



KVM Seating Management Transmitter/Receiver

User Manual

TS-9506KUT/TS-9506KUR

Please read this manual carefully before using

Notification



WARNING

To ensure the reliability of the equipment and the safety of personnel, please observe the following when installing, using and maintaining:

- If any of the following conditions are found, please immediately turn off the power, plug out and quickly contact your nearest dealer. Do not continue using this unit, which may cause a fire or electric shock.
 - If you find smoke or have a strange taste from the machine.
 - If water or metal falls into the machine.
 - If the unit is dropped or the case is damaged.
 - If the wire is damaged (wire core exposure, broken wire, etc.).
- If the machine contains high-pressure parts, in order to avoid the fire or electric shock, absolutely don't open the case, if any questions please inform your nearest dealer.
- Do not place cups, bowls, vases or metal and other water-filled substances on the unit. Serious spilled liquid may cause a fire or electric shock.
- Never expose the unit to rain and any moisture or water, which may cause electric shock or fire.
- Do not place metal objects or flammable materials from the vents on the machine cover, nor place coins, which may cause fire or electric shock.
- Do not place heavy objects on the unit to avoid personal injury or property damage when the unit is slipping.
- Make sure that the volume is turned on at the beginning of the boot, and the high volume of the boot may cause hearing problems.
- Make sure that the volume is turned on at the beginning of the boot, and the high volume of the boot may cause hearing problems.
- For long-term accumulation of dust to be cleaned, please inform your dealer to regularly clean the machine, so as to avoid damage to the machine or cause a fire.
- The battery must be replaced with the same type of product and the correct installation should be made in order to avoid electrical damage and explosion hazard.
- The product is a Class III device. The device must be well connected to ground. The power plug must be connected to a power outlet with a grounding device to ensure that the equipment is fully grounded.
- This product uses a power plug or appliance input socket as a disconnecting device with the power supply, and must be disconnected if necessary for safety reasons.



- This equipment is only suitable for safe use at altitudes under 2000 meters.

Precautions

1. The installation environment

When installing the unit, in order to ensure the normal cooling of the host, should avoid the poor ventilation of the place or high temperature environment, to avoid direct sunlight.

Recommend to install cabinet or other well-ventilated place indoor. If you use the machine in the outdoors, please pay attention to waterproof, moisture, lightning protection measures.

Avoid installing in a violent place of vibration; do not place other equipment on the machine.

Working temperature : $-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$.

Humidity is limited to 5% to 90% (non-condensing).

2. To avoid electric shock and fire

Do not touch the hands and the source with wet hands

Do not spill liquid on the machine, so as to avoid short-circuit or fire inside the machine.

Do not place other equipment directly on the top of the unit.

Non-professional service personnel Do not disassemble the unit yourself to avoid damage and electric shock.

3. Transport and handling

The packaging of the machine is designed and tested to ensure that the host will not be accidentally damaged during transport. It is best to use the original packaging when handling the unit.

Do not move the host device between the place or cold or over hot to avoid condensation inside the machine, affecting equipment life.

4. Please follow the warning instructions on this product, the warning signs on behalf of:

	Applicable to 2000 meters above sea level and below safe use
	Safe use only in non-tropical climates

5. Agreement

Please strictly follow the instructions in this manual. The software, hardware and appearance of this product will be upgraded and updated continually. The above changes will be made without notice.

Non-professional maintenance personnel, do not remove the product, to avoid damage and electric shock.

Preface

This user's manual mainly introduces transmitter TS-9506KUT and receiver TS-9506KUR of twisted pair transmission, including the operation method and main performance specifications.

This manual is only for user operation instructions, not for maintenance service. From the release date, if there is a change in the function or related parameters, additional explanation will be made. And you can consult the dealers for details.

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1. Descriptions

TS-9506KUT and TS-9506KUR are reliable solutions for long-distance transmission of ultra HD KVM signals. Support HDMI and DVI-D video interfaces, audio embedding and audio extraction, POE power supply, picture-in-picture, and custom serial ports and infrared signals. Support KVM mouse and keyboard data transmission, and matrix switching through keyboard shortcuts. Support EDID learning and memory functions to improve compatibility with different monitors. The device can be configured through not only the panel keys and LCD screen, but serial commands and infrared remote control. This set of equipment supports a maximum resolution of 3840X2160 @ 30Hz and a maximum transmission distance of 150 meters.

TS-9506KUT and TS-9506KUR has a black metal housing as a whole, an elegant appearance, exquisite shapes, and a thick texture. The panel adopts acrylic glass effect and brushed technology, with elegant and delicate appearance. There are cooling holes on both sides for reliable heat dissipation, and a fixed latex bracket at the bottom for safe and reliable support, so you don't have to worry about scratching the desktop. "1U combo mounting accessory for video transmitter" or "6U combo mounting accessory for video transmitter" can be selected to for convenient installation.

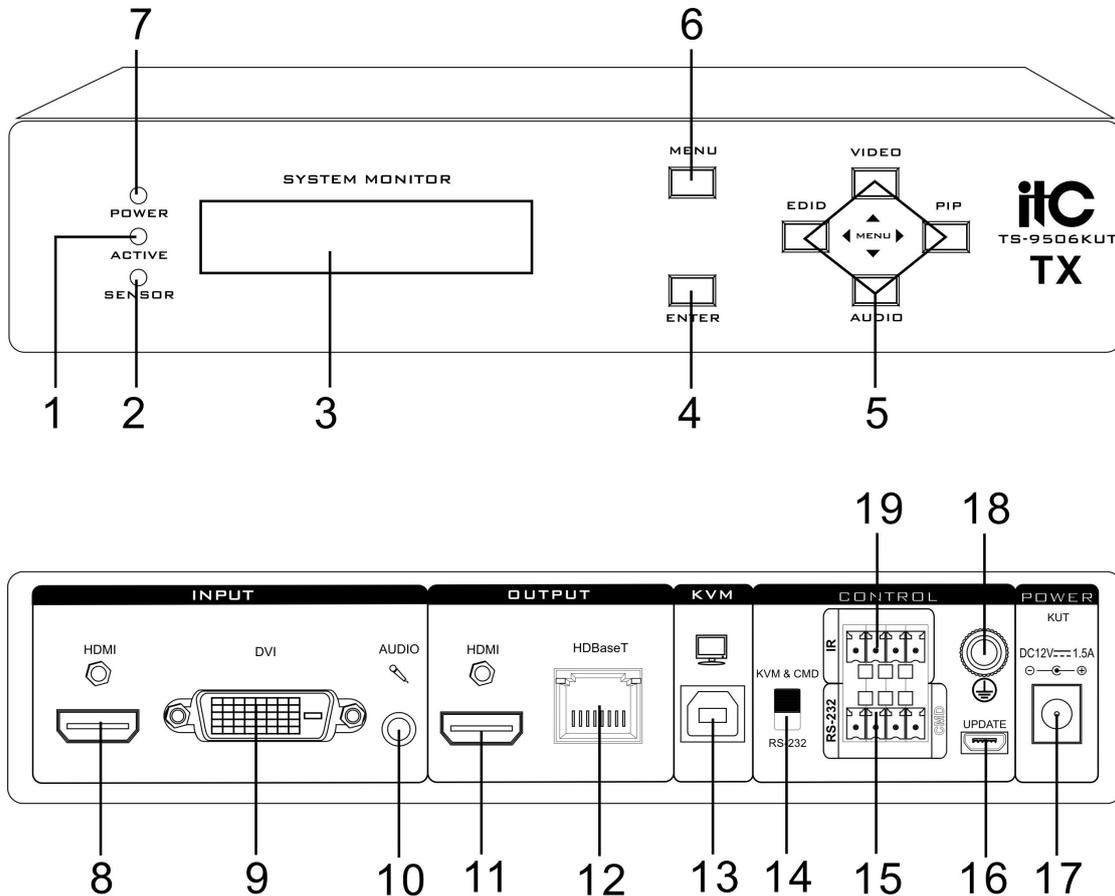
2. Features

1. TS-9506KUT supports HDMI and DVI-D video interfaces, 1 HDBaseT output and HDMI monitoring output; TS-9506KUR supports HDBaseT input, HDMI and DVI-D output.
2. Support HDMI 1.4 standard and HDCP 1.4 standard.
3. The maximum transmission resolution is 3840X2160 @ 30Hz, and the output video resolution is the same as the input resolution.
4. Adopt advanced HDBaseT transmission technology, no signal compression, consumption, HD lossless images without delay.
5. Support long transmission distance. The distance of the network cable can reach 150 meters when transmitting 1080P images and 90 meters when 4K images..
6. With strong interface drive capability. HDMI / DVI cable is up to 20 meters for 1080P images and 15 meters for 4K images.
7. Support KVM function, real-time transparent transmission of mouse and keyboard data. The operation delay is less than 10us. In addition, you can control the video switching of the matrix through the keyboard shortcuts.
8. Support TS-9506KUT end to embed external audio into the video, and meanwhile support TS-9506KUR end to extract and simultaneously output the audio in the video.
9. Support two-way transparent transmission of RS232 serial data, with the baud rate up to 256000bps.
10. Support two-way transparent transmission of infrared signals. And you can turn 38KHz carrier on or off by command.

- 11.Support EDID learning and memory function, and built-in multiple EDID for user site selection to ensure compatibility with different monitors.
12. Support POE power supply for convenient on-site installation and wiring.
- 13.Support RS232 serial port command control for all functions configuration.
14. Support infrared remote operation for for all functions configuration. And TS-9506KUR can be used to control the matrix video switching by remote control.
15. The panel is equipped with an beautiful elegant LCD screen and convenient operation buttons.
- 16.Support USB online firmware upgrade.
17. Built-in silent fan with low noise and low heat.

3. Functions

3.1 TS-9506KUT Transmitter



1. Operation indicator;
2. Infrared sensor receiving window;
3. LCD display, showing the current working status;
4. "ENTER"-ENTER button.
5. Direction selection buttons, among them:

"EDID" is the EDID learning button. To learn the EDID of the external display device, first press the "EDID" button on the panel, and then press the "ENTER" button. The learning is completed in about 3 seconds;

"VIDEO" is a loop switch button for HDMI and DVI video interfaces. This setting supports power-off memory;

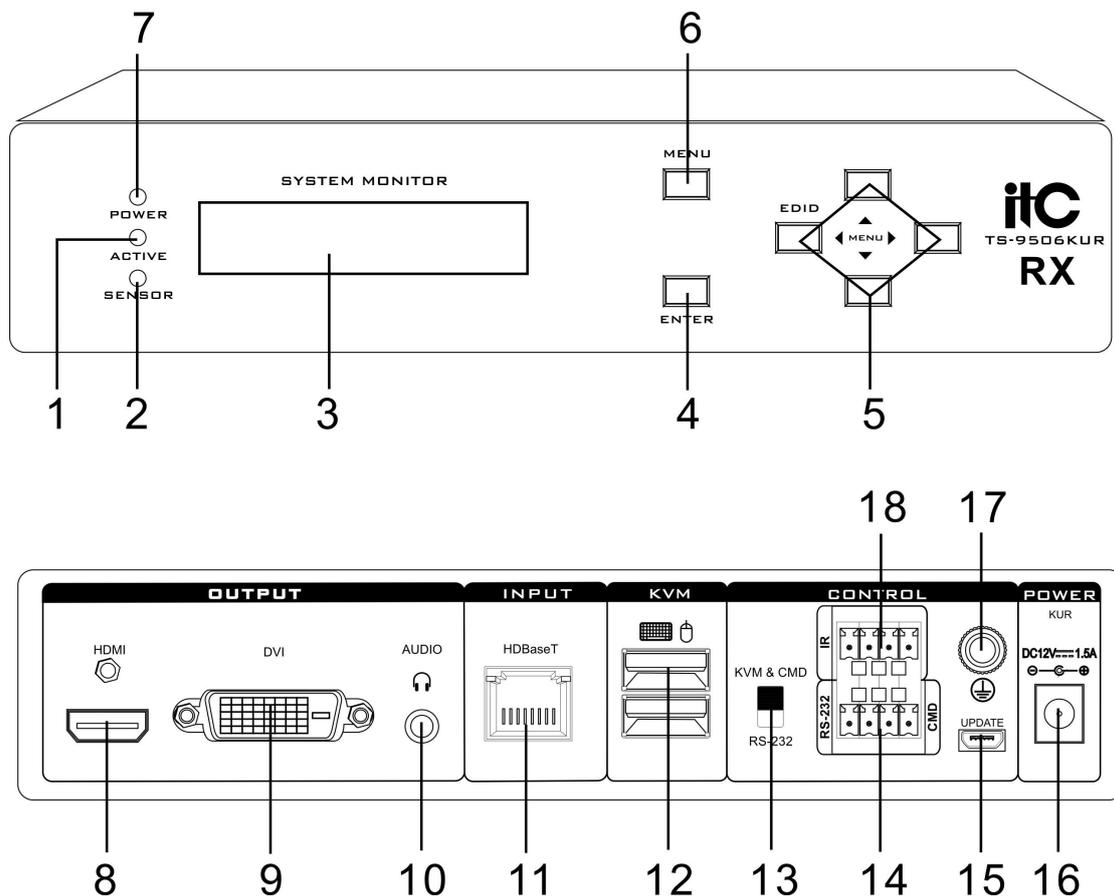
"PIP" is a picture-in-picture mode button, this setting supports power-off memory;

"AUDIO" is the internal and external audio button. This setting supports power-off memory.

6. "MENU" menu button is used to enter the advanced configuration menu; after entering the MENU menu;
7. Power indicator;
8. 1-channel HDMI video input interface;
9. 1-channel DVI-D digital video input interface;

- 10.3.5mm audio input interface;
- 11.1-channel HDMI video output interface;
- 12.1-channel HDBaseT network port (Note: This interface cannot be connected to non-HDBaseT interfaces such as switches or POE switches, otherwise the device may be damaged);
- 13.KVM interface, used to connect the host's USB interface;
- 14. KVM and RS232 transparent transmission selection switch;
- 15. Multiplexed RS232 port (Phoenix), support remote transparent transmission and local command configuration function: the left switch supports remote transparent transmission when it is down, and local command configuration when it is up;
- 16.Micro USB program burning port;
- 17.DC 12V / 1.5A power input interface;
- 18. Grounding post;
- 19. Infrared input and output port (Phoenix).

3.2 TS-9506KUR Receiver



- 1. Operation indicator;
- 2. Infrared sensor reception)
- 3.LCD display, showing the current working status;
- 4. "ENTER"-ENTER button.
- 5. Direction selection buttons, among them:

"EDID" is the EDID learning selection key. To learn the EDID of the external display device, first press the "EDID" button on the panel, and then press the "ENTER" button. The learning is completed in about 3 seconds;

6. "MENU" menu button is used to enter the advanced configuration menu; after entering the MENU menu;

7. Power indicator;

8.1-channel HDMI video input interface

9.1-channel DVI-D digital video input interface;

10.3.5mm audio output interface;

11. 1-channel HDBaseT input network port (Note: This interface cannot be connected to non-HDBaseT interfaces such as computer network ports, switches, etc., otherwise the device may be damaged);

12.USB interface for connecting mouse and keyboard;

13. KVM and RS232 transparent transmission selection switch;

14.RS232 input and output port (RCA);

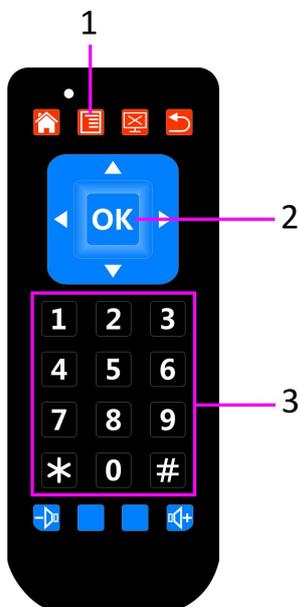
15.Micro USB program burning port;

16.DC 12V / 1.5A power input interface;

17. Grounding post;

18. Infrared two-way transparent transmission interface (RCA).

3.3 Remote control introduction



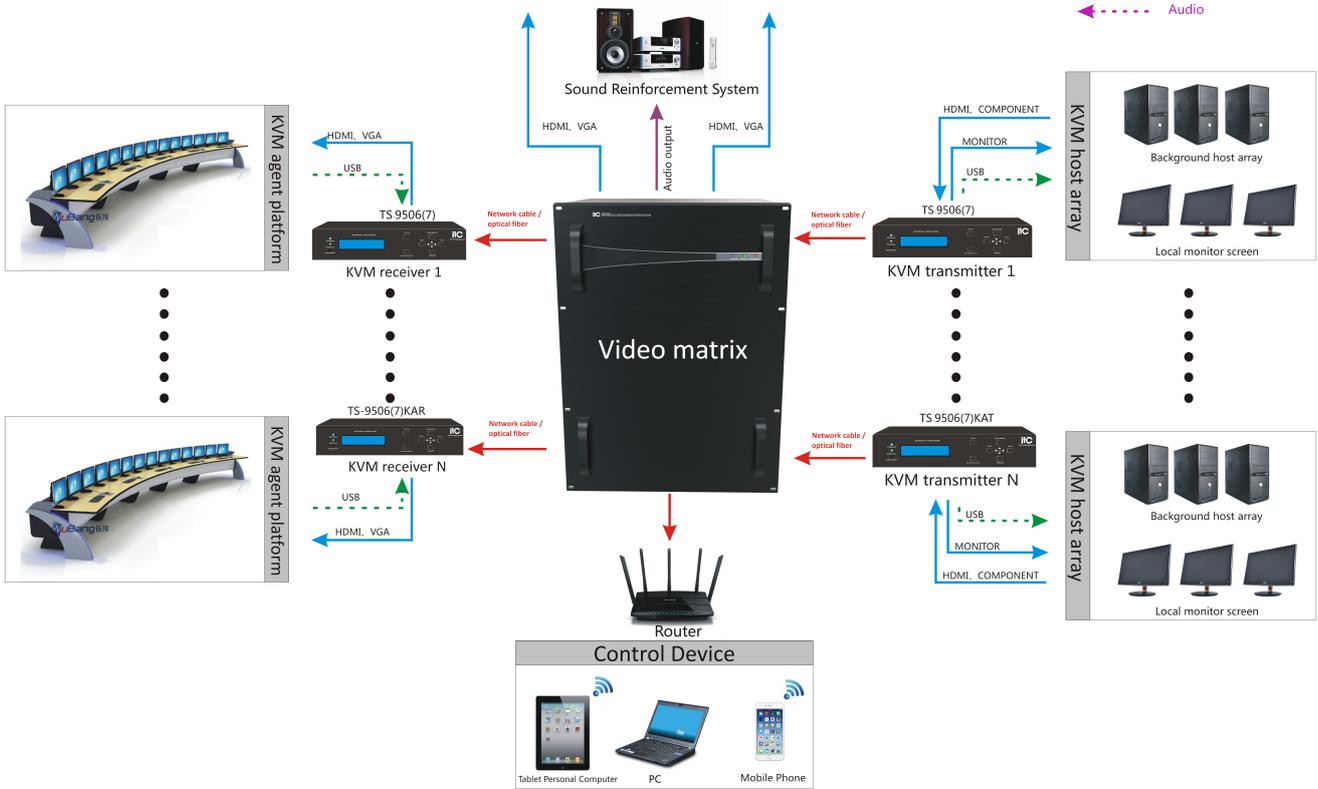
1. " " button, corresponding to the "MENU" button on the panel;

2. " " up / down / left / right direction button,
Corresponding to the up, down, left and right buttons on the panel,
The OK key corresponds to the ENTER key on the panel;

3. Numbers 0-9, # and * keys, used to control the switching of the matrix,
Only useful for KUR.

※ Note: The other keys on the remote control are reserved functions and have no effect temporarily.

4. System connection diagram



5. Instructions

5.1 Connection instructions

TS-9506KUT has 1 HDMI video input port, 1 DVI-D video input port, 1 HDBaseT output port and 1 HDMI monitor output port; only one of the input ports can be selected to send video to two output ports at the same time. TS-9506KUR has one HDBaseT input port, one HDMI output port and one DVI-D video output port. The video input port is connected to the video source device, and the video output port is connected to the display terminal device.

The TS-9506KUT is connected to the video signal source end, and the TS-9506KUR is connected to the display terminal. The two are connected by an Ethernet twisted pair. After the connection is successful, the green lights on the network ports on both sides are always on. If there is not video transmission for a long time, the device will enter the low power mode, and the green light will flash slowly.

5.2 Panel operation instructions

After power-on, the blue power indicator on the back panel is always on. The LCD screen turns on, and the welcome screen is displayed. After the device is powered on, it takes about 15 seconds to start up. During the startup, the "ACTIVE" light is always on and the panel keys are invalid. If there is no key operation within 1 minute, the LCD screen will go out automatically. Press the button on the panel to turn on the LCD screen again. When the button is pressed, the buzzer will beep briefly. While the device is processing instructions, the "ACTIVE" light will be on. After the operation the light will be off. Please operate the button while the "ACTIVE" light is off.

TS-9506KUT supports HDMI and DVI video interfaces. You can cycle by the "VIDEO" button on the panel. This setting can be remembered though power off.

TS-9506KUT supports picture-in-picture mode. To enable the function, please set the "PIP" menu on the panel to "ON". This setting can be remembered though power off.

TS-9506KUT supports external audio embedded in the video for simultaneous transmission. To enable the embedding function, set the "AUDIO" menu on the panel to "EXTERNAL". This setting can be remembered though power off.

Both TS-9506KUT and TS-9506KUR support EDID learning. To learn the EDID of an external display device, first press the "EDID" button on the panel and then press the "ENTER" button. The learning is completed in about 3 seconds. Complete steps of EDID learning: First, set the EDID of ts-9506kur learning monitor, and then set the EDID of ts-9506KUT learning ts-9506KUR.

The "MENU" contains "EDID selection settings", "IR carrier switch settings" and "Restore factory settings". After entering the "MENU", the four keys on the right side of the panel become 4 direction keys: "▲", "▼", "◀", and "▶". The "MENU" button is used to exit to the previous menu. "◀" and "▶" are used to select "EDID selection settings", "IR carrier switch settings" or "Restore factory settings". "▲" and "▼" are used to switch the options under each of the above menus, and "ENTER" is used to confirm the saved settings.

5.3 Audio function description

1. The audio interface of TS-9506KUT is used to embed external audio into digital video signals and transmit them together.

2. The audio interface of TS-9506KUR is used to extract audio signals from video signals and output them in real time.

3. Audio specifications: Gain: 1: 1 output

SNR: <0.1%

Amplitude frequency response: 80Hz-16KHz, within + 1db ~ -3db.

5.4 KVM function description

1. This device supports the KVM function. We can control a remote computer controller through a mouse and keyboard and send control instructions via keyboard shortcuts. The USB port on TS-9506KUT is connected to the computer controller. Two USB ports on the TS-9506KUR are connected to the mouse and keyboard. The keys on the right side of the USB port must be moved to the KVM position.

2. After the driver is automatically installed on the computer, we can control the controller of the TS-9506KUT end through the TS-9506KUR end keyboard and mouse in real time. This is the normal operation mode.

3. Simultaneously press the key combination "Num Lock" + "+" on the numlock of keyboard to enter the send command mode. At this time, the "Num Lock, CapsLock, ScrollLock indicators" on the keyboard will light up at the same time. Keyboard and mouse operations can not control the computer now. Only the numlock keys in the keypad area are effective, which are used to send control commands to TS-9506KUT.

4. In the send command mode, press "Number X" + "*" + "Number Y" + "Enter" to send a switch command to the matrix. The value of X represents the input terminal and the value of Y represents the output terminal. When X is "0", it means to disconnect a certain channel. When Y is ".", It means all output channels.

5. In the send command mode, press the key combination "Num Lock" + "-" on the keypad area at the same time to exit to normal operation mode again.

5.5 Custom serial port infrared function description

1. The custom serial port (RS232) on TS-9506KUT and TS-9506KUR can be passed through in both directions. Set the keys on the right side of the USB to the RS232 position, set the baud rate on both sides to be the same, and you can send and receive data in both directions at the same time. Support maximum baud rate: 256000bps;

2. The custom infrared interface (IR) on the TS-9506KUT and TS-9506KUR terminals can be connected in both directions. The IR end of one device is connected to the infrared receiver, and the infrared end of the other device is connected to the infrared transmitter. Use the infrared remote control to face the infrared receiver. Then the infrared transmitter is facing the device, which can realize infrared remote control. If the infrared signal is abnormal, we can try to set the infrared carrier on or off.

5.6 Device infrared and serial port control instructions

1. TS-9506KUT or TS-9506KUR can be set by infrared remote control. The "▲", "▼", "◀", "▶", "☰" and "OK" keys on the infrared remote control correspond to the "▲" "▼", "◀", "▶", "MEUN", "ENTER" keys;

2. TS-9506KUR can send switching commands to the matrix through infrared remote control: Press "Number X" + "*" + "Number Y" + "OK" to send a command. When X is "0", it means to disconnect a channel. And when Y is "#", it means all output channels.

3. TS-9506KUT or TS-9506KUR can be configured through the RS232 serial port. The right button of the USB interface under test must be moved up. Commands refer to "Appendix I, Command List".

6. System specifications

This transmission system consists of TS-9506KUT and TS-9506KUR. TS-9506KUT is a video transmitter that connects to video signal source devices such as PCs, notebooks, cameras, DVDs or matrix output terminals. And it has two video input interfaces, HDMI and DVI, as well as one HDBaseT and HDMI output interface. We can choose to use one of the interfaces through panel keys, infrared remote control or serial port commands. TS-9506KUR is a video receiver connected to video signal terminal equipment such as monitors, projectors and matrix inputs. It has the same video output as HDMI and DVI. TS-9506KUT and TS-9506KUR use HDBaseT protocol and are connected through a Cat5e cable or better network cable (568B line sequence). Video, audio, serial, infrared, USB and other data are transmitted over this network cable for long distances.

Model	Content
Specifications	
TS-9506KUT interfaces	
Digital video input	1x HDMI digital video interface 1x DVI-D digital video interface
Output Interface	1x HDBaseT network port 1x HDMI digital video interface
Audio input	1x 3.5mm audio port
KVM interface	1x USB TYPE-B
Infrared interface	1x infrared input and output port (RCA)
Serial port	1x RS232 input and output port (RCA)
Switch	1x KVM and RS232 transparent selection switch
TS-9506KUR interfaces	
Input interface	1x HDBaseT network port (using 568B wire sequence)
Video output interface	1x HDMI digital video interface 1x DVI-D digital video interface
Audio output	1x 3.5mm audio port
KVM interfaces	2x USB TYPE-A
Infrared interface	1x infrared input and output port (RCA)
Serial port	1x RS232 input and output port (RCA)
Switch	1x KVM and RS232 transparent selection switch
Protocols and standards	
HDMI	HDMI 1.4
HDCP	HDCP 1.4
HDBaseT	HDBaseT 1.0
HDBaseT maximum bandwidth	10.2Gbps
Custom serial baud rate support	110bps-256000bps
Video resolution and maximum transmission distance (tested with Cat5e cable)	
3840×2160(30Hz); 1920×1200(30/50/60Hz);	90 meters

Model	Content
Specifications	
1920×1080P(30/50/60Hz); 1920×1080i、1600×900、1366×768、 1280×720、1920×1200、1680×1050、 1440×900、1440×900、1360×768、 1280×800、1600×1200、1400×1050、 1280×1204、1024×768、800×600、 640×480 等(30/50/60Hz/120Hz);	150meters
Structure and other	
Power supply	12V / 1.5A
Rated power consumption	TS-9506KUT: 5W; TS-9506KUR: 6W
Dimensions (L * W * H)	215 × 153 × 44 mm
Weight	0.8Kg
Ambient temperature	-10 °C ~ +45 °C
Ambient humidity	10% ~ 80% (no condensation)

7. Appendix I. Command list

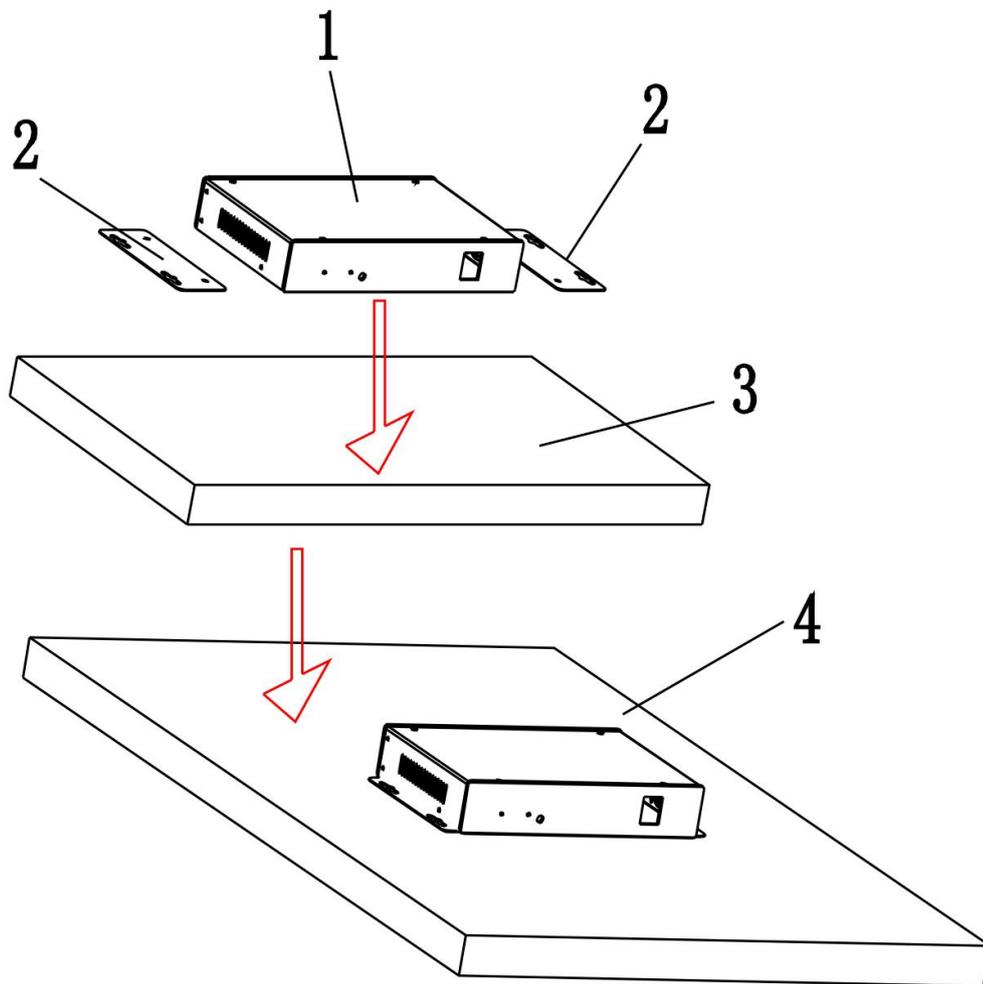
Computer send code	Command function	Device return code	Remark
Infrared carrier switch			
60C89.	Turn on the infrared carrier	IR wave is ON!	
61C89.	Turn off the infrared carrier	IR wave is OFF!	
Internal and external audio switching			
01C50.	Switch to internal audio	Audio=DIGITAL_AUDIO.	Only 9506KUT support
02C50.	Switch to external audio	Audio=ANALOG_AUDIO.IO.	Only 9506KUT support
EDID switch			
01C51.	Switch to 4K EDID	EDID is 4K EDID.	
02C51.	Switch to HDMI EDID	EDID is HDMI EDID.	
04C51.	Switch to USER EDID	EDID is User EDID.	
Input video port selection			
01C52.	Select DVI video input	Input Port = DVI.	Only 9506KUT support
02C52.	Select HDMI video input	Input Port = HDMI.	Only 9506KUT support
PIP function switch			
01C53.	Open the PIP function	PIP function open!	Only 9506KUT support
02C53.	Close the PIP function	PIP function close!	Only 9506KUT support

User EDID learning			
01C54.	User EDID learn and save		
Restore factory default settings			
01C55.	Restore factory settings		

Version: ITC 1.0

8. Installation method

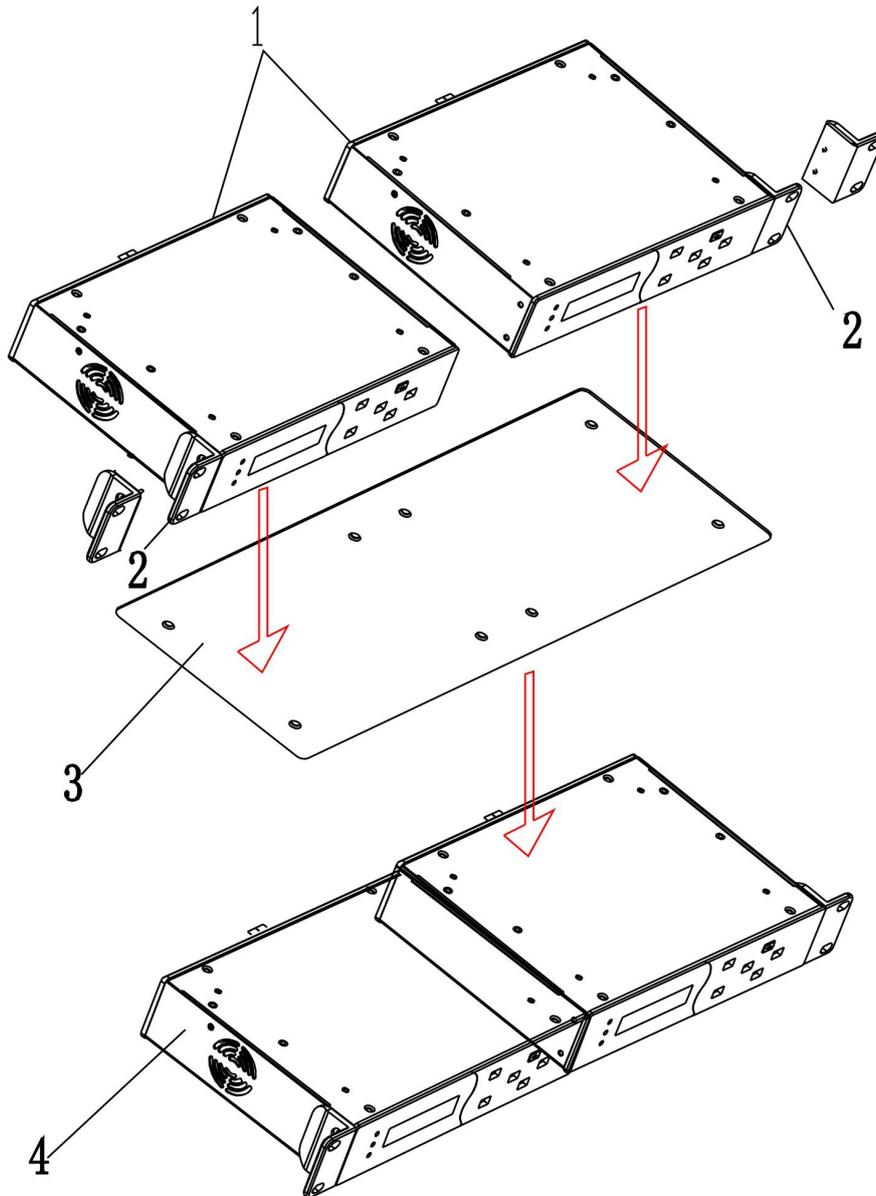
8.1 Wall mounting diagram



"Wall-Mounted Ear Fittings" are standard accessories included. No need to be ordered separately.

1. Transmitter: Remove the 4 foot pads at the bottom of each transmitter.
2. Wall-mounted accessories: two M4 * 6 flat-head screws are fixed on both sides of the transmitter bottom plate.
3. Wall: Fix the transmitter on the wall with four M4 * 10 round head screws.
4. The final effect.

8.2 Cabinet installation diagram



1. Transmitter: Remove the 4 foot pads at the bottom of each transmitter.
2. Side accessories: two M3 * 6 flat-head screws are fixed on both sides of the transmitter bottom plate.
3. Bottom plate accessories: Fix the transmitter bottom plate with four M4 * 8 flat-head screws
4. The final effect.

The specification of "Transmitter IU Combination Installation Accessories" is "TS-9500-IU". The detailed list is:

Side accessory x2

Bottom plate accessory x1

Side screw x4

Bottom screw x8

KVM Seating Management Transmitter/Receiver

