AVMATRIX®

# SHARK S6 PLUS

## 6-channel SDI/HDMI Audio&Video Switcher

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# 1. Introduction

## 1.1. Overview

SHARK S6 PLUS, featuring a 17.3-inch FHD IPS switcher, supports 6-ch 3G-SDI and 2-ch 4K HDMI input. Outputs include 2 HDMI, 4 SDI with customize output source and format option, and 1 HDMI multiview . It supports RTMP streaming, recording via USB/SD card, and UVC lossless capture. The switcher offers chroma key, luma key, customize PIP×3, DSK, and LOGO overlay. For Audio function, it provides two XLR/TRS balanced inputs with 48V phantom power and a 3.5mm stereo input, supporting mixing of 6 embedded video audio channels and two external audio inputs. It also features 6-channel PTZ control with rate, preset, focus control, and manual/auto exposure and color control. The switcher supports macro script functionality for effortless automation of operations, meeting professional live streaming and production needs.

## 1.2. Main Features

- 17.3-inch FHD IPS display
- Inputs: 6×3G-SDI and 2×4K HDMI
- Outputs: 2×HDMI(A/B) PGM (configurable), 4×SDI(A/B) PGM (configurable), 1×HDMI MV (source configurable)
- Streaming: RTMP
- Recording and playback: USB disk/SD card
- USB port for lossless capture
- Chroma key, luma key, custom position and size PIP×3, DSK, LOGO overlay
- T-bar/Auto/Cut transitions
- Professional XLR audio I/O, and 48V phantom power support
- Audio: 6×input video embedded audio & 2×XLR/TRS balanced & 3.5mm stereo input; 3.5mm stereo & XLR balanced output
- 6-channel PTZ control, supporting PTZ speed setting, preset position setting and calling, automatic/manual white balance, automatic/manual color and automatic/manual focus control
- Macro function, supporting macro recording, playback
- Tally GPIO port

## 1.3. Safety Reminder

※ Do not cover the air inlet and outlet of the unit, make sure that there is sufficient space around the ventilation holes on both sides to avoid blockage of ventilation.

※ To avoid falling or damage, please do not place this unit on an unstable cart, stand, or table. Make sure install this unit on a very stable horizontal surface for use.

※ Do not use this unit in a humid, dusty location or near water. Avoid liquids, metal pieces or other foreign materials to enter the unit.

※ Do not use this unit in an environment where the temperature is too cold or too hot.

※ Avoid placing this unit in direct sunlight or in a place where hot air from other products can blow.

Using the unit safely

Before using this unit, please read below warning and precautions which provide important information concerning the proper operation of the unit. Besides, to assure that you have gained a good grasp of every feature of your new unit, read below manual. This manual should be saved and kept on hand for further convenient reference.


### Warning And Cautions

※ Operate unit only on the specified supply voltage.

※ Disconnect power cord by connector only. Do not pull on cable portion.

※ Do not place or drop heavy or sharp-edged objects on power cord. A damaged cord can cause fire or electrical shock hazards. Regularly check power cord for excessive wear or damage to avoid possible fire / electrical hazards.

※ Ensure unit is properly grounded at all times to prevent electrical shock hazard.

※ Do not operate unit in hazardous or potentially explosive atmospheres. Doing so could result in fire, explosion, or other dangerous results.

※ Handle with care to avoid shocks in transit. Shocks may cause malfunction. When you need to transport the unit, use the original packing materials or alternate adequate packing.

※ Do not remove covers, panels, casing, or access circuitry with power applied to the unit! Turn power off and disconnect power cord prior to removal. Internal servicing / adjustment of unit should only be performed by qualified personnel.

※ Turn off the unit if an abnormality or malfunction occurs. Disconnect everything before moving the unit.

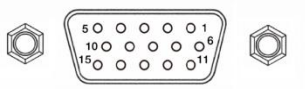
# 2. Appearance Introduction

## 2.1. Interface Overview


| Position | Function Category | Interface Label | Interface Function |
|---|---|---|---|
| **1** | Microphone Power Supply | 48V | 48V Phantom Power Switch Indicator |
| **2** | Audio Input | AUDIO IN, MIC1/L, MIC2/R | 2× XLR/TRS Female Connectors for Microphone/Balanced Audio Input |
| **3** | Audio Output | AUDIO OUT, L, R | 2× XLR Male Connectors for Balanced Audio Output |
| **4** | TALLY | TALLY | 1× TALLY DB15 Connector |
| **5** | PTZ Camera Control | RS-232/RS-485 | RS232/RS485 DB9×1 |
| **6** | Video Output | OUTPUTS | Outputs: 1× HDMI Multi-view, 4× SDI, 2× HDMI (Interfaces marked A/B are a group with identical output signals) |
| **7** | Video Input | INPUTS | Inputs: 6× 3G-SDI, 2× 4K HDMI |
| **8** | Lossless UVC Capture | USB OUT | 1× USB Type-C Output (for Lossless UVC Capture) |
| **9** | Network Communication & Control | LAN | 1× LAN Port (for PC Control / Software Upgrade/ Streaming Transmission / PTZ Camera Control, etc.) |
| **10** | DC Power Input | DC 15V IN | DC 15V 4A IN |

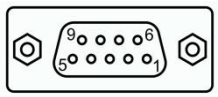
| | | | |
|---|---|---|---|
| **11** | Headphone Monitoring | Headphone Jack | 1× Headphone Monitoring Output |
| **12** | Audio Input | LINE IN | 1× Stereo Audio Input |
| **13** | Multimedia Input | USB MEDIA | 1× USB Type-A Port (for Recording Storage / Configuration Import & Export / Image Import ) |
| **14** | Recording Storage | SD CARD SLOT | 1× SD Card Slot (for Recording Storage) |

## 2.2. Tally PIN Definition



| PIN | Definition | PIN | Definition |
|---|---|---|---|
| **11** | PGM-IN1 | **6** | PVW IN1 |
| **12** | PGM-IN2 | **7** | PVW IN2 |
| **13** | PGM-IN3 | **8** | PVW IN3 |
| **14** | PGM-IN4 | **9** | PVW IN4 |
| **15** | PGM-IN5 | **10** | PVW IN5 |
| **3** | PGM-IN6 | **4** | PVW IN6 |
| **5** | GND | **1** | GPIO |
| **2** | GPIO | | |

## 2.3. Definition of RS232/RS485 (DB9) Port



| PIN | Definition | PIN | Definition |
|---|---|---|---|
| **1** | RS422_A | **7** | RX232-RTSN |
| **2** | RX232RX | **8** | RS232-CTSN |
| **3** | RX232TX | **9** | RS422_Y |
| **4** | RS422_B | **10** | GND |
| **5** | GND | **11** | GND |
| **6** | RS422_Z | | |

# 3. Main Parameters and Accessories

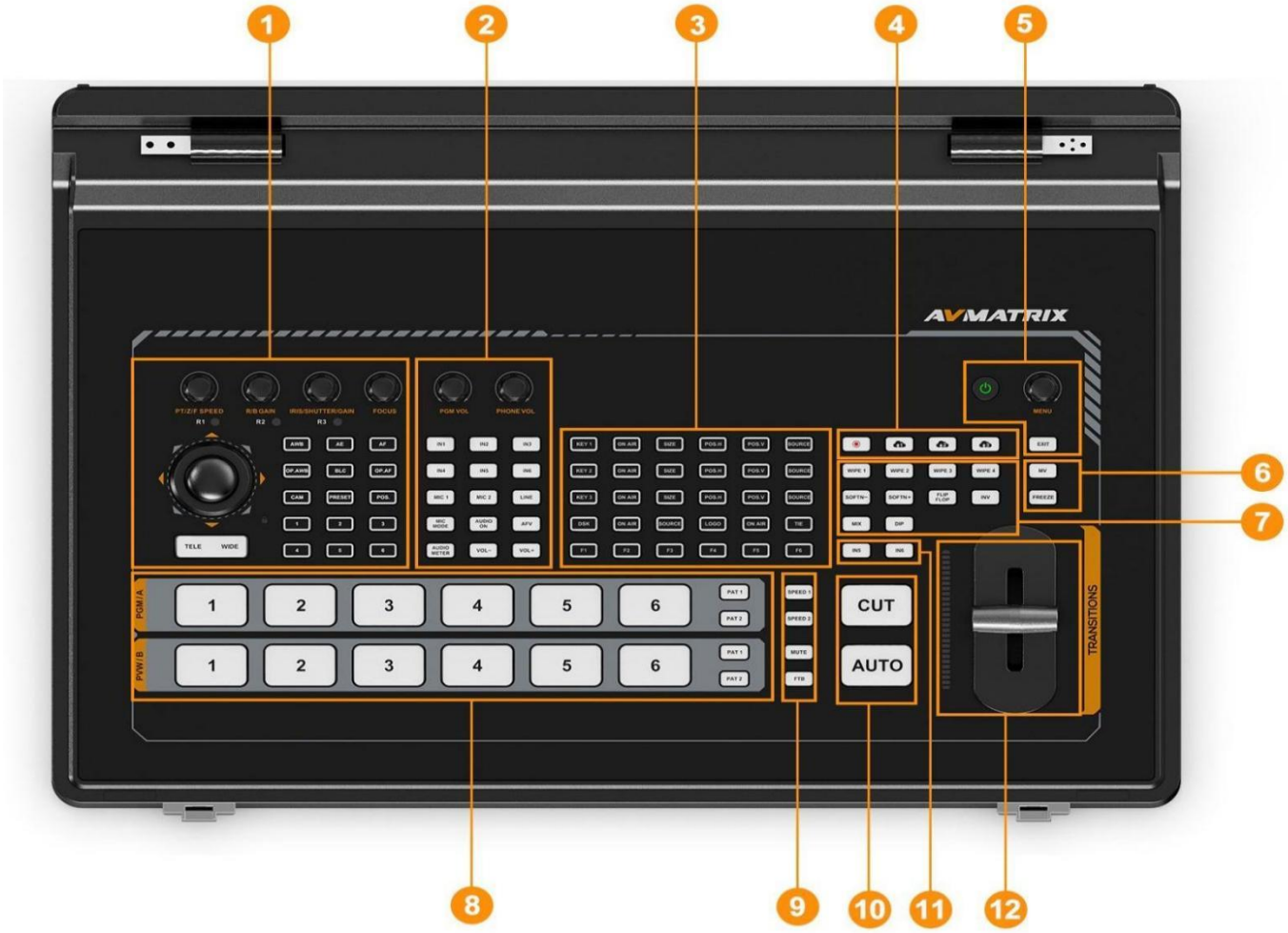
## 3.1. Main Parameters

| CONNECTION | |
|---|---|
| Video In | 3G-SDI × 6<br>4K HDMI × 2 |
| Video Out | HDMI (A/B, PGM) × 2<br>SDI (A/B, PGM) × 4<br>HDMI (Multiview) × 1<br>USB-C (UVC) × 1 |
| Audio Input | XLR/TRS Female: × 2; +48V Phantom Power<br>3.5mm TRS (Line) × 1 |
| Audio Output | XLR Male × 2<br>3.5mm TRS (Line) × 1<br>3.5mm TRS (Headphone Monitoring) × 1 |
| Network | LAN×1 (Streaming, web control, PTZ control, firmware update)<br>NDI (optional): NDI\|HX2 push streaming ×1, NDI\|HX3 pull streaming ×1 |
| USB Ports | USB Type-C×1 (UVC capture)<br>USB Type-A×1(Recording storage, configuration import/export, image import) |
| Tally Port | DB-15 |
| Serial Port | RS232/RS485×1, PTZ cameras control |
| Record | U-Disk×1, SD Card×1 |
| **STANDARDS** | |
| SDI In | 1080p 60/59.94/50/30/29.97/25/24/23.98<br>1080psF 30/29.97/25/24/23.98<br>1080i 60/59.94/50<br>720p 60/59.94/50/30/29.97/25/24/23.98<br>625i 50, 525 i59.94 |
| HDMI In | 4K 60/50/30, 2K 60/50/30<br>1080p 60/59.94/50/30/29.97/25/24/23.98<br>720p 60/59.94/50/30/29.97/25/24/23.98<br>576p 50, 480p 60/59.94 |
| SDI Out | 1080p 60/59.94/50/48/47.95/30/29.97/25/24/23.98<br>1080i 60/59.94/50 |

| | |
|---|---|
| HDMI Out | 1080p 60/59.94/50/47.95/48/30/29.97/25/24/23.98, 1080i 60/59.94/50 |
| Video Format | SDI: YUV 4:2:2 10bit; HDMI: YUV, RGB Full, RGB Limit |
| Color Space | SDI&HDMI: RGB Full/Limited，YUV |
| **Recording & Streaming** | |
| USB Capture Out | Formats: YUY2, NV12, RGB32, 1080p60 (200Mbps)<br>Supported Operating Systems: Windows 7/8/10/11, Linux (Kernel version 2.6.38 and above), Mac OS (10.8 and above)<br>Software Compatibility: OBS studio, Skype, ZOOM, Teams, Youtube Live, etc. |
| Stream | Bitrate: Up to 32Mbps |
| Record | Storage Formats: USB, SD card<br>File Formats: MP4/TS, up to 1080p60 (32Mbps)<br>Bitrate Control: CBR/VBR |
| Protocols | Push Steam：RTMP<br>PTZ Control：Visca、Onvif、Pelco D/P |
| **Media** | |
| Format | Video: MP4, TS; Audio: MP3, AAC<br>Image: PNG, up to 1920×1080 pixels<br>Logo: PNG, up to 450×50 pixels |
| **FEATURES** | |
| Display | 17.3-inch FHD LCD display |
| Macro | 20 macros, supporting recording and playback |
| KEY | Up to 6 keys, adjustable size and position<br>Upstream key×3: Chroma key/Luma key/PIP<br>Downstream key×1: DSK<br>LOGO×1 |
| Audio Mixing | Supports 8-channel audio mixing (6 video channels + 2 XLR/TRS channels) |
| **OTHERS** | |
| Power | Wide voltage range: 9V - 24V<br>Operating voltage: DC 15V, less than 50 W |
| Dimensions (LWD) | 433×307×75.5mm |
| Weight | Net: 5240g |
| Temperature | Operating temperature: 0℃~60℃, Storage temperature: -30℃~70℃ |
| Warranty | 2 years |

## 3.2. Accessories


# 4. Button Layout




| Position | Function Category | Button Name | Button Function | Operation Instructions |
|---|---|---|---|---|
| | | R1&PT/Z/F SPEED | Adjustment of Pan/tilt, Zoom, and Focus Speeds | R1: Rotate to increase or decrease the speed. Press to switch and adjust the |

| | | | | |
|---|---|---|---|---|
| 1 | PTZ Camera Control | | | PTZ(red light), zoom (green light) and focus (blue light) speeds. The current control speed status can be synchronously viewed in the status bar in the upper left corner. |
| | | R2&R/B GAIN | Adjustment of Camera's Red and Blue Gains | R2:Rotate to increase or decrease red and blue gain, press to switch between red gain (red light) and blue gain (blue light) |
| | | R3&IRIS/ SHUTTER/ GAIN | Adjustment of Camera's Aperture, Shutter, and Gain Parameters | R3: Rotate to increase or decrease parameters, press to switch and control aperture (red light), shutter (green light),gain (blue light) |
| | | FOCUS | Manual Focus | FOCUS Knob: Manual focus knob, can be used with the R1 to set the focus rate to achieve fast and precise focus |
| | | Joystick | Control Pan/tilt Movement | Joystick: The joystick can control the PTZ movement in 8 directions, and can be used with the R1 to set the speed for fast and accurate framing. Pressing the joystick can lock the joystick to prevent accidental touches, and the red light flashes when locked. |
| | | TELE WIDE | Zoom Control | Zoom control button for fast and accurate framing in conjunction with R1 set rate. |
| | | AWB | Auto White Balance | Lights up when turned on |
| | | AE | Auto Exposure | Lights up when turned on |
| | | AF | Auto Focus | Lights up when turned on |
| | | CAM | Function buttons, share the following numeric keys | Light up when the currently selected function is activated, such as CAM light up, press the number 1 or connect to |
| | | POS. | | |
| | | PRESET | | |

| | | | | |
|---|---|---|---|---|
| | | RESET<br>1-6 | | camera No.1, POS. light up by pressing the number 2 will call the current connected camera No. 2 preset bit, preset and reset correspond to set preset and clear preset respectively. Due to the limitation of numeric key area, only 6 cameras can be connected and 6 preset bits can be called at present. |
| | | Note:<br>The upper left status bar of the multi-screen will synchronously display the status and operation prompts of this area. | | |
| **Position** | **Function Category** | **Button Name** | **Button Function** | **Operation Instructions** |
| **2** | Audio Control | PGM VOL | PGM channel volume adjustment | Rotate to increase/decrease volume |
| | | PHONE VOL | Headphone monitoring volume adjustment | Rotate to increase/decrease volume |
| | | IN 1-IN 6 | IN1-IN6 audio settings | Audio on: Light on;Audio setting status (used with AFV/AUDIO ON/VOL-/VOL+ buttons): Flashing |
| | | LINE | Linear audio settings | |
| | | MIC 1/MIC 2 | MIC1/MIC2 audio settings | |
| | | MIC MODE | Microphone and linear audio switching | Indicator always on: Microphone mode<br>Indicator off: LINE mode |
| | | AFV | Audio follow video switch | AFV mode on: Light on |
| | | AUDIO ON | Audio switc | Audio on: Light on |
| | | VOL-/VOL+ | Volume adjustment | Increase/decrease volume |

| | | Notes: | | |
|---|---|---|---|---|
| **Position** | **Function Category** | **Button Name** | **Button Function** | **Operation Instructions** |
| **3** | Upstream key<br>Downstream key<br>Customize shortcuts | KEY1-KEY 3 | Enable KEY1-3 Functions in PVW channel | On: Light on<br>The functions of KEY1-3 can be enabled in the menu, including CHROMA, LUMA, and PIP. |
| | | ON AIR | Enable KEY1-3 functions in PGM channel | |
| | | SIZE | Customize the size of KEY1-3 | On: Light on and flashing.<br>Flexibly adjust the size with the menu knob |
| | | POS.H | Set the horizontal position of KEY1-3 in the screen | |
| | | POS.V | Set the vertical position of KEY1-3 in the screen | |
| | | SOURCE | Select the desired source for the picture | On: Light on and flashing.<br>Use the number keys of channels 1-6 with PAT 1 and PAT 2 to select the required signal source from the 8 flashing channels. |
| | | DSK | Enable downstream key in PVW channel | On: Light on |
| | | ON AIR | Enable downstream key in PGM channel | |
| | | SOURCE | Select the signal source required for the screen | On: Light on and flashing.<br>Use the number keys of channels 1-6 with PAT 1 and PAT 2 to select the required signal source from the 8 flashing channels. |
| | | LOGO | Enable logo overlay in PVW channel | On: Light on |
| | | ON AIR | Enable logo overlay | |

| | | | | |
|---|---|---|---|---|
| | | | in PGM channel | |
| | | TIE | Transition binding switch | On: Light on<br>DSK is usually used to overlay a logo o r title directly onto the PGM. But if you want the downstream keyer to work in AUTO or T-Bar, just turn on TIE. |
| | | F1-F6 | Customize shortcuts | Configure macro functions or other frequently-used functions in the menu; the current custom shortcut key settings are viewable in the bottom-left status bar. |
| **Position** | **Function Category** | **Button Name** | **Button Function** | **Operation Instructions** |
| **4** | Recording & Streaming & Local Playback |  | Press to start and stop recording | Red light on when recording active; Light off when recording stopped. |
| | |  | Press to start and stop streaming | Green light<br>flashes when connected, stays on during streaming, and turns off when Stopped. |
| | |  | | |
| | |  | | |
| **Position** | **Function Category** | **Button Name** | **Button Function** | **Operation Instructions** |
| **5** | POWER& MENU |  | Power on/off | Long press for 5 seconds to realize switch on/off, Red light when power is turned on, power on display green light. |
| | | MENU | Menu knob | Control menu, configure different parameters. |
| | | EXIT | Return or exit | Return to the previous level or exit the menu |
| **6** | Multi-view Control | MV | The multiview chann el monitors the speci fied signal source in full screen | The signal source to be monitored can be configured through the menu. When the button is lit, multiple screens are monitored, and when the light is off, the set source signal is monitored in full |

| | | | | |
|---|---|---|---|---|
| | | | | screen. |
| | Freeze | FREEZE | Screen freeze | Configure the freeze source in the menu: PGM or PVW |
| 7 | Transition Effects | WIPE1/WIPE2/WIPE3/WIPE4 | Scratch effect selection | Scratch effect selection buttons, with menu-configurable scratch effects for the corresponding buttons. |
| | | SOFTN -/ SOFTN+ | Softness adjustment | Increase/decrease the edge softness of the wipe effect |
| | | FLIP FLOP | Repeated switching | Repeatedly switch the wipe effect |
| | | INV | Reverse direction switching | The switching effect switches in the opposite direction. |
| | | MIX | Mix transition selection | Gradually blending from one frame to the next, the switching of frames is accomplished in a soft and smooth manner. The dissolve effect enhances the artistry and coherence of the picture |
| | | DIP | Dip transition selection | A transition effect where one scene dissolves into another. |
| **Position** | **Function Category** | **Button Name** | **Button Function** | **Operation Instructions** |
| 8 | PGM/PVW Selection | PGM/A | PGM or A channel signal source selection | Select by pressing the corresponding number key |
| | | PAT1 | Preset image selection | On: Light on |
| | | PAT2 | | |
| | | PVW/B | PVW or B channel signal selection | Select by pressing the corresponding number key |
| | | PAT1 | Preset image selection | On: Light on |
| | | PAT2 | | |
| 9 | Transition | SPEED1 | Transition effect | On: Light on (The speed can be |

| | | | | |
|---|---|---|---|---|
| | speed | SPEED2 | switching speed selection | configured in the menu.) |
| | Mute | MUTE | Full Mute | On: Light on and flashing |
| | Fade to Black | FTB | Fade to Black | On: Light on and flashing.<br>Blackfield for emergency |
| **10** | Switching Mode | CUT | Signal switching | Simple instant switch (No transition effect) |
| | | AUTO | Auto switching | Automatically switch<br>(Switching with transition effects) |
| **11** | IN5 and IN6 | IN5 | Reusable interface switching | Switch between SDI and HDMI modes, default HDMI mode |
| | | IN6 | | |
| **12** | Switching Function of The T-Bar | T-Bar | Manual switching | 1.Switching via T-Bar/ The T-bar switch is controllable to enable or disable the switching function of the T-bar.<br>2.Support A/B mode.<br>In A/B mode, the function of PGM/PVW is determined by the upper and lower positions of the T-bar. Users can make settings in the menu page. |
| | | Note:<br>1.Support Switching Key Inversion<br>In the menu settings,users can set the switch key inversion.Swap the functions of the AUTO key and the CUT key.Meet the usage habits of different operators and improve operating efficiency.<br>2.Supports passive switching.<br>Supports passive switching. When detecting that a signal source has no valid input, video switcher will automatically block the switching operation of the signal source to prevent misoperation and ensure broadcasting safety. | | |

# 5. Input and Output

## 5.1. Input Settings

| Menu | Sub-menu | Item | Options | Notes |
|---|---|---|---|---|
| Input | View Src | View | View1/View2/View3/ View4/ View5/ View6 | |
| | | Source | IN1/IN2/IN3/IN4/IN5/IN6 | |
| | | Flip | Off/Horizontal/Vertical/Rotate 180° | |
| | | Brightness | 0-100 | |
| | | Contrast | 0-100 | |
| | | Saturation | 0-100 | |
| | | Reset | OFF/ON | |
| | Input Src | IN 5 | SDI/HDMI | |
| | | IN 6 | SDI/HDMI | |
| | Freeze | Control | PVW/PGM | |

## 5.2. Input Description

### 5.2.1.

The S6 supports input signal routing configuration. The 6 preview screens (View1-View6) can freely select the same or different input signal sources (including IN1-IN6 sources), allowing flexible configuration of screen order. There is no need to unplug and plug interface cables to complete the custom adjustment of screen order.

### 5.2.2.

All views support flip functions, including horizontal flip, vertical flip, and 180° rotation flip, which are commonly used for correcting image orientation from aerial photography, PTZ inverted cameras, etc. It also supports adjustment of brightness, contrast, and saturation of the image.

### 5.2.3.

To restore the default routing configuration, you can select the source reset option to restore the default state. In the default state, screens correspond to interfaces in order. Input 5 and Input 6 default to the HDMI input signal.

**Note:** In all functions of the SHARK S6 where there is a corresponding signal source selection, the selection is based on the preview screen number. If the routing is in the default state, it corresponds to the interface. If the routing configuration has been changed, refer to the order of the preview screens, which may not correspond to the interface.

## 5.3. Output Setting

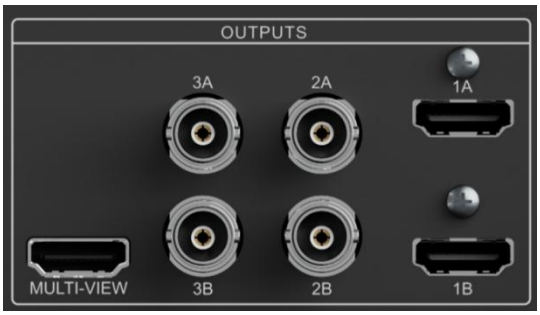
| Menu | Sub-menu | Item | Options | Notes |
|---|---|---|---|---|
| Output | Interface | HDMI Out 1 | In1/In2/In3/In4/In5/In6/PGM/ Clean PGM/PVW/Color Bar/Multiview | |
| | | SDI Out2 | In1/In2/In3/In4/In5/In6/PGM/ Clean PGM/PVW/Color Bar/Multiview | |
| | | SDIOut3 | In1/In2/In3/In4/In5/In6/PGM/ Clean PGM/PVW/Color Bar/Multiview | |
| | | Stream Out | In1/In2/In3/In4/In5/In6/PGM/ Clean PGM/PVW/Color Bar/Multiview | |
| | | LCD Mode | PGM/Multiview | |
| | | UVC Out | In1/In2/In3/In4/In5/In6/PGM/ Clean PGM/PVW/Color Bar | |
| | Format | Frame Rate Mode | Integer/Decimal | |
| | | HDMI Out1 | 1080i50/1080i60/1080p24/1080p25/1080p30/1080p50/1080p60/1080i59.94/1080p23.98/1080p29.97/1080p59.94 | |
| | | SDI Out2 | 1080i50/1080i60/1080p24/1080p25/1080p30/1080p50/1080p60/1080i59.94/1080p23.98/1080p29.97/1080p59.94 | |
| | | SDI Out3 | 1080i50/1080i60/1080p24/1080p25/1080p30/1080p50/1080p60/1080i59.94/1080p23.98/1080p29.97/1080p59.94 | |
| | | Color Space | RGB Full/RGB Limited/YUV | |

| | | | | |
|---|---|---|---|---|
| | | Brightness | 0-100 | |
| | | Contrast | 0-100 | |
| | | Saturation | 0-100 | |
| | FTB | FTB/Mute Speed | 0s-3.0s | |
| | | FTB With mute | OFF/ON | |

## 5.4. Output Setting

### 5.4.1. Output Description

The video switcher has 7 output ports. They are 2 HDMI (A/B) PGM (AUX) outputs, 4 SDI (A/B) PGM (AUX) outputs, 1 x HDMI Multi Picture Output, which can also be defined as AUX outputs, including IN 1-IN6, PVW, PGM, Clean PGM, Color Bar and Multiview outputs.




### 5.4.2. Multiview Output

The default output of the multiview port is multiview. Users can connect it to a larger size display.

**Note**: The A/B interface outputs are two connectors of the same signal.

### 5.4.3. PGM Output

The factory default is to output the PGM program broadcast screen. The menu can be configured to output other source signals including multi-screen, clean broadcast signal without downstream key subtitle logo and various input source signal output.

### 5.4.4. LCD Output

The video switcher's LCD output supports multiview mode and PGM mode.

By pressing the MV button on the panel, users can quickly switch between the multiview and the currently selected screen on the LCD (such as PGM).

Note: When MV switches to PGM, if an interface chooses to output multiview, it will also switch to PGM full-screen.

### 5.4.5. USB Output

When the user connects the USB output to the PC, the user can use software such as OBS, PotPlayer, VMix, etc. to play or capture the USB output video and audio on live platforms such as YouTube,

Facebook, Twitter, etc. USB3.0 streaming output is based on UVC (USB video class) and UAC (USB audio class) standards. No additional drivers need to be installed. The relevant video and audio devices will be automatically detected and displayed in the Windows Device Manager:

• **Imaging devices:** Switcher Capture

• **Audio Inputs and Outputs:** Switcher Capture

In addition, the USB video source can be not only PGM output, but also IN1-IN6. PVW, PGM, Clean PGM, Color Bar output. Users can set up, capture and stream the video they need.

### 5.4.6. PGM Screen Settings

Users can set the brightness, contrast, and saturation of the PGM output in the menu. The setting range is 0%-100%. The default setting is 50%.

### 5.4.7. PGM and Multiview Formats

Support up and down conversion output, output formatting supports integers and decimals. When the frame rate mode is an integer, the output format supports 1080i50, 1080i60, 1080p24, 1080p25, 1080p30, 1080p50, 1080p60. When the frame rate m ode is a decimal, there are 1080i50, 1080i59.94, 1080p23.98, 1080p25, 1080p29.97, 1080p50, 1080p59.94 to choose from. The default format for PGM and multi-screen is 1080p60.

### 5.4.8. PGM and MultiView Color Space

The video switcher supports color spaces such as YUV, RGB Full, and RGB Limit. The default color space for output is YUV.

# 6. Multiview Layout

## 6.1. Menu Setting

| Menu | Sub-menu | Item | Options | Notes |
|---|---|---|---|---|
| MV | Layout | Style | Landscape/Portrait | |
| | Meter | All Enable | OFF/ON | |
| | | View1 | OFF/ON | |
| | | View2 | OFF/ON | |
| | | View3 | OFF/ON | |
| | | Vew4 | OFF/ON | |
| | | View5 | OFF/ON | |
| | | View6 | OFF/ON | |
| | | PGM | OFF/ON | |
| | | Mic In | OFF/ON | |

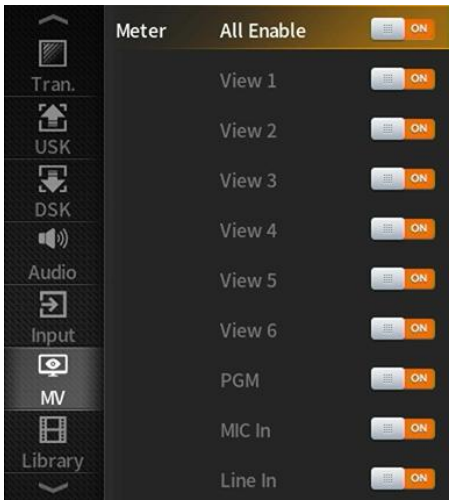
| | | | | |
|---|---|---|---|---|
| | | Line In | OFF/ON | |
| | | Position | Left/Right | |
| | | Opacity | 25%/50%/75%/100% | |
| | Status | Enable | OFF/ON | |
| | | Opacity | 25%/50%/75%/100% | |
| | | Position X | 0%-100% | |
| | | Position Y | 0%-100% | |
| | | Text Color | Any Color | |
| | | BG Color | Any Color | |
| | UMD | Enable | OFF/ON | |
| | | Opacity | 25%/50%/75%/100% | |
| | | Position X | 0%-100% | |
| | | Position Y | 0%-100% | |
| | | Text Color | Any Color | |
| | | BG Color | Any Color | |
| | UMD Text | View1 | Letters, Symbols, Numbers Optional | |
| | | View2 | Letters, Symbols, Numbers Optional | |
| | | View3 | Letters, Symbols, Numbers Optional | |
| | | View4 | Letters, Symbols, Numbers Optional | |
| | | View5 | Letters, Symbols, Numbers Optional | |
| | | View6 | Letters, Symbols, Numbers Optional | |
| | | Pattern 1 | Default PAT1; Letters, Symbols, Numbers Optional | |
| | | Pattern 2 | Default PAT1; Letters, Symbols, Numbers Optional | |
| | | PVW Text | Default PVW; Letters, Symbols, Numbers Optional | |
| | | PGM Text | Default PGM; Letters, Symbols, | |

| | | | | |
|---|---|---|---|---|
| | | | Numbers Optional | |

## 6.2. Option Description

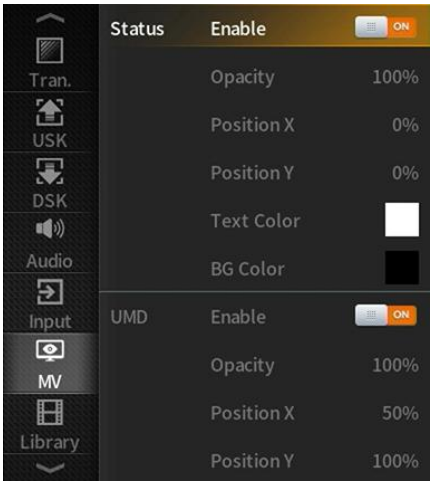
### 6.2.1. Audio Meter

Each window in the multiview has an audio meter, including IN1-IN6, MIC1, MIC2, and LINE to display the status of each audio channel. The audio meters for MIC1 and MIC2 are displayed on the left side of the PVW window, and the audio meter for LINE is displayed on the right side of the PVW window. Users can turn on/off all or individual audio meters through the menu. The position of the audio meter can be chosen to be on the right or left side of each window.

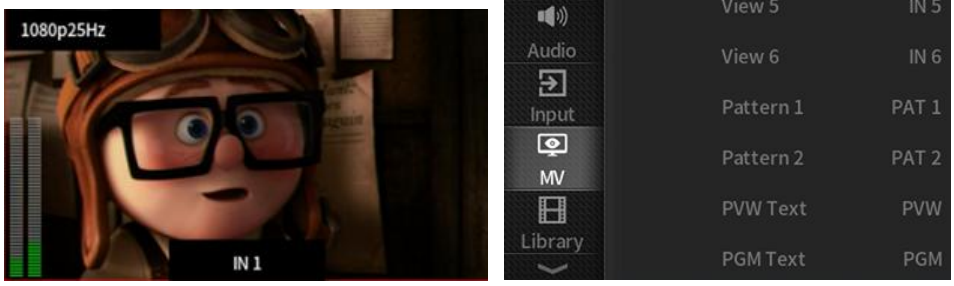

### 6.2.2. Source Status

Each window of IN1-IN6 can display the resolution and frame rate of the input video. Users can turn on/off this input information in each input window. Additionally, users can set the opacity (25%, 50%, 75%, 100%), X and Y positions (1-100), text color, and background color.




### 6.2.3. Label Settings

Users can turn on/off the label for each screen. Moreover, users can set the opacity (25%,50%, 75%, 100%), X and Y positions (1-100), text color, and background color for the overlay.

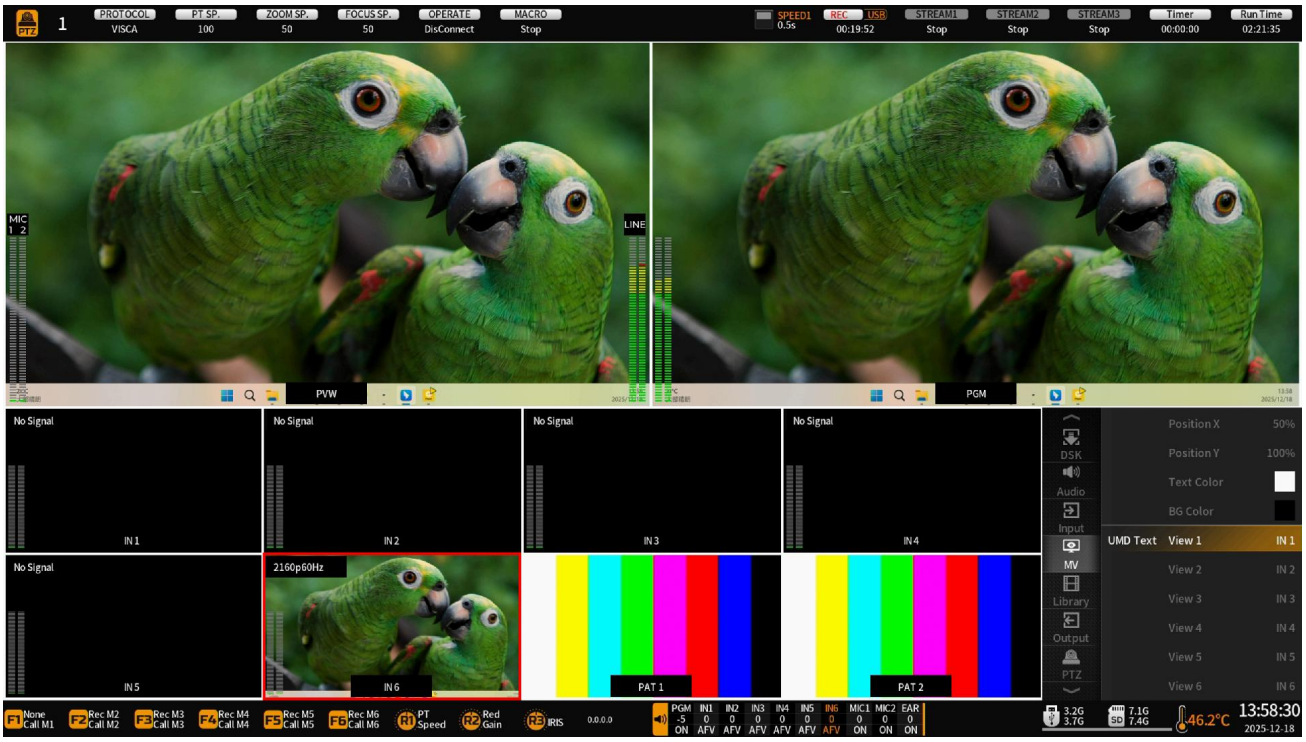



The character content of the screen labels can be set from the menu. Users can rename the label character content for each screen window through a virtual keyboard and the rotation button. Up to 7 characters of label content are supported.


## 6.3. Multi-view Layout

The multiview monitoring screen includes 8 small screens and two large screens. The small screens are used to monitor the input sources available for switching and two static images, while the large screens are used to monitor the program and preview view. In conjunction with the source selection buttons PGM/PVW, quick switching between broadcast and preview screens can be easily achieved.
There are two status bars at the top and bottom of the multiview, which display the working status of each module component and some system information.
The audio meter, input signal information, and label display for each screen are also shown on the multiview. Supports landscape and portrait modes.

### 6.3.1. Landscape multiview display

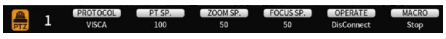


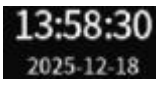

## 6.3.2. Portrait multiview display

In portrait multiview mode, users can adjust menu positions. The MEMU option in the MV menu allows customization of the menu's X and Y coordinates.


## 6.3.3. Status Bar Icon and Function Description

| Serial Number | Status Bar Icon | Function Description |
|---|---|---|

| | | |
|---|---|---|
| 1 |  | The upper left status bar displays the parameters and status information of PTZ camera control. |
| 2 |  | Displays the currently connected camera number and the control protocol being used. |
| 3 |  | Displays the current PTZ pan, zoom, and focus rates. |
| 4 |  | Displays control action prompts when performing PTZ control. |
| 5 |  | Displays the selected function of the three knobs on the current PTZ control area keyboard, which can be switched by pressing the knobs. |
| 6 |  | Displays the current macro script function status, with the status of macro script recording and calling displayed here. |
| 7 |  | The upper right status bar displays the current transition, AUX status, recording/streaming status, and a timer. |
| 8 |  | Displays the current transition effect diagram and transition rate. |
| 9 |  | Displays the current recording status, storage medium, and recording duration. |
| 10 |  | This is a timer, which defaults to displaying the time since power-on. It can be set in the menu to a timer for countdown or count-up, in conjunction with the F shortcut key to quickly start and stop the timer. |
| 11 |  | Displays the network card streaming status. You need to import or configure the streaming platform information in the menu or web page first. In conjunction with the streaming button, one-key streaming and status display can be achieved. After successful configuration, the configured streaming platform name will be displayed. When streaming starts, the connection status will be displayed. After a successful connection, the cumulative streaming duration will start to be recorded. |

| | | |
|---|---|---|
| 12 |  | Displays the function status of the F key. The upper part shows the current short press function, and the lower part shows the function set for a long press. |
| 13 |  | Displays the audio mixing status, with each column indicating the current channel's volume and mixing status and mode. ON indicates that the channel's mixing switch is turned on. When it lights up orange, it means that the channel's audio is being mixed and output. AFV indicates that the channel's audio follows the video for mixing. Only when the current channel's video is broadcast will the channel's audio be mixed and output. OFF indicates that the channel's audio is turned off, and the column for that channel turns gray. The middle value is the current mixing volume. 0 indicates that the volume is mixed according to the input source's volume unit dB. +1 indicates a digital volume gain of 1dB, and -1 indicates a digital volume attenuation of 1dB. You can select the channel to change its status and volume. |
| 14 |  | Displays the current IP address of the switcher. |
| 15 |  | Displays the status of the currently connected storage media, showing the total capacity and remaining capacity of the SD card and USB Disk. |
| 16 |  | Displays the current internal temperature of the machine. High temperatures may lead to performance degradation. Under normal room temperature conditions, the working temperature is around 48-55℃. When the displayed temperature exceeds 70℃, performance may be affected. The machine has an air intake at the bottom and an exhaust on the left side. Do not remove the machine's feet during use, and do not place soft fabrics under the machine to prevent blocking the air intake and exhaust ports. |
| 17 |  | Displays the system time, which can be set in the menu or synchronized with the network to set the local date and time. |

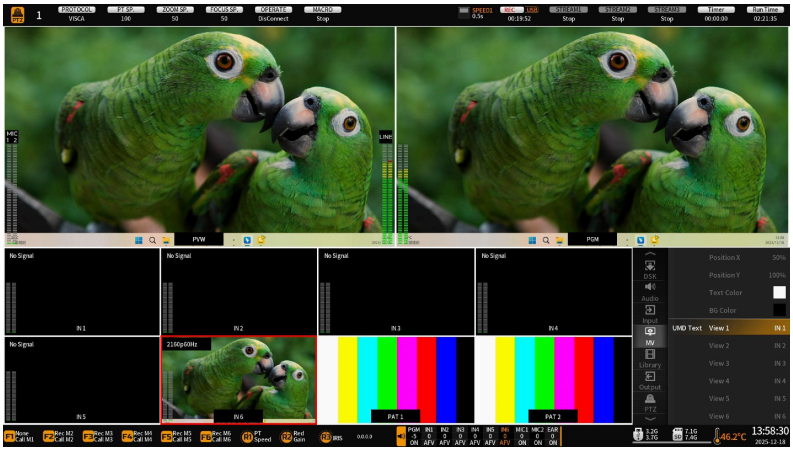
## 6.4. Freeze

The video switcher supports the FREEZE function, allowing users to freeze the input source image. Users can select to freeze PGM or PVW in the menu. In the PVW or PGM row, select the channel to be frozen and press the FREEZE button to freeze the input source image of that channel. Select the frozen input channel again and press the FREEZE button to unfreeze it. If needed, users can freeze all 6 inputs.

# 7. Selection and Switching of Signal Sources

## 7.1. PGM and PVW Switching

The user can select PGM and PVW sources from the PGM, PVW and PATTERN (which can be configured in different patterns on the menu) on the front panel button area. The PGM channel button for broadcast will display a red LED and the PVW button for pre-broadcast will display a green LED. The PGM source will be circled in red and the PVW source will be circled in green in the Source Monitor mini-screen.



## 7.2. Switching modes: CUT/ AUTO/ T-BAR

This video switcher has two types of transition control: switching without effect (CUT) and switching with effect (AUTO, T-Bar).

**CUT** Simple instant switching between preview and program. This is a seamless switch with no delay and does not use the selected transition effects WIPE, MIX or DIP. Direct PGM source key switching also switches the playout in real time without effects.

**AUTO** is used to automatically switch between preview and program view. The switching time can be set by the speed button. The switching effects WIPE, DIP, MIX can also be used.

**T-BAR** manual switching is similar to AUTO, with more flexible operation and the switching time depends on the speed of manual switching.

# 8. Transition Effects

## 8.1. Menu Settings

| Menu | Sub-menu | Item | Options | Notes |
|---|---|---|---|---|
| Tran. | Wipe | Wipe1 | 11 Wipe Styles | |
| | | Wipe2 | 11 Wipe Styles | |

| | | | | |
|---|---|---|---|---|
| | | Wipe3 | 11 Wipe Styles | |
| | | Wipe4 | 11 Wipe Styles | |
| | | Softness | 0%-100% | |
| | | Direction | Normal/Reverse/Flip-Flop | |
| | Dip | Color | Any Color | |
| | Speed | Speed 1 | 0.1s-8.0s | |
| | | Speed 2 | 0.1s-8.0s | |
| | T-bar | A/B Mode | OFF/ON | |
| | | Status | OFF/ON | |

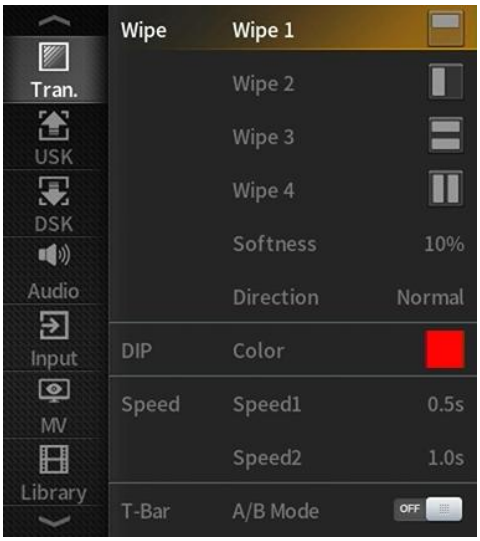
- **A/B Mode:** In A/B mode, the function of the PGM/PVW is determined by the up and down position of the T-bar.
- **T-bar switch:** The toggle function of the T-bar can be enabled or disabled.

## 8.2. Effect Description

The video switcher provides a variety of switching transitions for users to choose from, including WIPE, DIP, and MIX.

### 8.2.1. WIPE

WIPE is a transition effect from one screen to another. Press the WIPE key to enable this effect. Users can select different WIPE styles through the menu and set the softness of the edge. The INV key is a direction switch. Press this key and the WIPE effect direction will be reversed. The FLIP FLOP key is for repeated switching. Press this key, and the WIPE effect will be repeated. 4 shortcut WIPE effects can be set in the WIPE1-4 keys on the panel. Press the SOFTN key to increase or decrease the edge softness of the wipe.In some live streaming applications users usually use this effect pushed to about halfway, by adjusting the edge softness to achieve the effect of dual-lens out-of-picture.




### 8.2.2. Wipe Style Description

| Style | Description | Style | Description | Style | Description |
|---|---|---|---|---|---|
|  | Horizontal Wipe |  | Horizontal Wipe |  | Diamond Wipe |
|  | Vertical Wipe |  | Vertical Wipe |  | Circular Wipe |
|  | Diagonal Wipe |  | Four-Way Wipe |  | Elliptical Wipe |
|  | Diagonal Wipe |  | Square Wipe | | |

### 8.2.3. DIP

The old screen first disappears completely (turns black or white), then the new screen lights up, with a short black field in the middle. The user can select any color from the menu palette for the immersion screen, and the default color is black.

DIP to Black (fade out):

DIP to White (fade out):

### 8.2.4. MIX

The two screens blend slowly like watercolor paints. The old screen gradually becomes transparent, and the new screen gradually appears. Similar to when a character in a movie recalls the past, the screen will fade from the current scene to the past scene.

**Note:** The Wipe transition, Dip transition, and Mix transition functions are mutually exclusive, that is, only one effect can be used for transition.

### 8.2.5. Transition Speed Settings

Users can set two switching speeds on the menu, the defined speed value will be saved, press the SPEED1 and SPEED2 key on the panel to switch the three rates, the rate information can be viewed in the status bar. The larger the value is, the slower the switching speed is, a total of 0.1s-8.0s can be selected.

# 9. Upstream Keys

The Upstream Keyer is an important functional module for video keying processing. Keying is a technology that synthesizes one video signal (foreground) with another video signal (background) in video production. The upstream key can overlay specific foreground elements on the main video signal (usually the program signal being broadcast), and this operation is in a relatively "upstream" position in the signal processing flow of the switcher.

Upstream keys essentially mean that these are keys that are part of the switch, so anything belonging to the upstream keys will be switched over when switching from Preview to Program.

The switcher provides three customizable function keys, KEY1, KEY2, and KEY3, on the panel and in the menu. Users can set them to luma key, chroma key, or PIP mode in the menu. Through the keyboard panel or by pressing the menu knob to enter the corresponding settings interface, users can customize the size, position, key source, etc., of the luma key, chroma key, or PIP to achieve more precise video effect control.

## 9.1. Menu Settings

| Menu | Sub-menu | Item | Options | Notes |
|---|---|---|---|---|
| Upstream Key | KEY | KEY1 | PIP/Luma Key | |
| | | Priority | 1/2/3 | |
| | PIP | Status | OFF/ KEY (PVW)/ ON AIR (PGM)/ KEY & ON AIR | |
| | | Key Source | Black/IN 1-IN6/Color Bar/ Color 1/ Color 2/ PAT 1/PAT 2 | |
| | | Zoom Size | 12%-100% | |
| | | Key Position X | 0%-100% | |
| | | Key Position Y | 0%-100% | |
| | | Reset | OFF/ON | |
| | Border | Border Enable | OFF/ON | |
| | | Border Color | White/Red/Green/Blue/Black | |
| | | Border Width | 0-15 | |
| | Luma | Status | OFF/ KEY (PVW)/ ON AIR (PGM)/ KEY & ON AIR | |
| | | Fill Source | Black/ Color Bar/ IN1-IN6 | |

| | | | | |
|---|---|---|---|---|
| | | Key Source | Black/ Color Bar/ IN1-IN6 | |
| | | Zoom Size | 0%-100% | |
| | | Key Position X | 0%-100% | |
| | | Key Position Y | 0%-100% | |
| | | Clip | 0%-100% | |
| | | Gain | 0%-100% | |
| | | Invert Key | OFF/ON | |
| | | Mask Enable | OFF/ON | |
| | | Mask Left | 0%-100% | |
| | | Mask Top | 0%-100% | |
| | | Mask Right | 0%-100% | |
| | | Mask Bottom | 0%-100% | |
| | | Reset | OFF/ON | |
| | Key | Key2 | PIP/Luma Key | |
| | | Priority | 1/2/3 | |
| | PIP | Status | OFF/ KEY (PVW)/ ON AIR (PGM)/ KEY & ON AIR | |
| | | Key Source | Black/IN 1-IN6/Color Bar/ Color 1/ Color 2/ PAT 1/PAT 2 | |
| | | Zoom Size | 12%-100% | |
| | | Key Position X | 0%-100% | |
| | | Key Position Y | 0%-100% | |
| | | Reset | OFF/ON | |
| | Border | Border Enable | OFF/ON | |
| | | Border Color | White/Red/Green/Blue/Black | |
| | | Border Width | 0-15 | |
| | Chroma | Status | OFF/ KEY (PVW)/ ON AIR (PGM)/ KEY & ON AIR | |
| | | Key Source | Black/ Color Bar/ View1-View6 | |
| | | Key Color Type | Red/Green/Blue/Customize/Sampling | |

| | | | | |
|---|---|---|---|---|
| | | Key Color | | |
| | | Fetch Color | （0,0） | |
| | | Zoom Size | 12%-100% | |
| | | Key Position X | 0%-100% | |
| | | Key Position Y | 0%-100% | |
| | | Similarity | 0%-100% | |
| | | Smoothness | 0%-100% | |
| | | Spill | 0%-100% | |
| | | Opacity | 0%-100% | |
| | | Brightness | 0-100 | |
| | | Contrast | 0-100 | |
| | | Saturation | 0-100 | |
| | | Mask Enable | OFF/ON | |
| | | Mask Left | 0%-100% | |
| | | Mask Top | 0%-100% | |
| | | Mask Right | 0%-100% | |
| | | Mask Bottom | 0%-100% | |
| | | Reset | OFF/ON | |
| | KEY | Key3 | PIP | |
| | PIP | Status | OFF/ KEY (PVW)/ ON AIR (PGM)/ KEY & ON AIR | |
| | | Key Source | Black/IN1-IN6/Color Bar/ Color 1/ Color 2/PAT 1/PAT 2 | |
| | | Zoom Size | 12%-100% | |
| | | Key Position X | 0%-100% | |
| | | Key Position Y | 0%-100% | |
| | | Reset | OFF/ON | |
| | Border | Border Enable | OFF/ON | |
| | | Border Color | White/Red/Green/Blue/Black | |

| | | | | |
|---|---|---|---|---|
| | | Border Width | 0-15 | |

- Key 1/Key 2/Key 3: Configurable based on user requirements.
- Priority 1/Priority 2/Priority 3: The priority sequence applied to the video image.

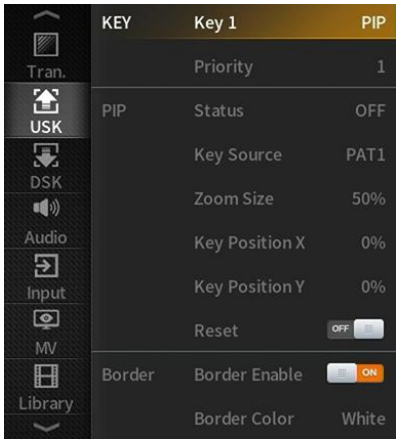
## 9.2. PIP


The video switcher supports three groups of PIP. When the corresponding button is pressed, a small image will appear in the upper left corner of the PVW window. Press the menu knob or directly operate on the keyboard panel to select the PIP settings interface. Users can set the size, position, key source, border, color, etc., of the PIP. Press the ON AIR button next to the corresponding button to make the PIP on PGM take effect.

When KEY1/KEY2/KEY3 button is turned on: PIP1 or PIP2 or PIP3 takes effect in PVW.

When the ON AIR button is turned on: PIP1, PIP2, PIP3 takes effect in PGM.

When KEY1/KEY2/KEY3 and ON AIR buttons are turned on simultaneously: PIP1 or PIP2 takes effect in both PVW and PGM. The corresponding state in the menu is <KEY & ON AIR>.




## 9.3. Luma Key

The luma key provides a method for compositing text clips on a background clip based on the brightness levels in the video. Turn on the luma key and adjust the appropriate brightness threshold. Parts of the key source image with brightness values lower than the set threshold will be removed, and the corresponding parts of the fill source image will be displayed in the removed areas. If the fill source and key source are the same, the removed parts will become transparent, revealing the background image, which is either the PGM or PVW selected source image.

**Key Source:** Select the source image to be keyed.

**Fill Source:** Select the source image to fill the removed parts of the key source.

**Clip:** The brightness value at which parts of the image will be removed. Increasing this value will remove more of the key source image, revealing more of the background. If the entire key source image is visible, it indicates that the keying effect range value is too low.

**Gain:** The range of brightness values around the threshold that will gradually become transparent. Adjusting this value can make the edges of the key softer or sharper.

**Invert Key:** Switches whether images with brightness lower than the threshold or higher than the threshold are removed.

**Mask:** Select the effective area for keying.

**Scale and Position:** Supports adjusting the size and position of the keyed image. Note that the scale function is not available if the key source and fill source are not the same image source.

When the KEY1/KEY2/KEY3 button is turned on, the luma key takes effect in PVW.

When the ON AIR button is turned on, the luma key takes effect in PGM. The background will change when switching between AUTO and T-BAR.

When both ON AIR and LUMA buttons are turned on, the luma key is visible in both PVW and PGM. The corresponding state in the menu is <KEY & ON AIR>.

Key Source = Fill Source


Key Source ≠ Fill Source


## 9.4. Chroma Key

Chroma Key is a visual-effects and post-production technique for compositing (layering) two images or video streams together based on color hues (chroma range). The technique has been used in many fields to remove a background from the subject of a photo or video, particularly the newscasting, motion picture, and video game industries.

**Key Source:** Select the source image that needs to be keyed, which usually has a large area of solid color background.

**Background Color:** Select the color to be removed from the key source background. This can be configured through RGB values, preset red/blue/green background colors, or directly sampling the background color from the key source image. Usually, the sampling method is used to quickly obtain the actual background color from the key source.

**Similarity:** The range of colors to be removed based on the set background color. For example, if the set background color is blue, increasing this value will remove both dark and light blue areas, making them transparent or semi-transparent. The larger the value, the more transparent areas will appear, revealing more of the background. If the entire key source image is visible, it indicates that the keying background color is set incorrectly or the similarity value is too low.

**Gain:** Feathering the edges of the key to make the transition between the foreground and background more natural.

**Mask:** Select the effective area for keying.

**Scale:** Scale the keyed foreground image to the desired size to match the background.

**Horizontal & Vertical Movement：** Adjust the horizontal and vertical position of the keyed foreground image to match the background.

**Restore Default Parameters:** When users are unable to adjust the parameters effectively or are unsure how to proceed, they can restore the default parameters and start over.

# 10. Downstream Key

Downstream Key (DSK) is a keying tool in a video switcher that is located downstream in the signal processing workflow. Keying is essentially a technique that combines one video signal (foreground) with another (background). A downstream key performs further keying operations and element overlay on the image after the main video signal has already undergone most switching, effects, and other processing procedures.The Downstream Key (DSK) is the final layer of keying, so it is overlaid on all video feeds switched to the broadcast output. It operates independently based on the selected "background". No matter what is applied to the DSK, or what transitions you are performing, the DSK will remain on the screen. DSK are ideal for overlaying animations or logos onto the screen.

## 10.1. Menu settings

| Menu | Sub-menu | Item | Options | Notes |
|---|---|---|---|---|
| DSK | Tie | Enable | OFF/ON | |
| | DSK | Status | OFF/ KEY (PVW)/ ON AIR (PGM)/ KEY & ON AIR | |
| | | Fill Source | Black/IN1-IN6/Color Bar | |
| | | Key Source | Black/IN1-IN 6/Color Bar | |
| | | Clip | 0%-100% | |

| | | | | |
|---|---|---|---|---|
| | | Gain | 0%-100% | |
| | | Invert Key | OFF/ON | |
| | | Mask Enable | OFF/ON | |
| | | Mask Left | 0%-100% | |
| | | Mask Top | 0%-100% | |
| | | Mask Right | 0%-100% | |
| | | Mask Bottom | 0%-100% | |
| | | Reset | OFF/ON | |
| | Logo | Status | OFF/ KEY (PVW)/ ON AIR (PGM)/ KEY & ON AIR | |
| | | Logo Selection | Select the desired logo from self-media files; it can be loaded using a USB flash drive. | |
| | | Key Position X | 0%-100% | |
| | | Key Position Y | 0%-100% | |
| | | Size | 0.5-1.0 | |
| | | Opacity | 20-100 | |
| | | Reset | OFF/ON | |

## 10.2. DSK

Downstream keys are the last layer of keying and operate independently of the selected "Background." No matter what operation is performed on the switch, the overlayed downstream key will remain on the screen. Downstream keys are very suitable for displaying logos on the screen.


Key source Fill source Bacground Combined output

**Key Source:** Select the source image to be keyed.

**Fill Source:** Select the source image to fill the removed parts of the key source.

**Clip:** The brightness value at which parts of the image will be removed. Increasing this value will remove more of the key source image, revealing more of the background. If the entire key source image is visible, it indicates that the keying effect range value is too low.

**Gain:** The range of brightness values around the threshold that will gradually become transparent. Adjusting this value can make the edges of the key softer or sharper.

**Invert Key:** Switches whether images with brightness lower than the threshold or higher than the threshold are removed.
**Mask:** Select the effective area for keying.
**Scale and Position:** Supports adjusting the size and position of the keyed image. Note that the scale function is not available if the key source and fill source are not the same image source.

When TIE is off, using AUTO or T-Bar to switch PVW and DSK to PGM. The DSK effect will not change when switching between PVW and PGM.

When the DSK button is turned on, the DSK key takes effect in PVW.
When the ON AIR button is turned on, the DSK key takes effect in PGM. When switching between PVW and PGM using AUTO or T-BAR, the DSK overlay will not change.
When both ON AIR and DSK buttons are turned on, the DSK is visible in both PVW and PGM. The corresponding state in the menu is <KEY & ON AIR>.

## 10.3. LOGO

The switcher allows users to import logos. Press the menu button to select the logo settings interface. Users can select a logo from the media pool on a USB Disk, and set its position, size, and opacity. Rotate the menu knob to select a logo, then press the menu knob to select and delete the logo.

**Logo format support:** PNG

**Logo size support:** 10×10 pixel to 450×50 pixel

**LOGO** button ON：LOGO shows on PVW.

**ON AIR** button ON：LOGO shows on PGM

**ON AIR** and **LOGO** button both ON：DSK available on both PVW and PGM. Corresponding status in menu is <KEY & ON AIR>


# 11. Audio

Users can precisely adjust the level of the 6 embedded audio channels as well as the 2 XLR/TRS/3.5mm audio inputs by accessing the audio interface in the menu. The audio status is displayed in real-time on the bottom area of the status page, making it easy for users to check and adjust accordingly at any time.

ON = audio on, AFV off, AFV = audio on, AFV effective.

## 11.1. Menu settings

| Menu | Sub-menu | Item | Options | Notes |
|---|---|---|---|---|
| Audio | Setting | Mute | OFF/ON | |
| | | All AFV | OFF/ON | |
| | | Reset | OFF/ON | |
| | PGM Out | Enable | OFF/ON | |
| | | Volume | -60dB-12dB | |
| | Earphone | Enable | OFF/ON | |
| | | Volume | -60dB-12dB | |
| | | Source | PGM/IN1-IN6/MIC 1/MIC 2/Line In | |
| | View1-View6 | Enable | OFF/ON | |
| | | Volume | -60dB-12dB | |
| | | AFV | OFF/ON | |
| | | Delay | 0-500ms | |
| | MIC/XLR | Mode | Mic/XLR | |
| | | MIC 1 Enable | OFF/ON | |
| | | Guitar | OFF/ON | |
| | | MIC 1Pre-gain | 0-14 | |
| | | MIC 1Volume | -60dB-12dB | |
| | | MIC Delay | 0-500ms | |
| | | MIC 2 Enable | OFF/ON | |
| | | Guitar | OFF/ON | |
| | | MIC 2 Pre-gain | 0-14 | |
| | | MIC 2 Volume | -60dB-12dB | |
| | | MIC 2 Delay | 0-500ms | |
| | Line In | Enable | OFF/ON | |
| | | Volume | -60dB-12dB | |
| | | Delay | 0-500ms | |

## 11.2. Master Audio

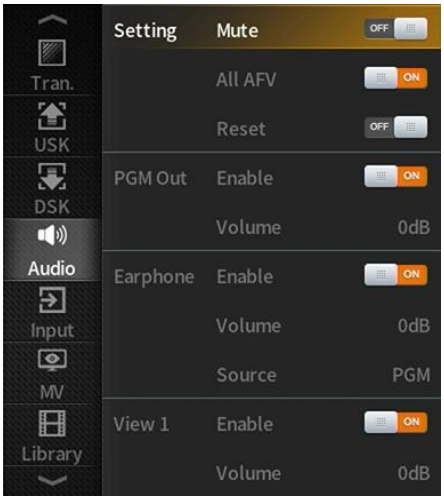
Master audio is an audio control for PGM output. It can be mixed audio or AFV audio. User can turn on/off the master audio or adjust audio volume.

## 11.3. AFV Audio Follow Mode

The audio of each SDI and HDMI channel can be set to AFV (Audio-Follows-Video). When the HDMI audio mode of a channel is set to AFV, the audio will be turned on only when the PGM switches to that HDMI. For example, if the audio mode of IN 1 is set to AFV, when the video switcher switches IN 1 to the video source of PGM, the embedded audio of IN 1 will be turned on.

**All Follow Functions（Follow All）：** In audio settings, "Follow All" usually means that the audio signal will follow the switching of the video signal without the need to adjust the audio source separately. This means that when you switch between different video input sources, the audio will automatically switch to the corresponding input source as well, without having to manually adjust the audio settings. This setting is particularly useful when using multi-source devices (such as multiple cameras, game consoles or Blu-ray players), as it simplifies the operation process and ensures that the audio and video are always in sync.

For example, when the user enables the "Follow All" function, when you switch from one camera to another, the audio will automatically switch from the first camera to the second camera without additional operation, making the live broadcast or recording process smoother and reducing the errors that may occur due to manual switching of audio sources.




## 11.4. Audio Delay

Users can set audio delay for IN 1, IN 2, IN 3, IN 4, IN 5, IN 6 and 2 XLR/TRS/3.5mm in the menu to synchronize audio and video. The maximum audio delay is 500ms.

## 11.5. MIC/XLR

The video switcher supports 2 XLR/TRS audio inputs, providing a complete solution for the audio system from sound acquisition to signal transmission, and is widely used in the professional audio field.

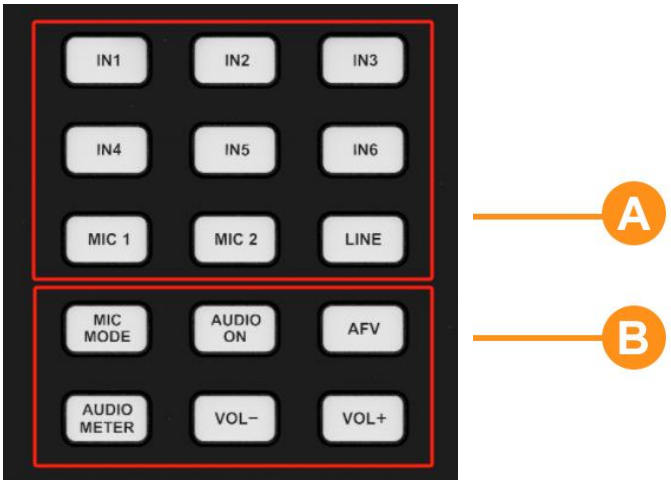
The XLR/TRS input interface has two working modes, namely microphone input mode and balanced audio input mode. Please select according to the actual application requirements. When working in balanced audio, please do not use 48V power supply to avoid damaging the pre-stage equipment.

The pre-gain is used to amplify the small signal of the microphone, and the maximum gain of the amplifier is 37dB. Usually, the output signal amplitude of the XLR condenser microphone is higher than that of the TRS dynamic microphone. When using a condenser microphone, the pre-gain can be configured to about 7, and the condenser microphone needs to be configured to about 12. The pre-gain can be adjusted in combination with the sound column of the microphone channel until the sound column reaches the yellow area when the microphone is used normally.

The sound column of this audio channel is on the left side of the preview screen by default. When working in microphone mode, MIC1 corresponds to the left channel of the sound column, and MIC2 corresponds to the right channel of the sound column. When working in balanced audio input, it is a stereo sound column.

## 11.6. Audio Configuration and Operation

Audio can be configured not only through the menu, but also through the video switcher's key area control. The audio key operation area consists of two parts, as shown in the figure below.




Part A is used to select the audio to be configured, including IN 1, IN 2, IN 3, IN 4, IN 5, IN 6, LINE, MIC 1, MIC 2

Part B is used to set the audio functions, including AUDIO ON, AFV, VOL+ and VOL-.

### 11.6.1. Audio Indicator Description

The LED indicators of the buttons show the current audio status. When the indicator light of the button in Part A lights up in white, it indicates that the corresponding audio channel is selected.

When a button in Part A is pressed, the indicator light of the button in Part B lights up in white, indicating that the corresponding audio function is turned on. When the indicator light is off, it means that the corresponding function is turned off.

For example, after pressing the IN 1 button, the indicator light of IN1 keeps flashing, indicating that the audio channel of IN1 is selected. When the indicator light of the AUDIO ON button is pressed, it lights up

white, indicating that the audio of IN 1 is turned on.

### 11.6.2. Audio Configuration

Step 1. Press a button in part A to select audio for configuration. The LED indicator of the button will keep flashing, indicating that configuration is available.

Step 2. Press the AUDIO ON button on part B to turn on the audio, the LED indicator turns white, press the AFV button to set the audio to follow the video, the LED indicator turns white. Press AUDIO ON/AFV twice to turn it off, the LED indicator also turns off. Press the VOL+/VOL- button to adjust the audio volume, the LED indicator turns white.

Note: The AFV button is not applicable to the MASTER output.

Step 3. Press the button in Part A. If the button selected in Part A in the first step is still flashing, press it again to complete the configuration and the indicator light stops flashing. Or, when the button in Part A is flashing, press another button in Part A to select the next audio and configure it in the same way. When all audio configurations are completed, press the flashing button in Part A again to complete all configurations and the indicator light stops flashing.

## 11.7. MUTE

There is a mute button on the PVW column. Users can quickly and easily press this button to turn off the main audio. When MUTE is turned on, the LED indicator flashes continuously, indicating that the PGM audio is muted.

## 11.8. FTB

The FTB (Fade to black) function is usually used in emergency situations. When the FTB button is pressed, the PGM will fade to a black screen to hide all other layers. The FTB button will keep flashing until the user presses the button again to stop FTB. The FTB status is also displayed in real time in the status bar.

Note: When the PGM window appears black and remains black after the transition, please check if the FTB button is flashing.

# 12. Media Library

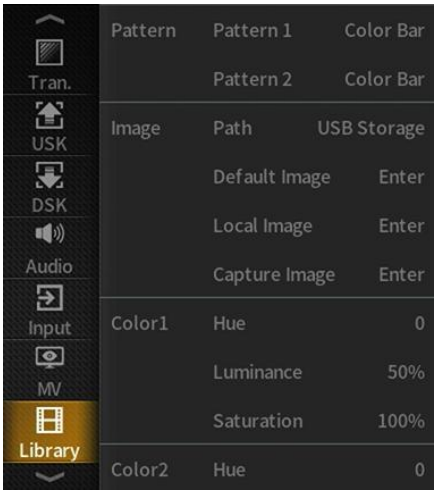
## 12.1. Menu Settings

| Menu | Sub-menu | Item | Options | Notes |
|---|---|---|---|---|
| Library | Pattern | Pattern 1 | Black/Color Bar/Color 1/Color 2/Image 1/Image 2 | |
| | | Pattern 2 | Black/Color Bar/Color 1/Color 2/Image | |

| | | | | |
|---|---|---|---|---|
| | | | 1/Image 2 | |
| | Image | Path | SD Card/USB Storage | |
| | | Default image | 1 Image | |
| | | Local Image | Via U Disk Import | |
| | | Capture Image | PGM | |
| | Color 1 | Hue | 0°- 360° | |
| | | Luminance | 0%-100% | |
| | | Saturation | 0%-100% | |
| | Color 2 | Hue | 0°- 360° | |
| | | Luminance | 0%-100% | |
| | | Saturation | 0%-100% | |

## 12.2. Assign Image

The video switcher can set custom patterns for PAT 1 and PAT 2. The pattern sources for PAT 1 and PAT 2 can be selected from Black/Color Bars/Color 1/Color 2/Image 1/Image 2.




## 12.3. Image Management

The user can select images as patterns for PAT 1 and PAT 2. The user can select the image source from default images, local images, or acquired images.

### 12.3.1. Default Image

The default image is a preset image in the switcher. The user can use the knob to select an image from the default images as the source of the PAT 1/PAT 2 pattern.

### 12.3.2. Local Images

Local images are images uploaded from USB storage. When a USB disk is inserted, a corresponding icon will appear at the bottom of the status/menu page. Select an image to upload it to the switcher. The images will be listed in the media list, and the user can select the uploaded image and use it as the PAT 1/PAT 2 pattern source by using the knob. The user can also delete the uploaded image from the menu.

### 12.3.3. Capture Images

The captured images are from PGM screenshots. The captured images will be listed in the media list. Supports up to 8 captured images. Users can select the captured image as PAT 1/PAT 2 pattern source by knob selection. Users can delete the captured image from the menu.

## 12.4. Color Generator

The video switcher supports custom patterns, with two color modes, Color 1 and Color 2, for users to define. Users can generate color patterns of Color 1 and Color 2 by setting hue, saturation, and brightness. See the figure below.


# 13. PTZ Control

When the switcher and PTZ camera are connected directly or through a switch, make sure the video switcher and PTZ camera are in the same network segment. Search for the camera through VISCA-IP or ONVIF, NDI from the menu, and then add the searched camera to the camera ID. If the camera is directly connected to the switcher, change the switcher's IP address in the system and set them in the same LAN so that the switcher can successfully search for the camera. Use the joystick and buttons to pan, tilt or zoom the camera.

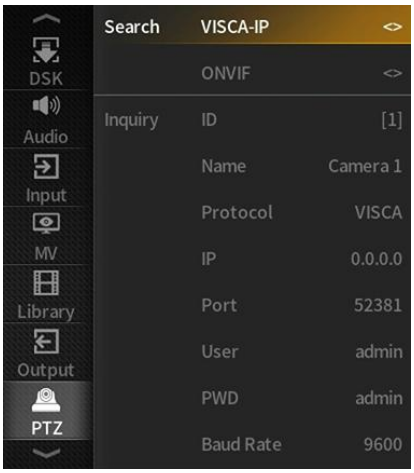
## 13.1. Menu Settings

| Menu | Sub-menu | Item | Options | Notes |
|---|---|---|---|---|
| PTZ | Search | VISCA-IP | | |
| | | ONVIF | | |

| | | | | |
|---|---|---|---|---|
| | Inquiry | ID | [1]/[2]/[3]/[4]/[5]/[6] | |
| | | Name | Camera 1/Camera 2/Camera 3/Camera 4/Camera 5/Camera 6 | |
| | | Protocol | VISCA/PELCO-D/PELCO-P/VISCA-IP/ONVIF | |
| | | IP | 0.0.0.0 | |
| | | Port | 52381 | |
| | | User | admin | |
| | | PWD | admin | |
| | | Baud Rate | 2400/4800/9600/19200/38400 | |
| | | Serial Port | RS232/RS485 | |
| | | Connect | OFF/ON | |
| | Function | PT Inversion | OFF/ON | |
| | | Call Option | Follow ID/Follow PGM/Follow PVW | |
| | Speed | PT Speed | 20%-100% | |
| | | Zoom Speed | 0%-100% | |
| | | Focus Speed | 0%-100% | |

## 13.2. Camera Search

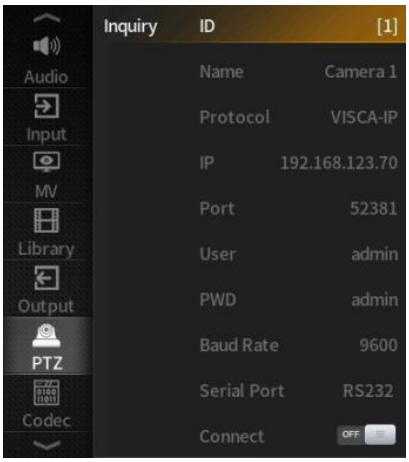
The video switcher supports searching for PTZ cameras connected via the network port or serial port (VISCA only). It supports searching for cameras using the VISCA-IP and Onvif protocols (requires the camera to also have the network search response function for the protocol).



## 13.3. Camera Settings

If the camera does not support search, user can configure it manually, select the control protocol supported by the camera, fill in the camera's IP address and the control port of the protocol, and if you use the onvif protocol, you also need to enter the connection account information.

When using serial port control, user need to select the corresponding protocol, communication baud rate and camera address code.（Serial port control is only available for ID 1.）




## 13.4. Function

### 13.4.1. PT Reverse

Can make the up and down, left and right control directions of the camera joystick reverse.

### 13.4.2. Switch Linkage

Set the call option to "Follow ID", which means setting the ID option for camera numbers 1-6. After connecting to the camera, you can use the camera control area number buttons of the switcher. For example, when setting CAM 2, camera 2 is in control.

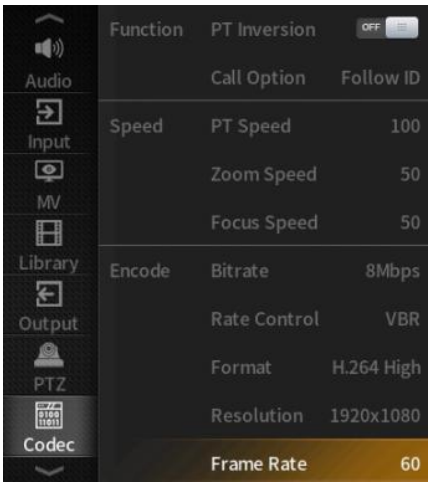
Set the option to "Follow PGM", which means the controlled camera is the same as the PGM channel selected in Camera 1 - 6. For example, when PGM selects Camera 2 (IN 2), then Camera 2 is in control.
Set the option to "Follow PVW", which means the controlled camera is the same as the PVW channel selected in Camera 1-6. For example, when PVW selects Camera 2 (IN 2), then Camera 2 is in control.

## 13.5. Rate Setting

Pan/Tilt speed, selectable from 10-100, default 50.

Zoom rate, can be selected from 0-100, default is 50.

Focus rate, can be selected from 0-100, default is 50.




## 13.6. Button Functions

### 13.6.1. R1(PT/Z/F SPEED)

Left/Right/Up/Down/Zoom/Focus speed. Speed control, clockwise to increase, counterclockwise to decrease. Press to switch and adjust the speed of the PTZ (red light), zoom (green light) and focus (blue light). The current speed status can be synchronously viewed in the status bar in the upper left corner.

### 13.6.2. R2(R/B GAIN)

Red and blue gain. Used for white balance adjustment, clockwise to increase, counterclockwise to decrease. Press to switch the corresponding color gain, with three-color lights. Red gain: red light, blue gain: blue light.

### 13.6.3. R3（IRIS/SHUTTER/GAIN）

Iris/shutter/gain. Control brightness and exposure, increase clockwise, decrease counterclockwise. Press to switch corresponding parameters, with three-color lights. IRIS: red light, shutter: green light, gain: blue light.

### 13.6.4. FOCUS

Manual Focus Knob: Rotate clockwise for far focus; rotate counterclockwise for near focus. It can be combined with the focu s rate set on R1 to achieve fast and precise focus.

### 13.6.5. Button Functions and Operation Instructions

| Button Name | Button Function | Operation Instructions |
|---|---|---|
| R1&PT/Z/F SPEED | Adjustment of Pan/tilt, Zoom, and Focus Speeds | R1: Rotate to increase/decrease speed; press to switch between adjusting PTZ (red light), zoom (green light), and focus (blue light) speeds. The current control speed is displayed synchronously in the top-left status bar. |
| R2&R/B GAIN | Adjustment of Camera's Red and | R2: Rotate to increase/decrease red/blue gain; press to switch between controlling red gain (red light) or blue gain (blue light). |

| | | |
|---|---|---|
| | Blue Gains | |
| R3&IRIS/SHUTTER/GAIN | Adjustment of Camera's Aperture, Shutter, and Gain Parameters | R3: Rotate to increase/decrease parameters; press to switch between controlling iris (red light), shutter (green light), and gain (blue light). |
| FOCUS | Manual Focus | Turn the manual focus knob；can work with the focus speed set via R1 to achieve fast and precise focusing. |
| Joystick | Control Pan/tilt Movement | Controls PTZ movement in 8 directions; can cooperate with the speed set via R1 for fast and precise framing. Press the joystick to lock it (to prevent misoperation), and the red light flashes when locked. |
| TELE WIDE | Zoom Control | Can work with the speed set via R1 for fast and precise framing. |
| AWB | Auto White Balance | Enabled: Indicator light is on. |
| AE | Auto Exposure | Enabled: Indicator light is on. |
| AF | Auto Focus | Enabled: Indicator light is on. |
| CAM | Function buttons, share the following numeric keys | Light up when the currently selected function is activated, such as CAM light up, press the number 1 or connect to camera No.1, POS. light up by pressing the number 2 will call the current connected camera No. 2 preset bit, preset and reset correspond to set preset and clear preset respectively. Due to the limitation of numeric key area, only 6 cameras can be connected and 6 preset bits can be called at present. |
| POS. | | |
| PRESET | | |
| RESET | | |
| Numbers 1-6 | | |
| Notes:The status bar in the upper-left corner of the multi-view screen will synchronously display the status and operation prompts of the current area. | | |

# 14. Codec Streaming and Recording Settings

## 14.1. Menu Settings

| Menu | Sub-menu | Item | Options | Notes |
|---|---|---|---|---|
| Codec | Encode | Bitrate | 256Kbps/512Kbps/1Mbps/2Mbps/4Mbps/8Mbps/12Mbps/ 16Mbps/24Mbps/32Mbps | |
| | | Rate Control | VBR/CBR | |

| | | | | |
|---|---|---|---|---|
| | | Format | High /Main /Base | |
| | | Resolution | 1920x1080/1280x720/720x480 | |
| | | Frame Rate | 24/25/30/50/60 | |
| | | I-Frame Interval | 5-300 | |
| | | Volume | 0-100 | |
| | | Sampling Rate | 48KHz | |
| | | Audio Bitrate | 64Kbps/128Kbps/256Kbps/320Kbps | |
| | Stream | Platform 1 | OFF/ON | |
| | | Platform 2 | OFF/ON | |
| | | Platform 3 | OFF/ON | |
| | Record | File Format | TS/MP4 | |
| | | Overwrite | OFF/ON | |
| | | Path | SD Card/USB Storage | |
| | | Formating | OFF/ON | |

## 14.2. Encoding Settings

Users can configure the encoding bitrate, bitrate control method, encoding method, encoding resolution, encoding frame rate, I-frame interval, volume, audio sampling, and audio bitrate.

## 14.3. Streaming Settings

The switcher offers two streaming methods: via USB output and via LAN port output.

### 14.3.1. USB Streaming（UVC output）

Via the USB Type-C port, users can capture video to a computer and stream or record the USB output video and audio on live streaming platforms such as YouTube, Facebook, and Twitter with software including OBS, PotPlayer, and VMix.USB 3.0 streaming output complies with the UVC (USB Video Class) and UAC (USB Audio Class) standards. No additional drivers are required to install.Relevant video and audio devices will be automatically detected and displayed in Windows Device Manager:

- Imaging Devices: Switcher Capture
- Audio Inputs and Outputs: Switcher Capture

Additionally, the streaming output video source can not only be PGM output but also IN1-IN6, PVW, PGM,

Clean PGM, Color Bar output. Users can set up and stream the video they need.

### 14.3.2. LAN Port Streaming

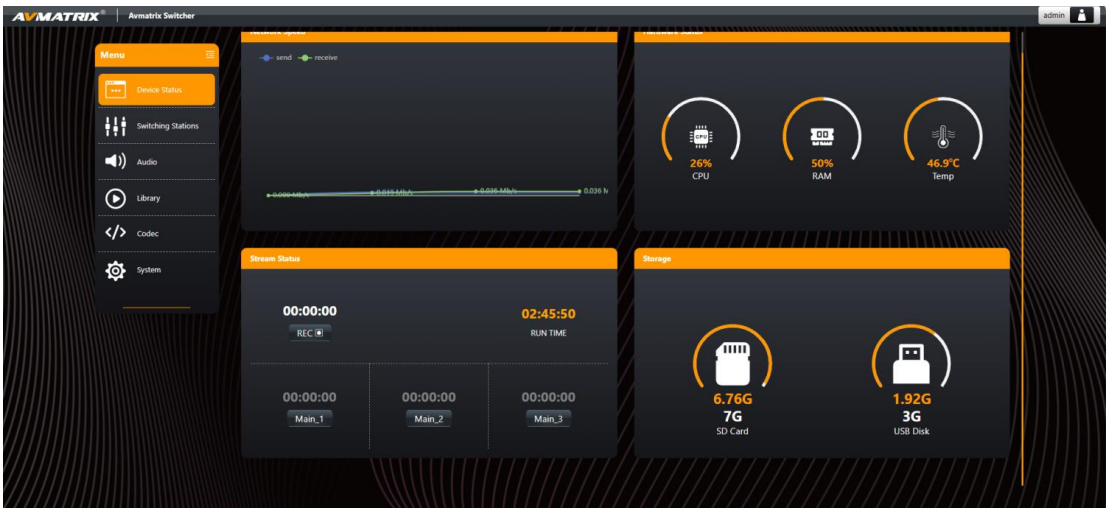
Using the LAN port, users can stream live directly on a streaming platform by importing streaming configuration via USB, entering it on the device, or selecting it via IP address. Up to three streaming platforms can be preset, and a maximum of two platforms can be streamed to simultaneously.

**Network Streaming:**

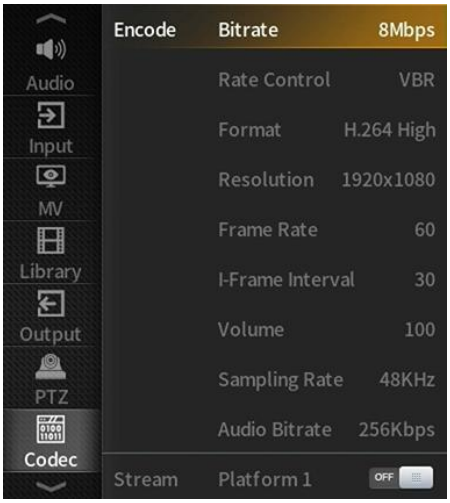
Open the streaming settings of the streaming platform to obtain the streaming URL and streaming key of the live platform. Use IP address selection to stream the platform, enter the streaming key, and you can start streaming. Users can go to the streaming platform to watch the live broadcast. Additionally, the streaming output video source can not only be PGM output but also IN1-IN6, PVW, PGM, Clean PGM, Color Bar output. Users can set up and stream the video they need.

**Here is an example of how to stream using IP address:**

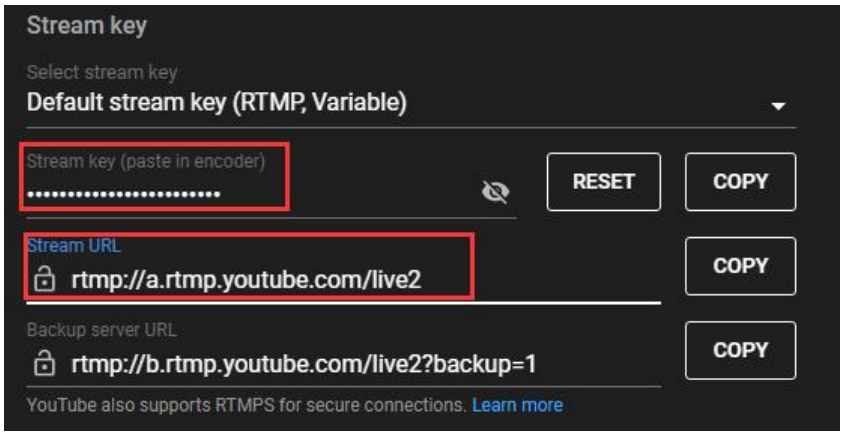
**Steps 1:**Enter the IP address of the switcher (192.168.1.216) in a web browser and log in with the account (username: admin, password: admin) to access the switcher's webpage and select "Encoding."



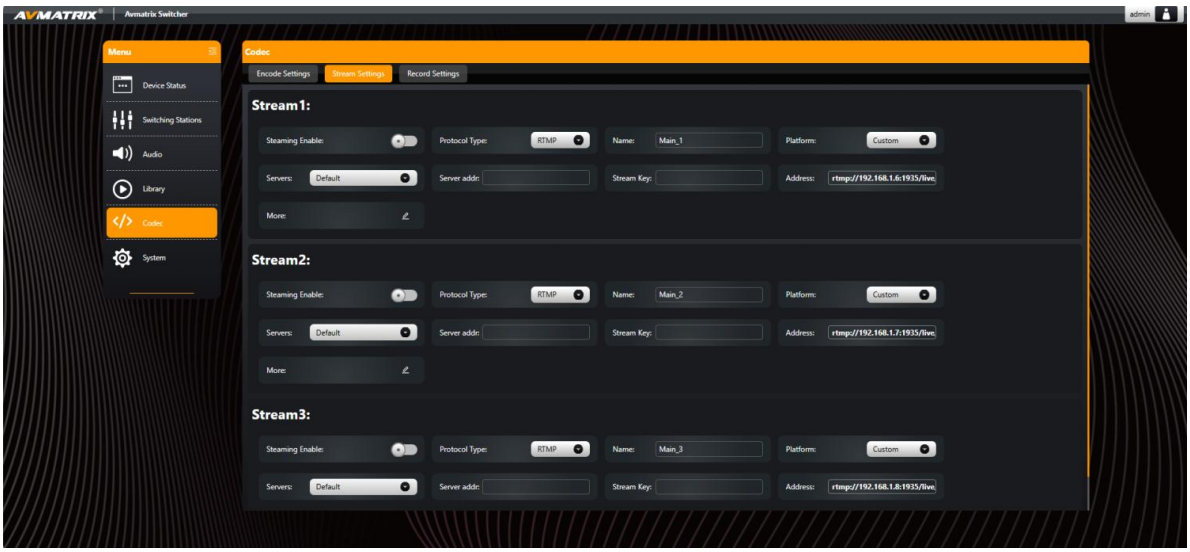

**Steps 2：** Users can customize the bitrate, bitrate control, encoding method, encoding resolution, etc., of the live video in the encoding settings according to the operating environment. For example, if the internet speed is slow, switch the bitrate control from CBR to VBR and adjust the bitrate. The encoding frame rate automatically follows the HDMI out frame rate and can be selected in the output format settings. Users can also make settings through the web page.




**Steps 3**：Open the streaming settings of the streaming platform to obtain the live platform's URL and streaming key.

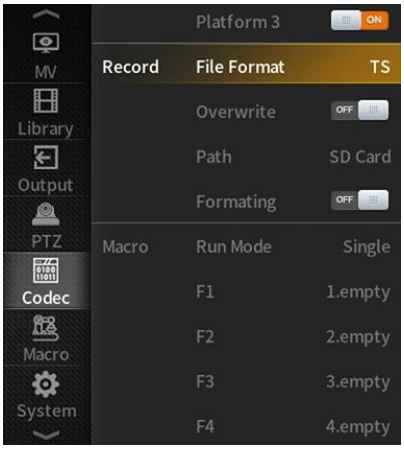



**Steps 4:**Open the streaming settings, and users can select the desired streaming platform. After selecting the streaming platform, paste the streaming key into the specified field. Enable the "start streaming" option to start the live broadcast. If the desired streaming platform is not in the menu, users can select the custom mode.



When the streaming status in the status bar turns green, and the streaming time on the menu status page starts counting, it indicates that the live broadcast has started. When the streaming status in the status bar turns yellow, it indicates that the connection is being established. When the streaming status in the status bar turns gray, it indicates that the connection has failed.


## 14.4. Record Settings




The switcher supports two storage media: USB Disk and SD card. Select the recording file storage medium in the recording settings and press the REC button on the panel to start recording. The status will display device information. MP4 and TS video file formats are supported for storing recorded files.

Press the REC button on the panel. When the recording time on the multiview starts counting, it indicates that the recording has started. Press the REC button again to end the recording. Additionally, the recording status will display the recording time and the status of the SD card/USB Disk, making it convenient for users to check.

Moreover, the switcher's recording feature has an overwrite function. When the SD card and USB Disk are full, it will automatically delete and overwrite previously recorded content and start recording new content again. Users can enable/disable this function in the menu.

**Note: It is recommended that the storage medium has only one partition. Multiple partitions may only be recognized as one partition.**

Inferior low-speed storage media may lead to recording failures, frame dropping, or unplayable videos.

Abnormal operations during recording, such as power loss or removal of the recording storage medium, may result in an unplayable video file. This issue does not occur with TS recording format.

## 14.5. Formatting Storage Devices

Users can format their USB Disk/SD card through the menu. In the recording menu, select "Format USB" or "Format SD" to start formatting the corresponding storage device. The default format after formatting is exFAT. Formatting will permanently erase all data on the disk, so back up important data in advance.

# 15. Macro

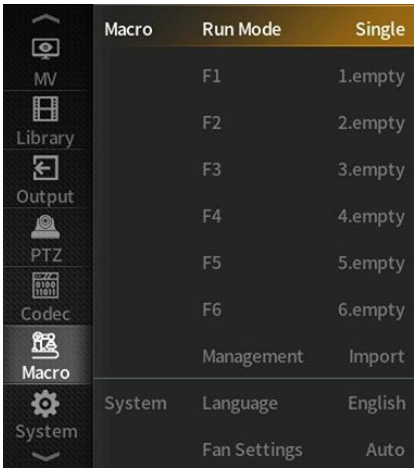
The macro recording function of the video switcher allows users to record a series of operation steps (e.g. signal switching, special effect application, screen adjustment, etc.) into one automated command. After the recording is completed, users can call it up with a single key via a shortcut key to quickly execute complex operations, reduce repetitive work and enhance work efficiency. This function is especially suitable for live broadcast, program production and fixed process scenarios.

## 15.1. Menu Settings

| Menu | Sub-menu | Item | Options | Notes |
|---|---|---|---|---|
| Macro | Marco | Run mode | Single/Repeat | |
| | F1 | 1-20.empty | | |
| | F2 | 1-20.empty | | |
| | F3 | 1-20.empty | | |
| | F4 | 1-20.empty | | |
| | F5 | 1-20.empty | | |
| | F6 | 1-20.empty | | |
| | Management | Import | | |

In the macro menu, the user can select for each macro either a single pass mode (execute once and stop) or a cyclic mode (cycle through until manually stopped). Up to 20 macro scripts can be stored locally and can be configured with shortcut keys for quick recall.

After inserting a USB flash drive, user can export the configuration file to obtain the current macro script, and support text tools to edit the delay time, sequence, and deletion and addition instructions of each operation in the script.




## 15.2. Shortcut Key Setting


Enter the system menu to set the shortcut keys. For example, select F1 shortcut key, the short press function of shortcut key F1 is to record macro 1, and set the long press function of shortcut key F1 to call macro 1.

| Menu | Sub-menu | Item | Options | Notes |
|---|---|---|---|---|
| System | Shortcut | Function Key | F1/F2/F3/F4/F5/F6 | |
| | | Short Press | None/REC M/Call M/Key1 Mask/Key2 Mask/DSK Mask/Clr Display/Timer | |
| | | Long Press | None/REC M//Call M//Key1 Mask/Key2 Mask/DSK Mask/Clr Display/Timer | |
| | | Reset | OFF/ON | |

## 15.3. Recording Macros

After the setting is completed, short press the F1 shortcut key on the panel to start recording macros, and the status bar will show “Macro Recording in Progress”. Perform the action that needs to be recorded

(such as switching signal source, applying special effects, etc.). Short press F1 again to stop recording and the action recording is finished.

Note: the operation of the T-bar,joystick and menu knobs may not be recorded during the recording process.

### 15.4. Calling Macros

Long press the F1 shortcut to recall the recorded macro, and the video switcher will automatically play back the recorded operation.

# 16. System

## 16.1. Menu settings

| Menu | Sub-menu | Item | Option | Notes |
|---|---|---|---|---|
| System | System | Language | English | |
| | | Fan Settings | AUTO/Manual（20%-100%）/OFF | |
| | | Temperature | Select temperature units：℃/℉ | |
| | | Power Mode | Power On/Last State | |
| | | Joystick Calib | OFF/ON | |
| | | T-Bar Calib | OFF/ON | |
| | | Version | System/Image/Keys/Display/Hardware | |
| | | System Reset | Cancel/Reset Preferences / Factory Reset | |
| | Shortcut | Function Key | F1/F2/F3/F4/F5/F6 | |
| | | Short Press | None/REC M/Call M/Key1 Mask/Key2 Mask/DSK Mask/Clr Display/Timer | |
| | | Long Press | None/REC M//Call M//Key1 Mask/Key2 Mask/DSK Mask/Clr Display/Timer | |
| | | Reset | OFF/ON | |
| | Screen | Brightness | 0-100 | |
| | | Contrast | 0-100 | |
| | | Saturation | 0-100 | |
| | | Color Cast | 0-100 | |
| | | Sharpness | 0-100 | |
| | | Color Temp. | 6500k/7500k/9300k/User | |

| | | | | |
|---|---|---|---|---|
| | | Red Gain | 0-255 | |
| | | Green Gain | 0-255 | |
| | | Blue Gain | 0-255 | |
| | | Red Offset | 0-255 | |
| | | Green Offset | 0-255 | |
| | | Blue Offset | 0-255 | |
| | Network | DHCP | OFF/ON | |
| | | IP | 0.0.0.0 | |
| | | Subnet | 0.0.0.0 | |
| | | Gateway | 0.0.0.0 | |
| | Clock | Format | 12-hour/24-hour | |
| | | Time Zone | UTC-12:00-UTC+14:00 | |
| | | Time Sync | NTP/Manual | |
| | | Year | 1970-2099 | |
| | | Month | 1-12 | |
| | | Day | 1-31 | |
| | | Hour | 0-23 | |
| | | Minute | 0-59 | |
| | Timer | Type | Timer/Countdown | |
| | | Hour | 0 | |
| | | Minute | 0 | |
| | | Second | 0 | |
| | | Status | OFF/ON | |
| | Users | Switch | User0 | |
| | | New | Enter | |
| | | Rename | user0 | |
| | | Delete | Enter | |
| | | Import | Enter | |
| | | Export | Enter | |

## 16.2. Fan Setting

Setting the cooling fan speed to control the temperature and noise of the switcher. There are 3 options, AUTO/ OFF/ ON.

The default setting of the fan is in AUTO mode that the speed of the fan is adjusted automatically depending on the switcher's operating temperature. If the working environment requires special quiet for a special application, the user can turn off the fan manually from the menu. And when the switcher's operating temperature is increasing and reaching a preset value (57 Degrees Celsius), the words in the bottom of the Status/Menu page will turn to Orange color to warning. And when the operating temperature reach to 60 Degrees Celsius, the fan will be auto turned on in a high speed to cool down the CPU quickly and switch the fan to AUTO mode at the same time. If the switcher is working in a high temperature environment, the auto fan setting cannot meet the cooling requirement, then user can select the fan setting to ON option to keep the fan in high speed（20%-100%）.

## 16.3. Temperature, Power-on Mode, Joystick Calibration, T-Bar Calibration, Firmware Version

**Temperature**：Users can customize temperature units, flexibly switch between Celsius ℃ and Fahrenheit ℉, or directly turn off the temperature display in the status bar.

**Power-on Mode**：Two power-on modes are available: Power-on Motor and Memory Power-on.

**Joystick Calibration**: Used to automatically calibrate joystick drift when connecting a PTZ camera.

**Bar Calibration**: Used to automatically calibrate drift during T-Bar operations.

**Firmware Version**: Check the firmware versions of the switcher, including those for the system, image, buttons, display, and hardware.

## 16.4. System Reset

Reset Preferences: Restore settings to default Settings but remain the part of settings including the Media library, Time, Network, Language, Fan and User Setting.

Factory Reset: Restore all settings to default Factory Settings.

## 16.5. Shortcut Key Settings

In the shortcut key settings, users can set the functions of long press and short press of the F1-F6 shortcut keys.

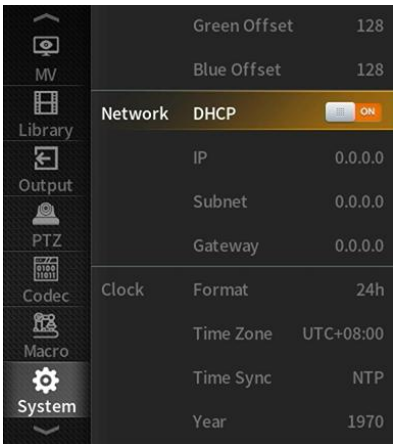
## 16.6. Screen Settings

Users can set the screen's backlight, brightness, contrast, saturation, color cast, sharpness, color temperature, red gain, green gain, blue gain and other related parameters.

## 16.7. Network Setting

The video switcher supports two connection methods. When DHCP is selected on the menu, the switcher can automatically obtain an IP address after connecting it to a router that supports DHCP.

When DHCP is turned off, the user can manually set the IP address, subnet mask, and gateway method in the menu. The default IP address of the switcher is 192.168.1.216.




## 16.8. Time Settings

Users can manually set the year, month, day, hour, and minute through the menu, and select the 12-hour (default) or 24-hour time display mode. They can also achieve automatic time synchronization through NTP. In addition, it supports time zone settings to ensure that the time is synchronized with the local time. Users can also turn on or off the time display in the status bar as needed.

## 16.9. Timer Setting

The video switch supports two modes, timer and countdown, users can choose flexibly according to their needs. Meanwhile, the timer display in the status bar can be turned on or off.

## 16.10. User Settings

Users can save all the current settings to the switcher's account according to their needs and different application scenarios. Adding new user accounts, renaming accounts, switching between accounts, deleting accounts, and also importing or exporting accounts to a USB flash drive, which is very flexible, convenient and user-friendly.

**Switch**：Switch to another saved user account to easily and quickly make saved settings.

**New**：Adding a new user account and save all current settings to the account. Input the name through a virtual keyboard from the menu.

**Rename**：Rename the current user account name

**Delete**：Delete a saved user account which you will never use again.

**Import**：Import the current user account and settings to USB flash disk.

**Export**：Export the user account and settings saved in USB flash disk.

Note: due to constant effort to improve products and product features, specifications may change without notice