



# Users' Manual

VER 1.0



## 4K UHD Switcher

# Precautions

Failure to observe these precautions could result in personal injury or death, possibly resulting in damage to equipment, loss of data, reduced equipment performance, or unpredictable results.



## Electrical Safety Features

- To avoid serious damage caused by possible electric shock, before moving the product, please temporarily remove the power cord from the power port of the product.
- When you need to add new hardware to the product or remove existing hardware from the product, be sure to power off the product first. If conditions permit, it is recommended to temporarily remove the power cord from the product interface.
- Before use, confirm whether the product is grounded and whether the power supply voltage has been adjusted to the applicable range of the product. Failure to do so may result in damage to the product, reduced performance, or unpredictable results.
- Do not use loose or damaged power sockets or touch the power sockets with wet hands, otherwise there is a risk of electric shock and fire.
- If you hear noises from the power cord and the power interface, please unplug the power cord immediately and seek help from your sales representative, otherwise there will be a risk of fire or electric shock.
- If foreign objects or liquids enter the product or need to clean the product, please remove the power cord and any other cables from the product, otherwise there will be danger of electric shock, fire and damage to the product.
- If the power supply is damaged, please do not try to repair it yourself. Please contact professional technical service personnel or distributors to deal with it.

Due to the continuous update of product functions, the user manual in your hand may be different from the actual application. Please download the latest user manual from the DeviceWell official website. The update date of this user manual is March 31, 2023.

**Note: Different models correspond to different product functions. Please match the parameters of the purchased model according to the model comparison table in the user manual according to the model you purchased. This manual takes the functional parameters of UHS6610R as an example to explain.**

There are technical changes in the future without notice.

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# 1. Overview

## Product Introduction

Devicewell 4K HD switcher UHS6610R integrates a variety of control methods. The special effects and transition methods can be set through the keyboard, and the camera joystick can control the distance and distance of the camera.

A dedicated director switcher for radio and television stations, which supports up to 10 channels of 4K60 signals. The device integrates SDI decoder, HDMI decoder, DP decoder, the highest resolution supports 4K60HZ, backward compatible with 3G SDI and other 1080P/720P high-definition video signals, built-in format converter, adaptive front-end different video signal input. Built-in special effects generator, audio processor and video streaming media processing and other common switcher components.

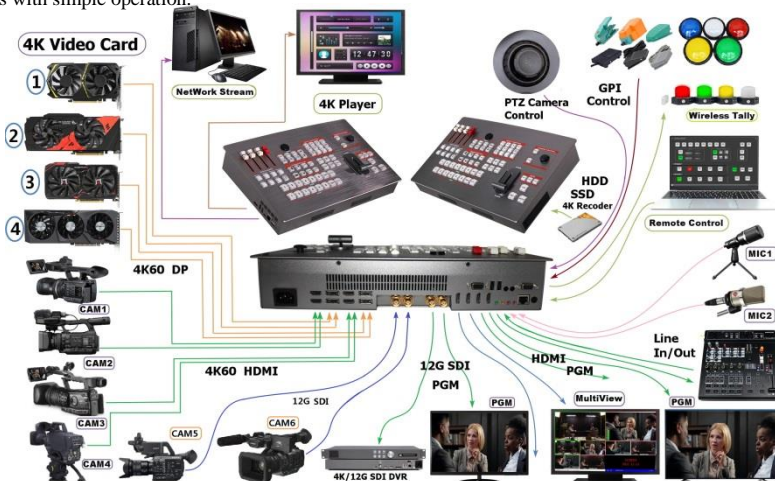
The video signal interface supports 2 channels of SDI + 4 channels of HDMI + 4 channels of DP, a total of 10 channels of video input, 2 channels of SDI output + 4 channels of HDMI output, a total of 6 channels of video signal output.

Optional H.26x encoding module, video stream can be output through UVC and RTMP network stream, and can also be recorded to internal EMMC, external SSD or TF card.

The audio signal interface supports 2-way microphone input, 1-way LINE input, a total of 3-way audio input, and 1-way Line output.

Support DCB control system and tally output. It adopts high-strength aluminum alloy shell and is easy to carry. It can be applied to the needs of special effects switching in radio and television studios and on-location video. For professional users, the control keyboard can be extended through the DCB interface.

It is suitable for live performances, course recording and in-studio broadcasting. RS422 control, etc., with remote upgrade capability. Users can perform video switching and audio mixing functions with additional effects with simple operation.



## 2. Function Features

DeviceWell switcher UHS6610R is a directing system with up to 6 cameras. It is suitable for many event projects. With the development of the times, especially in remote live broadcast of sports games, large-scale concerts or evening parties Especially in the event. If you want to use super multi-camera live directing operations in large-scale events, you must reach more than 10 sets of inputs on the directing system, so as to be able to present the wonderful program content to the audience from time to time, and there are so many live broadcast pictures and special effect transition. It can meet the needs of live production in various occasions and create exciting and wonderful pictures.

The UHS6610R switcher is super multi-camera directing equipment that requires no professional knowledge, and can perform video switching and audio mixing with simple operations. This unit can be used in broadcasting, live broadcasting and various event venues.



- ◆ Portable all-in-one body design
- ◆ Metal aluminum alloy material, high strength and light weight
- ◆ Industrial-grade mechanical keys
- ◆ Hall sensor T-Bar
- ◆ Support RJ45 remote control
- ◆ DCB2 control + video expansion
- ◆ Broadcast&TV standard tally interface
- ◆ Support GPI control
- ◆ Support joystick, camera control
- ◆ Foot pedal, control handle , etc. input
- ◆ 3840x2160p60/50/30/25/24, H.264 encoding
- ◆ Support CBR fixed bit rate mode
- ◆ Support High profile encoding
- ◆ Recording file format MP4, support EDIUS non-editing software
- ◆ Storage device interface supports USB3.0 and SATA hard disk recording
- ◆ Support screen freeze function
- ◆ Audio follow, mix function
- ◆ 4HDMI+4DP+2SDI input
- ◆ MULTIVIEW output: 2 HDMI
- ◆ PGM output: 3-CH HDMI+2-CH SDI
- ◆ 2-CH MIC input
- ◆ 1 LINE IN input
- ◆ 1 LINE OUT output
- ◆ Support 4K HDR
- ◆ Support HDMI audio de-embedding
- ◆ The device comes with color bar output screen
- ◆ PIP & POP function
- ◆ Support MIX/FADE/WIPE/INV transition effects;
- ◆ CUT hard cutting, AUTO automatic switching and FTB black field emergency switching
- ◆ 1 set of KEY, support Luma key, Chroma key
- ◆ Support RS422 interface to control camera
- ◆ Support PC software remote upgrade
- ◆ Support 220V or DC12V dual power redundant input
- ◆ Support SDI audio de-embedding
- ◆ Display the working status of the device

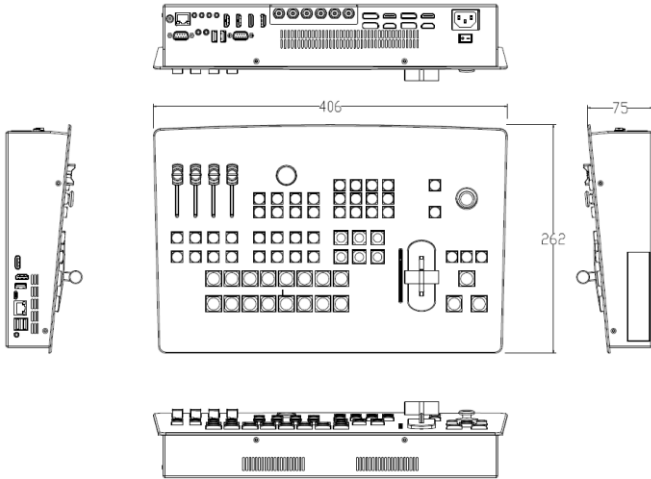
## 2.1 UHS Series 4K Switcher Function Comparison

4K Switcher Comparison Table										
Model	Tyoe	Specifications and Parameters								
		Video signal input						Video signal output		
		Max Resolution	Channel (not real-time)	Channel (real time)	SDI	HDMI	DP	PGM	PVW	LCD
UHS6610	OEM	4K@60HZ	10	6	2	4	4	H*2+S*2	H*2	
UHS6508	OEM	4K@60HZ	8	6	4	2	2	H*2+S*2	H*2	
UHS6512	OEM	4K@60HZ	12	6	0	6	6	H*2+S*2	H*2	
UHS6106	OEM	4K@60HZ	6	6	6	0	0	H*2+S*2	H*2	
UHS6108	OEM	4K@60HZ	8	8	8	0	0	H*2+S*2	H*2	
UHS6610R	OEM	4K@60HZ	10	6	2	4	4	H*2+S*2	H*2	
UHS6508R	OEM	4K@60HZ	8	6	4	2	2	H*2+S*2	H*2	
UHS6512R	OEM	4K@60HZ	12	6	0	6	6	H*2+S*2	H*2	
UHS6106R	OEM	4K@60HZ	6	6	6	0	0	H*2+S*2	H*2	
UHS6108R	OEM	4K@60HZ	8	8	8	0	0	H*2+S*2	H*2	
UHS9610	DeviceWell	4K@60HZ	10	6	2	4	4	H*2+S*2	H*2	15.6"
UHS9508	DeviceWell	4K@60HZ	8	6	4	2	2	H*2+S*2	H*2	15.6"
UHS9512	OEM	4K@60HZ	12	6	0	6	6	H*2+S*2	H*2	15.6"
UHS9106	OEM	4K@60HZ	6	6	6	0	0	H*2+S*2	H*2	15.6"
UHS9108	OEM	4K@60HZ	8	8	8	0	0	H*2+S*2	H*2	15.6"
UHS9610R	OEM	4K@60HZ	10	6	2	4	4	H*3+S*2	H*2	15.6"
UHS9508R	OEM	4K@60HZ	8	6	4	2	2	H*3+S*2	H*2	15.6"
UHS9512R	OEM	4K@60HZ	12	6	0	6	6	H*2+S*2	H*2	15.6"
UHS9106R	OEM	4K@60HZ	6	6	6	0	0	H*2+S*2	H*2	15.6"
UHS9108R	OEM	4K@60HZ	8	8	8	0	0	H*2+S*2	H*2	15.6"



Model	Stream & Record				Control				Others		
	RTMP stream	UVC stream	Record	Playback	Tally	GPI	Remote	Extension	Style	Key	T-Bar
UHS6610					Y	Y	RJ45	DCB	desktop	Mechanical	Hall
UHS6508					Y	Y	RJ45	DCB	desktop	Mechanical	Hall
UHS6512					Y	Y	RJ45	DCB	desktop	Mechanical	Hall
UHS6106					Y	Y	RJ45	DCB	desktop	Mechanical	Hall
UHS6108					Y	Y	RJ45	DCB	desktop	Mechanical	Hall
UHS6610R	TBD	TBD	Y	Y	Y	Y	RJ45	DCB	desktop	Mechanical	Hall
UHS6508R	TBD	TBD	Y	Y	Y	Y	RJ45	DCB	desktop	Mechanical	Hall
UHS6512R	TBD	TBD	Y	Y	Y	Y	RJ45	DCB	desktop	Mechanical	Hall
UHS6106R	TBD	TBD	Y	Y	Y	Y	RJ45	DCB	desktop	Mechanical	Hall
UHS6108R	TBD	TBD	Y	Y	Y	Y	RJ45	DCB	desktop	Mechanical	Hall
UHS9610					Y	Y	RJ45	DCB	Portable Flip	Mechanical	Hall
UHS9508					Y	Y	RJ45	DCB	Portable Flip	Mechanical	Hall
UHS9512					Y	Y	RJ45	DCB	Portable Flip	Mechanical	Hall
UHS9106					Y	Y	RJ45	DCB	Portable Flip	Mechanical	Hall
UHS9108					Y	Y	RJ45	DCB	Portable Flip	Mechanical	Hall
UHS9610R	TBD	TBD	Y	Y	Y	Y	RJ45	DCB	Portable Flip	Mechanical	Hall
UHS9508R	TBD	TBD	Y	Y	Y	Y	RJ45	DCB	Portable Flip	Mechanical	Hall
UHS9512R	TBD	TBD	Y	Y	Y	Y	RJ45	DCB	Portable Flip	Mechanical	Hall
UHS9106R	TBD	TBD	Y	Y	Y	Y	RJ45	DCB	Portable Flip	Mechanical	Hall
UHS9108R	TBD	TBD	Y	Y	Y	Y	RJ45	DCB	Portable Flip	Mechanical	Hall

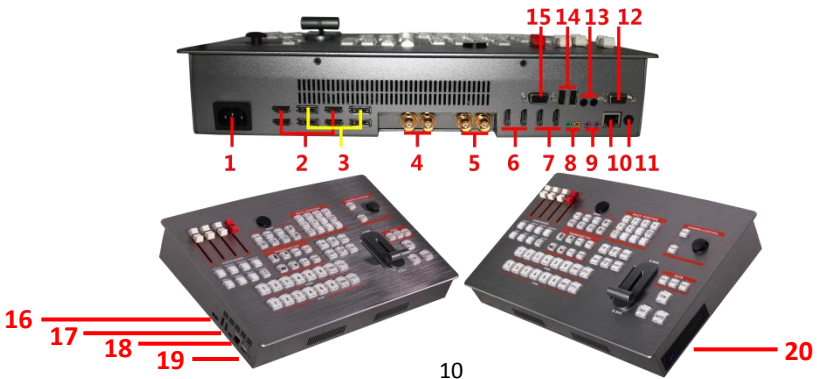
## 2.2 Size: 406\*262\*75mm



# 3. Interfaces

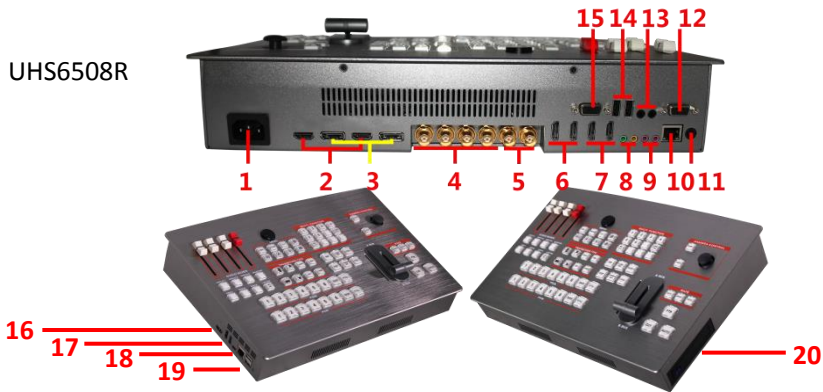
## 3.1. Interface Introduction

DeviceWell UHS6610R interface is as shown below.



NO.	Definition	Description	NO.	Definition	Description
1	AC 220V	AC 220V power input	11	DC 12V	DC 12V power input
			12	RS422	PTZ control
2	HDMI IN	4-CH HDMI input	13	GPI	GPI control
3	DP IN	4-CH DP input			
4	SDI IN	2-CH SDI input	14	DCB	DCB interface, supporting cascade equipment,
5	SDI OUT	2SDI PGM OUT			
6	HDMI OUT	MultiView OUT	15	Tally	wireless TALLY system
7	HDMI OUT	2HDMI PGM OUT	16	HDMI OUT	4K Player
8	LINE IN/OUT	3.5mm Stereo audio in/out	17	USB	External storage device
9	MIC IN	2-ch microphone input	18	STREAM OUT	Network Stream (reserved)
10	RJ45	Network upgrade	19	USB	Mouse/keyboard
			20	EXT HDD	HDD/SDD/4K Recoder

UHS6508R



NO.	Definition	Description	NO.	Definition	Description
1	AC 220V	AC 220V power input	11	DC 12V	DC 12V power input
			12	RS422	PTZ control
2	HDMI IN	2-CH HDMI input	13	GPI	GPI control
3	DP IN	2-CH DP input			
4	SDI IN	4-CH SDI input	14	DCB	DCB interface, supporting cascade equipment,
5	SDI OUT	2SDI PGM OUT			
6	HDMI OUT	MultiView OUT	15	Tally	Wireless tally system(DB-15)
7	HDMI OUT	2HDMI PGM OUT	16	HDMI OUT	4K Player
8	LINE IN/OUT	3.5mm Stereo audio in/out	17	USB	External storage device
9	MIC IN	2-ch microphone input	18	STREAM OUT	Network Stream (reserved)
10	RJ45	Network upgrade	19	USB	Mouse/keyboard
			20	EXT HDD	HDD/SDD/4K Recoder

## 3.2. Parameters

Name	4K UHD Switcher	
Model	UHS6610R/UHS6508R/UHS6610/UHS6508	
Video Signal Input	Input signal	HDMI/DP/SDI video signal
	Code rate	270Mbps~12Gbps
	Connector	Standard
	Signal amplitude	800mV ± 10%( HDMI/SDI/DP)
	Impedance	100Ω (HDMI) 100Ω (DP) 75Ω (SDI)
	Balance	Adaptive
	DVD input HDMI support	480i/576i,480p/576p,720p,1080i,1080p,2160p
HDMI/DP input support	3840x2160,1920x1080,1680x1050,1600x900,1440x1050,1366x768,1360x768,1280x1024,1280x960,1280x800,1280x768,1280x720,1280x600,1152x864,1024x768,800x600	
Video Signal Output	output signal	HDMI/SDI video signal
	Code rate	6Gbps ~12Gbps
	Connector	Standard
	Return Loss	>15dB 5MHz~3GHz
	Signal amplitude	800mV ± 10%( HDMI/SDI/DP)
	Impedance	100Ω (HDMI) 100Ω (DP) 75Ω (SDI)
	DC offset	0V ± 0.5V
Clock recovery	Support	
General Parameter	power supply	12V/DC 220V/AC
	Power rate	50W
	Size	384*252*92mm
	Control Panel	Support on-site production, integration of a variety of buttons.
	Operating temperature	0℃~50℃, No condensation
	Storage temperature	-20℃~75℃
	Working humidity	20%~70%RH
Storage humidity	0%~90%RH, No condensation	

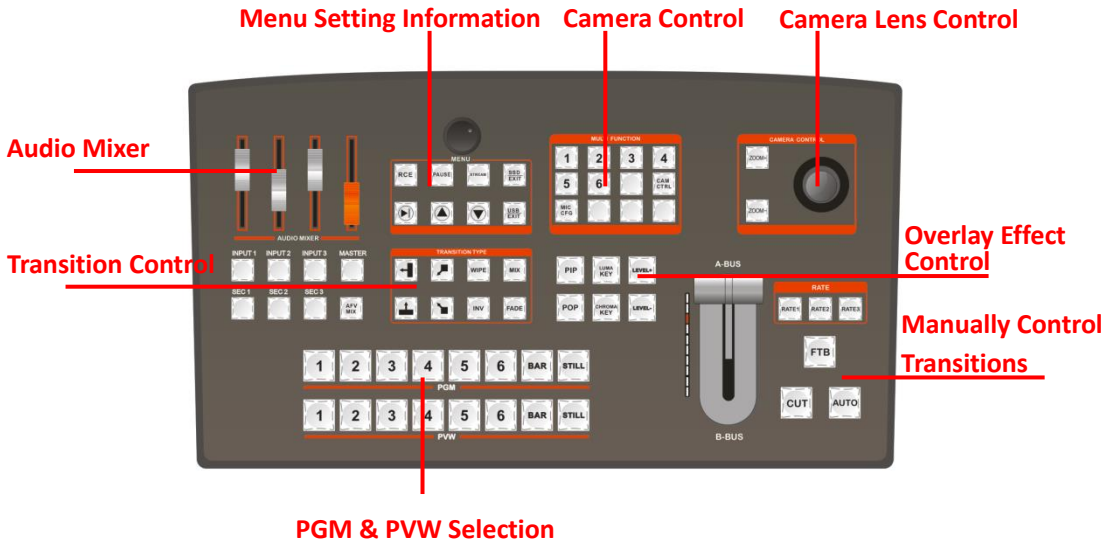
## 4. Control Panel & Interfaces

Please take a few minutes to read this chapter before using DeviceWell HD switcher equipment. This chapter will give you a detailed introduction to the panels and interfaces of the DeviceWell HD switcher, so as to facilitate your subsequent use and operation.

The high-strength feature of DeviceWell HD switcher equipment improves the anti-drop, pressure and shock resistance of the whole machine, and effectively protects the components inside the equipment. The ultra-thin and light characteristics make the equipment more convenient during transportation and maintenance without the need for other equipment; at the same time, it also has unparalleled heat dissipation performance.

In addition to the innovation of the shell, the DeviceWell HD switcher has also made a new optimization of the interface connector. Using the new RoHS standard environmental protection materials, the requirements for durability and environmental protection are more stringent, providing customers with more stable, cost-effective and more environmentally friendly products.

### 4.1 Control Panel



## 4.2 Area Description

NO.	Name	Description
1	Mixer	Mainly for audio follow, embedded and mix settings
2	Knob control area	Use the knob to display menu information and various states of the switcher system
3	Camera control area	Switch 1-6 camera
4	Camera lens control area	Control camera distance
5	Transition effect control area	Select transition effects
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

### 4.2.1 Button Description

#### 4.2.1.1 Audio Mixer

Audio channel control:

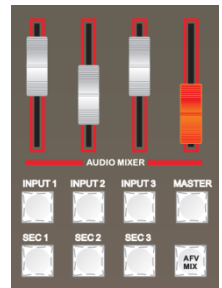
IN PUT1/IN PUT2/IN PUT3 means that 3 kinds of input audio can be controlled,

MASTER: Adjusts the output master volume.

Audio Source switch:

Where SRC is the audio channel binding selection, press SRC1/SRC2/SRC3

Cycle through and select the desired audio channel.



Audio Mode:

When the button light is on, it means that the audio is currently in follow mode, and when the button light is off, it means that the audio is currently in mixing mode.

## 4.2.1.2 Knob and Key Menu

UHS6610R can be set by knob

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.



Press the key to start recording

Press the key to pause recording

Press the key to start streaming

Turn the SSD device on or off



Press the key to play start/pause

View the direction key of the recorded file

View the recorded file under the direction key

Turn USB device on or off

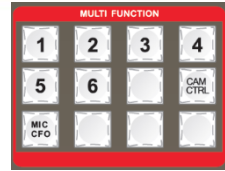


In the recording interface, USB/SSD device can be selected for recording. Select with the mouse, click SSD, and the background color of the icon changes to white, that is, the selected state.

名称	大小	最后时间
video_2023-01-06_084542.mp4	14.9GB	2023年 1月06日 09:19:01
video_2023-01-06_091901.mp4	15.0GB	2023年 1月06日 09:52:21
video_2023-01-06_095221.mp4	15.0GB	2023年 1月06日 10:25:41
video_2023-01-06_102941.mp4	14.8GB	2023年 1月06日 10:59:01
video_2023-01-06_105901.mp4	15.0GB	2023年 1月06日 11:30:21
video_2023-01-06_113221.mp4	14.9GB	2023年 1月06日 12:05:41
video_2023-01-06_120541.mp4	5.6GB	2023年 1月06日 12:18:02

On the recording file page, double-click the file to play and select the file to delete directly during mouse operation; If you can play/pause with the key operation, select the file with the direction key, and press the EXIT key to return to the previous level.

## 4.2.1.3 Camera Control



The UHS6610R switcher supports 6-channel camera control, and the distance and distance of the 6-channel cameras can be controlled through the joystick. When the CAMCTRL key is on, press any key from 1 to 6 again, and after the number key is on, you can control the corresponding camera.



Press to select camera 1



Press to select camera 2



Press to select camera 3



Press to select camera 4



Press to select camera 5



Press to select camera 6



After pressing the button, the setting menu of the MIC will pop up, and the volume and type of the MIC can be selected by the knob.



When the CAMCTRL key is off, the number keys 3, 4, 5, and 6 correspond to the 3, 4, 5, and 6 windows in the multi-screen window. These 4 buttons correspond to the channels of these 4 windows, because these 4 windows are multiplexed windows, which can display the pictures input by HDMI and DP channels. Each time these 4 numeric keys are pressed, the corresponding window will switch the screen.



Press the color bar key, when the light is on, the corresponding PVM window and PGM window will generate an internal color bar signal.



Press STLLY on the control panel (the green light will be displayed after pressing it), then the output PGM video animation will enter the freezing phenomenon, press the button again to unfreeze the picture

Mic	
Mic Volume	32dB
Mic Type	Passive
Exit	

CAM	
Address	1
Baud	9600
Protocol	PEL COD
Rotation Rate	16
Exit	

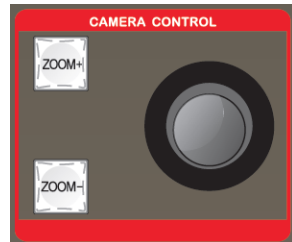


## 4.2.1.4 Camera Lens Control



Zoom in/increase the shooting distance

Zoom out/ 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

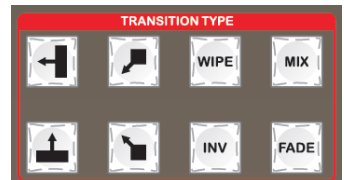
Push the camera rocker right: rotate the lens clockwise

## 4.2.1.5 Transition Control

There are four 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.



## 4.2.1.6 PGM & PVW

Mainly choose PGM (live) and PVM (preview)

The output channel, red means PGM Live, green means preview.



## 4.2.1.7 Integrated Control Area



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.



Level adjustment of the KEY, long press can quickly increase the level



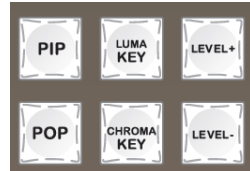
Level adjustment of the KEY, long press can quickly decrease the level



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)



The rotation rates are:

rate1: 640ms

rate2: 1280ms

rate3: 2560ms

## 4.2.1.8 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 T-bar pushes to the bottom and the top is a light).



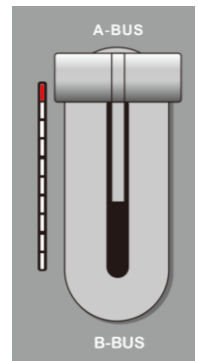
Black field, flashing after clicking, indicates that the main output is outputting a black field.



Hard cuts, no transition effects.



Auto transition, with transition effects.



# 5. Button Operation Instructions

## 5.1 Multiview Output Window Introduction



Preview and Program are PVW and PGM output respectively; as shown below:



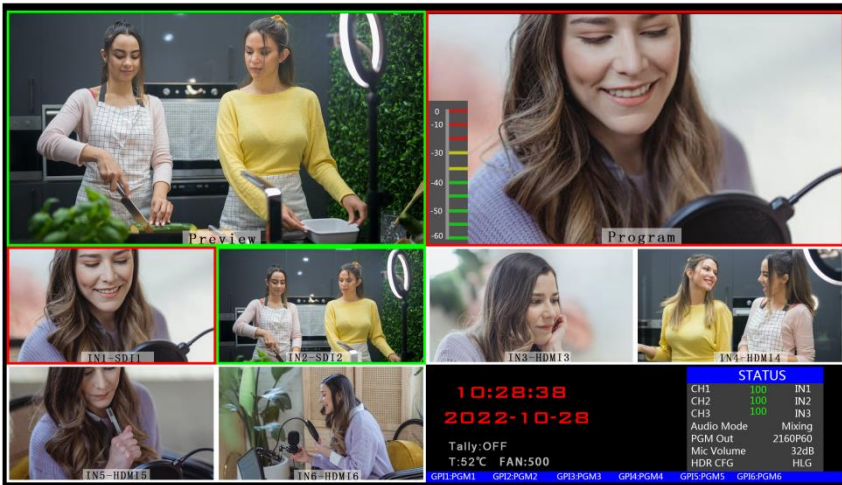
Preview

Program

There are 6 windows below that correspond to the input source monitoring, corresponding to the 1 - 6 buttons on the control panel.



Panel realizes 6 screen split display and preview switching of 6 channel sources



## 5.2 PGM&PVW Switching

### 5.2.1 T-bar Calibration

When the switcher is in use, the fader misalignment may occur, and the origin of the switcher fader is

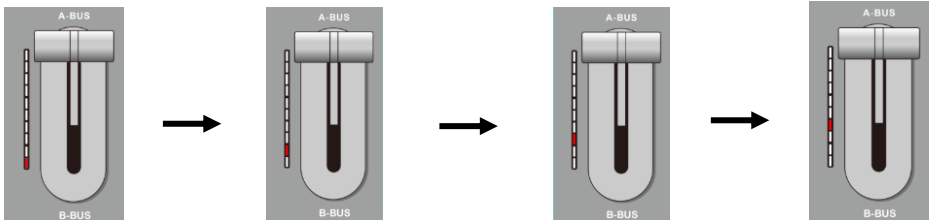
offset. Therefore, the switcher pushrod system should be calibrated before use.

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

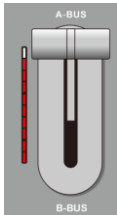


Note: The 1 and 2 keys cannot be released during the calibration process.

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.



After the device is connected to the video signal source, press 1 (PGM) and 2 (PVW) in the key panel, the live and preview signal sources in the output multiview monitor are 1 (PGM) and 2 (PVW) respectively, the signal sources are SDI IN1 and SDI IN2 respectively, as shown in the figure below



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



## 5.2.2 PGM and PVW Channel Selection by Panel

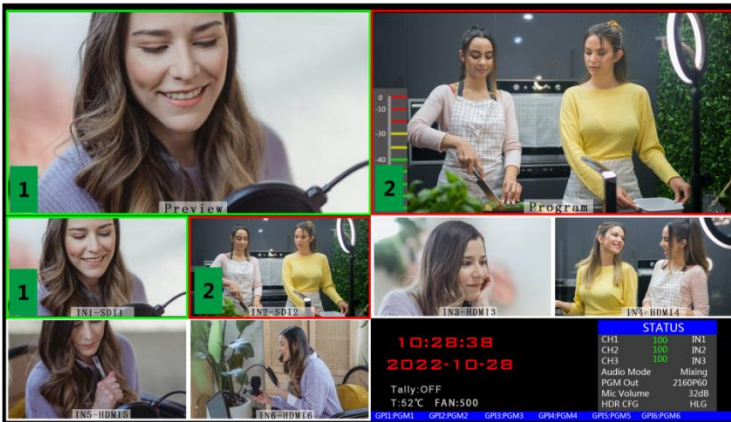


The button board and the 1-6 channels in the PGM & PVW of the PC control software correspond to the 6 multiview under the 6-screen segmentation.

Press the selection in the PGM area as shown below, and the button will turn red (live). Pressing PVW will display green (preview).



Suppose you want to convert the live signal source 1 (PGM) and the preview signal source 2 (PVW) in the multiview into 2 (PGM) and 1 (PVW), just press 2 (PGM) and 1 (PVW), and then click AUTO or CUT to switch. The live PGM signal source 1-6 can be switched arbitrarily with the preview PVW signal source. As shown below



## 5.2.3 Transition control

The transition control method of DeviceWell UHS6610R



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, 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 AUTO , you can make a transition with the special effects.
- 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.

## 5.2.4 PGM Output Black Field

In the integrated control area FTB button FTB, 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.

## 5.3 Audio Settings

### 5.3.1 Audio Introduction

Audio modes are divided into Mix and Follow.



## 5.3.2 Audio description of mixer control area

### 5.3.2.1 Audio Introduction

The UHS6610R switcher supports analog balanced audio input and output; supports SDI audio de-embedding, external audio and SDI de-embedded audio can be arbitrarily assigned to output, supports audio follow and mix switching functions, the menu and panel display as shown below.

STATUS		
CH1	100	PGM
CH2	100	IN2
CH3	100	IN3
Audio Mode	Mixing	
PGM Out	2160P60	
Mic Volume	32dB	
HDR CFG	HLG	



### 5.3.2.2 Audio Follow

The default audio mode of the device is audio follow-up (the audio source is SDI input). If pressed Master, 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.

### 5.3.2.3 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.

### 5.3.2.4 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. .

### 5.3.2.5 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 – 6 channel audio source and then external audio input source.

### 5.3.3 Audio usage analysis

The UHS6610R 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 outputs 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.

#### 5.3.3.1 Audio mode switching

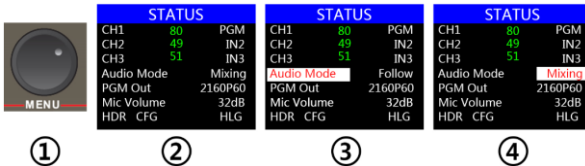
Switch the audio mode through the black knob of the operation panel (as shown in Figure 1)

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 ;



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

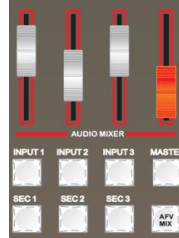
1. First adjust the audio mode to follow by the knob

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).

STATUS		
CH1	80	PGM
CH2	49	IN2
CH3	51	IN3
Audio Mode	Follow	
PGM Out	2160P60	
Mic Volume	32dB	
HDR CFG	HLG	



2. The audio following channels are IN1-SDI1, IN2-SDI2, IN3-SDI3, IN4-SDI4, IN5-SDI5、 IN6-SDI6、 XLR\_IN corresponding operation panel buttons.

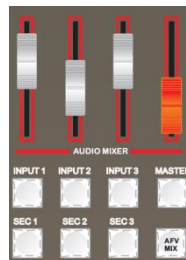


### 5.3.3.3 Function analysis of the mixer

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;

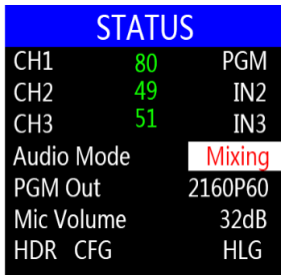
STATUS		
CH1	80	PGM
CH2	49	IN2
CH3	51	IN3
Audio Mode	Follow	
PGM Out	2160P60	
Mic Volume	32dB	
HDR CFG	HLG	



## 5.3.3.4 How to use the mix assignment

1. Adjust the audio mode to Mixing by the knob first (As shown in Figure 1)

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.( As shown in Figure 2)



①



②

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

After confirming the audio channel you have selected, press the CH1 button (as shown in Figure 2)

Indicates that the first audio channel is turned on, and finally the MASTER button main switch is turned on (as shown in Figure 3)

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.



①



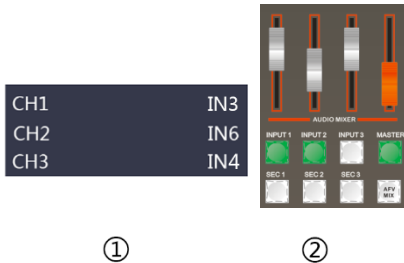
②

③

3. Operate the mixer control area, press the SRC2 button to enter the second audio channel to select IN1, IN2, IN3, IN4, IN5, IN6、XLR\_IN. The corresponding menu status bar will change according to your choice in real time. (as shown in Figure 1)

After confirming the audio channel you selected, press the CH2 button (as shown in Figure 2)

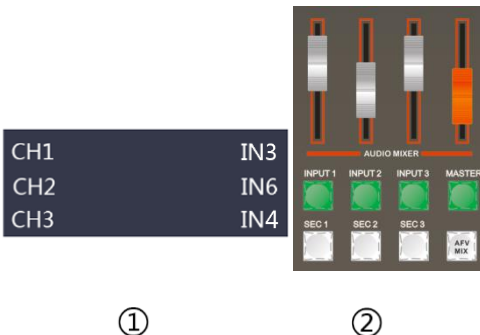
It means to open the second audio channel, push the white fader corresponding to the second channel, and adjust the volume of the second channel audio. At this time, the audio output of the PGM live broadcast is fixed to the audio of the first and second channels that you turn on.



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、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.



## 5.4 Special effects instructions

### 5.4.1. 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.



A  B

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 MIX and then click to use the T-bar or AUTO to switch.

### 5.4.2. FADE In and Out Transition Effects

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



A  B

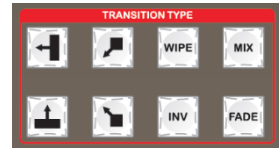
FADE fades in and out, and A gradually darkens until it is completely black, and then gradually changes from black to B.

### 5.4.3. WIPE Transition Effects

Press WIPE 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



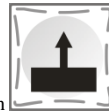
You can see the effect of the switch. If selected the effect is as shown below:



Wipe up transition effects, the A picture remains unchanged, and the B picture is gradually wiped in through the upward direction until the picture completely changes to B

## 5.4.4. 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.



## 5.4.5. 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 SDII 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 size and position

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

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.

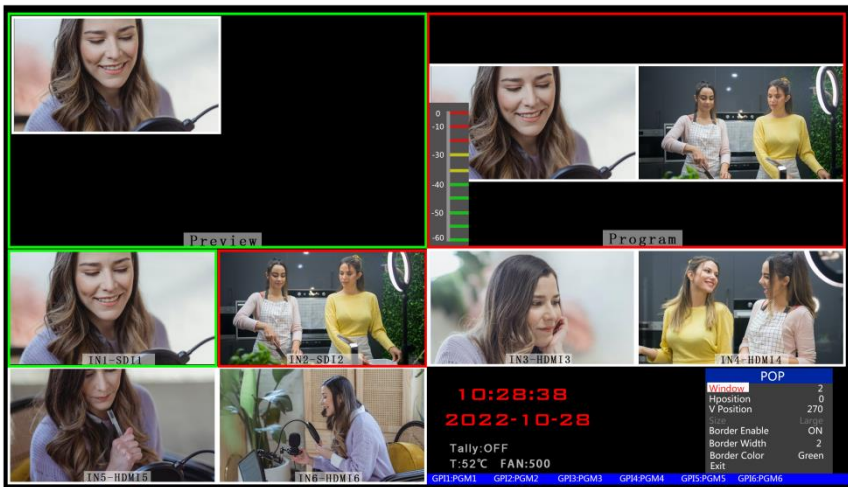
## Picture-in-picture source switching

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



## 5.4.6. 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 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.

POP	
Window	1
H Position	0
V Position	0
Size	Large
Border Enable	On
Border Width	2
Border Color	Green
Exit	

## Picture-out-picture source switching

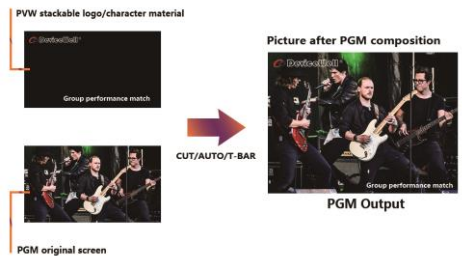
Press 1, 2, 3... in the PVW number keys to switch the input source of the picture.



## 5.4.7. 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.

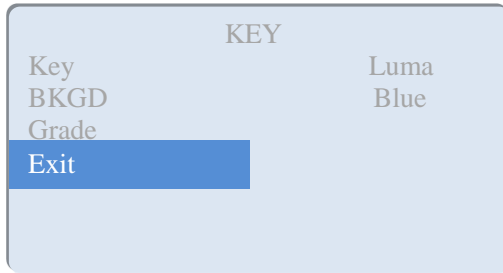
### Luma Key Operation:



### 5.4.7.1 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.

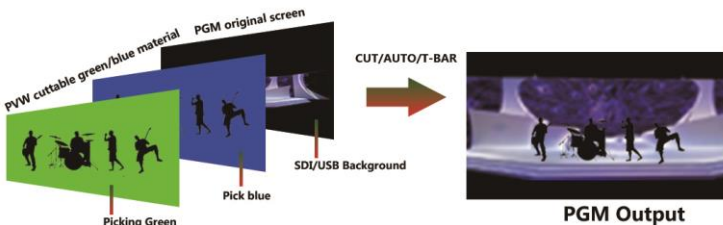
Image color gamut setting: After pressing the Luma KEY , the LCD panel will display the current luma key image information, as shown below.



## 5.4.8. 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.

### Chroma Key Operation:

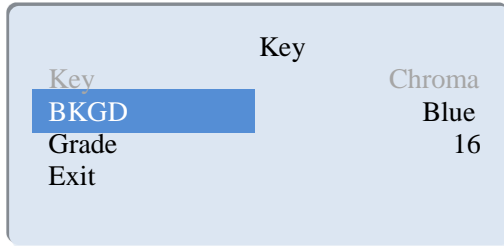


### 5.4.8.1 Panel color image

Switch the blue background or green background to the PVW preview window, and then turn on the 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.



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.

## 5.5 System Menu Settings

### 5.5.1 Menu Display

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

Status		
CH1	100	IN1
CH2	100	IN 2
CH3	100	IN 3
Audio Mode		MIX
Resolution		2160P60
MIC Vol.		20dB
HDR		OFF



Main Menu
System Settings
Network Settings
GPI Settings
Recording Settings
Device Info
Exit

Rotate the knob below the status bar to set the audio mode, output resolution, Mic volume, and HDR settings;

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

Output resolution: Rotate the knob to operate, select 3840x2160@P60/50/30/25/24

Mic volume: -18~32dB. HDR Settings: Follow, HDR10, HLG, Off

## 5.5.2 System Settings

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

System Settings	
Language	Chinese
Fan Control	Intelligent
Fan Speed	300
AUX_IN	Phone
Reset	
Return	

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.

## 5.5.3 Network Settings

Network Settings	
IP Source	static IP
IP Address	192.168.1.237
Subnet Mask	255.255.255.0
Gateway Settings	192.168.1.1
Save	
Return	

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.

## 5.5.4 GPI Settings

Main Menu	
GPI1	PGM1
GPI2	PGM2
GPI3	PGM3
GPI4	PGM4
GPI5	PGM5
GPI6	PGM6
Return	

GPI-Inx	Optional Function	Description
1	PGM1	Simulate PGM1 button messages
2	PGM2	Simulate PGM2 button messages
3	PGM3	Simulate PGM3 button messages
4	PGM4	Simulate PGM4 button messages
5	PGM_BAR	Simulate PGM_BAR button messages
6	CUT	Simulate CUT button messages
7	AUTO	Simulate AUTO button messages
8	MUTE	Simulate MUTE button messages
9	FTB	Simulate FTB button messages
10	STILL	Simulate STILL button messages

## 5.5.5 Recording Settings

Recording Settings	
Encoding	VBR
Storage Type	USB Disk
Return	

The storage mode can be set in the recording settings. You can select USB flash disk/SATA hard disk. The LED will flash when recording, and the status of recording will be displayed in real time in the status display bar of the switching station.



1. The LED will flash during recording, and the recording status will be displayed in real time in the status display bar of the switcher. REC is red and recording is in progress.
2. Recording time.
3. USB disk/SATA hard disk recording free space.

## 5.5.6 Device Info.

Device Info.	
Version	UHS6610R-10-60
Serial No.	02-09-00-16-16- 16-16-00-11-11- 02-00
Return	

# 6. Failure and Maintenance

## 6.1 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.

## 6.2 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.

## 6.2.1 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.

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.



<http://www.devicewell.com>