AR8500

Conference Auto Tracking Recorder

User Manual

V1.0



The meaning of symbols

■ Safety instructions

For your safe and correct use of equipments, we use a lot of symbols on the equipments and in the manuals, demonstrating the risk of body hurt or possible damage to property for the user or others. Indications and their meanings are as follow. Please make sure to correctly understand these instructions before reading the manual.

	This is A level product, which may cause radio interference in the living environment. In this case, users may need to take the feasible measures to get around the interference.
	Remind users that the dangerous voltage without insulation occurring within the equipment may cause people suffer from shock.
	CE certification means that the product has reached the directive safety requirements defined by the European Union. Users can be assured about the use of it.
	SGS certification means that the product has reached the quality inspection standards proposed by the world's largest SGS.
	This product passed the ISO9001 international quality certification (certification body: TUV Rheinland, Germany).
	Warning: in order to avoid electrical shock, do not open the machine cover, nor is the useless part allowed to be placed in the box. Please contact the qualified service personnel.

■ General information instructions

	It lists the factors leading to the unsuccessful operation or set and the relevant information to pay attention.

Important note

Warning

In order to ensure the reliable performance of the equipment and the safety of the user, please observe the following matters during the process of installation, use and maintenance:

The matters needing attention of installation

- Please do not use this product in the following places: the place of dust, soot and electric conductivity dust, corrosive gas, combustible gas; the place exposed to high temperature, condensation, wind and rain; the occasion of vibration and impact . Electric shock, fire, wrong operation can lead to damage and deterioration to the product, either;
- In processing the screw holes and wiring, make sure that metal scraps and wire head will not fall into the shaft of controller, as it could cause a fire, fault, or incorrect operation;
- When the installation work is over, it should be assured there is nothing on the ventilated face, including packaging items like dust paper. Otherwise this may cause a fire, fault, incorrect operation for the cooling is not free;
- Should avoid wiring and inserting cable plug in charged state, otherwise it is easy to cause the shock, or electrical damage;
- The installation and wiring should be strong and reliable, contact undesirable may lead to false action;
- For a serious interference in applications, should choose shield cable as the high frequency signal input or output cable, so as to improve the anti-jamming ability of the system.

Attention in the wiring

- Only after cutting down all external power source, can install, wiring operation begin, or it may cause electric shock or equipment damage;
- This product grounds by the grounding wires .To avoid electric shocks, grounding wires and the earth must be linked together. Before the connection of input or output terminal, please make sure this product is correctly grounded;
- Immediately remove all other things after the wiring installation. Please cover the terminals of the products cover before electrification so as to avoid cause electric shock.

Matters needing attention during operation and maintenance

- Please do not touch terminals in a current state, or it may cause a shock, incorrect operation;
- Please do cleaning and terminal tighten work after turning off the power supply. These operations can lead to electric shock in a current state;
- Please do the connection or dismantle work of the communication signal cable , the expansion module cable or control unit cable after turning off the power supply, or it may cause damage to the equipment, incorrect operation;
- Please do not dismantle the equipment, avoid damaging the internal electrical component;
- Should be sure to read the manual, fully confirm the safety, only after that can do program changes, commissioning, start and stop operation.

Matters needing attention in discarding product

- Electrolytic explosion: the burning of electrolytic capacitor on circuit boards may lead to explosion;
- Please collect and process according to the classification, do not put into life garbage;
- Please process it as industrial waste, or according to the local environmental protection regulations.

Preface

This manual mainly describes the use, performance parameters and troubleshooting of AR8500 Conference Auto Tracking Recorder.

If the technical parameters and system usage in this manual are changed, the manufacturer will update the version of the manual. Please use the latest user manual.

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1. Product description



With the gradual popularization of camera video signal source resolution from 1080p high-definition to 4k resolution (3840x2160), the demand for 4k encoding, recording, live broadcast and on-demand is increasing. For this reason, our company has launched a 4K conference recording and broadcasting system solution.

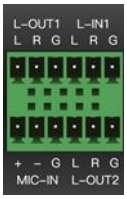
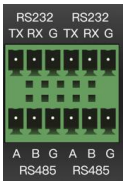
AR8500 is an integrated recording and broadcasting device integrating courseware recording, live broadcast, on-demand, intelligent broadcasting, storage and other functions. Based on the ARM architecture design, the product has powerful performance. The AH524K adopts H.265 encoding and supports 5-channel 4K video signal acquisition and encoding. From acquisition, recording to output, all support 4K resolution. Support synchronous recording and live broadcast in movie mode + resource mode, PGM screen supports picture-in-picture, 1/2/3/4//6 split screen mode display and recording.

2. Specification parameter table

Model	AR8500
video input	5 HDMI signal input
video output	4 HDMI signal output
Maximum Input Resolution	3840x2160@30fps
Maximum output resolution	3840x2160@30fps
Audio input	1 balanced input，3pin Phoenix terminal interface 1 unbalanced input，3.5mm interface
Audio output	1 Balanced output，3pin Phoenix terminal 1 Unbalanced listening output interface，3.5mm Earphone hole
video encoding	H.264,H.265
audio coding	AAC
Video output format	MP4
Video encoding frame rate	1～30fps
Video bitrate	500kbps~40Mbps Can be adjusted
Audio bitrate	8~128KB Can be adjusted
Data Storage	built-in 1T hard drive，Support extension
RS485	2 groups3pin Phoenix terminal Connector
RS232	2 groups3pin Phoenix terminal Connector
network	1 1000M network port，RJ-45
USB interface	2 USB2.0，1 USB3.0，1 USB_OTG
software upgrading	Support for network upgrades、OTG upgrade
Storage mode	Support for built-in hard drives、External USB storage,Supports USB export，Support for FTP download
protocol support	RTMP、RTSP、UDP、TCP、FTP、DHCP、HTTP
Working power supply	DC 12V/3A
Equipment size	1U rackmount

3. Equipment interface description



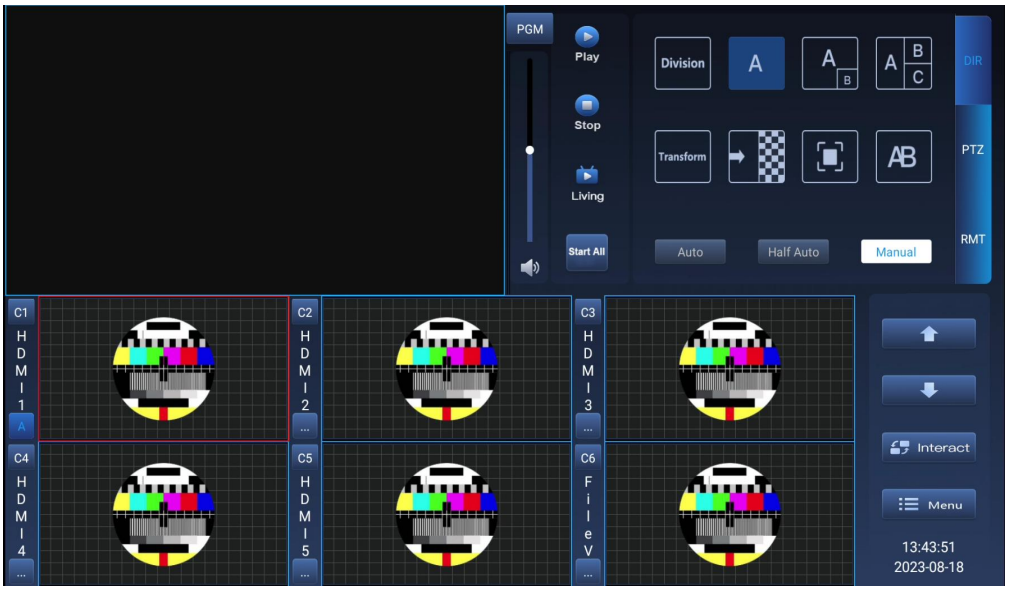
Number	Interface Identification	Illustration
1		3.5mm headphone monitor jack
2		L-IN1：Unbalanced audio input，Phoenix Terminal Connector MIC-IN：Balanced Audio Input，Phoenix Terminal Connector L-OUT1：Unbalanced audio input，Phoenix Terminal Connector L-OUT2：Unbalanced audio input，Phoenix Terminal Connector
3	HDMI OUT 1-4	HDMI signal output，The output screen is a guide screen or a PGM.（Software can be set）
4	HDMI IN 1-5	HDMI signal input，Support 5-channel 4K video signal input at the same time
5		USB 2.0：For external removable storage media for copying files or mouse operations USB-OTG：For software upgrades
6	NET	Gigabit network interface，For device networking
7		RS232：For external guide keyboard, centre control, etc. RS232：For external guide keyboard, centre control, etc. RS485：For external guide keyboard, centre control, etc. RS485：For external guide keyboard, centre control, etc.
8	DC-12V	Device Power Interface，Equipped with 12V 3A power adapter
9	POWER	Equipment power switch
10	LCD screen	For recording status, channel status, network information, storage space, and logo display
11	USB	USB 2.0*1,USB 3.0*1, For external removable storage media for copying files or mouse operations

4. Host function and operation instructions

4.1. Start up

After the equipment power cord is connected（DC12V/1A）, Press the unit's power on/off button

4.2. Start-up guide screen



- The main interface of the guide includes "live screen (PGM/PGM2)", "resource channel preview", "guide" function, "PTZ", "remote", "one key start", "menu" and other options.
- Click the hover button on the recording interface  to switch between the recording interface and the screen of the PC accessing the recording (see the Installation Guide for details).
- This is a page up/down button. When there are multiple preview channels, click it to flip the preview.

4.3. Record (video and audio)

Click "Start" button on the main interface of the software, there will be a "video countdown 5s", wait for the end of the countdown, then start to record PGM composite images, at the same time,

the "Start" icon will turn red, click "Start" icon again will pause the recording. At the same time, the "Start" icon will turn red, click "Start" icon again to pause the recording. Clicking the "Stop" button will end the recording task.

- Resource Channel Recording (need to record teacher/student/student camera, PC computer images) can be done by ticking the channels that need to be recorded in "Menu>Settings>Recording Settings>Recording Policies>Resource Mode" and clicking Record.
- Video files can be viewed in "Menu→File Manager", and can be copied (copied and pasted) by inserting a USB stick into the recording host.

4.4. Push the current (e.g. in mechanics)

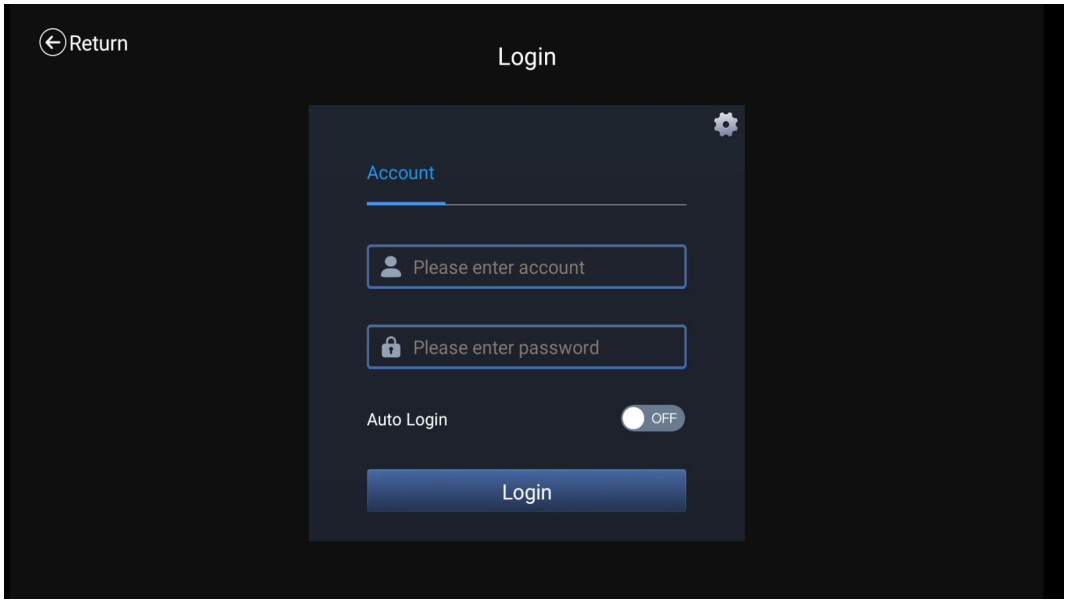
Click "Living" button in the main interface, you can push stream for RTMP and TS, if the push stream icon will turn red, click "Living" button again to end the push stream.

RTMP push stream need to be set in the "Menu → Settings → Live Settings → RTMP Push Stream" menu, open the "live on, release mode with the default is Live, open the main stream or sub-stream, set up to push the stream address, and then go back to the guide home page and click on the "Push Stream", the icon becomes red that is to push the stream successfully.

4.5. Interactivity

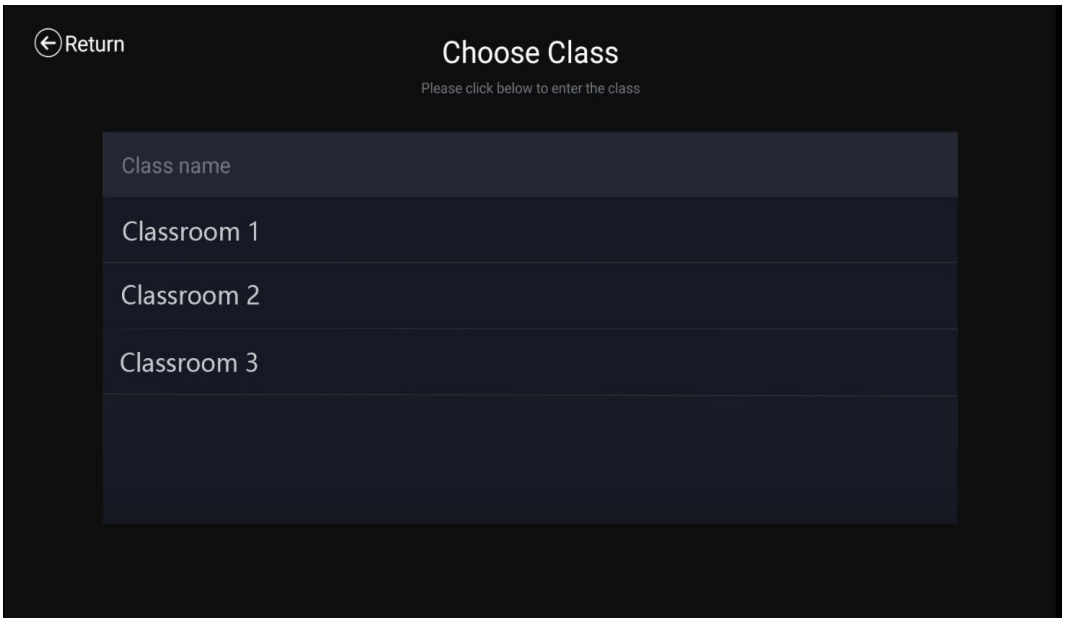
Click 

on the main screen to go to the figure below, the interactive login screen:



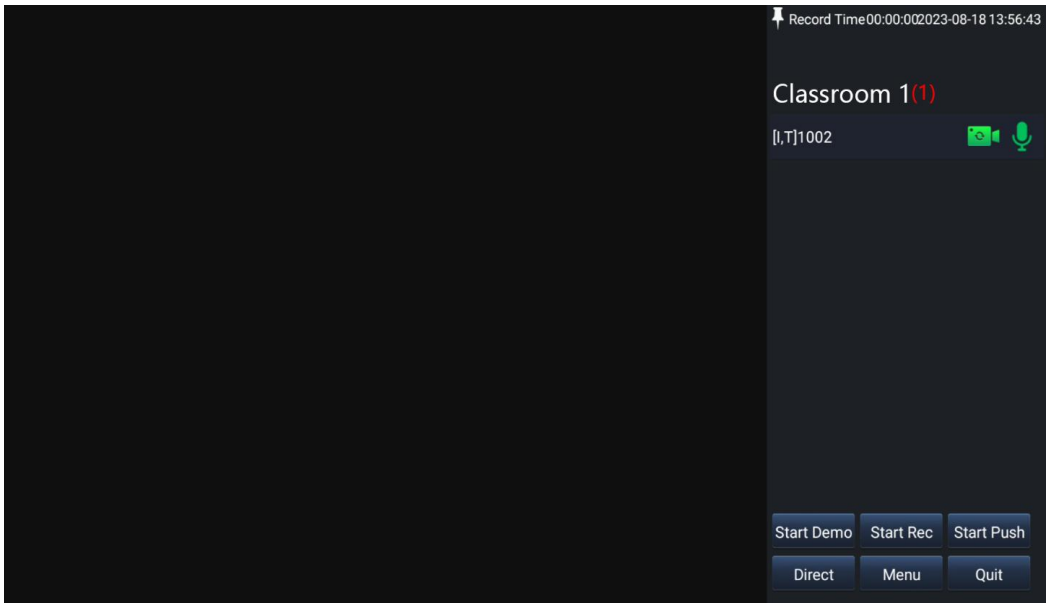
Interactive login screen

Enter the account number and password, the account number and password need to be authorised to open, please contact our sales staff.



Interactive classroom selection screen

Select the classroom, as shown above, to enter based on the classroom name set by the interactive system;



Presenter interactive interface

When you enter the room, as shown above, the teacher in the main classroom switches the lens of the listening classroom by clicking on 。

By clicking on , the teacher in the main classroom is asking the listening end to speak, and clicking on himself or herself to mute.

Click 

to send the PC's screen to the remote end.

Click 

to start recording, click 

to start push stream, and click 

to return to the guide screen.

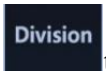
Click 

to enter the menu and 

to exit the room.

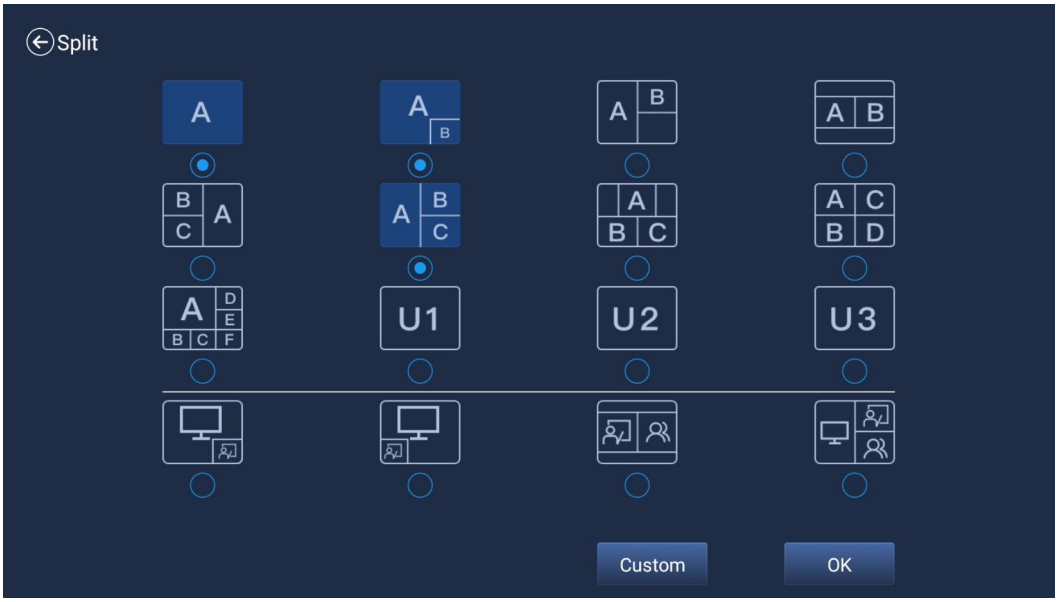
4.6. Demerger

There is a "Split" menu shortcut button on the upper right of the main interface, and the default guide interface displays three shortcut icons at the same time.

, In manual mode, you can switch the split screen operation. Click the "Division" button

to enter the selection menu to modify the 3 split screen modes displayed in the guide interface. The device supports up to 6 split screens, and the position display of A/B/C/D/E/F can be customised. Click the Split button to enter the shortcut setting customisation.

As shown in the figure below:



Segmentation type

where 

is a custom split option, Click 

to enter the custom setting interface, as shown below:

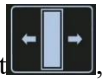


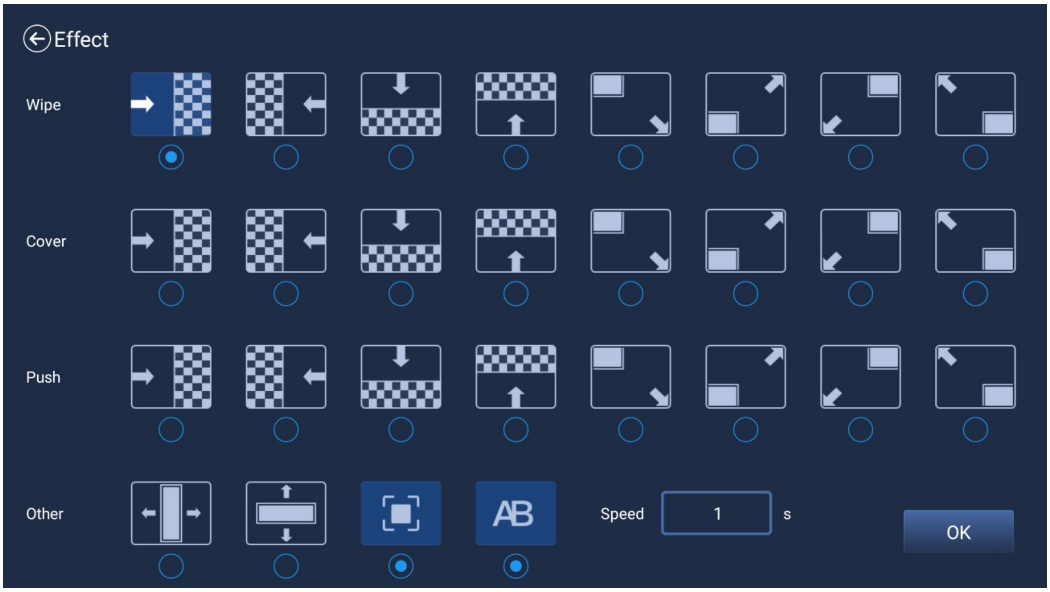
When used with an electronic gantry camera, the system provides 
four splits by default to facilitate quick screen splits for teacher close-ups, student panoramas, and pc screens.

4.7. Especially efficacious

You can set the switching effects during manual and full-automatic playback, which can be used to smooth the transition of image switching and enhance the viewability of the screen. Record and broadcast support a variety of switching effects, users can set the main interface effects bar to display three effects buttons, for rapid playback operations. You can only display 3 special effects icons in the home page of the guide, click the "

" button to enter the menu to modify, commonly used Wipe (erase), Cover (cover), fade in 

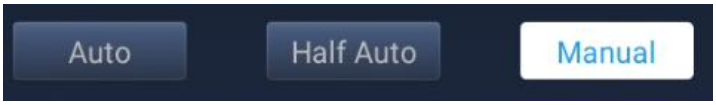
and out 
, sliding window, etc..



Special effects selection

4.8. Guide mode switching

The recording host supports single-click touch resource channel for PGM live channel image switching in manual guide mode.



Mode switching

In manual guide mode, the camera is not automatically tracked, and all operations can be set manually by clicking on the settings, such as split screen, special effects, switching to PGM and other operations.

In semi-automatic guide mode, the tracking camera can automatically track, but you need to manually click to switch to PGM.

In manual guide mode, the camera is not automatically tracked, and all operations can be set manually by clicking on the settings, such as split screen, special effects, switching to PGM and other operations.

Fully automatic and semi-automatic full grey means that this host is not suitable for tracking.

4.9. PTZ

As shown in the figure below, it is used to control the camera's head rotation, zoom and preset position recall in manual guide Mode.



PTZ control

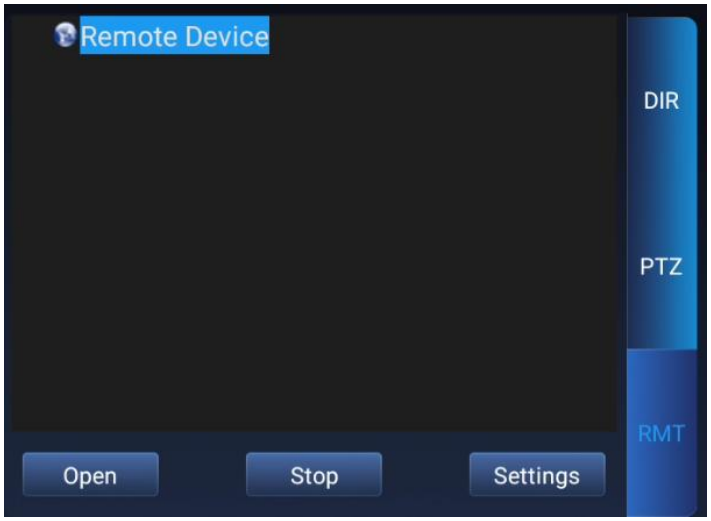
In "Menu→Channel→Remote Channel→(check the channel stream address to be configured) →Setup→Panel Head→Setup", you can control the camera's up/down/right/left/right rotation and call the preset position in this interface in manual mode by setting the parameters of the Pan/Tilt protocol VISCA, the camera's IP address, the camera's port number, the camera's address number, and so on.



PTZ control

4.10. Remotely

In the Remote menu, you can pull video streams from other cameras (supporting RTSP protocol) over the network to be displayed on the recording host. If "Teacher/Student Tracking Camera" is bound in the "eCloud" menu, the teacher/student camera streaming information will be displayed here.

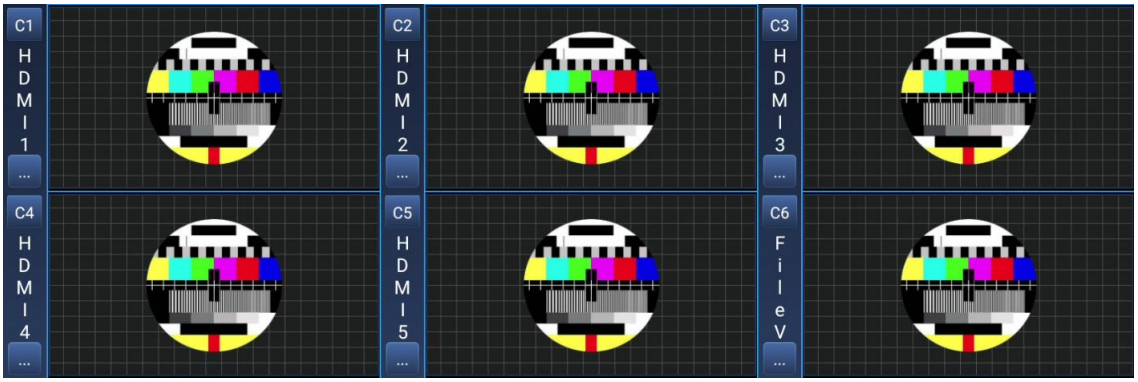


Remote menu

Click the 

button to enter the Remote Access screen, see "Remote Access" for details.

4.10.1. Resource channel



Resource channel

As shown in the above figure 6 small video windows are resource channels, in accordance with the order from top to bottom, from left to right, in order to display the file channel (video on demand playback channel).

Resource Channel Video:

The recording host supports film mode (PGM/PGM2) + resource channel recording at the same time, and the recording of the resource channel can be used for post-production non-editing software. The operation procedure to open the resource channel recording is as follows:

①Tick the resource channel you need to record: Click the main interface ["Menu→Settings→Recording Settings→Recording Policy→Resource Mode] to tick the resource channel you need to record, as shown in the figure below:

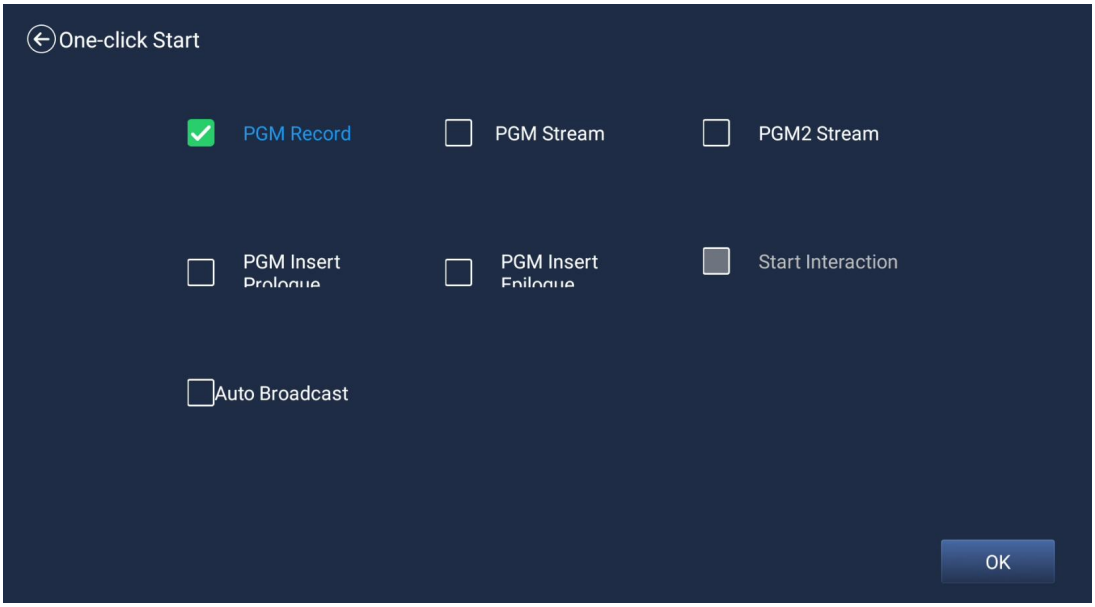


②Associated Resource Channel Recording: If you need to record in associated resource mode, click "Menu→Settings→Recording Settings→Recording Policies" in the main interface to tick the "RES" menu.

4.11. One-touch start

One button 

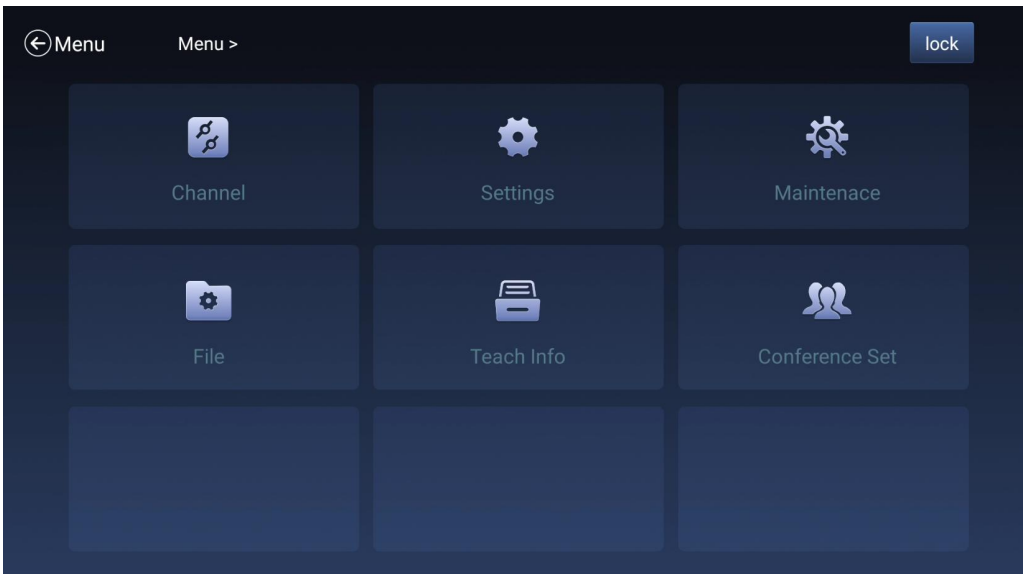
can be associated with "Record", "Push Stream in Movie Mode", "Auto Guide", "Insert Credits in Movie Mode", "Insert Credits in Movie Mode" and so on. "Auto guide", "Insert credits into movie mode", "Insert credits into movie" and so on. In the main interface of the guide, press "Menu>>Setup>>Recording and Broadcasting Settings>>One Click Open Configuration" to enter the configuration interface, and then click OK to take effect after checking the options that need to be associated. As shown in the figure below:



One click to start the setup

5. System function

As shown in the figure below, click - the main interface [menu], the system functions are mainly divided into seven modules: 1, "Channel"; 2, "Settings"; 3, "Maintenance"; 4, "File Manager"; 5, "Teaching Information"; 6, "Conference Settings"; 7, "Interface Switching".

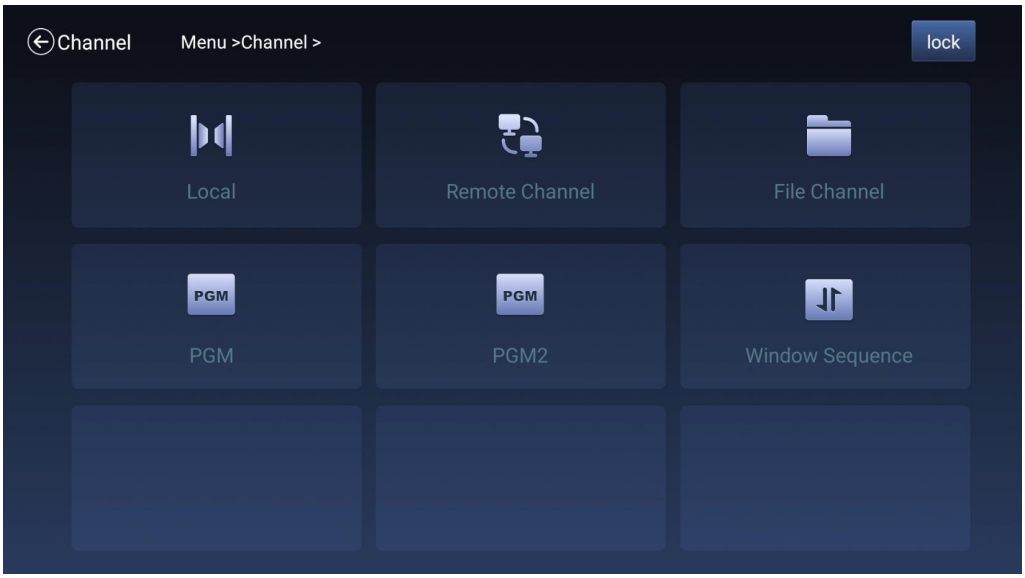


System function

TIP

To enter the menu, you need to enter the account password to verify that you can enter the default account/password are admin. you can also turn off this function, in the "Menu → Settings → Users and Login → Login Options", turn on the "automatic login" can be.

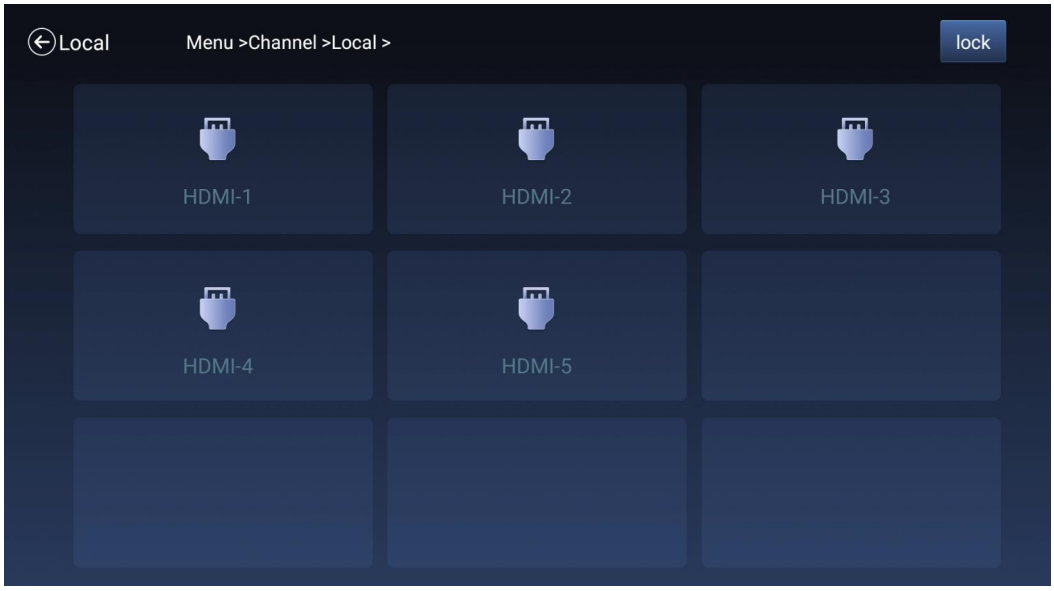
5.1. (communications) Channel



Channel module

5.1.1. Local channel

Local Channel: Set the video encoding parameters of the local physical channel



Local channel

Select the local channel that needs to be set to enter the channel setting interface, such as HDMI-1



HDMI-1 Channel settings

Monitor Window: set the order of resource channel preview for this channel in the main interface of the guide, C1 is the first window, C2 is the second window, and so on.

Video format: input video display format and frame rate, 3840*2160p25 represents 4k25 fps.
Channel name: set the name of the channel, support Chinese and English, the maximum display channel name in the main interface is 6 characters.

Channel Role: Set the channel role, which is related to the role of the 4 quick split buttons inside

the split function.

Auto Switching ID: Corresponds to the camera's auto-tracking procedure hair code, related to the recording and broadcasting host full-automatic switching.

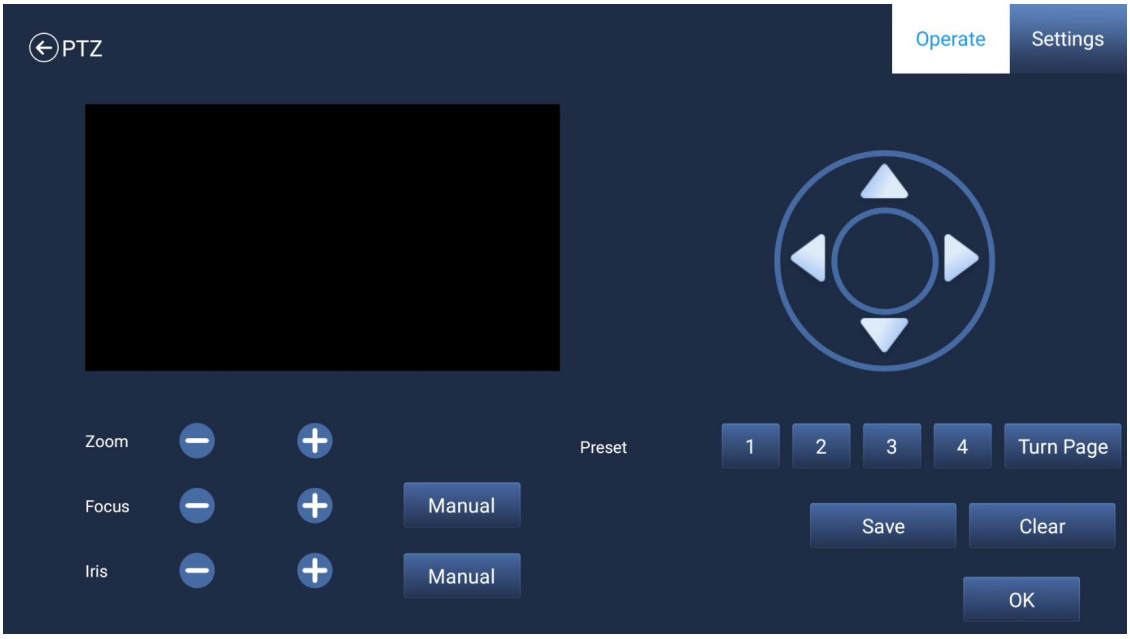
Display mode: divided into aspect ratio and full screen. When the video screen in the channel is not displayed full screen in PGM, you can modify it accordingly here.

Video Source: Used to select the video source for this channel access. (Default is grey display, not operable) rtsp master/sub stream address: rtsp real-time stream for this channel.

5.1.1.1. PTZ operation

Click the 

button to enter the gimbal operation interface, as shown below:



Gimbal Operator Interface

PTZ operation: ▲、▼、◀、▶on the button is to control the PTZ camera up, down, left, right rotation, [Zoom] "+", "-" is to zoom out and zoom in function keys, [Focus] "+", "-" is to focus on distant objects, focus on close objects. ", "-" is to focus on distant objects, focus on close objects. The "+", "-" of [Aperture] is to adjust the large aperture and adjust the small aperture.

Preset Position Setting: You can select 1-8 preset points, and big close-up, close-up, distant view, medium view, and near view. The preset point for large close-up is 11, close-up is 12, near scene is 13, medium scene is 14, far scene is 15. users can choose the preset point, save the preset point after adjusting the position of the camera, and then call the preset point in the operation.

Save: Used to save preset bits.

Clear: For clearing preset bits.

5.1.1.2. Head setup

Click Settings to enter the gimbal setting interface as shown below:



PTZ Settings Interface

Enable PTZ: PTZ switch for enabling or disabling this channel

PTZ Protocol: Used for PTZ control protocol selection, support VISCA, PELCO-P, PELCO-D and other three protocols. If the controlled PTZ camera supports VISAC protocol, select VISCA here.
COM port: used to select the serial port to control the camera. PTZ camera recording host connection interface, supports RS485 and RS232, corresponding to the corresponding RJ45 port on the hardware. (If the recording host does not have an external serial port or the camera uses network control, then this can be ignored)

PTZ Address Code: Fill in the PTZ communication address code of the corresponding camera.
Head Speed: Used to adjust the speed of the head rotation.

Camera IP: Fill in the IP address of the camera here when using network control of the camera.
Camera Port: When using network control of the camera, fill in the UDP port of the camera for PTZ control here.

TIP

Recording host through the network control PTZ PTZ camera, you need to configure the camera PTZ address code, camera IP and camera port in advance, and must be in manual guide mode to

PTZ control in the PTZ setup menu or the main interface of the recording and broadcasting, in the main interface to operate the PTZ, you must first activate the corresponding channel on the resource channel, and then point the PTZ control button in order to be able to use it normally.

5.1.1.3. Image settings

Click 

to enter the Image Settings screen as shown below:



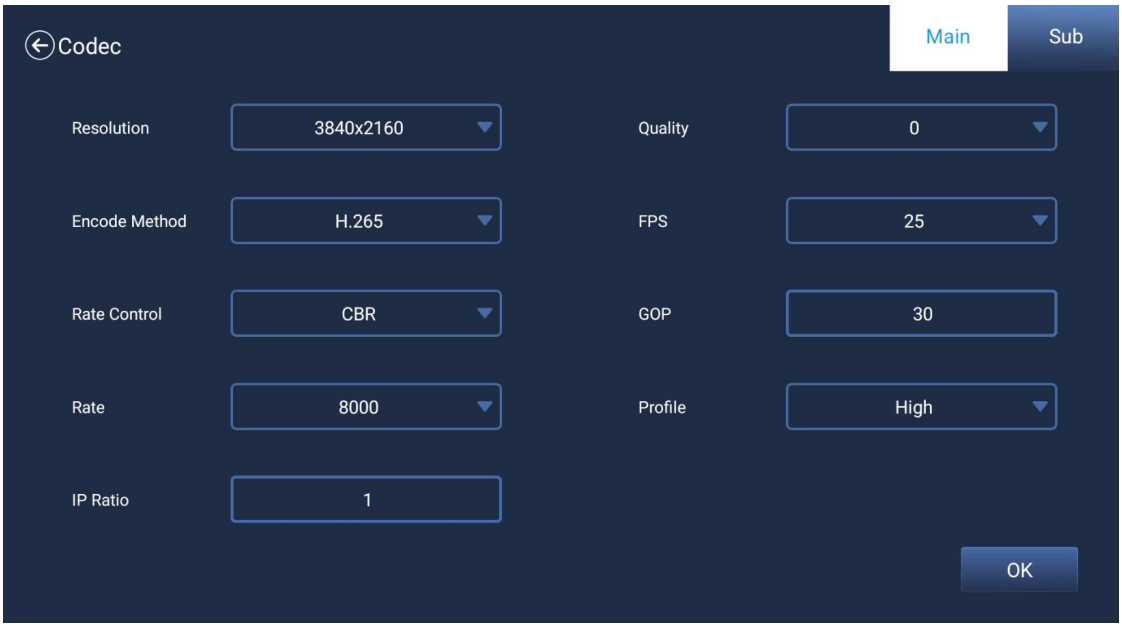
Image setting screen

The main settings are brightness, contrast, chroma and saturation of the video image. The quality of the video image depends mainly on the camera parameters, and normally no adjustments are needed here.

5.1.1.4. Code setting

Click 

to enter the code setting screen as shown below:



Code setting screen

Main Sub:Select the encoding parameter settings for the main stream and sub-streams.

Resolution: the resolution of the main stream can be selected: commonly used 3840*2160, 1920*1080, 1600*900, 1280*720, 960*540, etc.; the resolution of the sub-stream can be selected: 1280*720, 960*540, 640*360, 480*270, 720*576, 352*288.

Note: In multi-stream multi-screen recording in resource mode, the channel is recorded according to the resolution and bit rate size here.

Encoding Mode: Select the encoding mode of the channel, which supports both H.264 and H.265 compression formats.

Bit Rate Control: Select the bit rate control method for this channel.
Code Rate: Select the code rate of the channel. The code rate is adjustable between 50Kbps-40Mbps, the default code rate of the main stream is 4000Kbps, and the sub stream is 400Kbps.

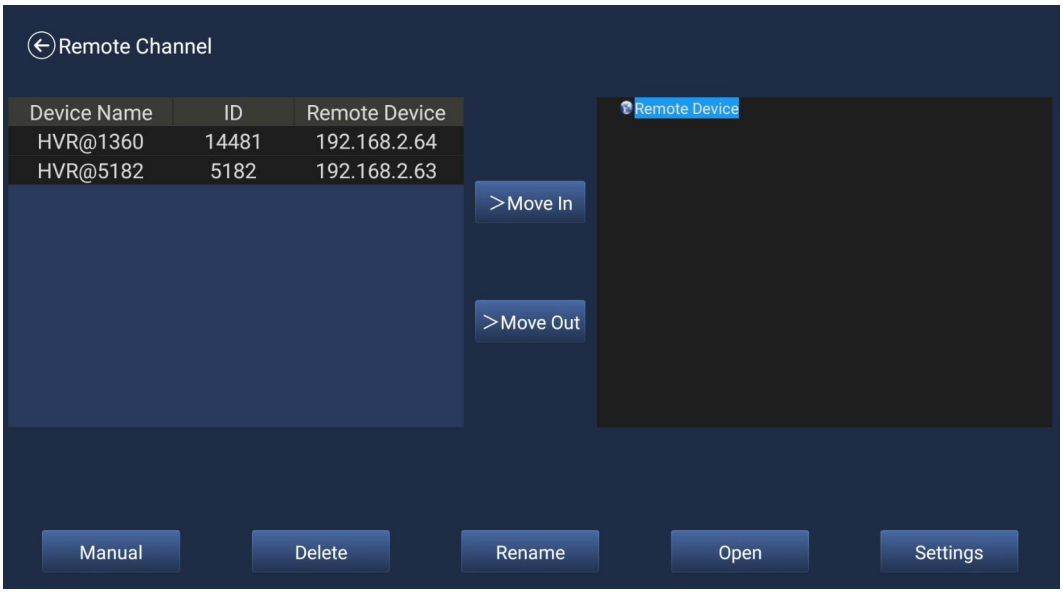
IP Ratio: Set the I-frame and P-frame ratio.
Picture Quality: Select the picture quality parameter, 0-5 levels adjustable, 0 level image quality is the best.

Frame rate: select the encoding frame rate of this channel, 10-60 fps is adjustable, default is 25 fps.

frame interval: set the I-frame interval of this channel, default is 30.

5.1.2. Remote access

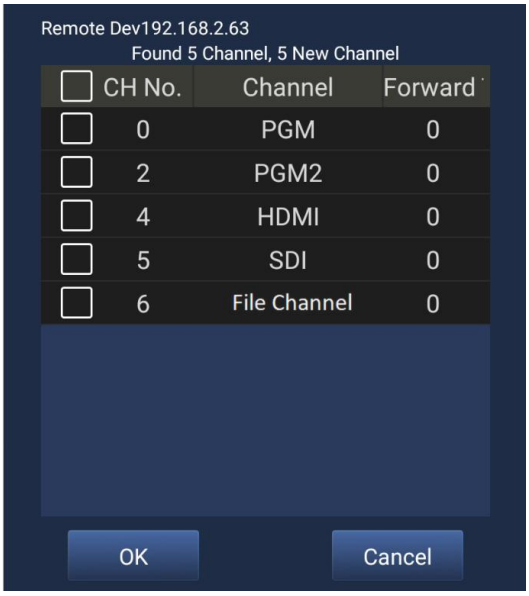
Used to automatically search for remote recording devices under LAN and add remote devices. As shown in the figure below:



Remote access

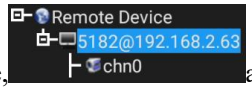
Add a remote recording device:

When multiple recording hosts are on the same LAN, the left window will automatically search out the recording hosts under the LAN. Select one of the remote recording hosts and click >Move In, the pop-up window will show all the channels of this remote recording, tick the channels you need to add and click OK.



Add video source

At this point, you can see the added channel under the remote device directory on the right

side, 

and select the channel for



and so on.

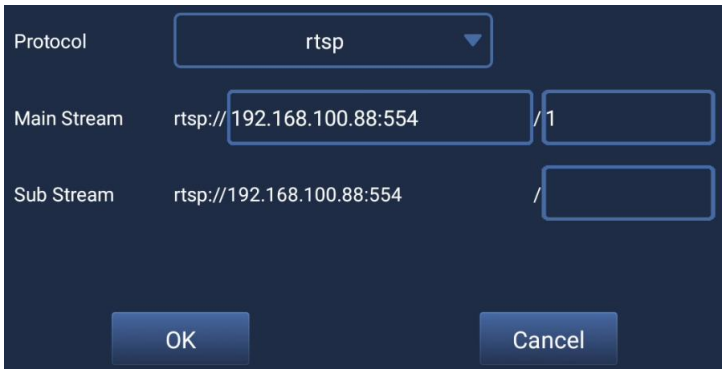
To remove the device, click 

to remove the device.

Manually add RTSP streams to the camera:

Click 

, you can add devices that support the RTSP real-time streaming protocol, enter the stream address (Note: Generally, you can just enter the main stream, the box after the following sub-stream is empty)



RSTP streaming

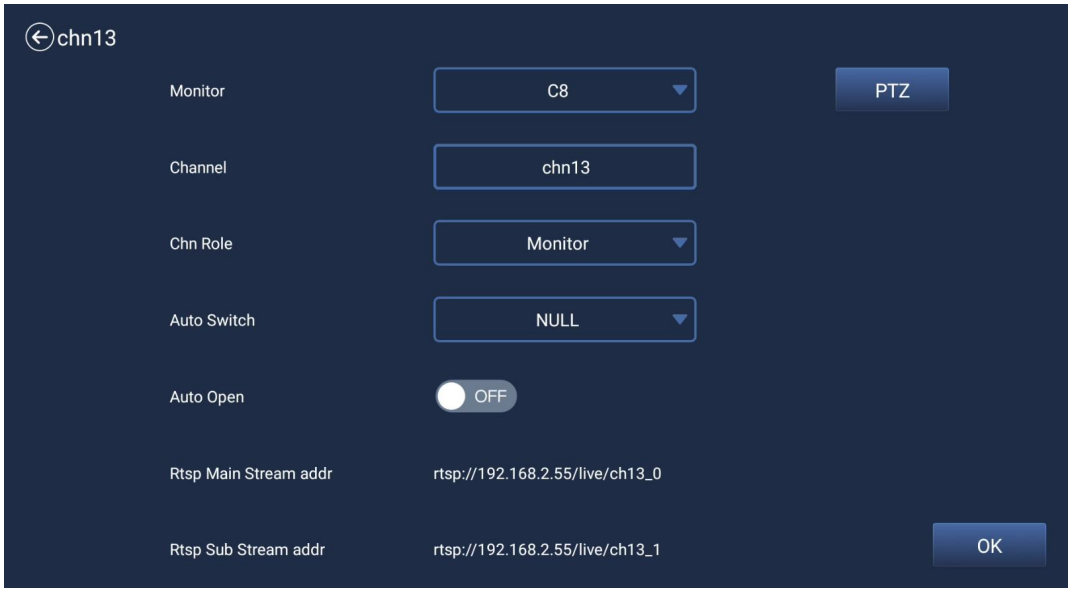
Click OK, select the added stream address, click the following 

can be, if you see the address in front of the device icon appeared in the green triangle logo , it means that the device is opened successfully.

If you need to configure this device, select the stream address 

of the desired device and click the 

button in the lower right corner to enter the setup interface for setting.



Remote channel setting interface

Monitor Window: set the order of resource channel preview for this channel in the main interface of the guide, C1 is the first window, C2 is the second window, and so on.

Channel name: set the name of the channel, support Chinese and English, the maximum display channel name in the main interface is 6 characters.

Channel Role: Set the channel role, which is related to the role of the 4 quick split buttons inside the split function.
Auto Switching ID: Corresponds to the camera's auto-tracking procedure hair code, related to the recording and broadcasting host full-automatic switching.

Auto Open: Set the channel to open automatically. rtsp master/substream address: rtsp live stream for this channel

:See Head Operation and Head Settings for details.

5.1.3. PGM

PGM：Sets the video encoding parameters for the PGM channel.



PGM Channel

Resolution: the set PGM resolution.

Video format: input video display format and frame rate, 1920*1080p25 represents 1080p HD 25 fps.

Channel name: (default is greyed out, not actionable here)

Automatic ID switching: (default is greyed out, not actionable here)

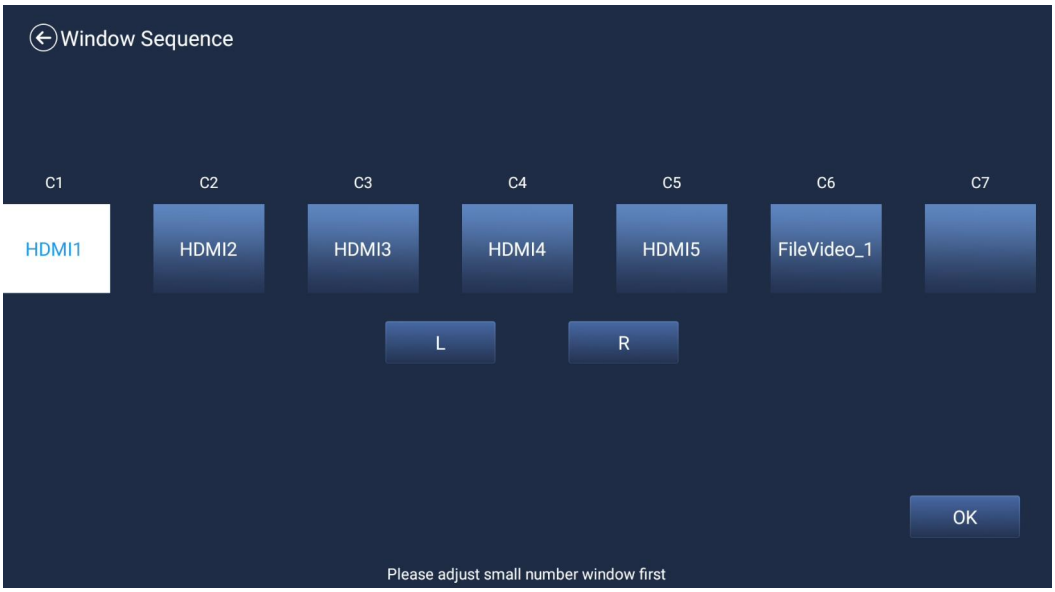
Audio and Video Synchronisation Compensation Time: Used for time compensation when audio and video are out of sync in guide mode or interactive mode.

rtsp master/sub stream address: rtsp real-time stream for this channel.

Codec: See Coding Settings for details

PGM2 : Same as above

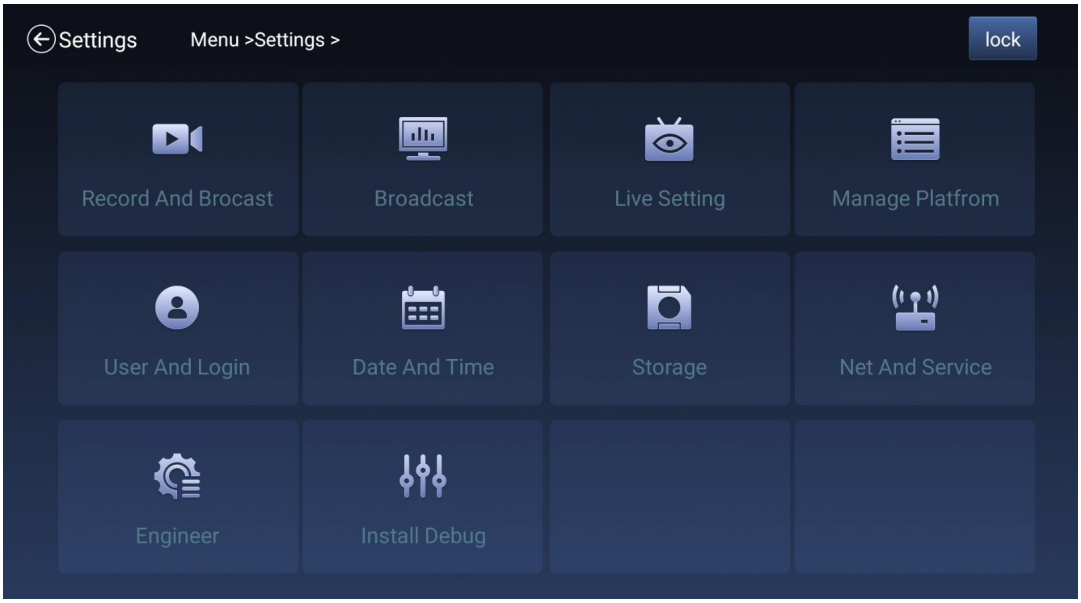
5.1.4. Window order



Window order

Window Order: Used to adjust the screen order of each channel in the master broadcasting interface;

5.2. Set up

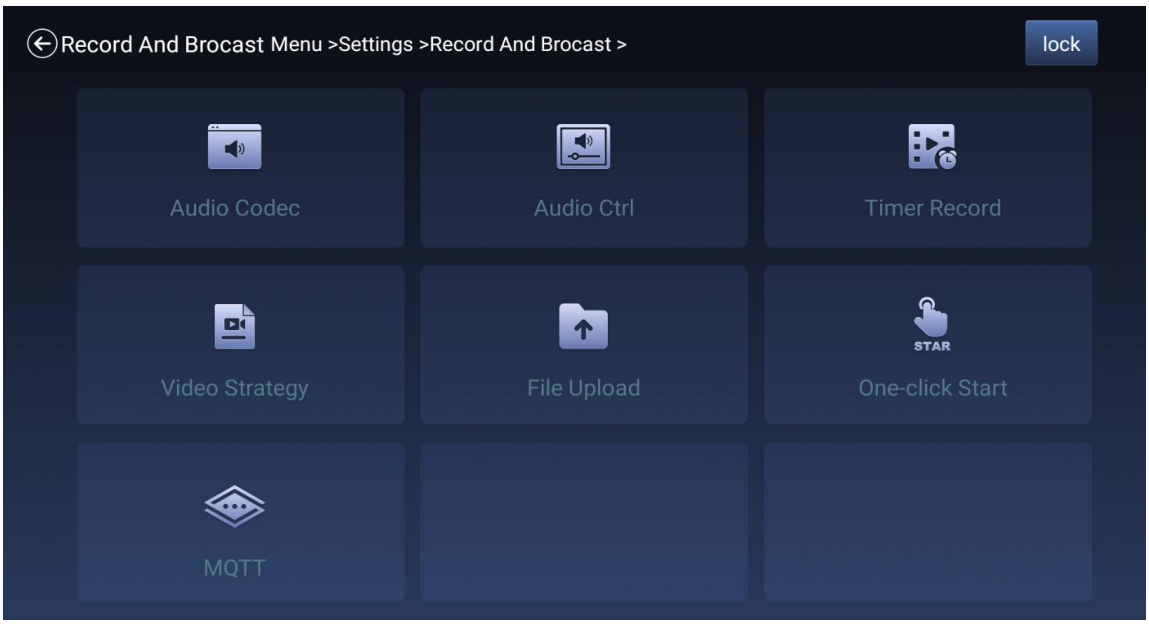


Set up

TIP

As shown in the figure, the setup menu has a total of 9 settings: "Record Setup", "Guide Setup", "Live Setup", "Management Platform", "Users and Login", "Date and Time", "Disk and Storage", "Network and Service", "Engineering Setup", "Installation and Commissioning".

5.2.1. Recording setup

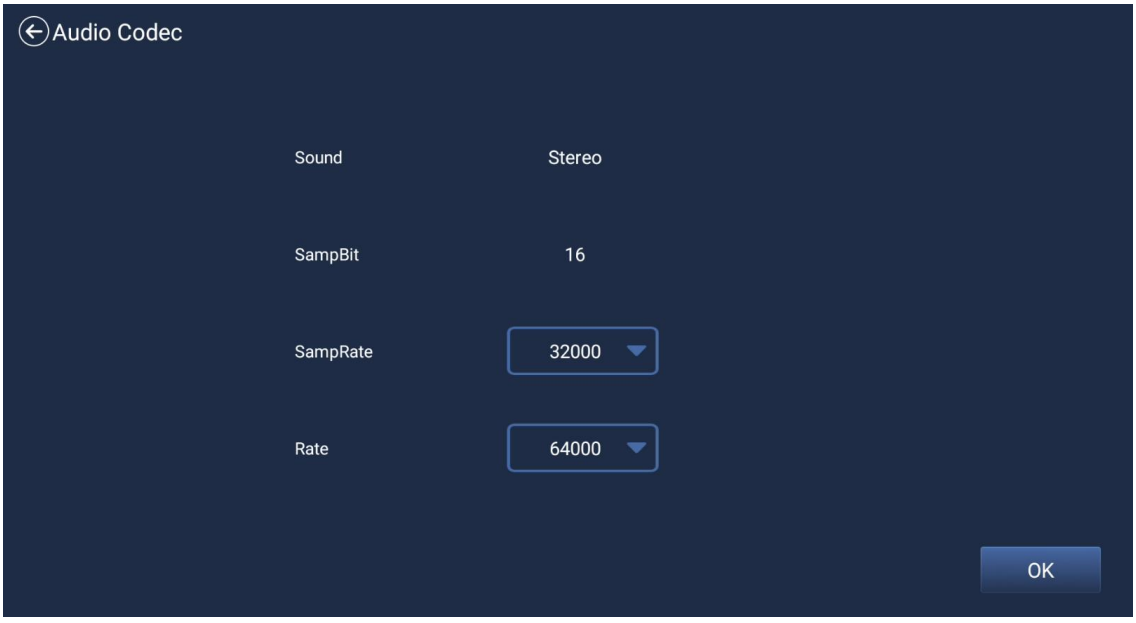


Video Settings

TIP

There are six settings in the Recording Settings menu: "Audio Encoding", "Audio Control", "Timed Recording", "Recording Policy", "FTP Upload", and "One Click Start Configuration".

5.2.1.1. Audio encoding



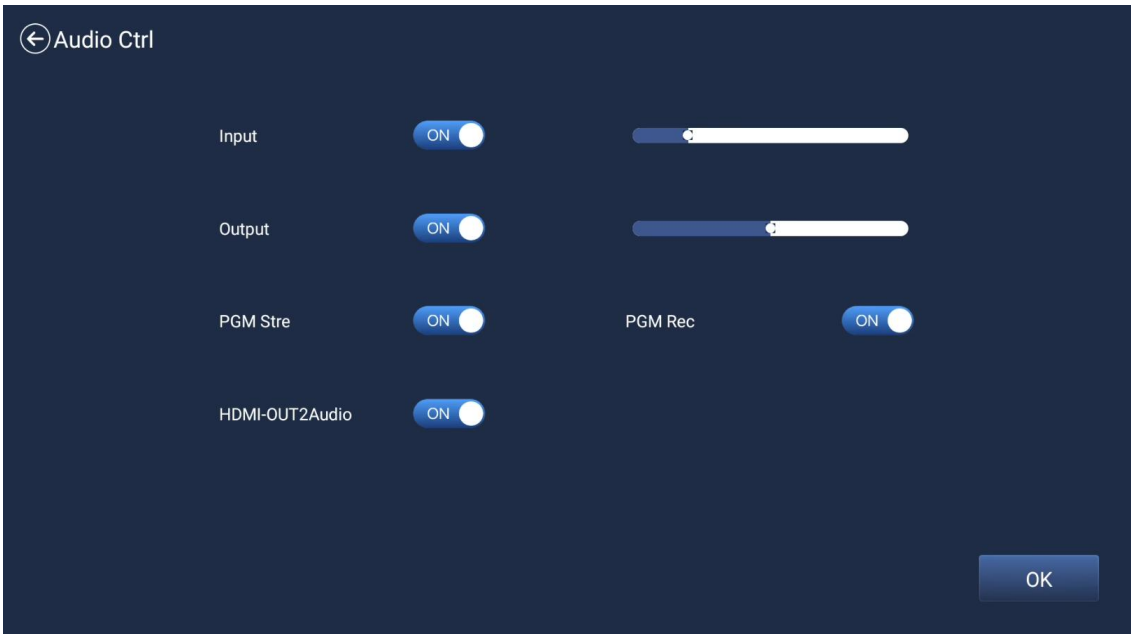
Audio encoding

TIP

As shown in the above figure, in the audio encoding setting menu, users can customise the sampling frequency (the default parameter is sufficient, and it is not recommended that users

modify it, as modification may cause sound anomalies); the audio encoding bit rate is selectable from 8000-128000Kbps.

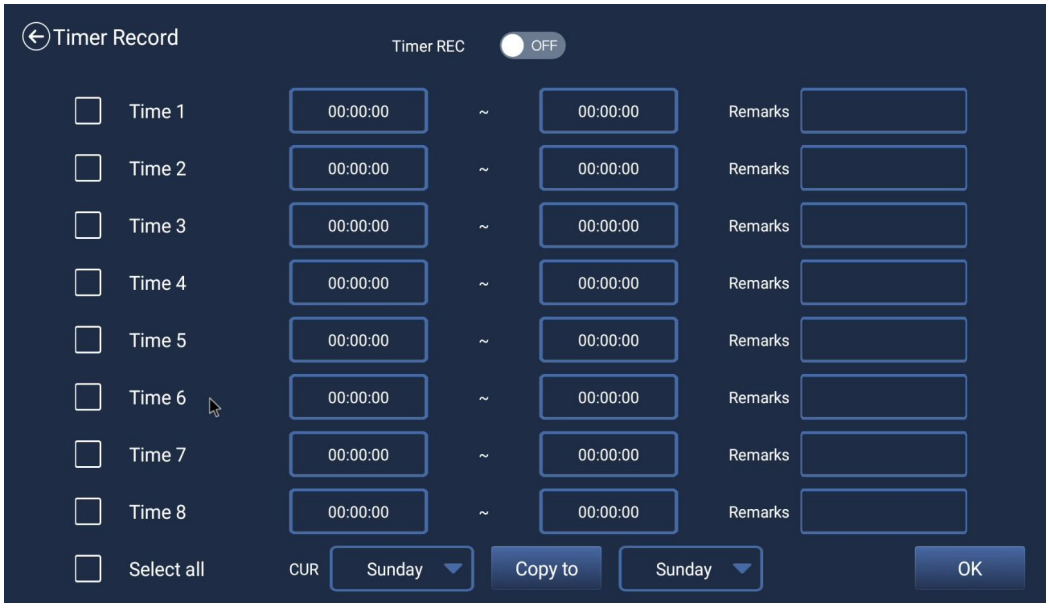
5.2.1.2. Audio control



Audio control

As shown in the figure above, it is used for corresponding audio on/off control and input/output sound level adjustment.

5.2.1.3. Time-lapse video recording

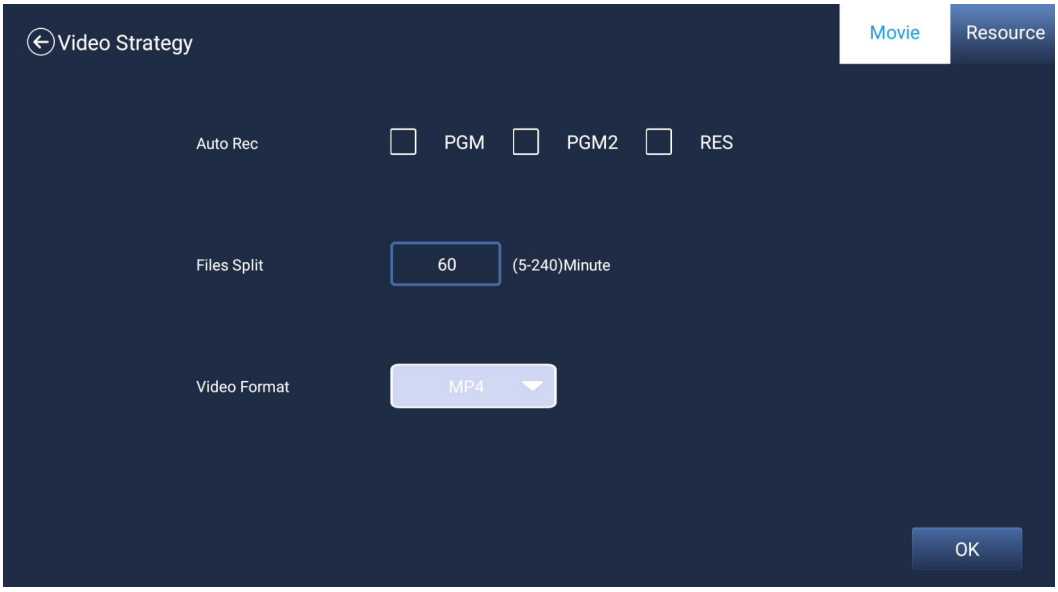


Time-lapse video recording

TIP

As shown in the above figure, it is used for the timed recording function of the recording system. Users can set eight time slots for timed recording parameters here, and copy the parameters of this day to any day of the week.

5.2.1.4. Video strategy



TIP

As shown in the figure above, the recording host supports "film mode + resource mode" simultaneous recording. Movie mode menu can be set to boot PGM/PGM2/RES (Resource Recording) automatic recording; video file split time 5-240 minutes can be set (the default is 60 minutes to generate a video file, file size of 1.8G). The video format is standard MP4 format.



Resource model

As shown in the figure above, Resource Mode Recording selects the channel that needs to be recorded to be ticked.

5.2.1.5. File upload

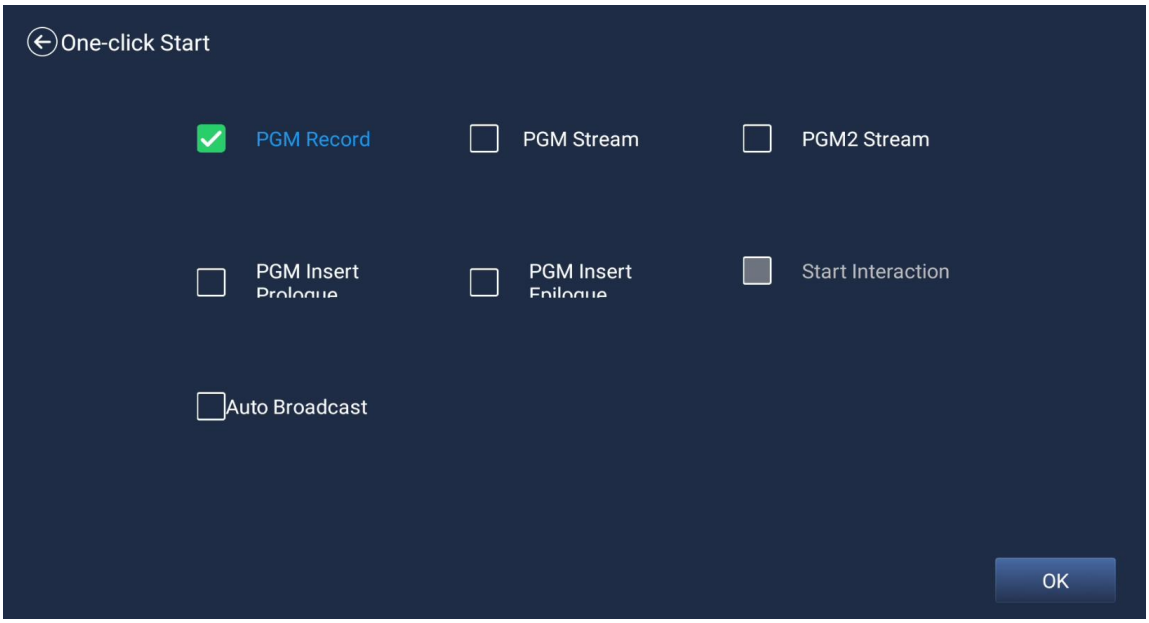


FTP upload and HTTP upload

As shown in the above figure, the recording and broadcasting system supports automatically uploading video files to the set FTP server for storage after the video recording stops.

Users need to set the server address, port number, user name and password and other information in advance. It supports automatic loading of historical tasks after restarting the recording host, timed upload and other functions.

5.2.1.6. One click to start configuration

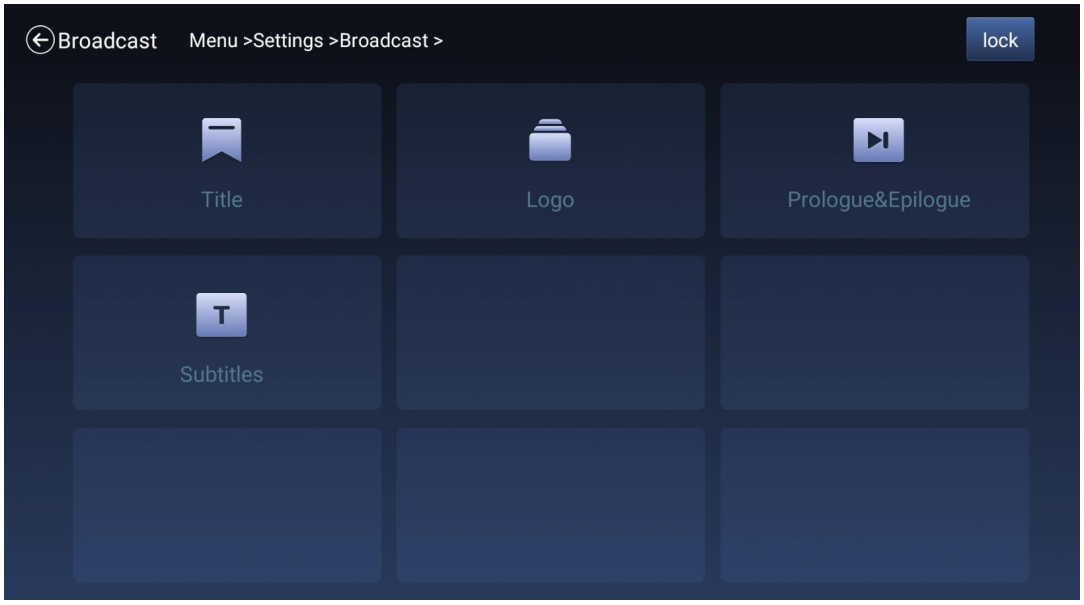


One click to start configuration

The functions associated with the One-Click Configuration menu are "Record", "Movie Mode Push Stream", "Auto-Introduction", "Auto-Introduction The functions associated with the menu are "Record", "Push Stream in Movie Mode", "Auto Pilot", "Auto Pilot", "Insert Title in Movie Mode", "Insert Ending in Movie Mode", and "Interactive" options. Users can execute these associated functions through the "One Click Start" button on the main interface of the recorder.

5.2.1.7. MQTT （an omission）

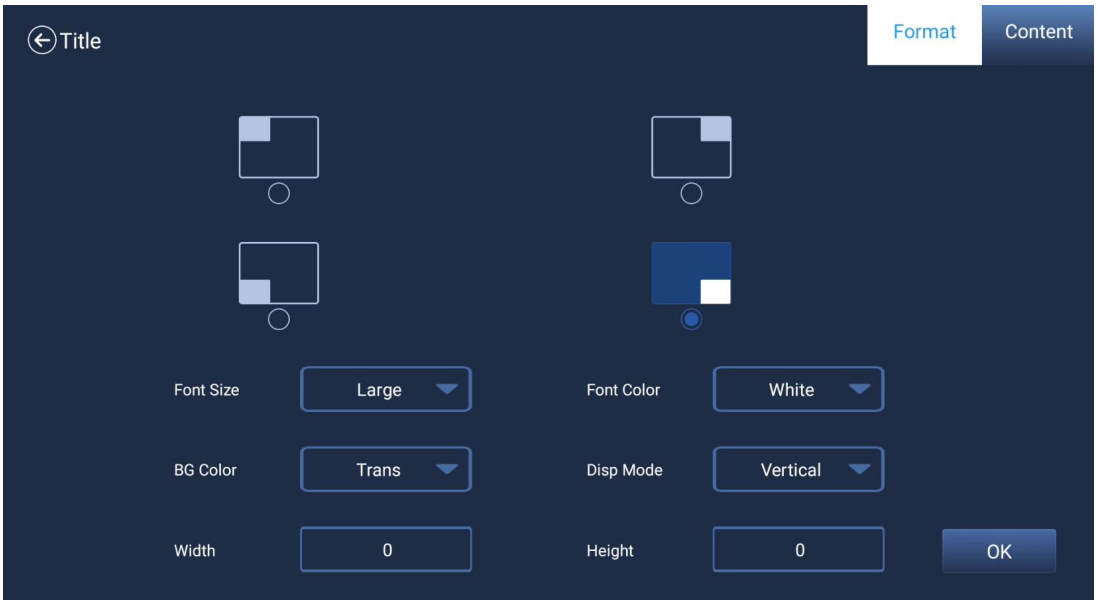
5.2.2. Guide settings

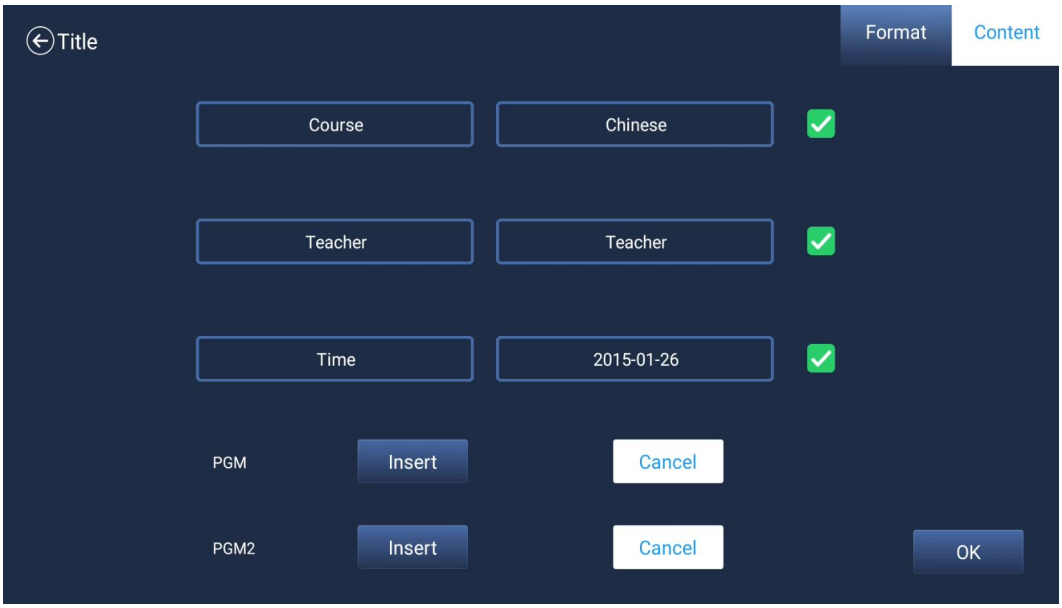


Guide settings

There are 4 settings in the Pilot Settings menu: Title Settings, Cursor Settings, Credits Settings, Subtitle Settings. During manual guide, it supports inserting information such as courseware information, station label, title and subtitle into live PGM and PGM2 channels after editing them in advance, so as to reduce the work of post-editing of the recorded courses.

5.2.2.1. Title setting



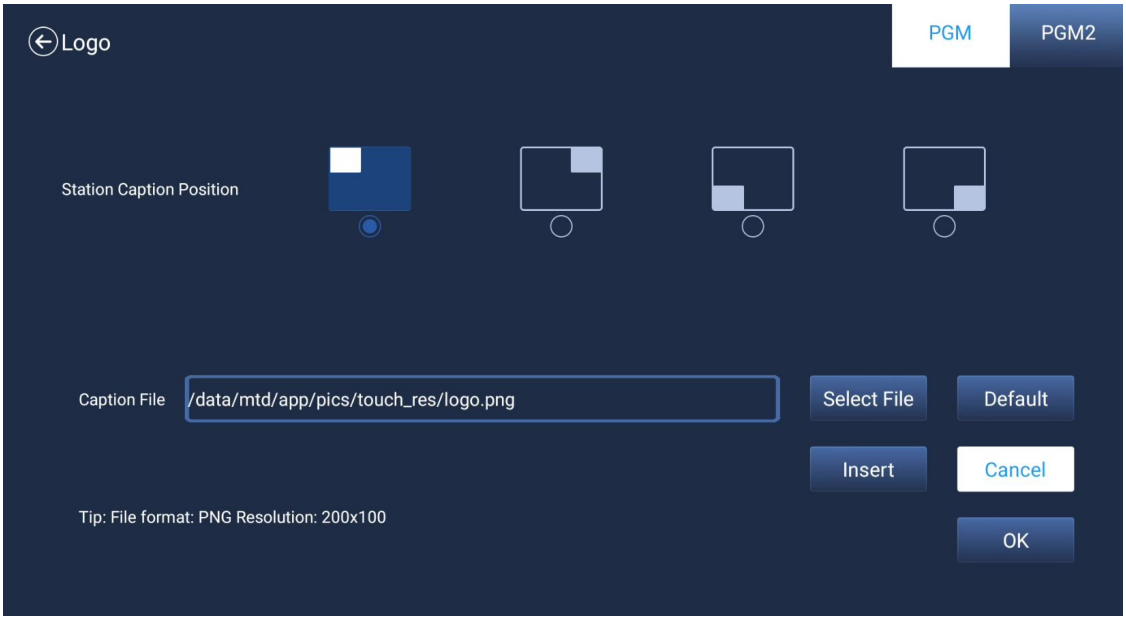


Title Setting

TIP

When manually guided, users can use class information can be inserted into the live channel PGM and PGM2 to increase the viewability of the video screen.

5.2.2.2. Label setting

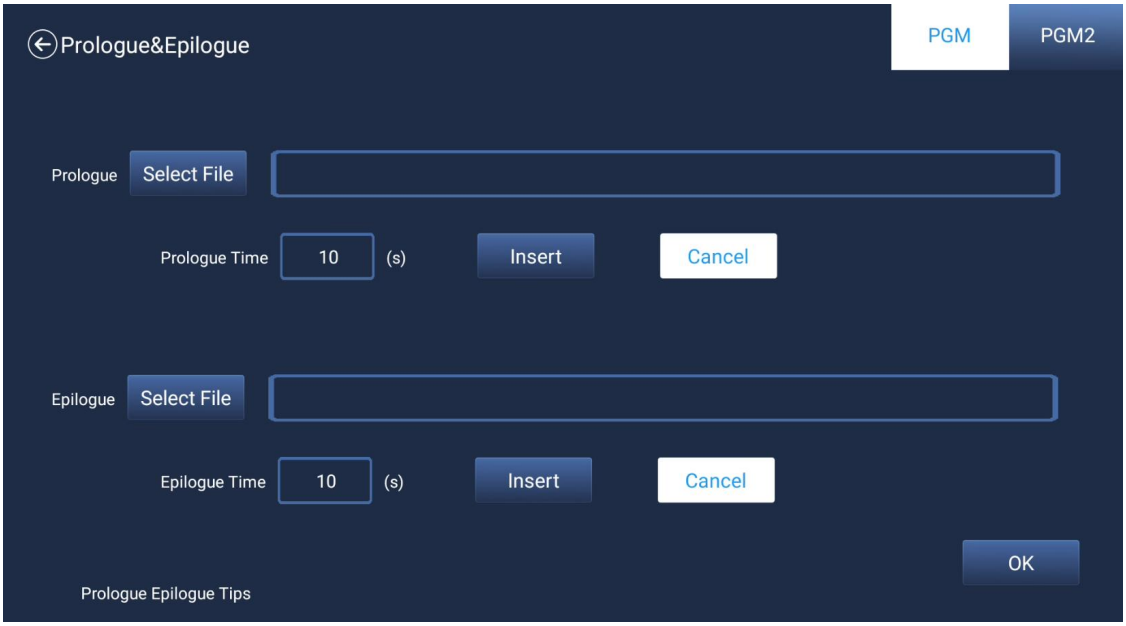


Label setting

During manual guide, users can manually insert station logos into the PGM and PGM2 channels. As shown in Figure 53, the maximum supported number of station logos to be inserted in the PGM and PGM2 channels is four. Top Left, Top Right, Bottom Left and Bottom Right. For each position of the station logo, the user can customise the modification, the format of the station logo

image is png, and the resolution size of the best effect image is 200*100.

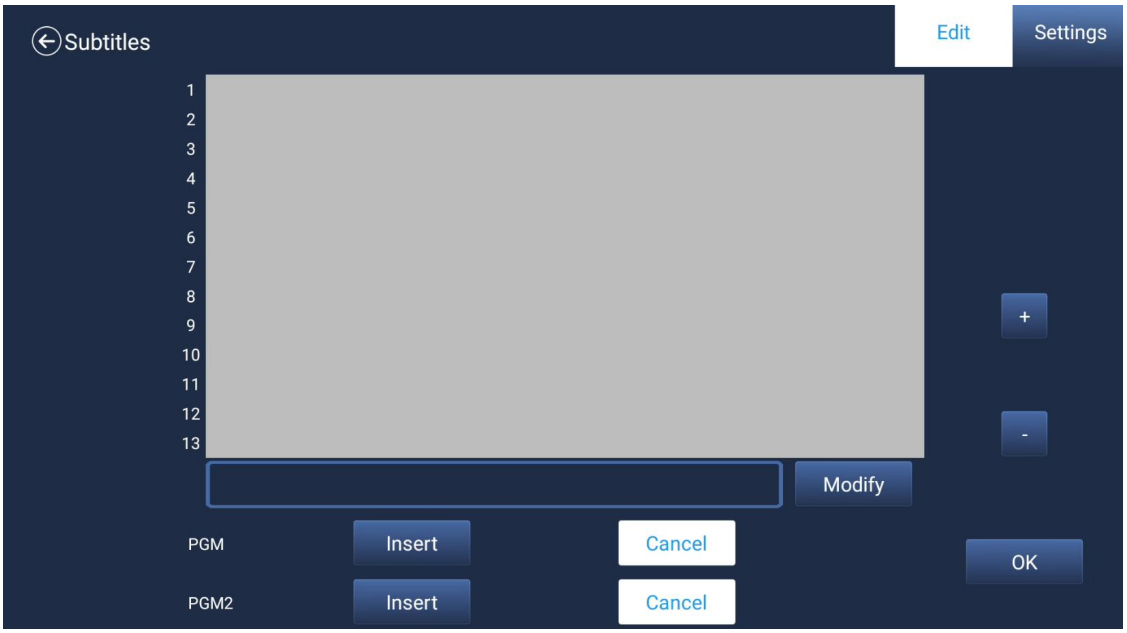
5.2.2.3. Opening and closing credits (of film)



The recording system supports the insertion of opening and closing credits when recording a course, such as inserting school and teacher profiles, eliminating the need for post-editing. When you use it, you need to copy the opening and closing files to a USB flash drive, set the path of the opening and closing files in this menu after accessing the recording, and the default insertion length is 10 s. Tick Movie Mode 1 to insert the opening and closing files in the One-Click Start menu, which can be achieved by the one-click start button in the main interface, and then start inserting the opening files after clicking the one-click start, and then inserting the closing files after the course recording is completed by clicking the one-click start button again.

Remarks: The title sequence file must be in MP4 format, H.264 encoding, audio encoding is AAC, two-channel stereo, sampling rate is 44.1KB, and the video resolution is not greater than 1920*1080.

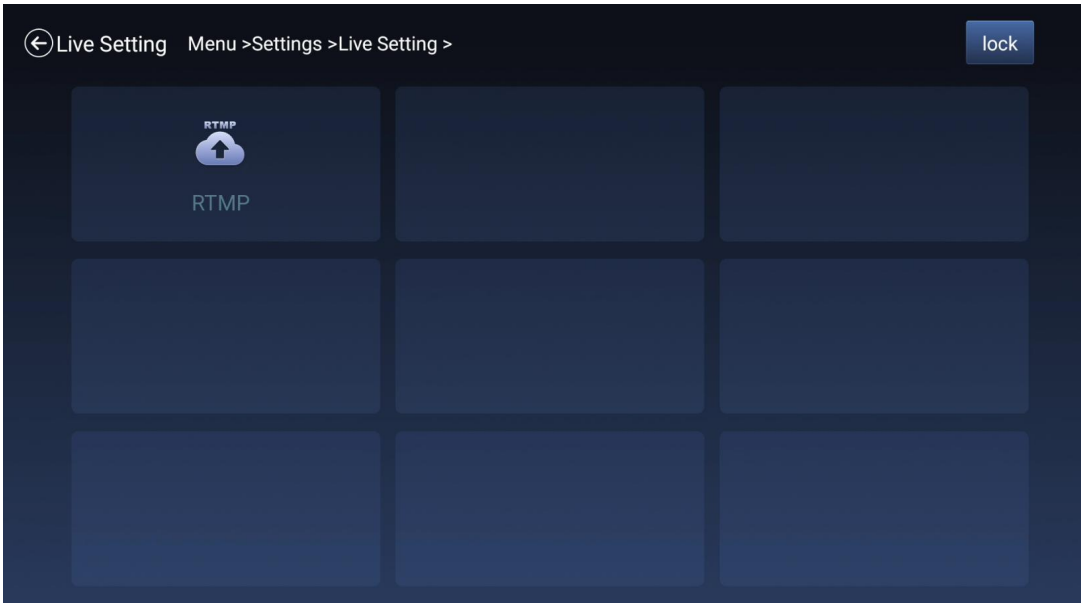
5.2.2.4. Subtitle settings



Captions

The recording system supports real-time insertion of subtitles in live channels PGM and PGM2, and users can edit up to 13 different subtitle files. Subtitles can only be displayed on one line in PGM and PGM2 channels, and the subtitles posted later will replace the subtitles posted earlier.

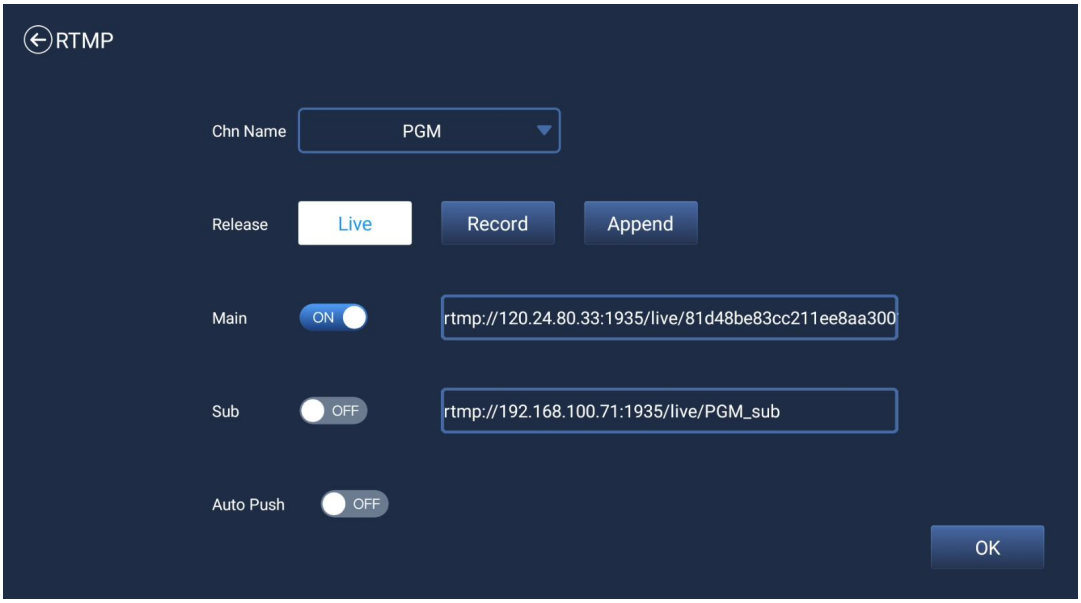
5.2.3. Live streaming settings



Live Streaming Settings

As shown above, RTMP push streams can be set up within the Live Settings menu.

5.2.3.1. RTMP push-stream setting

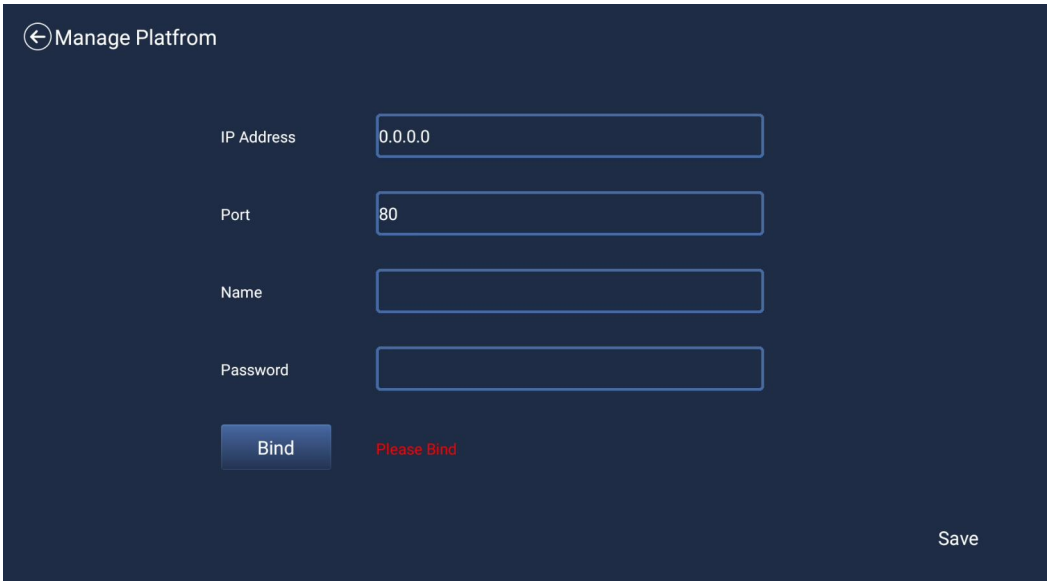


RTMP pushstream setting

TIP

As shown in the above figure, you can set the main and sub stream push address and push mode of PGM and PGM2 channels in RTMP push stream menu. The push mode is Live mode by default, the code stream and resolution of push can be adjusted in "Menu→Channel→PGM Coding Settings", the default code rate of main stream is 4000Kbps, the resolution is 19208*1080p30, the sub-stream is 400Kbps, and the resolution is 960*540, which can be adjusted by users according to the actual network bandwidth. Adjustment.

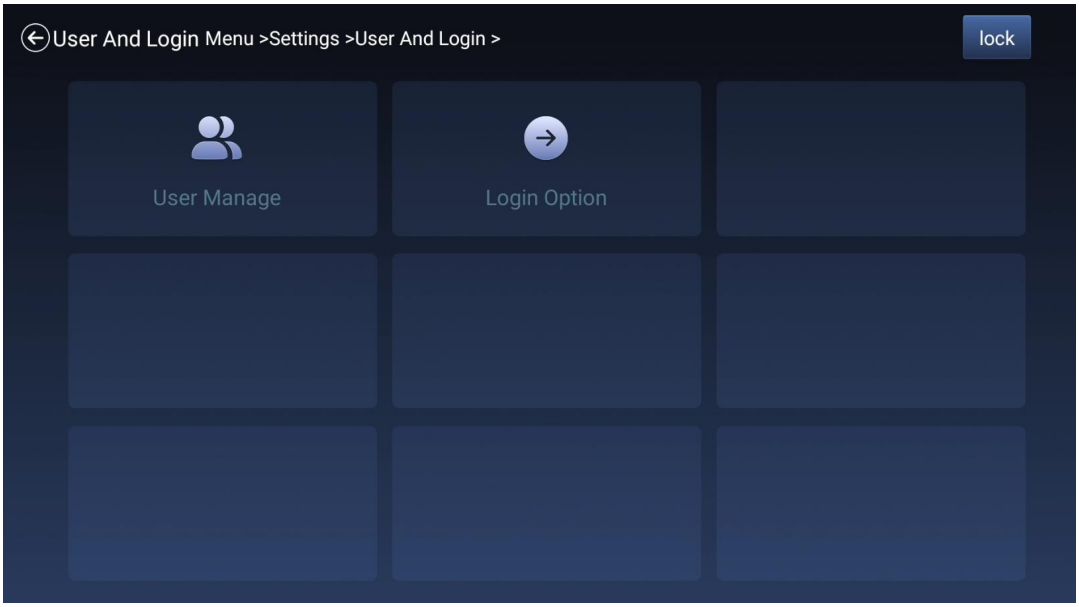
5.2.4. Management platform



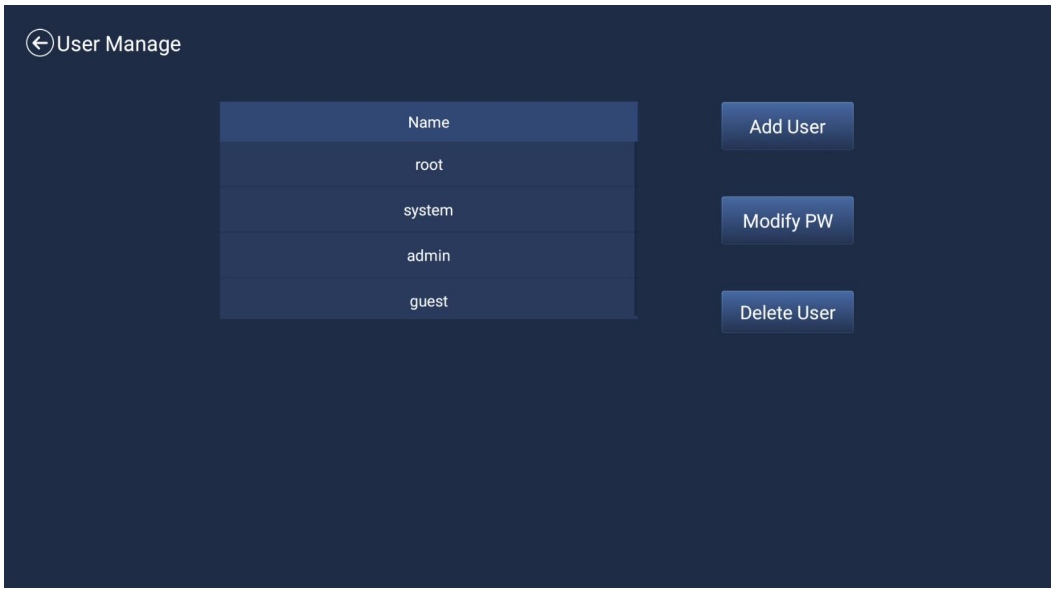
Management Platform

As shown in the figure above, this function is mainly docking resource platform, need to support the platform system to use. Fill in the server IP, port number, user name, password for binding.

5.2.5. Users and Login



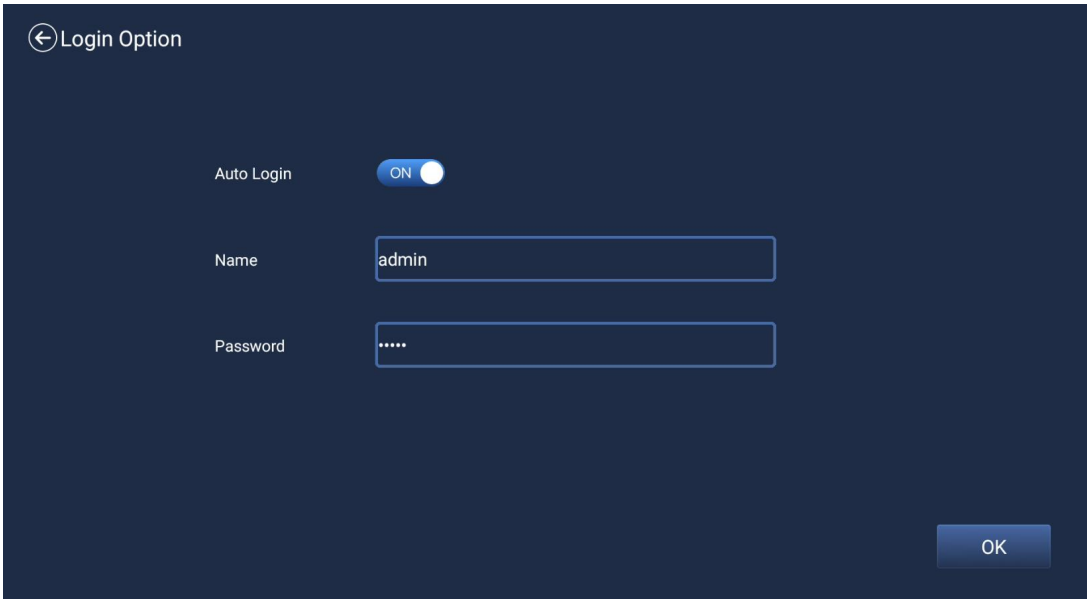
5.2.5.1. User management



User management

As shown in the above figure, you can manage the addition and deletion of users and change the password in this interface.

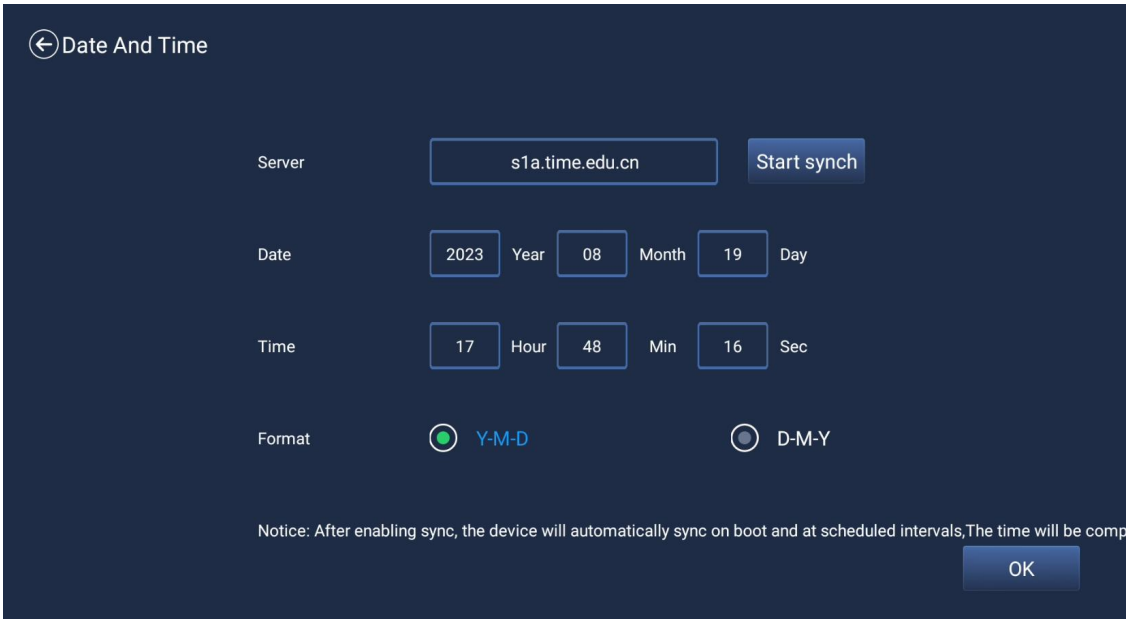
5.2.5.2. Login options



Login Options

As shown in the figure above, you can set the login options of the system menu in this screen.

5.2.6. Date and time



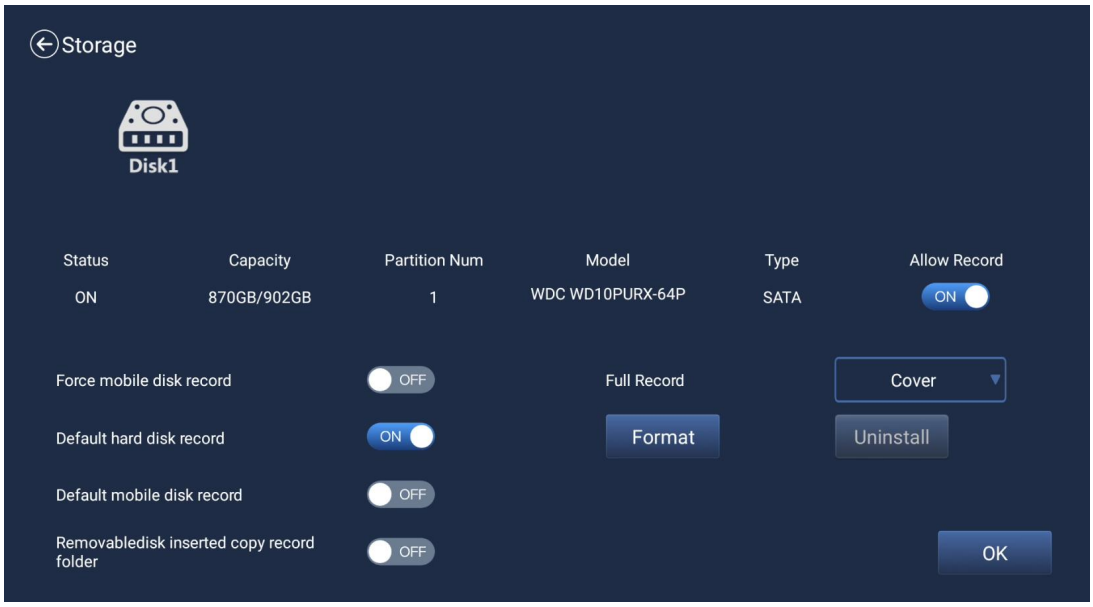
Date and time

TIP

As shown in the above figure, the interface supports manual and automatic time update. By factory default, there is a web server domain name s1a.time.edu.cn, and users can also customise to fill in other domain names or IPs for NTP time synchronisation.The recording and broadcasting system will automatically synchronise the time according to the web server address after each

power on.

5.2.7. Disk and storage

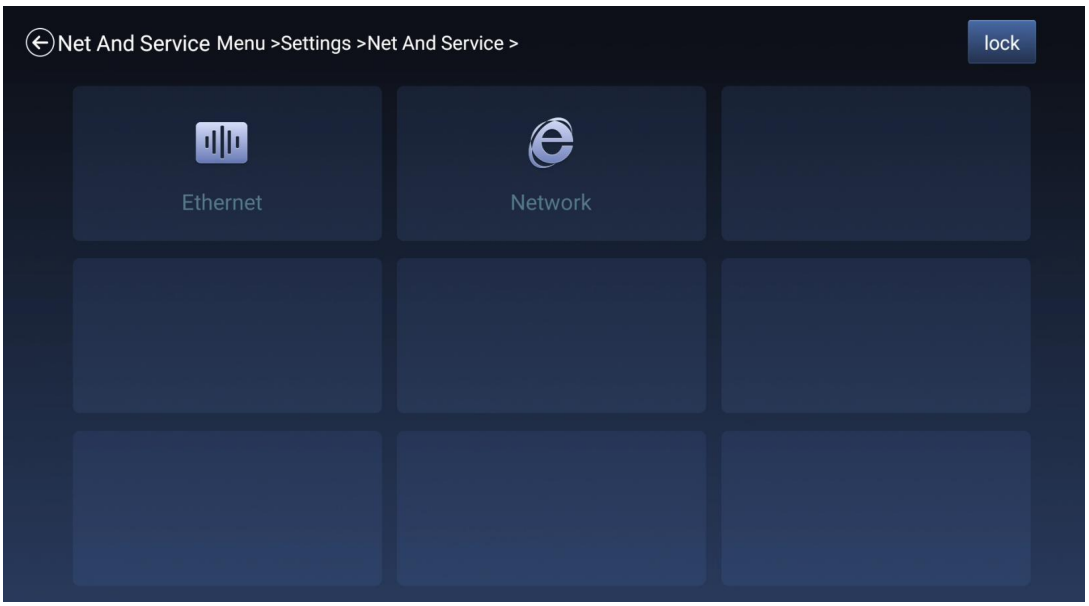


Disk and Storage

As shown in the above figure, the interface supports formatting, uninstalling, etc. of storage devices such as hard discs of recording and broadcasting hosts or peripheral USB flash drives. And you can view the capacity of the hard disc, the use of capacity and other corresponding parameters.

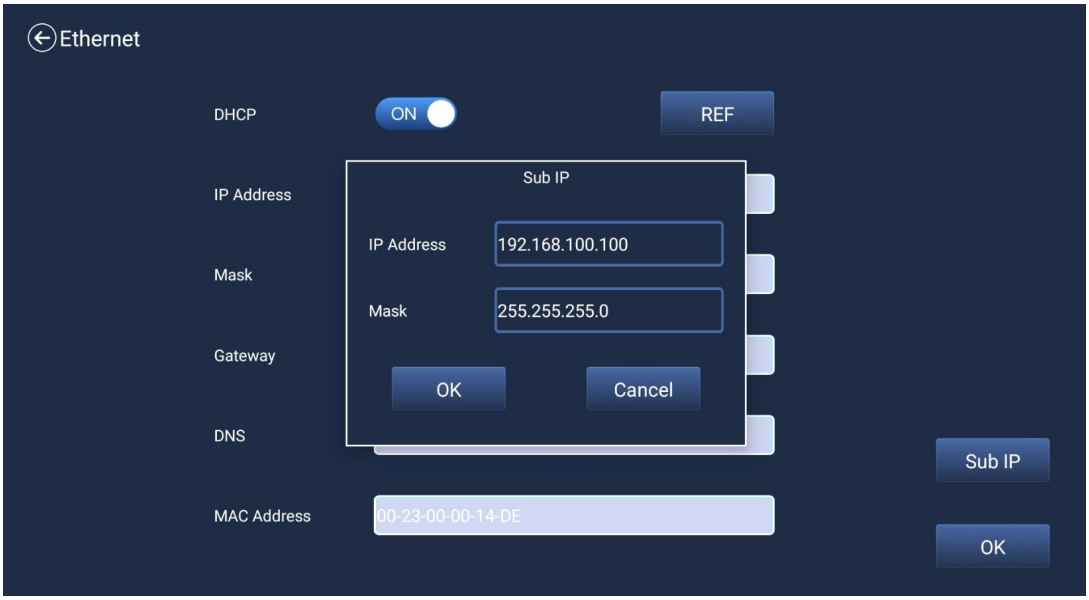
The action after the hard disc recording is full can be set to both cycle overwrite and stop recording.

5.2.8. Networks and services



Networks and Services

5.2.8.1. Ethernet

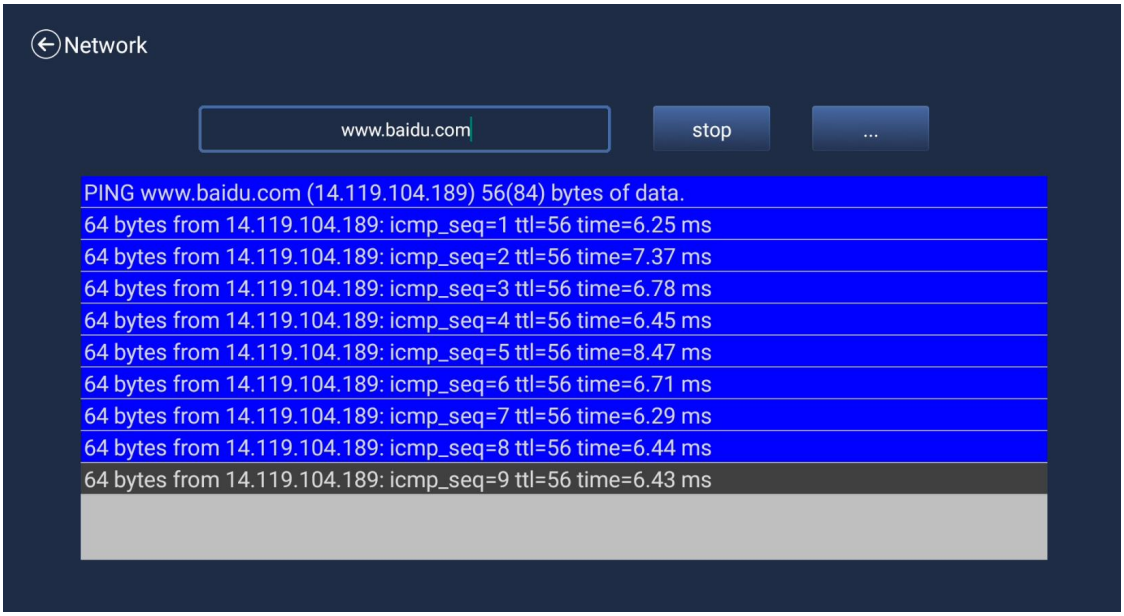


Ethernet

TIP

The factory default IP of the recording and broadcasting system is 192.168.101.53, and the default sub IP is 192.168.100.100. It supports manual IP setting and DHCP to get IP address automatically. Sub-IP setting can add 1 IP address of different network segment.

5.2.8.2. Network test

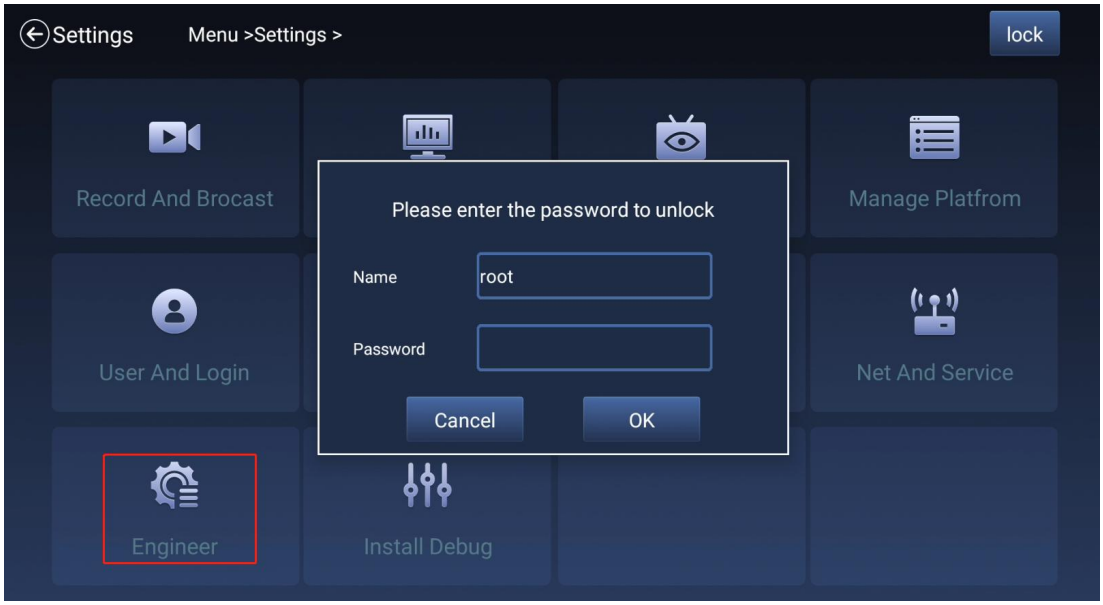


Network test

TIP

The test function of network ping is used to test whether the network of recording and broadcasting system and the switch are connected, and to verify whether the IP address of the recording and broadcasting host has ip conflict problem.

5.2.9. Engineering settings



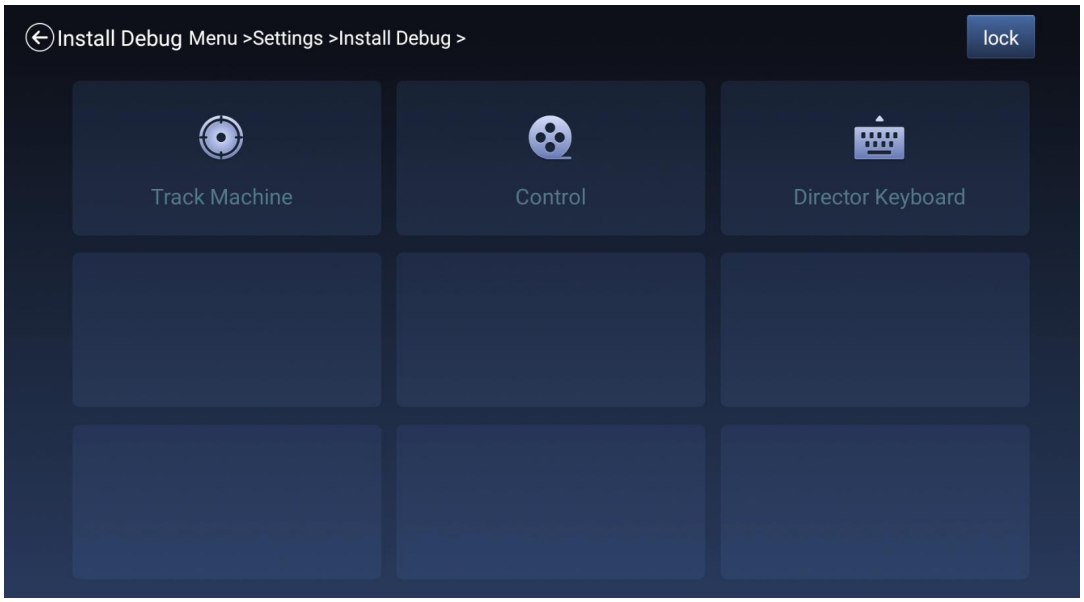
TIP

Project settings need to enter the root password to operate, the root password is: ******

Project settings are mainly used for developer configuration and debugging, and are generally not

open for use by use

5.2.10. Installation and Commissioning



Installation and commissioning

On-site commissioning mainly includes "tracking machine", "central control" and "guide keyboard" settings.

5.2.10.1. Tracking machine



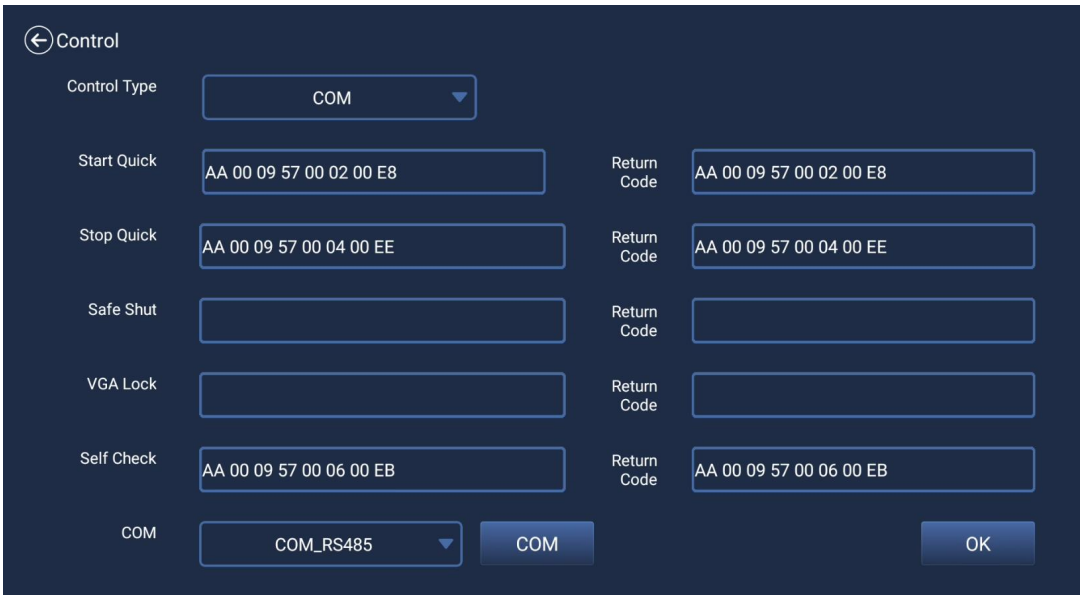
TIP

The action strategy is not the end of the last action code, but directly send the start of the next action code, that is: the tracking system to record the host code is corresponding to the switching

of a certain channel, each time a command code is sent to the recording host, the recording received to switch, there is no transition between the special effects and the screen combination effect, etc., directly cut the channel to the PGM live channel. Select the action strategy, the recording host switching does not call the switching strategy, the switching strategy is to track the host to analyse and then send the corresponding command code to the recording host for hard switching.

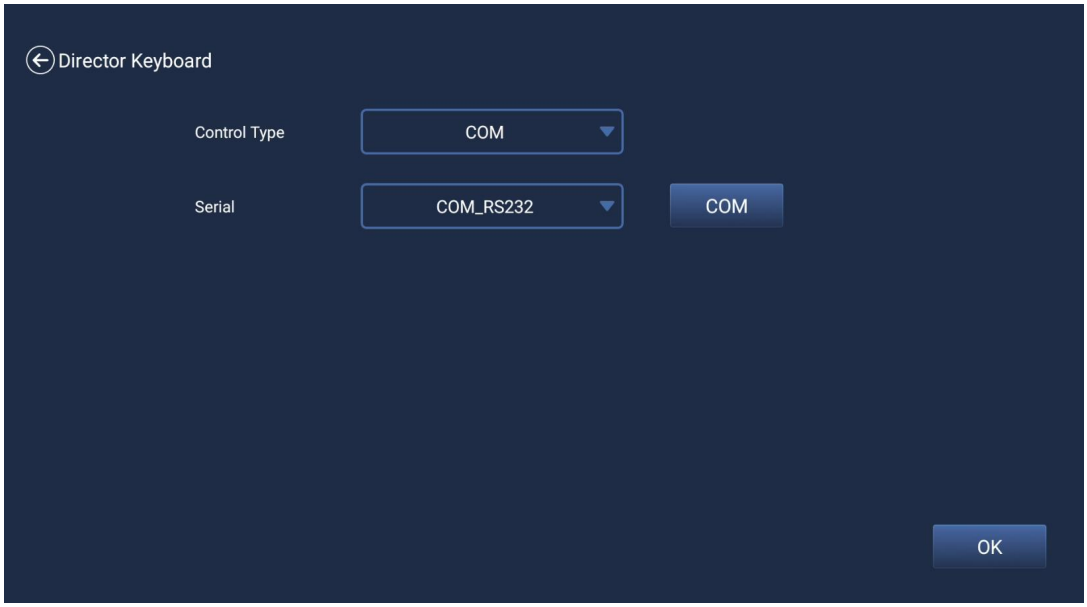
The state of the policy is to contain an action start code and end code, for example, tracking system to detect the student area has action, according to the corresponding classroom scenarios will be sent to the start of the alarm code of the student close-up to the recording host, the recording host receives the command code will automatically query the [switching strategy] menu in the strategy table, check the corresponding signal state after switching, in the middle of the transition can be a number of switching stunts and screen combinations of special effects. The switching can be done after checking the corresponding signal status. After receiving the command code for student close-up, the recorder will first switch the student panorama to the PGM channel, and then switch the student close-up to the PGM channel after 3 seconds (after the student special effect lens is stretched into position). When students finish answering questions, the tracking host will detect the disappearance of the alarm signal in the student area and send the end code of the student close-up alarm to the recording host, and the recording host will automatically switch back to the previous action, i.e. cut back to the teacher close-up channel after receiving the command code.

5.2.10.2. Central control settings



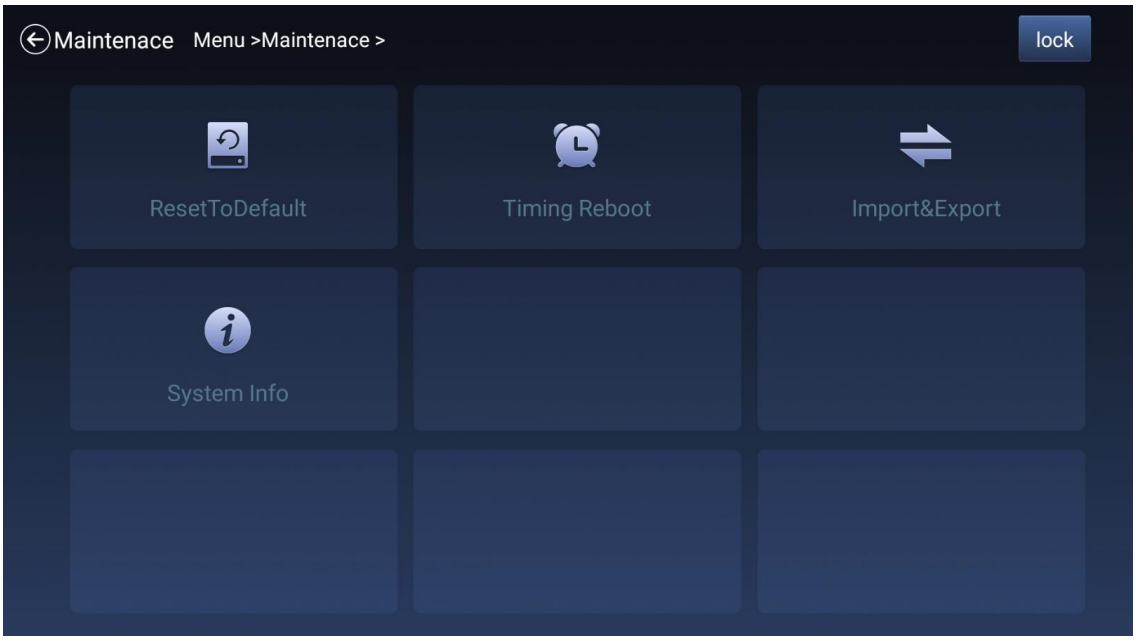
Central Control Setup is a configuration menu for the host computer to connect with the central control device. The communication interface supports RS485 and RS232, and you need to select the correct hardware connection interface in the serial number of this menu. Support start recording, pause recording, stop recording, security shutdown, VGA lock and other one-key open, the command code must be one-to-one correspondence with the central control equipment

5.2.10.3. Anchor keyboard



Anchor Keyboard

5.3. Safeguard



Maintenance settings

As shown in the above figure: maintenance includes "Restore Factory", "Configuration Import and Export", and "System Information";

5.3.1. Restore the factory



Restore the factory

Used to restore the device to factory settings and clear the configuration (but will not delete the video files inside the hard disc.)

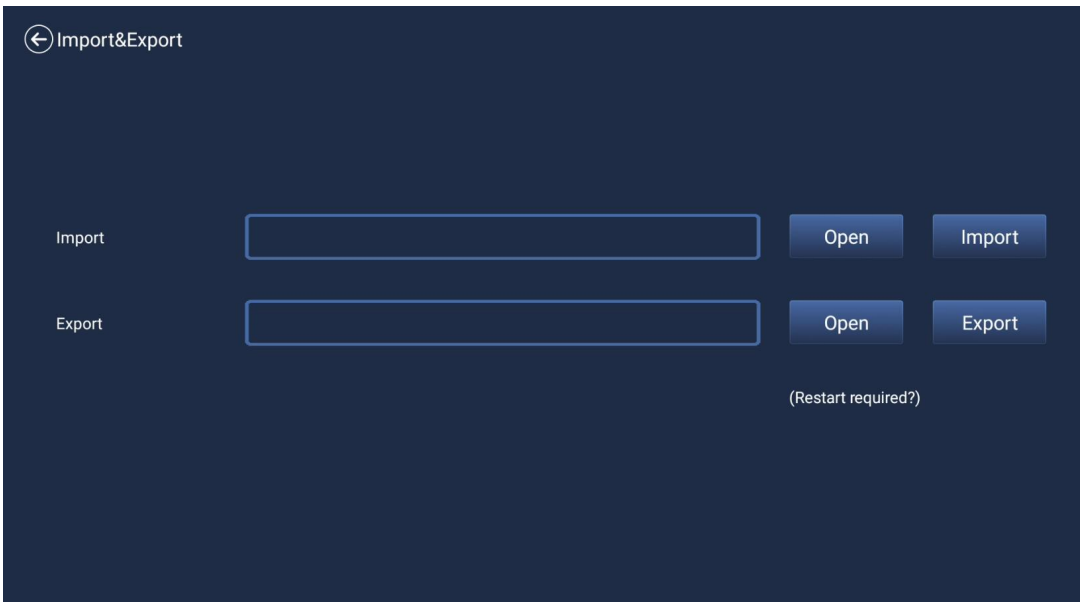
5.3.2. Time-lapse video recording



Reset

It can be set to enable the timed reboot function of the recording host, set the reboot interval and reboot time point, the recording host will automatically reboot the operation.

5.3.3. Configuration import and export



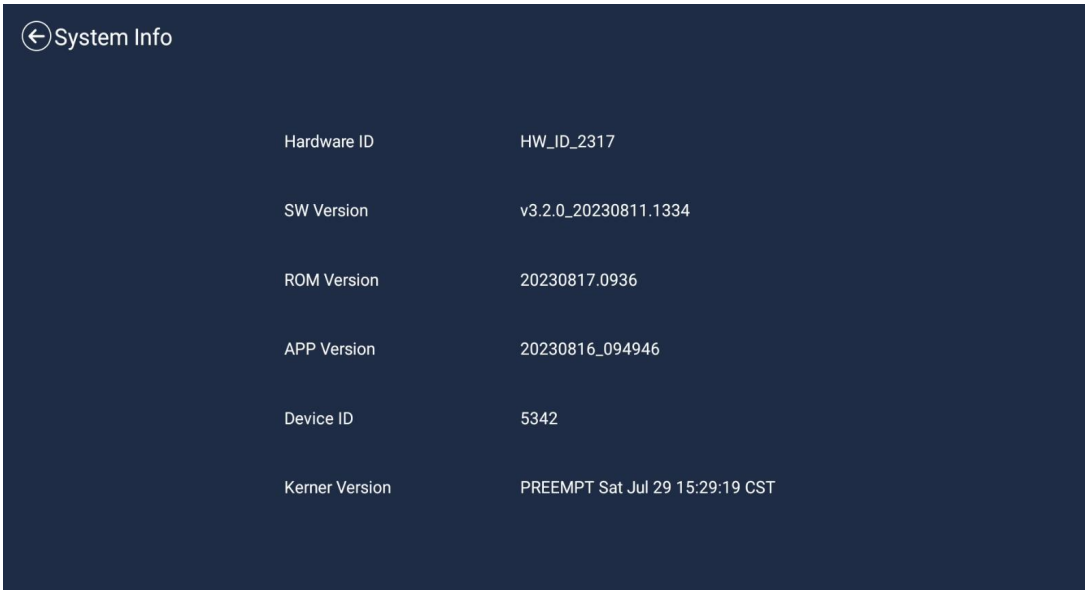
Configuration import and export

Import Configuration File: Click the Open button, select the configuration file you need to import, click the Import button to complete the operation, the system will automatically reboot after importing.

Export Configuration File: Click the Open button, select the path where you need to export the configuration file, and click the Export button to complete the operation.

Recording and broadcasting system supports the import and export of parameter configurations, users can import parameters in this menu, so that it is convenient not to repeat the setup debugging. But import and export configuration of the host software version of the recording and broadcasting must be the same.

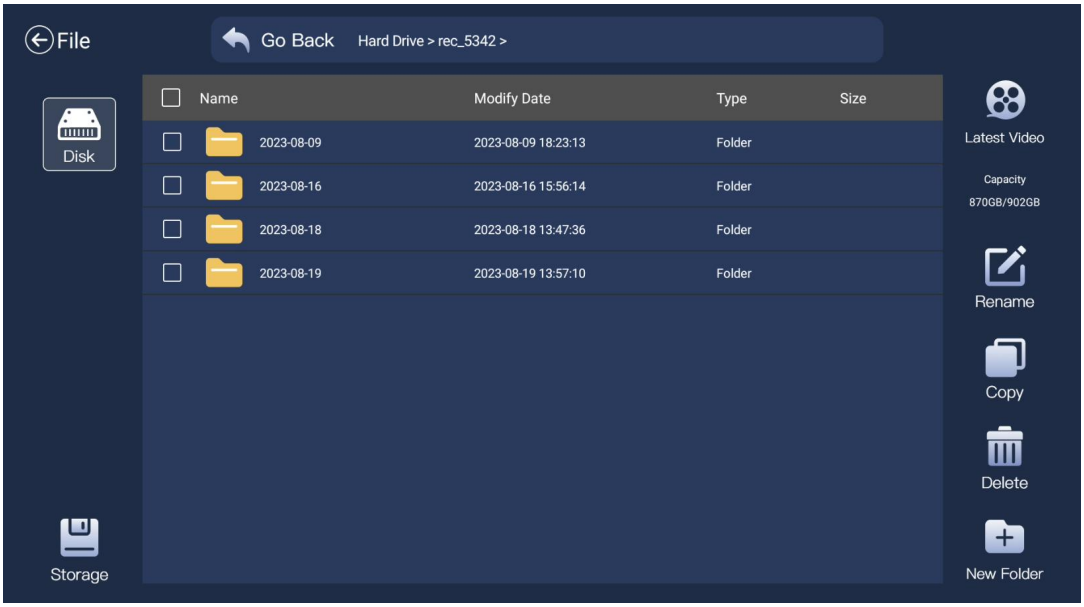
5.3.4. System information



System Information

As shown in the above figure, you can view the recording system hardware ID number, software version, ROM version, APP version, device ID and kernel version in the system information menu.

5.4. File manager

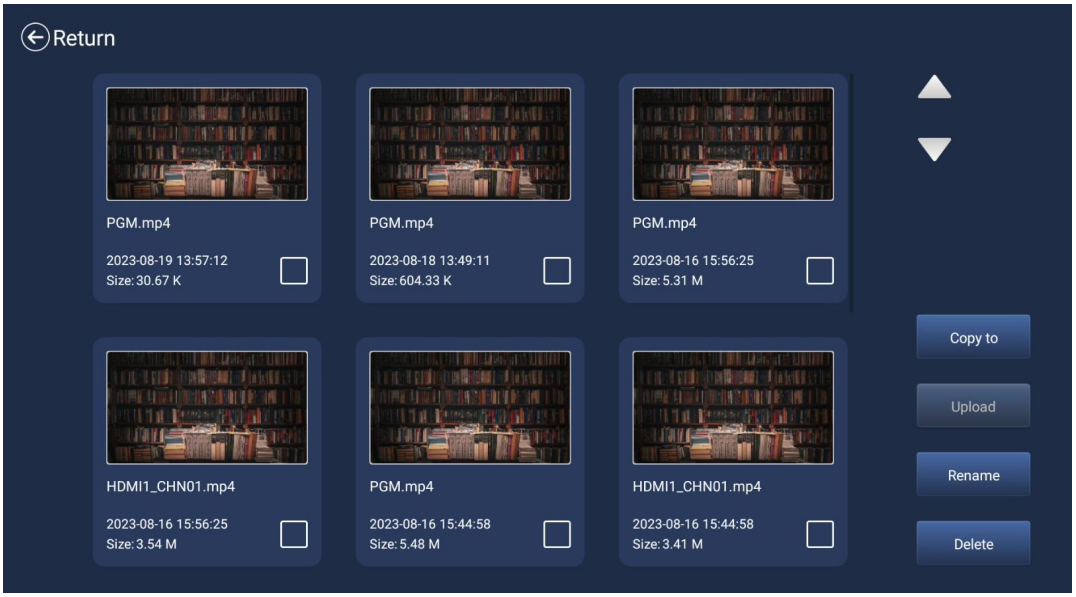


Document management

The videos recorded by the recording host are stored in folders, and the file management supports copying, pasting and deleting the recorded files.

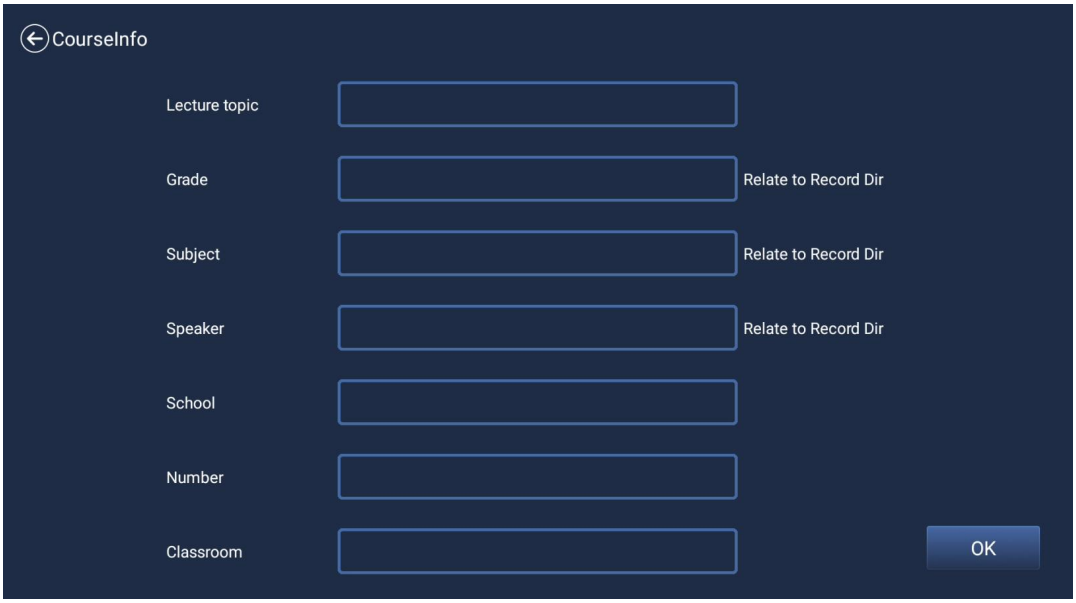
There is a latest video file 

, which stores the video files of the last day, as shown below:



5.5. Teaching information

Teaching information including course information



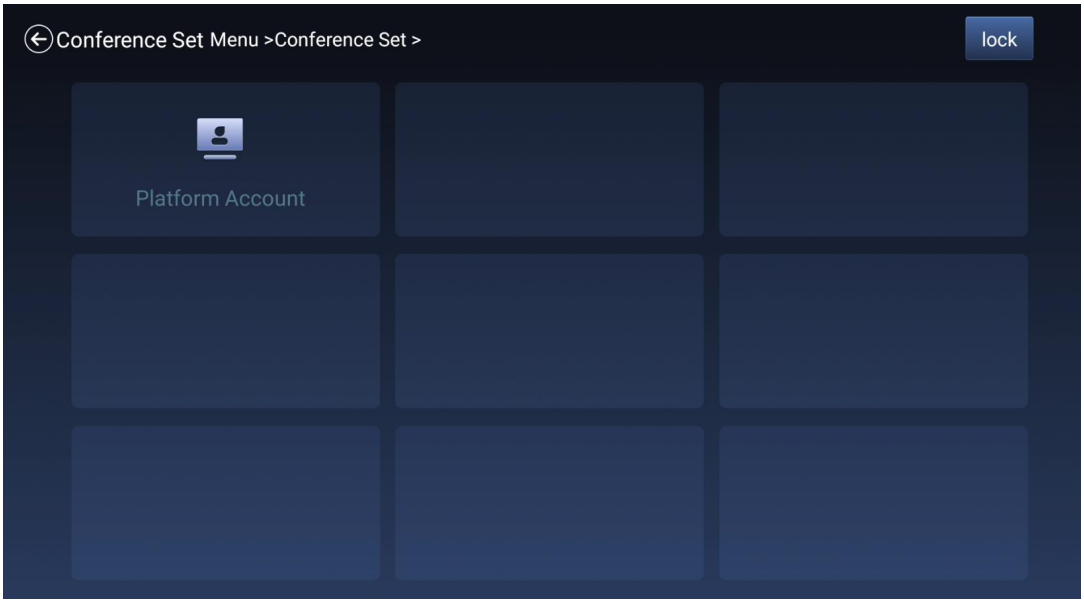
Course Information

As shown above, you can set the course information before recording.

Where the grade, subject and presenter are related to the naming of the video catalogue.

5.6. Conference

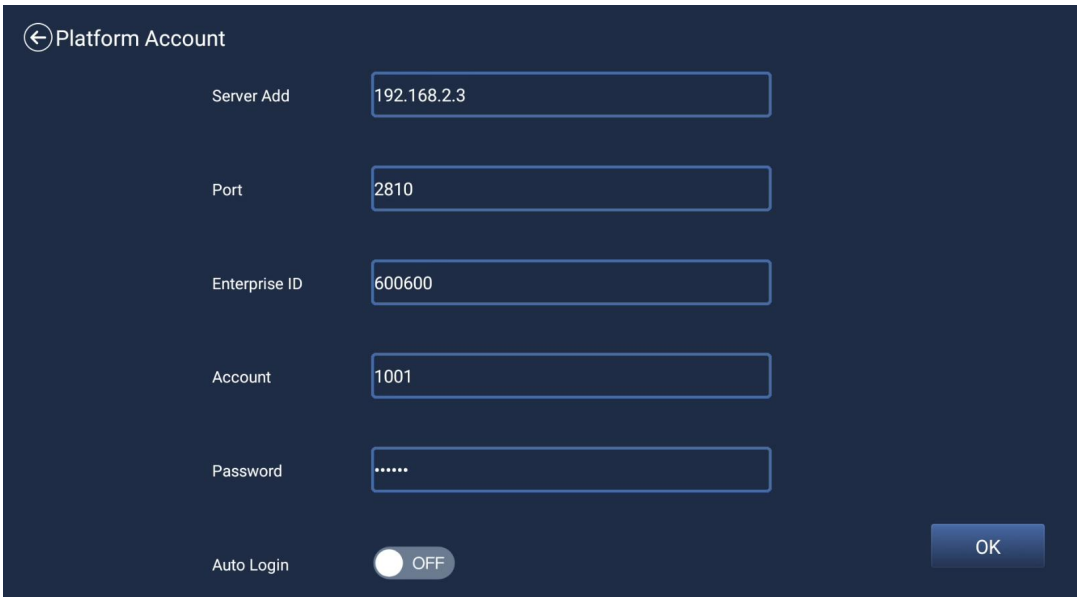
Settings



Conference settings

As shown above, meeting settings include platform and account settings.

5.6.1. Platforms & Accounts



Platforms & Accounts