iTC

HD Seamless MATRIX Switcher

User Manual

TS-9124HD

Please read this manual in detail before usage.

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 I 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.

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:

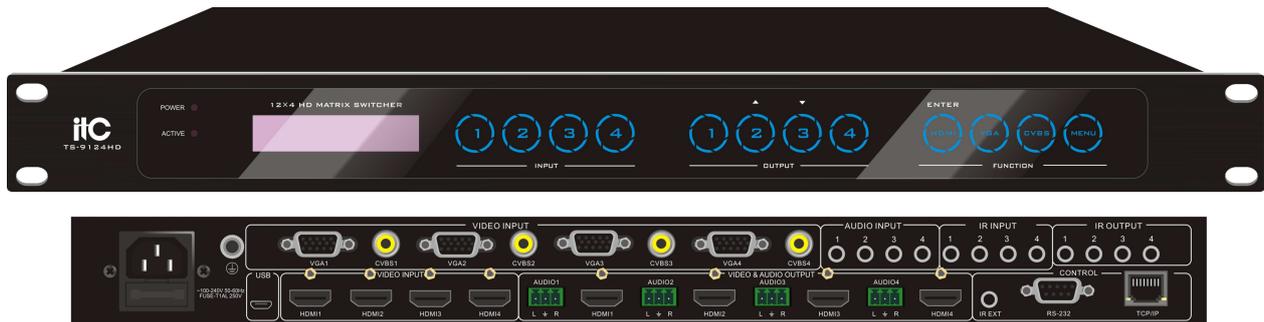|	
	Applicable to 2000 meters above sea level and below safe
	Safe use only in non-tropical climates

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.

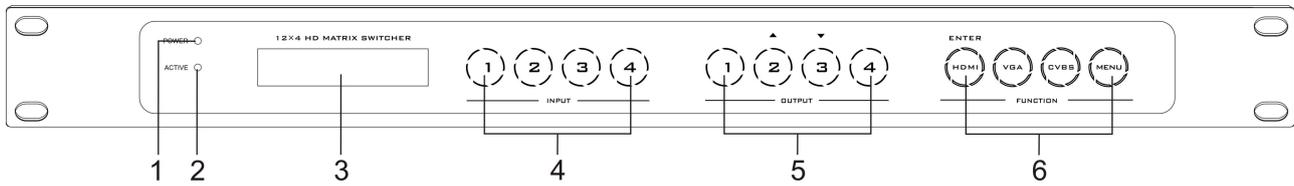# CONTENT

1. System introduction

TS-9124HD is a video switcher that supports 1080P high-definition video, supports 12-channel video inputs and 4-channel video outputs.

2.Feature

1. With various audio and video interfaces. Support 4-channel VGA, 4-channel HDMI, 4-channel CVBS. There are 12 channels video signal inputs in total; support 4-channel 3.5 unbalanced analog stereo audio inputs, 4-channel 3.5 unbalanced stereo audio outputs (Phoenix Terminal); support 4-channel IR inputs and 4-channel IR outputs.

2. For the HDMI input source, internal HDMI audio input or an external analog audio input is optional for you.

3. Support LCD screen to query audio and video switching channels, switch HDMI internal and external audio, switch HDMI port format.

4. Support HDMI video signal output resolution adjustment.

5. Support HDMI 1.4 (compatible with DVI1.0), HDCP1.3.

6. With HDMI cable fixing post to prevent HDMI cable from falling off or damaging the interface.

7. HDMI output port supports HDMI/DVI format conversion;

8. VGA input comes with EDID function.

9. Support RS232 port control, and Ethernet remote control.

10. Support power-off memory function and live memory function, power protection function, automatic recovery after fault elimination.

11. The maximum transmission distance of the HDMI cable is 15 meters, and the maximum transmission distance of the VGA cable is 15 meters.
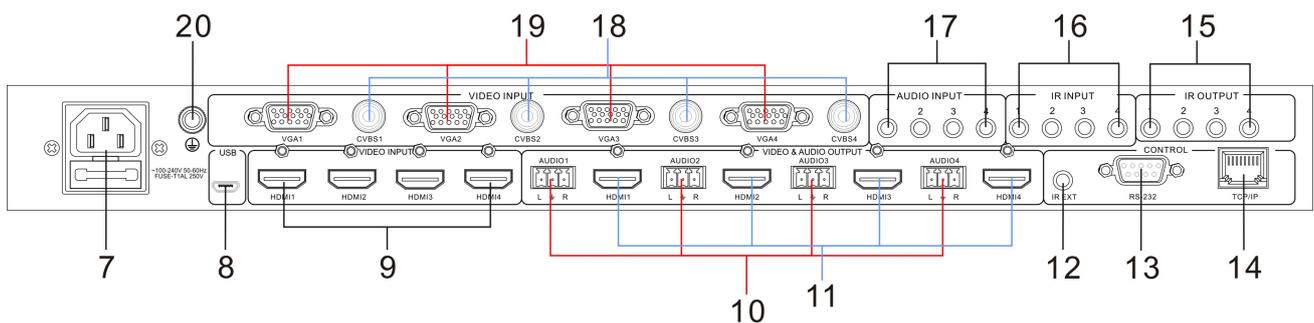
3.Function introduction
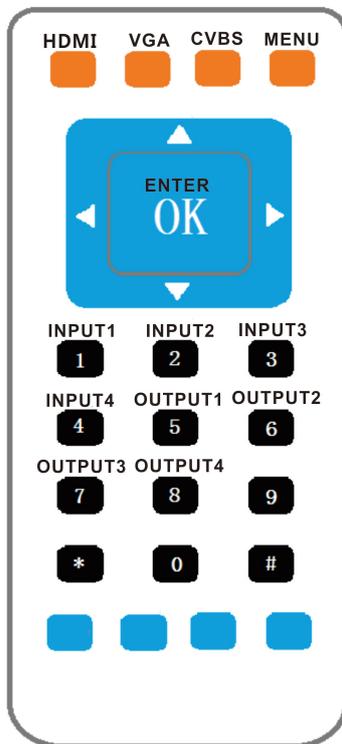
3.1 Front panel

1. Power indicator light;

2. Operation indicator light;

3. LCD screen, showing the current working status of the device;

4. 4-channel input numeric buttons;

5. 4-channel output digital buttons;

6. 4-channel function buttons: HDMI, VGA, CVBS and MENU.

3.2 Rear panel

7. AC power input socket;

8. Micro USB program burning port;

9. 4 HDMI digital video input ports;

10. 4 channels of 3.5 unbalanced stereo audio outputs (Phoenix terminals);

11. 4 HDMI digital video output ports;

12. Infrared control port (reserved function);

13. RS232 serial port;

14. TCP / IP network control port;

15. 4 channel 3.5 infrared output ports;

16. 4 channel 3.5 infrared input ports;

17. 4 channel analog audio signal input ports;

18. 4 channel CVBS video input ports;

19. 4 channel VGA video input ports;

20. Grounding post.

4. Infrared remote control button description

The infrared remote control button corresponds to the TS-9124HD touch button as shown in the figure:

The four buttons on the remote control correspond from left to right: **"HDMI", "VGA", "CVBS", "MENU"**;

Operation 1: Video channel switching.

Press the button **"HDMI"** to enter the video channel switching mode. At this time, the digital buttons correspond to the following:

Button "1" corresponds to: INPUT1 (input 1 channel);

Button "2" corresponds to: INPUT2 (input 2 channels);

Button "3" corresponds to: INPUT3 (input 3 channels);

Button "4" corresponds to: INPUT4 (input 4 channels);

Button "5" corresponds to: OUTPUT1 (output 1 channel);

Button "6" corresponds to: OUTPUT2 (output 2 channels);

Button "7" corresponds to: OUTPUT3 (output 3 channels);

Button "8" corresponds to: OUTPUT4 (output 4 channels);

Button: "MENU": Return to the initial interface.

The LCD screen will display correspondingly .

Example: switch input 1 channel to output 2 channel:

Remote control button operation: **"HDMI"**-"button 1"-"button 6" to switch channels.

5.Specification

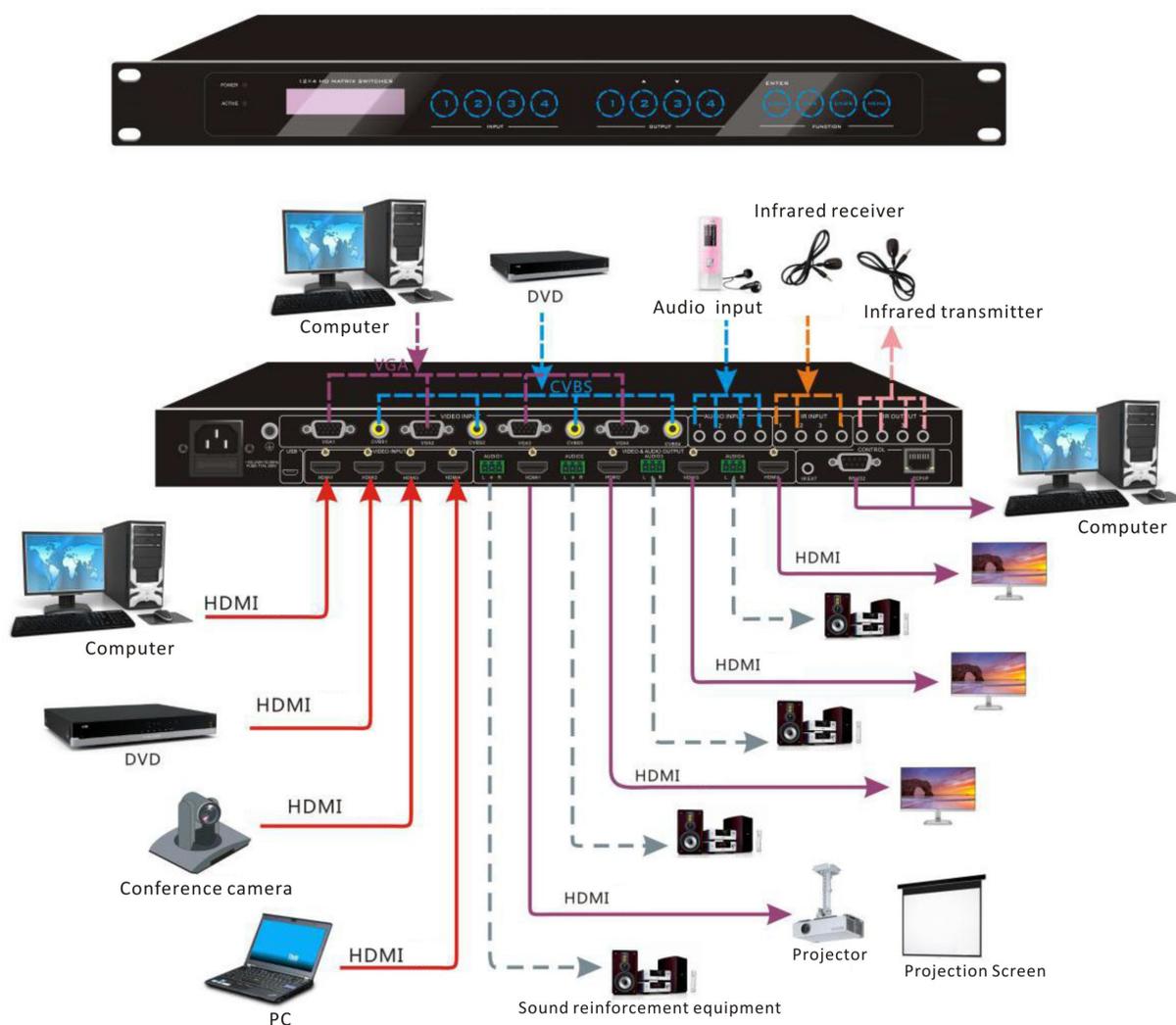| Model	TS-9124HD
Input signal/ input channels	12
Output display ports / output channels	4
Input signal interfaces	HDMI, DVI, VGA, CVBS
Output signal interface	HDMI
Interface bandwidth	2.25Gbps, full digital (total 6.75Gbps, each color is 2.25Gbps)
Resolution	1920*1080P
Serial control interface	RS-232, 9-pin female D-type interface
Baud rate and protocol	Baud rate: 9600bps, data bit: 8 bits, stop bit: 1, no parity bit
Serial control port structure	2=TX, 3=RX, 5=GND
Ethernet control interface	RJ-45 female interface
Ethernet control protocol	TCP/IP
Ethernet control rate	Adaptive 10M/100M, full duplex or half duplex
MTBF	30,000 hours
Storage and operation temperature	-20℃～+70℃
Storage and operation humidity	10%～90%
Power supply	100VAC~240VAC, 50/60Hz, international adaptive power supply
Maximum power consumption	35W
Cabinet size	1U, 440(L)×295(W)×42(H)mm
Weight	About 2Kg

6.Operation Instruction

1. Equipment

Audio and video signal input source: computer, DVD, camera and other audio and video signal source with HDMI, DVI, VGA, CVBS interfaces;

Screen: Screen with HDMI interface;

Standard wires: HDMI cable, DVI cable, VGA cable, component line, 3.5mm to 3.5mm or 3.5 to RCA audio signal cable (Note: To ensure the quality of audio and video signals, it is recommended to use wires from famous brands, such as UGREEN, CHOSEAL).

2. Connect each audio and video source and screen as shown

3. Operation description

（1）Power on

After normal power-on, the white power indicators "POWER" and "ACTIVE" on the rear

panel are always on. When you hear a short tone of the buzzer, the device starts. The LCD screen is activated to light up the initialization interface. And the 12 white touch lights are all on. The touch button operation on the panel is invalid during device startup.

Basically, within 10 seconds, the touch light is completely extinguished, and the buzzer emits a short beep to indicate that the device has completely started up. Thereafter, if there is no operation, the LCD screen will go out within 30 seconds. The LCD screen can be reactivated by pressing any of the touch buttons on the panel. At the beginning, only the four buttons "HDMI", "VGA", "CVBS" and "MENU" are valid. Only one button can be lit at the same time, indicating that the corresponding function mode has been entered.

（2）Panel touch button function

Select any input channel, the corresponding input light is on, and the corresponding output channel and the corresponding signal type light are on. This is to select the output channel. When the light is on, it means to switch the audio and video. If the light is off, the audio and video of the current output channel are turned off. Selecting the signal type changes the signal of the current input channel.

1) First, select any one input channel A, and select several output channels Y and Z, then the video can be switched. The selected channel button light will always be on, and it will be turned off without operation within 30 seconds, then the switched channel will not be displayed on the LCD screen.

2) First, select any one input channel A, and select the signal type buttons "HDMI", "VGA", and "CVBS" to achieve the signal type input for the current input channel. The selected channel button light will always be on, and it will be turned off without operation within 30 seconds, then the switched channel will not be displayed on the LCD screen.

Note:① **HDMI audio defaults to internal sound output, which can be switched between internal and external sounds via the panel button "MENU". Operation menu button MENU-->Down button (OUTPUT3)-->Screen shows "* HDMI AUDIO IN"-->ENTER(HDMI) button-->INPUT1-4 flashes twice to prompt the input channel to be set --> Display IN * Interior/IN* external--> Up or down button to select internal and external audio --> MENU button.**

② **VGA and CVBS only have external audio. When switched to "VGA" or "CVBS" mode, AUDIO INUP has audio input, and meanwhile the audio is switched after video switching.**

(3) Output resolution

It can support a maximum output of 1920x1080 60Hz. And 9 output resolutions are optional.

① Button operation: MENU-> Select Up or Down-> When the screen shows "* Resolution"-> ENTER-> Press 1/2/3/4 to select the channel whose resolution needs to be modified-> Select Up or Down, and meanwhile display resolution-> Press MEUN to confirm the resolution;

The maximum transmission distance:

1. HDMI / DVI cable maximum transmission distance: 1920x1080 @ 60Hz: 10 meters

2. Maximum transmission distance of VGA cable: 1920x1080 @ 60Hz: 7 meters

② See command operation list for details.

Common resolution:

1.1920x1080 60Hz

2.1680x1050 60Hz

3.1600x1200 60Hz

4.1440x900 60Hz

5.1400x1050 60Hz

6.1366x768 60Hz

7.1280x1024 60Hz

8.1280x720 60Hz

9.1024x768 60Hz

(Note: If there is an abnormal display on a screen, please first confirm whether the display itself can support the resolution.)

(4) Control port configuration instructions

① RS232 control

Baud rate: 9600bps;

Data bits: 8bits;

Stop bit: 1bit;

Parity bit: None;

Flow control: None

②TCP / IP control

Local address: 192.168.0.2

Subnet mask: 255.255.255.0

Gateway: 192.168.0.1

Port: 5000

MAC address: 0x00, 0x08, 0xDC, 0x01,0x02, 0x22

For the specific instruction list, please refer to the **Appendix, Serial Control Command List**" to ensure that each command works normally.
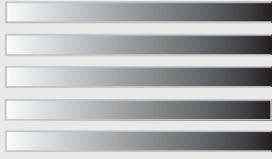
7. Appendix: serial control command list

ASCII command (computer to matrix)	Command functions	Return (matrix to computer)	Remarks
/*Type;	Query Matrix Model	TS-9124HD	
/^Version;	Software version	V1.0	
[x]All.	[x] input to all outputs. When [X1] is 0, it means to close all outputs.	V:[x1] -> [x2] V:[x1] -> [x2] V:[x1] -> [x2]	
$All.	Close all channels.	V:0 -> [x2] V:0 -> [x2]	
#All.	One-to-one channels	V:1 -> 1 V:2 -> 2 V:3 -> 3 V:4 -> 4	
<^SPORT>	Query the current matrix network port number	<SPORT:[X1]>	Default：5000
<^SIPR>	Query the current matrix network IP number	<SIPR:[X1].[X2].[X3].[X4]>	Network IP：192.168.0.2
<^SUBR>	Query the current network subnet mask number	<SUBR:[X1].[X2].[X3].[X4]>	Default subnet mask：255.255.255.0
<^GAR>	Query the current network gateway number	<GAR:[X1].[X2].[X3].[X4]>	Default gateway：192.168.0.1
<^SHAR>	Query the current network hardware address number	<SHAR:[X1].[X2].[X3].[X4].[X5].[X6]>	
<#SPORT[5000]>	Set the network port number of the matrix	<Set Network Succeed!>	Power on again to take effect
<#SIPR[192]. [168]. [0]. [2]>	Set the matrix network IP	<Set Network Succeed!>	Power on again to take effect
<#GAR[192].[168].[0]. [1]>	Set the network gateway number	<Set Network Succeed!>	Power on again to take effect
<#SUBR[255].[255].[255].[0]>	Set the network subnet mask	<Set Network Succeed!>	Power on again to take effect
<#SHAR[00].[11].[22].[33].[44].[55]>	Set network hardware address	<Set Network Succeed!>	Power on again to take effect

<#NETDEFAULT>	Network configuration to restore factory value	<Set Network Succeed!>	Power on again to take effect
[RX1]T[TY1].	Input port of infrared receiving channel [RX1] is connected to output port of infrared transmitting channel [TY1]	T:[RX1]->[TY1]	
[x1] V[y1].	The [x1] input to the [y1] output, the video switches. When [X1] is 0, it means y1 video is closed	V:[x1] -> [x2]	
[x1] V[y1],[y2],[y3]....	Input [x1] to [y1] [y2] [y3]	V:[x1] -> [x2]	
Status.	Query the current status of all output channels.	V:[x1] -> [x2]	
/:BellOn;	Turn on the buzzer	<Closed The Bell.>	
/:BellOff;	Turn off the buzzer	<Opened The Bell.>	
Input settings			
[x1],[x2]SETIN.	Activate the [x1], [x2] input channels to the preset state	<Set Succeed!>	
Input channel settings			
01C02.	Set CVBS channel input	<Set Succeed!>	
05C02.	Set VGA channel input	<Set Succeed!>	
06C02.	Set HDMI channel input	<Set Succeed!>	
HDMI audio input selection settings			
01C06.	Set up analog audio input	Input[xx] Analog Audio	
02C06.	Set up embedded digital audio input	Input[xx] Digital Audio	
VGA automatic adjustment			
08C15.	VGA automatic adjustment	<Set Succeed!>	
Output settings			
[x1]SETOUT.	Activate the [x1], [x2] output channels to the preset state	<Set Succeed!>	
HDMI output signal format			
02C07.	Output HDMI signal	Output[xx] HDMI	
01C07.	Output DVI signal	Output[xx] DVI	
Resolution setting			

01C08.	Set the resolution to 1024 X 768 @ 60Hz	Output[xx] RES : 1024x768	
02C08.	Set the resolution to 1280 X 720 @ 60Hz	Output[xx] RES : 1280x720	
03C08.	Set the resolution to 1280 X 1024 @ 60Hz	Output[xx] RES : 1280x1024	
04C08.	Set the resolution to 1366 X 768 @ 60Hz	Output[xx] RES : 1366x768	
05C08.	Set the resolution to 1400 X 1050 @ 60Hz	Output[xx] RES : 1400x1050	
07C08.	Set the resolution to 1440 X 900 @ 60Hz	Output[xx] RES : 1440x900	
08C08.	Set the resolution to 1600 X 1200 @ 60Hz	Output[xx] RES : 1600x1200	
09C08.	Set the resolution to 1680 X 1050 @ 60Hz	Output[xx] RES : 1680x1050	
11C08.	Set the resolution to 1920 X 1080 @ 60Hz	Output[xx] RES : 1920x1080	

Note: After editing the IP address, you are required to restart the controller to take effect the new address.

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