

SMART NETWORK VIDEO RECORDER USER MANUAL

Preface

Precautions:

Welcome to use our company's network video recorder (NVR) products. For your secure using, please read this user manual carefully. The following contents are about the proper use of the product, the prevention of danger and loss of property etc. Please be sure to abide.

1. Installation Environment:

- Please place and use this product in the environment with temperature 0°C-50°C;
- The device should be placed horizontally when it is being installed and used, avoid lean or inversion;
- Do not place or install it in the high temperature, wet, dusty and sooty places.
- Keep the device away from water drop or splash. Don't put any object with liquid inside like flower vase or any other object on the device.
- To ensure the normal heat dissipation of the device, there is a fan installed inside the device. The device should be installed in well-ventilated environment;
- The back of the NVR should be away from other devices or the wall above 6cm in order to release heat;
- If the device is used in the regions with much thunder, please install lightning protection device to avoid host or hardware breakdown by lightning stroke.

2. Attenions

- Do not touch the power switch and the NVR by wet hands or wet objects, in order to avoid electric shock;
- After installing the host, please make sure that the host and the chassis are connected to the ground in order to avoid video and audio signal interference and damaged by static electricity;
- Ensure the voltage stability of the power supply of the NVR. Use the power input with stable voltage value and little wave interference rather than shutdown the NVR by disconnecting the main switch directly;
- Do not drop any liquid or metal on the NVR in case short circuit inside or fire;
- The device does not include any hard disk, and you need to properly install the hard disk before using it, otherwise, you cannot record and playback the video;
- The dust on the mainboard will cause short circuit when it is damp. In order to ensure the long-term normal working, you should regularly deduct the mainboard, connectors, chassis, fan and so on by a brush;
- Do not disconnect the power switch directly when you want to shutdown the NVR. You should use the shutdown button on the panel in order to avoid damage to the hard disk;
- The device system supports HDD format function. If the HDD has been used, please take note that if it is with FAT 32 format. This NVR only supports HDD with FAT 32 format;
- Do not open the device when it is connected with electricity;;
- To ensure the integrity of the recording data, please replace the hard disk when it is damaged (there is disk error record in the log information).

3. Note:

- The user manual is for reference only. The real object is the standard;
- The products will be updated at any time. It is subject to update without notice.
- Please contact our technical department for the latest programs and additional documentation.
- If there is any doubt or dispute, our company reserves the right of final explanation.

This user manual offer references to multi-series products. The specific operation of each product will not be listed one by one. Please contact our technical department when you have any question.

Chapter 1: Product Instruction

1.1 Product Summary

This device is a video coding and recording product specially designed for the video monitoring field, combining with H.264 video compression, large capacity HDD storage, TCP/IP network, embedded Linux operating system and other various advanced electronic information technologies, realizing high-quality image and low bit rate recording features and favourable system stability.

The device meets the standard of GB 20815-2006 "Video Security Surveillance Digital Video Device" issued by the government. This device has functions including recording, playback and monitoring simultaneously, realizing synchronous video and audio, with advanced control technology and powerful network data transmission ability.

1.2 Main Functions of Product

The following functional characteristics will be different due to the different series of products and their different hardware versions.

- Real-time Monitoring
- Compression Processing Function
- Recording Function
- Video Playback and Backup
- Camera Control
- Alarm Management and Control
- Communication Port
- Network Function
- Smart Detection
-

Chapter 2: Installation Instruction

2.1 Open-case Inspection

When you receive the product, please check all the things according to the NVR packing list in the box.

2.2 HDD Installation

Installation Preparation:

Need one cross screwdriver. This series of HDD NVR can install 2 to 9pieces of HDD inside, and the capacity of each HDD is no limited.

3.1 HDD Installation Steps

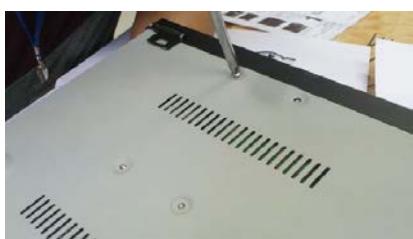
1. Remove the fix screws on the side chassis and open the top cover



2. Connect the hard disk data, wire and power supply wire.



3. Fix the HDD on the bottom plate



4.Put back the cover and fix it by screws



Chapter 3: Local Operation Guide

3.1 Start/Shutdown System

3.1.1 Start System

Plug power cable, press power switch, the power led will be on and the NVR will start. After booting, the video output default to multi-window output mode. If the booting time is within the record setting time period, the system will auto enable the record function

Notice: Please use the NVR matching power supply instead of any other power supply of any other type or brand.

3.1.2 Shutdown System

◆ Click 【Start】→【Shutdown】 and select【OK】。 (Note: this method is suggested when shutdown device in order to avoid damage to the device from electricity cut-off by accident).

Notice: Before changing the HDD operation, you should shutdown the device and cut the power supply first and then operate.

3.1.3 Power Failure Recovery

When the NVR is under the recording status, if the system power is cut off or the device is shut down forcefully, after reconnected with the power supply, the NVR will auto-save the video before cutting and auto-recover to the previous status and continue to work.

3.2 System Login

After normal boot, click the 【Start】 icon, or click the right mouse button, there is a shortcut menu, Select Start - login. Input user name admin and initial password 888888 in the dialogue box.

3.3 Menu Operation

After login successfully, do the related setting according the tool bar on the top of GUI:



3.3.1 Start Setting



Click **Start** icon on the tool bar, show the image as right



- 1 .Log out: click the "Log out" button, can log out the current user
2. Booting Guide: Click "Booting Guide" button will pop out the setting menu, can set language, monitor resolution and network parameter and mobile App QR code
3. Reboot: click the "Reboot" button, the device automatically restart;
4. Shutdown: click the "Shutdown" button, the device automatically shut down.

3.3.2 How to connect NVR with IP Camera

Before do configuration for NVR, need add camera to NVR:

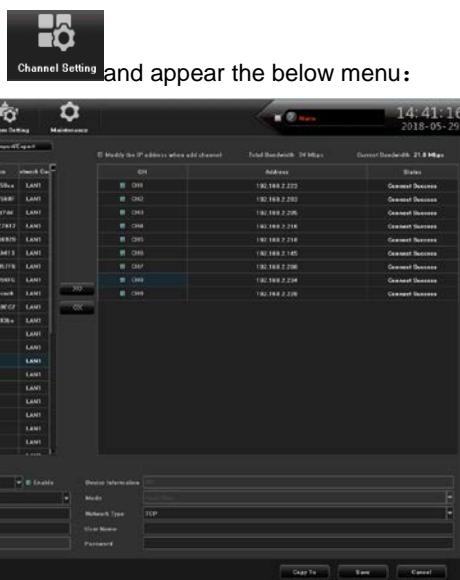
This device supports multi-version Onvif protocols, compatible with main brand IP cameras. Take below brands as example.



Before connect the IP camera with NVR, please make sure that the IP addresses of the IP camera and the NVR are in a same network section, and the main stream and sub stream are adjusted to be the suggested values (main stream: 2048k, sub stream: 512k), otherwise, these problems may appear: the NVR cannot search the IP camera, the image cannot be connected, the image is not fluent, the image quality is bad and so on.



Connect the NVR with the network cable, and the switch in the LAN. After booting, click **System Setting** and enter the system configure interface to set the network parameters including the IP address, subnet mask, network gateway of the NVR. User can run the command ping through the PC in the LAN to ping the IP of the NVR to see if the NVR has connected with the LAN.



click "Search", NVR will auto search the IP cameras in LAN, then it will appear IP camera list and add the camera to NVR channel according the requirement. Additionally, know the IPC IP address, port and so on parameter, can input directly and save, then can add camera to NVR.(Details, please refer to 3.3.6.1)

Following is main 7 functions of NVR instruction: preview, playback, backup, channel setting, hard disk management, system configuration, system maintenance:

3.3.3 Real-time preview

After the device starts normally, it enters the real-time monitoring screen, as shown in the following figure: Among them, the red rectangles are marked with function shortcut keys, and the mouse pointer is corresponding to the text prompts.



The following focuses on the preview interface of the various functions, PTZ control functions, real-time playback.

3.3.3.1 Interface quick function introduction

There are multiple toolbars on the preview interface. The upper, right and lower toolbars can be hidden manually. Each toolbar has different shortcut functions, and there are some hidden convenient functions.

◆ Top toolbar

After the device starts up, the toolbar will exist in all configuration interfaces if it is not hidden.

- Real-time alarm information

When there is an alarm, the indicator will flash and the alarm information will scroll in real time. If you do not want to display scrolling information, you can click Button hides information, If you need to display detailed alarm information, click to popup following info:



In practical applications, to avoid the impact of the alarm, click on the page button temporarily masks the alarm information (the alarm actually exists, and can be queried in the log). If you need to view the real-time alarm information, click the arming button again.

- Equipment time and date
- Superimposed on the real-time display in the upper right corner of the interface, which can be modified on the Time Settings page

◆ Right Toolbar

- Screen playback mode

There are 3 playback modes. The preview screen can be previewed by "Device List", "Organization" and "Channel Scan" as required. The default is "Device List". Note that "Organization" and "Channel Wheel Tours need to be configured before they can be used.

- Disk Information

Can check the status of the hard disk in real time, and it is convenient to view multiple hard disks.

- Video parameters

Real-time modification of brightness, contrast, saturation, and hue of the currently selected

mouse channel, or one-click restore of default values

- PTZ / Preset / Cruise / Track

For detailed operations, see the PTZ control function explained in section 3.3.3.2. The operation method is similar..

◆ Lower toolbar

- Preview split screen mode
- Channel audio adjustment switch
- Cycle switch and interval time
- Linkage preview switch
- Does the channel show smart rules and smart goals
- Full Screen Capture and Full Screen Video Switch
- Page turning/grouping (use with split screen/organization structure)

◆ Exchange channel

Select a channel and drag it to another channel. A prompt box will pop up. There are 3 ways to switch channels::

- Exchange channel connection, all configuration swap
- Exchange channel sequence, exchange preview position, device list information change
- Swap window position, exchange preview position, device list information unchanged

◆ Channel underside floating toolbar

- Current channel capture
- Switch with IPC front-end intercom
- Current channel audio switch
- Current channel manual video switch
- Real-time playback switch (Section 3.3.3.3 has detailed function description)

◆ Anti-key menu

The non-full-screen and full-screen anti-key menus basically include the commonly used shortcut buttons on the preview interface described above, and can be used in practice according to personal habits.

3.3.3.2 PTZ control

PTZ Control Before performing PTZ control, please confirm that the PTZ related parameters are set correctly. After setting the parameters, select the channel to be controlled in the preview interface, and then control the direction of the lens in the PTZ operation interface; zoom, zoom, and zoom of the focal length, focus, and aperture; set the speed of the pan/tilt.

Note: In addition to operating the PTZ control function in the toolbar on the right side of the preview interface, the PTZ control operation page (as shown in the right figure) can also be called from the full screen mode of the mouse reverse key shortcut menu. The page explains the detailed setting method of preset point, cruise, track function:

◆ Preset point settings and enable

- First, turn the camera to the desired position by the direction button controlled by the PTZ, then select a preset number in the "Preset" drop-down list, and finally click the "Settings" button.
- Select a preset number to be called in the "Preset" drop-down list, and then click the "Enable" button

◆ "Cruise" settings, calls and deletes



- Select a cruise number in the "Cruise" drop-down list, click on the "Settings" button to enter the "Cruise Settings" page, then select the preset point, cruise time, cruising speed, click on the "Add" button, set the cruise path preset point Add it successfully (can add multiple presets).
- Select a cruise number in the "Cruise" drop-down list and click the "Call" button to call.
- Select a cruise number in the "Cruise" drop-down list and click the "Delete" button to delete.
- ◆ Track setup and enable
 - Select a track number in the "Track" drop-down list, click the "Settings" button to start recording, and then perform a series of direction operations. Click the "Settings" button again to stop recording the track. The track memory is successful.
 - Select a track number in the "Track" drop-down list and click the "Call" button to call.

3.3.3.3 Real-time playback

There is a hidden toolbar on the lower side of each channel screen. The mouse will appear when it slides to the lower side. Click the rightmost button , a progress bar will appear, and the channel screen will be put forward 5 minutes from the current moment. Video recording can be played, reversed, paused or stopped for 5 minutes of recording as required, and the screen can be returned to the real-time monitoring screen after stopping playing. (Note: The default time for real-time playback is 5min, which can be modified)

3.3.4 Video playback

Click the icon  to enter the video playback interface. The playback mode includes the local video, local capture, and external files. The default is the local video interface (as shown below):



3.3.4.1 Local video

- Channel selection
The default is to select ch1-ch16 by "channel list", or select the channel to query video according to "organization".
- File search
The default time is the date of the current day of the device. Select the date, search method, and search type as required. Then click the button  in the lower right corner of the interface to search for the video that meets the conditions. The video status will be displayed in the bar area under the interface (Note: Different types of video correspond to different colors of the video).
- Video playback

Retrieve the video bar, the mouse can drag the video bar left and right, you can also use the mouse roller slowly zoom to adjust the 24-hour timeline unit scale, time unit scale: 1h, 0.5h, 15min, 5min, 2min, 1min; mouse When the center point moves to the color column time axis, an accurate time prompt will automatically appear, accurate to the second. Double-click the color column time axis to quickly play back video, adjust the scale according to the precision of the playback, and make the playback time more accurate.

➤ Quick Button function

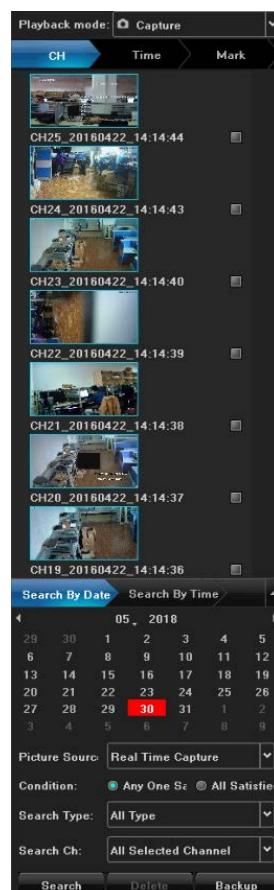
Item	Screenshot	Function Description
Pause / Play	▶ ■	Pause / continue playing the current video
Stop	■	Stop playing video, screen all closed
Play/ Play Reverse	→ ←	Play / Play reverse video by time
Single Frame Play	▶	Play video by frames
Skip Forward / Skip Back 30 Seconds	▶ 30 ▶	Let the video skip forward / skip back 30 seconds to play
Slow / Fast Play	◀ 1x速度 ▶	Let the video played by the speed of 1X / 2X / 4X / 8X / 16X
Split-screen Mode	■ ■ ■ ■ ■ ■ ■ ■	Switch the playback split-screen mode
Previous / Next Page	< >	Page turning function keys, matching to the split-screen function
Backup	↓	Will pop up a file backup page
Screenshot	camera	Capture the screenshot in the selected channel
Hide/Show Progress Bar	‡	Show / hide the video bar area on the lower side
Audio Switch	音量	Adjust the audio size in the channels
Full screen	-	Click the right mouse button, to enlarge full-screen video screen

3.3.4.2 Local Snapshot

◆ Rightside Toolbar

Switch the playback mode to "Local Screenshot", after refresh the interface, click "Search" at the under right corner to search all the screenshots on the day, the screenshots will be ranked as thumbnails by the channel numbers by default.

- Click the button to sort the screenshots by time
- Heck the right side of the picture , the individual pictures are marked. You can also click to perform the open **Mark** of "select/uncheck/inverse/sort" the marked picture in the pop-up list.
- By default, the search condition is "search by day", or "search by time"
- "Image Source, Search Criteria, Search Type, Search Channel" is the default value shown on the right. It can also be selected as required.
- Click the **Backup** button on the under right corner, the backup dialog box will popup, then you can backup the marked picture.



- Underside Toolbar:

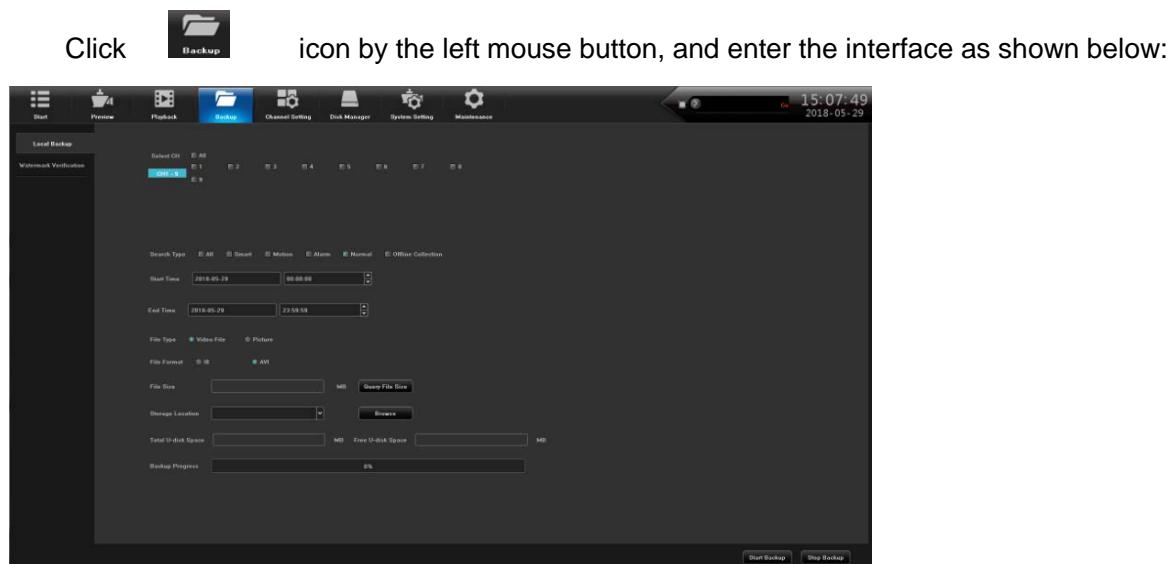
You can play all the retrieved pictures like a slideshow, and all the buttons on the toolbar are the relevant function buttons, of which functions are similar to local video playback.

It is important to note that the current playing picture can be marked by click this  button during the play.

3.3.4.3 External File

- This module is to visit the files in the USB external storage device inserted into the NVR, and all the backup files can be searched in this module.
- Click the “Refresh” button at the under right corner, then the files in the USB external storage device can be retrieved, operate the controls on the toolbar underside the interface, you can do a series of operations to the selected files to play/pause、stop、fast play、audio adjustment. Otherwise, click the “Delete” button at the under right corner can delete the selected files.

3.3.5 File backup



This product supports backup and download of video and picture files. The following describes the backup conditions:

- Channel selection: no channel is selected By default. You can check the channels that need to be backed up as needed.
- File type: "General" is checked By default, single or multiple check can be selected as required
- File time: full day of the day of the device is checked By default, which can be modified as needed
- File type: "video file" is checked by default, which can be replaced with "picture"
- file format: For video file format, the default is AVI, can be changed to I8
- File size: Click the button  to calculate the size of the backup file that meets the above conditions

After the NVR is plugged into the USB external storage device, you can click the  to detect whether the USB device has been recognized normally. If the NVR is properly identified, the "storage location", "U disk total capacity" and "U disk free space" will automatically flash out the corresponding information.

After all the above conditions are satisfied, click the button  in the lower right corner of the file backup interface to view the backup status from the changes in the Backup Progress bar. When the progress reaches 100%, the backup is completed.

3.3.6 Channel Setting



Click on the icon  to enter the disk backup interface. There are five modules in this interface.

3.3.6.1 Channel connection

This page is the configuration interface for adding channels. There are 3 ways to add channels to the channel list.:

◆ LAN Search Add Channel

Click the button  to search for the IPC that meets the checked protocol in the LAN. Click the button  to add the selected IPC to the right list. From the Status, you can check whether the channel is connected successfully. If the connection fails, In the state, check whether the IPC is still online or whether it is in the same network segment as the IP address of the NVR.

- ◆ Automatically added (modify IP address when adding channels)

The IPC that is searched out may not be in the same network segment as the IP address of the NVR (you may not be able to access the screen after adding it). Select the “Add IP Address” function, select the channel to be added, and click the button . The dialog box is displayed. (See the figure on the right), select whether to modify the IP as needed.



- ◆ Manually Add

After selecting the channel number to be added on the lower channel parameter page, fill in the correct IPC protocol, IP address, port number, user name, and password, and then click the Save button to complete the addition. The "Copy To" function copies other information except IP addresses to other channels.

3.3.6.2 Channel parameters

The module is basically some common configuration of the channel parameters. It should be noted that the IPC front-end parameters need to be supported by the IPC front-end, and the access protocols are different. Some of the functions are also not supported. There are 6 pages in total. The following describes:

- ◆ display setting

This page can be configured for "local channel name, channel name, time and date format, image settings, and lens parameters":

- Local channel name: The default is displayed in red font in the upper left corner of the screen, can be modified
- Channel Name:
- Time/date format: Different time/date formats can be selected for the specified channel;
- Image settings: can set the brightness, contrast, saturation, and chroma of the specified channel;
- OSD position: The channel name, time and date are marked on the screen with a yellow rectangle, and the mouse can be dragged anywhere;
- Lens parameters: configuration of the basic parameters of the IPC lens;

Copy To: Copies the configuration parameters of the current channel to other channels.

Note: The above IPC front-end configuration requires IPC front-end support to be saved!

- encoding settings
- Mass stream type: There are two types of composite stream and video stream. When the channel supports audio output, the composite stream must be selected.
- Resolution: Sub- and main stream resolutions are different, and there are multiple resolutions to choose from (different types of IPC resolution options are different);
- Bit rate type: including fixed rate and variable rate;
- The upper limit of the bit rate: different values can be selected in the drop-down list, and can also be customized;
- Video frame rate: select different values in the drop-down list, the default is "full frame rate";
- Image quality: When the bit rate type is variable bit rate, different image quality can be selected according to the need;
- I frame interval: The interval of I frames is 25;
- Watermark: Save an invisible character in the video to verify that the video file has been tampered with. Enable the watermark, enter the desired character in the watermark string and save it. This character will be hidden and saved in the video. After backing up the video, check whether the watermark information of the backup video is consistent with the setting in [File Backup]-[Watermark Verification].

◆ Motion detection

- Detection mode: The default is “Front-end detection”, some NVRs do not support “NVR local detection”;
- Sensitivity/proportion: After setting it reasonably, the accuracy of motion detection triggering can be increased;
- Regional settings: Hold down the left mouse button directly on the screen and drag it to the area where you need to move the detection. The red grid area that appears is the selected area for motion detection.
- Arming time: Select the time interval for arming;
- Linkage method: Select the method to be linked
- Full-screen frame: One-click to set the entire screen area as a motion detection area;
- Full Screen Clear: The area of the motion detection previously set on the screen is cleared

◆ Lost video

Video loss configuration page, the default is all-day enabled state, and the default is "Monitor Alert"

◆ Mask Alarm

The setting method is similar to the motion detection. When the painted area is occluded, an alarm will be triggered. Note that the onvif protocol access channel does not support the occlusion alarm function.

Video Tampering The setting method is similar to the motion detection. The painted area will form black blocks on the screen. Note that the onvif protocol access channel does not support the occlusion alarm function.

3.3.6.3 Video settings

There are four video modes, the default is "time recording + alarm video", switchable mode:

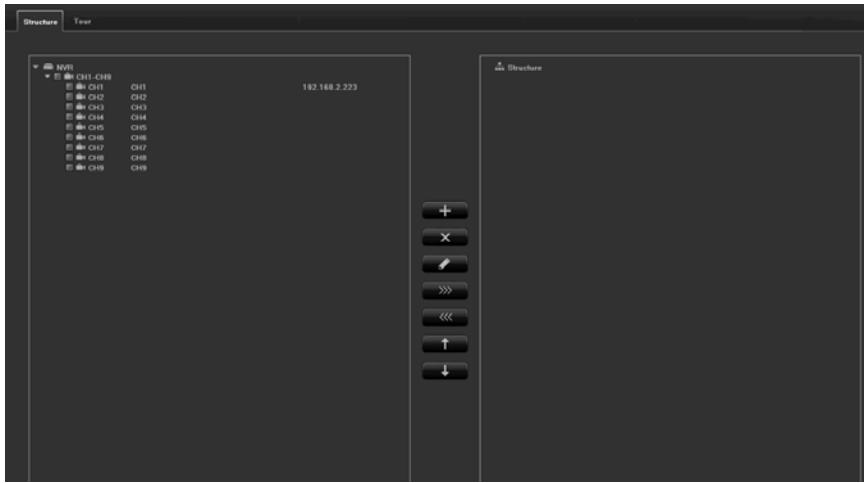
- Scheduled recording + alarm recording: In the set timing recording period, or alarm triggered recording, the current channel system will perform recording operation;
- Scheduled recording: Only during the scheduled recording period, the current channel system will perform the recording operation.
- Alarm recording: Only when the alarm recording function is triggered, the current channel system will perform the recording operation.
- Stop recording: The current channel stops recording immediately unless the manual recording function is enabled in the preview interface.

Note: The setting of recording period is for “time recording”. The pre-recording time and recording delay are for “alarm recording”; otherwise, the setting is not allowed.

3.3.6.4 Channel grouping

◆ Organization

The role of setting up the organization structure is to preview the channels in groups and group them according to a certain standard. The following figure is grouped by area, and the same channel can be divided into different groups (such as ch4) as needed.



A row of function buttons in the middle of the above figure are: "Create a group, delete a group, modify a group name, add a channel to a group to the right, remove a channel in a group to the left, move a group up, and move a group down".

◆ Preview Tour

The settings of the preview patrol are similar to the above organizational structure settings, and are also grouped according to a certain standard to facilitate the preview tour operations.

3.3.6.5 Intelligent detection

◆ detection mode

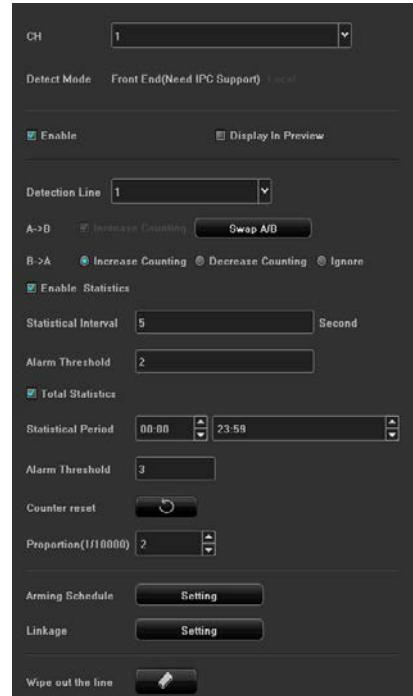
There are two modes: "IPC front-end detection" and "NVR local detection". The default is the former. The "IPC front-end detection" mode requires the IPC front-end to support intelligent detection. If not, select "NVR local detection" mode.

Some models do not support "NVR local detection"

◆ Target count

The role of this page is to configure the relevant parameters so that the target count alarm occurs when the moving object that is larger than the percentage is crossed the set detection line and reaches the number of detection rules that have been set. The following describes how to set the parameters on the page:

- Displayed during preview: After you enable it, you can see the inspection line and statistical results in the preview interface.
- Detection Line: Each screen can set up to 4 detection lines. Drag the left mouse button directly on the screen to draw a line, release the left button, and right-click to complete the line. When the inspection line is completed, the two sides are respectively AB area. The upper side will display the statistical results;
- A->B: The default is to increase the count from area A to area B, and exchange the position of the A/B area on both sides of the detection line;
- B->A: "Increase count" means "Traffic statistics result = 'A->B count' + 'B->A count'", "Decrease count" means "traffic statistic result = 'A->B count' - 'B->A count'", "Ignore" ie "Flow statistics = 'A->B's count'" ;



- Occupy ratio: When the proportion of the moving object in the picture exceeds the set size, it can be used as the "target". When setting, a yellow dotted rectangle will appear at the center of the picture as the size reference;
- Traffic statistics: After you enable it, you can set the "traffic statistics interval and alarm threshold";
- Total statistics: After you enable it, you can set the "statistical period and total alarm threshold";
- Arming schedule: Set the arming time, the default is all day arming;
- Linkage processing: You can enter the linkage configuration page when the alarm is triggered, and perform the linkage configuration operation;
- Erase line: Clears the line drawn by the history on the screen with one key.

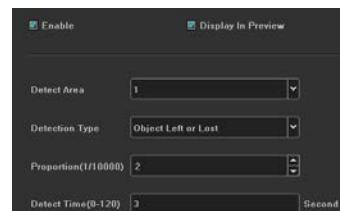


According to the above settings, in the channel 1 screen, the moving object (vehicle) with a ratio of more than 150 crosses the detection line, and the number of vehicles per 60-second crossover line is 2. No alarm is triggered, but between 10:00-15:30. The number of cross-boundary vehicles is 201, which exceeds the threshold 200 and triggers the target count alarm. The above figure shows the preview of the real-time image when the alarm occurs.

◆ Object left/lost

The role of this page is to configure related parameters so that items that are greater than the percentage of the objects in the set detection area are lost/left longer than the detection time and an item detection alarm occurs. The following describes how to set the main parameters on the page:

- Detection area: Each screen can set up to 4 detection areas. Drag the left mouse button directly on the screen to draw a line, release the left button, move the mouse again, and then click the left button to form a second line. Then click the right button. Automatically closed area is the detection area (to set a qualified area at least hand animation 2 lines);
- Detection type: There are 3 types: "lost goods", "left goods", "lost goods or articles left behind";
- proportion: When the proportion of the moving object in the picture exceeds the set size, it can be used as an "item";
- Detection time: Detection of missing/left over this time will trigger the alarm;



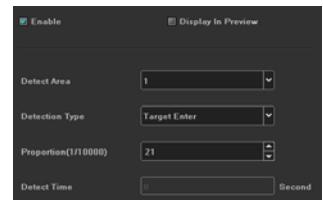
According to the above settings, on this channel screen, items that accounted for more than 150 disappear within 30 seconds in the detection area, triggering item detection alarm. The following figure is the preview real-time screen before and after the alarm occurs (the blue rectangle box identifies Is the area in which the item was lost:)



◆ Area detection

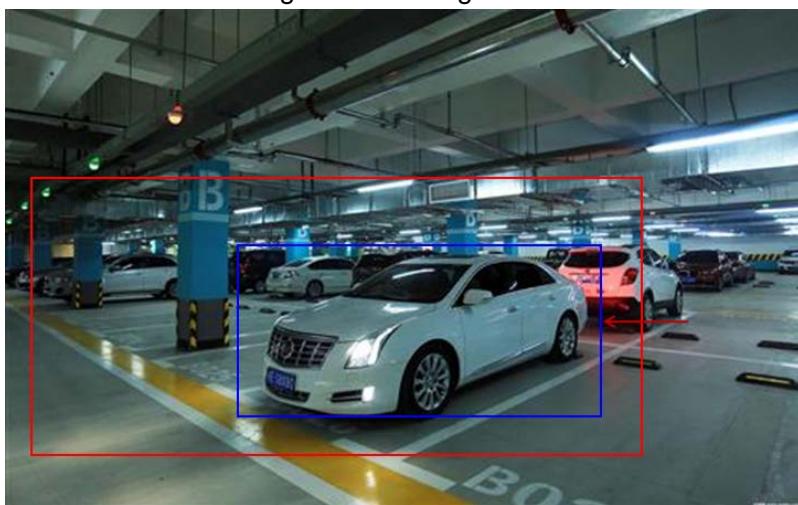
The function of this page is to configure the relevant parameters so that the moving objects that are larger than the percentage are entering/exiting/departing in the set detection area. When the detection time is exceeded, the area detection alarm occurs. The following describes how to set the main parameters on the page:

- Detection area: draw the area on the screen with the mouse;
- Detection type: There are 4 kinds: "Target entry", "Target departure", "Target entry or departure", and "Target";



- proportion: when the proportion of the moving object in the picture exceeds the set size, it can be used as the "target wandering";
- Detection time: Detection of target activity beyond this time will trigger an alarm

According to the above settings, the moving object (bicycle) that occupies more than 1000 in the channel picture exceeds 5s when entering the detection zone, triggering the zone detection alarm. The following figure is the preview of the real-time picture when the alarm occurs (the blue rectangle The box identifies the goal of entering the area:



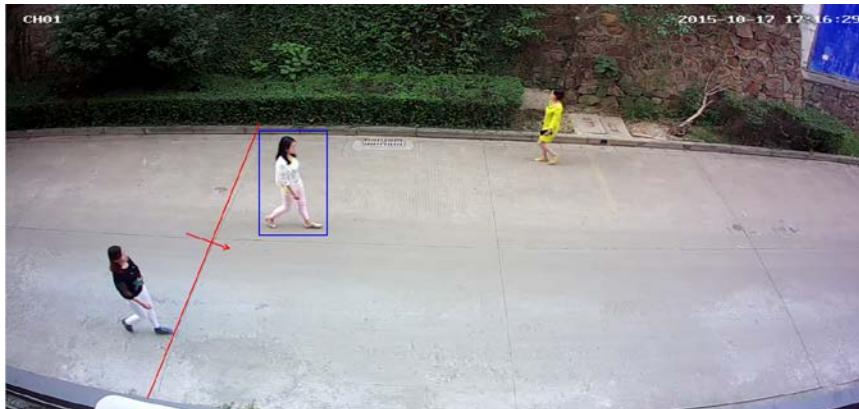
◆ Cross border detection

The role of this page is to configure related parameters so that when a moving object that is larger than the percentage of the moving object crosses the set detection line, a virtual warning line alarm occurs immediately. The following describes how to set the main parameters on the page:



- Detection Line: Draw a test line with the mouse on the screen, you can exchange A/B with a key;
- Detection type: There are 2 types: "A->B alarm" and "A<->B alarm";
- Occupy ratio: filter out moving objects that have a smaller proportion than the setting

According to the above settings, in the channel picture, the moving object, which occupies more than 30 percent, crosses the detection line from area A to area B, triggering the area detection alarm. The following figure is the preview real-time screen when the alarm occurs (in which the detection line is Red and green flash alternately, and the blue rectangle moves with the target crossing the cordon):

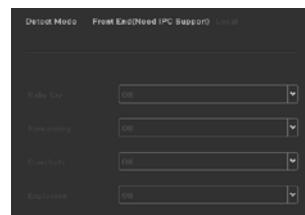


◆ sound abnormal

The function of this page is to configure relevant parameters. When a relevant type of sound is detected, an abnormal sound alarm occurs immediately. This function requires front-end IPC support. The following describes how to set the main parameters on the page:

Sound type: Baby crying

Scream
Gunshot
Explosion



◆ Fire detection

The function of this page is to configure related parameters. When an open flame is detected, an immediate fire alarm occurs. This function requires front-end IPC support. The following describes how to set the main parameters on the page:

When enabled, set the sensitivity, set arming

After time and linkage, save it.



The following figure shows the real-time preview screen when the fire alarm is triggered.



◆ Video diagnostics

The function of this page is to configure related parameters. When the image is obviously abnormal, an abnormal alarm is triggered immediately. This function requires front-end IPC support. The following describes how to set the main parameters on the page:

- After it is enabled, select the type to be detected, set the deployment plan and linkage processing, and save.

Image color cast

Brightness is too bright

Image Color Cast	<input type="checkbox"/>	0	Image Too Dark	<input type="checkbox"/>	0
Image Too Bright	<input type="checkbox"/>	0	Image Blur	<input type="checkbox"/>	0
Video Loss <input type="checkbox"/>					

Darkness is too dark

Blurred image

Lost video

3.3.7 Disk management



Click **Disk Manager** icon, enter the disk backup interface, the interface has 3 modules, the following are:

3.3.7.1 Storage management

The information on the page details the current NVR hard disk, as follows: the device is connected to 1 hard disks, both in normal state and in the state of space saturation, in which the physical number of the 0-0-0's hard disk is being videotaped.

Physical No.	Name	Type	Model	Space	Free Space	Status	Information	Record	Testing Alert	Format	Delete	Power
0-0-0												

- Post processing: there are 2 ways of "automatic coverage" and "stop video". The default is "automatic coverage".;
- SMART processing: there are 2 ways of "ignoring errors and continuing videos" and "stopping videos when making mistakes".;

- SMART information: Click The icon will pop up the SMART information list of the current hard disk;
- Loss of alarm: detection of the current SATA port does not receive hard disk will be in the "alarm information" there is no hard disk alarm.
- Formatting: check the hard disk that needs to be formatted and click button (Note: when the state is "formatted", the hard disk is formatted after the hard disk is formatted to continue the video, and other operations are not done during the formatting process).

3.3.7.2 Disk grouping

- ◆ Automated grouping

The default of the system is to video by "automatic grouping", that is, the default of all channels is to write video data to a hard disk, and then switch to the next hard disk, if the NVR only connects to a hard disk, that is, to cover the history video or stop according to the "post processing" selection in the storage management page. Stop video.

It should be noted that when the video recording channel is over 32 and the device is connected to multiple hard drives, In order to ensure the efficiency and performance of the hard disk, the defaults will be videotaped in 2 hard disks, video on one hard disk in the first 32 ways of the video channel, and the remaining channel to the other hard disk. (the maximum number of routes at present is 64)

- ◆ Manual grouping

The manual grouping function is to group the channels into group operations. The channels of different groups can be videotaped in different hard disks, and each channel can also be set up. As follows, there are 2 groups, in which 2 groups are grouped 1, and ch10-ch15 is in group 2, of which group 1 has a quota set for the passageway, and all channels are to Di Sk0-2-0 video, group 2 does not enable quotas, and all channels are videotaped to Disk1-4-0.



A column of function buttons in the middle of the upper figure is the function of "creating groups, deleting packets, setting quotas, adding channels to groups in the right shift, and leaving the channels in the left shift to delete the packets". It is necessary to note that no video (ch7-ch9, ch16-ch64), and the hard disk that is not grouped, will not be videotaped when the channel preview has not been added into the packet. Idle hard disk, no data write (Disk1-0-0).

Important Note: when the manual group operation is carried out, the history video data in the hard disk may be cleared and the operation is careful so as not to cause irreparable loss!

3.3.7.3Disk position diagram

The page shows the picture of the main board of the product, which identifies the corresponding physical numbers of the SATA ports. If a hard disk needs to be replaced, the hard disk that corresponds to the SATA is found.

3.3.8 System Configuration



Click **System Setting** icon, enter the system configuration interface, the interface has 6 modules, the following are separately explained:

3.3.8.1Time Setting

- Equipment time: the time of NVR can be modified manually;
- Synchronization to front end: when the time of modifying the device is effective, the time synchronization of channel IPC front-end is updated.;
- Time zone: Switching the time zone, the page will pop up a new date and time, and part time zone has the function of daylight saving time.;
- NTP timing: after the function is enabled, the network timing (the device needs to access the external network). .

3.3.8.2Network Parameters

The module has 5 pages, which are explained below:

◆ Basic configuration

- NIC: you can choose different NIC types according to your needs;
- Physical address: displays the physical address of the current network interface and cannot be modified.;
- Automatically obtain the IP address: the DHCP function, when open, the IP/ mask / gateway is not available, if the current DHCP takes effect, the new IP/ mask / gateway assigned by the router (the remote login needs a new IP address), if not effective, the IP/ mask / gateway displays or the previous address (using the old IP address to log on equipment remotely);
- IP address: enter the corresponding number to change the default IP address.;
- Subnet mask: subnet mask input to the corresponding IP;
- Gateway address: enter the corresponding gateway address;
- Default routing: multiple network card devices need to set up the default route and access the external network through the network card device.

◆ DDNS Settings

The default is the "disable domain resolution" state. All the settings are not available. You need to switch to the "enable domain resolution" state. It is important to note that the device needs to ensure that the device can access the external network normally when using the function.

- Server type: there are 14 types in the default list;
- Server domain name: each server type corresponds to the default server domain name.;
- Port: each server type corresponds to an existing default port.;
- User name & password: manually enter the correct username and password.;
- Device domain name: manually enter the correct domain name (function OK, you can use the domain name remote access device). .

◆ Email Setting

The page is set in conjunction with the "linkage" in the "mail linkage" function, the sender mailbox address and password, the recipient mailbox address, SMTP server address and port, and other information in the corresponding format required in the corresponding column, there are other appending functions on the page:

- Fill in multiple recipient mailboxes. The sender's mailbox will send mail to multiple recipient mailboxes at the same time.;
 - Click Attachment Function, the mail received by the recipient mailbox will have attachments, and the attachment is the linked capture file (compressed package format) corresponding to the channel.;
 - Click the "test mail" corresponding to the field  icon to send the mailbox to the recipient's mailbox. If the message is successful or not, there will be some hints.
- It should be noted that the use of Email linkage function ensures that the network environment is good, and the device can smoothly access the external network. .
- ◆ Advanced Settings
 - Enable PPPoE

You need to fill in the correct PPPoE username and password. If the network is connected, you can get the dynamic address of the device. .
 - Enable UPnP

The default RTSP, RTMP, and HTTP port numbers are 554, 1935, and 80 respectively. The port number can be modified (modifying the internal port needs restarting the device to take effect). The UPnP state is not in effect by default, and the external IP address will be obtained after the entry into force. .
 - ◆ Management platform

This page is the interface of the platform protocol, the default opening of the WebServer protocol (supporting device remotely logon) and Device ID (supporting P2P cloud services), and other services to be opened according to the needs. It should be noted that some services need to be restarted or disabled.

3.3.8.3 Alarm management

- The module has 4 pages, which are explained below:
- ◆ Local alarm input (part type is not supported)
 - Select channel and alarm state;
 - Enable alarm processing function (default is not enabled).;
 - Defense time and linkage mode: choose the time interval and linkage mode that need to be deployed.;
 - Copy to: copy the above configuration to other channels. .
 - Remote alarm input
 - Select the remote alarm channel and enter the IP address and name of the alarm device.
 - Enable alarm processing function (default is not enabled).;
 - Defense time and linkage mode: choose the time interval and linkage mode that need to be deployed.;
 - Copy to: copy the above configuration to other channels. .
 - ◆ Alarming output (part type is not supported)
 - Alarm output: select the channel number that needs to be set;
 - Output alarm delay: select the time of alarm output delay or custom settings.;
 - Defense time: select the time interval that needs to be protected;
 - Copy to: copy the above configuration to other channels. .
 - ◆ Exception configuration
 - Exception type: there are 6 types of selection;
 - Trigger mode: all types of triggers default open the "monitor on monitor" and "Upload Center", in which "hard disk error" also defaults to "sound alarm".
 - ◆ Linkage setting

On this page, you can query / add / modify / delete all alarm types and linkage configuration information of all channels.

3.3.8.4user management

- Modify user: modify user name, password and user type for selected users.;
- Add users: add a new user;
- Delete user: delete selected users (except admin and default users);
- User permissions: permission settings for selected users.。

3.3.8.5Setting of cloud platform

This page is the setting interface of PTZ parameters. After the parameters are set correctly, the PTZ can operate normally.。

3.3.8.6Equipment parameters

This page displays some basic information and common settings of the device.:

- Product serial number: the unique identification of device identification;
- Select language: modify NVR's system language and restart;
- Main display resolution: it can modify the NVR local display resolution (with display support), and become effective immediately after the modification.;
- Video bitstream mode: two modes supporting main stream + sub stream and main stream.
- Channel information display: there are 4 ways to display. After the revision is successful, preview the list of interface devices and refresh them in time.;
- Real time playback time: there are 5 kinds of time to choose.;
- Automatic logoff time: automatically quit logon status after no operation for a period of time.;
- IPC protocol management: Switch on / off with protocol and plug and play functions;
- Auxiliary user: function on / off, default is off state, turn on to restart device.;
- Display mode: intelligence + preview + playback road number selection;
- Mouse speed: adjust the speed of mouse movement, and take effect in time.。

3.3.9system maintenance



Click **Maintenance** Icon, enter the system configuration interface, the interface has 6 modules, the following are:

3.3.9.1system information

- Device information: software version and hard disk version currently used by NVR
- Stream information: real time sub and main stream information of all channels.
- Online users: user information that is currently accessing NVR

3.3.9.2log information

There are three main types of log master types: "operation", "exception" and "alarm". Each main type corresponds to multiple seed types (the system default is to query all types of logs), and the log time can be used for Cross Day query.

3.3.9.3configuration management

There are only three function buttons on the page, and each button has different functions.:

- Export configuration: export the system configuration to the USB external storage device inserted by NVR.;
- Import configuration: import the system configuration file from the USB external storage device inserted by NVR into the system, and the configuration imported after restarting the device will take effect.;
- Restore default: select single / multiple configurations as required, restore the factory default values, and restart the device before taking effect.。

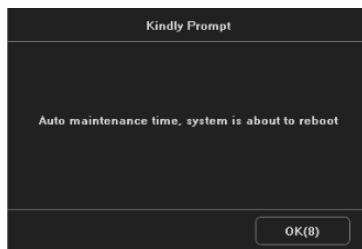
3.3.9.4 System upgrade

In this page, the version of the product upgrade operation, NVR's USB port needs to insert the update upgrade file with the product external storage device, select the file, click upgrade, upgrade the completion of the device needs to restart

Note: during the upgrade process, do not perform any operations on the local and remote ends, so as to avoid incorrectly repairable errors!

3.3.9.5 Automatic maintenance

This page has only one "maintenance mode" option, the default is "disable" state, and can be switched to "single", "Daily" or "weekly". After setting up the maintenance time, 10s will pop up a prompt box (see right) before the time of system time reaches maintenance time, and after 10s, the maintenance time system will be restarted automatically.



4 Network operation guide

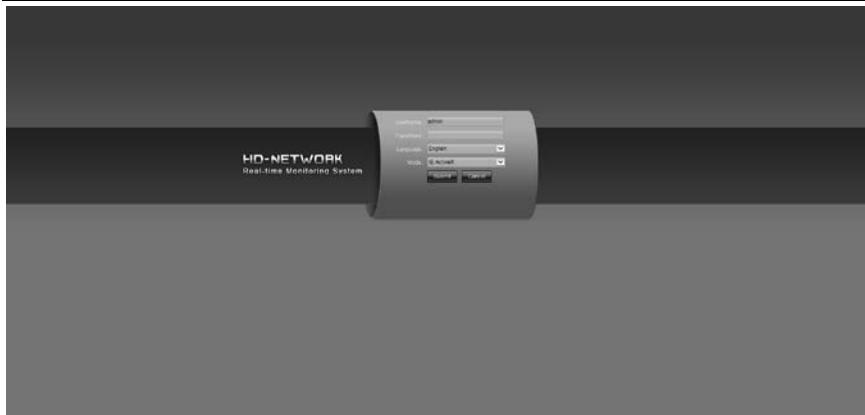
4.1 WEB Browser operation guide

4.1.1 network connections

- ◆ Confirm the network digital VCR correct access network;
- ◆ Set up IP address, subnet mask and gateway respectively for computer host and NVR. If there is no routing device in the network, please allocate the IP address of the same network segment. If there are routing devices in the network, the corresponding gateways and subnet masks should be set up. The network settings of the network digital video recorder are set up [system Settings > > network parameters.];
- ◆ Please make sure that the IP address is set correctly. After the IP address is set up, you can use the Ping tool of the system to check whether the network digital video recorder has access to the network correctly.。

4.1.2 Control installation and user logon logoff

- ◆ After the network digital video recorder correctly connects to the network, it can log in and access the network digital video recorder through IE browser.;
- ◆ You can download and install IE controls from NVR through the network, run and install the controls, and then enter the IP address, username, and password of the network digital VCR in the IE browser and join the following interface successfully.:



After you login correctly, you can enter the network interface preview interface. The network end operation method is detailed in the host side..

5 Mobile operation guide

This operation guide is directed at how to install and use mobile client's instructions in mobile phones on Android and iOS systems. The use of the company's mobile phone client app is AEeye, customers can customize the use according to the needs, the use of mobile client methods are much the same, the following is to explain the example of AEeye.

Mobile client software supports Android 4 and above system versions (mobile phones include common brands on the market, such as HUAWEI, millet, HTC, etc.), and system versions of iOS 6 and above (mobile phones including iPhone, iPad, etc.).

★ Installation and operation instructions

- 1.Download the download connection from the application treasure downloading the latest AEeye installation or scanning the NVR's [system configuration] - the Device ID two-dimensional code option under [management platform].
- 2.for installation; ;
- 3.after installation, click the corresponding program
- 4.For the first time, you can choose to login locally.



(will not bind accounts and add devices), you can also register accounts.

Login with account number (using account login, add

The device will be bound with the account number, and will be used after replacing the phone.

This account can be accessed, you can view the device and do not need to add it again.

Note: in actual use, cell phone performance and network status will affect the preview effect. If the network condition is poor, the frame rate can be reduced appropriately to ensure that the preview screen is fluent.

5.Click button, open device management interface -> Add device

Enter the serial number (you can click the button behind the serial number, scan).

Two dimensional code to add serial number), enter user name, password, according to the device

Select path and stream type, click Add device, prompt device.

Add success.

6.Click the button on the  preview screen to select the channel you need to open.

Open the corresponding preview. Most can be previewed at the same time 16.

 Play、stop

 capture

 Recording

 PTZ Control

 intercom

 Monitor



6 Common troubleshooting

◆ The equipment can not start or restart

Possible reasons:

- The network digital video recorder upgraded the wrong program causing the system software to be damaged.;
- NVR motherboard broken, please contact supplier maintenance.;
- Hard disk failure, please replace the hard disk;
- Panel selection error, settings, device parameters, and settings. For aluminum panel, please select MINI. other plastic panels, please select 01, 02, 05, etc.;
- NVR IP address conflict.

◆ PTZ Could not control

Possible reasons:

- Incorrect connection of RS-485 interface cable, reverse connection of A and B port.;
- The type of decoder, protocol, baud rate and address bit are not set correctly.;
- The RS-485 bus connects with a large number of cloud platforms, and there is a signal reflection. A 120 ohm resistor is needed at the far end.;
- Board's RS-485 interface broken.

◆ NVR preview exclamation mark

Possible reasons:

- The access video resolution exceeds NVR's maximum support resolution range.
- ◆ NVR does not support the video coding format of IPC
- ◆ **NVR playback image, flower screen or unable to query video.**

Possible reasons:

- There is an error in program reading. Please try to restart the network digital video recorder.;
- Hard disk data is wrong due to bad path and bad cluster. Please check hard disk. If hard disk is damaged, replace hard disk.;
- Hardware failure of network digital video recorder. Please contact supplier.。

◆ can not be connected NVR by network

Possible reasons:

- Please check whether the NVR physical connection is normal;
- Please check the network parameter configuration of the NVR;
- Please check whether there is a IP conflict in the network.

- ◆ **Videotapes that are downloaded or backed up can not be played normally**

Possible reasons:

- No correct installation of the player;
- Backup U disk or mobile hard disk file system error;
- No installation of more than DX9.0 version of graphics acceleration software.
- The player does not support the video file encoding format
- ◆ The functions of "mobile detection alarm", "occlusion alarm" and "video occlusion" are set correctly, but why they can not?

Because your IPC uses the ONVIF protocol, which does not support these functions at present..

- ◆ Don't search for IPC. What's the matter?

Maybe your NVR or IPC is not properly connected to the network. Try using ping command to check it.

Do you have access to the network correctly, and check if there is any conflict between IP.

- ◆ It's a long time to get out of the picture

The time of IPC from different brands of different models will vary from storage to image, generally more than one minute, but very few models are used for longer time.

- ◆ After saving, there has been no image

It may be a mistake in user name and password. It may also be a video camera. Some private protocols have compatibility problems. It is recommended to use the network camera gun that supports our company's SLINK protocol and international ONVIF protocol.