

# User Manual

## TPUH630 HDMI2.0 HDBaseT Extender



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Version: TPUH630\_2017V1.0



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## 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. The functions described in this version are updated till April 2017. In the constant effort to improve our product, we reserve the right to make functions or parameters changes without notice or obligation. Please refer to the dealers for the latest details.

**All product function is valid till 2017-4-13.**

## Trademarks

Product model, PTN and its logo  are trademarks of PTN Electronics Limited. 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 of PTN Electronics Limited.

## 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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# 1. Introduction

## 1.1 Brief Introduction

TPUH630 is an ultra-thin HDMI2.0 HDBaseT Extender, includes Transmitter TPUH630T & Receiver TPUH630R. It extends 3840x2160@60Hz 4:4:4 (Max) HDMI signal up to 100m via Cat5e/6 based on HDBaseT technology, providing a good solution for long-distance transmission application.

Flexible power design (24V PoC) allows this extender to be powered at either the Transmitter or Receiver end, and only one power supply is required.

The extender boasts 3 Ethernet ports to work as Ethernet Switch, with any one connecting to LAN, other ports access Ethernet.


The bidirectional wideband IR, bidirectional RS232 pass-through capabilities make the extender compatible with most control systems. Furthermore, TPUH630 supports ARC function, making it more flexible.

## 1.2 Features

- Support HDMI 2.0, 3840x2160@60Hz 4:4:4, HDR.
- HDCP2.2 pass-through.
- Extends 3840x2160@60Hz 4:4:4 (Max) signal up to 100m.
- Supports bi-directional IR/RS232 pass-through.
- Supports bi-directional 24V PoC.
- Works as Ethernet Switch.
- LEDs indicate the system status.

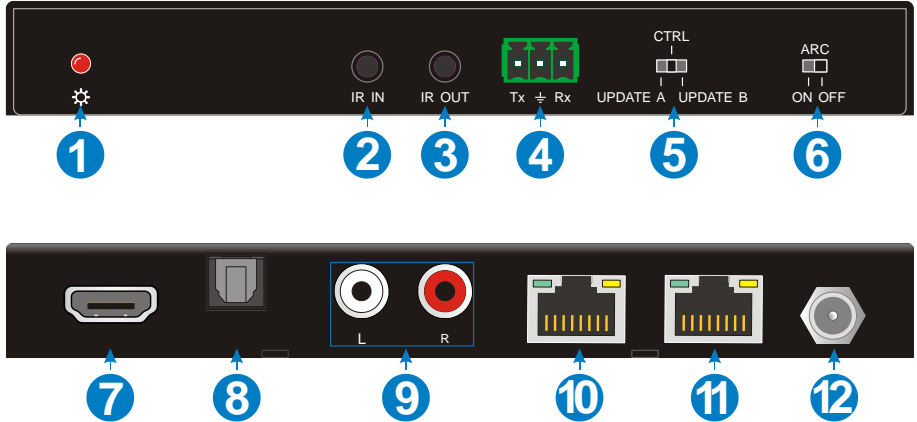
## 1.3 Package List

- |                                   |                               |
|-----------------------------------|-------------------------------|
| ▪ 1 x TPUH630T                    | ▪ 1 x TPUH630R                |
| ▪ 1 x Power Adapter (DC24V 1.25A) | ▪ 2 x 3-pin Phoenix Connector |
| ▪ 4 x Mounting Ears & 4 x Screws  | ▪ 8 x Plastic Cushions        |
| ▪ 1 x User Manual                 |                               |

 Confirm if the product and the accessories are all included, if not, please contact with the dealers.

## 2. Panel Description

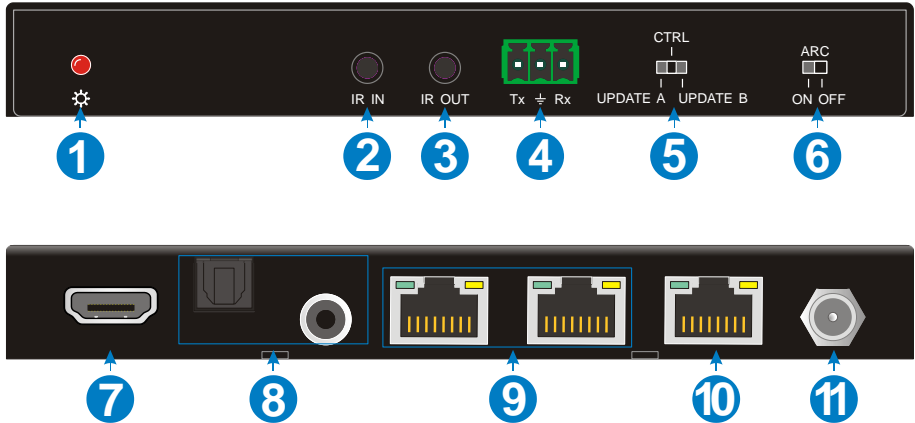
### 2.1 Transmitter TPUH630T



No.	Name	Description
①	Power LED	RED when DC power present.
②	IR IN	Connect with IR Receiver to collect infrared signal, work with far-end IR OUT port.
③	IR OUT	Connect with IR Emitter to send infrared signal, work with far-end IR IN port.
④	RS232	Serial port, supports bi-directional RS232 pass-through.
⑤	RS232 MODE switch	<ul style="list-style-type: none"> <li>▪ CTRL: RS232 pass-through control mode;</li> <li>▪ UPDATE A: Update Valens IC program, connect a PC to the RS232 port, and then double-click the update file (.bat).</li> <li>▪ UPDATE B: Update compression IC program, the upgrade method is the same as the above UPDATE A.</li> </ul>
⑥	ARC Switcher	ON: Enable ARC function; OFF: Disable ARC function
⑦	HDMI IN	Connect with HDMI source.
⑧	SPDIF OUT	Digital audio output port.
⑨	L+R OUT	Stereo analog audio output port.
⑩	ETHERNET	Ethernet port, work as Ethernet Switch together with the 2 Ethernet ports of Receiver. Connect router to any one port, the others are able to access LAN.


⑪	HDBT OUT	Connect to the Receiver via Cat5e/6 cable.
⑫	DC 24V	Connect with the included power adapter.

## 2.2 Receiver TPUH630R



No.	Name	Description
①	Power LED	RED when DC power present.
②	IR IN	Connect with IR Receiver to collect infrared signal, work with far-end IR OUT port.
③	IR OUT	Connect with IR Emitter to send infrared signal, work with far-end IR IN port.
④	RS232	Serial port, supports bi-directional RS232 pass-through.
⑤	RS232 MODE switch	<ul style="list-style-type: none"> <li>CTRL: RS232 pass-through control mode;</li> <li>UPDATE A: Update Valens IC program, connect a PC to the RS232 port, and then double-click the update file (.bat).</li> <li>UPDATE B: Update compression IC program, the upgrade method is the same as the above UPDATE A.</li> </ul>
⑥	ARC Switcher	ON: Enable ARC function; OFF: Disable ARC function.
⑦	HDMI OUT	Connect with HDMI display.
⑧	SPDIF IN/TO TX	<p>Toslink audio input port, connect with audio source.</p> <p>Coaxial audio input port, when this port is connected with audio source, the Toslink audio input port shouldn't be</p>

		connected.
⑨	ETHERNET	2 Ethernet ports, work as Ethernet Switch together with the Ethernet port of Transmitter. Connect router to any one port, the others are able to access LAN.
⑩	HDBT IN	Connect to the TPUH630T via Cat5e/6 cable.
⑪	DC24V	Connect with the included power adapter.

 This extender to be powered at either the Transmitter or Receiver end, and only one power adaptor is required.



### 3. System Connection

TPUH630 has a good application in occasions where high-definition AV distribution, long-distance transmission, Ethernet Switch are needed, such as computer realm, monitoring, big screen displaying, meeting room, education and bank & securities institution etc.

#### 3.1 Usage Precautions

- System should be installed in a clean environment and has a prop temperature and humidity.
- All of the power switches, plugs, sockets and power cords should be insulated and safety.
- All devices should be connected before power on.

#### 3.2 System Diagram

TPUH630 boast ARC (Audio Return Channel) function, which enables a display via a single audio/ HDMI cable, to send (upstream) audio to amplifiers/ speakers, increasing user flexibility.

Mode	ARC Switcher Status		Description
	Transmitter	Receiver	
①	ON	ON	The audio signal can be transmitted from the HDTV display back to HDMI IN, SPDIF OUT and L+R OUT ports.
②	OFF	OFF	The audio signal can be transmitted from the SPDIF IN to SPDIF OUT and L+R OUT ports.

① Transmitter: ARC ON; Receiver: ARC ON

ARC ON

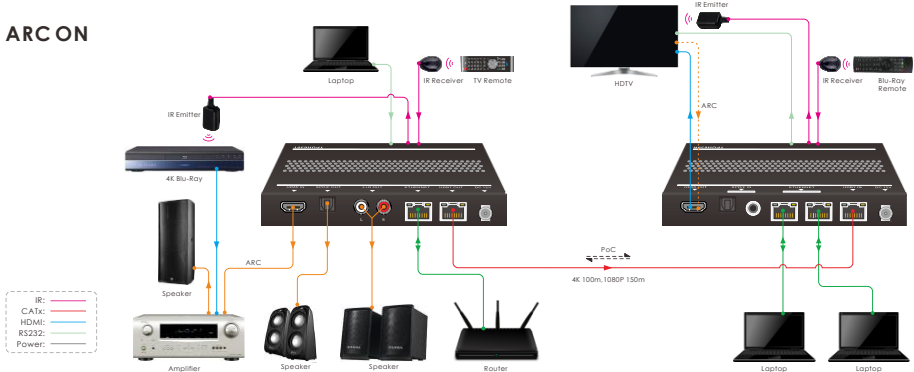


Figure 3-1 System Diagram (ON ON)

② Transmitter: ARC OFF; Receiver: ARC OFF

ARC OFF

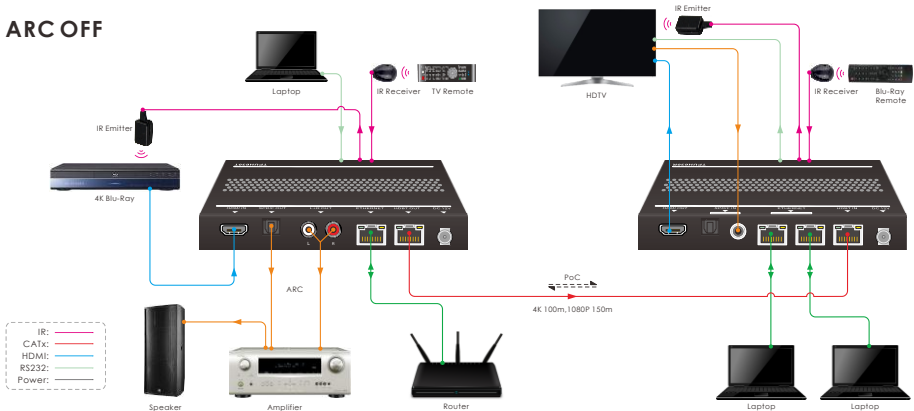


Figure 3-2 System Diagram (OFF OFF)



- When using ARC feature, please connect the amplifier via HDMI cable.
- All utilized devices including the HDMI cable should support ARC.
- System Diagram shown in this manual are for reference only, more specific schemes depend on real devices.
- Connect HDBT ports via straight-thru CAT5e/6 cable with TIA/EIAT568B standard terminations at both ends.

- RS232 communication protocol: Baud Rate: 9600; data bit: 8; stop bit: 1; parity: none. TPUH630 receives RS232 control from devices with various baud rate (2400, 4800, 9600, 19200, 38400, 57600, 115200).
- HDBT ports can work with our company's HDBT devices that has same power supply solution.
- Make sure the switchers on front panel are in the necessary status.

## 4. Specification

Model	Transmitter TPUH630T	Receiver TPUH630R
<b>Spec</b>		
<b>Audio&amp; Video</b>		
Input	(1) HDMI	(1) HDBT; (1) SPDIF
Input Connector	(1) 19-pin Type-A male	(1) RJ45; (1) Toslink/Coax
Output	(1) HDBT; (1) L+R ; (1) SPDIF	(1) HDMI
Output Connector	(1) RJ45; (1) L&R (RCA); (1) Toslink	(1) 19-pin Type-A male
<b>Control Parts</b>		
Control	(1) IR IN; (1) IR OUT; (1) RS232; (1) Ethernet	(1) IR IN; (1) IR OUT; (1) RS232; (2) Ethernet
Control Connector	(2) 3.5mm mini jack; (1) 3-Pin phoenix connector; (1) RJ45	(2) 3.5mm mini jack; (1) 3-Pin phoenix connector; (2) RJ45
<b>General</b>		
Transmission Mode & Distance	HDBaseT; 4Kx2K@60Hz 4:4:4≤100m	
Resolution	Up to 3840x2160@60Hz 4:4:4.	
Signal Standard	HDMI2.0& HDCP2.2.	
Temperature	-10~ 55℃.	
Reference Humidity	10% ~ 90%.	
Power Supply	Input: 100V~240V AC; Output: 24VDC, 1.25A.	
Power Consumption	19W (Max.)	
Dimension(W*H*D)	152mm x 19mm x84mm	152mm x 19mm x84mm
Net Weight	227g	232g

## 5. Troubleshooting & Maintenance

Problems	Causes	Solutions
No reaction to any operation, power indicator is off	Haven't been powered on.	Insert power adapter to either end.
	The poor quality of network cable.	Should the replacement CAT5e/CAT6a cable of high quality.
Abnormal indication of the status LEDs	Wrong specification of the power adapter.	Change for DC 24V 1.25A power adapter.
Color lose or poor picture quality	Bad quality of the HDMI cable.	Ensure the HDMI cables used at source, transmitter, receiver and display are properly connected and are of good quality.
	HDMI cables are too long to transmit 4K HDMI signal successfully. The longest HDMI cable is 8m for 4K input signal, and 20m for 4K output signal.	Shorten the length of HDMI cables.
No video output	Communication cables has no connection or bad connection.	Recheck all cables and ports.
	The display that you use is incompatible with this device.	It is recommended that you use mainstream display.
No digital audio output	Input source and output device are connected to the wrong ports.	Check again and make sure input source and output device are connected correctly.
	Audio Output device don't support the audio format.	Change for other output devices that support the audio formats listed in <i>Specifications</i> .
No analog audio	Audio OUT port (RCA connector)	Change for other audio input

output	only support PCM format.	device that support PCM format.
Cannot use ARC function	ARC switcher is dialed to OFF	Dial the switcher to ON.
	Devices or cables utilized don't support ARC	Change for devices/ cables that support ARC
Cannot work as an Ethernet Switch. PCs cannot connect to the internet.	The DHCP switch of Router is turned on, but the IP address of PCs are static.	Recheck all PCs and set these Pcs to use dynamic IP mode.
	The DHCP switch of Router is turned off, but the IP address of PCs are dynamic.	Recheck all PCs and set these Pcs to use static IP mode and make sure the difference of IP addresses to avoid IP address conflict.
	Network or server failure.	Please contact to your Internet Service Provider.
Cannot use the device	the device is 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.

## 6. After-sales Service

If there appear some problems when running the device, please check and deal with the problems reference to this user manual.

- **Product Limited Warranty:** PTN warrants that its products will be free from defects in materials and workmanship for **three years**, which starts from the first day the product leaves warehouse (check the SN mark on the product).

Proof of purchase in the form of a bill of sale or receipted invoice must be presented to obtain warranty service.

- **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 by PTN.
  - ✓ Other causes which does not relate to a product defect.
- Delivery, installation or labor charges for installation or setup of the product.

- **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, or email PTN at: [support@PTN-electronics.com](mailto:support@PTN-electronics.com)



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