8 Channels Network Live Video Switcher Operating Manual

Preface

Read this user manual carefully before using the product. Pictures shown in this manual are for reference only. Different models and specifications are subject to real product.

This manual is only for operation instruction, please contact the local distributor for maintenance assistance. The functions described in this version were updated till March 2023. In the constant effort to improve the product, we reserve the right to make functions or parameters changes without notice or obligation. Please refer to the dealers for the latest details.

FCC Statement

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It 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 in a commercial installation. Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference.Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

SAFETY PRECAUTIONS

To ensure the best performance from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment.
- Follow basic safety precautions to reduce the risk of fire, electrical shock, and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration, or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

Table of Content

1. Product Introduction

The world first touch screen NDI live video switcher is a simplifies live broadcasting. It supports up to 8 channels of 1080p60 video input and multiple protocols. It also has an integrated audio mixer and supports multiple transitional effects. The device has a 10.1" full HD display and can be controlled through touch screen, buttons, and USB mouse/keyboard etc.

1.1 About live video switcher

A live video switcher is a device that takes multiple audio and video sources from different places and sends them to a single output. It allows users to connect multiple devices such as video cameras, game systems, cable boxes, and Blu-ray players to a single input on a television, live streaming platforms, or other display devices.

1.2 Features

- Integration of live control, allowing fine control of the camera during live video, simplifying live broadcast equipment, and making it easier to set up a live broadcast environment.
- Multi-channel input and output, up to 8 channels 1080p60 video input, users can start live broadcast with only one network cable with multiple IP cameras.
- Support for multiple protocols, including network, HDMI, and local file access and output of video; support for mainstream live streaming protocols; optional NDI|HX2 support.
- Integrated audio mixer, support 4-channel mixer, support multiple audio input and output methods.
- A variety of operation methods, control the live broadcast efficiently through the touch screen, buttons, and other methods, so that the live broadcast is under your control at any time.
- Support multiple transitional effects, such as fade in and fade out.
- Custom overlay content, support subtitle overlay and logo overlay.
- High-definition touch display, the body integrates a 10.1" full HD display, the device operation mode is more user-friendly.

1.3 Package list

- 1x NDI live video switcher
- 1x Power Adapter (12V DC, 3A)
- 1x User manual
- 1x QC card
- 1x HDMI cable
- 1x Bracket

2. Specification

| Main Parameters	
Video Standard	FHD
Video Processing Capability	Input: Up to :1920x1080p60 * 8 Output: Up to 1920x1080p60（HDMI）+1920x1080p60（IP）+1280x720p60（IP）
Video Input	8 channels IP video streaming +1 channel HDMI + local video/image files
Video Output	2 channels IP video streaming +1 channel HDMI + local recording
Live Video Encoding Format	H.264, H.265
Live Video Bitrate	512Kbps~ 20Mbps
Live Video Bitrate Mode	CBR
Network Input Protocol	RTSP, RTMP, NDI|HX2 (optional)
Network Output Protocol	RTSP, RTMP
Audio Input	RCA*1 TRS6.3mm*2 (Compatible with active and passive signals), Video embedded
Audio Output	RCA*1 Video embedded
Mixer	4 physical tuning (by hardware slider) + 8 digital tuning(by menu control)
Transition Control	Joystick , button, touch screen
Subtitle Overlay	Support
Logo Overlay	Support
Tally	DB9 output
USB Port	USB3.0*2+USB2.0*2
Camera Control	Support PTZ, focus, exposure, white balance, preset position control
Power Supply	
Input Voltage	DC 12V
Input Current	3A
Rated Power	36W
POE	Optional 802.3AT
Others	
Use Environment	Indoor
Operating Temperature	0℃~40℃
Storage Temperature	-10-50℃
Camera Dimensions	420*257.52*121.2mm
Accessories	Power adapter, Power cable, HDMI cable, User manual, Bracket

3. Panel Description

3.1 Connection interface
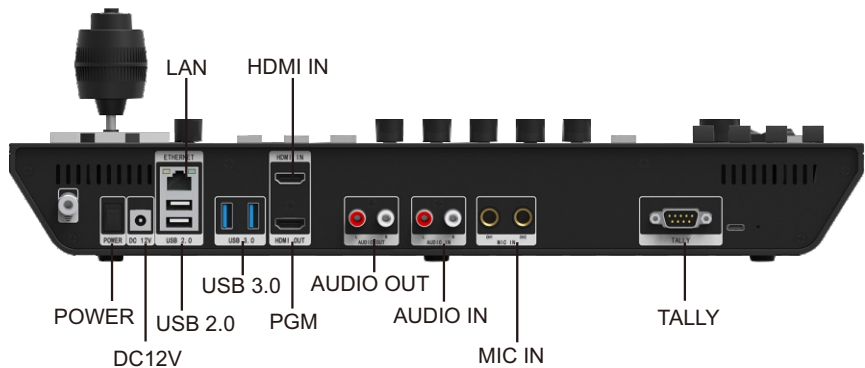
- Power: Power switch
- DC12V: for power supply adapter connection
- LAN: network interface (RJ45, 1000Mbps)
- USB2.0: Storage interface (also available for USB disk, USB mouse/keyboard)
- USB3.0: Storage interface (also available for USB disk, USB mouse/keyboard)
- HDMI IN: HDMI input
- PGM: HDMI output for PGM channel
- AUDIO OUT: Analog dual-channels audio output interface, RCA
- AUDIO IN: Analog dual-channel audio input interface, RCA
- MIC IN: MIC input interface, active/passive support
- TALLY: for Tally system connection

Tally interface:
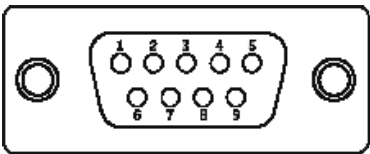
Pin definition:

①PGM1 ②PGM2 ③PGM3

④PGM4 ⑤PGM5 ⑥PGM6

⑦PGM7 ⑧PGM8 ⑨Grounded

3.2 Control panel

①   Headphone connector: Monitor audio output interface

②   MIC 1 slider: MIC IN CH1 volume adjustment

③   MIC 2 slider: MIC IN CH2 volume adjustment

④   AUX slider: AUDIO volume adjustment

⑤   VOL slider: PGM volume adjustment

⑥   AUTO button: Set focus mode to auto focus

⑦   FOCUS+/- knob: Rotate the knob to adjust the lens focal length

⑧   ONE PUSH button: Set focus mode to ONE PUSH

⑨   SPEED+/- knob: Rotate the knob to adjust the speed level of ZOOM ship-shape control to adjust lens zoom

⑩   ZOOM in: press to get telephoto vision

⑪   ZOOM out: press to get wide vision

① LOCK button: Get device buttons and screen locked or unlocked

② STREAM button: Get Streaming function enabled or disabled

③ RECORD button: Turn on PGM signal recording (recording files are stored in the root directory of the U disk, listed by system time)

④ PLAY button: Enter the recording and playback interface

⑤ Preset function buttons: for presets control usage

⑥ Joystick: 1. Moving left/right for pan operation. 2. Moving up/down for tilt operating. 3. Rotate clockwise to zoom in and rotate counterclockwise to zoom out the lens. 4. Press the button to get back to camera PTZ home location or used to confirm the camera menu selection.

⑦ PT SPEED+/- knob: Rotate the knob to adjust the speed level of the joystick to control camera pan/tilt movement.

① Camera control buttons: AE AUTO button is used to set the camera exposure mode to automatic exposure; IRIS+/-, SHUTTER+/-, GAIN+/-, RGAIN+/-, BGAIN+/- knobs are used to control the aperture parameter value of the camera in manual exposure mode; WB MODE button is used to change camera white balance mode.

② PGM1- PGM8: PGM channel buttons, signal will be output to the PGM screen after pressed the channel button

③ PVW1-PVW8: PVW channel buttons, signal will be output to the PVW screen after pressed the channel button

④ FN: to enable the PVW screen full screen or exit full screen

⑤ MENU: to open system menu or exit

⑥ CUT: press to do PVW/PGM switch

⑦ AUTO: press to do PVW/PGM switch with transition effect

4. System connection
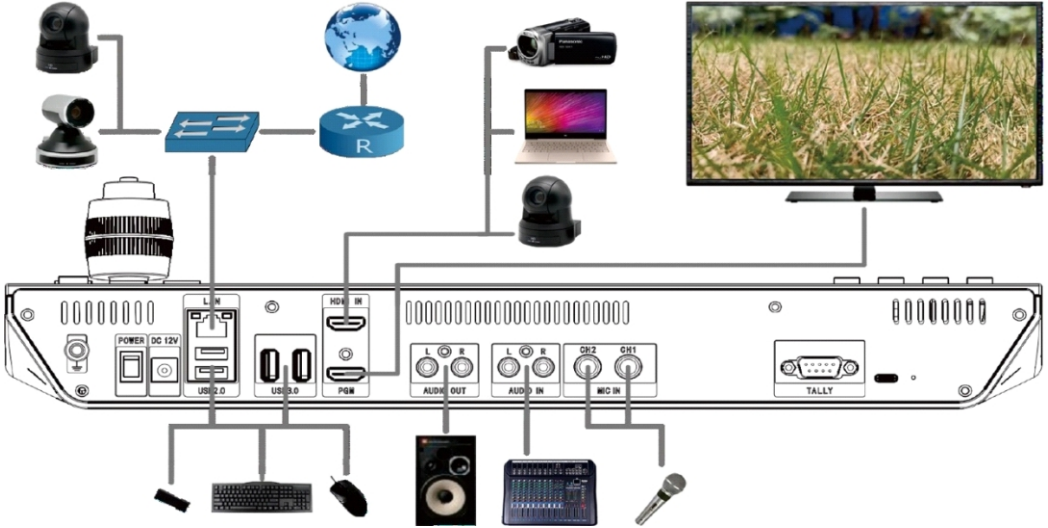
5. GUI control
5.1 Main interface
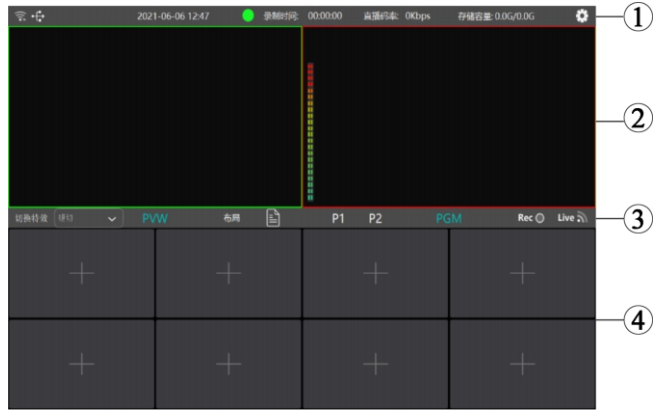
① Status bar. From left to right are network status, USB disk status, system time(modifiable), recording time, stream status/time, Bitrate, USB disk storage capacity, system setting button
② PVW signal display window (on left side); PGM signal display window (on right side)
③ From left to right: Transitions effect selection, PIP layout selection, (and P1-P4 video source selection for PIP effect), REC status light, LIVE status light
④ Videos sources display location: click icon "+" to add a video signal

5.2 Video Source Interface
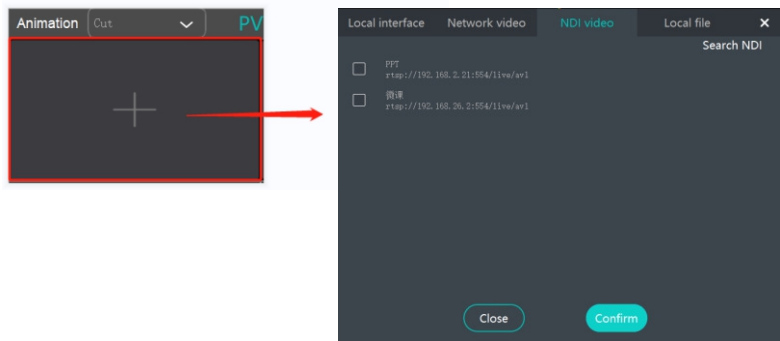
1. Press the icon "+" on the main screen, then it will pop up a new screen.

2. Click tab "Local interface" to add HDMI input; click tab "IP Video(rtsp/srt)" to add rtsp/srt streaming; click tab "NDI Sources" to add NDI streaming; click tab "Media" to add MP4 video files or JPG/PNG/BMP image file.

3. After that, click the checkbox to get the corresponded channel selected, then click button Confirm to add it to main interface.

After switched to tab IP Video (rtsp/srt), it has an option "+Import IP sources" to add bulk rtsp/srt source links from USB flash directly. You can create a NetStream.ini at the root directory of USB flash and its content can be listed as below:

(you need to input the corresponded rtsp streaming link from your local side, below rtsp streaming address is only for examples)

```
[Stream1]
name=net1
url=rtsp://192.168.5.103/Stream/live/1
[Stream2]
name=net2
url=rtsp://192.168.5.104/Stream/live/1
[Stream3]
name=net3
url=rtsp://192.168.5.105/Stream/live/1
[Stream4]
name=net4
url=rtsp://192.168.5.106/Stream/live/1
[Stream5]
name=net5
url=rtsp://192.168.5.103/Stream/live/2
[Stream6]
name=net6
url=rtsp://192.168.5.108/Stream/live/1
[Stream7]
name=net7
url=rtsp://192.168.5.111/Stream/live/3
[Stream8]
name=net8
url=rtsp://abcd.com/test
```

6. System menu

Click the button MENU to get system menu displayed on the main interface.

6.1 System Information
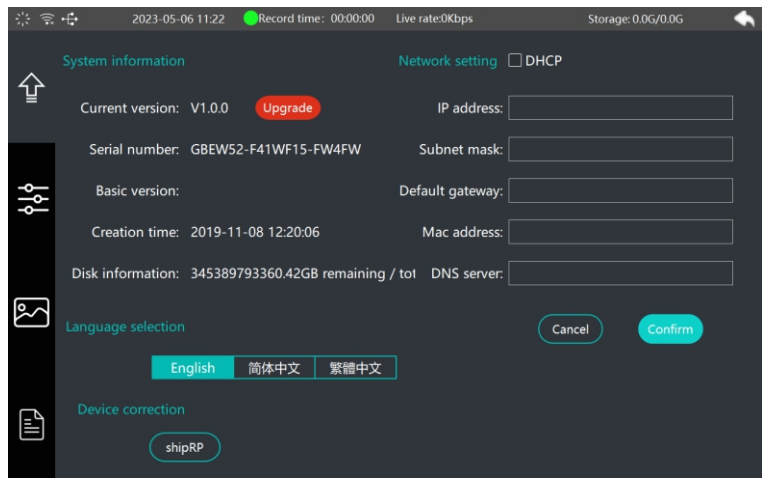
System information:
Current version: available for updating by USB flash or network tool
Serial number: unique number for device identification
Basic version: only for factory production checking
Creation time: only for factory production checking
Disk Information: if USB flash is connected, its capacity information will be shown here.

Network setting:
DHCP: get the checkbox selected to enable DHCP; get the checkbox unselected to input IP address manually.
(Default IP address is 192.168.66.88)

Language:
English/简体中文/繁體中文 optional

Support:
Correction: after this button pressed, it will pop up a window to show you how to get the button Zoom (TELE/WIDE) back to normal working.
Reset: after this button pressed, it will pop up a window to show you how to get the device's factory setting.
LOG: after this button pressed, it will pop up a window to show the system log files.

The template:
Export: after this button pressed, it will pop up a window to show you how to get the system configuration file saved to USB flash.

6.2 Streaming Setting
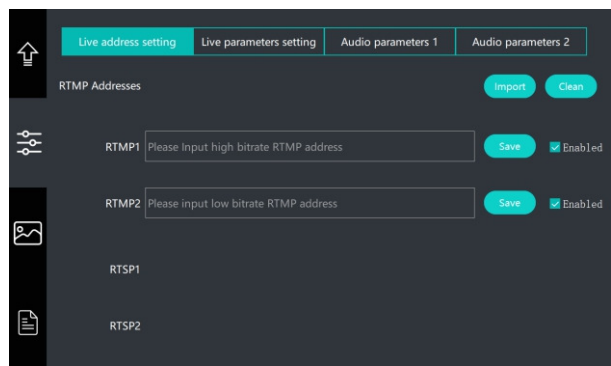
Streaming URL 1:
(For network platform streaming)
RTMP Addresses: Address 1/2/3/4/5/6 optional by "Import" function.
(As default, only one RTMP address with RTMP1 and RTMP2 available)
Take Address1 as example, it can support two RTMP streaming out, RTMP1 and RTMP2.
After the RTMP address filled, please click button Save to save the changes, then get the checkbox Enabled selected.
(After that, if the device's network setting works out well, you can press the button
STREAM to start streaming now)
A rtmp.ini file can be imported as below format:
rtmp.ini file content: (below rtmp address is only for reference. Please get the correct
rtmp streaming address from your service provider side firstly)
[Scene1]
RTMP1=rtmp://scene1/RTMP1
RTMP2=rtmp://scene1/RTMP2
[Scene2]
RTMP1=rtmp://scene2/RTMP1
RTMP2=rtmp://scene2/RTMP2
[Scene3]
RTMP1=rtmp://scene3/RTMP1
RTMP2=rtmp://scene3/RTMP2
[Scene4]
RTMP1=rtmp://scene4/RTMP1
RTMP2=rtmp://scene4/RTMP2
[Scene5]
RTMP1=rtmp://scene5/RTMP1
RTMP2=rtmp://scene5/RTMP2
[Scene6]
RTMP1=rtmp://scene6/RTMP1
RTMP2=rtmp://scene6/RTMP2

Streaming URL 2:
(for local network streaming)
NDI Name: change the display name for switcher's NDI streaming in local network.After that, click button Save to apply it. (Sometimes, a system reboot is needed)
RTSP Address: can use VLC player (or other tools) on your PC to play this rtsp streaming of the NDI switcher.

Video Setting:
(for streaming video parameters configuration)
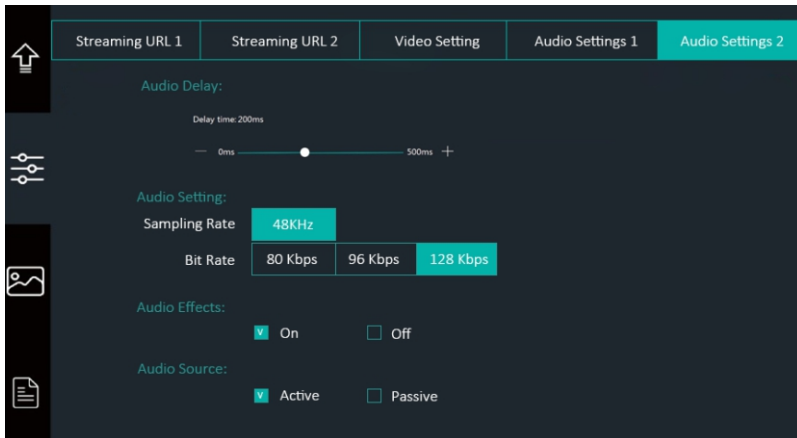Record information: setup the maximum size of a single recorded file.
Video Parameters: Bit Rate, Frame rate, Resolution optional.
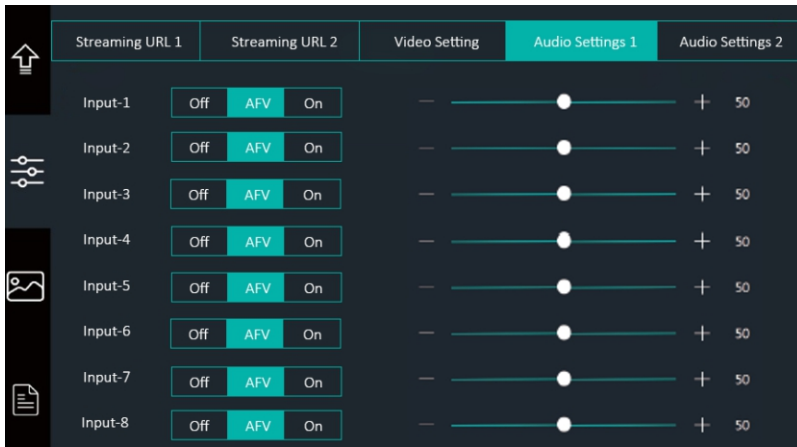
Audio Settings 1
Input 1-8, 8 channels audio control available.
Off/AFV/ON optional. (AFV means audio follow video switch)

Audio Settings 2
Audio Delay: Setthe delay time of PGM mixed audio
Audio Settings:
      Sampling Rate: 48KHz optional
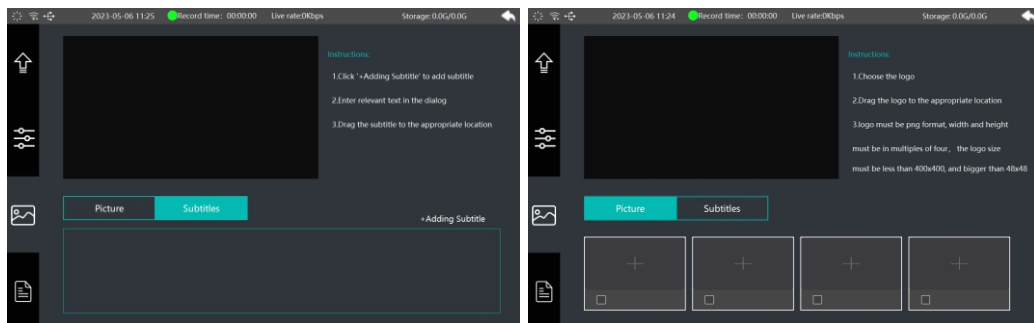   Bit Rate: 80/ 96/ 128 Kbps optional
Audio Effects: On/Off (not available now)
Audio source:
      When an active mic is connected, get option Active enabled.
   When a passive mic is connected, get option Passive enable.

6.3 Logo, Subtitles change

Logo addition:
Add logo via U disk(file placed in the root directory), 4 logos can be added;
You can drag the logo to the appropriate position via touch screen and mouse by yourself;
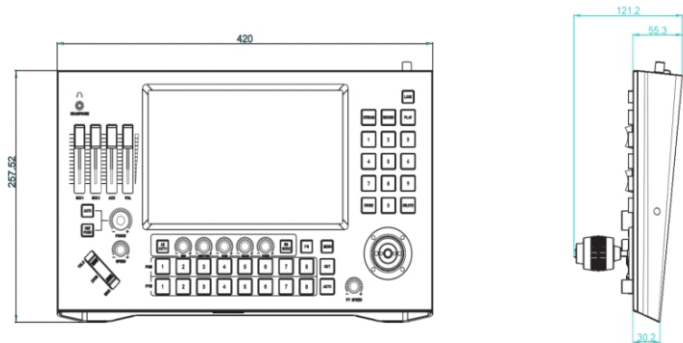
Subtitles addition:
Enter text via touch screen/ USB flash/external keyboard
Standard subtitles and rolling subtitles can be added

6.4 Playback
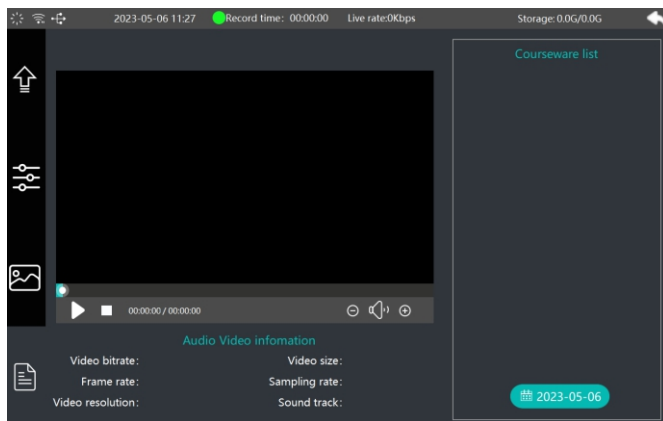
Recorded files can be reviewed or deleted.

7. Panel Drawing

8. Quick Start

8.1 Camera Remote Control

1. Press the icon "+" on the main screen to add a camera by rtsp(VISCAoverIP) or NDI. (Here we take the 1st channel as an example)

2. Press the PVW button 1 to get this channel displayed on PVW screen.

3. Now you can use the joystick to control this camera.(some function is not supported by NDI protocol yet)
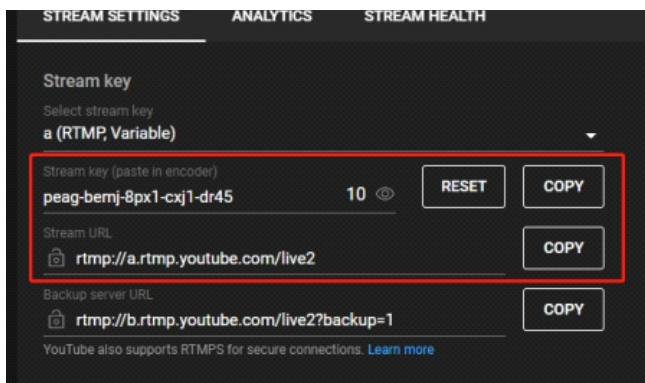
Add channel 1 video to PVW
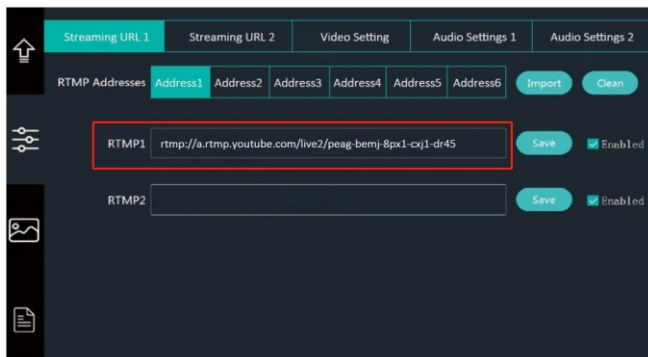

Camera control zone

8.2 YouTube Streaming

1. Get KD30N connected to internet with correct network setting. (DHCP is suggested)

2. Get the value of "Stream URL" and "Stream Key" from YouTube website as below image shown. (Different user account has different value)
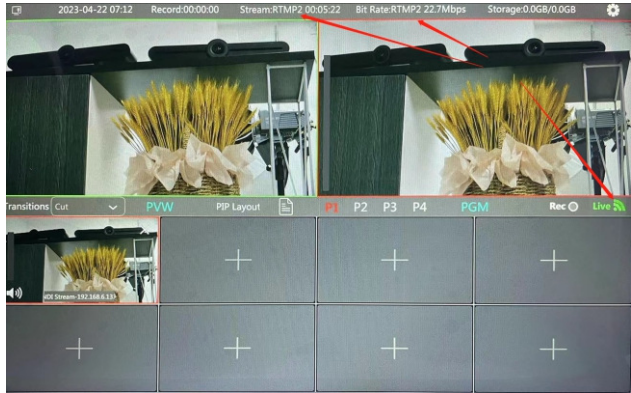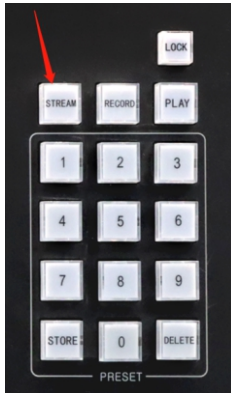

3. Input Stream URL and the Stream Key as below image shown. Please be noticed that it has a "/" between Stream URL and Stream Key.
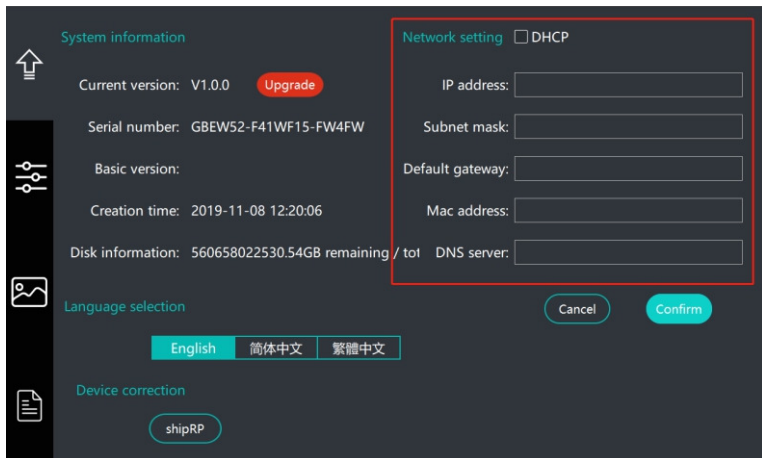

4. Click button Save to save it.

5. Press the button STREAM, and wait for about 20 seconds, it will show you below notifications. It means the streaming is working now.

8.3 Facebook Streaming

1. Get the NDI switcher connected to internet with correct network setting. (DHCP is suggested)

2. Get the value of "Server URL" and "Stream Key" from Facebook website as below image shown. (Different user account has different value)

Streaming software setup

Copy and paste the stream key into your streaming software.

Stream key

FB-6035182303268185-0-AbxpSUCJPD24T97Z   Copy

This stream key is valid until you log out of Facebook. Once you start to preview the broadcast you have up to 4 hours to go live.

Advanced Settings   ⌃

Persistent stream key

This can be reused every time you go live. You can only broadcast one live video at a time with your persistent stream key.

Backup stream

Once a backup stream is added to your live video, it cannot be removed. It will not affect your stream if you choose not to use it.

Server URL

rtmps://live-api-s.facebook.com:443/rtmp/   Copy

This may be referred to as "URL" or "Address" in your streaming software.

3. Input Server URL and the Stream Key as below image shown.

4. Click button Save to save it.
5. Press the button STREAM, and wait for about 20 seconds, it will show you below notifications. It means the streaming is working now.
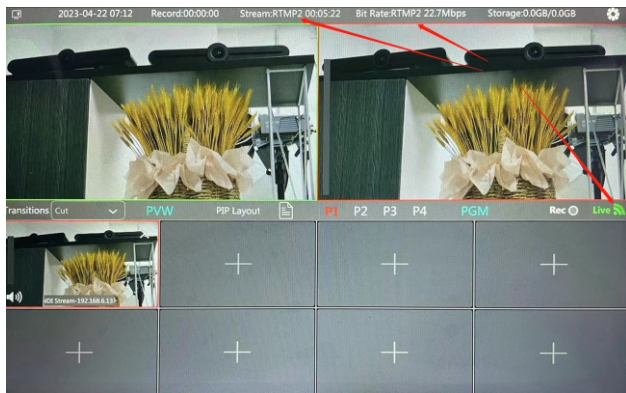
9. Troubleshooting & Maintenance

1. Power failure or no screen image display?
   Re: please check below items:
   1.1   Try it with another power supply adapter DC12V,3A.
   1.2   Make sure the power switch is switched to ON status.
   1.3   Check the power supply connecter defected or not.

2. Can not get network video source image shown on screen?
   Re: please check below items:
   2.1 Make sure both camera and NDI switcher have suitable network configuration.
   2.2 Make sure the video source is not higher than 1080P.
   2.3 Make sure network hardware connection get no problem.

3. The button Zoom is not working correctly.
   Re: please try below operation:
   3.1   Press the button MENU.
   3.2   On the pop-up interface, click button Correction in Support part.
   3.3   Follow its operation to do a ZOOM button correction.