# User Manual

ALTIMIUM

# TP408P

## HDBaseT Extender Set

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**Version: TP408P_V1.0**

## 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. The functions described in this version are updated till November 2016. Any changes of functions and parameters since then will be informed separately. Please refer to the dealers for the latest details.

**All product function is valid till 2016-11-28.**

## 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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# 1. Introduction

## 1.1 Brief Introduction

TP408P is an HDBaseT Extender Set which contains a Transmitter and a Receiver.

It uses HDBaseT technology to deliver HDMI/DVI/VGA signal, and the max transmission is up to 70m. Moreover, bi-directional RS232 control, RS232 pass-through, IR control and PoC are supported by this product.

TP408P has a good application in various occasions, such as computer realm, monitoring, big screen displaying, meeting room, education and bank & securities institution etc.

## 1.2 Features

- HDMI/DVI/VGA output resolution up to 1920x1200@60HZ.
- Support bi- directional PoC.
- Maximum transmission distance is up to 70m for 1080p.
- In-built scaler function, support scaling HDMI/ DVI/VGA signals to match the native resolution of the displays.
- Provide external audio input for DVI video signal.
- HDMI/DVI/VGA input signal can be switched automatically.
- Supports firmware upgrading via USB.
- Control methods: front panel buttons of transmitter, bi-directional RS232 control.
- LED indicators show work status.

## 1.3 Package Contents

- 1 x Transmitter
- 1 x Receiver
- 4 x Mounting Ears
- 8 x Screws
- 2 x RS232 Cable
- 8 x Rubber Feet
- 1 x Power Adapter (DC24V 1.25A)
- 1 x User manual

**Notes:** If you find any defective or missing parts, please contact your local dealer.

# 2. Panel Description

## 2.1 Transmitter

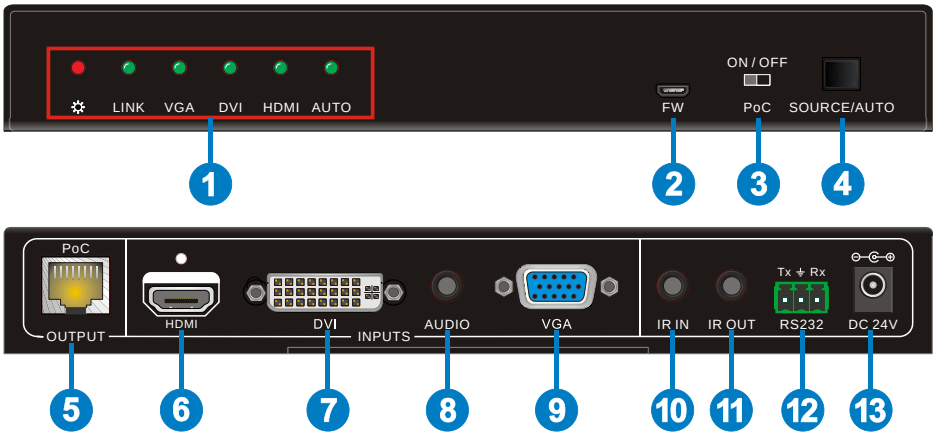



**Figure 2-1 Transmitter**

| No. | Name | Description |
|---|---|---|
| ① | Indicators | ➢ Power: Illuminates red when power on.<br>➢ LINK: Twisted Pair Link status indicator, illuminates green when successfully connected.<br>➢ VGA: Illuminates green when there is VGA signal input<br>➢ DVI: Illuminates green when there is DVI signal input.<br>➢ HDMI: Illuminates green when there is HDMI signal input.<br>➢ AUTO: Illuminates green under auto-switching mode. |
| ② | FW | Micro USB port, used for firmware update.<br>Plug a flash disk or other storage device with update file (MERGE.bin), and send command **50698%** to update firmware. |
| ③ | PoC switcher | ➢ ON: Enable bi-directional PoC function.<br>In this model, Transmitter and Receiver cannot be connected with power adaptors at the same time. Only one power adaptor needed.<br>➢ OFF: Disable bi-directional PoC.<br>In this model, you can connect power adaptors to Transmitter |

| | | |
|---|---|---|
| | | and Receiver at the same time, or only connect one power adaptor to Receiver, Transmitter can be powered. |
| ④ | SOURCE/ AUTO | ➢ Press to select one source, press again to select next source, switching circularly between HDMI, DVI and VGA input. The indicator of the selected input source will illuminate green.<br>➢ Long-press this button for 5 seconds or more to enter in auto-switching mode and the indicator **AUTO** will lights green. Under this mode, the last signal source connected to transmitter will be recognized as input signal. Press and hold for 5 seconds or more again to exit auto-switching mode. |
| ⑤ | OUTPUT | Connect to the INPUT port of Receiver with a CAT5e cable. |
| ⑥ | HDMI INPUT | Connect with HDMI source device. |
| ⑦ | DVI INPUT | Connect with DVI source device. |
| ⑧ | AUDIO INPUT | Connect with the audio input socket of DVI or VGA source device, provide external audio signal for DVI or VGA video signal. |
| ⑨ | VGA INPUT | Connect with VGA source device. |
| ⑩ | IR IN | Connect with IR receiver to collect infrared signal, work with far-end IR OUT port. |
| ⑪ | IR OUT | Connect with IR Emitter to send infrared signal, work with far-end IR IN port. |
| ⑫ | RS232 | Serial port, 3-pin pluggable terminal block, supports bi-directional RS232 control and pass-through function, connect with the control PC or other devices needed to be controlled. |
| ⑬ | DC 24V | Connect with DC24V 1.25A power adaptor (not necessary if Receiver connects with power adaptor and the PoC button is switched on). |

## 2.2 Receiver

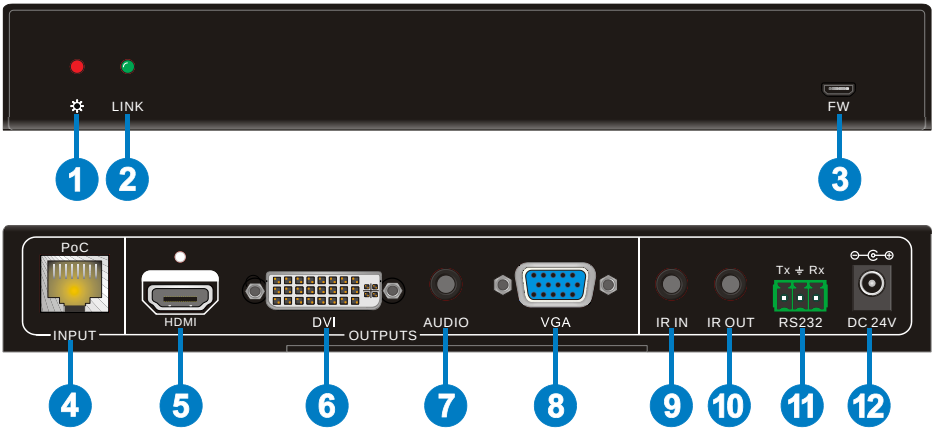



**Figure 2-2 Receiver**

| No. | Name | Description |
|---|---|---|
| ① | Power | Illuminates red when power on. |
| ② | LINK | Twisted Pair link status indicator, illuminates green when successfully connected. |
| ③ | FW | Micro USB port, used for firmware update.<br>Firmware updated need auxiliary equipment, please contact with our after-sales department for more details. |
| ④ | INPUT | Connect to the OUTPUT port of Transmitter with a CAT5e cable. |
| ⑤ | HDMI OUTPUT | Connect with HDMI displayer. |
| ⑥ | DVI OUTPUT | Connect with DVI displayer. |
| ⑦ | AUDIO OUTPUT | Connect with audio player, synchronously output audio signal with DVI or VGA video signal output. |
| ⑧ | VGA OUTPUT | Connect with VGA displayer. |
| ⑨ | IR IN | Connect with IR receiver to collect infrared signal, work with far-end IR OUT port. |
| ⑩ | IR OUT | Connect with IR Emitter to send infrared signal, work with far-end |

| | | |
|---|---|---|
| | | IR IN port. |
| ⑪ | RS232 | Serial port, 3-pin pluggable terminal block, supports bi-directional RS232 control and passthrough function, connect with the control PC or other devices needed to be controlled. |
| ⑫ | DC 24V | Connect with DC24V 1.25A power adaptor (not necessary if Transmitter connects with power adaptor and the PoC button is switched on). |

**Note:** Pictures shown on 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 safety.
3) All devices should be connected before power on.

## 3.2 System Diagram

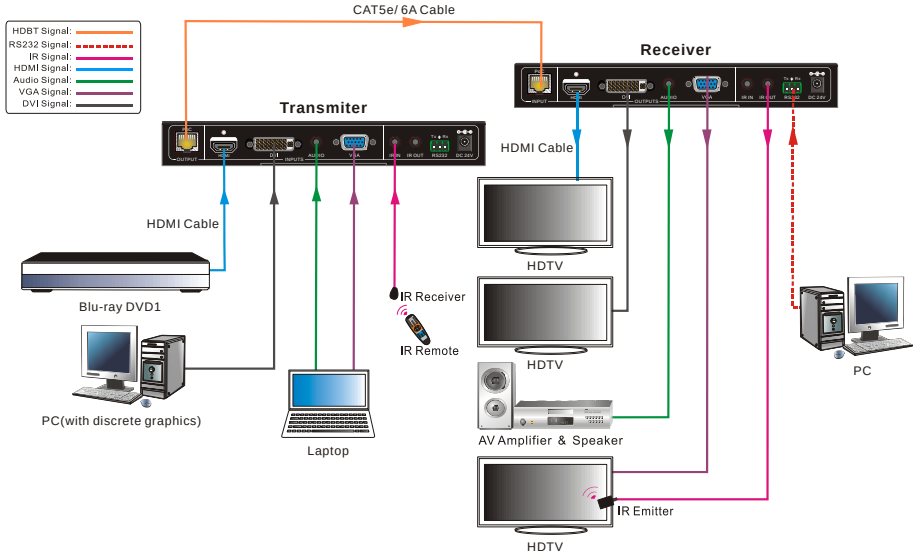



**Figure 3-1 System Connection Diagram**

## 3.3 Connection Procedure

**Step1.** Connect a HDMI source device (such as Blue-ray DVD) to **HDMI INPUT** port of Transmitter with HDMI cable.

**Step2.** Connect a DVI source device (e.g. PC) to the **DVI INPUT** port of Transmitter VI cable.

**Step3.** Connect a VGA source device (e.g. Laptop) to the **VGA INPUT** port of Transmitter cable.

**Step4.** Connect a VGA source device (e.g. Laptop) or other audio source device to the **AUDIO INPUT** port of Transmitter with audio cable.

**Step5.** Connect **OUTPUT** port of Transmitter and **INPUT** port of Receiver with single

CAT5e/CAT6 cable.

**Step6.** Connect HDMI displayer (such as HDTV) to **HDMI OUTPUT** port of Receiver with HDMI cable.

**Step7.** Connect DVI displayer to **DVI OUTPUT** port of Receiver with HDMI cable.

**Step8.** Connect VGA displayer to **VGA OUTPUT** port of Receiver with HDMI cable.

**Step9.** Connect audio device (such as AV amplifier) to the **AUDIO OUTPUT** port of Receiver with audio cable.

**Step10.** When using the bi-directional IR control, do the following.

a) Connect an IR receiver to the **IR IN** port at either the Transmitter or the Receiver.

b) Connect an IR Emitter to the **IR OUT** port at the other end.

**Step11.** TP408P supports bi-directional RS232 control. Connect control device (e.g. PC) to **RS232** port of Transmitter or Receiver, and then send commands to control Transmitter or Receiver. Please refer to ***4.2 R2323 control*** for more details.

**Step12.** Connect a DC24V 1.25A power adaptor to the **DC 24V** port of the transmitter; and make sure the switch "**PoC** "is turned on, the receiver will be energized synchronously.

🕮

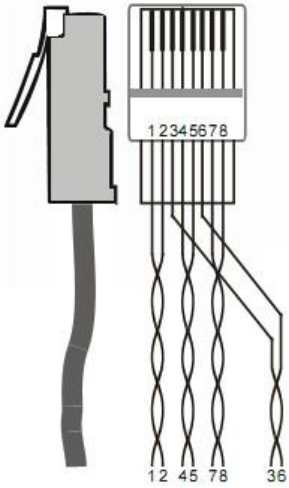
- ✧ System Diagram shown in this manual are for reference only, more specific schemes depend on real devices.
- ✧ When the **IR IN** port receive the IR signal from IR remote, the IR signal can't be sent out via the **IR OUT of the** native unit.
- ✧ When using PoC solution, the switch "**PoC**" must be turned on.
- ✧ Connect HDBT ports via straight-thru CAT5e/6 cable with TIA/EIAT568B standard terminations at both ends.

## 3.4 Twisted Pair Cable Connection

The twisted pair used in this extender MUST be a straight-through cable.

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

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



# 4. Operations

## 4.1 Operations of front panel buttons

Transmitter has a channel switching button **SOURCE/ AUTO** on the front panel, through which users can switch input source signals.

It supports both manual and auto mode. (Default: Auto switching) Press and hold the button **SOURCE/AUTO** for 5 seconds or send command "**50770%**"and "**50771%**" to switch between the two modes.

**Switching modes:**

- Manual switching mode

  Long-press the button **SOURCE/ AUTO** for 5 seconds or more to enter manual switching mode and the green indicator **AUTO** will extinguish. Press **SOURCE/ AUTO** to switch circularly between HDMI, DVI and VGA input signal source.

  When the format of VGA input signal is CVBS or YPbPr, the manual mode cannot be switched to manual switching mode automatically.

- Auto switching mode

  Under manual switching mode, long-press the button **SOURCE/ AUTO** for 5 seconds or more to enter auto mode, Transmitter will automatically recognize the signal source device that it was last connected to as input source.

## 4.2 RS232 Control

As RS232 can be transmitted bi-directionally between Transmitter and Receiver, so it is able to control Receiver from local or control Transmitter from remote.

### 4.2.1 Installation/uninstallation of RS232 Control Software

- **Installation**

  Copy the control software file to the computer connected with Transmitter or Receiver.

- **Uninstallation**

  Delete all the control software files in corresponding file path.

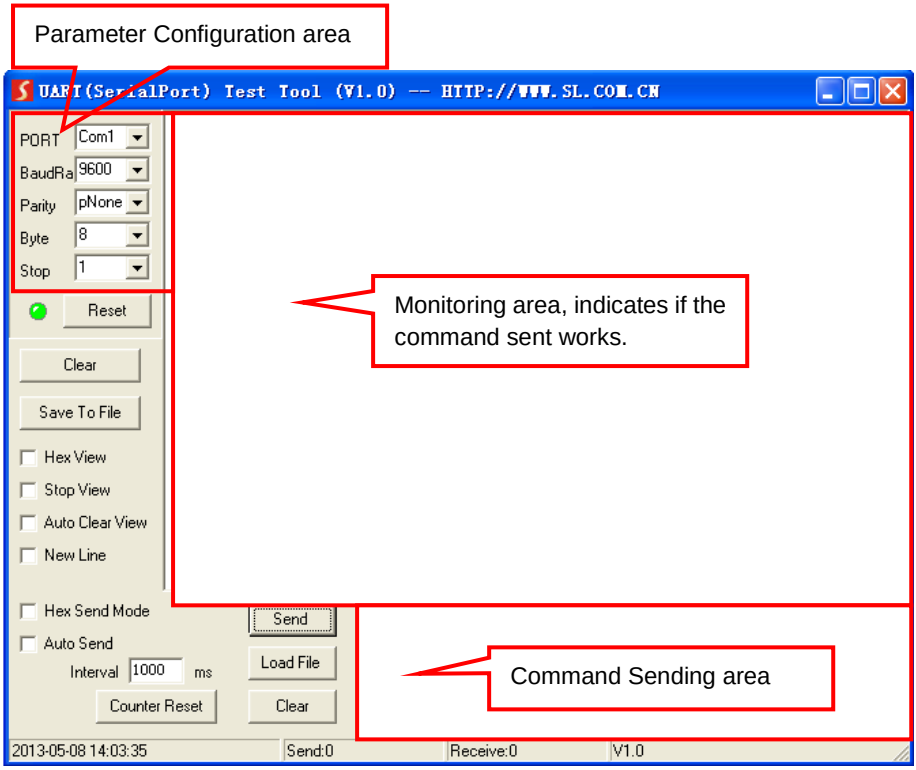
### 4.2.2 Basic Settings

First, connect Transmitter 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:

CommWatch.exe

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 |
|---|---|---|
| **Transmitter** | | |
| **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.) |
| **50705%** | Change the horizontal polarity to the opposite | Hpolarity:0/1 |
| **50706%** | Change the vertical polarity to the opposite | Vpolarity:0/1 |
| **50701%** | Switch to HDMI input | Switch to HDMI |
| **50702%** | Switch to DVI input | Switch to DVI |
| **50704%** | Switch to VGA/YPbPr/AV input | Switch to VGA/YPbPr/AV |
| **50710%** | Set the VGA port to input VGA signal | Port VGA Set & Switch to VGA! |
| **50711%** | Set the VGA port to input YPbPr signal | Port VGA Set & Switch to YPbPr! |
| **50712%** | Set the VGA port to input AV signal | Port VGA Set & Switch to AV! |
| **50770%** | Enable auto-switching | Auto Switching |
| **50771%** | Disable auto-switching | Manual Switching |

| | | |
|---|---|---|
| **50779%** | Switch to RS232 mode 1, enable this unit to control far-end devices | RS232 Mode 1: RS232 Control Scaler & Remote |
| **50780%** | Switch to RS232 mode 2, enable far-end devices to control this unit | 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 |
| **50603%** | Embed Audio into DVI signal | DVI Audio from Embedded |
| **50604%** | Connect external audio to DVI signal | DVI Audio from LINE |
| **50698%** | Software update | |
| **50617%** | Reset to factory default | |
| **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 |
| **Inquire Commands** | | |
| **50632%** | Check the output resolution | Resolution: xx |
| **50633%** | Check the picture mode | Picture Mode: xx |
| **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 |
| **50707%** | Check the present resolution and polarity | 1920x1080<br>Hpolarity:1<br>Vpolarity:0 |
| **50699%** | Check the system version | Version Vx.x.x |
| **50642%** | Check the input signal format of VGA | Port VGA Set & VGA<br>Port VGA Set & YPbPr<br>Port VGA Set & CVBS |
| **50631%** | Check the input signal | Input:XXX<br>(XXX=YPbPr，VGA，HDMI，DVI，AV) |
| **50767%** | Check the signal source switching mode | Auto Switching<br>Manual Switching |
| **50641%** | Check the RS232 mode | RS232 Mode 1: RS232 Control Scaler & Remote<br>RS232 Mode 2:RS232 & Remote Control Scaler |
| **50605%** | Check the audio source for DVI signal | DVI Audio from Embedded<br>DVI Audio from LINE |
| **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** | | |
| **50769%** | Load EDID data from U-disk. | EDID read ok! |
| **50772%** | Restore EDID default. | EDID restore to default! |
| **50773%** | EDID pass-through. | EDID: bypass. |
| **50774%** | Customize EDID. | EDID: user. |
| **50778%** | Check EDID mode. | EDID: initial.<br>EDID: bypass.<br>EDID: user. |
| **50799%** | Program EDID file, send EDID data within 10s. | Waiting for edid within 10 secs! |
| | **Receiver** | |
| 80800% | Reset to factory default | |
| 80600% | Open analog audio output | Analog Audio Open |
| 80601% | Close analog audio output | Analog Audio Close |
| 80643% | Check the status for analog audio output | AUDIO MUTE /UNMUTE |
| 80605% | Check the signal format for VGA output signal. | Output Format is RGB/ YPBPR |

| | | |
|---|---|---|
| 80606% | Change the resolution to 1920x1080i for all displays. | Resolution:1920x1080i |
| 80612% | Change the resolution to 1920x1080p for all displays. | Resolution:1920x1080p |
| 80613% | Change the resolution to 800x600p for all displays. | Resolution:800x600p |
| 80614% | Change the resolution to 1024x768p for all displays. | Resolution:1024x768p |
| 80615% | Change the resolution to 1280x1024p for all displays. | Resolution:1280x1024p |
| 80616% | Change the resolution to 1920x1200p for all displays. | Resolution:1920x1200p |
| 80627% | Change the resolution to 1280x720p for all displays. | Resolution:1280x720p |
| 80623% | Set the signal format as YPBPR for VGA output signal | Switch To YPBPR |
| 80622% | Set the signal format as VGA for VGA output signal | Switch To VGA |
| 80687% | Inquire current resolution(including CVBS&YPBPR&RGB ) | Resolution: xxxxxxxx |
| 80700% | Enable far-end device to control this unit | RS232 Mode 1: RS232 Control Scaler & Remote |
| 80701% | Enable this unit to control far-end devices | RS232 Mode 2:RS232 & Remote Control Scaler |
| 80300% | Move the image up | Pricture Mvoe Up |
| 80301% | Move the image down | Pricture Mvoe Down |
| 80302% | Move the image to left | Pricture Mvoe Left |
| 80303% | Move the image to right | Pricture Mvoe Right |
| 80200% | Check the brightness | BRIGHTNESS is XX |
| 80201% | Check the contrast | CONTRAST is XX |
| 80202% | Check the saturation | SATURATION is XX |
| 80203% | Check the chrominance | HUE is XX |

| | | |
|---|---|---|
| 80204% | Check the video format for output video signal | Video output Is YPBPR/RGB/CVBS |
| 80207% | Check the resolution mode | Resolution is Auto/Resolution is Manual |
| 80208% | Check the version | Versions X.X.XT |
| 80214% | Check the RS232 mode | RS232 Mode 2:RS232 & Remote Control Scaler<br>RS232 Mode 1: RS232 Control Scaler & Remote |
| 80212% | Auto mode for adjusting output resolution. | Switch Auto Mode |
| 80213% | Manual mode for adjusting output resolution. | Switch Manual Mode |
| 11xxx% | Set the brightness value | Brightness: |
| 12xxx% | Set the contrast value | Contrast: |
| 13xxx% | Set the saturation value | Saturation: |
| 14xxx% | Set the chromaticity value | Hue: |

**Note:**

- ✧ EDID and HDCP commands are for HDMI sources only.
- ✧ 50790%、50791%、50792% only used for Transmitter.
- ✧ By default, Both Transmitter and Receiver are in **RS232 Mode 1**, the PC that is connected to Transmitter can control Receiver by sending commands.
- ✧ If you want to control Transmitter via the PC that is connected to Receiver, please send 50780% and 80701% to make Transmitter and Receiver into **RS232 Mode 2**.

### 4.3 RS232 Passthrough Feature

Besides RS232 control function, TP408P supports bi-directional RS232 passthrough feature. Connect a control device to the RS232 port of Transmitter or Receiver, and connect a device that need to be controlled to the remote RS232 port of Transmitter or Receiver. The remote device can be controlled by sending commands via control device.

For example, connect a PC to RS232 port of Transmitter, and then connect a projector to RS232 port of Receiver, the connection diagram as shown as below. The remote projector can be controlled by sending commands via PC. For specific commands,

please refer to the projector's user manual.

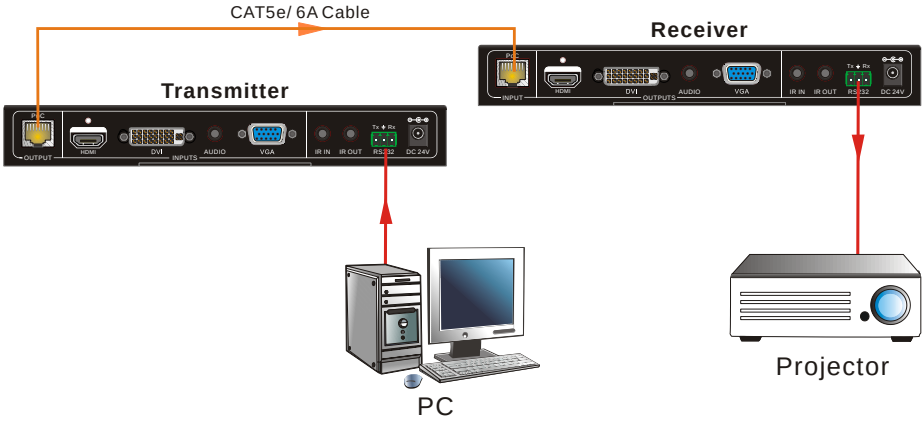



Figure 4-1 RS232 Pass-through Diagram

1. Before using RS232 passthrough feature, 50779% and 80701% should be sent to make Transmitter and Receiver into **RS232 mode 1** and **RS232 mode 2.**

2. When using RS232 passthrough feature, the baud rate supports 2400、4800、9600、19200、38400、57600、115200; Data bit: 8; Stop bit: 1; Parity bit: none.

## 5. Specification

| Model / Spec | Transmitter | Receiver |
|---|---|---|
| **Input Ports** | | |
| Input Signal | 1×HDMI;<br>1×DVI;<br>1×VGA;<br>1×AUDIO; | 1×HDBT INPUT |
| Input Connector | Female HDMI (Type-A);<br>Female DVI-I;<br>Female VGA (DB-15,blue);<br>3.5mm stereo jack; | RJ-45 |
| **Output Ports** | | |
| Output | 1×HDBT OUTPUT | 1×HDMI;<br>1×DVI;<br>1×VGA;<br>1×AUDIO; |
| Output Connector | RJ-45 | Female HDMI (Type-A);<br>Female DVI-I;<br>Female VGA (DB-15,blue);<br>3.5mm stereo jack |
| **Control Ports** | | |
| Control Ports | 1×IR IN;<br>1×IR OUT;<br>1×RS232 | 1×IR IN;<br>1×IR OUT;<br>1×RS232 |
| Control Connector | 3.5mm mini jack;<br>3.5mm mini jack;<br>3-pin RS232 socket | 3.5mm mini jack;<br>3.5mm mini jack;<br>3-pin RS232 socket |
| **General** | | |
| Transmission Mode | HDBase T | |

| | | | |
|---|---|---|---|
| Transmission Distance | 1080P≤70M (PoC) | | |
| Resolution | 16:9 | 1920x1080、1600x900、1366x768、1280x720、1024x576 | |
| | 16:10 | 1920x1200、1680x1050、1440x900、1360x768,1280x800 | |
| | 4:3 | 1600x1200、1400x1050、1280x1204、1024x768、800x600、640x480 | |
| Upscaling Resolution | 1920x1200、1920x1080、1600x1200、1360x768、1280x800、1280x720、1024x768. | | |
| Audio Format | **HDMI embedded audio:** PCM**,** PCM 2Ch<br>**Analog audio:** PCM，PCM 2Ch | | |
| VGA Signal Type | Input：support VGA、CVBS、YPbPr<br>Output：support VGA、YPbPr | | |
| Bandwidth | 10.2Gbps | | |
| Standard | HDMI1.4, HDCP1.2 | | |
| Impedance | 75Ω | | |
| Operating Temperature | 0 ~ 50℃ | | |
| Storage Temperature | -20 ~ 70℃ | | |
| Humidity | 10% ~ 90% | | |
| Power Supply | Input: 100VAC~240VAC, 50/60Hz Output: DC 24V,1.25A | | |
| Power Consumption | ≤7W | | ≤13W |
| Dimension(mm) | W220xH30x D100 | | W220xH30x D100 |
| Weight | 426g | | 455g |

**NOTE**: All nominal levels are at ±10%.

# 6. Panel Drawing

**Figure 6-1 Transmitter**

**Figure 6-2 Receiver**

# 7. Troubleshooting & Maintenance

| Problems | Causes | Solutions |
|---|---|---|
| No reaction to any operation, power indicator is off | Haven't been powered on. | Insert power adapter to the receiver. |
| | The poor quality of network cable. | Should the replacement CAT5e/CAT6a cable of high quality. |
| **POWER** indicator doesn't not | Loose or failed power cord connection | Ensure the power cord connection is good |
| **LINK** indicator does not lit | Loose or failed connection | Ensure the power cord connection is good |
| | The PoC switcher is closure. | Enable PoC function |
| Color lose or poor picture quality | Signal loss caused by long transmission distance beyond effective value. | Make sure the connecting cable is within 70m and of good 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 high-resolution HDMI signal successfully. | 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 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 *Specifications*. |

| | | |
|---|---|---|
| Static becomes stronger when connecting the video connectors | bad grounding | Check the grounding and make sure it is connected well. |
| Cannot control the projector by control device (e.g. a PC) through RS232 port | Wrong RS232 communication parameters | Make sure the RS232 communication parameters are correct. |
| Cannot use the device | the device is broken | Send it to authorized dealer for repairing. |

# 8. 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 warrants that its 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.

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