3.3 Connection Procedure .....	6
4. CEC Control .....	8
5. IR Control .....	9
6. Specification .....	10
7. Panel Drawing .....	12
7.1 Transmitter .....	12
7.2 Receiver .....	12
8. Troubleshooting & Maintenance .....	13
9. After-sales Service .....	14

# 1. Introduction

## 1.1 Introduction to TL-SMP-HDV

The TL-SMP-HDV is a Collaboration Hub consists of Transmitter and Receiver. Twisted pair cabling is used to transmit high-resolution 1080p/4K signal from Transmitter to the Receiver over CAT5e/6a/7 cable at a distance of up to 70/40m.

The Transmitter features one Twisted Pair output, one built-in IR sensor, one HDMI input, and one VGA input with built-in VGA scaler function; the Receiver supports one Twisted Pair input, one IR output and one HDMI output.

## 1.2 Features

- HDMI video resolution up to 4Kx2K @30Hz 4:4:4, compliant with HDMI1.4& HDCP1.4.
- VGA input video resolution up to 1920x1200 @60Hz 4:4:4.
- When VGA video is selected as input, the output resolution will be enhanced to 1080p automatically to assure high-definition image.
- Maximum transmission distance is 70m for 1080p and 40m for 4Kx2K over CAT5e/6a/7 cable.
- The Transmitter are powered by the Receiver by PoC technology.
- Support front panel button control, and the buttons can replace the key functions of IR Remote based on IR learning function.
- Support manual CEC control.
- Support Micro USB online firmware update.
- Support Hot-plug.
- LED indicators show work status.

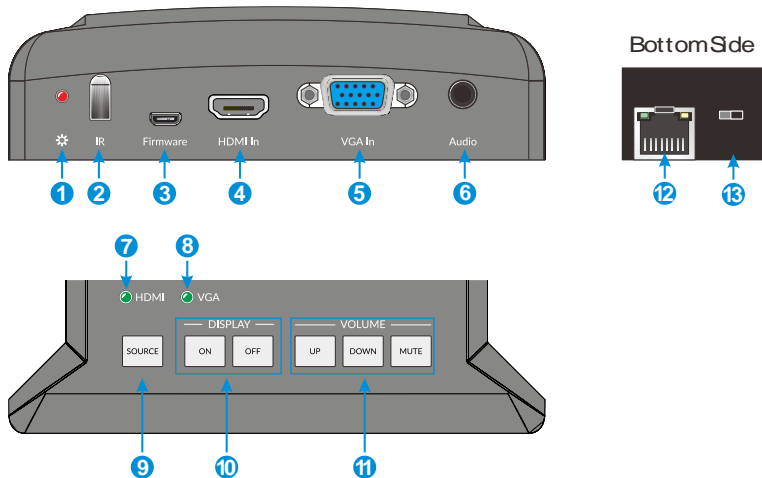
### 1.3 Package List

- 1 x Transmitter
- 1 x Receiver
- 1 x IR Emitter
- 8 x Rubber feet
- 1 x Iron Plate (mounted in the bottom of Transmitter)
- 2 x Mounting Ears with 2 screws (for Receiver)
- 1 x Power Adapter (12VDC 2A)
- 1 x User Manual

**Note:** *Confirm all the accessories are included, if not, please contact with the dealers.*

## 2. Panel Description

### 2.1 Transmitter

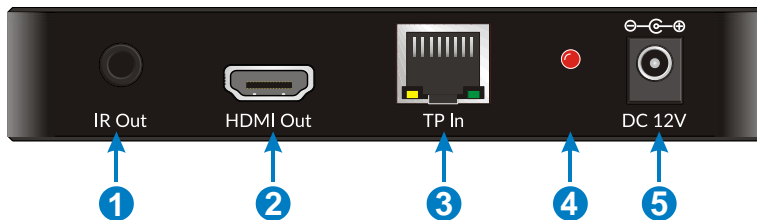
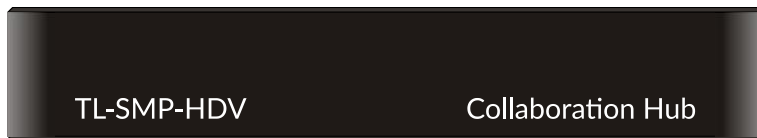


No.	Name	Description
①	Power LED	Red when powered on.
②	Built-in IR Sensor	Receive the IR control signal sent from IR remote.
③	Firmware	Micro USB port, used for firmware update. Firmware updated need auxiliary equipment, please contact with our after-sales department for more details.
④	HDMI In	Connect with HDMI source.
⑤	VGA In	Connect with VGA source.
⑥	Audio	Auxiliary audio input for VGA video.
⑦	HDMI LED	The LED will turn green once the HDMI input is selected.
⑧	VGA LED	The LED will turn green once the VGA input is selected.
⑨	SOURCE	Input source selector, press this button to select input source between HDMI and VGA.
⑩	DISPLAY	<b>ON:</b> <ul style="list-style-type: none"> <li>● Customized button based on IR control.</li> <li>● Press it to turn on display device via built-in CEC</li> </ul>

		function.
		<b>OFF:</b> <ul style="list-style-type: none"> <li>● Customized button based on IR control.</li> <li>● Press it to turn off display device via built-in CEC function.</li> </ul>
⑪	VOLUME	<b>UP:</b> <ul style="list-style-type: none"> <li>● Customized button based on IR control.</li> <li>● Press it to turn up the volume of display device via built-in CEC function.</li> </ul>
		<b>DOWN:</b> <ul style="list-style-type: none"> <li>● Customized button based on IR control.</li> <li>● Press it to turn down the volume of display device via built-in CEC function.</li> </ul>
		<b>MUTE:</b> <ul style="list-style-type: none"> <li>● Customized button based on IR control.</li> <li>● Press it to mute the display device via built-in CEC function.</li> </ul>
⑫	TP Out	Connect with the TP In socket on the Receiver via CAT5e/6a/7 cable. Support unidirectional PoC.
⑬	DIP Switcher(IR/CEC)	IR control mode: The buttons (ON, OFF, UP, DOWN and MUTE) need to learn the functions of IR remote before using.
		CEC control mode: The buttons (ON, OFF, UP, DOWN, and MUTE) can be used to control display device directly based on CEC function.



## 2.2 Receiver



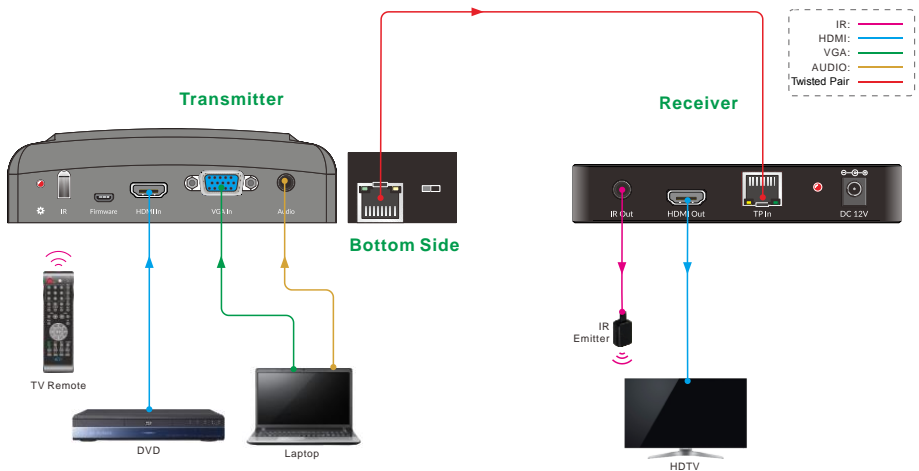
No.	Name	Description
①	IR Out	Connect with IR Emitter to send infrared signal to control display device.
②	HDMI Out	HDMI output port, connect to display device.
③	TP In	Connect with the TP Out socket on the Transmitter via CAT5e/6a/7 cable. Support unidirectional PoC.
④	Power LED	Red when power on.
⑤	DC 12V	Power port, plug a DC 12V power adapter into this port.

### 3. System Connection

#### 3.1 Usage Precautions

- Verify all components included with the product are present before installation
- System should be installed in a clean environment and has a prop temperature and humidity.
- If the product will be permanently mounted to a surface, attach the included mounting ears with the supplied screws.
- If the products will be sitting on a shelf, attach the included Plastic cushions to the bottom of the unit.
- All of the power switches, plugs, sockets and power cords should be insulated and safe.
- Turn off power and disconnect the audio/video equipment by following the manufacturer’s instructions.

#### 3.2 System Diagram



3-1 System Diagram

#### 3.3 Connection Procedure

1. Verify all components included with the Collaboration Hub are present before installation.
2. The included rubber feet should be mounted on the bottom surface.

3. Turn off power and disconnect the audio/video equipment by following the manufacturer's instructions.
4. Connect a HDMI signal cable between the HDMI source (such as DVD) and the **HDMI In** port on Transmitter.
5. Connect a VGA signal cable between the VGA source and the **VGA In** port on Transmitter.
6. Connect an audio signal cable between the audio source and the **Audio** port on Transmitter.
7. Connect a CAT5e/6a/7 cable between the **TP Out** port on Transmitter and the **TP In** port on Receiver.
8. Connect a HDMI cable between the display device and the **HDMI Out** port on Receiver.
9. Connect an IR Emitter to the IR Out port on Receiver, and the put the IR Emitter to get close to the display device.
10. Connect the included 12VDC power adaptor to the Receiver.
11. Power on attached audio/video devices.

**Important notice:**

- Do not attempt to disassemble or alter the Collaboration Hub housing. There are no user-serviceable parts inside the unit. Doing so will void your warranty.
- To minimize the possibility of equipment damage from electrostatic discharge (ESD), all source and destination equipment must be powered off during installation.
- Allow proper ventilation to reduce the risk of thermal failure.

## 4. CEC Control

The Transmitter features six buttons, including **SOURCE**, **ON**, **OFF**, **UP**, **DOWN**, **MUTE**, and they can be used to control display device via built-in CEC function.

- **Source Input Switching:**

Press the button **SOURCE** to switch cyclically the input source devices between HDMI and VGA.

- **Display Device Control:**

1. Turn the DIP switcher to CEC control mode.
2. Press the corresponding buttons to control display device. For the button function, please refer to the description of Transmitter at **2.1**.

- **Output Video Resolution Setting:**

1. Press both the **ON** and **UP** buttons to change the output video resolution as 1080p.
2. Press both the **OFF** and **DOWN** buttons to change the output video resolution as 720p.

**Note:** The display device need to be support CEC on this control mode.

## 5. IR Control

The Transmitter features five customized buttons, including **ON**, **OFF**, **UP**, **DOWN**, **MUTE**, and they can be customized for replacing the IR remote to control display device.

### Procedure of Button Customization:

1. Long-press one of five buttons (such as **ON**) on Transmitter needed to be customized for more than 5 seconds into IR learning status until the power LED blinks orange and keep on.
2. Put the IR Remote close to the IR sensor of front panel on Transmitter, and then press the corresponding button (such as: POWER ON key) on IR Remote of which the function need to be copied.
3. Once learn successfully, the power LED will turn red and keep on.
4. Repeat the above steps (1~3) to customize other four buttons on Transmitter.
5. Turn the DIP switcher into IR control mode.
6. Press the corresponding customized button to control display device.

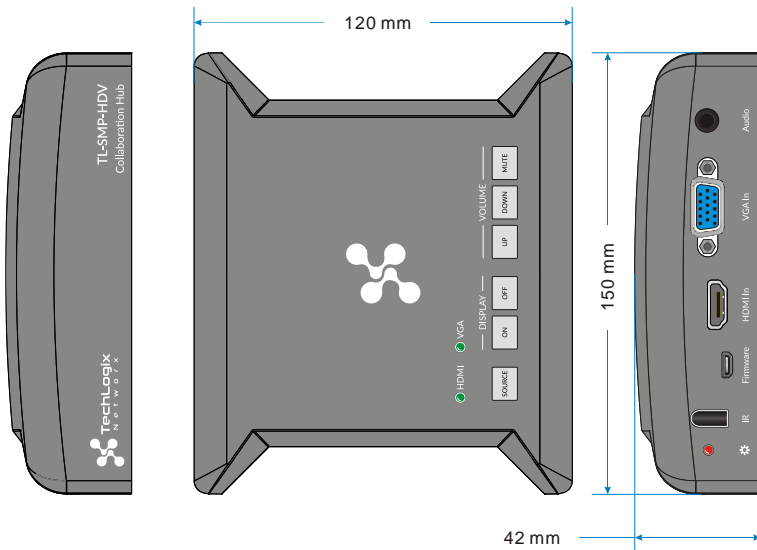
## 6. Specification

<b>Transmitter</b>	
<b>Video:</b>	
Video Input	1 HDMI; 1 VGA
Video Input Connector	1 female HDMI; 1 female VGA (15-pin)
Video Output	1 Twisted Pair
Video Output Connector	1 RJ45
HDMI Video Resolution	Up to 4Kx2K @30Hz 4:4:4
VGA Video Resolution	Up to 1920x1200 @60Hz 4:4:4
<b>Audio:</b>	
Audio input	1 stereo audio input for VGA video
Audio Input Connector	1 3.5mm stereo jack
Audio Input Impedance	>10kΩ
Frequency Response	20Hz~20K Hz
<b>Control:</b>	
Control Port	1 IR In; 1 Firmware
Control Connector	1 Built-in IR sensor, 1 Micro-USB
Control Buttons	Front panel buttons: SOURCE, ON, OFF, UP, DOWN, MUTE. Bottom panel button: DIP Switcher (IR/CEC)
<b>General:</b>	
Temperature	-10 ~ +55℃
Humidity	10% ~ 90%
Power Supply	Powered by Receiver, support PoC.
Max Power Consumption	14W
Dimension (W*H*D)	150mm x 42mm x120mm
Weight	580g
<b>Receiver</b>	
Video Input	1 Twisted Pair
Video Input Connector	1 RJ45
Video Output	1 HDMI
Video Output Connector	1 female HDMI
Output Resolution	When HDMI video input, HDMI output video resolution can up to 4Kx2K/30Hz 4:4:4. When VGA input, HDMI output video resolution is 1920x1080p.

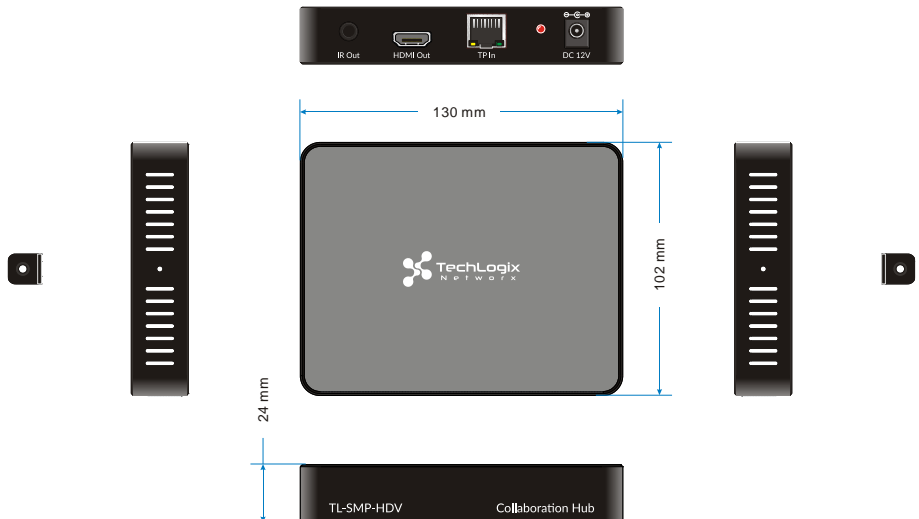
<b>Control:</b>	
Control Port	1 IR Out
Control Connector	1 3.5mm stereo jack
<b>General</b>	
Temperature	-10 ~ +55°C
Humidity	10% ~ 90%
Power Supply	DC12V 2A
Max Power Consumption	14W
Dimension (W*H*D)	130mm x 24mm x 102mm
Weight	270g

## 7. Panel Drawing

### 7.1 Transmitter



### 7.2 Receiver





## 8. Troubleshooting & Maintenance

<b>Problems</b>	<b>Causes</b>	<b>Solutions</b>
Output image with snowflake	Bad quality of the connecting cable	Try another high quality cable.
	Fail or loose connection	Make sure the connection is good
No output image when switching	No signal at the input / output end	Check with oscilloscope or multimeter if there is any signal at the input/ output end.
	Fail or loose connection	Make sure the connection is good
	The switcher is broken	Send it to authorized dealer for repairing.
<b>POWER</b> indicator doesn't work or no respond to any operation	Fail connection of power cord.	Make sure the power cord connection is good.
Static becomes stronger when connecting the video connectors	Bad grounding	Check the grounding and make sure it is connected well.
Cannot control the device by front panel buttons.	These buttons haven't been customized in IR control mode.	Re-customize the button function.
	The front panel buttons are broken.	Send it to authorized dealer for repairing.
The buttons cannot be customized via IR learning function.	The device has already been broken.	Send it to authorized dealer for repairing.

If your problem persists after following the above troubleshooting steps, seek further help from authorized dealer or our technical support.

## 9. After-sales Service

If there appear some problems when running the device, please check and deal with the problems reference to this user manual. Any transport costs are borne by the users during the warranty.

- 1) **Product Limited Warranty:** We warrant that our products will be free from defects in materials and workmanship for **three years**. Please see warranty page posted on [www.tlnetworx.com](http://www.tlnetworx.com) for more info.
- 2) **What the warranty does not cover:**
  - Warranty expiration.
  - Factory applied serial number has been altered or removed from the product.
  - Damage, deterioration or malfunction caused by:
    - Normal wear and tear
    - Use of supplies or parts not meeting our specifications
    - No certificate or invoice as the proof of warranty.
    - The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
    - Damage caused by force majeure.
    - Servicing not authorized
    - Any other causes which does not relate to a product defect
  - Delivery, installation or labor charges for installation or setup of the product
- 3) **Technical Support:** Email to our after-sales department or make a call, please inform us the following information about your cases.
  - Product version and name.
  - Detailed failure situations.
  - The formation of the cases.

**Remarks:** For any questions or problems, please try to get help from your local distributor.