

LipEncoder HQ

5G bonding encoder

User Manual

V1.0

Nanjing Nagasoft Corporation

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Catalogue

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1. Hardware specifications

1.1 Packing list

Name/model	Package	Standard	PSC	Quantity	Remark
Device	Inside box	HQ	1	1	
Power adapter	Inside box	Customized	1	1	
User Manual	Inside box	Customized	1	1	（Digital）
Warranty card	Inside box	Customized	1	1	

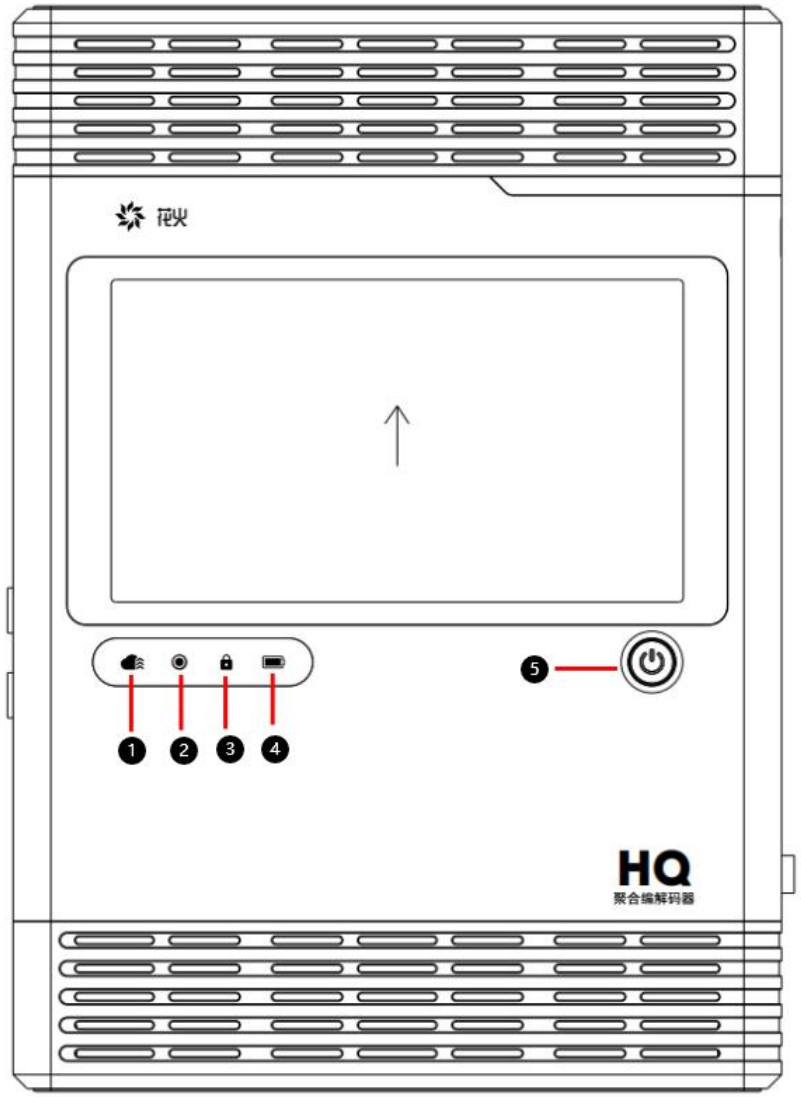
1.2 Equipment parameters

Chip	Hisilicon 22AP10/SS524
RAM	2G
Storage	512MB SPI nano flash, one TF port, can support TF card
Bonding function	8 channel network bonding, support 5Gx2 + 4Gx3 + USB port x1 + WiFi + Gigabit wired bonding
Extended functionality	● Supports 1 HDMI 4K output, up to 4Kp30 ● Supports 1 3G-SDI output, up to 1080p60 ● Supports HDMI and SDI same source output ● Supports H.264 and H.265 video encoding ● Kernel level aggregation algorithm, super efficient multi-channel bandwidth stacking ● Efficient bandwidth detection and congestion control algorithms, fully tapping into the bandwidth of each channel ● Support port forwarding and can provide public IP addresses
Bonding bandwidth	Maximum 300Mbps
Network Type	Embedded module, support 4G, 5G NSA/SA
WAN port	1 Gigabit interface
LAN port	2 Gigabit interface
WiFi frequency	2.4G/5.8G dual frequency
Antenna	WiFi/5G/4G antenna hiding
Power supply	PD 65W 20V TYPEC power supply Embedded 14.8V 6000mAh 88.8Wh Capacity lithium battery, Up to 4.5 hours of battery life

Screen	5-inch touch screen
USB	1-USB3.0
Dimension	209*163*62mm
Operation temperature	-20℃ — 60℃
Weight	1.4KG

1.3 Interface diagram

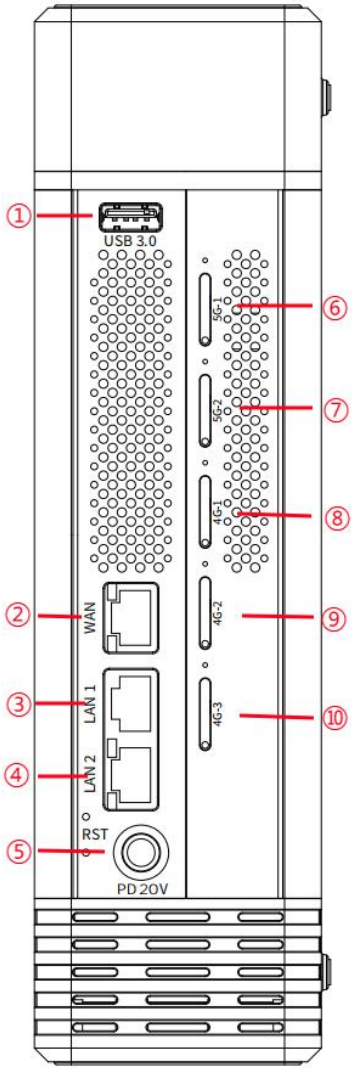
Front

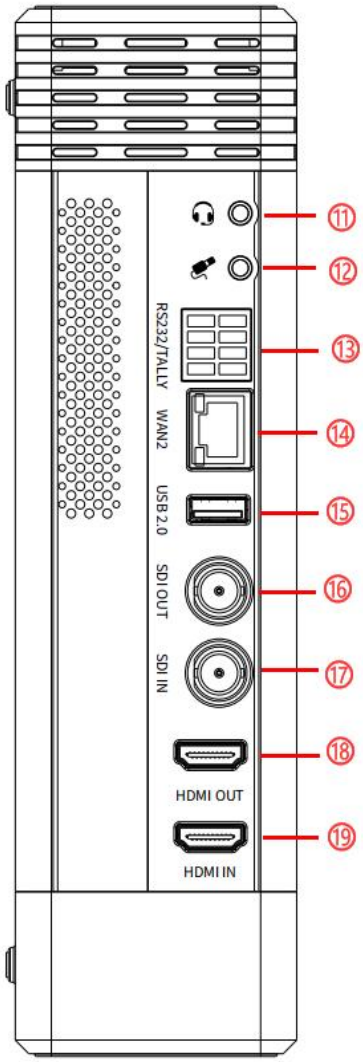


① Stream indicator light, always on after turning on streaming.
② The recording indicator light stays on continuously after recording is turned on.
③ The lock screen indicator light remains on after the lock screen is turned on.

④ Power indicator light, high battery always on, low battery flicker.
⑤ Power button.

Side

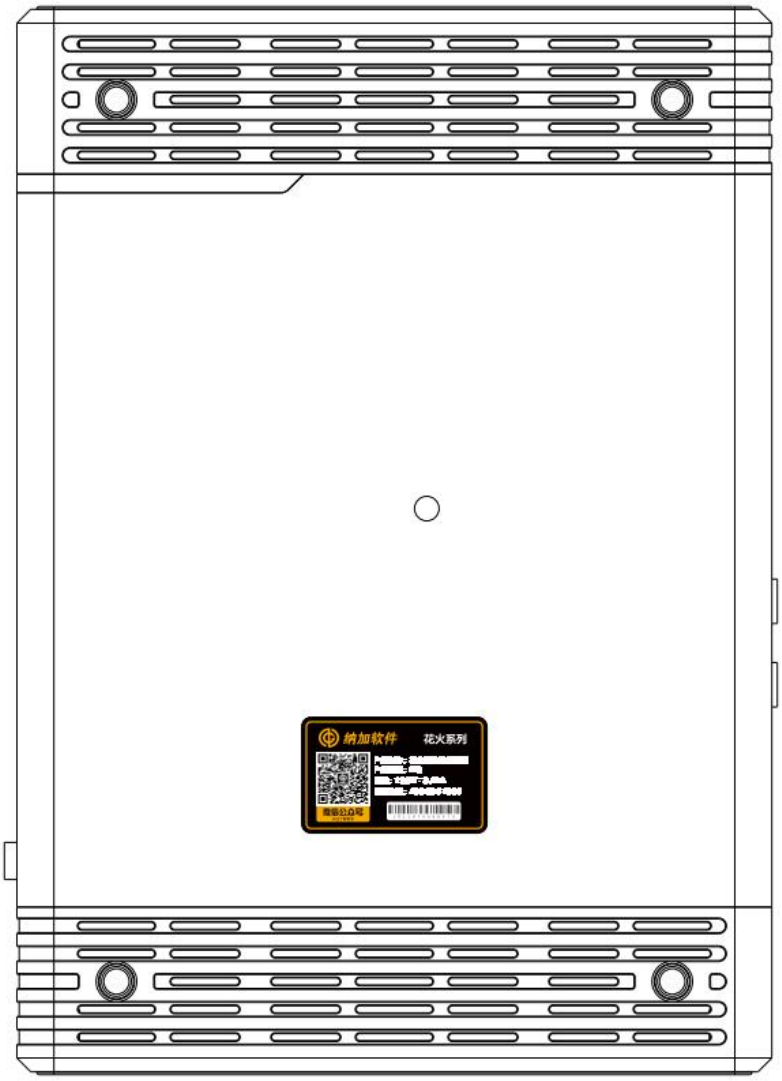




①Bonding USB3.0 port
②Bonding RJ45Gigabit Ethernet port
③Bonding LAN 1port
④Bonding LAN 2port
⑤PD 20Vpower supply port
⑥Bonding 5G SIM 1
⑦Bonding 5G SIM 2
⑧Bonding 4G SIM 1
⑨4G SIM 2
⑩Bonding 4G SIM 2
⑪3.5mmmonitor
⑫3.5mm microphone input
⑬RS232/TALLY port
⑭Encoding RJ45 Gigabit Ethernet port
⑮Coding USB2.0port
⑯SDI output port
⑰SDI input port
⑱HDMI output port

⑲HDMI input port

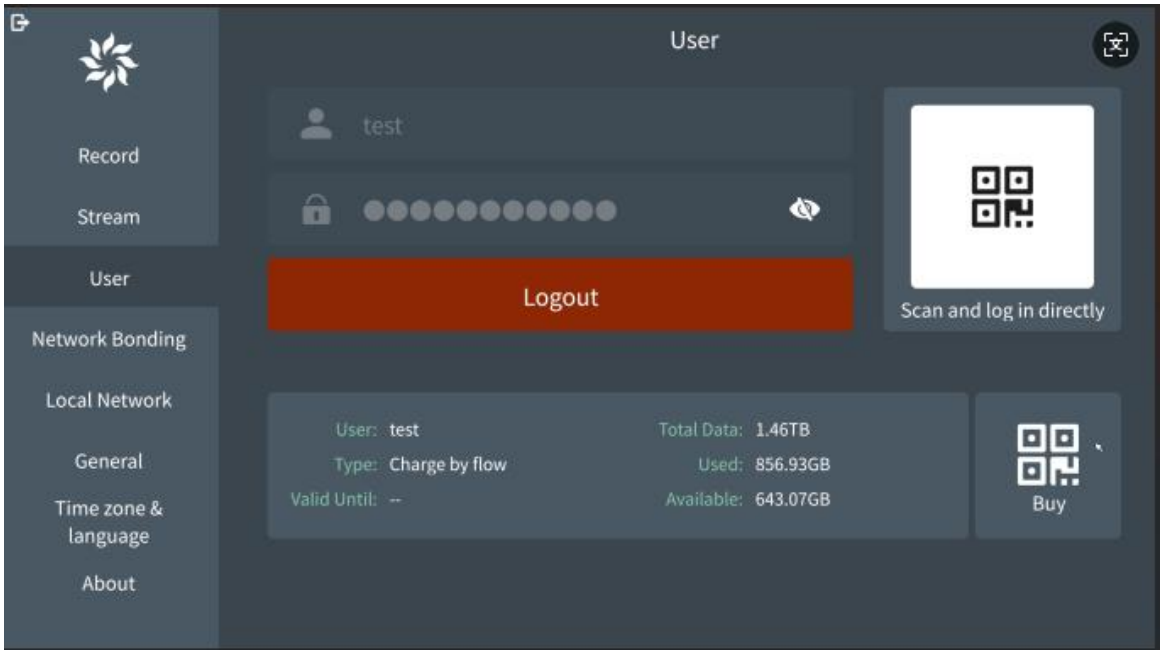
Back



2. Installation and debugging

2.1. Remove the bonding encoder from the packaging and place it on a stable desktop.
2.2. Remove the power adapter and connect it to the DC 19V power interface of the bonding encoder, or directly use the built-in battery for power supply.
2.3. Insert the 5G/4G SIM card into the corresponding SIM card slot.
2.4. Connect the USB 4G network card to the bonding USB 3.0 interface.
2.5. Use an external network cable to connect to the bonding RJ45 network port.
2.6. Press the power switch of the bonding encoder to start the device.

2.7. After entering the main interface, please click the "Settings" icon button in the upper right corner to enter the settings interface.
2.8. In the settings interface, click the "Bonding Account" button, enter your account/password or scan the QR code to log in, and you can use the bonding internet function, as shown in the following
figure:

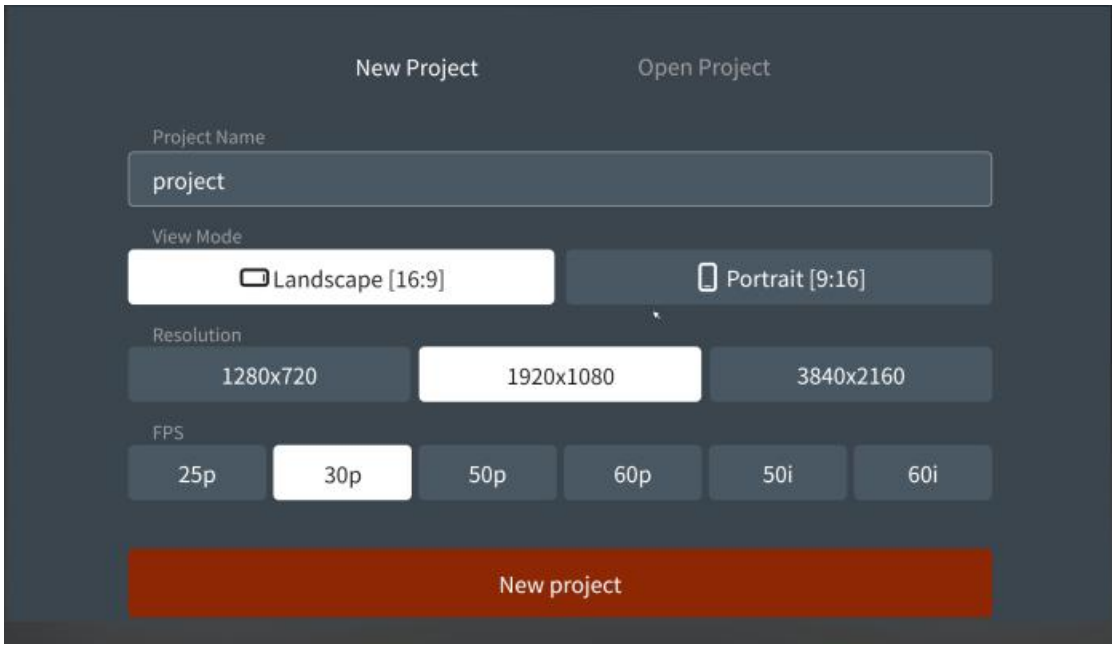


2.9 In the settings interface, enter "Bonding Network - Wired Network" to automatically or manually assign external IP addresses.
2.10. In the settings interface, enter "Bonding Network - WIFI-STA Mode", enable wifi to scan 2.4G/5.8G wifi network, enter the correct password to connect.
2.11. In the settings interface, enter "Bonding Network - LAN" and manually set the IP address of the local area network.
2.12. After using the device, turn off the power of the bonding encoder, disconnect the DC 19V power supply, and store the connected network cable, USB 4G network card, 5G/4G SIM card, main device, and power adapter.

3. Software function

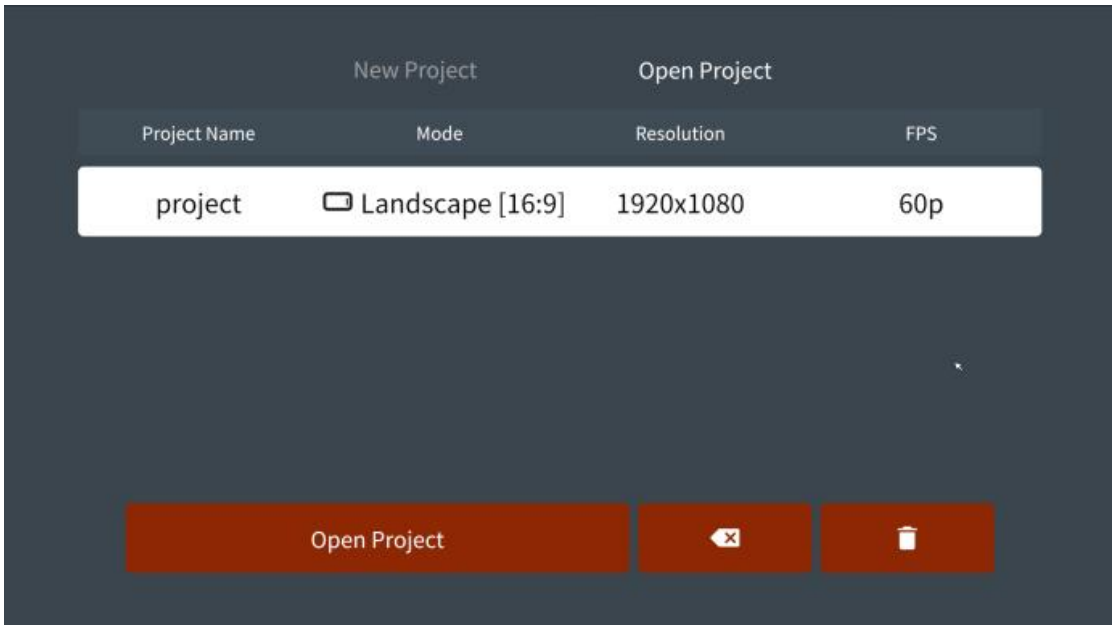
3.1 Power on interface

Create a new project interface, as shown in the following figure:



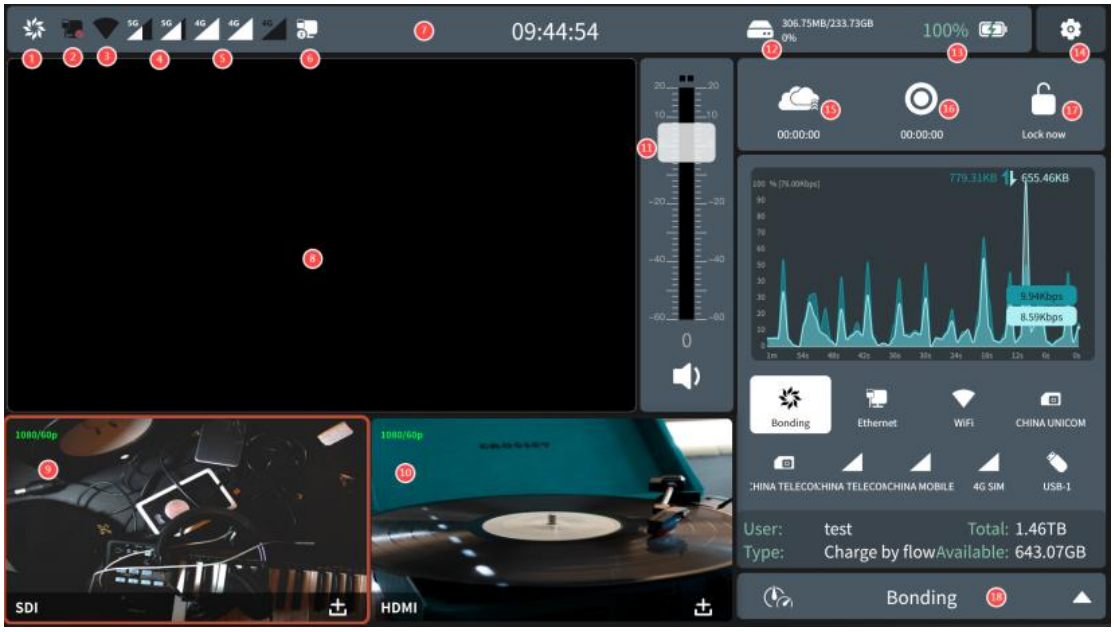
In this interface, you can select resolutions/frame rates of 720p25, p30, p50, p60, 1080p25, p30, p50, p60, 2160p25, p30 to create a new project.

Open the project interface, as shown in the following figure:



In this interface, you can choose to open the recently created or historically saved projects. Click the "" button to remove the selected individual project, and click the "" button to clear all projects.

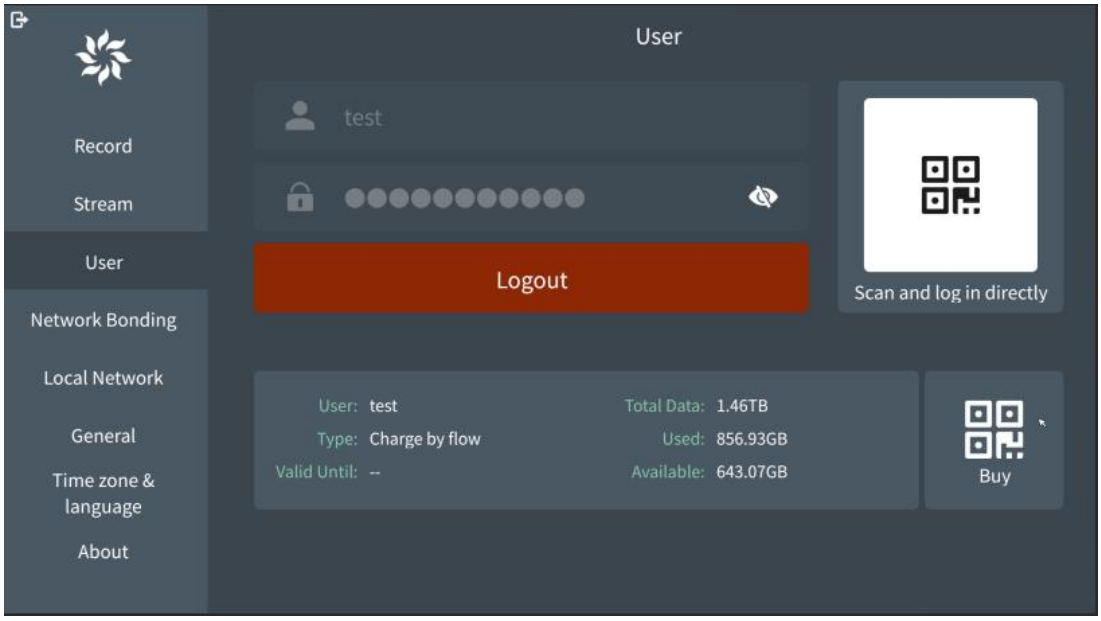
3.2 Main User Interface



S/N	Name	S/N	Name
1	Bonding network	10	HDMI channel
2	Bonding wired network	11	Total mixing output gain control
3	WiFi network	12	Internal storage of equipment
4	5G network	13	Device battery level display
5	4G network	14	System settings
6	Local wired network	15	One click start/stop streaming
7	Log information	16	One click start/stop recording
8	PGM	17	Screen lock button
9	SDI channel	18	Menu selection bar

3.2.1 Bonding Network

As shown in the following figure: In the "System Settings - Bonding Account" function, you can log in to the bonding account by entering your account and password, or by scanning the QR code.



Data plan purchase: Choose the data flow package for the bonding account by scanning the code on your phone.

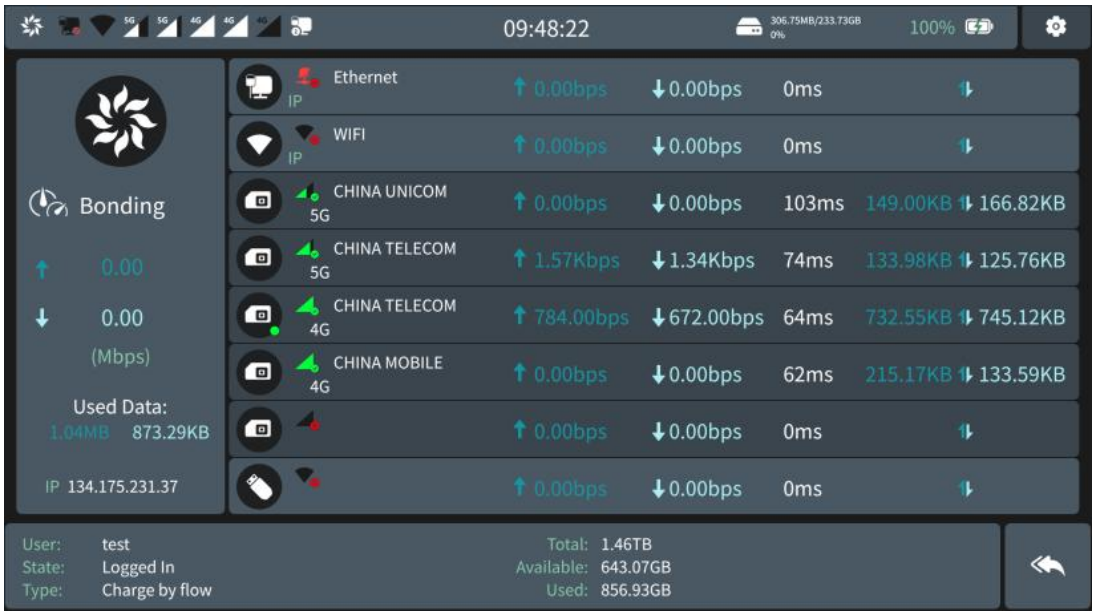
After logging in, you can obtain bonding account types and data usage information.

Click the "" button in the top left corner to return to the main interface.

Click on the "" icon in the top left corner of the main interface, as shown in the following figure:



You can enter the bonding network monitoring interface, as shown in the following figure:



1.Bonding Network: Real time monitoring of network speed and bonding data.

2. Bonding status: monitoring of bonding account status and account data flow information.

3 WAN: Real time monitoring of wired network speed.

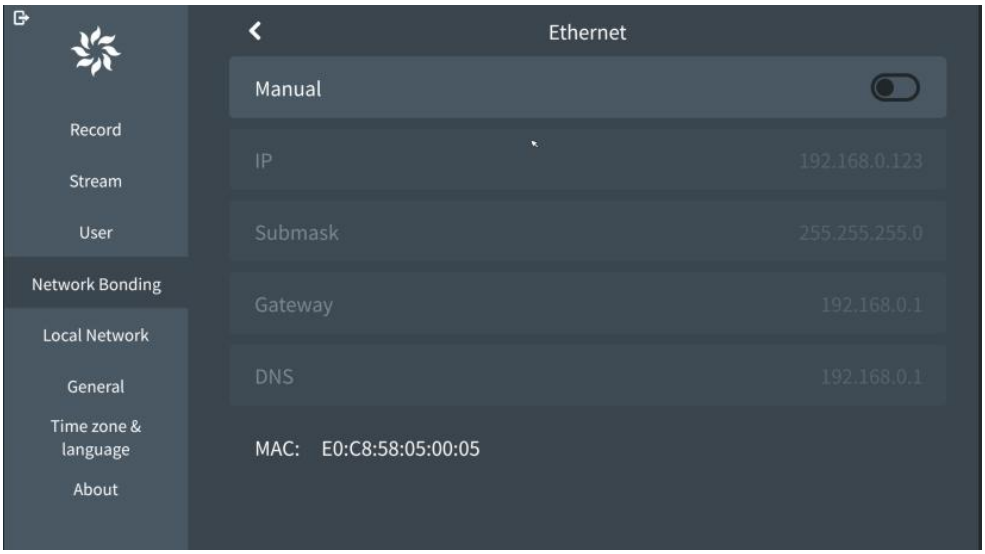
4. WIFI: Real time monitoring of WiFi network speed.

5. 5G/4G network: 2 5G networks, 3 4G networks for real-time monitoring of network speed and data flow, supporting bonding of 5G/4G network total network speed and data flow monitoring.

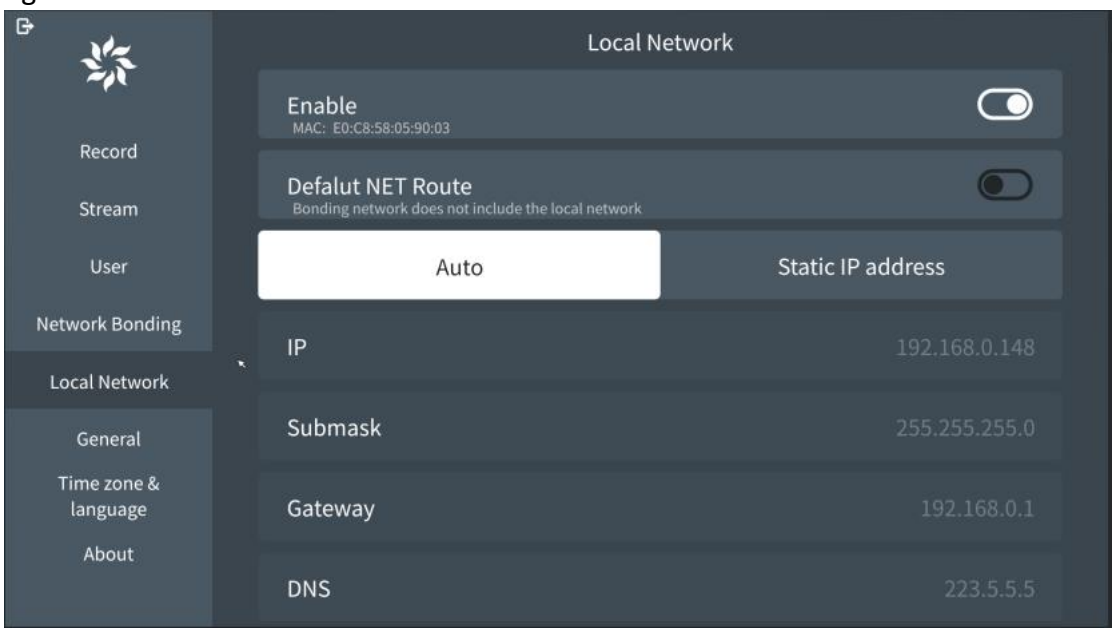
6 Dongle: 1 USB 4G network card for real-time monitoring of network speed and data flow.

3.2.2 Wired network

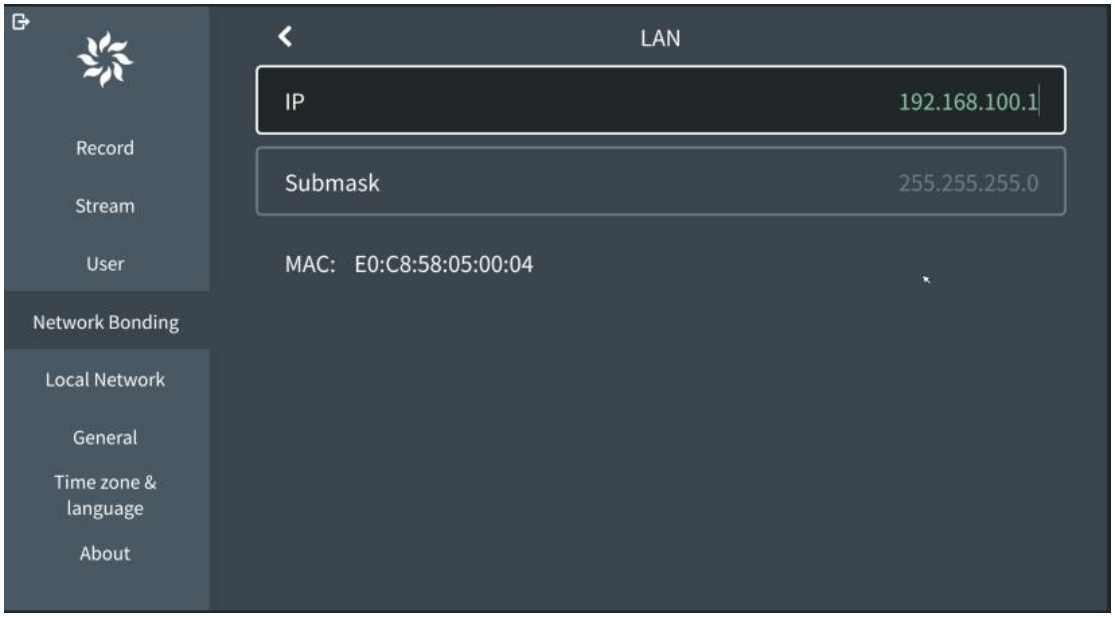
As shown in the following figure: Enter the "System Settings - Bonding Network - Wired Network" function to automatically or manually assign external IP addresses.



Select the local network, which can automatically or manually assign external IP addresses. The local network defaults to a non bonding network, as shown in the following
figure:

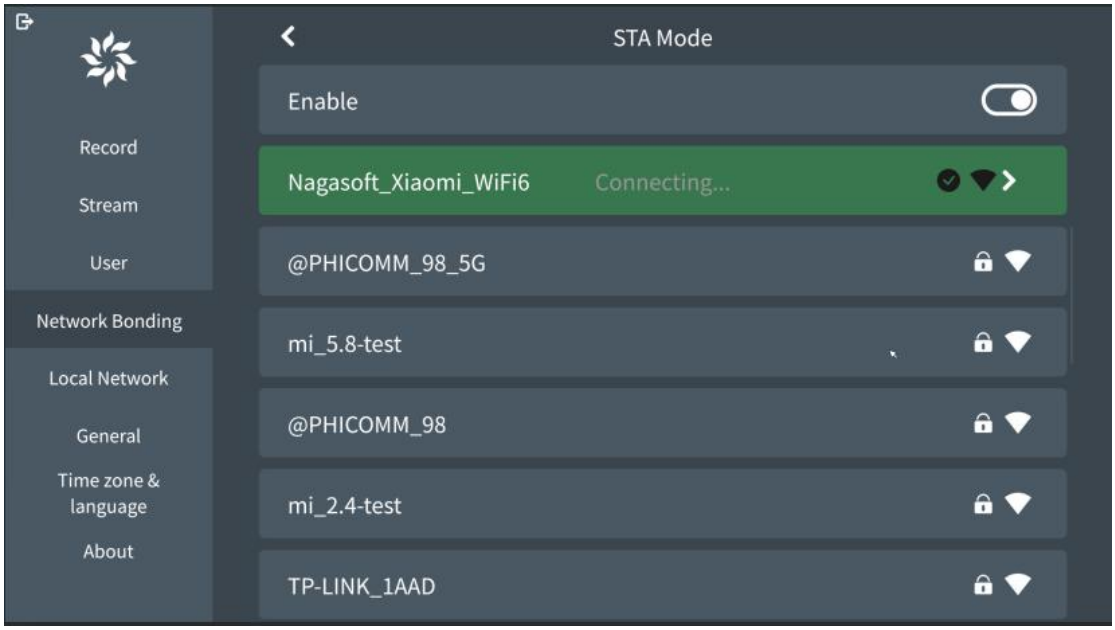


In the settings interface, enter "Bonding Network - LAN" to manually set the IP address of the local area network, as shown in the following figure:

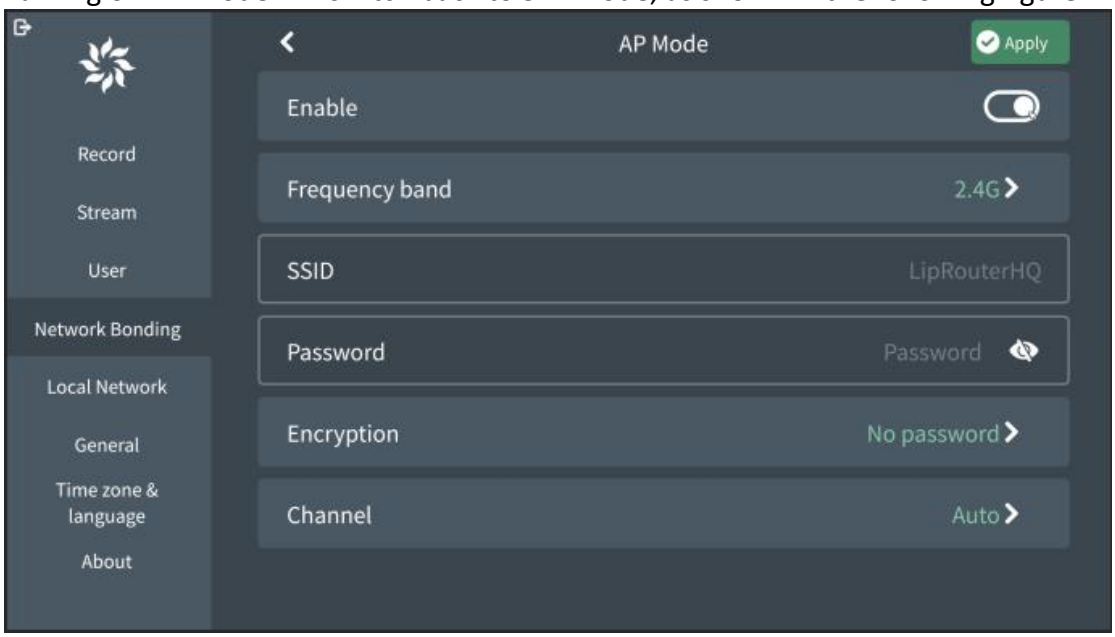


3.2.3 WIFI Network

In the settings interface, enter "Bonding Network - WIFI", default to STA mode, enable WiFi to scan 2.4G/5.8G WiFi network, enter the correct password to connect. As shown in the following figure:

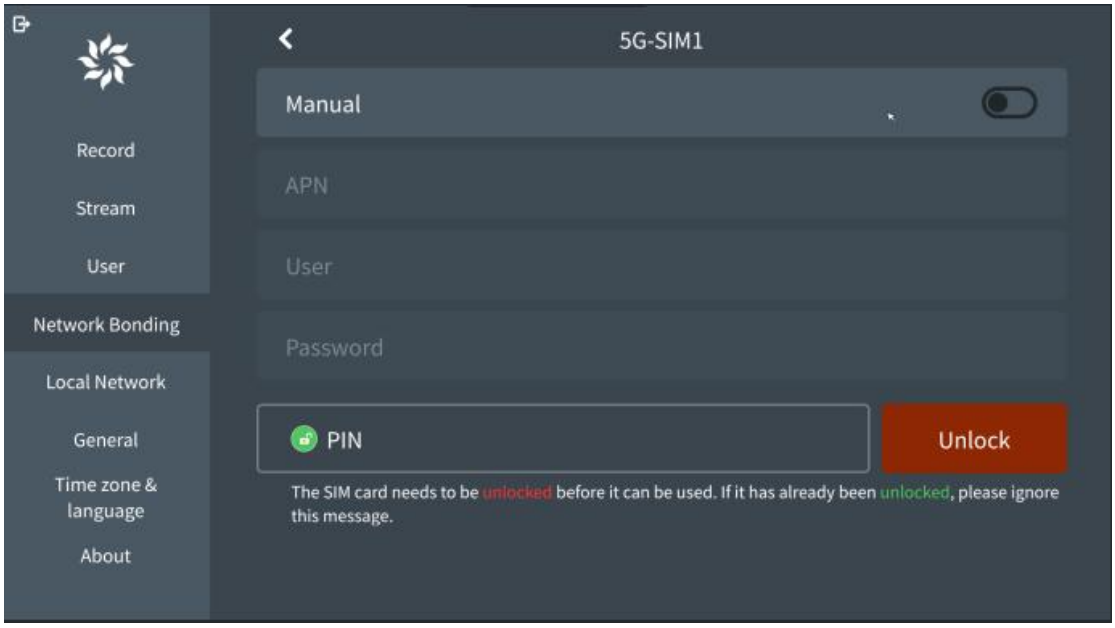


You can also switch to AP mode, providing WiFi network output. After enabling it, set the WiFi frequency band, WiFi name, WiFi password, WiFi encryption mode, and select the WiFi channel. The channel can be selected as automatic or fixed channel. Click the "Apply" button in the upper right corner to make the settings effective. Turning off AP mode will switch back to STA mode, as shown in the following figure:



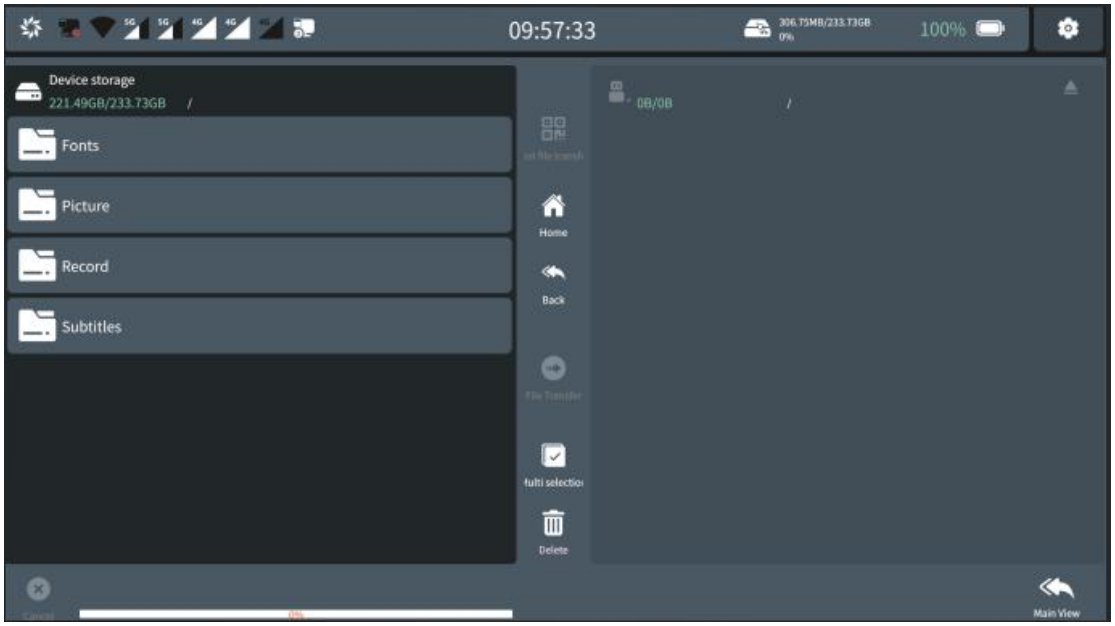
3.2.4 5G-SIM Network

On the 5G/4G hardware interface, it supports the use of SIM cards compatible with most European network standards. In the settings interface, enter "Bonding Network -5G-SIM" to enable the SIM card APN function as shown in the following figure:



3.2.5 Internal storage management of devices

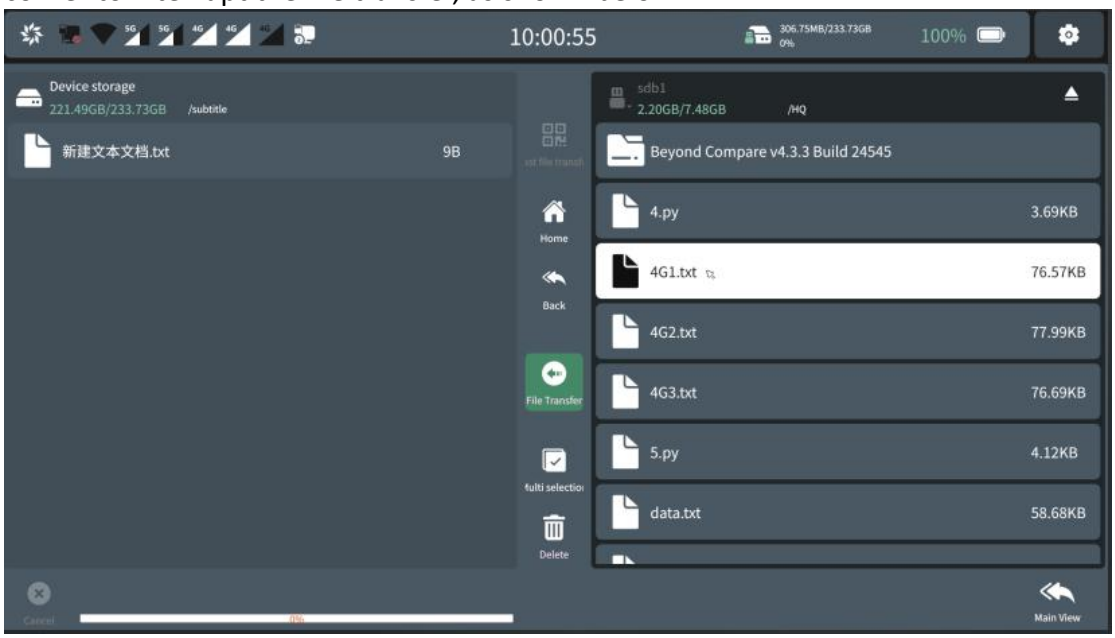
Click the button to enter the internal storage directory of the device, as shown in the following figure:



Click on the directory to customize the import of corresponding materials. You can use "File Transfer" to scan the QR code on your phone to quickly import materials, as shown in the following figure:



Alternatively, you can use a USB flash drive to access the USB 2.0 interface of the device to import materials. During file import, you can view the file transfer progress bar in the lower left corner. You can also click the "Cancel" button in the lower left corner to interrupt the file transfer, as shown below:



Button usage instructions:

：Return the device storage directory;

：Return to the previous directory;

：After clicking to select, multiple files can be selected;

：Delete files;



：Return to the main interface of the device.

3.2.6 Battery level display

As shown in the following figure: Display the current battery remaining power as a percentage.



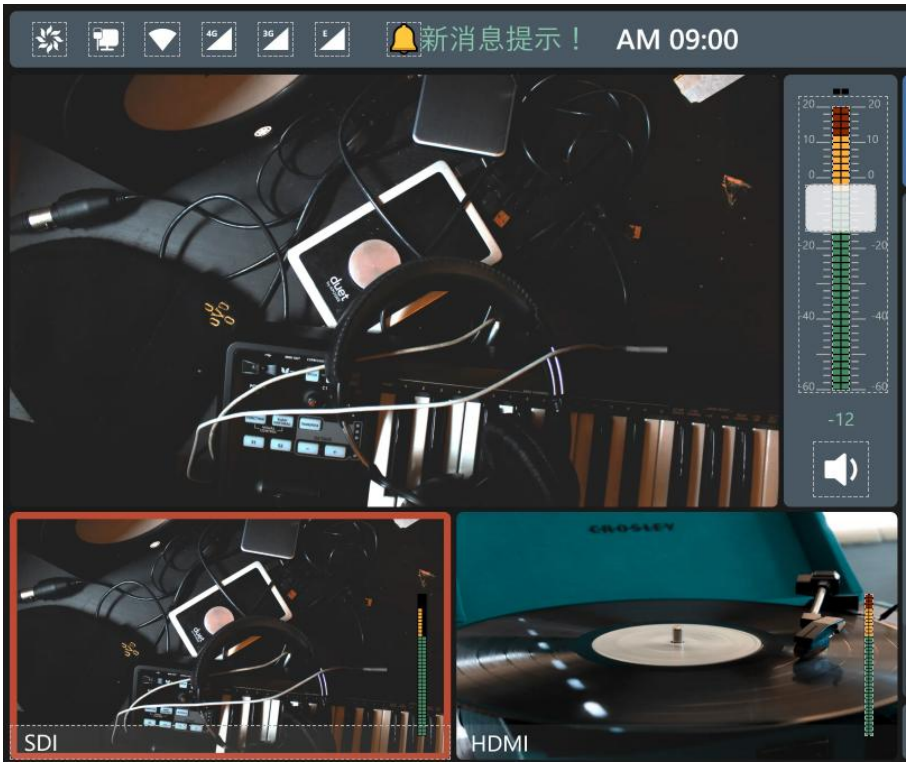
When the battery level is below 10%, the power indicator light will enter a flashing state.

Connect the PD 20V power adapter to charge to 10% or more, and the power indicator light will enter a long on state.

The status indicator light will only display the corresponding status when entering the software project. For example, when the device is turned off and connected to a PD 20V power adapter for charging, the battery prompt light will not light up.

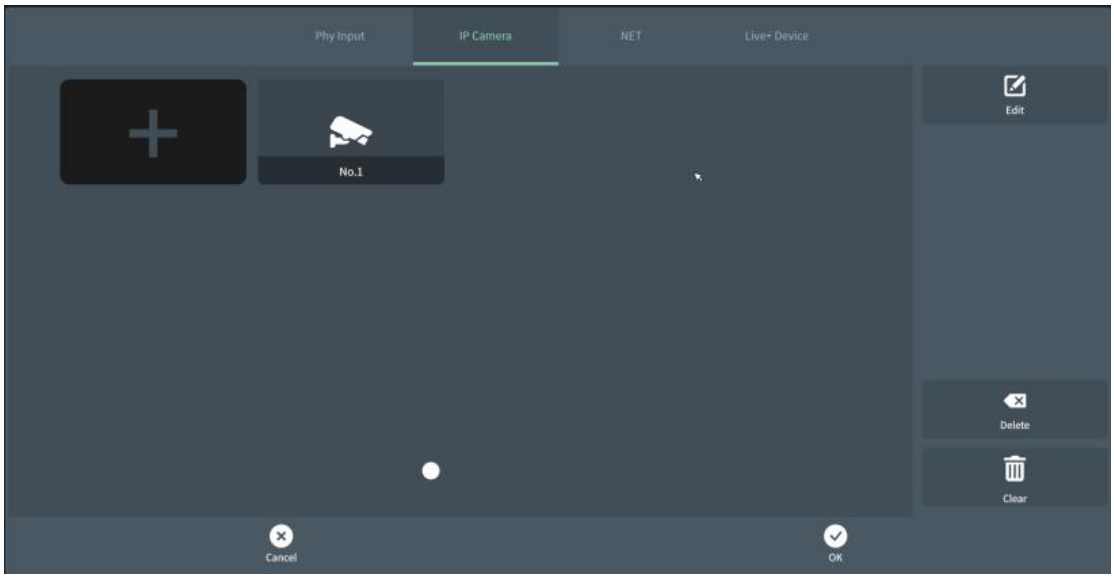
3.2.7 PGM

Monitor the camera channel and click on the SDI or HDMI channel to switch the channel to the PGM output. As shown in the following figure:



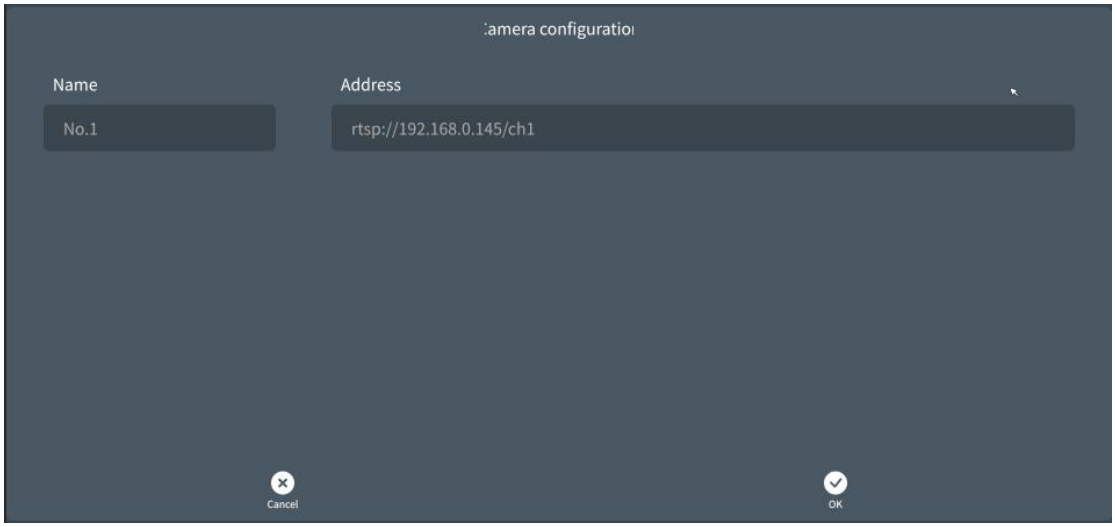
3.2.8 SDI/HDMI capture channel

It can be connected to SDI/HDMI cameras or other devices with SDI/HDMI interfaces for signal acquisition and displayed on the corresponding channel. You can also click the button in the bottom right corner to load other signals, as shown in the following figure:



1) IP camera

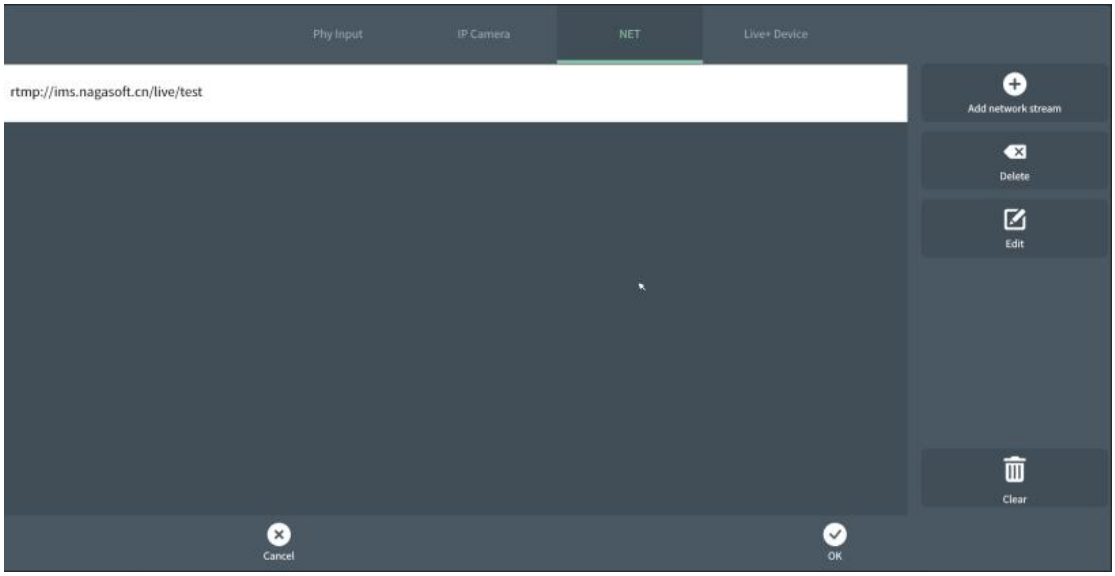
Click the add button, enter the name and RTSP address of the camera, and click "Finish" to add the camera to the camera list. You can edit, delete individual cameras, and clear all cameras in the list, as shown in the following figure:



2) Network flow

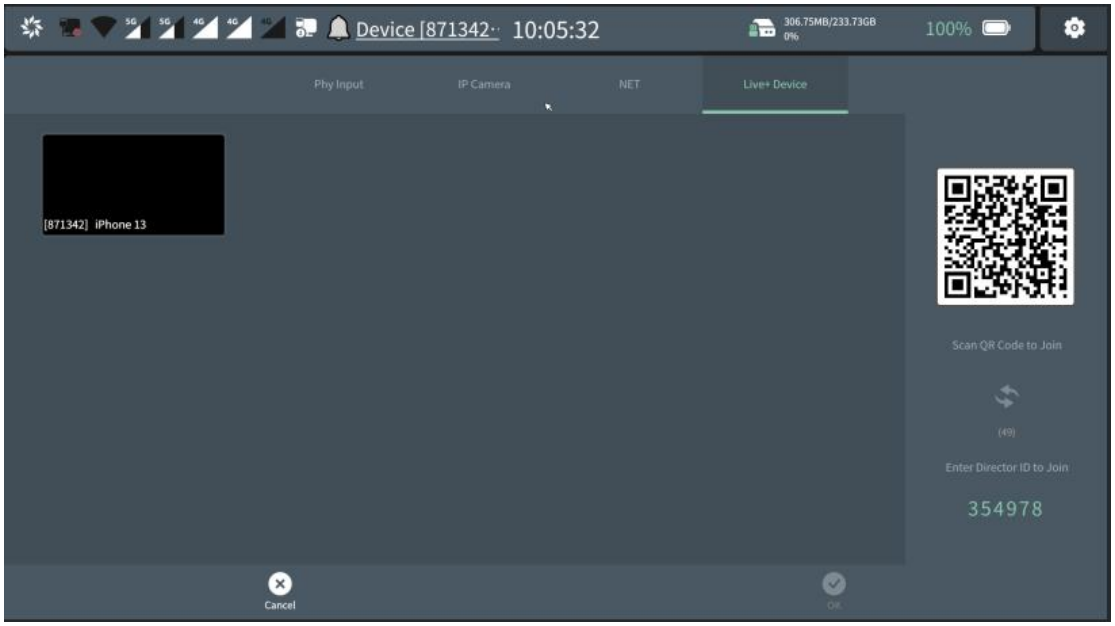
By loading signals through network flow and filling in the complete address at the URL, the fast screen input function can also be used to quickly input the streaming address. The filled in network flow will be added to the network flow list, and the added network flow can be edited, deleted, or cleared, as shown in the following

figure:



3) Live+devices

You can use the VJMobilecast app to access the mobile screen. The access signal can be added by scanning the QR code directly through the app or entering the director ID. The connected device signal will be displayed in the device list. Click to select the signal screen that needs to be loaded onto the mobile device. (Note: After resetting the live streaming code, the original live streaming code is not available and needs to be re-scanned with a new one), as shown in the following figure:



3.2.9 Total mixing output gain control

As shown in the following figure：

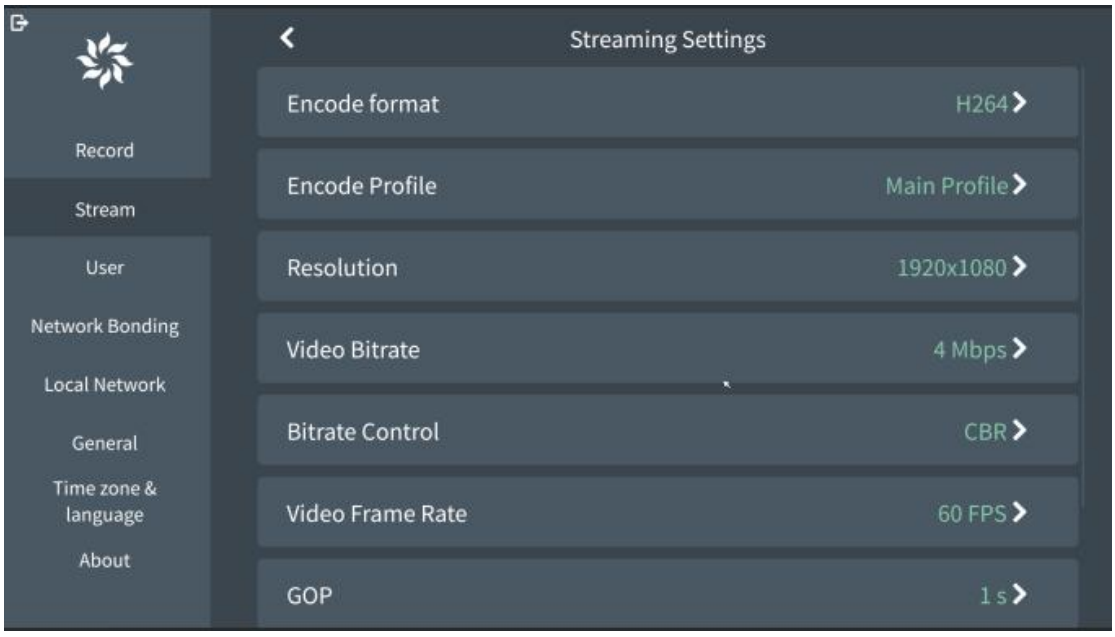


The button operation is described as follows:

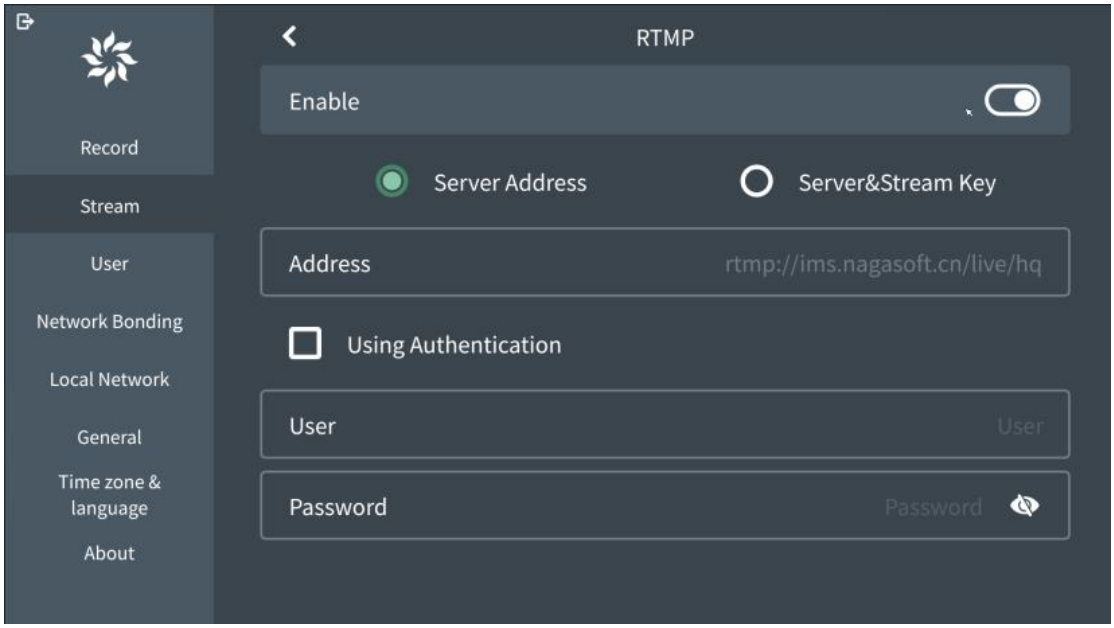
1) Button: Mix Output.
2) Button: Mute
3) Button: Volume adjustment knob.

3.2.10 PGM streaming

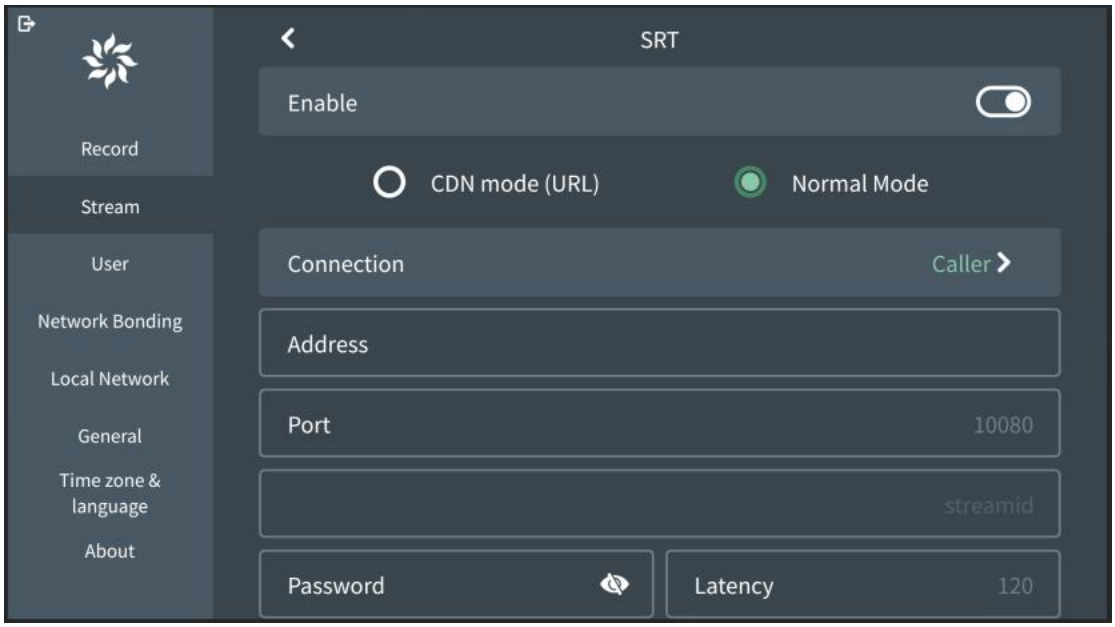
PGM streams to VJLive3, FMS, WOWZA, etc. through RTMP protocol for live streaming on the internet. Click the button on the main interface to start live streaming, and click again to stop streaming. Resolution, video bitrate, bitrate mode, video frame rate GOP, parameters such as audio bitrate and frame synchronization can be customized and set. As shown in the following figure:



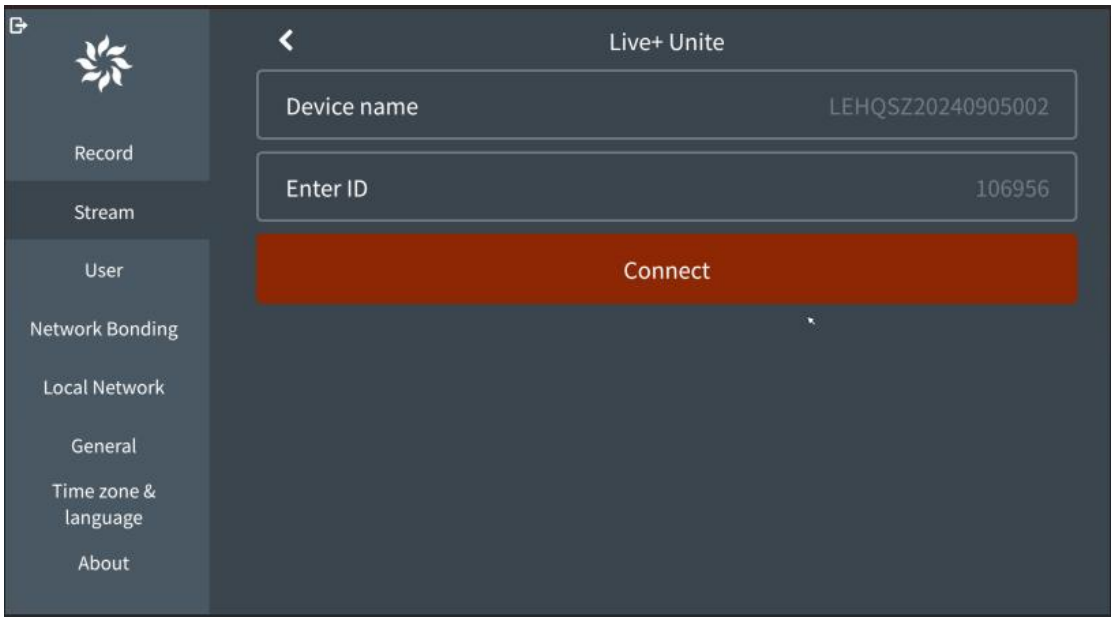
1) Select the streaming platform as "RTMP" to push the stream to the streaming server. If channel streaming protection is set, a username and password must be entered. If not set, there is no need to fill them in. The input format for 'rtmp://' is: ip:port/live， The 'stream name' is the name of the channel. Enter the complete RTMP streaming address in the RTMP address. As shown in the following figure:



2) Select the streaming platform as "SRT", which can output SRT protocol data streams. Fill in the corresponding IP address, port number, stream ID, and password and set the delay of the output data stream and select SRT mode. The setting interface is shown in the following figure:



3) Choose the streaming platform as "Live+Connection", and use the live+connection function to achieve interaction between Live+devices. The operation interface is as follows:



Enter the director ID of other devices that support Live+access to join the interaction with the main venue, and support custom Live+device name settings.

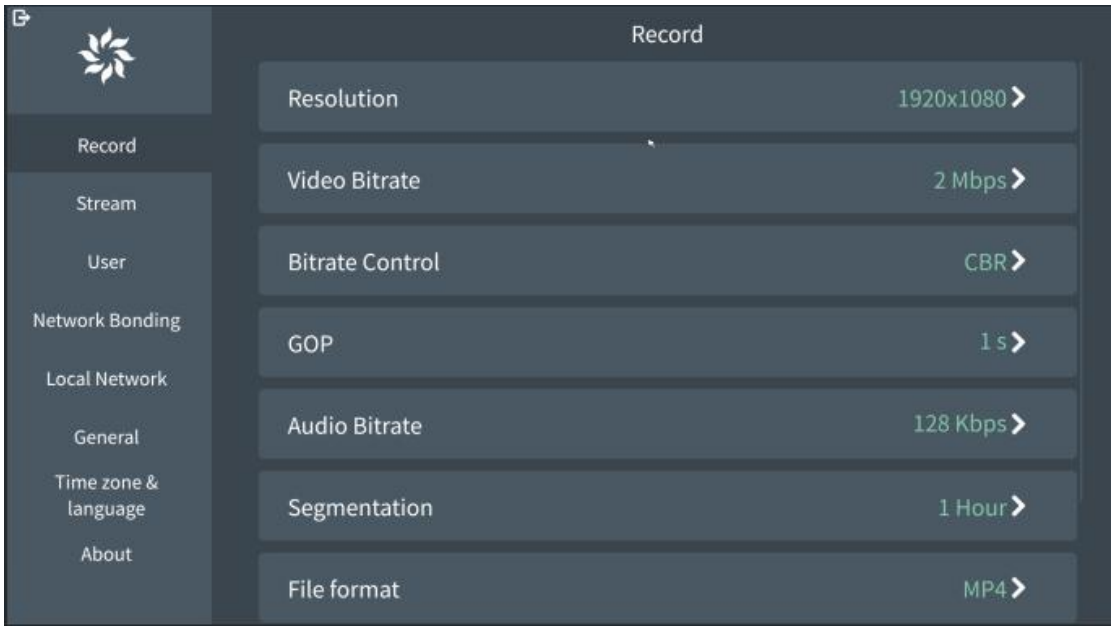
Select the streaming platform as "GB 28181", fill in the corresponding SIP server ID, SIP server domain, SIP server address, SIP server port, SIP user authentication ID, and password to push the stream to a platform that supports GB 28181. The operation interface is as follows:



- Enable any streaming platform, and the streaming prompt light will remain on. Turn off streaming, and the streaming prompt light will go out accordingly.

3.2.11 PGM Recording

Record the content of PGM, click the  button on the "main interface" to start recording, and click again to stop recording. The recording parameters are shown in the following figure:

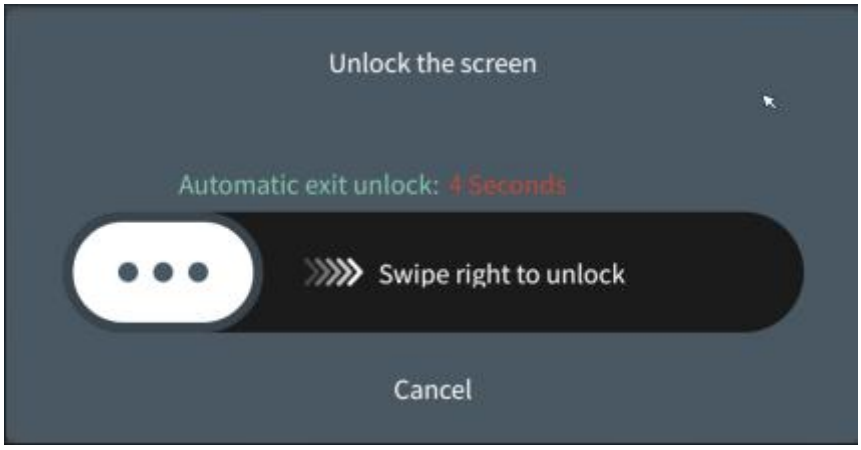


Parameter settings include: resolution, video bitrate, bitrate mode GOP, Audio bitrate, file segmentation, and file format.

Enable recording: The recording prompt light stays on, and disable recording: The recording prompt light goes off.

3.2.12 Screen lock button

Click the "" button to lock the screen, and the unlocking method for the pop-up screen will be as shown in the following figure:



The default "auto exit unlock" time is 5 seconds, and if there is no operation within 5 seconds,

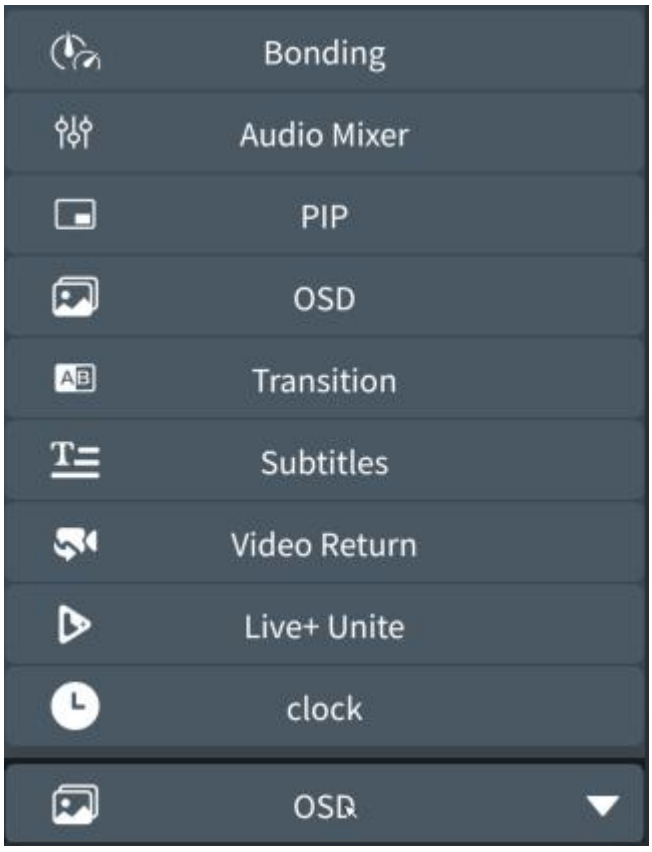
the pop-up box will automatically disappear. Clicking the "

" button again will bring up a "screen unlock" pop-up.

Lock screen: The lock screen indicator light stays on, and unlock screen: The lock screen indicator light goes off.

3.2.13 Menu selection bar

Click on the menu bar to pop up the following menu options, as shown in the following figure:



1) Select the "Bonding Network" menu bar, as shown in the following figure:



On this interface, you can view the real-time network data usage of bonding

networks, wired networks, WIFI, SIM cards, Dongle and other network ports, as well as display bonding account types and data usage information.

2) Select the "Tuning" menu bar, as shown in the following figure



- The mixing console is used to control the gain and mixing of all input audio. The button operations are as follows:

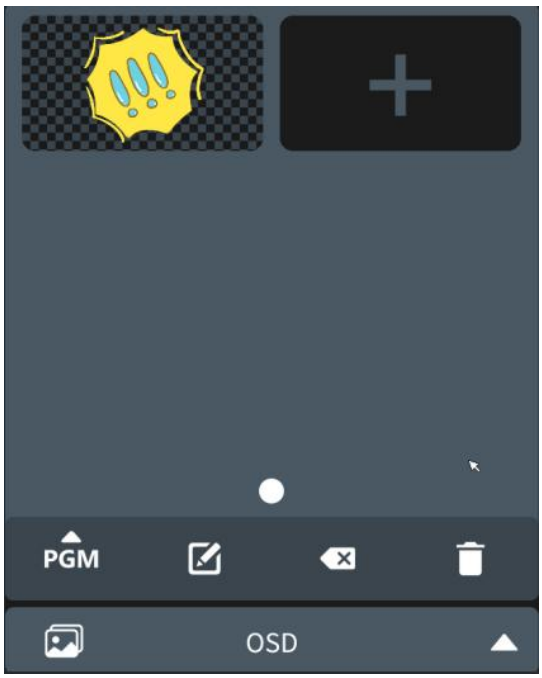
- Button: Mix output.
- Button: Mute.
- Button: volume adjustment pusher.
- Button: Microphone mixing.
- Button: Microphone monitoring.
- Button: Select the channel of "PGM", only when this channel is PGM will the sound be mixed to the main output.

3) Select the "Picture in Picture" menu bar, as shown in the following figure:



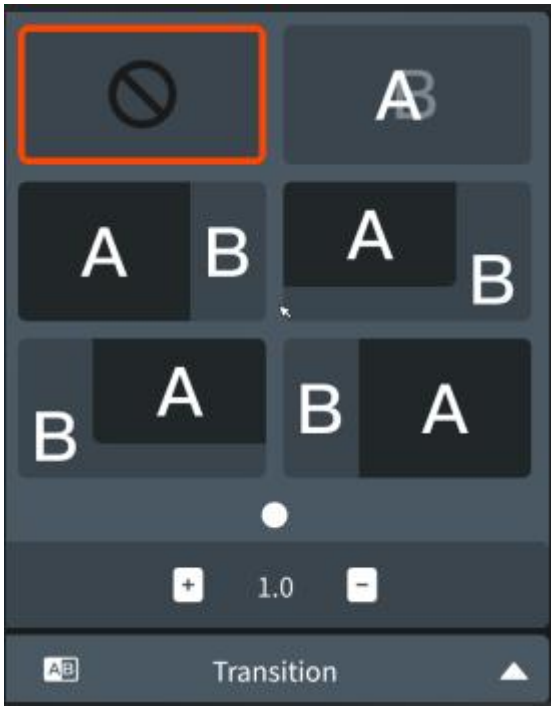
Picture in picture can display images from multiple channels on the PGM. Click PGM↑ to display the selected picture in picture mode on the PGM, where A represents the SDI channel image/B represents the HDMI channel image, and P represents the option to add a background image. Click " " to select the background image.

4) Select the "Image Overlay" menu bar, as shown in the following figure:



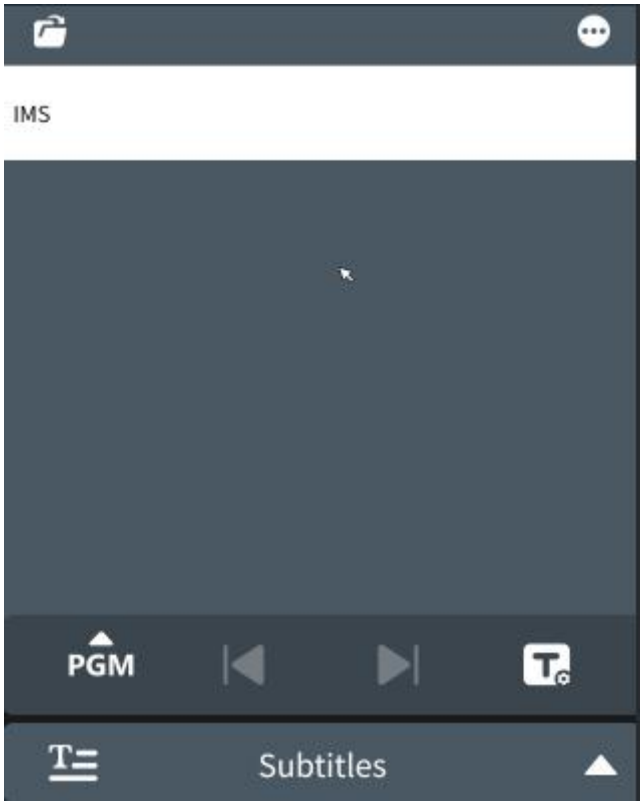
- The image overlay panel can publish selected images to the main monitoring interface and supports PNG image format. The button operation is described as follows:
- Click the "+" button to enter the image preview interface.
- Click the "PGM↑" button to send the selected image to the PGM for display. Clicking again will not display it.
- Click the "" button to enter the image editing interface.
- The "⌫"/"🗑" buttons respectively delete the selected individual image/clear all images.

5) Select the "Transition Effects" menu bar, as shown in the following figure:

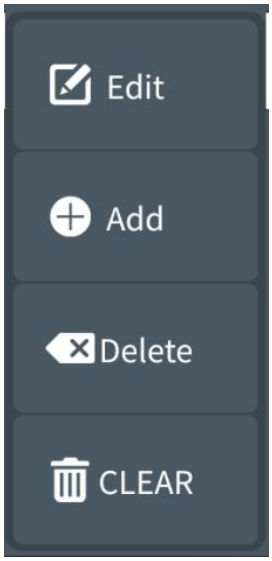


Select the transition effects required for channel switching, set the duration of the special effects switching process - transition time, and then click on the channel that needs to be monitored to achieve the transition effect between the two channel screens.

6) Select the "Subtitles" menu bar, choose a subtitle from the list, and click the PGM button to publish/remove PGM, as shown in the following figure:



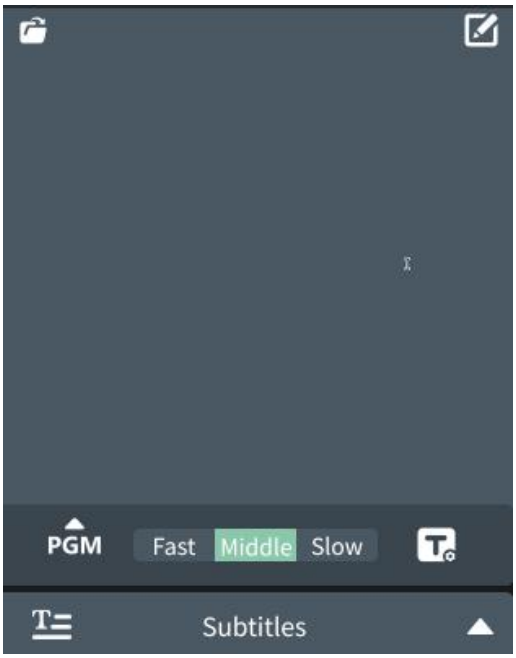
- Click the button to import subtitle files, supporting txt files.
- Click the button to add, edit, delete individual subtitles, and clear the subtitle list, as shown in the following figure:



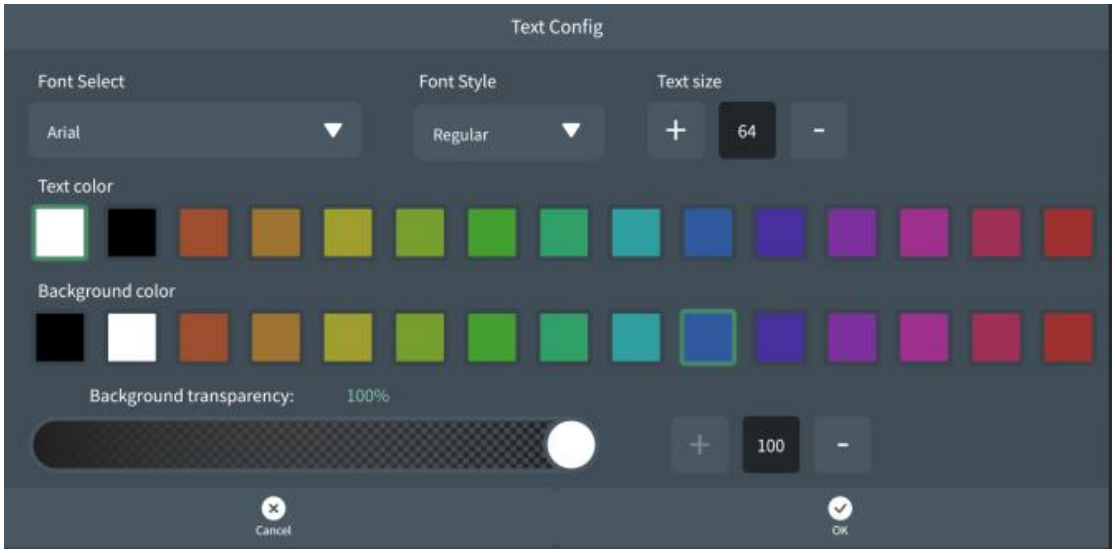
Click the button: Subtitle settings menu bar, where you can configure "single line subtitles", "scrolling subtitles", "text configuration", and "file import".

Rolling subtitles/single line subtitles: The speed of rolling subtitles can be adjusted, and clicking again can switch back to single line subtitles, as shown in the

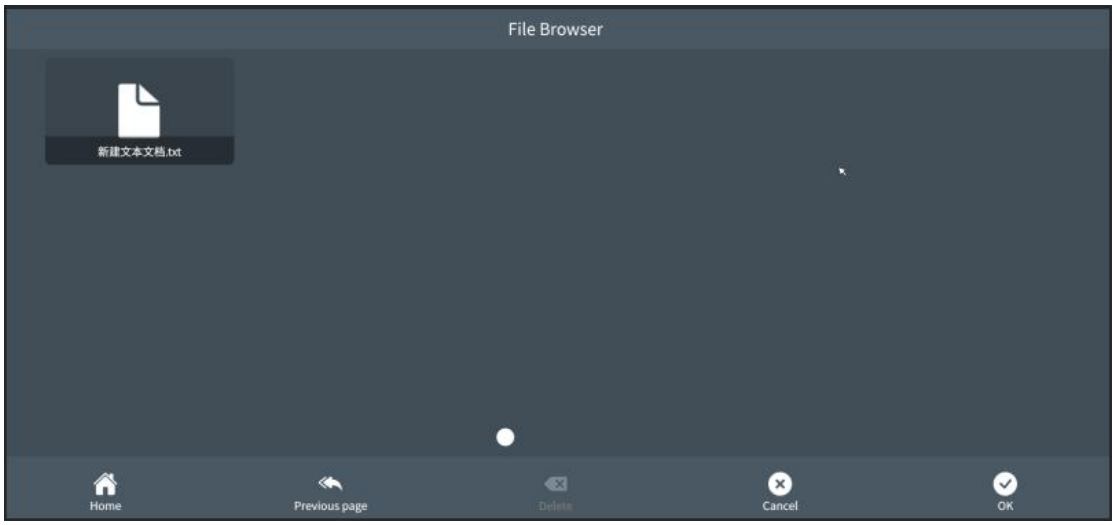
following figure:



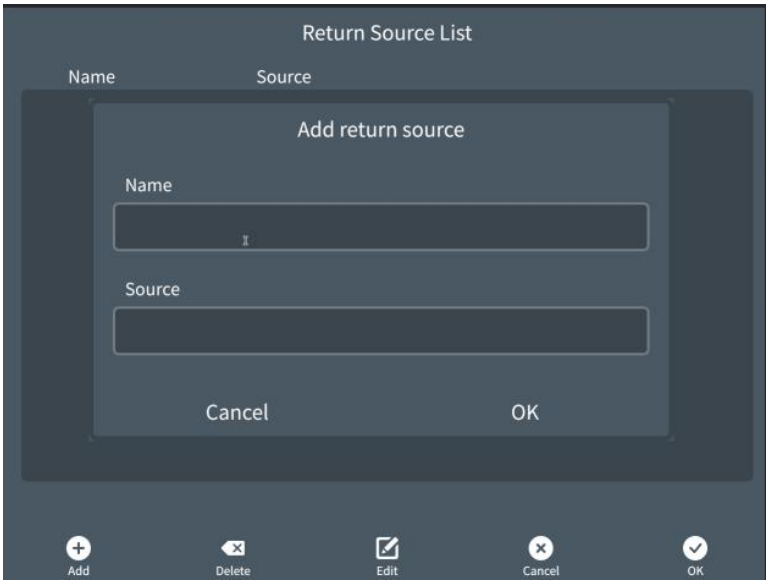
Text configuration: Configure the font, font style, text size, subtitle position, subtitle text color, subtitle background color, and subtitle background transparency for single line subtitles/scrolling subtitles, as shown in the following figure:



File import: Manage font files, including importing and deleting font files, as shown in the following figure:

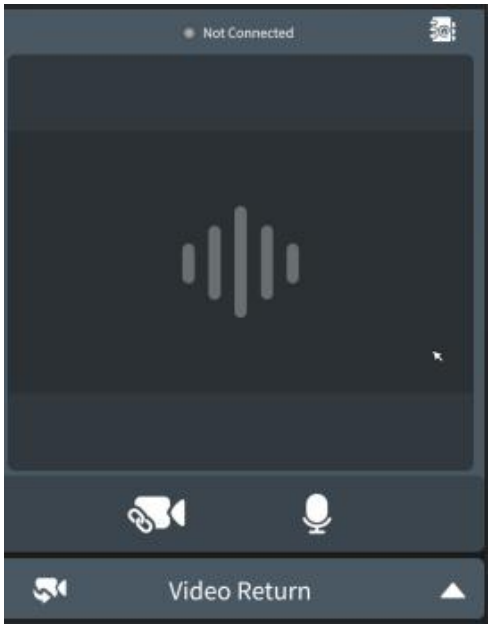


7) Select the "Video Return" menu bar and click the "" button to manage the return source, as shown in the following figure:



- Click the button: Connect the video and send it back.
- Click the button: Microphone mixing.

8) Select the "Live+Connect" menu bar, on the streaming platform, after the "Live+Connect" connection is successful, click the "" button to connect and watch the videos returned by the main monitoring venue. Click the button to perform headphone mixing, as shown in the following figure:



9) Select the "Clock" menu bar to choose the clock format and coordinate position displayed on PGM, as shown in the following figure:

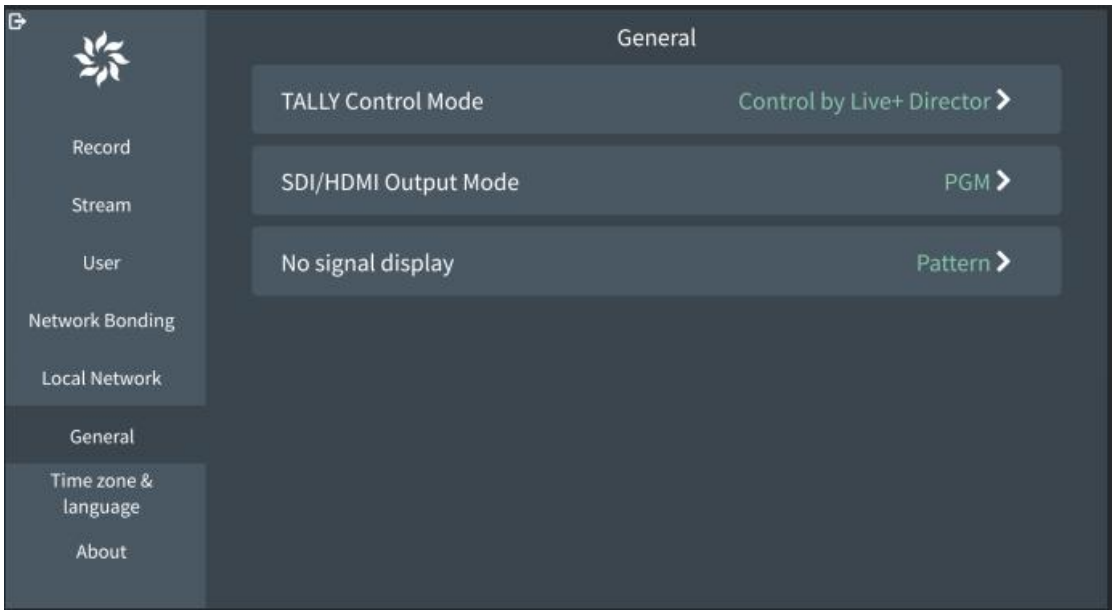


- Click the PGM button: Clock publish/remove PGM.
- Click the button to set the clock font, font style, clock text size, clock color, clock background color, and background transparency, as shown in the following figure:



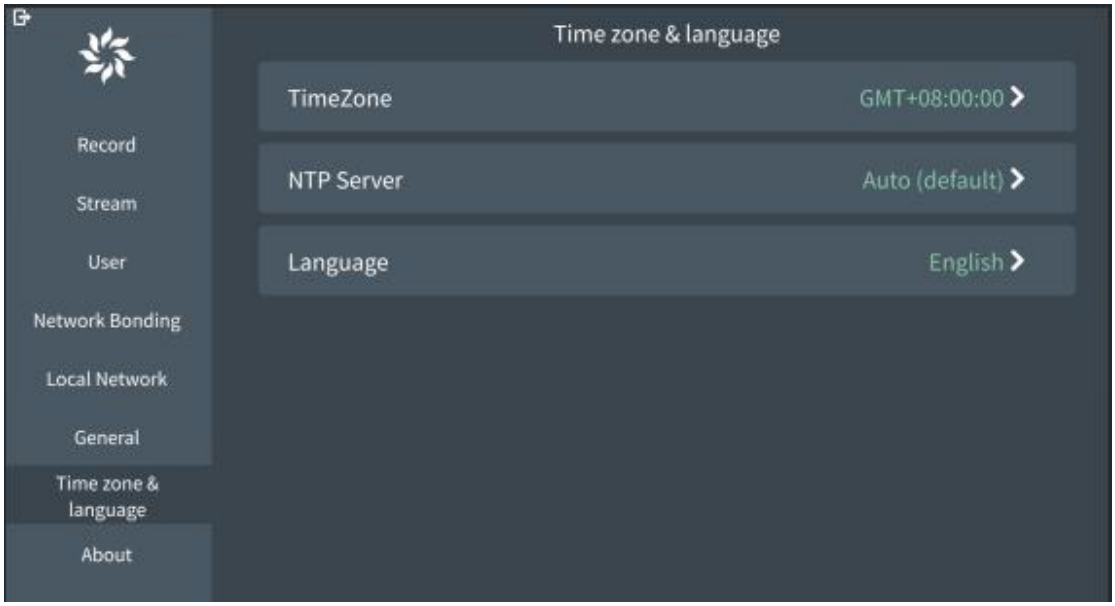
3.2.14 General

Click the Settings "" button and select "General" to switch between TALLY control mode, SDI/HDMI output mode, and no signal display content, as shown in the following figure:



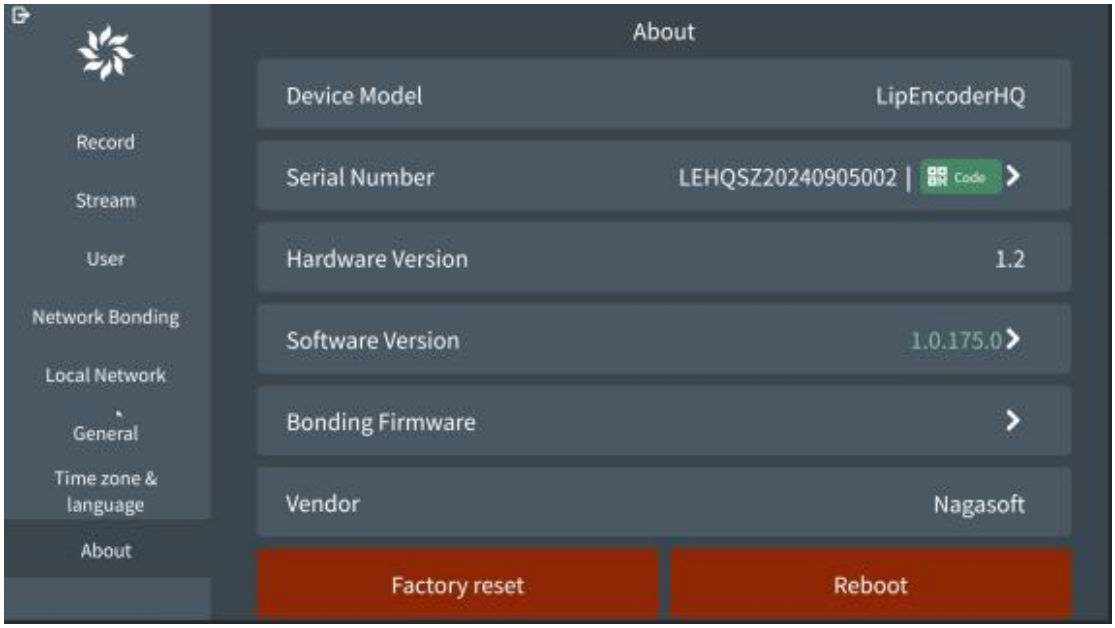
- TALLY control mode: The TALLY control mode can choose between Live+ director control and local switching control.
- SDI/HDMI output mode: SDI/HDMI can choose one of PGM, video feedback, or Live+connection modes as the channel output.
- No signal display: When there is no signal from SDI/HDMI input, you can choose to display the color bar, black screen, and last frame.

3.2.15 Time Zone and Language



- Time Zone: Mainstream time zones are supported, and the corresponding time zone can be selected according to the region.
- Language: Simplified Chinese/Traditional Chinese/English language switching is available, and the selected language will take effect.

3.2.16 About



About page displays of the current device's model, serial number, firmware version number, software version number, bonding firmware version, and other information on the interface.
Restore factory settings: Restore the device parameters to their original factory state.
Restart the device: Restart the software of the device.
Binding Code: Click to enter the device binding code interface. You can use your phone to scan the QR code to open the cloud device management platform, or use your PC to open it https://cdn.ndmp.nagasoft.cn/global/user/device/#/login, after logging into the cloud device management platform, follow the corresponding prompts on the page to bind the device, as shown in the following figure:

