User Manual

MPTP-T70-WPI

Scaler Wall Plate HDBaseT Transmitter-I

Version: MPTP-T70-WPI_2016V1.0

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

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 A 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.

Contents

1. Introduction

1.1 Introduction to MPTP-T70-WPI

MPTP-T70-WPI is a Decora style transmitter that installs in a double-gang wall plate to provide a convenient interface for HDMI / VGA input sources. It has 1 HDMI IN, 1 VGA IN and 1 HDBT OUT with PoC. It supports VGA with full HD scaler, and HDMI 1.4 with 4k& 3D, input signals support auto-switching. The HDBaseT output supports 60m UHD video transmission with PoC, enables bi-directional IR and RS232 communication between MPTP-T70-WPI and remote device.

With its PoC solution, MPTP-T70-WPI can be energized by far-end PoC receiver.

1.2 Features

- Selectable HDMI/ VGA with audio input
- Support VGA output resolution up to 1920x1200
- High bandwidth: 10.2Gbps
- In-built scaler function, support scaling HDMI/ VGA signals to match the native resolution of the display
- Transmit HDMI signals up to 4K
- Compliant with HDMI 1.4, support 1080p 3D
- HDCP compliance, equipped with HDCP auto-tracking solution
- Provides auto-switching capability
- Support multiple control methods including front panel buttons, IR, and RS232, support bi-directional IR & RS232 pass-through control.
- Supports firmware upgrading via USB.
- Energize 3rd device with a DC 12V power output
- Powered by local power pack or PoC connection up to 60m
- Aluminium design for elegant and better cooling

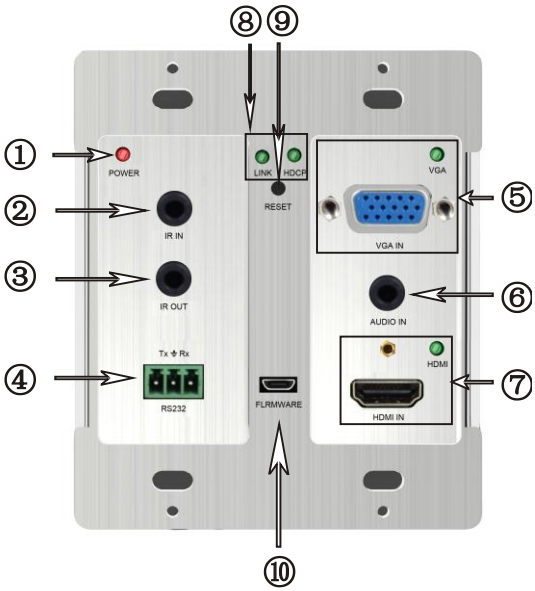
1.3 Package List

- 1 x MPTP-T70-WPI
- 4 x Screws (for MPTP-T70-WPI)
- 3 x Pluggable Terminal Blocks (1 2-pin block, 1 3-pin block, and 1 4-pin block)
- 1 x Face Plate (Selectable)
- 4 x Screws (for the face plate)
- 1 x Power Adapter (DC 12V 2A, selectable)
- 1 x User Manual

Notes：Please confirm if the product and the accessories are all included, if not, please contact with the dealers.

2. Panel Description

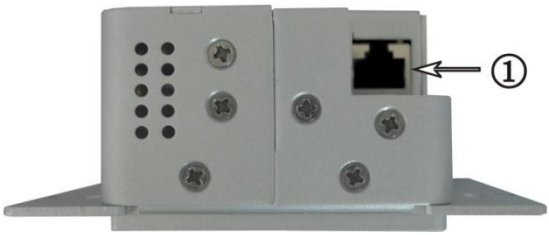
2.1 Front Panel



No.	Name	Description
①	Power indicator	Illuminates red when power on
②	IR IN	Connect with IR receiver, receive IR signals sent from the IR Emitter connected to the far-end receiver
③	IR OUT	Connect with IR Emitter, IR signals emitted from the IR emitter are received by the IR receiver connected to the far-end receiver.
④	RS232	Serial port, 3-pin pluggable terminal block, connects with the control terminal to control the MPTP-T70-WPI, supports bi-directional RS232 control (send control signal from local or receive control signal sent from far-end devices).
⑤	VGA IN	Connect with VGA source device. The indicator: ✓ illuminate yellow when there is VGA signal input ✓ illuminate green when the signal source is chosen as input source

		✓ turn off when there is no VGA input signal
⑥	AUDIO IN	Connect with the audio output socket of VGA source device, deliver synchronous audio source with VGA signal source when choosing VGA as source signal.
⑦	HDMI IN	Connect with HDMI source device. The indicator: ✓ illuminate yellow when there is HDMI signal input ✓ illuminate green when the signal source is chosen as input source ✓ turn off when there is no HDMI input signal
⑧	LINK &HDCP	✓ LINK: Twisted Pair Link status indicator, illuminate green when successfully connected. ✓ HDCP: HDCP compliance indicator, illuminate green when the source signals is with HDCP; blink when it is not with HDCP; and turn off when there is no source signal.
⑨	RESET	Press the button to reboot MPTP-T70-WPI.
⑩	FIRMWARE	USB port, used for firmware update Plug a flash disk or other storage device with update file (MERGE.bin), and send command **50698%** to update firmware.

2.2 Side Panel



① HDBT OUT: RJ45 port, connect with receiver via a CAT5e/6 cable to deliver Audio/ Video signals, support PoC.
Note: MPTP-T70-WPI support unidirectional PoC, i.e. it can be energized by far-end receiver but it can't energize far-end receiver.

2.3 Rear Panel

No.	Name	Description
①	Power In	Power in port, 2-pin pluggable terminal block, connect with DC 12V power adapter
②	Power Out	Power out port, connect with 3rd device to energize it with a 12V power output
③	RS232	Serial port, connects with a far-end receiver, supports bi-directional RS232 control (send control signal from local or receive control signal sent from far-end devices).

Note: Pictures shown in this manual are for reference only, different model and specifications are subject to real product.

3. System Connection

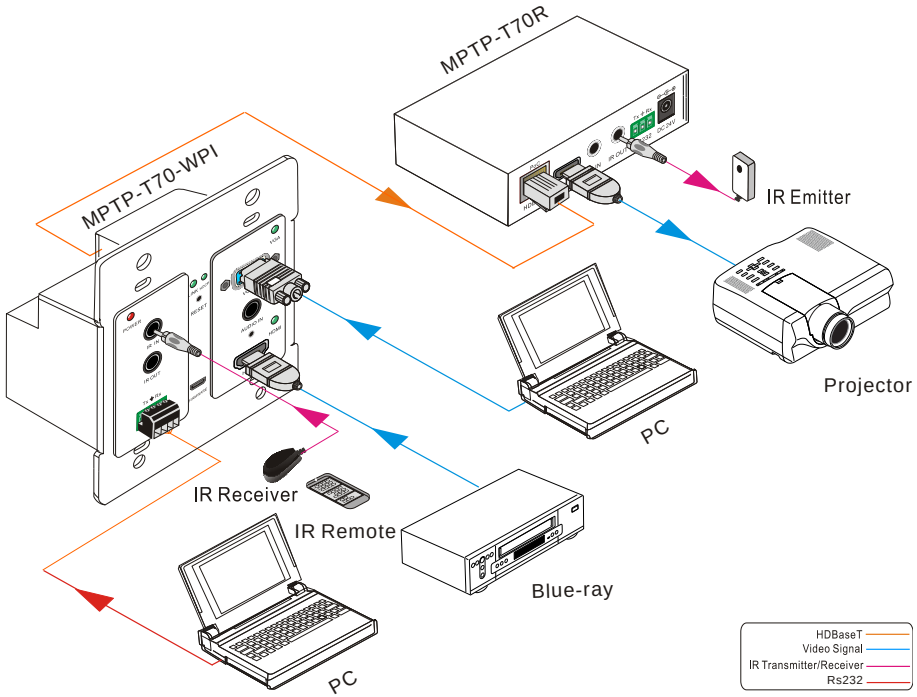
3.1 Usage Precautions

1) System should be installed in a clean environment and has a prop temperature and humidity.

2) All of the power switches, plugs, sockets and power cords should be insulated and safe.

3) All devices should be connected before power on.

3.2 System Diagram



3.3 Connection Procedure

Step1. Connect HDMI source device (e.g. Blue-ray DVD) to HDMI input ports of MPTP-T70-WPI with HDMI cable. Connect a VGA source device (e.g. PC) to the VGA input port of MPTP-T70-WPI with VGA cable.

Step2. Connect a MPTP-T70R to the HDBT port on the rear panel with twisted pair.

Step3. Connect a HDMI display to the HDMI OUT port of MPTP-T70R.

Step4. Connect a control terminal to the RS232 port on the front panel of MPTP-T70R.

Step5. Both MPTP-T70-WPI and MPTP-T70R have IR IN and OUT. When one model is used for IR signal receiver, the IR signal must be sent out by the other model.

For example: When “IR IN” of MPTP-T70-WPI connects with an IR receiver, the IR transmitter must connect to IR OUT of MPTP-T70R.

The IR signal can be transmitted bi-directionally between MPTP-T70-WPI and MPTP-T70R.

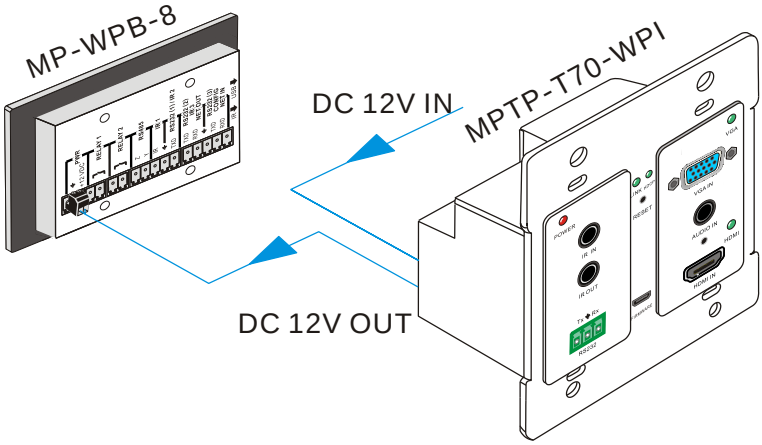
Step6. Connect control device (e.g. PC) to RS232 port of MPTP-T70-WPI or MPTP-T70R (bi-directional RS232 control, either is available).

Step7. Connect DC 24V power adaptor to the power port of MPTP-T70R, MPTP-T70-WPI is able to get power from MPTP-T70R with PoC solution.

Note: MPTP-T70-WPI supports unidirectional PoC, i.e, MPTP-T70-WPI can get power from far-end PoC devices with PoC function while it can't energize far-end PoC devices when the power supply is connected to MPTP-T70-WPI.

3.4 Energizing 3rd device

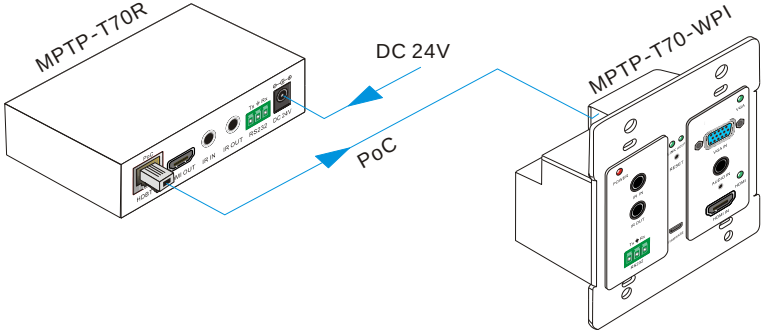
MPTP-T70-WPI has a 12V power output port on the rear panel. Connect the 12V power output port of MPTP-T70-WPI to the power port of 3rd device (refer to the following figure), MPTP-T70-WPI is capable of energizing 3rd device.



3.5 PoC Solution

MPTP-T70-WPI supports PoC, which allows several terminals share the same power supply and eliminates the need for extra power supply at the remote nodes.

Connect a DC 24V power adapter to the power port of MPTP-T70R, MPTP-T70-WPI can be energized synchronously with PoC solution, see the picture below:



3.6 Application

MPTP-T70-WPI has a good application in various occasions, such as computer realm, monitoring, conference room, big screen displaying, television education, command & control center and smart home etc.

4. Control Modes

4.1 IR control

MPTP-T70-WPI provides an IR IN/ IR OUT socket for connection to IR receiver/ IR Transmitter to attain bi-directional IR transmission with the far-end receiver.

- Control far-end device from local

Control MPTP-T70-WPI or far-end display device from local by the IR remote of far-end display. IR control signal will be received by IR IN socket, and converted to corresponding IR output socket of the far-end receiver.

- Control local device from remote

Control local source device from remote via corresponding IR remote. The control signal will be transmitted via the IR OUT socket.

4.2 RS232 Control

As RS232 can be transmitted bi-directionally between MPTP-T70-WPI and MPTP-T70R, so it is able to control a third party RS232 device from local or control MPTP-T70-WPI from remote. When to control a third party RS232 device, the baud rate of this device should be 2400, 4800, 9600, 19200, 38400, 57600 or 115200.

4.2.1 Installation/uninstallation of RS232 Control Software

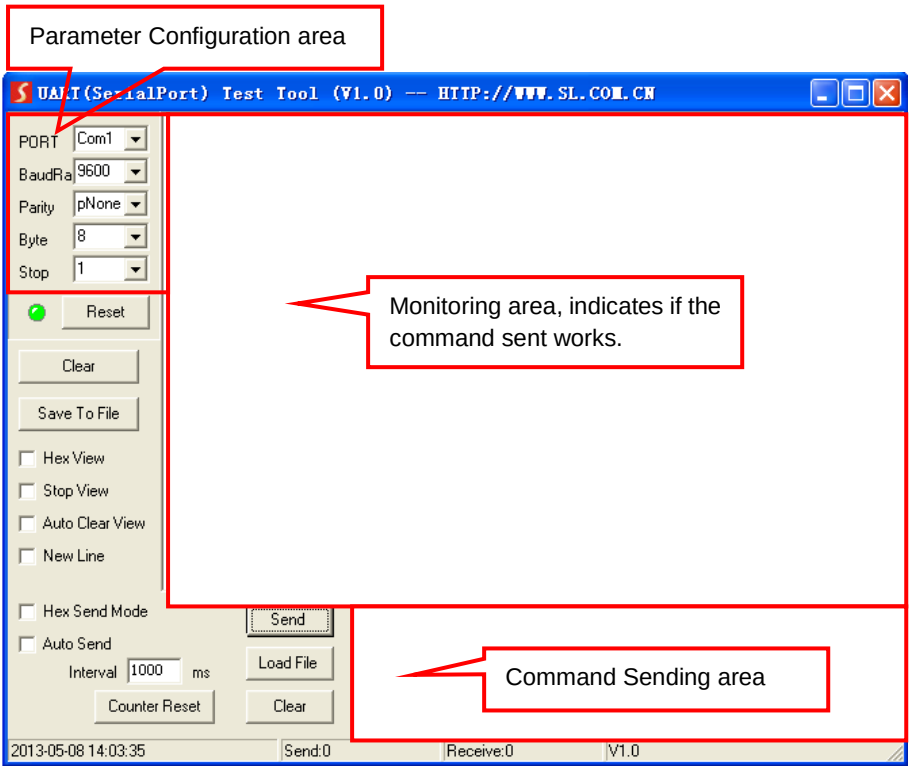
- **Installation:** Copy the control software file to the computer connected with MPTP-T70-WPI.
- **Uninstallation:** Delete all the control software files in corresponding file path.

4.2.2 Basic Settings

First, connect MPTP-T70-WPI with all input devices and output devices needed, then to connect it with a computer which is installed with RS232 control software. Double-click the software icon to run this software.

Here we take the software **CommWatch.exe** as example. The icon is showed as below:

The interface of the control software is showed as below:



Please set the parameters of COM number, bound rate, data bit, stop bit and the parity bit correctly, and then you are able to send command in Command Sending Area.

4.2.3 RS232 Communication Commands

Communication protocol: RS232 Communication Protocol
Baud rate: 9600 Data bit: 8 Stop bit: 1 Parity bit: none

Command	Function	Feedback Example
Switch Commands		
50701%	Switch to HDMI input	Switch to HDMI
50704%	Switch to VGA input	Switch to VGA
50770%	Enable auto-switching	Auto Switching
50771%	Disable auto-switching	Manual Switching
Resolution Commands		
50619%	Change the resolution to 1360X768 HD	Resolution: 1360x768
50626%	Change the resolution to 1024X768 XGA	Resolution: 1024x768
50627%	Change the resolution to 1280X720 720P	Resolution: 1280x720
50628%	Change the resolution to 1280X800 WXGA	Resolution: 1280x800
50629%	Change the resolution to 1920X1080 1080P	Resolution: 1920x1080
50620%	Change the resolution to1920X1200 WUXGA	Resolution: 1920x1200
50621%	Change the resolution to1600X1200 UXGA	Resolution: 1600x1200
Setup Commands		
502xx%	Set the brightness to xx. XX ranges from 00 to 99	Brightness: xx
503xx%	Set the contrast to xx. XX ranges from 00 to 99	Contrast: xx
504xx%	Set the saturation to xx. XX ranges from 00 to 99	Saturation: xx

505xx%	Set the sharpness to xx. XX ranges from 00 to 99	Sharpness: xx
50606%	Auto-adjust the input parameter	VGA Input Auto
50607%	Adjust the color temperature	Color Temperature: xx (xx can be medium, warm, user, or cool)
50608%	Set the aspect ratio	Aspect Ratio: xx (xx can be 16:9, 4:3, or auto.)
50614%	Set the picture mode	Picture Mode: xx (xx can be dynamic, standard, mild, or user.)
50699%	Check the system version	Version Vx.x.x
50779%	Switch to RS232 mode 1, enable scaler to control far-end devices	RS232 Mode 1: RS232 Control Scaler & Remote
50780%	Switch to RS232 mode 2, enable far-end devcices to control scaler	RS232 Mode 2:RS232 & Remote Control Scaler
50790%	Set the HDCP status of HDMI output socket to Active	HDCP Active
50791%	Set the HDCP status of HDMI output socket to On	HDCP On
50792%	Set the HDCP status of HDMI output socket to Off	HDCP Off
50698%	Software update	
50617%	Reset to factory default	
Inquire Commands		
50632%	Check the output resolution	Resolution: xx
50633%	Check the picture mode	Picture Mode: xx
50793%	Check HDCP status	HDCP Off HDCP On HDCP Active

50635%	Check the image aspect ratio	Aspect Ratio: xx
50636%	Check the brightness	Brightness: xx
50637%	Check the contrast	Contrast: xx
50638%	Check the saturation	Saturation: xx
50639%	Check sharpness	Sharpness: xx
50640%	Check the color temperature	Color Temperature: xx
Adjustment Commands		
50678%	Enable screen output adjusting	Enter Output Position Adjust
50679%	Disable screen output adjusting	Exit Output Position Adjust
50670%	Move the image to left	Output Position Adjust X xx
50671%	Move the image to right	Output Position Adjust X xx
50672%	Move the image up	Output Position Adjust Y xx
50673%	Move the image down	Output Position Adjust Y xx
50674%	Pull left from right side (decrease image width)	Output Width Adjust xx
50675%	Stretch right from right side (increase image width)	Output Width Adjust xx
50676%	Stretch upwards from bottom side (decrease image height)	Output Height Adjust xx
50677%	Stretch downwards from bottom side (increase image height)	Output Height Adjust xx
EDID Commands		
50772%	EDID pass-through	EDID: bypass mode
50773%	Set EDID data to 1080P PCM 2.0ch	EDID:1080P&PCM 2ch
50774%	Set EDID data to 1080P Dolby 5.1	EDID:1080P&5.1ch
50775%	Set EDID data to 1080P3D Dolby 5.1	EDID:1080P3d&5.1ch
50776%	Set EDID data to 1080i PCM 2.0ch	EDID:1080i&PCM 2ch
50777%	Set EDID data to 4K*2K PCM	EDID:4K&PCM 2ch

	2.0ch	
50778%	Check EDID data	EDID:1080P&PCM 2ch EDID:1080P&5.1ch EDID:1080P3d&5.1ch EDID:4K&PCM 2ch
50799%	Program EDID file, send EDID data within 10s	Waiting for edid within 10 secs!

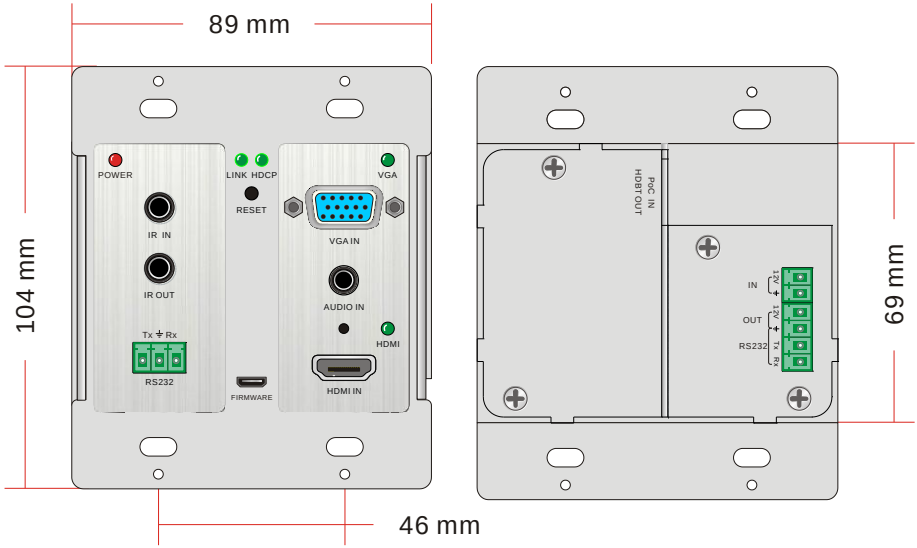
Note:

1. Commands with grey background are for VGA sources only.
2. EDID commands are for HDMI sources only.

5. Specification

Video			
Input	1 HDMI, 1 VGA	Output	1 HDBaseT
Input Connector	1 19-pin Type A HDMI female; 1 15-pin VGA	Output Connector	1 RJ45
Transmission Mode	HDBaseT		
Audio			
Input	1 synchronous VGA audio		
Input Connector	1 3.5mm stereo jack		
Frequency Response	20Hz~20KHz		
Impedance	＞10Ω	SNR	>85db@20Hz~20KHz
Control Parts			
Control Ports	1 3-pin RS232 socket on front panel 1 3-pin RS232 socket on rear panel (share the ground pole with 12V OUT) 1 3.5mm IR IN		
General			
Resolution	VGA: 800 x600, 1024 x 768, 1280 x 800,1280 x 1024, 1440 x 900,1600 x 1200, 1920 x 1080, 1920 x 1200; HDMI: 4Kx2K, 1080p 3D, 1080P(HD)/1080i/720P/576P/576i/480P/480i		
Transmission Distance	1080P≤60M (PoC) 4Kx2K≤40M (PoC)		
Bandwidth	10.2Gbps		
HDMI Standard	Support HDMI1.4 and HDCP		
Chassis Dimension	Decora style two gang	Power Supply	DC 12V 2A; 9.6W
Temperature	-10 ~ +40℃	Reference Humidity	10% ~ 90%
Dimension (W*H*D)	104.5 x 89 x 44 mm	Weight	0.29Kg

6. Panel Drawing



7. Troubleshooting & Maintenance

Problems	Causes	Solutions
Color losing or no video signal output in HDMI display	The connecting cables may not be connected correctly or it may be broken	Check whether the cables are connected correctly and in working condition.
No HDMI signal output in the device while local HDMI input is in normal working state		
Output image with snowflake		
POWER indicator doesn't work or no respond to any operation	Loose or failed power cord connection	Ensure the power cord connection is good
Cannot control the device by control device (e.g. a PC) through RS232 port	Wrong RS232 communication parameters	Make sure the RS232 communication parameters are correct.
Static becomes stronger when connecting the video connectors	bad grounding	Check the grounding and make sure it is connected well.
Cannot be controlled through RS232 port or front panel buttons	The unit may have 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.

8. After-sales Service

If there appear some problems when running MPTP-T70-WPI, 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,** which starts from the first day you buy this product (The purchase invoice shall prevail).
   Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the Warranty period must be presented to obtain warranty service.
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.