AR8200 / AR8300 / AR8400

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 AR8200/ AR8300 / AR8400 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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Version	Update	Date
1.0		2023.10.21

Contexts

1. Product description 8

2. Commissioning of the recorder 11

3. Functions of the controller and operating instructions 12

3.1. Main Interface. 12

3.1.1. User interface 12

4. Specification Parameter 14

4.1.1. Main interface 15

4.2. Monitoring interface 15

4.3. Video Input Channel 16

4.3.1. Channel interface 17

4.3.2. Channel Settings 17

4.4. PTZ control 22

4.5. Guide function 23

4.5.1. Screen Split/Switching Effects 23

4.5.2. Sound control/subtitles 24

4.5.3. Station label/OSD information/time 25

4.5.4. Mainframe working status 27

4.5.5. Beginning and ending of video 27

4.5.6. Video settings 28

4.5.7. One-touch start 28

4.6. System function 29

4.6.1. System Menu 29

4.6.2. Channel 30

4.6.3. File manager 33

4.6.4. Safeguard 34

4.7. Set up 36

4.7.1. Video Settings 36

4.7.2. Guide settings 40

4.7.3. Live streaming settings 44
4.7.4. Management Platform 46
4.7.5. Users and login 46
4.7.6. Date and time 47
4.7.7. Disk and Storage 48
4.7.8. Networks and Services 48
4.7.9. Engineering Settings 51
4.7.10. Installation and commissioning 55

1. Product description



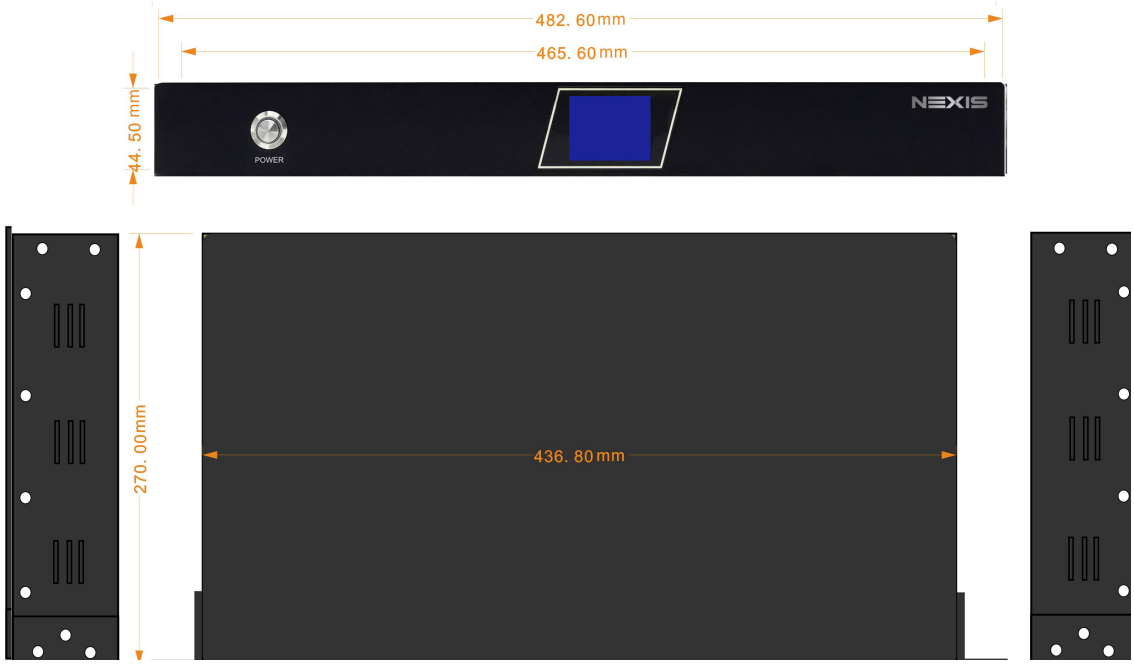
AR8200/AR8300/AR8400 is a conference recording and broadcasting equipment, integrated conference recording, live, on-demand, intelligent guide, storage and other multi-functions in one, based on embedded hardware architecture design, the product is highly stable. The device adopts H.264/H.265 coding, with 4 HDMI video input interfaces, supporting 1080P@60fps image input. A total of 2-way video output interface, multi-channel screen output to meet the playback system to display images and can be used as an image input source for other systems (such as video conferencing systems). The system supports simultaneous recording and live broadcasting in both movie mode and resource mode, and the screen supports picture-in-picture and 1/2/3/4 split-screen display and recording. Users can not only connect the mouse, monitor and guide desk locally for guide recording and broadcasting operations, but also log in to the IE on the PC for remote guide broadcasting.

Product Features：

- Hardware and software pure embedded integrated architecture, stable and reliable.
- Video can support 1920*1080 resolution from capture, recording to output.
- H.264 advanced video compression technology.
- Support up to 4-channel 1080P video synchronous capture and recording, 2-channel 1080P video synchronous output.

.

Main unit size and mounting holes:



Exterior dimension drawing

Front and rear panel interface definitions:



Front and rear panel interface diagram

grade	interface identification	clarification
1	DC-12V	Power connector
2	RS232/RS485	Control serial port, external central control unit or console
3	USB2.0	Connect USB mouse, USB flash drive, removable hard drive, etc.
4	NET	1000M network port for device networking
5	HDMI OUT	1080P60 signal output, the output screen for the guide interface or PGM (software can be set)
6	VGA OUT	1080P60 signal output, the output screen for the guide interface or PGM (software can be set)

7	HDMI IN 1-4	1080P60 signal input, support 4-way video signal input at the same time
8	Line in Mic in Line out 1 Line out 2	Line in：Unbalanced Audio Input Connector Mic in：Balanced Audio Input Connector Line out 1：Unbalanced Audio Output Connector Line out 2：Unbalanced Audio Output Connector
9	Monitor	3.5mm headphone monitor jack to monitor PGM channel sound
10	Power	Equipment power switch
11	LCD screen	For recording status, channel status, network information, storage space, and logo display

2. Commissioning of the recorder

(1) Preparation before commissioning

Before installing and commissioning the recording host, please prepare the following：

① Network cable and switch, you can also connect to a Hub, it is recommended to use a switch to keep the network flowing.

② Power cord*1, HDMI cable*5, VGA*1, audio input and output cables (LINE-IN, MIC-IN, LINE-OUT, monitor headphones) for recording and broadcasting host.

③ External high-definition monitor, HDMI interface, a resolution of 1920 × 1080.

④ Prepare a laptop and a number of HDMI-connected cameras as input sources.

(2) Wire connections for commissioning

① Please connect HDMI video signal cable, VGA video signal cable, audio signal cable, network cable, RS232/RS485 control cable, power cord, USB mouse, etc. to the corresponding interfaces and make the corresponding audio and video input/output connections.

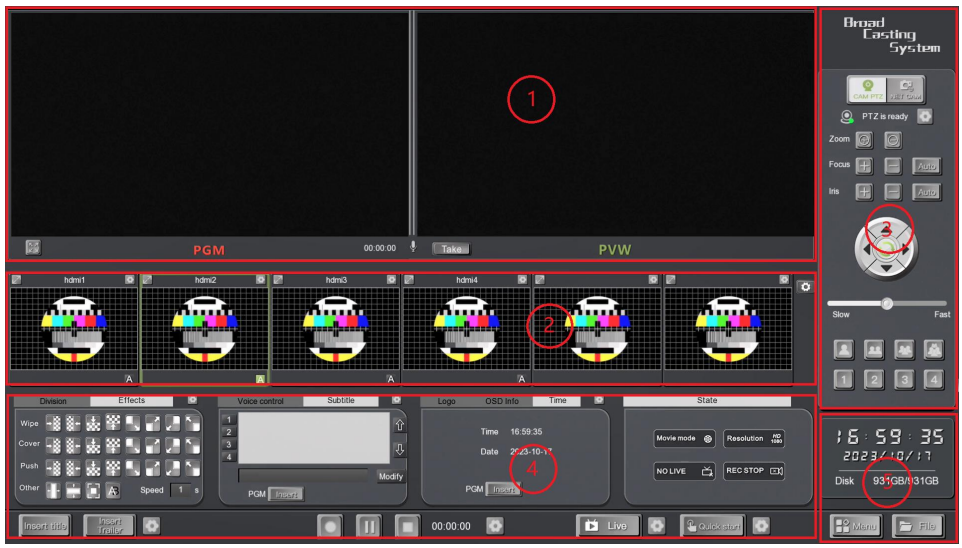
② After confirming that the recording host is correctly connected to the power supply, then press the power switch on the guide panel to start the recording host. After the equipment is powered on, wait about 30 seconds or so to enter the guide interface to manage the system.

Clarification：

HDMI-OUT and VGA-OUT interface output is the system interface of the recording and broadcasting host (guide interface), the user can be connected to the USB interface USB mouse, keyboard on the recording and broadcasting host to carry out the corresponding operation. Recording and broadcasting host factory is a static IP, IP address 192.168.100.53.

3. Functions of the controller and operating instructions

The system includes five modules: monitoring interface, video channel, PTZ control, guide function, and system function setting. As shown in the figure below.



5 modules of the system

① Live/Pre-monitoring panel： Movie Mode final recording, pre-monitoring or live effects interface. (PGM, PVW).

② Resource Channel Panel：Input video channel display screen.

③ PTZ Control Panel：Manual control interface for PTZ cameras.

④ Navigator Function Panel： Toggle effects/subtitles/corner markers/OSD information/guide mode switching/recording and other functional interfaces.

⑤ System Menu Panel：Access secondary menus such as System Settings, File Management, etc. to view time and hard disc capacity.

3.1. Main Interface.

3.1.1. User interface

After the power cable is connected, press the power button on the front panel of the host to turn on the power, the HD monitor connected to the HDMI-OUT or VGA-OUT port will display the

recording and broadcasting boot logo interface. (The boot logo can be customised by the user and modified in System Settings - System Information - Project Settings. The logo image format is JPG, resolution size is 1024*768, 72dpi, bit depth 24, size not more than 128KB.The interface logo image format is gif, resolution size is 200*100, 72dpi, bit depth 24.Note: The logo image name can not be named in Chinese and featured symbols.

4. Specification Parameter

model number	AR8200/AR8300/AR8400
System architecture	Embedded Linux system
Video input	2/3/4 HDMI inputs
Video output	1CH HDMI, 1CH VGA
Maximum input resolution	1080P@60fps
Audio input	2 line in, 3-pin Phoenix terminal connector
Audio output	2 line-out, 3-pin Phoenix terminal connector 1 monitor jack, 3.5mm headphone jack
Video encoding	H.264/H.265
Audio encoding	AAC
Video output format	MP4
Video encoding frame rate	1～30fps
Video bitrate	500kbps~40Mbps Adjustable
Audio bitrate	8~128KB Adjustable
Data storage	Built-in 1T hard drive, support expansion
Rs485	3 set, 3 pin Phoenix Terminal Connector
Rs232	1 set, 3 pin Phoenix terminal connector
Reticulation	1 x 1000M network port，RJ-45
Usb port	2 USB2.0
Software upgrade	Support for network upgrades
Storage mode	Support built-in hard drive, external USB storage, support USB export, support FTP downloads
Protocol support	RTMP、RTSP、UDP、TCP、FTP、DHCP、HTTP
Operating power	DC 12V/3A
Equipment size	1U Rackmount

4.1.1. Main interface

The system will enter the main interface of the recorder after the logo interface stays for about 20 seconds. In the middle of the main interface, there is a welcome interface with the words "Welcome to Embedded Recording, the system is loading", after loading, users can operate the main interface.



Main interface of recording and broadcasting

4.2. Monitoring interface

The monitoring interface mainly contains the following two items: PGM and PVW channels in single-conductor mode, audio display bar

Single-conductor mode PGM and PVW channels：



Single-conductor mode PGM and PVW

Clarification：

① Single guide mode is the movie mode. Single guide mode supports mainstream screen overlays and combinations: picture-in-picture, dialogue mode, 2/3/4/6 split screen, etc. In single guide mode,

it contains live screen PGM and preview screen PVW.

② Single guide mode only supports automatic switching of PGM channel images during auto-guide.

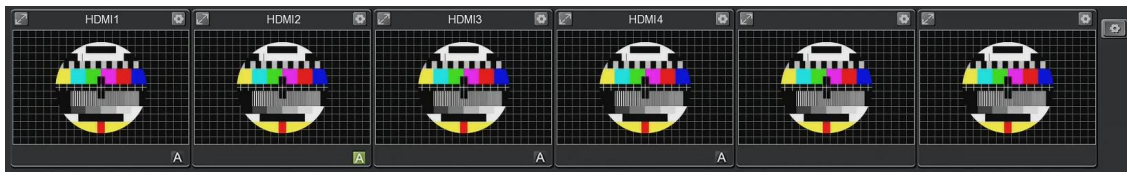
③ The audio display bar is located between the PGM channel and the PVW channel in single-conductor mode, with 2 thin display bars 。The audio display bar mainly reflects the sound level of the audio input, and the green wave inside the display bar will change according to the sound level. Click on the speaker icon ， The sound output from the PGM channel to the external speakers can be resized, switched on and off.

④ After double clicking on the preview PVW image, the image will jump to PGM and overwrite the previous one. For example, PVW preview is a 2-split image, PGM is a 4-split image, after double clicking PVW channel, the 2-split image will be cut to PGM, and the original 4-split image will be replaced.Both PVW and PGM channels support multi-screen combination. Steps: Select PGM or PVW channel, then select the screen split type, and then select the combination position of each channel in the video input channel.

⑤ In single-guide mode, the PVW window has a [take] button, hard cut function, after clicking the button, the PVW channel image is directly cut to the PGM channel.1. PGM: double-click on the resource channel to directly switch the video image to the PGM channel; 2. PVW: double-click on the resource channel to directly switch the video image to the PVW channel, and then click on the [take] button to switch the PVW channel image to the PGM.

4.3. Video Input Channel

Video input channels as shown:



Video input channel interface

Video input channel is mainly divided into 3 parts: local video display channel, local playback channel, remote video display channel.

Each video host has PGM, PVW resource channel and other local display video, in the resource channel in the first page of the channel are displayed in the local input video channel: "HDMI1" channel corresponds to the rear panel of the video host HDMI-IN1 interface; "HDMI2 "HDMI1" channel corresponds to the HDMI-IN1 interface on the rear panel of the recording host; "HDMI2"

corresponds to the HDMI-IN2 interface; "HDMI3" corresponds to the HDMI-IN3 interface; "HDMI4" channel corresponds to the HDMI-IN4 interface.

4.3.1. Channel interface

① Channel Full Screen：There is a screen maximise button on the top left corner of each channel, after clicking here with the left mouse button, the video image will be maximised to appear on the main interface.

② Channel Name： The factory default channel names are: from left to right, channel 1 is "HDMI-IN1", channel 2 is "HDMI-IN2", channel 3 is "HDMI-IN3", channel 4 is "HDMI-IN4". "HDMI-IN1", "HDMI-IN2" for channel 2, "HDMI-IN3" for channel 3, and "HDMI-IN4" for channel 4. The channel name can be modified in the channel settings, and it is generally not recommended to change it arbitrarily.

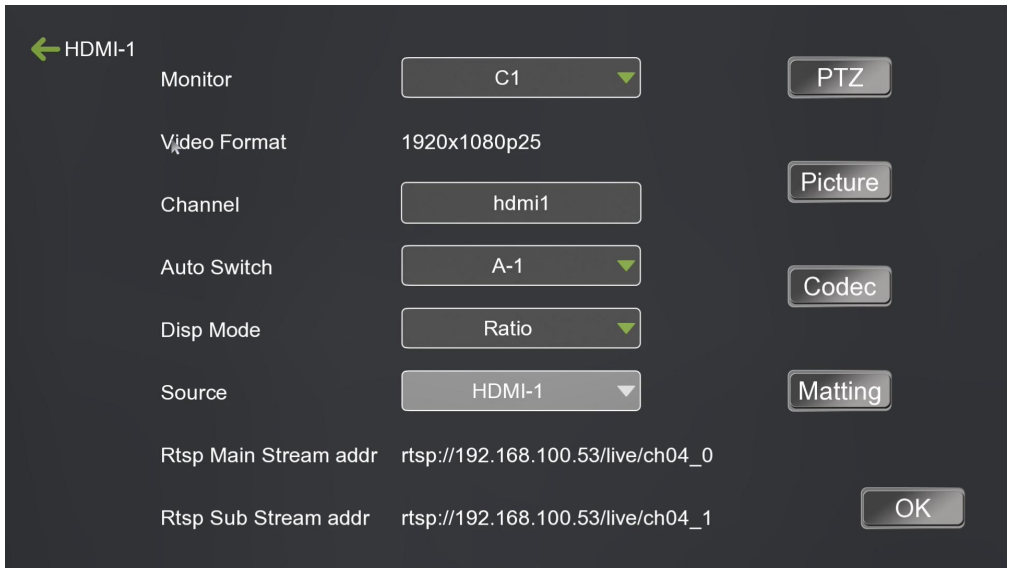
③ If the channel is connected to a camera with PTZ function, you need to tick "Enable PTZ" in the channel setting  on the right of the channel, and then you can operate the PTZ setting in the channel setting. If you want to operate the corresponding channel in the gimbal control of the guide interface, you need to click the mouse to select the channel. By factory default, "Teacher Close-up" and "Student Close-up" are enabled with PTZ function (Note: After the channel is enabled with PTZ, click on the green border of the channel to select the channel, and it will be displayed on the upper right of the main interface as 

and vice versa, it will be 

.

4.3.2. Channel Settings

Each video channel has a channel setting, the icon is  channel setting can set the video parameters of the channel and other information. Channel settings include: 1, channel settings; 2, PTZ settings; 3, image settings; 4, encoding settings; 5, keying and other 5 parts. The following figure:



Channel setting interface

4.3.2.1. Channel Settings

① Channel Name：The channel name supports Chinese and English, and the maximum channel name displayed in the main interface is 6 characters.

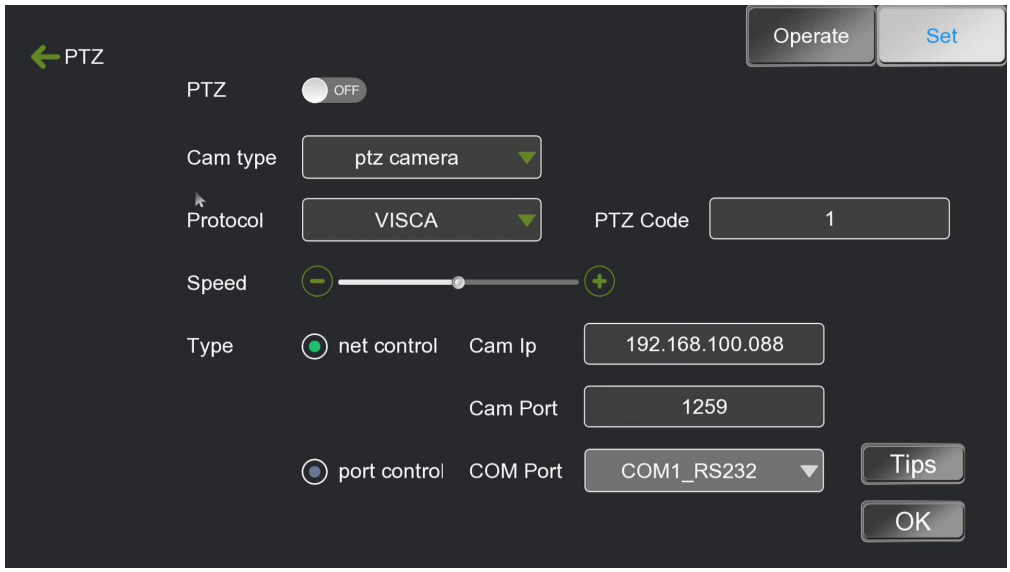
② video source：The hardware interface of the video input, e.g. HDMI means that the image of the teacher's panorama is input from the HDMI-IN1 port.

③ video format：Input video display format and frame rate, 1080P25 stands for 1080p HD 25 fps video.

④ Display Mode：It is divided into aspect ratio and full screen display. When the video frame in the channel is not displayed full screen in PGM, you can modify it here accordingly.

⑤ Input source：In the HDMI-IN channel setting there is the input source fixed to HDMI.

4.3.2.2. Head Setup



Channel-Head setting



Channel-Head adjustment

① Enabling the cloud platform：Turn on the PTZ function.

② Camera Type：Choose from three options such as electronic gimbal cameras, gimbal cameras, and optical zoom cameras.

③ Pantai Agreement： Supports three protocols such as VISCA, PELCO-P, and PELCO-D.

④ Gimbal address code： The address code must be the same as the camera's set PTZ address code. The default PTZ address code for the "Teacher Close-up" channel is 1, and the default PTZ address code for the "Student Close-up" channel is 2.

⑤ Velocity： The speed at which the gimbals rotate is fast and slow.

⑥ Selection of control method.

⑦ 1Network control, you need to fill in the IP address and port number of the camera (the default configuration of the IP address is 192.168.100.088, the default configuration of the camera port is 1259, the actual camera manufacturer).

⑧ 2Serial port control, PTZ camera or tracking host and recording host connection interface, support RS485 and RS232, corresponding to the corresponding RJ45 port on the hardware.

⑨ Baud rate： There are different options such as 2400/4800/9600, so users can choose the appropriate baud rate according to the PTZ settings of different cameras. The default baud rate of many cameras is 9600, which is the same as the default configuration of the recording host and does not need to be set.

⑩ Preset Bit Setting： Selectable preset positions 1-8, and large close-up, close-up, telephoto, medium, and close-up. Large close-up. The preset point is 11, close-up is 12, near scene is 13, medium scene is 14, far scene is 15. user can choose the preset point, save the preset point after adjusting the position of the camera, and then just call the preset point in operation.

⑪ PTZ Operation ： Buttons ▲, ▼, ◀, and ▶ control the head's rotation up, down, left, and right, respectively.

⑫ The "+", "-" of [Zoom] is the zoom in and zoom out function key, and the "+", "-" of the [Focus]It is to focus on distant objects and to focus on close objects. The "+", "-" of [Aperture] is to adjust the aperture up and down. are to adjust the aperture up and down.

TIP

The control lines from the camera to the recording host or the tracking host to the recording host must correspond and cannot be misconnected. The PTZ protocol and address code in the host channel need to correspond to the settings of the camera before normal PTZ operation. It must be in manual guide mode to control PTZ in PTZ setup menu or in the main interface of recording and broadcasting. To operate PTZ in the main interface, you must activate the corresponding channel on the resource channel first, and then click the PTZ control button to use it normally. (If you still have questions, please click [Tip])

4.3.2.3. Image Settings

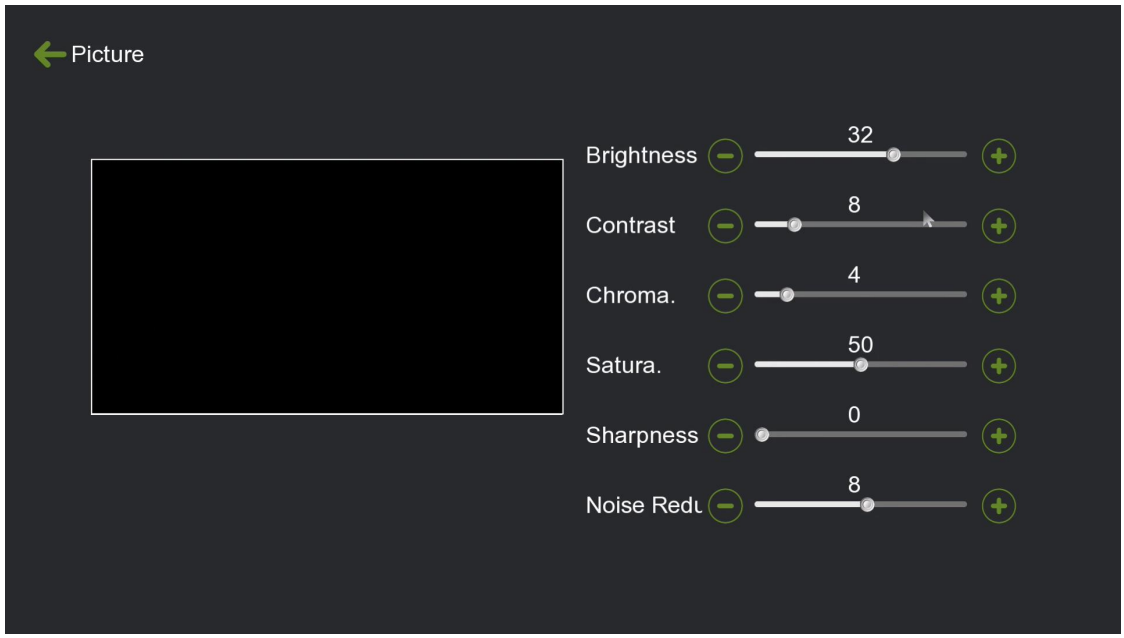
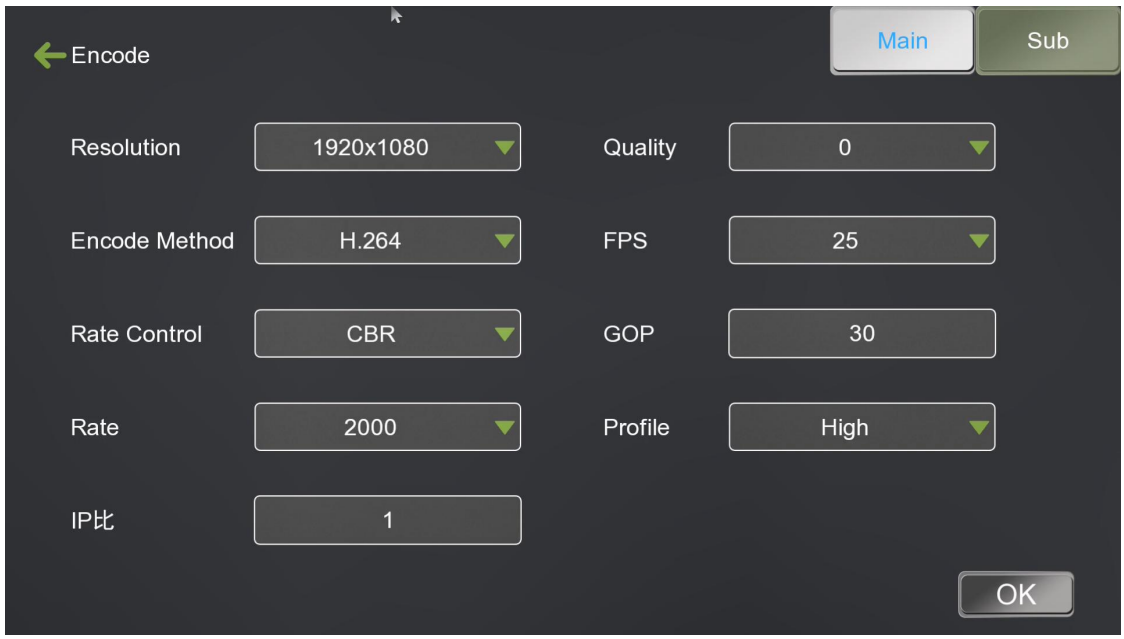


Image settings

As shown in the picture: Image Settings, mainly set the brightness, contrast, chroma and saturation of the video image. The quality of the video image mainly depends on the camera parameters, usually no need to adjust here.

4.3.2.4. Code Setting



Code setting

Clarification：

① Resolution ： The resolution of the main stream can be selected:commonly used 1920*1080,1600*900,1280*720,960*540; the resolution of sub-stream can be selected:1280*720,960*540,640*360,480*270,720*576,352*288.

② Coding method：H.264 compression format for recording and broadcasting

③ controller.

④ Code rate：The bit rate is adjustable between 50Kbps-40Mbps,the default bit rate of the main stream is 4000Kbps,and the sub-stream is 400Kbps.

⑤ Image quality：Adjustable from 0 to 5 levels,with the best image quality at level 0.

⑥ Frame rate：4-30 fps adjustable,default is 25 fps.

⑦ I frame interval：I frame interval time setting,default is 30S.

4.4. PTZ control



PTZ control interface

As shown in the figure above, the functions of the gimbal control are the same as those of the gimbal in the channel settings. Buttons ▲, ▼, ◀, ▶ are to control the head up, down, left, right rotation, [Zoom] "+", "-" is to zoom in and zoom out function keys, [Focus] "+", "-" to focus on distant objects, focus on close objects. "+", "-" of [Focus] focuses on distant objects, and focuses on close objects. The "+", "-" of [Aperture] is to adjust the large aperture and small aperture.

In the channel head setup, set the preset points 1-8, as well as close-up, close-up, telephoto, medium, near, etc., you can switch the preset points in this interface (Figure 13). , , , , are the preset points: 11 "Close-up", 13 "Nearby", 14 "Medium", 15 "Far", 15 "Far". 1, respectively, are the preset points: 11 "Big Close-up", 13 "Close-up", 14 "Medium View", 15 "Long View".

4.5. Guide function

The interface of the guide function is shown in the figure:

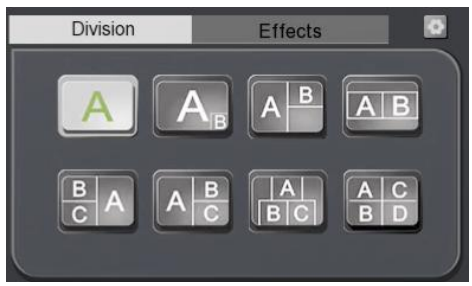


Guide function interface

Clarification：

The guide function interface mainly has: 1, screen split/switching effects; 2, sound control/subtitles; 3, station label/OSD information/time; 4, host working status; 5, inserting title/end credits; 6, recording settings; 7, push stream settings; 8, one key to open and other functions.

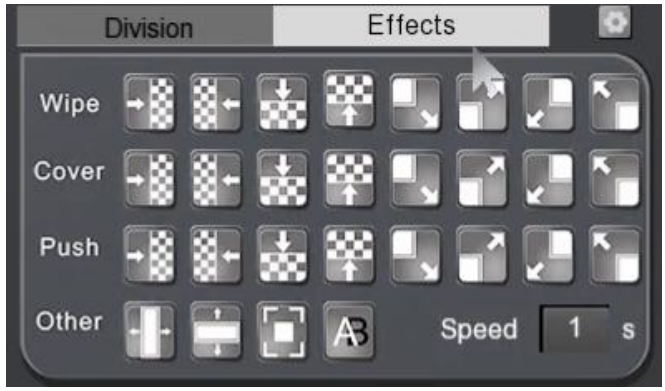
4.5.1. Screen Split/Switching Effects



Split screen

Clarification：

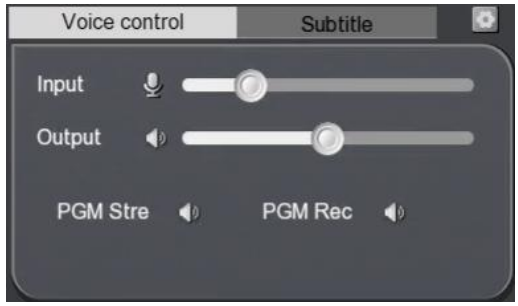
① Split screen：As shown in the above figure, the screen split type can be selected on both PGM and PVW channels for the corresponding combination. There are 8 types of screen split types: single screen, two-split screen picture-in-picture, two-split screen diagonal combination, two-split screen dialogue mode, three-split screen, four-split screen and so on.



Toggle effects

② Toggle effects：As shown above, the guide's switching stunts. According to the type is divided into: 1, erase wipe; 2, cover cover; 3, slide into push; 4, other (shutters, dissolve, fade in and out). Each of these switching techniques supports 8 different directions: up and down, left and right, and 4 diagonal directions.Speed is the switching speed, the larger the value, the slower the speed.

4.5.2. Sound control/subtitles

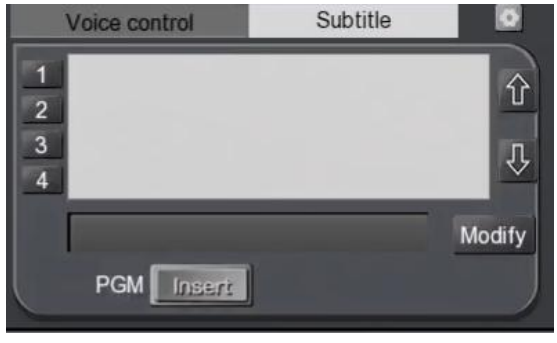


Sound control

Clarification：

① Sound control：Input Volume/Output Volume adjusts the volume of the input and output sound, the pull bar is pulled from left to right and the volume changes from small to large. The sound control can turn off and on the sound in the state of PGM push streaming, PGM recording, etc., i.e., the speaker logo is turned off and on.

② voice control：As shown in the figure below



Subtitle settings

Captions：As shown in the picture, in the upper right corner of the subtitle setting, we can edit the text to generate the subtitle list, and can pre-set the font capitalisation, background colour, font colour, soft subtitle, hard subtitle and so on. After selecting the subtitle you want to publish in the subtitle list, click "PVW Insert" to publish the text to the PVW screen for previewing the subtitle. After there is no problem, click "PGM Insert" to publish to PGM live screen. When subtitles are inserted into the screen, the button will change to "Cancel", click "PGM Cancel" or "PVW Cancel" to remove subtitles from PGM and PVW. Subtitles can only be displayed on one line on PGM/PVW, and the subtitles posted later will replace the subtitles posted earlier.

4.5.3. Station label/OSD information/time

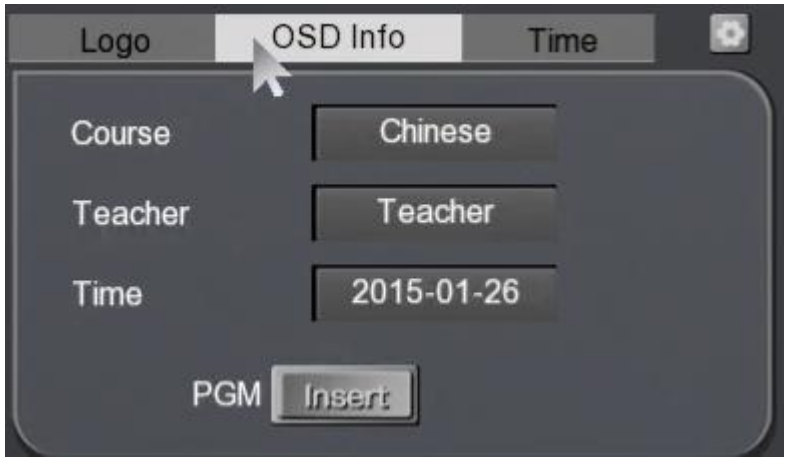


Label setting

(1) Label Setting

The station logo insertion is divided into PGM/PVW insertion in single-conductor mode and PGM station insertion in dual-conductor mode. As shown in Figure 20, the maximum supported number of corner logo insertions in the PGM and PVW channels is four. The four buttons "1", "2", "3", and "4" correspond to the upper left, upper right, lower left, and lower right respectively of the four corners. You can modify the insertion position of the corner logo file in the setting icon in the upper right corner, and you can also modify the customisation of the corner logo image here, the format of the corner logo image is png, and the resolution size of the image for the best effect is 200*100.

(2) OSD information



OSD information

The OSD information is mainly course information, and the user can customise the name of the course, the name of the teacher of the class, and the exact time of the class. After inserting the OSD information into the corresponding interface, it is displayed at the lower right of the screen. Same as the above Corner Marker Settings, you can modify and adjust the font capitalisation, font colour, display background colour, etc. in Settings.

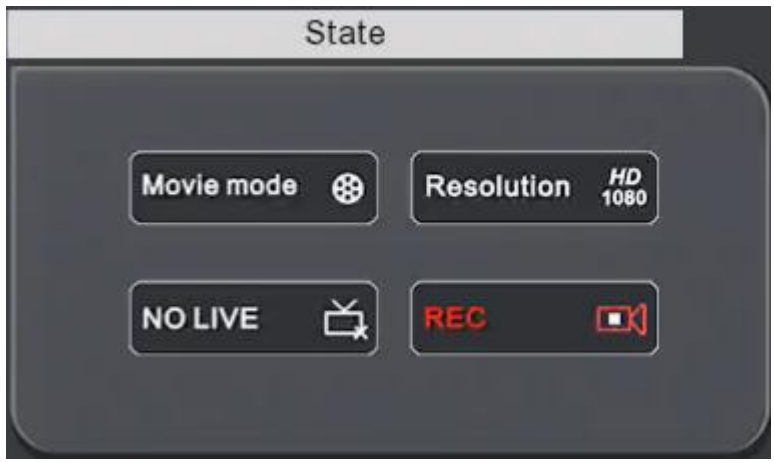
(3) Time



Time setting

Real-time time can be inserted into the single-conductor mode PGM channel as shown in the figure.

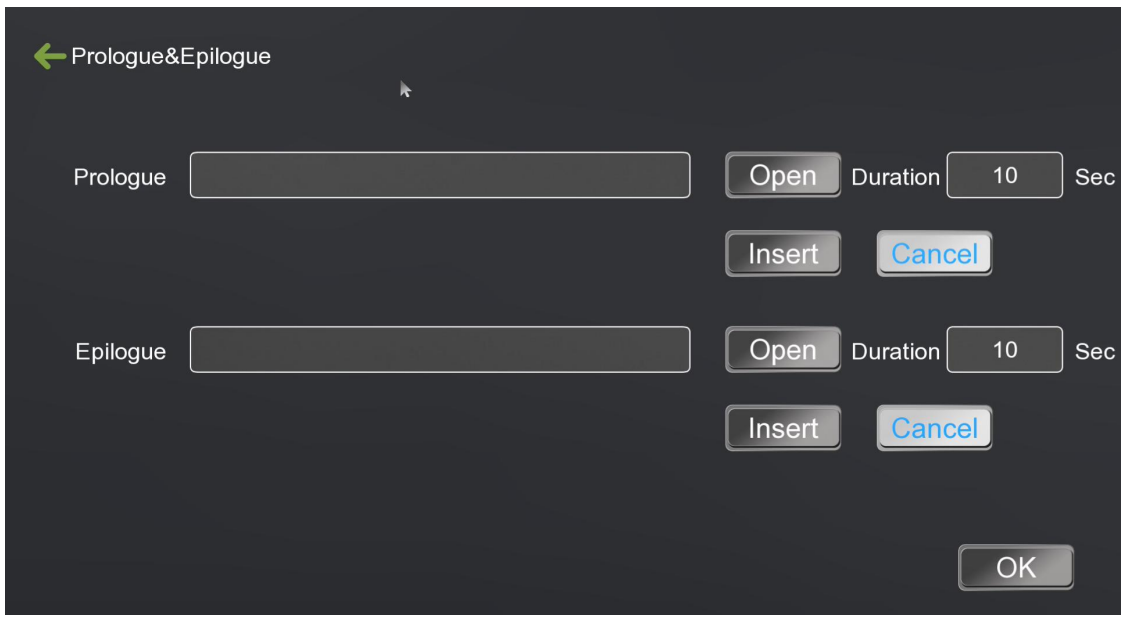
4.5.4. Mainframe working status



Mainframe working status

The main working status of the host is the film mode display, after pushing the stream successfully in the film mode, and the PGM channel is recording, it will display the red subtitle status of "Live" and "Recording".

4.5.5. Beginning and ending of video



Beginning and ending of video

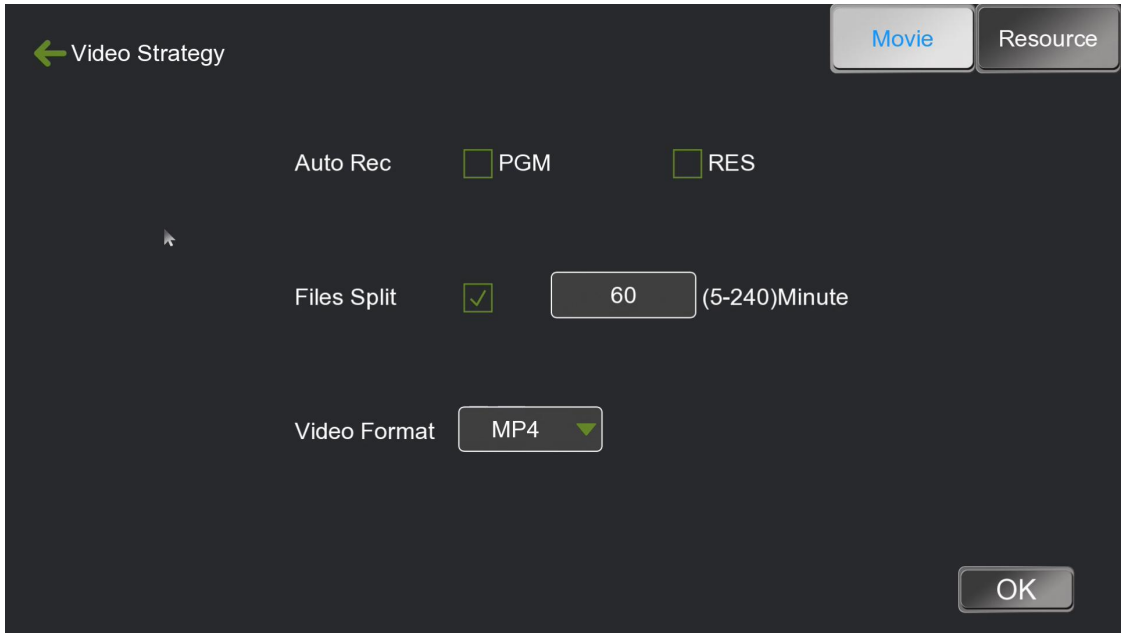
Select the path of the video file for the beginning and ending, the format must be mp4, the video file can be the video recording on the local hard drive, or the file on the external USB flash drive/removable hard drive. After selecting the path, tap Save to return to the interface, tap Insert Title File, the selected title video will be played in the PGM live screen. When the live broadcast is about to end, tap Insert Credits File to play the credits video in the PGM live screen.

Note: The external MP4 file must meet the following conditions in order to be played normally: it must be encoded in H.264, the audio encoding is AAC, two-channel stereo, the sampling rate is 44.1KB, and the video resolution is not larger than 1920*1080.

4.5.6. Video settings



Video settings



Video strategy

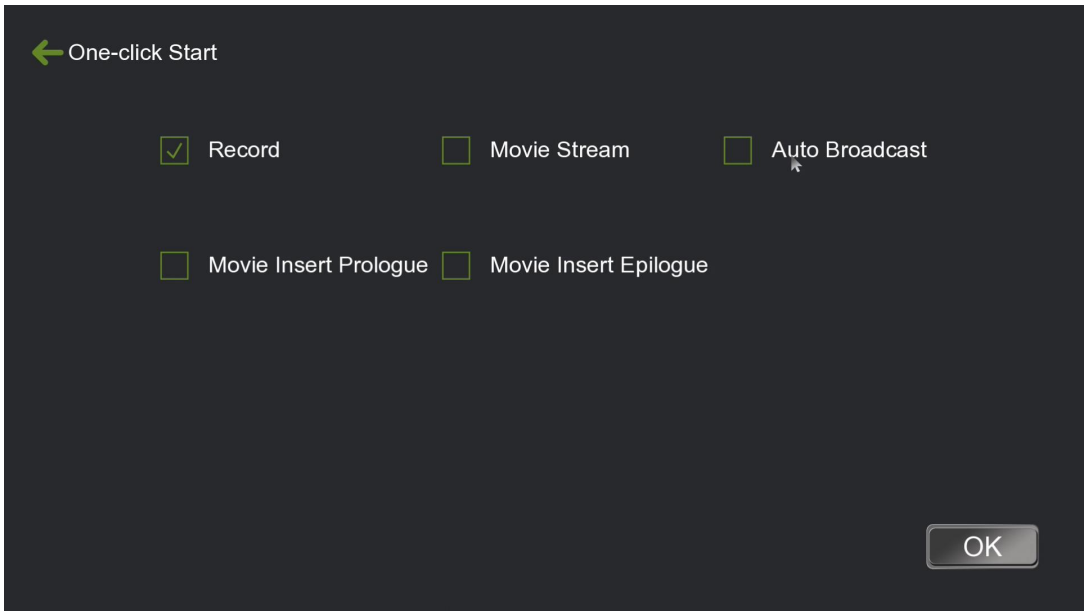
Here you can select the resource channel and live channel that you need to record, and you can select the length of the recording file split, and you can start, pause and stop the recording.

4.5.7. One-touch start



One-touch start

Here one key to open is a quick operation button, in the recording and broadcasting settings in the "one key to start" set the corresponding parameters, can be set to open the film mode recording, push the stream; push the stream; automatic guide.



One click to start the setup

4.6. System function

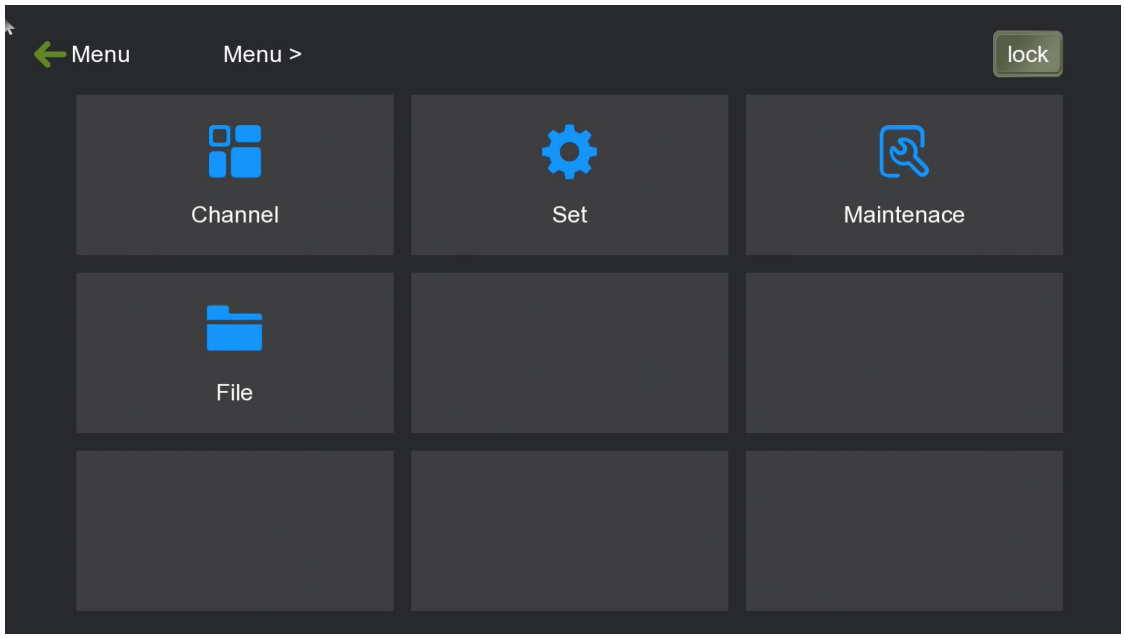


System function

The system function setting is mainly divided into 2 major blocks: 1, system menu; 2, document management.

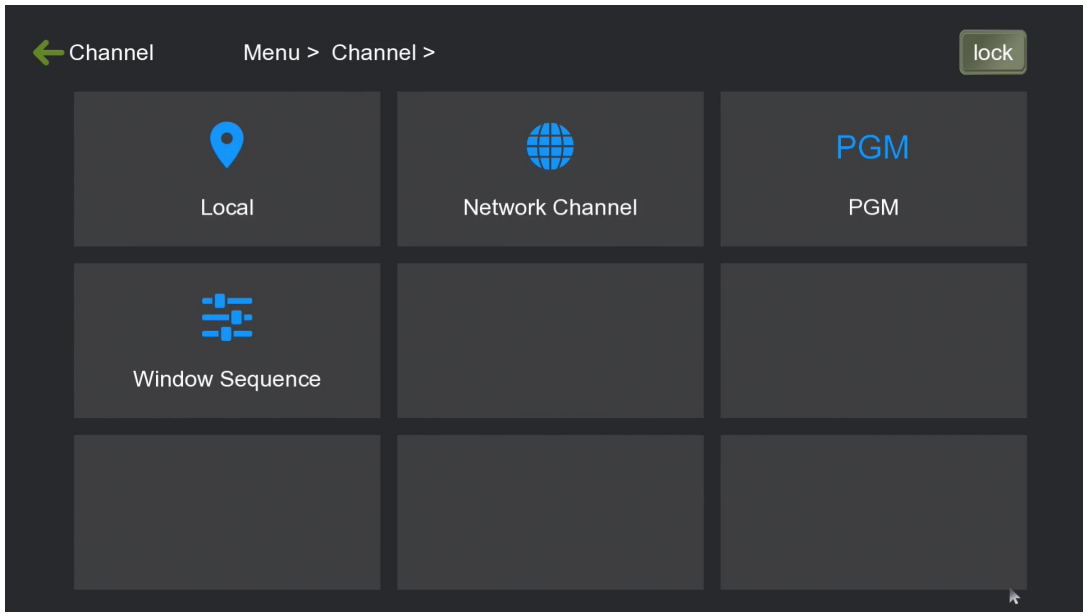
4.6.1. System Menu

As shown in the figure below, the system menu functions are divided into six main modules: 1. Channel Module; 2. Settings; 3. Maintenance; 4. File Manager.



System menu functions

4.6.2. Channel

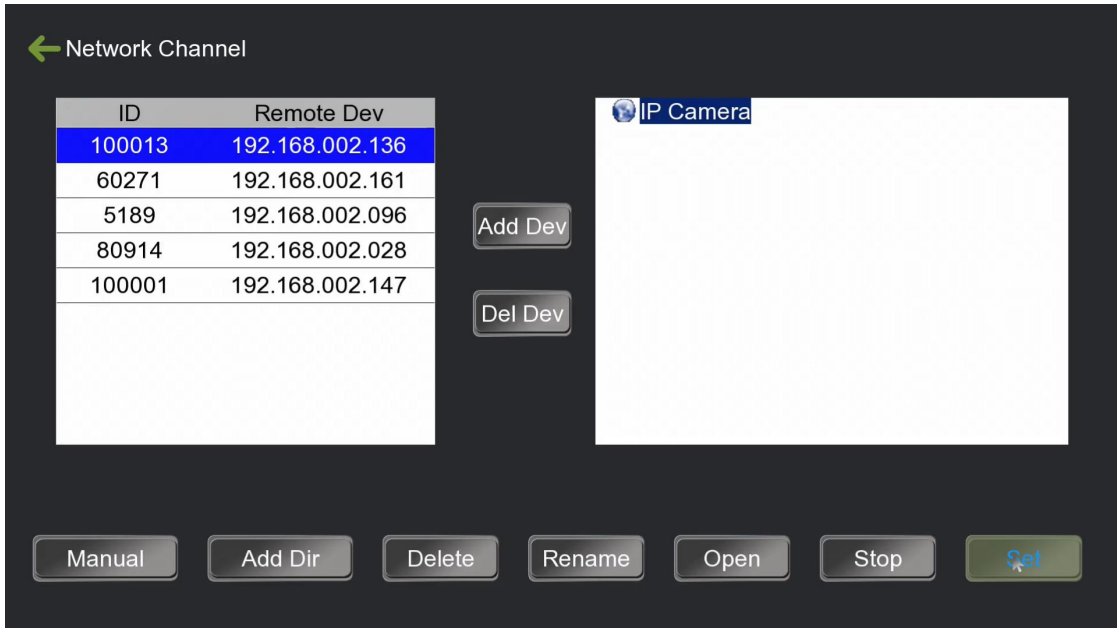


Channel module

Local Channel: Set the image parameters, PTZ parameters, and encoding parameters of the input channel.

4.6.2.1. Remote access

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

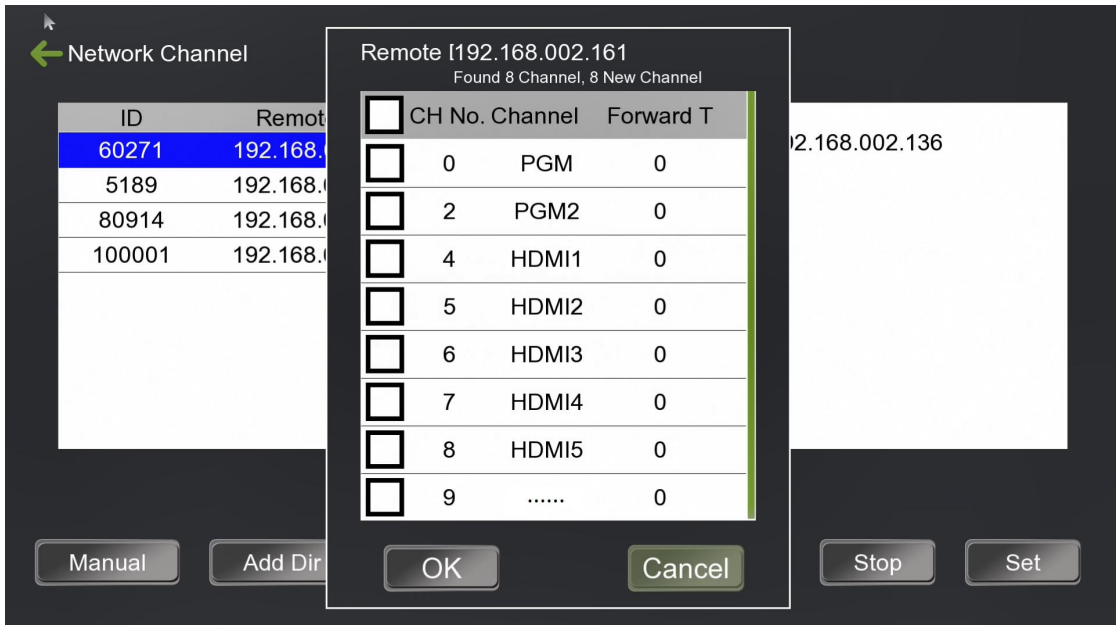


Remote access

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 

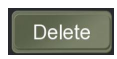
, the pop-up window will show all the channels of this remote recording, tick the channels you need to add and click OK.



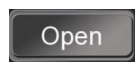
Add video source

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



select the channel for 

, 

, 

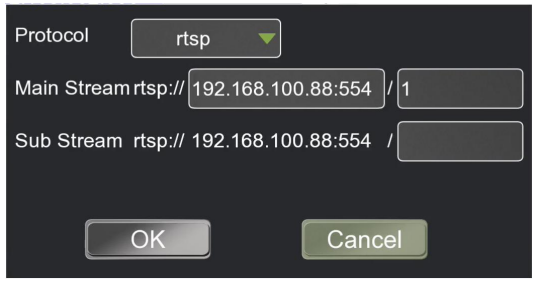
,

Stop, Set and so on.

If you need to delete the device, click Del Dev to remove the device.

Manually add RTSP streams to the camera:

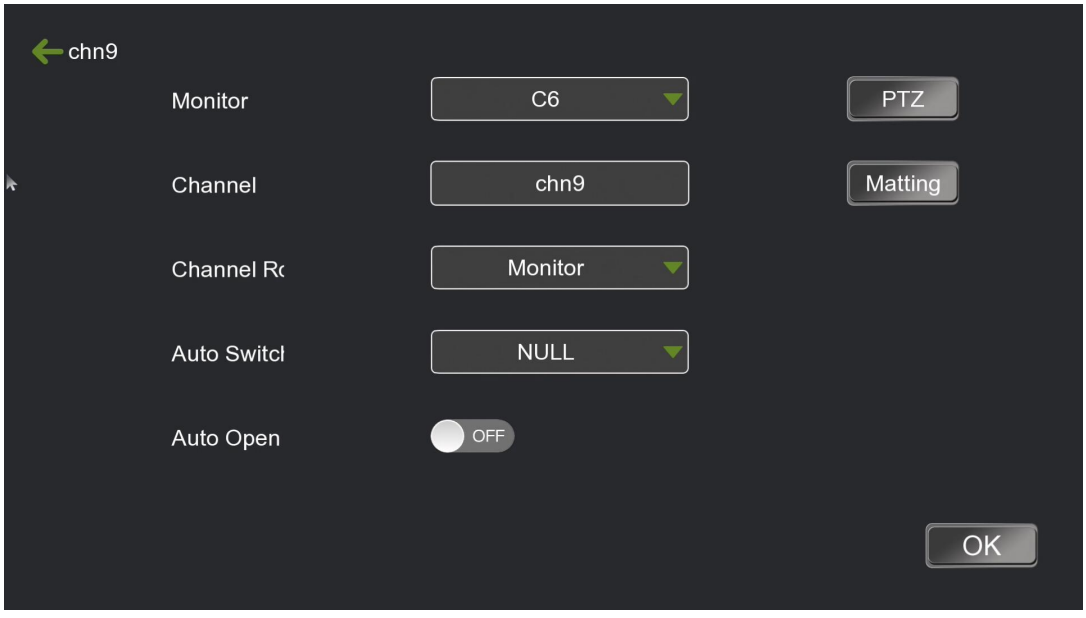
Click Manual, you can add devices that support RTSP real-time streaming protocol, enter the stream address (Note: Generally, you can just enter the main stream, the box after the following sub-stream is empty)



RTSP streaming

Click OK, select the added stream address, click the following open Open can be, if you see the device icon in front of the address appeared green triangle logo , it means the device open successfully.

If you need to configure the device, select the stream address rtsp://192.168.100.92/1 that you need the device for, and click the Set button in the lower right corner to enter the setup interface to set it up.



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.

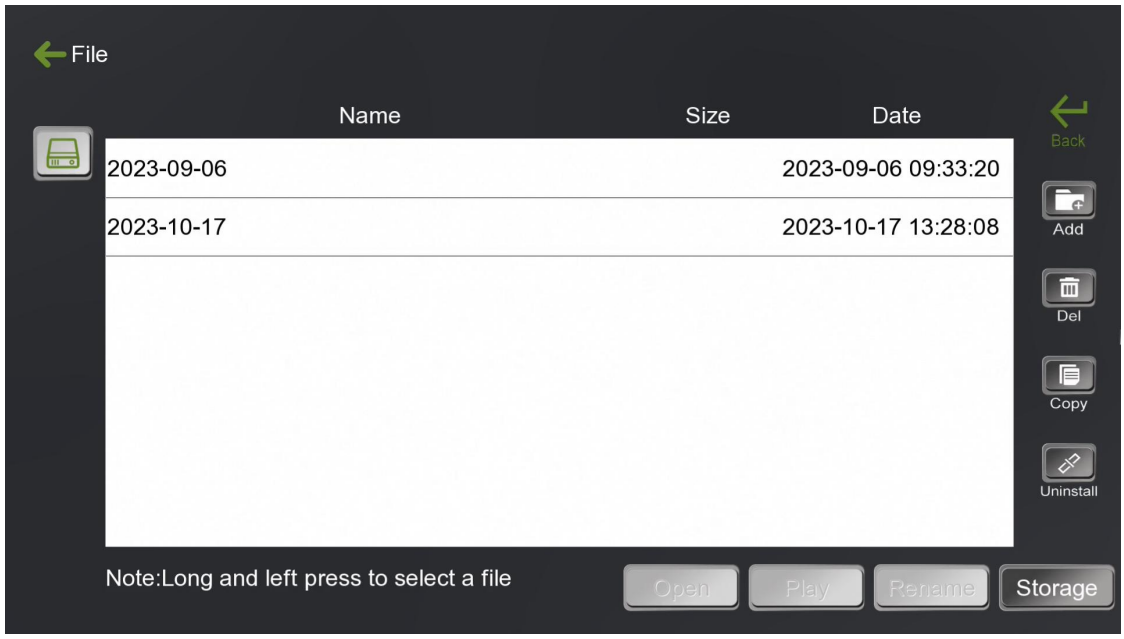
RTSP master/substream address: RTSP live stream for this channel

PTZ：See 4.3.2.2 Head Setting for details.

PGM：Set the image parameters of the PGM channel, encoding parameters.

Window Order: Allows you to change the order in which the current resource channels are arranged.

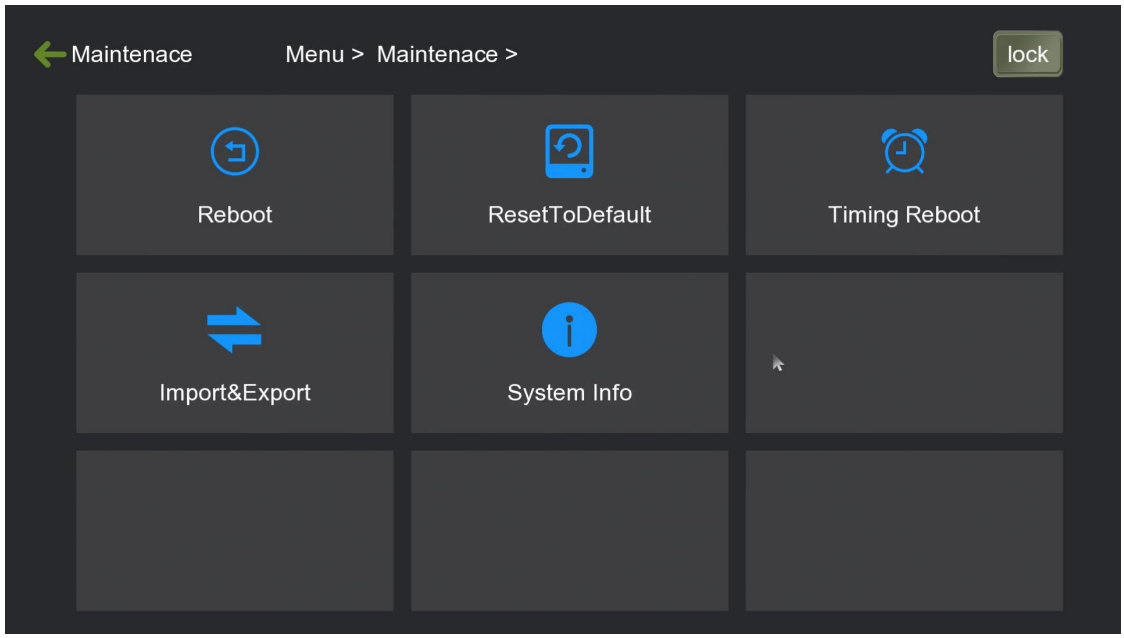
4.6.3. File manager



File manager

File management supports copying, pasting and deleting recorded files.

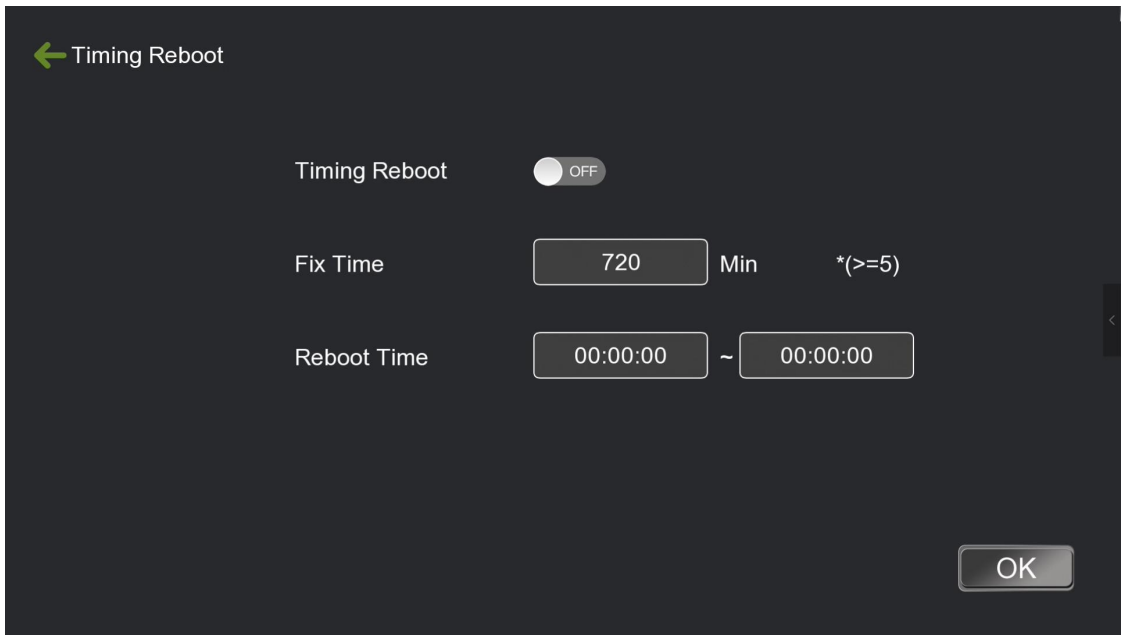
4.6.4. Safeguard



Safeguard

As shown in the figure above, maintenance can software security shutdown, reboot, restore factory settings, timed restart of the machine, configuration import and export and view some of the current system information and other functions.

4.6.4.1. Reset

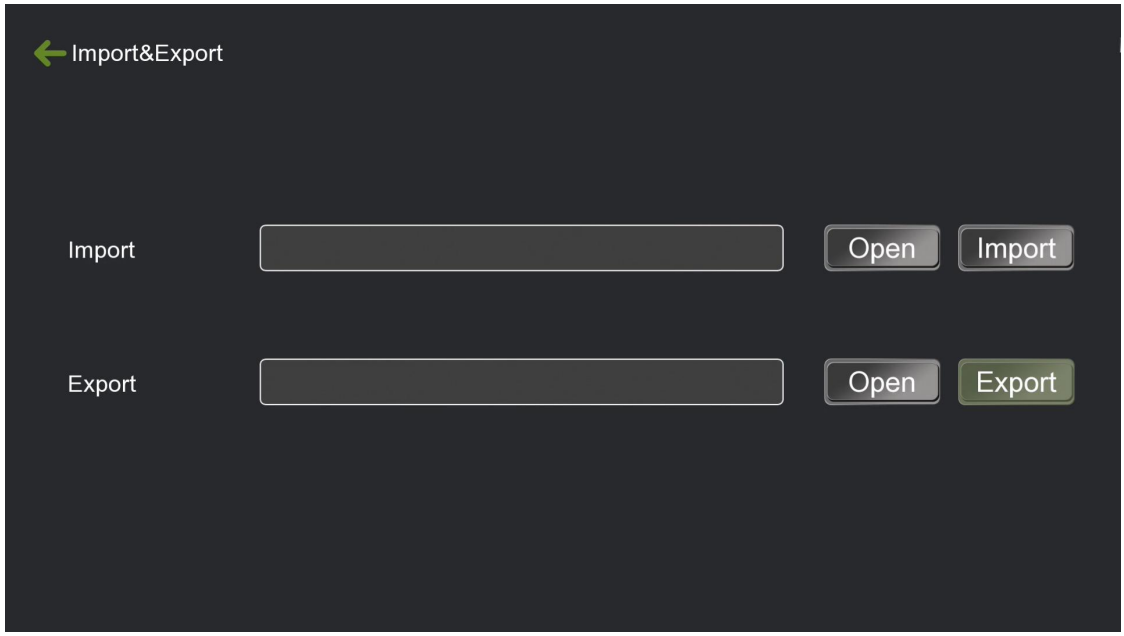


Timed reboot settings

Can be set to enable the recording and broadcasting host timer restart function, set the restart

interval and restart time point, the recording and broadcasting host will automatically restart the operation.

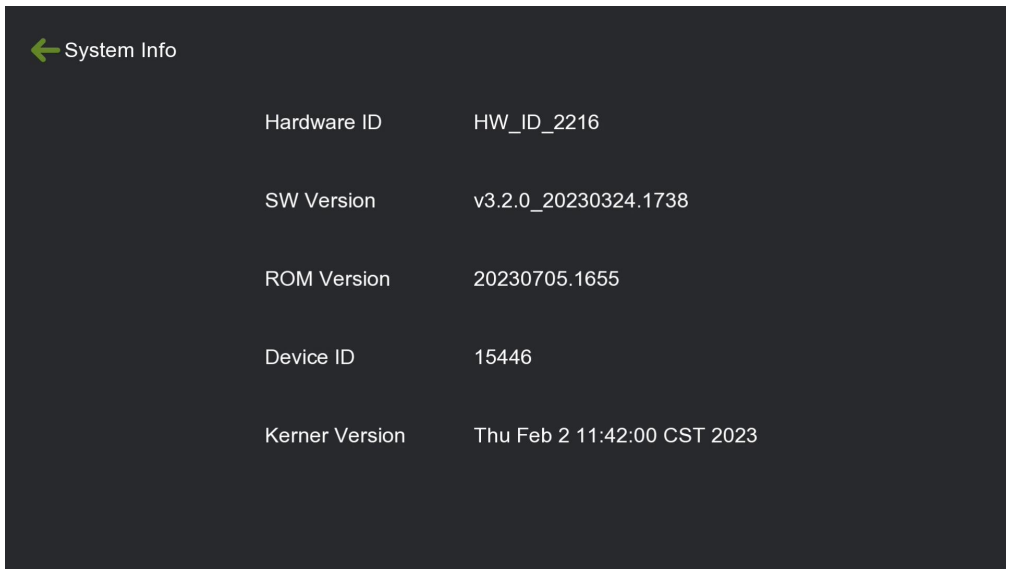
4.6.4.2. Configuration import and export



Configuration import and export

Recording and broadcasting system supports the import and export of parameter configurations, the user can import parameters in this menu, it is convenient not to repeat the setup debugging. Configuration import and export can export the current settings, configuration import restart configuration will take effect.

4.6.4.3. System Information

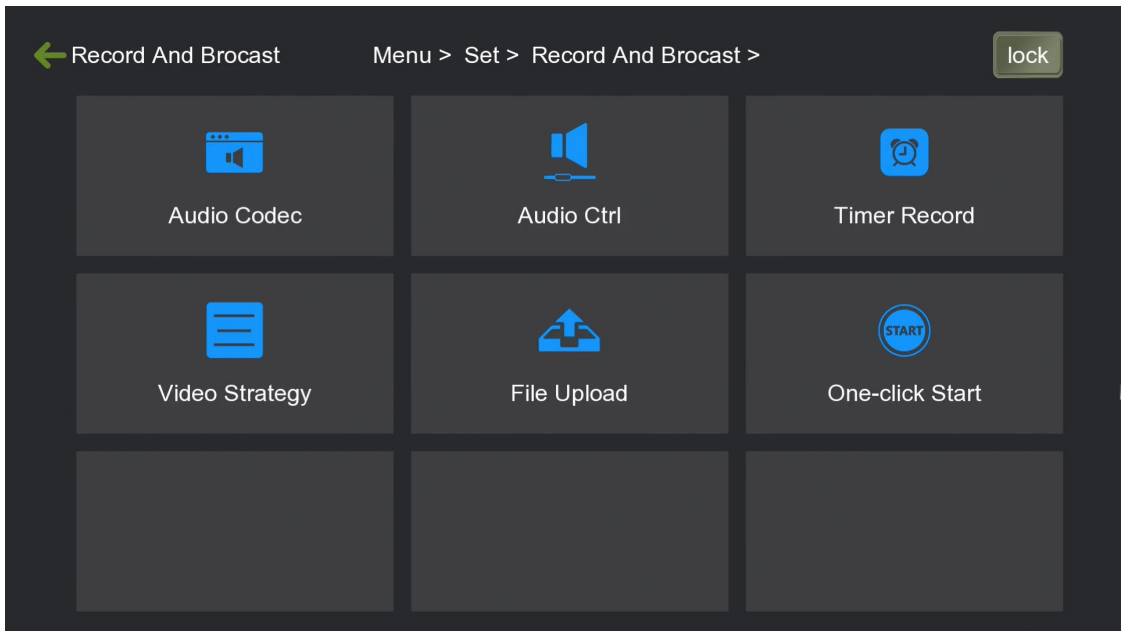


System information

The recording system hardware ID number and software ROM version and release date can be viewed in the System Information menu.

4.7. Set up

4.7.1. Video Settings

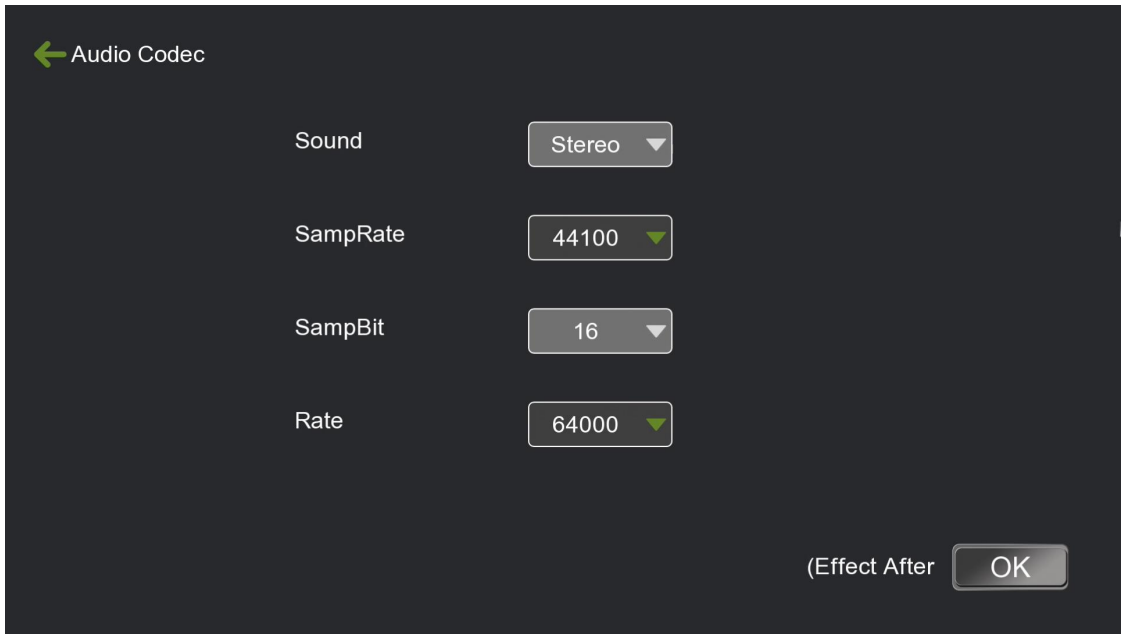


Video settings

TIP

There are 6 settings in the Recording Setup menu: audio encoding setting, audio control setting, timer recording setting, recording policy setting, file upload, and one piece of start configuration.

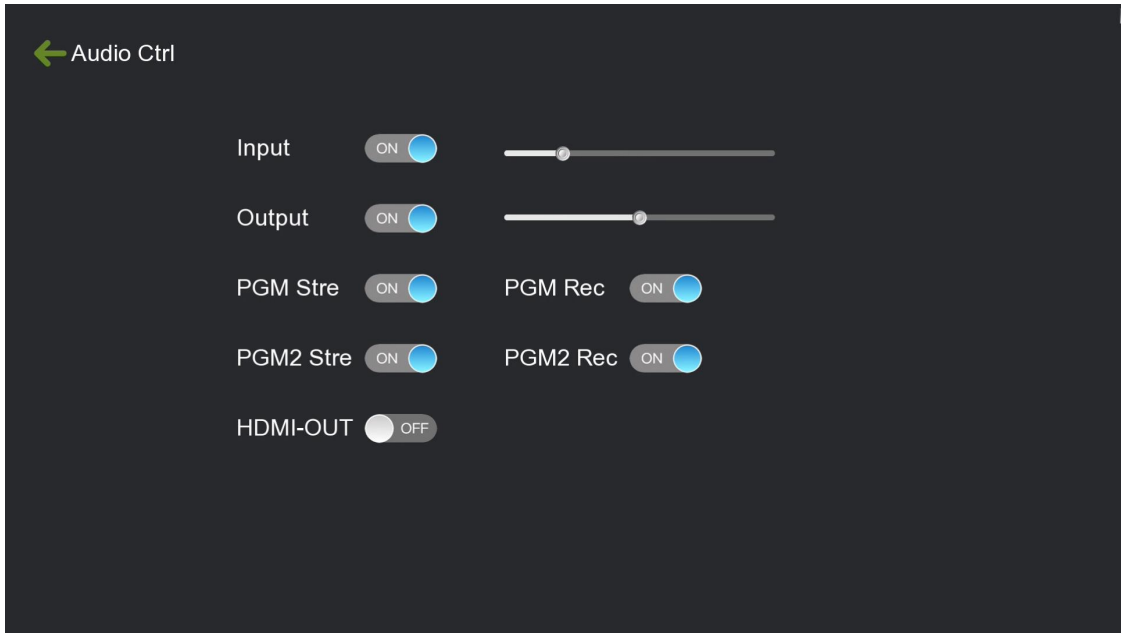
4.7.1.1. Audio encoding



Audio encoding settings

As shown in the above figure, in the audio encoding settings menu, users can customise the audio encoding channel, sampling frequency, number of sampling bits, code rate, etc. The audio encoding code rate is selectable from 8000-128000Kbps. The sound channel supports stereo and left/right mono; the sampling frequency is 44100K-48000K; the number of sampling bits is 16; the code rate of audio encoding is from 8000-128000Kbps.

4.7.1.2. Audio control



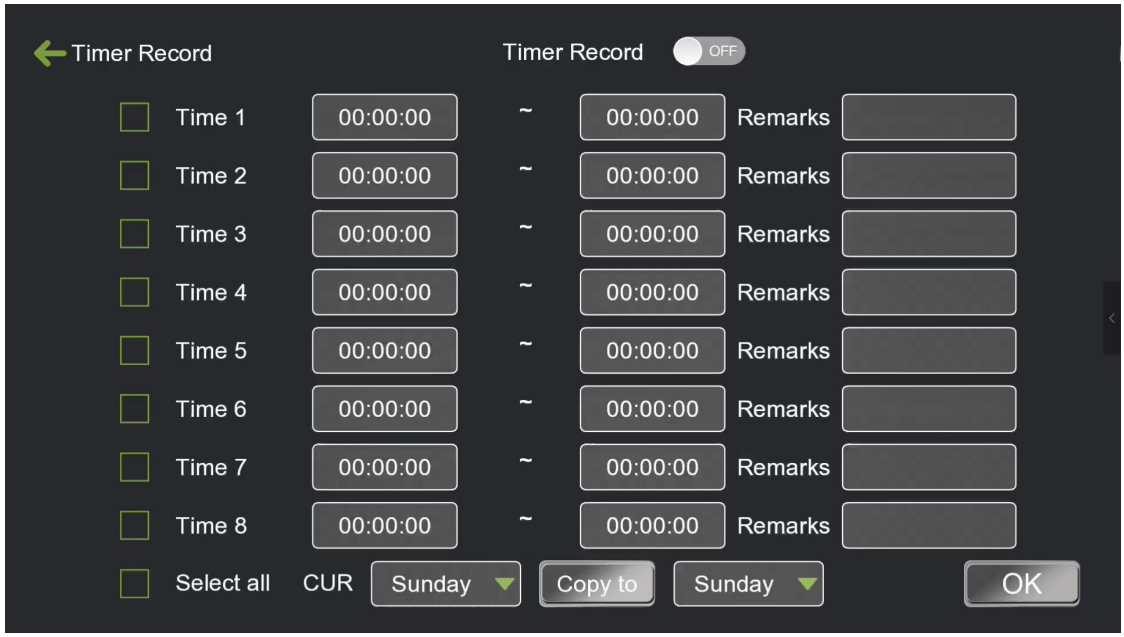
Audio control

TIP

Input Volume/Output Volume adjusts the volume of the input and output sound, the pull bar is

pulled from left to right and the volume changes from small to large. Sound Control turns the sound off and on for PGM Push Stream, PGM Record, and other states, i.e. the speaker logo is turned off and on. (PGM2 has been removed from this version)

4.7.1.3. Time-lapse video recording

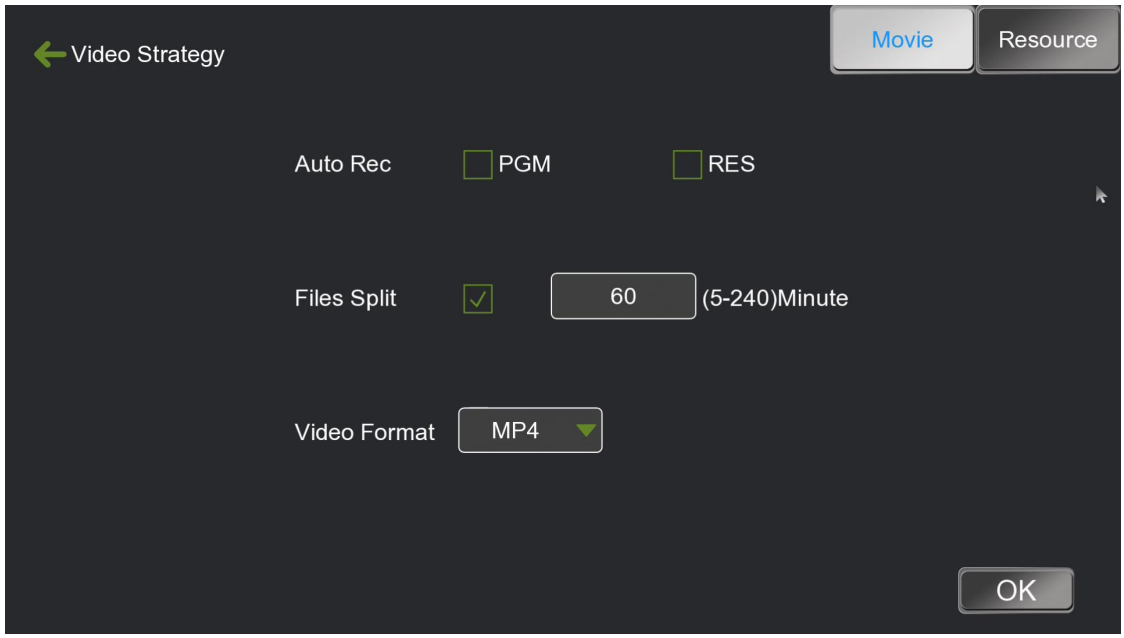


Time-lapse video recording

TIP

The recording system supports timed recording function. Users can set up four time periods of timed recording parameters here and copy the parameters of this day to any day of the week, and can only record PGM channel video at regular intervals.

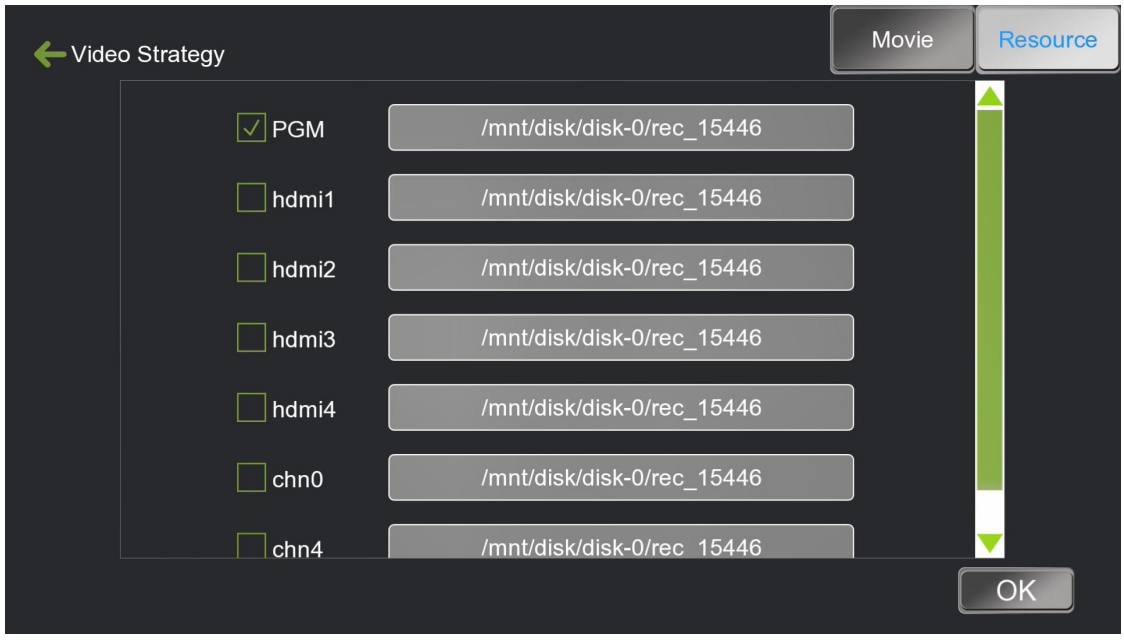
4.7.1.4. Video strategy



Film mode

TIP

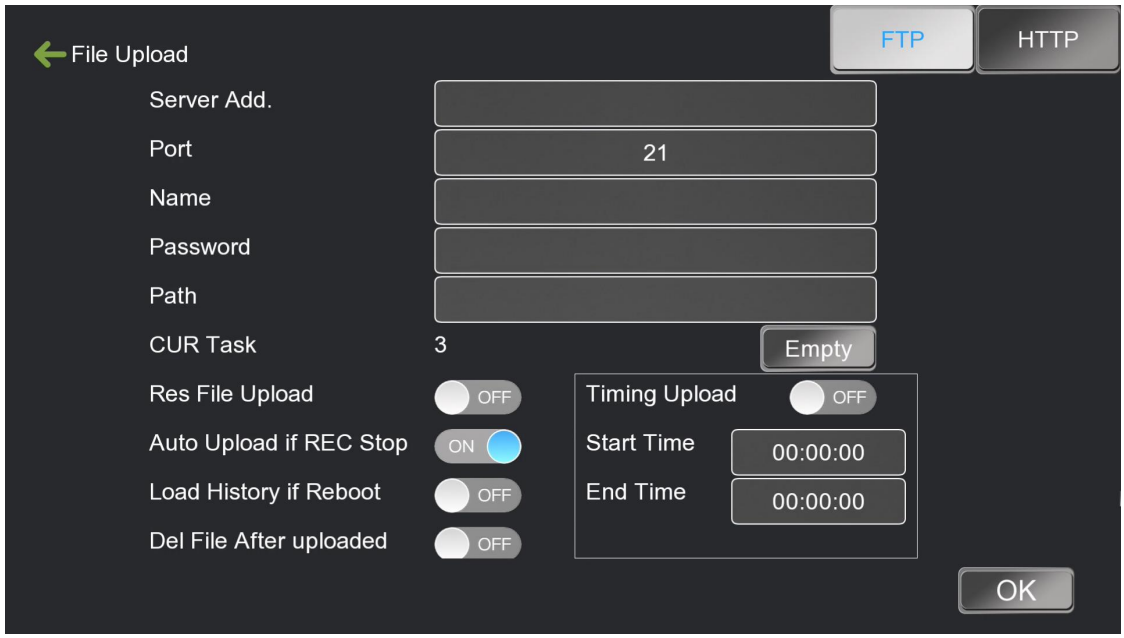
Recording host supports film mode + resource mode simultaneous recording, the maximum simultaneous recording of 5 channels: 1 film channel (PGM) + 4 resource channels + HDMI. film mode menu can be set to boot the PGM/RES (resource recording) automatic recording; video file split time 5-240 minutes can be set.



Resource model

As shown in the above figure, select the resource channel you need to record in the Recording Policy - Resource Mode menu, tick the recording in the [One Click Start] menu, and then click the [One Click Start] button on the main interface to start recording.

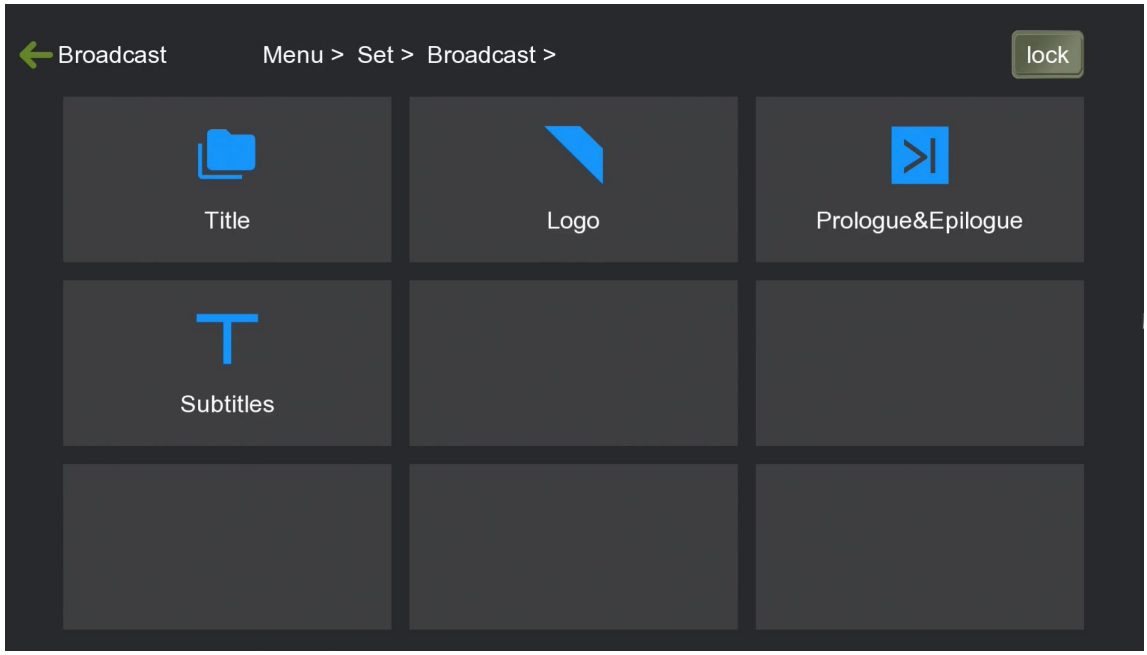
4.7.1.5. File Upload



Ftp upload

The recording system supports automatically uploading video files to the set FTP server for storage after the recording stops. Supports automatic loading of history tasks after the recording host is restarted.

4.7.2. Guide settings

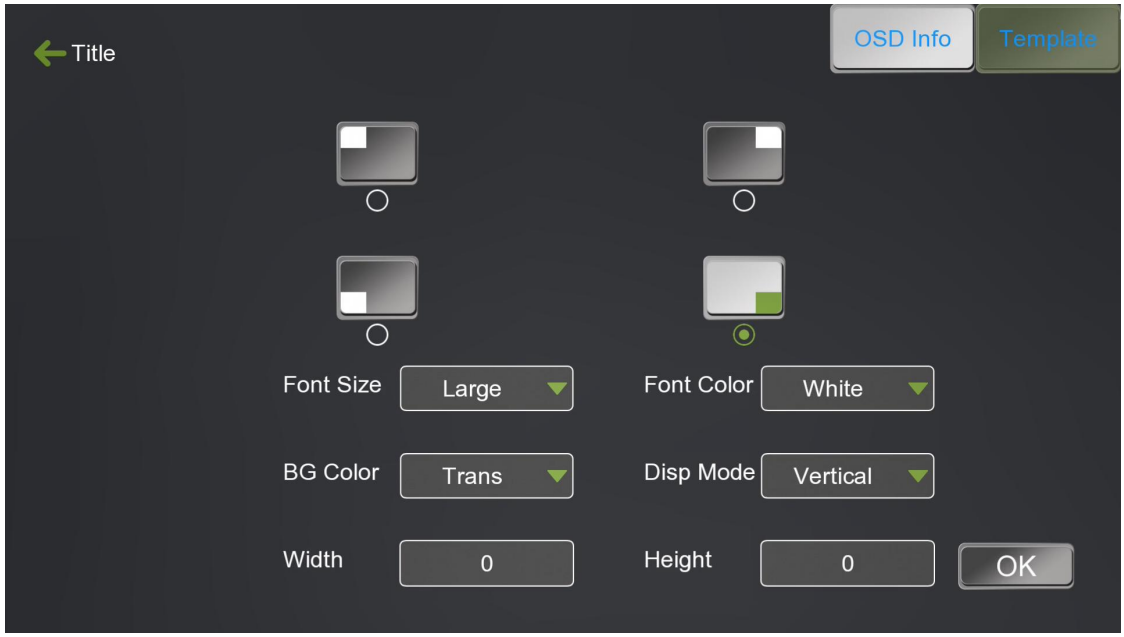


Guide settings

As shown in the figure, there are 4 settings in the guide settings menu: title, stage manager, credits

and subtitles. During manual playback, it supports inserting information such as courseware information, station title, credits and subtitles into the live PGM and PGM2 channels after editing them in advance, so as to reduce the work of post-editing of the recorded courses.

4.7.2.1. Caption

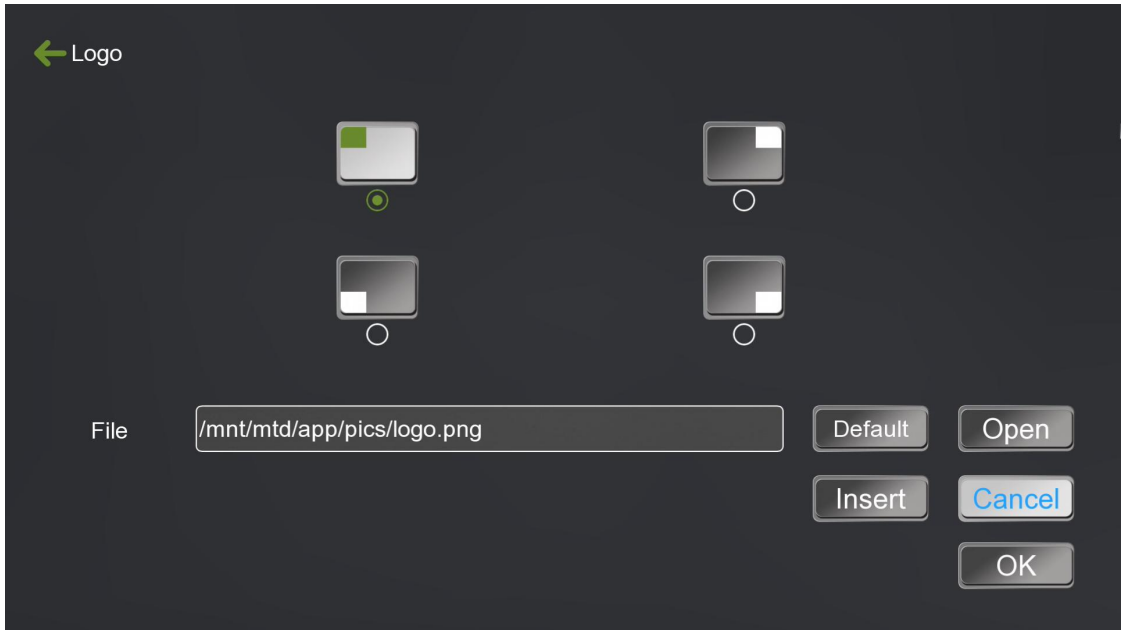


OSD settings

TIP

When manually guiding the broadcast, the user can use the courseware information can be inserted into the live channel PGM to increase the view ability of the video screen.

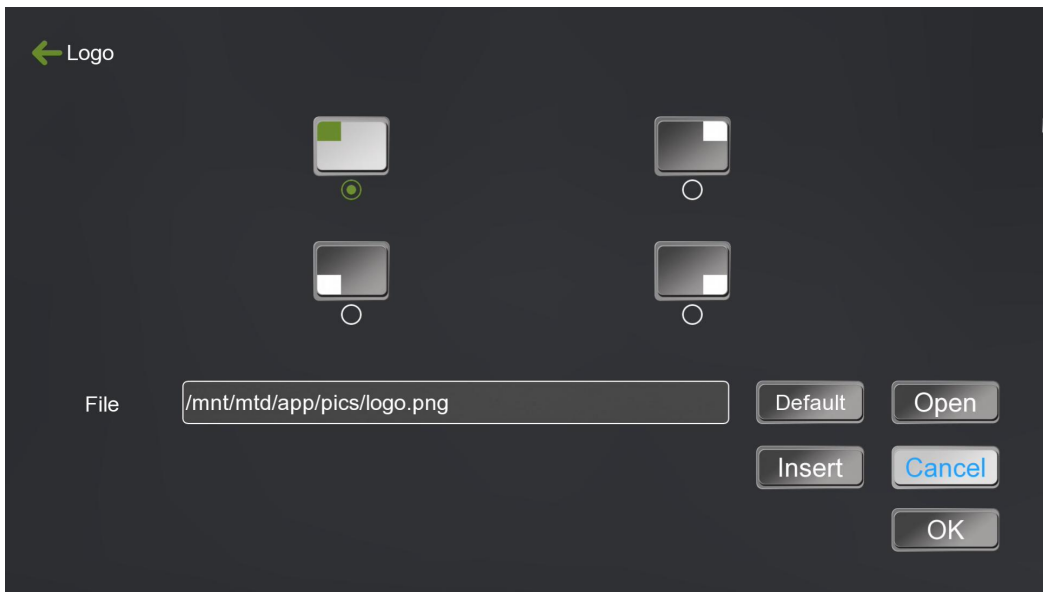
4.7.2.2. Stage markings



Label setting

During manual guide, users can manually insert station logos into the PGM. As shown in Figure 56, the maximum number of station logo insertions supported in the PGM channel is four. Upper left, upper right, lower left and lower right corners. 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.

4.7.2.3. Opening and closing credits (of film)



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.

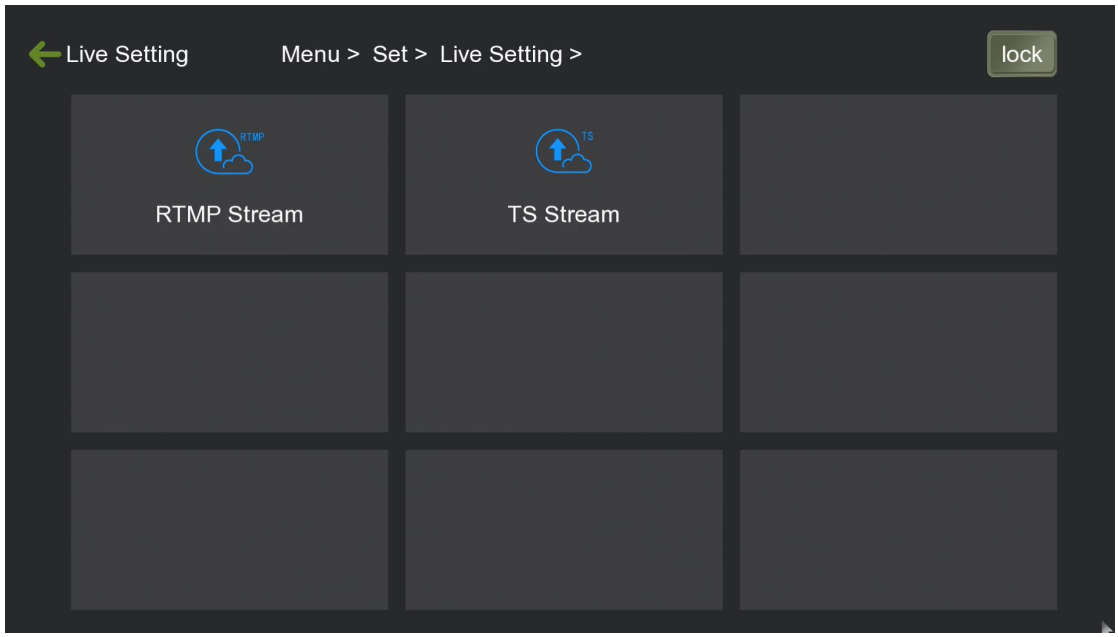
4.7.2.4. Captions



Subtitle settings

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

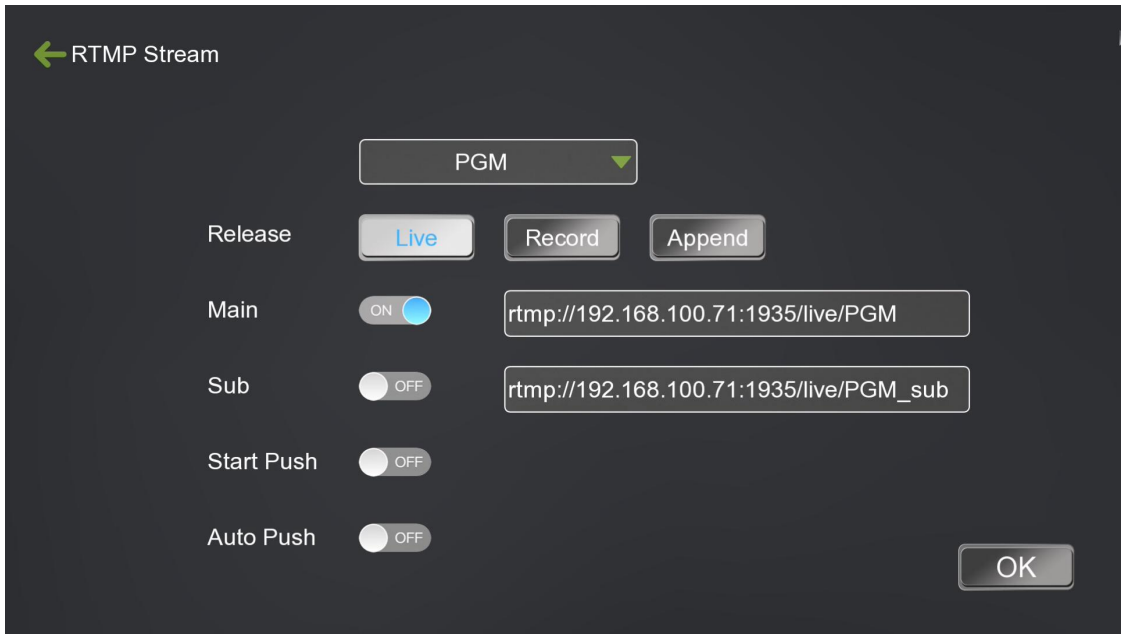
4.7.3. Live streaming settings



Live streaming settings

As shown in the figure, RTMP Push Streaming and TS Push Streaming functions can be set up within the Live Settings menu.

4.7.3.1. RTMP Push-stream



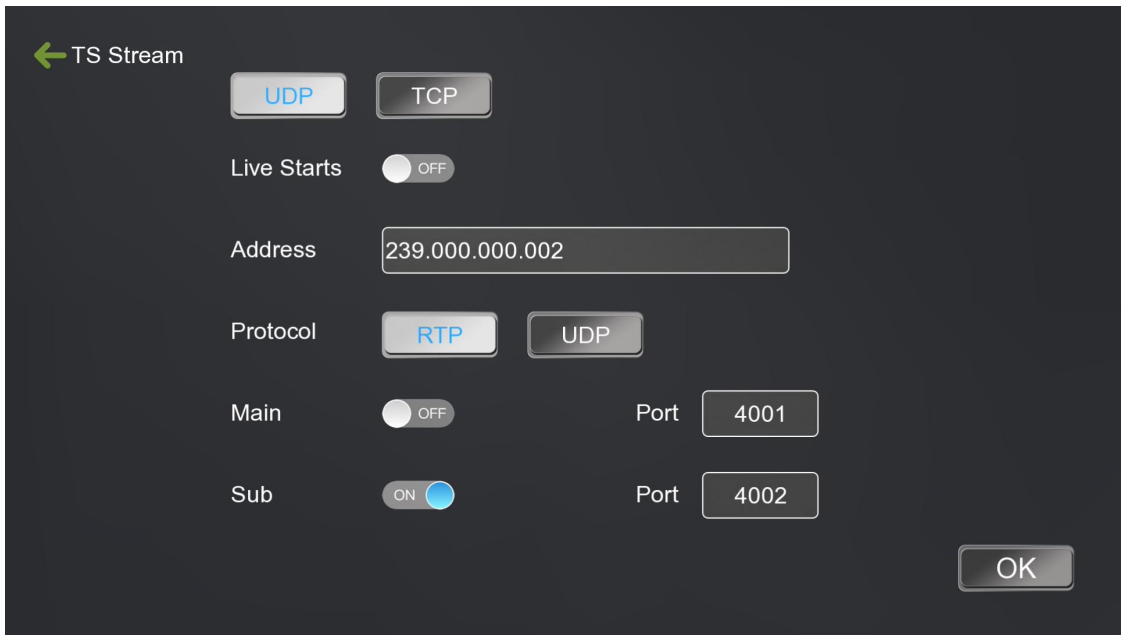
RTMP live streaming

TIP

As shown in the above figure, the RTMP Push Stream menu allows you to set the main and sub

stream push address and push mode for PGM and PGM2 channels. The push mode is decided by the RTMP stream receiving platform, and Live mode is used by default. Push stream size can be adjusted in Video Settings-Encoding Settings, between 50Kbps-40Mbps, the default bit rate of main stream is 4000Kbps, and the sub-stream is 400Kbps, which can be adjusted by users according to the actual network bandwidth.

4.7.3.2. TS Push Stream



TS push stream

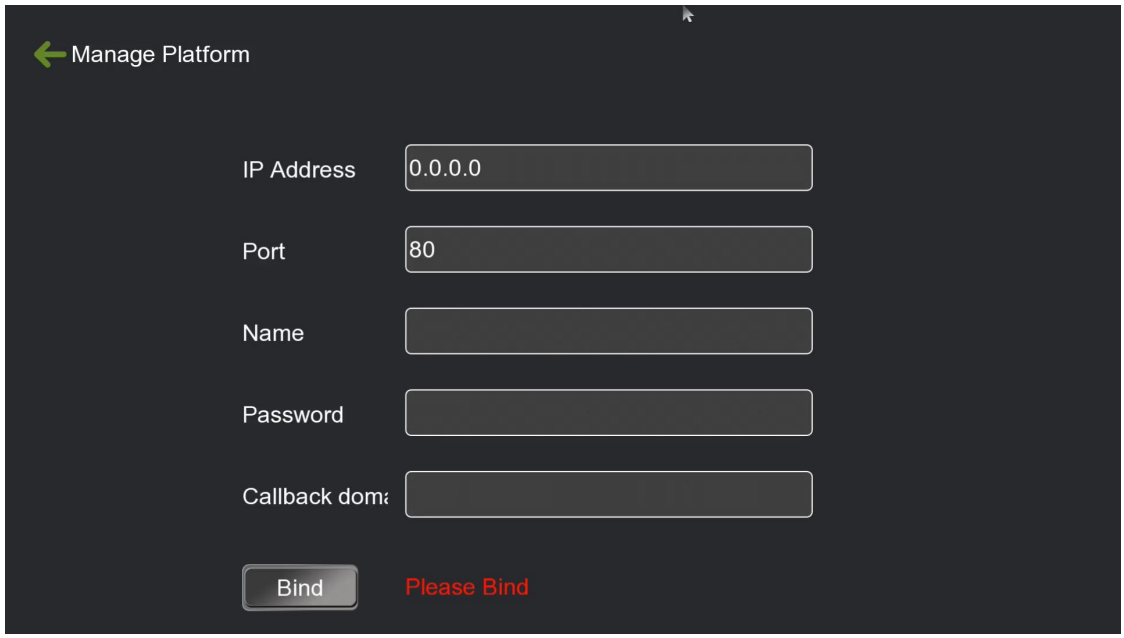
The recording host supports TS unicast and multicast push streaming.TS push streaming only supports watching the live broadcast in LAN, you can watch the live broadcast screen of the LAN recording equipment by inputting a fixed format in the VLC player.

TS Unicast uses TCP network protocol, and the recording system starts to push the live video stream only after the user requests it. Input the fixed format "tcp://recording host IP:push port" in VLC player network streaming to open and watch the live screen.

TS multicast uses UDP network protocol, in the VLC player network streaming enter a fixed format "rtp://239.0.0.2: Push Streaming Port" will be able to open and watch the live screen.

Note: Multicast and unicast difference: unicast is the network has a request to push the video stream, the connection is the user end directly connected to the recording host, support for simultaneous viewing of the live broadcast is limited. Multicast use must be in a router LAN environment, the general router default multicast IP is 239.0.0.2, open the multicast push stream, the video host will always be pushed to the multicast address of the video stream, the user opens the live broadcast is only connected to the multicast address to get the video stream. Multicast supports 253 users to watch the live screen at the same time.

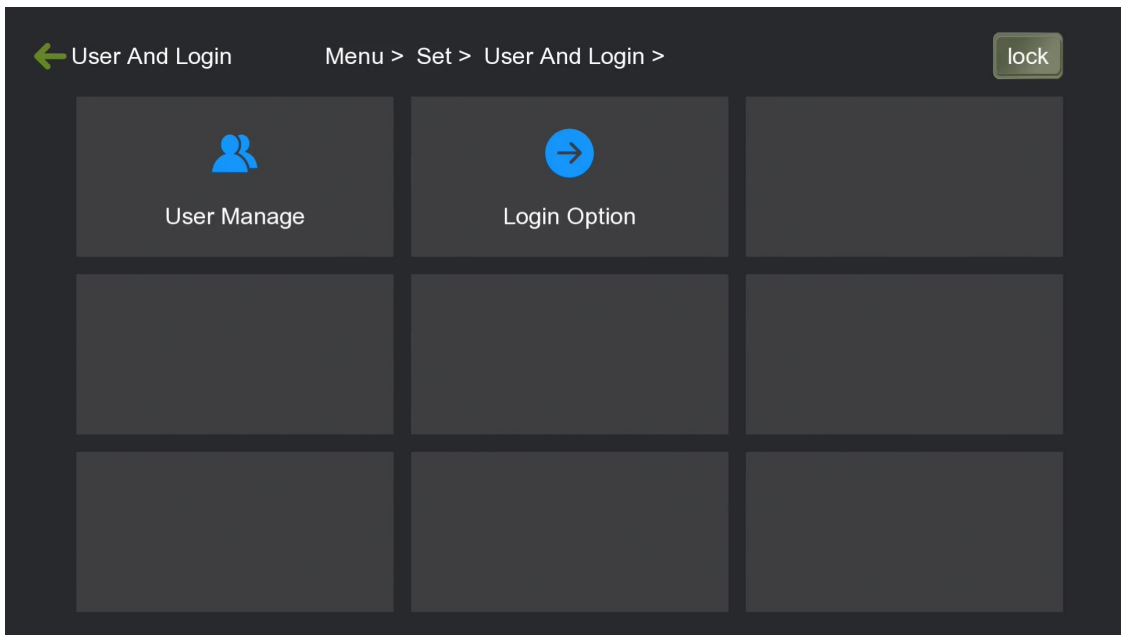
4.7.4. Management Platform



Management platform

This function is mainly docking resource platform, need to support the platform system to use.

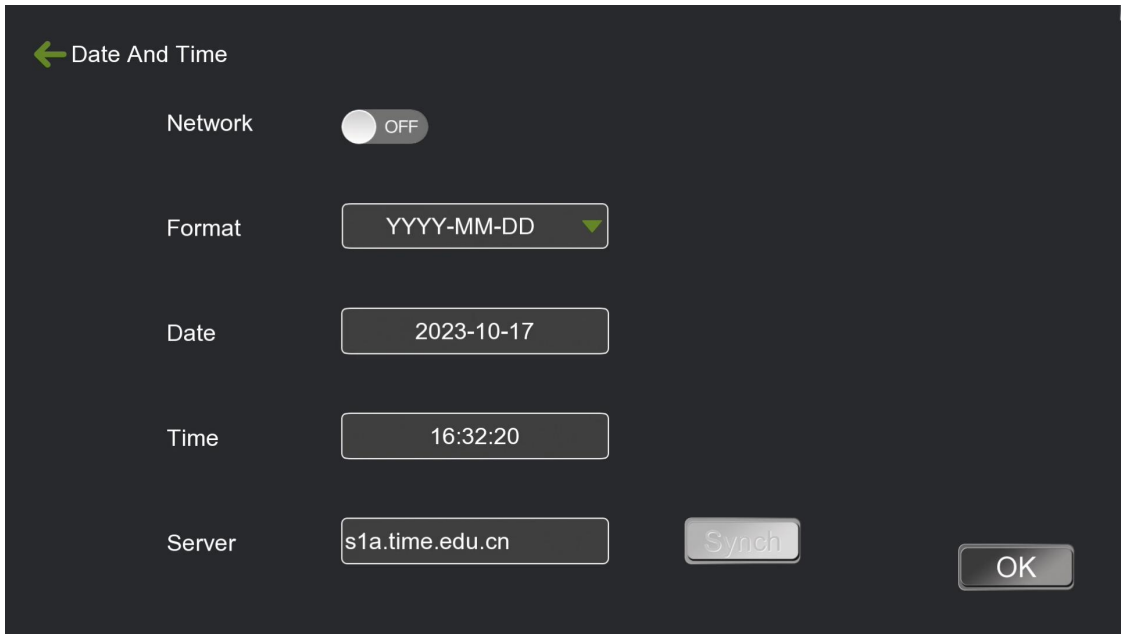
4.7.5. Users and login



Users and login

Management of adding and deleting users, changing passwords, and setting login options for the system menu.

4.7.6. Date and time

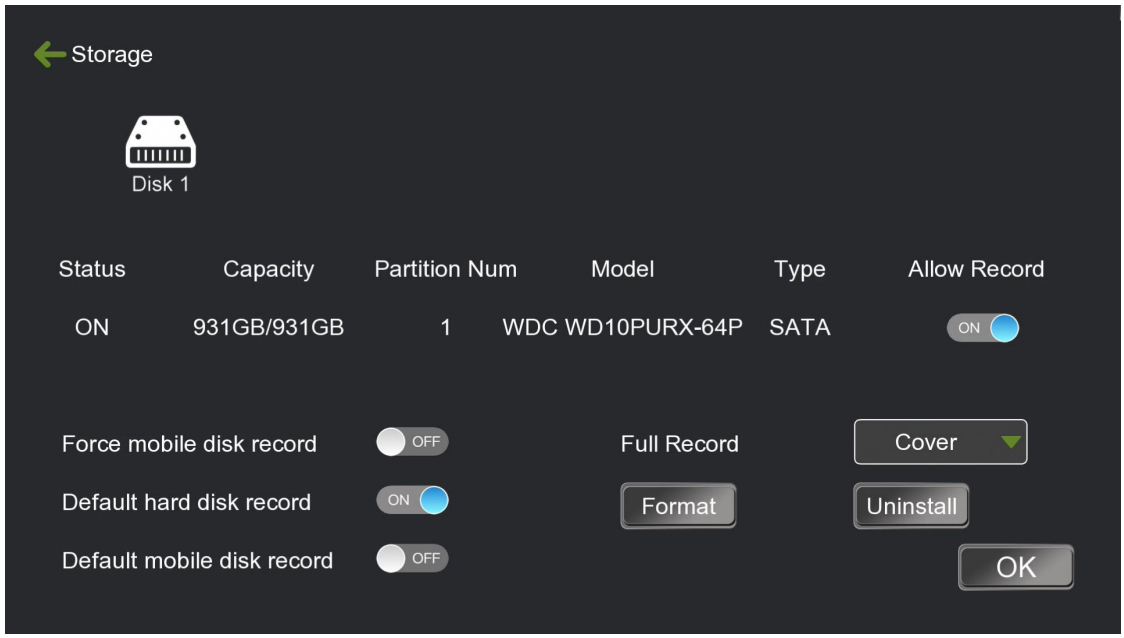


Time setting

TIP

The recording and broadcasting system supports manual and automatic time update. The factory default is s2m.time.edu.cn web server domain name, users can also customise to fill in other domain names or IPs that can normally be used for NTP time synchronisation.The recording and broadcasting system will automatically synchronise the time according to the web server address every time it is switched on.

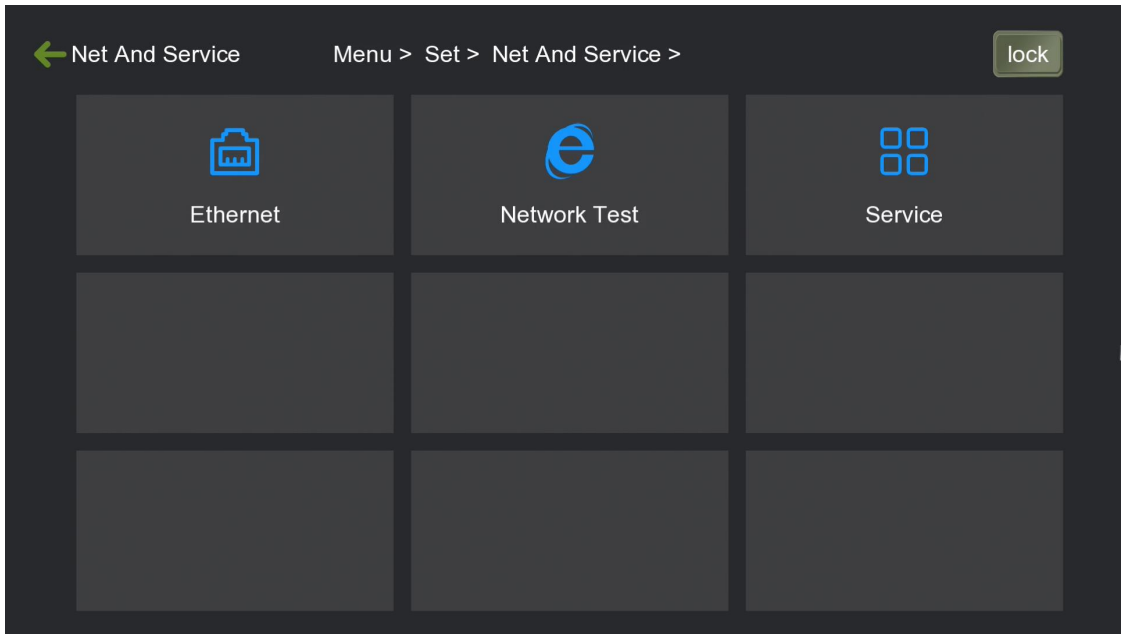
4.7.7. Disk and Storage



Hard drive setup

The Disk Management menu supports formatting, uninstalling, etc. of storage devices such as recording hard drives or peripheral USB drives.

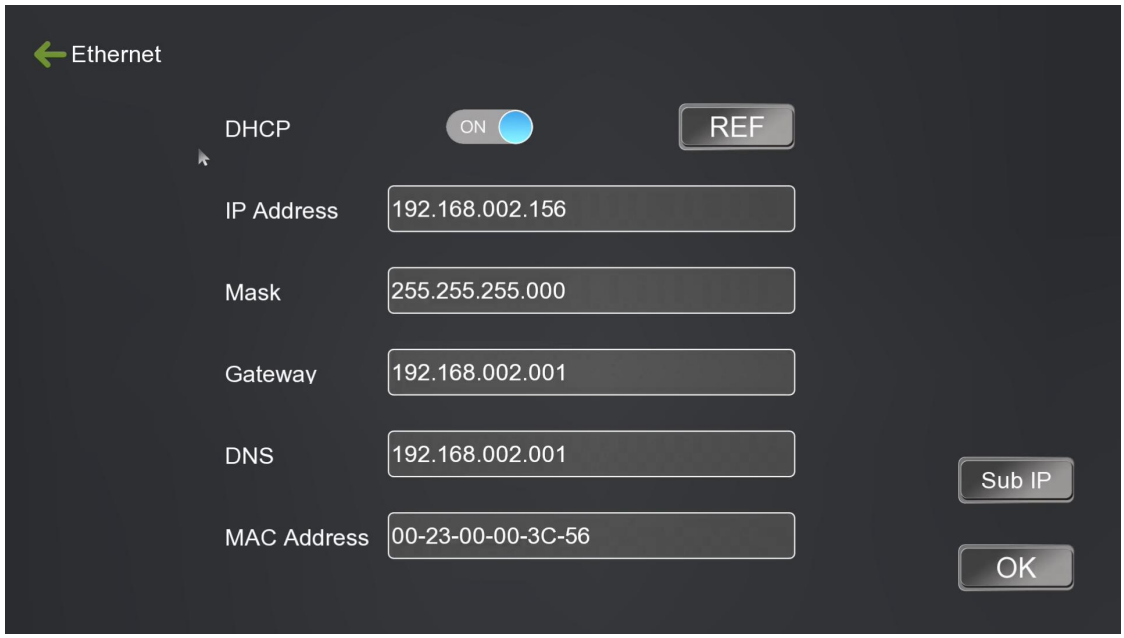
4.7.8. Networks and Services



Networks and services

As shown in the figure, there are three settings within the Network and Services menu: Ethernet, Network Test, and Services;

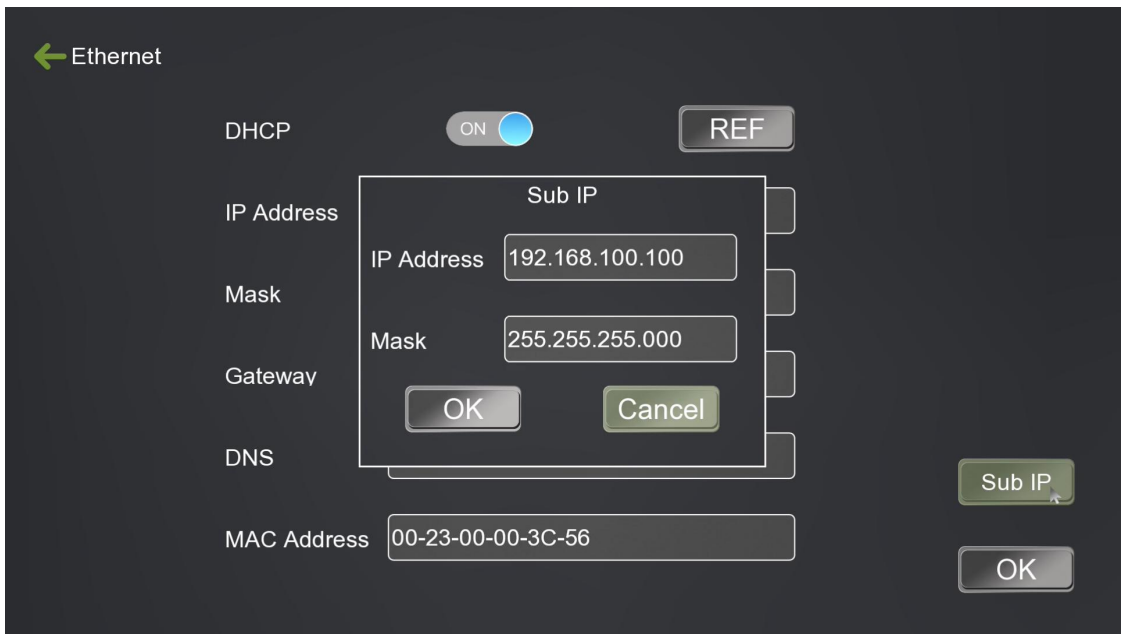
4.7.8.1. Ethernet



Network setup

TIP

The factory default IP of the recording and broadcasting system is 192.168.100.53. It supports manual IP setting and DHCP to get the IP address assigned through the router. It is also possible to set an IP as well as sub-IP settings;



Sub-IP settings

4.7.8.2. Network test

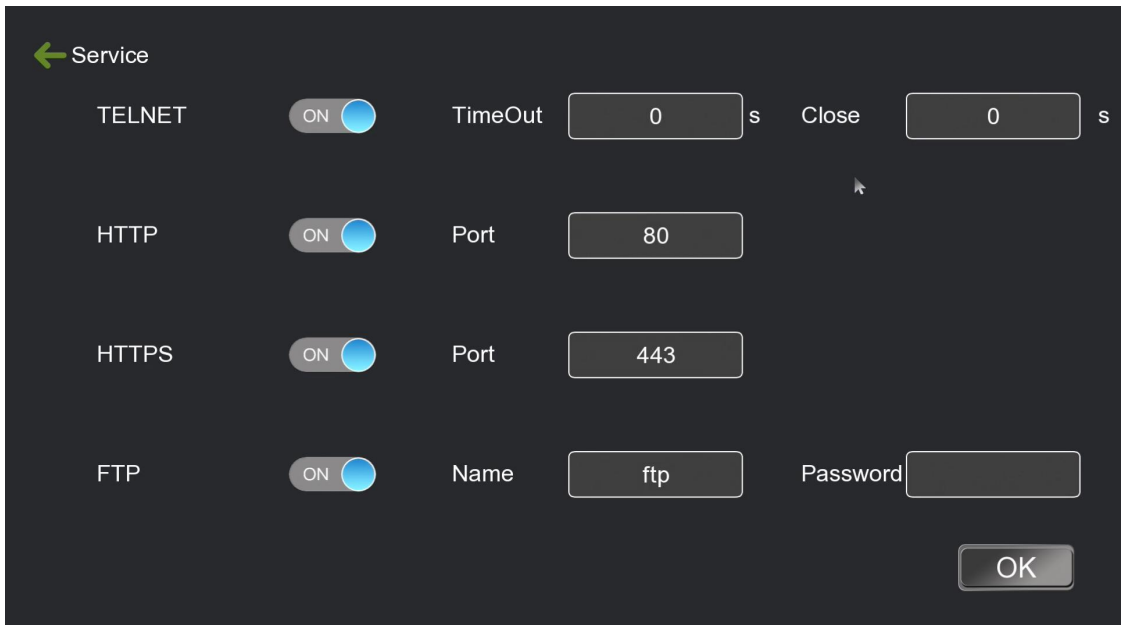


Network test

Ping.As above: can be used to test whether the network is normal ping.

4.7.8.3. Service

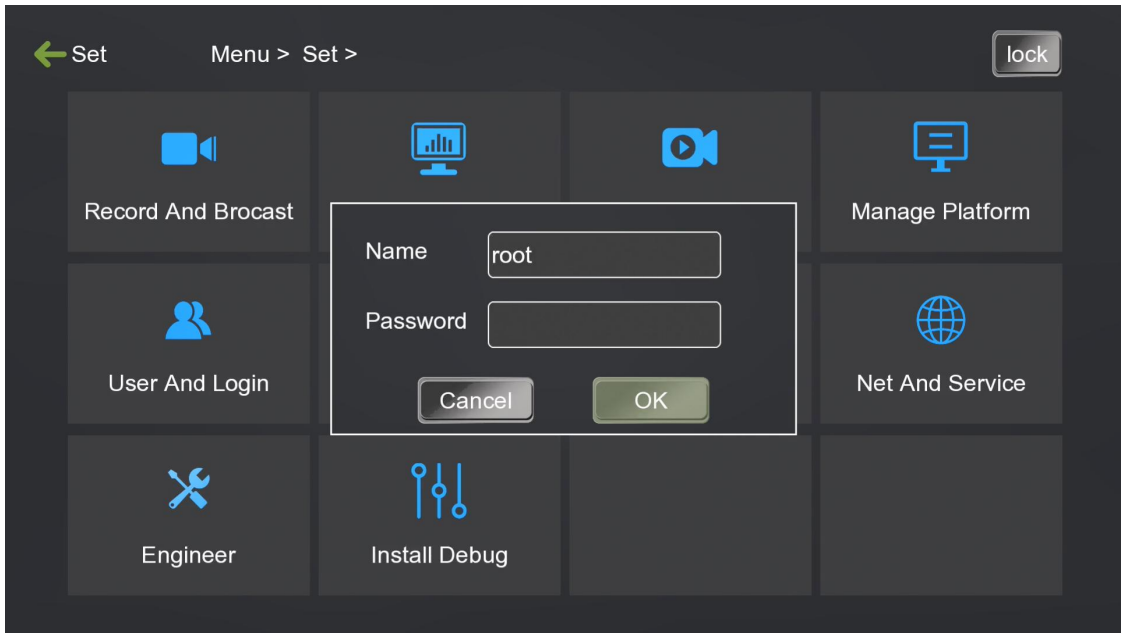
Below:



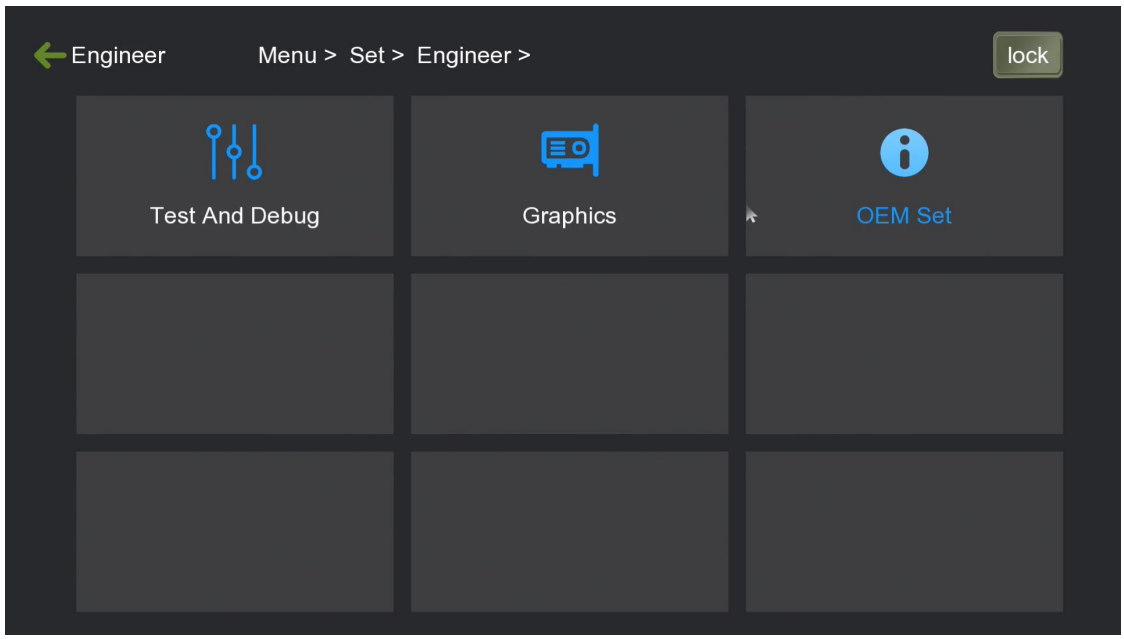
Network service setup

Telnet service, HTTP service, HTTPS service, and FTP service can be turned off manually.

4.7.9. Engineering Settings



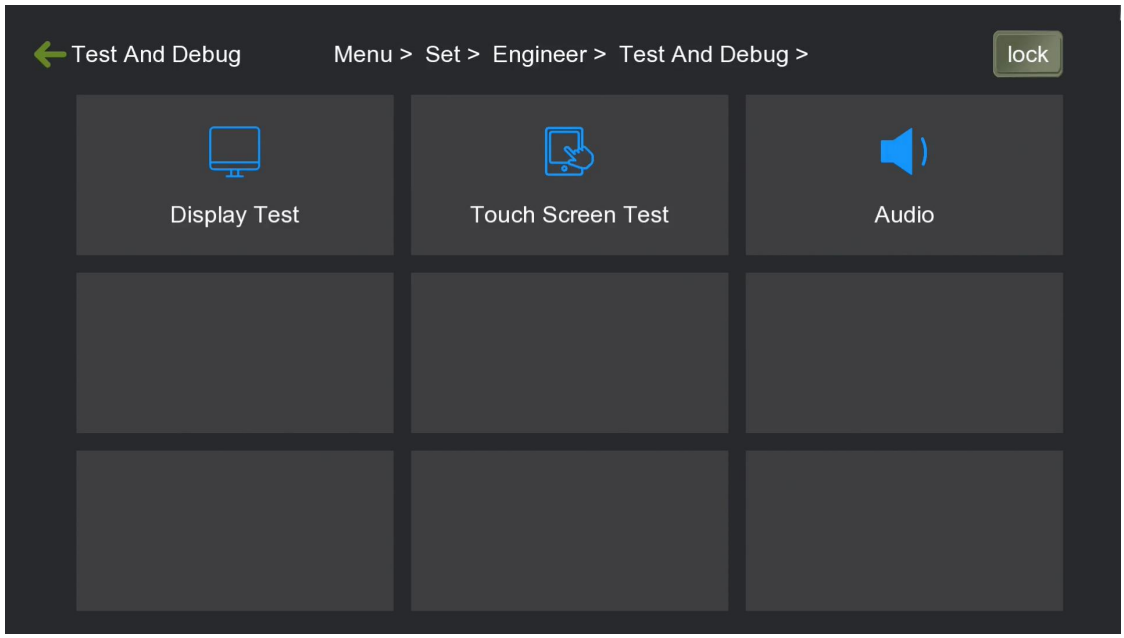
Login project settings



Engineering settings

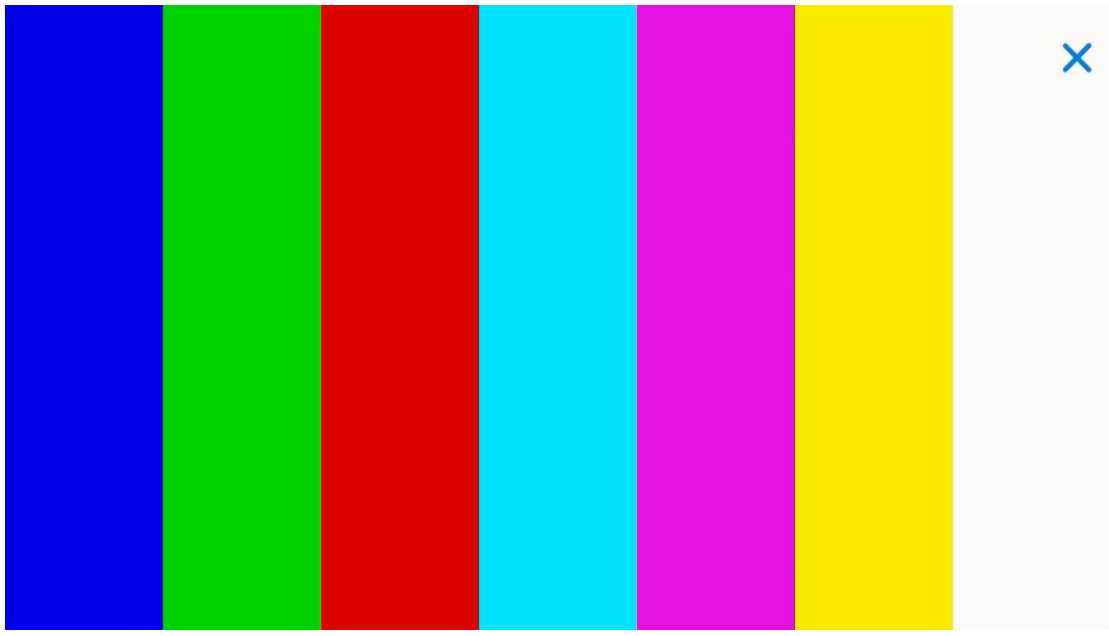
As shown in the above figure, the Engineering Setup is mainly used for configuration and debugging by the engineering site personnel. There are 4 major categories of configurations in the Engineering Setup menu: Test and Debug, Dual Graphics Card Setup, Power Supply Setup, OEM Setup and so on.

4.7.9.1. Testing and Debugging



Testing and debugging

4.7.9.2. Display Test

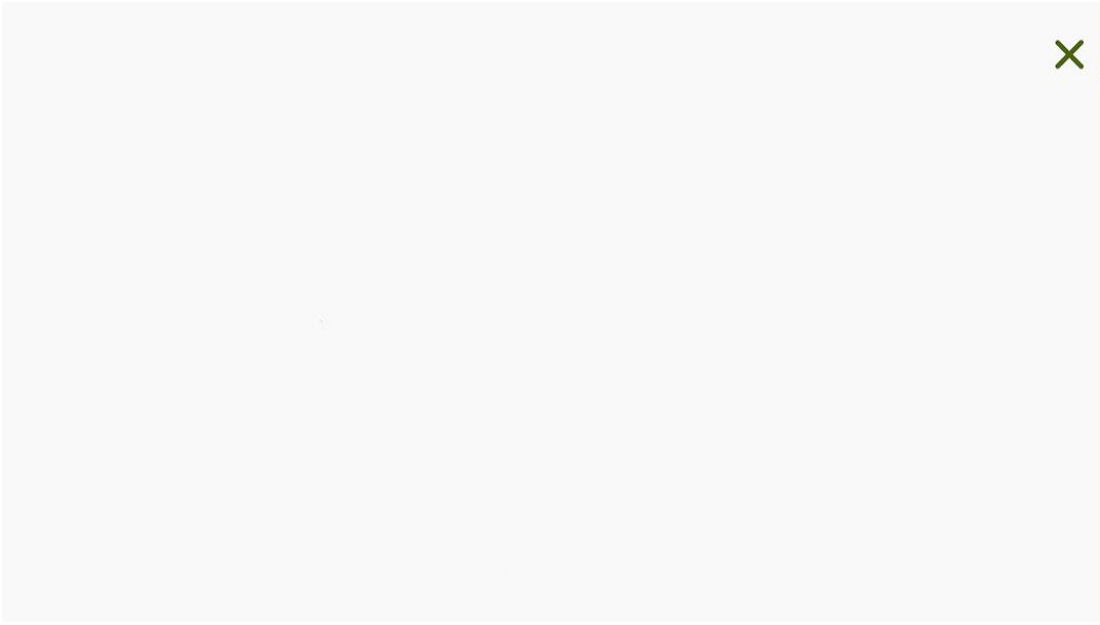


Display test

TIP

A function of the recording system to test the display for bad dots, etc.

4.7.9.3. Touch Screen Testing

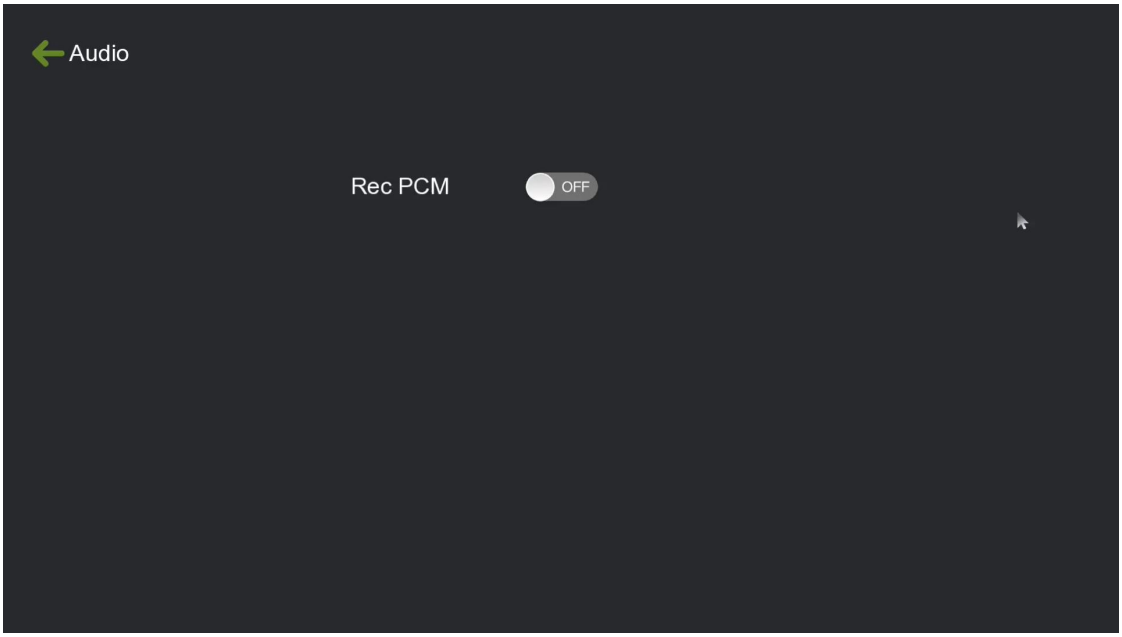


Touch screen testing

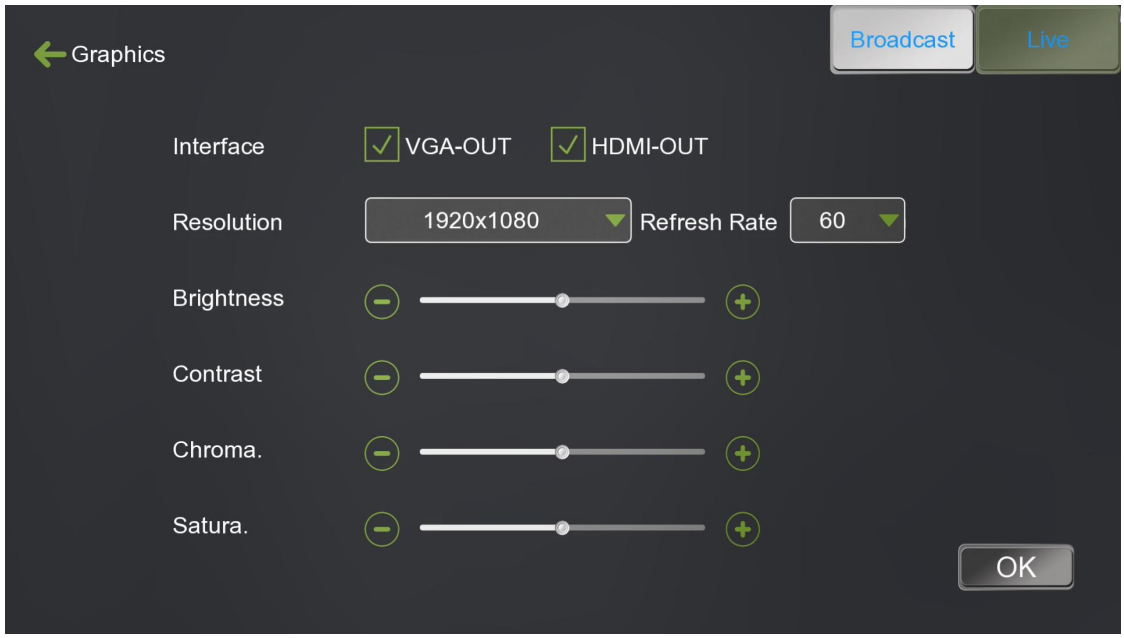
TIP

A function of the recording system to test the touch screen, you can test out the display for the presence of bad dots and so on.

4.7.9.4. Sound frequency



4.7.9.5. Dual graphics card setup



Dual graphics card setup

The recording and broadcasting host has built-in dual video card outputs, i.e. the output of guide screen and live screen. Default HDMI-OUT and VGV-OUT output the guide screen.

4.7.9.6. OEM Settings

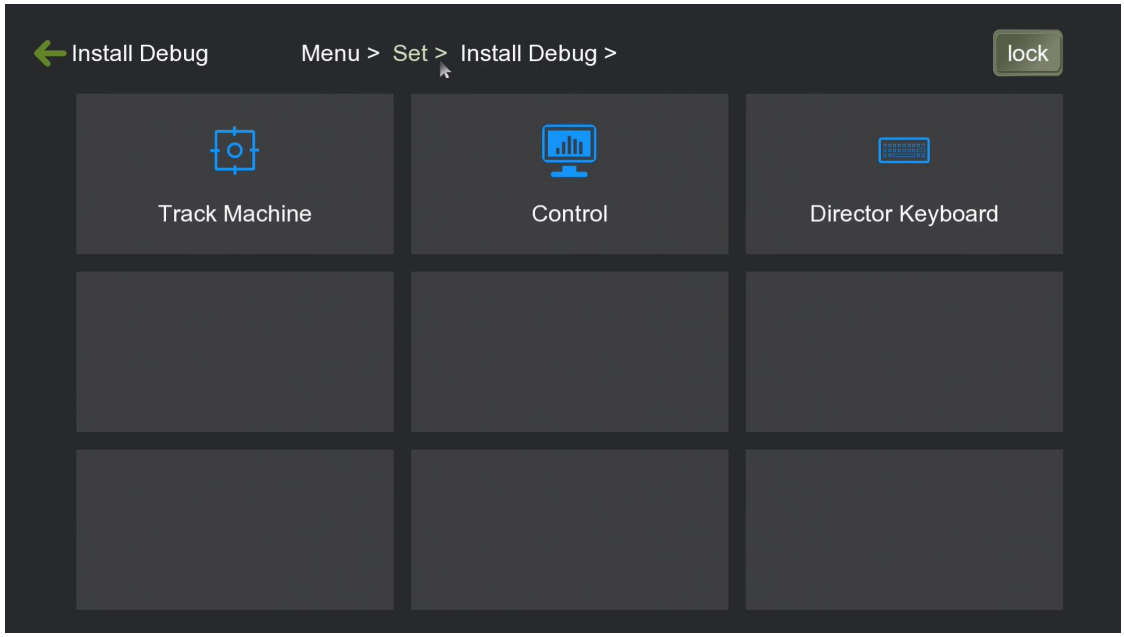


Logo setting

The recording system supports user-defined boot logo. boot logo image format is jpg, resolution size of 1024*768, 72dpi, bit depth 24, file size not more than 128KB; users can import the logo file

to a USB flash drive, and then access to the recording host, in this menu to import, after importing, tap OK, exit the menu and reboot, restart, after the restart of the replaced After reboot, the replaced logo will take effect.

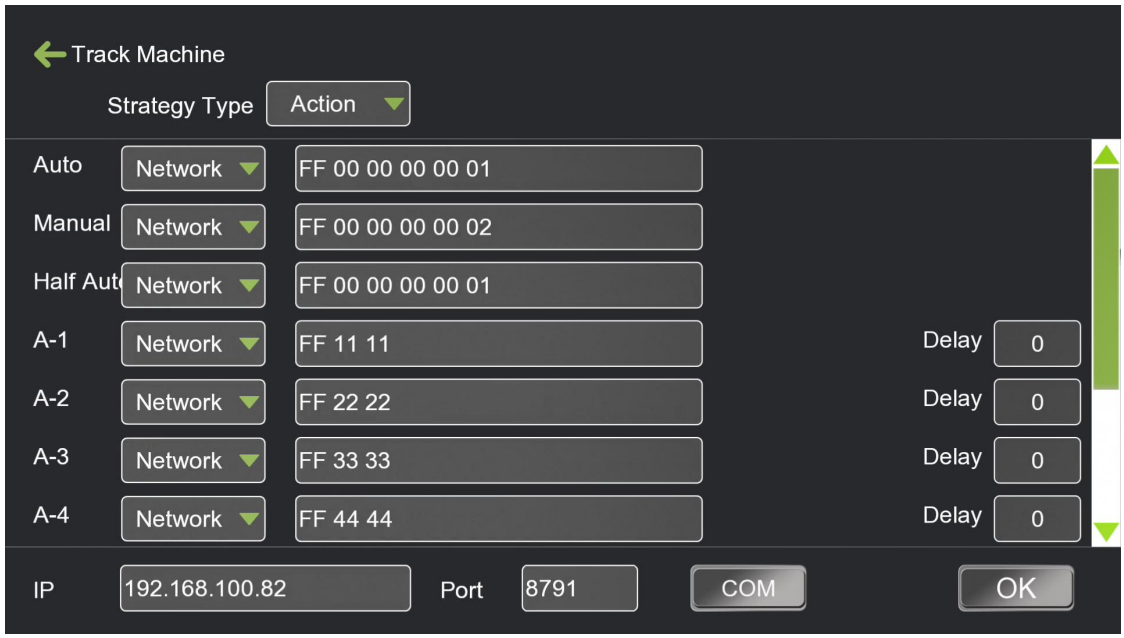
4.7.10. Installation and commissioning



Installation and commissioning

As shown in the above figure, the engineering settings are mainly used for the configuration and debugging of the personnel at the engineering site. There are 4 major categories of configuration in the project setup menu: tracker, centre control, guide keyboard, etc.

4.7.10.1. Tracking machine



Tracking machine

TIP

As shown in the figure above, recording and tracking devices can be classified into action policies and state policies according to the type of code issued.

(1) 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.

(2) The state policy contains a start code and an end code of an action, for example, if the tracking system detects an action in the student area, it will send the alarm start code of the student close-up to the recording host in accordance with the corresponding classroom scenario, and the recording host will automatically query the policy table in the menu of [Switching Policy] after receiving the command code and switch to the corresponding signal state, and then switch, and in the middle of which, it can transition to switching some stunts and screen combination effects. 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 the students finish answering the 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.

(3) Description of action strategies:

① Full-automatic/manual/semi-automatic, HDMI1-HDMI4 (the number of HDMI ports varies from model to model) all select the serial port.

② Full-auto/manual/semi-automatic behind the sending host serial port number fill in the tracking device and recording and broadcasting connection interface number, such as connected to the recording and broadcasting RS232, communication signals used is RS232, then select COM1_RS232 here.

③ Full-automatic/manual/semi-automatic serial number, fill in the command code corresponding to the tracking, it can be realised normally by clicking the full-automatic guide button on the main interface of the recording and broadcasting, the recording and broadcasting host sends the command code to start full-automatic to the tracking host, and the tracking host receives the code and starts the camera tracking; the recording and broadcasting host clicks the manual button on the main interface of the recording and broadcasting, the recording and broadcasting host sends a stop tracking command code to the tracking host, and the tracking host receives the code and stops the Click the semi-automatic button on the main interface of recording and broadcasting, the recording and broadcasting host sends the semi-automatic command code to the tracking host, and at the same time, the recording and broadcasting will not respond to any command code sent from the tracking host, at this time, the tracking host still controls the camera tracking automatically, even if there is an action command code sent to the recording and broadcasting, the recording and broadcasting does not correspond to it, which is convenient for the users to manually switch the image of the PGM channel when semi-automatic guiding and broadcasting.

④ The command code after HDMI-1_HDMI-4 is filled in corresponding to the strategy of tracking host, and at the same time, it needs to correspond to the hardware image input. For example, if hdmi-1 is connected to the teacher close-up camera, the command code will be filled in the command code of the tracking host to cut the teacher close-up. The delay time behind is usually not set, the default is 0S.

⑤ HDMI-IN can also be a computer signal, the default is a network interface, can also be modified to serial and auto-detect.HDMI-IN channel support HDMI input source, select the serial port, but also support the reception of the command code automatically switch. The default is the network interface, if connected to the computer HDMI signal. When the teacher's computer has any action, the network will send a signal to the recording host to trigger the screen switch. If you use "auto-detect", you don't need to install any plug-in, when the teacher's computer screen has image movement, it will automatically switch, simple and convenient.HDMI delay can be modified according to the user's habits or PPT playback time, the default is 10 S. The above two switching modes support the first time the trigger is switched, and then operate again, the original delay time will be cleared to zero, the original delay time will be cleared to zero. The HDMI delay time can be

modified according to user's habit or PPT playback etc. The default is 10S. That is, when the first trigger, after 5S and then trigger, is re-timed. Note: HDMI-IN channel select network interface, you need to select the continuous sending mode (switching signal after the end of leaving the computer screen to return to the previous channel screen), if you select a single sending mode, it will always stay in the computer screen.

(4) Status Policy Description:

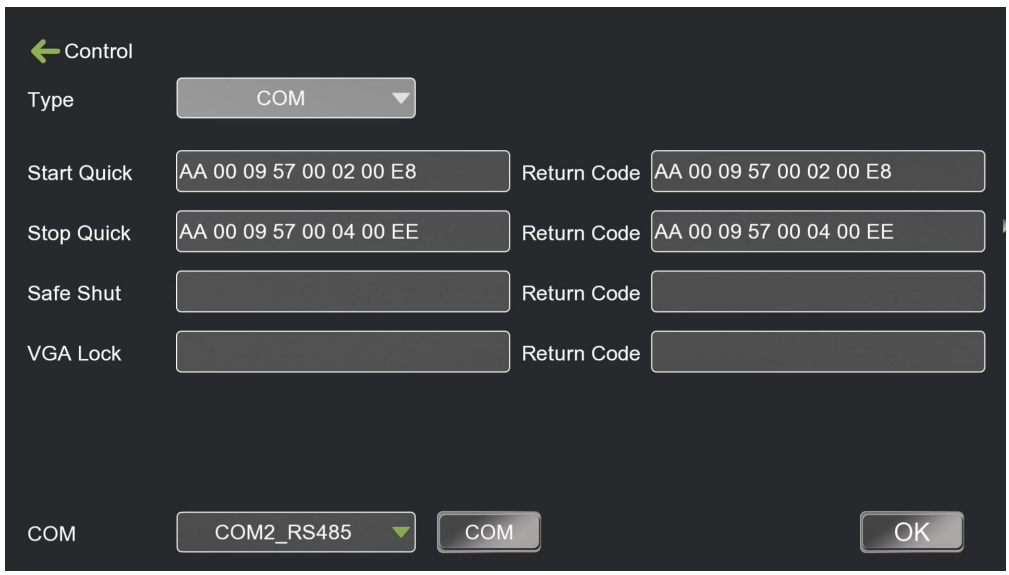
① The interface and interface number settings of the HDMI of the state policy are the same as those of the action policy.

② Command codes behind HDMI need to correspond with the tracking host, there are alarm signal start code and end code, start tracking and stop tracking command code, need to correspond one by one.

③ The alarm in the teacher close-up channel corresponds to the scene where the teacher walks up to the podium, and the alarm ends in the scene where the teacher walks down from the podium; the alarm in the student close-up channel corresponds to the scene where the student gets up, and the alarm ends in the scene where the student sits down.

④ When the recording receives the start and end codes from the tracking host, it will automatically query the strategy table in the [Switching Strategy] menu and switch according to the switching effects, switching screens, etc. set in the strategy table.

4.7.10.2. Central control



Central control settings

TIP

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

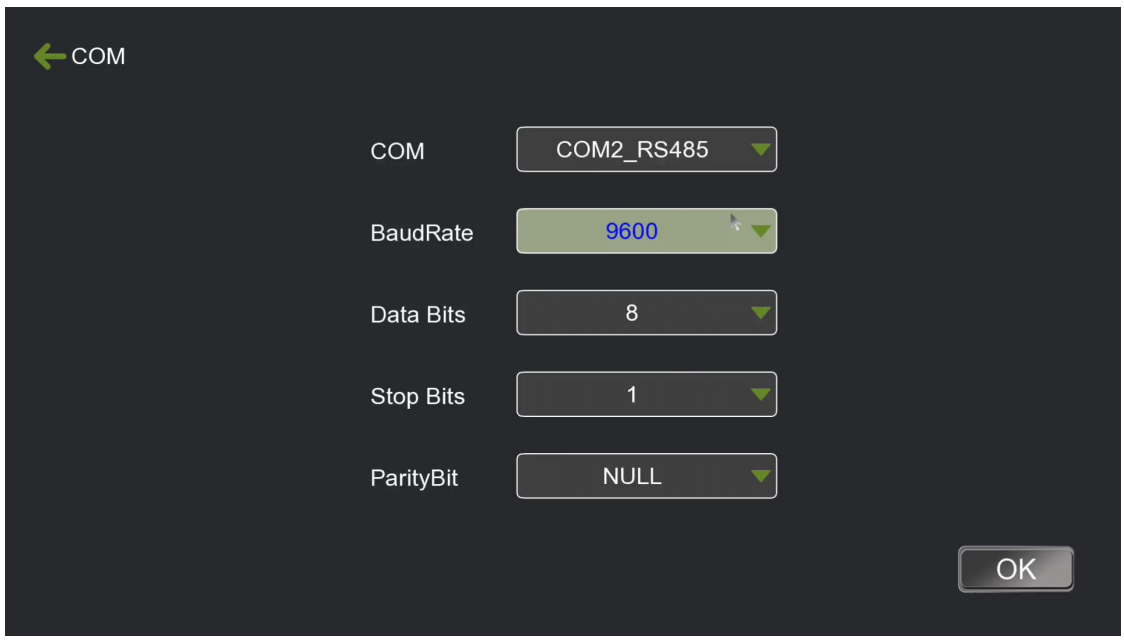
correct hardware connection interface in the serial number of this menu. Support start recording, pause recording, stop recording, safety shutdown, VGA lock and other one-key open, the command code must be one-to-one correspondence with the central control device.

4.7.10.3. Anchor Keyboard



Anchor keyboard

4.7.10.4. Serial port settings



Serial port settings

As shown above, the Serial Settings menu allows you to configure the parameters of the guide's codeback.

Specify the guide desk return code serial number must select the correct interface number, recording and broadcasting will be normal return code from the specified serial number sent out. Generally used in the guide desk and other equipment that need to return to the code to light up the lamp.