www.alfatronelectronics.com

ALF-VM52

Contents

1. Introduction

1.1. Important Notes

Thank you for choosing our product.
To help you quickly become proficient in operating this device, please carefully read the user manual provided. It contains important information about product safety procedures, product introduction, and usage instructions. After reading, please keep this user manual for future reference.
If you encounter any issues during use, please contact our service personnel. We appreciate our cooperation.

1.2 Precautions

1. Before connecting the device, ensure the power voltage is correct. Only use the original uncut (unspliced) power cable provided with the device.
2. If the product does not function properly, contact your dealer. Do not attempt to disassemble the device yourself. (We are not responsible for problems caused by unauthorized repairs or maintenance.)
3. This product is designed for indoor use. Do not place it in wet or damp locations.
4. During transportation, the device should be packed in its original packaging.
5. Avoid dropping or subjecting the device to physical impact.
6. Do not use strong cleaning agents to clean the device. For heavy dust, gently wipe with a neutral cleaner, limiting cleaning to the exterior only.
7. Keep the device interface free of dust and moisture.
8. Avoid moving the device between excessively cold and hot environments to prevent internal condensation, which may affect its lifespan.

1.3 Disclaimer

1. We have made every effort to ensure the completeness and accuracy of this manual, but errors or omissions may still occur. We are not responsible for any technical or printing errors in the manual.
2. The product appearance shown in this manual is for reference only and may differ from the actual product you purchased.
3. This instruction manual guides multiple product models, so it is not used for any specific product alone.
4. The display interface, parameters, drawings and model value ranges in this manual,
5. illustration may be different. Please refer to the actual product for details.
6. The contents of this manual are subject to change without notice.
7. If the software version is not consistent with this manual, please refer to the software.

2. Features

- HDMI interface supports up to 4K60 input, adapting to the needs of high-definition video sources (*Only HDMI IN1 and HDMI IN2 interfaces support 4K60 input);
- Supports 4-channels (HDMI/SDI) video sources + 1-channel LAN port (RTSP/ NDI®|HX) or USB/SD card local video source input + 1Channel picture input to meet the connection needs of different signal sources and devices;
- Support 2-channel HDMI+ 1-channel SDI, 1-channel LAN and 1-channel UVC video signal output interface, which is convenient to connect to different display devices and network streaming and live streaming;
- Up to 8 layers can be superimposed on the channel, providing powerful guiding ability;
- 2-way LOGO, which can be freely adjusted and zoomed in and out, the effect is more realistic and natural;
- Support T-Bar switching, support up to 30 kinds of switching effects, make video switching more vivid;
- Support a variety of PIP and POP layouts and a variety of transition effects, freely adjust and crop the size of the picture-in-picture, enhance video editing and creation flexibility;
- Built-in media library, picture generator, support user-defined preset patterns and external imported images;
- Support DSK, can realize subtitles and other functions;
- Flexible switching between horizontal and vertical screens, and streaming on horizontal and vertical screens;
- Video recording and playback, the played video can be used as an auxiliary source to participate in program production;
- Integrated PTZ camera control, one person and one machine are all under control;
- Professional-grade chroma cutout to create a realistic virtual studio;
- Brightness key to help users achieve video effects;
- Support WEB background operation, support personal computer, mobile phone smart device flexible control;
- Support RTMP/RTMPS protocol, live broadcast at any time
- Support LAN connection Companion software control;

3. Package Contents

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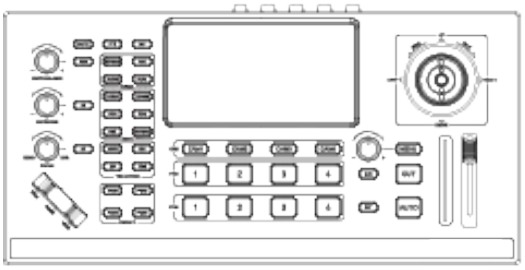
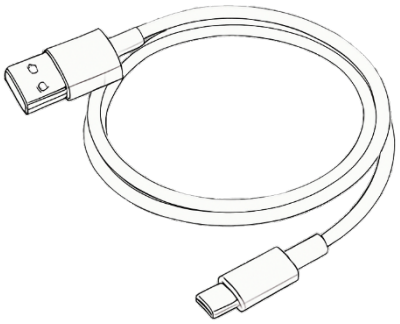
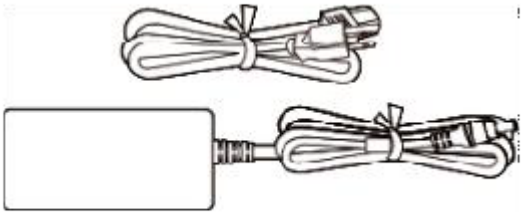


1 x ALF-VM52 Video Mixer



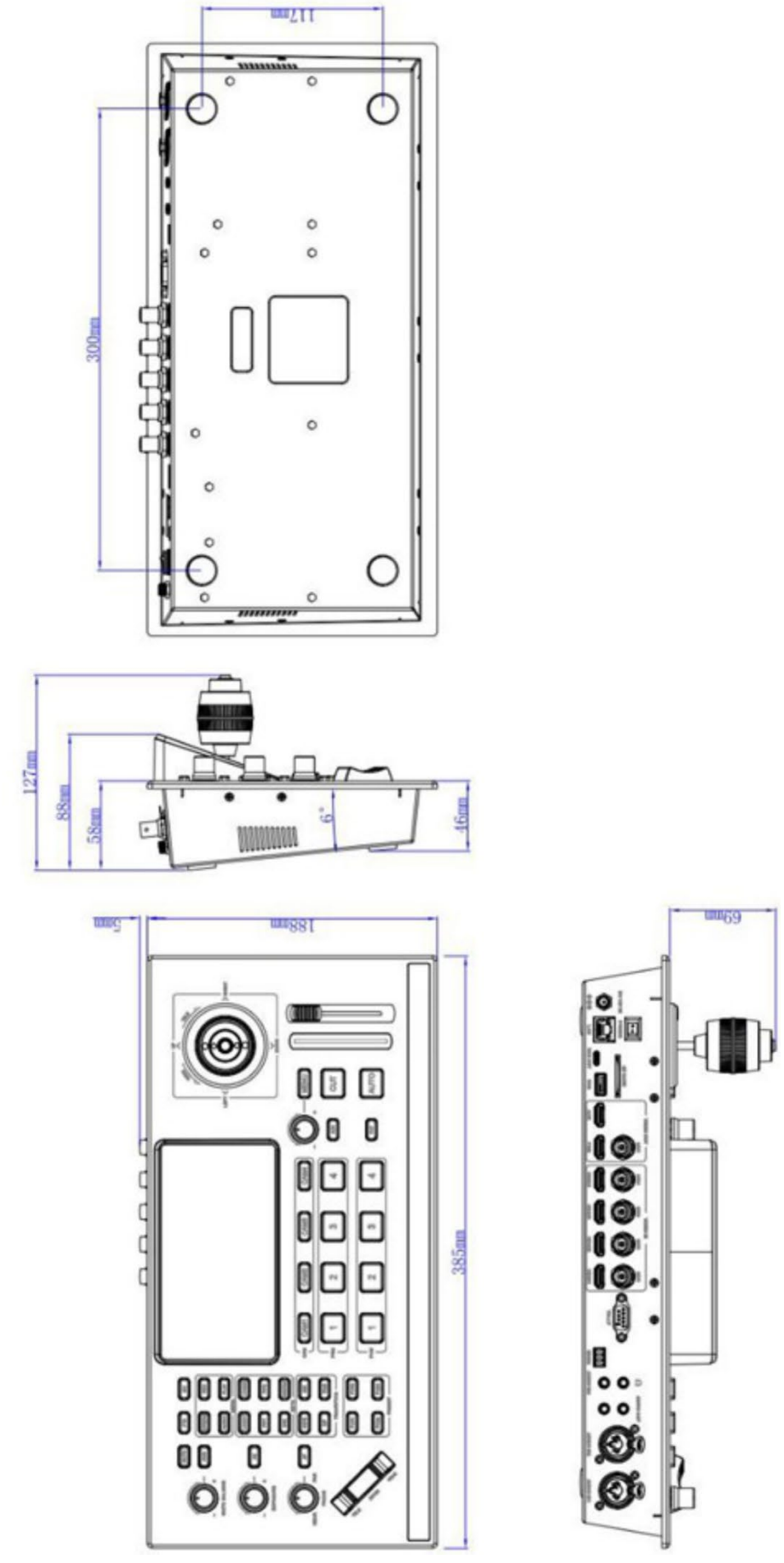
1 x USB-C to USB-A Cable



1 x External Power Supply with Cable (12V, 2A)

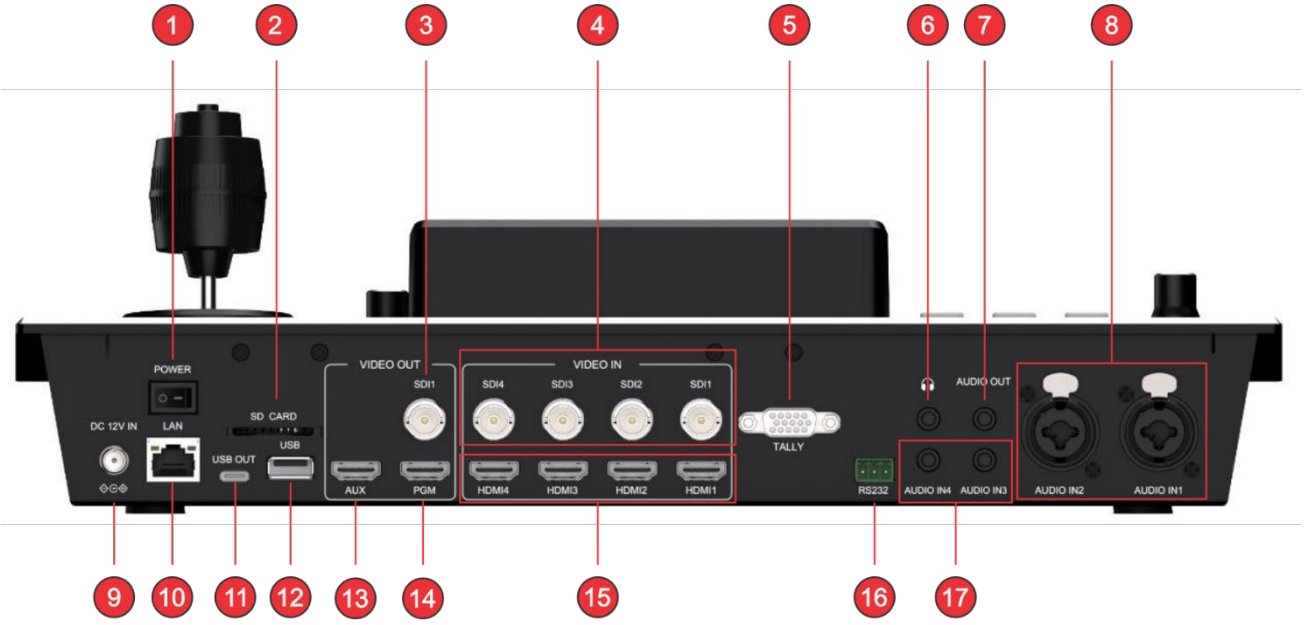
1 x User Manual

4. Dimension Wireframe



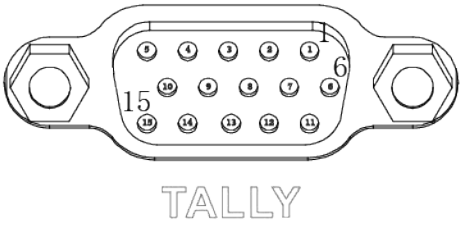
5. Interface

5.1 Interface Introduction

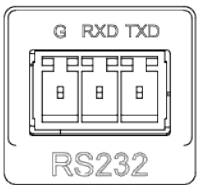


1	POWER	Power Switch
2	SD CARD	SD card interface for importing materials, playing local files, video recording,
3	SDI	SDI output interface, selectable output channel source.
4	SDI 1,2,3,4	four 3G-SDI inputs, up to 1080P60
5	TALLY	TALLY interface, output TALLY signal;
6	🎧	audio output monitoring interface;
7	AUDIO OUT	audio output interface;
8	AUDIO IN 1, 2	2-channel XLR audio input interface;
9	DC 12V IN	12-volt / 2A (24W) power input interface;
10	LAN	RJ45 network interface;
11	USB OUT	USB TYPE-C interface, for UVC output.
12	USB	USB interface, used to import files, play local files, video recording, firmware updates
13	AUX	HDMI output interface, selectable output channel source.
14	PGM	HDMI output interface, selectable output channel source.
15	HDMI 1,2,3,4	4 HDMI input interfaces, HDMI 1 and 2 support up to 4KP60 input, HDMI 3 and 4 support up to 1080p60
16	RS232	RS232 serial port, can send VISCA serial port command, the default baud rate is 9600
17	AUDIO IN 3,4	2 X 3.5 mm AUDIO INPUT INTERFACES;

5.2 Interface Pin Definition



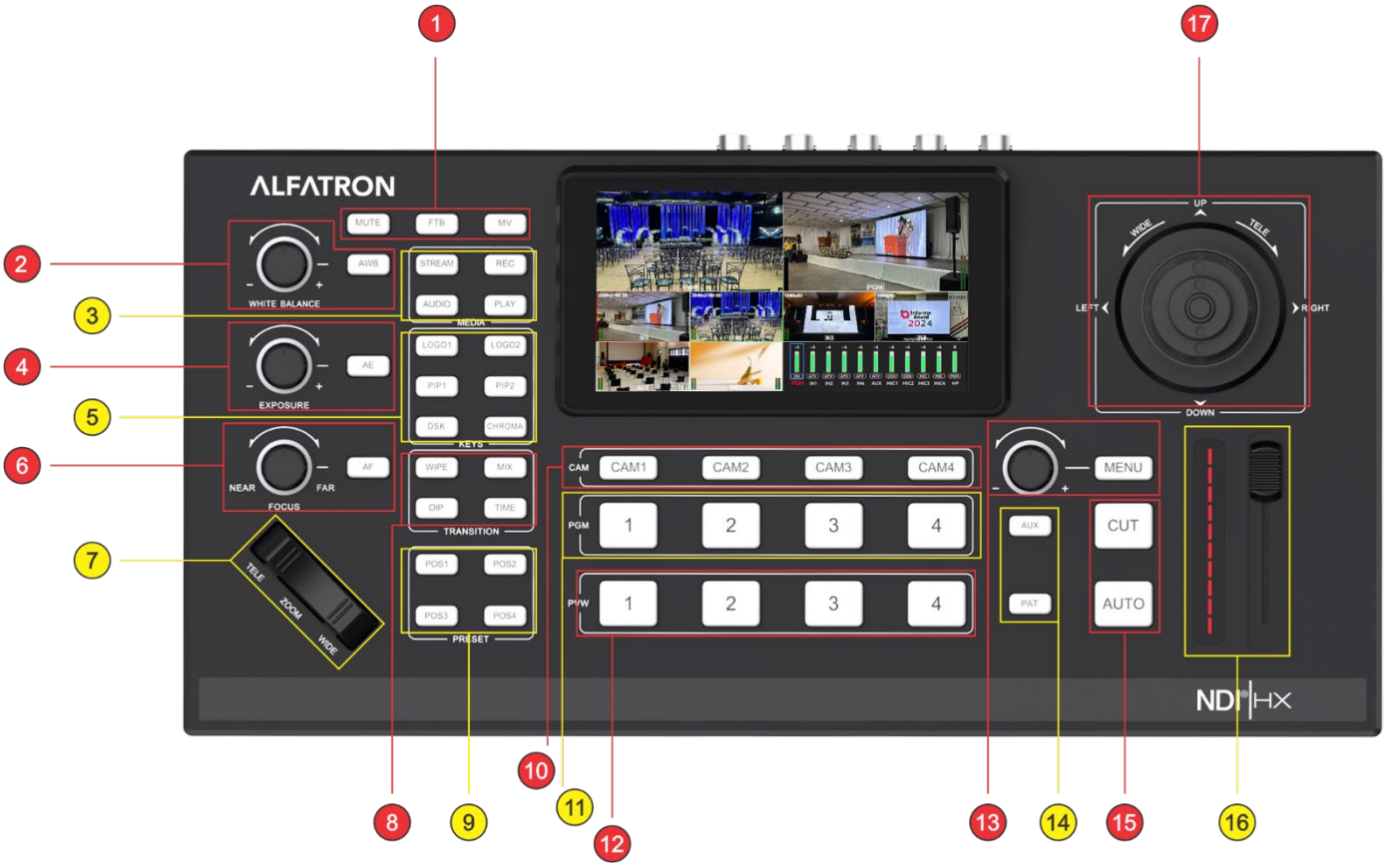
Pin No.	Function	Pin No.	Function
1	PGM1	9	NC
2	PGM2	10	GND
3	PGM3	11	PVW3
4	PGM4	12	PVW4
5	PGM5	13	PVW5
6	PGM6	14	PVW6
7	PVW1	15	NC
8	PVW2		



Pin No.	Function
1	GND
2	RXD
3	TXD

6. Panel Keys and Display Functions

6. 1 Panel Key Diagram.

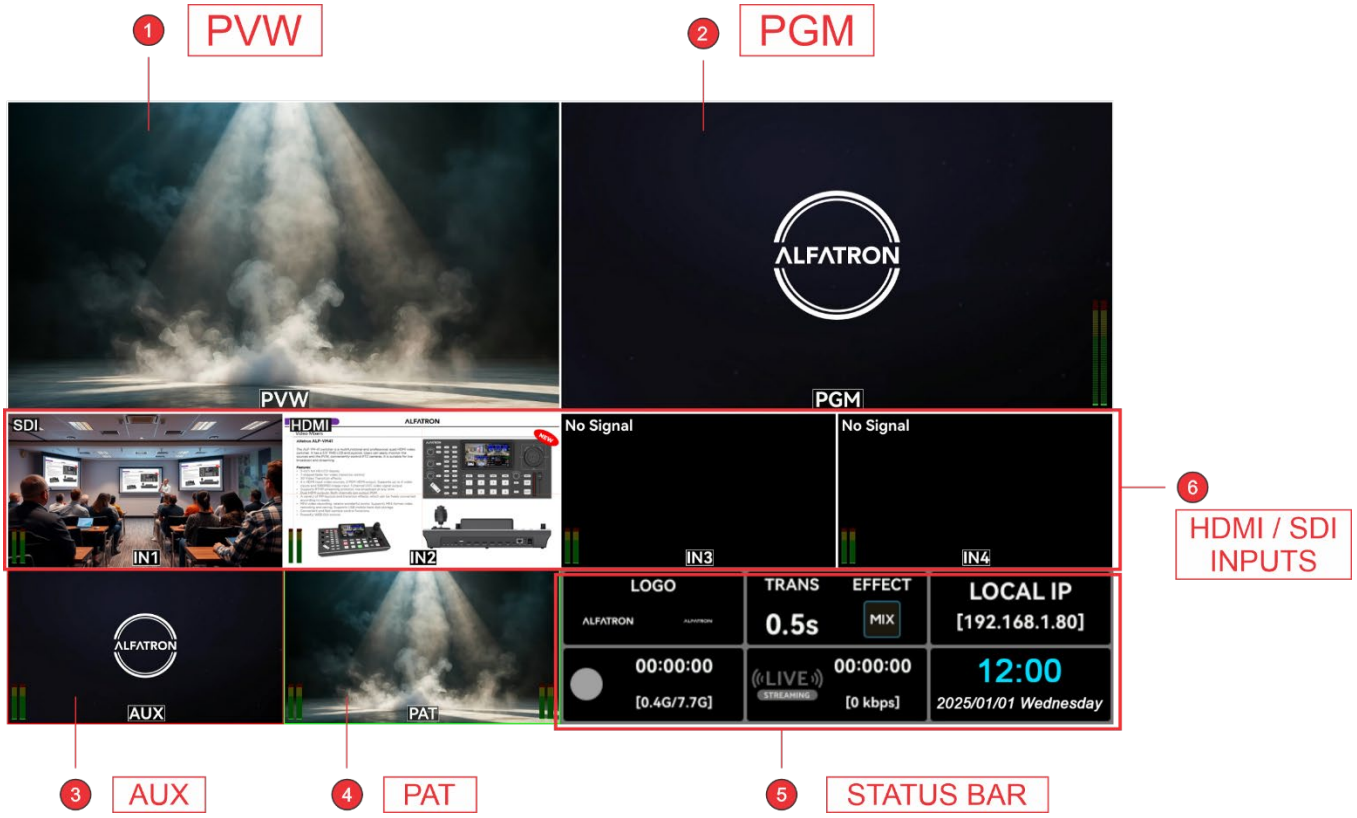


6. 2 Panel Key Functions

1	MUTE (One-Touch Mute)	Press to "Mute" audio output;
	FTB (Blackout)	Press to trigger the "Fade-To-Black" function, fades PGM output to black screen and mute audio output;
	MV (Multiview)	When switched on, the output mode of "HDMI-AUX" is set to "Multiview", which is switched on by default, and when it is switched off, it is a single-channel full-screen output; set to "PGM" by default.
2	White Balance Adjustment Knob	Rotate to adjust the "White Balance" related parameters, press to toggle the "Red/Blue Gain" adjustments. In the "One-Push Trigger" mode, press to "Trigger" One-Push;
	AWB Auto White Balance	Press to toggle White Balance modes;
3	STREAM (Streaming)	Press to turn on/off "Live Streaming";
	REC (Recording)	Press the button to start/stop USB "Recording";
	AUDIO (Audio)	Press to adjust the "audio" related parameters, (switch the audio channel with the joystick, rotate the audio parameters with the "Menu knob", and tap to switch mode);
	PLAY (Play/Pause)	Press the button Play/Pause the video for the AUX channel;
4	EXPOSURE (Exposure Adjustment Knob)	Rotate to adjust the "Exposure" related parameters, tap to switch the "Shutter, Aperture, Gain" mode;
	AE (Auto Exposure)	Press to change Exposure mode;

5	LOGO1/LOGO2 (Logo)	Press to turn on/off "LOGO" overlay;
	PIP1/PIP2 (Picture-in-Picture)	Press to turn on/off the "Picture-in-Picture" layer, press and hold to enter the editing mode; the button backlight will flash. Adjust the position and size of the picture-in-picture by turning the "Menu Knob", adjust the position with the “Joystick”.
	DSK (Downstream Key)	Press to turn on/off Downstream (Caption) Keying;
	CHROMA (Chroma Key)	Press to turn on/off Chroma Keying;
6	FOCUS (Focus Adjustment Knob)	Rotate to adjust the camera's focal length (Set the focus mode to ‘manual focus’ for the adjustment to take effect);
	AF (Auto Focus)	Press to toggle manual/autofocus modes;
7	ZOOM TELE/WIDE (Zoom Rocker Switch)	Controls camera zoom (TELE: zoom in; WIDE: zoom out). The Zoom Speed depends on pressure
8	WIPE (Wipe Transition)	Press and hold to enter the wipe effect selection menu, tap to activate the selected transition effect, the default effect is "Mix";
	MIX (Mix Transition) DIP (Dip Transition)	Press to activate ‘Mix’ or ‘Dip’ transitions.
	TIME (Transition Time)	Press to select the Transition time and adjust with the ‘Menu Rotary’ knob;
9	POS 1~4 (Presets)	Long press to set preset 1~4, short press to call preset 1~4;
10	CAM 1~4 (Camera Selection)	Press to select camera 1~4; press and hold to enter the selected camera menu settings;
11	PGM 1~4 (Program Source Switch)	Press to select the source of the "PGM" channel 1~4;
12	PVW 1~4 (Preview Source Switch)	Press to select the source of the "PVW" channel 1~4;
13	Menu Rotary Knob	In ’Menus’; rotate to adjust menu parameters; Press to Select / Confirm. In Camera mode: Adjusts pan/tilt speed. In PIP mode: Adjusts PIP size. In Audio mode: Adjusts audio parameters.
	MENU	Press to open/close settings menu; Long-press to open/close the camera settings menu;
14	AUX (AUX Source)	Press the "AUX" source to switch the Aux source to the "PVW" channel;
	PAT (PAT Source)	Press the "PAT" source to switch the background pattern to the "PVW" channel;
15	CUT (Hard Cut)	Cuts (Transitions) PVW and PGM without any transition effect;
	AUTO (Transition)	Transitions PVW and PGM with selected transition effects;
16	FADER / FADER LIGHT	Fader light indicates fader progress; The Fader controls manual transition effects.
17	JOYSTICK	In camera mode: Controls pan/tilt (up/down/left/right) and zoom (rotation). Press center button to ‘HOME’ the camera back to the camera’s initial position. In PIP mode: Adjusts PIP position. In audio mode: Switch audio channels left/right.

6. 3 Introduction to the display interface



1	PVW	Displays the selected "PVW" channel source IN1~4, AUX, PAT;
2	PGM	Displays the selected "PGM" channel source IN1~4, AUX, PAT;
3	AUX	Display the "AUX" channel source, the AUX channel can be set to USB stream, RTSP stream, NDI stream, or local video source;
4	PAT	Displays the selected "PAT" channel source;
5	Status bar	Display the status and effect of the current settings of the ALF-VM52;
6	HDMI / SDI	Displays the input sources of HDMI or SDI inputs 1~4; the resolution and active input source are displayed in the upper left corner. The "HDMI" or "SDI" source priority can be configured in the main menu to set which input is displayed first; the default is set to display the "SDI" source first;

7. Menu Operation

7.1 Main Menu

Press the [MENU] button to open the ALF-VM52 main settings menu. Use the [Rotary Menu Knob] to select the desired menu item and press the [Rotary Menu Knob] to access/select the required menu setting. Press the [MENU] button to go back. Repeated pressing od the [MENU] button will exist out of the settings menu.

7.1.1 Transition Effect Settings

Go to the transition settings menu and select the desired transition effect, such as MIX, DIP, WIPE, etc., the default is set to the ‘MIX’ transition effect.

7.1.1.1 MIX

Select ‘MIX’, press [AUTO] to execute MIX transition.

7.1.1.2 DIP

Select ‘DIP’, press [AUTO] to execute DIP transition. Configure ‘Dip’ source (default: color/black).

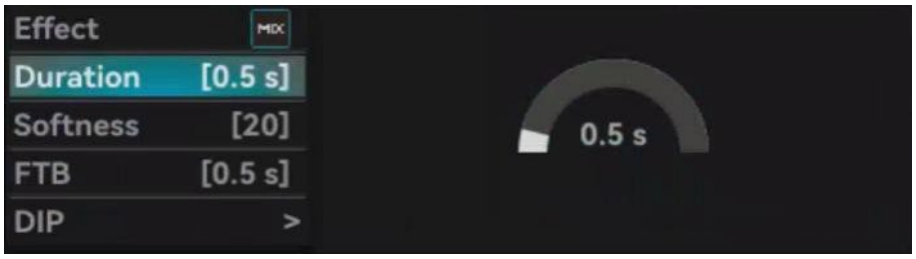
DIP to Black（fade out）:

7.1.1.3 WIPE

Selects the wipe transitions effect between scenes. Selects styles and adjust softness in menus.

7.1.2 Transition Time Settings

Set the transition duration (0.1s–5.0s; default: 0.5s). Longer times equals slower transitions.

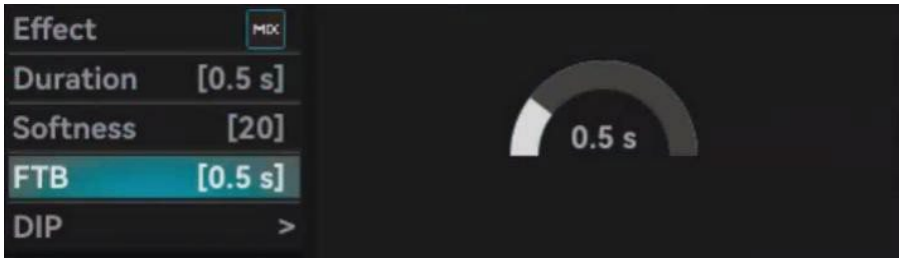


7.1.3 Softness settings

Adjust the transition edge softness (0–100; default: 20). Lower values yields sharper edges.

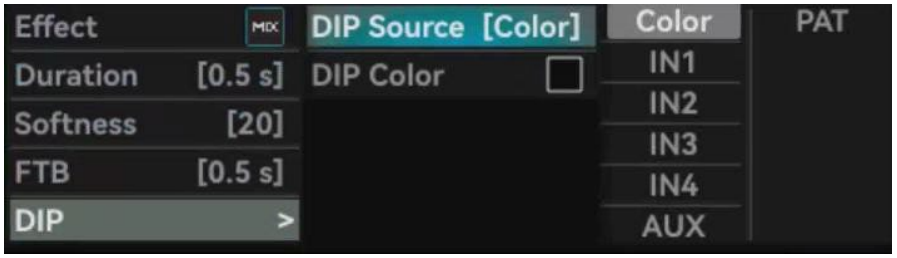
7.1.4 Blackout Settings

Sets the ‘Blackout’ (Fade to Black) transition duration (0.1s–2.0s; default: 0.5s). Longer times equals slower blackout transition time.



7.1.5 Dip Settings

Sets the dip source (color, IN1–IN4, AUX, PAT; default: color/black).

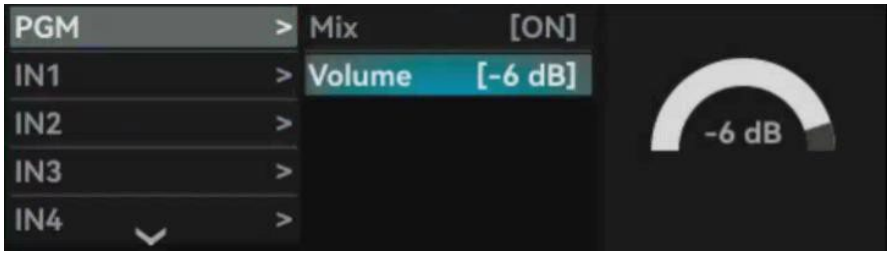


7.2 Audio

Supports 4 HDMI + 4 SDI digital audio inputs, two 3.5mm + two XLR mic inputs. Each channel has independent volume, switch, mixing, and delay settings. HDMI audio supports AFV (Audio Follow Video), Mixing (MIX) and 'Off' states.

7.2.1 PGM Audio Settings

Mutes (turn On/Off) PGM audio or adjust volume (-60dB–0dB; default: -6dB).



7.2.2 Quad HDMI/SDI Input Audio Settings

Go to audio settings, select inputs 1~4, and set the embedded audio settings of the four individual inputs.

7.2.2.1 Mix Mode Settings

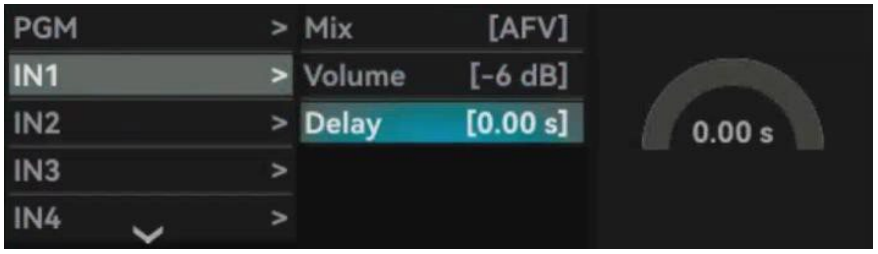
Users can turn on/off the mixing mode independently or set it to AFV (Audio Follows Video) mode, default are set to AFV mode.
When the audio mode of a channel is set to AFV, the audio channel is active only when the video input channel is the active PGM.

7.2.2.2 Volume Control

Adjusts the input volume (-60dB–0dB; default: -6dB).

7.2.2.3 Audio Delay

Inputs 1~4 can be set in the menu to synchronize audio and video. (max delay: 1s; default: 0.00s).



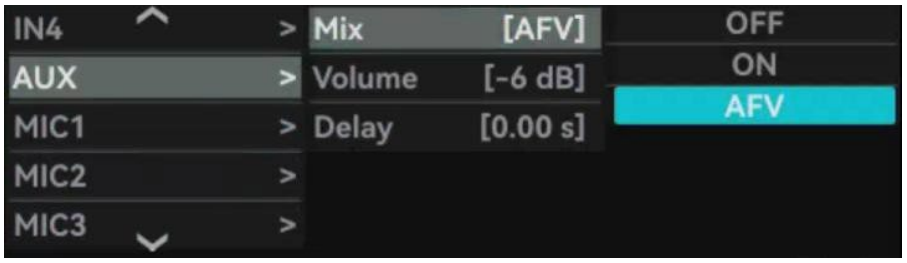
7.2.3 Multimedia AUX Output Audio Settings

Configure AUX output audio.

7.2.3.1 Mix Mode Settings

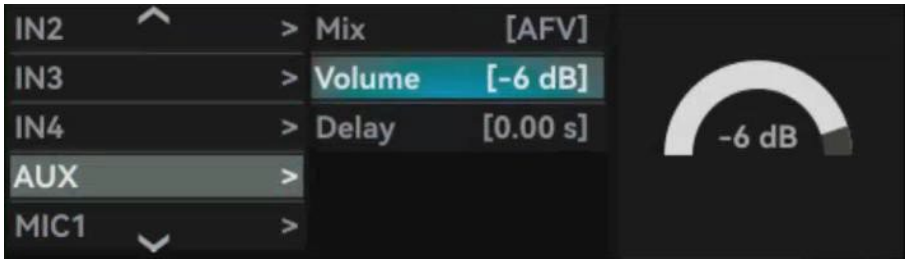
Users can turn on/off the mixing mode independently or set it to AFV (Audio Follows Video) mode, default are set to AFV mode.

When the audio mode of a channel is set to AFV, the AUX video audio output is active only when the AUX input channel is the active PGM.



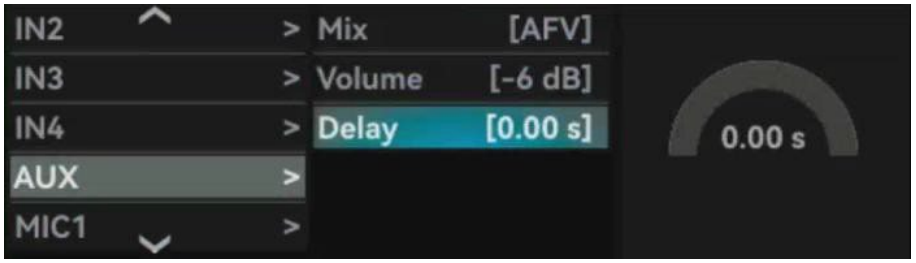
7.2.3.2 Volume Control

Adjust AUX output volume (-60dB–0dB; default: -6dB).



7.2.3.3 Audio Delay

Synchronizes the AUX audio to video (max delay: 1s; default: 0s).



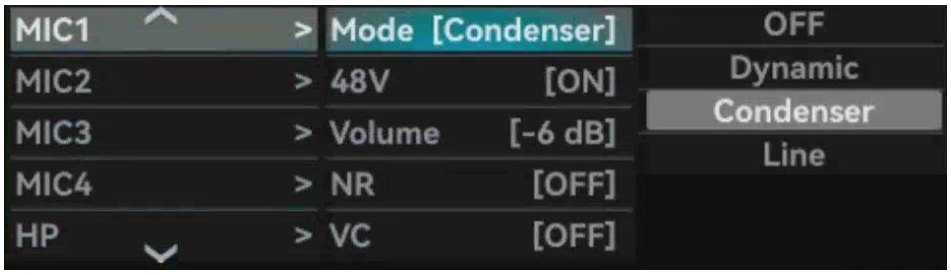
7.2.4 Microphone Input Audio Settings

7.2.4.1 Two-Channel XLR Interface Microphone Input Audio Settings

Configure XLR mics (condenser/dynamic). Toggle 48V phantom power, adjust volume, noise
reduction, and voice effects.

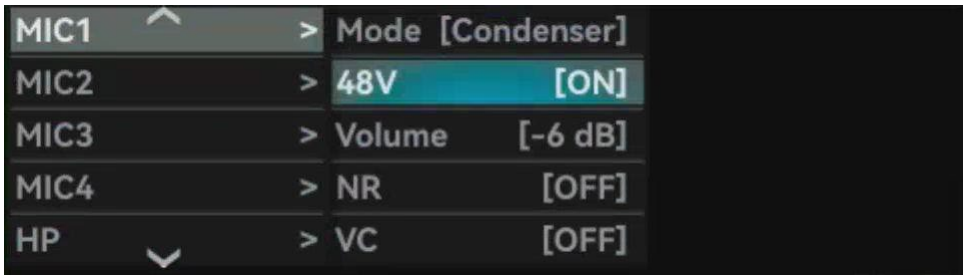
7.2.4.2 Audio Mode Settings

Select MIC 1~4 input type, Off, Dynamic, Condenser, Line; Default is ‘Condenser’.



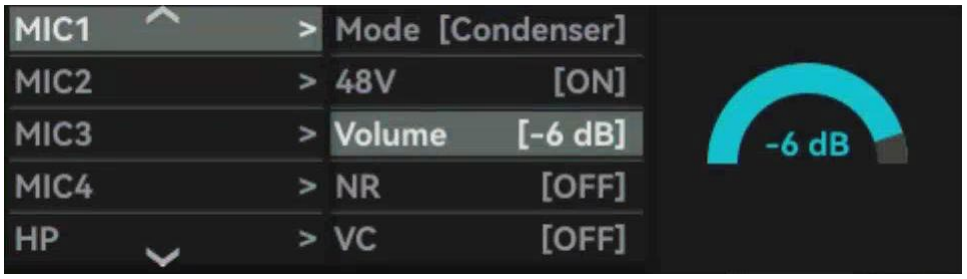
7.2.4.3 48V Power Supply Setting

Turn on/off the 48V Phantom power supply; Default is ‘ON’.



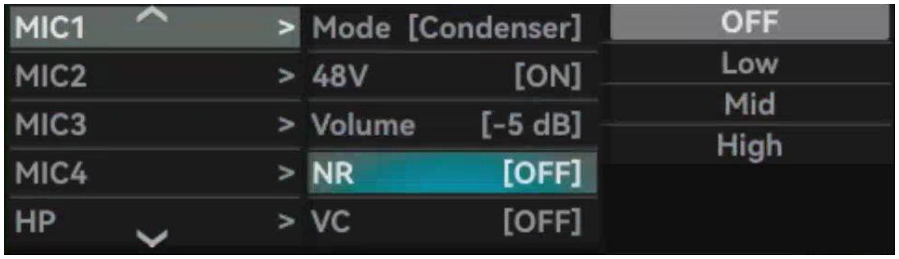
7.2.4.4 Volume Control

Adjust mic volume (-60dB–0dB; default: -6dB)



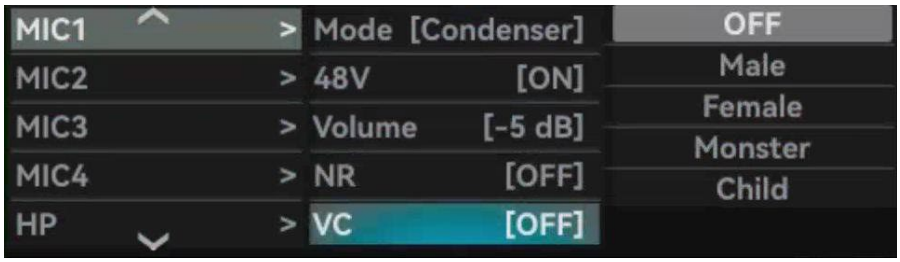
7.2.4.5 Noise Reduction Settings

Sets the noise cancellation mode; Default is ‘OFF’.



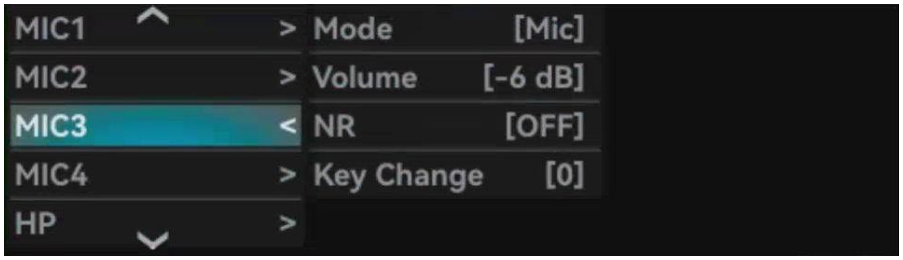
7.2.4.6 Voice-Changing Effects Settings

Sets the ‘voice changing’ effect; Default is ‘OFF’.



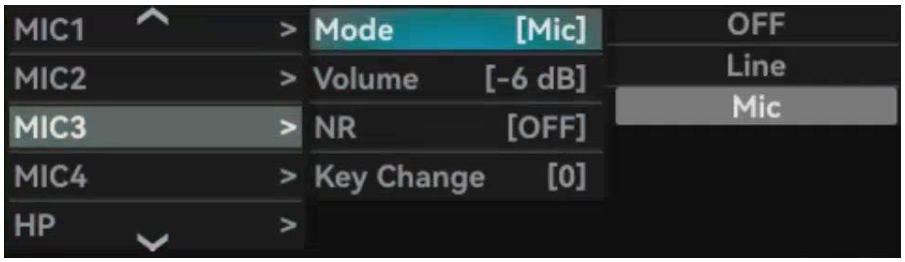
7.2.4.7 Two-Channel 3.5mm Interface Microphone Input Settings

Configure Microphone Input 3~4 for line-level devices, desktop audio, or lapel microphones. Adjusts volume, noise reduction, and pitch shift settings.



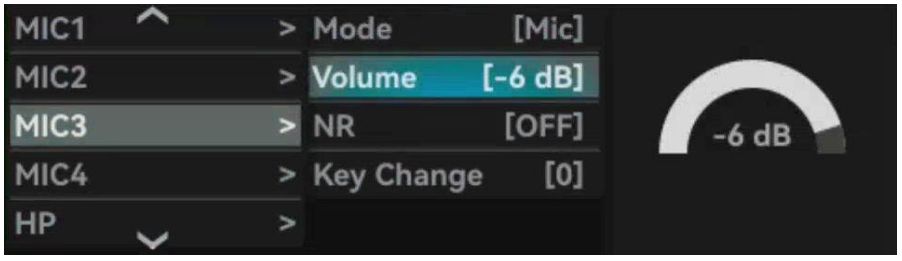
7.2.4.8 Audio Mode Settings

Selects the MIC 3~4 input mode according to the input device type; Default is ‘Mic’.



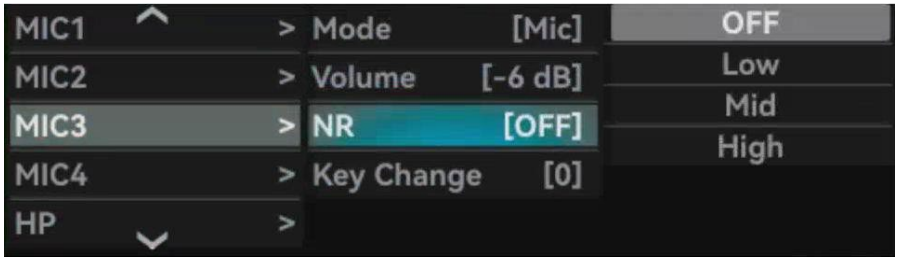
7.2.4.9 Volume Control

Adjusts the volume of Mic 3~4 audio input, (volume range is -60dB-0dB, the default is -6dB).



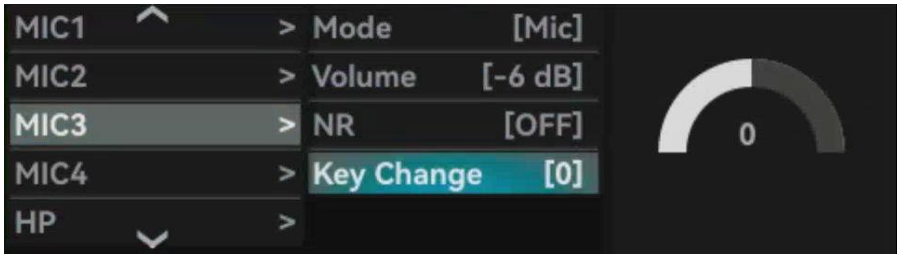
7.2.4.10 Noise Reduction Settings

Sets the noise cancellation mode; Default is ‘OFF’.



7.2.4.11 Pitch Shift Settings

The user can adjust the pitch by using the pitch change value, which ranges from -4 to 4, with the default value of 0.



7.2.5 Headphone Settings

The Video switcher has a headphone output for monitoring audio. The user can select any input source as the monitoring target, the headphone output source is PGM by default, and the user can adjust the monitoring volume of the headphones; the volume range is -60dB-0dB, and the volume is 0dB by default.

7.2.6 Audio Output Settings

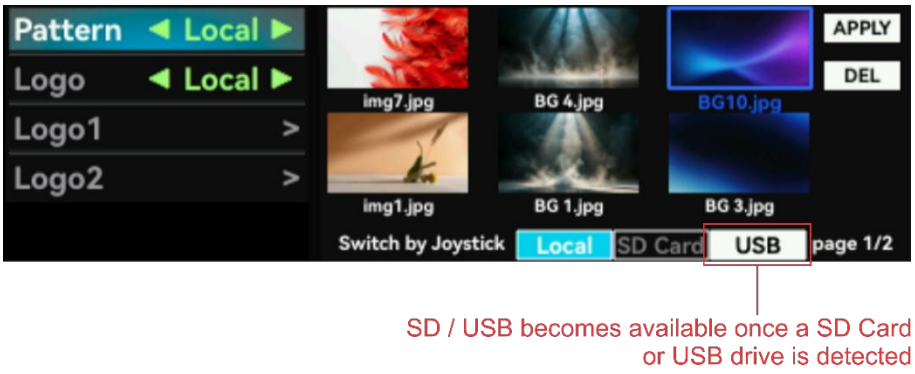
The AUDIO OUT interface allows selecting any input source as the output (default: PGM).

7.3 Images

Customize background images and logos. Supports importing images via USB/SD card.

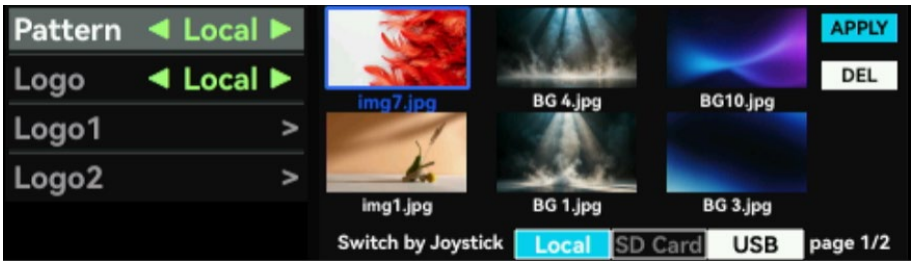
7.3.1 Image

View default/ internal images or external images from USB/ SD (indicated by white icon). Use the joystick to select image sources.



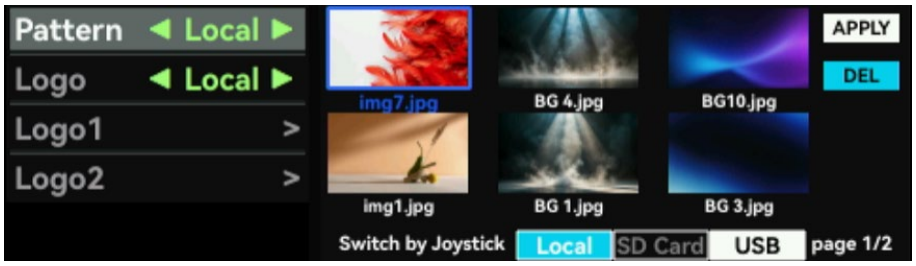
7.3.1.1 Image Applications

Select the image in the system or USB flash drive/SD card by using the Rotary knob, press the knob to apply.



7.3.1.2 Image Deletion

Select and delete images. Note: One cannot delete the currently active/ selected image.



7.3.1.3 Image Import

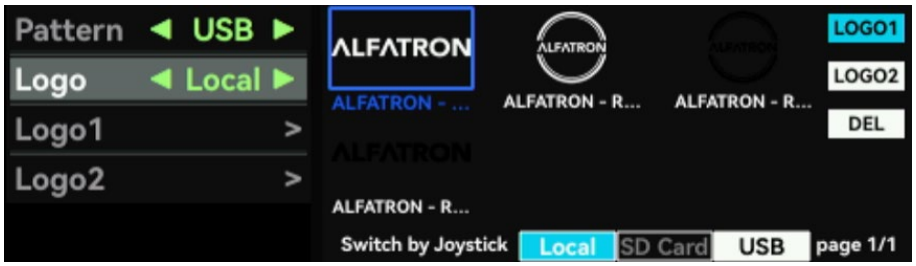
Images can be imported from a USB flash drive or SD card. When inserting a USB flash drive/SD card, a memory used/total memory icon will appear at the bottom of the status/menu page. (Make sure the image is stored in the "images" directory of the USB flash drive/SD card) Use the joystick to select the USB stick/SD card image menu and click Import to load it into the video switcher. Note: The recommended format of the pictures are PNG, with a resolution of 1920x1080.

7.3.2 Logo

Select logos (supports PNG/JPEG/BMP, max 960×540).

7.3.2.1 Logo1/2 selection

Select the image on the system or USB flash drive/SD card by pressing the Rotary knob to set the image of LOGO 1 or LOGO 2.



7.3.2.2 Logo 1/2 Deletion

Select the image on the system or USB flash drive/SD card by pressing the Rotary knob, and then click ‘DEL’ to delete the image.

7.3.2.3 LOGO 1/2 Import

The logo is added by loading the LOGO image from the USB flash drive/SD card. When inserting a USB flash drive/SD card, a memory used/total memory icon will appear at the bottom of

the status/menu page. (Please make sure that the LOGO image is stored on the USB flash drive in a directory labelled “logos".) Use the joystick to switch to the USB stick/SD card LOGOS menu, click Import to load it into the video switcher.

The maximum resolution of the LOGO image is 960x540, and the supported formats are .png, .jpeg, .jpg, .bmp, etc.

7.3.2.4 LOGO 1/2 Size

Adjust the logo size (×0.4 to ×1.4). Default: ×1.0.

7.3.2.5 LOGO 1/2 Position

Go to image settings, select the position of the Logo 1 and 2, and adjust the position of the logo with the joystick.

7.4 Media

Record/play videos (H.264 encoding), stream, and manage media files

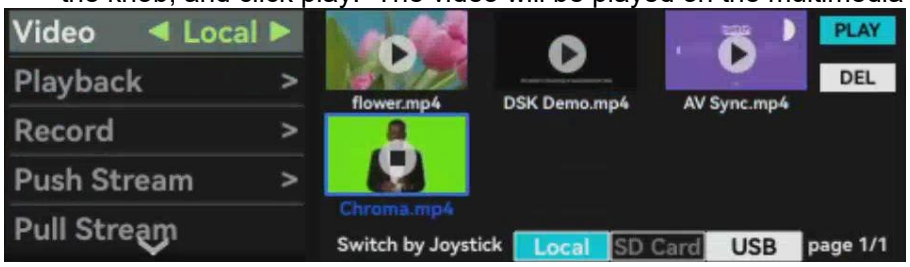
7.4.1 Video

Go to Media Settings and select the Video to display the default video stored inside the switcher. After inserting a USB flash drive or SD card, switch between the video files by moving the joystick.

Video files must be stored on the USB Flash Drive/ SD Card in a folder named "video_rec".

7.4.1.1 Video Playback

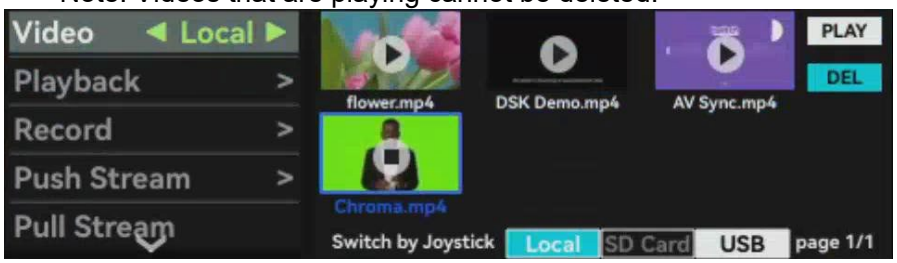
Select the video from the system or USB flash drive/SD card with the Rotary knob, press the knob, and click play. The video will be played on the multimedia AUX port.



7.4.1.2 Video Deletion

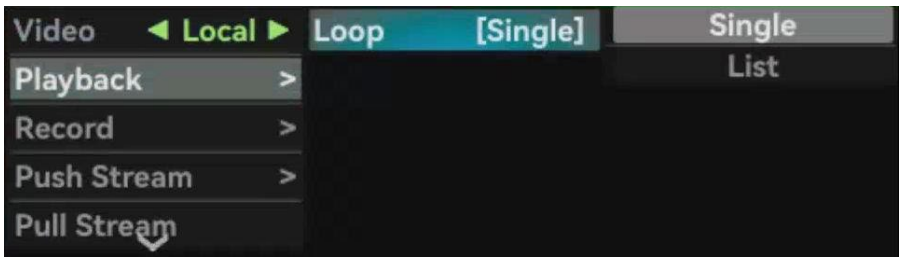
Select the video from the system or USB flash drive/SD card by the Rotary knob, press the knob, and click Delete.

Note: Videos that are playing cannot be deleted.



7.4.1.3 Video Playback Mode

Selecting the media settings, one can choose the playback mode; default playback mode ‘Single‘.



7.4.2 Recording

Records the PGM video and audio to the "video_rec" folder on a USB flash drive/SD card.

Supported U disk/SD card format is FAT32, NTFS, exFAT. (FAT32 can record up to 4Gb video files).

Note: The system will automatically stop recording when the U disk/SD card is full.

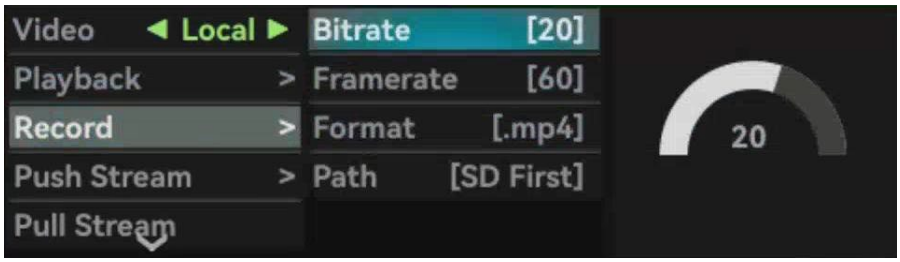
FAT32 formated U disk/SD card recording a 4Gb file size will automatically stop recording when 4Gb file size is reached.

If the recording is not stopped normally (such as the recording power is interrupted and the USB flash drive/SD card is unplugged), the recording file will not be able to be used normally.

7.4.2.1 Bitrate

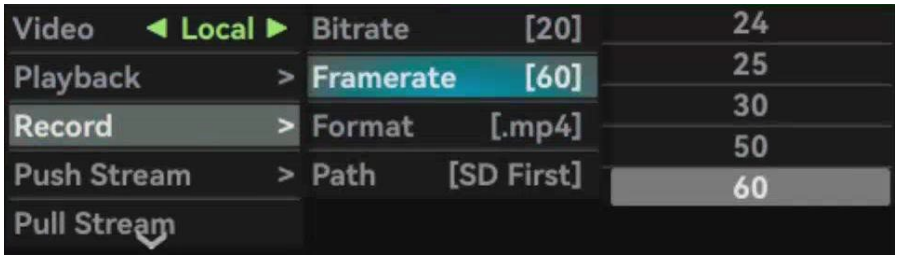
One can modify the recording bitrate. Go to the media settings, select Record, and click ‘Bitrate’.

Bitrate ranges from 5 to 30. The default bitrate is 20.



7.4.2.2 Frame Rate

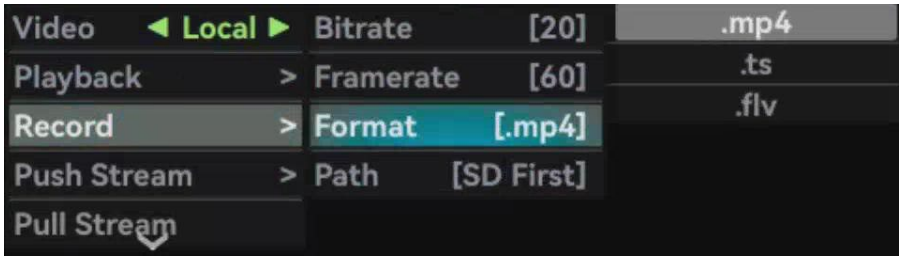
The recording frame rate can be modified by the user. Go to the media settings, select ‘Record’, and click on ‘Framerate’. Framerate range is 24, 25, 30, 50, and 60. The default frame rate is 60.



7.4.2.3 Format

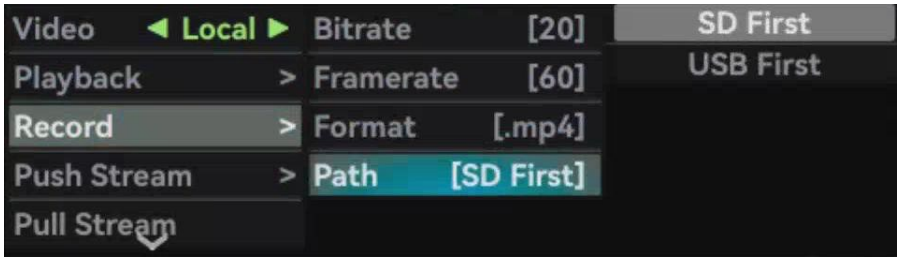
The recording format file type can be selected. Go to ‘Media Settings’, select ‘Recording’, click

‘Format’; File types selectable is ".mp4", ".ts", or ".flv". The default format is “.mp4".



7.4.2.4 Storage Path

Select the storage path of the recorded video. Go to ‘Media Settings’, select ‘Recording’, and click the storage path, which can be modified to SD card first or U disk first; Default is set to SD card takes precedence.



7.4.3 Streaming

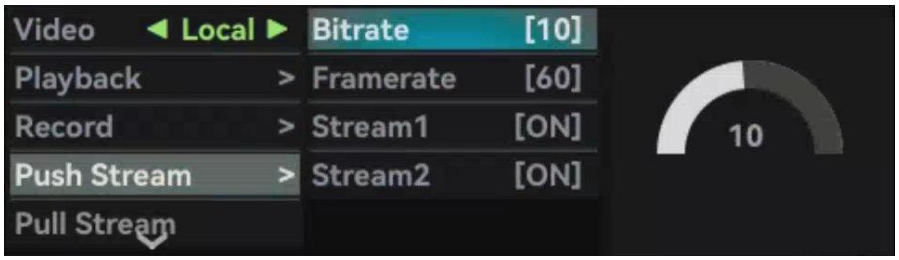
Go to ‘Media’ Settings. Here you can have two ingest URLs (Push Streams) to send the stream to online streaming services. You can also have up to 6 RTSP streams (Pull Streams) to receive streams from the local network.

Click the [STREAM] button to start streaming. If the ingest URL address is available, the [STREAM] button will light up green and start ingesting.

7.4.3.1 Bitrate

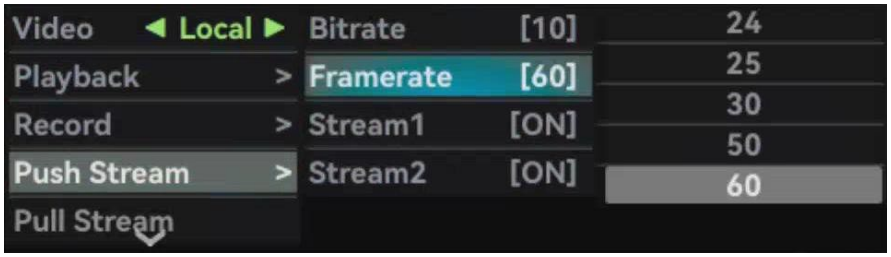
You can modify the bitrate of ingest streams. Go to the media settings, select Push Stream, and click

Bitrate, which ranges from 1 to 20. The default bitrate is 10.



7.4.3.2 Frame Rate

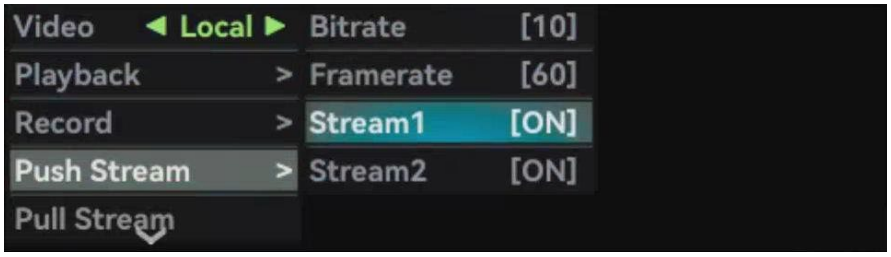
You can modify the frame rate of the ingest streams. Go to the ‘Media’ settings, select ‘Push Stream’, click ‘Frame Rate’, and the frame rate range is 24, 25, 30, 50, and 60. The default frame rate is 60.



7.4.3.3 Streaming Switch Control

You can Turn On/Off control the two ingest streams individually. Go to ‘Media’ settings, select ‘Push Stream’, Select and click ‘Stream 1’ or ‘Stream 2’ to turn on/off each stream individually.

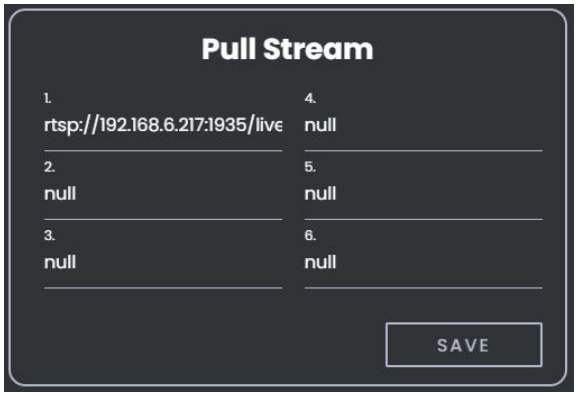
Note: Streaming is activated/ deactivate (‘Go Live’) by pressing the [Stream] button on the front panel of the ALF-VM52.



7.4.4 Pull Streaming

Fill in the local streaming address (up to 6 addresses) through a host computer by accessing the GUI interface, click Save. In the ‘Media’ menu select ‘Pull Stream’, then select the corresponding address in the menu, and click the Rotary Menu knob to activate the selected pull stream.

GUI Interface:

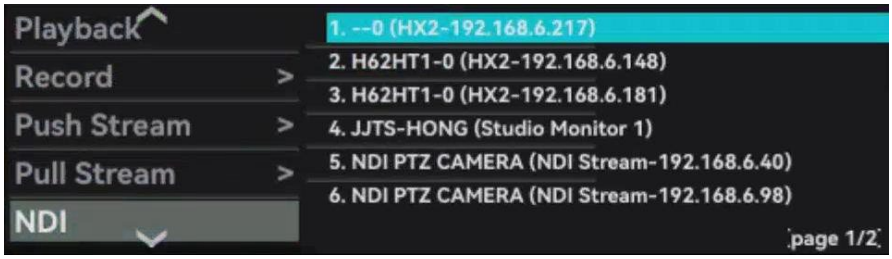


Media Menu Setting:

7.4.5 NDI

NDI is a network transmission protocol that enables video transmission between multiple devices without the need for dedicated network equipment. It can transmit video signals of NDI|HX capable and enabled devices to multiple NDI|HX enable and capable receiving devices through the network.

With the NDI|HX enabled PTZ camera and video switcher on the same LAN, configure the video switcher's network, turn on the NDI function and select the required NDI|HX enabled PTZ camera. The NDI|HX Stream of the PTZ camera will be displayed in the 'AUX' window.

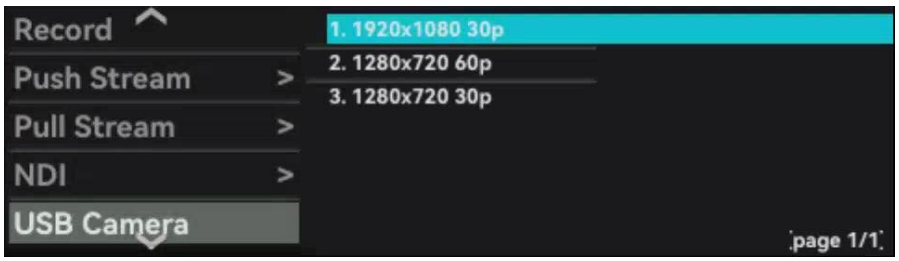


7.4.6 USB Camera

A USB stream from a camera can be connected to the USB-A interface, the USB signal source

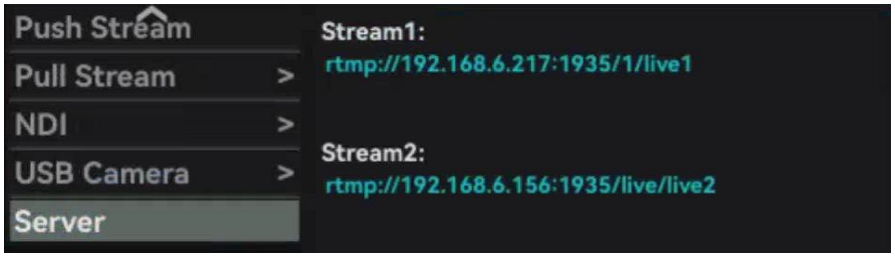
supports MJPG format, with a resolution of 1280*720P30, 1280*720P60 or 1920*1080P30.

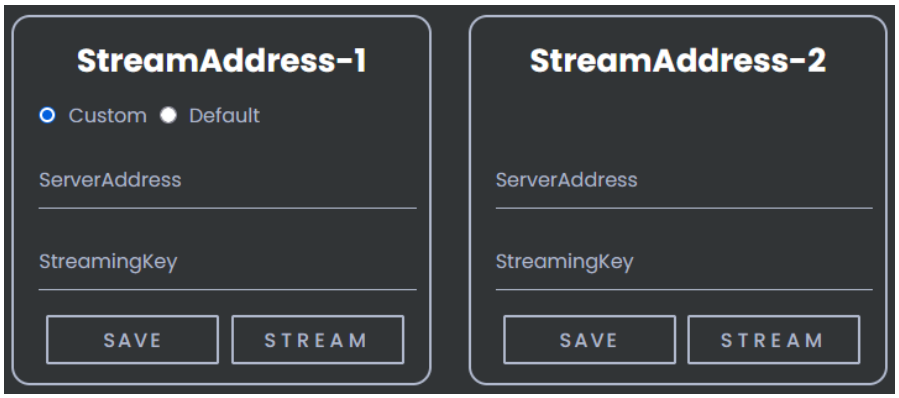
Select



7.4.7 Streaming Server

You can customize the ingest URL address. Store the streaming address in the "stream_url.txt" file on a USB flash drive, insert it into the USB flash drive/SD card, and the streaming address will be
automatically updated.





7.5 Picture-in-Picture (PIP)

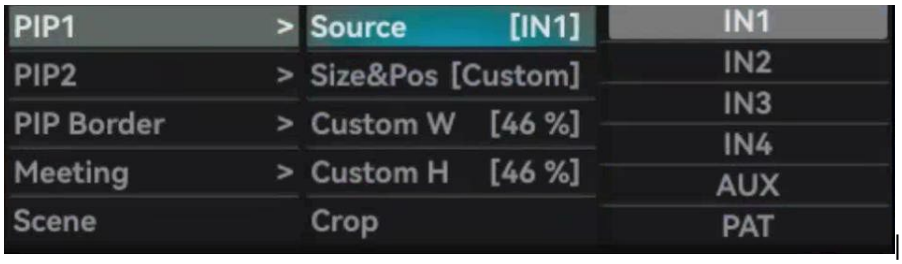
Configure two PIP layers with cropping/resizing.

7.5.1 PIP 1/2 Settings

Users need to use the [PIP1] or [PIP2] buttons to open the Picture-in-Picture 1~1 settings and then enter Picture-in-Picture 1 to adjust the PIP screen size and crop.

7.5.1.1 Source Selection

The user can modify the source selection of Picture-in-Picture 1~1. Go to the picture-in-picture settings, select picture-in-picture1, click the source selection, Select from IN1-IN4, AUX, or PAT. Default: IN1.



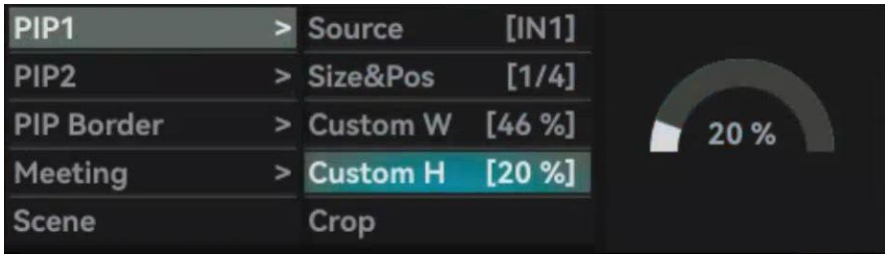
7.5.1.2 Size & Position Selection

The user can adjust the size and position of Picture-in-Picture 1. The position can be adjusted by the joystick, Sizes: 1/8 to 1/2 or custom. Default: 1/4.

7.5.1.3 Custom Width & Height

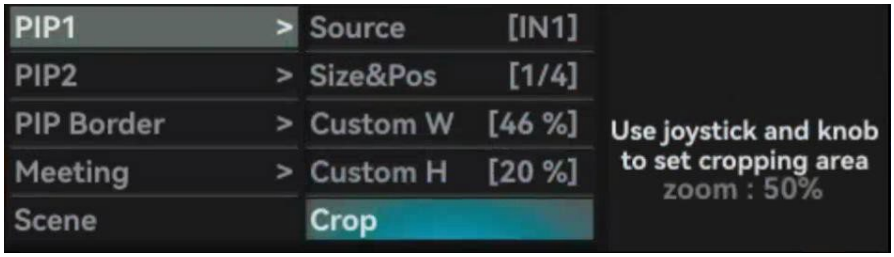
The size and position of Picture-in-Picture 1~2 can be customized. The position can be adjusted with the joystick, the size & position selection is customized, and the width and

height of the picture-in-picture 1~1 can be adjusted by the knob. Set width/height (10%-100%). Default: W40%, H20%.



7.5.1.4 Cropping

The crop function allows the user to select a specific part or portion of the picture to be displayed. Go to the picture-in-picture settings, select Picture-in-Picture 1, and click Crop. Use the PTZ joystick to select a part of the screen to display and rotate the knob to set the zoom size of the screen. The default zone size is 25%.a



7.5.2 Border Settings

The border settings will apply to both Picture-in-Picture 1 and Picture-in-Picture 2.

7.5.2.1 Border Color

Users can customize the color of the border in the color palette. Go to the picture-in-picture settings, select the border, click on the border color, and modify red, green, and blue color space, hue, saturation, and lightness parameters via the Rotary knob and Joystick.

7.5.2.2 Border Width

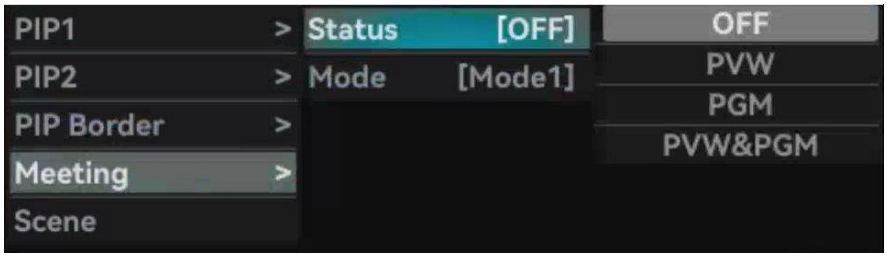
The user can customize the width of the frame of the picture-in-picture. Go to the picture-in-picture
settings, select the border, click the border width, and set the width range is 0-16. The default width is 2.

7.5.3 Conference Settings (Meeting)

The conference function can display the signals of all four input channels on the Preview screen or
the Program screen, or on both screens at the same time.

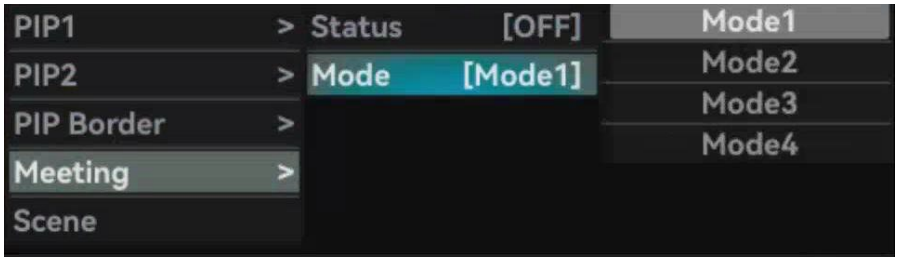
7.5.3.1 Status

The user can customize the display in PVW, PGM, or both. Go to the picture-in-picture settings, select the meeting, click Status, and select the required view as "OFF", "PVW", "PGM", or "PVW&PGM". The default status is ‘OFF’.



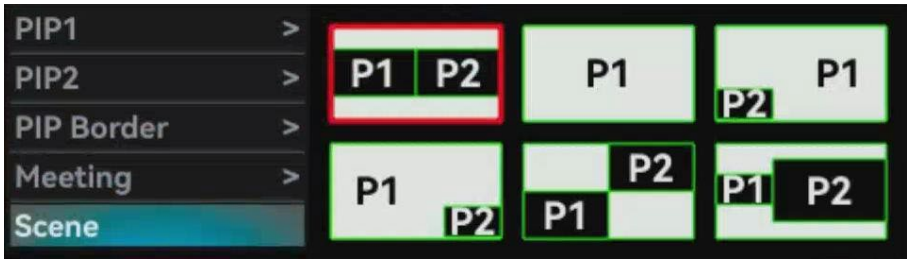
7.5.3.2 Mode

Users can choose from 4 different modes for the ‘Meeting’ view. Each ‘mode’ moves the 4 Conference PIP views to the four sides respectively of the PVW or PGM screens; The default is mode 1.



7.5.4 Scene

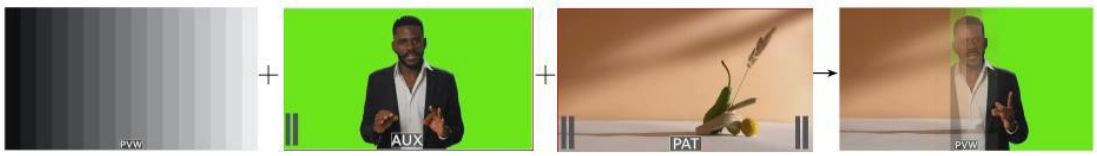
Users can set up picture-in-picture scenes to suit different broadcast requirements.



7.6 Luma Key (Brightness Keyeing)

Luma keying (Brightness Keying) provides a way to synthesize text clips on top of background clips based on the brightness level in the source.

Go to the ‘LUMA’ settings page, select the ‘Key Source’, and set the ‘Fill Source’ for Luma keying. The Luma key can be set to take effect in ‘PVW’, ‘PGM’ or ‘PVW&PGM’.



Key Source Fill Source Background Mix Output

7.6.1 Key Source

The keying source can be selected. Go to the Luma menu and select ‘Key Source’. Select the required keying source IN1, IN2, IN3, IN4, AUX, PAT. The default key source is IN4.

7.6.2 Fill Sources

The fill source can be selected. Go to the Luma menu and select ‘Fill Source’. Select the required keying source IN1, IN2, IN3, IN4, AUX, PAT. The default fill source is IN1.

7.6.3 Display (Show)

Users can set the Luma key to take effect in PVW, PGM, PVW&PGM, or off; Default is ‘OFF’.

7.6.4 Luma Key Parameter adjustments

7.6.4.1 Threshold

In the Luma key settings, select ‘Parameter’ and then select ‘Threshold’. The level of transparency is set by adjusting the ‘Threshold’ range. The threshold ranges from 1% to 100%, with the default threshold being 20%. The higher the threshold value, the greater the effect of the luma (Brightness) keying.

7.6.4.2 Gain

In the Luma key ‘Parameter’ settings, the gain sets the smoothness of the boundary of the keyeing, the higher the gain value, the smoother the boundary. The gain ranges from 1% to 100%, with a default gain value of 20%.

7.6.4.3 Invert

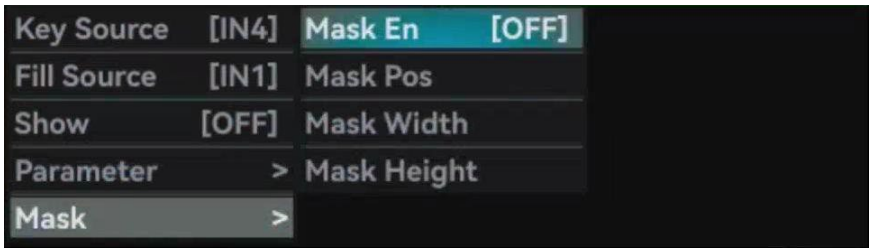
In the Luma key ‘Parameter’ settings, turn on ‘Invert’ to key the brightness range that is greater than the threshold. ‘Invert’ is set to ‘OFF’ by default.

7.6.5 Mask

The mask function adjusts the part of the source that is displayed through the Luma Key mask layer.

7.6.5.1 Mask Switch

In the Luma key ‘Mask’ settings, click Mask, set the ‘Mask En’ switch to ‘ON / OFF’ to turn the mask on or off; Default is set to ‘OFF’.



7.6.5.2 Mask Position

In the Luma key ‘Mask’ settings, click Mask, then select and click ‘Mask Pos’ to set the position of the mask region. Use the Rotary knob to zoom in and out of the mask screen and use the joystick to move the position of the mask.

7.6.5.3 Mask Width

In the Luma key ‘Mask’ settings, click Mask, then select and click ‘Mask Width’ to adjust the width of the mask. Use the joystick to further adjust the position of the mask.

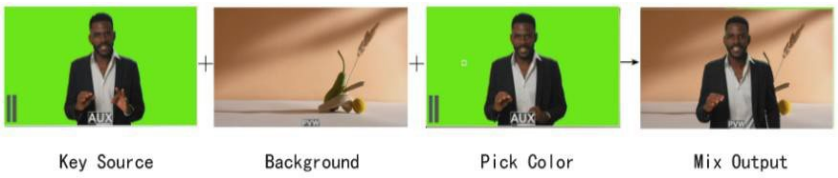
7.6.5.4 Mask Height

In the Luma key ‘Mask’ settings, click Mask, then select and click ‘Mask Height’ to adjust the height of the mask. Use the joystick to further adjust the position of the mask.

7.7 Chroma Key

Chroma key is a visual effects and post-production technique used to composite (layer) two images or video streams together based on hue (chroma range). This technology has been used in many fields to remove backgrounds from photo or video subjects, especially in industries such as news broadcasting, movies, games, live streaming, etc.

Go to Chroma Key, select the key source, and set the effect of Chroma Key. Chroma key can take effect in PVW and PGM, turn on the chroma key function in PVW by pressing the [CHROMA] key. It will light up when turned on;



7.7.1 Key Source

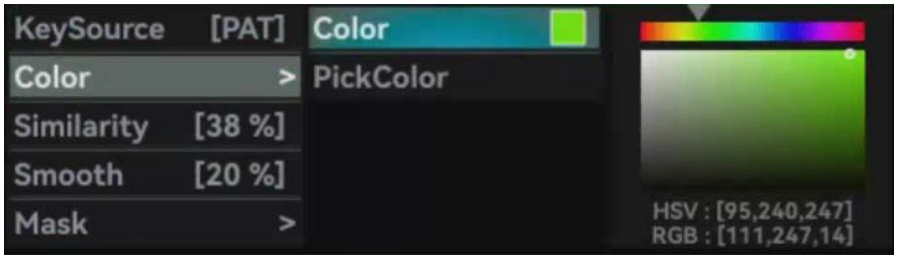
In Chroma Key settings, select ‘KeySource’ and then select the required key source. The key source can be selected as IN1, IN2, IN3, IN4, AUX, PAT, PIP1, PIP2. The default key source is IN4.

7.7.2 Key Color

In Chroma Key settings, select ‘Color’. The Rotary Knob and Joystick is used to customize and select
the required color of the chroma key.

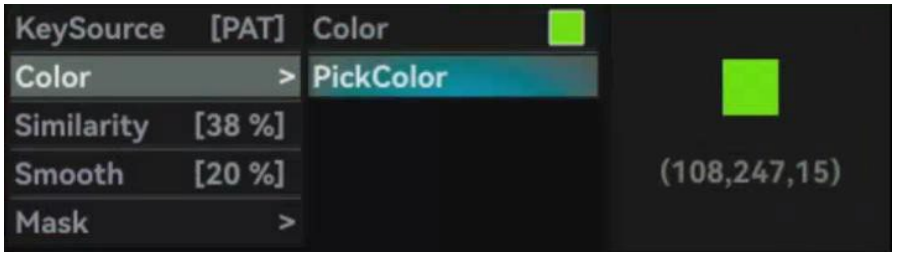
7.7.2.1 Color

Users can select the specific color to be used for chroma keying in the color palette. Go to the chroma key settings, select ‘Color’ and then click on ‘Color’ to set the required chroma color. Modify the selected chroma color, hue, saturation, and lightness parameters with the Rotary Knob and Joystick.



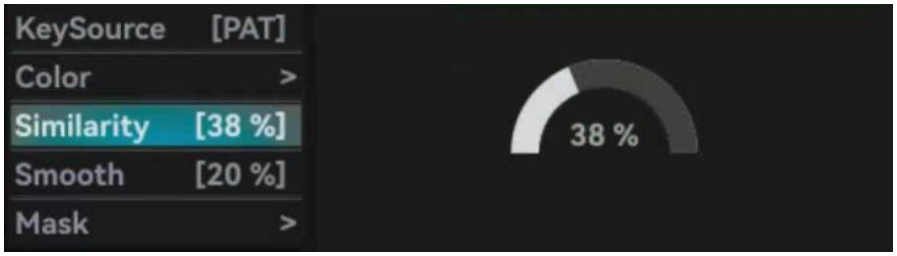
7.7.2.2 Color Picker

Users can select the color to be used as the chroma key source from the selected ‘KeySource’. Go to the ‘Chroma Key’ settings, select ‘Color’, click ‘PickColor’ and use the joystick to pick the color in the key source to be used as the Chroma Key.



7.7.3 Similarity

In Chroma Key settings select ‘Similarity’. Then set the similarity range of the selected chroma color. The higher the number, the larger the chroma key effects the color range from the selected chroma key color. The similarity ranges from 1% to 100%, with the default similarity range set to 38%.



7.7.4 Smoothness

In Chroma Key settings select ‘Smooth’. The Smooth range sets the ‘smoothness’ of the boundary of the keyed color. The higher the number, the smoother the boundary. The smoothness ranges from 1% to 100%, with the default smoothness set to 20%.

7.7.5 Mask

The mask function adjusts the portion of the screen that is effected by the Chroma key layer by applying a layer mask to the Chroma key.

7.7.5.1 Mask Switch (ON/OFF)

Go to Chroma Key settings, select ‘Mask’. Select ‘Mask En’ to turn the chroma key mask layer ‘ON’ or ‘OFF’. It is ‘OFF’ by default.

7.7.5.2 Mask Position

Go to Chroma Key settings, select ‘Mask’. Select ‘Mask Pos’; Use the Rotary Knob to zoom in and out the mask and use the joystick to move the position of the layer mask.

7.7.5.3 Mask Width

Go to Chroma Key settings, select ‘Mask’. Select ‘Mask Width’; Adjust the width of the mask with the Rotary Knob. Use the joystick to further adjust the position of the mask.

7.7.5.4 Mask Height

Go to Chroma Key settings, select ‘Mask’. Select ‘Mask Height’; Adjust the height of the mask with the Rotary Knob. Use the joystick to further adjust the position of the mask.

7.8 Downstream Key (DSK)

The ALF-VM52 supports Downstream Keying, which is the process of overlaying professional subtitles, graphic packages or effects to the final video output. DSK is applied after all other effects, transitions, overlays or keying has been applied. This process allows for the DSK overlay to remain consistent across all PGM outputs regardless of selected and switched input.

7.8.1 Key Sources

Select the ‘DSK’ Settings, then select ‘KeySource’; The DSK key source can be selected to be IN1, IN2, IN3, IN4, AUX, PAT. The default DSK key source is IN4.

7.8.2 Threshold

Select the ‘DSK’ Settings, then select ‘Threshold’; The threshold range sets the cut of point for the similarity of the DSK key source with regards to the luminosity (brightness) of the source. The threshold ranges from 1% to 100%, with the default threshold set to 20%.

7.8.3 Gain

Select the ‘DSK’ Settings, then select ‘Gain’; In the DSK key settings, the ‘Gain’ sets the smoothness of the boundaries of the DSK layer, resulting in smoother boundaries to the DSK keyed source. The gain ranges from 1% to 100%, with a default gain value of 20%.


KeySource [IN4]
Threshold [20 %]
Gain [20 %]
Inverse [OFF]
Mask >
20 %

7.8.4 Invert

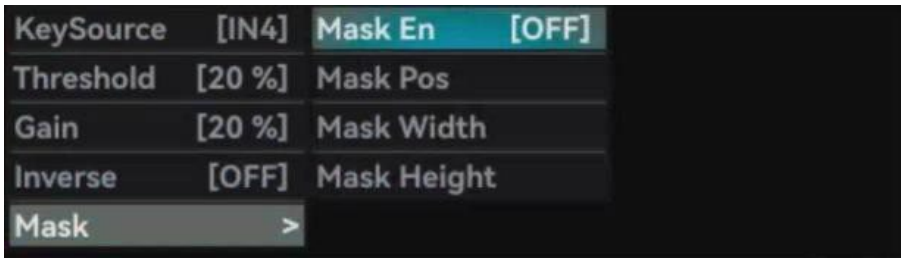
Select the ‘DSK’ Settings, then select ‘Invert’; Set the Invert to ‘ON / OFF’. Invert changes the range to be keyed by the DSK to affect the brightness range greater than the threshold. It is set to ‘OFF’ by default.

7.8.5 Mask

The mask function adjusts the part of the DSK that is displayed by the DSK masking layer.

7.8.5.1 Mask Switch

Go to DSK settings, select ‘Mask’. Select ‘Mask En’ to turn the DSK mask layer ‘ON’ or ‘OFF’. It is ‘OFF’ by default.



7.8.5.2 Mask Position

Go to DSK settings, select ‘Mask’. Select ‘Mask Pos’; Use the Rotary Knob to zoom in and out the mask and use the joystick to move the position of the layer mask.

7.8.5.3 Mask Width

Go to Chroma Key settings, select ‘Mask’. Select ‘Mask Width’; Adjust the width of the mask with the Rotary Knob. Use the joystick to further adjust the position of the mask.

7.8.5.4 Mask Height

Go to DSK settings, select ‘Mask’. Select ‘Mask Height’; Adjust the height of the mask with the Rotary Knob. Use the joystick to further adjust the position of the mask.

7.9 PTZ

The ALF-VM52 supports the VISCA IP camera control protocol, which allows you to quickly and easily control the camera with the Joysticks, Zoom rocker switch and Camera Rotary Knobs. You can set the camera's focus, exposure, white balance and other parameters in the camera menu.
In addition, it also supports the storage and recall of up to 4 camera presets, which can be recalled by the [POS 1~4] buttons.

7.9.1 Camera Selection

Go to the PTZ settings, select ‘Cam ID’; Select the required camera 1~4 with the Rotary Knob.

7.9.2 Camera Connection

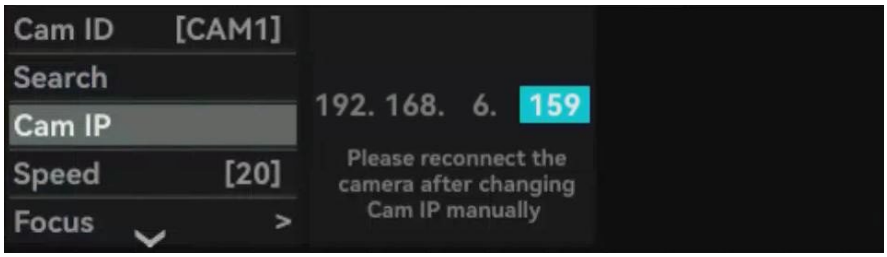
When the PTZ camera is connected to the ALF-VM52 via a network cable or through a network switch, the camera is searchable and assignable to the ALF-VM52.

7.9.2.1 Search

Go to ‘PTZ’ settings, select ‘Search’; The ALF-VM52 will display all the camera IPs detected on the same LAN / network. Select the required camera IP address with the Rotary Knob to assign the camera to CAM ID 1~4 as selected in ‘CAM ID’.

7.9.2.2 Manual IP

Go to PTZ settings, select the camera IP, display the IP address of the camera, and you can manually set the IP address (you need to reconnect after manually updating the camera).



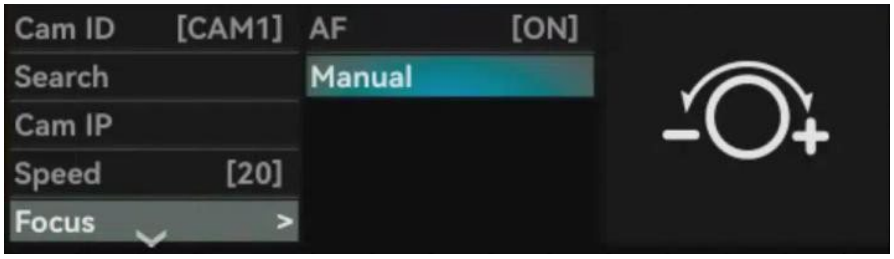
7.9.3 Camera Settings

7.9.3.1 Speed

Go to ‘PTZ; settings and select ‘Speed’; Speed adjusts the speed of the camera Pan, Tilt and Zoom movement. The speed range is 1-24. The default speed is 20.

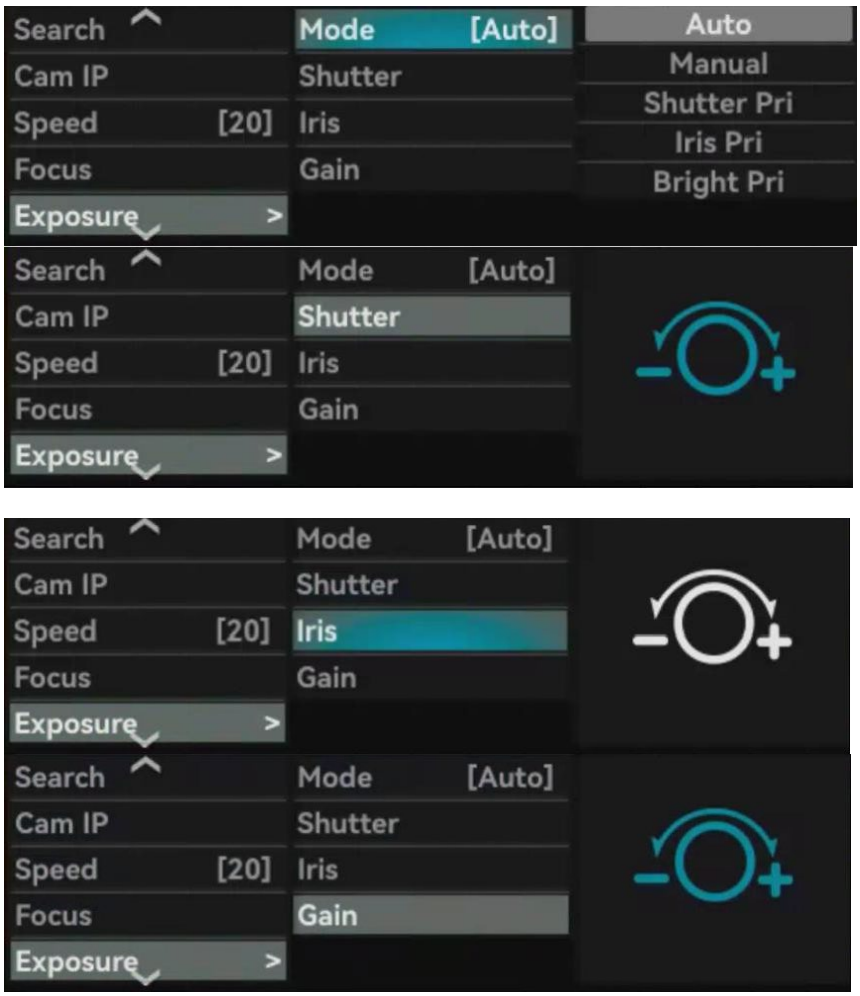
7.9.3.2 Focus

Go to ‘PTZ; settings and select ‘Focus’; Focus allows you to set autofocus ‘ON/ OFF’ or set the camera to manual focus, to adjust the focus by the Rotary Knob.



7.9.3.3 Exposure

Go to the ‘PTZ’ settings and select ‘Exposure’; The exposure mode can be set to Auto, Manual, Shutter Priority, and Aperture (Iris) Priority or Brightness Priority. After selecting any Exposure mode, except ‘AUTO’, use the Rotary Knob to set the Shutter, Aperture (Iris) or Gain respectively as per the selected exposure mode.



7.9.3.4 White Balance

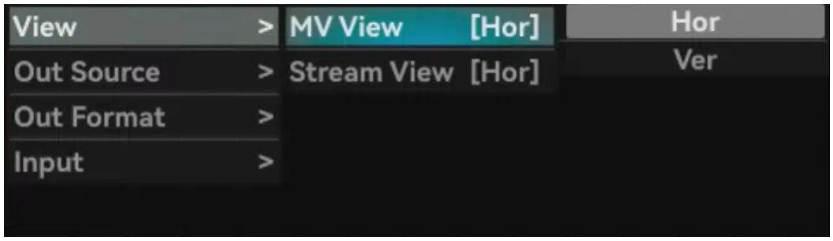
Go to the ‘PTZ’ settings and select ‘WB’ (White Balance); Set the WB mode to Auto, Indoor, Outdoor, One Push, ATW or Manual mode. In all modes, except Auto, use the White balance Rotary knob to adjust the WB setting. Press to select ‘Red gain’ or ‘Blue gain’. The gain range is 0-255 (the displayed parameter value reads the current actual value of the camera, if the actual value of the camera cannot be read, the default display is 0).

7.10 Interface (Port settings)

The interface function controls the output source of the LCD monitor and all outputs.

7.10.1 View Direction

Go to the View Orientation settings and select the horizontal or vertical layout of the monitor and output screen.



7.10.1.1 Multi-View Monitoring

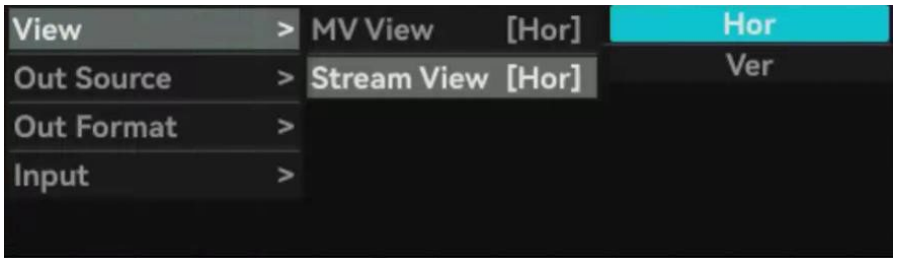
Select ‘Port’ settings, then select ‘MV View’; Select ‘Hor’ for ‘landscape’ / ‘horizontal’ layout, or ‘Ver’ for ‘Portrait’ / ‘Vertical’ layout of the Multi-View screen.

Sample of Landscape / Horizontal layout:

Sample of Portrait / Vertical layout:

7.10.1.2 Recording/Streaming View

Select ‘Port’ settings, then select ‘Stream View’; Select ‘Hor’ for ‘landscape’ / ‘horizontal’ layout, or ‘Ver’ for ‘Portrait’ / ‘Vertical’ layout of the ‘Stream View’ output.



7.10.2 Output Source

7.10.2.1 AUX Output

Select ‘Port’ settings, then select ‘Out Source’. Select ‘AUX Out’ to set the required source for the AUX output. The available sources are; IN1, IN2, IN3, IN4, AUX, PAT, Cln PGM, PGM, Cln PVW, PVW and MV. MV is selected by default.

7.10.2.2 PGM Output

Select ‘Port’ settings, then select ‘Out Source’. Select ‘PGM Out’ to set the required source for the PGM output. The available sources are; IN1, IN2, IN3, IN4, AUX, PAT, Cln PGM, PGM, Cln PVW, PVW and MV. PGM is selected by default.

7.10.2.3 Built-in LCD Screen Output

Select ‘Port’ settings, then select ‘Out Source’. Select ‘LCD Out’ to set the required source for the LCD output. The available sources are; IN1, IN2, IN3, IN4, AUX, PAT, Cln PGM, PGM, Cln PVW, PVW and MV. PGM is selected by default.

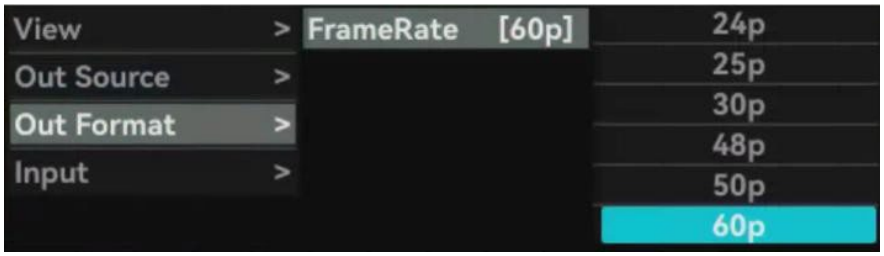
7.10.2.4 SDI Output

Select ‘Port’ settings, then select ‘Out Source’. Select ‘SDI Out’ to set the required source for the SDI output. The available sources are; IN1, IN2, IN3, IN4, AUX, PAT, Cln PGM, PGM, Cln PVW, PVW and MV. PGM is selected by default.

7.10.3 Output Format

7.10.3.1 Frame Rate

Select ‘Port’ settings, then select ‘Out Format’; Select ‘FrameRate’ to set the required video output framerate. Choose from 24p, 25p, 30p, 48p, 50p, 60p. The default framerate is 60p.



7.10.4 Input

Select ‘Port ‘ settings, then select ‘Input’; Select the required video input source priority for IN1~4 to set the input priority of the four input signals IN1~4. Choose between ‘HDMI First’ or ‘SDI First’. The default is set for the SDI signal to take precedence first.

<u>NOTE:</u> If input is set to ‘SDI First’, and both an SDI cand HDMI input is present in the selected input, the SDI signal will be displayed and used first. Should the SDI signal fail, be unplugged, or any fault occur with the SDI signal, the HDMI input will be used and displayed as the “fail-over” signal.

7.11 User

Select ‘User’ settings; The User1~6 presets allow one to save up to 6 custom configurations.

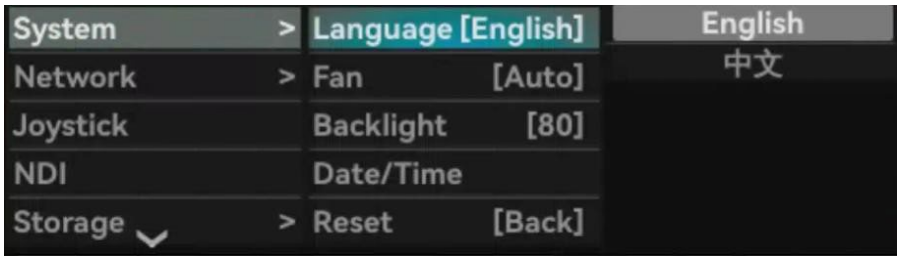
7.12 Settings

7.12.1 System Settings

Select ‘Settings’ to set the system settings of the video switcher’s operating system, including system settings, network settings, joystick calibration, view NDI version, available Storage devices and Device version information.

7.12.1.1 Language

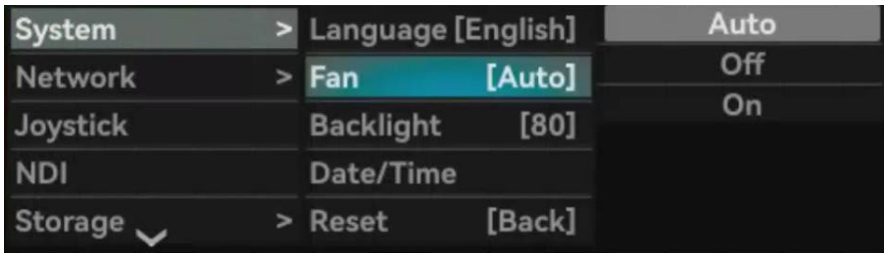
Go to ‘Settings’, select ‘System’; Select ‘Language’ to set the required language of the ALF-VM52. Default language is English.



7.12.1.2 Fan

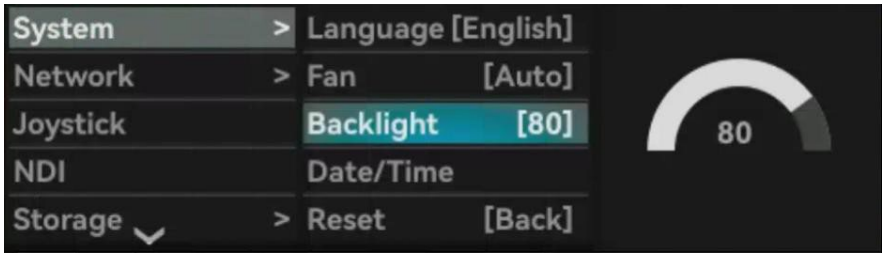
Go to ‘Settings’, select ‘System’; Select ‘Fan’ to set the required Fan mode of the ALF-VM52 with the Rotary knob, select the mode of the fan, the default is ‘Auto’.

Auto mode: Fan speed control is based on the switcher’s temperature, the higher the temperature, the faster the speed.
Off Mode: Turns off the fan and switches to auto mode only when a certain temperature is reached.
On mode: The fan is set to always on.



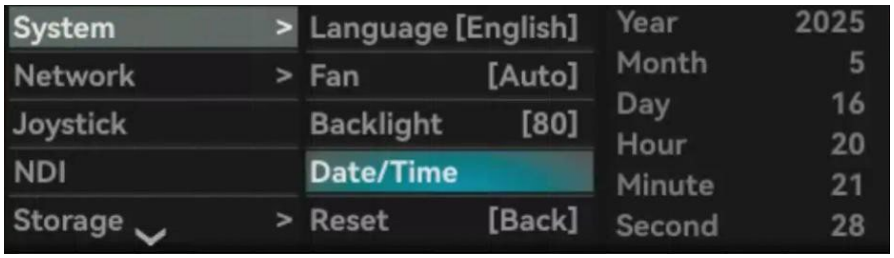
7.12.1.3 Backlight

Go to ‘Settings’, select ‘System’; Select ‘Backlight’, Use the Rotary Knob to adjust the screen backlight brightness. The range is from 1-100, the higher the value, the brighter the screen. The default brightness is 80.



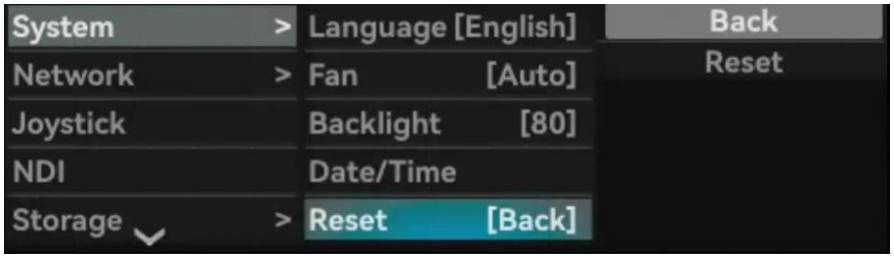
7.12.1.4 Time/Date

Go to ‘Settings’, select ‘System’; Select ‘Date/Time’ to and modify the year, month, day, hour, minute, and second with the Rotary Knob and joystick.



7.12.1.5 Reset

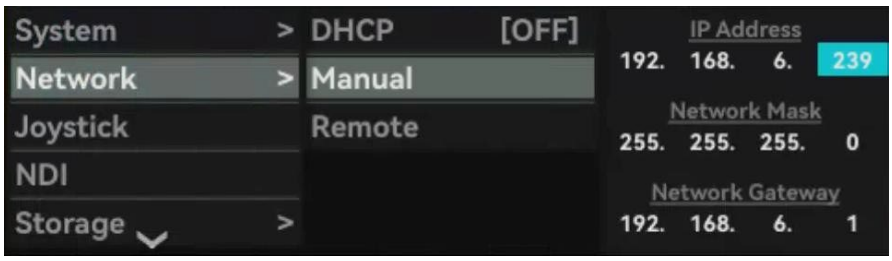
Go to ‘Settings’, select ‘System’; Select ‘Reset’ and press the Rotary Knob to confirm a ‘factory default’ reset. The reset will clear all configurations and return to the ALF-VM52 to its default state.



7.12.2 Network

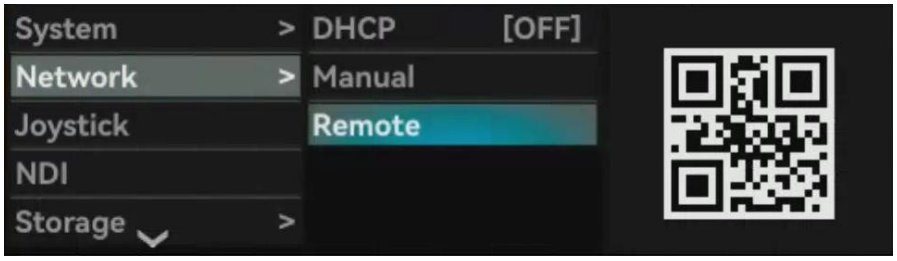
7.12.2.1 Network Connection

In the network settings, you can choose to automatically obtain a network IP address or manually configure it to a specific network IP address. In order to set a manual IP Address, ensure that DHCP mode is set to ‘OFF’. The default DHCP mode is ‘DHCP Off’.



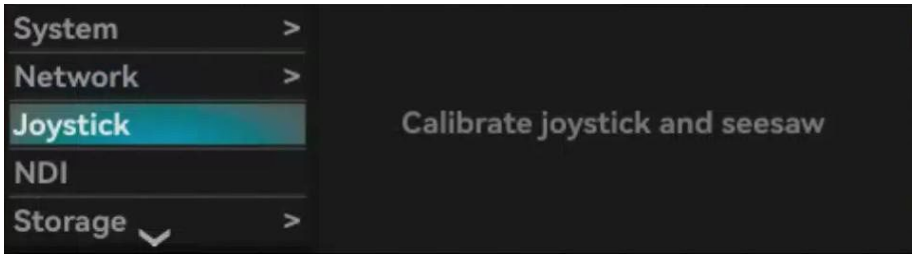
7.12.2.2 Remote control

FOR FUTURE USE: The remote functionality may be available in the future.



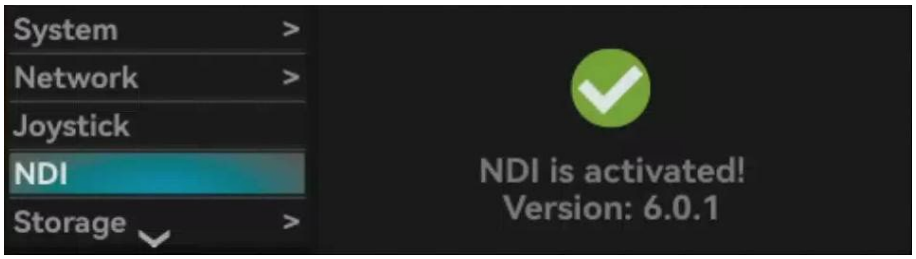
7.12.3 Joystick Calibration

Go to ‘Settings’, then select ‘Joystick’ to calibrate the joystick and Zoom Rocker/ Seesaw switch. Follow the steps on the LCD screen to calibrate the joystick.



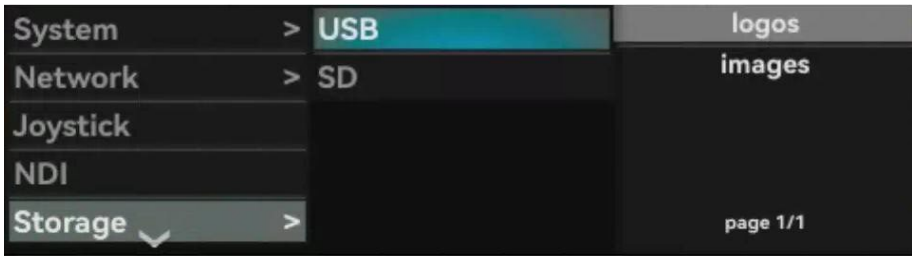
7.12.4 NDI

Go to ‘Settings’, then select ‘NDI’. This will display whether the NDI is active and shows the activated NDI version information



7.12.5 Storage

Storage items can be imported in batches, such as logos, images, local video sources, and software upgrades.



Version 7.12.6

Go to the settings, click on the version, and the QR code of the device serial number, version date and other information and help address will be displayed.

8. Web UI

8. 1 Connect the web UI

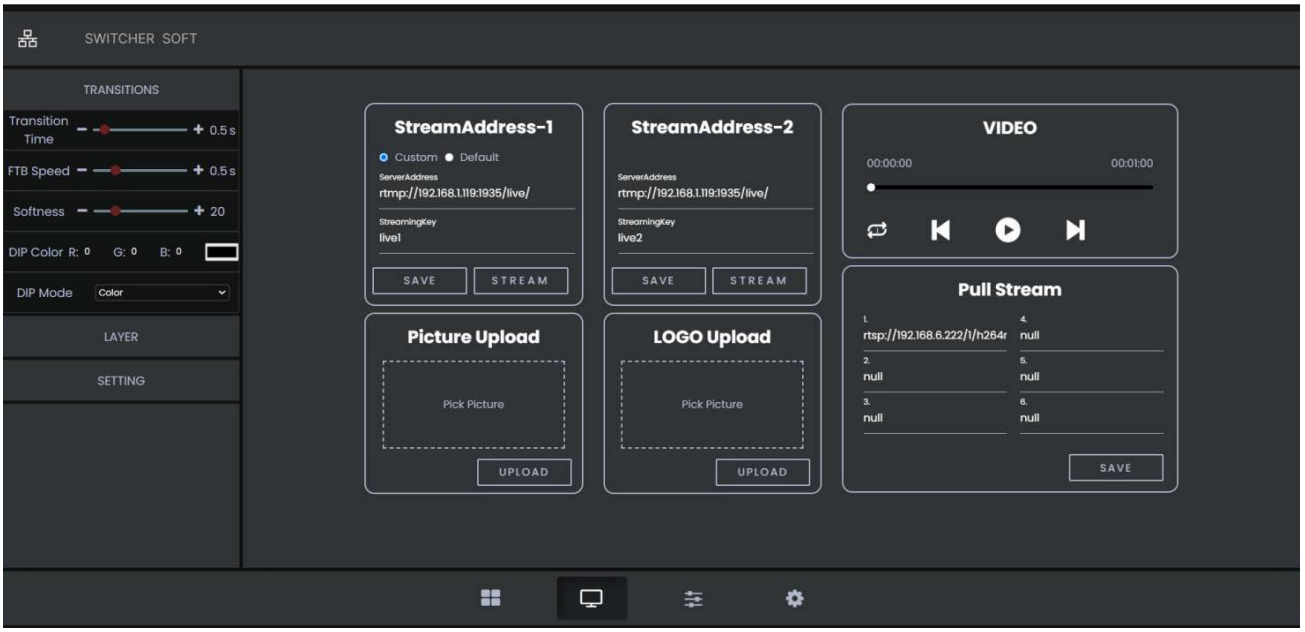
8. 1. 1 Computer Connection

Confirm that your computer is connected to the same LAN and automatically obtaining or manually setting the network IP address accordingly. Open a web browser on the computer, Enter the IP address of the ALF-VM52 to connect to the Web-GUI home page of the host computer, that is, the switcher page.

8. 2 Switcher Panel Control

The interface allows the user to control and set the corresponding buttons on the ALF-VM52.

8. 3 Multimedia Settings



8. 3. 1 Streaming Settings

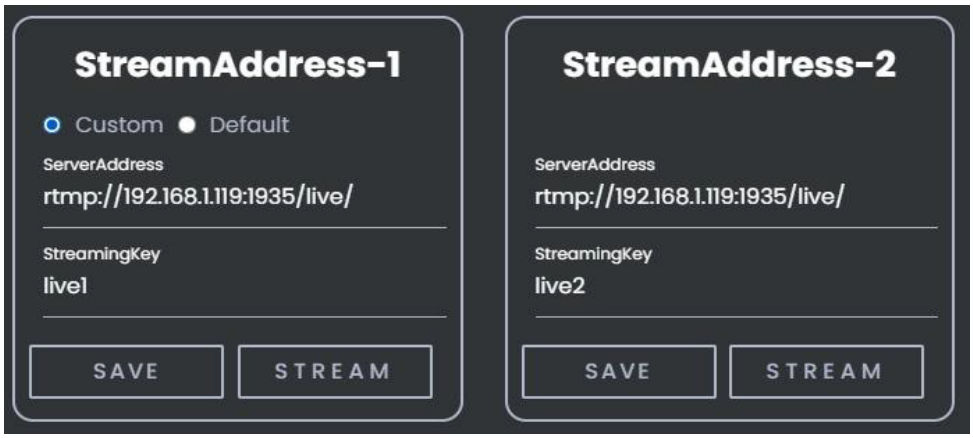
8. 3. 1. 1 Setting Streaming Address

Custom ingest URL:

Enter WEB-UI through the host computer and select the Media icon at the bottom of the main view. Select ‘StreamAddress-1’ or ‘StreamAddress-2’ to enter the server address and streaming key of the push stream in the relevant fields. Push Streams are used to push the stream to live streaming platforms such as Youtube or Facebook. Click ‘SAVE’ to save the settings and click ‘STREAM’ to activate the stream.

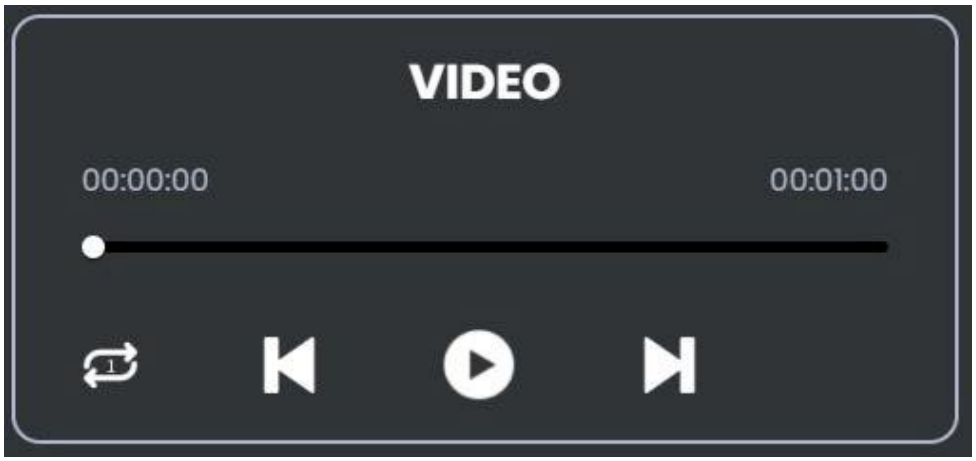
Default ingest URL:

Enter the default local server address and streaming key of the ‘StreamingAddress-1’. Click ‘SAVE’ to save the settings and click ‘STREAM’ to activate the stream.



8.3.2 Video

You can use this interface to operate the local video source played for ‘AUX’.



8.3.3 Upload images and logos

Users can upload images and logo files through this interface.

8. 3. 4 Pull stream settings

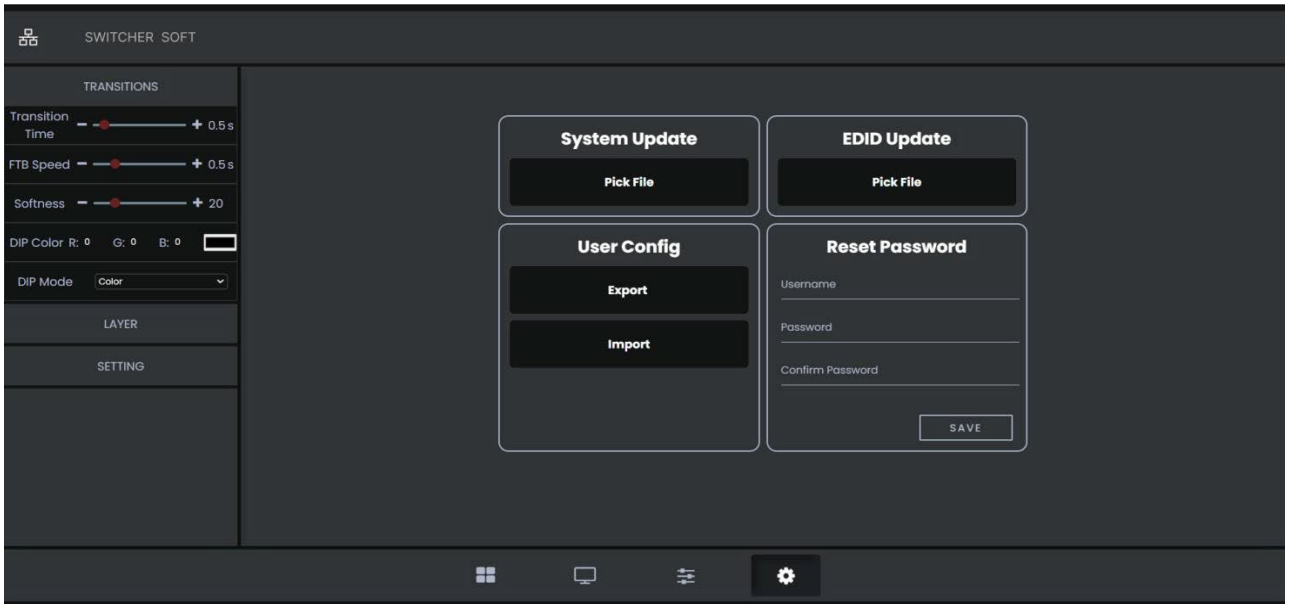
Fill in the local pull streaming address (up to 6 addresses) on the host computer, click Save to synchronize the addresses to the switcher.

8. 4 Audio

Users can modify audio-related parameters on this interface.

8.5 Upgrades

Users can perform system updates, EDID updates, Import / Export user configuration files and set new password and username accounts.



9. Technical Specifications

TECHNICAL SPECIFICATIONS	
Video input	4× HDMI (2× 4K60), 4× SDI (1080p60), 1× USB/RTSP/NDI
Video output	1 x HDMI PGM + 1 x HDMI AUX + 1 x SDI PGM + 1 x USB 3.1 (Type-C) and 1 x RJ45 (Network control and streaming).
Audio input	2 x Line (3.5mm stereo), 2 x XLR
Audio output	2 x Line (3.5mm stereo)
USB	USB/SD for recording/ digital media (FAT32/NTFS/exFAT)
Control interface	1 x LAN is used for network streaming, PTZ camera control, and web interface (GUI) access.
SD card	It is used for video recording and storage, LOGO, pictures, local videos, firmware upgrades.
FUNCTION	
Transition	T-Bar/AUTO/ CUT
Transitions	WIPE (MULTI-PATTERN)/ MIX/ DIP/ TRANSITION PREVIEW
Key	Upstream key: 1 x Chroma Key, 2 x PIP, 1 x Luma Key Downstream key: 1 x DSK, 2 x LOGO overlay
Layer	Up to 8 layers are supported
Audio	HDMI x 4, SDI x4, multimedia and 4 mic/analog audio inputs. Audio delay: 0-1s
PTZ CONTROL	VISCA OVER IP
Media Library	Support presets with a variety of background images, logos, video playback and video streams
Streaming	H.264 encoding, supports recording and multi-network stream ingestion, and supports bitrate separation for recording and ingesting streams. RTSP, RTMP and NDI streams supported.
LOGO	Any size (up to 960x540) and position, support alpha transparent channel (PNG image).
RESOLUTION & FORMAT SUPPORT	
HDMI input support	Progressive Formats: 2160p 60/ 59.94/ 50/ 30/ 29.97/ 25/ 24/ 23.98 (HDMI2.0） 1080p 60/ 59.94/ 50/ 30/ 29.97/ 25/ 24/ 23.98 *PLEASE NOTE: Only HDMI IN1 and HDMI IN2 supports 2160p Video Formats* Interlaced formats: 1080i50/ 1080i60
SDI input support	Progressive Formats: 1080p 60/ 59.94/ 50/ 30/ 29.97/ 25/ 24/ 23.98 Interlaced formats: 1080i50/ 1080i60
HDMI output	1080p 60/ 50/ 48/ 30/ 25/ 24
SDI output	1080p 60/ 50/ 48/ 30/ 25/ 24
HDMI color space	RGB/ YUV
UVC output	USB 3.1 lossless output, up to YUV2 1080p60
Dataflow support	1080p 60/ 59.94/ 50/ 30/ 29.97/ 25/ 24/ 23.98
POWER, WEIGHT & DIMENTIONS	
power supply	12V / 2A
power consumption	≤15W
size	385 x 188 x 88mm / 385 x 188 x 127mm (including joystick height)
weight	2.2kg
temperature	Operating temperature: 0 ° C~40 ° C, Storage temperature: -10°C~60°C