



# Users' Manual

## SWITCHER

**Model: HDS9110**

**VER 1.0**



# Precautions

## About this device:

- This device belongs to the high-frequency video processing equipment. Therefore, please strictly observe the following points:
- Non-professionals are not allowed to disassemble the equipment case without permission. Do not repair it yourself to avoid accidents or damage to the equipment.
- Do not spill any chemicals or liquids on or near the equipment.
- The power supply of the device will generate heat during operation. Therefore, keep the working environment well ventilated to avoid damage to the device due to excessive temperature.
- Do not place system equipment in a location that is too cold or too hot.
- Operate the equipment in an environment where the temperature is between 0-70 degrees Celsius (32-158 degrees Fahrenheit) and the humidity is between 10% and 80%.
- Try to keep the product environment clean and avoid dust, otherwise there is a danger of destroying the product.
- When using the product, keep it away from electromagnetic fields.



- Do not dispose of this product as normal waste. This product is designed to be recyclable.

## Copyright:

When using this unit for video and/or audio switching, publishing over the Internet, or the like, in some cases it may be necessary to authorize the copyright owner of the video or audio. In order to protect copyright, please strictly observe the following points when using this device:

- When connecting a recording device to this unit and recording video or audio, be sure to follow the relevant copyright laws.
- It is prohibited by law to display or publish third-party copyrighted video and audio materials, or to allow private or public access without the permission of the copyright holder.
- Even if you have the right to display or publish, for example, editing activities that use this unit to erase or disassemble the original content may still be prohibited by law. For the purpose of copyright protection, the specifications of the video and audio signals that can be input may change without notice due to software upgrades or feature extensions.
- According to copyright laws, recorded video and audio may not be used for purposes other than personal preferences without the permission of the copyright holder. Please note that even if it is based on personal preference,
- It may also limit shooting during live performances, performances or exhibitions.

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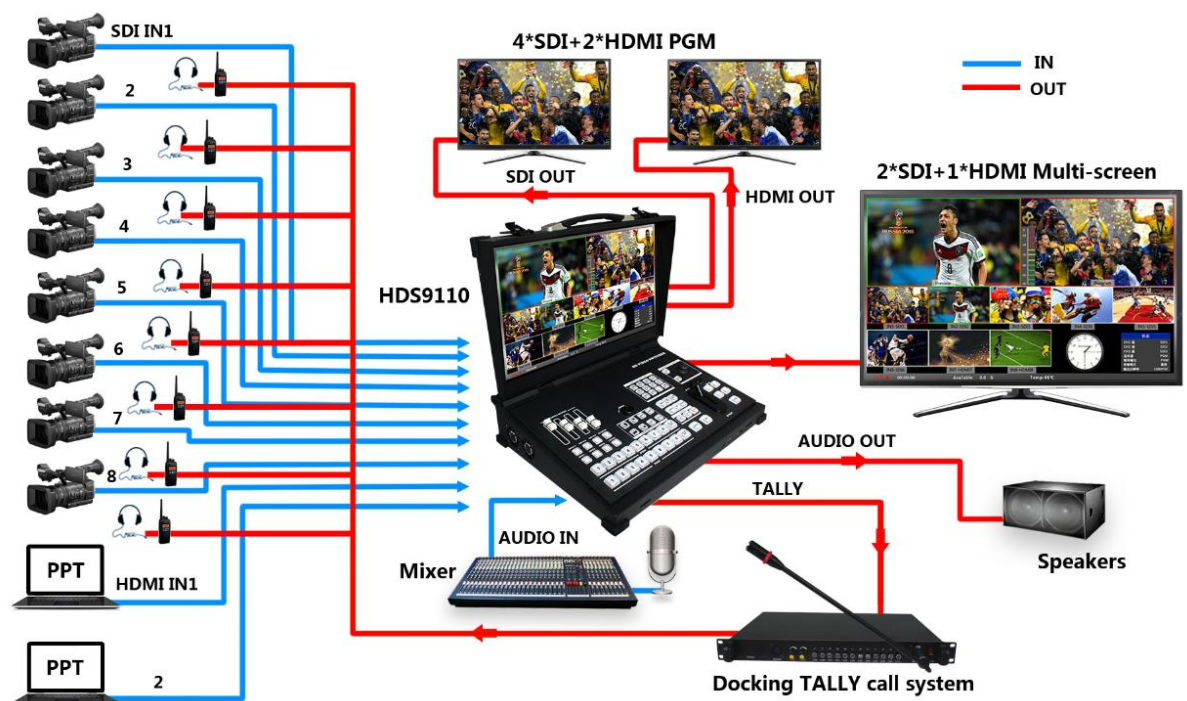
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# 1. Overview

## 1.1 Product Introduction

Devicewell 10-CH switcher HDS9110 integrates multiple control modes. Comes with 17-inch high-definition monitoring screen. The keyboard can be used to set special effects and transition modes. The knob can control the LCD display. The LCD will display various states of the current device in real time. The built-in menu display function allows the device to be set up more intuitively and efficiently, and the camera joystick can control the distance between the camera and the camera.

Devicewell 10-channel switcher HDS9110 is an 8-channel SDI, 2-channel HDMI and 2-channel U-disk playback input video signal, a total of 6 SDI output, 3 HDMI output broadcast-level video signals. The ten-channel switcher HDS9110 is suitable for live performances, course recordings, and in-shed navigation. The switcher has multiple functions. Such as multiple format video input and input resolution adaptive, analog balanced audio input and output, audio plus embedded de-embedding, mixing, TALLY, SD card recording, RS422 and RJ45 control, etc., with remote upgrade capabilities. The user can perform video switching and audio mixing with additional effects through easy operation.



## 2. Function Features

The DeviceWell Switcher is a multi-function switcher that requires no special knowledge and can be used for video switching and audio mixing with a simple operation. This unit can be used in radio and television, live broadcast and various activities.



- Comes with 17-inch high-definition monitoring screen
- Media management function, support 2-CH USB media playback, you can choose to play video or picture.
- Support PIP& POP function. The size and position of the sub-window can be adjusted arbitrarily, and the thickness and color of the frame can be set.
- The configured LCD panel can be controlled by the knob to facilitate setting the parameters of the device and displaying the working status of the device in real time.
- HDMI input supports 4K60, backward compatible
- Support audio monitoring function, easy to monitor any audio and PGM live output audio.
- The input resolution is adaptive and the output resolution is adjustable.
- Support PC software remote upgrade.
- Support SD/HD/3G signal format.
- Support TALLY interface signal indication.
- Input: 8-CH SDI, 2-CH HDMI&2-CH USB.
- Output: 4-CH SDI, 2-CH HDMI live PGM output, 2-CH SDI, 1-CH HDMI multi-picture output.
- 1 channel XLR balanced audio input; 1 channel XLR balanced audio output; support SDI audio de-embedding; support audio follow-up and mix switching function.
- Supports MIX/FADE/WIPE/INV switching effects; supports CUT hard cut, AUTO switching and FTB black field emergency switching; the switching rate can be set.
- 1 set of KEY, support Luma key, chroma key image processing, support overlay icon.
- Support camera control, up to 8 cameras can be controlled.
- Test pictures such as color bars can be generated inside the device.
- Support SD card to record PGM live video.
- Support RS422 interface to control the camera.

### 3. Preparation Before Installation

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#### Caution

- During transportation, handling, and installation of switchboard equipment, avoid collisions between the switchgear equipment and doors, walls, shelves, etc.
- When the equipment is unpacked and transported, it is strictly forbidden to put it down and drag it gently to avoid damage to the switchboard equipment.
- Do not place the switcher equipment in a flammable, explosive atmosphere or smoke environment. Do not perform any operation in this environment.
- Operating equipment should be kept away from water and moisture. The water in the switchgear or moisture will cause damage to the circuit of the switchgear equipment.
- A certain amount of heat will be generated during the operation of the switcher. Ensure that the switchgear equipment is ventilated and the switcher device can operate normally.



#### Danger

- It is a fatal hazard that indirect contact with the power supply by wet objects is prohibited. Unregulated, incorrect high-voltage operation can cause accidents such as fire or electric shock.
- It is forbidden to install and remove the switchgear equipment and power cord. When the power cord is in contact with the conductor, an arc or spark may be generated, which may result in fire or electric shock.

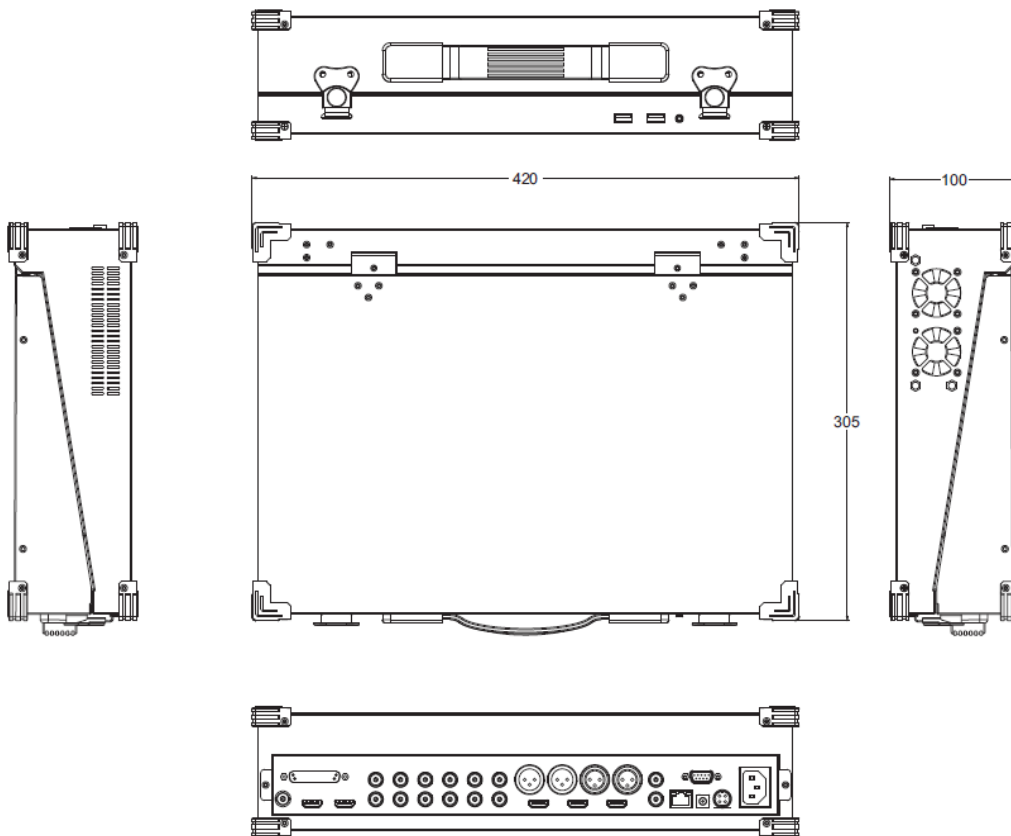


## 4. Equipment Unpacking



When unpacking inspection, if the sealing label or packaging is found to be damaged, stop unpacking and report the situation to the equipment dealer. If the quantity of the goods is correct and the packaging is intact, the goods can be inspected.

### 4.1 Size: 420\*305\*100mm



## 5. Interface Specification

### 5.1 Interface Introduction

HDS9110 interface is shown below.



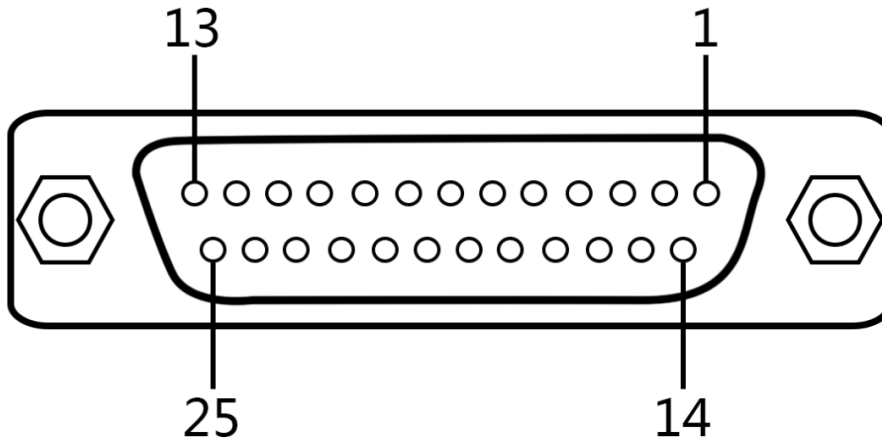
NO.	Definition	Description
1	TALLY	DB-25 interface
2	SDI IN	8-CH SDI input
3	SDI OUT	3-way SDI video output PGM, SDI OUT1 custom output PGM/PVW, SDI OUT2 AUX auxiliary output
4	AUDIO IN	XLR_IN
5	AUDIO OUT	XLR_OUT
6	RJ45	Network control and upgrade
7	RS422	PTZ camera control
8	POWER	AC 110-240V power input
9	HDMI IN	2 HDMI video source inputs
10	HDMI OUT	2 HDMI video output PGM
11	MULTIVIEW	HDMI and SDI output multi-picture
12	POWER	DC12V power input and output



NO.	Definition	Description
13	SD Card	SD card recording PGM screen
14	USB	USB media player
15	AUDIO	Audio monitoring

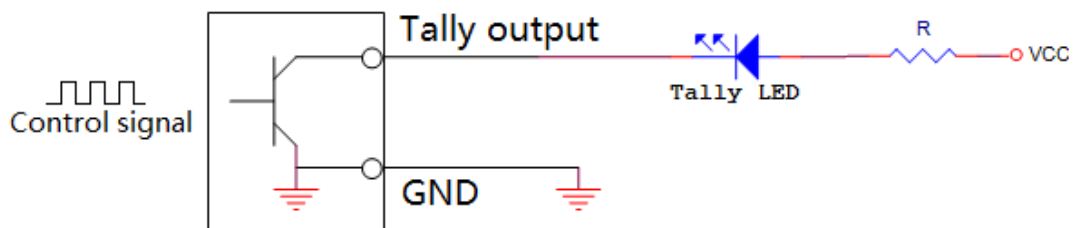
## 5.2 TALLY Interface

HDS9110 DB-25 Interface Definition



Channel	PGM ( LED Red )	PVW (LED Green )
1	1	14
2	2	15
3	3	16
4	4	17
5	5	18
6	6	19
7	7	20
8	8	21
GND:13		

TALLY : Online schematic



Note: Tally LED: for external display device

Tally output : Active low (Tally LED is lit) High level is invalid (Tally out is off)

### 5.3 Interface Parameters

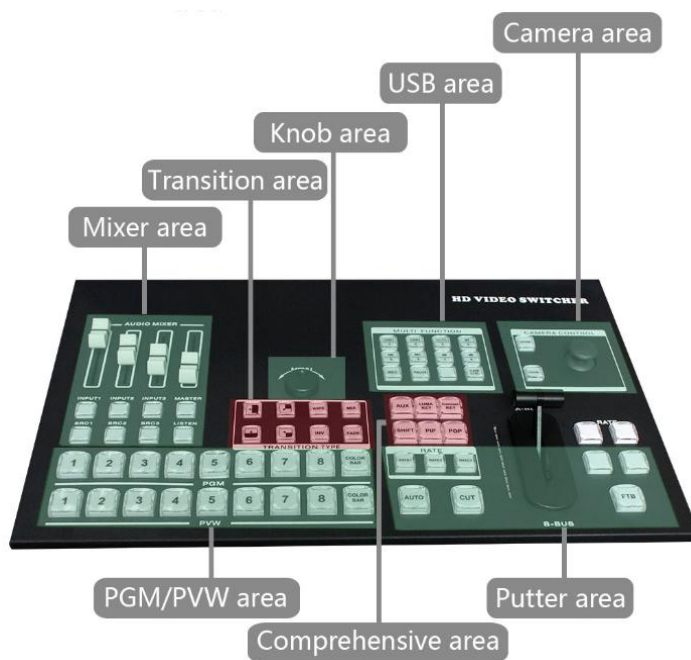
Name	Portable Switcher	
Model	HDS9110	
<b>Video Signal Input</b>	Input Signal	SDI/HDMI Video Signal
	Rate	270Mbps~3Gbps
	Connector	Standard
	Reflection loss	>15dB 5MHz~3GHz
	Signal amplitude	800mV ±10% (SDI /HDMI)
	Impedance	100Ω (HDMI) 75Ω(SDI)
	Balance	Adaptive
	DVD input HDMI support	480i/576i,480p/576p,720p,1080i,1080p
	Computer HDMI input support	1920x1080,1680x1050,1600x900,1440x1050,1366x768,1360x768,1280x1024,1280x960,1280x800,1280x768,1280x720,1280x600,1152x864,1024x768,800x600
<b>Video Signal Output</b>	Output Signal	SDI/HDMI Video Signal
	Rate	270Mbps~3Gbps
	Connector	Standard
	Reflection loss	>15dB 5MHz~3GHz
	Signal amplitude	800mV ±10% (SDI /HDMI)
	Impedance	100Ω (HDMI) 75 Ω(SDI )
	DC offset	0V ±0.5V
<b>General Parameters</b>	Power supply	12V/DC
	Power Rating	Rated power 40w
	Size	420*305*100mm
	Control Panel	Support live production, integrate multiple buttons.
	Weight	6.44kg
	Operating Temperature	0°C~50°C without condensation
	Storage Temperature	-20°C~75°C
	Working Humidity	20%~70%RH
	Storage Humidity	0%~90%RH, No condensation

## 6. Control Panel and Interface

The new high-strength characteristics of the new aluminum alloy with high-strength characteristics improve the anti-drop, anti-shock and shock-proof capabilities of the whole machine, and effectively protect the internal components of the equipment. Ultra-lightweight features make the unit easier to transport and maintain without the need for additional equipment; it also offers unparalleled thermal performance.

In addition to the innovation of the enclosure, the DeviceWell HD switcher has also been completely optimized for the interface connector. Environmentally friendly materials with new RoHS standards are more demanding in terms of durability and environmental protection, providing customers with more stable, cost-effective and environmentally friendly products.

### 6.1 Control Panel



#### 6.1.1 Area Description

NO.	Name	Description
1	Mixer	Mainly for audio follow, embedded and mix settings.
2	Transition effect control area	Select transition effects
3	Knob control area	Use the knob to display menu information and various states of the switcher system

NO.	Name	Description
4	USB media play area	Control USB playback
5	Camera control area	Control camera
6	PGM & PVW	Live broadcast and preview selection
7	Integrated control area	Mainly to control the switcher overlay effects
8	T-bar	Manual control of transitions

## 6.1.2 Button Description

### 6.1.2.1 Mixer

Audio channel control:

INPUT1/INPUT2/INPUT3 indicates that 3 types of input audio can be controlled.

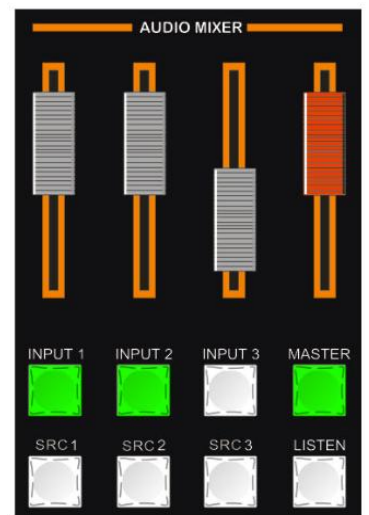
MASTER: Adjusts the output master volume.

Audio Source Switch:

Where SRC is the audio channel bonding option, press SRC1 /SRC2/ SRC3, cycle through the selection of the desired audio channel.

Audio monitoring:

LISTEN monitor button, after accessing the headset, you can cycle to select any one of the monitors.



### 6.1.2.2 Knob and LCD menu

HDS9110 integrated LCD menu, can be set by knob

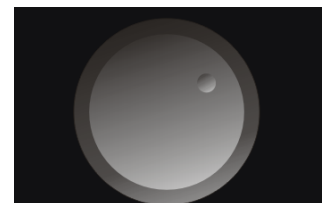
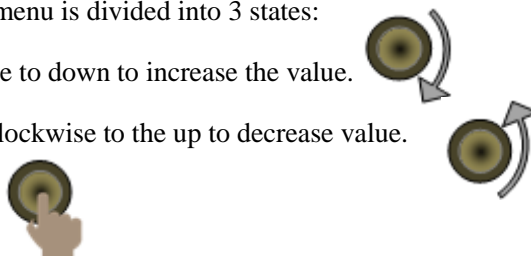
The LCD menu is mainly divided into status display and menu settings.

The knob control menu is divided into 3 states:

1. Rotate clockwise to down to increase the value.

2. Rotate counterclockwise to the up to decrease value.

3. Press to select.



### 6.1.2.3 USB Media Play Area

USB1 and USB2 in the multimedia play area are control options, and USB1 is also controlled on USB1. VD/PIC is selected for video or picture, the default is to play video. Once pressed, you can switch to picture playback.



Play/ Pause



Previous



Next



Back, up to 32 times



Speed, up to 32 times



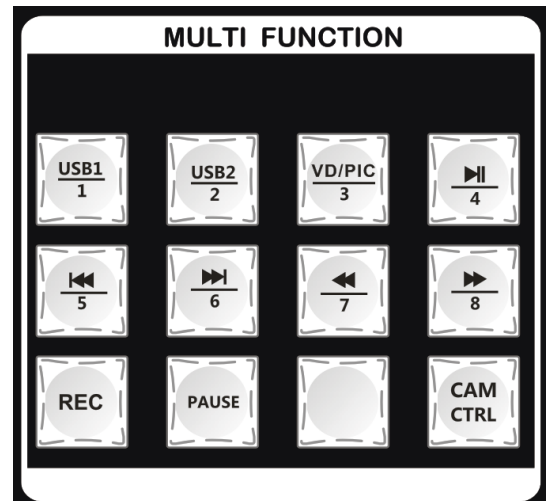
After the SD card is properly inserted, the red light is displayed after pressing REC.



Pause the recording of the SD card after pressing



Reserved





### 6.1.2.4 Camera Control Area



Zoom in shooting distance



Reduced shooting distance

Push the camera rocker up: the lens is up

Push the camera rocker down: the lens is down

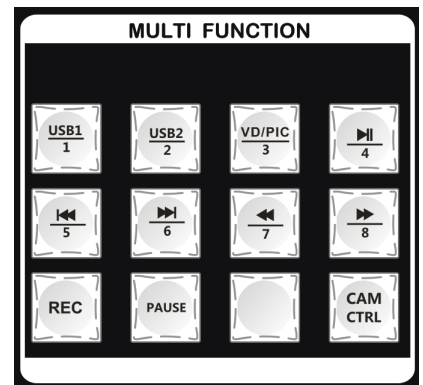
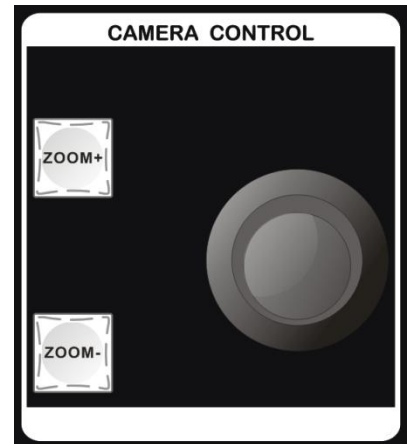
Push the camera rocker left: rotate the lens counterclockwise

Push the camera rocker right: rotate the lens clockwise



Camera control key, if you want to choose the number of control,

You must first press the CAM CTRL key, then select the number key, the number corresponds to the address of the camera;



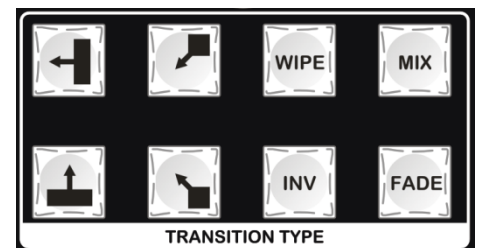
### 6.1.2.5 Transition Control Area

There are three transition modes:

MIX, WIPE, FADE

INV key are mirrored transitions.

Before using the INV mirror button, press the arrow button and then press the INV mirror button. The wipe direction is opposite to the direction of the arrow.



### 6.1.2.6 PGM & PVW

Mainly choose PGM (live) and PVM (preview)

Output channel, red indicates that it is being broadcast, green table preview.





After pressing this button, the screen will output color bars.

### 6.1.2.7 Integrated Control Area



Auxiliary output, after accessing SDI OUT2, press AUX and press any one of the PVWs to assign one output to any of the 8 videos.



Luma key, press button to deduct the black and background source overlay.



Chroma key, press the button to deduct the specified color and overlay it with the background source.



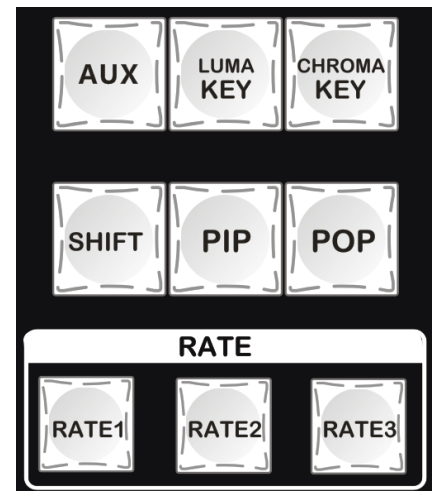
Switch the channel key and switch to other preview screens with the numbers in the PVW



PIP special effects button, open picture-in-picture function



POP special effects button, open picture-out-picture function



Transition rate selection:

RATE1, RATE2, RATE3 can be customized through the menu (Note: only when using AUTO transition)

### 6.1.2.8 T-bar

The switcher T-Bar system consists of a pusher module and an indicator light. Pushing the T-bar up can complete the transition.

When the T-bar is pushed, the indicator light will follow the movement to the top 1 (the pusher pushes to the bottom and the top is a light).



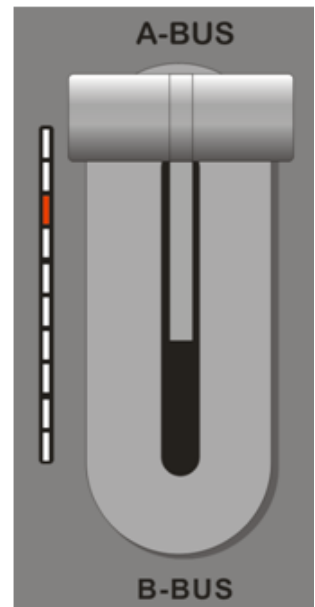
Auto transition, with transition effects.



Hard cuts, no transition effects.



Black field, flashing after clicking, indicates that the main output is outputting a black field.



# 7. Button Operation Instructions

## 7.1 Multi-Screen Output Window Introduction



Preview and Program are preview and live output respectively; As shown below:



PVW

PGM

There are 8 windows below that correspond to the input source monitoring, corresponding to the 1 - 8 buttons on the switchboard control panel.



## 7.2 Multi-screen preview 8 channel source switching

### 7.2.1 Panel realizes 10 screen split display and preview switching of 8 channel sources



As shown above, how to change the input source of the 7th window and the 8th window:

First press the SHIFT key on the control panel and then press 7/8 in the PVW, press once is SDI7 / SDI8, repeat this operation can switch SDI7 / USB1 (new version character is USB7) / HDMI1 (new version character is HDMI7) And SDI8 / USB2 (the new version character is USB8) / HDMI2 (the new version character is HDMI8).

Note: After long pressing the SHIFT key, press the 7/8 key in PVW.

Channel switching mode of the 7th window: SHIFT + 7

Channel switching mode of the 8th window: SHIFT + 8

## 7.3 PGM&PVW Switching

### 7.3.1 T-bar Calibration

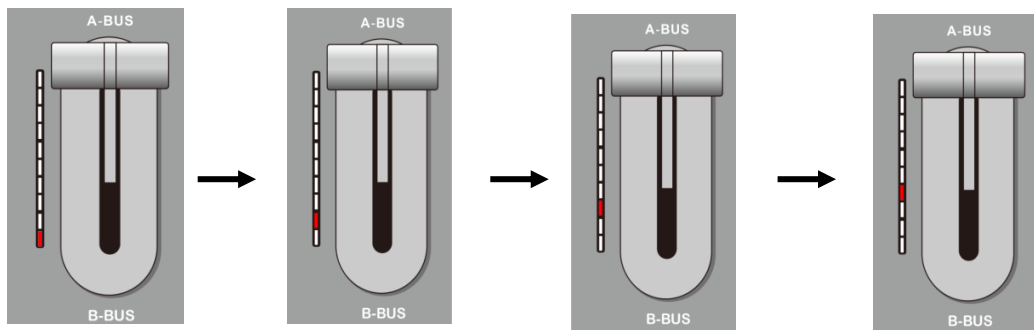
When the switcher is in use, the fader misalignment may occur, and the origin of the switcher fader is offset. Therefore, the switcher pushrod system should be calibrated before use.

First press the 1 and 2 buttons in the PGM area simultaneously with the device turned off. As shown below:

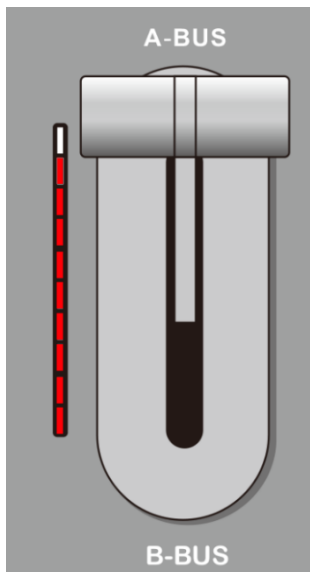


Note: The 1 and 2 keys cannot be released during the calibration process.

Turn on the power switch again, and the indicator light next to the push rod will light up in sequence after the power is turned on, as shown below.



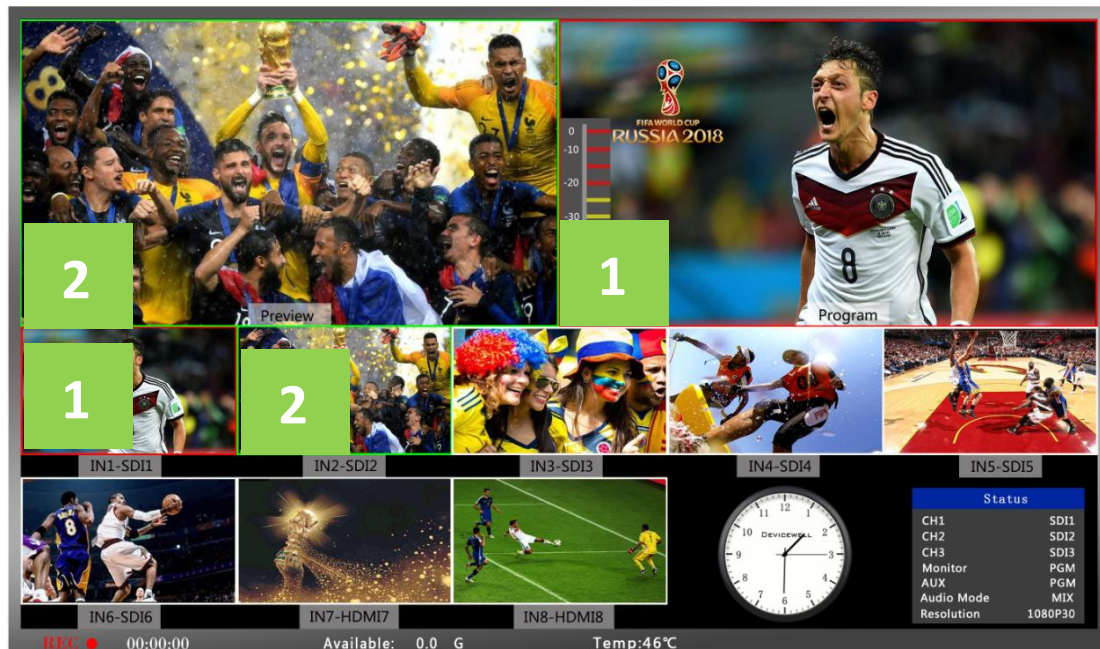
At this time, push the T-bar back and forth until the indication is normal. (All lights up or all lights down) as shown below.



The picture on the left shows the status of the push indicator light from bottom to top.

If the display on the left indicates that the calibration is complete, you can release the 1 and 2 buttons that were previously pressed.

After the device is wired, input SDI camera 1 and camera 2, the default will be displayed in the red mark 1 and 2 position in the figure below; then press 1 and 2 respectively in the PGM and PVW areas of the control panel, then the PGM and PVW boxes above will display correspondingly. Signal source.



Then press the AUTO, CUT, or manually push the fader on the control panel to switch. Among them, AUTO can be set to switch effects, CUT is hard cut, no transition effect, manual putter can set special effects, and push speed is proportional to the speed of switching.

Note: In the process of switching between AUTO or fader, if the 1 button of PGM and the 2 button of PVW are both red, the channel for switching PGM or PVW is invalid. As shown below



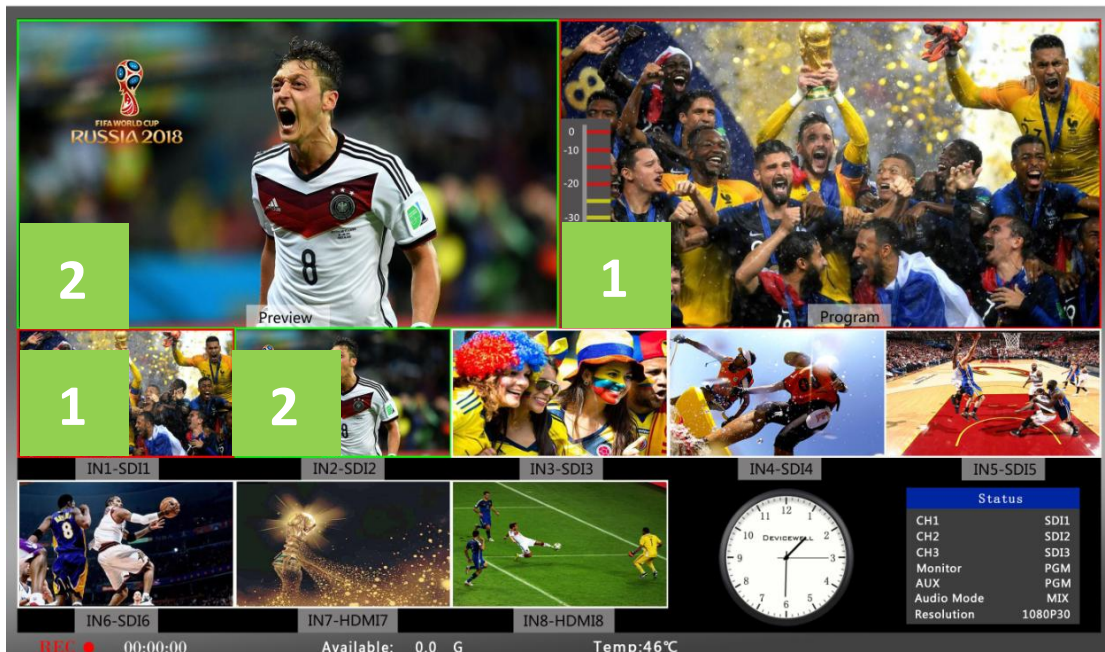
### 7.3.2 Panels Enable PGM and PVW Channel Selection

The button board and the 1-8 channels in the PGM &PVW of the PC control software correspond to the 8 multi-screens under the 10-screen segmentation.

Press the selection in the PGM area as shown above, and the button will turn red (live). Pressing PVW will display green (pre-supervised).



If you want to display the source of the SDI1 interface on the PGM, the source of the SDI2 interface is displayed on the PVW, press the 1 button directly in the PGM area, and press PV2 to press 2. As shown above






### 7.3.3 Transition control

The transition control method of DeviceWell HDS9110 portable switcher is mainly divided into two types, one is transition special effect, and the other is transition mode without transition special effect.



1、 No transition effect: Press , CUT button is hard cut. If you select the preview (PVW) screen to switch directly to the main output (PGM), because there is no delay seamless switching, there is no transition effect.


2、 There are transition effects:

- AUTO button, first select the rate of transition, select the pre-stored transition time in the user-defined area, as shown below, (displayed red after pressing).



- Then select the transition effect, the transition effects have been connected: MIX, FADE, WIPE, INV mirror button (special effects more details after this). At last



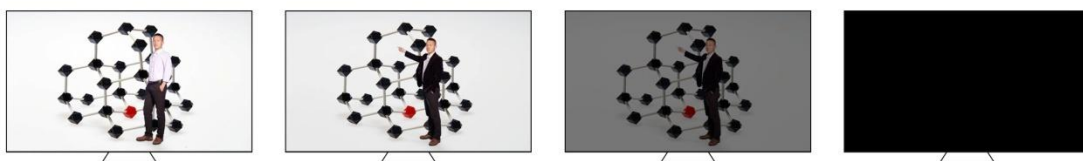
press , you can make a transition with the special effects.

- The putter transition, the putter transition is consistent with the AUTO effect setting. The difference is that the speed of the push determines the speed of the transition is proportional and flexible.

- The T-bar transition, the T-bar transition is consistent with the AUTO effect setting. The difference is that the speed of the push determines the speed of the transition is proportional and flexible.

### 7.3.4 PGM Output Black Field

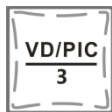
In the integrated control area FTB button, this button function is: PGM output black field, press the FTB button will flash the main output will be blackened, can deal with various emergencies, the effect is as shown below. If the PGM output is found to be black and it is still black after the transition, please check if the FTB button is pressed (flashing). Press again to turn off the black field.



### 7.3.5 USB Media Playback



Select the USB channel USB1 or USB2 to be controlled, and USB1 corresponds to the USB1 playback of the interface panel.



Play video/picture selection keyboard: The default is to play video; if you want to play the picture, press this button to switch to picture playback.



Corresponding to Play/Pause, Previous, Next, Back, Speed. Media player support formats: .jpeg, .png, .bmp

The media player supports video formats: HEVC, MPEG2\_HD, GAAC, MPEG2, Miracast, MPEG4\_HD, MPEG4, MVC, VP9, MPEG4\_SD, H.264, VC1, VP8, FLV. Note: (The encoding compression method must be H.264

### 7.3.6 SD card recording



You can use the SD card to record video. After inserting the SD card normally, press the REC



button to record the PGM output video. To pause, you can click the PAUSE button



Note: (Before using the SD card, format the SD card first, the SD card supports the FAT32/exFAT file format, and supports up to 128G SD card; if the recording is paused and recorded, if the power is turned off, the file will be damaged and cannot be played).

The recorded resolution is the same as the PGM output.

The recorded bit rate is divided into 4 levels: low 6M, medium 12M, high 18M, and ultra high 24M. (Through the knob to enter the recording settings in the main menu, the code rate setting level is shown in the figure below, from left to right, respectively, from high to low)

Record Setting		Record Setting		Record Setting		Record Setting	
Rate Control	6M	Rate Control	12M	Rate Control	18M	Rate Control	24M
Level	Low	Level	Medium	Level	High	Level	Super high
Exit		Exit		Exit		Exit	

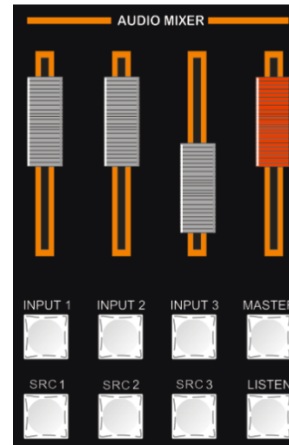
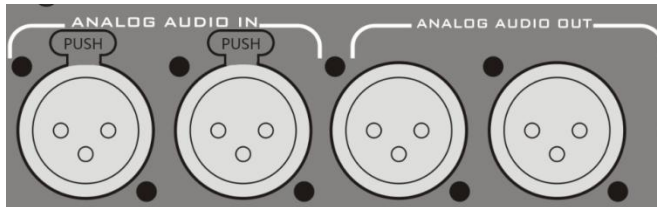
Note: After switching the output format, if you want to record, please record after re-powering; if the inserted SD card does not recognize the remaining capacity, please re-insert the SD card or replace the SD card.

The video file recorded by the SD card is automatically segmented at 1.95G, and the recorded video file can be edited by entering PR/ED.

## 7.4 Audio Settings

### 7.4.1 Audio Introduction

HDS9110 10-CH switcher has 1 XLR balanced audio input; 1 XLR balanced audio output. The audio mode is divided into mixing and following.



### 7.4.2 Audio Description

#### 7.4.2.1 Audio Introduction


HDS9110 switcher supports analog balanced audio input and output; supports SDI audio de-embedding, external audio and SDI de-embed audio can be assigned to output arbitrarily, supports audio following and mixing switching functions, menu and panel display as shown below.

	STATUS
CH1	SDI1
CH2	SDI2
CH3	SDI3
Earphone	PGM
SDI OUT3	PGM
Audio Mode	Follow
PGM Out	1080P30
2020-03-22	10:48:50

### 7.4.2.2 Audio Follow

The default audio mode of the device is audio follow-up (the audio source is HDMI or SDI input).



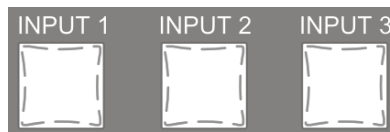
If pressed , the volume output is turned on. The volume level corresponds to the position of the audio fader. Push the fader to adjust the volume of the following audio.

### 7.4.2.3 Audio Embedding

After accessing the Canon audio, operate any audio channel of the mixer SRC1/SRC2/SRC3 to control the external embedded audio. The volume level corresponds to the position of the audio fader. Turn on the MASTER master volume audio channel, at this time the PGM source is externally embedded. At this time, the push fader can adjust the volume of the embedded audio and control the PGM output volume.

### 7.4.2.4 Mixing mode


The knob can be switched to the mix mode (default follow mode). After setting to the mix mode,



press INPUT1, INPUT2, and INPUT3  to turn on the mix mode. Up to 3 channels can be mixed. The sound can be adjusted by the audio fader. .

### 7.4.2.5 Audio Source Switching




Press the SRC1, SRC2, SRC3  to bind the source of the audio channel multiple times. The default order is multi-screen preview channel 1 – 8 channel audio source and then external audio input source.

### 7.4.2.6 Audio Monitoring

The HDS9110 supports audio live monitoring. The 3.5mm standard headphones can be used to monitor the specified audio. By default, the PGM live video is monitored. By pressing the



LISTEN  on the mixer, you can monitor any audio.

### 7.4.3 Audio usage analysis

The HDS9110 audio mode is divided into Follow and Mixing;

Follow: The audio follows the video output to the PGM live broadcast, which means what the audio is coming in from the camera, and what is the audio output from the switcher live broadcast;

Mixing: Mixing three different audio output to PGM at the same time, which means that I specify the audio of one camera as the live sound, and specify the audio of the camera as the audience applause, then I use the audio from the mixer. Embedded in my switcher; after the audio channel is fixed, the video channel can be switched at will.

#### 7.4.3.1 Audio mode switching

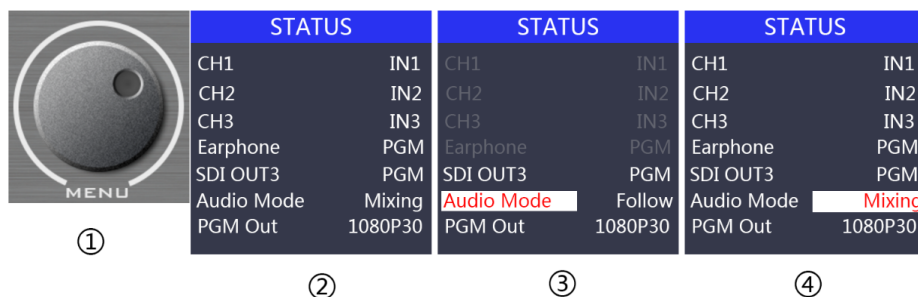
Switch the audio mode through the black knob of the operation panel (as shown in Figure 1)

Corresponding to the lower right corner menu of the LCD screen (as shown in Figure 2)

Turn the knob clockwise to the Audio Mode option (shown in Figure 3)

Press the knob to enter the mode selection (as shown in Figure 4)

Rotate the knob to select Mixing or Follow ;



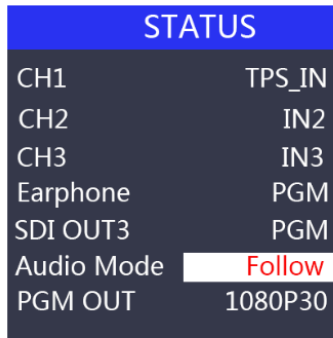
#### 7.4.3.2 How to use the audio follow mode

1. First adjust the audio mode to follow by the knob

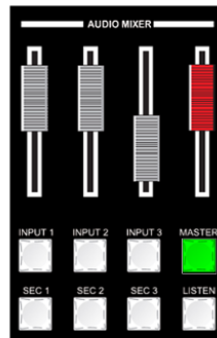
Press the mixer's MASTER button (the button lights up in green)

The channel of the audio follow mode is turned on, pushes the corresponding red fader upwards, adjusts the volume of the PGM output, and switches the video signal with audio to the PGM window. At this time, the audio table of the PGM window will have a sound column fluctuation.

To turn off the audio output, push the red fader down or press the MASTER button (the button light goes out).



①



②

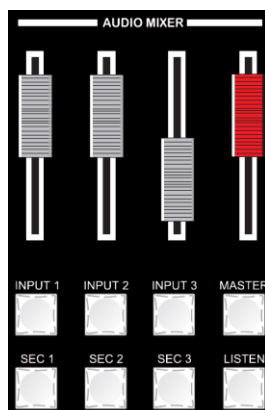
2. The audio following channels are IN1-SDI1, IN2-SDI2, IN3-SDI3, IN4-SDI4, IN5-SDI5、IN6-SDI6、IN7-SDI7 (HDMI7)、IN8-SDI8 (HDMI8) ,XLR\_IN, corresponding operation panel buttons



### 7.4.3.3 Function analysis of the mixer

According to the picture on the right:

1. CH1 means the first audio channel open key, and SRC1 means the source selection of the first audio channel;
2. CH2 means the second audio channel open key, and SRC2 means the source selection of the second audio channel;
3. CH3 means the third channel of the audio channel, and SRC3 means the source of the third channel.
4. MASTER means the total volume switch button;
5. LISTEN means the source selection of the listening audio channel;

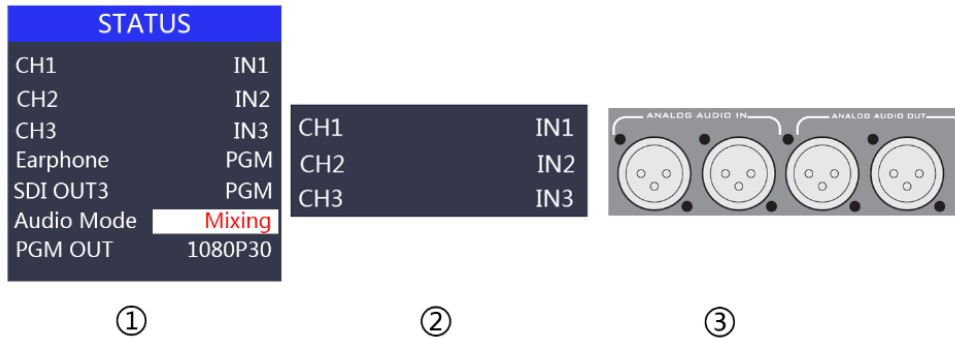


### 7.4.3.4 How to use the mix assignment

1. Adjust the audio mode to Mixing by the knob first

Corresponding to the status bar of the LCD screen, the audio channel source is displayed. The factory default is CH1 source IN1, CH2 source IN2, CH3 source IN3.

The three audio channels can be arbitrarily selected as IN1, IN2, IN3, IN4, IN5, IN6, IN7、IN8、XLR\_IN (Indicates external XLR head audio interface input) (As shown in Figure 3)

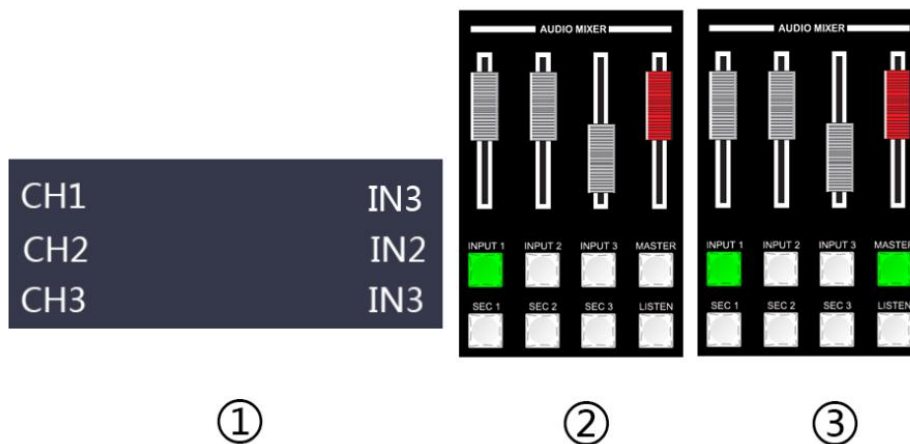


2. Operate the mixer control area, press the SRC1 button to enter the first audio channel to select IN1, IN2, IN3, IN4, IN5, IN6, IN7、IN8、XLR\_IN. The corresponding menu status bar will change according to your choice in real time.

After confirming that the audio channel you selected has been pressed, press the CH1 button (the button lights up in green)

Indicates that the first audio channel is turned on, and finally the MASTER button main switch is turned on (the button lights up in green)

Push the white fader corresponding to the first channel to adjust the volume of the first channel audio. At this time, the audio output of the PGM live broadcast is fixed as the first audio that you turn on.

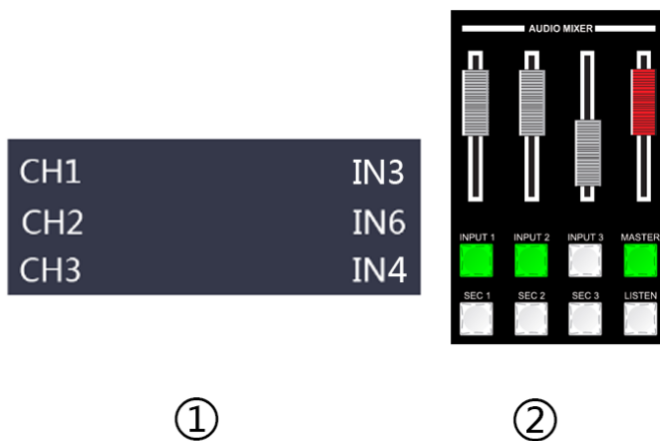




3. Operate the mixer control area, press the SRC2 button to enter the second audio channel to select IN1, IN2, IN3, IN4, IN5, IN6, IN7、IN8、XLR\_IN. The corresponding menu status bar will change according to your choice in real time.

After confirming the audio channel you selected, press the CH2 button (the button lights up in green)

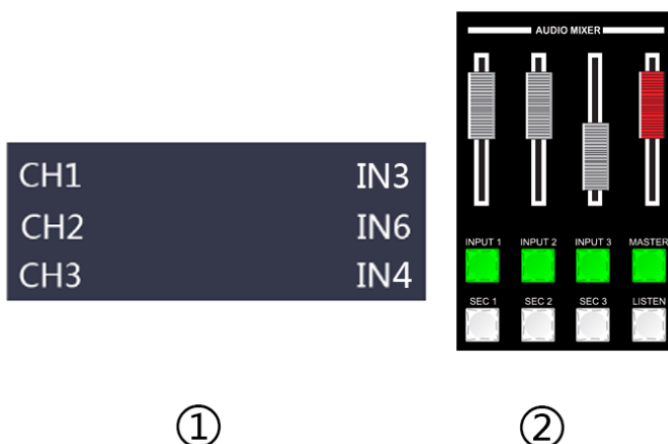
It means to open the second audio channel, push the white fader corresponding to the second channel, and adjust the volume of the second channel audio. At this time, the audio output of the PGM live broadcast is fixed to the audio of the first and second channels that you turn on.



4. Operate the console control area and press the SRC3 button to enter the third audio channel and select IN1, IN2, IN3, IN4, IN5, IN6, IN7, IN8, XLR\_IN. The corresponding menu status bar will be based on your selection in real time. Change (as shown in Figure 1)

After confirming the audio channel you selected, press the CH3 button (the button lights green) (as shown in Figure 2)

Indicates to open the third audio channel, push the white fader corresponding to the third channel, adjust the volume of the third audio channel, then the audio output from the PGM live broadcast is fixed to the first, second and third channels you open Audio.

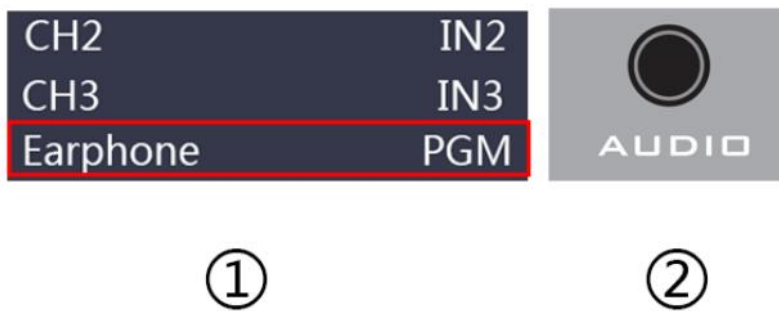


### 7.4.3.5 How to listen to audio

Operate the mixer control area, press the LISTEN button to select the monitor source, and the corresponding menu status bar will change according to your choice in real time.

The monitor source channel defaults to PGM. The channel selection of the monitor source is IN1, IN2, IN3, IN4, IN5, IN6, IN7、IN8、XLR\_IN. The 3.5mm headphone hardware interface is on the side of the switcher.

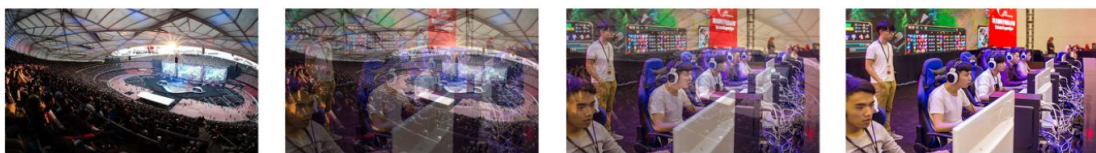
The PGM is selected for the monitor headphone channel, and the headphone monitor volume is adjusted by the mixer red fader; the IN1, IN2, IN3, IN4, IN5, IN6, IN7、IN8、XLR\_IN audio channels are selected, and the headphone monitor fixed volume cannot be adjusted.



## 7.5 Special effects instructions

### 7.5.1 MIX Transition Effects

The MIX blend effect is a transition effect. After setting, the transition will have the original live screen fade in the main output and then disappear until it disappears completely to the new live screen, as shown below.



MIX mixed transition effect, superimposed and superimposed B picture in A picture until the transition to the end, the picture is completely replaced with B picture

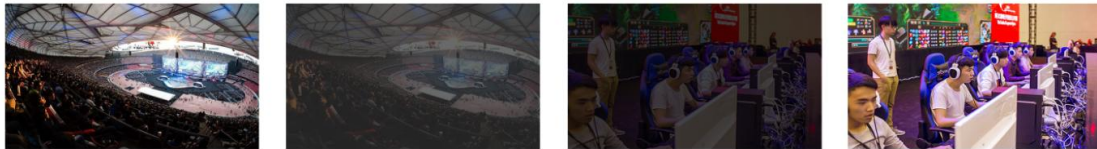


Select the effect control area and then click to use the T-bar or AUTO to switch.

### 7.5.2 FADE In and Out Transition Effects



Select the effect control area and click to use the T-bar or AUTO to switch.



FADE fades in and out, and A gradually darkens until it is completely black, and then gradually changes from black to B.

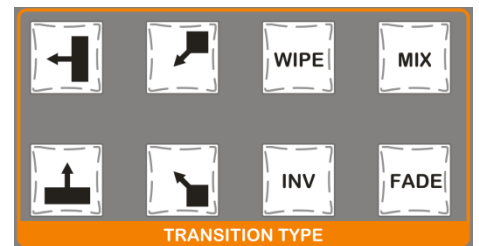
### 7.5.3 WIPE Transition Effects



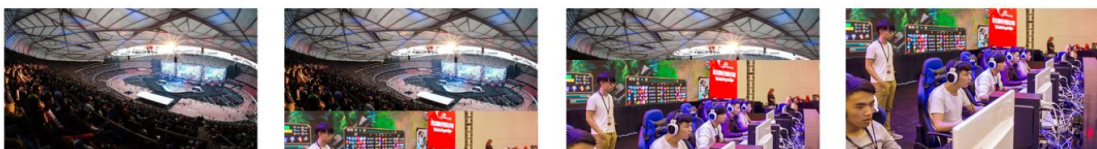
Press to select the mode of the wipe, there are 4 modes.

As shown on the right

After selecting the way of the wipe, click on AUTO or push the T-bar



You can see the effect of the switch. If selected, the effect is as shown below:



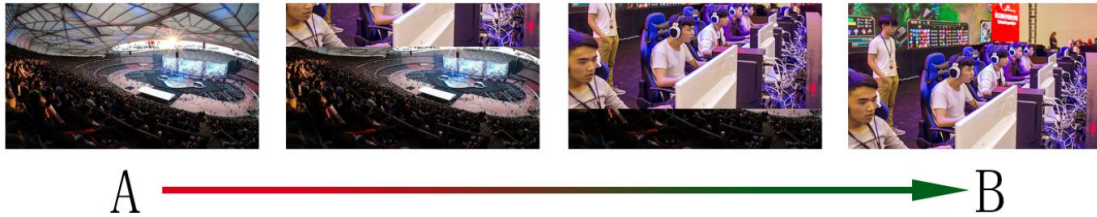
Stroke up the transition effect, the A picture is unchanged, and the B picture is gradually drawn in the upward direction until the picture completely becomes B.

### 7.5.4 INV mirror transition effects

The INV mirror transition is opposite to the original WIPE transition. When you press WIPE and



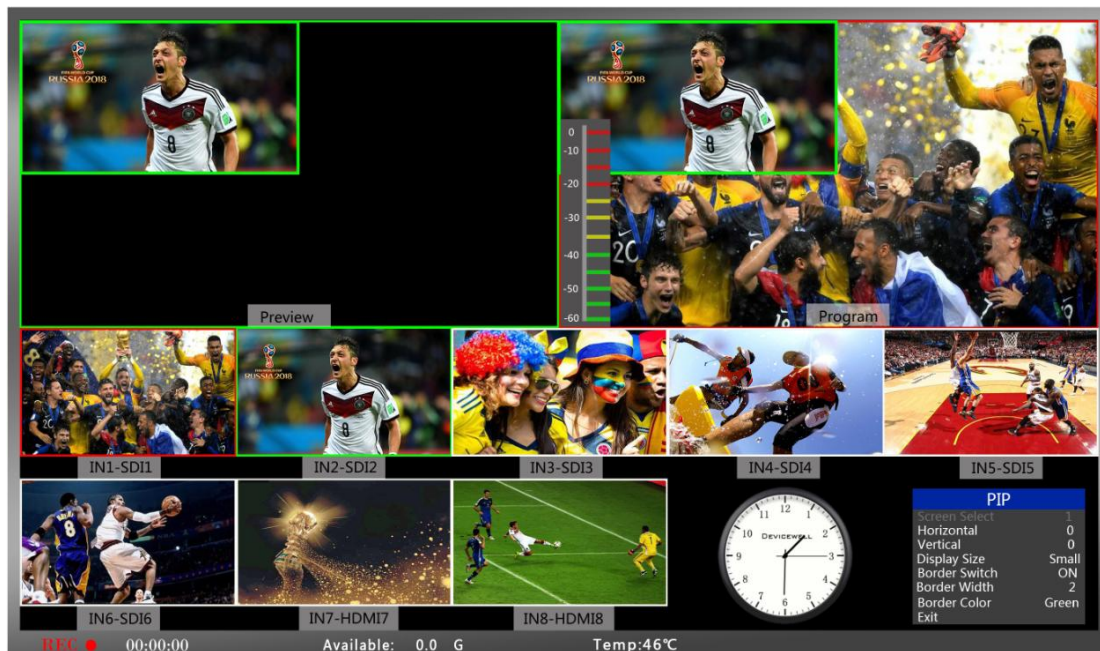
INV in the key panel, and then press the upward transition direction, the screen that appears will be the downward transition, and the effect diagram is shown below.



### 7.5.5 PIP Picture-In-Picture Special Effects



When the T-bar is operated in the B-BUS state, the PIP button will have a small screen appearing in the upper left corner of the preview. The source signal of the SDI1 is displayed by default. The default background is PVW. As shown below



At this time, the information on the LCD screen will be switched to the PIP picture-in-picture setting. After pressing the knob, it can be set according to the requirements. As shown below

PIP	
Screen Select	1
Horizontal	0
Vertical	0
Display Size	Small
Border Switch	ON
Border Width	2
Border Color	Green

### PIP size and position

You can use the knob to set the parameters of the PIP picture-in-picture, as follows:

Horizontal position setting: The value from the top left to the top right is 0-1280, and the value of each rotation knob is increased/decreased by 10.

Vertical position setting: The value from the top left to the bottom left is 0-760, and the value of each rotation knob is increased/decreased by 10.

Display size setting: Small/medium/large settings can be selected.

Border switch setting: You can select the on/off setting.

Border width setting: The border width can be selected from 2-7 thickness borders, and the value of each rotation knob is increased/decreased by 1.

Border color setting: You can choose white/red/blue/green to set the border color.

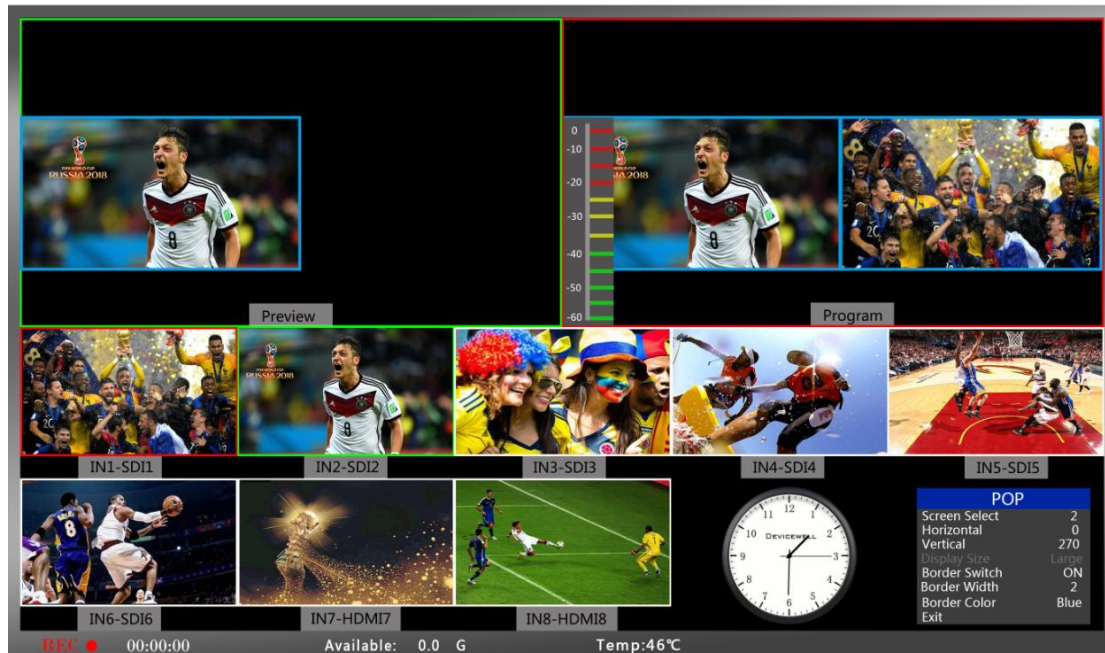
### Picture-in-picture source switching

You can switch the input source of the PIP by pressing 1, 2, 3... in the PVW number keys.



## 7.5.6 POP Picture-Out-Picture Special Effect

The T-bar operates in the B-BUS state. Clicking on the POP button will display a small screen in the upper left corner of the preview. The source signal of the SDI1 is displayed by default. The default background is PVW. As shown below:



At this time, the information on the LCD screen will be switched to the POP picture-out-picture setting, and the knob can be set as required. As shown below

POP	
Screen Select	2
Horizontal	0
Vertical	270
Display Size	Large
Border Switch	ON
Border Width	2
Border Color	Blue

### POP size and position

You can use the knob to set the parameters of the POP drawing, as follows

Screen selection setting: You can select 1/2 two screens.

Horizontal position setting: The value from the top left to the top right is 0-960, and the value of each rotation knob is increased/decreased by 10.

Vertical position setting: The value from the top left to the bottom left is 0-540, and the value of one rotation per knob is increased/decreased by 10.

Border switch setting: You can select the on/off setting.

Border width setting: The border width can be selected from 2-7 thickness borders, and the value of each rotation knob is increased/decreased by 1.

Border color setting: You can choose white/red/blue/green to set the border color.

## Picture-out-picture source switching

Press 1, 2, 3... in the PVW number keys to switch the input source of the picture.



## 7.5.7 Luma KEY

The Luma key image supports the dynamic video source image and the static source image. The switcher will deduct the black part of the key source and retain other colors. Then it overlaps with the background image to achieve the purpose of keying and superimposing the background. This function is generally used for superimposing subtitles in virtual studios.



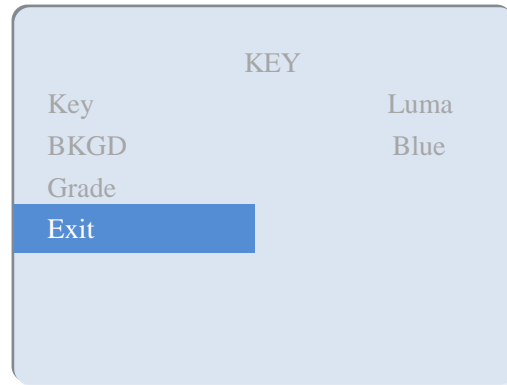
### 7.5.7.1 Panel brightness image

Switch the video or picture of the black background white font to the PVW preview window, and turn on the Luma KEY brightness key function. At this time, the LCD will display a brightness key parameter setting interface, and then use the CUT/AUTO/push switch to superimpose the characters. PGM live window.



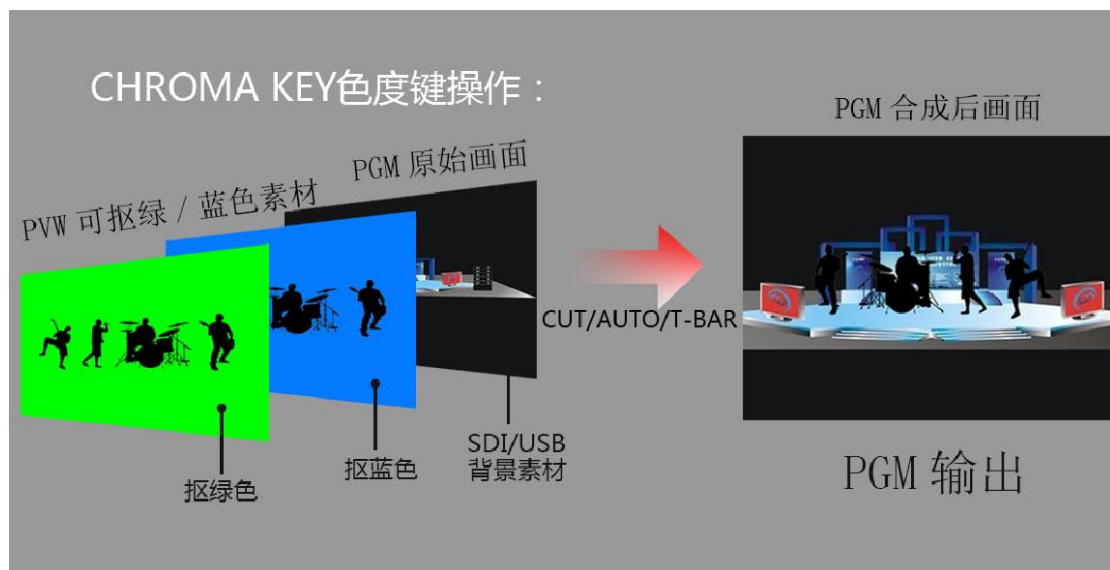
Image color gamut setting: After pressing the , the LCD panel will display the current

luma key image information, as shown below.



## 7.5.8 Chroma KEY

The chroma key image supports dynamic video source image and static source image, switching the opportunity to buckle the blue or green part of the key source, retaining other colors, and then overlapping the background image to achieve the purpose of image and overlay background. Generally used for superimposing subtitles in virtual studios.




### 7.5.8.1 Panel color image

Switch the blue background or green background to the PVW preview window, and then turn on the Chroma KEY chroma key function. At this time, the LCD screen will display a parameter setting interface for the chroma key. Use the knob to select the background of your key image. After the selection, The image can be achieved by CUT/AUTO/Pusher, and the image you want to superimpose appears in the PGM live view;





When the chroma key  is pressed, the LCD panel displays the current chroma key image information as shown below.

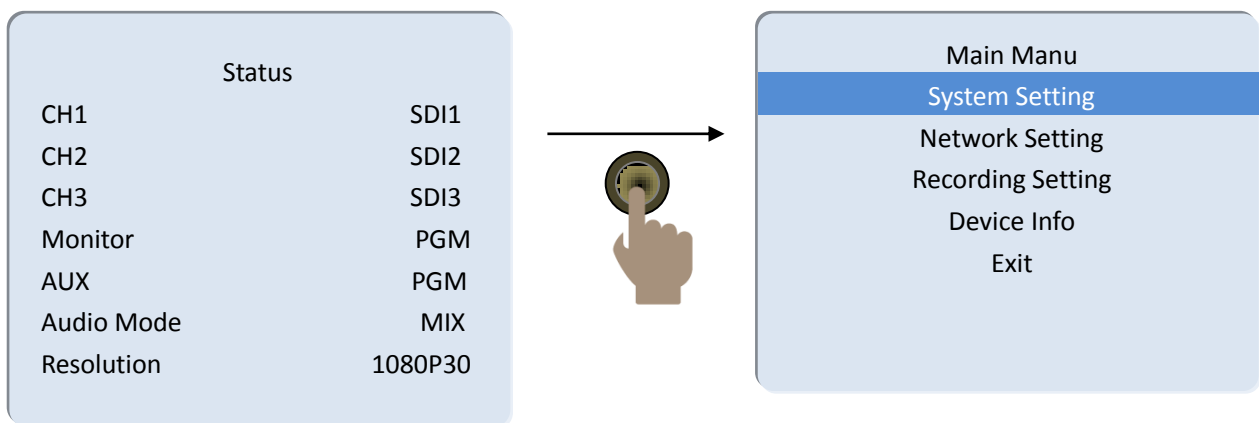
Key	
Key	Chroma
BKGD	Blue
Grade	16
Exit	

The video source item can select the key source, and the KEY type has the chroma key \_ green and chroma key \_ blue, and the level setting range is 0-64.

## 7.6 System Menu Settings

In the menu, you can perform IP settings on the device, restore the system to factory settings, change the language, etc.

In the power-on default state, press the knob to enter the main menu. As shown below



Rotate the knob under the status bar to set the auxiliary output, audio mode, and output resolution;

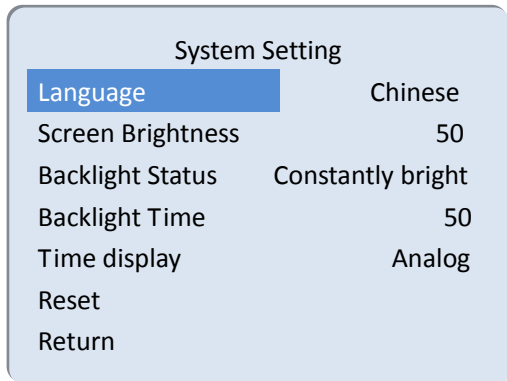
Auxiliary output: Rotate the knob to customize the PGM / PVW output, corresponding to the AUX output interface on the rear panel;

Audio mode; turn the knob to select mix or follow;

Output resolution: Rotate the knob to operate, you can choose 1080p60 / 1080p50 / 1080p30 / 1080p25 / 1080p24 / 1080i50 / 1080i60

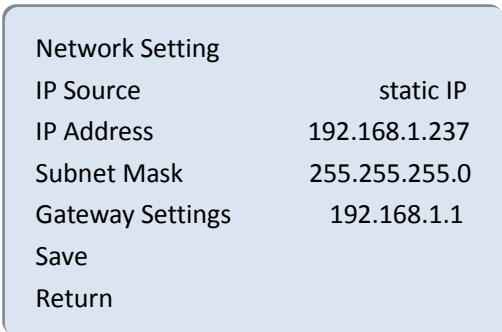
## 7.6.1 System Setting

After turning the knob to the system setting, you can click the knob to enter the system setting submenu, as shown below



In this menu, you can choose between Chinese or English. If you encounter an unknown error during use, you can choose to restore the factory settings and reset it.

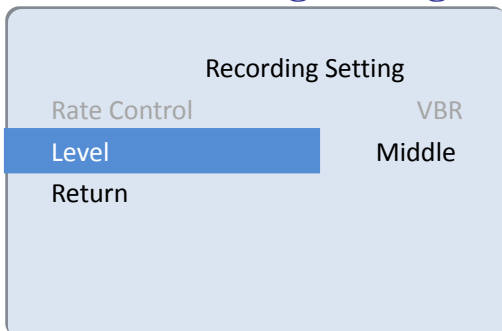
## 7.6.2 Network Setting



There are two modes for obtaining an IP address. One is dynamic configuration, and the other is a static IP address. The static IP address needs to be manually configured. Remember to save and exit after the setup is complete.

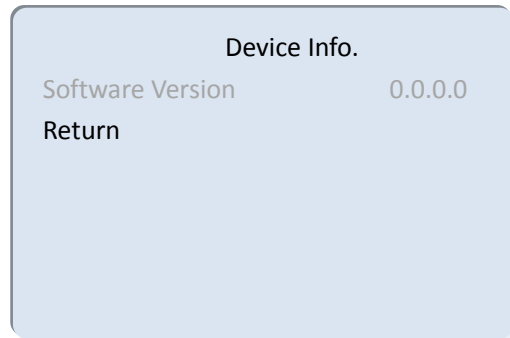
Note: When setting the device IP address, do not repeat the IP address to avoid address conflicts.

## 7.6.3 Recording Settings



The level can be set in the recording settings, and can be set with low, middle, high and super high.

#### 7.6.4 Device Info.



## 8. Failure and Maintenance

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### 8.1 Common Faults and Solutions

(1) The output image may be flickered by interference. The quality of the wire used may be poor, and the shielding layer of the wire is not well prepared. When there is a strong radio near the use environment, radio waves may interfere with the transmission of the signal, resulting in unstable signal flicker. Please use the wire produced by regular manufacturers, such as Belden, Jia Nai Mei.

(2) When plugging in the audio and video interface, if there is obvious static electricity, the device power ground wire may not be good grounding, please ground in the correct way; otherwise it will easily damage the host and shorten the life of the mainframe.

(3) When RJ45 (generally: Computer network port) cannot control the Switcher, check whether the communication port set by the control software corresponds to the serial port of the connected device; check if the communication port of the computer is good.

### 8.2 Maintenance

Use a soft, dry cloth to clean the device. Do not use alcohol, paint thinner or benzene to clean. Make sure that the device is stored and operated in an environment away from liquids and stains.

#### 8.2.1 Warranty information

The company guarantees that the process and materials of the product are not defective within 12 months after purchase from the company or its authorized distributors, under normal use and service support. We offer a one-year warranty after sale.