



# User Manual

## TL-2X2-HD

### 2x2 HDMI Matrix



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Version: TL-2X2-HD\_160701

## Preface

Read this user manual carefully before using this product. Pictures shown in this manual are for reference only, slight differences may be evident on the 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 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 experience 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 burns.
- 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 damage.
- 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 proper 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 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.

## 1. Introduction

TL-2X2-HD is 4K 2 x 2 slim matrix for HDMI with Ultra HD 4K support. It reliably distributes two HDMI source signal up to two HDMI displays. The matrix supports resolutions up to 4K@30Hz and is HDCP compliant.

This matrix features two advanced technologies: automatic EDID management, which provides Copy EDID options for different output resolutions, and HDCP management, which authenticates HDCP encryption between all devices, ensuring the HDMI source reliably outputs correct content for display.

It provides analog audio output de-embedded from HDMI 2.


It is ideal for applications such as offices, schools, conferences rooms, shopping malls, hotels or museums, which require the distribution of an HDMI source signal to multiple displays.

### 1.1 Features

- 4K HDMI Matrix 2x2
- Support HDCP 1.4
- Support automatic EDID management with Copy mode
- 10m HDMI input transmission distance @4K and 15m for output
- Support remote control
- Support CEC TV turn on/off control
- Support stereo audio output

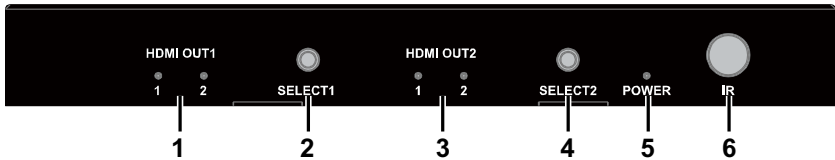
### 1.2 Package List

- |                                 |                     |
|---------------------------------|---------------------|
| ✓ 1 x TL-2X2-HD                 | ✓ 1 x Mounting ears |
| ✓ 1 x IR Remote                 | ✓ 1 x User manual   |
| ✓ 1 x Power Adapter (DC 12V 1A) |                     |

 Check whether all the items listed above are included in your package. If not, contact your dealer.

## 2. Appearance

### Front Panel




No.	Name	Description
1	Output 1 LED	Indicates the input source for HDMI OUT 1
2	Select 1 Button	Press this button to select input source for HDMI OUT 1
3	Output 2 LED	Indicates the input source for HDMI OUT 2
4	Select 2 Button	Press this button to select input source for HDMI OUT 2
5	Power LED	ON: The device is on. OFF: The device is off.
6	IR Window	Receive IR signal

### Rear Panel

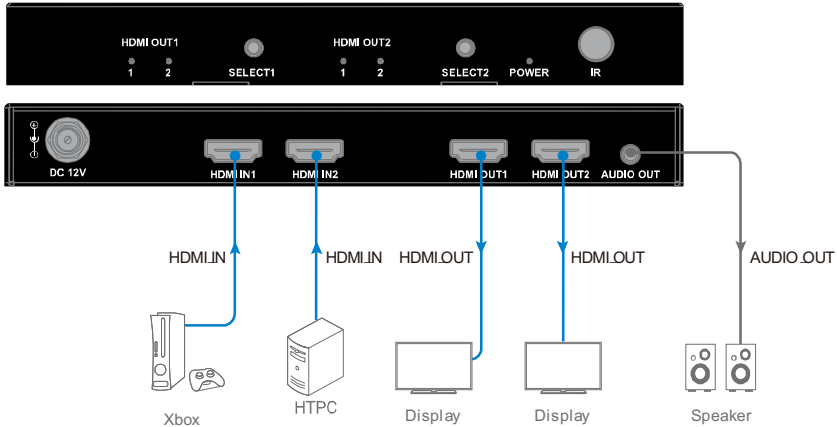


No.	Name	Description
1	DC 12V	DC 12V power input
2	HDMI IN 1/2	Connects to HDMI source devices
3	HDMI OUT 1/2	Connects to HDMI display devices
4	Audio OUT	Connects to audio system

 Pictures shown in this manual are for reference only.

### 3. System Connection

The figure below illustrates a typical connection that can be utilized with TL-2X2-HD:



**Step1.** Connect a HDMI source (e.g. a Blu-ray DVD) to **IN** port of TL-2X2-HD;

**Step2.** Connect a HDMI display (e.g. a LCD TV) to **OUT** port of TL-2X2-HD;

**Step3.** Plug DC 12V 1A power adapter into the power port of TL-2X2-HD.



- 1) System should be installed in a clean environment with proper temperature and humidity.
- 2) All of the power switches, plugs, sockets and power cords should be insulated.
- 3) All devices should be connected before power on.

## 4. Specification

Technical	
Input	2x HDMI IN
Input Signal Type	HDMI 1.4
Input Resolution Support	720 x480@30Hz/60Hz, 720 x 576@30Hz/60Hz, 1080 x 720@30Hz/60Hz, 1920 x 1080@30Hz/60Hz, 1920 x 1200@60Hz, 3840 x 2160@30Hz, 4096 x 2160@24Hz
Input Video Level	0.5-1.0 V p-p
Input DDC Signal	5V p-p
Maximum Pixel Clock	297MHz
Output	2 x HDMI OUT 1 x Audio OUT
Output Signal Type	HDMI 1.4
Output Resolution Support	720 x480@30Hz/60Hz, 720 x 576@30Hz/60Hz, 1080 x 720@30Hz/60Hz, 1920 x 1080@30Hz/60Hz, 1920 x 1200@60Hz, 3840 x 2160@30Hz, 4096 x 2160@24Hz
Video Impedance	100 Ω

<b>General</b>	
Operating Temperature	0°C to 45°C (32°F to 113°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Humidity	10% to 90%, non-condensing
ESD Protection	Human-body Model: ±8kV(Air-gap discharge)/ ±4kV(Contact discharge)
Surge Protection	Voltage: ±1 kV (Ten times respectively for the positive and negative voltage)
Electrical Fast Transient/Burst	Data communication cord: 1 kV Power cord : 2 kV
Power Supply	DC 12V 1A
Power Consumption (Maximum)	5 W
Device Dimensions (W x H x D)	182mm × 22 mm × 77 mm /7.17" x 0.67" x 3.03"
Product Weight	0.34kg
Certification	CE, FCC, RoHS



Use quality HDMI cable to connect the devices to ensure preferred transmission effect.



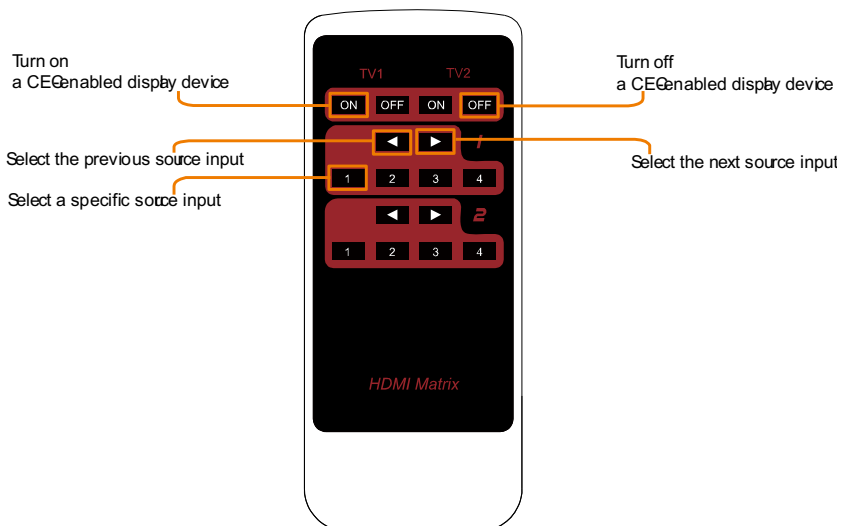
## 5. IR Remote Handset

The included remote control handset can be used to turn on and off a CEC-enabled display device and to switch two HDMI sources (1 and 2 button are effective) to any display device.

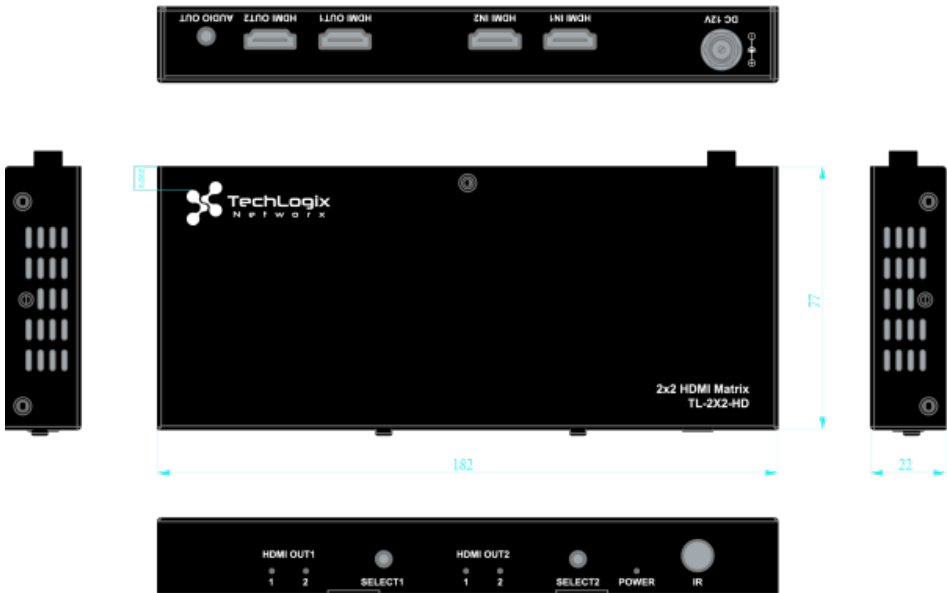
### Note:

As the internal battery inside the remote control of our device is packaged by insulation slice, please remove the insulation slice before use

Please make sure that the remote is pointed directly at the IR receive window




## 6. Panel Drawing



## 7. Troubleshooting & Maintenance

Problems	Causes	Solutions
Color loss or blurry/ double image on HDMI display	Poor quality of the HDMI cable	Change for qualified HDMI cable.
Power led is off, operations don't work	No power	Power up the unit
	Poor contact of power port	Make sure power adapter is properly seated
No output on the display	Source/ Display is off	Turn on the source/ display
	Poor contact of HDMI ports	Check the HDMI ports one by one to make sure they're properly seated.

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

## 8. After-sales Service

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

- 4) **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.
- 5) **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.
    - Non-authorized service
    - Other causes which does not relate to a product defect
  - Delivery, installation or labor charges for installation or setup of the product
- 6) **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.