
PTN Electronics

HDMI Twisted Pair Transmission System

User Manual

TPHD401

TPHD401 is a twisted pair transmission for HDMI signal over single cable, including one transmitter and one receiver, the maximum distance it can transmit is up to 90m at 1080P.



TP Series --- HDMI Twisted Pair over Single Cable

Please read this manual carefully before using this product.

Content Table

Attention	1
Features	1
Packing List	1
Twisted Pair Cable Connection	2
Panel Description	2
Specification	4
Installation Instruction	5
System Diagram	5

Attention

1. Ensure 100~250VAC@50Hz AC power input.
2. DO NOT place the system equipment in the place too cold or too hot.
3. As the power generating heat when running, the working environment should be maintained fine ventilation, in case of damage caused by overheat.
4. In humid weather or left unused for long time, please cut off the general power.
5. Without permission, please DO NOT try to open the cage, DO NOT repair it on your own, in case of accident.

Features

- Single cable transmission technology for HDMI signal
- Up to 30m with CAT5e, 50m with CAT6, and 90m with CAT7 at 1080P@60Hz.
- One side power supply technology, any side to power supply, no need two sides or one designated side.
- Great data rate at 1.65Gbps.
- HDMI 1.3 compliant.
- HHCP compliant
- EDID pass through
- Aluminium cage with mounting ears

Notice: CAT5e with better impedance is recommended, and GND should be shared.

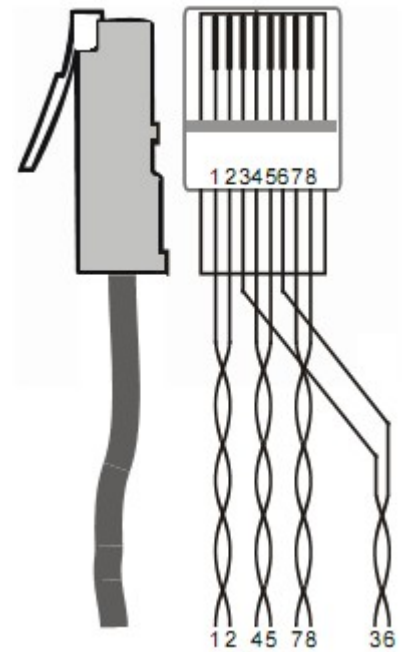
Packing List

The packing list of this system is as follow:

Item	Unit	Quantity	Remarks
TPHD401T Transmitter	set	1	
TPHD401R Receiver	set	1	
+12VDC power adapter	set	1	

Twisted Pair Cable Connection

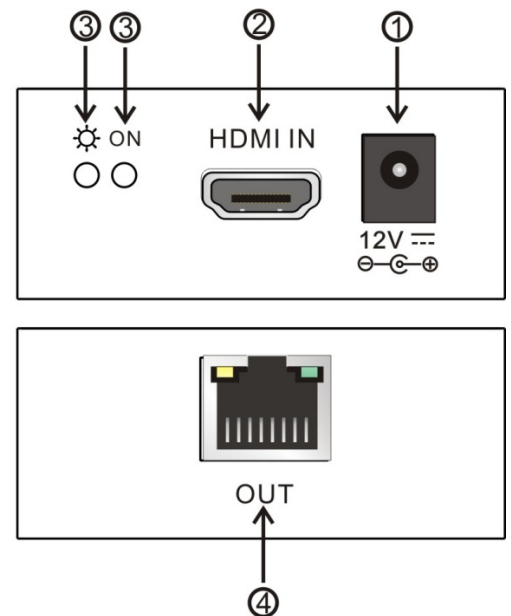
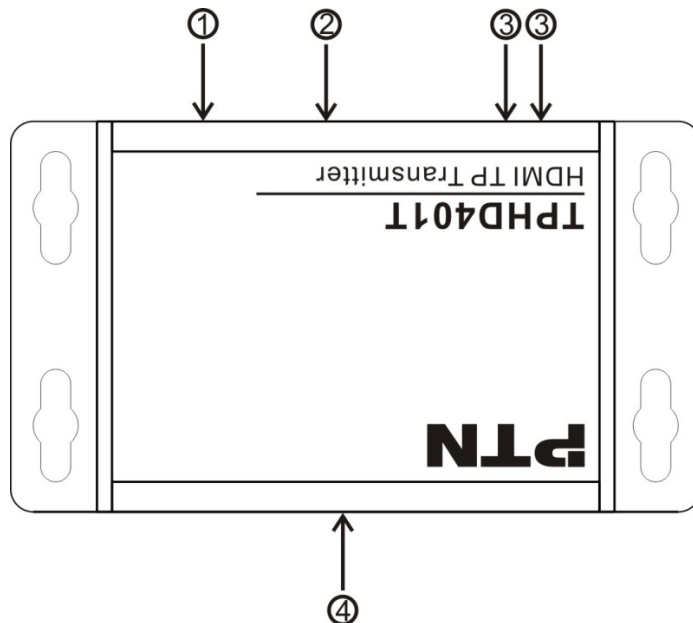
TIA/EIA T568A		TIA/EIA T568B	
Pin	Cable color	Pin	Cable color
1	green white	1	orange white
2	green	2	orange
3	orange white	3	green white
4	blue	4	blue
5	blue white	5	blue white
6	orange	6	green
7	brown white	7	brown white
8	brown	8	brown
1 st Ground	4--5	1 st Ground	4--5
2 nd Ground	3--6	2 nd Ground	1--2
3 rd Group	1--2	3 rd Group	3--6
4 th Group	7--8	4 th Group	7--8



Notice: Cable connectors MUST be metal one, the shielded layer of cable MUST be connected to the connector's metal shell, to make a better transmission.

Panel Description

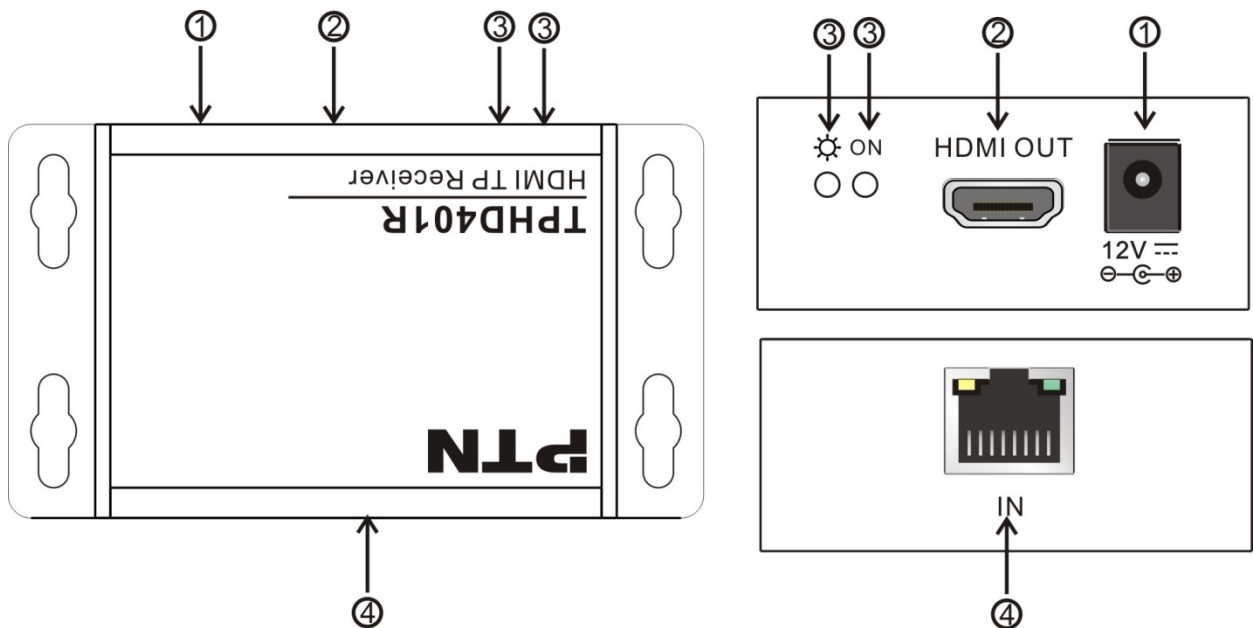
1. Transmitter TPHD401T:



HDMI Twisted Pair Transmitter/Receiver

- 1) 12VDC: This is the 12VDV power supply.
 - 2) HDMI IN: This is the HDMI source input.
 - 3) LED indicators:
 - a) Red LED is on when power on.
 - b) Both red LED and green LED are on when either connect to source or connect CAT5e cable.
 - c) Green LED is on when both source and CAT5e cable are connected.
 - 4) OUT: Output port to connect to receiver input via CAT5e.
- Notice: Don't connect the net port cable directly to the Ethernet port of PC.

2. Receiver TPHD401R:



- 1) 12VDC: This is the 12VDV power supply.
 - 2) HDMI OUT: Signal output to displayer.
 - 3) LED indicators:
 - d) Red LED is on when power on.
 - e) Both red LED and green LED are on when either connect to source or connect CAT5e cable.
 - f) Green LED is on when both source and CAT5e cable are connected.
 - 4) IN: Input port to connect to transmitter output via CAT5e.
- Notice: Don't connect the net port cable directly to the Ethernet port of PC.

Specification

Transmitter TPHD401			
Input		Output	
Input	1 HDMI	Output	1 RJ45
Input Connector	HDMI connector, female	Output Connector	1 RJ45
Video Signal	HDMI 1.3	Video Signal	TIA/EIA T 568A or T 568B. Pin configurations for each standard are available on the manual.
Audio	Digital Audio, supports HDMI audio transmitted through the RGB and Y, Cr, Cb lines, actively buffered	Transmission Mode	Audio/Video sync-transmission, and also power
Receiver TPHD401			
Input		Output	
Input	1 RJ45	Output	1 HDMI
Input Connector	1 RJ45	Output Connector	HDMI connector, female
Video Signal	TIA/EIA T 568A or T 568B. Pin configurations for each standard are available on the manual.	Video Signal	HDMI 1.3
Audio	Digital Audio, supports HDMI audio transmitted through the RGB and Y, Cr, Cb lines, actively buffered	Transmission Mode	Audio/Video sync-transmission, and also power
General			
Resolution Range	800x600 ~ 1920x1200	Transmission Distance	Maximum distance 90m
Gain	0dB~10dB@100MHz	Differential Phasic Error	$\pm 10^\circ$ @ 135MHz_100M
SNR	>70dB@ 100MHz-100M	Frequency Respond	20Hz to 20KHz, ± 1 dB
Return Lost	<-30dB@5KHz	THD	<0.005%@1KHz
Differential Gain Error	± 3 dB @ 135MHz	Min. ~ Max. Level	<0.3V ~ 1.45Vp-p
Temperature	-20 ~ +60°C	Impedance	75 Ω
Power Supply	100VAC ~ 240VAC, 50/60Hz	Humidity	$\leq 95\%$ (no frost)
Net Weight	0.8Kg	Case Dimension	W92 x H30 x D53mm

Installation Instruction

- Step 1: Connect source to input port of transmitter TPHD401T, with HDMI cable.
- Step 2: Connect output port of transmitter TPHD401T to input port of receiver TPHD401R, with CAT5e at least.
- Step 3: Connect displayer to output port of receiver TPHD401R, with HDMI cable.
- Step 4: Choose either transmitter or receiver to supply power.

System Diagram

