

S16

4K Live Production Switcher

User Manual

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1

General

Overview

- About This Manual
- Change History
- Symbols and Pictures

1.1 About This Manual

This user manual describes how to operate the S16 4K live production switcher. This manual is designed to be a reference for your daily use of our products. It contains a complete description of the hardware.

Note

Always check for the latest version of all documents at www.pixelhue.com.

1.2 Change History

Version	Date	Changes
V1.3.0	2026-09-04	• Updated UVC to support output of 3840×2160@60Hz. • Added the Quick Start chapter. • Updated the description of the BACK button. • Updated the description of the shortcut buttons in the SHORTCUT Area. • Updated the description of the shortcut buttons in the FUNCTION Area. • Updated the content of the Button-Menu Sync table. • Added the Menu Overview section. • Updated the Streaming section and its corresponding subsections. • Added the 1×1 MVR layout template. • Added the description of video recording file formats. • Added the description of supported image formats for USB import. • Updated the Preset section. • Updated the Peripheral section. • Updated the Audio section. • Updated the Preference section. • Updated the FN section. • Added the More Operations chapter, including the Companion Control and Remote Control sections.
V1.2.1	2026-05-26	Updated the description related to DVE button.
V1.2.0	2026-04-03	• Changed button indicator color from off to white backlight. • Added the description related to mode switching. • Added the description related to DVE button. • Added the description related to displaying the input source list in the expansion area. • Added the description related to button-menu sync. • Added the description related to internal sources.

		• Added YUY2 encoding format for streaming. • Added the description related to flipping. • Added the description related to DVE. • Added the description related to clean feed. • Updated the description related to AUX. • Added the description related to renaming input sources and presets. • Updated the description related to PTZ and streaming import template formats. • Updated the preferences section, adding options for mode switching, button-menu sync, etc. • Removed the S12 model and related descriptions.
V1.1.0	2025-11-20	• Updated the status of the AFV/ON button indicator for audio input. • Updated the Media interface. • Updated the description in Peripheral > Camera. • Added the description in Advanced > Screen Brightness. • Added the description in Advanced > Preferences.
V1.0.0	2025-08-15	First release

1.3 Symbols and Pictures

Symbol Overview

	Danger	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.
	Warning	Indicates a hazard with a medium or low level of risk, which if not avoided, could result in minor or moderate injury.
	Caution	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
	Note	Provides additional information to emphasize or supplement important points of the main text.

Picture Overview

Images and pictures given in this manual are used for illustration purposes only. The actual product may vary due to product enhancement. The content of the images can be slightly different from reality, such as device types, installed modules, form and position of software windows on the screen.

2 Safety

Overview

- General Considerations
- Device Carrying
- Device Mounting
- Cable Requirements
- Electrical Safety
- Unpacking and Inspection
- Device Labels
- Notes and Cautions

2.1 General Considerations

To ensure that you can use this product correctly and safely, please be sure to observe the following precautions:

- Before performing any operation, make sure that you have read all the operating instructions provided by the device, especially the instructions that may endanger the personal safety and device safety, such as dangers, warnings and cautions, to minimize the probability of accidents.
- All the operations must conform to local safety codes. When the safety and precautionary measures described in this manual conflict with local safety codes, please follow the local codes.
- The personnel responsible for installing and maintaining the device must be professionals who have been trained and have mastered the correct operation methods and all safety precautions. Only trained and qualified personnel can perform device installation and maintenance.
- This device must be used in an environment that meets the design specifications; otherwise, it may cause device failure. The resulting device function abnormalities or component damage, personal safety accidents, property losses and other situations are not included within the scope of the device warranty.

2.1.1 General Safety

- When operating the device, you must strictly abide by the local laws and regulations. The safety precautions described in this manual are only a supplement to the local safety laws and regulations.
- The "Danger", "Warning" and "Caution" items described in this manual are only supplementary instructions for all safety precautions.
- To ensure personal and device safety, please strictly follow all the safety precautions on the device labels and described in this manual when installing the device.

2.1.2 Environmental Requirements

- Ensure adequate air flow in the equipment room.
- Take necessary measures to prevent dust, water and static electricity.
- Avoid long-term direct sunlight.
- Keep the device away from heat and ignition sources.
- Do not place the device in an explosive atmosphere.
- Do not place the device in a corrosive environment.
- Do not place the device in a strong electromagnetic environment.

2.1.3 Device Safety

- Before operating, fix the device on the floor or other stable objects, such as a wall or mounting bracket.
- During transportation and use of the device and its packaging, the device must be fixed stably to avoid falling.

- Do not step on, hit and violently operate the device and its packaging to prevent damage to the device or packaging box.
- Do not block the ventilation openings during operation.
- Tighten the board or card screws with a tool.
- After the installation, remove the empty packing materials from the device area.
- Save the packing box and materials for possible storage and transportation in the future.
- Always wear anti-static wrist bands and insulating gloves when touching the static-sensitive components.
- Avoid dropping any object into the chassis.
- Keep the device away from conductors that are easy to induce lightning to avoid lightning strikes to the device.
- Do not make the circuit faces of the boards or cards contact each other.
- Do not touch the circuit, components, connectors or wiring slots of the boards or cards with bare hands.
- Do not repair the device without authorization. Only trained professionals can maintain the device. You can contact PIXELHUE at any time if needed.
- Always use the spare parts recommended by PIXELHUE.
- Regularly clean the dust on the heat dissipation holes to prevent the dust from blocking the holes and thus affect the heat dissipation of the device.

2.1.4 Personal Safety

- Place the device in a stable location to prevent personal injury caused by falling.
- Avoid bare wires and maintain or replace them in time when they are damaged.
- Do not operate the device and connect cables outdoors under thunderstorms.
- Do not wear watches, rings, or other metal jewelry when installing spare parts or maintaining the device.

2.2 Device Carrying

- Do not relocate a powered device, and do not take any objects that may cause danger to the relocation.
- Always pay attention to the wheels at the bottom of the flight case during transportation to avoid them being jammed by stones or deformed due to external forces.
- Always hold the handles of the flight case firmly when pushing a flight case with wheels. Do not stack other devices on the flight case.
- The relocated device should be repacked in the original factory packaging.
- Do not disassemble the components during the transportation of the flight case.
- When handling or placing the boards or cards, bare board components or modules, always package them individually.
- When carrying the device with your bare hands, always wear protective gloves to avoid injury.

- When carrying the device, handle it gently and always hold the handles of the device or drag the bottom edge of the device. Do not hold the handles of a device component.
- When the device weight exceeds the carrying limit of a single person, carry it with multiple people or use a carrying tool.
- When using a forklift or handcart for transportation, place the device stably to ensure the device will not tip over.

The following table lists the maximum weights that adults can carry at a time specified by some organizations for your reference.

Organization	Weight
CEN (European Committee for Standardization)	25 kg/55.13 lb
ISO (International Organization for Standardization)	25 kg/55.13 lb
NIOSH (National Institute for Occupational Safety and Health)	23 kg/50.72 lb
HSE (Health and Safety Executive)	25 kg/55.13 lb
General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China	Male: 15 kg/33.08 lb Female: 10 kg/22.05 lb

2.3 Device Mounting

When the device is installed on a desktop, the desktop must bear at least 4 times the device weight.

2.3.1 Mounting on a Desktop

- Ensure the stability and grounding of the desktop or working table.
- Ensure that the device is placed horizontally and do not turn it over or hang it on the wall.
- Do not place other objects on the device.
- Do not put water cups, beverages and other containers with liquid close to or on the device to avoid liquid leakage and thus cause safety hazards.
- If any object or liquid accidentally enters the device, stop using the device and disconnect the power cord and all cables connected to the device immediately, and then contact the after-sales personnel.
- When handling a flight case with wheels, please lock and fix the wheels to prevent the device from sliding.
- When stacking, ensure all the devices are stacked stably to avoid device damage and personal injury caused by falling.

2.3.2 Grounding

- Connect the grounding wire first when installing a device, and disconnect the grounding wire at last when removing the device.
- The connecting surface of the grounding wire and the device must have good conductivity. Spray painting is strictly prohibited, and there must be sufficient fastening force between the connecting parts.

- Do not operate the device when the grounding conductor is not installed.
- There must be no joints in the middle of the grounding wire, and it is strictly prohibited to install a switch or fuse on the grounding wire.
- For devices using a three-pin socket, ensure that the ground terminal in the three-pin socket is well grounded.

2.4 Cable Requirements

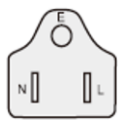
2.4.1 Power Cords

Warning

Do not install or remove the power cord when the device is powered on. When the power cord core contacts the conductor, an electric arc or spark will be generated which may result in fire or eye injury.

- Protect the power cord properly to prevent it from being punctured to avoid personal injury or fire caused by a short circuit.
- To ensure the safety of the device and personnel, be sure to use the matched power cord.
- User-supplied cables must comply with local cable regulations and device cable requirements.
- Before installing or removing the power cord, turn off the device power first.
- Check the electrical plug regularly and wipe off the dirt or dust accumulated on the plug.
- Before connecting the power cord, read the labels or markings on the power cord to make sure it is a matched one.

The device is intended to operate from an AC power source with a voltage range of AC 100–240V~, 50/60Hz. Various standard plugs are shown in the figure below.

US NEMA5/15	Europe CEE 7	China GB 2099	UK BS 1363
			

E Earth

N Neutral

L Live

2.4.2 Signal Cables

- Before using a DVI signal cable, check whether the pins on the cable connector are vertical and even. If not, please replace the cable.
- Before connecting the signal cable to the device, check whether there is any object in the device connector. If yes, remove the object first.
- If the signal cable has not been used for a long time, discharge static electricity before using it.

- Under normal working conditions of the device, it is recommended that non-technical professionals do not perform hot-swapping to avoid device damage.

2.4.3 Miscellaneous

- Signal cables must be bound separately from strong current cables or high voltage cables.
- When the temperature is too low, severe shock and vibration may cause brittle cracking of the plastic sheath of the cable. All cables should be laid and installed when the temperature is above zero.
- If the storage temperature of the cable is below zero, the cable must be moved to room temperature and stored for more than 24 hours before laying and installation.
- When carrying cables, especially in a low-temperature environment, always handle the cable with care. Violent handling, such as pushing down the cables directly from a high place, is prohibited.

2.5 Electrical Safety

2.5.1 Battery

- The battery is not intended to be replaced.
- Always follow the relevant instructions to dispose of batteries.
- Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery can result in an explosion.
- Leaving a battery in an extremely high temperature surrounding environment can result in an explosion or the leakage of flammable liquid or gas.
- A battery subjected to extremely low air pressure may result in an explosion or the leakage of flammable liquid or gas.

2.5.2 Electromagnetic Interference

- Keep the device away from transformers, high-voltage power lines and high-current devices.
- Keep the device away from high-power broadcast transmitters.
- If there is a mobile communication transmitter around the device, its interference degree should meet the requirements of relevant standards. If needed, take necessary measures to prevent interference, such as shielding and isolation.
- When using hand-held wireless communication devices, such as interphones, keep at least 30 cm away from the device.

2.5.3 Anti-Static

- Always wear anti-static wrist bands and insulating gloves when touching the static-sensitive components.
- Always hold the board by the edges to avoid touching the circuits or components, and do not touch the chip with your hands.
- The disassembled board must be packaged with anti-static packaging material before storage or transportation.

2.6 Unpacking and Inspection

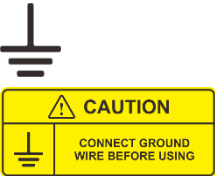
2.6.1 Unpacking

- After receiving the device, check whether the packing box is damaged. If there is any damage, do not open the box and contact the carrier in time to confirm the damage to the device and matters related to compensation.
- After unpacking, save the packing box and materials for possible storage and transportation in the future.

2.6.2 Inspection

- When the packing box is in perfect condition, unpack the box. Check the appearance of the device for damage. If there is damage, please contact the salesperson.
- Check the box contents according to the packing list described in the certificate of approval. If any item is missing, please contact the salesperson in time.

2.7 Device Labels

Labels	Description
	Warranty void if removed Do not open the chassis. If this label is damaged, the device will not be covered by the warranty.
	Grounding The two ends of the grounding wire are connected to the device and the grounding point respectively, which means that the device must be grounded through the grounding point to ensure the normal operation of the device and the personal safety of the operators.
	Sensitive electronic device Keep the device away from areas with strong electromagnetic radiation to avoid electromagnetic interference and thus affect the image output quality.
	Device carrying The device needs to be carried by multiple people.
	Removing cards Remove cards before taking out the motherboard.

2.8 Notes and Cautions

2.8.1 FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

2.8.2 Others

- This is Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.
- This product can only be placed horizontally. Do not mount vertically or upside-down.
- Please read the specifications thoroughly and use the product in accordance with the requirements. If you have any questions about the specifications, please contact us immediately. If you use the product improperly, not following the requirements, or for illegal purposes, you shall be solely responsible for any consequences arising therefrom.
- If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please contact PIXELHUE to confirm or address the problem. Otherwise, the customer shall be responsible for the legal risks caused or PIXELHUE has the right to claim compensation.

3 Overview

About This Chapter

This chapter is designed to introduce you to the S16 4K live production switcher.

Overview

- Introduction
- Applications
- Initial Inspection

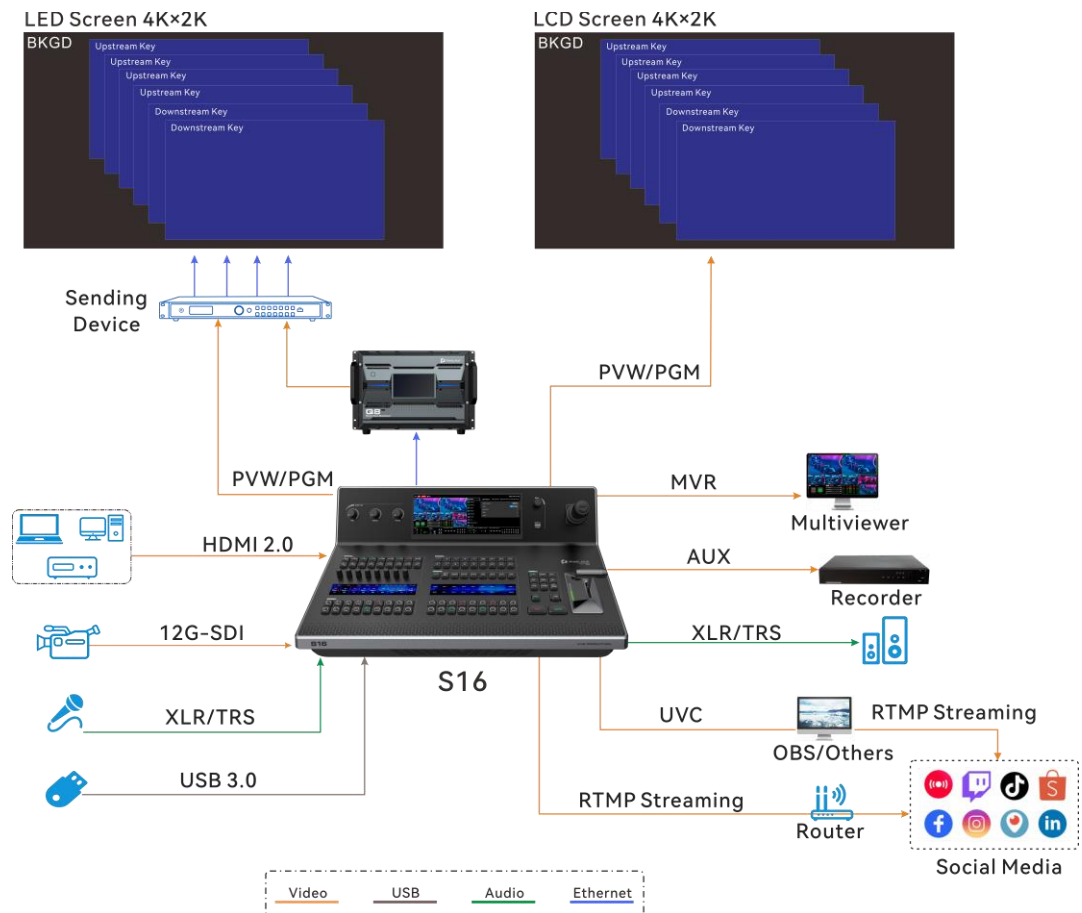
3.1 Introduction

The S16 is a high-performance 4K live production switcher, designed to meet the needs of professional broadcasting and multimedia productions. Featuring 4K input and output capabilities, it receives and transmits ultra-high-definition videos, ensuring premium visual effects in various events. It supports UHD, FHD, and custom resolution options, offering flexible resolution adaptation capability. More importantly, it provides a powerful layer resource configuration, including 1 BKGD, 4 upstream keyers, 2 downstream keyers, and 1 SuperSource, offering unlimited possibilities for creative live productions.

The S16 is equipped with a 10.25-inch LCD display, providing professional Multiviewer function, and comes with an industrial-grade control joystick, making on-site adjustments and operations more intuitive and precise. Its versatile live streaming module supports major streaming platforms globally, offers simultaneous 4-channel RTMP streaming, and provides 3840×2160@60Hz UVC output capability, meeting high-standard live streaming and online editing requirements. What's more, the S16 includes MIX, DIP, WIPE, and DVE transition effects, adding professional-quality visual effects to your streaming and recording.

With its high performance, flexibility, and innovative design, the S16 provides powerful and professional support for various live productions in corporate and commercial events, entertainment and cultural activities, sports events, community and religious gatherings, education and training, e-sports and game streaming, as well as personal and small studio productions.

3.2 Applications



3.3 Initial Inspection

General

Before shipment, the devices were inspected and found to be free of mechanical and electrical defects. As soon as the devices are unpacked, inspect for any damage that may have occurred in transit, and make sure there are no broken parts and the unit is free of dents. Save all packing material until the inspection is completed. If any damage is found, please contact PIXELHUE or your local distributor immediately.

After unpacking, please always place the device on a stable, flat and insulated support for handling or using.

Unpacking

After the unpacking, it is recommended you check carefully to see whether all accessories are included according to the provided packing list.

4 Hardware Introduction

About This Chapter

This chapter is designed to introduce you to the hardware configuration of the 4K live production switcher in detail.

Overview

- Front Panel
 - Rear Panel
-

**Note:**

All product pictures shown in this chapter are for illustration purposes only. Actual product may vary.

4.1 Front Panel



No.	Area	Description
1	Output audio	Adjust the output volume.
2	LCD screen	Provide an intuitive LCD interface displaying menus and monitoring images.
3	Menu navigation	Choose menu options and configure relevant parameters.
4	Joystick	Precisely control the position, size, and direction of keyer and camera focus.
5	Input audio	Adjust the audio mix and volume.
6	Main program source switching	Quickly switch the BKGD source to the one bound to the button.
7	Auxiliary control	Perform operations such as delete, confirm, and enter numbers.
8	Comprehensive control	Edit keyers, load presets, and set camera presets.
9	Transition	Perform actions such as lock, live streaming, recording, and transition effects settings.

4.2 Rear Panel



Area	Connector	Qty	Description
INPUT (HDMI 2.0-12G SDI)	HDMI 2.0	4	- Each supports up to 4K×2K@60Hz 8-bit 4:4:4 inputs. - Support 8-bit, 10-bit, 12-bit input processing. - Support 4:4:4, 4:2:2, 4:2:0 format inputs. - Support EDID settings. - Support full and limited color ranges. - Support HDCP 2.2, downward compatible. - Support deinterlacing processing (only A and B). - Support embedded audio (24-bit/48 kHz, dual channel). - Support custom resolutions. - Maximum width: 4096 pixels - Maximum height: 4096 pixels - Can be selected alternatively with 12G-SDI input 7, 8, 15, 16.
	12G-SDI	16	- Each supports up to 4K×2K@60Hz 10-bit 4:2:2 inputs. - Support ST-2081 (6G), ST-2082 (12G), ST-424 (3G), and ST-292 (HD) inputs. - Compatible with HD-SDI, 3G-SDI and 6G-SDI - Support YCbCr color space settings. - Support interlaced inputs. - Support deinterlacing processing (only the first row of 12G-SDI connectors). - Support embedded audio (24-bit/48 kHz, dual channel).

Area	Connector	Qty	Description
OUTPUT (HDMI 2.0-12G SDI)	HDMI 2.0	2	• Each supports up to 4K×2K@60Hz 8-bit 4:4:4 outputs. • Support 8-bit and 10-bit output processing. • Support 4:4:4 and 4:2:2 format outputs. • Support YCbCr and RGB color space settings. • Support for interlaced signal output • Support embedded audio (24-bit/48 kHz, dual channel). • Support custom resolutions. – Maximum width: 4096 pixels – Maximum height: 4096 pixels
	12G-SDI	2	• Compatible with HD-SDI, 3G-SDI and 6G-SDI • Support interlaced outputs. • Copy the output content from 2x HDMI 2.0. • Support embedded audio (24-bit/48 kHz, dual channel).
MVR (HDMI 2.0-12G SDI)	HDMI 2.0	1	• Each supports up to 4K×2K@60Hz 8-bit 4:4:4 outputs. • Support separate timing configuration. When the timing matches the main output 1 timing, output via AUX is supported.
	12G-SDI	1	
AUX (HDMI 2.0-12G SDI)	HDMI 2.0	4	• Each supports up to 4K×2K@60Hz 8-bit 4:4:4 outputs. • Support output of input sources, PVW, PGM, Multiviewer, and Clean Feed. • Support embedded audio (24-bit/48 kHz, dual channel).
	12G-SDI	8	
CONTROL	USB 3.0 (TYPE-C)	2	• USB 3.0 (TYPE-C) 1 – Connect to devices like USB drives for storage, firmware update, and log export. – Connect an external keyboard. • USB 3.0 (TYPE-C) 2 – Supports UVC streaming with selectable output resolution, up to 3840×2160@60Hz. – Connect to devices like USB drives for storage, firmware update, and log export. – Connect an external keyboard.
	LTC (Reserved)	2	1x LTC IN, 1x LTC OUT • IN: Connect to an external LTC-format timecode input device. • OUT: LTC time code output

Area	Connector	Qty	Description
	GENLOCK	2	1x GENLOCK IN, 1x GENLOCK OUT A pair of Genlock signal connectors. Support Bi-Level and Tri-Level. • IN: Accept the sync signal. • OUT: Loop through the sync signal. Genlock signal supports frame rate range from 23.98 Hz to 60 Hz.
	ETHERNET	2	2x Gigabit Ethernet ports • Connect to the control PC software (reserved). • Support network Tally. • Support PTZ control.
AUDIO	XLR/TRS (IN)	2	2x Audio input connectors • XLR: 24-bit/48 kHz, mono • TRS: 24-bit/48 kHz, stereo
	XLR (OUT)	2	2x Audio output connectors 24-bit/48 kHz, mono, defaulting to output the left and right channels of PGM audio
	PHONES OUT	1	1x 6.35 mm TRS (24-bit/48 kHz, stereo) monitoring output connector Used for monitoring or transmitting unbalanced stereo audio signals
	Dante	2	Reserved Note: The device does not ship with a Dante module. Please order it separately if needed.
LIGHT	-	1	Connect the gooseneck lamp.
Power connector	100-240V~, 50/60Hz	1	An AC power input

5

Device Operations

About This Chapter

This chapter introduces you to the buttons and system menus of the 4K live production switcher, including how the buttons are used and how the menus are accessed and the available functions and parameters.

Overview

- Quick Start
- Button Operations
- LCD Menu Operations

5.1 Quick Start

This section guides users through the first-time setup, covering device connection, input source configuration, and program output, helping users quickly master the complete workflow.

5.1.1 Step 1: Environment Preparation

First, complete the necessary connections for the S16 and power it on.

- **Connect power and power on:** Connect the power cable and press the power switch on the rear panel. Wait for the device to boot up until the main screen is displayed on the LCD.
- **Connect inputs:** Connect cameras or computers to the 12G-SDI or HDMI 2.0 input connectors on the rear panel using SDI/HDMI cables.
- **Connect outputs:** Connect the 12G-SDI or HDMI 2.0 output connectors on the rear panel to sending devices or screens using SDI or HDMI cables.
- **Streaming connection:** Connect a computer to the USB 3.0 (Type-C) port on the rear panel using a USB cable.

5.1.2 Step 2: Basic Configuration

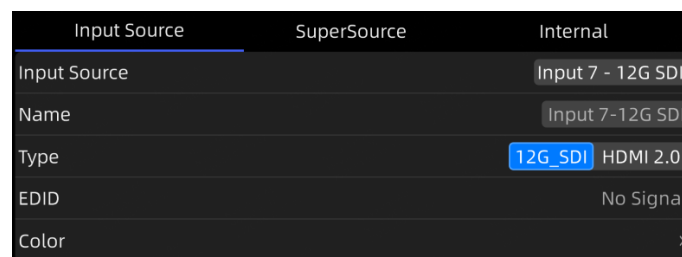
Knob and button operations:

- Rotate the knob to browse menu items; press the knob to confirm a selection.
- Press a button to confirm a selection or perform an action.

5.1.2.1 EDID Settings

LCD Operations

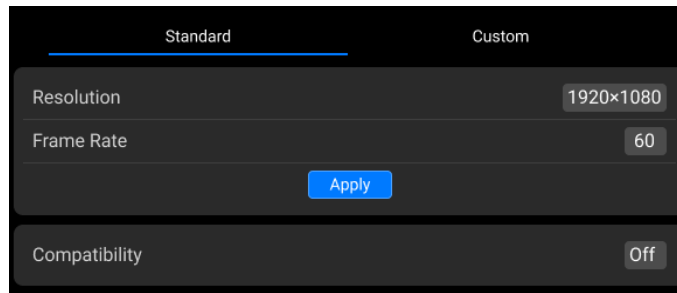
Step 1 Enter the **Input > Input Source** screen.



Step 2 Select the target input source. A pop-up displays all input sources. Select one to switch.

Step 3 Select **Type** to switch between 12G-SDI or HDMI 2.0, matching the actual cable type connected.

Step 4 If the connector type is HDMI 2.0, select **EDID** to enter the EDID settings screen.



Step 5 On the standard screen, select **Resolution**. A pop-up shows the supported resolution list. Select a resolution matching the signal source (e.g., 1920×1080).

Step 6 Select **Frame Rate** to choose a frame rate (e.g., 60 Hz).

Step 7 Select **Apply** to activate the parameters.

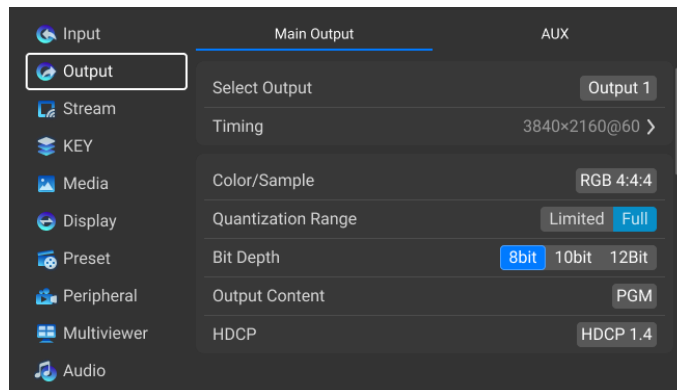
Note

- If the signal source is a Mac computer, it is recommended to enable **Compatible with Mac** under **Compatibility** to avoid compatibility issues.
- If the input source image is visible on the PGM or MVR, the EDID configuration is correct, and you can proceed to the next step.

5.1.2.2 Main Output Connection & Timing Settings

LCD Operations

Step 1 Enter the **Output > Main Output** screen.



Step 2 Select **Select Output** to choose the output connector to configure (e.g., Output 1).

Step 3 Select **Timing** to enter timing settings. On the preset timing screen, select the resolution and frame rate, then select **Apply**.

Step 4 To customize the resolution, enter the custom screen and input custom parameters.

Step 5 (Optional) Select **Color/Sample** to choose the appropriate color space.

Step 6 (Optional) Select **Output Content** to switch between PGM and PVW (Main output defaults to PGM).

Button Shortcut Operations

In the **FUNCTION** area on the front panel, press the **OUTPUT** button to enter the output operation screen. The LCD displays output-related information.

- Press the first button in the first row. The **Output 1** text and corresponding button light up green, indicating the output 1 is selected. You can switch the output 1 content using the second-row buttons.
- Press the first button in the second row. The **PVW** text and corresponding button light up green, indicating the output 1 content has been switched to PVW.
- Press the second button in the second row. The **PGM** text and corresponding button light up green, indicating the output 1 content has been switched to PGM.

5.1.3 Step 3: BKGD Source Switching

Button Shortcut Operations

- Step 1 In the **SOURCE** area on the front panel, view the input source list displayed on the top long LCD screen. Sources with signals appear in white text; those without signals appear in gray text.
- Step 2 Press the target input source button in the second row (e.g., the first button) to change the BKGD input source on PVW to Input 1. The PVW image switches to this input source. The square below the text on the long LCD screen turns green, and the corresponding button lights up green, indicating the PVW BKGD input source has been changed to Input 1.
- Step 3 After confirming the PVW image is correct, press the **CUT** button in the switching control area to instantly switch the PVW image to PGM without effects. Alternatively, press the **AUTO** button to smoothly transition the PVW image to PGM using the currently selected transition effect.
- Step 4 After the switch is complete, PGM displays the signal image. The corresponding button lights up red, indicating the PGM BKGD input source has been changed to Input 1.

Note

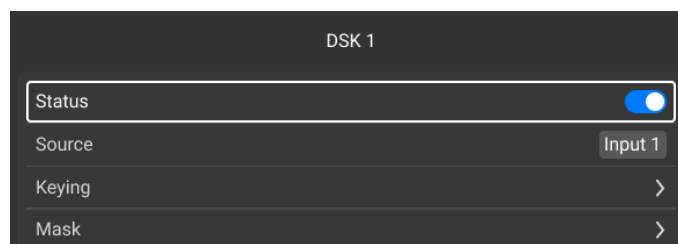
It is recommended to use the **AUTO** button for switching to achieve more professional transition effects. You can set the transition type and duration in the **Display** menu on the LCD.

5.1.4 Step 4: Keyer On/Off & Source Switching

The S16 supports up to 4 upstream keyers and 2 downstream keyers for setting layers, overlaying subtitles, logos, station IDs, and other graphic content. The following takes adding a subtitle layer as an example.

LCD Operations

- Step 1 Enter the **KEY > DSK 1** screen.



- Step 2 Select **Source**. From the pop-up input source list, select the subtitle/image source (options include input sources, SuperSource, internal sources, or media sources).
- Step 3 Toggle the **Status** switch. The keyer is now enabled on PVW.
- Step 4 (Optional) For further adjustments, enter the **Keying** submenu for fine-tuning. For detailed keying operations, see [Configure Keying](#).
- Step 5 After confirming the PVW preview, press the **AUTO** or **CUT** button to transition the keyer to PGM.

Note

If the subtitle image has a solid-color background (e.g., green screen), enable the keying function in the DSK settings and select chroma key or luma key to remove the background.

Button Shortcut Operations

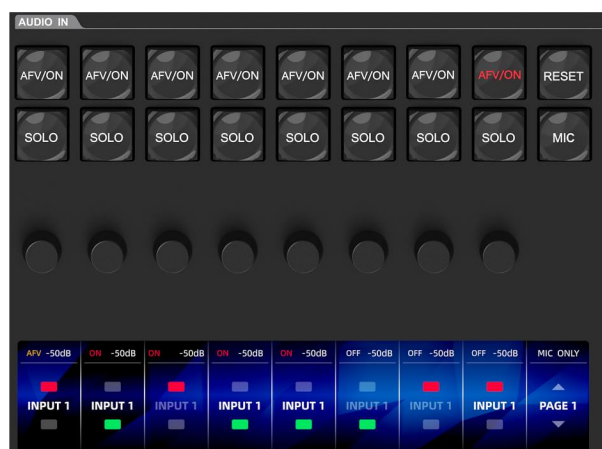
In the **FUNCTION** area on the front panel, press the **KEY** button. The button lights up white, and the LCD displays keyer-related information.

- Press the fifth button in the first row below the long LCD screen. The text and corresponding button light up red, indicating DSK 1 is enabled.
Press the fifth button in the second row. The text and corresponding button light up green, indicating DSK 1 transition follow is enabled.
- Press the **KEY EDIT** button in the **FUNCTION** area. The button lights up white, and the LCD displays keyer edit-related information.
- Press the fifth button in the first row below the long LCD screen. The text and corresponding button light up green, indicating DSK 1 is now selected. You can change the DSK 1 input source using the second-row buttons.

5.1.5 Step 5: Audio Mixing Adjustment

Button Operations

In the **AUDIO IN** area on the front panel, press an input audio button to adjust the audio mixing state. Rotate the knob to adjust the audio volume.



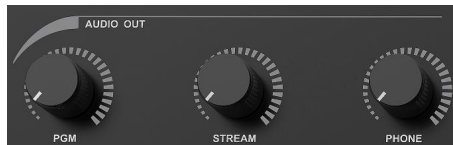
- Enable AFV and audio mixing
 - Enable AFV

Press the button (**AFV/ON**) in the first row. The button lights up yellow, and **AFV** appears in yellow above the input on the bottom long LCD screen, indicating AFV is enabled for the input name and the corresponding input source is not displayed on PGM.

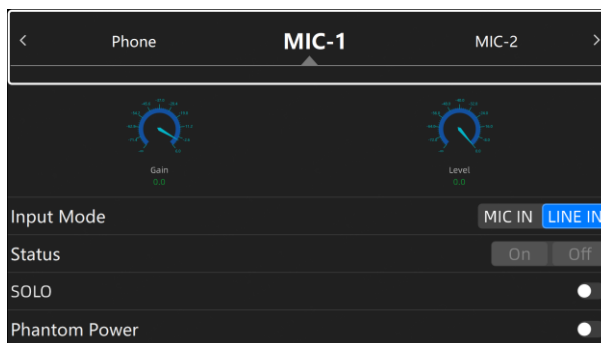
- Enable audio mixing

Press the button (**AFV/ON**) in the first row again. The button lights up red, and **AFV** appears in red above the input name on the bottom long LCD screen, indicating audio mixing is enabled for the input.

- Input level adjustment: Rotate the knob above the input name counterclockwise. The level decreases, and the level value on the LCD changes in real time.
- Output volume adjustment: In the **AUDIO OUT** area on the front panel, rotate the **PGM**, **STREAM** and **PHONE** knobs to adjust the output audio volume.



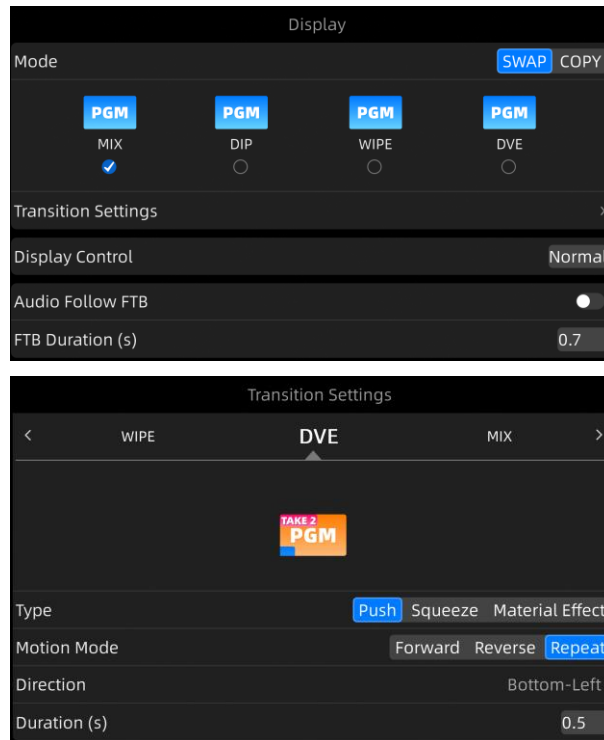
- Main program volume adjustment: Rotate the **PGM** knob counterclockwise to decrease the overall output volume; rotate clockwise to increase it. The audio bars on the PGM preview and level meter modules change in real time.
- Stream volume adjustment: Rotate the **STREAM** knob counterclockwise to decrease the streaming and recording volume; rotate clockwise to increase it. The audio bars on the level meter module change in real time.
- Monitor volume adjustment: Rotate the **PHONE** knob counterclockwise to decrease the headphone output volume; rotate clockwise to increase it. The audio bars on the level meter module change in real time.



5.1.6 Step 6: Effect Selection and On-Screen Switching

LCD Operations

- Step 1 Rotate the **MENU** knob to enter the **Display** menu screen.
- Step 2 Select the switching mode and transition type, then select **Transition Settings**.
- Step 3 Configure the relevant parameters for different transition types.



Button Operations

In the **TRANS** area on the front panel, press the **MIX**, **WIPE**, **DIP**, or **DVE** buttons to switch transition effects.

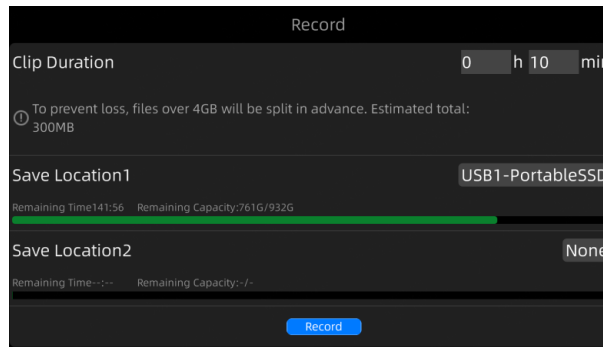


5.1.7 Step 7: Start Recording and Streaming

The S16 supports local recording to a USB drive and UVC/RTMP multi-platform streaming. The following describes the steps for recording and streaming.

Recording to USB Drive

- Step 1 Insert a USB drive into the USB 3.0 (Type-C) port on the rear panel.
- Step 2 Rotate the **MENU** knob to enter the **Stream > Record** screen.



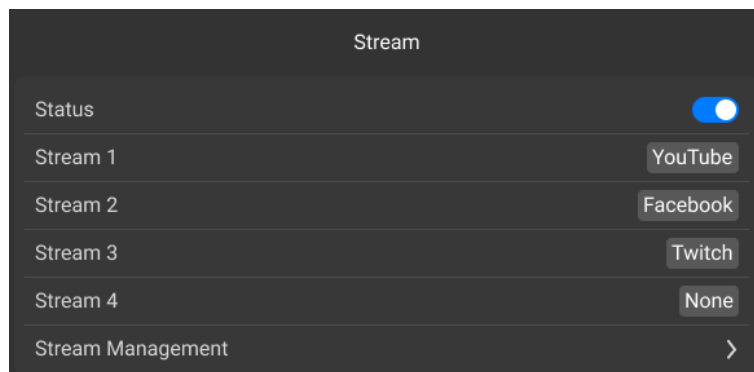
- Step 3 Set the clip duration, storage path 1, and storage path 2 (the two paths must be different).
- Step 4 Click **Record** or press the **REC** button in the **TRANS** area on the front panel to start recording.

UVC Streaming

Connect a computer to the USB 3.0 (Type-C) port on the rear panel using a USB cable. Rotate the **MENU** knob to enter the **Stream** screen and set the streaming resolution, frame rate, codec, encoding quality, and bitrate.

RTMP Streaming

- Step 1 Rotate the **MENU** knob to enter the **Stream** screen and set the streaming resolution, codec, encoding quality, and bitrate.
- Step 2 Go to **Stream > Stream > Stream Management** to import streaming rooms (import .csv/.xlsx files from the USB drive).



- Step 3 On the stream management screen, each of the four streams can be assigned to a different streaming room.
- Step 4 Select any stream and press the **STREAM** button in the **TRANS** area on the front panel to start streaming. The LCD preview window displays the current streaming status, room name, streaming duration, and bitrate.
- Step 5 In the **TRANS** area on the front panel, hold down the **STREAM** button for 1.5 seconds to stop streaming.

Note

Once streaming starts, the streaming room selection and resolution cannot be modified. Please confirm the configuration is correct beforehand. For safety, you can set the stream and record button to require a hold down operation in **Advanced > Preferences** to prevent accidental activation.

5.1.8 Step 8: Save Presets

Save the complete configuration of the current PGM or PVW (including input source selection, keyer states, transition settings, etc.) as a preset for quick recovery later.

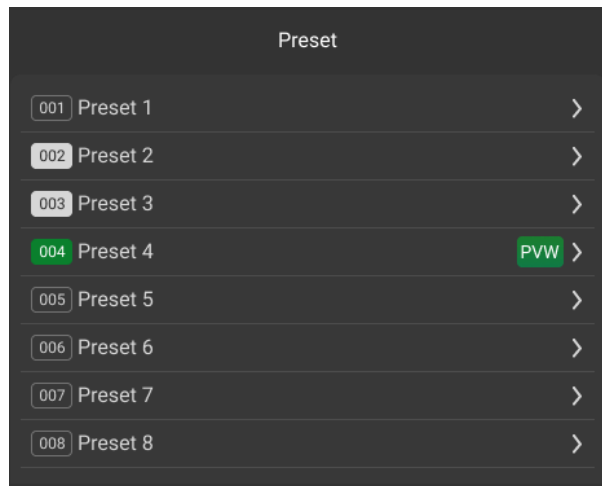
Button Operations (Recommended)

Press the **PRESET** button in the **FUNCTION** area. The button lights up white, and the LCD displays scene-related information. The following operations are available:

- Save PGM to preset 2: Press the save button (8th button in row 2 in **FUNCTION** area). The button flashes yellow. Press the second button in the first row to save the current PGM configuration as Preset 2. Upon success, the save button returns to steady white.
- Save PVW to preset 3: Press the save button. The button flashes yellow. Press the third button in the second row to save the current PVW configuration as Preset 3. Upon success, the save button returns to steady white.
- Load presets:
 - Press the Preset 1 button in the first row to load it to PGM. The button and text light up red.
 - Press the Preset 1 button in the second row to load it to PVW. The button and text light up green.
- Delete presets: Press the delete button (8th button in row 3 in **FUNCTION** area). The button flashes yellow. Press the preset button to delete the corresponding preset.

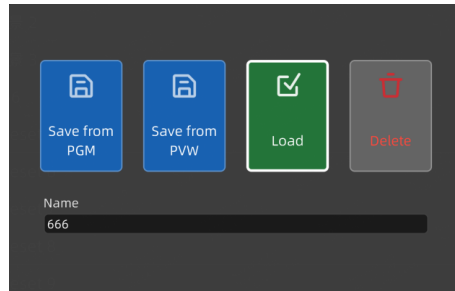
LCD Operations

Step 1 Rotate the **MENU** knob to enter the **Preset** screen.



Step 2 Select a preset and press the knob.

Step 3 In the pop-up menu, perform the desired operation and press the knob to confirm.



- **Save from PGM:** Save the content on PGM to the preset.
- **Save from PVW:** Save the content on PVW to the preset.
- **Load:** Select an existing preset, select **Load** in the dialog box, and load the preset to the screen.
Presets can be loaded to PVW via LCD operation and to PVW or PGM via button operation.
- **Delete:** Select an existing preset, select **Delete** in the dialog box, and select **OK** to delete the scene.
- **Rename:** Modify the preset name.

Note

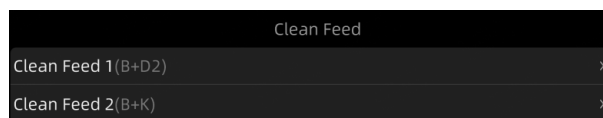
It is recommended to save a preset before and after each live broadcast to quickly restore the working state. Saved presets include BKGD source, all keyer states, keyer positions/sizes, etc.

5.1.9 (Optional) Set Clean Feed and AUX Output

Clean Feed removes specified overlay keyers (such as subtitles and logos) from the PGM image, outputting a clean program feed for recording or rebroadcasting. AUX output can be flexibly configured as an independent output for any input source, PVW, PGM, or Clean Feed.

LCD Operations – Clean Feed

Step 1 Rotate the **MENU** knob to enter **Advanced > Clean Feed**.



Step 2 Select **Clean Feed 1** or **Clean Feed 2** to enter the next operation screen.

Step 3 Select the keyers to exclude (e.g., DSK) to remove them from the clean feed.

Step 4 Once set, the clean feed output will not contain the excluded keyers.

LCD Operations –AUX Output

Step 1 Rotate the MENU knob to enter Output > AUX.

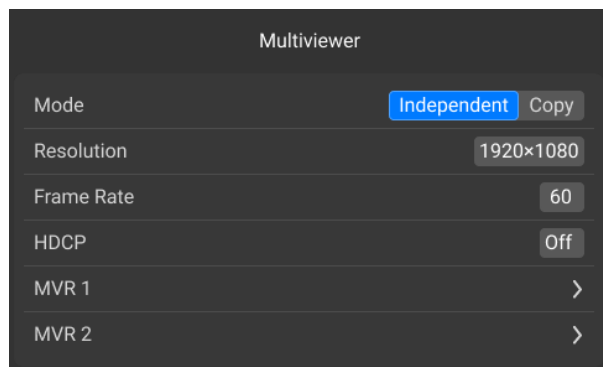


- Step 2 Select the target AUX connector.
- Step 3 Press the knob and a pop-up displays all selectable output contents (input sources, media sources, Super Source, PVW, PGM, Clean Feed, MVR).
- Step 4 Select the desired output content and press the knob to confirm.
- Step 5 To reset all AUX outputs to their defaults, select the Reset button and confirm.

5.1.10 (Optional) Set Multiviewer

LCD Operations

- Step 1 Rotate the **MENU** knob to enter the **Multiviewer** screen.



- Step 2 Select the mode, including **Independent** and **Copy** (in **Independent** mode, MVR 1 and MVR 2 can be set separately).
- Step 3 Set the MVR output resolution, frame rate, and HDCP.
- Step 4 Rotate the knob to enter the MVR 1 settings screen to adjust the template, MVR window sources, level meters, safety frame, and UMD display.

Button Shortcut Operations

- Step 1 In the **FUNCTION** area on the front panel, press the **MVR** button. The button lights up white. The long LCD screen and buttons below display MVR-related information. Buttons can be used to change MVR window sources.
- Step 2 By default, MVR 1 Window 1 is selected. The **Window 1** text and the first button in the first row light up green. Use the second-row buttons to change the Window 1 input source. After changing, the second-row text and corresponding button light up green. Press the last button in the second row to page through input sources.
- Step 3 In **Independent** mode, press the 8th button in the first row to switch to MVR 2. You can now change the window source for MVR 2. Press a first-row button to select a window. After selection, the text and corresponding button light up green. Press a

second-row button to switch the window source. After switching, the second-row text and corresponding button light up green.

The above covers the basic functions of the S16 4K live production switcher. The device also supports many advanced features, such as transition effects, chroma keying, SuperSource, PTZ camera control, end-to-end backup, and network Tally. It is recommended to read the corresponding chapters in this manual based on your production needs.

5.2 Button Operations

5.2.1 Menu Navigation

Utilize the menu knob and BACK button to navigate the LCD menu options and configure relevant parameters.

Figure 5-1 Menu setup



- Knob: Press or rotate the knob to navigate through and confirm the LCD menu options.
 - Press: Confirm the selection.
 - Rotate: Select the menu items or adjust the parameter value.
- BACK button:
 - Press to return to the previous menu level or cancel the current operation.
 - Hold down the button for 1.5 seconds to quickly close all menus and return to the main screen.

5.2.2 Joystick

Precisely control the keyer position, size, and camera direction and focus.

Figure 5-2 Joystick



- Omnidirectional tilt: Control the keyer positioning or camera pan/tilt direction.
- Rotate (L/R): Adjust the keyer scaling or camera zoom.
- Top Button: Instantly reset the current keyer to its native aspect ratio, proportionally scales it to fit the full screen, and centers the display.

5.2.3 Audio Input

Press the audio input button to adjust the audio mixing status; rotate the knob to adjust the audio volume.

Figure 5-3 Audio input area

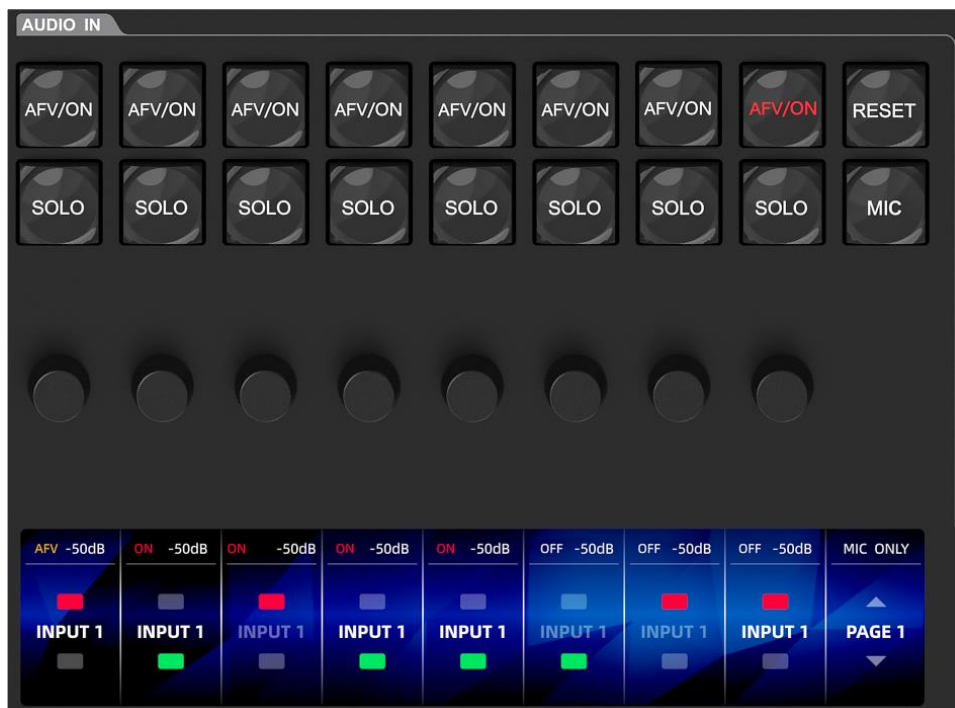


Table 5-1 Audio input button and indicator description - AUDIO IN

Button/ Knob	Button Description	Indicator	Indicator Description
Volume knob	Adjust the mixing volume of the input source, which is displayed in real time on the long LCD screen. • Volume+: Rotate clockwise. • Volume-: Rotate counterclockwise.	-	-
AFV/ON (Audio mixing switch)	Press to cycle through audio mixing states: Off (default), AFV, On.	Yellow	AFV is on, but the video source is not displayed on PGM.
		Red	Mixing output to PGM in progress
		White backlight	No audio output
SOLO	Monitor the post-mixed PGM audio from multiple channels.	Green	Enabled, and audio output in progress
		White backlight	Disabled
RESET	Reset all input audio mixing states.	White	Pressed
		White backlight	Released
MIC	Press to toggle the filter switch of the source list on the long LCD screen below. It is off by default. • On: Only the sources with Mic input are displayed on the long LCD screen. • Off: All sources are displayed on the long LCD screen.	Green	Filter on
		White	Filter off

Note

At most one SOLO can be turned on at the same time. At this time, all audio mixing states are changed to off. When SOLO is turned off, the audio mixing switch (AFV/ON button) returns to the state before SOLO is turned on.

Long LCD Screen Description

Figure 5-4 Long LCD screen description - AUDIO IN



- Display the audio source list combined with video source list, supporting filtering of pure microphone sources by using the MIC button.
- Display the audio mixing states: Off (default), AFV, On.

- Display the audio level values.
- Display the audio tally states:
 - The SuperSource and media source do not support audio.
 - Mixing off: The audio mixing state text and level value text are white.
 - AFV on, video source not used to create a keyer: The audio mix state text is yellow.
 - Mixing output to PVW: The audio mixing state text is green.
 - Mixing output to PGM: The audio mixing state text is red.

5.2.4 Main Program Source Switching

The input source bound to each button can be viewed through the long LCD screen above. Press the input source button to switch the BKGD source.

Figure 5-5 Input source area - SOURCE



Table 5-2 Input source button and indicator description – SOURCE

Button	Button Description	Indicator	Indicator Description
Input source buttons	Quickly switch the BKGD source to the one bound to the button.	Red	The input source is currently being displayed in PGM and is being used by the selected BKGD.
		Green	The input source is currently being displayed in PVW and is being used by the selected BKGD.
		Flashing	The input source is bound but not displayed on the current page.
	• Press (released): Page up or down the input source list by one page.	White	Pressed

Page buttons (last column)	• Hold down (duration $\geq 0.3s$): Continuously page up or down the input source list. • Hold down (released): Restore the input source list to the page before pressing.	White backlight	Released
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Long LCD Screen Description

Figure 5-6 Long LCD screen description - SOURCE

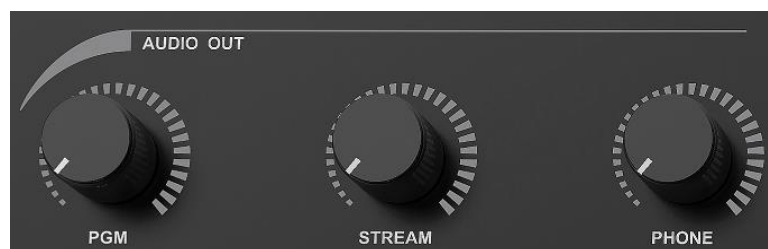


- The input audio list and the input source list can be paged simultaneously using the page button.
- When the MIC button filter is turned on, the SOURCE area button operations are invalid.
- Source name: Display the source state, distinguishing between signal (green), no signal (white), overload (red), unavailable (grey).
- Tally state:
 - Output to PGM: The input source state is red.
 - Output to PVW: The input source state is green.

5.2.5 Audio Output

Rotate the PGM/STREAM/PHONE knob to adjust the output audio volume.

Figure 5-7 Audio output area



- Volume+: Rotate clockwise.
- Volume-: Rotate counterclockwise.

5.2.6 Auxiliary Functions

The auxiliary function area includes number buttons, FN buttons, back button and confirmation button.

Figure 5-8 Auxiliary function area



Table 5-3 Auxiliary function button and indicator description – SHORTCUT

Button	Button Description	Indicator	Indicator Description
	The button is active when the input box in the LCD menu interface is activated. Press to move the cursor one space to the left and delete the previous character. If all the input content is selected, all content will be deleted.	Green	There is an activated input box in the LCD menu interface.
		White backlight	There is no activated input box in the LCD menu interface.
	When the input box in the LCD menu interface is activated, confirm the content and then exit the activation state.	Green	Always on
Number buttons (0 to 9)	• Number input: When the numeric input box is activated in the LCD menu interface, the numeric buttons are used to enter numbers. • Quick selection: When the LCD menu interface is displayed and the numeric input box is not activated, the number buttons serve as shortcut selection buttons for the LCD menu. Pressing a number button selects the menu option in the LCD menu interface that corresponds to the focused item in the menu list (e.g., number button 1 corresponds to the first menu option in the menu list). If neither situation is present, pressing the number button has no effect.	Green	An input box is activated in the LCD menu interface, or the focus is on the numeric parameter value.
		White backlight	Neither situation is present.
	Set each button's bound function in Advanced > FN.	Off	Not bound
		Green	Bound

Button	Button Description	Indicator		Indicator Description
Shortcut buttons (FN 1 to FN 6)	- Function 1: Defaults to the keyer control function. - In Direct Control mode: Control the KEY and DSK on/off status on PGM and PVW. - In Follow Transition mode: Control the ON AIR status of keyers on PGM, as well as the button on/off status involved in the next transition. - Function 2: Can be assigned to Synchronization, Capture, or Button-Menu Sync. Pressing the button jumps to the corresponding LCD menu screen.	Capture	Green flashing	Capturing in progress
			White	Not capturing
		Synchronization	Green	Sync enabled/sync failed
			Off	Sync disabled
		Button-Menu Sync	Green	Function enabled
			White backlight	Function disabled
		Keyer status	Green	Keyer is enabled on PVW/Transition follow is enabled
			Red	Keyer is enabled on PGM
			White backlight	Keyer is disabled/Transition follow is disabled

5.2.7 Comprehensive Control

The comprehensive control area includes function switching buttons of key, key editing, preset, macro, output, camera, MVR, play, expansion and function operation buttons.

Figure 5-9 Comprehensive control area



Table 5-4 Button and indicator description – FUNCTION

Button	Button Description	Indicator	Indicator Description
Function switching area buttons	The 1st row buttons include function buttons for KEY, KEY EDIT, PRESET, MACRO, OUTPUT, CAM, MVR, PLAY, and EXP. Press (on release): Switch the corresponding operation area buttons (rows 2 and 3) to the selected function.	White	The function operation buttons are currently switched to this function.
		White backlight	The function operation buttons are not switched to this function.
KEY	Direct Control (default): Control the activation status of the keyer, with transition state switching not involved. Used in conjunction with the function operation buttons. - Row 2: Represent the keyer list on PGM. - Row 3: Represent the keyer list on PVW.	Red (function operation area)	Keyer is enabled on PGM.
		Green	Keyer is enabled on PVW.
		White backlight	Keyer is not enabled.
	Follow Transition: Control the activation status of the keyer and set the switching state for the next transition. Used in conjunction with the function operation buttons. - Row 2: Toggle the keyer on or off on PGM. - Row 3: Toggle whether the keyer will be switched in the next transition.	Red (function operation area)	Row 2: Keyer is enabled on PGM.
		Green	Row 3: Keyer is set to be switched in the next transition.
		White backlight	- Row 2: Keyer is disabled on PGM. - Row 3: Keyer will not be switched in the next transition.

Button	Button Description	Indicator	Indicator Description
	Note: At least one of the following must be enabled: the transition follow for KEY, DSK, or BKGD.		
KEY EDIT	Edit the currently selected keyer. Used in conjunction with the function operation area buttons. - Row 2: Display the list of keyers (excluding BKGD). Press to toggle the selection state of a keyer. By default, the most recently modified keyer is selected. Multiple selections are not supported. When a keyer is selected on the current page, its position and size can be adjusted using the joystick. - Row 3: The first eight buttons represent the input source list. Press to change the source for the selected keyer. The 9th button is the page turn button. Clicking it switches to the next page. It also supports a long press for temporary page switching.	Green	- Row 2: Keyer is selected. - First 8 buttons in row 3: Source is used by the selected keyer.
		Green (flashing)	First 8 buttons in row 3: Source is used but not on the current page.
		White	9th button in row 3: Pressed
		White backlight	- Row 2: Keyer is not selected. - First 8 buttons in row 3: Source is not selected and used 9th button in row 3: Released
PRESET	Display the preset name and state, and allow loading presets into PVW or PGM, saving, or deleting presets. Used in conjunction with function operation area buttons. - First 7 buttons in row 2 and 3: Represent the preset list (content identical in both rows). Press the button in row 2 to load a preset into PGM, while press the button in row 3 to load a preset into PVW. 8th buttons in row 2 and 3: Indicate the preset save and delete functions. Press the button in row 2	Red	First 7 buttons in row 2: Preset is loaded into PGM.
		Green	First 7 buttons in row 3: Preset is loaded into PVW.
		Yellow (flashing)	8th buttons in row 2 and 3: Enter the preset save or delete state.
		White	9th buttons in row 2 and 3: Press to turn pages.
		White backlight	- First 7 buttons in row 2 and 3: Preset is not loaded. 8th buttons in row 2 and 3: Not in save or delete state

Button	Button Description	Indicator	Indicator Description
	to enable or disable the save function, while press the button in row 3 to enable or disable the delete function. • 9th buttons in row 2 and 3: Indicate the page-turning function. Press the button in row 2 to page up in the preset list, while press the button in row 3 to page down. Note: If loading a preset would cause the BKGD and all four KEYs of the next transition to be turned off (five button lights in total), the BKGD button light for the next transition will be forcibly lit after loading. In this case, PGM and PVW will each display the selected BKGD source.		
MACRO	Reserved	-	-
OUTPUT	Control or select the output signal. Used in conjunction with function operation area buttons. • First 8 buttons in row 2: Represent all output connector list, including OUT 1, OUT 2, AUX 1 to 12. • Press to toggle selection, and multiple selections not allowed. • 9th button in row 2: Control the page-turning for output connectors. • First 8 buttons in row 3: Represent selectable sources for output connectors, including PGM, PVW, input sources, media, etc. • 9th button in row 3: Control the page-turning for sources.	Green	First 8 buttons in row 2: Output connector is selected. First 8 buttons in row 3: Source is selected.
		Green (flashing)	Source is used but not on the current page.
		White	• 9th button in row 2: Pressed • 9th button in row 3: Pressed
		White backlight	• First 8 buttons in row 2: Output connector is not selected. • First 8 buttons in row 3: Source is not selected. • 9th button in row 2: Released • 9th button in row 3: Released
CAM	Add PTZ cameras and save camera presets.	Green	First 8 buttons in row 2: Camera is selected.

Button	Button Description	Indicator	Indicator Description
	Used with function operation area buttons. • First 8 buttons in row 2: Represent the added cameras. Press to toggle the camera's selected state. • 9th button in row 2: Control the page-turning function. • 1–8th buttons in row 3: Load camera presets, allowing adjustment of camera parameters (focus, direction) with the joystick. • 9th button in row 3: Save a camera preset.	Flashing (yellow)	9 th button in row 3: Camera preset is being saved.
		White	• 9th button in row 2: Pressed • 1–8th buttons in row 3: Pressed
		White backlight	• First 8 buttons in row 2: Camera is not selected. • 9th button in row 2: Released • 1–8th buttons in row 3: Released
MVR	Display and control the MVR windows. Used with function operation area buttons. • First 8 buttons in row 2: Represent the MVR windows (1–N, where N is the maximum number of windows). • Press to toggle the window's selected state. When selected, the window flashes. • First 8 buttons in row 3: Represent the source list supported by MVR. Press to select the source for the window. • 9th button in row 2: Press to page up. • 9th button in row 3: Press to page down.	Green	• First 8 buttons in row 2: MVR window is selected. • First 8 buttons in row 3: Source is selected.
		White	• 9th button in row 2: Pressed • 9th button in row 3: Pressed
		White backlight	• First 8 buttons in row 2: MVR window is not selected. • First 8 buttons in row 3: Source is not selected. • 9th button in row 2: Released • 9th button in row 3: Released
PLAY	Reserved	-	-
EXP	Change the buttons in the current area to display the BKGD source list. It supports independent page scrolling, which does not affect the page navigation of the source list on the left.	Red	The input source is currently displayed on PGM and is in use by the selected BKGD.
		Green	The input source is currently displayed on PVW and is in use by the selected BKGD.
		Flashing	The input source is bound but not displayed on the current page.

Button	Button Description	Indicator	Indicator Description
		White backlight	The input source is not selected.

Note

For function switching area buttons:

- Press and hold ($\geq 0.3s$): Temporarily switch the operation area to this function.
- Press and hold (released): Restore the operation area to the function prior to pressing.

For function operation area buttons:

- Press and hold page-turning button ($\geq 0.3s$): Temporarily switch the operation area to this function.
- Press and hold page-turning button (released): Restore the operation area to the function prior to pressing.

Long LCD Screen Description

Figure 5-10 Long LCD screen – keyer (follow transition)



- Row 2: Keyer state on PGM
 - Red: Keyer is enabled on PGM.
 - White: Keyer is not enabled on PGM.
- Row 3: Keyer transition follow state
 - Green: Keyer will follow next transition.
 - White: Keyer will not follow next transition.

Figure 5-11 Long LCD screen – keyer (direct control)



- Row 2: Keyer list on PGM
 - Red: Keyer is enabled on PGM.
 - White: Keyer is not enabled on PGM.
- Row 3: Keyer list on PVW
 - Red: Keyer is enabled on PVW.
 - White: Keyer is not enabled on PVW.

Figure 5-12 Long LCD screen - key edit



- Row 2: Keyer selection state
 - Green: Selected
 - White: Not selected
- Row 3: Keyer source state
 - Signal state: White (signal accessed); dim white (no signal); red (overload)
 - Selection state: Green (selected); non-green (not selected)
 - Selection state takes precedence over signal state.
- 9th in row 3: Current page number

Figure 5-13 Long LCD screen - preset



- Saving state
 - White: Saved
 - Dim white: Not saved
- Loading state
 - Red (row 2): Loaded to PGM
 - Green (row 3): Loaded to PVW
 - White: Not loaded
 - Loading state takes precedence over saving state.

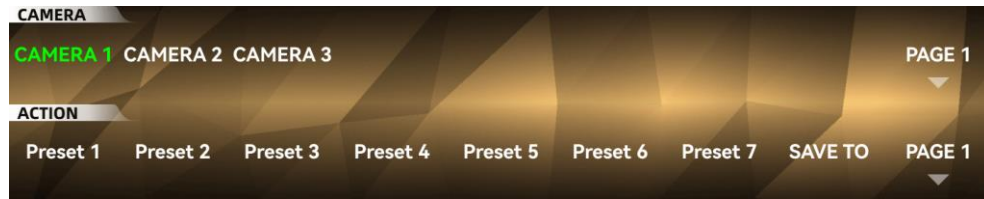
Figure 5-14 Long LCD screen - output



- Row 2:
 - Green: Selected
 - White: Not selected
- Row 3:
 - Signal state: White (signal accessed); dim white (unavailable/no signal); red (overload)

- Selection state: Green (selected); non-green (not selected)

Figure 5-15 Long LCD screen - camera



- Row 2:
 - Green: Selected
 - White: Not selected
- Row 3:
 - White: Existing camera presets
 - Yellow (flashing): In saving

Figure 5-16 Long LCD screen - Multiviewer



- Row 2:
 - Green: Selected
 - White: Not selected
- Row 3:
 - Signal state: White (signal accessed); dim white (unavailable/no signal); red (overload)
 - Selection state: Green (selected); non-green (not selected)

Selection state takes precedence over signal state.

For the lock and wipe buttons in the transition control area, they can be used in conjunction with the function operation area buttons as shown in the table below.

Table 5-5 Button and indicator descriptions - Lock/Wipe

Button	Button Description	Indicator	Indicator Description
Lock	Press to toggle lock on or off (default). Used conjunction with the corresponding buttons in rows 2 and 3 of the function operation area will lock the respective functions.	Orange	Area or function button locked
		White backlight	Not locked

Button	Button Description	Indicator	Indicator Description
	Lockable areas include input audio, output audio, input sources (page-turn button locking and no-signal input source locking), auxiliary functions, comprehensive control, transition control, cut, auto, T-Bar, and other panel operations.		
Wipe	Used conjunction with the corresponding buttons in rows 2 and 3 of the function operation area. • Row 2: Press to select a pattern. • Row 3: Press to switch patterns.	Green	Selected
		White backlight	Not selected

Long LCD Screen Description

Figure 5-17 Long LCD screen - lock



Display a list of lockable areas.

- White: Not locked
- Grayed + lock icon: Locked

Figure 5-18 Long LCD screen - wipe



Display pattern items and parameter options.

- Green: Selected
- White: Not selected

5.2.8 Transition Control

The transition control area includes buttons for locking, live streaming, recording, and transition effects (mix, wipe, dip, etc.), as well as transition preview, test pattern, FTB, cut, auto, and T-Bar.

Figure 5-19 Transition control area



Table 5-6 Button and indicator descriptions - transition control

Button	Button Description	Indicator	Indicator Description
LOCK	- Pressed: The long LCD displays the lock page. - Released: Return to original display.	Green	Locked items
		White backlight	No locked items
STREAM	Toggle RTMP streaming on/off.	Green	Enabled
		White backlight	Disabled
REC	Toggle recording on/off.	Green	Enabled
		White backlight	Disabled
MIX	Set the next transition effect to mix.	Green	Selected
		White backlight	Not selected
WIPE	Set the next transition effect to wipe.	Green	Selected
		White backlight	Not selected
DIP	Set the next transition effect to dip.	Green	Selected
		White backlight	Not selected
DVE	Set the next transition effect to DVE.	Green	Selected
		White backlight	Not selected

Button	Button Description	Indicator	Indicator Description
STINGER	Reserved	-	-
PREV TRANS	Toggle transition effect preview on/Off. - On: PVW of both the Multiviewer interface and the main output match the PGM screen precisely. During T-Bar operation, both display the transition effects between PVW and PGM, reverting to PGM once complete. - Off: PVW of the Multiviewer interface shows PVW content. During transition, the transition effect is displayed on PGM.	Green	Enabled
		White backlight	Disabled
TEST	Toggle test pattern on/Off. - On: The LCD menu displays the test pattern settings menu. - Off: The LCD remains on the test pattern settings menu. Note: The test pattern and FTB are mutually exclusive and cannot be active simultaneously.	Green	Enabled
		White backlight	Disabled
FTB	Toggle FTB on/Off. Note: The test pattern and FTB are mutually exclusive and cannot be active simultaneously.	Red (flashing)	Enabled
		White backlight	Disabled
CUT	Press to switch the PVW to PGM without effects.	On	Pressed
		Red backlight	Released
AUTO	Press to switch the PVW to PGM using the selected effect.	Green flashing	In switching
		Green backlight	Not in switching
T-Bar	Manually push the T-Bar up or down to transition between PVW and PGM with effects.	-	LED indicates transition progress.

5.2.9 Button-Menu Sync

Enable the **Button-Menu Sync** toggle in **Advanced > Preferences**. When the LCD menu is open, operating certain buttons on the panel will cause the LCD menu to jump to the corresponding page. For a detailed list of buttons that support this feature, see the table below.

Table 5-7 Button-menu sync list

Button Area	Button Operation
Menu	Press the MENU knob
	Press the BACK button
Audio input and audio output	Rotate the input volume knob.
	Rotate the output volume knob.
	Press the AFV/ON button.
	Press the SOLO button.
Main program source switching	Hold down the source switching button (input source/SuperSource/internal source) for 1.5s.
Comprehensive control-keyer	Press the keyer list button.
	Press or hold down (1.5s) the keyer source button.
	Operate the joystick.
Comprehensive control-preset	Press the preset button (save).
Comprehensive control-output	Press the main output button.
	Press the AUX button.
	Press the main output list button.
	Press the AUX output list button.
Comprehensive control-camera	Press the configured camera button.
	Press the camera operation button.
	Operate the joystick.
Comprehensive control-Multiviewer	Press the MVR button.
	Press the MVR window button.
	Press the input source list button.
	Press the above all buttons.
Comprehensive control-function area	Press the transition effect button.

Transition control	Press the STREAM button.
	Press the REC button.
	Press/Hold down the MIX button.
	Press/Hold down the WIPE button.
	Press/Hold down the DIP button.
	Press/Hold down the DVE button.
	Press/Hold down the PREV TRANS button.
	Press the TEST button.
	Press the FTB button.
Auxiliary function shortcuts (1–18)	Press/Hold down (1.5s) all buttons.

5.3 LCD Menu Operations

5.3.1 Home Screen

After the device is powered on, the home screen showing device related information is displayed.

Figure 5-20 Home screen

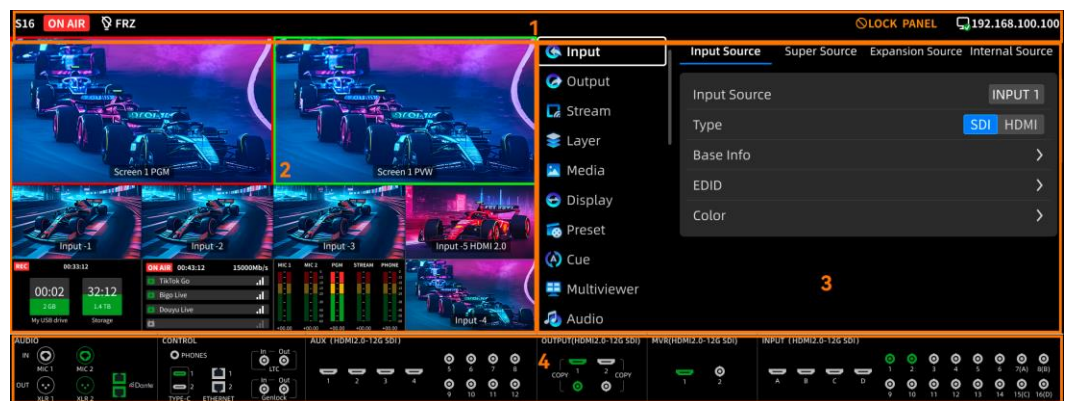


Table 5-8 Home screen descriptions

No.	Area	Description
1	Status bar	- S16: Device model REC: Recording in progress ON AIR: Live streaming in progress

No.	Area	Description
		•  FTB: Screen blacked out •  Test Pattern: Test pattern displayed • : Panel locked. The operations to input audio area, output audio area, input source area, auxiliary function area, comprehensive control area, transition control area, and device panel are not allowed. • 192.168.100.100: Device IP address. For device communication settings, please refer to Communication.
2	Multiviewer	Displays the monitoring screen of PGM, PVW, input source, recording, live streaming and audio.
3	LCD menu	Allows you to navigate through all levels of menu items and adjust the parameter settings. • When the Multiviewer mode is selected as Copy, there is only one monitoring screen, and the right side of the LCD is fixed to displaying the menus. • When the Multiviewer mode is selected as Independent, there are two monitoring screens, and the right side of the LCD displays either the menus or the monitoring screen.
4	Rear panel connectors	Display the states of the device rear panel connectors. • Green: The connector is accessed with a signal. • White: The connector is not accessed with any signal. • Gray: The connector is unavailable. • Red: The connector is overloaded. The 12G-SDI output connector is always displayed white whether there is a signal or not (the connection status is not displayed).

5.3.2 Menu Overview

Level 1 Menu	Submenu	Item	Parameter and Description	
Input	Input Source	Input Source	Input 1 to 16	
		Name	Input source name	
		Type	12G-SDI (default), HDMI 2.0	
		InfoFrame Override	Bit Depth	From Input, 8bit, 10bit, 12bit
			Color/ Sample	From Input, RGB 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0, YCbCr 4:4:4
			HDCP	HDCP 1.4, HDCP 2.2
		EDID	Standard	Resolution 800×600 1024×768 1152×864 1280×720 1280×768 1280×800

Level 1 Menu	Submenu	Item	Parameter and Description		
					1280×960 1280×1024 1364×1024 1400×1050 1440×900 1600×900 1600×1200 1680×1050 1792×1280 1920×1080i 1920×1200 2048×1080 2048×1152 2304×1024 2304×1152 2560×1080 2560×1400 2560×1600 3840×1080 3840×2160 4096×1080 4096×2160
					Frame Rate
					23.98/24/25/29.97/30/48/50/56/59.94/60/70, etc
					Compatibility
					Off, Compatible with Mac
			Custom	Width	800 to 4096
				Height	600 to 4096
				Frame Rate	23.98/24/25/29.97/30/48/50/56/59.94/60/70, etc
				Compatibility	Off, Compatible with Mac
		Color	Brightness	Brightness	0 to 200
				R, G, B	0 to 200
			Contrast	Contrast	0 to 200
				R, G, B	0 to 200
			Saturation	0 to 200	
			Hue	-180 to +180	
			Monochrome		
	SuperSource	Window	Layout		

Level 1 Menu	Submenu	Item	Parameter and Description				
			Box	1, 2, 3, 4			
			Position& Size	X, Y, W (min 64), H (min 64)			
			Source	Input sources, media sources, internal sources			
			Crop	Status			
				Position& Size	X	Defaults to 0	
					Y	Defaults to 0	
					W	64 to original source width	
			H		64 to original source height		
		Background	Type	Off, background, foreground			
			Source	Input sources, media sources, internal sources			
			Keying				
			Key Source	Input sources, media sources, internal sources			
			Invert Colors				
			Clip	0 to 100			
			Smooth	0 to 100			
	Internal Source	Internal Source 1	Solid color	Color	7 kinds		
				RGB	0 to 255		
				Brightness	1 to 4		
		Internal Source 2	Solid color	Color	7 kinds		
				RGB	0 to 255		
				Brightness	1 to 4		
		Internal Source 3	Color bar	Direction	Horizontal and vertical bars		
				Brightness	1 to 4		
				Spacing	Auto, 1 to 8		
Output	Main Output	Select Output	Select target output.				
		Timing	Standard	Resolution	800×600 1024×768 1152×864 1280×720 1280×768 1280×800		

Level 1 Menu	Submenu	Item	Parameter and Description		
					1280×960
					1280×1024
					1364×1024
					1400×1050
					1440×900
					1600×900
					1600×1200
					1680×1050
					1792×1280
					1920×1080i
					1920×1200
					2048×1080
		2048×1152			
		2304×1024			
		2304×1152			
	2560×1080				
	2560×1400				
2560×1600					
3840×1080					
3840×2160					
4096×1080					
4096×2160					
	Frame Rate	23.98/24/25/29.97/30/48/50/56/59.94/60/70, etc			
Custom	Width	800 to 4096			
	Height	600 to 4096			
	Frame Rate	23.98/24/25/29.97/30/48/50/56/59.94/60/70, etc			
	Color/ Sample	RGB 4:4:4, YCbCr 4:2:2, YCbCr 4:4:4			
	Quantization Range	Limited, Full			
	Bit Depth	8bit, 10bit, 12bit			
	Output Content	PVW, PGM, Clean Feed 1, Clean Feed 2			
	HDCP	HDCP 1.4, HDCP 2.2			
	AUX	Save AUX to Preset			
		AUX 1 to 12	Available AUX outputs. Defaults to Input 1 to 12.		
Stream	Basic	Resolution	1280×720, 1920×1080, 3840×2160		
		Frame Rate (Hz)	23.98/24/25/29.97/30/50/59.94/60		

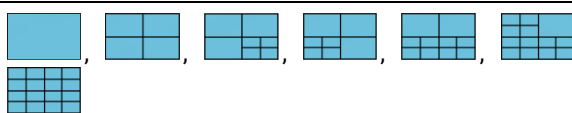
Level 1 Menu	Submenu	Item	Parameter and Description				
		Codec	H.264, YUY2				
		Quality	High, Medium (default), Low				
		Bitrate	64 to 64000 kbps (Recommended: max 4096, 2048, min 1024)				
	Stream	Status	Status				
		Stream X	Stream X	Streaming platform			
		Stream Management	Import stream	Import stream rooms.			
	Stream room, platform, server, server address, stream key						
	Record	Clip Duration	Set duration	0 to 24h, 0 to 50 min (step: 10)			
Save Location		Set save location.					
KEY	PGM EDIT						
	BKGD	Source	Input sources, SuperSource, media sources				
	KEY	Status					
		Source	Input sources, SuperSource, media sources				
		Position&Size	Lock aspect ratio				
			Aspect Ratio	1:1, 3:2, 4:3, 5:4, 16:9, 16:10, Custom, native ratio			
			Position&Size	X	min	-(keyer.max x - canvas W) / 2	
					max	(keyer.max x + canvas W) / 2 – keyer W	
				Y	min	-(keyer.max x - canvas H) / 2	
					max	(keyer.max x + canvas H) / 2 – keyer H	
				W	64 to 131070		
				H	64 to 131070		
		Border	Status				
			Type	Hard, Soft			
			Width	0 to 32			
			Height	0 to 32			
	Color RGB		0 to 255				

Level 1 Menu	Submenu	Item	Parameter and Description		
		Keying	Public parameters	Status	
				Type	Smart, Luma, Chroma
			Smart	Pick	Config method 1, Config method 2
				Matting Strength	0 to 100
				Gain Adjust	0 to 100
			Luma	Key Source Type	Input sources, SuperSource, media sources
				Key Source	Select key source.
				Invert Colors	
				Clip	0 to 100
				Smooth	0 to 100
			Chroma	Pick	Config method 1, Config method 2
				Hue Clip	5 to 180
				Hue Ramp	5 to 180
				Saturation Clip	0 to 100
				Saturation Gain	1 to 100
				Spill	0 to 100
				Shadow	0 to 100
				Highlight	0 to 100
		Crop	Status		
			Position&Size	X	Defaults to 0
				Y	Defaults to 0
				W	64 to original source width
				H	64 to original source height
		Shadow	Status		
			Position&Size	X	-100 to +100
				Y	-100 to +100
				W	5 to 200
				H	5 to 200
			Opacity	0 to 100	
			Edge Blur	0 to 100	

Level 1 Menu	Submenu	Item	Parameter and Description			
			Color	0 to 255		
		Mask	Status			
			Area	Top, Bottom, Left, Right		
		Flip	None,  ,  , 			
	DSK	Status				
		Source	Input sources, SuperSource, media sources			
		Keying	Smart, Luma, Chroma Please refer to KEY.			
Media	Media Player 1/2	Player name				
	Image	Image media				
	Capture	Input sources, PGM, media sources				
Display	Mode	SWAP, COPY				
	Transition	MIX, DIP, WIPE, DVE				
	Transition Settings	MIX	Duration (s)	0.1 to 10.0		
		WIPE	Wipe Pattern	14 patterns		
			Duration (s)	0.1 to 10.0		
			Motion Mode	Forward, Reverse, Repeat		
			Symmetry	Supported by the last 10 patterns 0.0 to 100.0, defaults to 50.0		
			Start Position	X	0 to H size of main output	
				Y	0 to V size of main output	
			Border	Width	0 to 100	
				Softness	0 to 100	
			Source	Filling source		
		DIP	Duration (s)	0.1 to 10.0		
			Input Source	Filling source		
		DVE	Type	Push, Squeeze, Material Effect		
			Motion Mode	Forward, Reverse, Repeat		
			Direction	Up, Down, Left, Right, Top-Left, Top-Right, Bottom-Left, Bottom-Right		

Level 1 Menu	Submenu	Item	Parameter and Description			
			Duration (s)	0.1 to 10.0		
	Display Control	Normal				
		FTB				
		Test Pattern				
	Test Pattern	Type	Pure Color, Gradient, Grid			
			Pure Color	Test Pattern	8 kinds	
				Brightness	1 to 4	
				Spacing	1 to 8	
			Gradient	Test Pattern	8 kinds	
				Brightness	1 to 4	
				Spacing	1 to 8	
			Grid	Test Pattern	6 kinds	
				Brightness	1 to 4	
				Spacing	1 to 960	
Line Width				1 to 64		
Speed				0 to 4		
Audio Follow FTB						
FTB Duration (s)	FTB duration					
Preset	Preset X					
	Save from PGM					
	Save from PVW					
	Load					
	Delete					
	Rename					
Peripheral	Camera	Add Camera	Add Manually	Name		
				Config Method	ONVIF, VISCA, Panasonic AW	
				IP		
				Port	1 to 65535	
				Username		
				Password		
				Manufacturer		
				Import Config File	Import configuration files from USB drive.	

Level 1 Menu	Submenu	Item	Parameter and Description		
		Camera X (ONVIF/ Panasonic AW)	Control	Speed	1 to 18
				Focus	-, +
				Zoom	-, +
				Aperture	-, +
				Preset	20
			Details	View configuration details.	
		Camera X (VISCA)	Control	Speed	1 to 18
				Focus	-, +
				Zoom	-, +
				Aperture	-, +
				Preset	20
			Advanced	White Balance (K)	Preset, Auto, Manual, OnePush
				Red Gain	-50 to +50
				Blue Gain	-50 to +50
				Exposure Control (EV)	Manual, Auto, Shutter, Aperture
				Shutter Speed (s)	1 to 1/10000s, defaults to 1/60s
				Exposure Compensation	Increase or decrease brightness
				Backlight Compensation	
				Gain	
				AI Tracking	
				Tracking Mode	Single, Group
				Tracking Speed	
			Details	View configuration details.	
	Tally	Protocol	TSL 3.1, TSL 5.0 (default), NAYA UDP		
		Protocol Settings	Operational status	PGM Status, PVW Status, Off	
			Left/right Tally and text Tally configuration	LH, RH, Text	
			DLE/STX sequence		
		Tally Packet Interval (ms)	500 to 20000 ms		

Level 1 Menu	Submenu	Item	Parameter and Description	
		IP	IP address	
		Port	0 to 65535	
		Connection Test	 , 	
		New Tally	Tally lights	
		Tally X	Tally X	64
			Input X	Input sources, SuperSource
			Screen	PVW, PGM, PVW&PGM
		Clear All Tally		
Multiviewer	Mode	Independent, Copy		
	Resolution	Connector resolution		
	Frame Rate	Connector frame rate		
	HDCP	HDCP 1.4, HDCP 2.2		
	MVR	Layout		
		Window	16	
		Source	PGM, PVW, input sources, SuperSource, stream source, audio sources, record sources, Clean Feed	
		Level Meter	 , 	
		Safety Frame		
		UMD	 , 	
Audio	Audio	Gain, Level		
	Input mode	MIC IN, LINE IN		
	Mixing status	AFV, On, Off		
	SOLO	 , 		
	Phantom Power	 , 		
Advanced	Communication	MAC Address		
		Network Mode	Manual, DHCP	
		IP Address		
		Subnet Mask		
		Gateway		
	Update	USB drive 1/2		
	Project	Import, Export		

Level 1 Menu	Submenu	Item	Parameter and Description
	Factory Reset	Keep User Data, Reset All	
	Synchronizat ion	Status	Locked, Failed
		Sync To	Genlock, Input X
	FN	Synchronization, Capture, Button-Menu Sync	
	End-to-End Backup	Input Backup	☒ , ☐
		Primary Source Preferred	☒ , ☐
	Diagnostics	Run Diagnostics	
	Preferences	Layer Switch Mode	Direct Control, Follow Transition
		Source Ordering	No, Active Source First, Custom
		Start/Stop Streaming	Press trigger, Hold trigger (default)
		Start/Stop Recording	Press trigger, Hold trigger (default)
		Button-Menu Sync	☒ , ☐
	Log Export	USB drive	
	T-Bar Calibration	Sensitivity	Extreme, High, Medium, Low, Minimal
		Steps	
	Screen Brightness	Set screen brightness	
	Clean Feed	Clean Feed 1/2	KEY, DSK1/2

5.3.3 Input

5.3.3.1 Configure Input Source

5.3.3.1.1 Select Connector Type

Select the desired input connector to enable the corresponding physical connector.

Prerequisites

None

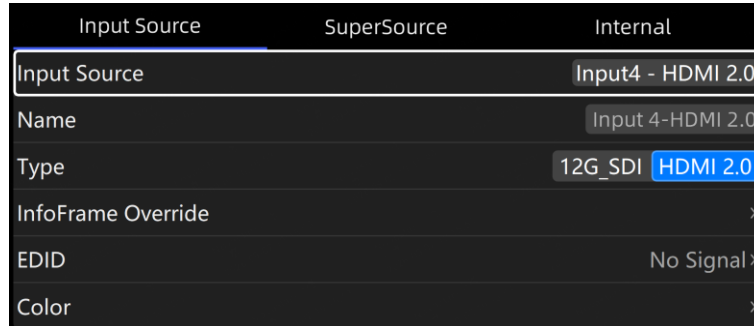
Notes

None

Menu Orientation

[Input > Input Source]

Menu Interface



Description

Parameter	Description
Input Source	Select the desired input source. Input 1 to 16 are available for selection. When the input source is selected as Input 7, Input 8, Input 15, or Input 16, you can choose between 12G-SDI and HDMI 2.0 input sources.
Name	Set a name for the input source or rename the input source.
Type	Select the input connector type. You can choose between 12G-SDI (default) or HDMI 2.0.

5.3.3.1.2 Configure InfoFrame Override

Set the override parameters of the input source so that the device can use them when performing some calculations. This operation will not change the original parameter values of the input source.

Prerequisites

An input source and connector type (HDMI 2.0) are selected. InfoFrame override settings are not available for the 12G-SDI connectors.

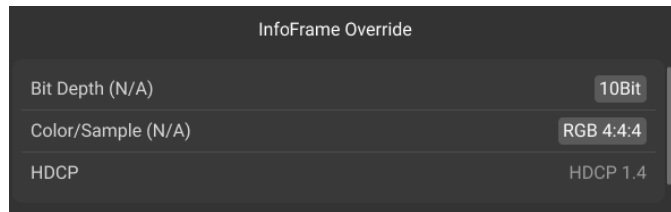
Notes

None

Menu Orientation

[Input > Input Source > InfoFrame Override]

Menu Interface



Description

Parameter	Description
Bit Depth (N/A)	Bit depth refers to the color information stored in an image. The options include From Input , 8Bit , 10Bit and 12Bit .
Color/Sample (N/A)	The input color space and sampling rate The options include From Input , RGB 4:4:4 , YCbCr 4:2:2 , YCbCr 4:2:0 and YCbCr 4:4:4 .
HDCP	The options include HDCP 1.4 and HDCP 2.2 .

5.3.3.1.3 Configure Input EDID

Set the resolution and frame rate of the input connector. You can choose between standard resolution and custom resolution. You can also configure the Mac compatibility mode to solve the EDID incompatibility problem between the device and the Mac system.

Prerequisites

You have selected the input source and connector type.

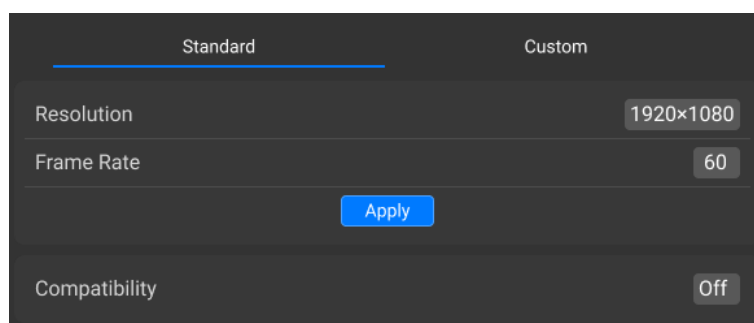
Notes

None

Menu Orientation

[Input > Input Source > EDID]

Menu Interface



Description

Type	Parameter	Description
Standard	Resolution	The commonly-used resolutions
	Frame Rate	The commonly-used frame rates (Hz)
	Compatibility	Turn on or turn Off the Mac system compatibility switch. • Off: The function is turned off. • Compatible with Mac: The function is turned on.
Custom	Width	The pixel width of the input source
	Height	The pixel height of the input source
	Frame Rate	The frames per second, in Hz
	Compatibility	• Off: The function is turned off. • Compatible with Mac: The function is turned on.

After the settings are done, click **Apply** to make them take effect.

5.3.3.1.4 Configure Input Color

Set the color parameters of an input connector so that the color effect can be applied to all the signal sources accessed from this connector.

Prerequisites

You have selected the input source and connector type.

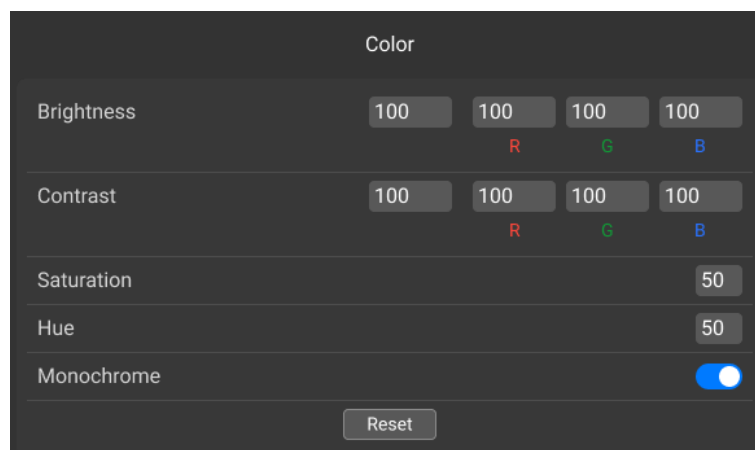
Notes

None

Menu Orientation

[Input > Input Source > Color]

Menu Interface



Description

Parameter	Description
Brightness	Brightness is the shading of lights in the image. RGB individual adjustments are supported.
Contrast	Contrast is the ratio of the luminance of the brightest color to that of the darkest color. RGB individual adjustments are supported.
Saturation	Saturation is the colorfulness of the image. The higher the saturation, the more vivid the image.
Hue	Hue is the attribute of color that distinguishes red, green, blue, etc.; the relative difference in color tone.
Monochrome	Turn on or turn off the function. : The function is turned on. The input image is displayed in black and white. : The function is turned off.

5.3.3.2 Configure SuperSource

Combine and mosaic multiple input source images together to form a SuperSource.

Prerequisites

None

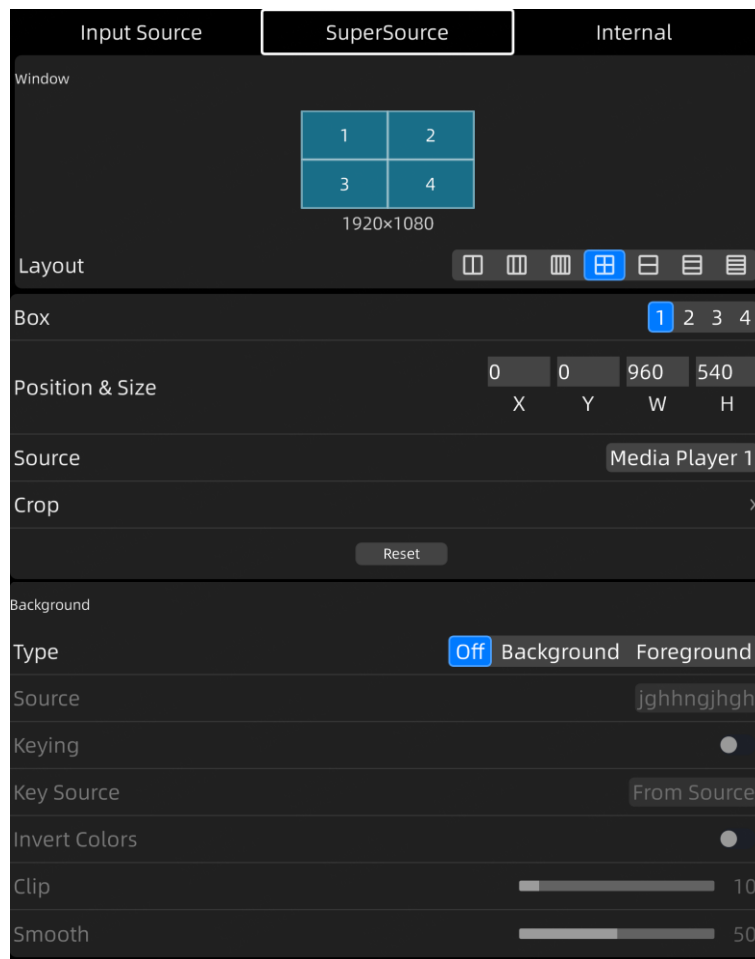
Notes

None

Menu Orientation

[Input > SuperSource]

Menu Interface



Description

Parameter	Description
Layout	Set the mosaic layout. At most 4 mosaic areas are supported and the layout options include  ,  ,  ,  ,  ,  , and  .
Box	Select the mosaic area.
Position & Size	Set the position and size of the selected mosaic area. • X: The horizontal starting position of the top left corner of the selected mosaic area in the mosaic source • Y: The vertical starting position of the top left corner of the selected mosaic area in the mosaic source • W: The horizontal size of the mosaic area • H: The vertical size of the mosaic area
Source	Select the input source for the selected mosaic area.
Crop	Set the position and size of the cropped area. • Status – : The function is turned on.

Parameter	Description
	: The function is turned off. • Position & Size - X: The horizontal starting position of the top left corner of the cropped part upon the current input source - Y: The vertical starting position of the top left corner of the cropped part upon the current input source - W: The horizontal size of the cropped area - H: The vertical size of the cropped area
Type	Set the background image type. The options include Off , Background , and Foreground . • Off: No background image is needed, and a transparent background will be displayed. • Foreground: The foreground is located above all other mosaic area boxes, which displays the other mosaic box images through keying technology and supports subsequent keying parameter adjustments. • Background: The background is located at the bottom of all other mosaic area boxes, which only supports input source replacement.
Source	Select the source that fills the background. This parameter is editable when Type is set to Background or Foreground .
Keying	Perform keying on the input source. This parameter is editable when Type is set to Foreground . : The function is turned on. : The function is turned off.
Key Source	Select the key out source for the foreground image. This parameter is editable when Keying is turned on.
Invert Colors	Invert the image colors. This parameter is editable when Keying is turned on. : The function is turned on. : The function is turned off.
Clip	Image content below the threshold will be removed completely. This parameter is editable when Keying is turned on.
Smooth	The softness of the transition area between the foreground and background. The larger the value, the softer the transition. This parameter is editable when Keying is turned on.

5.3.3.3 Configure Internal Source

When no input source is connected to the device, use the device's built-in sources for configuration operations.

Prerequisites

None

Notes

None

Menu Orientation

[Input > Internal Source]

Menu Interface



Description

Parameter	Description
Internal Source 1/2/3	The device supports three internal sources. • Internal Source 1/2: Support solid color patterns only. Configurable parameters include Color and Brightness. • Internal Source 3: Supports line patterns only. Configurable parameters include Direction, Brightness, and Spacing. – Direction: Can be set to Horizontal or Vertical. – Spacing: Options are Auto (evenly distributed line spacing) or a value from 1 to 8.

5.3.4 Output

5.3.4.1 Configure Main Output

Set relevant parameters of main output.

Prerequisites

None

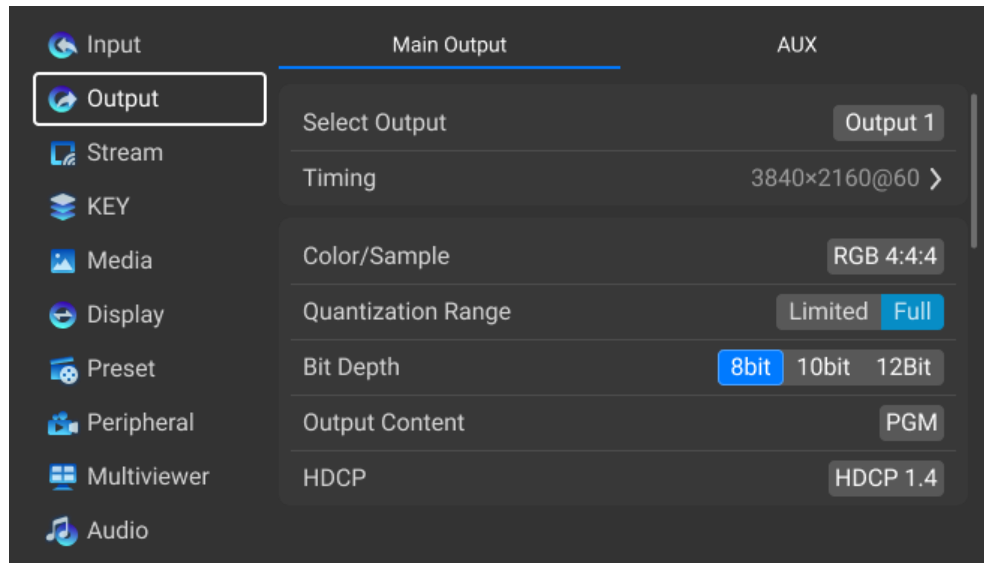
Notes

None

Menu Orientation

[Output > Main Output]

Menu Interface



Description

Parameter	Description
Select Output	Select the desired output connector.
Timing	Standard • Resolutions: The commonly-used resolutions • Frame Rate: The commonly-used frame rates (Hz) After the settings are done, click Apply .
	Custom • Width: The pixel width of the output image • Height: The pixel height of the output image • Frame Rate: The frames per second, in Hz After the settings are done, click Apply .
Color/Sample	Select the output color space and sampling rate. The options include RGB 4:4:4, YCbCr 4:2:2 and YCbCr 4:4:4.
Quantization Range	Select the output quantization range. The options include Limited and Full .
Bit Depth	Bit depth refers to the color information stored in an image. The options include 8bit , 10bit , 12bit .
Output Content	Select the content output from the selected output connector. • PVW: Output PVW. • PGM: Output PGM. • Clean Feed 1: The image generated by removing the upstream key and downstream key based on PGM. • Clean Feed 2: The image generated by removing the downstream key based on PGM.

Parameter	Description
HDCP	Select the HDCP version of the output connector. The options include HDCP 1.4 and HDCP 2.2 .

5.3.4.2 Configure AUX Output

Select the output content from the AUX connector. The options include input source, media, SuperSource, PVW, PGM, Clean Feed, and MVR.

Prerequisites

None

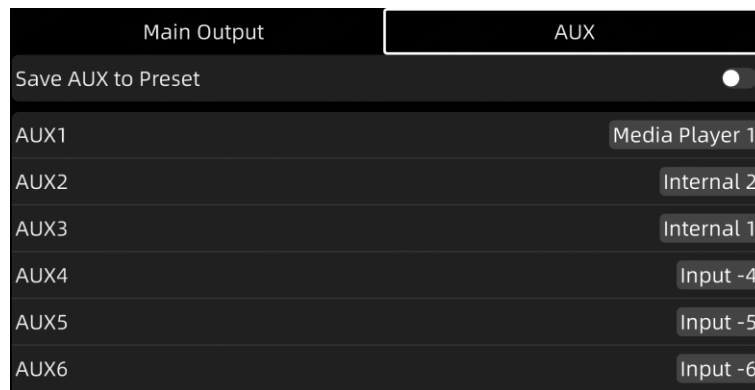
Notes

- The resolution of the AUX connector is always consistent with that of the main output 1.
- The default output content of AUX 1 to AUX 12 is Input 1 to Input 12.
- When the MVR resolution matches the main output 1 timing, output via AUX is supported.

Menu Orientation

[Output > AUX]

Menu Interface



Description

Parameter	Description
Save AUX to Preset	Turn on or turn off the function. • : The function is turned on. When a preset is saved, the output content for AUX 1 to 12 is saved simultaneously. • : The function is turned off.
AUX 1 to 12	Set the output content for the corresponding AUX.

5.3.5 Stream

5.3.5.1 Configure Basic Information

UVC and multi-platform RTMP live streaming and live streaming settings are supported.

Prerequisites

None

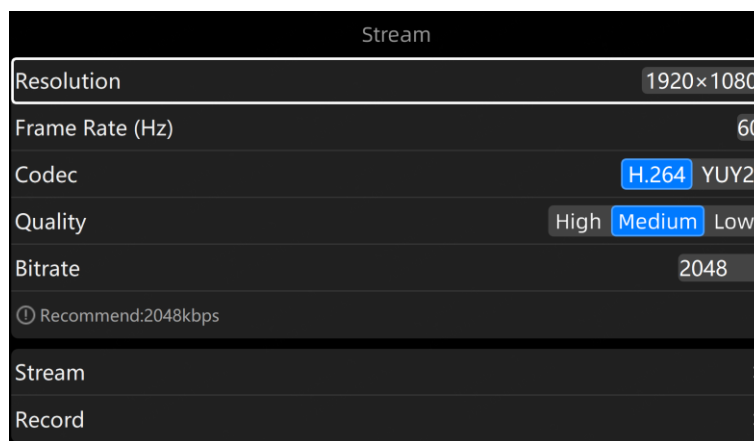
Notes

None

Menu Orientation

[Stream]

Menu Interface



Description

Parameter	Description
Resolution	Set the resolution of the streaming signal. The options include 1280×720, 1920×1080, 3840×2160 (only UVC).
Frame Rate	Set the frame rate of the streaming signal. The options include 23.98/24/25/29.97/30/50/59.94/60.
Codec	Select the encoding format. Currently H.264 and YUY2 are supported. Note: UVC streaming supports the H.264 and YUY2 encoding formats, while RTMP streaming supports H.264 only.
Quality	The image quality after encoding. The options include High , Medium (default), and Low .
Bitrate	The bitrate at which the encoded signal is pushed to the live streaming platform via RTMP.

Parameter	Description
	The streaming bitrate needs to be recommended to users based on the signal encoding quality and resolution.

5.3.5.2 Stream Management

View the streaming status and manage the streaming platforms.

Prerequisites

None

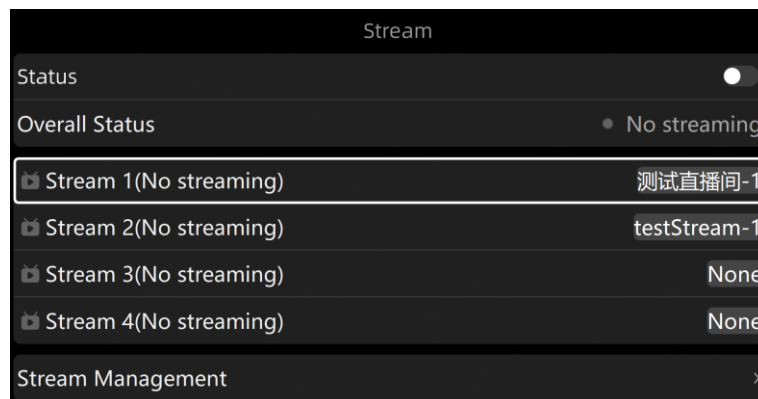
Notes

After the streaming is turned on, the live stream platforms and resolution cannot be modified, but other parameters can still be adjusted.

Menu Orientation

[Stream > Stream]

Menu Interface



Description

Parameter	Description
Status	Turn on or turn off the streaming function. • : The function is turned on. • : The function is turned off.
Overall Status	Indicate the overall streaming status.
Stream X	View the status of an individual stream. Click to select a specific streaming platform.
Stream Management	• Import the live stream platforms through the file (.csv/.xlsx/.xls) in the inserted USB drive. • The file path is: S16 > livestream > .csv/.xlsx/.xls. • The live stream platform information is as follows: – Stream Name: The live stream name

Parameter	Description
	- Platform Name: The platform name - Server Name: The server of the live stream platform - Server Address: The server address of the live stream platform - Stream Key: The streaming key of the live stream platform - Click Delete to delete the live stream platform.

5.3.5.3 Record Management

Save the recorded video files to local storage, supporting up to 2 channels of recording at the same time.

Prerequisites

None

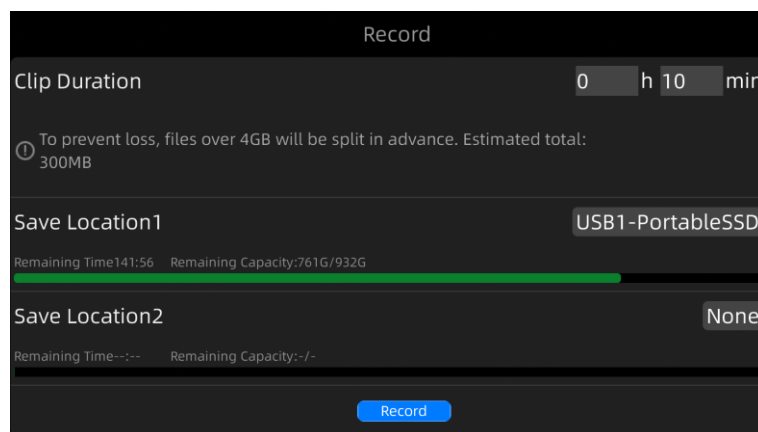
Notes

- During recording, **Clip Duration** and **Save Location** cannot be changed.
- Two save locations must be set to different storage paths.
- Ensure the USB drive has a capacity of at least 100 MB during the recording process.
- Only MP4 format video files are supported for recording.

Menu Orientation

[Stream > Record]

Menu Interface



Description

Parameter	Description
Clip Duration	Set the duration of the recording clip.

Parameter	Description
	Note: Files larger than 4 GB have poorer compatibility in playback software. Therefore, the recording will be automatically split into segments when a file reaches 4 GB.
Save Location	Set the storage path of the recorded files, with the remaining capacity of the selected storage device and the available recording time shown for user's reference.
Record	Click Record to start the recording.

5.3.6 KEY

5.3.6.1 Configure PGM Edit

Turn on or turn off the PGM editing function.

Prerequisites

None

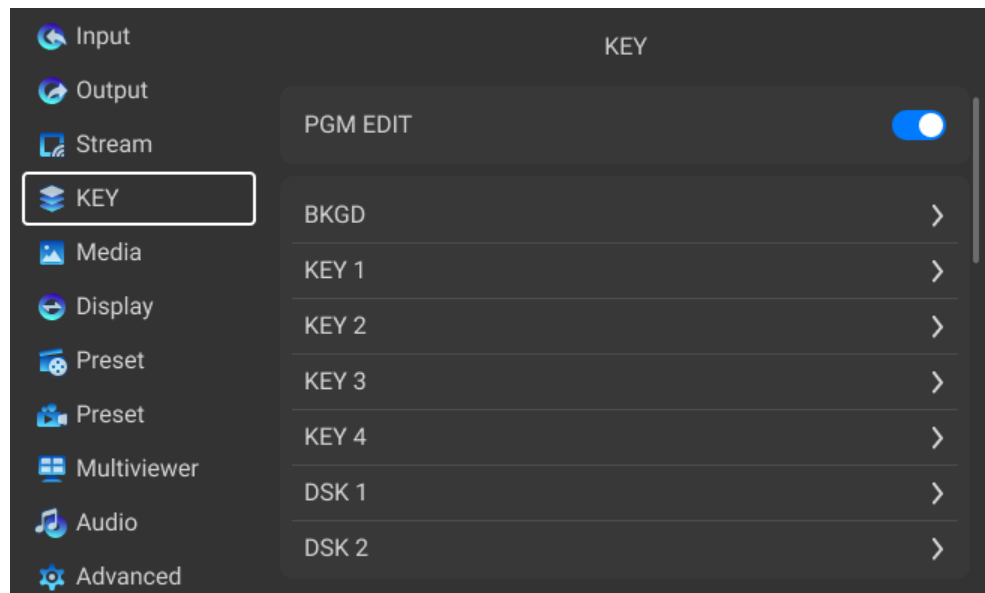
Notes

None

Menu Orientation

[KEY > PGM EDIT]

Menu Interface



Description

Parameter	Description
Configure PGM Edit	Turn on or turn off the PGM editing function.

Parameter	Description
	: The function is turned on, and the keyer property settings are applied to the PGM keyers and are displayed in real time on the screen. : The function is turned off, and the keyer property settings are applied to the PVW keyers.

5.3.6.2 Configure BKGD

Set the basic information of BKGD.

Prerequisites

None

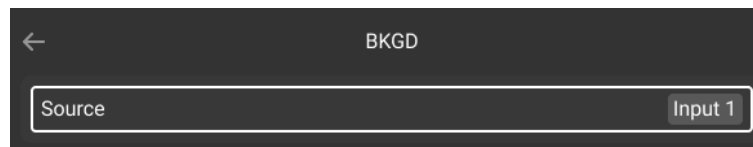
Notes

None

Menu Orientation

[KEY > BKGD]

Menu Interface



Description

Select the desired source for BKGD.

5.3.6.3 Configure KEY

5.3.6.3.1 Configure Basic Information

Set the basic information of the keyer.

Prerequisites

None

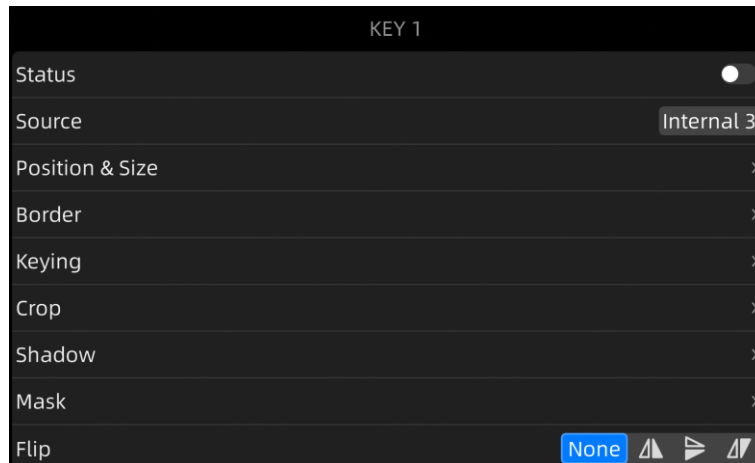
Notes

None

Menu Orientation

[KEY > KEY X]

Menu Interface



Description

Parameter	Description
Status	Turn on or turn off the function. • : The function is turned on. • : The function is turned off.
Source	Select the keyer source. The options include input source, SuperSource, and media.
Position & Size	• Turn on or turn off the aspect ratio locking function. – : The function is turned on. – : The function is turned off. • Aspect Ratio: The ratio of the horizontal width to the vertical height of the keyer. The options include 1:1, 3:2, 4:3, 5:4, 16:9, 16:10, Custom, Native. After modifying the aspect ratio, the keyer height remains unchanged and the device automatically calculates the width. • Position & Size: Set the keyer position and size. – X: The horizontal starting position of the keyer. The coordinates of the first pixel in the top left corner of the screen are (0,0). – Y: The vertical starting position of the keyer. The coordinates of the first pixel in the top left corner of the screen are (0,0). – W: The horizontal size of the keyer – H: The vertical size of the keyer • Reset: Restore the current keyer to its source (native) aspect ratio, proportionally scale it to fill the entire screen, and center the display.

5.3.6.3.2 Configure Borders

Set the borders of the keyer.

Prerequisites

None

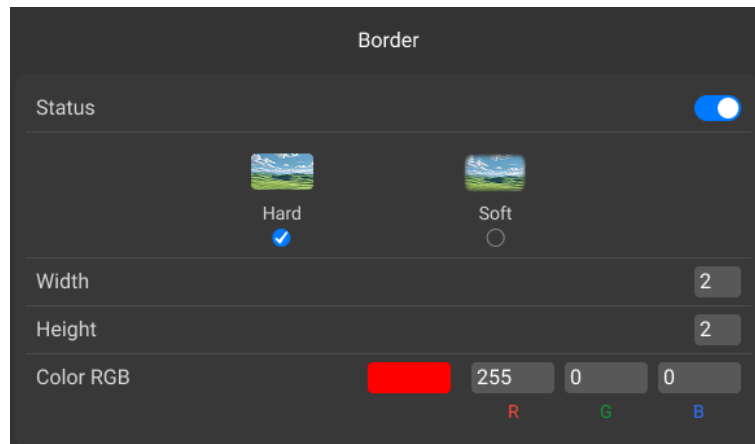
Notes

None

Menu Orientation

[KEY > KEY X > Border]

Menu Interface



Description

Parameter	Description
Status	Turn on or turn off the keyer border function. • : The function is turned on. • : The function is turned off.
Type	Select the keyer border type. The options include Hard and Soft .
Width	Set the width of the left and right borders.
Height	Set the height of the top and bottom borders.
Color RGB	Set the color RGB values of the keyer borders. When Soft is selected as the border type, this parameter is unavailable.

5.3.6.3.3 Configure Keying

Perform keying on the keyer input source.

Prerequisites

The keyer is accessed with an input source.

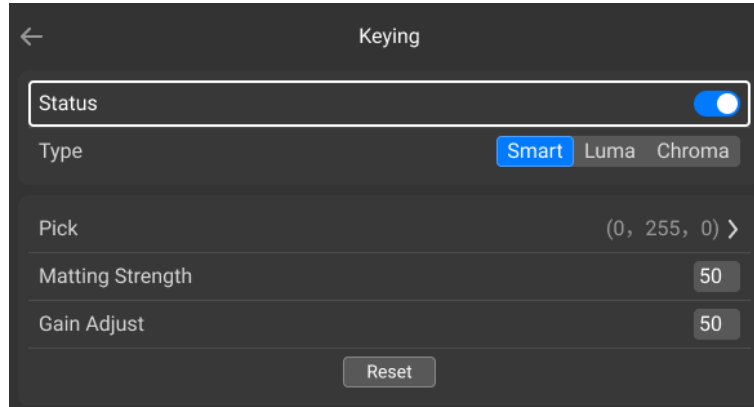
Notes

None

Menu Orientation

[KEY > KEY X > Keying]

Menu Interface



Description

Type	Parameter	Description
Public parameters	Status	Turn on or turn off the keying function. : The function is turned on. : The function is turned off.
	Type	The options include Smart , Luma , and Chroma . - Smart: Suitable for standard keying scenarios. This feature reduces the need for parameter adjustments, facilitating a more convenient and swift fulfillment of user requirements for image keying. - Luma: Suitable for application scenarios where the brightness of the background is significantly smaller than that of the foreground. The result of luma key is that the background becomes transparent and the foreground is keyed out. - Chroma: Suitable for application scenarios with a single background color, such as blue/green screen matting
Smart key parameters	Pick	The RGB values of the pick point - Config method 1: Click Pick, and then click the position to be picked in the input source image. - Config method 2: Set the RGB values. After the settings are done, click Apply . You can also adjust the following parameters to optimize the keying effect.
	Matting Strength	Adjust the intensity with which the background is processed.
	Gain Adjust	Adjust the shadow or noise areas present in the foreground.

Type	Parameter	Description
Luma key parameters	Key Source type	Select the desired source type. The options include input source, media, and SuperSource.
	Key Source	Select the desired keying source.
	Invert Colors	Turn on or turn off the function. : The function is turned on. : The function is turned off.
	Clip	Image content below the threshold will be removed completely.
	Smooth	Adjust the softness of the transition area between the foreground and background. The larger the value, the softer the transition.
Chroma key parameters	Pick	The RGB values of the pick point - Config method 1: Click Pick, and then click the position to be picked in the input source image. - Config method 2: Set the RGB values. After the settings are done, click Apply . You can also adjust the following parameters to optimize the keying effect.
	Hue Clip	Adjust the hue range. The larger the value, the larger the removal area. The maximum value is the current value of Hue Ramp.
	Hue Ramp	Distinguish between the foreground and background.
	Saturation Clip	Distinguish between the foreground and background.
	Saturation Gain	Adjust the saturation gain of the image.
	Spill	Remove the overflow from the foreground image edges and semi-transparent areas
	Shadow	Remove the shadow areas.
	Highlight	Remove the highlight areas.

5.3.6.3.4 Configure Cropping

When there are black borders or unnecessary information on the input source, the crop function allows you to crop the input source and display the desired area to improve the utilization rate of the screen.

Prerequisites

The keyer is accessed with an input source.

Notes

The input source status after cropping is the same as the original.

Menu Orientation

[KEY > KEY X > Crop]

Menu Interface



Description

Parameter	Description
Status	Turn on or turn off the crop function. • : The function is turned on. • : The function is turned off.
Position & Size	Set the position and size of the selected mosaic area. • X: The horizontal start position of the cropped area relative to the original source • Y: The vertical start position of the cropped area relative to the original source • W: The horizontal size of the cropped area • H: The vertical size of the cropped area

5.3.6.3.5 Configure Shadow

Set the position, size, opacity, edge blur, and color of the keyer shadow.

Prerequisites

None

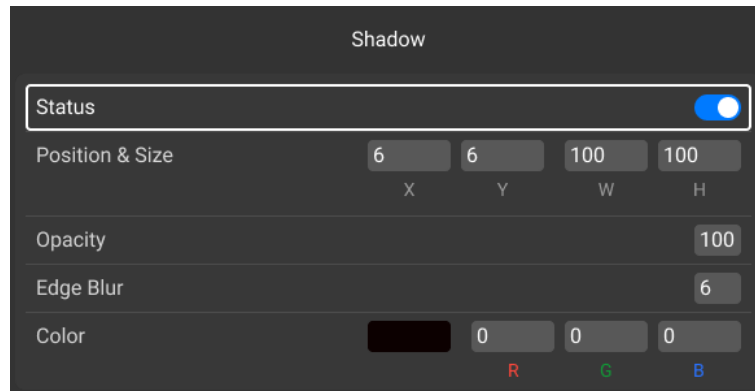
Notes

None

Menu Orientation

[KEY > KEY X > Shadow]

Menu Interface



Description

Parameter	Description
Status	Turn on or turn off the shadow function. • : The function is turned on. • : The function is turned off.
Position & Size	Set the position and size of the shadow area. • X: The horizontal starting position of the shadow area. The coordinates of the first pixel in the top left corner of the screen are (0,0) • Y: The vertical starting position of the shadow area. The coordinates of the first pixel in the top left corner of the screen are (0,0) • W: The horizontal size of the shadow • H: The vertical size of the shadow
Opacity	Set the shadow opacity.
Edge Blur	Set how blurry the edges of the shadow are. The larger the value, the greater the blur.
Color	Set the shadow color.

5.3.6.3.6 Configure Mask

Set the mask-related parameters. The masked area will be transparent and invisible. The keyer resolution keeps unchanged.

Prerequisites

None

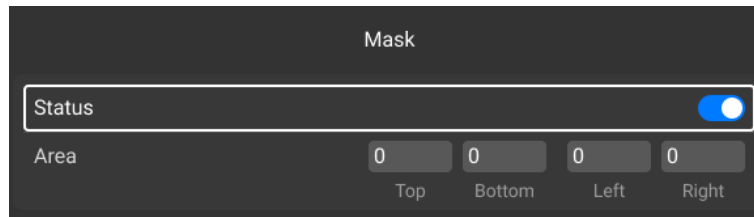
Notes

None

Menu Orientation

[KEY > KEY X > Mask]

Menu Interface



Description

Parameter	Description
Status	Turn on or turn off the mask function. : The function is turned on. : The function is turned off.
Area	Set the size of the masked area. - Top: Set the masked area height from the top edge of the keyer. - Bottom: Set the masked area height from the bottom edge of the keyer. - Left: Set the masked area width from the left edge of the keyer. - Right: Set the masked area width from the right edge of the keyer.

5.3.6.3.7 Configure Flipping

Flip the content of the selected keyer horizontally, vertically, or both.

Prerequisites

None

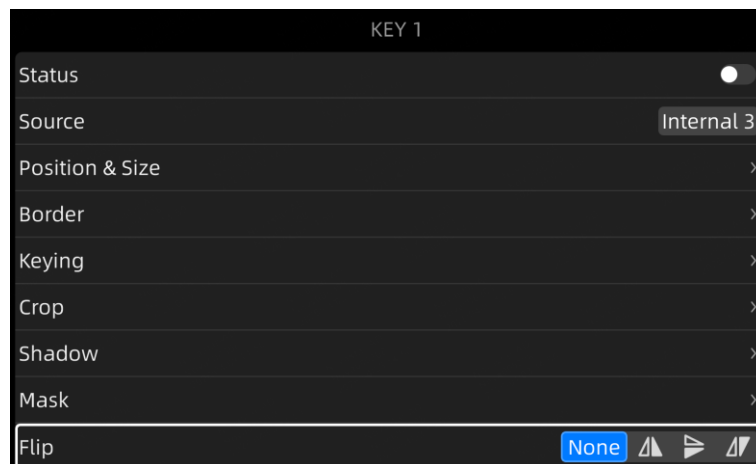
Notes

None

Menu Orientation

[KEY > KEY X > Flip]

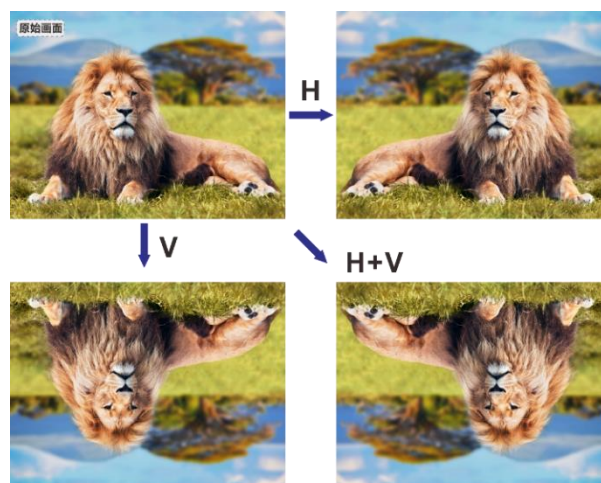
Menu Interface



Description

Parameter	Description
Flip	The method for flipping the keyer. • None: No flip. The keyer is displayed normally. • : Horizontal flip. The keyer is flipped horizontally. • : Vertical flip. The keyer is flipped vertically. • : Horizontal & vertical flip. The keyer is flipped both horizontally and vertically.

Effect Example



5.3.6.4 Configure DSK

Set the basic information of DSK.

Prerequisites

None

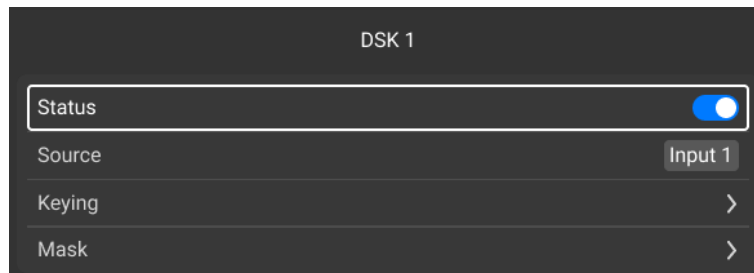
Notes

None

Menu Orientation

[KEY > DSK X]

Menu Interface



Description

Parameter	Description
Status	Turn on or turn off the DSK. • : The DSK is turned on. • : The DSK is turned off.
Source	Select the source for the DSK. The options include input source, SuperSource, and media.
Keying	Perform keying on the keyer input source. For detailed parameter settings, please refer to Configure Keying.

5.3.7 Media

Media management includes the players and media pool.

Prerequisites

None

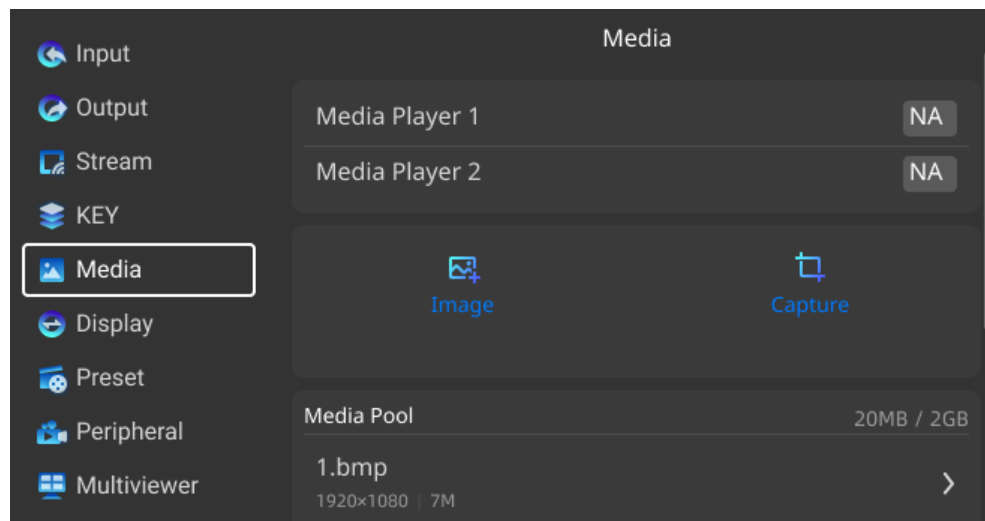
Notes

Only the media pool supports importing media files, and pictures in the players are used for keyers.

Menu Orientation

[Media]

Menu Interface



Description

Parameter	Description
Player 1/2	Play the media in the player.
Image/Capture	Import different types of media as needed and store them in the media pool. • Image: Import image media (.png/.jpg/.jpeg/.bmp) from the USB drive. • Capture: Select the capture source, including input source, PGM, media source, etc.

5.3.8 Display

Set the way to transition from PVW to PGM, as well as screen FTB, and test pattern.

Prerequisites

None

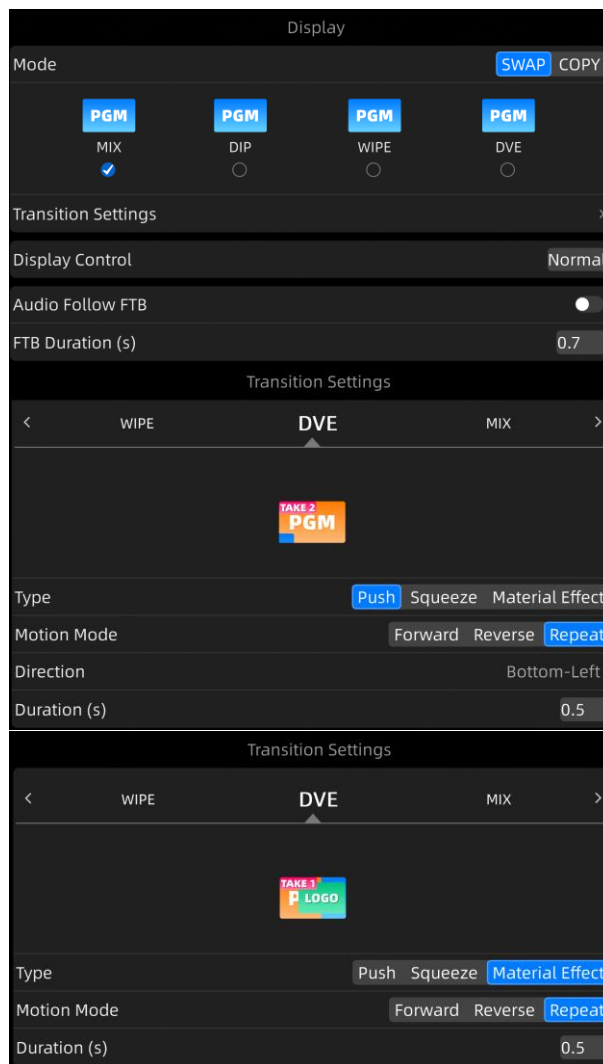
Notes

None

Menu Orientation

[Display]

Menu Interface



Description

Parameter	Description
Mode	Set the way to transition from PVW to PGM. • SWAP: Swap the PVW and PGM content. • COPY: Copy the PVW content to PGM.
Transition Effect	Select a transition effect. The options include Mix , Dip , Wipe , and DVE .
Transition Settings	• Mix: Set the transition duration of the mix effect. • Wipe: Set the wipe pattern, duration, direction, symmetry, start position, and border of the wipe effect. – Wipe pattern: Select the desired wipe pattern. A total of 14 patterns are provided. – Duration: Set the duration of the wipe effect. – Motion Mode: Set the direction of the wipe effect. The options include Forward, Reverse and Repeat. – Forward: The transition proceeds in normal direction from

Parameter	Description
	start to end.  – Reverse: The transition goes in reverse direction from end to start.  – Repeat: The transition cycles alternately between forward and reverse. – Symmetry (supported by the last 10 patterns): Set the symmetry of the transition pattern. – 50.0 means the pattern height/width = the vertical/horizontal resolution of the main output. – Start Position: Set the horizontal and vertical starting positions of the transition pattern on the screen. – Border: Set the width and softness of the borders. – Source: Select the filling source for the borders. • Dip: Set the transition duration and source of the dip effect. • DVE: Set the effect type, motion mode, direction, and transition duration. – Type: The options include Push, Squeeze, and Media Effect. – When Media Effect is selected, you can configure the fill source, Keying switch, key source, key source invert, clip, and softness. – Motion Mode: The options include Forward, Reverse, and Repeat (similar to the Wipe effect). – Direction: Set the direction of the transition. The options include Up, Down, Left, Right, Top-Left, Top-Right, Bottom-Left, Bottom-Right. – Duration: Set the duration of the transition effect.
Display Control	• Normal: Display the normal image. • FTB: Make the screen go black. • Test Pattern: Display the test pattern.
Test Pattern	• Type: Select the type of test pattern. The options include Pure Color, Gradient, and Grid. • Test Pattern: Select the desired pattern. • Brightness: Set the pattern brightness. • Spacing Level: Set the spacing of different colors. When Gradient or Pure Color is selected, this parameter is available. • Spacing Pixel: Set the spacing of grid lines. When Grid is selected, this parameter is available. • Line Width: Set the width of the grid lines. When Grid is selected, this parameter is available. • Speed: Set the grid line moving speed.

Parameter	Description
	When Grid is selected, this parameter is available.
Audio Follow FTB	Set whether the sound follows the screen FTB. • : Mute when FTB • : Sound continues when FTB
FTB Duration	Set the FTB duration.

5.3.9 Preset

Save PVW or PGM as a preset, load and delete existing presets.

Prerequisites

None

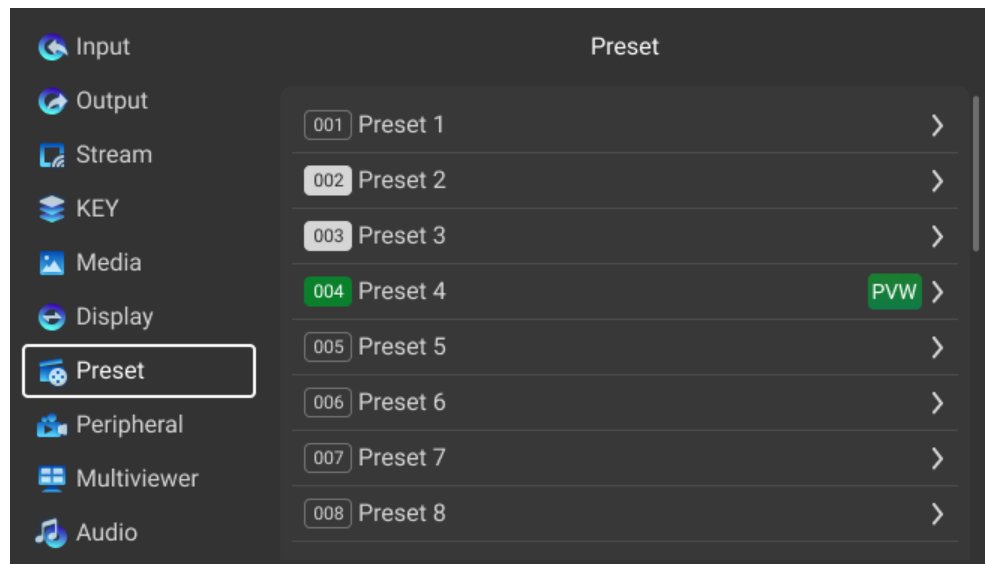
Notes

- At most 128 presets can be saved.
- When a preset saved on AUX is loaded to PVW, the AUX configuration will not switch to the configuration saved within the preset.

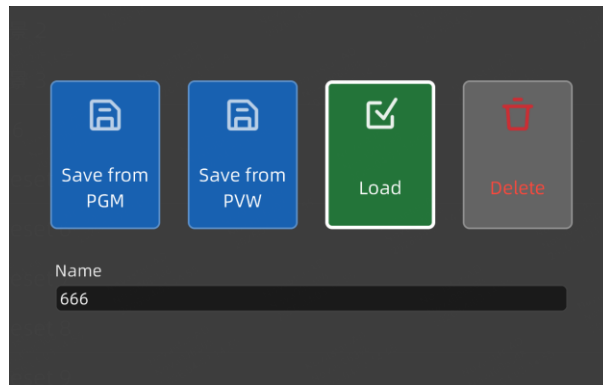
Menu Orientation

[Preset]

Menu Interface



Description



- Save from PGM: Save the PGM content as a preset.
- Save from PVW: Save the PVW content as a preset.
- Load: Select an existing preset and select **Load** in the pop-up window to load the preset to the screen.

The preset can be loaded to PVW through LCD operation, and the preset can be loaded to PVW or PGM through button operation.

Note

If loading a preset would cause the BKGD and all four KEYS of the next transition—a total of five button lights—to go out, the BKGD button light for the next transition will be forcibly lit after the preset is loaded, and PGM and PVW will each display the selected BKGD source.

- Delete: Select an existing preset and select **Delete** in the pop-up window to delete.
- Rename: Rename the preset.

5.3.10 Peripheral

5.3.10.1 Add Cameras

Cameras can be added manually or by importing configuration data.

Prerequisites

None

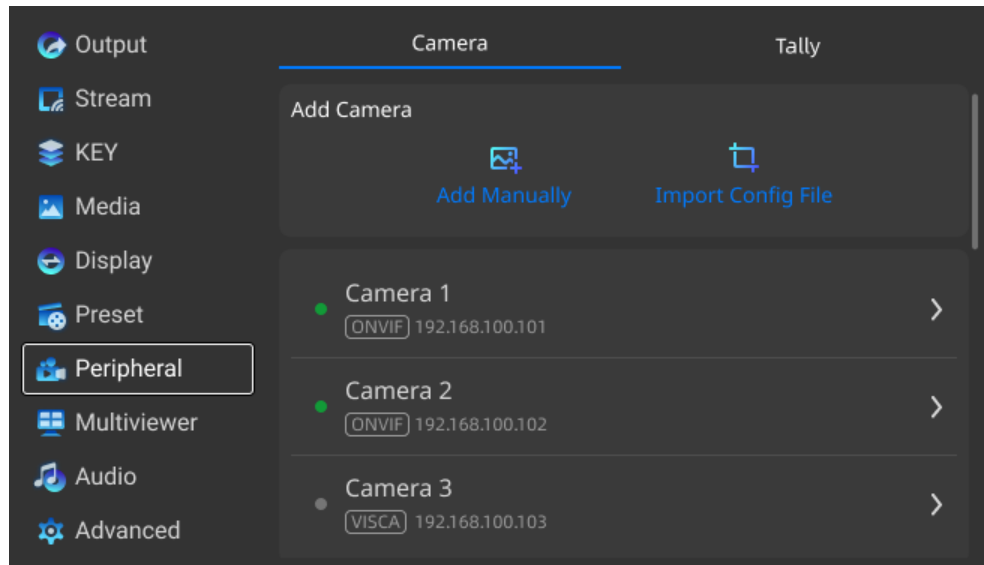
Notes

- At most 20 cameras can be added.
- When adding cameras by importing configuration files, the file template format must be .csv/.xlsx/.xls.

Menu Orientation

[Peripheral > Camera]

Menu Interface



Description

Type	Parameter	Description
Add Camera	Add Manually	Manually add the device information for the camera. • Name: The camera name • Config Method: Select the protocol type. The options include ONVIF, VISCA, and Panasonic AW. • IP: The camera IP address • Port: The communication port number for the camera protocol (1-65535) • Username: Enter the username using the keyboard. This parameter is available when ONVIF or Panasonic AW is selected as the configuration method. • Password: Enter the password using the keyboard. This parameter is available when ONVIF or Panasonic AW is selected as the configuration method. • Manufacturer: Select the manufacturer. This parameter is available when VISCA is selected as the configuration method. Once the settings are complete, click Apply.
	Import Config File	Import a configuration file from a USB drive. File path: S16 > camera > .csv/.xlsx/.xls

5.3.10.2 Configure Cameras

Configure and manage the cameras connected to the live production switcher, allowing for remote adjustment of various parameters of cameras using different protocols.

Prerequisites

- The live production switcher and cameras must be on the same network segment.
- The camera's network control function must be enabled.
- The network latency should be below 300 ms to ensure smooth control.

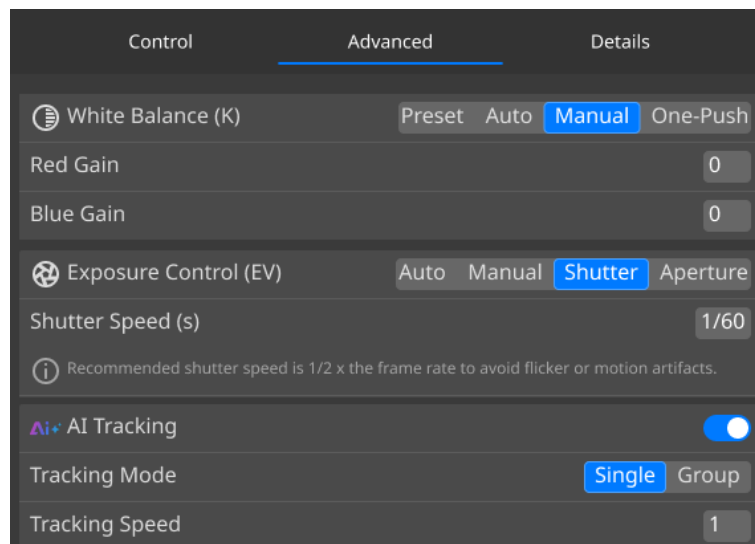
Notes

The speed parameter in the preset is set to the default value; updating and saving altered speed parameter in the preset is not supported.

Menu Orientation

[Peripheral > Camera]

Menu Interface



Description

Type	Parameter	Description
Camera X (ONVIF/Panasonic AW)	Control	• Speed: Adjust the camera's movement speed. The speed level ranges from 1 to 18. • Focus: Adjust the camera's focal point. • Zoom: Control the camera's zoom. • Aperture: Control the camera's aperture size. • Preset: 20 preset slots are provided for saving or loading camera-related parameters.
	Details	View the camera configuration details. To remove a device, click Delete .
Camera X (VISCA)	Control	• Speed: Adjust the camera's movement speed. The speed level ranges from 1 to 18. • Focus: Adjust the camera's focal point. • Zoom: Control the camera's zoom.

Type	Parameter	Description
		• Aperture: Control the camera's aperture size. • Preset: Four preset slots are provided for saving or loading camera-related parameters.
	Advanced	• White Balance (K): Correct the light source's color temperature to ensure white objects appear accurate. The options include Preset, Auto, Manual, and One-Push. Once One-Push is selected, click One-Push Calibrate for automatic white balance. • Red Gain: Adjust the red channel gain to correct for green or cyan tinges. Once White Balance (K) is set to Manual, this parameter is available. • Blue Gain: Adjust the blue channel gain to correct for yellow or red tinges. Once White Balance (K) is set to Manual, this parameter is available. • Exposure Control (EV): Select an exposure mode. The options include Manual, Auto, Shutter, and Aperture. • Shutter Speed: Control the exposure time per frame. Once Exposure Control (EV) is set to Manual or Shutter, this parameter is available. • Exposure Compensation: Manually adjust brightness while maintaining background and subject depth. Once Exposure Control (EV) is set to Auto or Aperture, this parameter is available. • Backlight Compensation: Automatically increase foreground brightness to counteract silhouette effects from strong backlighting. – : The function is turned on. – : The function is turned off. Once Exposure Control (EV) is set to Auto or Aperture, this parameter is available. • Gain: Enhance the brightness in darker areas. Once Exposure Control (EV) is set to Manual, this parameter is available. • AI Tracking: Engage continuous lock and tracking of persons in the frame. – : The function is turned on. – : The function is turned off. This parameter is available when the OBSBOT camera is selected. • Tracking Mode: Choose between Single and Group tracking modes. • Tracking Speed: Set the camera's response speed for tracking.

Type	Parameter	Description
	Details	View the camera configuration details. To remove a device, click Delete .

5.3.10.3 Configure Tally

Manage multiple cameras using red and green Tally lights to distinguish between live and standby signals, assisting on-site personnel in monitoring.

Prerequisites

The input source is selected and a screen is created.

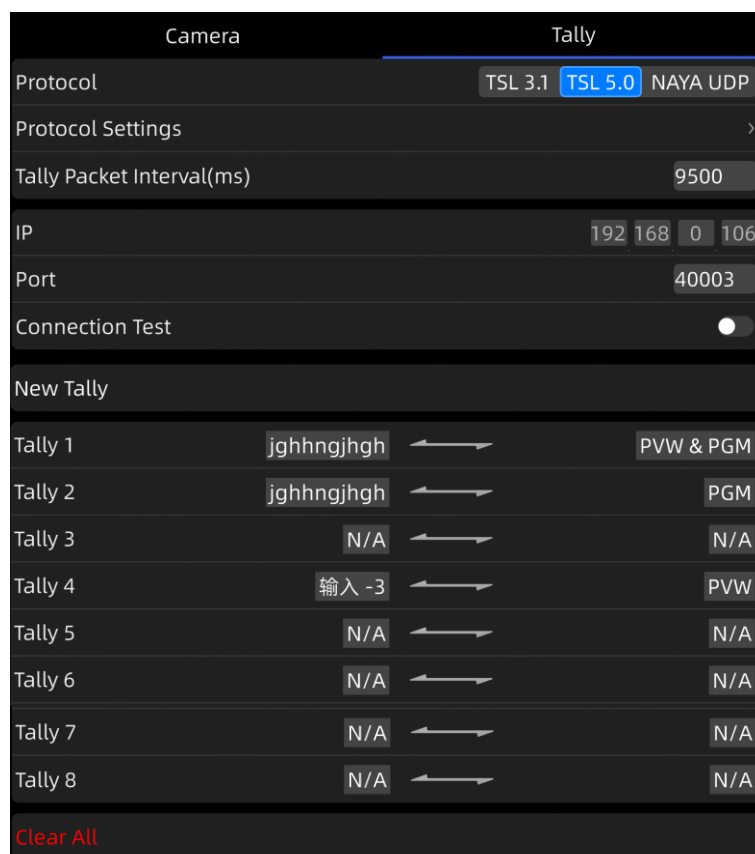
Notes

None

Menu Orientation

[Peripheral > Tally]

Menu Interface



Camera	Tally
Protocol	TSL 3.1 TSL 5.0 NAYA UDP
Protocol Settings	>
Tally Packet Interval(ms)	9500
IP	192 168 0 106
Port	40003
Connection Test	☒
New Tally	
Tally 1	jghhngjghh ←→ PVW & PGM
Tally 2	jghhngjghh ←→ PGM
Tally 3	N/A ←→ N/A
Tally 4	輸入 -3 ←→ PVW
Tally 5	N/A ←→ N/A
Tally 6	N/A ←→ N/A
Tally 7	N/A ←→ N/A
Tally 8	N/A ←→ N/A
Clear All	

Description

Parameter	Description
Protocol	Select the protocol type. The options include TSL 3.1, TSL 5.0 (Default), and NAYA UDP. • TSL 3.1 and TSL 5.0 are universal protocols. • NAYA UDP is a proprietary protocol.
Protocol Settings	Configurable when TSL 5.0 protocol is selected Set the left/right lights and text display format for different operational states. • The operational states include PGM Status, PVW Status, Off. • Left/right Tally light and text Tally configuration: – LH (Left Hand): Set the display color of the left Tally light for each state. The options include Red (PGM default), Green, Off (PVW/OFF default). – RH (Right Hand): Set the display color of the right Tally light for each state. The options include Red, Green (PVW default), Off (PGM/OFF default). – Text: Set the display color of the text Tally for each state. The options include Red (PGM default), Green (PVW default), Normal (OFF default). • DLE/STX Sequence: Turn on and turn off the DLE/STX sequence functionality. – : The function is turned on. Add DLE/STX control sequences to the Tally data frame as required by the peer device. – : The function is turned off. Enable only if the peer device fails to recognize Tally data.
Tally Packet Interval (ms)	Set the frequency for sending Tally status updates, balancing response speed and system load. The value ranges from 500 ms to 20,000 ms and defaults to 500 ms.
IP	Set the IP address of the Tally device for network connection.
Port	Set the port number of the Tally device.
Connection Test	Turn on or turn off the connection test to test whether the network connection between the live production switcher and Tally device is normal. • : The function is turned on. • : The function is turned off.
New Tally	Below are the settings for the Tally lights for different input sources.
Tally X, input source, screen	Each Tally is bound to a specific input source. When the input source is selected as the program output, the corresponding Tally light will light up, indicating that the camera signal is on air. • Tally X: Select the desired Tally. At most 64 Tally lights are supported. • Input X: Select the signal source (each source can be selected twice). The options include input source, and SuperSource. • Screen: PVW, PGM, or PVW&PGM is displayed. The red Tally light

Parameter	Description
	indicates PGM or PVW&PGM, and the green Tally light indicates PVW.
Clear All	Clear all Tally device states, that is, turn off all Tally lights.

5.3.11 Multiviewer

Set the basic parameters of the MVR windows.

Prerequisites

None

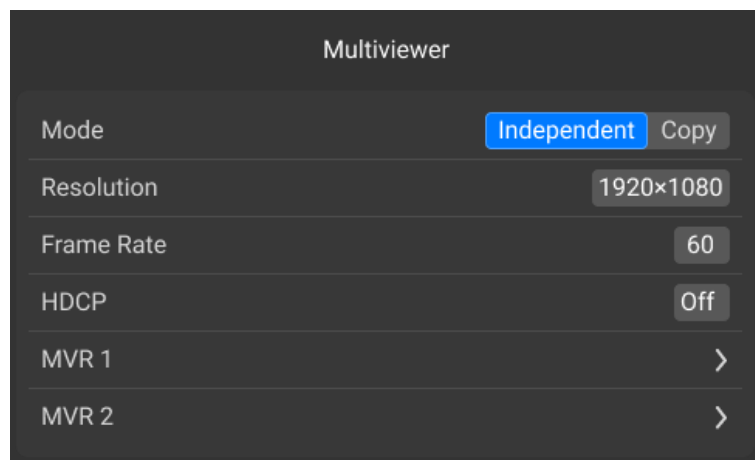
Notes

- The position and size of MVR windows cannot be adjusted.
- Recording, streaming, and audio content do not support setting a safety frame.

Menu Orientation

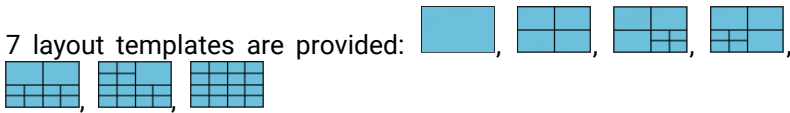
[Multiviewer]

Menu Interface



Description

Parameter	Description
Mode	Set the working mode of the MVR connectors. • Independent (default): MVR 1 and MVR 2 output the monitoring images independently, and the resolution of the two connectors is the same. • Copy: MVR 2 copies the monitoring image of MVR 1.
Resolution	Set the resolution of the MVR connectors.
Frame Rate	Set the frame rate of the MVR connectors.

Parameter	Description
HDCP	Select the HDCP version of the MVR connectors. The options include HDCP 1.4 and HDCP 2.2, and the function is disabled by default.
MVR 1/2	- Layout: Select the MVR window layout. 7 layout templates are provided: , - In independent mode, MVR 1 defaults to a 10-window layout, while MVR 2 defaults to a 16-window layout. - After a layout template is selected, all connected input sources will be automatically displayed in the MVR windows. - Window: Set the MVR window area. At most 16 windows can be set. Upon selecting the MVR window on the LCD, the MVR button display changes accordingly. - Source: Set the MVR window source. The options include PGM, PVW, input source, SuperSource, streaming, audio, recording, Clean Feed, etc. - Note: An audio source can only be added once across all MVR windows. - Level Meter: Turn on or turn off the function. - The function is used to display the strength of the audio signal, helping users monitor the audio output. : The function is turned on. : The function is turned off. - Safety Frame: Remind users to pay attention to the correct range of the image to ensure that the image information can be fully displayed on the screen. - UMD: Turn on or turn off the function. - The function is used to display the name and status of the source. : The function is turned on. : The function is turned off.

5.3.12 Audio

Adjust and control various audio parameters for perfect audio output.

Prerequisites

None

Notes

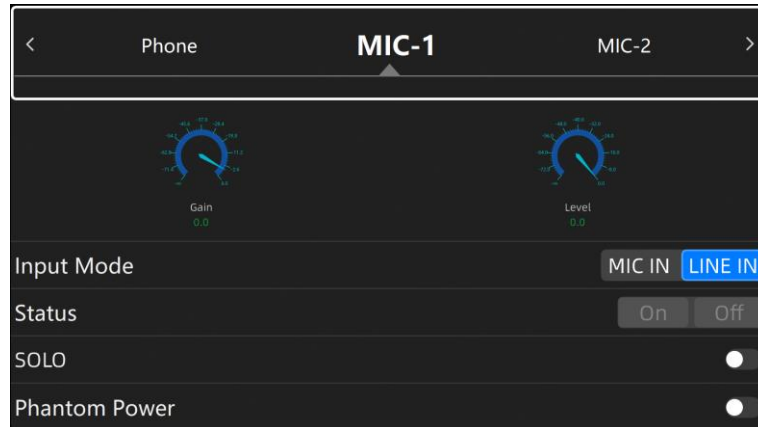
- Different input audio supports different mixing states:
 - MIC 1, MIC 2: On and off
 - Input 1 to Input 16: AFV, On, and off.
- PGM, Stream, Phone: Only the level can be adjusted.
- SOLO takes priority over mixing state.

- Only the XLR/TRS audio connector supports input mode selection.

Menu Orientation

[Audio]

Menu Interface



Description

Parameter	Description
Audio	Supports setting gain and level for all audio sources, including MIC 1, MIC 2, Phone, input source, PGM, and Stream. • Gain: The gain knob is used to adjust the strength of the microphone input signal. The higher the gain value, the stronger the input signal. • Level: The level knob is used to adjust the volume level of the audio input.
Input Mode	Select the audio input mode. This parameter is displayed only when MIC 1 and MIC 2 are selected as the audio source. • MIC IN: Connect low-level audio sources such as microphones. • LINE IN: Connect line-level audio sources such as mixers, players, and computers.
Status	Set the input audio mixing state. • AFV: The audio synchronizes and switches with the video signal. • On: The audio is always output along with the video content. • Off: The audio will never be output with the video content.
SOLO	Turn on or turn off the function. •  On: Only the selected audio channel will be output. Even if other audio channels are in mixing state, no sound will be actually output. •  Off: All audio channels will be output normally according to the mixing status settings.

Parameter	Description
Phantom Power	Turn on or turn off the function. This parameter is available only when MIC 1 or MIC 2 is selected. • : On. Turn on the phantom power function. • : Off. Turn off the phantom power function.

5.3.13 Advanced

5.3.13.1 Communication

Manually set a static IP address for the device or allow the device to automatically obtain an IP address.

Prerequisites

None

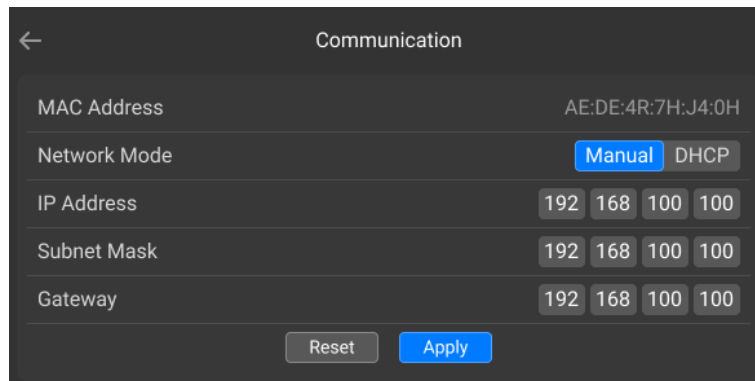
Notes

None

Menu Orientation

[Advanced > Communication]

Menu Interface



Description

Parameter	Description
MAC Address	The physical address of the device
Network Mode	The configuration method for the device IP address • Manual: Manually set a static IP address for the device. • DHCP: The device automatically obtains an IP address.
IP Address	The IP address of the device
Subnet Mask	The subnet mask of the device
Gateway	The gateway of the device

After the settings are done, click **Apply** to make them take effect.

5.3.13.2 Update

Update the device.

Prerequisites

You have stored the update file (.img) into the root directory of a USB drive and inserted the USB drive into the USB 3.0 (Type-C) port on the rear panel.

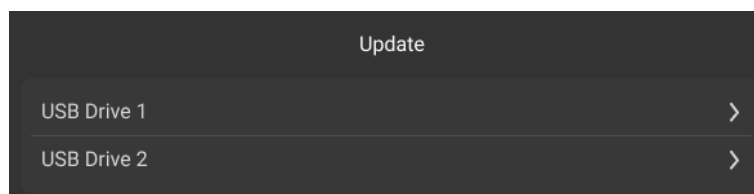
Notes

After a successful update, the device will automatically restart.

Menu Orientation

[Advanced > Update]

Menu Interface



Description

Select the desired USB drive to enter the update file list interface. Select the target file, select **OK** in the pop-up dialog box, and wait for the update to complete.

5.3.13.3 Project File

Import project files from a USB drive to the device, and export project files from the device to a USB drive. The project file contains configuration files and operation data.

Prerequisites

- Before using a USB drive to import a project file, make sure you have stored the project file (.uprj) into the root directory of a USB drive and inserted the USB drive into the USB 3.0 (Type-C) port on the rear panel.
- Before exporting the project file to a USB drive, make sure you have inserted the USB drive into the USB 3.0 (Type-C) port on the rear panel.

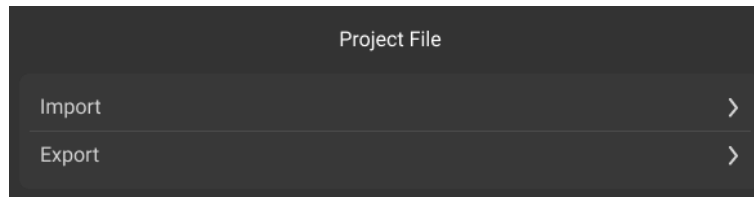
Notes

None

Menu Orientation

[Advanced > Project File]

Menu Interface



Description

- Import
 1. Select **Project File** to access the submenu.
 2. Select **Import** to open the project file list.
 3. Select the target project file.
 4. In the pop-up dialog box, select **OK** to import the project file (.uprj) from the USB drive to the device.
- Export
 1. Select **Project File** to access the submenu.
 2. Select **Export**.
 3. In the pop-up dialog box, select **OK** to export the project file (.uprj) to the USB drive.

5.3.13.4 Factory Reset

Reset the device data to the factory settings.

Prerequisites

None

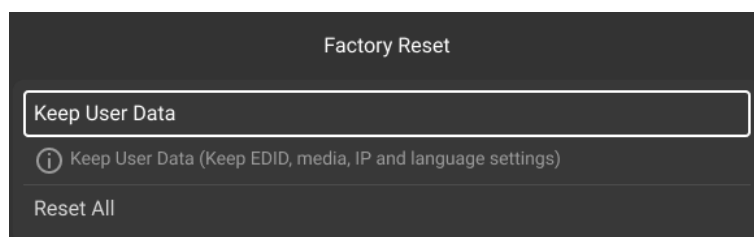
Notes

- Please perform this operation with caution.
- This operation does not affect the device firmware version.
- Power outage is not allowed during operation.
- After a successful reset, the device will automatically restart.

Menu Orientation

[Advanced > Factory Reset]

Menu Interface



Description

- **Keep User Data**
Retain the EDID file, media and device language settings.
 1. Select **Factory Reset** to access the submenu.
 2. Select **Keep User Data**.
 3. Select **OK** in the displayed dialog box.
- **Reset All**
Retain the network parameters and project files.
 1. Select **Factory Reset** to access the submenu.
 2. Select **Reset All**.
 3. Select **OK** in the displayed dialog box.

5.3.13.5 Synchronization

Set the synchronization signal source for the output signal.

Prerequisites

Before Genlock settings, make sure the synchronization signal source is connected to the Genlock connector on the device rear panel.

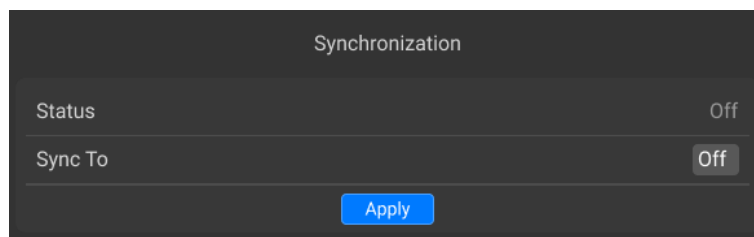
Notes

When the input source type is selected as HDMI, it is not allowed to be used as a synchronization source.

Menu Orientation

[Advanced > Synchronization]

Menu Interface



Description

Parameter	Description
Status	View the synchronization state. • Locked: Synchronization successful • Failed: Synchronization failed
Sync To	Select a synchronization source. • Genlock: Sync to the frame frequency of the Genlock input signal. • Input X: Sync to the frame frequency of the selected input source.

Parameter	Description
	X stands for the input source number.

After the settings are done, click **Apply** to make them take effect.

5.3.13.6 FN

Assign a function to the FN shortcut button on the front panel so that users can quickly access the assigned function. Functions that can be assigned to the FN button include synchronization and capturing.

Prerequisites

None

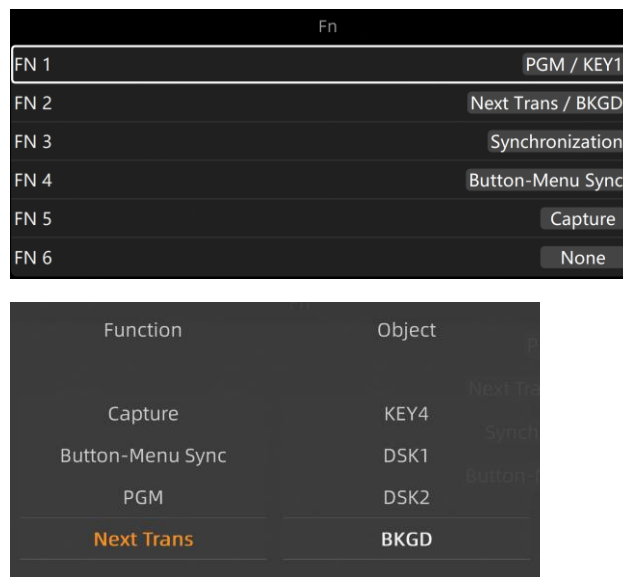
Notes

None

Menu Orientation

[Advanced > FN]

Menu Interface



Description

Select **FN** to access the submenu.

Parameter	Description
FN 1–FN 6	• Function: Set the binding function for the FN buttons, including Synchronization, Capture, Button-Menu Sync, ON AIR (Follow Transition Mode), Next Trans (Follow Transition Mode), PGM (Direct Control Mode), and PVW (Direct Control Mode). • Object: When the function is set to ON AIR or Next Trans, a

Parameter	Description
	target can be configured. – ON AIR/PGM: KEY 1/2/3/4 and DSK 1/2 – Next Trans/PVW: KEY 1/2/3/4, DSK 1/2, and BKGD

5.3.13.7 End-to-End Backup

Set the input source backup relations.

Prerequisites

None

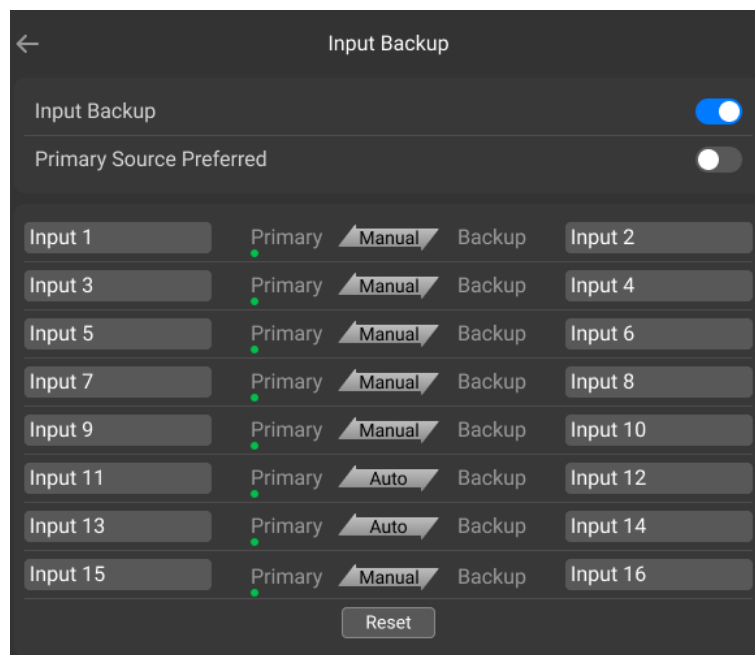
Notes

None

Menu Orientation

[Advanced > End-to-End Backup]

Menu Interface



Description

Parameter	Description
Input Backup	Turn on or turn off the function. • : The function is turned on. • : The function is turned off.

Parameter	Description
Primary Source Preferred	Turn on or turn off the function. •  : On. When the primary source has a signal, it is given precedence. •  : The function is turned off.

Select a primary source and a backup source respectively to establish a backup relationship.

Click **Reset** to reset all settings to defaults.

5.3.13.8 Diagnostics

Run diagnostics to identify and troubleshoot problems.

Prerequisites

None

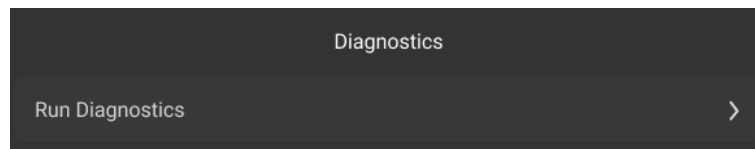
Notes

None

Menu Orientation

[Advanced > Diagnostics]

Menu Interface



Description

Select **Diagnostics** to access the submenu. Select **Run Diagnostics** and you can view the test results after the test is completed.

5.3.13.9 Preferences

Users can customize the keyer switching mode, input source ordering, set the **STREAM** and **REC** buttons in the control area to be triggered by a short or long press, and enable/disable the button-menu sync function.

Prerequisites

None

Notes

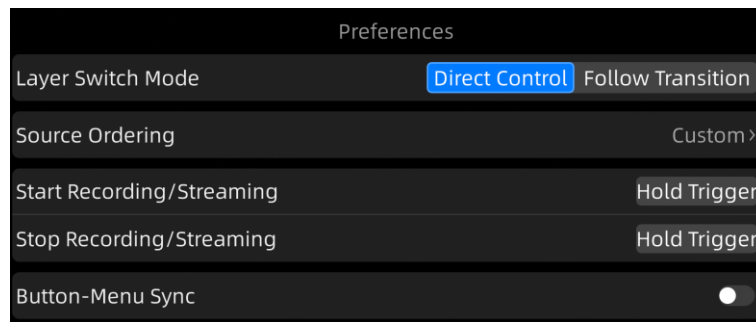
- When configuring source ordering, the sorting rule only affects the display order of input sources, not the actual signal processing logic.

- Setting the streaming and recording functions to trigger on a long press can prevent accidental activation and is suitable for scenarios requiring higher operational safety.

Menu Orientation

[Advanced > Preferences]

Menu Interface



Description

Parameter	Description
Layer Switch Mode	Sets the keyer switching mode. • Direct Control: Quickly switch keyers, without involving transition state changes. • Follow Transition: Control the state for the next transition using the two rows of buttons in the operation area below the function buttons.
Source Ordering	Set the sorting order for input sources. • No: Sort according to the physical hardware slot order. • Active Source First: Prioritize input sources currently carrying a signal. • Custom: Allow manual assignment of an input source to each position.
Start/Stop Streaming	• Press trigger: A short press can start or stop the live streaming. • Hold trigger (default): Holding down the button for more than 1.5 seconds can start or stop the live streaming.
Start/Stop Recording	• Press trigger: A short press can start or stop the recording. • Hold trigger (default): Holding down the button for more than 1.5 seconds can start or stop the recording.
Button-Menu Sync	Turn on or turn off the function. • : The function is turned on. When the LCD menu is open, operating certain buttons will cause the LCD menu to jump to the corresponding page. No jump occurs when the LCD menu is closed. For details, see 5.2.9 Button-Menu Sync. • : The function is turned off. Button operations and the LCD menu are independent (Camera, keyer, MVR, and test

Parameter	Description
	pattern buttons can still trigger independent LCD jumps).

5.3.13.10 Log Export

Export logs from the device to a USB drive.

Prerequisites

A USB drive is inserted into the USB port on the front panel.

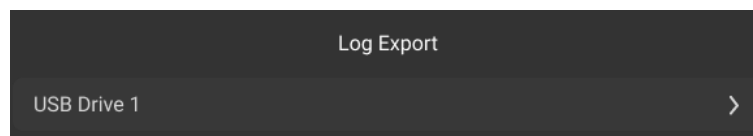
Notes

None

Menu Orientation

[Advanced > Log Export]

Menu Interface



Description

The log export path is: S16 > Logs > .csv.

5.3.13.11 T-Bar Calibration

When the T-Bar is pushed to the top and bottom, the progress bar on the left cannot reach 100% and 0%. At this time, T-Bar calibration is required.

Prerequisites

None

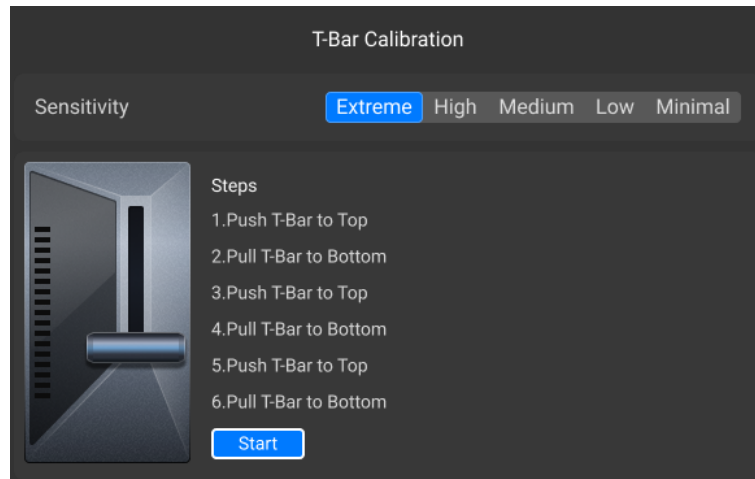
Notes

Other operations are not allowed during the calibration process. If other device areas are triggered, you need to try again according to the prompts.

Menu Orientation

[Advanced > T-Bar Calibration]

Menu Interface



Description

Select **T-Bar Calibration** to access the submenu. Select **Sensitivity**. The options include **Extreme**, **High**, **Medium**, **Low**, and **Minimal**.

Select **Start** and follow the calibration steps one by one. After all the steps are completed, the message **Calibration completed** will be displayed.

5.3.13.12 Screen Brightness

Adjust the screen brightness according to the actual environment as needed.

Prerequisites

None

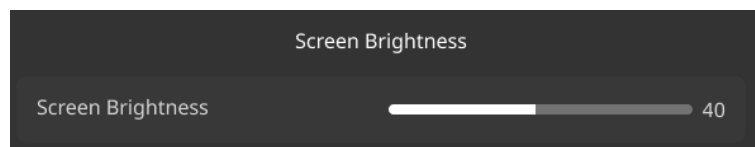
Notes

None

Menu Orientation

[Advanced > Screen Brightness]

Menu Interface



Description

In the **Screen Brightness** interface, adjust the brightness using the knob.

5.3.13.13 Clean Feed

Allow users to remove certain overlaid layers (such as upstream/downstream keyers) to obtain a clean video signal for operations like recording and rebroadcasting.

Prerequisites

None

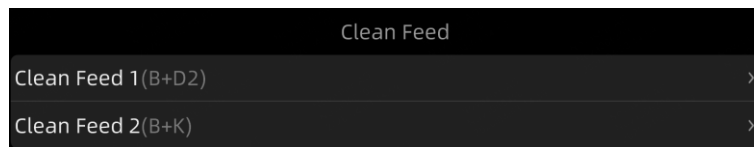
Notes

None

Menu Orientation

[Advanced > Clean Feed]

Menu Interface

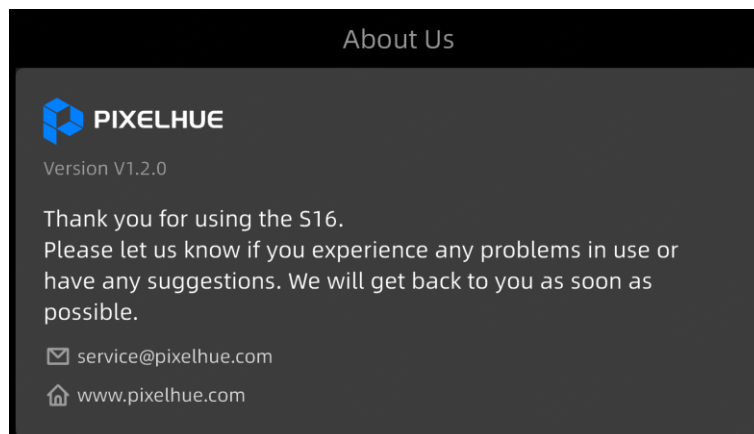


Description

Select **Clean Feed 1/2** to access the submenu interface, where you can choose **Upstream Key** or **Downstream Key 1/2**.

5.3.14 About Us

View the company related information.



6 More Operations

6.1 Companion Control

The S16 is compatible with the Companion protocol, allowing remote control via third-party Stream Deck devices to enhance on-site operational flexibility.

Compatible Versions

- S16 firmware version: V1.3.0
- Companion software version: V4.3.2 or later

Notes

After updating the S16 to firmware V1.3.0, you must first perform a factory reset before proceeding with the Companion software configuration. Failure to do so may result in keyer or connector names being displayed inconsistently with the actual device.

Preparation

Connect the Stream Deck to a USB port on your PC and ensure the PC and the switcher are on the same network segment.



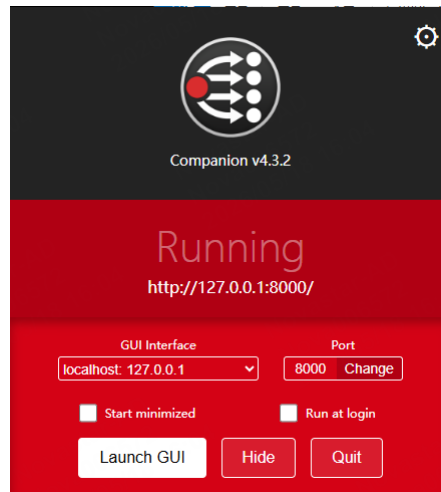
The Companion software should be installed on a computer that meets the following requirements:

- Operating system: Windows or macOS (the operations in this chapter use Windows as an example).
- The computer must be on the same LAN as the S16.
- A Stream Deck must be connected to the computer via USB.

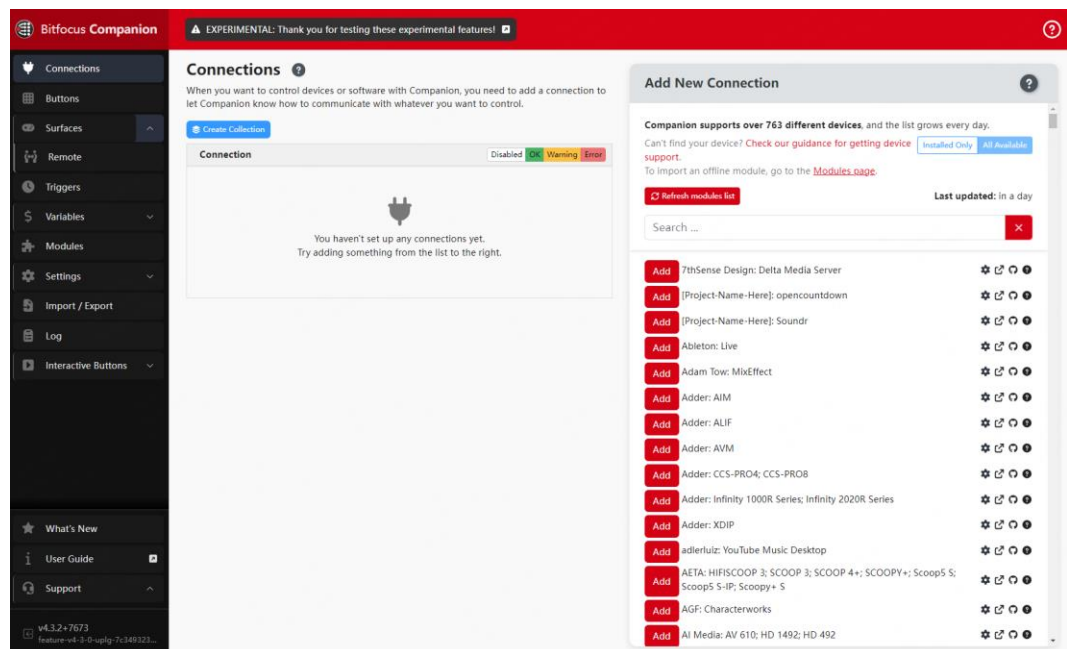
If you download the Companion software yourself, you must first register a user account on the official Companion website: <https://bitfocus.io/companion>.

Operation Procedure

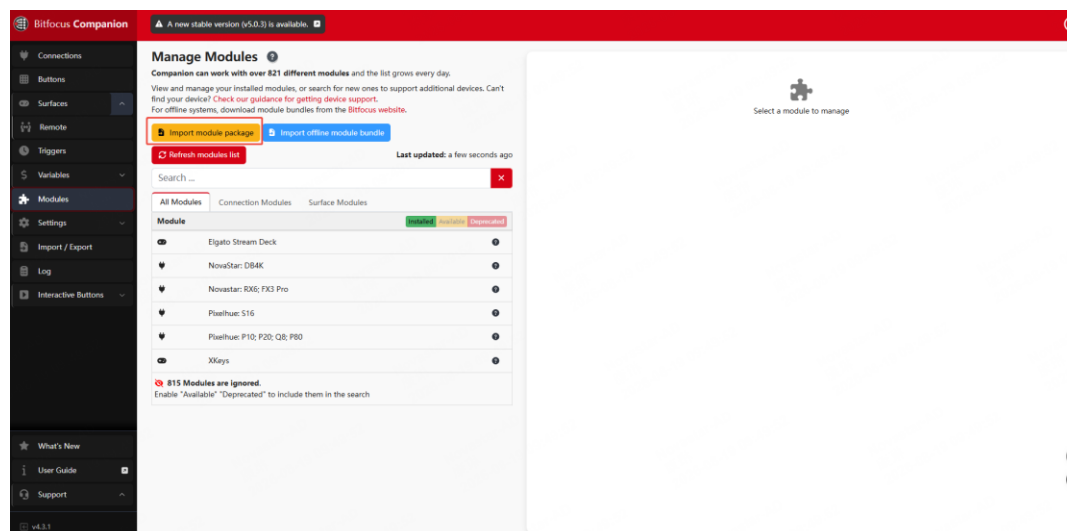
Step 1 Double-click the Companion software shortcut to open the launch screen.



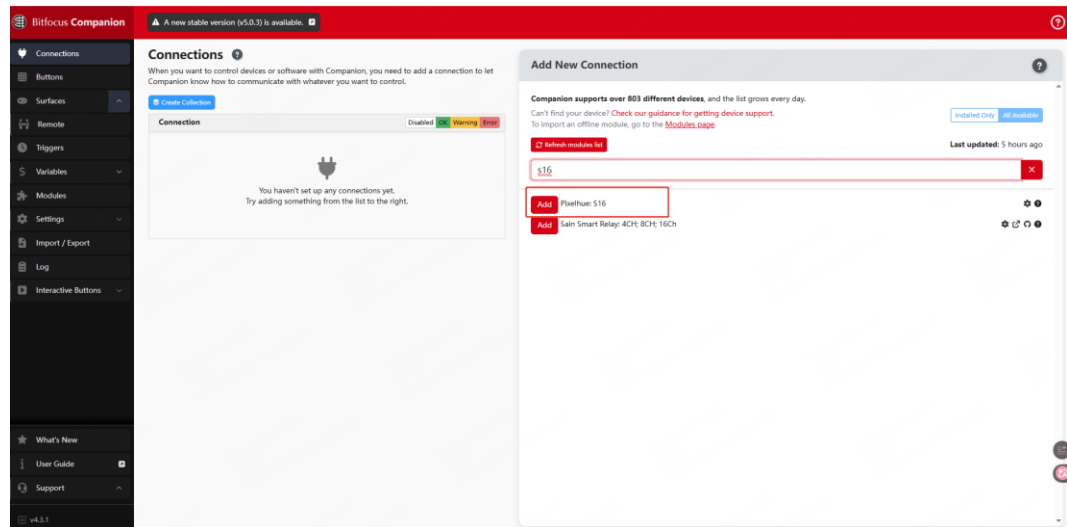
Step 2 Click **Launch GUI** to enter the Companion configuration interface.



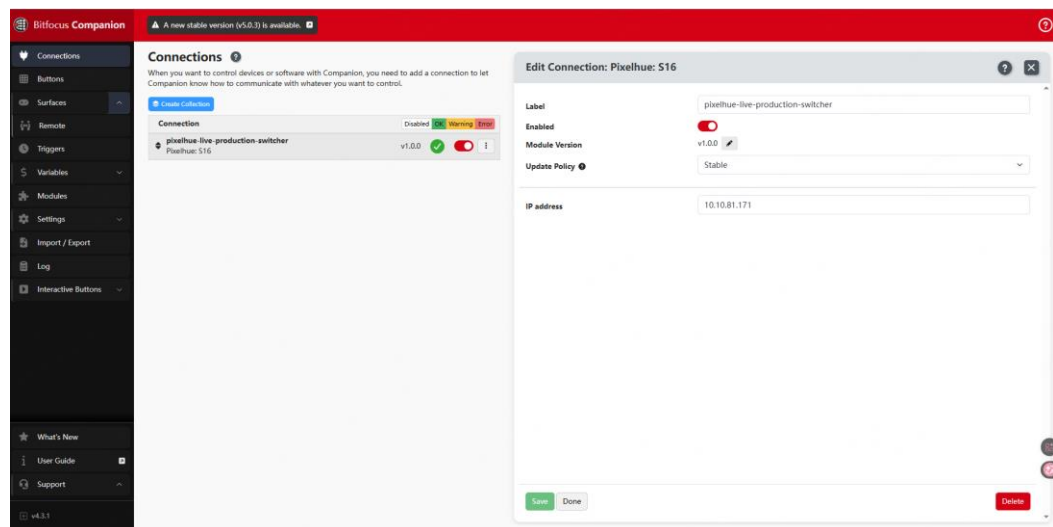
Step 3 Select **Modules** from the left-side list and click **Import module package**.



- Step 4 Import the corresponding module package (.tar file) for the device from the local path.
- Step 5 Select the **Connections** screen from the left-side list, then enter the device model in the **Add New Connection** area on the right to search.



- Step 6 Click **Add**. In the pop-up window, select the **Label** and **Module Version**, then click **Add**.
- Step 7 Enter the following information in the area on the right to configure the controlled device.



- Step 8 Click **Save** to complete the connection configuration.

After successful configuration, the device status will show as  in the **Connections** area on the left.

- Step 9 For the specific supported functions, click  on the right to view them.

6.2 Remote Control

The S16 provides an open third-party protocol interface to facilitate remote control by users.

Note

For specific operations, please contact PIXELHUE technical support.

7

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